

**Prepared on behalf of**

**Avanton Richmond Development Ltd**

**Proposed Change of Use Development  
off Manor Road, Richmond**

**Transport Assessment Addendum**

## Control Sheet

**CLIENT:** Avanton Richmond Development Ltd




**PROJECT TITLE:** Proposed Change of Use Development,  
Off Manor Road,  
Richmond

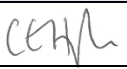
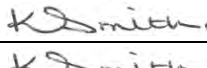
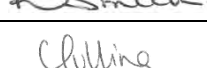
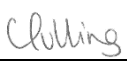
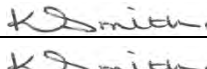
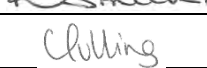
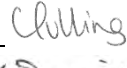
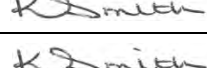
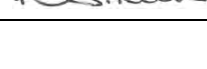
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This document has been prepared in accordance with procedure OP/P02 of the *Fairhurst Quality and Environmental Management System*

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## Acknowledgements:

The National Geographic Society MapMaker tool has been used to generate figures included in this report.

Imagery from ©Google has been included in this report for illustrative purposes only.

Accident information has been obtained from [www.crashmap.co.uk](http://www.crashmap.co.uk) and Transport for London (TfL).

An extract of TfL's Local Cycling Guide 9 has been included in this report.

Census 2011 data has been used to predict modal split.

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## Executive Summary

This Transport Assessment Addendum has been prepared by Sanderson Associates (Consulting Engineers) Ltd on behalf of Avanton Richmond Development Ltd ('the Applicant') in relation to the proposed scheme for the redevelopment of the Homebase store at 84 Manor Road, North Sheen ('the Site').

A Revised Transport Assessment, dated June 2020, provided an assessment of the Amended Proposed Development and considered the impact of the amended proposals in comparison to the Original Proposed Development.

An Addendum report was prepared in April 2021 following the formal adoption of the updated London Plan in March 2021 and bring up-to-date specific sections of the report accordingly. It also recognised changes in TfL bus services and the impact these changes had on the PTAL rating of the site.

The Addendum report prepared in September 2021 was to address South Western Railway's Timetable Consultation, which is intended to come into effect in December 2022, and assess whether the proposed changes will impact the PTAL rating of the site.

This current Addendum report is submitted in order to reflect the changes that have been made to the layout of the site due to an amendment to the red line boundary.

The development will positively influence travel behaviour at the site by incorporating facilities to encourage sustainable trip movements and ensuring easy, convenient access to sustainable travel options. Travel Plans have been developed for the site which sets out the strategy and initiatives that will be adopted in order to encourage the use of sustainable modes of travel.

The impact of the residual trips from the proposed development have been assessed through detailed capacity analysis using junction performance modelling techniques and proportional impact assessment.

The development supports the transport objectives of National and Local Planning Policy.

The proposed development remains acceptable in transport planning terms, suitable access for all people can be achieved, and there will be no significant transport impacts as a result of the proposed development as the scheme will result in a reduction of traffic compared to the existing use.

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## 1 Introduction

- 1.1 This Transport Assessment Addendum has been prepared by Sanderson Associates (Consulting Engineers) Ltd on behalf of Avanton Richmond Development Ltd ('the Applicant') to address South Western Railway's Timetable Consultation and assess whether the proposed changes will impact the PTAL rating of the site (84 Manor Road, North Sheen).
- 1.2 A planning application for the redevelopment of the Site was submitted to London Borough of Richmond upon Thames (LBRuT) in February 2019 (ref. 19/0510/FUL) (the 'Original Proposed Development'), and was considered at LBRuT Planning Committee on 3 July 2019. The Planning Committee resolved that they were minded to refuse the Application, however on 29 July 2019 it was confirmed that the Mayor of London would act as the local planning authority for the purposes of determining the application.
- 1.3 Following review of LBRuT's reasons for refusal and discussions with Officers at the Greater London Authority (GLA) and Transport for London (TfL), the Applicant sought to review the scheme, with the principle aim of increasing the delivery of affordable housing through additional density and addressing other issues raised in the Mayor's Stage 2 Report. Initial scheme amendments were submitted in November 2019 ('the November 2019 Amendments') and increased the overall number of units by 48, primarily through the introduction of a new residential building known as Block E.
- 1.4 Following further discussions with TfL and the GLA, it was subsequently agreed that further revisions should be explored in order to deliver an improved scheme, without the need for this additional block.
- 1.5 The proposed changes are described in detail in the Design and Access Statement Addendum (July 2020), however, of particular note is the increase in residential units from 385 within the Original Proposed Development (Feb 2019 submission) to 453 within the Amended Proposed Development (July 2020 submission).

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- 1.6 This increased the total number of affordable units by 39 to a total of 173 affordable homes (40% by habitable room taking account of grant funding, increased from 35% as originally submitted). This increase in units and the higher affordable housing provision was principally achieved through amendments to the height and internal layout in appropriate locations across the Site.
- 1.7 The June 2020 Revised Transport Assessment, therefore, provided an assessment of the Amended Proposed Development and considered the impact of the amended proposals in comparison to the Original Proposed Development. This addendum report retains all such references and analysis.
- 1.8 Travel Plans have been developed for the site which set out the strategies and initiatives that will be adopted in order to encourage the use of sustainable modes of travel associated with the development. This Transport Assessment Addendum should be considered in conjunction with the previously submitted Travel Plans.

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## 2 Planning Policy Context

### 2.1 National Planning Policy

2.1.1 The latest National Planning Policy Framework (NPPF) was published in July 2021 and sets out the Government's planning policies for England and how these are expected to be applied.

2.1.2 At NPPF paragraph 38 it is stated that;

*'Decision-makers at every level should seek to approve applications for sustainable development where possible.'*

2.1.3 Paragraph 110 states that in assessing development applications;

*'a) appropriate opportunities to promote sustainable transport modes can be – or have been – taken up, given the type of development and its location;*

*b) safe and suitable access to the site can be achieved for all users;*

*c) the design of streets, parking areas, other transport elements and the content of associated standards reflects current national guidance, including the National Design Guide and the National Model Design Code 46; and*

*d) any significant impacts from the development on the transport network (in terms of capacity and congestion), or on highway safety, can be cost effectively mitigated to an acceptable degree.'*

2.1.4 NPPF Paragraphs 111 and 112 state that;

*'Development should only be prevented or refused on highways grounds if there would be an unacceptable impact on highway safety, or the residual cumulative impacts on the road network would be severe.*

*Within this context, applications for development should:*

*a) give priority first to pedestrian and cycle movements, both within the scheme and with neighbouring areas; and second – so far as possible – to facilitating access to high quality public transport, with layouts that maximise the catchment area for bus or other public transport services, and appropriate facilities that encourage public transport use;*

- 
- b) *address the needs of people with disabilities and reduced mobility in relation to all modes of transport;*
  - c) *create places that are safe, secure and attractive – which minimise the scope for conflicts between pedestrians, cyclists and vehicles, avoid unnecessary street clutter, and respond to local character and design standards;*
  - d) *allow for the efficient delivery of goods, and access by service and emergency vehicles; and*
  - e) *be designed to enable charging of plug-in and other ultra-low emission vehicles in safe, accessible and convenient locations.'*

2.1.5 NPPF Paragraph 111 states that;

*'All developments that will generate significant amounts of movement should be required to provide a travel plan, and the application should be supported by a transport statement or transport assessment so that the likely impacts of the proposal can be assessed.'*

2.1.6 Travel Plans have been prepared in support of the residential and commercial proposals, and are submitted under separate covers.

## **2.2 National Planning Practice Guidance**

2.2.1 The National Planning Practice Guidance (NPPG) brings together National Planning Policy Framework. It was launched in March 2014 and coincided with the cancelling of the majority of Government Circulars which had previously given guidance on many aspects of planning.

2.2.2 In relation to Transport NPPG provides the following guidance:

- *Transport evidence bases in plan making and decision taking - March 2015*
- *Travel Plans, Transport Assessments and Statements - March 2015*

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2.2.3 NPPG *Transport evidence bases in plan making and decision taking* sets out the key issues that local planning authorities should consider in developing the transport base to support the Local Plan, including:

- assess the existing situation and likely generation of trips over time by all modes and the impact on the locality in economic, social and environmental terms;
- assess the opportunities to support a pattern of development that, where reasonable to do so, facilitates the use of sustainable modes of transport
- highlight and promote opportunities to reduce the need for travel where appropriate;
- identify opportunities to prioritise the use of alternative modes in both existing and new development locations if appropriate;
- consider the cumulative impacts of existing and proposed development on transport networks;
- assess the quality and capacity of transport infrastructure and its ability to meet forecast demands;
- identify the short, medium and long-term transport proposals across all modes.

2.2.4 NPPG *Travel Plans, Transport Assessments and Statements* sets out the key principles that should be taken into account in preparing a Travel Plan and Transport Assessment. NPPG states that Travel Plans and Transport Assessments are important as they can positively contribute to:

- encouraging sustainable travel;
- lessening traffic generation and its detrimental impacts;
- reducing carbon emissions and climate impacts;
- creating accessible, connected, inclusive communities;
- improving health outcomes and quality of life;
- improving road safety; and
- reducing the need for new development to increase existing road capacity or provide new roads.

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## **2.3 London Plan Policies**

2.3.1 The London Plan (March 2021), is “the overall strategic plan for London” and “sets out an integrated economic, environmental, transport and social framework for the development of London over the next 20–25 years”. “The London Plan is legally part of each of London’s Local Planning Authorities’ Development Plan and must be taken into account when planning decisions are taken in any part of Greater London”.

2.3.2 Key policies within the London Plan considered applicable to this development are set out below:-

- Policy T1 – Strategic approach to transport
- Policy T2 – Healthy Streets
- Policy T4 – Assessing and mitigating transport impacts
- Policy T5 – Cycling
- Policy T6 – Car Parking

## **2.4 Local Planning Policies**

2.4.1 The Local Plan for LBRuT, adopted July 2018, sets out the key planning policies for the area for a 15 year period.

2.4.2 Policy LP 44 relates to Sustainable Travel Choices including cycling and walking, public transport and location of new developments and states that;

*“The Council will work in partnership to promote safe, sustainable and accessible transport solutions, which minimise the impacts of development including in relation to congestion, air pollution and carbon dioxide emissions, and maximise opportunities including for health benefits and providing access to services, facilities and employment”.*

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## **2.5      *The Development in Planning Policy Context***

- 2.5.1      This Transport Assessment demonstrates that the development is sustainable, can be accessed by all people and the residual cumulative traffic impact is not severe. The development is therefore in accordance with the transport principles set out in NPPF.
- 2.5.2      The planning application is supported by a Transport Assessment and Travel Plan in accordance with NPPF and NPPG.
- 2.5.3      The proposed car and cycle parking provisions are in accordance with the standards identified within the London Plan.
- 2.5.4      The development supports the general principles of sustainable transport set out within the Local Plan 2018 and does not conflict with the objectives of the Mayor's Transport Strategy.

### 3 Existing Situation

#### 3.1 The Site and Surrounding Area

3.1.1 The development site is currently occupied by operational Homebase and Pets at Home stores with associated surface level parking. The site is bounded by active railway lines to both the North and the South of the site. The East of the site is bounded by Manor Road as can be seen in the figure below;



Figure 1 – Approximate extents of site

© 2018 Google

3.1.2 Vehicular access is taken from Manor Road in the form of a standard priority junction arrangement, the dimensions of which are able to accommodate heavy goods vehicles and buses. The initial section of the access road within the site also serves the North Sheen Bus Terminus, situated in the northern part of the site.

3.1.3 The existing car park provides a total of 174 spaces. However, 14 of these are occupied by a hand car wash & valeting service and 11 are reserved for use by Europcar Car Hire customers.

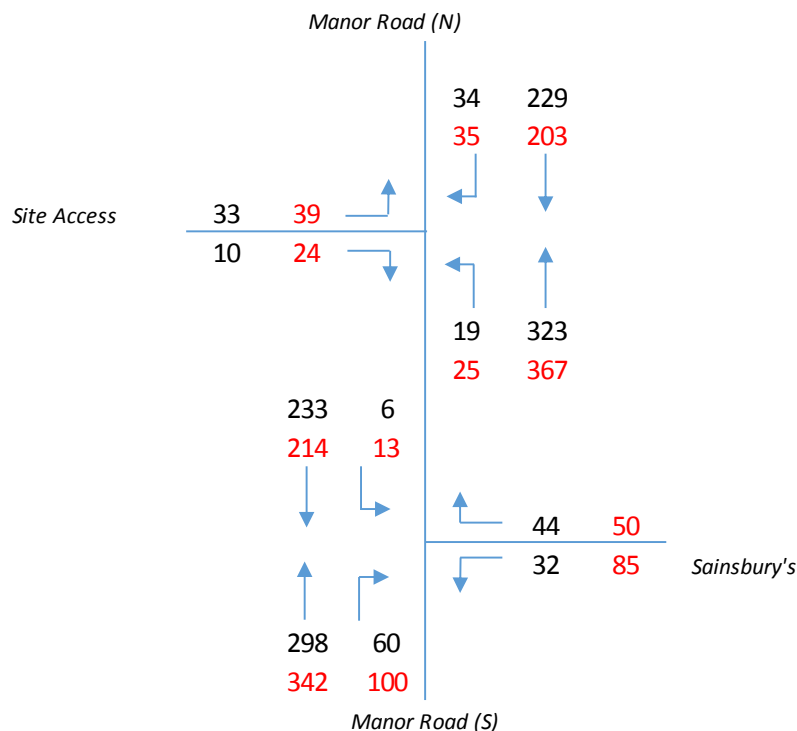
**3.2 Existing Traffic Flows**

3.2.1 Fully classified traffic counts at both the site access and the access to Sainsbury's opposite were undertaken by Nationwide Data Collection Ltd on 2<sup>nd</sup> October 2018 as part of the original application. The data obtained from the traffic surveys is considered to remain valid and provides a robust assessment of the proposals.

3.2.2 The AM and PM peak hours were shown to be 08:30-09:30 and 17:00-18:00, the full report is included at **Appendix A**.

3.2.3 The recorded vehicle movements at the junctions in the peak hours are shown on the diagram below;

AM 08:30 - 09:30  
PM 17:00 - 18:00



**Figure 2 – Recorded peak hour vehicle movements**

3.2.4 The peak hour vehicle movements at the existing site access were recorded as shown below:

	Arrivals	Departures	Total
AM Peak	53	43	96
PM Peak	60	63	123

**Table 1 – Existing total vehicle movements at the site access**

3.2.5 However, it should be noted that the recorded traffic flows include a number of passenger service vehicle movements associated with the bus terminus which will continue to occur post-development. Therefore, the number of light vehicles has been extracted in order to show the number of vehicle movements associated with the Homebase part of the development site in its existing use which will cease to occur. The results of this are shown below:

	Arrivals	Departures	Total
AM Peak	46	33	79
PM Peak	52	55	107

**Table 2 – Existing light vehicle movements at the site access**

### 3.3 Level Crossing

3.3.1 On Manor Road, adjacent to the southern boundary of the site, a level crossing is present, as indicated on Figure 1. On 2 October 2018, Nationwide Data Collection Ltd undertook surveys of the activations of the level crossing and the associated queues that formed.

3.3.2 In the AM peak hour, the level crossing was activated 9 times resulting in the barrier being down for 37m 28s. In the PM peak hour this was 30m 38s over 11 activations.

3.3.3 In the AM, the average southbound queue caused by the barrier being down was 128 metres which extends to the site access junction. In the PM, the average queue was 83 metres which extends to a point between Manor Grove and Sainsbury’s access.

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### **3.4      *The Existing Highway Network***

- 3.4.1      Manor Road, classified as the B353, runs in a north-south direction from Sheen Road (A305) in the south to the roundabout junction of Lower Richmond Road/Lower Mortlake Road (A316) and Sandycombe Road (B353) to the north.
- 3.4.2      Manor Road is a predominantly residential street and is generally a single carriageway with right turn lanes provided for access to both this site and the Sainsbury's supermarket opposite. It is subject to a 30mph speed limit and has double yellow line parking restrictions in place.
- 3.4.3      Along the site frontage there are two central islands which aid pedestrian movements, both have dropped kerbs and at the northern crossing tactile paving is also provided.
- 3.4.4      To the south of the site a stepped bridge is present to allow pedestrian movements to continue whilst the level crossing barriers are down as trains pass.
- 3.4.5      An assessment has been made of the walking routes from the site to the bus stops on Manor Road, Lower Mortlake Road and Lower Richmond Road.
- 3.4.6      Along Manor Road, street-lighting is provided on both flanks, as are footways that link to the wider network. On the western side, the footway width is approximately 2.5m leading to the bus stop and then gradually narrows to approximately 1.8m on the approach to the roundabout junction.
- 3.4.7      At the roundabout junction, all arms have controlled pedestrian crossings in the form of zebra crossings. To the west, on Lower Mortlake Road, is a segregated foot/cycle way providing access to the nearest bus stops.
- 3.4.8      Towards the eastbound bus stop on Lower Richmond Road, raised crossing points with a central island and tactile paving are provided to aid pedestrian crossings of North Road and also act as a traffic calming measure. From North Road, footways with a width of approximately 4m are present.

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### **3.5      *Parking Stress Survey***

3.5.1      In line with the Transport Scoping Study a Parking Stress Survey has been commissioned to establish the current parking restrictions and controls in force and also to identify the level of on-street parking which takes place.

3.5.2      Alpha Parking Limited undertook the surveys between 01:00-05:30, 09:00-10:00 and 13:00-14:00 on Monday 12 and Tuesday 13 November 2018 and a copy of the final report is attached at **Appendix B**.

3.5.3      The overall conclusion of this report is that both day (AM and PM) and overnight parking stress levels are between 62% and 63%.

3.5.4      Further consideration of the implications of the development on existing on-street parking provision is provided in Section 4.2 of this report.

### **3.6      *Pedestrian Activity Survey at North Sheen Station***

3.6.1      During the consideration of application 19/0510/FUL, the 'Original Proposed Development', the matters of potential platform congestion and the availability of space on trains to London, particularly during the AM peak were raised by South Western Rail and TfL.

3.6.2      In order to be able to consider this in greater detail and to enable a development impact assessment to be undertaken a survey was undertaken on three neutral weekdays, Tuesday 8, Wednesday 9 and Thursday 10 October 2019 between the hours of 07:00-09:30 and 15:00-18:00. Unfortunately, due to a camera failure data was not recorded after 09:20 on Thursday 10. However, a further survey was subsequently undertaken on Thursday 24 October 2019 to obtain additional data for analysis.

3.6.3 The full results of the surveys are presented at **Appendix C** and summarised as follows, (numbers in brackets represent cyclists):-

Time Period	Tuesday 08/10/19		Wednesday 09/10/19		Thursday 10/10/19		Thursday 24/10/19	
	In	Out	In	Out	In	Out	In	Out
07:00 – 07:30	99	31	93	25 (1)	90	25 (1)	73	23
07:30 – 08:00	160	31 (1)	129	28 (1)	138	36 (1)	111	27 (2)
08:00 – 08:30	130	51	124	38	114	35	141	47
08:30 – 09:00	81	21	73	24	73	30	75	30
09:00 – 09:30	49	11	58	19			58	15
<b>AM Total</b>	<b>519</b>	<b>145 (1)</b>	<b>477</b>	<b>134 (2)</b>			<b>458</b>	<b>142 (2)</b>
15:00 – 15:30	24	24	27	17 (1)			23	27
15:30 – 16:00	12	18	42 (1)	27			24	21
16:00 – 16:30	27	50	24 (1)	31			28	18
16:30 – 17:00	33	55	31 (6)	46 (1)			23	58
17:00 – 17:30	42 (1)	56 (1)	23 (2)	44 (1)			44 (1)	53
17:30 – 18:00	23	73	31 (2)	95 (3)			30 (1)	80
18:00 – 18:30	32	54	30 (1)	42			27	36
<b>PM Total</b>	<b>193 (1)</b>	<b>330 (1)</b>	<b>208 (13)</b>	<b>302 (6)</b>			<b>199 (2)</b>	<b>293</b>

**Table 3 – Summary of pedestrian activity at North Sheen Station**

3.6.4 The base data recorded during this survey is analysed in greater in Section 5.4 where the number of visitors to the station is compared to the frequency of trains typically stopping at North Sheen Station during these peak periods.

### 3.7 **Personal Injury Accident Data**

3.7.1 The Transport Assessment reports prepared in support of the Original Proposed Development (Ref: 10596-002-03, Feb 2019) and the November 2019 Amendments (Ref: 11205-001-03, Nov 2019) provided a review of personal injury accident data on the local highway network for the 5 year period up to 31<sup>st</sup> December 2017.

3.7.2 The data identified a total of 31 incidents had occurred within the study area; of which 2 were ‘serious’ incidents and the remainder were all considered ‘slight’ in severity. No fatal incidents had been recorded. A review of the contributory factors found that there were no particular accident trends in terms of type or location.

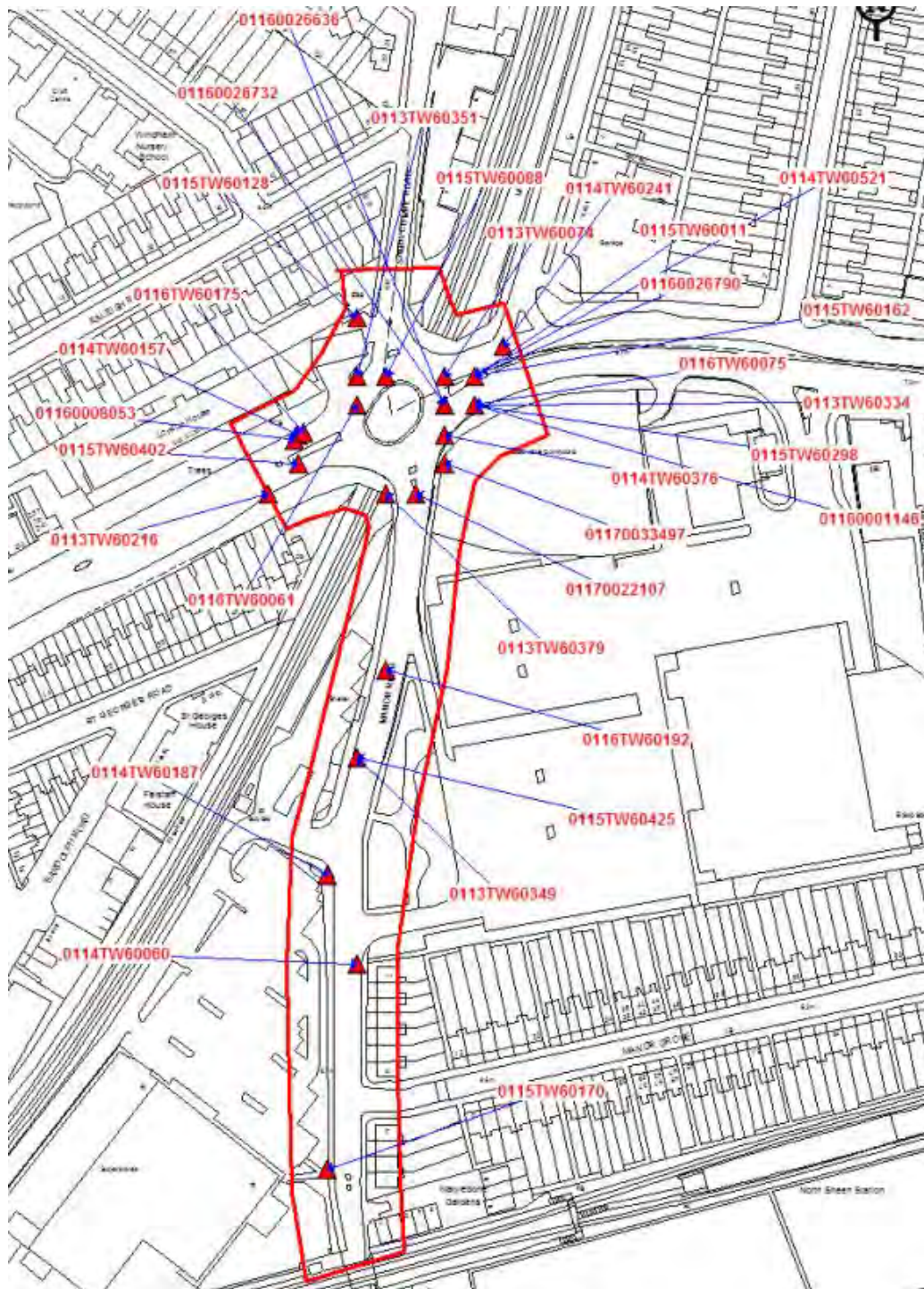


Figure 3 – TfL Accident Data Plot (5 years up to 31<sup>st</sup> Dec 2017)

3.7.3 In order to bring the assessment up to date, the Crashmap accident database has been reviewed to identify any additional incidents that have taken place since 1<sup>st</sup> January 2018. It should be noted that the latest available data includes up to 31<sup>st</sup> December 2019. The following extract from Crashmap shows the location and severity of each incident recorded during the aforementioned two year period.

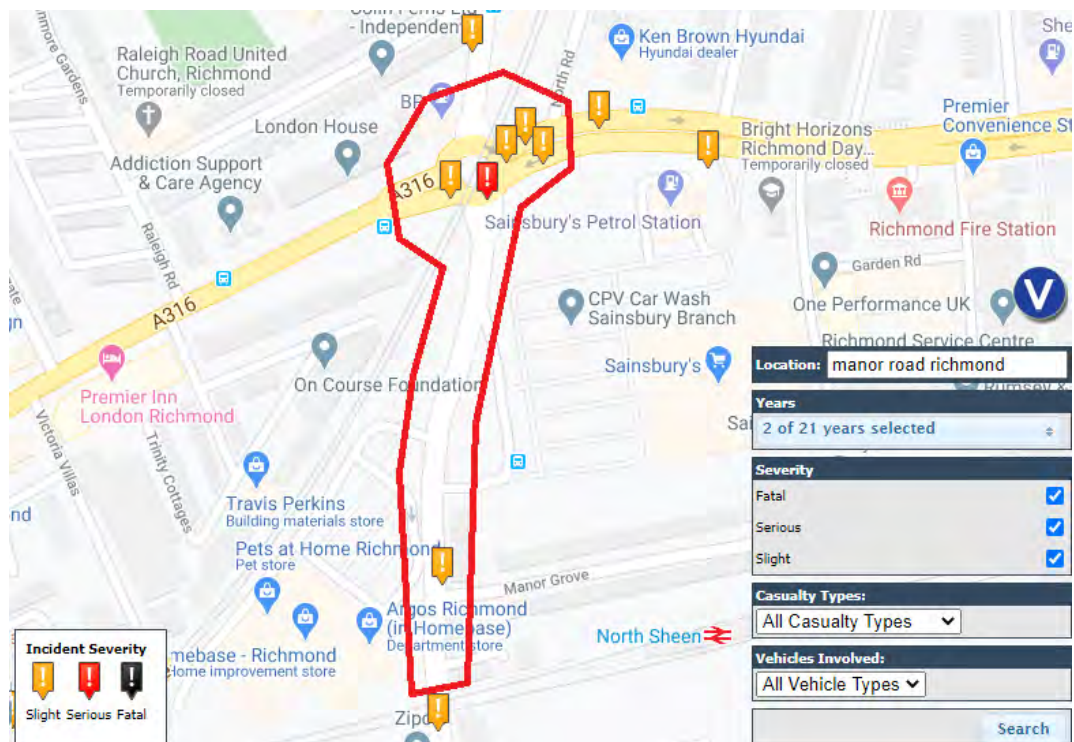


Figure 4 - Crashmap Accident Data Plot (2 years up to 31st Dec 2019)

3.7.4 The Crashmap database identifies that there have been a total of 6 incidents recorded within the latest two year period; of which 1 was a serious incident and 5 were slight in severity.

3.7.5 In terms of location, 1 (slight) incident took place along Manor Road in proximity to the junction with Manor Grove, whilst the remaining incidents (4 slight, 1 serious) all occurred at or in close proximity to the roundabout junction.

3.7.6 In terms of type, 2 incidents (both 'slight') involved pedestrian casualties, 2 incidents (1 'slight', 1 'serious') involved cyclists, and the remaining 2 incidents were collisions between two vehicles.

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- 3.7.7 Due to the progression of time since the previous Transport Assessments were prepared, and the subsequent inclusion of the 2018 / 2019 accident data, it is considered appropriate to discount the previously assessed 2013 / 2014 accident data as this now falls outside the accepted 5 year study period.
- 3.7.8 In total, between 1<sup>st</sup> January 2013 and 31<sup>st</sup> December 2014, a total of 14 incidents were recorded within the study area, of which, 13 were 'slight' in severity and 1 was a 'serious' incident. 3 incidents (all 'slight') occurred at varying locations along Manor Road, whilst the remaining 11 incidents took place at the roundabout junction.
- 3.7.9 Based on the above, it is considered that the accident history on the local highway network has improved since the original assessments were undertaken, and that there have been no emergent accident trends that require further consideration.

## 4 Development Proposals

### 4.1 Development Overview

4.1.1 The development proposes the demolition of existing buildings and structures and comprehensive phased residential-led redevelopment to provide 453 residential units (of which 173 units will be affordable), flexible retail, community and office uses, provision of car and cycle parking, landscaping, public and private open spaces and all other necessary enabling works.

4.1.2 A total of 453 residential units are proposed, of which, 173 are to be affordable homes (40% by habitable rooms). Further details of the development mix are provided below:

Private Rent	= 280 homes (713 habitable rooms)
Shared Ownership	= 34 homes (101 habitable rooms)
London Living Rent	= 36 homes (83 habitable rooms)
London Affordable Rent	= 103 homes (293 habitable rooms)

Unit Type	Mix %	Units
Studio / 1 bed 1 person	6.6%	30
1 bed 2 person	31.6%	143
2 bed 3 person	27.2%	123
2 bed 4 person	27.2%	123
3 bed 5 person	0.4%	2
3 bed 6 person	7.1%	32
<b>Total =</b>		<b>453</b>

**Table 4 – Proposed Schedule of Accommodation**

4.1.3 The two commercial units are located at ground floor level of Blocks A and D facing on to Manor Road. The Block D unit section extends towards the level crossing both areas flanking the main entrance to the site, opposite Manor Grove. The total proposed commercial floor space is 495m<sup>2</sup> GIA.

4.1.4 Each building is to have stairwells and lifts to provide access to the residential units on upper floors with access to highway network being available via a network of footpaths and communal areas. The proposed ground floor layout is included at **Appendix D**.

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4.1.5 The primary pedestrian and cycle entrance to the site is to be off Manor Road opposite Manor Grove with vehicular access remaining from Manor Road in the place of the existing site access.

#### **4.2 *Parking Provision***

4.2.1 The development is to be “car-free” with no standard car parking spaces provided. 14 N<sup>o</sup> car parking spaces (3% provision) are proposed within the site and these are all designated as accessible spaces. The potential to increase to the full 10% provision has been assessed and full details of this are available in the Landscape Addendum (July 2020) prepared by Gillespies (see sections 1.7 and 1.8 of the Landscape Addendum report).

4.2.2 In addition to the above, two electric car club spaces are to be provided on site, located between blocks A and B, as shown in Figure 4A, overleaf. Car Clubs are widely accessible and provide users with access to a vehicle, without the need to own one themselves. They will be managed by the operators of the scheme who are to be confirmed in due course with the provision to be secured via a S106 obligation.



**Figure 4A – Location of car club spaces (Assael, November 2021)**

4.2.3 Policy T6 Car parking within the London Plan (2021) states that; “*Car-free development should be the starting point for all development proposals in places that are (or are planned to be) well-connected by public transport*”. The maximum residential parking standards state that for all new developments in Outer London boroughs with a PTAL rating of 4 the maximum provision is ‘up to 0.5-0.75 spaces per dwelling’. However, the notes state that “*When considering development proposals that are higher density or in more accessible locations, the lower standard shown here should be applied as a maximum*” therefore, in this case, 0.5 spaces per dwelling is the maximum provision. It is therefore considered that the car-free proposals remain in conformity with the London Plan.

4.2.4 In line with the policies of TfL and LBRuT, residents of the Amended Proposed Development will be restricted from applying for residents parking permits for those roads in the vicinity of the site subject to such restrictions. This will be secured by way of a planning condition/obligation.

4.2.5 However, in order to mitigate against residents of the proposed development parking on roads in the vicinity of the site which are subject to daytime only parking restrictions or no restriction at all, the results of the parking stress survey attached at Appendix B have been discussed in detail with LBRuT with a view to amending and extending the existing Traffic Regulation Orders covering the Controlled Parking Zones adjacent to the site.

4.2.6 During the LBRuT determination period it was agreed that a contribution of £50,000.00 would be made to support a Controlled Parking Zone study with a further £50,000.00 to be provided (conditionally) should amendments be deemed necessary. This is likely to be secured by way of a planning obligation.

### **4.3 Cycle Parking**

4.3.1 With regards to cycle parking; Chapter 10 – ‘Transport’ of the London Plan sets out the applicable standards for the commercial and residential elements of the development. These are summarised in Table 5:

	<b>Use class</b>	<b>Long stay</b>	<b>Short stay</b>
<b>Commercial</b>	A1 Food retail	1 space per 175sqm GEA	1 space per 20sqm
	A1 Non-food retail	1 space per 250sqm	1 space per 60sqm
	A2	1 space per 175sqm GEA	1 space per 20sqm
	B1 Office	1 space per 75sqm	1 space per 500sqm
<b>Residential</b>	C3	1 space per studio/1b1p unit,	1 space per 40 units
		1.5 spaces per 1b2p unit	
		2 spaces all other dwellings	

**Table 5 –London Plan - Table 10.2: Minimum Cycle Parking Standards**

4.3.2 As the exact use of the commercial areas is not yet known, the most stringent standards have been applied resulting in the following requirements for the proposed development.

Land Use	Long Stay Provision	Short Stay Provision
	Minimum Requirement	Minimum Requirement
Commercial Flexible A1/A2/A3/D2/B1 495m <sup>2</sup>	7	25
Residential (C3) 453 Units	805	12
<b>Total</b>	<b>812</b>	<b>37</b>

**Table 6 – Amended Proposed Development cycle parking requirements**

- 4.3.3 The development proposes to provide a total of 817 long stay cycle parking spaces which is above the standards required in order to promote the use of this transport mode.
- 4.3.4 The required short stay cycle parking provision is to be located throughout the open space of the site, incorporated into the landscaping.
- 4.3.5 An extract from the Assael Architecture Design and Access Statement Addendum (November 2019) which details the locations of the cycle parking/storage across the site is provided overleaf (Figure 5). Since the production of this plan the location of the refuse stores has been amended (see Section 4.5), however, the cycle parking remains as shown in Figure 5.



**Figure 5 – Location of Cycle Parking/Storage (Assael, November 2019)**

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#### **4.4 Highway Improvements**

4.4.1 As part of the proposals, improvements are to be made to the footway along the site frontage, including widening and planting of trees and shrubs.

4.4.2 TfL have plans to make safety improvements to the roundabout junction to the north of the site. These works are expected to include signalling the junction, including the introduction of signalised pedestrian crossings, and providing an improved environment for both pedestrians and cyclists. During the LBRuT determination period a contribution of £330,000 was agreed with TfL towards this scheme which was 15% of the estimated final scheme costs. This was requested having regard to the predicted increase in users at Manor Circus generated by the proposed development.

4.4.3 However, during more recent pre-application discussions it has been established that the scheme design costs have risen. Therefore, TfL requested a revised financial contribution of £380,000 towards the implementation of the Manor Circus scheme. The developer has agreed to the revised contribution sum.

#### **4.5 Servicing**

4.5.1 All servicing of the buildings is to be undertaken within the site. All of the buildings will have a managed waste system whereby the refuse bins will be moved to a collection area in readiness for the refuse collection vehicle. The November 2021 amendments to the scheme have resulted in both internal and external refuse storage areas being relocated as per Figure 5A below:-



**Figure 5A – Location of refuse stores (Assael, November 2021)**

- 4.5.2 Swept path analysis of a refuse collection vehicle, rigid vehicle, hydraulic inspection platform and fire appliance has been carried out and is detailed on drawing **300025-001** attached at **Appendix E**.
- 4.5.3 The servicing of the development has been the subject of detailed consideration and assessment, particularly with regards to the proposed commercial units. During the on-going review of the development proposals by both the team and the planning authorities consideration has been given to the feasibility of frontage servicing direct from Manor Road.
- 4.5.4 However, given the close proximity of these frontage units to the level crossing it is considered that this would not be in the best interests of highway safety and especially that of pedestrians.
- 4.5.5 The whole length of the Manor Road frontage to the development site (both sides) is subject to a TRO restricting parking at all times. It is unclear whether there are specific restrictions to loading and unloading and it is possible that an amendment to the TRO may be required to enable enforcement of such scenarios.

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- 4.5.6 The parking of a delivery vehicle of any kind or size would potentially give rise to situations where northbound vehicles would be unable to pass a parked delivery vehicle due to either the island within the carriageway or southbound traffic. Such a queue of traffic would quickly extend to the level crossing and the inherent dangers this would present.
- 4.5.7 The formation of a servicing lay-by along the Manor Road frontage has also been considered. However, the creation of such a facility, whilst maintaining a suitable footway width, would eat into the development site to a significant extent. In addition to this the potential for conflict between the prevalent pedestrian flow (north-south) and the desire line for servicing (east-west) would be significant particularly at peak commuter times.
- 4.5.8 Whilst it is accepted that the above situation already occurs on many of London's streets it is considered that a viable alternative is available in this particular case which avoids such conflicts.
- 4.5.9 The erection of pedestrian guard railing is an option which would prevent ad-hoc loading and unloading but this carries with it the possibility of pedestrian becoming trapped on the wrong side of the guardrails within the carriageway. A line of bollards would, therefore, appear to be a more viable option although this would still reduce the effective footway width as the bollards would have to set in 500mm from the kerb line.
- 4.5.10 It is, therefore, recommended that all occupiers of the commercial units are required to advise all their delivery providers that they must use the servicing area within the site which has been made available within the development design. It is suggested that such an operational requirement be included in any lease agreement or other similar legal document.
- 4.5.11 Further details regarding the servicing of the development are included within the site's Revised Servicing and Delivery Management Plan, which has been prepared under separate cover.

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## 5 Sustainable Travel

### 5.1 Overview

5.1.1 This section of the report considers the accessibility of the development by sustainable modes of transport in order to review the opportunities that will exist for residents, staff and visitors.

5.1.2 In preparation of the June 2020 Revised Transport Assessment, TfL's WebCAT Planning Tool was used to identify the site's Public Transport Accessibility Level (PTAL) rating. The site previously had a PTAL rating of 5 however, due to alterations to the bus services in the vicinity, this has been changed to 4. Details of the bus service changes are included in section 5.4.

5.1.3 South Western Railway have undertaken a timetable consultation with changes proposed to take effect in December 2022. The proposed changes have been assessed to determine whether they will have a further impact on the PTAL rating of the site.

### 5.2 Accessibility on Foot

5.2.1 Walking is the most important mode of transport in the local level and can replace short car trips in journeys under 2km, which contribute to congestion and pollution, and the need for car parking.

5.2.2 Further guidance on walking accessibility is provided in the Department for Transport's document 'Building Sustainable Transport into New Developments' (2008) which gives the following advice:

*"Walkable neighbourhoods are typically characterised as having a range of facilities within 10 minutes walking distance (around 800m). However, the propensity to walk or cycle is not only influenced by distance but also the quality of the experience; people may be willing to walk or cycle further where their surroundings are more attractive, safe and stimulating."*

5.2.3 The IHT publication “*Providing for Journeys on Foot*” also identifies suggested acceptable walking distances for commuting, school and sight-seeing as follows with times based on a walking speed of 1.4m/s.

Desirable 500m	6 minutes
Acceptable 1000m	12 minutes
Preferred maximum 2000m	24 minutes

5.2.4 Figure 6 identifies 500m, 1km and 2km walking radii from the site. It is noted that walking routes will not follow the simple radius of this plan and the plan is provided as an indication of where destinations lie and the general extent to which the local area can be accessed on foot.

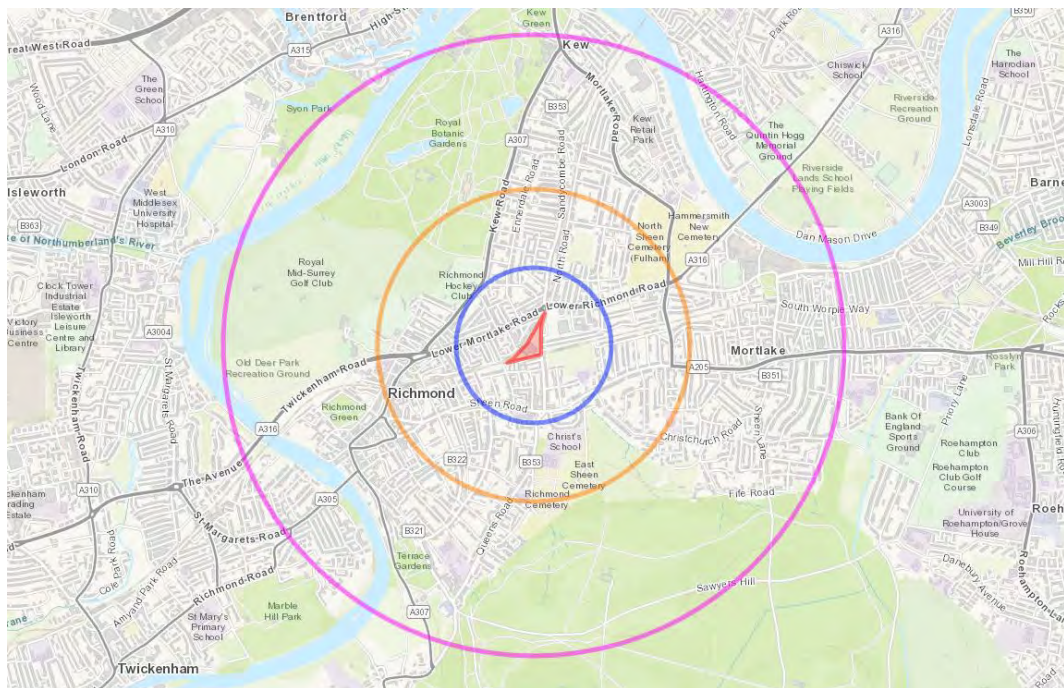


Figure 6 – Walking Radii

[NatGeo]

5.2.5 The following amenities and facilities are all located within walking distance of the site:

- Within a 500m walking distance of the site there are bus stops on Manor Road, Lower Richmond Road, Sandycombe Road and Lower Mortlake Road, North Sheen Train Station, Sainsbury’s supermarket, Lloyd’s Pharmacy, Starbucks coffee shop, Bright Horizons Day Nursery and Preschool.

- Within a 1km walking distance of the site there is Darel Primary School, Windham Nursery School, The Kings Road Nursery, Marshgate Primary School, Christ's School and Sixth Form Centre, Holy Trinity Primary School, North Sheen recreation ground, North Sheen Bowling Club, Skinners Newsagent and Post Office, Seymour House Surgery, Kew Road Dental, Dental Care London, Specsavers and Vision Express.
- Within 2km there is Kings House School, North Road Surgery, Pensford Tennis Club, Richmond Town Centre with various amenities and facilities, Richmond Station, Kew Gardens Station and Royal Botanic Gardens at Kew.

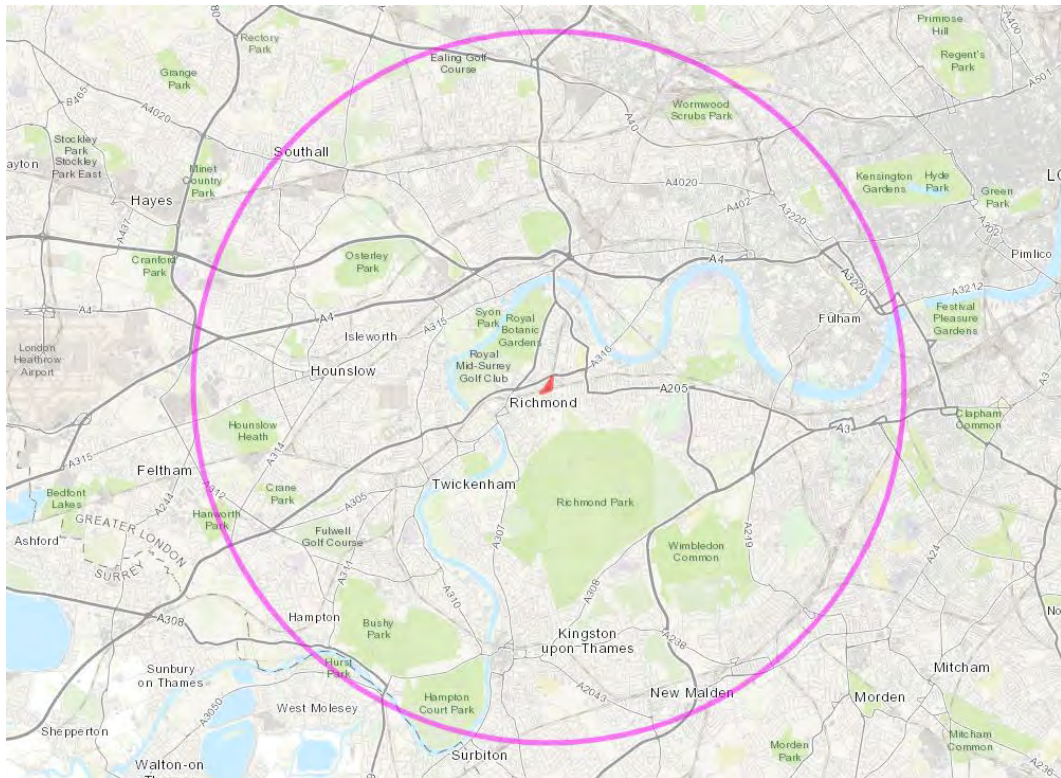
5.2.6 It is therefore considered that local facilities are highly accessible by pedestrians with a wide range of key amenities within acceptable walking distance of the site.

5.2.7 CIHT's 'Buses in Urban Development' (Jan 2018) identifies 500m as the recommended maximum walking distances to a 'core bus corridor with two or more high-frequency services. Furthermore, the PTAL assessment takes into account bus stops within 640m. The bus stops on Manor Road are located approximately 170-180m from the site therefore within the desired walking distance. Bus stops on Lower Mortlake Road and Lower Richmond Road are located approximately 340-390m from the site therefore within acceptable walking distances.

### **5.3 Accessibility by Cycle**

5.3.1 Like walking, cycling has an important part to play in reducing congestion, improving accessibility and reducing pollution. Cycling may also allow people without cars to reach destinations that they may otherwise be unable to reach. CIHT's Planning for Cycling (2014) states that the majority of cycling trips are for short distances, with 80% being less than five miles and with 40% being less than two miles. However, the majority of trips by all modes are also short distances (67% are less than five miles, and 38% are less than two miles); therefore, the bicycle is a potential mode for many of these trips. Electric bicycles extend the range that can be cycled comfortably, and combined cycle-rail or cycle-bus journeys offer an alternative to car travel for many longer trips.

5.3.2 Figure 7 identifies an 8km (5 mile) radius from the site. Again, it is noted that cycling routes will not follow the simple radius of this plan and it is provided as an indication of where destinations lie and the general extent to which the local area can be accessed by cycle.



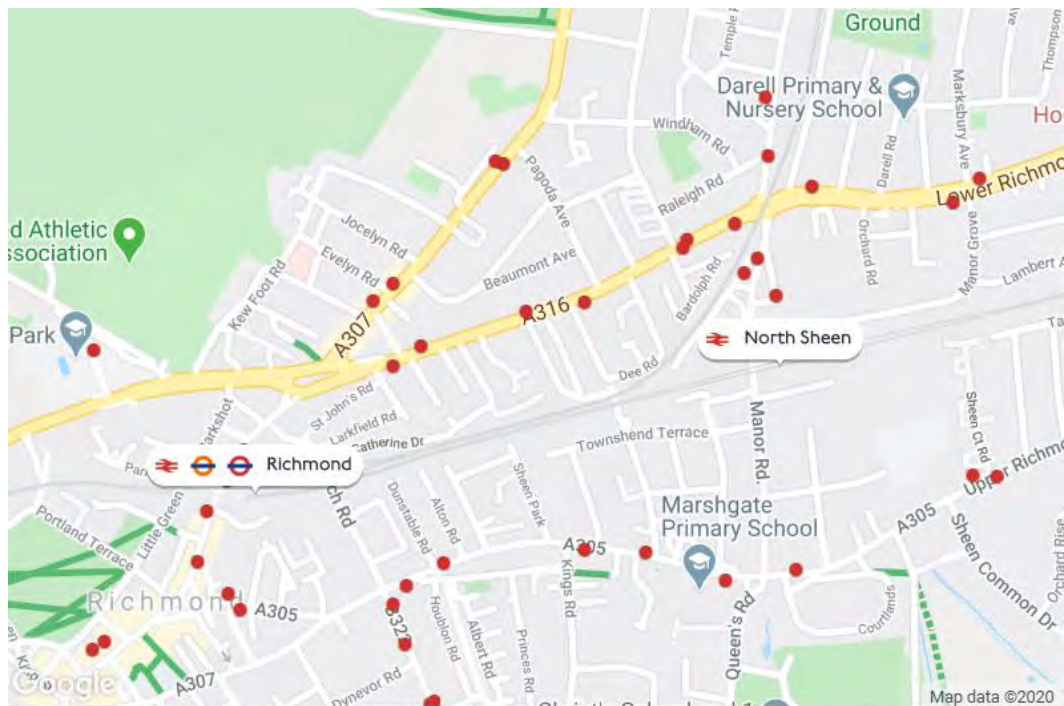
**Figure 7 – 8km Cycling Radius**

5.3.3 In the vicinity of the site, Manor Road, Manor Grove, Lower Richmond Road and Lower Mortlake Road are shown as off road/quiet cycle routes on the Transport for London Cycling Guides.

5.3.4 The site is accessible by cycle and plentiful cycle parking will be provided. It is therefore concluded that the site’s location provides good cycling accessibility to the local area and the local infrastructure provides good opportunities for cycle use with ongoing connectivity to public transport.

**5.4 Accessibility by Public Transport**

5.4.1 The closest bus stops to the site are located on Manor Road approximately 170-180m from the site. In addition, bus stops are located on Lower Mortlake Road, Lower Richmond Road and Sandycombe Road slightly further from the site. Meanwhile, the closest train station to the site is North Sheen Station located approximately 180m to the east of the site and Richmond Station (which provides both rail and underground services) is located approximately 1.5km from the site which equates to a 30 minute walk or 7½ minute cycle journey. Figure 8 is an extract from TfL’s Public Transport Map and identifies the location of the aforementioned facilities.



**Figure 8 – TfL Public Transport Map extract**

5.4.2 A summary of the services that were available from the bus stops within recommended walking distance of the site prior to the disruption caused by Covid-19 is provided overleaf.

Service	Route	Approximate Peak Frequency		
		Mon - Sat Daytime	Mon - Sat Evening	Sunday
190	George Street – Empress State Building/West Brompton Station	15 mins	20 mins	20 mins
371	Manor Road/Sainsbury's – Kingston Hall Road	8-12 mins	15 mins	11-12 mins
391	George Street – Sands End/Sainsbury's	9-14 mins	15 mins	11-14 mins
419	George Street – Hammersmith Bus Station	15 mins	20-30 mins	30 mins
493	St George's/University of London – Richmond/Manor Road	9-14 mins	20 mins	20 mins
H22	The Bell – Manor Road	11-14 mins	20 mins	20 mins
H37	Hounslow/Blenheim Centre – Manor Road	5-10 mins	6-15 mins	7-10 mins
N22	South Road/Fulwell – Margaret Street/Oxford Circus (Night Bus)	No Service	30 mins	30 mins
R68	Kew Retail Park – Hampton Court Station	15 mins	20 mins	15 mins
R70	Nurserylands Shopping Centre – Richmond/Manor Road	6-12 mins	15-20 mins	15 mins

**Table 7 – Summary of bus services**

5.4.3 As can be seen from the above, there are a wide range of frequent bus services available seven days a week. The above services stop at various rail and tube stations which provide frequent and varied services to a wider range of destinations for onward travel.

5.4.4 However, TfL advised that a number of alterations to the bus services in the vicinity of the site came into effect on 12<sup>th</sup> December 2020. The changes were made in order to address areas of surplus capacity and to reallocate resources where additional capacity is needed in Richmond, Twickenham and Whitton. The alterations are summarised below:

- Route H37 frequency reduced from 10bph to 8bph.
- Route 493 terminates at Richmond Bus Station rather than at Richmond Manor Circus. However, whilst route 493 will no longer serve Manor Circus, it will continue to service the south side of the site from East Sheen (albeit a longer walk time).

- Route H22 will no longer operate between Richmond and Twickenham
- Route 391 will be renumbered to 110.

5.4.5 The following bus routes still serve (within 640m) the application site: 371 and R70 (Manor Road), 110, 190, 419, H37, R68 and N22 Manor Circus and 33, 337, 493 and N33 (at East Sheen).

5.4.6 It is noted that, with the revised services, TfL remain satisfied that there is sufficient spare capacity on the bus network to accommodate the uplift in bus demand generated by the development.

5.4.7 North Sheen Railway Station is a two platform station that is under the management of South Western Railway. It provides the following facilities; information services, ticket counter, ticket machines and help points. No car or cycle parking facilities are available at this station. This station provides services to Chiswick, London Waterloo, Wimbledon, Putney and other local destinations.

5.4.8 As detailed in Section 3.6 a survey of pedestrian activity at the station has been undertaken. This has revealed that on a typical neutral weekday the morning “peak” occurs between 07:30 and 08:30 when an average of 262 passengers enter the station.

5.4.9 As there is only a single point of entry linking to a central platform it is not known for certain which direction passengers are intending to travel in. However, it is noted that trains from North Sheen towards central London (Waterloo) are available on both west and east bound lines with varying journey times and number of stops.

5.4.10 In this “peak” period 8 trains are scheduled to stop at North Sheen which provide access to London Waterloo and varying station en-route. Some trains provide an option to change at Richmond to catch a faster onward train.

5.4.11 It is, therefore, considered that typically these 8 services would need to be able to accommodate, on average 33 passengers each. Bearing in mind that the South Western Rail trains on this line usually operate between 8 and 10 carriages during peak times this is not considered to be unreasonable.

- 5.4.12 Richmond Station provides access to both rail and underground services. The station provides the following facilities: CCTV monitored cycle stands for 212 cycles, 55 space car park, taxi/drop off area, fully staffed ticket office, ticket machines, help points, ATM, pay phones, post box, toilets, waiting rooms, shops, step free access and ramps for train access with staff available to help.
- 5.4.13 This station provides rail services to Chiswick, London Waterloo, Reading, Wokingham and other local destinations. Richmond Station also provides Overground line services on the Richmond and Clapham Junction to Stratford route with approximately 12-18 minute frequency.
- 5.4.14 There have been recent rail improvements including the introduction of new trains which has increased the available capacity of the trains on key routes in south-west London. In addition, Network Rail has also improved/realigned the platforms at Waterloo Station which now means that all 24 platforms are able to be used for South Western train services thus increasing the available services and reliability.
- 5.4.15 District line underground services are also available at approximately 10 minute intervals.

## **5.5 South Western Railway Timetable Consultation**

- 5.5.1 South Western Railway (SWR) have undertaken a timetable consultation with the changes proposed to take effect in December 2022. The proposals have been assessed to determine whether they will have an impact on the PTAL rating of the site.
- 5.5.2 SWR, divide their lines into four areas; Main Suburban, Windsor, Mainline and West of England. North Sheen is served by the Windsor routes, specifically the London Waterloo to Kingston via Richmond, Shepperton via Twickenham and Hounslow via Richmond lines. **Figure 9**, overleaf, is an extract from the Timetable Consultation document with the lines that serve North Sheen highlighted. The tables detail the number of services per hour in the direction of London however trains also run on these lines in the opposite direction.

Outline specification – Windsor peak			
	AM high peak trains per hour to London		
	May 2019	May 2021	December 2022
Reading	4	2	3
Windsor	2	2	2
Weybridge via Brentford	2	2	2
Kingston via Richmond	2	2	2
Shepperton via Twickenham	2	2	2
Hounslow via Richmond	0	0	1
Hounslow via Brentford	3	2	2
Aldershot via Ascot	2	1	2
<b>Total</b>	<b>17</b>	<b>13</b>	<b>16</b>

Outline specification – Windsor off peak			
	Off peak trains per hour to London		
	May 2019	May 2021	December 2022
Reading	2	2	2
Windsor	2	2	2
Weybridge via Brentford	2	2	2
Kingston via Richmond	2	2	2
Hounslow via Richmond	2	0	0
Hounslow via Brentford	2	0	2
<b>Total</b>	<b>12</b>	<b>8</b>	<b>10</b>

Figure 9 – Extract from SWR Timetable Consultation document

- 5.5.3 As can be seen, the number of trains in the direction of London during the AM high peak, which is defined as between 08:00 and 08:59, was four “pre-Covid” and is proposed to be five from December 2022. During off-peak hours there were previously four trains and this is proposed to reduce to two, in line with current provision due to the impacts of Covid.
- 5.5.4 Section 2.5 of Transport for London’s ‘Assessing transport connectivity in London’ document details how PTAL ratings are calculated. It is stated that “The standard PTAL calculation is based on service frequencies in the period between 08:15 and 09:15 on a weekday”. Although this does not align exactly with the ‘high peak’ defined by SWR, it is considered that it is reasonable to compare the two periods for the purpose of this assessment.

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5.5.5 As the PTAL rating is calculated based on AM peak period services, the proposed amendments to off-peak services will have no impact on the rating of the site.

5.5.6 In the AM peak the number of services calling at North Sheen is proposed to increase. As a result, the PTAL rating of the site will not be reduced and provision will, in fact, be improved.

## **5.6 *Accessibility Summary***

5.6.1 The site is considered to be highly accessible by both active and public transport, as reflected by the site's PTAL rating of 4. As such, residents, staff and visitors to the development will have a choice of sustainable travel options which will reduce the need to travel by car.

5.6.2 From analysis of the pedestrian survey which recorded activity at the entrance/exit at North Sheen Station it is considered that existing rail passengers can be accommodated on peak hour services. Further analysis of the predicted uplift also indicates that the station and attending trains will be able to accommodate future passenger levels during peak hours.

**5.7 Healthy Streets Approach**

5.7.1 The ‘Healthy Streets Approach’ has been introduced by the Mayor of London, Sadiq Khan, and “aims to reduce traffic, pollution and noise, create more attractive, accessible and people-friendly streets where everybody can enjoy spending time and being physically active, and ultimately to improve people’s health”. There are ten indicators as illustrated below:

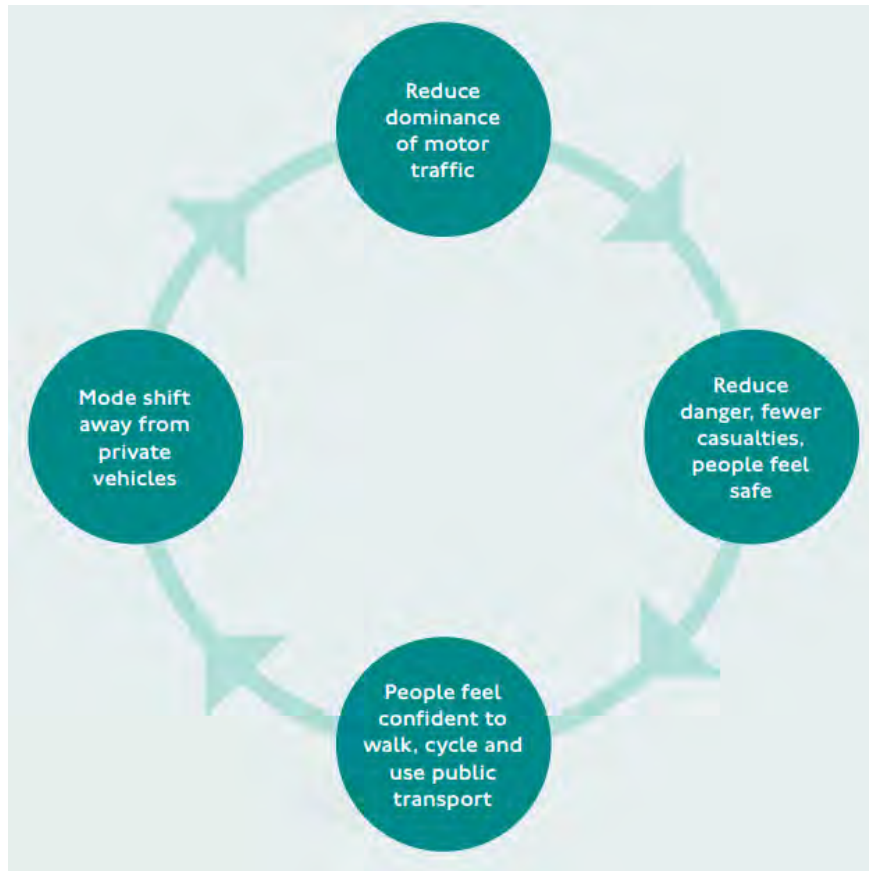


**Figure 10 – Ten Healthy Streets Indicators (TfL)**

5.7.2 In relation to these indicators, the development will encourage travel by active and sustainable modes by being predominantly car-free, providing ample cycle parking and electric car club vehicles.

5.7.3 It will also provide public spaces with seating where people can relax, rest and seek shade and shelter in a safe environment. The improvements to the footway on the site frontage will ensure the space is suitable for all sections of the community and will be able to accommodate a range of activities. A dropped crossing with tactile paving will be provided across the site access road to assist with pedestrian movements along Manor Road.

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- 5.7.4 In addition, Manor Road is street-lit and the addition of trees and shrubs will add to the varied appearance of the frontage. The courtyard within the site will be used for various events potentially including markets, art installations and outdoor cinema which will bring life and interest to the area.
- 5.7.5 In line with the strategies incorporated into the London Plan 2021 and additional guidance published by TfL, a detailed Active Travel Zone assessment has been undertaken. This is attached at **Appendix G**.
- 5.7.6 The scope of this assessment was agreed in advance with TfL and was limited to Manor Circus to the north of the site and then extended to include the nearest primary school and GP surgery both of which were identified as being located on Sheen Road to the south of the site.
- 5.7.7 The routes assessed generally perform well in relation to the Healthy Streets indicators by providing safe places to cross, being well-maintained, not having an accident history of concern and having public and private areas of vegetation that provide interest and variety. In addition, the development will enhance the routes along the site frontage by providing improved footways, landscaping, places to rest and overlooking buildings.
- 5.7.8 Within the London Plan the Mayor, through TfL and the boroughs, proposes to set out a programme to achieve the Vision Zero aim of reducing the number of people killed or seriously injured on London's streets to zero. The key aims of this strategy are shown in the diagram overleaf which is extracted from the "Vision Zero Action Plan".



**Figure 11 – Road danger reduction (TfL)**

5.7.9 In order to tie into this strategy the following initiatives have been integrated within the Amended Proposed Development:-

- Virtually car-free development, providing only disabled parking
- Contribution to improvements to Manor Circus which will benefit pedestrians and cyclists
- Permeable links to all parts of the site
- Improved facilities for public transport

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## 6 Multimodal Traffic Generations

- 6.1 As part of the Environmental Assessment screening process associated with the Original Proposed Development a Technical Note was prepared by Sanderson's (10596-TN1) which considered, in detail, the potential traffic impact resulting from the development proposals. The Technical Note looked at trip generation information from the TRICS database for each proposed land use and highlighted how influencing factors such as accessibility by sustainable travel modes (PTAL ratings) and parking availability within and in proximity to the site have a significant impact on how people travel to and from the site. Consequentially, a considered approach was taken to obtain multimodal trip rates which were as representative of the development proposals as practicable. The resulting trip rates and forecast trip generations were presented in the previously submitted Transport Assessment dated February 2019.
- 6.2 However, during the LBRuT determination period of the Original Proposed Development, TfL advised that it did not agree with the methodology applied to predict the multi modal generation potential of the proposed development. It was advised that the residential trip rate assessment must be based on total person trip rates which had not been adjusted to remove sites from the TRICs Database with higher parking ratios. Instead, TfL advised that 2011 Census 'Method of Travel to Work' data to be used to establish mode share which should then be adjusted down to account for the limited car parking provision and the remaining trips reassigned pro-rata to the other modes.
- 6.3 This chapter of the Revised Transport Assessment identifies the multimodal trip generation potential of the Amended Proposed Development based on both TfL's desired assessment methodology and Sanderson's original approach.

## 6.4 TfL Methodology

6.4.1 Total person trip rates for each proposed land use have been derived from the TRICS database. The sites used to generate the trip rates have been filtered to remove any sites considered unrepresentative in terms of accessibility (PTAL <4 excluded), however, no further filtering in relation to parking has been undertaken as requested by TfL.

6.4.2 A summary of the total person trip rates and generations for each land use is provided below along with details of the TRICS filtering parameters applied.

### **Residential Multimodal Generations**

#### Privately Owned Flats

Land Use: 03 – Residential

Category: C – Flats Privately Owned

Selected Regions and Areas: Greater London only (sites with PTAL rating less than 4 excluded)

Parameter: Number of Dwellings

Actual Range: 9-472 units

Date Range: 01/01/10 – 03/07/18

Selected Survey Days: Monday – Friday

Selected Locations: Town centre sites excluded

6.4.3 The following table provides details of the resulting weekday AM and PM peak hour total person two-way trip rates per unit along with the corresponding generated trips for the proposed private 280 units. The full TRICS outputs are contained in **Appendix H**.

Time	Trip Rate per Unit	Generations from 280 units
Weekday AM Peak (08:00-09:00)	0.542	152
Weekday PM Peak (17:00-18:00)	0.449	126
Weekday Daily	4.565	1278

**Table 8 – Total person trip generations for private residential element (280 units)**

Affordable Flats

Land Use: 03 – Residential

Category: D – Affordable/Local Authority Flats

Selected Regions and Areas: Greater London only (sites with PTAL rating less than 4 excluded)

Parameter: Number of Dwellings

Actual Range: 36-247 units

Date Range: 01/01/10 – 27/06/16

Selected Survey Days: Monday – Friday

Selected Locations: Town Centre sites excluded

- 6.4.4 The following tables provide details of the weekday AM and PM peak hour total person two-way trip rates per unit along with the corresponding generated trips for the proposed 173 affordable units. The full TRICS data is contained in **Appendix I**.

Time	Trip Rate per Unit	Generations from 173 units
Weekday AM Peak (08:00-09:00)	0.646	112
Weekday PM Peak (17:00-18:00)	0.450	78
Weekday Daily	6.702	1159

**Table 9 – Total person trip generations - affordable residential (173 units)**

- 6.4.5 In summary, the total person trip generations associated with the residential element of the development can be summarised as follows:

Time	Total generations
Weekday AM Peak (08:00-09:00)	264
Weekday PM Peak (17:00-18:00)	204
Weekday Daily	2,438

**Table 10 – Total person trip generations**

- 6.4.6 In order to determine the likely modal split of the person trips calculated above the 2011 Census Data – Method of Travel to Work dataset has been used. The Richmond upon Thames 004 MSOA (Middle Super Output Area), in which the site lies, has been compared to Richmond as a whole and England and the table below gives a summary of this data with a full copy included at **Appendix J**.

Method of Travel to Work	Richmond upon Thames 004	Richmond upon Thames	England
	% working	% working	% working
Work Mainly at or From Home	8.0%	8.9%	5.4%
Underground, Metro, Light Rail, Tram	21.6%	10.7%	4.1%
Train	17.9%	21.9%	5.3%
Bus, Minibus or Coach	7.5%	7.6%	7.5%
Taxi	0.2%	0.2%	0.5%
Motorcycle, Scooter or Moped	1.6%	1.7%	0.8%
Driving a Car or Van	26.8%	32.5%	57.0%
Passenger in a Car or Van	1.2%	1.4%	5.0%
Bicycle	5.9%	6.1%	3.0%
On Foot	8.6%	8.2%	10.7%
Other Method of Travel to Work	0.8%	0.7%	0.6%

**Table 11 – Census Data – Method of Travel to Work**

6.4.7 As acknowledged by TfL, given the absence of ‘standard’ car parking spaces within the site it is considered that the level of generation associated with car / van drivers is unlikely to be realised. Therefore, to provide a more representative assessment, the modal share proportions have been adjusted so that vehicle occupancy (drivers and passengers) is limited to 3%. This is consistent with the level of car parking provided for disabled occupants.

Method of Travel to Work	%
Underground, Metro, Light Rail, Tram	32.7%
Train	27.1%
Bus, Minibus or Coach	11.3%
Taxi	0.3%
Motorcycle, Scooter or Moped	2.5%
Driving a Car or Van	2.9%
Passenger in a Car or Van	0.1%
Bicycle	8.9%
On Foot	13.0%
Other Method of Travel to Work	1.2%

**Table 12 – Adjusted modal splits**

6.4.8 The modal splits identified above have been applied to the total person trip rates and generations set out in Table 10 in order to establish the number of people travelling by each mode during the AM and PM peak periods, as well as on a daily basis.

6.4.9 It is acknowledged that due to the distance of the site from Richmond Underground Station, those travelling to work via the Underground are likely to first travel by bus in order to reach the station. Therefore, in order to provide a robust assessment, the estimated modal share for Underground users has been added to the modal share for bus users.

6.4.10 The generations for each mode of travel are summarised below:

Method of Travel to Work	%	8 - 9 AM			17 - 18 PM			Daily		
		Arr	Dep	Two-way	Arr	Dep	Two-way	Arr	Dep	Two-way
		38	226	264	127	77	204	1196	1242	2438
Underground, Metro, Light Rail, Tram	32.7%	12	74	86	42	25	67	391	406	797
Train	27.1%	10	61	72	34	21	55	324	337	661
Bus, Minibus or Coach	11.3%	4	26	30	14	9	23	135	140	275
Taxi	0.3%	0	1	1	0	0	1	4	4	8
Motorcycle, Scooter or Moped	2.5%	1	6	7	3	2	5	30	31	61
Driving a Car or Van	2.9%	1	7	8	4	2	6	35	36	71
Passenger in a Car or Van	0.1%	0	0	0	0	0	0	2	2	3
Bicycle	8.9%	3	20	24	11	7	18	107	111	217
On Foot	13.0%	5	29	34	17	10	27	156	162	317
Other Method of Travel to Work	1.2%	0	3	3	1	1	2	14	14	28
Bus + Underground		17	99	116	56	34	90	526	546	1072

**Table 13 – AM, PM and Daily Multimodal Trip Generations (TfL Methodology)**

Commercial Multimodal Generations

6.4.11 During the analysis of the TRICS database in relation to the proposed commercial space within the development it was noted that there were no “Greater London” sites in the “Shopping Centre - Local Shops” category.

6.4.12 It is, however, considered that the commercial spaces in question are of such a size that the end use would be limited to those outlets serving the immediate community and thus would generate the majority of its traffic as pass-by movements on foot and cycle.

## 6.5 Sanderson's Methodology

6.5.1 Again, total person trip rates for each proposed land use have been derived from the TRICS database and the sites used to generate the trip rates have been filtered to remove any sites considered unrepresentative in terms of accessibility (PTAL <4 excluded). However, on this occasion, further filtering has been undertaken to remove sites with a parking ratio per dwelling of > 0.5. Copies of the TRICS outputs with advanced filtering are included at **Appendix K**.

6.5.2 The resulting trip rates and generations associated with the residential elements of the development are summarised below. With regards to the commercial element of the development, the same principle applies as described in paragraphs 6.4.11 and 6.4.12.

Time	Trip Rate per Unit	Generations from 280 Units
Weekday AM Peak (08:00-09:00)	0.334	94
Weekday PM Peak (17:00-18:00)	0.345	97
Weekday Daily	3.637	1,018

**Table 14 – Total person trip generations for private residential (280 units)**

Time	Trip Rate per Unit	Generations from 173 Units
Weekday AM Peak (08:00-09:00)	0.632	109
Weekday PM Peak (17:00-18:00)	0.463	80
Weekday Daily	6.565	1,136

**Table 15 – Total person trip generations - affordable residential (173 units)**

Time	Total generations
Weekday AM Peak (08:00-09:00)	203
Weekday PM Peak (17:00-18:00)	177
Weekday Daily	2,154

**Table 16 – Total person trip generations**

6.5.3 It is considered that given the deliberated approach taken to derive trip rates from the TRICS database, the results of the TRICS assessment are representative of how a car-free development is likely to operate in an area of high accessibility such as the proposed development site (PTAL rating = 4).

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- 6.5.4 It should also be noted that the TRICS data (based on surveys of similar sites) accounts for the movements associated with all journey purposes. As such it is considered appropriate to use the multimodal TRICS data to estimate the likely modal split with all journey purposes accounted for.
- 6.5.5 It is this point where Sanderson's methodology is inherently different to that requested by TfL which is entirely based upon 'Method of Travel to Work' data.
- 6.5.6 The 2018 National Travel Survey (Table NTS0409) identifies that commuting (i.e. Travel to Work journeys) accounts for just 15% of all journey purposes by all modes of travel. It is considered that the mode of travel associated with other common journey purposes such as education / escort education (13%), shopping (19%), personal business (9%) and leisure (26%) is likely to be different to how people choose to travel to work; especially given the proximity of the site to the adjacent supermarket and various primary schools.
- 6.5.7 Given the above, it is considered that the use of TRICS to establish a modal split is a valid approach and that the results of the assessment are representative of how people will travel to and from the development as a whole, not just to and from work.
- 6.5.8 Using the multimodal TRICS data for the 'Privately Owned Flats' element of the development, the predicted modal split is detailed in Table 17. It should be noted that the available TRICS data for the 'Affordable Flats' element of the development does not provide enough detail to determine a split between the various public transport modes. Nevertheless, the split identified by the 'Privately Owned Flats' data is considered representative.

	Mode of Travel	Modal Share			Two-way Trip Generation		
		AM	PM	Total	AM	PM	Total
Active Transport	Pedestrians	34%	33%	43%	69	58	926
	Cyclists	1%	2%	1%	2	4	18
Private Transport	Taxis	4%	1%	3%	7	2	62
	Cars	3%	9%	5%	7	16	103
	LGV	1%	1%	1%	2	1	30
	OGV	0%	0%	0%	0	0	2
	Motorcycles	0%	0%	0%	0	0	6
	Vehicle Passengers	0%	2%	1%	0	3	25
Public Transport	Underground	28%	23%	21%	57	41	443
	Overground	5%	4%	3%	11	7	71
	Bus	24%	26%	21%	49*	45*	458*
Total People		100%	100%	100%	203	177	2154

**Table 17 – Predicted modal split based on multimodal TRICS data**

6.5.9 As noted by TfL, those travelling on the Underground will likely travel to / from the station by bus. Therefore, the total number of people travelling by bus is estimated to be in the order of 106 people in the AM peak period, 86 people in the PM peak period and 901 people daily.

## 6.6 Comparison of results

6.6.1 The following tables provide a comparison between the modal split predictions associated with each assessment methodology as well as the resulting trip generations:

Method of Travel	2011 Census 'Method of Travel to Work' modal split %	TRICS data 'Daily' modal split %
Underground, Metro, Light Rail, Tram	32.7%	21%
Train	27.1%	3%
Bus, Minibus or Coach	11.3%	21%
Taxi	0.3%	3%
Motorcycle, Scooter or Moped	2.5%	0%
Driving a Car or Van	2.9%	5%
Passenger in a Car or Van	0.1%	1%
Bicycle	8.9%	1%
On Foot	13.0%	43%
Other Method of Travel to Work	1.2%	0%

**Table 18 – Modal Split % Comparison**

6.6.2 With regards to the impact on trip generations, a comparison is provided below:

Method of Travel	2011 Census 'Method of Travel to Work' trip generations	TRICS data 'Daily' trip generations
Underground, Metro, Light Rail, Tram	797	443
Train	661	70
Bus, Minibus or Coach	275	458
Taxi	8	62
Motorcycle, Scooter or Moped	61	6
Driving a Car or Van	71	134
Passenger in a Car or Van	3	25
Bicycle	217	18
On Foot	317	926
Other Method of Travel to Work	28	0
Bus and Underground	1072	901

**Table 19 – Trip Generation Comparison**

6.6.3 From the above it can be seen that there are material differences in predicted modal splits for almost all modes of travel. It is considered that this appropriately reflects how travel modes vary depending upon journey purpose.

6.6.4 The 'Travel to Work' estimations rely more heavily on public transportation, in particular the rail and underground network, which makes sense because most people do not live within a reasonable walking distance from their workplace. In comparison, the TRICS data, which account of all journey purposes, predicts a much greater proportion of people travelling on foot. Given the range of education, leisure and retail opportunities available within reasonable walking distance of the site it is understandable that people are likely to be less reliant upon public transportation.

6.6.5 For the purpose of providing a robust assessment of the impact of the Amended Proposed Development on pedestrian infrastructure as well as on public transport services, it is proposed to use the generations resulting from TfL's assessment methodology. Further details are provided within Chapters 9 – 11 of this report.

## 7 Vehicle Traffic Generations

### 7.1 Trip Generations

7.1.1 Notwithstanding the different methodologies described in the previous Chapter of this report, the original Transport Assessment identified no material junction capacity issues surrounding the development proposals. Therefore, for the purpose of this Revised Transport Assessment, the vehicle trips associated with the proposed development have been assessed using vehicle trip rates from the TRICS database which have not been filtered to exclude sites based on parking ratios, as per TfL's request. These trip rates are presented within the multimodal outputs in Appendix H & I and are summarised below:

	Trip Rate Per Dwelling		Traffic Generations from 280 Units		
	Arrivals	Departures	Arrivals	Departures	Total
AM Peak (08:00-09:00)	0.032	0.081	9	23	32
PM Peak (17:00-18:00)	0.054	0.031	15	9	24

**Table 20 – Traffic generations for private residential element (280 units)**

	Trip Rate Per Dwelling		Traffic Generations from 173 Units		
	Arrivals	Departures	Arrivals	Departures	Total
AM Peak (08:00-09:00)	0.027	0.078	5	13	18
PM Peak (17:00-18:00)	0.054	0.038	9	7	16

**Table 21 – Traffic generations for affordable residential element (173 units)**

7.1.2 The predicted residential vehicle trips are 50 vehicle movements two-way in the AM and 40 in the PM peak hours. This equates to approximately one vehicle every 1½ to 2 minutes in the AM and PM peak hours.

7.1.3 Providing complementary amenities within the site will reduce the need for residents to travel off site for the same facilities and traffic flows could be expected to be lower than at comparative residential development sites without convenience facilities on site.

7.1.4 At this stage, the exact uses of the commercial space within the development have not yet been confirmed. However, it is understood that this could be a mix of A1/A2 retail outlets and B1 office.

7.1.5 To provide an initial assessment the TRICS land use category '01 Retail – I Shopping Centre Local Shops' has been utilised. It is considered that whilst this category may not necessarily be exactly representative of the development proposals, it is the most appropriate land use category available within the TRICS database.

7.1.6 The table below shows the trip rates and associated traffic generations based on the available sites with the full report included at **Appendix L**;

	Time Period	Trip Rates (per 100m <sup>2</sup> GFA)		Traffic Generations		
		Arrivals	Departures	Arrivals	Departures	Two-way
Commercial Space (495m <sup>2</sup> )	AM (08:00-09:00)	5.180	4.773	26	24	50
	PM (17:00-18:00)	6.369	6.933	32	34	66

**Table 22 - Trip rates and generations for proposed commercial use**

7.1.7 It is considered that the generations identified in the table above are wholly unrealistic and in reality are unlikely to be realised at the proposed development site. This is due to no on-site parking provision associated with the commercial element of the development combined with TRO's along Manor Road which prohibit on-street car parking. In addition, the modest size of the proposed commercial areas means it is unlikely that trips would be drawn from further-a-field and use of the retail space is likely to be by pass-by trips.

7.1.8 Taking this into account the trip generations are envisaged to be as detailed in the table below:-

	Time Period	Traffic Generations		
		Arrivals	Departures	Two-way
Commercial Space (495m <sup>2</sup> )	AM (08:00-09:00)	6	6	12
	PM (17:00-18:00)	8	8	16

**Table 23 - Trip generations for proposed commercial use with reductions applied**

7.1.9 This equates to approximately one vehicle every 4 - 5 minutes in the AM and PM peak hours.

## 7.2 Total Traffic Generations

7.2.1 Following the above assessments, the total vehicle trip generations associated with the development proposals can be summarised as follows:-

Time Period	Land Use	Traffic Generations		
		Arrivals	Departures	Two-way
AM	Private Flats	9	23	32
	Affordable Flats	5	13	18
	Commercial	6	6	15
	<b>Total</b>	<b>20</b>	<b>42</b>	<b>62</b>
PM	Private Flats	15	9	24
	Affordable Flats	9	7	16
	Commercial	8	8	18
	<b>Total</b>	<b>32</b>	<b>24</b>	<b>56</b>

**Table 24 - Total proposed development vehicle trip generations**

7.2.2 Taking into consideration the existing use of the development site, described in Table 2, the proposed development could be expected to result in a reduction of 17 traffic movements in the AM peak and 51 in the PM peak.

## 7.3 Development Traffic Distribution

7.3.1 The distribution of the traffic generated by the residential element of the site has been predicted using the 'WU03EW - Location of usual residence and place of work by method of travel to work (MSOA level)' dataset from the 2011 Census. The site falls within Richmond upon Thames 004 MSOA which is illustrated overleaf.



**Figure 12 – Richmond upon Thames 004 MSOA (MapItUK)**

- 7.3.2 The traffic generated by the commercial element of the site has been distributed by the existing turning proportions of light vehicles at the site access.
- 7.3.3 The residential and commercial traffic distributions and resulting traffic flows, along with the total development traffic flows are included at **Appendix M**.

## 8 Traffic Impact Assessment

8.1 This section of the report seeks to quantify the impact of the Amended Proposed Development upon the operation of the local highway network.

### 8.2 *Base Traffic Flows*

8.2.1 Fully classified traffic counts of the site access and Sainsbury's supermarket access opposite were undertaken by Nationwide Data Collection Ltd on 2 October 2018.

8.2.2 A diagram showing the base traffic flows is included at **Appendix N**.

### 8.3 *Committed Development*

8.3.1 During the pre-application discussions on the November 2019 Amendments no committed development sites were identified.

### 8.4 *Traffic Growth*

8.4.1 The traffic impact of the development has been assessed at the initial year of 2018, an opening year of 2024 and a design year of 2029.

8.4.2 Traffic growth factors have been generated utilising the latest version of TEMPRO (v7.2b), adjusted against Department for Transport's Road Traffic Forecasts 2018 Scenario 1 (RTF18) and updated National Trip End Model (NTEM). The growth factors used are shown below:

<b>2018 to 2024</b>	AM	1.0526	<b>2018 to 2029</b>	AM	1.0898
	PM	1.0519		PM	1.0900

8.4.3 Diagrams showing the base traffic flows growthed to 2024 and 2029 are included at **Appendix N**.

### 8.5 *Junction Modelling*

8.5.1 Detailed junction capacity modelling has been undertaken using Junctions software. Both the site access and the access to Sainsbury's supermarket opposite have been modelled in the 2024 and 2029 future years.

**Site Access priority junction**

8.5.2 The results of this assessment are summarised as follows;

Arm A = Manor Road (S)

Arm B = Site Access

Arm C = Manor Road (N)

	2018 Base AM		2018 Base PM	
	Max RFC	Max Queue (veh)	Max RFC	Max Queue (veh)
B-AC	0.10	0.1	0.15	0.2
C-B	0.08	0.1	0.08	0.1

	2024 Base + Dev AM		2024 Base + Dev PM	
	Max RFC	Max Queue (veh)	Max RFC	Max Queue (veh)
B-AC	0.26	0.4	0.24	0.3
C-B	0.17	0.2	0.20	0.2

	2029 Base + Dev AM		2029 Base + Dev PM	
	Max RFC	Max Queue (veh)	Max RFC	Max Queue (veh)
B-AC	0.27	0.4	0.35	0.5
C-B	0.18	0.2	0.20	0.3

**Table 25 – Junctions results**

8.5.3 The output results can be found at **Appendix O**.

8.5.4 This shows that, even in the worst case situation of 2029 with development traffic, the junction would operate comfortably within its practical capacity, which is generally accepted as being represented by a ratio of flow to capacity (RFC) of 0.850.

**Sainsbury's supermarket access priority junction**

8.5.5 The results of this assessment are summarised as follows;

Arm A = Manor Road (N)

Arm B = Site Access

Arm C = Manor Road (S)

	2018 Base AM		2018 Base PM	
	Max RFC	Max Queue (veh)	Max RFC	Max Queue (veh)
B-C	0.07	0.1	0.18	0.2
B-A	0.14	0.2	0.18	0.2
C-AB	0.10	0.1	0.17	0.2

	2024 Base + Dev AM		2024 Base + Dev PM	
	Max RFC	Max Queue (veh)	Max RFC	Max Queue (veh)
B-C	0.07	0.1	0.19	0.2
B-A	0.15	0.2	0.19	0.2
B-C	0.11	0.1	0.18	0.2

	2029 Base + Dev AM		2029 Base + Dev PM	
	Max RFC	Max Queue (veh)	Max RFC	Max Queue (veh)
B-C	0.08	0.1	0.20	0.2
B-A	0.16	0.2	0.20	0.2
C-AB	0.11	0.1	0.19	0.2

**Table 26 – Junctions results**

8.5.6 The output results can be found at **Appendix P**.

8.5.7 This shows that, even in the worst case situation of 2029 with development traffic, the junction would operate comfortably within its practical capacity, which is generally accepted as being represented by a ratio of flow to capacity (RFC) of 0.850.

**Southbound queues**

8.5.8 As the total proposed traffic generations during the peak AM and PM hours are predicted to result in reductions when compared to the existing use of the site, it is considered that queues at the level crossing to the south would not be adversely affected by the proposals.

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## 9 Impact of the Development on the Pedestrian Network

- 9.1 TfL's multimodal assessment methodology, detailed in Chapter 6 of this report used '2011 Census: Method of Travel to Work data' to form a modal split. However, as previously noted, there are other journey purposes to consider as well as Travel to Work (e.g. education and shopping). Furthermore, those using public transport modes are likely to require a short journey on foot in order to be able to access those services.
- 9.2 The multimodal trip generations set out within Table 13 of this report estimates that the development is likely to generate in the order of 34 pedestrian trips (two-way) in AM peak, 27 pedestrian trips (two-way) in the PM peak hour and 317 trips (two-way) daily.
- 9.3 Further to the above, those utilising public transport modes are expected to generate an additional pedestrian demand in the order of 188 trips (two-way) in the AM, 145 trips in the PM and 1,733 trips (two-way) daily. These journeys on foot would be limited to between the site and local bus stops / North Sheen Station.
- 9.4 The following assessment is based on data from the National Travel Survey and seeks to provide a realistic estimate of the distribution of pedestrian movement about the site and evaluate the suitability of existing crossing facilities.
- **Commuting:-** Trips to / from home to usual place of work
  - **Business:-** Personal trips in course of work.
  - **Education / Escort:-** Trips to school or college / Accompanying someone else (e.g. taking a child to school)
  - **Shopping:-** Trips to the shops or from the shops to home.
  - **Personal Business:-** Visits to services, medical consultations etc.
  - **Visit friends:-** Trips to visit friends
  - **Other leisure:-** Mostly entertainment, sport, holidays and day trips.

**9.5 Just Walking (23%)**

9.5.1 This journey purpose would account for around 73 trips (two-way) daily. This would include activities such as dog walking, walking / running for exercise etc. It is considered that these activities would predominantly occur outside of typical network peak periods.

9.5.2 With regards to distribution it is difficult to determine in what direction people would travel. As such a 50/50 split is to be assumed northbound / southbound along Manor Road (without the need to cross-over). The northbound proportion will then be evenly split between westbound and northbound movements at Manor Circus.

**9.6 Education / Escort Education (21%)**

9.6.1 This journey purpose would account for 67 trips (two-way) daily. The outbound journeys would likely occur on a morning during the typical AM peak period of 8am – 9am (with parents / guardians returning home after 9am), and in the afternoon between 3pm – 4pm, prior to the typical PM peak period 5pm – 6pm.

9.6.2 As part of the Health Impact Assessment undertaken for this scheme, the GLA’s SPG Play Space Requirement Calculator was used to determine the child yield (aged up to and including 17) from the proposed development. The child yield from the proposed development is as detailed in the table below:-

Age of children	Number of children
Under 5	73
5-11 years	51
12 -17 years	24
<b>Total</b>	<b>148</b>

**Table 26 – Proposed Development Child Yield**

9.6.3 It is considered that those children walking (including being escorted) to / from school will be mostly primary school children (51 total). Those at secondary level and above are likely to have to travel further and are therefore included within the public transport user element of trips; the impact of which is still to be considered. On this basis, the estimation of 67 trips (two-way) associated with education appears to be reasonable.

9.6.4 With regards to distribution, schools within walking distance of the site include;

- Holy Trinity Primary School and Nursery (550m to the south)
- Marshgate Primary School (550m to the south)
- Darell Primary & Nursery School (550m to the north)
- Christ's School and Sixth Form (800m to the south)

9.6.5 It is estimated that 75% of journeys to / from school would be to the south of the site; of which 25% would cross Manor Road via the 0.8m wide pedestrian crossing refuge. The remaining 50% could continue along the western flank of Manor Road before utilising the controlled crossing facility at the junction with Sheen Rd (A305).

9.6.6 The 25% travelling northbound would utilise the zebra crossing facilities around the Manor Circus roundabout junction.

## **9.7 Shopping (19%)**

9.7.1 This journey purpose would account for 60 trips (two-way) daily. It is considered that these activities would predominantly occur outside of typical network peak periods, with a small proportion coinciding with journeys home from work in the PM peak. Given the proximity a size of the adjacent supermarket, it is considered that most 'shopping' trips would be generated from there.

9.7.2 People travelling between the site and the supermarket would utilise the existing 2.0m wide pedestrian crossing refuge which is located immediately adjacent the access to the store.

## **9.8 Leisure (17%)**

9.8.1 This journey purpose would account for 54 trips (two-way) daily. Again, it is considered that these trips would predominantly occur outside of typical network peak periods.

9.8.2 Local 'leisure' destinations are considered to include:

- Allotments to the south of North Sheen Station (200m south)
- North Sheen Recreation Ground (550m north)
- Old Deer Park / Kew Gardens (900m – 1.2km north/west)
- Richmond Park (within 1km)

9.8.3 With regards to distribution it is difficult to determine how popular each of the above locations will be. As such a 50 / 50 split is to be assumed northbound / southbound along Manor Road, with 10% crossing via the 0.8m wide pedestrian crossing refuge on Manor Road to access the allotments.

## **9.9 Personal Business (9%)**

9.9.1 This journey purpose would account for 29 trips (two-way) daily. Again, it is considered that these trips would predominantly occur outside of typical network peak periods.

9.9.2 A number of things associated with 'Personal Business' are provided within the adjacent supermarket, including a pharmacy and banking facilities. The nearest Post Office is located approximately 800m to the south-west of the site along Sheen Road.

9.9.3 For the purpose of distribution for this assessment, and to be robust, all personal business trips are to be assigned to / from the supermarket via the 2.0m wide pedestrian crossing refuge adjacent the supermarket access.

## **9.10 Commuting (7%)**

9.10.1 This journey purpose would account for 22 trips (two-way) daily; a material proportion of which would likely occur during network peak periods.

9.10.2 With regards to distribution, the surrounding area is predominantly residential, with the exception of the supermarket and various schools. The main employment areas are likely to be Richmond (west), Kew (north) and North Sheen (east). For the purpose of this assessment a split of 50/25/25 is to be applied, respectively.

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**9.11 Other including Business and Other Escort (4%)**

9.11.1 These journey purposes would account for 13 trips (two-way) daily. There is unlikely to be a fixed or likely destination associated with these journeys as such the assignment of a distribution is difficult. However, it is considered that these trips would likely occur throughout the day (non-peak) or could be linked with a journey home in the PM peak.

**9.12 Accessing Public Transport**

9.12.1 As previously noted, those utilising public transport modes are expected to generate an additional pedestrian demand in the order of 188 trips (two-way) in the AM, 145 trips (two-way) in the PM and 1,733 trips (two-way) daily.

9.12.2 Pedestrian movements to / from North Sheen Station are expected to be in the order to 72 trips (two-way) in the AM, 55 trips (two-way) in the PM and 661 trips (two-way) daily. These movements would be required to cross Manor Road using the 0.8m wide pedestrian crossing refuge.

9.12.3 Pedestrian movements to / from Richmond Underground Station (via bus services along Lower Mortlake Road) are expected to be in the order of 86 trips (two-way) in the AM, 67 trips (two-way) in the PM and 797 trips (two-way) daily. Given the location of bus stop 'SB', outbound journeys (to Richmond Underground) would not require anybody to cross a road. Inbound journeys (arriving at bus stop 'SA') would require people to cross Lower Mortlake Road using the zebra crossing facilities at the manor Circus roundabout junction.

9.12.4 With regards to pedestrian movements to / from bus stops (specifically for bus journeys) are expected to be in the order of 30 trips (two-way) in the AM, 23 trips (two-way) in the PM and 275 trips (two-way) daily.

9.12.5 The majority of bus services operate along Lower Mortlake Road via the aforementioned bus stops ‘SA’ and ‘SB’, with a relatively even split between north-eastbound and south-westbound journeys. It is also acknowledged that a frequent service (371) is provided via stop ‘SU’ located within the adjacent supermarket car park. For the purpose of this assessment, 10% of bus journeys are to be assigned via bus stop ‘SU’ with the remaining 90% via stops ‘SA’ and ‘SB’.

### 9.13 Pedestrian Impact Summary

9.13.1 The total number and distribution of daily pedestrian movements are illustrated within **Appendix Q**, and summarised in the following table:

Links

A = Southbound on Manor Road

B = Crossing Manor Road at 0.8m pedestrian crossing refuge

C = Crossing Manor Road at 2.0m pedestrian crossing refuge

D = Westbound on Lower Mortlake Road

E = Crossing Manor Road via Manor Circus zebra crossing facility

F = Crossing Lower Mortlake Road via Manor Circus zebra crossing facility

LINK ID	A	B	C	D	E	F
Daily	102	683	117	558	24	567

**Table 27 – Summary of pedestrian movements**

### 9.14 Review of Crossing Facilities

9.14.1 To determine the suitability of the existing crossing facilities, in particular those provided along Manor Road, guidance set out within Local Transport Note 1/95 ‘The Assessment of Pedestrian Crossings’ has been reviewed.

9.14.2 The purpose of a crossing is to provide pedestrians with a passage across a carriageway. Each type of crossing has advantages and disadvantages; the type chosen should be appropriate to the circumstances of the site and the demand and behaviour of road users.

9.14.3 Details relating to the ‘circumstances of the site’ and ‘behaviour of road users’ are provided in the Site Assessment below;

**9.15 Highway Description**

9.15.1 The B353 Manor Road has one pedestrian crossing refuge approximately 20m south of the mid-point of the main pedestrian access to the site, which is approximately 1.6m wide and one 12m north of the secondary pedestrian access to the site which is 2m wide. There are chevrons to accommodate both of these established crossing points and maintain a carriageway width of 3m in both directions for vehicular traffic.

9.15.2 There is a carriageway length of 92m between the two crossing refuges and 24m between the smaller refuge and the railway level crossing, which can act as a pedestrian crossing facility when the barriers are down, and the pedestrian footbridge across the railway line on the eastern side of Manor Road.

9.15.3 LBRuT commented that “Current highway design standards state that there should be a carriageway length of at least 90m between signalised pedestrian crossing facilities, and that these should be considered when there is a gap in vehicular traffic to enable able-bodied pedestrians to cross two lanes of traffic of less than 5 seconds and a gap of less than 12 seconds for other groups of pedestrians.” Firstly, it is noted that the pedestrian crossing facilities on Manor Road are not signal controlled. However, the distance between the two refuges is still greater than 90m.

9.15.4 The road is surfaced, providing adequate skid resistance for vehicles and street lighting is provided in accordance with standards for built-up areas.

9.15.5 Manor Road has a relatively straight alignment and Traffic Regulation Orders (TROs) in the form of double yellow lines are present on both sides of the carriageway preventing on-street parking. As such, adequate visibility is considered to be available between pedestrians and vehicles in relation to the 30mph speed limit of the road.

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**9.16 Existing Traffic Flows**

- 9.16.1 Traffic surveys undertaken along Manor Road in October 2018 identified that two-way vehicle flows were in the order of 623 vehicles in the AM peak period and 741 vehicles in the PM. The recorded HGV percentages were 4.2% in the AM and 2.7% in the PM.
- 9.16.2 As the presence of the pedestrian crossing refuges allows pedestrians to cross the road in two stages, pedestrians must only give-way to one direction of vehicle traffic at a time. Assuming free-flow conditions, the northbound vehicles equate to (358) approximately 1 vehicle every 10 seconds in the AM peak and (442) approximately 1 vehicle every 8 seconds in the PM peak. Meanwhile, southbound vehicles equate to (265) approximately 1 vehicle every 14 seconds in the AM peak and (299) approximately 1 vehicle every 12 seconds in the PM peak.
- 9.16.3 However, consideration must also be given to the presence of the railway level crossing and its impact on the flow of vehicle traffic.
- 9.16.4 As set out in Section 3.3 of this report, surveys of the level crossing identified that in the AM peak hour, the level crossing was activated 9 times resulting in the barrier being down for 37m 28s. In the PM peak hour this was 30m 38s over 11 activations. The typical duration for which the barriers were down was observed to be in the order of 3 to 4 minutes per crossing.
- 9.16.5 Whilst the operation of the crossing often results in vehicles travelling in platoons (with minimal gaps to allow pedestrians to cross), it also creates extended periods of time whereby pedestrians can cross the road without having to give-way to moving vehicles.

9.16.6 As part of the original TA, pedestrian surveys were undertaken identifying crossing movements along Manor Road. The study area and zones are illustrated below:

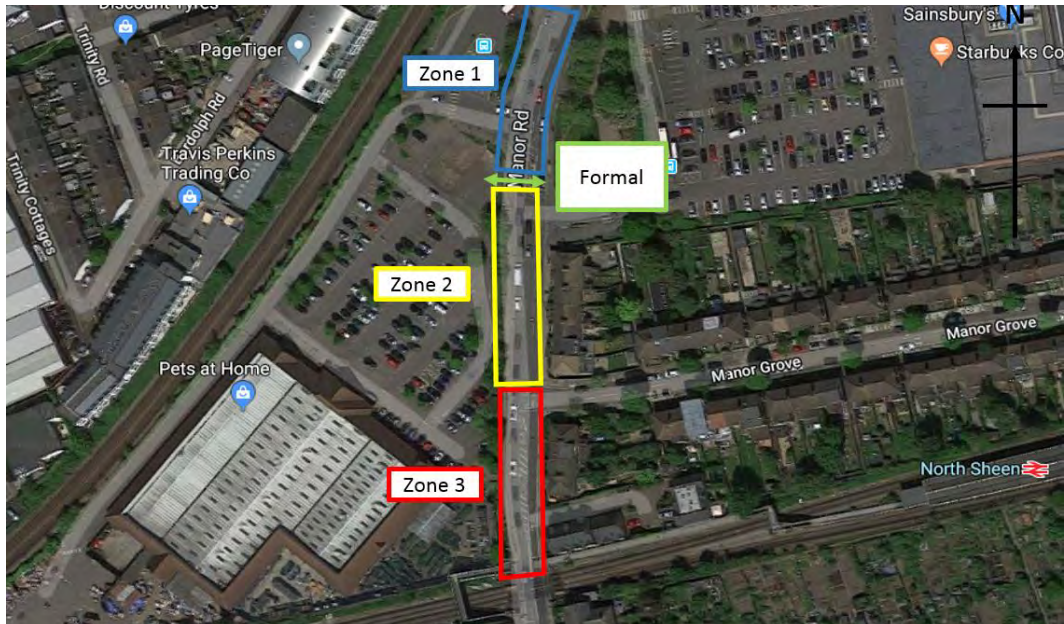


Figure 13 – Pedestrian survey study area

9.16.7 The results of the pedestrian survey are tabulated below:

TIME	Zone 1		Formal Crossing		Zone 2		Zone 3	
	EB	WB	EB	WB	EB	WB	EB	WB
07:30	5	1	1	5	0	4	16	9
07:45	5	1	3	2	1	5	29	30
08:00	0	1	1	2	1	14	17	34
08:15	0	2	0	6	3	1	19	27
08:30	3	2	4	4	2	8	14	61
08:45	2	1	3	1	4	3	20	19
09:00	2	2	3	3	3	3	39	6
09:15	3	3	2	0	2	5	10	1
<b>P/TOT</b>	<b>20</b>	<b>13</b>	<b>17</b>	<b>23</b>	<b>16</b>	<b>43</b>	<b>164</b>	<b>187</b>

Table 28 – AM Pedestrian survey results

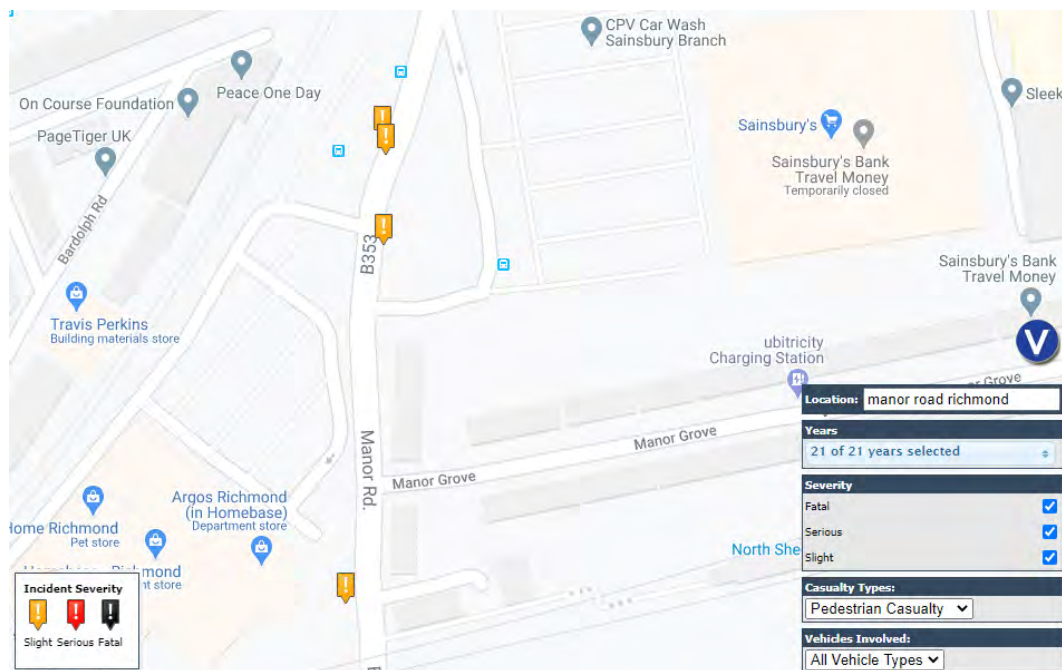
TIME	Zone 1		Formal Crossing		Zone 2		Zone 3	
	EB	WB	EB	WB	EB	WB	EB	WB
15:00	5	4	1	4	5	4	17	17
15:15	3	4	17	6	1	3	22	9
15:30	2	2	9	4	5	6	25	2
15:45	1	0	5	2	4	9	21	11
16:00	6	6	5	1	6	2	11	12
16:15	2	3	8	6	1	2	19	9
16:30	6	3	15	5	1	1	16	10
16:45	2	4	5	1	4	4	19	13
17:00	3	1	3	0	4	2	9	5
17:15	2	1	4	3	1	2	12	7
17:30	1	5	1	3	1	3	7	16
17:45	8	2	2	2	5	8	15	10
<b>P/TOT</b>	<b>41</b>	<b>35</b>	<b>75</b>	<b>37</b>	<b>38</b>	<b>46</b>	<b>193</b>	<b>121</b>

**Table 29 – PM Pedestrian survey results**

- 9.16.8 The survey results identify that during both the AM and PM survey periods, there were significant levels of pedestrian activity. The pedestrian peak hours were 07:45 – 08:45 during which time a total of 302 crossings occurred, and 15:00 – 16:00 during which time a total of 230 crossings occurred. Over the course of the entire AM and PM survey periods, a total of 1,069 crossing movements were recorded.
- 9.16.9 What is also notable from the survey results is that more people were recorded crossing the road not at a crossing, than those recorded using a crossing. This would suggest that pedestrians typically have the opportunity to cross the full carriageway in one stage, rather than requiring refuge.
- 9.16.10 Based on the predicted level of pedestrian movements generated by the development set out earlier in this Chapter, the number of additional crossing movements along Manor Road equates to 800 movements daily.

**9.17 Accident History**

9.17.1 The Crashmap database has been reviewed to investigate the accident history along Manor Road in proximity to the site, specifically relating to incidents involving pedestrians. The following image shows all pedestrian related incidents that have been recorded in the 21 year period between 01/01/1999 and 31/12/2019.



**Figure 14 – Pedestrian Accident History**

**[Crashmap]**

9.17.2 Crashmap indicates that just 4 pedestrian related incidents (all slight in severity) have been recorded in the last 20 years. Two events occurred approximately 30m north of the existing site entrance, one event occurred at the 2.0m wide pedestrian crossing refuge and one occurred between the 0.8m wide pedestrian crossing refuge and the level crossing.

9.17.3 It is considered that the number of recorded pedestrian related incidents (4) over a period of 20 years is particularly low, especially given the surveyed volume of pedestrian crossing movements. This would indicate that the existing relationship between pedestrian and vehicle movements is a manageable one and that the existing crossing facilities do not require upgrading. Furthermore, the forecast increase in pedestrian movements as a result of the proposed development is unlikely to have a material adverse effect on road safety.

- 9.17.4 The pedestrian refuge island widths provided on Manor Road (2.0m and 1.6m with hatching to either side) comply with current design standards and are considered satisfactory to accommodate the proposed level of pedestrian activity.

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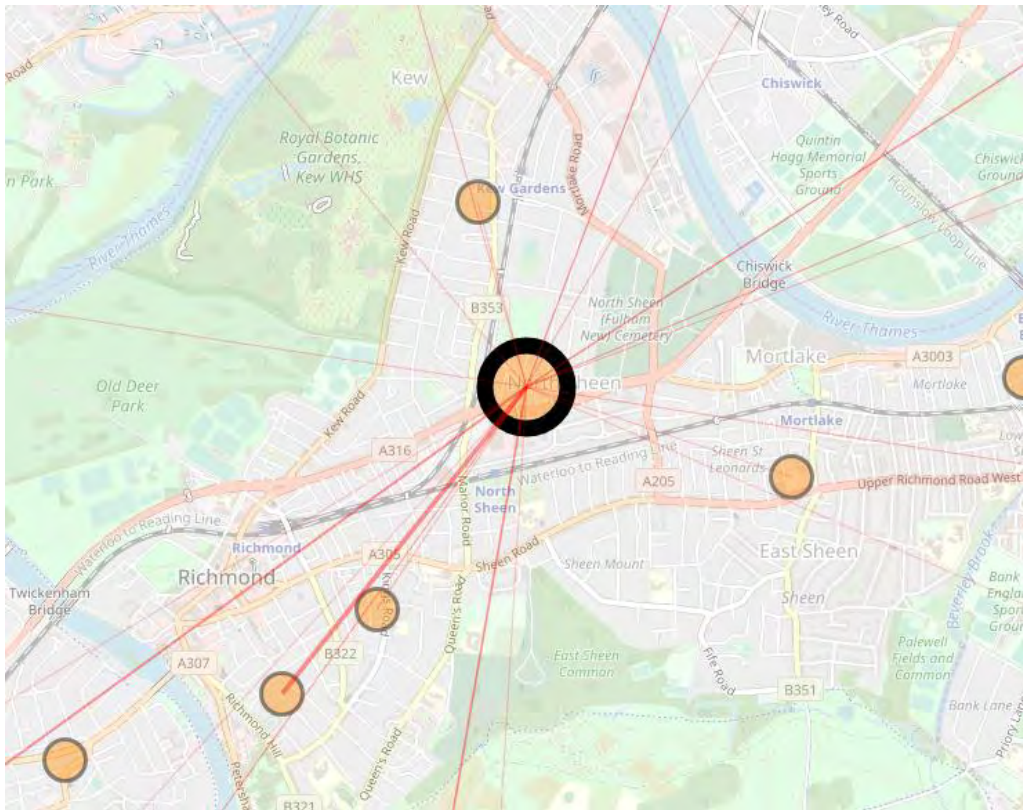
## 10 Impact of the Development on Local Bus Services

- 10.1 Based on TfL's assessment methodology, it is identified (in Table 13) that the additional demand for buses which could potentially be generated by the proposed development equates to around 116 people in the AM peak period, 90 people in the PM peak period and 1,072 people daily. These figures include all those using a bus to access Richmond Underground Station.
- 10.2 The above estimate is considered robust because (as noted by the Council) there are schools (primary and secondary) and higher education establishments within acceptable walking distance of the site. As such, pupils are unlikely to be dependent upon bus services to access education. Furthermore, the site is located immediately adjacent a supermarket (with Pharmacy); therefore journeys for the purposes of shopping are unlikely to require access to bus services.
- 10.3 TfL have advised that a number of alterations to the bus services in the vicinity of the site came into effect on 12<sup>th</sup> December 2020. The changes were made in order to address areas of surplus capacity and to reallocate resources where additional capacity is needed in Richmond, Twickenham and Whitton. The alterations are summarised below:
- Route H37 frequency reduced from 10bph to 8bph.
  - Route 493 terminates at Richmond Bus Station rather than at Richmond Manor Circus. However, whilst route 493 will no longer serve Manor Circus, it will continue to service the south side of the site from East Sheen (albeit a longer walk time).
  - Route H22 will no longer operate between Richmond and Twickenham
  - Route 391 will be renumbered to 110.
- 10.4 The following bus routes still serve (within 640m) the application site: 371 and R70 (Manor Road), 110, 190, 419, H37, R68 and N22 Manor Circus and 33, 337, 493 and N33 (at East Sheen).

- 10.5 Given the anticipated increase in demand (116 people in the AM peak period, 90 people in the PM peak period and 1,072 people daily) and the number of available bus services per hour (41), the number of additional people using each service would likely be modest; in the order of 2 or 3 people. This is considered unlikely to have a material adverse effect on existing bus capacity.
- 10.6 It is noted that, with the revised services, TfL remain satisfied that there is sufficient spare capacity on the bus network to accommodate the uplift in bus demand generated by the development.
- 10.7 With regards to the peak hour direction of travel for bus trips, we have analysed 2011 Census: Origin / Destination statistics which identifies place of work by method of travel to work. Again, it is acknowledged that bus journeys will be undertaken for other journey purposes as well as 'travel to work'. However, for the purpose of distribution, this dataset is considered to be appropriate.
- 10.8 The figure overleaf depicts the Middle Super Output Area (MSOA) destination of journeys to work by bus from the MSOA of the site and the general direction of travel they would take based on Census data. As can be seen, there is a relatively even distribution between south-westbound and north-eastbound bus journeys to / from work. The split has been calculated as follows:

Direction of travel	Number of Travel to Work Journeys by Bus from 'Richmond 004'	% Split
South-westbound	124	53.7
North-eastbound	107	46.3

**Table 30 - Direction of bus travel based on 2011 Census statistics**



**Figure 15 - Travel by bus** (Source: <http://commute.datashine.org.uk>)

- 10.9 It should be noted that for the purpose of this assessment; areas generating less than 6 bus trips have been omitted. This is considered to be appropriate as the impact of these low generating areas on distribution would be minimal. The dataset identifying the percentage draw to each area is included at **Appendix R**.
- 10.10 The relatively even distribution of bus journeys to / from work supports the assertion that an excessive demand on a particular bus service is unlikely to occur as a result of the development proposals.

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## 11 Impact of the Development on Local Rail Services

- 11.1 Given its proximity to the site, it is considered the vast majority of rail users generated by the development will access the rail network via North Sheen Station.
- 11.2 During the consideration of application 19/0510/FUL, the 'Original Proposed Development', the matters of potential platform congestion and the availability of space on trains to London, particularly during the AM peak were raised.
- 11.3 In order to be able to consider this in greater detail and to enable a development impact assessment to be undertaken, surveys were undertaken at North Sheen Station on three neutral weekdays; Tuesday 8, Wednesday 9 and Thursday 10 October 2019 between the hours of 07:00-09:30 and 15:00-18:00. Due to camera failure during the 10 October survey Thursday 24 October was surveyed for comparison.
- 11.4 The results of the surveys (detailed in Section 3.6 and attached at Appendix C) revealed that on a typical neutral weekday the morning "peak" occurs between 07:30 and 08:30 when an average of 262 passengers enter the station.
- 11.5 As there is only a single point of entry linking to a central platform it is not known for certain which direction passengers are intending to travel in. However, it is noted that trains from North Sheen towards central London (Waterloo) are available on both west and east bound lines with varying journey times and number of stops.
- 11.6 In this "peak" period 8 trains are scheduled to stop at North Sheen which provide access to London Waterloo and varying station en-route. Some trains provide an option to change at Richmond to catch a faster onward train.
- 11.7 It is, therefore, considered that typically these 8 services would need to be able to accommodate, on average 33 passengers each. Bearing in mind that the South Western Rail trains on this line usually operate between 8 and 10 carriages during peak times this is not considered to be unreasonable.

- 
- 11.8 It is identified (in Table 13) that the additional demand for rail services which could potentially be generated by the proposed development equates to around 72 people in the AM peak period, 55 people in the PM peak period and 661 people daily.
- 11.9 Based on the above, it is considered the development could result in an increase of circa 7 – 9 people per service, or an additional 1 person per carriage, during the peak periods.
- 11.10 It is considered that this level of increase would not have a material impact on the capacity of local rail services and in reality the additional demand would not be discernible amongst typical daily fluctuations.
- 11.11 From analysis of the pedestrian survey which recorded activity at the entrance/exit at North Sheen Station it is considered that existing rail passengers can be accommodated on peak hour services. Further analysis of the predicted uplift also indicates that the station and attending trains will be able to accommodate future passenger levels during peak hours.
- 11.12 There have been recent rail improvements including the introduction of new trains which has increased the available capacity of the trains on key routes in south-west London. In addition, Network Rail has also improved/realigned the platforms at Waterloo Station which now means that all 24 platforms are able to be used for South Western train services thus increasing the available services and reliability.

## 12 Comparison of Proposals

12.1 This chapter of the Transport Assessment Addendum provides a comparison of the Original Proposed Development (Feb 2019) and the Amended Proposed Development (July 2020), and their associated assessments.

12.2 The proposed changes are described in detail in the Design and Access Statement Addendum (July 2020), however, of particular note is the increase in residential units from 385 within the Original Proposed Development to 453 within the Amended Proposed Development. This increases the total number of affordable units by 39 to a total of 173 affordable homes (40% by habitable room taking account of grant funding, increased from 35% as originally submitted). This increase in units and the higher affordable housing provision has been principally achieved through amendments to the height and internal layout in appropriate locations across the Site.

12.3 From a Traffic and Transportation perspective, a comparison of the salient points is provided below;

	Original Proposed Development (Feb 2019)	Amended Proposed Development (July 2020)
Total Homes	385	453
Private	253	280
Affordable	132	173
Commercial	480.1m <sup>2</sup>	495m <sup>2</sup>
Accessible Car Parking	14	14
Long Stay Cycle Parking	840	817
Short Stay Cycle Parking	35	37

**Table 31 – Summary of Changes**

12.4 It should be noted that as part of the Original Proposed Development, 720 of the 840 long stay cycle parking spaces were proposed within a basement storage area. The Amended Proposed Development provides all cycle parking facilities at ground floor level.

12.5 With regards to the comparative impact of the proposals, this can be summarised as follows:

### 12.6 Accident history

12.6.1 The accident history on the local highway network has improved since the original Transport Assessment was undertaken. There have been no emergent accident trends that require further consideration, or that are likely to be exacerbated by the Amended Proposed Development.

### 12.7 Multimodal trip generations

Method of Travel	TfL Methodology		
	Original Proposed Development	Amended Proposed Development	+/-
Underground, Metro, Light Rail, Tram	667	797	+130
Train	553	661	+108
Bus, Minibus or Coach	230	275	+45
Taxi	6	8	+2
Motorcycle, Scooter or Moped	51	61	+10
Driving a Car or Van	59	71	+12
Passenger in a Car or Van	3	3	+0
Bicycle	182	217	+35
On Foot	265	317	+52
Other Method of Travel to Work	24	28	+4
Bus and Underground	897	1072	+175

**Table 32 – Daily Trip Generation Comparison (TfL Methodology)**

Method of Travel	SA Methodology		
	Original Proposed Development	Amended Proposed Development	+/-
Underground, Metro, Light Rail, Tram	368	443	+75
Train	58	70	+12
Bus, Minibus or Coach	380	458	+78
Taxi	51	62	+11
Motorcycle, Scooter or Moped	5	6	+1
Driving a Car or Van	112	134	+22
Passenger in a Car or Van	21	25	+4
Bicycle	15	18	+3
On Foot	768	926	+158
Other Method of Travel to Work	0	0	+0
Bus and Underground	748	901	+153

**Table 33 – Daily Trip Generation Comparison (SA Methodology)**

## 12.8 *Impact on pedestrian network*

12.8.1 The following table provides a comparison of the predicted daily pedestrian flows on various links on the local highway network.

### Links

A = Southbound on Manor Road

B = Crossing Manor Road at 0.8m pedestrian crossing refuge

C = Crossing Manor Road at 2.0m pedestrian crossing refuge

D = Westbound on Lower Mortlake Road

E = Crossing Manor Road via Manor Circus zebra crossing facility

F = Crossing Lower Mortlake Road via Manor Circus zebra crossing facility

LINK ID	Original Proposed Development	Amended Proposed Development	+/-
A	85	102	+17
B	571	683	+112
C	98	117	+19
D	467	558	+91
E	20	24	+4
F	474	567	+93

**Table 34 – Comparison of impact on pedestrian network**

12.8.2 Despite the predicted increase in pedestrian movements on the local highway network, in particular the additional 131 daily pedestrian movements that are likely to utilise the pedestrian crossing refuges on Manor Road; given the absence of any existing pedestrian related accident trends, it is considered that no significant adverse impact on highway safety is likely to occur as a result of the increased demand.

## 12.9 *Impact on local bus services*

12.9.1 The following table identifies the predicted demand on local bus services generated by the Original Proposed Development and Amended Proposed Development, based on TfL assessment methodology. The predicted demands include those who are likely to use buses in order to access the Underground services.

	Original Proposed Development	Amended Proposed Development	+/-
AM Peak	98	116	+18
PM Peak	76	90	+14
Daily	897	1072	+175

**Table 35 – Comparison of impact on local bus services**

12.9.2 Following the changes to bus services, it is understood that there are now 41 bus services per hour provided via the stops in proximity to the site.

12.9.3 Based on TfL’s recent review of bus services which identified that several local services were operating with spare capacity, and that the existing services were sufficient to meet demand, it is considered that the additional demand for bus services generated by the Amended Proposed Development would have no material adverse impact on the capacity of local services.

**12.10 Impact on local rail services**

12.10.1 The following table identifies the predicted demand on local rail services generated by the Original Proposed Development and Amended Proposed Development, based on TfL assessment methodology.

	Original Proposed Development	Amended Proposed Development	+/-
AM Peak	60	72	+12
PM Peak	47	55	+8
Daily	553	661	+108

**Table 36 – Comparison of impact on local rail services**

12.10.2 It is considered that the additional demand generated by the Amended Proposed Development would equate to an additional 1 – 2 passengers per service during peak periods. This modest increase is unlikely to have a significant adverse impact on the capacity of existing rail services.

**12.11 Vehicle trip generations**

12.11.1 The predicted peak hour vehicle trip generations associated with the residential element of the Original Proposed Development and Amended Proposed Development are summarised below. The predicted commercial vehicle trip generations have not been compared as there is no discernible difference in the proposed GIA's, as such no changes to the traffic flows would occur.

Time Period	Arrivals	Departures	Two-way
AM	12	31	42
PM	21	13	34

**Table 37 – Original Proposed Development Peak Hour Vehicle Trips**

Time Period	Arrivals	Departures	Two-way
AM	14	36	50
PM	25	15	40

**Table 38 – Amended Proposed Development Peak Hour Vehicle Trips**

12.11.2 Despite the comparative increase of 8 vehicle trips (two-way) in the AM peak period and 6 vehicle trips (two-way) in the PM peak period, the Amended Proposed Development is still expected to result in a reduction of 17 traffic movements in the AM peak and 51 in the PM peak when compared against the site's existing vehicle trip generation potential. As such, the proposal remains to result in a betterment on the operation of the local highway network.

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## 13 Summary and Conclusions

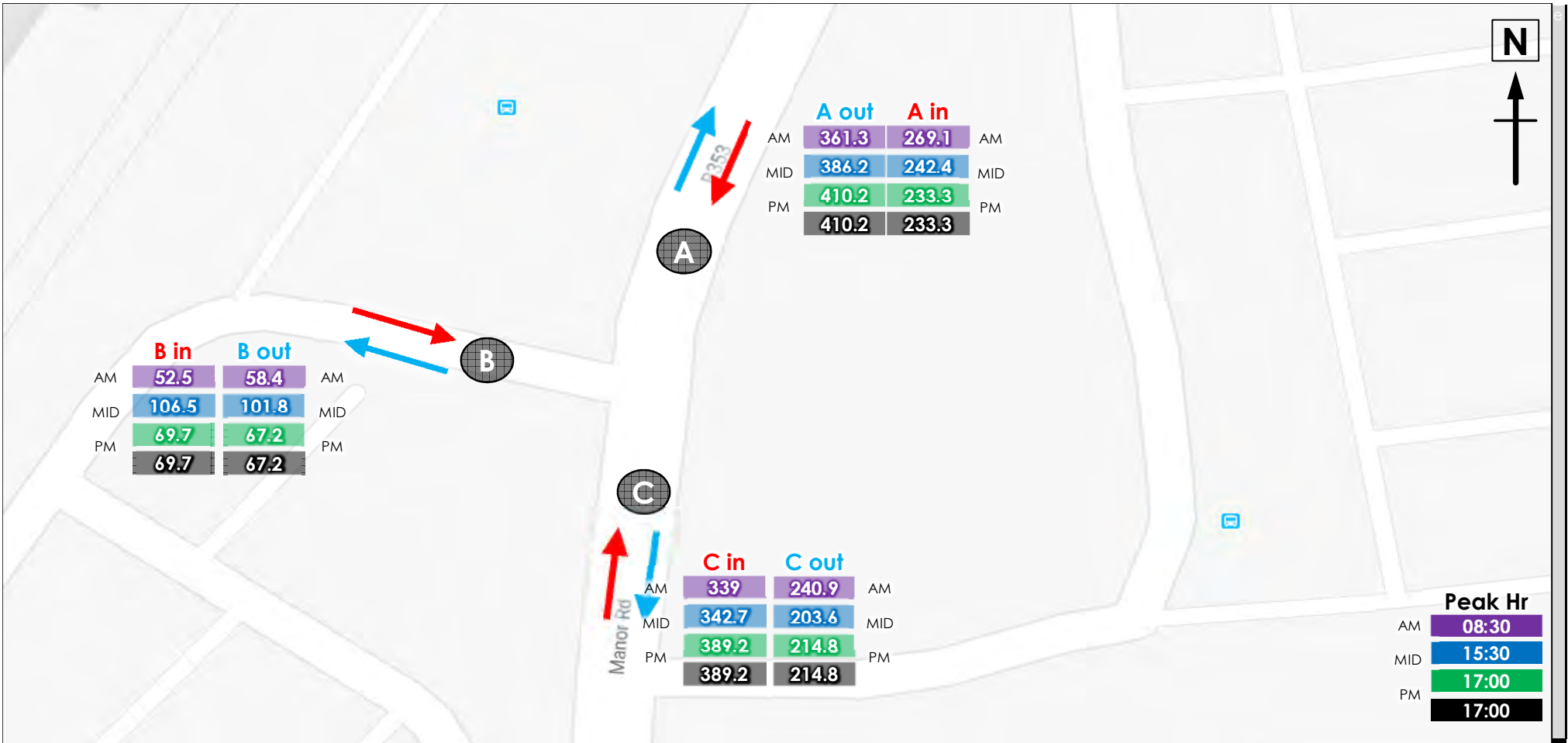
- 13.1 This Transport Assessment Addendum has been prepared by Sanderson Associates (Consulting Engineers) Ltd on behalf of Avanton Richmond Development Ltd ('the Applicant') to reflect changes to the layout of the site (84 Manor Road, North Sheen) due to an amendment to the red line boundary.
- 13.2 The London Plan (2021) notes that; "*Car-free development should be the starting point for all development proposals in places that are (or are planned to be) well-connected by public transport*". The maximum residential parking standards state that for all higher density new developments that are in more accessible locations in areas within Outer London boroughs with a PTAL rating of 4 the maximum provision is 0.5 spaces per dwelling.
- 13.3 Therefore, on-site parking is limited to fourteen (3%) disabled spaces with the capability to increase this to 10% if required. 20% of these spaces will be provided with electric vehicle charging facilities in line with the London Plan requirements. Two Electric Car Club vehicles are to be provided within the development. These will be managed by the operators of the scheme who are to be confirmed in due course with the provision being secured via a S106 obligation.
- 13.4 Cycle parking is proposed in excess of the standards contained within the London Plan and in order to increase accessibility for residents and in response to comments from statutory consultees the cycle parking has been relocated from the basement to the ground floor of residential blocks.
- 13.5 As part of the proposals, improvements are to be made to the footway along the site frontage including widening and planting of trees and shrubs.
- 13.6 A detailed assessment of the surrounding highway network and public transport infrastructure has been undertaken and it is considered that the site is highly accessible by both active and public transport. As such, residents, staff and visitors to the development will have a choice of sustainable travel options which will reduce the need to travel by car.

- 13.7 From analysis of the pedestrian survey which recorded activity at the entrance/exit at North Sheen Station it is considered that existing rail passengers can be accommodated on peak hour services. Further analysis of the predicted uplift also indicates that the station and attending trains will be able to accommodate future passenger levels during peak hours.
- 13.8 In line with the strategies incorporated into the London Plan 2021 and additional guidance published by TfL a detailed Active Travel Zone assessment has been undertaken. The routes assessed, which had been previously agreed with TfL, generally performed well in relation to the Healthy Streets indicators by providing safe places to cross, being well-maintained, not having an accident history of concern and having public and private areas of vegetation that provide interest and variety. In addition, it is considered that the development will enhance the routes along the site frontage by providing improved footways, landscaping, places to rest and overlooking buildings.
- 13.9 It is therefore considered that, as the development site is situated in a highly accessible area, the virtually car-free proposals are in conformity with the current policies adopted by LBRuT, and also satisfy the future aspirations of the London Plan.
- 13.10 A number of financial contributions were previously agreed in relation to the Original Proposed Development and it is understood that these will be similarly applicable to the Amended Proposed Development. These are to be secured by a S106 Agreement and include:-
- Manor Circus Improvement Scheme £330,000
  - Railway Safety £ 15,000
  - Level Crossing Improvements £ 60,000
  - Station Access Feasibility £ 30,000
  - Controlled Parking Zone Study £ 50,000
  - Controlled Parking Zone Amendments £ 50,000 (if deemed necessary)

- 
- 13.11 During more recent pre-application discussions it has been established that the scheme design costs for Manor Circus have risen. Therefore, TfL have requested a revised financial contribution of £380,000 towards the implementation of the Manor Circus scheme. This revised contribution sum has been agreed by the developer. A further contribution of £40,000.00 has also been agreed towards improvements within North Sheen station.
- 13.12 It is therefore, considered that the Amended Proposed Development, complies the current policies adopted by LBRuT, and also satisfies the future aspirations of the London Plan. It is further considered that appropriate mitigation is proposed either within the parameters of the development itself or in the form of financial contributions and that there are no transportation related reasons why the development should not be allowed to proceed.

***APPENDIX A***  
***Traffic Count Data***

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Arms: **A B C**

	<b>Site / Location:</b> <b>1</b> <b>Manor Road / Retail Park Access</b>	<b>Project No:</b> <b>9256</b>	<b>Drawing No:</b> <b>9256 - 01</b>	<b>Drawn By:</b> <b>MB</b>
	<b>Survey Date:</b> <b>02/10/2018</b>	<b>Project Name:</b> <b>MANOR ROAD, RICHMOND</b>		
	<b>Survey Times:</b> from: <b>07:30 15:00</b> to: <b>09:30 18:00</b>	<b>Drawing Title:</b> <b>Junction Labels and Peak Hr PCU's</b>		



SITE: **1**  
 LOCATION: Manor Road / Retail Park Access  
 TOTAL ARMS: A B C

from arm: **A**  
 to arm: **A**

period I period II  
 from: 07:30 15:00  
 to: 09:30 18:00

DATE: 02/10/2018  
 DAY: Tuesday

**per quarter of an hour**

from	to	CAR	LGV	OGV1	OGV2	PSV	MCL	PCL	TOT	PCU
PCU factor		1	1	1.5	2.3	2	0.4	0.2		
INTERVAL		00:15	00:15	00:15	00:15	00:15	00:15	00:15	00:15	00:15
<b>07:30</b>	<b>07:45</b>	0	0	0	0	0	0	0	0	0
07:45	08:00	0	0	0	0	0	0	0	0	0
08:00	08:15	0	0	0	0	0	0	0	0	0
08:15	08:30	0	0	0	0	0	0	0	0	0
<b>08:30</b>	<b>08:45</b>	0	0	0	0	0	0	0	0	0
08:45	09:00	0	0	0	0	0	0	0	0	0
09:00	09:15	0	0	0	0	0	0	0	0	0
09:15	09:30	0	0	0	0	0	0	0	0	0
15:00	15:15	0	0	0	0	0	0	0	0	0
15:15	15:30	0	0	0	0	0	0	0	0	0
<b>15:30</b>	<b>15:45</b>	0	0	0	0	0	0	0	0	0
15:45	16:00	0	0	0	0	0	0	0	0	0
16:00	16:15	0	0	0	0	0	0	0	0	0
16:15	16:30	0	0	0	0	0	0	0	0	0
<b>16:30</b>	<b>16:45</b>	0	0	0	0	0	0	0	0	0
16:45	17:00	0	0	0	0	0	0	0	0	0
17:00	17:15	0	0	0	0	0	0	0	0	0
17:15	17:30	0	0	0	0	0	0	0	0	0
<b>17:30</b>	<b>17:45</b>	0	0	0	0	0	0	0	0	0
17:45	18:00	0	0	0	0	0	0	0	0	0
<b>P/TOT</b>		<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
<b>Period I Total:</b>		0	0	0	0	0	0	0	0	0
<b>Period II Total:</b>		0	0	0	0	0	0	0	0	0

**per hour**

from	to	CAR	LGV	OGV1	OGV2	PSV	MCL	PCL	TOT	PCU.h
PCU factor		1	1	1.5	2.3	2	0.4	0.2		
INTERVAL		01:00	01:00	01:00	01:00	01:00	01:00	01:00	01:00	01:00
<b>07:30</b>	<b>08:30</b>	0	0	0	0	0	0	0	0	0
07:45	08:45	0	0	0	0	0	0	0	0	0
08:00	09:00	0	0	0	0	0	0	0	0	0
08:15	09:15	0	0	0	0	0	0	0	0	0
<b>08:30</b>	<b>09:30</b>	0	0	0	0	0	0	0	0	0
08:45	09:45	0	0	0	0	0	0	0	0	0
09:00	10:00	0	0	0	0	0	0	0	0	0
09:15	10:15	0	0	0	0	0	0	0	0	0
15:00	16:00	0	0	0	0	0	0	0	0	0
15:15	16:15	0	0	0	0	0	0	0	0	0
<b>15:30</b>	<b>16:30</b>	0	0	0	0	0	0	0	0	0
15:45	16:45	0	0	0	0	0	0	0	0	0
16:00	17:00	0	0	0	0	0	0	0	0	0
16:15	17:15	0	0	0	0	0	0	0	0	0
<b>16:30</b>	<b>17:30</b>	0	0	0	0	0	0	0	0	0
16:45	17:45	0	0	0	0	0	0	0	0	0
17:00	18:00	0	0	0	0	0	0	0	0	0
17:15	18:15	0	0	0	0	0	0	0	0	0
<b>17:30</b>	<b>18:30</b>	0	0	0	0	0	0	0	0	0
17:45	18:45	0	0	0	0	0	0	0	0	0
<b>P/TOT</b>		<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>



SITE: **1**  
 LOCATION: Manor Road / Retail Park Access  
 TOTAL ARMS: A B C

from arm: **A**  
 to arm: **B**

period I period II  
 from: 07:30 15:00  
 to: 09:30 18:00

DATE: 02/10/2018  
 DAY: Tuesday

		per quarter of an hour							TOT	PCU
from	to	CAR	LGV	OGV1	OGV2	PSV	MCL	PCL		
PCU factor		1	1	1.5	2.3	2	0.4	0.2		
INTERVAL		00:15	00:15	00:15	00:15	00:15	00:15	00:15	00:15	00:15
07:30	07:45	1	0	1	0	1	0	0	3	4.5
07:45	08:00	3	1	0	0	3	0	0	7	10
08:00	08:15	2	1	0	0	2	0	0	5	7
08:15	08:30	8	1	0	0	3	0	0	12	15
08:30	08:45	4	0	0	0	2	0	0	6	8
08:45	09:00	4	1	0	0	0	0	1	6	5.2
09:00	09:15	6	0	0	0	2	0	0	8	10
09:15	09:30	6	5	0	0	2	0	1	14	15.2
15:00	15:15	10	0	0	0	2	0	0	12	14
15:15	15:30	12	0	0	0	3	1	0	16	18.4
15:30	15:45	15	1	0	0	3	1	1	21	22.6
15:45	16:00	9	0	0	0	3	0	1	13	15.2
16:00	16:15	16	0	0	0	1	0	0	17	18
16:15	16:30	2	2	0	0	4	0	0	8	12
16:30	16:45	9	2	1	0	3	0	0	15	18.5
16:45	17:00	5	1	0	0	0	0	0	6	6
17:00	17:15	7	0	0	0	3	0	0	10	13
17:15	17:30	6	0	0	0	2	0	0	8	10
17:30	17:45	6	0	0	0	1	0	0	7	8
17:45	18:00	8	0	0	0	2	0	0	10	12
P/TOT		139	15	2	0	42	2	4	204	242.6

Period I Total: 34 9 1 0 15 0 2 0 0 61 74.9  
 Period II Total: 105 6 1 0 27 2 2 0 0 143 167.7

		per hour							TOT	PCU.h
from	to	CAR	LGV	OGV1	OGV2	PSV	MCL	PCL		
PCU factor		1	1	1.5	2.3	2	0.4	0.2		
INTERVAL		01:00	01:00	01:00	01:00	01:00	01:00	01:00	01:00	01:00
07:30	08:30	14	3	1	0	9	0	0	27	36.5
07:45	08:45	17	3	0	0	10	0	0	30	40
08:00	09:00	18	3	0	0	7	0	1	29	35.2
08:15	09:15	22	2	0	0	7	0	1	32	38.2
08:30	09:30	20	6	0	0	6	0	2	34	38.4
08:45	09:45	16	6	0	0	4	0	2	28	30.4
09:00	10:00	12	5	0	0	4	0	1	22	25.2
09:15	10:15	6	5	0	0	2	0	1	14	15.2
15:00	16:00	46	1	0	0	11	2	2	62	70.2
15:15	16:15	52	1	0	0	10	2	2	67	74.2
15:30	16:30	42	3	0	0	11	1	2	59	67.8
15:45	16:45	36	4	1	0	11	0	1	53	63.7
16:00	17:00	32	5	1	0	8	0	0	46	54.5
16:15	17:15	23	5	1	0	10	0	0	39	49.5
16:30	17:30	27	3	1	0	8	0	0	39	47.5
16:45	17:45	24	1	0	0	6	0	0	31	37
17:00	18:00	27	0	0	0	8	0	0	35	43
17:15	18:15	20	0	0	0	5	0	0	25	30
17:30	18:30	14	0	0	0	3	0	0	17	20
17:45	18:45	8	0	0	0	2	0	0	10	12
P/TOT		139	15	2	0	42	2	4	204	242.6



SITE: **1**  
 LOCATION: Manor Road / Retail Park Access  
 TOTAL ARMS: A B C

from arm: **A**  
 to arm: **C**

period I period II  
 from: 07:30 15:00  
 to: 09:30 18:00

DATE: 02/10/2018  
 DAY: Tuesday

		per quarter of an hour							TOT	PCU		
from	to	CAR	LGV	OGV1	OGV2	PSV	MCL	PCL				
PCU factor		1	1	1.5	2.3	2	0.4	0.2				
INTERVAL		00:15	00:15	00:15	00:15	00:15	00:15	00:15	00:15	00:15		
07:30	07:45	30	15	4	0	2	0	2	53	55.4		
07:45	08:00	38	12	3	1	0	0	1	55	57		
08:00	08:15	29	6	4	0	1	1	3	44	44		
08:15	08:30	36	8	2	0	0	2	4	52	48.6		
08:30	08:45	56	8	3	0	0	1	3	71	69.5		
08:45	09:00	58	9	2	0	1	1	0	71	72.4		
09:00	09:15	27	7	5	0	0	0	3	42	42.1		
09:15	09:30	34	6	3	0	1	0	1	45	46.7		
15:00	15:15	46	9	1	0	1	3	2	62	60.1		
15:15	15:30	27	6	3	0	1	0	1	38	39.7		
15:30	15:45	39	7	2	0	0	2	3	53	50.4		
15:45	16:00	33	8	0	0	0	0	1	42	41.2		
16:00	16:15	32	5	1	0	1	1	1	41	41.1		
16:15	16:30	34	5	1	0	0	3	1	44	41.9		
16:30	16:45	35	6	1	0	1	1	0	44	44.9		
16:45	17:00	37	6	0	0	0	0	1	44	43.2		
17:00	17:15	41	5	2	0	1	2	1	52	52		
17:15	17:30	39	6	1	0	0	3	4	53	48.5		
17:30	17:45	40	4	0	0	0	1	4	49	45.2		
17:45	18:00	38	5	0	0	0	2	4	49	44.6		
P/TOT		749	143	38	1	10	23	40	0	0	1004	988.5

Period I Total: 308 71 26 1 5 5 17 0 0 433 435.7  
 Period II Total: 441 72 12 0 5 18 23 0 0 571 552.8

		per hour							TOT	PCU.h		
from	to	CAR	LGV	OGV1	OGV2	PSV	MCL	PCL				
PCU factor		1	1	1.5	2.3	2	0.4	0.2				
INTERVAL		01:00	01:00	01:00	01:00	01:00	01:00	01:00	01:00	01:00		
07:30	08:30	133	41	13	1	3	3	10	204	205		
07:45	08:45	159	34	12	1	1	4	11	222	219.1		
08:00	09:00	179	31	11	0	2	5	10	238	234.5		
08:15	09:15	177	32	12	0	1	4	10	236	232.6		
08:30	09:30	175	30	13	0	2	2	7	229	230.7		
08:45	09:45	119	22	10	0	2	1	4	158	161.2		
09:00	10:00	61	13	8	0	1	0	4	87	88.8		
09:15	10:15	34	6	3	0	1	0	1	45	46.7		
15:00	16:00	145	30	6	0	2	5	7	195	191.4		
15:15	16:15	131	26	6	0	2	3	6	174	172.4		
15:30	16:30	138	25	4	0	1	6	6	180	174.6		
15:45	16:45	134	24	3	0	2	5	3	171	169.1		
16:00	17:00	138	22	3	0	2	5	3	173	171.1		
16:15	17:15	147	22	4	0	2	6	3	184	182		
16:30	17:30	152	23	4	0	2	6	6	193	188.6		
16:45	17:45	157	21	3	0	1	6	10	198	188.9		
17:00	18:00	158	20	3	0	1	8	13	203	190.3		
17:15	18:15	117	15	1	0	0	6	12	151	138.3		
17:30	18:30	78	9	0	0	0	3	8	98	89.8		
17:45	18:45	38	5	0	0	0	2	4	49	44.6		
P/TOT		749	143	38	1	10	23	40	0	0	1004	988.5



SITE: 1  
 LOCATION: Manor Road / Retail Park Access  
 TOTAL ARMS: A B C

from arm: **A**  
 to arm: **all**

period I period II  
 from: 07:30 15:00  
 to: 09:30 18:00

DATE: 02/10/2018  
 DAY: Tuesday

		per quarter of an hour							TOT	PCU		
from	to	CAR	LGV	OGV1	OGV2	PSV	MCL	PCL				
PCU factor		1	1	1.5	2.3	2	0.4	0.2				
INTERVAL		00:15	00:15	00:15	00:15	00:15	00:15	00:15	00:15	00:15		
07:30	07:45	31	15	5	0	3	0	2	56	59.9		
07:45	08:00	41	13	3	1	3	0	1	62	67		
08:00	08:15	31	7	4	0	3	1	3	49	51		
08:15	08:30	44	9	2	0	3	2	4	64	63.6		
08:30	08:45	60	8	3	0	2	1	3	77	77.5		
08:45	09:00	62	10	2	0	1	1	1	77	77.6		
09:00	09:15	33	7	5	0	2	0	3	50	52.1		
09:15	09:30	40	11	3	0	3	0	2	59	61.9		
15:00	15:15	56	9	1	0	3	3	2	74	74.1		
15:15	15:30	39	6	3	0	4	1	1	54	58.1		
15:30	15:45	54	8	2	0	3	3	4	74	73		
15:45	16:00	42	8	0	0	3	0	2	55	56.4		
16:00	16:15	48	5	1	0	2	1	1	58	59.1		
16:15	16:30	36	7	1	0	4	3	1	52	53.9		
16:30	16:45	44	8	2	0	4	1	0	59	63.4		
16:45	17:00	42	7	0	0	0	0	1	50	49.2		
17:00	17:15	48	5	2	0	4	2	1	62	65		
17:15	17:30	45	6	1	0	2	3	4	61	58.5		
17:30	17:45	46	4	0	0	1	1	4	56	53.2		
17:45	18:00	46	5	0	0	2	2	4	59	56.6		
P/TOT		888	158	40	1	52	25	44	0	0	1208	1231

Period I Total: 342 80 27 1 20 5 19 0 0 494 510.6  
 Period II Total: 546 78 13 0 32 20 25 0 0 714 720.5

		per hour							TOT	PCU.h		
from	to	CAR	LGV	OGV1	OGV2	PSV	MCL	PCL				
PCU factor		1	1	1.5	2.3	2	0.4	0.2				
INTERVAL		01:00	01:00	01:00	01:00	01:00	01:00	01:00	01:00	01:00		
07:30	08:30	147	44	14	1	12	3	10	231	241.5		
07:45	08:45	176	37	12	1	11	4	11	252	259.1		
08:00	09:00	197	34	11	0	9	5	11	267	269.7		
08:15	09:15	199	34	12	0	8	4	11	268	270.8		
08:30	09:30	195	36	13	0	8	2	9	263	269.1		
08:45	09:45	135	28	10	0	6	1	6	186	191.6		
09:00	10:00	73	18	8	0	5	0	5	109	114		
09:15	10:15	40	11	3	0	3	0	2	59	61.9		
15:00	16:00	191	31	6	0	13	7	9	257	261.6		
15:15	16:15	183	27	6	0	12	5	8	241	246.6		
15:30	16:30	180	28	4	0	12	7	8	239	242.4		
15:45	16:45	170	28	4	0	13	5	4	224	232.8		
16:00	17:00	170	27	4	0	10	5	3	219	225.6		
16:15	17:15	170	27	5	0	12	6	3	223	231.5		
16:30	17:30	179	26	5	0	10	6	6	232	236.1		
16:45	17:45	181	22	3	0	7	6	10	229	225.9		
17:00	18:00	185	20	3	0	9	8	13	238	233.3		
17:15	18:15	137	15	1	0	5	6	12	176	168.3		
17:30	18:30	92	9	0	0	3	3	8	115	109.8		
17:45	18:45	46	5	0	0	2	2	4	59	56.6		
P/TOT		888	158	40	1	52	25	44	0	0	1208	1231



SITE: 1  
 LOCATION: Manor Road / Retail Park Access  
 TOTAL ARMS: A B C

from arm: all  
 to arm: A

period I period II  
 from: 07:30 15:00  
 to: 09:30 18:00

DATE: 02/10/2018  
 DAY: Tuesday

from	to	CAR	LGV	OGV1	OGV2	PSV	MCL	PCL	TOT	PCU		
PCU factor		1	1	1.5	2.3	2	0.4	0.2				
INTERVAL		00:15	00:15	00:15	00:15	00:15	00:15	00:15	00:15	00:15		
07:30	07:45	79	13	4	0	7	4	2	109	114		
07:45	08:00	48	8	1	0	8	1	2	68	74.3		
08:00	08:15	63	11	1	1	3	5	5	89	86.8		
08:15	08:30	63	13	2	1	4	1	4	88	90.5		
08:30	08:45	64	11	1	0	3	4	3	86	84.7		
08:45	09:00	80	13	1	1	1	1	3	100	99.8		
09:00	09:15	65	6	2	0	2	1	1	77	78.6		
09:15	09:30	74	12	1	1	4	1	0	93	98.2		
15:00	15:15	64	8	3	0	3	1	4	83	83.7		
15:15	15:30	47	13	5	1	6	1	1	74	82.4		
15:30	15:45	87	11	1	2	4	3	2	110	113.7		
15:45	16:00	53	12	3	0	5	1	0	74	79.9		
16:00	16:15	70	12	3	1	4	1	1	92	97.4		
16:15	16:30	70	13	1	1	4	0	2	91	95.2		
16:30	16:45	69	10	3	0	5	1	4	92	94.7		
16:45	17:00	61	14	1	0	3	1	1	81	83.1		
17:00	17:15	62	19	0	0	6	1	3	91	94		
17:15	17:30	88	16	1	0	3	1	4	113	112.7		
17:30	17:45	81	9	5	0	3	4	2	104	105.5		
17:45	18:00	81	12	0	0	2	2	1	98	98		
P/TOT		1369	236	39	9	80	35	45	0	0	1813	1867

Period I Total: 536 87 13 4 32 18 20 0 0 710 726.9  
 Period II Total: 833 149 26 5 48 17 25 0 0 1103 1140

from	to	CAR	LGV	OGV1	OGV2	PSV	MCL	PCL	TOT	PCU.h		
PCU factor		1	1	1.5	2.3	2	0.4	0.2				
INTERVAL		01:00	01:00	01:00	01:00	01:00	01:00	01:00	01:00	01:00		
07:30	08:30	253	45	8	2	22	11	13	354	365.6		
07:45	08:45	238	43	5	2	18	11	14	331	336.3		
08:00	09:00	270	48	5	3	11	11	15	363	361.8		
08:15	09:15	272	43	6	2	10	7	11	351	353.6		
08:30	09:30	283	42	5	2	10	7	7	356	361.3		
08:45	09:45	219	31	4	2	7	3	4	270	276.6		
09:00	10:00	139	18	3	1	6	2	1	170	176.8		
09:15	10:15	74	12	1	1	4	1	0	93	98.2		
15:00	16:00	251	44	12	3	18	6	7	341	359.7		
15:15	16:15	257	48	12	4	19	6	4	350	373.4		
15:30	16:30	280	48	8	4	17	5	5	367	386.2		
15:45	16:45	262	47	10	2	18	3	7	349	367.2		
16:00	17:00	270	49	8	2	16	3	8	356	370.4		
16:15	17:15	262	56	5	1	18	3	10	355	367		
16:30	17:30	280	59	5	0	17	4	12	377	384.5		
16:45	17:45	292	58	7	0	15	7	10	389	395.3		
17:00	18:00	312	56	6	0	14	8	10	406	410.2		
17:15	18:15	250	37	6	0	8	7	7	315	316.2		
17:30	18:30	162	21	5	0	5	6	3	202	203.5		
17:45	18:45	81	12	0	0	2	2	1	98	98		
P/TOT		1369	236	39	9	80	35	45	0	0	1813	1867



SITE: **1**  
 LOCATION: Manor Road / Retail Park Access  
 TOTAL ARMS:

from arm: **B**  
 to arm: **A**

period I period II  
 from: 07:30 15:00  
 to: 09:30 18:00

DATE: 02/10/2018  
 DAY: Tuesday

		per quarter of an hour							TOT	PCU		
from	to	CAR	LGV	OGV1	OGV2	PSV	MCL	PCL				
PCU factor		1	1	1.5	2.3	2	0.4	0.2				
INTERVAL		00:15	00:15	00:15	00:15	00:15	00:15	00:15	00:15	00:15		
07:30	07:45	2	0	1	0	2	0	0	5	7.5		
07:45	08:00	1	0	0	0	3	0	0	4	7		
08:00	08:15	2	1	0	0	2	0	0	5	7		
08:15	08:30	5	3	0	0	2	0	0	10	12		
08:30	08:45	3	0	0	0	3	0	0	6	9		
08:45	09:00	2	0	0	0	1	0	0	3	4		
09:00	09:15	4	2	0	0	2	0	0	8	10		
09:15	09:30	11	2	0	1	2	0	0	16	19.3		
15:00	15:15	9	0	0	0	2	0	0	11	13		
15:15	15:30	8	2	0	0	3	0	0	13	16		
15:30	15:45	15	0	0	0	3	2	1	21	22		
15:45	16:00	7	1	0	0	2	0	0	10	12		
16:00	16:15	17	1	1	0	3	0	0	22	25.5		
16:15	16:30	13	1	0	0	2	0	0	16	18		
16:30	16:45	16	0	0	0	4	0	1	21	24.2		
16:45	17:00	7	1	0	0	1	0	0	9	10		
17:00	17:15	6	1	0	0	3	0	1	11	13.2		
17:15	17:30	8	1	0	0	2	0	0	11	13		
17:30	17:45	6	1	0	0	2	0	0	9	11		
17:45	18:00	8	0	0	0	0	0	0	8	8		
P/TOT		150	17	2	1	44	2	3	0	0	219	261.7

Period I Total: 30 8 1 1 17 0 0 0 0 57 75.8  
 Period II Total: 120 9 1 0 27 2 3 0 0 162 185.9

		per hour							TOT	PCU.h		
from	to	CAR	LGV	OGV1	OGV2	PSV	MCL	PCL				
PCU factor		1	1	1.5	2.3	2	0.4	0.2				
INTERVAL		01:00	01:00	01:00	01:00	01:00	01:00	01:00	01:00	01:00		
07:30	08:30	10	4	1	0	9	0	0	24	33.5		
07:45	08:45	11	4	0	0	10	0	0	25	35		
08:00	09:00	12	4	0	0	8	0	0	24	32		
08:15	09:15	14	5	0	0	8	0	0	27	35		
08:30	09:30	20	4	0	1	8	0	0	33	42.3		
08:45	09:45	17	4	0	1	5	0	0	27	33.3		
09:00	10:00	15	4	0	1	4	0	0	24	29.3		
09:15	10:15	11	2	0	1	2	0	0	16	19.3		
15:00	16:00	39	3	0	0	10	2	1	55	63		
15:15	16:15	47	4	1	0	11	2	1	66	75.5		
15:30	16:30	52	3	1	0	10	2	1	69	77.5		
15:45	16:45	53	3	1	0	11	0	1	69	79.7		
16:00	17:00	53	3	1	0	10	0	1	68	77.7		
16:15	17:15	42	3	0	0	10	0	2	57	65.4		
16:30	17:30	37	3	0	0	10	0	2	52	60.4		
16:45	17:45	27	4	0	0	8	0	1	40	47.2		
17:00	18:00	28	3	0	0	7	0	1	39	45.2		
17:15	18:15	22	2	0	0	4	0	0	28	32		
17:30	18:30	14	1	0	0	2	0	0	17	19		
17:45	18:45	8	0	0	0	0	0	0	8	8		
P/TOT		150	17	2	1	44	2	3	0	0	219	261.7



SITE: **1**  
 LOCATION: Manor Road / Retail Park Access  
 TOTAL ARMS: A B C

from arm: **B**  
 to arm: **B**

period I period II  
 from: 07:30 15:00  
 to: 09:30 18:00

DATE: 02/10/2018  
 DAY: Tuesday

**per quarter of an hour**

from	to	CAR	LGV	OGV1	OGV2	PSV	MCL	PCL	TOT	PCU
PCU factor		1	1	1.5	2.3	2	0.4	0.2		
INTERVAL		00:15	00:15	00:15	00:15	00:15	00:15	00:15	00:15	00:15
<b>07:30</b>	<b>07:45</b>	0	0	0	0	0	0	0	0	0
07:45	08:00	0	0	0	0	0	0	0	0	0
08:00	08:15	0	0	0	0	0	0	0	0	0
08:15	08:30	0	0	0	0	0	0	0	0	0
<b>08:30</b>	<b>08:45</b>	0	0	0	0	0	0	0	0	0
08:45	09:00	0	0	0	0	0	0	0	0	0
09:00	09:15	0	0	0	0	0	0	0	0	0
09:15	09:30	0	0	0	0	0	0	0	0	0
15:00	15:15	0	0	0	0	0	0	0	0	0
15:15	15:30	0	0	0	0	0	0	0	0	0
<b>15:30</b>	<b>15:45</b>	0	0	0	0	0	0	0	0	0
15:45	16:00	0	0	0	0	0	0	0	0	0
16:00	16:15	0	0	0	0	0	0	0	0	0
16:15	16:30	0	0	0	0	0	0	0	0	0
<b>16:30</b>	<b>16:45</b>	0	0	0	0	0	0	0	0	0
16:45	17:00	0	0	0	0	0	0	0	0	0
17:00	17:15	0	0	0	0	0	0	0	0	0
17:15	17:30	0	0	0	0	0	0	0	0	0
<b>17:30</b>	<b>17:45</b>	0	0	0	0	0	0	0	0	0
17:45	18:00	0	0	0	0	0	0	0	0	0
<b>P/TOT</b>		<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
<b>Period I Total:</b>		0	0	0	0	0	0	0	0	0
<b>Period II Total:</b>		0	0	0	0	0	0	0	0	0

**per hour**

from	to	CAR	LGV	OGV1	OGV2	PSV	MCL	PCL	TOT	PCU.h
PCU factor		1	1	1.5	2.3	2	0.4	0.2		
INTERVAL		01:00	01:00	01:00	01:00	01:00	01:00	01:00	01:00	01:00
<b>07:30</b>	<b>08:30</b>	0	0	0	0	0	0	0	0	0
07:45	08:45	0	0	0	0	0	0	0	0	0
08:00	09:00	0	0	0	0	0	0	0	0	0
08:15	09:15	0	0	0	0	0	0	0	0	0
<b>08:30</b>	<b>09:30</b>	0	0	0	0	0	0	0	0	0
08:45	09:45	0	0	0	0	0	0	0	0	0
09:00	10:00	0	0	0	0	0	0	0	0	0
09:15	10:15	0	0	0	0	0	0	0	0	0
15:00	16:00	0	0	0	0	0	0	0	0	0
15:15	16:15	0	0	0	0	0	0	0	0	0
<b>15:30</b>	<b>16:30</b>	0	0	0	0	0	0	0	0	0
15:45	16:45	0	0	0	0	0	0	0	0	0
16:00	17:00	0	0	0	0	0	0	0	0	0
16:15	17:15	0	0	0	0	0	0	0	0	0
<b>16:30</b>	<b>17:30</b>	0	0	0	0	0	0	0	0	0
16:45	17:45	0	0	0	0	0	0	0	0	0
17:00	18:00	0	0	0	0	0	0	0	0	0
17:15	18:15	0	0	0	0	0	0	0	0	0
<b>17:30</b>	<b>18:30</b>	0	0	0	0	0	0	0	0	0
17:45	18:45	0	0	0	0	0	0	0	0	0
<b>P/TOT</b>		<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>



SITE: **1**  
 LOCATION: Manor Road / Retail Park Access  
 TOTAL ARMS: A B C

from arm: **B**  
 to arm: **C**

period I period II  
 from: 07:30 15:00  
 to: 09:30 18:00

DATE: 02/10/2018  
 DAY: Tuesday

		per quarter of an hour							TOT	PCU		
from	to	CAR	LGV	OGV1	OGV2	PSV	MCL	PCL				
PCU factor		1	1	1.5	2.3	2	0.4	0.2				
INTERVAL		00:15	00:15	00:15	00:15	00:15	00:15	00:15	00:15	00:15		
07:30	07:45	0	0	0	0	0	0	0	0	0		
07:45	08:00	1	0	0	0	0	0	0	1	1		
08:00	08:15	0	0	0	0	0	0	0	0	0		
08:15	08:30	2	0	0	0	0	0	0	2	2		
08:30	08:45	0	0	0	0	0	0	0	0	0		
08:45	09:00	1	0	0	0	0	0	0	1	1.2		
09:00	09:15	3	0	0	0	0	0	0	3	3		
09:15	09:30	4	0	0	0	1	0	0	5	6		
15:00	15:15	6	1	0	0	0	0	0	7	7		
15:15	15:30	9	1	0	0	0	0	0	10	10		
15:30	15:45	7	1	0	0	0	0	0	8	8		
15:45	16:00	8	0	0	0	0	0	0	8	8		
16:00	16:15	6	0	0	0	0	0	0	6	6		
16:15	16:30	6	1	0	0	0	0	0	7	7		
16:30	16:45	7	2	0	0	0	0	0	9	9		
16:45	17:00	6	1	0	0	0	0	0	7	7		
17:00	17:15	7	1	0	0	0	0	0	8	8		
17:15	17:30	6	0	1	0	0	0	0	7	7.5		
17:30	17:45	4	0	0	0	0	0	0	4	4		
17:45	18:00	5	0	0	0	0	0	0	5	5		
<b>P/TOT</b>		<b>88</b>	<b>8</b>	<b>1</b>	<b>0</b>	<b>1</b>	<b>0</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>99</b>	<b>99.7</b>

Period I Total: 11 0 0 0 1 0 1 0 0 13 13.2  
 Period II Total: 77 8 1 0 0 0 0 0 0 86 86.5

		per hour							TOT	PCU.h		
from	to	CAR	LGV	OGV1	OGV2	PSV	MCL	PCL				
PCU factor		1	1	1.5	2.3	2	0.4	0.2				
INTERVAL		01:00	01:00	01:00	01:00	01:00	01:00	01:00	01:00	01:00		
07:30	08:30	3	0	0	0	0	0	0	3	3		
07:45	08:45	3	0	0	0	0	0	0	3	3		
08:00	09:00	3	0	0	0	0	0	1	4	3.2		
08:15	09:15	6	0	0	0	0	0	1	7	6.2		
08:30	09:30	8	0	0	0	1	0	1	10	10.2		
08:45	09:45	8	0	0	0	1	0	1	10	10.2		
09:00	10:00	7	0	0	0	1	0	0	8	9		
09:15	10:15	4	0	0	0	1	0	0	5	6		
15:00	16:00	30	3	0	0	0	0	0	33	33		
15:15	16:15	30	2	0	0	0	0	0	32	32		
15:30	16:30	27	2	0	0	0	0	0	29	29		
15:45	16:45	27	3	0	0	0	0	0	30	30		
16:00	17:00	25	4	0	0	0	0	0	29	29		
16:15	17:15	26	5	0	0	0	0	0	31	31		
16:30	17:30	26	4	1	0	0	0	0	31	31.5		
16:45	17:45	23	2	1	0	0	0	0	26	26.5		
17:00	18:00	22	1	1	0	0	0	0	24	24.5		
17:15	18:15	15	0	1	0	0	0	0	16	16.5		
17:30	18:30	9	0	0	0	0	0	0	9	9		
17:45	18:45	5	0	0	0	0	0	0	5	5		
<b>P/TOT</b>		<b>88</b>	<b>8</b>	<b>1</b>	<b>0</b>	<b>1</b>	<b>0</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>99</b>	<b>99.7</b>



SITE: 1  
 LOCATION: Manor Road / Retail Park Access  
 TOTAL ARMS: A B C

from arm: **B**  
 to arm: **all**

period I period II  
 from: 07:30 15:00  
 to: 09:30 18:00

DATE: 02/10/2018  
 DAY: Tuesday

		per quarter of an hour							TOT	PCU		
from	to	CAR	LGV	OGV1	OGV2	PSV	MCL	PCL				
PCU factor		1	1	1.5	2.3	2	0.4	0.2				
INTERVAL		00:15	00:15	00:15	00:15	00:15	00:15	00:15	00:15	00:15		
07:30	07:45	2	0	1	0	2	0	0	5	7.5		
07:45	08:00	2	0	0	0	3	0	0	5	8		
08:00	08:15	2	1	0	0	2	0	0	5	7		
08:15	08:30	7	3	0	0	2	0	0	12	14		
08:30	08:45	3	0	0	0	3	0	0	6	9		
08:45	09:00	3	0	0	0	1	0	1	5	5.2		
09:00	09:15	7	2	0	0	2	0	0	11	13		
09:15	09:30	15	2	0	1	3	0	0	21	25.3		
15:00	15:15	15	1	0	0	2	0	0	18	20		
15:15	15:30	17	3	0	0	3	0	0	23	26		
15:30	15:45	22	1	0	0	3	2	1	29	30		
15:45	16:00	15	1	0	0	2	0	0	18	20		
16:00	16:15	23	1	1	0	3	0	0	28	31.5		
16:15	16:30	19	2	0	0	2	0	0	23	25		
16:30	16:45	23	2	0	0	4	0	1	30	33.2		
16:45	17:00	13	2	0	0	1	0	0	16	17		
17:00	17:15	13	2	0	0	3	0	1	19	21.2		
17:15	17:30	14	1	1	0	2	0	0	18	20.5		
17:30	17:45	10	1	0	0	2	0	0	13	15		
17:45	18:00	13	0	0	0	0	0	0	13	13		
P/TOT		238	25	3	1	45	2	4	0	0	318	361.4

Period I Total: 41 8 1 1 18 0 1 0 0 70 89  
 Period II Total: 197 17 2 0 27 2 3 0 0 248 272.4

		per hour							TOT	PCU.h		
from	to	CAR	LGV	OGV1	OGV2	PSV	MCL	PCL				
PCU factor		1	1	1.5	2.3	2	0.4	0.2				
INTERVAL		01:00	01:00	01:00	01:00	01:00	01:00	01:00	01:00	01:00		
07:30	08:30	13	4	1	0	9	0	0	27	36.5		
07:45	08:45	14	4	0	0	10	0	0	28	38		
08:00	09:00	15	4	0	0	8	0	1	28	35.2		
08:15	09:15	20	5	0	0	8	0	1	34	41.2		
08:30	09:30	28	4	0	1	9	0	1	43	52.5		
08:45	09:45	25	4	0	1	6	0	1	37	43.5		
09:00	10:00	22	4	0	1	5	0	0	32	38.3		
09:15	10:15	15	2	0	1	3	0	0	21	25.3		
15:00	16:00	69	6	0	0	10	2	1	88	96		
15:15	16:15	77	6	1	0	11	2	1	98	107.5		
15:30	16:30	79	5	1	0	10	2	1	98	106.5		
15:45	16:45	80	6	1	0	11	0	1	99	109.7		
16:00	17:00	78	7	1	0	10	0	1	97	106.7		
16:15	17:15	68	8	0	0	10	0	2	88	96.4		
16:30	17:30	63	7	1	0	10	0	2	83	91.9		
16:45	17:45	50	6	1	0	8	0	1	66	73.7		
17:00	18:00	50	4	1	0	7	0	1	63	69.7		
17:15	18:15	37	2	1	0	4	0	0	44	48.5		
17:30	18:30	23	1	0	0	2	0	0	26	28		
17:45	18:45	13	0	0	0	0	0	0	13	13		
P/TOT		238	25	3	1	45	2	4	0	0	318	361.4



SITE: 1  
 LOCATION: Manor Road / Retail Park Access  
 TOTAL ARMS: A B C

from arm: **all**  
 to arm: **B**

period I period II  
 from: 07:30 15:00  
 to: 09:30 18:00

DATE: 02/10/2018  
 DAY: Tuesday

from	to	CAR	LGV	OGV1	OGV2	PSV	MCL	PCL	TOT	PCU		
PCU factor		1	1	1.5	2.3	2	0.4	0.2				
INTERVAL		00:15	00:15	00:15	00:15	00:15	00:15	00:15	00:15	00:15		
<b>07:30</b>	<b>07:45</b>	1	0	1	0	1	0	0	<b>3</b>	<b>4.5</b>		
07:45	08:00	4	1	0	0	3	0	0	<b>8</b>	<b>11</b>		
08:00	08:15	2	1	0	0	2	0	0	<b>5</b>	<b>7</b>		
08:15	08:30	9	1	0	0	3	0	0	<b>13</b>	<b>16</b>		
<b>08:30</b>	<b>08:45</b>	5	0	0	0	2	0	0	<b>7</b>	<b>9</b>		
08:45	09:00	8	2	0	0	0	0	1	<b>11</b>	<b>10.2</b>		
09:00	09:15	13	0	0	0	2	0	0	<b>15</b>	<b>17</b>		
09:15	09:30	11	5	0	0	3	0	1	<b>20</b>	<b>22.2</b>		
15:00	15:15	19	0	0	0	2	0	0	<b>21</b>	<b>23</b>		
15:15	15:30	18	1	0	0	3	1	0	<b>23</b>	<b>25.4</b>		
<b>15:30</b>	<b>15:45</b>	17	2	0	0	3	1	1	<b>24</b>	<b>25.6</b>		
15:45	16:00	16	0	0	0	3	0	1	<b>20</b>	<b>22.2</b>		
16:00	16:15	29	1	0	0	1	0	0	<b>31</b>	<b>32</b>		
16:15	16:30	11	3	0	0	4	0	0	<b>18</b>	<b>22</b>		
<b>16:30</b>	<b>16:45</b>	15	2	1	0	3	0	1	<b>22</b>	<b>24.7</b>		
16:45	17:00	13	2	0	0	0	0	0	<b>15</b>	<b>15</b>		
17:00	17:15	11	0	0	0	3	0	0	<b>14</b>	<b>17</b>		
17:15	17:30	15	1	0	0	2	0	0	<b>18</b>	<b>20</b>		
<b>17:30</b>	<b>17:45</b>	12	0	0	0	1	0	0	<b>13</b>	<b>14</b>		
17:45	18:00	12	0	0	0	2	0	1	<b>15</b>	<b>16.2</b>		
<b>P/TOT</b>		<b>241</b>	<b>22</b>	<b>2</b>	<b>0</b>	<b>43</b>	<b>2</b>	<b>6</b>	<b>0</b>	<b>0</b>	<b>316</b>	<b>354</b>

Period I Total: 53 10 1 0 16 0 2 0 0 **82** 96.9  
 Period II Total: 188 12 1 0 27 2 4 0 0 **234** 257.1

from	to	CAR	LGV	OGV1	OGV2	PSV	MCL	PCL	TOT	PCU.h		
PCU factor		1	1	1.5	2.3	2	0.4	0.2				
INTERVAL		01:00	01:00	01:00	01:00	01:00	01:00	01:00	01:00	01:00		
<b>07:30</b>	<b>08:30</b>	<b>16</b>	<b>3</b>	<b>1</b>	<b>0</b>	<b>9</b>	<b>0</b>	<b>0</b>	<b>29</b>	<b>38.5</b>		
07:45	08:45	20	3	0	0	10	0	0	<b>33</b>	<b>43</b>		
08:00	09:00	24	4	0	0	7	0	1	<b>36</b>	<b>42.2</b>		
08:15	09:15	35	3	0	0	7	0	1	<b>46</b>	<b>52.2</b>		
<b>08:30</b>	<b>09:30</b>	<b>37</b>	<b>7</b>	<b>0</b>	<b>0</b>	<b>7</b>	<b>0</b>	<b>2</b>	<b>53</b>	<b>58.4</b>		
08:45	09:45	32	7	0	0	5	0	2	<b>46</b>	<b>49.4</b>		
09:00	10:00	24	5	0	0	5	0	1	<b>35</b>	<b>39.2</b>		
09:15	10:15	11	5	0	0	3	0	1	<b>20</b>	<b>22.2</b>		
15:00	16:00	70	3	0	0	11	2	2	<b>88</b>	<b>96.2</b>		
15:15	16:15	80	4	0	0	10	2	2	<b>98</b>	<b>105.2</b>		
<b>15:30</b>	<b>16:30</b>	<b>73</b>	<b>6</b>	<b>0</b>	<b>0</b>	<b>11</b>	<b>1</b>	<b>2</b>	<b>93</b>	<b>101.8</b>		
15:45	16:45	71	6	1	0	11	0	2	<b>91</b>	<b>100.9</b>		
16:00	17:00	68	8	1	0	8	0	1	<b>86</b>	<b>93.7</b>		
16:15	17:15	50	7	1	0	10	0	1	<b>69</b>	<b>78.7</b>		
<b>16:30</b>	<b>17:30</b>	<b>54</b>	<b>5</b>	<b>1</b>	<b>0</b>	<b>8</b>	<b>0</b>	<b>1</b>	<b>69</b>	<b>76.7</b>		
16:45	17:45	51	3	0	0	6	0	0	<b>60</b>	<b>66</b>		
17:00	18:00	50	1	0	0	8	0	1	<b>60</b>	<b>67.2</b>		
17:15	18:15	39	1	0	0	5	0	1	<b>46</b>	<b>50.2</b>		
<b>17:30</b>	<b>18:30</b>	<b>24</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>3</b>	<b>0</b>	<b>1</b>	<b>28</b>	<b>30.2</b>		
17:45	18:45	12	0	0	0	2	0	1	<b>15</b>	<b>16.2</b>		
<b>P/TOT</b>		<b>241</b>	<b>22</b>	<b>2</b>	<b>0</b>	<b>43</b>	<b>2</b>	<b>6</b>	<b>0</b>	<b>0</b>	<b>316</b>	<b>354</b>



SITE: **1**  
 LOCATION: Manor Road / Retail Park Access  
 TOTAL ARMS:

from arm: **C**  
 to arm: **A**

period I period II  
 from: 07:30 15:00  
 to: 09:30 18:00

DATE: 02/10/2018  
 DAY: Tuesday

		per quarter of an hour							TOT	PCU		
from	to	CAR	LGV	OGV1	OGV2	PSV	MCL	PCL				
PCU factor		1	1	1.5	2.3	2	0.4	0.2				
INTERVAL		00:15	00:15	00:15	00:15	00:15	00:15	00:15	00:15	00:15		
07:30	07:45	77	13	3	0	5	4	2	104	106.5		
07:45	08:00	47	8	1	0	5	1	2	64	67.3		
08:00	08:15	61	10	1	1	1	5	5	84	79.8		
08:15	08:30	58	10	2	1	2	1	4	78	78.5		
08:30	08:45	61	11	1	0	0	4	3	80	75.7		
08:45	09:00	78	13	1	1	0	1	3	97	95.8		
09:00	09:15	61	4	2	0	0	1	1	69	68.6		
09:15	09:30	63	10	1	0	2	1	0	77	78.9		
15:00	15:15	55	8	3	0	1	1	4	72	70.7		
15:15	15:30	39	11	5	1	3	1	1	61	66.4		
15:30	15:45	72	11	1	2	1	1	1	89	91.7		
15:45	16:00	46	11	3	0	3	1	0	64	67.9		
16:00	16:15	53	11	2	1	1	1	1	70	71.9		
16:15	16:30	57	12	1	1	2	0	2	75	77.2		
16:30	16:45	53	10	3	0	1	1	3	71	70.5		
16:45	17:00	54	13	1	0	2	1	1	72	73.1		
17:00	17:15	56	18	0	0	3	1	2	80	80.8		
17:15	17:30	80	15	1	0	1	1	4	102	99.7		
17:30	17:45	75	8	5	0	1	4	2	95	94.5		
17:45	18:00	73	12	0	0	2	2	1	90	90		
P/TOT		1219	219	37	8	36	33	42	0	0	1594	1606

Period I Total: 506 79 12 3 15 18 20 0 0 653 651.1  
 Period II Total: 713 140 25 5 21 15 22 0 0 941 954.4

		per hour							TOT	PCU.h		
from	to	CAR	LGV	OGV1	OGV2	PSV	MCL	PCL				
PCU factor		1	1	1.5	2.3	2	0.4	0.2				
INTERVAL		01:00	01:00	01:00	01:00	01:00	01:00	01:00	01:00	01:00		
07:30	08:30	243	41	7	2	13	11	13	330	332.1		
07:45	08:45	227	39	5	2	8	11	14	306	301.3		
08:00	09:00	258	44	5	3	3	11	15	339	329.8		
08:15	09:15	258	38	6	2	2	7	11	324	318.6		
08:30	09:30	263	38	5	1	2	7	7	323	319		
08:45	09:45	202	27	4	1	2	3	4	243	243.3		
09:00	10:00	124	14	3	0	2	2	1	146	147.5		
09:15	10:15	63	10	1	0	2	1	0	77	78.9		
15:00	16:00	212	41	12	3	8	4	6	286	296.7		
15:15	16:15	210	44	11	4	8	4	3	284	297.9		
15:30	16:30	228	45	7	4	7	3	4	298	308.7		
15:45	16:45	209	44	9	2	7	3	6	280	287.5		
16:00	17:00	217	46	7	2	6	3	7	288	292.7		
16:15	17:15	220	53	5	1	8	3	8	298	301.6		
16:30	17:30	243	56	5	0	7	4	10	325	324.1		
16:45	17:45	265	54	7	0	7	7	9	349	348.1		
17:00	18:00	284	53	6	0	7	8	9	367	365		
17:15	18:15	228	35	6	0	4	7	7	287	284.2		
17:30	18:30	148	20	5	0	3	6	3	185	184.5		
17:45	18:45	73	12	0	0	2	2	1	90	90		
P/TOT		1219	219	37	8	36	33	42	0	0	1594	1606



SITE: **1**  
 LOCATION: Manor Road / Retail Park Access  
 TOTAL ARMS: A B C

from arm: **C**  
 to arm: **B**

period I period II  
 from: 07:30 15:00  
 to: 09:30 18:00

DATE: 02/10/2018  
 DAY: Tuesday

		per quarter of an hour							TOT	PCU		
from	to	CAR	LGV	OGV1	OGV2	PSV	MCL	PCL				
PCU factor		1	1	1.5	2.3	2	0.4	0.2				
INTERVAL		00:15	00:15	00:15	00:15	00:15	00:15	00:15	00:15	00:15		
07:30	07:45	0	0	0	0	0	0	0	0	0		
07:45	08:00	1	0	0	0	0	0	0	1	1		
08:00	08:15	0	0	0	0	0	0	0	0	0		
08:15	08:30	1	0	0	0	0	0	0	1	1		
08:30	08:45	1	0	0	0	0	0	0	1	1		
08:45	09:00	4	1	0	0	0	0	0	5	5		
09:00	09:15	7	0	0	0	0	0	0	7	7		
09:15	09:30	5	0	0	0	1	0	0	6	7		
15:00	15:15	9	0	0	0	0	0	0	9	9		
15:15	15:30	6	1	0	0	0	0	0	7	7		
15:30	15:45	2	1	0	0	0	0	0	3	3		
15:45	16:00	7	0	0	0	0	0	0	7	7		
16:00	16:15	13	1	0	0	0	0	0	14	14		
16:15	16:30	9	1	0	0	0	0	0	10	10		
16:30	16:45	6	0	0	0	0	0	1	7	6.2		
16:45	17:00	8	1	0	0	0	0	0	9	9		
17:00	17:15	4	0	0	0	0	0	0	4	4		
17:15	17:30	9	1	0	0	0	0	0	10	10		
17:30	17:45	6	0	0	0	0	0	0	6	6		
17:45	18:00	4	0	0	0	0	0	1	5	4.2		
P/TOT		102	7	0	0	1	0	2	0	0	112	111.4

Period I Total: 19 1 0 0 1 0 0 0 0 21 22  
 Period II Total: 83 6 0 0 0 0 2 0 0 91 89.4

		per hour							TOT	PCU.h		
from	to	CAR	LGV	OGV1	OGV2	PSV	MCL	PCL				
PCU factor		1	1	1.5	2.3	2	0.4	0.2				
INTERVAL		01:00	01:00	01:00	01:00	01:00	01:00	01:00	01:00	01:00		
07:30	08:30	2	0	0	0	0	0	0	2	2		
07:45	08:45	3	0	0	0	0	0	0	3	3		
08:00	09:00	6	1	0	0	0	0	0	7	7		
08:15	09:15	13	1	0	0	0	0	0	14	14		
08:30	09:30	17	1	0	0	1	0	0	19	20		
08:45	09:45	16	1	0	0	1	0	0	18	19		
09:00	10:00	12	0	0	0	1	0	0	13	14		
09:15	10:15	5	0	0	0	1	0	0	6	7		
15:00	16:00	24	2	0	0	0	0	0	26	26		
15:15	16:15	28	3	0	0	0	0	0	31	31		
15:30	16:30	31	3	0	0	0	0	0	34	34		
15:45	16:45	35	2	0	0	0	0	1	38	37.2		
16:00	17:00	36	3	0	0	0	0	1	40	39.2		
16:15	17:15	27	2	0	0	0	0	1	30	29.2		
16:30	17:30	27	2	0	0	0	0	1	30	29.2		
16:45	17:45	27	2	0	0	0	0	0	29	29		
17:00	18:00	23	1	0	0	0	0	1	25	24.2		
17:15	18:15	19	1	0	0	0	0	1	21	20.2		
17:30	18:30	10	0	0	0	0	0	1	11	10.2		
17:45	18:45	4	0	0	0	0	0	1	5	4.2		
P/TOT		102	7	0	0	1	0	2	0	0	112	111.4



SITE: 1  
 LOCATION: Manor Road / Retail Park Access  
 TOTAL ARMS: A B C

from arm: C  
 to arm: C

period I period II  
 from: 07:30 15:00  
 to: 09:30 18:00

DATE: 02/10/2018  
 DAY: Tuesday

**per quarter of an hour**

from	to	CAR	LGV	OGV1	OGV2	PSV	MCL	PCL	TOT	PCU
PCU factor		1	1	1.5	2.3	2	0.4	0.2		
INTERVAL		00:15	00:15	00:15	00:15	00:15	00:15	00:15	00:15	00:15
07:30	07:45	0	0	0	0	0	0	0	0	0
07:45	08:00	0	0	0	0	0	0	0	0	0
08:00	08:15	0	0	0	0	0	0	0	0	0
08:15	08:30	0	0	0	0	0	0	0	0	0
08:30	08:45	0	0	0	0	0	0	0	0	0
08:45	09:00	0	0	0	0	0	0	0	0	0
09:00	09:15	0	0	0	0	0	0	0	0	0
09:15	09:30	0	0	0	0	0	0	0	0	0
15:00	15:15	0	0	0	0	0	0	0	0	0
15:15	15:30	0	0	0	0	0	0	0	0	0
15:30	15:45	0	0	0	0	0	0	0	0	0
15:45	16:00	0	0	0	0	0	0	0	0	0
16:00	16:15	0	0	0	0	0	0	0	0	0
16:15	16:30	0	0	0	0	0	0	0	0	0
16:30	16:45	0	0	0	0	0	0	0	0	0
16:45	17:00	0	0	0	0	0	0	0	0	0
17:00	17:15	0	0	0	0	0	0	0	0	0
17:15	17:30	0	0	0	0	0	0	0	0	0
17:30	17:45	0	0	0	0	0	0	0	0	0
17:45	18:00	0	0	0	0	0	0	0	0	0
<b>P/TOT</b>		<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
<b>Period I Total:</b>		0	0	0	0	0	0	0	0	0
<b>Period II Total:</b>		0	0	0	0	0	0	0	0	0

**per hour**

from	to	CAR	LGV	OGV1	OGV2	PSV	MCL	PCL	TOT	PCU.h
PCU factor		1	1	1.5	2.3	2	0.4	0.2		
INTERVAL		01:00	01:00	01:00	01:00	01:00	01:00	01:00	01:00	01:00
07:30	08:30	0	0	0	0	0	0	0	0	0
07:45	08:45	0	0	0	0	0	0	0	0	0
08:00	09:00	0	0	0	0	0	0	0	0	0
08:15	09:15	0	0	0	0	0	0	0	0	0
08:30	09:30	0	0	0	0	0	0	0	0	0
08:45	09:45	0	0	0	0	0	0	0	0	0
09:00	10:00	0	0	0	0	0	0	0	0	0
09:15	10:15	0	0	0	0	0	0	0	0	0
15:00	16:00	0	0	0	0	0	0	0	0	0
15:15	16:15	0	0	0	0	0	0	0	0	0
15:30	16:30	0	0	0	0	0	0	0	0	0
15:45	16:45	0	0	0	0	0	0	0	0	0
16:00	17:00	0	0	0	0	0	0	0	0	0
16:15	17:15	0	0	0	0	0	0	0	0	0
16:30	17:30	0	0	0	0	0	0	0	0	0
16:45	17:45	0	0	0	0	0	0	0	0	0
17:00	18:00	0	0	0	0	0	0	0	0	0
17:15	18:15	0	0	0	0	0	0	0	0	0
17:30	18:30	0	0	0	0	0	0	0	0	0
17:45	18:45	0	0	0	0	0	0	0	0	0
<b>P/TOT</b>		<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>



SITE: 1  
 LOCATION: Manor Road / Retail Park Access  
 TOTAL ARMS: A B C

from arm: **C**  
 to arm: **all**

period I period II  
 from: 07:30 15:00  
 to: 09:30 18:00

DATE: 02/10/2018  
 DAY: Tuesday

		per quarter of an hour							TOT	PCU		
from	to	CAR	LGV	OGV1	OGV2	PSV	MCL	PCL				
PCU factor		1	1	1.5	2.3	2	0.4	0.2				
INTERVAL		00:15	00:15	00:15	00:15	00:15	00:15	00:15	00:15	00:15		
<b>07:30</b>	<b>07:45</b>	77	13	3	0	5	4	2	<b>104</b>	106.5		
07:45	08:00	48	8	1	0	5	1	2	<b>65</b>	68.3		
08:00	08:15	61	10	1	1	1	5	5	<b>84</b>	79.8		
08:15	08:30	59	10	2	1	2	1	4	<b>79</b>	79.5		
<b>08:30</b>	<b>08:45</b>	62	11	1	0	0	4	3	<b>81</b>	76.7		
08:45	09:00	82	14	1	1	0	1	3	<b>102</b>	100.8		
09:00	09:15	68	4	2	0	0	1	1	<b>76</b>	75.6		
09:15	09:30	68	10	1	0	3	1	0	<b>83</b>	85.9		
15:00	15:15	64	8	3	0	1	1	4	<b>81</b>	79.7		
15:15	15:30	45	12	5	1	3	1	1	<b>68</b>	73.4		
<b>15:30</b>	<b>15:45</b>	74	12	1	2	1	1	1	<b>92</b>	94.7		
15:45	16:00	53	11	3	0	3	1	0	<b>71</b>	74.9		
16:00	16:15	66	12	2	1	1	1	1	<b>84</b>	85.9		
16:15	16:30	66	13	1	1	2	0	2	<b>85</b>	87.2		
<b>16:30</b>	<b>16:45</b>	59	10	3	0	1	1	4	<b>78</b>	76.7		
16:45	17:00	62	14	1	0	2	1	1	<b>81</b>	82.1		
17:00	17:15	60	18	0	0	3	1	2	<b>84</b>	84.8		
17:15	17:30	89	16	1	0	1	1	4	<b>112</b>	109.7		
<b>17:30</b>	<b>17:45</b>	81	8	5	0	1	4	2	<b>101</b>	100.5		
17:45	18:00	77	12	0	0	2	2	2	<b>95</b>	94.2		
<b>P/TOT</b>		<b>1321</b>	<b>226</b>	<b>37</b>	<b>8</b>	<b>37</b>	<b>33</b>	<b>44</b>	<b>0</b>	<b>0</b>	<b>1706</b>	<b>1717</b>

Period I Total: 525 80 12 3 16 18 20 0 0 **674** 673.1  
 Period II Total: 796 146 25 5 21 15 24 0 0 **1032** 1044

		per hour							TOT	PCU.h		
from	to	CAR	LGV	OGV1	OGV2	PSV	MCL	PCL				
PCU factor		1	1	1.5	2.3	2	0.4	0.2				
INTERVAL		01:00	01:00	01:00	01:00	01:00	01:00	01:00	01:00	01:00		
<b>07:30</b>	<b>08:30</b>	<b>245</b>	<b>41</b>	<b>7</b>	<b>2</b>	<b>13</b>	<b>11</b>	<b>13</b>	<b>332</b>	334.1		
07:45	08:45	230	39	5	2	8	11	14	<b>309</b>	304.3		
08:00	09:00	264	45	5	3	3	11	15	<b>346</b>	336.8		
08:15	09:15	271	39	6	2	2	7	11	<b>338</b>	332.6		
<b>08:30</b>	<b>09:30</b>	<b>280</b>	<b>39</b>	<b>5</b>	<b>1</b>	<b>3</b>	<b>7</b>	<b>7</b>	<b>342</b>	<b>339</b>		
08:45	09:45	218	28	4	1	3	3	4	<b>261</b>	262.3		
09:00	10:00	136	14	3	0	3	2	1	<b>159</b>	161.5		
09:15	10:15	68	10	1	0	3	1	0	<b>83</b>	85.9		
15:00	16:00	236	43	12	3	8	4	6	<b>312</b>	322.7		
15:15	16:15	238	47	11	4	8	4	3	<b>315</b>	328.9		
<b>15:30</b>	<b>16:30</b>	<b>259</b>	<b>48</b>	<b>7</b>	<b>4</b>	<b>7</b>	<b>3</b>	<b>4</b>	<b>332</b>	<b>342.7</b>		
15:45	16:45	244	46	9	2	7	3	7	<b>318</b>	324.7		
16:00	17:00	253	49	7	2	6	3	8	<b>328</b>	331.9		
16:15	17:15	247	55	5	1	8	3	9	<b>328</b>	330.8		
<b>16:30</b>	<b>17:30</b>	<b>270</b>	<b>58</b>	<b>5</b>	<b>0</b>	<b>7</b>	<b>4</b>	<b>11</b>	<b>355</b>	353.3		
16:45	17:45	292	56	7	0	7	7	9	<b>378</b>	377.1		
17:00	18:00	307	54	6	0	7	8	10	<b>392</b>	<b>389.2</b>		
17:15	18:15	247	36	6	0	4	7	8	<b>308</b>	304.4		
<b>17:30</b>	<b>18:30</b>	<b>158</b>	<b>20</b>	<b>5</b>	<b>0</b>	<b>3</b>	<b>6</b>	<b>4</b>	<b>196</b>	194.7		
17:45	18:45	77	12	0	0	2	2	2	<b>95</b>	94.2		
<b>P/TOT</b>		<b>1321</b>	<b>226</b>	<b>37</b>	<b>8</b>	<b>37</b>	<b>33</b>	<b>44</b>	<b>0</b>	<b>0</b>	<b>1706</b>	<b>1717</b>



SITE: 1  
 LOCATION: Manor Road / Retail Park Access  
 TOTAL ARMS: A B C

from arm: all  
 to arm: C

period I period II  
 from: 07:30 15:00  
 to: 09:30 18:00

DATE: 02/10/2018  
 DAY: Tuesday

from	to	CAR	LGV	OGV1	OGV2	PSV	MCL	PCL	TOT	PCU		
PCU factor		1	1	1.5	2.3	2	0.4	0.2				
INTERVAL		00:15	00:15	00:15	00:15	00:15	00:15	00:15	00:15	00:15		
07:30	07:45	30	15	4	0	2	0	2	53	55.4		
07:45	08:00	39	12	3	1	0	0	1	56	58		
08:00	08:15	29	6	4	0	1	1	3	44	44		
08:15	08:30	38	8	2	0	0	2	4	54	50.6		
08:30	08:45	56	8	3	0	0	1	3	71	69.5		
08:45	09:00	59	9	2	0	1	1	1	73	73.6		
09:00	09:15	30	7	5	0	0	0	3	45	45.1		
09:15	09:30	38	6	3	0	2	0	1	50	52.7		
15:00	15:15	52	10	1	0	1	3	2	69	67.1		
15:15	15:30	36	7	3	0	1	0	1	48	49.7		
15:30	15:45	46	8	2	0	0	2	3	61	58.4		
15:45	16:00	41	8	0	0	0	0	1	50	49.2		
16:00	16:15	38	5	1	0	1	1	1	47	47.1		
16:15	16:30	40	6	1	0	0	3	1	51	48.9		
16:30	16:45	42	8	1	0	1	1	0	53	53.9		
16:45	17:00	43	7	0	0	0	0	1	51	50.2		
17:00	17:15	48	6	2	0	1	2	1	60	60		
17:15	17:30	45	6	2	0	0	3	4	60	56		
17:30	17:45	44	4	0	0	0	1	4	53	49.2		
17:45	18:00	43	5	0	0	0	2	4	54	49.6		
P/TOT		837	151	39	1	11	23	41	0	0	1103	1088

Period I Total: 319 71 26 1 6 5 18 0 0 446 448.9  
 Period II Total: 518 80 13 0 5 18 23 0 0 657 639.3

from	to	CAR	LGV	OGV1	OGV2	PSV	MCL	PCL	TOT	PCU.h		
PCU factor		1	1	1.5	2.3	2	0.4	0.2				
INTERVAL		01:00	01:00	01:00	01:00	01:00	01:00	01:00	01:00	01:00		
07:30	08:30	136	41	13	1	3	3	10	207	208		
07:45	08:45	162	34	12	1	1	4	11	225	222.1		
08:00	09:00	182	31	11	0	2	5	11	242	237.7		
08:15	09:15	183	32	12	0	1	4	11	243	238.8		
08:30	09:30	183	30	13	0	3	2	8	239	240.9		
08:45	09:45	127	22	10	0	3	1	5	168	171.4		
09:00	10:00	68	13	8	0	2	0	4	95	97.8		
09:15	10:15	38	6	3	0	2	0	1	50	52.7		
15:00	16:00	175	33	6	0	2	5	7	228	224.4		
15:15	16:15	161	28	6	0	2	3	6	206	204.4		
15:30	16:30	165	27	4	0	1	6	6	209	203.6		
15:45	16:45	161	27	3	0	2	5	3	201	199.1		
16:00	17:00	163	26	3	0	2	5	3	202	200.1		
16:15	17:15	173	27	4	0	2	6	3	215	213		
16:30	17:30	178	27	5	0	2	6	6	224	220.1		
16:45	17:45	180	23	4	0	1	6	10	224	215.4		
17:00	18:00	180	21	4	0	1	8	13	227	214.8		
17:15	18:15	132	15	2	0	0	6	12	167	154.8		
17:30	18:30	87	9	0	0	0	3	8	107	98.8		
17:45	18:45	43	5	0	0	0	2	4	54	49.6		
P/TOT		837	151	39	1	11	23	41	0	0	1103	1088



SITE: 1  
 LOCATION: Manor Road / Retail Park Access  
 TOTAL ARMS: A B C

from arm: **all**  
 to arm: **all**

period I period II  
 from: 07:30 15:00  
 to: 09:30 18:00

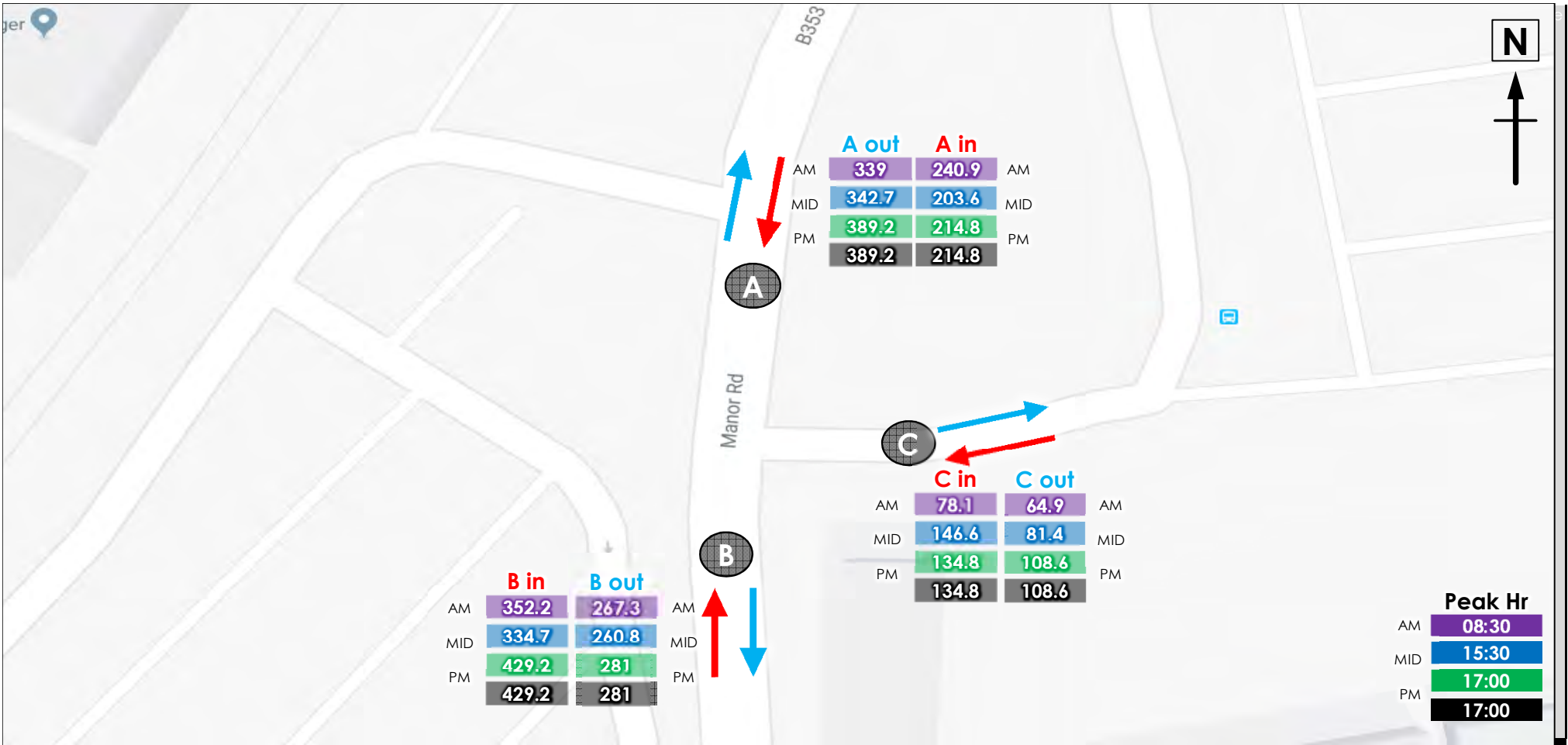
DATE: 02/10/2018  
 DAY: Tuesday

from	to	CAR	LGV	OGV1	OGV2	PSV	MCL	PCL	TOT	PCU
PCU factor		1	1	1.5	2.3	2	0.4	0.2		
INTERVAL		00:15	00:15	00:15	00:15	00:15	00:15	00:15	00:15	00:15
07:30	07:45	110	28	9	0	10	4	4	165	173.9
07:45	08:00	91	21	4	1	11	1	3	132	143.3
08:00	08:15	94	18	5	1	6	6	8	138	137.8
08:15	08:30	110	22	4	1	7	3	8	155	157.1
08:30	08:45	125	19	4	0	5	5	6	164	163.2
08:45	09:00	147	24	3	1	2	2	5	184	183.6
09:00	09:15	108	13	7	0	4	1	4	137	140.7
09:15	09:30	123	23	4	1	9	1	2	163	173.1
15:00	15:15	135	18	4	0	6	4	6	173	173.8
15:15	15:30	101	21	8	1	10	2	2	145	157.5
15:30	15:45	150	21	3	2	7	6	6	195	197.7
15:45	16:00	110	20	3	0	8	1	2	144	151.3
16:00	16:15	137	18	4	1	6	2	2	170	176.5
16:15	16:30	121	22	2	1	8	3	3	160	166.1
16:30	16:45	126	20	5	0	9	2	5	167	173.3
16:45	17:00	117	23	1	0	3	1	2	147	148.3
17:00	17:15	121	25	2	0	10	3	4	165	171
17:15	17:30	148	23	3	0	5	4	8	191	188.7
17:30	17:45	137	13	5	0	4	5	6	170	168.7
17:45	18:00	136	17	0	0	4	4	6	167	163.8
P/TOT		2447	409	80	10	134	60	92	3232	3309

Period I Total: 908 168 40 5 54 23 40 0 0 1238 1273  
 Period II Total: 1539 241 40 5 80 37 52 0 0 1994 2037

from	to	CAR	LGV	OGV1	OGV2	PSV	MCL	PCL	TOT	PCU.h
PCU factor		1	1	1.5	2.3	2	0.4	0.2		
INTERVAL		01:00	01:00	01:00	01:00	01:00	01:00	01:00	01:00	01:00
07:30	08:30	405	89	22	3	34	14	23	590	612.1
07:45	08:45	420	80	17	3	29	15	25	589	601.4
08:00	09:00	476	83	16	3	20	16	27	641	641.7
08:15	09:15	490	78	18	2	18	11	23	640	644.6
08:30	09:30	503	79	18	2	20	9	17	648	660.6
08:45	09:45	378	60	14	2	15	4	11	484	497.4
09:00	10:00	231	36	11	1	13	2	6	300	313.8
09:15	10:15	123	23	4	1	9	1	2	163	173.1
15:00	16:00	496	80	18	3	31	13	16	657	680.3
15:15	16:15	498	80	18	4	31	11	12	654	683
15:30	16:30	518	81	12	4	29	12	13	669	691.6
15:45	16:45	494	80	14	2	31	8	12	641	667.2
16:00	17:00	501	83	12	2	26	8	12	644	664.2
16:15	17:15	485	90	10	1	30	9	14	639	658.7
16:30	17:30	512	91	11	0	27	10	19	670	681.3
16:45	17:45	523	84	11	0	22	13	20	673	676.7
17:00	18:00	542	78	10	0	23	16	24	693	692.2
17:15	18:15	421	53	8	0	13	13	20	528	521.2
17:30	18:30	273	30	5	0	8	9	12	337	332.5
17:45	18:45	136	17	0	0	4	4	6	167	163.8
P/TOT		2447	409	80	10	134	60	92	3232	3309

from: to:  
 08:30 09:30 AM Peak Hour AM 07:00 10:00 AM Peak PCU 660.6  
 15:30 16:30 MID Peak Hour MID 10:00 16:00 MID Peak PCU 691.6  
 17:00 18:00 PM Peak Hour PM 16:00 19:00 PM Peak PCU 692.2  
 17:00 18:00 TOT Peak Hour TOT Peak PCU 692.2



Arms: **A** **B** **C**

	<b>Site / Location:</b> <b>2</b> <b>Manor Road / Sainsbury's Access</b>	<b>Project No:</b> <b>9256</b>	<b>Drawing No:</b> <b>9256 - 02</b>	<b>Drawn By:</b> <b>MB</b>	
	<b>Survey Date:</b> <b>02/10/2018</b>	<b>Project Name:</b> <b>MANOR ROAD, RICHMOND</b>			
	<b>Survey Times:</b> from: <b>07:30</b> <b>15:00</b> to: <b>09:30</b> <b>18:00</b>	<b>Drawing Title:</b> <b>Junction Labels and Peak Hr PCU's</b>			



SITE: **2**  
 LOCATION: Manor Road / Sainsbury's Access  
 TOTAL ARMS: A B C

from arm: **A**  
 to arm: **A**

period I period II  
 from: 07:30 15:00  
 to: 09:30 18:00

DATE: 02/10/2018  
 DAY: Tuesday

		per quarter of an hour							TOT	PCU
from	to	CAR	LGV	OGV1	OGV2	PSV	MCL	PCL		
PCU factor		1	1	1.5	2.3	2	0.4	0.2		
INTERVAL		00:15	00:15	00:15	00:15	00:15	00:15	00:15	00:15	00:15
07:30	07:45	0	0	0	0	0	0	0	0	0
07:45	08:00	0	0	0	0	0	0	0	0	0
08:00	08:15	0	0	0	0	0	0	0	0	0
08:15	08:30	0	0	0	0	0	0	0	0	0
08:30	08:45	0	0	0	0	0	0	0	0	0
08:45	09:00	0	0	0	0	0	0	0	0	0
09:00	09:15	0	0	0	0	0	0	0	0	0
09:15	09:30	0	0	0	0	0	0	0	0	0
15:00	15:15	0	0	0	0	0	0	0	0	0
15:15	15:30	0	0	0	0	0	0	0	0	0
15:30	15:45	0	0	0	0	0	0	0	0	0
15:45	16:00	0	0	0	0	0	0	0	0	0
16:00	16:15	0	0	0	0	0	0	0	0	0
16:15	16:30	0	0	0	0	0	0	0	0	0
16:30	16:45	0	0	0	0	0	0	0	0	0
16:45	17:00	0	0	0	0	0	0	0	0	0
17:00	17:15	0	0	0	0	0	0	0	0	0
17:15	17:30	0	0	0	0	0	0	0	0	0
17:30	17:45	0	0	0	0	0	0	0	0	0
17:45	18:00	0	0	0	0	0	0	0	0	0
P/TOT		0	0	0	0	0	0	0	0	0
Period I Total:		0	0	0	0	0	0	0	0	0
Period II Total:		0	0	0	0	0	0	0	0	0

		per hour							TOT	PCU.h
from	to	CAR	LGV	OGV1	OGV2	PSV	MCL	PCL		
PCU factor		1	1	1.5	2.3	2	0.4	0.2		
INTERVAL		01:00	01:00	01:00	01:00	01:00	01:00	01:00	01:00	01:00
07:30	08:30	0	0	0	0	0	0	0	0	0
07:45	08:45	0	0	0	0	0	0	0	0	0
08:00	09:00	0	0	0	0	0	0	0	0	0
08:15	09:15	0	0	0	0	0	0	0	0	0
08:30	09:30	0	0	0	0	0	0	0	0	0
08:45	09:45	0	0	0	0	0	0	0	0	0
09:00	10:00	0	0	0	0	0	0	0	0	0
09:15	10:15	0	0	0	0	0	0	0	0	0
15:00	16:00	0	0	0	0	0	0	0	0	0
15:15	16:15	0	0	0	0	0	0	0	0	0
15:30	16:30	0	0	0	0	0	0	0	0	0
15:45	16:45	0	0	0	0	0	0	0	0	0
16:00	17:00	0	0	0	0	0	0	0	0	0
16:15	17:15	0	0	0	0	0	0	0	0	0
16:30	17:30	0	0	0	0	0	0	0	0	0
16:45	17:45	0	0	0	0	0	0	0	0	0
17:00	18:00	0	0	0	0	0	0	0	0	0
17:15	18:15	0	0	0	0	0	0	0	0	0
17:30	18:30	0	0	0	0	0	0	0	0	0
17:45	18:45	0	0	0	0	0	0	0	0	0
P/TOT		0	0	0	0	0	0	0	0	0



SITE: **2**  
 LOCATION: Manor Road / Sainsbury's Access  
 TOTAL ARMS: A B C

from arm: **A**  
 to arm: **B**

period I period II  
 from: 07:30 15:00  
 to: 09:30 18:00

DATE: 02/10/2018  
 DAY: Tuesday

		per quarter of an hour							TOT	PCU
from	to	CAR	LGV	OGV1	OGV2	PSV	MCL	PCL		
PCU factor		1	1	1.5	2.3	2	0.4	0.2		
INTERVAL		00:15	00:15	00:15	00:15	00:15	00:15	00:15	00:15	00:15
07:30	07:45	28	15	4	0	2	0	2	51	53.4
07:45	08:00	39	12	3	1	0	0	1	56	58
08:00	08:15	28	6	4	0	1	1	3	43	43
08:15	08:30	37	8	2	0	0	2	4	53	49.6
08:30	08:45	54	8	3	0	0	1	3	69	67.5
08:45	09:00	59	8	2	0	1	1	0	71	72.4
09:00	09:15	30	7	5	0	0	0	3	45	45.1
09:15	09:30	36	6	3	0	2	0	1	48	50.7
15:00	15:15	50	10	1	0	1	3	2	67	65.1
15:15	15:30	29	7	3	0	1	0	1	41	42.7
15:30	15:45	44	7	2	0	0	2	3	58	55.4
15:45	16:00	34	8	0	0	0	0	0	42	42
16:00	16:15	36	5	1	0	1	1	1	45	45.1
16:15	16:30	34	6	1	0	0	3	1	45	42.9
16:30	16:45	37	8	1	0	1	1	0	48	48.9
16:45	17:00	40	7	0	0	0	0	1	48	47.2
17:00	17:15	44	5	2	0	1	2	1	55	55
17:15	17:30	42	6	1	0	0	3	4	56	51.5
17:30	17:45	40	4	0	0	0	1	4	49	45.2
17:45	18:00	43	5	0	0	0	2	4	54	49.6
P/TOT		784	148	38	1	11	23	39	1044	1030

Period I Total: 311 70 26 1 6 5 17 0 0 436 439.7  
 Period II Total: 473 78 12 0 5 18 22 0 0 608 590.6

		per hour							TOT	PCU.h
from	to	CAR	LGV	OGV1	OGV2	PSV	MCL	PCL		
PCU factor		1	1	1.5	2.3	2	0.4	0.2		
INTERVAL		01:00	01:00	01:00	01:00	01:00	01:00	01:00	01:00	01:00
07:30	08:30	132	41	13	1	3	3	10	203	204
07:45	08:45	158	34	12	1	1	4	11	221	218.1
08:00	09:00	178	30	11	0	2	5	10	236	232.5
08:15	09:15	180	31	12	0	1	4	10	238	234.6
08:30	09:30	179	29	13	0	3	2	7	233	235.7
08:45	09:45	125	21	10	0	3	1	4	164	168.2
09:00	10:00	66	13	8	0	2	0	4	93	95.8
09:15	10:15	36	6	3	0	2	0	1	48	50.7
15:00	16:00	157	32	6	0	2	5	6	208	205.2
15:15	16:15	143	27	6	0	2	3	5	186	185.2
15:30	16:30	148	26	4	0	1	6	5	190	185.4
15:45	16:45	141	27	3	0	2	5	2	180	178.9
16:00	17:00	147	26	3	0	2	5	3	186	184.1
16:15	17:15	155	26	4	0	2	6	3	196	194
16:30	17:30	163	26	4	0	2	6	6	207	202.6
16:45	17:45	166	22	3	0	1	6	10	208	198.9
17:00	18:00	169	20	3	0	1	8	13	214	201.3
17:15	18:15	125	15	1	0	0	6	12	159	146.3
17:30	18:30	83	9	0	0	0	3	8	103	94.8
17:45	18:45	43	5	0	0	0	2	4	54	49.6
P/TOT		784	148	38	1	11	23	39	1044	1030



SITE: **2**  
 LOCATION: Manor Road / Sainsbury's Access  
 TOTAL ARMS: A B C

from arm: **A**  
 to arm: **C**

period I period II  
 from: 07:30 15:00  
 to: 09:30 18:00

DATE: 02/10/2018  
 DAY: Tuesday

		per quarter of an hour							TOT	PCU
from	to	CAR	LGV	OGV1	OGV2	PSV	MCL	PCL		
PCU factor		1	1	1.5	2.3	2	0.4	0.2		
INTERVAL		00:15	00:15	00:15	00:15	00:15	00:15	00:15	00:15	00:15
07:30	07:45	2	0	0	0	0	0	0	2	2
07:45	08:00	0	0	0	0	0	0	0	0	0
08:00	08:15	1	0	0	0	0	0	0	1	1
08:15	08:30	1	0	0	0	0	0	0	1	1
08:30	08:45	2	0	0	0	0	0	0	2	2
08:45	09:00	0	1	0	0	0	0	1	2	1.2
09:00	09:15	0	0	0	0	0	0	0	0	0
09:15	09:30	2	0	0	0	0	0	0	2	2
15:00	15:15	2	0	0	0	0	0	0	2	2
15:15	15:30	7	0	0	0	0	0	0	7	7
15:30	15:45	2	1	0	0	0	0	0	3	3
15:45	16:00	7	0	0	0	0	0	1	8	7.2
16:00	16:15	2	0	0	0	0	0	0	2	2
16:15	16:30	6	0	0	0	0	0	0	6	6
16:30	16:45	5	0	0	0	0	0	0	5	5
16:45	17:00	3	0	0	0	0	0	0	3	3
17:00	17:15	4	1	0	0	0	0	0	5	5
17:15	17:30	3	0	1	0	0	0	0	4	4.5
17:30	17:45	4	0	0	0	0	0	0	4	4
17:45	18:00	0	0	0	0	0	0	0	0	0
P/TOT		53	3	1	0	0	0	2	59	57.9

Period I Total: 8 1 0 0 0 0 1 0 0 10 9.2  
 Period II Total: 45 2 1 0 0 0 1 0 0 49 48.7

		per hour							TOT	PCU.h
from	to	CAR	LGV	OGV1	OGV2	PSV	MCL	PCL		
PCU factor		1	1	1.5	2.3	2	0.4	0.2		
INTERVAL		01:00	01:00	01:00	01:00	01:00	01:00	01:00	01:00	01:00
07:30	08:30	4	0	0	0	0	0	0	4	4
07:45	08:45	4	0	0	0	0	0	0	4	4
08:00	09:00	4	1	0	0	0	0	1	6	5.2
08:15	09:15	3	1	0	0	0	0	1	5	4.2
08:30	09:30	4	1	0	0	0	0	1	6	5.2
08:45	09:45	2	1	0	0	0	0	1	4	3.2
09:00	10:00	2	0	0	0	0	0	0	2	2
09:15	10:15	2	0	0	0	0	0	0	2	2
15:00	16:00	18	1	0	0	0	0	1	20	19.2
15:15	16:15	18	1	0	0	0	0	1	20	19.2
15:30	16:30	17	1	0	0	0	0	1	19	18.2
15:45	16:45	20	0	0	0	0	0	1	21	20.2
16:00	17:00	16	0	0	0	0	0	0	16	16
16:15	17:15	18	1	0	0	0	0	0	19	19
16:30	17:30	15	1	1	0	0	0	0	17	17.5
16:45	17:45	14	1	1	0	0	0	0	16	16.5
17:00	18:00	11	1	1	0	0	0	0	13	13.5
17:15	18:15	7	0	1	0	0	0	0	8	8.5
17:30	18:30	4	0	0	0	0	0	0	4	4
17:45	18:45	0	0	0	0	0	0	0	0	0
P/TOT		53	3	1	0	0	0	2	59	57.9



SITE: **2**  
 LOCATION: Manor Road / Sainsbury's Access  
 TOTAL ARMS: A B C

from arm: **A**  
 to arm: **all**

period I period II  
 from: 07:30 15:00  
 to: 09:30 18:00

DATE: 02/10/2018  
 DAY: Tuesday

		per quarter of an hour							TOT	PCU		
from	to	CAR	LGV	OGV1	OGV2	PSV	MCL	PCL				
PCU factor		1	1	1.5	2.3	2	0.4	0.2				
INTERVAL		00:15	00:15	00:15	00:15	00:15	00:15	00:15	00:15	00:15		
07:30	07:45	30	15	4	0	2	0	2	53	55.4		
07:45	08:00	39	12	3	1	0	0	1	56	58		
08:00	08:15	29	6	4	0	1	1	3	44	44		
08:15	08:30	38	8	2	0	0	2	4	54	50.6		
08:30	08:45	56	8	3	0	0	1	3	71	69.5		
08:45	09:00	59	9	2	0	1	1	1	73	73.6		
09:00	09:15	30	7	5	0	0	0	3	45	45.1		
09:15	09:30	38	6	3	0	2	0	1	50	52.7		
15:00	15:15	52	10	1	0	1	3	2	69	67.1		
15:15	15:30	36	7	3	0	1	0	1	48	49.7		
15:30	15:45	46	8	2	0	0	2	3	61	58.4		
15:45	16:00	41	8	0	0	0	0	1	50	49.2		
16:00	16:15	38	5	1	0	1	1	1	47	47.1		
16:15	16:30	40	6	1	0	0	3	1	51	48.9		
16:30	16:45	42	8	1	0	1	1	0	53	53.9		
16:45	17:00	43	7	0	0	0	0	1	51	50.2		
17:00	17:15	48	6	2	0	1	2	1	60	60		
17:15	17:30	45	6	2	0	0	3	4	60	56		
17:30	17:45	44	4	0	0	0	1	4	53	49.2		
17:45	18:00	43	5	0	0	0	2	4	54	49.6		
P/TOT		837	151	39	1	11	23	41	0	0	1103	1088

Period I Total: 319 71 26 1 6 5 18 0 0 **446** 448.9  
 Period II Total: 518 80 13 0 5 18 23 0 0 **657** 639.3

		per hour							TOT	PCU.h		
from	to	CAR	LGV	OGV1	OGV2	PSV	MCL	PCL				
PCU factor		1	1	1.5	2.3	2	0.4	0.2				
INTERVAL		01:00	01:00	01:00	01:00	01:00	01:00	01:00	01:00	01:00		
07:30	08:30	136	41	13	1	3	3	10	207	208		
07:45	08:45	162	34	12	1	1	4	11	225	222.1		
08:00	09:00	182	31	11	0	2	5	11	242	237.7		
08:15	09:15	183	32	12	0	1	4	11	243	238.8		
08:30	09:30	183	30	13	0	3	2	8	239	240.9		
08:45	09:45	127	22	10	0	3	1	5	168	171.4		
09:00	10:00	68	13	8	0	2	0	4	95	97.8		
09:15	10:15	38	6	3	0	2	0	1	50	52.7		
15:00	16:00	175	33	6	0	2	5	7	228	224.4		
15:15	16:15	161	28	6	0	2	3	6	206	204.4		
15:30	16:30	165	27	4	0	1	6	6	209	203.6		
15:45	16:45	161	27	3	0	2	5	3	201	199.1		
16:00	17:00	163	26	3	0	2	5	3	202	200.1		
16:15	17:15	173	27	4	0	2	6	3	215	213		
16:30	17:30	178	27	5	0	2	6	6	224	220.1		
16:45	17:45	180	23	4	0	1	6	10	224	215.4		
17:00	18:00	180	21	4	0	1	8	13	227	214.8		
17:15	18:15	132	15	2	0	0	6	12	167	154.8		
17:30	18:30	87	9	0	0	0	3	8	107	98.8		
17:45	18:45	43	5	0	0	0	2	4	54	49.6		
P/TOT		837	151	39	1	11	23	41	0	0	1103	1088



SITE: **2**  
 LOCATION: Manor Road / Sainsbury's Access  
 TOTAL ARMS: A B C

from arm: **all**  
 to arm: **A**

period I period II  
 from: 07:30 15:00  
 to: 09:30 18:00

DATE: 02/10/2018  
 DAY: Tuesday

from	to	CAR	LGV	OGV1	OGV2	PSV	MCL	PCL	TOT	PCU		
PCU factor		1	1	1.5	2.3	2	0.4	0.2				
INTERVAL		00:15	00:15	00:15	00:15	00:15	00:15	00:15	00:15	00:15		
<b>07:30</b>	<b>07:45</b>	77	13	3	0	5	4	2	<b>104</b>	106.5		
07:45	08:00	48	8	1	0	5	1	2	<b>65</b>	68.3		
08:00	08:15	61	10	1	1	1	5	5	<b>84</b>	79.8		
08:15	08:30	59	10	2	1	2	1	4	<b>79</b>	79.5		
<b>08:30</b>	<b>08:45</b>	62	11	1	0	0	4	3	<b>81</b>	76.7		
08:45	09:00	82	14	1	1	0	1	3	<b>102</b>	100.8		
09:00	09:15	68	4	2	0	0	1	1	<b>76</b>	75.6		
09:15	09:30	68	10	1	0	3	1	0	<b>83</b>	85.9		
15:00	15:15	64	8	3	0	1	1	4	<b>81</b>	79.7		
15:15	15:30	45	12	5	1	3	1	1	<b>68</b>	73.4		
<b>15:30</b>	<b>15:45</b>	74	12	1	2	1	1	1	<b>92</b>	94.7		
15:45	16:00	53	11	3	0	3	1	0	<b>71</b>	74.9		
16:00	16:15	66	12	2	1	1	1	1	<b>84</b>	85.9		
16:15	16:30	66	13	1	1	2	0	2	<b>85</b>	87.2		
<b>16:30</b>	<b>16:45</b>	59	10	3	0	1	1	4	<b>78</b>	76.7		
16:45	17:00	62	14	1	0	2	1	1	<b>81</b>	82.1		
17:00	17:15	60	18	0	0	3	1	2	<b>84</b>	84.8		
17:15	17:30	89	16	1	0	1	1	4	<b>112</b>	109.7		
<b>17:30</b>	<b>17:45</b>	81	8	5	0	1	4	2	<b>101</b>	100.5		
17:45	18:00	77	12	0	0	2	2	2	<b>95</b>	94.2		
<b>P/TOT</b>		<b>1321</b>	<b>226</b>	<b>37</b>	<b>8</b>	<b>37</b>	<b>33</b>	<b>44</b>	<b>0</b>	<b>0</b>	<b>1706</b>	<b>1717</b>

Period I Total: 525 80 12 3 16 18 20 0 0 **674** 673.1  
 Period II Total: 796 146 25 5 21 15 24 0 0 **1032** 1044

from	to	CAR	LGV	OGV1	OGV2	PSV	MCL	PCL	TOT	PCU.h		
PCU factor		1	1	1.5	2.3	2	0.4	0.2				
INTERVAL		01:00	01:00	01:00	01:00	01:00	01:00	01:00	01:00	01:00		
<b>07:30</b>	<b>08:30</b>	<b>245</b>	<b>41</b>	<b>7</b>	<b>2</b>	<b>13</b>	<b>11</b>	<b>13</b>	<b>332</b>	334.1		
07:45	08:45	230	39	5	2	8	11	14	<b>309</b>	304.3		
08:00	09:00	264	45	5	3	3	11	15	<b>346</b>	336.8		
08:15	09:15	271	39	6	2	2	7	11	<b>338</b>	332.6		
<b>08:30</b>	<b>09:30</b>	<b>280</b>	<b>39</b>	<b>5</b>	<b>1</b>	<b>3</b>	<b>7</b>	<b>7</b>	<b>342</b>	<b>339</b>		
08:45	09:45	218	28	4	1	3	3	4	<b>261</b>	262.3		
09:00	10:00	136	14	3	0	3	2	1	<b>159</b>	161.5		
09:15	10:15	68	10	1	0	3	1	0	<b>83</b>	85.9		
15:00	16:00	236	43	12	3	8	4	6	<b>312</b>	322.7		
15:15	16:15	238	47	11	4	8	4	3	<b>315</b>	328.9		
<b>15:30</b>	<b>16:30</b>	<b>259</b>	<b>48</b>	<b>7</b>	<b>4</b>	<b>7</b>	<b>3</b>	<b>4</b>	<b>332</b>	<b>342.7</b>		
15:45	16:45	244	46	9	2	7	3	7	<b>318</b>	324.7		
16:00	17:00	253	49	7	2	6	3	8	<b>328</b>	331.9		
16:15	17:15	247	55	5	1	8	3	9	<b>328</b>	330.8		
<b>16:30</b>	<b>17:30</b>	<b>270</b>	<b>58</b>	<b>5</b>	<b>0</b>	<b>7</b>	<b>4</b>	<b>11</b>	<b>355</b>	353.3		
16:45	17:45	292	56	7	0	7	7	9	<b>378</b>	377.1		
17:00	18:00	307	54	6	0	7	8	10	<b>392</b>	<b>389.2</b>		
17:15	18:15	247	36	6	0	4	7	8	<b>308</b>	304.4		
<b>17:30</b>	<b>18:30</b>	<b>158</b>	<b>20</b>	<b>5</b>	<b>0</b>	<b>3</b>	<b>6</b>	<b>4</b>	<b>196</b>	194.7		
17:45	18:45	77	12	0	0	2	2	2	<b>95</b>	94.2		
<b>P/TOT</b>		<b>1321</b>	<b>226</b>	<b>37</b>	<b>8</b>	<b>37</b>	<b>33</b>	<b>44</b>	<b>0</b>	<b>0</b>	<b>1706</b>	<b>1717</b>



SITE: **2**  
 LOCATION: Manor Road / Sainsbury's Access  
 TOTAL ARMS:

from arm: **B**  
 to arm: **A**

period I period II  
 from: 07:30 15:00  
 to: 09:30 18:00

DATE: 02/10/2018  
 DAY: Tuesday

		per quarter of an hour							TOT	PCU		
from	to	CAR	LGV	OGV1	OGV2	PSV	MCL	PCL				
PCU factor		1	1	1.5	2.3	2	0.4	0.2				
INTERVAL		00:15	00:15	00:15	00:15	00:15	00:15	00:15	00:15	00:15		
<b>07:30</b>	<b>07:45</b>	69	12	3	0	3	4	2	<b>93</b>	93.5		
07:45	08:00	45	5	1	0	2	1	2	<b>56</b>	56.3		
08:00	08:15	53	9	1	1	0	4	5	<b>73</b>	68.4		
08:15	08:30	54	7	2	1	0	1	4	<b>69</b>	67.5		
<b>08:30</b>	<b>08:45</b>	57	9	1	0	0	4	3	<b>74</b>	69.7		
08:45	09:00	76	13	0	1	0	1	3	<b>94</b>	92.3		
09:00	09:15	54	3	2	0	0	1	1	<b>61</b>	60.6		
09:15	09:30	57	9	1	0	1	1	0	<b>69</b>	69.9		
15:00	15:15	51	7	3	0	0	1	4	<b>66</b>	63.7		
15:15	15:30	36	11	5	1	1	1	1	<b>56</b>	59.4		
<b>15:30</b>	<b>15:45</b>	65	12	1	2	0	1	1	<b>82</b>	83.7		
15:45	16:00	40	9	3	0	1	1	0	<b>54</b>	55.9		
16:00	16:15	51	11	2	1	0	1	0	<b>66</b>	67.7		
16:15	16:30	49	11	1	1	0	0	2	<b>64</b>	64.2		
<b>16:30</b>	<b>16:45</b>	51	10	3	0	0	1	3	<b>68</b>	66.5		
16:45	17:00	50	11	1	0	1	1	1	<b>65</b>	65.1		
17:00	17:15	48	17	0	0	1	1	2	<b>69</b>	67.8		
17:15	17:30	84	15	1	0	0	1	4	<b>105</b>	101.7		
<b>17:30</b>	<b>17:45</b>	64	8	4	0	0	4	1	<b>81</b>	79.8		
17:45	18:00	72	12	0	0	0	1	2	<b>87</b>	84.8		
<b>P/TOT</b>		<b>1126</b>	<b>201</b>	<b>35</b>	<b>8</b>	<b>10</b>	<b>31</b>	<b>41</b>	<b>0</b>	<b>0</b>	<b>1452</b>	<b>1439</b>

Period I Total: 465 67 11 3 6 17 20 0 0 **589** 578.2  
 Period II Total: 661 134 24 5 4 14 21 0 0 **863** 860.3

		per hour							TOT	PCU.h		
from	to	CAR	LGV	OGV1	OGV2	PSV	MCL	PCL				
PCU factor		1	1	1.5	2.3	2	0.4	0.2				
INTERVAL		01:00	01:00	01:00	01:00	01:00	01:00	01:00	01:00	01:00		
<b>07:30</b>	<b>08:30</b>	<b>221</b>	<b>33</b>	<b>7</b>	<b>2</b>	<b>5</b>	<b>10</b>	<b>13</b>	<b>291</b>	285.7		
07:45	08:45	209	30	5	2	2	10	14	<b>272</b>	261.9		
08:00	09:00	240	38	4	3	0	10	15	<b>310</b>	297.9		
08:15	09:15	241	32	5	2	0	7	11	<b>298</b>	290.1		
<b>08:30</b>	<b>09:30</b>	<b>244</b>	<b>34</b>	<b>4</b>	<b>1</b>	<b>1</b>	<b>7</b>	<b>7</b>	<b>298</b>	<b>292.5</b>		
08:45	09:45	187	25	3	1	1	3	4	<b>224</b>	222.8		
09:00	10:00	111	12	3	0	1	2	1	<b>130</b>	130.5		
09:15	10:15	57	9	1	0	1	1	0	<b>69</b>	69.9		
15:00	16:00	192	39	12	3	2	4	6	<b>258</b>	262.7		
15:15	16:15	192	43	11	4	2	4	2	<b>258</b>	266.7		
<b>15:30</b>	<b>16:30</b>	<b>205</b>	<b>43</b>	<b>7</b>	<b>4</b>	<b>1</b>	<b>3</b>	<b>3</b>	<b>266</b>	<b>271.5</b>		
15:45	16:45	191	41	9	2	1	3	5	<b>252</b>	254.3		
16:00	17:00	201	43	7	2	1	3	6	<b>263</b>	263.5		
16:15	17:15	198	49	5	1	2	3	8	<b>266</b>	263.6		
<b>16:30</b>	<b>17:30</b>	<b>233</b>	<b>53</b>	<b>5</b>	<b>0</b>	<b>2</b>	<b>4</b>	<b>10</b>	<b>307</b>	301.1		
16:45	17:45	246	51	6	0	2	7	8	<b>320</b>	314.4		
17:00	18:00	268	52	5	0	1	7	9	<b>342</b>	<b>334.1</b>		
17:15	18:15	220	35	5	0	0	6	7	<b>273</b>	266.3		
<b>17:30</b>	<b>18:30</b>	<b>136</b>	<b>20</b>	<b>4</b>	<b>0</b>	<b>0</b>	<b>5</b>	<b>3</b>	<b>168</b>	164.6		
17:45	18:45	72	12	0	0	0	1	2	<b>87</b>	84.8		
<b>P/TOT</b>		<b>1126</b>	<b>201</b>	<b>35</b>	<b>8</b>	<b>10</b>	<b>31</b>	<b>41</b>	<b>0</b>	<b>0</b>	<b>1452</b>	<b>1439</b>



SITE: **2**  
 LOCATION: Manor Road / Sainsbury's Access  
 TOTAL ARMS: A B C

from arm: **B**  
 to arm: **B**

period I period II  
 from: 07:30 15:00  
 to: 09:30 18:00

DATE: 02/10/2018  
 DAY: Tuesday

		per quarter of an hour							TOT	PCU
from	to	CAR	LGV	OGV1	OGV2	PSV	MCL	PCL		
PCU factor		1	1	1.5	2.3	2	0.4	0.2		
INTERVAL		00:15	00:15	00:15	00:15	00:15	00:15	00:15	00:15	00:15
07:30	07:45	0	0	0	0	0	0	0	0	0
07:45	08:00	0	0	0	0	0	0	0	0	0
08:00	08:15	0	0	0	0	0	0	0	0	0
08:15	08:30	0	0	0	0	0	0	0	0	0
08:30	08:45	0	0	0	0	0	0	0	0	0
08:45	09:00	0	0	0	0	0	0	0	0	0
09:00	09:15	0	0	0	0	0	0	0	0	0
09:15	09:30	0	0	0	0	0	0	0	0	0
15:00	15:15	0	0	0	0	0	0	0	0	0
15:15	15:30	0	0	0	0	0	0	0	0	0
15:30	15:45	0	0	0	0	0	0	0	0	0
15:45	16:00	0	0	0	0	0	0	0	0	0
16:00	16:15	0	0	0	0	0	0	0	0	0
16:15	16:30	0	0	0	0	0	0	0	0	0
16:30	16:45	0	0	0	0	0	0	0	0	0
16:45	17:00	0	0	0	0	0	0	0	0	0
17:00	17:15	0	0	0	0	0	0	0	0	0
17:15	17:30	0	0	0	0	0	0	0	0	0
17:30	17:45	0	0	0	0	0	0	0	0	0
17:45	18:00	0	0	0	0	0	0	0	0	0
<b>P/TOT</b>		<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
<b>Period I Total:</b>		0	0	0	0	0	0	0	0	0
<b>Period II Total:</b>		0	0	0	0	0	0	0	0	0

		per hour							TOT	PCU.h
from	to	CAR	LGV	OGV1	OGV2	PSV	MCL	PCL		
PCU factor		1	1	1.5	2.3	2	0.4	0.2		
INTERVAL		01:00	01:00	01:00	01:00	01:00	01:00	01:00	01:00	01:00
07:30	08:30	0	0	0	0	0	0	0	0	0
07:45	08:45	0	0	0	0	0	0	0	0	0
08:00	09:00	0	0	0	0	0	0	0	0	0
08:15	09:15	0	0	0	0	0	0	0	0	0
08:30	09:30	0	0	0	0	0	0	0	0	0
08:45	09:45	0	0	0	0	0	0	0	0	0
09:00	10:00	0	0	0	0	0	0	0	0	0
09:15	10:15	0	0	0	0	0	0	0	0	0
15:00	16:00	0	0	0	0	0	0	0	0	0
15:15	16:15	0	0	0	0	0	0	0	0	0
15:30	16:30	0	0	0	0	0	0	0	0	0
15:45	16:45	0	0	0	0	0	0	0	0	0
16:00	17:00	0	0	0	0	0	0	0	0	0
16:15	17:15	0	0	0	0	0	0	0	0	0
16:30	17:30	0	0	0	0	0	0	0	0	0
16:45	17:45	0	0	0	0	0	0	0	0	0
17:00	18:00	0	0	0	0	0	0	0	0	0
17:15	18:15	0	0	0	0	0	0	0	0	0
17:30	18:30	0	0	0	0	0	0	0	0	0
17:45	18:45	0	0	0	0	0	0	0	0	0
<b>P/TOT</b>		<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>



SITE: **2**  
 LOCATION: Manor Road / Sainsbury's Access  
 TOTAL ARMS: A B C

from arm: **B**  
 to arm: **C**

period I period II  
 from: 07:30 15:00  
 to: 09:30 18:00

DATE: 02/10/2018  
 DAY: Tuesday

		per quarter of an hour							TOT	PCU		
from	to	CAR	LGV	OGV1	OGV2	PSV	MCL	PCL				
PCU factor		1	1	1.5	2.3	2	0.4	0.2				
INTERVAL		00:15	00:15	00:15	00:15	00:15	00:15	00:15	00:15	00:15		
<b>07:30</b>	<b>07:45</b>	11	2	1	0	0	1	0	<b>15</b>	<b>14.9</b>		
07:45	08:00	4	1	0	0	0	1	0	<b>6</b>	<b>5.4</b>		
08:00	08:15	10	1	0	0	0	0	0	<b>11</b>	<b>11</b>		
08:15	08:30	5	1	0	0	0	0	1	<b>7</b>	<b>6.2</b>		
<b>08:30</b>	<b>08:45</b>	11	1	0	0	0	0	0	<b>12</b>	<b>12</b>		
08:45	09:00	9	1	0	0	0	0	0	<b>10</b>	<b>10</b>		
09:00	09:15	16	3	0	0	0	0	1	<b>20</b>	<b>19.2</b>		
09:15	09:30	17	0	1	0	0	0	0	<b>18</b>	<b>18.5</b>		
15:00	15:15	9	1	0	0	0	0	1	<b>11</b>	<b>10.2</b>		
15:15	15:30	11	1	0	0	0	0	0	<b>12</b>	<b>12</b>		
<b>15:30</b>	<b>15:45</b>	17	1	0	0	0	0	0	<b>18</b>	<b>18</b>		
15:45	16:00	15	1	0	0	0	0	1	<b>17</b>	<b>16.2</b>		
16:00	16:15	21	0	0	0	0	2	1	<b>24</b>	<b>22</b>		
16:15	16:30	7	0	0	0	0	0	0	<b>7</b>	<b>7</b>		
<b>16:30</b>	<b>16:45</b>	22	1	0	0	0	0	0	<b>23</b>	<b>23</b>		
16:45	17:00	9	0	0	0	0	0	2	<b>11</b>	<b>9.4</b>		
17:00	17:15	17	0	0	0	0	0	2	<b>19</b>	<b>17.4</b>		
17:15	17:30	31	3	0	0	0	0	1	<b>35</b>	<b>34.2</b>		
<b>17:30</b>	<b>17:45</b>	23	1	0	0	0	1	2	<b>27</b>	<b>24.8</b>		
17:45	18:00	15	2	1	0	0	0	1	<b>19</b>	<b>18.7</b>		
<b>P/TOT</b>		<b>280</b>	<b>21</b>	<b>3</b>	<b>0</b>	<b>0</b>	<b>5</b>	<b>13</b>	<b>0</b>	<b>0</b>	<b>322</b>	<b>310.1</b>

Period I Total: 83 10 2 0 0 2 2 0 0 **99** 97.2  
 Period II Total: 197 11 1 0 0 3 11 0 0 **223** 212.9

		per hour							TOT	PCU.h		
from	to	CAR	LGV	OGV1	OGV2	PSV	MCL	PCL				
PCU factor		1	1	1.5	2.3	2	0.4	0.2				
INTERVAL		01:00	01:00	01:00	01:00	01:00	01:00	01:00	01:00	01:00		
<b>07:30</b>	<b>08:30</b>	<b>30</b>	<b>5</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>2</b>	<b>1</b>	<b>39</b>	<b>37.5</b>		
07:45	08:45	30	4	0	0	0	1	1	<b>36</b>	<b>34.6</b>		
08:00	09:00	35	4	0	0	0	0	1	<b>40</b>	<b>39.2</b>		
08:15	09:15	41	6	0	0	0	0	2	<b>49</b>	<b>47.4</b>		
<b>08:30</b>	<b>09:30</b>	<b>53</b>	<b>5</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>1</b>	<b>60</b>	<b>59.7</b>		
08:45	09:45	42	4	1	0	0	0	1	<b>48</b>	<b>47.7</b>		
09:00	10:00	33	3	1	0	0	0	1	<b>38</b>	<b>37.7</b>		
09:15	10:15	17	0	1	0	0	0	0	<b>18</b>	<b>18.5</b>		
15:00	16:00	52	4	0	0	0	0	2	<b>58</b>	<b>56.4</b>		
15:15	16:15	64	3	0	0	0	2	2	<b>71</b>	<b>68.2</b>		
<b>15:30</b>	<b>16:30</b>	<b>60</b>	<b>2</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>2</b>	<b>2</b>	<b>66</b>	<b>63.2</b>		
15:45	16:45	65	2	0	0	0	2	2	<b>71</b>	<b>68.2</b>		
16:00	17:00	59	1	0	0	0	2	3	<b>65</b>	<b>61.4</b>		
16:15	17:15	55	1	0	0	0	0	4	<b>60</b>	<b>56.8</b>		
<b>16:30</b>	<b>17:30</b>	<b>79</b>	<b>4</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>5</b>	<b>88</b>	<b>84</b>		
16:45	17:45	80	4	0	0	0	1	7	<b>92</b>	<b>85.8</b>		
17:00	18:00	86	6	1	0	0	1	6	<b>100</b>	<b>95.1</b>		
17:15	18:15	69	6	1	0	0	1	4	<b>81</b>	<b>77.7</b>		
<b>17:30</b>	<b>18:30</b>	<b>38</b>	<b>3</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>1</b>	<b>3</b>	<b>46</b>	<b>43.5</b>		
17:45	18:45	15	2	1	0	0	0	1	<b>19</b>	<b>18.7</b>		
<b>P/TOT</b>		<b>280</b>	<b>21</b>	<b>3</b>	<b>0</b>	<b>0</b>	<b>5</b>	<b>13</b>	<b>0</b>	<b>0</b>	<b>322</b>	<b>310.1</b>



SITE: **2**  
 LOCATION: Manor Road / Sainsbury's Access  
 TOTAL ARMS: A B C

from arm: **B**  
 to arm: **all**

period I period II  
 from: 07:30 15:00  
 to: 09:30 18:00

DATE: 02/10/2018  
 DAY: Tuesday

		per quarter of an hour							TOT	PCU		
from	to	CAR	LGV	OGV1	OGV2	PSV	MCL	PCL				
PCU factor		1	1	1.5	2.3	2	0.4	0.2				
INTERVAL		00:15	00:15	00:15	00:15	00:15	00:15	00:15	00:15	00:15		
<b>07:30</b>	<b>07:45</b>	80	14	4	0	3	5	2	<b>108</b>	108.4		
07:45	08:00	49	6	1	0	2	2	2	<b>62</b>	61.7		
08:00	08:15	63	10	1	1	0	4	5	<b>84</b>	79.4		
08:15	08:30	59	8	2	1	0	1	5	<b>76</b>	73.7		
<b>08:30</b>	<b>08:45</b>	68	10	1	0	0	4	3	<b>86</b>	81.7		
08:45	09:00	85	14	0	1	0	1	3	<b>104</b>	102.3		
09:00	09:15	70	6	2	0	0	1	2	<b>81</b>	79.8		
09:15	09:30	74	9	2	0	1	1	0	<b>87</b>	88.4		
15:00	15:15	60	8	3	0	0	1	5	<b>77</b>	73.9		
15:15	15:30	47	12	5	1	1	1	1	<b>68</b>	71.4		
<b>15:30</b>	<b>15:45</b>	82	13	1	2	0	1	1	<b>100</b>	101.7		
15:45	16:00	55	10	3	0	1	1	1	<b>71</b>	72.1		
16:00	16:15	72	11	2	1	0	3	1	<b>90</b>	89.7		
16:15	16:30	56	11	1	1	0	0	2	<b>71</b>	71.2		
<b>16:30</b>	<b>16:45</b>	73	11	3	0	0	1	3	<b>91</b>	89.5		
16:45	17:00	59	11	1	0	1	1	3	<b>76</b>	74.5		
17:00	17:15	65	17	0	0	1	1	4	<b>88</b>	85.2		
17:15	17:30	115	18	1	0	0	1	5	<b>140</b>	135.9		
<b>17:30</b>	<b>17:45</b>	87	9	4	0	0	5	3	<b>108</b>	104.6		
17:45	18:00	87	14	1	0	0	1	3	<b>106</b>	103.5		
<b>P/TOT</b>		<b>1406</b>	<b>222</b>	<b>38</b>	<b>8</b>	<b>10</b>	<b>36</b>	<b>54</b>	<b>0</b>	<b>0</b>	<b>1774</b>	<b>1749</b>

Period I Total: 548 77 13 3 6 19 22 0 0 **688** 675.4  
 Period II Total: 858 145 25 5 4 17 32 0 0 **1086** 1073

		per hour							TOT	PCU.h		
from	to	CAR	LGV	OGV1	OGV2	PSV	MCL	PCL				
PCU factor		1	1	1.5	2.3	2	0.4	0.2				
INTERVAL		01:00	01:00	01:00	01:00	01:00	01:00	01:00	01:00	01:00		
<b>07:30</b>	<b>08:30</b>	<b>251</b>	<b>38</b>	<b>8</b>	<b>2</b>	<b>5</b>	<b>12</b>	<b>14</b>	<b>330</b>	323.2		
07:45	08:45	239	34	5	2	2	11	15	<b>308</b>	296.5		
08:00	09:00	275	42	4	3	0	10	16	<b>350</b>	337.1		
08:15	09:15	282	38	5	2	0	7	13	<b>347</b>	337.5		
<b>08:30</b>	<b>09:30</b>	<b>297</b>	<b>39</b>	<b>5</b>	<b>1</b>	<b>1</b>	<b>7</b>	<b>8</b>	<b>358</b>	<b>352.2</b>		
08:45	09:45	229	29	4	1	1	3	5	<b>272</b>	270.5		
09:00	10:00	144	15	4	0	1	2	2	<b>168</b>	168.2		
09:15	10:15	74	9	2	0	1	1	0	<b>87</b>	88.4		
15:00	16:00	244	43	12	3	2	4	8	<b>316</b>	319.1		
15:15	16:15	256	46	11	4	2	6	4	<b>329</b>	334.9		
<b>15:30</b>	<b>16:30</b>	<b>265</b>	<b>45</b>	<b>7</b>	<b>4</b>	<b>1</b>	<b>5</b>	<b>5</b>	<b>332</b>	<b>334.7</b>		
15:45	16:45	256	43	9	2	1	5	7	<b>323</b>	322.5		
16:00	17:00	260	44	7	2	1	5	9	<b>328</b>	324.9		
16:15	17:15	253	50	5	1	2	3	12	<b>326</b>	320.4		
<b>16:30</b>	<b>17:30</b>	<b>312</b>	<b>57</b>	<b>5</b>	<b>0</b>	<b>2</b>	<b>4</b>	<b>15</b>	<b>395</b>	385.1		
16:45	17:45	326	55	6	0	2	8	15	<b>412</b>	400.2		
17:00	18:00	354	58	6	0	1	8	15	<b>442</b>	<b>429.2</b>		
17:15	18:15	289	41	6	0	0	7	11	<b>354</b>	344		
<b>17:30</b>	<b>18:30</b>	<b>174</b>	<b>23</b>	<b>5</b>	<b>0</b>	<b>0</b>	<b>6</b>	<b>6</b>	<b>214</b>	208.1		
17:45	18:45	87	14	1	0	0	1	3	<b>106</b>	103.5		
<b>P/TOT</b>		<b>1406</b>	<b>222</b>	<b>38</b>	<b>8</b>	<b>10</b>	<b>36</b>	<b>54</b>	<b>0</b>	<b>0</b>	<b>1774</b>	<b>1749</b>



SITE: **2**  
 LOCATION: Manor Road / Sainsbury's Access  
 TOTAL ARMS: A B C

from arm: **all**  
 to arm: **B**

period I period II  
 from: 07:30 15:00  
 to: 09:30 18:00

DATE: 02/10/2018  
 DAY: Tuesday

from	to	CAR	LGV	OGV1	OGV2	PSV	MCL	PCL	TOT	PCU
PCU factor		1	1	1.5	2.3	2	0.4	0.2		
INTERVAL		00:15	00:15	00:15	00:15	00:15	00:15	00:15	00:15	00:15
<b>07:30</b>	<b>07:45</b>	33	16	4	0	2	0	2	<b>57</b>	59.4
07:45	08:00	44	14	4	1	0	0	1	<b>64</b>	66.5
08:00	08:15	38	8	4	0	1	1	3	<b>55</b>	55
08:15	08:30	42	9	3	0	0	2	6	<b>62</b>	57.5
<b>08:30</b>	<b>08:45</b>	60	9	4	0	0	1	3	<b>77</b>	76
08:45	09:00	67	8	2	0	1	2	0	<b>80</b>	80.8
09:00	09:15	38	7	5	0	0	0	3	<b>53</b>	53.1
09:15	09:30	39	8	4	0	2	0	2	<b>55</b>	57.4
15:00	15:15	66	11	1	0	1	3	2	<b>84</b>	82.1
15:15	15:30	48	8	3	0	1	0	4	<b>64</b>	63.3
<b>15:30</b>	<b>15:45</b>	64	7	3	0	0	2	7	<b>83</b>	77.7
15:45	16:00	45	10	0	0	0	0	1	<b>56</b>	55.2
16:00	16:15	49	7	2	0	1	1	1	<b>61</b>	61.6
16:15	16:30	55	7	1	0	0	4	6	<b>73</b>	66.3
<b>16:30</b>	<b>16:45</b>	50	10	1	0	1	1	0	<b>63</b>	63.9
16:45	17:00	57	8	0	0	0	0	1	<b>66</b>	65.2
17:00	17:15	60	6	2	0	1	3	3	<b>75</b>	72.8
17:15	17:30	59	7	3	0	0	3	7	<b>79</b>	73.1
<b>17:30</b>	<b>17:45</b>	62	6	1	0	0	2	6	<b>77</b>	71.5
17:45	18:00	57	5	0	0	0	2	4	<b>68</b>	63.6
<b>P/TOT</b>		<b>1033</b>	<b>171</b>	<b>47</b>	<b>1</b>	<b>11</b>	<b>27</b>	<b>62</b>	<b>0</b>	<b>0</b>
<b>Period I Total:</b>		<b>361</b>	<b>79</b>	<b>30</b>	<b>1</b>	<b>6</b>	<b>6</b>	<b>20</b>	<b>0</b>	<b>0</b>
<b>Period II Total:</b>		<b>672</b>	<b>92</b>	<b>17</b>	<b>0</b>	<b>5</b>	<b>21</b>	<b>42</b>	<b>0</b>	<b>0</b>
									<b>1352</b>	<b>1322</b>

from	to	CAR	LGV	OGV1	OGV2	PSV	MCL	PCL	TOT	PCU.h
PCU factor		1	1	1.5	2.3	2	0.4	0.2		
INTERVAL		01:00	01:00	01:00	01:00	01:00	01:00	01:00	01:00	01:00
<b>07:30</b>	<b>08:30</b>	<b>157</b>	<b>47</b>	<b>15</b>	<b>1</b>	<b>3</b>	<b>3</b>	<b>12</b>	<b>238</b>	238.4
07:45	08:45	184	40	15	1	1	4	13	<b>258</b>	255
08:00	09:00	207	34	13	0	2	6	12	<b>274</b>	269.3
08:15	09:15	207	33	14	0	1	5	12	<b>272</b>	267.4
<b>08:30</b>	<b>09:30</b>	<b>204</b>	<b>32</b>	<b>15</b>	<b>0</b>	<b>3</b>	<b>3</b>	<b>8</b>	<b>265</b>	<b>267.3</b>
08:45	09:45	144	23	11	0	3	2	5	<b>188</b>	191.3
09:00	10:00	77	15	9	0	2	0	5	<b>108</b>	110.5
09:15	10:15	39	8	4	0	2	0	2	<b>55</b>	57.4
15:00	16:00	223	36	7	0	2	5	14	<b>287</b>	278.3
15:15	16:15	206	32	8	0	2	3	13	<b>264</b>	257.8
<b>15:30</b>	<b>16:30</b>	<b>213</b>	<b>31</b>	<b>6</b>	<b>0</b>	<b>1</b>	<b>7</b>	<b>15</b>	<b>273</b>	<b>260.8</b>
15:45	16:45	199	34	4	0	2	6	8	<b>253</b>	247
16:00	17:00	211	32	4	0	2	6	8	<b>263</b>	257
16:15	17:15	222	31	4	0	2	8	10	<b>277</b>	268.2
<b>16:30</b>	<b>17:30</b>	<b>226</b>	<b>31</b>	<b>6</b>	<b>0</b>	<b>2</b>	<b>7</b>	<b>11</b>	<b>283</b>	275
16:45	17:45	238	27	6	0	1	8	17	<b>297</b>	282.6
17:00	18:00	238	24	6	0	1	10	20	<b>299</b>	<b>281</b>
17:15	18:15	178	18	4	0	0	7	17	<b>224</b>	208.2
<b>17:30</b>	<b>18:30</b>	<b>119</b>	<b>11</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>4</b>	<b>10</b>	<b>145</b>	135.1
17:45	18:45	57	5	0	0	0	2	4	<b>68</b>	63.6
<b>P/TOT</b>		<b>1033</b>	<b>171</b>	<b>47</b>	<b>1</b>	<b>11</b>	<b>27</b>	<b>62</b>	<b>0</b>	<b>0</b>
									<b>1352</b>	<b>1322</b>



SITE: **2**  
LOCATION: Manor Road / Sainsbury's Access  
TOTAL ARMS:

from arm: **C**  
to arm: **A**

period I period II  
from: 07:30 15:00  
to: 09:30 18:00

DATE: 02/10/2018  
DAY: Tuesday

		per quarter of an hour							TOT	PCU		
from	to	CAR	LGV	OGV1	OGV2	PSV	MCL	PCL				
PCU factor		1	1	1.5	2.3	2	0.4	0.2				
INTERVAL		00:15	00:15	00:15	00:15	00:15	00:15	00:15	00:15	00:15		
<b>07:30</b>	<b>07:45</b>	8	1	0	0	2	0	0	<b>11</b>	<b>13</b>		
07:45	08:00	3	3	0	0	3	0	0	<b>9</b>	<b>12</b>		
08:00	08:15	8	1	0	0	1	1	0	<b>11</b>	<b>11.4</b>		
08:15	08:30	5	3	0	0	2	0	0	<b>10</b>	<b>12</b>		
<b>08:30</b>	<b>08:45</b>	5	2	0	0	0	0	0	<b>7</b>	<b>7</b>		
08:45	09:00	6	1	1	0	0	0	0	<b>8</b>	<b>8.5</b>		
09:00	09:15	14	1	0	0	0	0	0	<b>15</b>	<b>15</b>		
09:15	09:30	11	1	0	0	2	0	0	<b>14</b>	<b>16</b>		
15:00	15:15	13	1	0	0	1	0	0	<b>15</b>	<b>16</b>		
15:15	15:30	9	1	0	0	2	0	0	<b>12</b>	<b>14</b>		
<b>15:30</b>	<b>15:45</b>	9	0	0	0	1	0	0	<b>10</b>	<b>11</b>		
15:45	16:00	13	2	0	0	2	0	0	<b>17</b>	<b>19</b>		
16:00	16:15	15	1	0	0	1	0	1	<b>18</b>	<b>18.2</b>		
16:15	16:30	17	2	0	0	2	0	0	<b>21</b>	<b>23</b>		
<b>16:30</b>	<b>16:45</b>	8	0	0	0	1	0	1	<b>10</b>	<b>10.2</b>		
16:45	17:00	12	3	0	0	1	0	0	<b>16</b>	<b>17</b>		
17:00	17:15	12	1	0	0	2	0	0	<b>15</b>	<b>17</b>		
17:15	17:30	5	1	0	0	1	0	0	<b>7</b>	<b>8</b>		
<b>17:30</b>	<b>17:45</b>	17	0	1	0	1	0	1	<b>20</b>	<b>20.7</b>		
17:45	18:00	5	0	0	0	2	1	0	<b>8</b>	<b>9.4</b>		
<b>P/TOT</b>		<b>195</b>	<b>25</b>	<b>2</b>	<b>0</b>	<b>27</b>	<b>2</b>	<b>3</b>	<b>0</b>	<b>0</b>	<b>254</b>	<b>278.4</b>

Period I Total: 60 13 1 0 10 1 0 0 0 **85** 94.9  
 Period II Total: 135 12 1 0 17 1 3 0 0 **169** 183.5

		per hour							TOT	PCU.h		
from	to	CAR	LGV	OGV1	OGV2	PSV	MCL	PCL				
PCU factor		1	1	1.5	2.3	2	0.4	0.2				
INTERVAL		01:00	01:00	01:00	01:00	01:00	01:00	01:00	01:00	01:00		
<b>07:30</b>	<b>08:30</b>	<b>24</b>	<b>8</b>	<b>0</b>	<b>0</b>	<b>8</b>	<b>1</b>	<b>0</b>	<b>41</b>	<b>48.4</b>		
07:45	08:45	21	9	0	0	6	1	0	<b>37</b>	<b>42.4</b>		
08:00	09:00	24	7	1	0	3	1	0	<b>36</b>	<b>38.9</b>		
08:15	09:15	30	7	1	0	2	0	0	<b>40</b>	<b>42.5</b>		
<b>08:30</b>	<b>09:30</b>	<b>36</b>	<b>5</b>	<b>1</b>	<b>0</b>	<b>2</b>	<b>0</b>	<b>0</b>	<b>44</b>	<b>46.5</b>		
08:45	09:45	31	3	1	0	2	0	0	<b>37</b>	<b>39.5</b>		
09:00	10:00	25	2	0	0	2	0	0	<b>29</b>	<b>31</b>		
09:15	10:15	11	1	0	0	2	0	0	<b>14</b>	<b>16</b>		
15:00	16:00	44	4	0	0	6	0	0	<b>54</b>	<b>60</b>		
15:15	16:15	46	4	0	0	6	0	1	<b>57</b>	<b>62.2</b>		
<b>15:30</b>	<b>16:30</b>	<b>54</b>	<b>5</b>	<b>0</b>	<b>0</b>	<b>6</b>	<b>0</b>	<b>1</b>	<b>66</b>	<b>71.2</b>		
15:45	16:45	53	5	0	0	6	0	2	<b>66</b>	<b>70.4</b>		
16:00	17:00	52	6	0	0	5	0	2	<b>65</b>	<b>68.4</b>		
16:15	17:15	49	6	0	0	6	0	1	<b>62</b>	<b>67.2</b>		
<b>16:30</b>	<b>17:30</b>	<b>37</b>	<b>5</b>	<b>0</b>	<b>0</b>	<b>5</b>	<b>0</b>	<b>1</b>	<b>48</b>	<b>52.2</b>		
16:45	17:45	46	5	1	0	5	0	1	<b>58</b>	<b>62.7</b>		
17:00	18:00	39	2	1	0	6	1	1	<b>50</b>	<b>55.1</b>		
17:15	18:15	27	1	1	0	4	1	1	<b>35</b>	<b>38.1</b>		
<b>17:30</b>	<b>18:30</b>	<b>22</b>	<b>0</b>	<b>1</b>	<b>0</b>	<b>3</b>	<b>1</b>	<b>1</b>	<b>28</b>	<b>30.1</b>		
17:45	18:45	5	0	0	0	2	1	0	<b>8</b>	<b>9.4</b>		
<b>P/TOT</b>		<b>195</b>	<b>25</b>	<b>2</b>	<b>0</b>	<b>27</b>	<b>2</b>	<b>3</b>	<b>0</b>	<b>0</b>	<b>254</b>	<b>278.4</b>



SITE: **2**  
 LOCATION: Manor Road / Sainsbury's Access  
 TOTAL ARMS: A B C

from arm: **C**  
 to arm: **B**

period I period II  
 from: 07:30 15:00  
 to: 09:30 18:00

DATE: 02/10/2018  
 DAY: Tuesday

		per quarter of an hour							TOT	PCU		
from	to	CAR	LGV	OGV1	OGV2	PSV	MCL	PCL				
PCU factor		1	1	1.5	2.3	2	0.4	0.2				
INTERVAL		00:15	00:15	00:15	00:15	00:15	00:15	00:15	00:15	00:15		
<b>07:30</b>	<b>07:45</b>	5	1	0	0	0	0	0	<b>6</b>	<b>6</b>		
07:45	08:00	5	2	1	0	0	0	0	<b>8</b>	<b>8.5</b>		
08:00	08:15	10	2	0	0	0	0	0	<b>12</b>	<b>12</b>		
08:15	08:30	5	1	1	0	0	0	2	<b>9</b>	<b>7.9</b>		
<b>08:30</b>	<b>08:45</b>	6	1	1	0	0	0	0	<b>8</b>	<b>8.5</b>		
08:45	09:00	8	0	0	0	0	1	0	<b>9</b>	<b>8.4</b>		
09:00	09:15	8	0	0	0	0	0	0	<b>8</b>	<b>8</b>		
09:15	09:30	3	2	1	0	0	0	1	<b>7</b>	<b>6.7</b>		
15:00	15:15	16	1	0	0	0	0	0	<b>17</b>	<b>17</b>		
15:15	15:30	19	1	0	0	0	0	3	<b>23</b>	<b>20.6</b>		
<b>15:30</b>	<b>15:45</b>	20	0	1	0	0	0	4	<b>25</b>	<b>22.3</b>		
15:45	16:00	11	2	0	0	0	0	1	<b>14</b>	<b>13.2</b>		
16:00	16:15	13	2	1	0	0	0	0	<b>16</b>	<b>16.5</b>		
16:15	16:30	21	1	0	0	0	1	5	<b>28</b>	<b>23.4</b>		
<b>16:30</b>	<b>16:45</b>	13	2	0	0	0	0	0	<b>15</b>	<b>15</b>		
16:45	17:00	17	1	0	0	0	0	0	<b>18</b>	<b>18</b>		
17:00	17:15	16	1	0	0	0	1	2	<b>20</b>	<b>17.8</b>		
17:15	17:30	17	1	2	0	0	0	3	<b>23</b>	<b>21.6</b>		
<b>17:30</b>	<b>17:45</b>	22	2	1	0	0	1	2	<b>28</b>	<b>26.3</b>		
17:45	18:00	14	0	0	0	0	0	0	<b>14</b>	<b>14</b>		
<b>P/TOT</b>		<b>249</b>	<b>23</b>	<b>9</b>	<b>0</b>	<b>0</b>	<b>4</b>	<b>23</b>	<b>0</b>	<b>0</b>	<b>308</b>	<b>291.7</b>

Period I Total: 50 9 4 0 0 1 3 0 0 **67** **66**  
 Period II Total: 199 14 5 0 0 3 20 0 0 **241** **225.7**

		per hour							TOT	PCU.h		
from	to	CAR	LGV	OGV1	OGV2	PSV	MCL	PCL				
PCU factor		1	1	1.5	2.3	2	0.4	0.2				
INTERVAL		01:00	01:00	01:00	01:00	01:00	01:00	01:00	01:00	01:00		
<b>07:30</b>	<b>08:30</b>	<b>25</b>	<b>6</b>	<b>2</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>2</b>	<b>35</b>	<b>34.4</b>		
07:45	08:45	26	6	3	0	0	0	2	<b>37</b>	<b>36.9</b>		
08:00	09:00	29	4	2	0	0	1	2	<b>38</b>	<b>36.8</b>		
08:15	09:15	27	2	2	0	0	1	2	<b>34</b>	<b>32.8</b>		
<b>08:30</b>	<b>09:30</b>	<b>25</b>	<b>3</b>	<b>2</b>	<b>0</b>	<b>0</b>	<b>1</b>	<b>1</b>	<b>32</b>	<b>31.6</b>		
08:45	09:45	19	2	1	0	0	1	1	<b>24</b>	<b>23.1</b>		
09:00	10:00	11	2	1	0	0	0	1	<b>15</b>	<b>14.7</b>		
09:15	10:15	3	2	1	0	0	0	1	<b>7</b>	<b>6.7</b>		
15:00	16:00	66	4	1	0	0	0	8	<b>79</b>	<b>73.1</b>		
15:15	16:15	63	5	2	0	0	0	8	<b>78</b>	<b>72.6</b>		
<b>15:30</b>	<b>16:30</b>	<b>65</b>	<b>5</b>	<b>2</b>	<b>0</b>	<b>0</b>	<b>1</b>	<b>10</b>	<b>83</b>	<b>75.4</b>		
15:45	16:45	58	7	1	0	0	1	6	<b>73</b>	<b>68.1</b>		
16:00	17:00	64	6	1	0	0	1	5	<b>77</b>	<b>72.9</b>		
16:15	17:15	67	5	0	0	0	2	7	<b>81</b>	<b>74.2</b>		
<b>16:30</b>	<b>17:30</b>	<b>63</b>	<b>5</b>	<b>2</b>	<b>0</b>	<b>0</b>	<b>1</b>	<b>5</b>	<b>76</b>	<b>72.4</b>		
16:45	17:45	72	5	3	0	0	2	7	<b>89</b>	<b>83.7</b>		
17:00	18:00	69	4	3	0	0	2	7	<b>85</b>	<b>79.7</b>		
17:15	18:15	53	3	3	0	0	1	5	<b>65</b>	<b>61.9</b>		
<b>17:30</b>	<b>18:30</b>	<b>36</b>	<b>2</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>1</b>	<b>2</b>	<b>42</b>	<b>40.3</b>		
17:45	18:45	14	0	0	0	0	0	0	<b>14</b>	<b>14</b>		
<b>P/TOT</b>		<b>249</b>	<b>23</b>	<b>9</b>	<b>0</b>	<b>0</b>	<b>4</b>	<b>23</b>	<b>0</b>	<b>0</b>	<b>308</b>	<b>291.7</b>



SITE: **2**  
 LOCATION: Manor Road / Sainsbury's Access  
 TOTAL ARMS: A B C

from arm: **C**  
 to arm: **C**

period I period II  
 from: 07:30 15:00  
 to: 09:30 18:00

DATE: 02/10/2018  
 DAY: Tuesday

		per quarter of an hour							TOT	PCU
from	to	CAR	LGV	OGV1	OGV2	PSV	MCL	PCL		
PCU factor		1	1	1.5	2.3	2	0.4	0.2		
INTERVAL		00:15	00:15	00:15	00:15	00:15	00:15	00:15	00:15	00:15
07:30	07:45	0	0	0	0	0	0	0	0	0
07:45	08:00	0	0	0	0	0	0	0	0	0
08:00	08:15	0	0	0	0	0	0	0	0	0
08:15	08:30	0	0	0	0	0	0	0	0	0
08:30	08:45	0	0	0	0	0	0	0	0	0
08:45	09:00	0	0	0	0	0	0	0	0	0
09:00	09:15	0	0	0	0	0	0	0	0	0
09:15	09:30	0	0	0	0	0	0	0	0	0
15:00	15:15	0	0	0	0	0	0	0	0	0
15:15	15:30	0	0	0	0	0	0	0	0	0
15:30	15:45	0	0	0	0	0	0	0	0	0
15:45	16:00	0	0	0	0	0	0	0	0	0
16:00	16:15	0	0	0	0	0	0	0	0	0
16:15	16:30	0	0	0	0	0	0	0	0	0
16:30	16:45	0	0	0	0	0	0	0	0	0
16:45	17:00	0	0	0	0	0	0	0	0	0
17:00	17:15	0	0	0	0	0	0	0	0	0
17:15	17:30	0	0	0	0	0	0	0	0	0
17:30	17:45	0	0	0	0	0	0	0	0	0
17:45	18:00	0	0	0	0	0	0	0	0	0
<b>P/TOT</b>		<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
<b>Period I Total:</b>		0	0	0	0	0	0	0	0	0
<b>Period II Total:</b>		0	0	0	0	0	0	0	0	0

		per hour							TOT	PCU.h
from	to	CAR	LGV	OGV1	OGV2	PSV	MCL	PCL		
PCU factor		1	1	1.5	2.3	2	0.4	0.2		
INTERVAL		01:00	01:00	01:00	01:00	01:00	01:00	01:00	01:00	01:00
07:30	08:30	0	0	0	0	0	0	0	0	0
07:45	08:45	0	0	0	0	0	0	0	0	0
08:00	09:00	0	0	0	0	0	0	0	0	0
08:15	09:15	0	0	0	0	0	0	0	0	0
08:30	09:30	0	0	0	0	0	0	0	0	0
08:45	09:45	0	0	0	0	0	0	0	0	0
09:00	10:00	0	0	0	0	0	0	0	0	0
09:15	10:15	0	0	0	0	0	0	0	0	0
15:00	16:00	0	0	0	0	0	0	0	0	0
15:15	16:15	0	0	0	0	0	0	0	0	0
15:30	16:30	0	0	0	0	0	0	0	0	0
15:45	16:45	0	0	0	0	0	0	0	0	0
16:00	17:00	0	0	0	0	0	0	0	0	0
16:15	17:15	0	0	0	0	0	0	0	0	0
16:30	17:30	0	0	0	0	0	0	0	0	0
16:45	17:45	0	0	0	0	0	0	0	0	0
17:00	18:00	0	0	0	0	0	0	0	0	0
17:15	18:15	0	0	0	0	0	0	0	0	0
17:30	18:30	0	0	0	0	0	0	0	0	0
17:45	18:45	0	0	0	0	0	0	0	0	0
<b>P/TOT</b>		<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>



SITE: **2**  
 LOCATION: Manor Road / Sainsbury's Access  
 TOTAL ARMS: A B C

from arm: **C**  
 to arm: **all**

period I period II  
 from: 07:30 15:00  
 to: 09:30 18:00

DATE: 02/10/2018  
 DAY: Tuesday

		per quarter of an hour							TOT	PCU		
from	to	CAR	LGV	OGV1	OGV2	PSV	MCL	PCL				
PCU factor		1	1	1.5	2.3	2	0.4	0.2				
INTERVAL		00:15	00:15	00:15	00:15	00:15	00:15	00:15	00:15	00:15		
<b>07:30</b>	<b>07:45</b>	13	2	0	0	2	0	0	<b>17</b>	<b>19</b>		
07:45	08:00	8	5	1	0	3	0	0	<b>17</b>	20.5		
08:00	08:15	18	3	0	0	1	1	0	<b>23</b>	23.4		
08:15	08:30	10	4	1	0	2	0	2	<b>19</b>	19.9		
<b>08:30</b>	<b>08:45</b>	11	3	1	0	0	0	0	<b>15</b>	15.5		
08:45	09:00	14	1	1	0	0	1	0	<b>17</b>	16.9		
09:00	09:15	22	1	0	0	0	0	0	<b>23</b>	23		
09:15	09:30	14	3	1	0	2	0	1	<b>21</b>	22.7		
15:00	15:15	29	2	0	0	1	0	0	<b>32</b>	33		
15:15	15:30	28	2	0	0	2	0	3	<b>35</b>	34.6		
<b>15:30</b>	<b>15:45</b>	29	0	1	0	1	0	4	<b>35</b>	33.3		
15:45	16:00	24	4	0	0	2	0	1	<b>31</b>	32.2		
16:00	16:15	28	3	1	0	1	0	1	<b>34</b>	34.7		
16:15	16:30	38	3	0	0	2	1	5	<b>49</b>	46.4		
<b>16:30</b>	<b>16:45</b>	21	2	0	0	1	0	1	<b>25</b>	25.2		
16:45	17:00	29	4	0	0	1	0	0	<b>34</b>	35		
17:00	17:15	28	2	0	0	2	1	2	<b>35</b>	34.8		
17:15	17:30	22	2	2	0	1	0	3	<b>30</b>	29.6		
<b>17:30</b>	<b>17:45</b>	39	2	2	0	1	1	3	<b>48</b>	47		
17:45	18:00	19	0	0	0	2	1	0	<b>22</b>	23.4		
<b>P/TOT</b>		<b>444</b>	<b>48</b>	<b>11</b>	<b>0</b>	<b>27</b>	<b>6</b>	<b>26</b>	<b>0</b>	<b>0</b>	<b>562</b>	<b>570.1</b>

Period I Total: 110 22 5 0 10 2 3 0 0 **152** 160.9  
 Period II Total: 334 26 6 0 17 4 23 0 0 **410** 409.2

		per hour							TOT	PCU.h		
from	to	CAR	LGV	OGV1	OGV2	PSV	MCL	PCL				
PCU factor		1	1	1.5	2.3	2	0.4	0.2				
INTERVAL		01:00	01:00	01:00	01:00	01:00	01:00	01:00	01:00	01:00		
<b>07:30</b>	<b>08:30</b>	<b>49</b>	<b>14</b>	<b>2</b>	<b>0</b>	<b>8</b>	<b>1</b>	<b>2</b>	<b>76</b>	82.8		
07:45	08:45	47	15	3	0	6	1	2	<b>74</b>	79.3		
08:00	09:00	53	11	3	0	3	2	2	<b>74</b>	75.7		
08:15	09:15	57	9	3	0	2	1	2	<b>74</b>	75.3		
<b>08:30</b>	<b>09:30</b>	<b>61</b>	<b>8</b>	<b>3</b>	<b>0</b>	<b>2</b>	<b>1</b>	<b>1</b>	<b>76</b>	78.1		
08:45	09:45	50	5	2	0	2	1	1	<b>61</b>	62.6		
09:00	10:00	36	4	1	0	2	0	1	<b>44</b>	45.7		
09:15	10:15	14	3	1	0	2	0	1	<b>21</b>	22.7		
15:00	16:00	110	8	1	0	6	0	8	<b>133</b>	133.1		
15:15	16:15	109	9	2	0	6	0	9	<b>135</b>	134.8		
<b>15:30</b>	<b>16:30</b>	<b>119</b>	<b>10</b>	<b>2</b>	<b>0</b>	<b>6</b>	<b>1</b>	<b>11</b>	<b>149</b>	146.6		
15:45	16:45	111	12	1	0	6	1	8	<b>139</b>	138.5		
16:00	17:00	116	12	1	0	5	1	7	<b>142</b>	141.3		
16:15	17:15	116	11	0	0	6	2	8	<b>143</b>	141.4		
<b>16:30</b>	<b>17:30</b>	<b>100</b>	<b>10</b>	<b>2</b>	<b>0</b>	<b>5</b>	<b>1</b>	<b>6</b>	<b>124</b>	124.6		
16:45	17:45	118	10	4	0	5	2	8	<b>147</b>	146.4		
17:00	18:00	108	6	4	0	6	3	8	<b>135</b>	134.8		
17:15	18:15	80	4	4	0	4	2	6	<b>100</b>	100		
<b>17:30</b>	<b>18:30</b>	<b>58</b>	<b>2</b>	<b>2</b>	<b>0</b>	<b>3</b>	<b>2</b>	<b>3</b>	<b>70</b>	70.4		
17:45	18:45	19	0	0	0	2	1	0	<b>22</b>	23.4		
<b>P/TOT</b>		<b>444</b>	<b>48</b>	<b>11</b>	<b>0</b>	<b>27</b>	<b>6</b>	<b>26</b>	<b>0</b>	<b>0</b>	<b>562</b>	<b>570.1</b>



SITE: **2**  
 LOCATION: Manor Road / Sainsbury's Access  
 TOTAL ARMS: A B C

from arm: **all**  
 to arm: **C**

period I period II  
 from: 07:30 15:00  
 to: 09:30 18:00

DATE: 02/10/2018  
 DAY: Tuesday

from	to	CAR	LGV	OGV1	OGV2	PSV	MCL	PCL	TOT	PCU		
PCU factor		1	1	1.5	2.3	2	0.4	0.2				
INTERVAL		00:15	00:15	00:15	00:15	00:15	00:15	00:15	00:15	00:15		
<b>07:30</b>	<b>07:45</b>	13	2	1	0	0	1	0	<b>17</b>	16.9		
07:45	08:00	4	1	0	0	0	1	0	<b>6</b>	5.4		
08:00	08:15	11	1	0	0	0	0	0	<b>12</b>	12		
08:15	08:30	6	1	0	0	0	0	1	<b>8</b>	7.2		
<b>08:30</b>	<b>08:45</b>	13	1	0	0	0	0	0	<b>14</b>	14		
08:45	09:00	9	2	0	0	0	0	1	<b>12</b>	11.2		
09:00	09:15	16	3	0	0	0	0	1	<b>20</b>	19.2		
09:15	09:30	19	0	1	0	0	0	0	<b>20</b>	20.5		
15:00	15:15	11	1	0	0	0	0	1	<b>13</b>	12.2		
15:15	15:30	18	1	0	0	0	0	0	<b>19</b>	19		
<b>15:30</b>	<b>15:45</b>	19	2	0	0	0	0	0	<b>21</b>	21		
15:45	16:00	22	1	0	0	0	0	2	<b>25</b>	23.4		
16:00	16:15	23	0	0	0	0	2	1	<b>26</b>	24		
16:15	16:30	13	0	0	0	0	0	0	<b>13</b>	13		
<b>16:30</b>	<b>16:45</b>	27	1	0	0	0	0	0	<b>28</b>	28		
16:45	17:00	12	0	0	0	0	0	2	<b>14</b>	12.4		
17:00	17:15	21	1	0	0	0	0	2	<b>24</b>	22.4		
17:15	17:30	34	3	1	0	0	0	1	<b>39</b>	38.7		
<b>17:30</b>	<b>17:45</b>	27	1	0	0	0	1	2	<b>31</b>	28.8		
17:45	18:00	15	2	1	0	0	0	1	<b>19</b>	18.7		
<b>P/TOT</b>		<b>333</b>	<b>24</b>	<b>4</b>	<b>0</b>	<b>0</b>	<b>5</b>	<b>15</b>	<b>0</b>	<b>0</b>	<b>381</b>	<b>368</b>

Period I Total: 91 11 2 0 0 2 3 0 0 **109** 106.4  
 Period II Total: 242 13 2 0 0 3 12 0 0 **272** 261.6

from	to	CAR	LGV	OGV1	OGV2	PSV	MCL	PCL	TOT	PCU.h		
PCU factor		1	1	1.5	2.3	2	0.4	0.2				
INTERVAL		01:00	01:00	01:00	01:00	01:00	01:00	01:00	01:00	01:00		
<b>07:30</b>	<b>08:30</b>	<b>34</b>	<b>5</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>2</b>	<b>1</b>	<b>43</b>	41.5		
07:45	08:45	34	4	0	0	0	1	1	<b>40</b>	38.6		
08:00	09:00	39	5	0	0	0	0	2	<b>46</b>	44.4		
08:15	09:15	44	7	0	0	0	0	3	<b>54</b>	51.6		
<b>08:30</b>	<b>09:30</b>	<b>57</b>	<b>6</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>2</b>	<b>66</b>	64.9		
08:45	09:45	44	5	1	0	0	0	2	<b>52</b>	50.9		
09:00	10:00	35	3	1	0	0	0	1	<b>40</b>	39.7		
09:15	10:15	19	0	1	0	0	0	0	<b>20</b>	20.5		
15:00	16:00	70	5	0	0	0	0	3	<b>78</b>	75.6		
15:15	16:15	82	4	0	0	0	2	3	<b>91</b>	87.4		
<b>15:30</b>	<b>16:30</b>	<b>77</b>	<b>3</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>2</b>	<b>3</b>	<b>85</b>	81.4		
15:45	16:45	85	2	0	0	0	2	3	<b>92</b>	88.4		
16:00	17:00	75	1	0	0	0	2	3	<b>81</b>	77.4		
16:15	17:15	73	2	0	0	0	0	4	<b>79</b>	75.8		
<b>16:30</b>	<b>17:30</b>	<b>94</b>	<b>5</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>5</b>	<b>105</b>	101.5		
16:45	17:45	94	5	1	0	0	1	7	<b>108</b>	102.3		
17:00	18:00	97	7	2	0	0	1	6	<b>113</b>	108.6		
17:15	18:15	76	6	2	0	0	1	4	<b>89</b>	86.2		
<b>17:30</b>	<b>18:30</b>	<b>42</b>	<b>3</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>1</b>	<b>3</b>	<b>50</b>	47.5		
17:45	18:45	15	2	1	0	0	0	1	<b>19</b>	18.7		
<b>P/TOT</b>		<b>333</b>	<b>24</b>	<b>4</b>	<b>0</b>	<b>0</b>	<b>5</b>	<b>15</b>	<b>0</b>	<b>0</b>	<b>381</b>	<b>368</b>



SITE: 2  
 LOCATION: Manor Road / Sainsbury's Access  
 TOTAL ARMS: A B C

from arm: **all**  
 to arm: **all**

period I period II  
 from: 07:30 15:00  
 to: 09:30 18:00

DATE: 02/10/2018  
 DAY: Tuesday

from	to	CAR	LGV	OGV1	OGV2	PSV	MCL	PCL	TOT	PCU		
PCU factor		1	1	1.5	2.3	2	0.4	0.2				
INTERVAL		00:15	00:15	00:15	00:15	00:15	00:15	00:15	00:15	00:15		
07:30	07:45	123	31	8	0	7	5	4	178	182.8		
07:45	08:00	96	23	5	1	5	2	3	135	140.2		
08:00	08:15	110	19	5	1	2	6	8	151	146.8		
08:15	08:30	107	20	5	1	2	3	11	149	144.2		
08:30	08:45	135	21	5	0	0	5	6	172	166.7		
08:45	09:00	158	24	3	1	1	3	4	194	192.8		
09:00	09:15	122	14	7	0	0	1	5	149	147.9		
09:15	09:30	126	18	6	0	5	1	2	158	163.8		
15:00	15:15	141	20	4	0	2	4	7	178	174		
15:15	15:30	111	21	8	1	4	1	5	151	155.7		
15:30	15:45	157	21	4	2	1	3	8	196	193.4		
15:45	16:00	120	22	3	0	3	1	3	152	153.5		
16:00	16:15	138	19	4	1	2	4	3	171	171.5		
16:15	16:30	134	20	2	1	2	4	8	171	166.5		
16:30	16:45	136	21	4	0	2	2	4	169	168.6		
16:45	17:00	131	22	1	0	2	1	4	161	159.7		
17:00	17:15	141	25	2	0	4	4	7	183	180		
17:15	17:30	182	26	5	0	1	4	12	230	221.5		
17:30	17:45	170	15	6	0	1	7	10	209	200.8		
17:45	18:00	149	19	1	0	2	4	7	182	176.5		
P/TOT		2687	421	88	9	48	65	121	0	0	3439	3407

Period I Total: 977 170 44 4 22 26 43 0 0 1286 1285  
 Period II Total: 1710 251 44 5 26 39 78 0 0 2153 2122

from	to	CAR	LGV	OGV1	OGV2	PSV	MCL	PCL	TOT	PCU.h		
PCU factor		1	1	1.5	2.3	2	0.4	0.2				
INTERVAL		01:00	01:00	01:00	01:00	01:00	01:00	01:00	01:00	01:00		
07:30	08:30	436	93	23	3	16	16	26	613	614		
07:45	08:45	448	83	20	3	9	16	28	607	597.9		
08:00	09:00	510	84	18	3	5	17	29	666	650.5		
08:15	09:15	522	79	20	2	3	12	26	664	651.6		
08:30	09:30	541	77	21	1	6	10	17	673	671.2		
08:45	09:45	406	56	16	1	6	5	11	501	504.5		
09:00	10:00	248	32	13	0	5	2	7	307	311.7		
09:15	10:15	126	18	6	0	5	1	2	158	163.8		
15:00	16:00	529	84	19	3	10	9	23	677	676.6		
15:15	16:15	526	83	19	4	10	9	19	670	674.1		
15:30	16:30	549	82	13	4	8	12	22	690	684.9		
15:45	16:45	528	82	13	2	9	11	18	663	660.1		
16:00	17:00	539	82	11	2	8	11	19	672	666.3		
16:15	17:15	542	88	9	1	10	11	23	684	674.8		
16:30	17:30	590	94	12	0	9	11	27	743	729.8		
16:45	17:45	624	88	14	0	8	16	33	783	762		
17:00	18:00	642	85	14	0	8	19	36	804	778.8		
17:15	18:15	501	60	12	0	4	15	29	621	598.8		
17:30	18:30	319	34	7	0	3	11	17	391	377.3		
17:45	18:45	149	19	1	0	2	4	7	182	176.5		
P/TOT		2687	421	88	9	48	65	121	0	0	3439	3407

from: to:  
 08:30 09:30 AM Peak Hour AM 07:00 10:00 AM Peak PCU 671.2  
 15:30 16:30 MID Peak Hour MID 10:00 16:00 MID Peak PCU 684.9  
 17:00 18:00 PM Peak Hour PM 16:00 19:00 PM Peak PCU 778.8  
 17:00 18:00 TOT Peak Hour TOT Peak PCU 778.8

***APPENDIX B***  
***Parking Stress Survey Data***

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Manor Road, Richmond

**Parking Stress Survey Report**

## PARKING STRESS SURVEY REPORT

Development: Manor Road, Richmond

Location: London Borough of Richmond

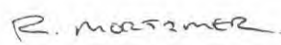

Client: Avanton Richmond Developments Limited

Project Manager: Roger Mortimer

Version No: V01

Date: 26/11/2018

### Approvals:

Name	Signature	Title
Roger Mortimer		Project Manager
Penny Winder		Director

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Methodology.....	5
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## 1 INTRODUCTION

Avanton Richmond Developments Limited has commissioned Alpha Parking Ltd to undertake a parking stress survey around the development site known as Manor Road in Richmond.

The purpose of the survey is to examine the roads within 500 metres' walking distance of the site and establish the existing levels of "parking stress", meaning the percentage of the kerbside parking space occupied at peak periods. This information can be used to assess whether there would be sufficient spare capacity on the streets for any additional parking generated by the development or whether special measures would be needed to manage the pressure for parking space.

Further details of the survey project are given in the inception document shown in Appendix A and a plan of the development site and survey area is shown in Figure 1.

The idea of parking stress surveys arose following changes in government policy in the 1990s to address concerns about growth in car use. In order to limit the available parking spaces the previous requirements to provide parking within housing developments were dropped and, instead, planning authorities were given new powers to cap the number of spaces that developers might choose to provide. However, reducing the levels of parking space did not necessarily stop the new residents from wanting cars. This tended to put pressure on the parking facilities in surrounding roads and, in some cases, for parking demand to exceed the available capacity.

In response to this a number of local authorities, such as the The London Borough of Lambeth, realised the need to assess such problems at the planning stage and the concept of "planning/parking stress surveys" came into being. These allowed early identification of likely problems and meant that protective measures (often in the form of parking restrictions on the streets) could be brought in with, and funded by, the development. The London Borough of Lambeth produced what are recognised as the standard guidelines on how to approach these surveys the "Lambeth Methodology". This approach is used as the basis for this survey.

## 2 PROJECT APPROACH

Alpha Parking Ltd recognises that the parking stress survey method developed by Lambeth Council has become an unofficial standard for this type of work and we use this as a basis for our surveys. This standard approach has an added benefit in allowing the results to be readily understood by anyone familiar with previous surveys.

However, we recommend that survey times and technical standards (such as the nominal length of road occupied by a parked vehicle) are tailored to reflect the preferences of the particular local authority involved and we plan the surveys to reflect these requirements.

Every Planning Department will decide on the parking situation on a case by case basis. This means that it is not possible to predict the planning decision, therefore the surveys are providing an independent and professional set of results to facilitate the decision rather than a conclusion. As an indication of the message from the results we would suggest that 85% is an indicative level at which parking stress becomes a cause for concern after allowance has been made for parking generated by the development. At this point, residents will begin to have difficulty parking close to their homes. Anything over 95% represents a situation where full capacity has effectively been reached. The use of a 500 metre walking distance to define the roads affected by the development is accepted as standard practice.

## 3 METHODOLOGY

### **Background Assessment**

An initial assessment was made taking into account the following factors:-

- The size and nature of the development
- Setting of development – residential/industrial etc, proximity to shopping centres, schools, railway stations etc
- Parking provisions within the development
- Other transport improvements linked to the development.

## Surveys

The survey area and the times and days of the surveys were defined taking into account the results of the background assessment. Within each road, the lengths of each section of restricted or unrestricted parking were measured and recorded, together with the number of vehicles parked upon that section and the lengths of any dropped kerbs. The position of skips was also noted, as well as any other unexpected items on the roads.

## Analysis

The lengths of restricted and unrestricted parking recorded on site were converted into equivalent numbers of parking spaces, assuming a 5.5 metre length for each space. Any sections with dropped kerbs were excluded from the calculation, as were any lengths of less than 5.5 metres.

# 4 RESULTS

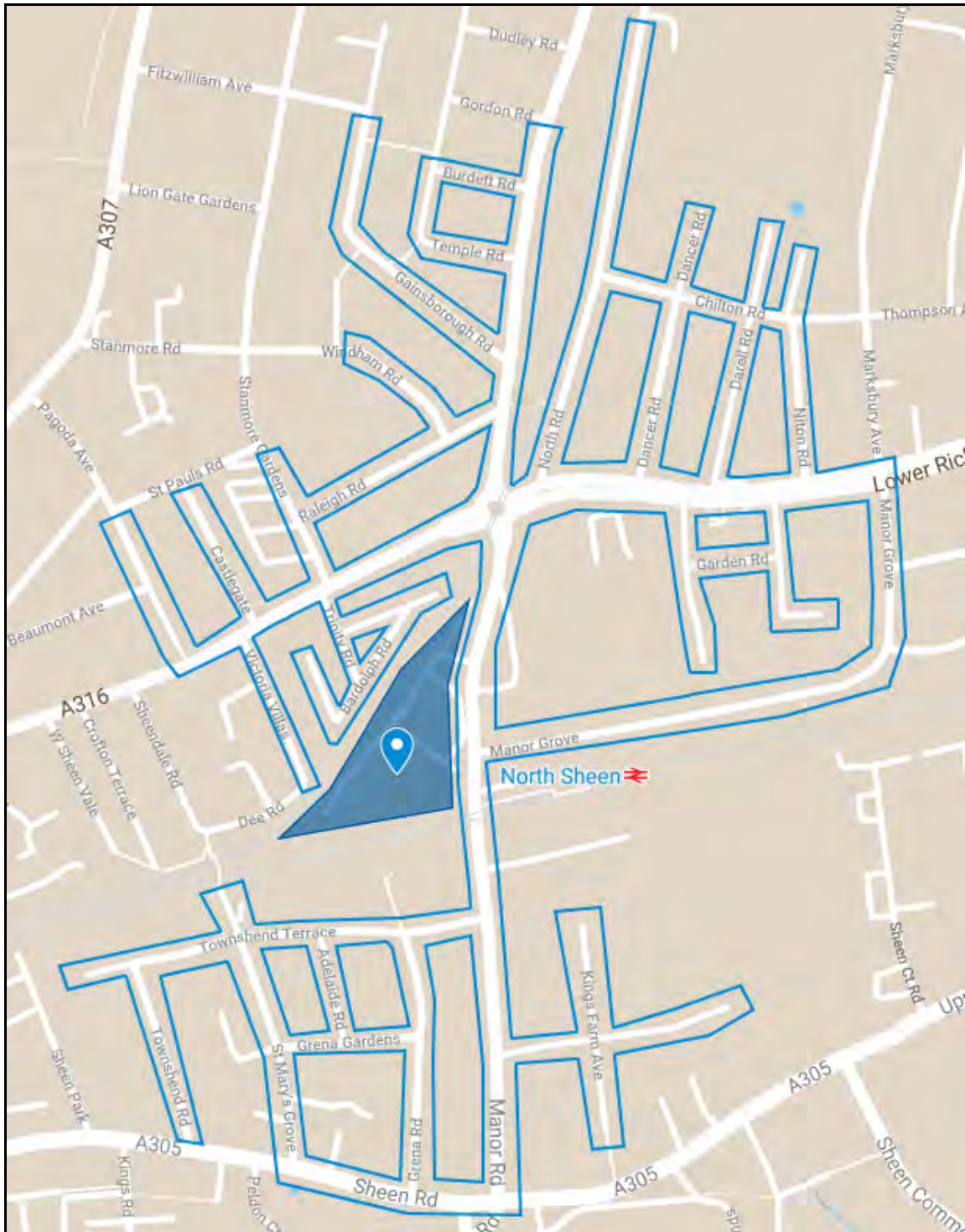
## Surveys

The area surveyed is shown on the plan in Figure 1 and the roads surveyed together with any additional comments are listed underneath each table.

The surveys took place between 01:00 – 05:30, 09:00 – 10:00 and 13:00 – 14:00 on Monday 12<sup>th</sup> and Tuesday 13<sup>th</sup> November 2018.

The tables show a detailed breakdown of the results for both days and beats and what restrictions are in place on the streets within the survey area.

Figure 1 – Survey Area



- The shaded area/pin drop shows the site location

Adelaide Road			Day 1						Day 2					
Restriction Type	No. Spaces (day)	No. Spaces (night)	0900-1000	Stress %	1300-1400	Stress %	Overnight	Stress %	0900-1000	Stress %	1300-1400	Stress %	Overnight	Stress %
Disabled	0	0	1	0.00%	1	0.00%	1	0.00%	1	0.00%	1	0.00%	1	0.00%
Resident Permit Holder	10	10	8	80.00%	9	90.00%	8	80.00%	8	80.00%	8	80.00%	8	80.00%
Resident Permit Holder & Limited Waiting	4	4	3	75.00%	3	75.00%	4	100.00%	4	100.00%	4	100.00%	4	100.00%
Single Yellow/Red Lines	0	15	0	0.00%	0	0.00%	0	0.00%	0	0.00%	0	0.00%	0	0.00%
<b>Total</b>	<b>14</b>	<b>29</b>	<b>12</b>	<b>85.71%</b>	<b>13</b>	<b>92.86%</b>	<b>13</b>	<b>44.83%</b>	<b>13</b>	<b>92.86%</b>	<b>13</b>	<b>92.86%</b>	<b>13</b>	<b>44.83%</b>

Bardolph Road			Day 1						Day 2					
Restriction Type	No. Spaces (day)	No. Spaces (night)	0900-1000	Stress %	1300-1400	Stress %	Overnight	Stress %	0900-1000	Stress %	1300-1400	Stress %	Overnight	Stress %
Pay & Display	2	3	0	0.00%	0	0.00%	0	0.00%	0	0.00%	0	0.00%	0	0.00%
Resident Permit Holders	13	17	10	76.92%	10	76.92%	12	70.59%	10	76.92%	10	76.92%	12	70.59%
Single Yellow/Red Lines	0	2	0	0.00%	0	0.00%	0	0.00%	0	0.00%	0	0.00%	0	0.00%
<b>Total</b>	<b>15</b>	<b>22</b>	<b>10</b>	<b>66.67%</b>	<b>10</b>	<b>66.67%</b>	<b>12</b>	<b>54.55%</b>	<b>10</b>	<b>66.67%</b>	<b>10</b>	<b>66.67%</b>	<b>12</b>	<b>54.55%</b>

Burdett Road			Day 1						Day 2					
Restriction Type	No. Spaces (day)	No. Spaces (night)	0900-1000	Stress %	1300-1400	Stress %	Overnight	Stress %	0900-1000	Stress %	1300-1400	Stress %	Overnight	Stress %
Disabled	1	1	1	100.00%	0	0.00%	1	100.00%	1	100.00%	0	0.00%	1	100.00%
Limited Waiting	2	2	2	100.00%	1	50.00%	0	0.00%	2	100.00%	2	100.00%	0	0.00%
Resident Permit Holder	18	18	13	72.22%	14	77.78%	17	94.44%	12	66.67%	14	77.78%	17	94.44%
<b>Total</b>	<b>21</b>	<b>21</b>	<b>16</b>	<b>76.19%</b>	<b>15</b>	<b>71.43%</b>	<b>18</b>	<b>85.71%</b>	<b>15</b>	<b>71.43%</b>	<b>16</b>	<b>76.19%</b>	<b>18</b>	<b>85.71%</b>

Carrington Road			Day 1						Day 2					
Restriction Type	No. Spaces (day)	No. Spaces (night)	0900-1000	Stress %	1300-1400	Stress %	Overnight	Stress %	0900-1000	Stress %	1300-1400	Stress %	Overnight	Stress %
Disabled	2	2	1	50.00%	1	50.00%	2	100.00%	2	100.00%	2	100.00%	2	100.00%
Unrestricted	48	48	32	66.67%	30	62.50%	40	83.33%	28	58.33%	28	58.33%	41	85.42%
<b>Total</b>	<b>50</b>	<b>50</b>	<b>33</b>	<b>66.00%</b>	<b>31</b>	<b>62.00%</b>	<b>42</b>	<b>84.00%</b>	<b>30</b>	<b>60.00%</b>	<b>30</b>	<b>60.00%</b>	<b>43</b>	<b>86.00%</b>

Castlegate			Day 1						Day 2					
Restriction Type	No. Spaces (day)	No. Spaces (night)	0900-1000	Stress %	1300-1400	Stress %	Overnight	Stress %	0900-1000	Stress %	1300-1400	Stress %	Overnight	Stress %
Disabled	1	1	0	0.00%	1	100.00%	0	0.00%	0	0.00%	0	0.00%	0	0.00%
Resident Permit Holder	27	27	23	85.19%	22	81.48%	26	96.30%	20	74.07%	21	77.78%	24	88.89%
Resident Permit Holder & Limited Waiting	4	4	4	100.00%	4	100.00%	3	75.00%	4	100.00%	4	100.00%	3	75.00%
Single Yellow/Red Lines	0	13	0	0.00%	0	0.00%	0	0.00%	0	0.00%	0	0.00%	0	0.00%
<b>Total</b>	<b>32</b>	<b>45</b>	<b>27</b>	<b>84.38%</b>	<b>27</b>	<b>84.38%</b>	<b>29</b>	<b>64.44%</b>	<b>24</b>	<b>75.00%</b>	<b>25</b>	<b>78.13%</b>	<b>27</b>	<b>60.00%</b>

Chilton Road			Day 1						Day 2					
Restriction Type	No. Spaces (day)	No. Spaces (night)	0900-1000	Stress %	1300-1400	Stress %	Overnight	Stress %	0900-1000	Stress %	1300-1400	Stress %	Overnight	Stress %

Resident Permit Holder	19	19	14	73.68%	14	73.68%	17	89.47%	14	73.68%	13	68.42%	17	89.47%
Unrestricted	25	25	20	80.00%	19	76.00%	22	88.00%	20	80.00%	20	80.00%	21	84.00%
<b>Total</b>	<b>44</b>	<b>44</b>	<b>34</b>	<b>77.27%</b>	<b>33</b>	<b>75.00%</b>	<b>39</b>	<b>88.64%</b>	<b>34</b>	<b>77.27%</b>	<b>33</b>	<b>75.00%</b>	<b>38</b>	<b>86.36%</b>

Dancer Road			Day 1						Day 2					
Restriction Type	No. Spaces (day)	No. Spaces (night)	0900-1000	Stress %	1300-1400	Stress %	Overnight	Stress %	0900-1000	Stress %	1300-1400	Stress %	Overnight	Stress %
Disabled	1	1	1	100.00%	1	100.00%	1	100.00%	1	100.00%	1	100.00%	1	100.00%
Resident Permit Holder	79	79	53	67.09%	51	64.56%	67	84.81%	50	63.29%	51	64.56%	67	84.81%
<b>Total</b>	<b>80</b>	<b>87</b>	<b>54</b>	<b>67.50%</b>	<b>52</b>	<b>65.00%</b>	<b>68</b>	<b>78.16%</b>	<b>51</b>	<b>63.75%</b>	<b>52</b>	<b>65.00%</b>	<b>68</b>	<b>78.16%</b>

Darrel Road			Day 1						Day 2					
Restriction Type	No. Spaces (day)	No. Spaces (night)	0900-1000	Stress %	1300-1400	Stress %	Overnight	Stress %	0900-1000	Stress %	1300-1400	Stress %	Overnight	Stress %
Disabled	1	1	0	0.00%	0	0.00%	1	100.00%	0	0.00%	0	0.00%	1	100.00%
School Keep Clear	6	6	1	16.67%	0	0.00%	0	0.00%	2	33.33%	0	0.00%	0	0.00%
Unrestricted	65	65	47	72.31%	49	75.38%	52	80.00%	48	73.85%	48	73.85%	53	81.54%
<b>Total</b>	<b>72</b>	<b>81</b>	<b>48</b>	<b>66.67%</b>	<b>49</b>	<b>68.06%</b>	<b>53</b>	<b>65.43%</b>	<b>50</b>	<b>69.44%</b>	<b>48</b>	<b>66.67%</b>	<b>54</b>	<b>66.67%</b>

\* School Keep Clear restriction applies Monday - Friday between 08.00 to 09.30 and 14.30-16.30

Gainsborough Road			Day 1						Day 2					
Restriction Type	No. Spaces (day)	No. Spaces (night)	0900-1000	Stress %	1300-1400	Stress %	Overnight	Stress %	0900-1000	Stress %	1300-1400	Stress %	Overnight	Stress %
Car Club	1	1	1	100.00%	1	100.00%	1	100.00%	1	100.00%	1	100.00%	1	100.00%
Limited Waiting	2	2	1	50.00%	1	50.00%	0	0.00%	0	0.00%	0	0.00%	1	50.00%
Resident Permit Holder	82	82	55	67.07%	59	71.95%	76	92.68%	51	62.20%	56	68.29%	76	92.68%
Single Yellow/Red Lines	0	4	0	0.00%	0	0.00%	0	0.00%	0	0.00%	0	0.00%	0	0.00%
<b>Total</b>	<b>85</b>	<b>89</b>	<b>57</b>	<b>67.06%</b>	<b>61</b>	<b>71.76%</b>	<b>77</b>	<b>86.52%</b>	<b>52</b>	<b>61.18%</b>	<b>57</b>	<b>67.06%</b>	<b>78</b>	<b>87.64%</b>

Garden Road			Day 1						Day 2					
Restriction Type	No. Spaces (day)	No. Spaces (night)	0900-1000	Stress %	1300-1400	Stress %	Overnight	Stress %	0900-1000	Stress %	1300-1400	Stress %	Overnight	Stress %
Unrestricted	19	19	17	89.47%	17	89.47%	14	73.68%	18	94.74%	17	89.47%	14	73.68%
<b>Total</b>	<b>19</b>	<b>19</b>	<b>17</b>	<b>89.47%</b>	<b>17</b>	<b>89.47%</b>	<b>14</b>	<b>73.68%</b>	<b>18</b>	<b>94.74%</b>	<b>17</b>	<b>89.47%</b>	<b>14</b>	<b>73.68%</b>

Grena Gardens			Day 1						Day 2					
Restriction Type	No. Spaces (day)	No. Spaces (night)	0900-1000	Stress %	1300-1400	Stress %	Overnight	Stress %	0900-1000	Stress %	1300-1400	Stress %	Overnight	Stress %
Disabled	2	2	1	50.00%	1	50.00%	2	100.00%	2	100.00%	1	50.00%	2	100.00%
Resident Permit Holder	16	16	12	75.00%	12	75.00%	13	81.25%	11	68.75%	12	75.00%	13	81.25%
Resident Permit Holder & Limited Waiting	2	2	2	100.00%	2	100.00%	2	100.00%	2	100.00%	2	100.00%	2	100.00%
Single Yellow/Red Line	0	14	0	0.00%	0	0.00%	0	0.00%	0	0.00%	0	0.00%	0	0.00%
<b>Total</b>	<b>20</b>	<b>34</b>	<b>15</b>	<b>75.00%</b>	<b>15</b>	<b>75.00%</b>	<b>17</b>	<b>50.00%</b>	<b>15</b>	<b>75.00%</b>	<b>15</b>	<b>75.00%</b>	<b>17</b>	<b>50.00%</b>

Grena Road			Day 1						Day 2					
Restriction Type	No. Spaces (day)	No. Spaces (night)	0900-1000	Stress %	1300-1400	Stress %	Overnight	Stress %	0900-1000	Stress %	1300-1400	Stress %	Overnight	Stress %
Resident Permit Holder	25	25	23	92.00%	22	88.00%	24	96.00%	22	88.00%	21	84.00%	24	96.00%
Resident Permit Holder & Limited Waiting	5	5	2	40.00%	2	40.00%	4	80.00%	3	60.00%	3	60.00%	4	80.00%
<b>Total</b>	<b>30</b>	<b>31</b>	<b>25</b>	<b>83.33%</b>	<b>24</b>	<b>80.00%</b>	<b>28</b>	<b>93.33%</b>	<b>25</b>	<b>83.33%</b>	<b>24</b>	<b>80.00%</b>	<b>28</b>	<b>93.33%</b>

Kings Farm Avenue			Day 1						Day 2					
Restriction Type	No. Spaces (day)	No. Spaces (night)	0900-1000	Stress %	1300-1400	Stress %	Overnight	Stress %	0900-1000	Stress %	1300-1400	Stress %	Overnight	Stress %
Disabled	3	3	4	133.33%	3	100.00%	4	133.33%	3	100.00%	3	100.00%	4	133.33%
Unrestricted	52	52	38	73.08%	37	71.15%	44	84.62%	38	73.08%	37	71.15%	45	86.54%
<b>Total</b>	<b>55</b>	<b>55</b>	<b>42</b>	<b>76.36%</b>	<b>40</b>	<b>72.73%</b>	<b>48</b>	<b>87.27%</b>	<b>41</b>	<b>74.55%</b>	<b>40</b>	<b>72.73%</b>	<b>49</b>	<b>89.09%</b>

Lower Mortlake Road			Day 1						Day 2					
Restriction Type	No. Spaces (day)	No. Spaces (night)	0900-1000	Stress %	1300-1400	Stress %	Overnight	Stress %	0900-1000	Stress %	1300-1400	Stress %	Overnight	Stress %
Loading & Disabled	4	4	0	0.00%	0	0.00%	0	0.00%	0	0.00%	0	0.00%	0	0.00%
Resident Permit Holder	6	6	5	83.33%	5	83.33%	5	83.33%	5	83.33%	5	83.33%	5	83.33%
Resident Permit Holder & Limited Waiting	2	2	4	200.00%	4	200.00%	4	200.00%	4	200.00%	4	200.00%	4	200.00%
<b>Total</b>	<b>12</b>	<b>12</b>	<b>9</b>	<b>75.00%</b>	<b>9</b>	<b>75.00%</b>	<b>9</b>	<b>75.00%</b>	<b>9</b>	<b>75.00%</b>	<b>9</b>	<b>75.00%</b>	<b>9</b>	<b>75.00%</b>

Lower Richmond Road			Day 1						Day 2					
Restriction Type	No. Spaces (day)	No. Spaces (night)	0900-1000	Stress %	1300-1400	Stress %	Overnight	Stress %	0900-1000	Stress %	1300-1400	Stress %	Overnight	Stress %
Loading	2	2	0	0.00%	0	0.00%	0	0.00%	1	50.00%	0	0.00%	0	0.00%
Limited Waiting	4	4	2	50.00%	1	25.00%	0	0.00%	0	0.00%	1	25.00%	0	0.00%
Single Yellow/Red Lines	0	40	0	0.00%	0	0.00%	0	0.00%	0	0.00%	0	0.00%	0	0.00%
<b>Total</b>	<b>6</b>	<b>46</b>	<b>2</b>	<b>33.33%</b>	<b>1</b>	<b>16.67%</b>	<b>0</b>	<b>0.00%</b>	<b>1</b>	<b>16.67%</b>	<b>1</b>	<b>16.67%</b>	<b>0</b>	<b>0.00%</b>

Manor Gardnes			Day 1						Day 2					
Restriction Type	No. Spaces (day)	No. Spaces (night)	0900-1000	Stress %	1300-1400	Stress %	Overnight	Stress %	0900-1000	Stress %	1300-1400	Stress %	Overnight	Stress %
Resident Permit Holder	10	10	8	80.00%	8	80.00%	8	80.00%	8	80.00%	8	80.00%	8	80.00%
Resident Permit Holder & Limited Waiting	10	10	9	90.00%	9	90.00%	9	90.00%	8	80.00%	9	90.00%	8	80.00%
<b>Total</b>	<b>20</b>	<b>23</b>	<b>17</b>	<b>85.00%</b>	<b>17</b>	<b>85.00%</b>	<b>17</b>	<b>85.00%</b>	<b>16</b>	<b>80.00%</b>	<b>17</b>	<b>85.00%</b>	<b>16</b>	<b>80.00%</b>

Manor Grove			Day 1						Day 2					
Restriction Type	No. Spaces (day)	No. Spaces (night)	0900-1000	Stress %	1300-1400	Stress %	Overnight	Stress %	0900-1000	Stress %	1300-1400	Stress %	Overnight	Stress %
Disabled	2	2	2	100.00%	2	100.00%	2	100.00%	1	50.00%	1	50.00%	2	100.00%
Unrestricted	190	190	116	61.05%	112	58.95%	127	66.84%	113	59.47%	107	56.32%	130	68.42%
<b>Total</b>	<b>192</b>	<b>192</b>	<b>118</b>	<b>61.46%</b>	<b>114</b>	<b>59.38%</b>	<b>129</b>	<b>67.19%</b>	<b>114</b>	<b>59.38%</b>	<b>108</b>	<b>56.25%</b>	<b>132</b>	<b>68.75%</b>

**Manor Park**

Restriction Type	No. Spaces (day)	No. Spaces (night)	Day 1						Day 2					
			0900-1000	Stress %	1300-1400	Stress %	Overnight	Stress %	0900-1000	Stress %	1300-1400	Stress %	Overnight	Stress %
Disabled	2	2	1	50.00%	1	50.00%	2	100.00%	2	100.00%	2	100.00%	2	100.00%
Unrestricted	22	22	20	90.91%	19	86.36%	21	95.45%	20	90.91%	20	90.91%	21	95.45%
<b>Total</b>	<b>24</b>	<b>24</b>	<b>21</b>	<b>87.50%</b>	<b>20</b>	<b>83.33%</b>	<b>23</b>	<b>95.83%</b>	<b>22</b>	<b>91.67%</b>	<b>22</b>	<b>91.67%</b>	<b>23</b>	<b>95.83%</b>

**Manor Road**

Restriction Type	No. Spaces (day)	No. Spaces (night)	Day 1						Day 2					
			0900-1000	Stress %	1300-1400	Stress %	Overnight	Stress %	0900-1000	Stress %	1300-1400	Stress %	Overnight	Stress %
Single Yellow/Red Lines	0	15	0	0.00%	0	0.00%	0	0.00%	0	0.00%	0	0.00%	0	0.00%
Unrestricted	39	39	30	76.92%	29	74.36%	34	87.18%	27	69.23%	27	69.23%	34	87.18%
<b>Total</b>	<b>39</b>	<b>54</b>	<b>30</b>	<b>76.92%</b>	<b>29</b>	<b>74.36%</b>	<b>34</b>	<b>62.96%</b>	<b>27</b>	<b>69.23%</b>	<b>27</b>	<b>69.23%</b>	<b>34</b>	<b>62.96%</b>

**Market Road**

Restriction Type	No. Spaces (day)	No. Spaces (night)	Day 1						Day 2					
			0900-1000	Stress %	1300-1400	Stress %	Overnight	Stress %	0900-1000	Stress %	1300-1400	Stress %	Overnight	Stress %
Loading & Disabled	2	2	1	50.00%	1	50.00%	0	0.00%	1	50.00%	1	50.00%	0	0.00%
Single Yellow/Red Lines	0	2	0	0.00%	0	0.00%	0	0.00%	0	0.00%	0	0.00%	0	0.00%
Unrestricted	8	8	6	75.00%	6	75.00%	3	37.50%	8	100.00%	7	87.50%	3	37.50%
<b>Total</b>	<b>10</b>	<b>12</b>	<b>7</b>	<b>70.00%</b>	<b>7</b>	<b>70.00%</b>	<b>3</b>	<b>25.00%</b>	<b>9</b>	<b>0.00%</b>	<b>8</b>	<b>80.00%</b>	<b>3</b>	<b>25.00%</b>

**Niton Road**

Restriction Type	No. Spaces (day)	No. Spaces (night)	Day 1						Day 2					
			0900-1000	Stress %	1300-1400	Stress %	Overnight	Stress %	0900-1000	Stress %	1300-1400	Stress %	Overnight	Stress %
School Keep Clear	4	4	0	0.00%	0	0.00%	1	25.00%	0	0.00%	0	0.00%	1	25.00%
Unrestricted	31	31	21	67.74%	21	67.74%	22	70.97%	21	67.74%	19	61.29%	25	80.65%
<b>Total</b>	<b>35</b>	<b>35</b>	<b>21</b>	<b>60.00%</b>	<b>21</b>	<b>60.00%</b>	<b>23</b>	<b>65.71%</b>	<b>21</b>	<b>60.00%</b>	<b>19</b>	<b>54.29%</b>	<b>26</b>	<b>74.29%</b>

\* School Keep Clear restriction applies Monday - Friday between 08.00 to 09.30 and 14.30-16.30

**North Road**

Restriction Type	No. Spaces (day)	No. Spaces (night)	Day 1						Day 2					
			0900-1000	Stress %	1300-1400	Stress %	Overnight	Stress %	0900-1000	Stress %	1300-1400	Stress %	Overnight	Stress %
Limited Waiting	3	3	2	66.67%	2	66.67%	3	100.00%	1	33.33%	3	100.00%	2	66.67%
Resident Permit Holder	108	108	67	62.04%	74	68.52%	95	87.96%	66	61.11%	71	65.74%	89	82.41%
Single Yellow/Red Lines	0	3	1	33.33%	0	0.00%	0	0.00%	0	0.00%	1	33.33%	0	0.00%
<b>Total</b>	<b>111</b>	<b>114</b>	<b>70</b>	<b>63.06%</b>	<b>76</b>	<b>68.47%</b>	<b>98</b>	<b>85.96%</b>	<b>67</b>	<b>60.36%</b>	<b>75</b>	<b>67.57%</b>	<b>91</b>	<b>79.82%</b>

**Orchard Road**

Restriction Type	No. Spaces (day)	No. Spaces (night)	Day 1						Day 2					
			0900-1000	Stress %	1300-1400	Stress %	Overnight	Stress %	0900-1000	Stress %	1300-1400	Stress %	Overnight	Stress %
Limited Waiting & Disabled	4	4	0	0.00%	0	0.00%	0	0.00%	0	0.00%	0	0.00%	0	0.00%
Unrestricted	26	26	23	88.46%	23	88.46%	9	34.62%	25	96.15%	23	88.46%	8	30.77%

<b>Total</b>	<b>30</b>	<b>30</b>	<b>23 76.67%</b>	<b>23 76.67%</b>	<b>9 30.00%</b>	<b>25 83.33%</b>	<b>23 76.67%</b>	<b>8 26.67%</b>
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<b>Pagoda Avenue</b>			<b>Day 1</b>				<b>Day 2</b>							
Restriction Type	No. Spaces (day)	No. Spaces (night)	0900-1000	Stress %	1300-1400	Stress %	Overnight	Stress %	0900-1000	Stress %	1300-1400	Stress %	Overnight	Stress %
Resident Permit Holder	28	28	24	85.71%	23	82.14%	25	89.29%	22	78.57%	22	78.57%	26	92.86%
Resident Permit Holder & Limited Waiting	4	4	5	125.00%	5	125.00%	7	175.00%	5	125.00%	6	150.00%	7	175.00%
<b>Total</b>	<b>32</b>	<b>32</b>	<b>29 90.63%</b>		<b>28 87.50%</b>		<b>32 100.00%</b>		<b>27 84.38%</b>		<b>28 87.50%</b>		<b>33 103.13%</b>	

<b>Raleigh Road</b>			<b>Day 1</b>				<b>Day 2</b>							
Restriction Type	No. Spaces	No. Spaces	0900-1000	Stress %	1300-1400	Stress %	Overnight	Stress %	0900-1000	Stress %	1300-1400	Stress %	Overnight	Stress %
Resident Permit Holder	64	64	63	98.44%	60	93.75%	68	106.25%	61	95.31%	61	95.31%	68	106.25%
<b>Total</b>	<b>64</b>	<b>64</b>	<b>63 98.44%</b>		<b>60 93.75%</b>		<b>68 106.25%</b>		<b>61 95.31%</b>		<b>61 95.31%</b>		<b>68 106.25%</b>	

<b>Sandycombe Road</b>			<b>Day 1</b>				<b>Day 2</b>							
Restriction Type	No. Spaces (day)	No. Spaces (night)	0900-1000	Stress %	1300-1400	Stress %	Overnight	Stress %	0900-1000	Stress %	1300-1400	Stress %	Overnight	Stress %
Single Yellow/Red Lines	0	13	0	0.00%	0	0.00%	0	0.00%	0	0.00%	0	0.00%	0	0.00%
Unrestricted	41	41	36	87.80%	33	80.49%	39	95.12%	36	87.80%	36	87.80%	39	95.12%
<b>Total</b>	<b>41</b>	<b>54</b>	<b>36 87.80%</b>		<b>33 80.49%</b>		<b>39 72.22%</b>		<b>36 87.80%</b>		<b>36 87.80%</b>		<b>39 72.22%</b>	

<b>Sheen Road</b>			<b>Day 1</b>				<b>Day 2</b>							
Restriction Type	No. Spaces (day)	No. Spaces (night)	0900-1000	Stress %	1300-1400	Stress %	Overnight	Stress %	0900-1000	Stress %	1300-1400	Stress %	Overnight	Stress %
Resident Permit Holder	19	19	15	78.95%	14	73.68%	15	78.95%	15	78.95%	14	73.68%	15	78.95%
Resident Permit Holder & Limited Waiting	10	10	7	70.00%	7	70.00%	7	70.00%	8	80.00%	6	60.00%	7	70.00%
Single Yellow/Red Lines	0	12	0	0.00%	1	>100.00%	0	0.00%	0	0.00%	2	>100.00%	0	0.00%
<b>Total</b>	<b>29</b>	<b>41</b>	<b>22 75.86%</b>		<b>22 75.86%</b>		<b>22 53.66%</b>		<b>23 79.31%</b>		<b>22 75.86%</b>		<b>22 53.66%</b>	

<b>St George's Road</b>			<b>Day 1</b>				<b>Day 2</b>							
Restriction Type	No. Spaces (day)	No. Spaces (night)	0900-1000	Stress %	1300-1400	Stress %	Overnight	Stress %	0900-1000	Stress %	1300-1400	Stress %	Overnight	Stress %
Resident Permit Holder	26	26	15	57.69%	14	53.85%	14	53.85%	16	61.54%	14	53.85%	14	53.85%
<b>Total</b>	<b>26</b>	<b>26</b>	<b>15 57.69%</b>		<b>14 53.85%</b>		<b>14 53.85%</b>		<b>16 61.54%</b>		<b>14 53.85%</b>		<b>14 53.85%</b>	

<b>St Mary's Grove</b>			<b>Day 1</b>				<b>Day 2</b>							
Restriction Type	No. Spaces (day)	No. Spaces (night)	0900-1000	Stress %	1300-1400	Stress %	Overnight	Stress %	0900-1000	Stress %	1300-1400	Stress %	Overnight	Stress %
Resident Permit Holder	25	25	17	68.00%	17	68.00%	19	76.00%	17	68.00%	16	64.00%	18	72.00%
Resident Permit Holder & Limited Waiting	9	9	5	55.56%	4	44.44%	6	66.67%	6	66.67%	5	55.56%	5	55.56%
<b>Total</b>	<b>34</b>	<b>34</b>	<b>22 64.71%</b>		<b>21 61.76%</b>		<b>25 73.53%</b>		<b>23 67.65%</b>		<b>21 61.76%</b>		<b>23 67.65%</b>	

**Stanmore Grove**

Restriction Type	No. Spaces (day)	No. Spaces (night)	Day 1						Day 2					
			0900-1000	Stress %	1300-1400	Stress %	Overnight	Stress %	0900-1000	Stress %	1300-1400	Stress %	Overnight	Stress %
Resident Permit Holder	15	15	12	80.00%	13	86.67%	16	106.67%	12	80.00%	12	80.00%	15	100.00%
Resident Permit Holder & Pay at Machine	13	13	11	84.62%	11	84.62%	11	84.62%	10	76.92%	10	76.92%	11	84.62%
Single Yellow/Red Lines	0	1	0	0.00%	0	0.00%	0	0.00%	0	0.00%	0	0.00%	0	0.00%
<b>Total</b>	<b>28</b>	<b>29</b>	<b>23</b>	<b>82.14%</b>	<b>24</b>	<b>85.71%</b>	<b>27</b>	<b>93.10%</b>	<b>22</b>	<b>0.00%</b>	<b>22</b>	<b>78.57%</b>	<b>26</b>	<b>89.66%</b>

**Temple Road**

Restriction Type	No. Spaces (day)	No. Spaces (night)	Day 1						Day 2					
			0900-1000	Stress %	1300-1400	Stress %	Overnight	Stress %	0900-1000	Stress %	1300-1400	Stress %	Overnight	Stress %
Disabled	1	1	1	100.00%	1	100.00%	1	100.00%	1	100.00%	1	100.00%	1	100.00%
Limited Waiting	2	2	2	100.00%	2	100.00%	1	50.00%	0	0.00%	0	0.00%	1	50.00%
Resident Permit Holder	36	36	19	52.78%	19	52.78%	32	88.89%	21	58.33%	22	61.11%	31	86.11%
<b>Total</b>	<b>39</b>	<b>39</b>	<b>22</b>	<b>56.41%</b>	<b>22</b>	<b>56.41%</b>	<b>34</b>	<b>87.18%</b>	<b>22</b>	<b>56.41%</b>	<b>23</b>	<b>58.97%</b>	<b>33</b>	<b>84.62%</b>

**Townshed Road**

Restriction Type	No. Spaces (day)	No. Spaces (night)	Day 1						Day 2					
			0900-1000	Stress %	1300-1400	Stress %	Overnight	Stress %	0900-1000	Stress %	1300-1400	Stress %	Overnight	Stress %
Resident Permit Holder	31	31	23	74.19%	23	74.19%	29	93.55%	25	80.65%	26	83.87%	28	90.32%
Single Yellow/Red Lines	0	14	0	0.00%	0	0.00%	0	0.00%	0	0.00%	0	0.00%	0	0.00%
<b>Total</b>	<b>31</b>	<b>45</b>	<b>23</b>	<b>74.19%</b>	<b>23</b>	<b>74.19%</b>	<b>29</b>	<b>64.44%</b>	<b>25</b>	<b>80.65%</b>	<b>26</b>	<b>83.87%</b>	<b>28</b>	<b>62.22%</b>

**Townshed Terrace**

Restriction Type	No. Spaces (day)	No. Spaces (night)	Day 1						Day 2					
			0900-1000	Stress %	1300-1400	Stress %	Overnight	Stress %	0900-1000	Stress %	1300-1400	Stress %	Overnight	Stress %
Disabled	1	1	1	100.00%	1	100.00%	1	100.00%	1	100.00%	1	100.00%	1	100.00%
Resident Permit Holder	40	40	30	75.00%	29	72.50%	28	70.00%	30	75.00%	28	70.00%	31	77.50%
Single Yellow/Red Lines	0	41	0	0.00%	0	0.00%	0	0.00%	0	0.00%	0	0.00%	1	2.44%
<b>Total</b>	<b>41</b>	<b>82</b>	<b>31</b>	<b>75.61%</b>	<b>30</b>	<b>73.17%</b>	<b>29</b>	<b>35.37%</b>	<b>31</b>	<b>0.00%</b>	<b>29</b>	<b>70.73%</b>	<b>33</b>	<b>40.24%</b>

**Trinity Cottages**

Restriction Type	No. Spaces (day)	No. Spaces (night)	Day 1						Day 2					
			0900-1000	Stress %	1300-1400	Stress %	Overnight	Stress %	0900-1000	Stress %	1300-1400	Stress %	Overnight	Stress %
Resident Permit Holder	1	1	0	0.00%	0	0.00%	1	100.00%	1	100.00%	1	100.00%	1	100.00%
<b>Total</b>	<b>1</b>	<b>1</b>	<b>0</b>	<b>0.00%</b>	<b>0</b>	<b>0.00%</b>	<b>1</b>	<b>100.00%</b>	<b>1</b>	<b>100.00%</b>	<b>1</b>	<b>100.00%</b>	<b>1</b>	<b>100.00%</b>

**Trinity Road**

Restriction Type	No. Spaces (day)	No. Spaces (night)	Day 1						Day 2					
			0900-1000	Stress %	1300-1400	Stress %	Overnight	Stress %	0900-1000	Stress %	1300-1400	Stress %	Overnight	Stress %
Resident Permit Holder	19	19	8	42.11%	9	47.37%	14	73.68%	9	47.37%	7	36.84%	15	78.95%
<b>Total</b>	<b>19</b>	<b>19</b>	<b>8</b>	<b>42.11%</b>	<b>9</b>	<b>47.37%</b>	<b>14</b>	<b>73.68%</b>	<b>9</b>	<b>47.37%</b>	<b>7</b>	<b>36.84%</b>	<b>15</b>	<b>78.95%</b>

**Victoria Villas**

Restriction Type	No. Spaces (day)	No. Spaces (night)	Day 1						Day 2					
			0900-1000	Stress %	1300-1400	Stress %	Overnight	Stress %	0900-1000	Stress %	1300-1400	Stress %	Overnight	Stress %
Loading & Disabled	2	2	1	50.00%	1	50.00%	0	0.00%	0	0.00%	1	50.00%	0	0.00%
Resident Permit Holder	11	11	3	27.27%	3	27.27%	2	18.18%	3	27.27%	4	36.36%	2	18.18%
Resident Permit Holder & Pay at Machine	12	12	5	41.67%	4	33.33%	2	16.67%	3	25.00%	3	25.00%	2	16.67%
Single Yellow/Red Lines	0	3	0	0.00%	0	0.00%	0	0.00%	0	0.00%	0	0.00%	0	0.00%
<b>Total</b>	<b>25</b>	<b>28</b>	<b>9</b>	<b>36.00%</b>	<b>8</b>	<b>32.00%</b>	<b>4</b>	<b>14.29%</b>	<b>6</b>	<b>24.00%</b>	<b>8</b>	<b>32.00%</b>	<b>4</b>	<b>14.29%</b>

**Windham Road**

Restriction Type	No. Spaces (day)	No. Spaces (night)	Day 1						Day 2					
			0900-1000	Stress %	1300-1400	Stress %	Overnight	Stress %	0900-1000	Stress %	1300-1400	Stress %	Overnight	Stress %
Resident Permit Holder	11	11	7	63.64%	9	81.82%	9	81.82%	10	90.91%	9	81.82%	9	81.82%
Resident Permit Holder & Limited Waiting	13	13	10	76.92%	10	76.92%	11	84.62%	9	69.23%	11	84.62%	10	76.92%
School Keep Clear	3	3	0	0.00%	0	0.00%	0	0.00%	0	0.00%	0	0.00%	0	0.00%
Single Yellow/Red Lines	0	4	0	0.00%	0	0.00%	0	0.00%	0	0.00%	0	0.00%	0	0.00%
<b>Total</b>	<b>27</b>	<b>31</b>	<b>17</b>	<b>62.96%</b>	<b>19</b>	<b>70.37%</b>	<b>20</b>	<b>64.52%</b>	<b>19</b>	<b>70.37%</b>	<b>20</b>	<b>74.07%</b>	<b>19</b>	<b>61.29%</b>

\* School Keep Clear restriction applies Monday - Friday between 08.00 to 09.30 and 14.30-16.30

**Overall Results**

Overall Results	Spaces	Usage	Average Stress	Average Stress per beat/day	Overall Average Stress
Day 1 - 0900-1000	1453	1028	70.75%	70.13%	67.45%
Day 2 - 0900-1000		1010	69.51%		
Day 1 - 1300-1400	1628	1017	62.47%	62.93%	
Day 2 - 1300-1400		1032	63.39%		
Day 1 - overnight	1674	1161	69.35%	69.30%	
Day 2 - overnight		1159	69.24%		

## CONCLUSION

The overall stress percentage covering the survey area is 67.45%. While the parking decisions for developments remains with the Council the results here are moderate for a busy London Borough.

*Appendix A*

**A. CONTACT DETAILS**

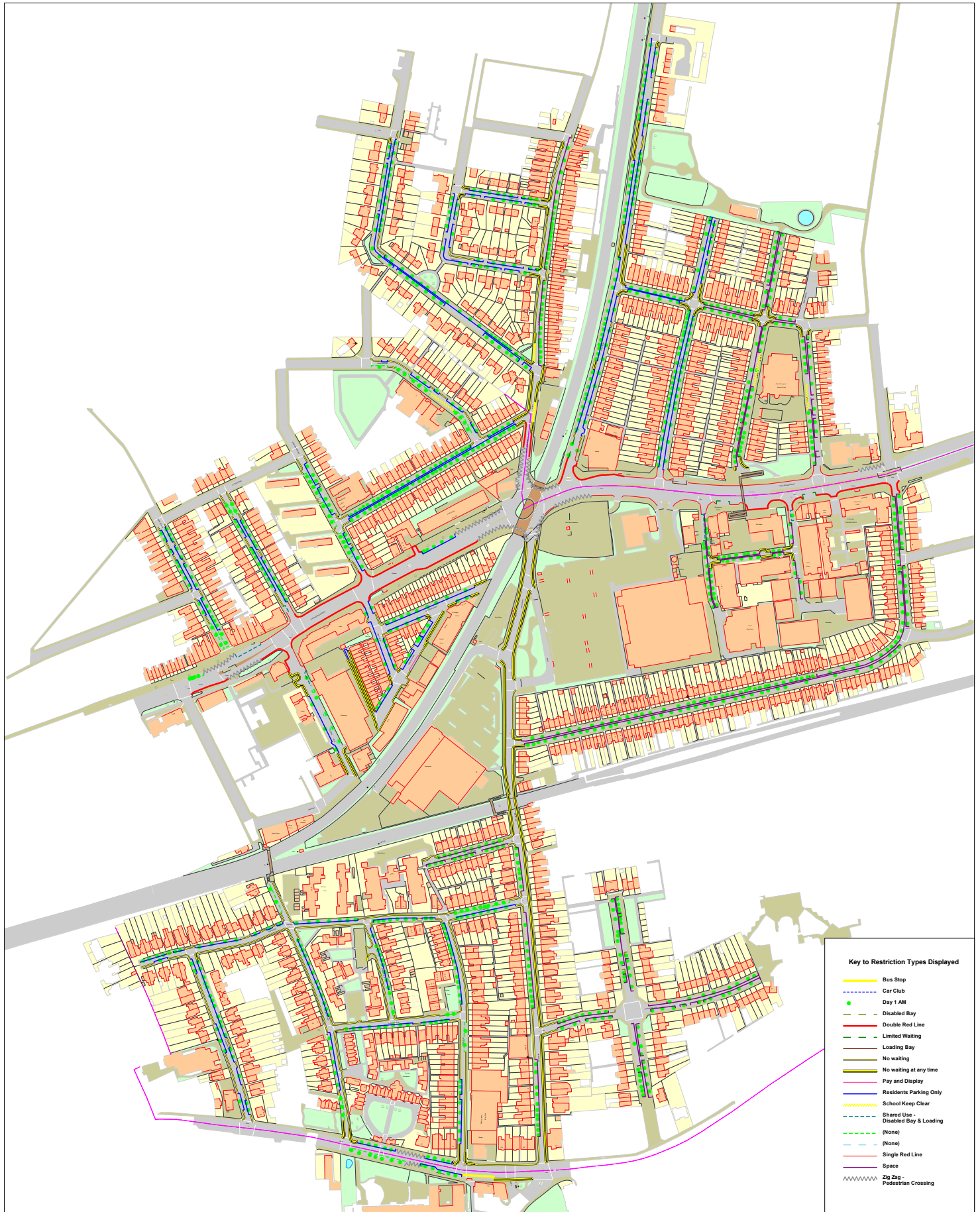
1. Client Contact Name	Avanton Richmond Developments Limited
2. Client Contact Email address	<u><a href="mailto:chris@avanton.co.uk">chris@avanton.co.uk</a></u>

**B. DEVELOPMENT DETAILS**

3. Development Name	Manor Road, Richmond
4. Development address (please include post code)	84 Manor Road, Richmond, TW9 1YB
5. Can development plans be provided?	n/a

**PLANNING REQUIREMENTS**

6. Which Local Authority is requiring the Parking Stress Survey?	London Borough of Richmond
7. Local Authority Planning contact:	n/a



**Key to Restriction Types Displayed**

- Bus Stop
- - - Car Club
- - - Day 1 AM
- - - Disabled Bay
- - - Double Red Line
- - - Limited Waiting
- - - Loading Bay
- - - No waiting
- - - No waiting at any time
- - - Pay and Display
- - - Residents Parking Only
- - - School Keep Clear
- - - Shared Use - Disabled Bay & Loading
- - - (None)
- - - Single Red Line
- - - Space
- ⋈ Zig Zag - Pedestrian Crossing



**Manor Road, Richmond: PSS Day 1 AM**

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SCALE	1 : 1250 @ A0 size
DATE	26/11/2018
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**Key to Restriction Types Displayed**

- Bus Stop
- - - Car Club
- - - Day 1 Night
- Disabled Bay
- Double Red Line
- - - Limited Waiting
- Loading Bay
- No waiting
- No waiting at any time
- Pay and Display
- Residents Parking Only
- - - School Keep Clear
- - - Shared Use - Disabled Bay & Loading
- - - (None)
- - - (None)
- Single Red Line
- Space
- - - Zig Zag - Pedestrian Crossing



Manor Road, Richmond: PSS Day 1 Night

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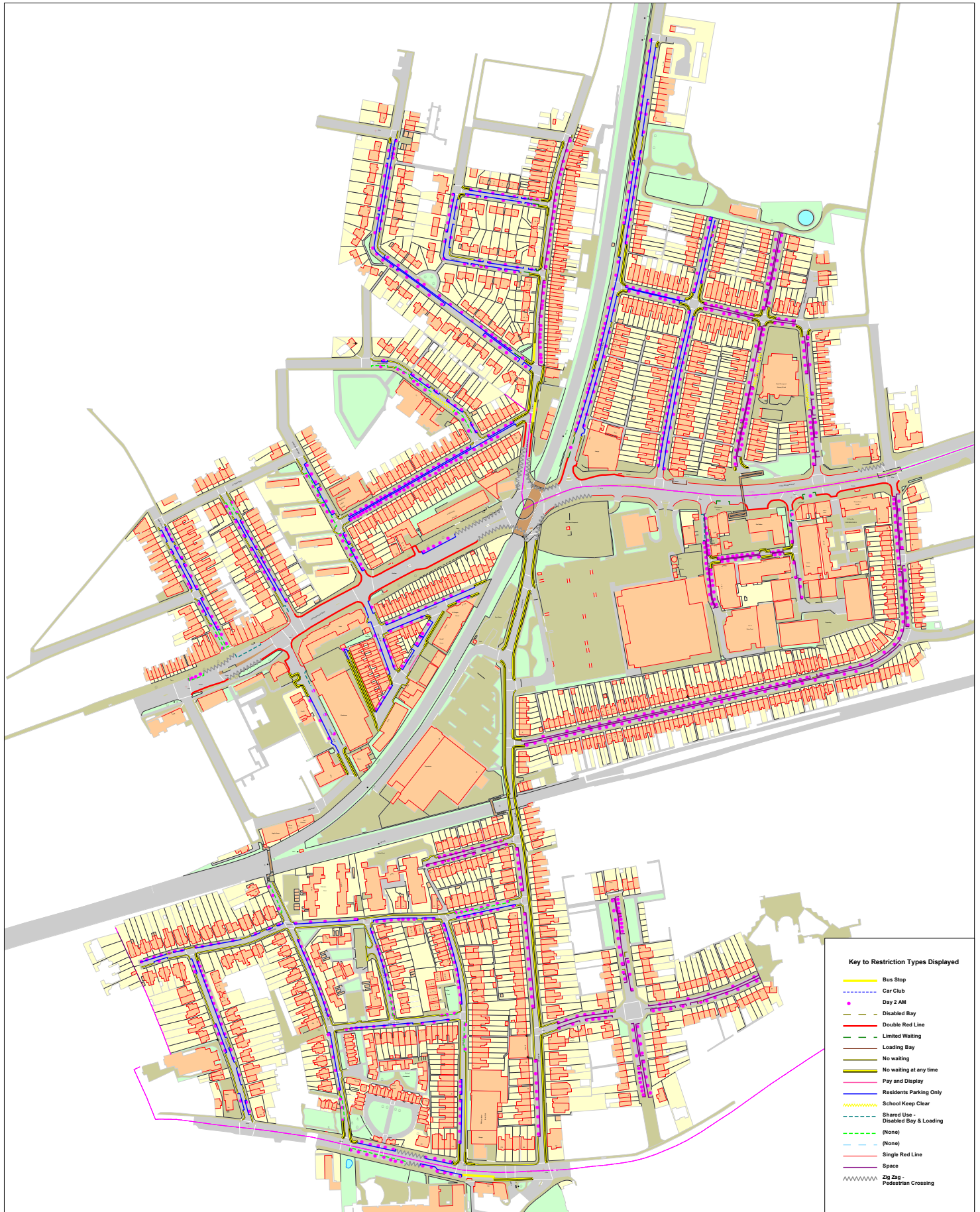
SCALE	1 : 1250 at A0 size
DATE	26/11/2018
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Manor Road, Richmond: PSS Day 1 PM

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**Key to Restriction Types Displayed**

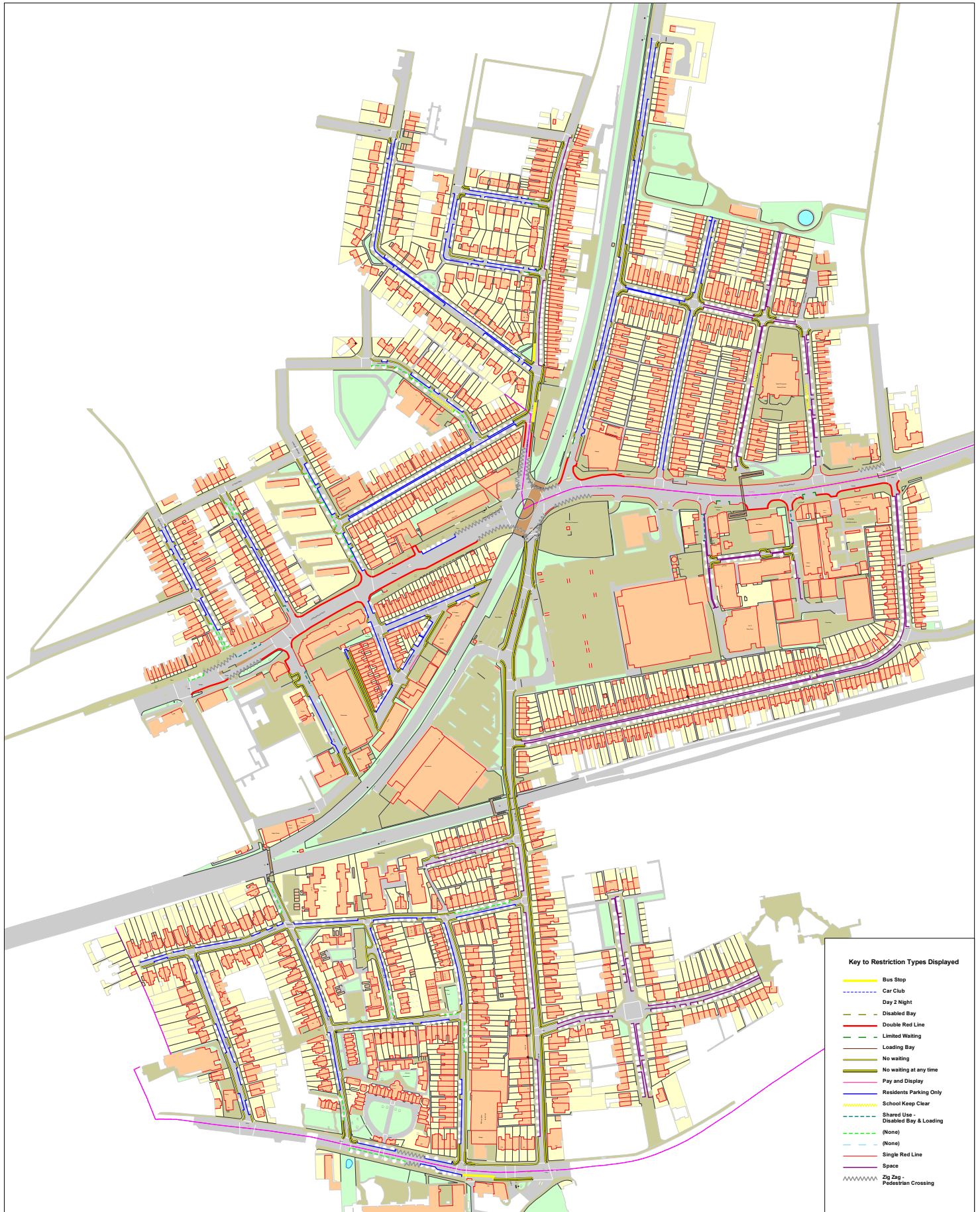
- Bus Stop
- - - Car Club
- - - Day 2 AM
- - - Disabled Bay
- == Double Red Line
- - - Limited Waiting
- - - Loading Bay
- - - No waiting
- - - No waiting at any time
- - - Pay and Display
- - - Residents Parking Only
- - - School Keep Clear
- - - Shared Use - Disabled Bay & Loading
- - - (None)
- - - Single Red Line
- - - Space
- ⋈ Zig Zag - Pedestrian Crossing



**Manor Road, Richmond: PSS Day 2 AM**

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**Key to Restriction Types Displayed**

- Bus Stop
- - - Car Club
- - - Day 2 Night
- - - Disabled Bay
- - - Double Red Line
- - - Limited Waiting
- - - Loading Bay
- - - No waiting
- - - No waiting at any time
- - - Pay and Display
- - - Residents Parking Only
- - - School Keep Clear
- - - Shared Use - Disabled Bay & Loading
- - - (None)
- - - (None)
- - - Single Red Line
- - - Space
- - - Zig Zag - Pedestrian Crossing



Manor Road, Richmond: PSS Day 2 Night

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**Key to Restriction Types Displayed**

- Bus Stop
- - - Car Club
- Day 2 PM
- - - Disabled Bay
- == Double Red Line
- - - Limited Waiting
- - - Loading Bay
- - - No waiting
- - - No waiting at any time
- Pay and Display
- - - Residents Parking Only
- - - School Keep Clear
- - - Shared Use - Disabled Bay & Loading
- - - (None)
- - - (None)
- - - Single Red Line
- Space
- ⋈ Zig Zag - Pedestrian Crossing



Manor Road, Richmond: PSS Day 2 PM

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***APPENDIX C***  
***Survey of Pedestrian Activity at North Sheen Station***

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ADVANCED  
TRANSPORT  
RESEARCH

*Job Number & Name:* 23031 Richmond

*Site Number/Name:* North Sheen Station

*Client:* Sanderson Associates

*Date:* 8th to 10th October 2019

*Weather:* variable

*Comments:* due to camera failure some data is  
missing on Thursday 10th

Advanced Transport Research

Job Number & Name: 23031 Richmond

North Sheen Station

Date: 8th to 10th October 2019

Job Type: Pedestrian & Cyclist Count

Co-ordinates: 51° 27' 54.30"N, 0° 17' 18.66"W

Postcode: TW9 4QE

Times: 0700-0930  
1500-1830



Times	Movement A		Movement B	
	Peds	Cyclists	Peds	Cyclists
07:00 - 07:05	29	0	4	0
07:05 - 07:10	0	0	2	0
07:10 - 07:15	5	0	7	0
07:15 - 07:20	36	0	1	0
07:20 - 07:25	10	0	0	0
07:25 - 07:30	19	0	17	0
07:30 - 07:35	31	0	6	0
07:35 - 07:40	6	0	4	0
07:40 - 07:45	21	0	13	1
07:45 - 07:50	50	0	0	0
07:50 - 07:55	19	0	5	0
07:55 - 08:00	33	0	3	0
<b>Hourly Total</b>	<b>259</b>	<b>0</b>	<b>62</b>	<b>1</b>
08:00 - 08:05	30	0	15	0
08:05 - 08:10	11	0	12	0
08:10 - 08:15	14	0	0	0
08:15 - 08:20	43	0	16	0
08:20 - 08:25	14	0	0	0
08:25 - 08:30	18	0	8	0
08:30 - 08:35	12	0	8	0
08:35 - 08:40	9	0	2	0
08:40 - 08:45	7	0	8	0
08:45 - 08:50	19	0	1	0
08:50 - 08:55	18	0	0	0
08:55 - 09:00	16	0	2	0
<b>Hourly Total</b>	<b>211</b>	<b>0</b>	<b>72</b>	<b>0</b>
09:00 - 09:05	21	0	5	0
09:05 - 09:10	6	0	1	0
09:10 - 09:15	8	0	1	0
09:15 - 09:20	10	0	2	0
09:20 - 09:25	2	0	0	0
09:25 - 09:30	2	0	2	0
<b>Hourly Total</b>	<b>49</b>	<b>0</b>	<b>11</b>	<b>0</b>

Times	Movement A		Movement B	
	Peds	Cyclists	Peds	Cyclists
15:00 - 15:05	1	0	5	0
15:05 - 15:10	4	0	1	0
15:10 - 15:15	4	0	14	0
15:15 - 15:20	10	0	0	0
15:20 - 15:25	4	0	2	0
15:25 - 15:30	1	0	2	0
15:30 - 15:35	2	0	6	0
15:35 - 15:40	1	0	2	0
15:40 - 15:45	4	0	2	0
15:45 - 15:50	1	0	0	0
15:50 - 15:55	3	0	2	0
15:55 - 16:00	1	0	6	0
<b>Hourly Total</b>	<b>36</b>	<b>0</b>	<b>42</b>	<b>0</b>
16:00 - 16:05	9	0	10	0
16:05 - 16:10	4	0	3	0
16:10 - 16:15	5	0	12	0
16:15 - 16:20	4	0	0	0
16:20 - 16:25	2	0	7	0
16:25 - 16:30	3	0	18	0
16:30 - 16:35	4	0	3	0
16:35 - 16:40	6	0	4	0
16:40 - 16:45	6	0	15	0
16:45 - 16:50	7	0	10	0
16:50 - 16:55	3	0	3	0
16:55 - 17:00	7	0	20	0
<b>Hourly Total</b>	<b>60</b>	<b>0</b>	<b>105</b>	<b>0</b>
17:00 - 17:05	5	0	5	0
17:05 - 17:10	9	1	1	0
17:10 - 17:15	12	0	14	1
17:15 - 17:20	7	0	0	0
17:20 - 17:25	6	0	1	0
17:25 - 17:30	3	0	35	0
17:30 - 17:35	5	0	6	0
17:35 - 17:40	2	0	3	0
17:40 - 17:45	4	0	17	0
17:45 - 17:50	5	0	4	0

**Advanced Transport Research**

*Job Number & Name:* **23031 Richmond**

**North Sheen Station**

*Client:* **Sanderson Associates**

**Pedestrian Counts**

*Date:* **Tuesday 08 October 2019**

Times	Movement A		Movement B	
	Peds	Cyclists	Peds	Cyclists
17:50 - 17:55	5	0	10	0
17:55 - 18:00	2	0	33	0
Hourly Total	65	1	129	1

Times	Movement A		Movement B	
	Peds	Cyclists	Peds	Cyclists
07:00 - 07:05	24	0	1	0
07:05 - 07:10	2	0	1	0
07:10 - 07:15	7	0	4	0
07:15 - 07:20	22	0	3	0
07:20 - 07:25	13	0	0	0
07:25 - 07:30	25	0	16	1
07:30 - 07:35	21	0	2	1
07:35 - 07:40	4	0	2	0
07:40 - 07:45	15	0	15	0
07:45 - 07:50	43	0	2	0
07:50 - 07:55	21	0	0	0
07:55 - 08:00	25	0	7	0
<b>Hourly Total</b>	<b>222</b>	<b>0</b>	<b>53</b>	<b>2</b>
08:00 - 08:05	41	0	13	0
08:05 - 08:10	14	0	8	0
08:10 - 08:15	13	0	12	0
08:15 - 08:20	34	0	2	0
08:20 - 08:25	10	0	0	0
08:25 - 08:30	12	0	3	0
08:30 - 08:35	23	0	0	0
08:35 - 08:40	9	0	9	0
08:40 - 08:45	9	0	1	0
08:45 - 08:50	15	0	12	0
08:50 - 08:55	5	0	0	0
08:55 - 09:00	12	0	2	0
<b>Hourly Total</b>	<b>197</b>	<b>0</b>	<b>62</b>	<b>0</b>
09:00 - 09:05	26	0	0	0
09:05 - 09:10	11	0	7	0
09:10 - 09:15	3	0	0	0
09:15 - 09:20	8	0	5	0
09:20 - 09:25	7	0	5	0
09:25 - 09:30	3	0	2	0
<b>Hourly Total</b>	<b>58</b>	<b>0</b>	<b>19</b>	<b>0</b>

Times	Movement A		Movement B	
	Peds	Cyclists	Peds	Cyclists
15:00 - 15:05	3	0	2	0
15:05 - 15:10	3	0	1	0
15:10 - 15:15	6	0	5	0
15:15 - 15:20	6	0	0	0
15:20 - 15:25	5	0	0	0
15:25 - 15:30	4	0	9	1
15:30 - 15:35	14	0	4	0
15:35 - 15:40	7	0	2	0
15:40 - 15:45	7	0	9	0
15:45 - 15:50	11	0	0	0
15:50 - 15:55	1	0	4	0
15:55 - 16:00	2	1	8	0
<b>Hourly Total</b>	<b>69</b>	<b>1</b>	<b>44</b>	<b>1</b>
16:00 - 16:05	4	0	3	0
16:05 - 16:10	2	0	2	0
16:10 - 16:15	5	0	7	0
16:15 - 16:20	8	0	0	0
16:20 - 16:25	1	1	9	0
16:25 - 16:30	4	0	10	0
16:30 - 16:35	3	0	7	0
16:35 - 16:40	5	2	2	0
16:40 - 16:45	4	0	22	0
16:45 - 16:50	7	0	0	0
16:50 - 16:55	4	4	5	0
16:55 - 17:00	8	0	10	1
<b>Hourly Total</b>	<b>55</b>	<b>7</b>	<b>77</b>	<b>1</b>
17:00 - 17:05	5	0	2	0
17:05 - 17:10	3	0	0	0
17:10 - 17:15	1	0	13	1
17:15 - 17:20	5	0	0	0
17:20 - 17:25	6	0	3	0
17:25 - 17:30	3	2	26	0
17:30 - 17:35	2	0	7	0
17:35 - 17:40	6	2	8	2
17:40 - 17:45	7	0	36	0
17:45 - 17:50	5	0	0	0

**Advanced Transport Research**

*Job Number & Name:* **23031 Richmond**

**North Sheen Station**

*Client:* **Sanderson Associates**

**Pedestrian Counts**

*Date:* **Wednesday 09 October 2019**

Times	Movement A		Movement B	
	Peds	Cyclists	Peds	Cyclists
17:50 - 17:55	6	0	0	0
17:55 - 18:00	5	0	44	1
Hourly Total	54	4	139	4

Times	Movement A		Movement B	
	Peds	Cyclists	Peds	Cyclists
07:00 - 07:05	20	0	3	0
07:05 - 07:10	6	0	0	0
07:10 - 07:15	4	0	6	1
07:15 - 07:20	33	0	0	0
07:20 - 07:25	9	0	1	0
07:25 - 07:30	18	0	15	0
07:30 - 07:35	30	0	2	1
07:35 - 07:40	10	0	4	0
07:40 - 07:45	19	0	7	0
07:45 - 07:50	41	0	1	0
07:50 - 07:55	18	0	7	0
07:55 - 08:00	20	0	15	0
<b>Hourly Total</b>	<b>228</b>	<b>0</b>	<b>61</b>	<b>2</b>
08:00 - 08:05	32	0	1	0
08:05 - 08:10	10	0	1	0
08:10 - 08:15	16	0	32	0
08:15 - 08:20	43	0	0	0
08:20 - 08:25	13	0	1	0
08:25 - 08:30	14	0	0	0
08:30 - 08:35	18	0	9	0
08:35 - 08:40	4	0	1	0
08:40 - 08:45	10	0	14	0
08:45 - 08:50	21	0	1	0
08:50 - 08:55	8	0	3	0
08:55 - 09:00	12	0	2	0
<b>Hourly Total</b>	<b>201</b>	<b>0</b>	<b>65</b>	<b>0</b>
09:00 - 09:05	24	0	5	0
09:05 - 09:10	4	0	0	0
09:10 - 09:15	7	0	0	0
09:15 - 09:20	6	6	0	0
09:20 - 09:25				
09:25 - 09:30				
<b>Hourly Total</b>	<b>41</b>	<b>6</b>	<b>5</b>	<b>0</b>

Times	Movement A		Movement B	
	Peds	Cyclists	Peds	Cyclists
15:00 - 15:05				
15:05 - 15:10				
15:10 - 15:15				
15:15 - 15:20				
15:20 - 15:25				
15:25 - 15:30				
15:30 - 15:35				
15:35 - 15:40				
15:40 - 15:45				
15:45 - 15:50				
15:50 - 15:55				
15:55 - 16:00				
<b>Hourly Total</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
16:00 - 16:05				
16:05 - 16:10				
16:10 - 16:15				
16:15 - 16:20				
16:20 - 16:25				
16:25 - 16:30				
16:30 - 16:35				
16:35 - 16:40				
16:40 - 16:45				
16:45 - 16:50				
16:50 - 16:55				
16:55 - 17:00				
<b>Hourly Total</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
17:00 - 17:05				
17:05 - 17:10				
17:10 - 17:15				
17:15 - 17:20				
17:20 - 17:25				
17:25 - 17:30				
17:30 - 17:35				
17:35 - 17:40				
17:40 - 17:45				
17:45 - 17:50				

<b>Advanced Transport Research</b>	<i>Job Number &amp; Name:</i> <b>23031 Richmond</b>
<b>North Sheen Station</b>	<i>Client:</i> <b>Sanderson Associates</b>
<b>Pedestrian Counts</b>	<i>Date:</i> <b>Thursday 10 October 2019</b>

Times	Movement A		Movement B	
	Peds	Cyclists	Peds	Cyclists
17:50 - 17:55				
17:55 - 18:00				
<b>Hourly Total</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>



ADVANCED  
TRANSPORT  
RESEARCH

*Job Number & Name:* 23031 Richmond

*Site Number/Name:* North Sheen Station

*Client:* Sanderson Associates

*Date:* 24/10/2019

*Weather:* bright and dry

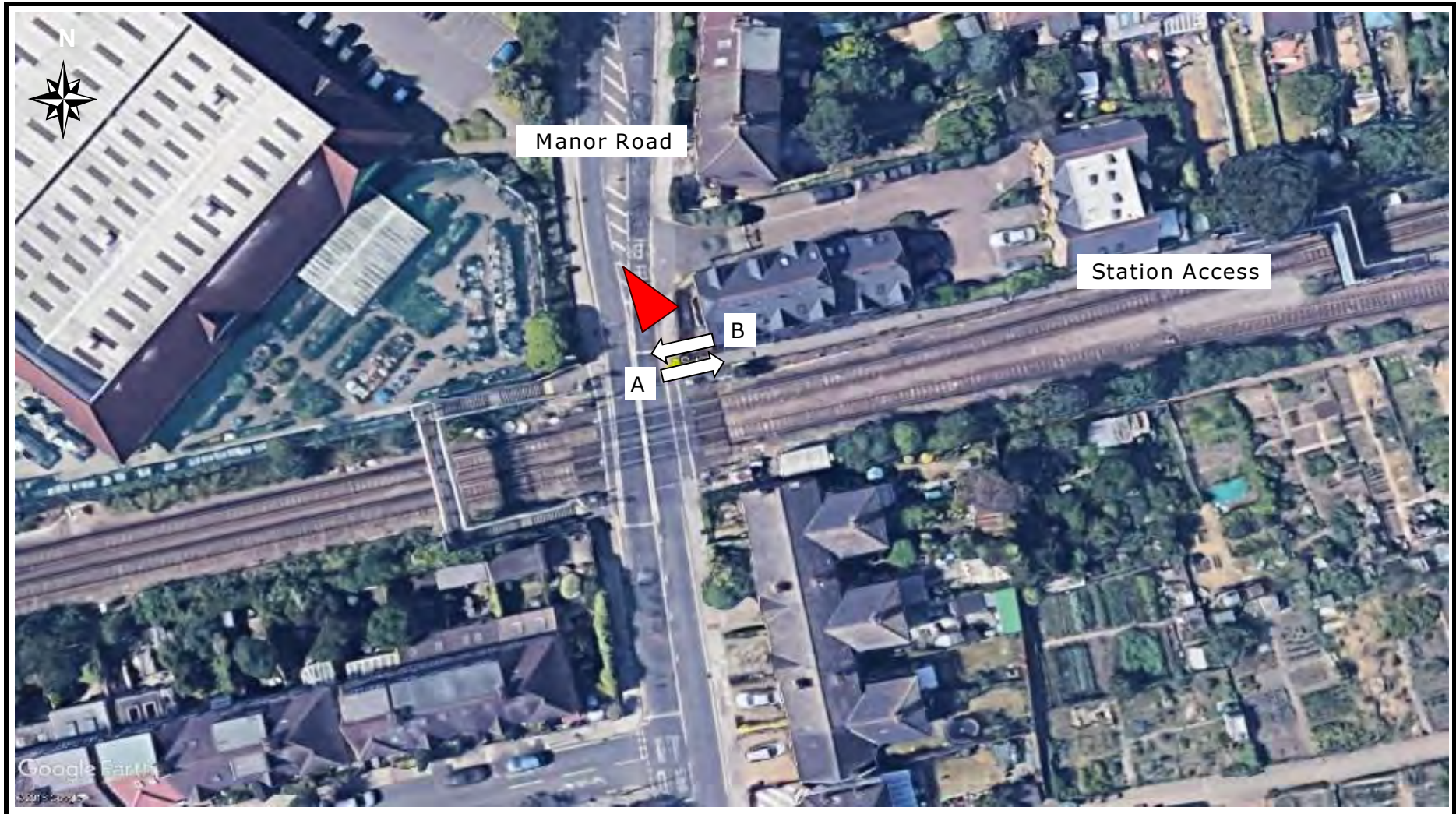
*Comments:* none

Job Type: Pedestrian & Cyclist Count

Co-ordinates: 51° 27' 54.30"N, 0° 17' 18.66"W

Postcode: TW9 4QE

Times: 0700-0930  
1500-1830



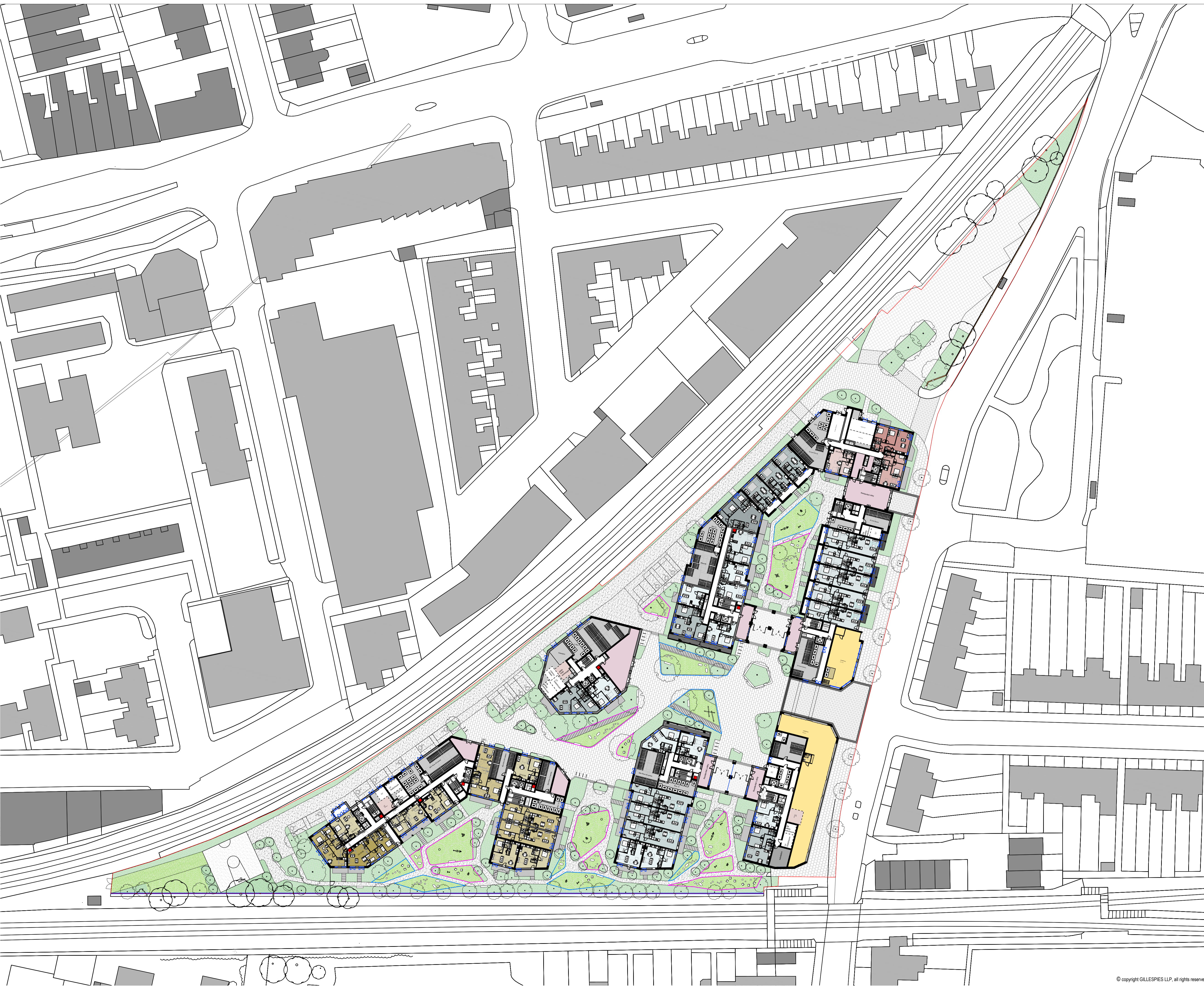
Times	Movement A		Movement B	
	Peds	Cyclists	Peds	Cyclists
07:00 - 07:05	14	0	8	0
07:05 - 07:10	1	0	1	0
07:10 - 07:15	8	0	3	0
07:15 - 07:20	26	0	0	0
07:20 - 07:25	2	0	2	0
07:25 - 07:30	22	0	9	0
07:30 - 07:35	22	0	8	2
07:35 - 07:40	4	0	2	0
07:40 - 07:45	15	0	12	0
07:45 - 07:50	30	0	0	0
07:50 - 07:55	8	0	2	0
07:55 - 08:00	32	0	3	0
<b>Hourly Total</b>	<b>184</b>	<b>0</b>	<b>50</b>	<b>2</b>
08:00 - 08:05	35	0	14	0
08:05 - 08:10	12	0	14	0
08:10 - 08:15	19	0	12	0
08:15 - 08:20	37	0	1	0
08:20 - 08:25	17	0	0	0
08:25 - 08:30	21	0	6	0
08:30 - 08:35	33	0	8	0
08:35 - 08:40	3	0	0	0
08:40 - 08:45	6	0	15	0
08:45 - 08:50	12	0	0	0
08:50 - 08:55	10	0	0	0
08:55 - 09:00	11	0	7	0
<b>Hourly Total</b>	<b>216</b>	<b>0</b>	<b>77</b>	<b>0</b>
09:00 - 09:05	13	0	2	0
09:05 - 09:10	5	0	0	0
09:10 - 09:15	13	0	0	0
09:15 - 09:20	15	0	12	0
09:20 - 09:25	7	0	0	0
09:25 - 09:30	5	0	1	0
<b>Hourly Total</b>	<b>58</b>	<b>0</b>	<b>15</b>	<b>0</b>

Times	Movement A		Movement B	
	Peds	Cyclists	Peds	Cyclists
15:00 - 15:05	5	0	3	0
15:05 - 15:10	3	0	3	0
15:10 - 15:15	2	0	3	0
15:15 - 15:20	6	0	9	0
15:20 - 15:25	5	0	2	0
15:25 - 15:30	2	0	7	0
15:30 - 15:35	8	0	0	0
15:35 - 15:40	1	0	2	0
15:40 - 15:45	3	0	11	0
15:45 - 15:50	6	0	0	0
15:50 - 15:55	2	0	16	0
15:55 - 16:00	4	0	2	0
<b>Hourly Total</b>	<b>47</b>	<b>0</b>	<b>58</b>	<b>0</b>
16:00 - 16:05	2	0	5	0
16:05 - 16:10	5	0	0	0
16:10 - 16:15	13	0	4	0
16:15 - 16:20	3	0	2	0
16:20 - 16:25	2	0	0	0
16:25 - 16:30	3	0	7	0
16:30 - 16:35	5	0	10	0
16:35 - 16:40	1	0	6	0
16:40 - 16:45	2	0	16	1
16:45 - 16:50	1	0	0	0
16:50 - 16:55	5	0	5	0
16:55 - 17:00	9	0	21	0
<b>Hourly Total</b>	<b>51</b>	<b>0</b>	<b>76</b>	<b>1</b>
17:00 - 17:05	8	0	0	0
17:05 - 17:10	2	0	3	0
17:10 - 17:15	9	1	29	0
17:15 - 17:20	14	0	1	0
17:20 - 17:25	6	0	0	0
17:25 - 17:30	5	0	20	0
17:30 - 17:35	7	0	7	0
17:35 - 17:40	7	0	2	0
17:40 - 17:45	3	1	19	0
17:45 - 17:50	6	0	0	0

<b>Advanced Transport Research</b>	<i>Job Number &amp; Name:</i>	<b>23031 Richmond</b>
<b>North Sheen Station</b>	<i>Client:</i>	<b>Sanderson Associates</b>
<b>Pedestrian Counts</b>	<i>Date:</i>	<b>Thursday 24 October 2019</b>

Times	Movement A		Movement B	
	Peds	Cyclists	Peds	Cyclists
17:50 - 17:55	5	0	5	0
17:55 - 18:00	2	0	47	0
<b>Hourly Total</b>	<b>74</b>	<b>2</b>	<b>133</b>	<b>0</b>

***APPENDIX D***  
***Proposed Ground Floor Layout***



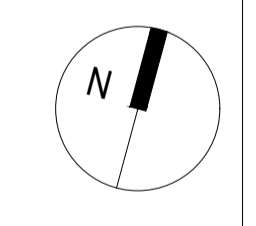
rev	details	by	date
00	For information	AP	07.11.2018
01	For Planning	AP	29.01.2019
02	Inclusion of play areas	AP	28.03.2019
03	Revised play areas	GP	16.04.2019
04	Revised tree planting	GP	08.05.2019
05	Updated for addendum submission	PC	22.11.2019
06	Updated to revised Block E design	PC	08.01.2020
07	Issued as draft for review	PC	17.07.2020
08	Issued for planning	PC	24.07.2020
09	Red line update	CC	10.11.2021
10	Refuse store update	CC	15.11.2021

**Notes**

1.0 Do not scale from drawing, use figured dimensions only  
 1.1 All dimensions to be checked onsite  
 1.2 This drawing to be read in conjunction with all other Gillespies drawings and specifications

**GENERAL**

	Concrete flags		Lawn
	Granite paving with frame		Proposed planting - perennials / shrubs
	Granite slabs		Existing Trees
	Granite setts		Proposed Trees
	Permeable asphalt		Planning Boundary
	Resin bound paving		0-4 Play space Total: 721m <sup>2</sup>
	High quality concrete block paving		5-11 Play space Total: 505m <sup>2</sup>
	Private terraces		
	Reinforced grass		
	Existing paving retained		
	Stepping stones		
	Seating elements		
	Play elements		
	2.4m Height Gates and Fences		
	Proposed timber fence infill		
	2.4m max brick screen wall with climber planting		
	Cycle stands		



Project title  
 Manor Road Richmond

Drawing title  
 Landscape General Arrangement

PLANNING	Drawing status	Scale	Drawn
		1:500 @ A1	GP
	Date	Checked	RC
	07.11.2018		
	Drawing number	Revision	
P11559-00-001-100			10

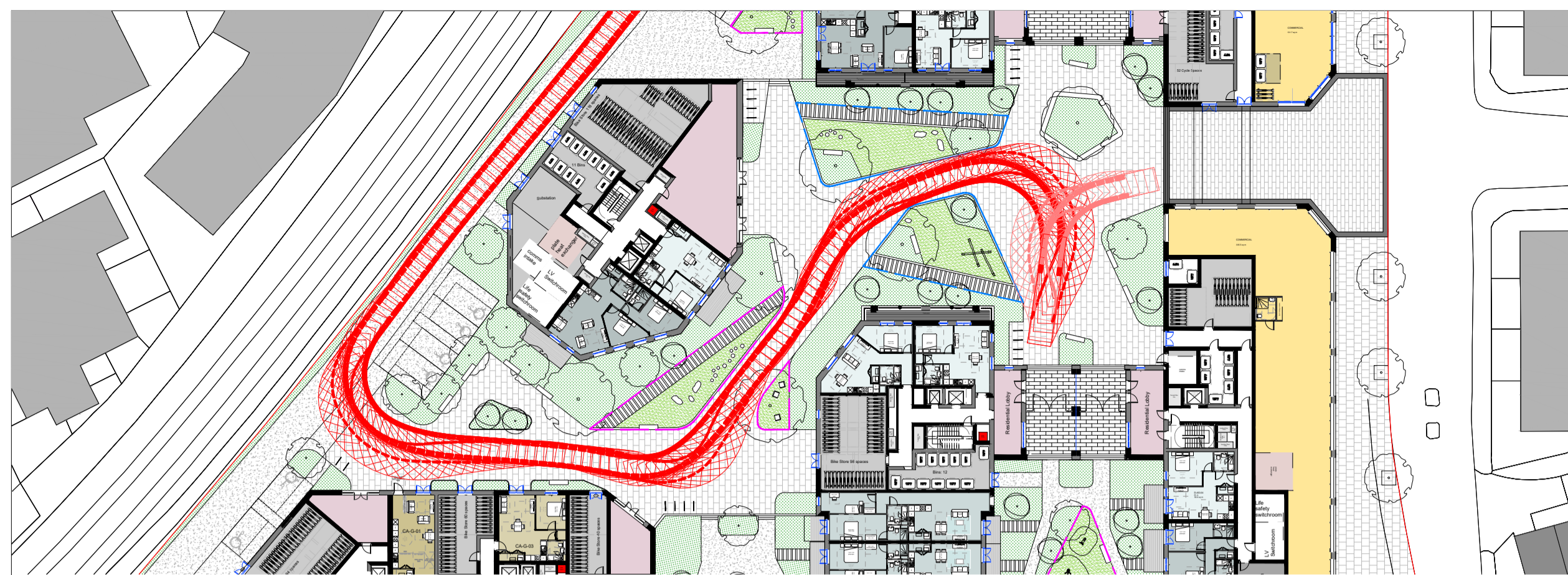
Client  
 Avator  
 56 Queen Anne Street  
 Luton, W10 3JA

**GILLESPIES**  
 1 St John's Square, London EC1M 4DH  
 P: 020 7253 2925 E: design.london@gillespies.co.uk

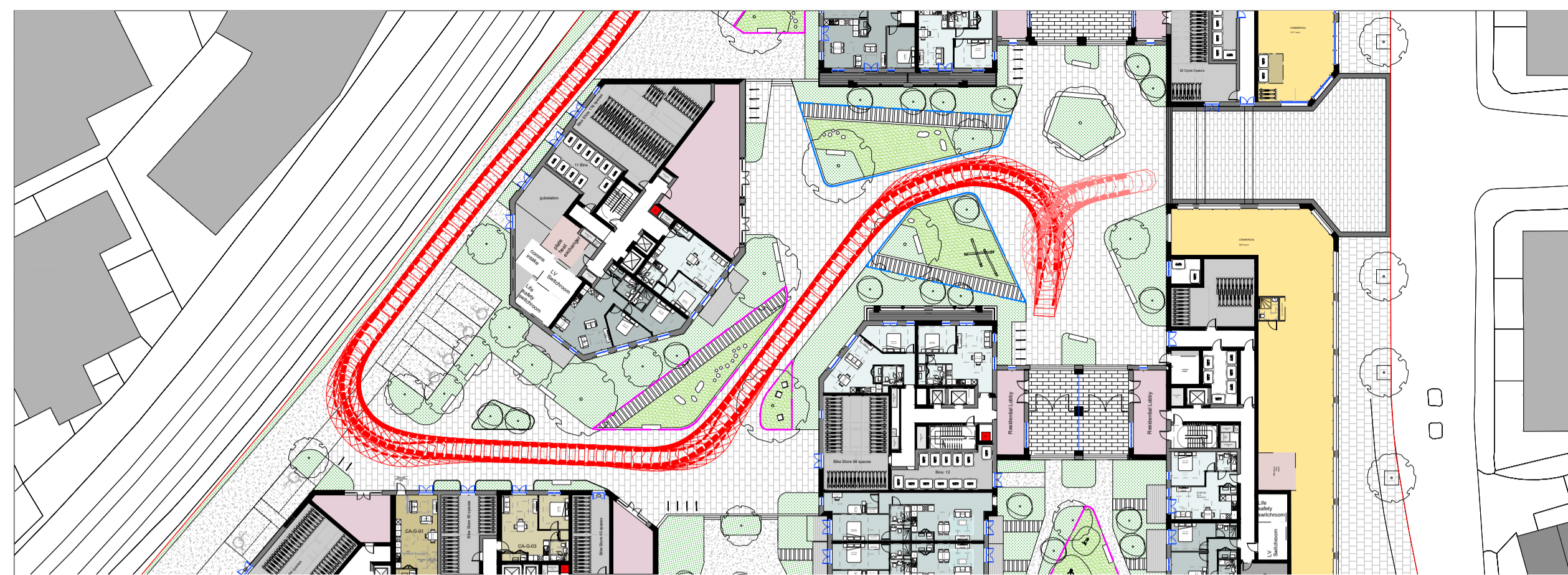
***APPENDIX E***

***Drawing 300025-001***

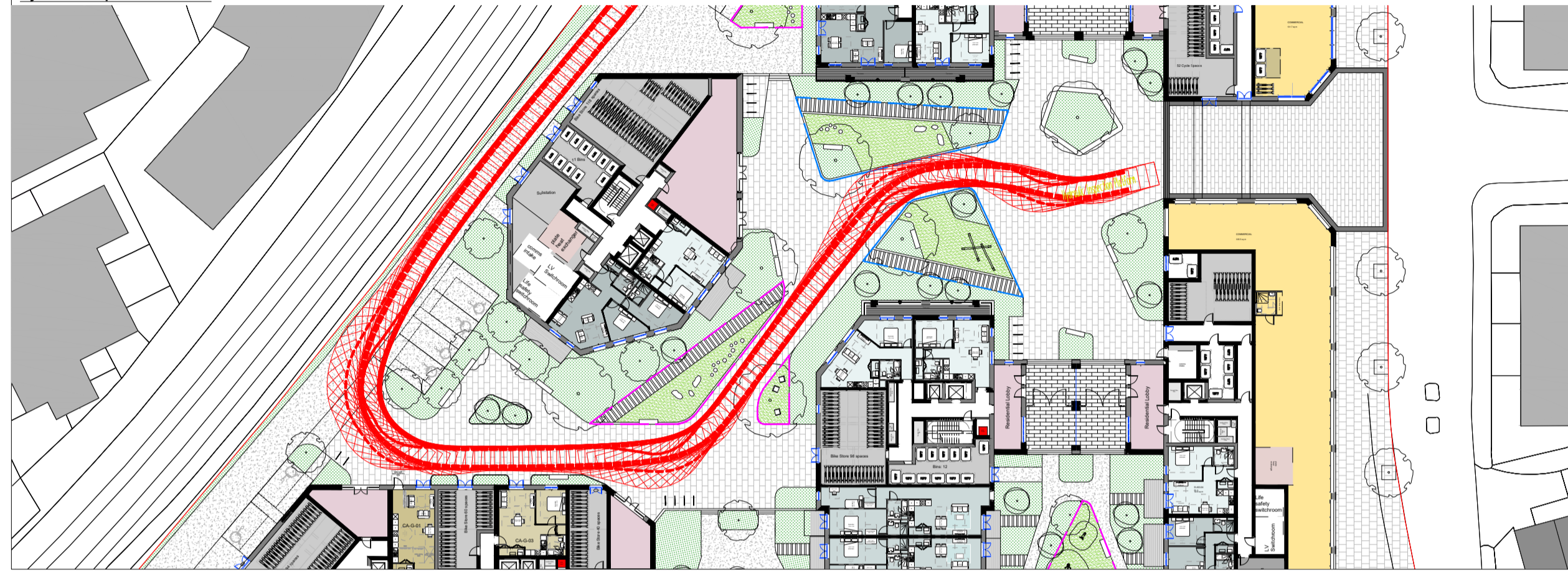
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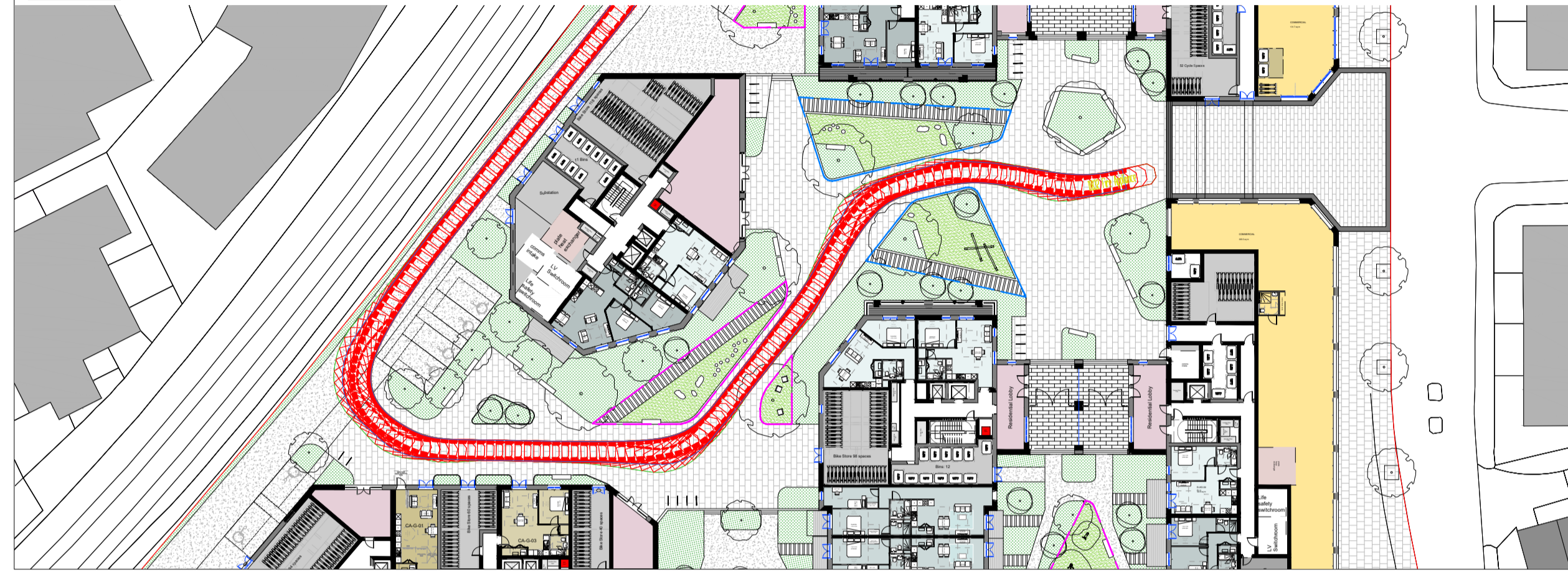
Hydraulic Inspection Platform



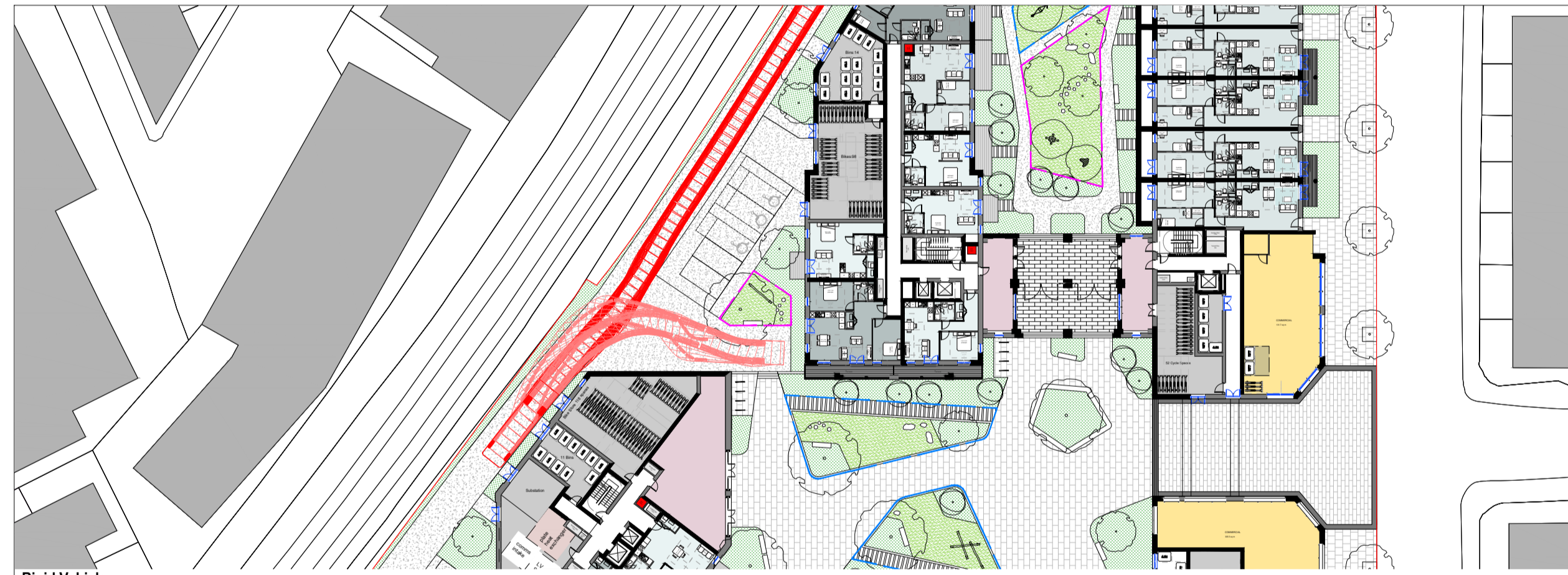
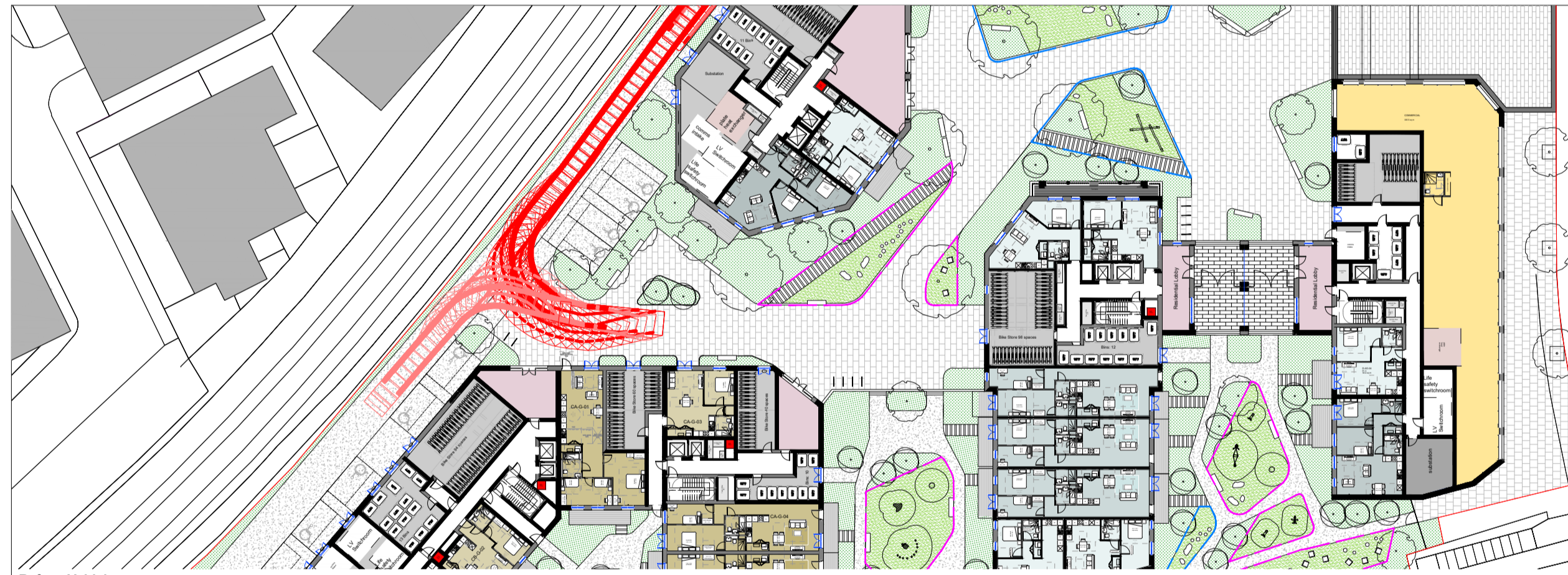
Fire Appliance



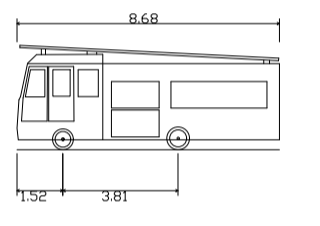
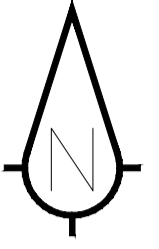
Refuse Vehicle



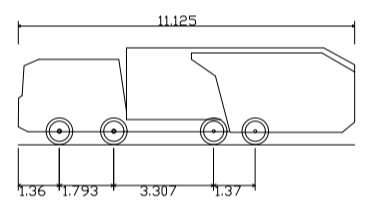
Rigid Vehicle



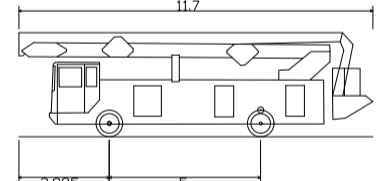
- Sanderson Associates (Consulting Engineers) Ltd ("the consultant"), has not checked or verified, and shall have no liability whatsoever for any inaccuracies which may be attributable to any data, reports, base plans) and drawings provided by the client, or purchased by the consultant on the client's behalf, that may have been utilised within this drawing.
- The consultant shall not be liable for the use by any person of any document for any purpose other than that for which the same were provided by the consultant.
- No liability whatsoever is accepted by the consultant for any error or omissions.
- The consultant accepts no liability for any vehicle specification errors within the vehicle track software used and / or it's vehicle libraries.
- The locations of utilities apparatus, if shown, is reproduced from plans supplied to the consultant, although care has been taken when duplicating this information. These locations are approximate only and no guarantee can be given for their accuracy. It is the client's or it's appointed agent/contractors responsibility to verify the exact locations on site by hand dug trial holes or other appropriate means prior to mechanical excavation.
- Service connections are not shown but their presence should be anticipated.
- Reference to any third party equipment shown on this drawing was only relevant at the time the drawing was prepared.
- It is the client's responsibility to ensure that any equipment ordered meets the design.



DB32 Fire Appliance  
 Overall Length 8.680m  
 Overall Width 2.380m  
 Overall Body Height 2.455m  
 Min Body Ground Clearance 2.337m  
 Max Track Width 2.121m  
 Lock to lock time 9.60s  
 Kerb to Kerb Turning Radius 9.910m



Phoenix 2-25W (with Volvo FM12 chassis)  
 Overall Length 11.025m  
 Overall Width 2.793m  
 Overall Body Height 3.367m  
 Min Body Ground Clearance 2.205m  
 Track Width 2.500m  
 Lock to lock time 4.80s  
 Kerb to Kerb Turning Radius 9.250m



Hydraulic Inspection Platform  
 Overall Length 11.700m  
 Overall Width 2.965m  
 Overall Body Height 3.430m  
 Min Body Ground Clearance 2.416m  
 Track Width 2.450m  
 Lock to lock time 9.00s  
 Kerb to Kerb Turning Radius 9.375m

***APPENDIX F***

***Not Used***

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***APPENDIX G***  
***Active Travel Zone Assessment***

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**Prepared on behalf of**

**Avanton Richmond Development Limited**

**Redevelopment of Homebase  
Manor Road, North Sheen**

**ATZ Assessment**

## **1.1 Maps**

1.1.1 Maps 1, 2 and 3 that are required to be produced as part of the ATZ assessment are included at the **ATZ Appendix** to the rear of this report.

### **Map 1**

No destinations have been excluded as all are considered relevant to this mixed use development.

### **Map 2**

Three serious incidents at the Manor Road/Sheen Road/Queen's Road junction. One involved a passenger on a bus being injured with no impact being made therefore this has been discounted. The remaining two both involved a car colliding with a motorbike. There is no obvious suggestion as to how to reduce the occurrence of this kind of incident. No incidents involved pedestrians therefore it is considered that the signal controlled pedestrian crossings already in place at the junction are sufficient in that regard

### **Map 3**

The proximity of the site to high quality public transport opportunities will provide incentive to residents, staff and visitors to travel to/from the site by non-car modes.

The permeable streets in the vicinity will provide shorter distances to the site and therefore encourage residents, staff and visitors to walk to/from the site. The green spaces surrounding the site provide attractive routes for pedestrians.

This development is encouraging a car-free lifestyle by providing a site-wide travel plan, providing limited disabled only car parking, providing cycle parking, improving pedestrian routes within the site and connections to the surrounding network.

## **1.2 Walking of the Key Routes**

1.2.1 As required and specified within the ATZ guidance, part of the assessment requires the key walking and cycling routes to and from the site to be walked and photographed. The routes are then compared to Healthy Streets indicators 3-10 specified within the 'Guide to Healthy Streets Indicators Manual' with suggestions made to state what can be done to improve them.

1.2.2 The scope of this assessment has been agreed with TfL. The correspondence with TfL is included within the **ATZ Appendix** and the routes are shown on 'Map 2', also at the **ATZ Appendix**.

- 1) North on Manor Road to Manor Circus
- 2) South on Manor Road to Holy Trinity Primary School
- 3) South on Manor Road to Marshgate Primary School
- 4) South on Manor Road to Seymour House Medical Practice via Townshend Terrace

**Route 1 - North on Manor Road to Manor Circus**

This route runs north from the site's main pedestrian entrance to Manor Circus roundabout junction.



<p><b>Easy to Cross</b></p>	<p>Tactile paving and dropped crossings are to be provided across the site's vehicular access to aid pedestrians. It is not expected that this will be a highly trafficked access due to the limited parking provision within the site. A refuge island with tactile paving and dropped kerbs is present on Manor Road to aid pedestrian movements to the eastern flank of the road. Although Manor Road is a relatively busy road, the refuge island reduces the distance required to cross at one time. Furthermore, the activation of the level crossing to the south results in frequent lengthy periods where vehicles are stationary and therefore providing opportunities for pedestrians to cross. At the northern point of this route, on the approach to Manor Circus, zebra crossings are provided across Manor Road with the inclusion of a refuge island. Manor Circus roundabout junction is subject of a planned TfL improvement scheme that will provide signal controlled toucan crossings.</p>
<p><b>Shade and Shelter</b></p>	<p>There are currently few opportunities for shade and shelter on this route with some trees and a bus shelter. However, this is to be improved as part of the development with trees being planted on the footway edge along the site frontage which will also provide some segregation from the road.</p>
<p><b>Places to stop and rest</b></p>	<p>This is a short route of approximately 165m. On the eastern flank of Manor Road there is a path that links to Sainsbury's, within a 'pocket park' set away from the road, that incorporates benches, with backs and armrests. On the western flank there is seating available under the protection of the bus shelter. The site will incorporate landscaped areas including seating.</p>
<p><b>Not too noisy</b></p>	<p>Although Manor Road is relatively busy it is not necessary to raise your voice to hold a conversation. The activation of the level crossing to the south results in frequent lengthy periods where vehicles are stationary and there are signs encouraging drivers to turn off their engines.</p>
<p><b>People feel safe</b></p>	<p>The assessment of personal injury accidents does not suggest that there would be cause for concern regards safety when walking or cycling on this route. The speed limit of the road is 30mph and, as previously stated, vehicles are stationary for lengthy periods. The route is street-lit and there are railings along a section on the eastern flank. The route is well-kept and there are no signs of neglect. This will be further improved by the development with buildings overlooking the footway and improvements to the footway.</p>



<b>Things to do and see</b>	Sainsbury's supermarket is located opposite the site and the development will add to the street frontage with commercial units in addition to the residential units. The site will also incorporate landscaped areas and children's play areas. The central courtyard within the site will hold community events.
<b>People feel relaxed</b>	The route feels well maintained and clean. The carriageway and footways are well-kept and easy to navigate. Litter bins are provided at the bus shelter and within the landscaped area adjacent to Sainsbury's. As previously stated, the speed limit of the road is 30mph and vehicles are stationary for lengthy periods and drivers are encouraged to turn off their engines. As part of the development, improvements are to be made to the footway on the western flank of Manor Road and trees are to be planted on the footway edge which will also provide some segregation from the road.
<b>Clean air</b>	Measures are in place both city-wide and locally to decrease the need for car travel and to promote sustainable means. Drivers that are stationary due to the activation of the level crossing to the south are encouraged to turn off their engines by signs although further education of this could be promoted. The development is providing very limited car parking which will reduce vehicle usage associated with the site and therefore improve air quality.

**Route 2 - South on Manor Road to Holy Trinity Primary School**

This route runs south from the site's main pedestrian entrance to Holy Trinity Primary School via Manor Road and Carrington Road.



<p><b>Easy to Cross</b></p>	<p>Towards the southern boundary of the site there is a refuge island with dropped kerbs on Manor Road to aid pedestrian movements to the eastern flank of the road. This would be improved with tactile paving. Although Manor Road is a relatively busy road, the refuge island reduces the distance required to cross at one time. The carriageway leading to Marylebone Gardens is raised to aid pedestrian movements. A stepped bridge is provided on the western flank of Manor Road to allow the railway line to be crossed when the level crossing is activated. The provision of ramps would improve this facility. Dropped kerbs are present at the junctions with Manor Park and Manor Gardens. Dropped kerbs are also present on Carrington Road at the junction with Kings Farm Avenue.</p>
<p><b>Shade and Shelter</b></p>	<p>There are currently few opportunities for shade and shelter on this route however there are a number of established trees along Carrington Road. Further trees are to be planted on the footway edge along the site frontage which will also provide some segregation from the road. The section of Manor Road between the level crossing and Carrington Road provides no shade or shelter however this is due to the road being fronted by houses.</p>
<p><b>Places to stop and rest</b></p>	<p>There are no formal places provided to stop and rest on this route however there are garden walls that provide informal opportunities. There are limited places seating could be provided as they would obstruct the footway and there are numerous driveways.</p>
<p><b>Not too noisy</b></p>	<p>Although Manor Road is relatively busy it is not necessary to raise your voice to hold a conversation. The activation of the level crossing results in frequent lengthy periods where vehicles are stationary and there are signs encouraging drivers to turn off their engines. Carrington Road does not provide through access, but rather serves residential dwellings and the school. Its residential nature means the road is not busy and noisy. There are 'slow' carriageway markings and school warning signs to encourage slower speeds.</p>
<p><b>People feel safe</b></p>	<p>An assessment of personal injury accidents does not suggest that there would be cause for concern regards safety when walking or cycling on this route. The speed limit of the roads is 30mph and, as previously stated, vehicles are stationary on Manor Road for lengthy periods. The route is street-lit, well-kept and there are no signs of neglect.</p>



<b>Things to do and see</b>	As the route is along predominantly residential roads there are no shops etc to provide interest. However, gardens to the properties do provide variety to the route.
<b>People feel relaxed</b>	The route feels well maintained and clean. The carriageway and footways are well-kept and easy to navigate. A litter bin is provided on the western flank of Manor Road to the south of the level crossing. As previously stated, the speed limit of the roads is 30mph and vehicles are stationary on Manor Road for lengthy periods and drivers are encouraged to turn off their engines. Carrington Road does not provide through access, but rather serves residential dwellings and the school. Its residential nature means the road is not busy and provides more vegetation.
<b>Clean air</b>	Measures are in place both city-wide and locally to decrease the need for car travel and to promote sustainable means. Drivers that are stationary due to the activation of the level crossing on Manor Road are encouraged to turn off their engines by signs although further education of this could be promoted.

**Route 3 - South on Manor Road to Marshgate Primary School**

This route runs south from the site’s main pedestrian entrance to Marshgate Primary School via Manor road and Sheen Road.



<p><b>Easy to Cross</b></p>	<p>Towards the southern boundary of the site there is a refuge island with dropped kerbs on Manor Road to aid pedestrian movements to the eastern flank of the road. This would be improved with tactile paving. Although Manor Road is a relatively busy road, the refuge island reduces the distance required to cross at one time. The carriageway leading to Marylebone Gardens is raised to aid pedestrian movements. A stepped bridge is provided on the western flank of Manor Road to allow the railway line to be crossed when the level crossing is activated. The provision of ramps would improve this facility. Dropped kerbs are present at the junctions with Manor Park, Manor Gardens and Carrington Road. Signal controlled crossings are present on all arms of the Manor Road/Sheen Road/Queen’s Road junction. Dropped kerbs are provided on the left turn branch of Queen’s Road at this junction.</p>
<p><b>Shade and Shelter</b></p>	<p>There are currently few opportunities for shade and shelter on this route however there are established trees at the Manor Road/Sheen Road/Queen’s Road junction and on the school frontage. There is also a bus shelter adjacent to the school. Further trees are to be planted on the footway edge along the site frontage which will also provide some segregation from the road. The section of Manor Road between the level crossing and Sheen Road provides no shade or shelter however this is due to the road being fronted by houses.</p>
<p><b>Places to stop and rest</b></p>	<p>A bench with back rest and arms is provided beneath an established tree at the Manor Road/Sheen Road/Queen’s Road junction. Aside from this there are no formal places to rest however there are garden walls that provide informal opportunities.</p>
<p><b>Not too noisy</b></p>	<p>Although Manor Road is relatively busy it is not necessary to raise your voice to hold a conversation. The activation of the level crossing results in frequent lengthy periods where vehicles are stationary and there are signs encouraging drivers to turn off their engines. Sheen Road is also relatively busy but, again, it is not necessary to raise your voice to hold a conversation. There are school warning signs to encourage slower speeds.</p>
<p><b>People feel safe</b></p>	<p>An assessment of personal injury accidents does not suggest that there would be cause for concern regards safety when walking on this route as there are no recorded incidents involving pedestrians. However, there are a number of ‘slight’ incidents involving pedal cycles in the vicinity of the Manor Road/Sheen Road/Queen’s Road junction. As on-road cycle lanes and advanced stop lines are already provided on two arms improvements are limited The route is street-lit, well-kept and there are no signs of neglect.</p>





<b>Things to do and see</b>	As the route is along predominantly residential roads there are few shops etc to provide interest. However, gardens to the properties do provide variety to the route.
<b>People feel relaxed</b>	The route feels well maintained and clean. The carriageway and footways are well-kept and easy to navigate. Litter bins are provided on the western flank of Manor Road to the south of the level crossing and at the Manor Road/Sheen Road/Queen's Road junction. As previously stated, the speed limit of the roads is 30mph and vehicles are stationary on Manor Road for lengthy periods and drivers are encouraged to turn off their engines. .
<b>Clean air</b>	Measures are in place both city-wide and locally to decrease the need for car travel and to promote sustainable means. Drivers that are stationary due to the activation of the level crossing on Manor Road are encouraged to turn off their engines by signs although further education of this could be promoted.

**Route 4 - South on Manor Road to Seymour House Medical Practice via Townshend Terrace**

This route runs south from the site's main pedestrian entrance to Seymour House Medical Practice via Manor Road, Manor Gardens, Townshend Terrace and Townshend Road.



<b>Easy to Cross</b>	A stepped bridge is provided on the western flank of Manor Road to allow the railway line to be crossed when the level crossing is activated. The provision of ramps would improve this facility. Dropped kerbs are present at the junction with Manor Park. On Townshend Terrace dropped kerbs are present at junctions with Adelaide Road, St Mary's Grove and Townshend Road. Townshend Terrace and Townshend Road are residential roads that are quiet and therefore provide opportunities to cross.
<b>Shade and Shelter</b>	There are few opportunities for shade and shelter on this route however there are established trees on Manor Gardens, Townshend Terrace/St Mary's Grove junction and on Townshend Road. Further trees are to be planted on the footway edge along the site frontage which will also provide some segregation from the road. The section of Manor Road between the level crossing and Manor Gardens provides no shade or shelter however this is due to the road being fronted by houses.
<b>Places to stop and rest</b>	There are no formal places provided to stop and rest on this route however there are garden walls that provide informal opportunities. There are limited places seating could be provided as they would obstruct the footway and there are numerous driveways.
<b>Not too noisy</b>	Although Manor Road is relatively busy it is not necessary to raise your voice to hold a conversation. The activation of the level crossing results in frequent lengthy periods where vehicles are stationary and there are signs encouraging drivers to turn off their engines. The residential nature of Townshend Terrace and Townshend Road means that the roads are not busy and noisy
<b>People feel safe</b>	An assessment of personal injury accidents does not suggest that there would be cause for concern regards safety when walking or cycling on this route as there are no recorded incidents involving pedestrians or pedal cycles. The route is street-lit, well-kept and there are no signs of neglect.
<b>Things to do and see</b>	As the route is along predominantly residential roads there are no shops etc to provide interest. However, gardens to the properties do provide variety to the route.



<b>People feel relaxed</b>	The route feels well maintained and clean. The carriageway and footways are well-kept and easy to navigate. A litter bin is provided on the western flank of Manor Road to the south of the level crossing. As previously stated, the speed limit of the roads is 30mph and vehicles are stationary on Manor Road for lengthy periods and drivers are encouraged to turn off their engines.
<b>Clean air</b>	Measures are in place both city-wide and locally to decrease the need for car travel and to promote sustainable means. Drivers that are stationary due to the activation of the level crossing on Manor Road are encouraged to turn off their engines by signs although further education of this could be promoted.

### 1.3 **Summary**










1.3.1 In summary, the routes assessed generally perform well in relation to the Healthy Streets indicators by providing safe places to cross, being well-maintained, not having an accident history of concern and having public and private areas of vegetation that provide interest and variety. In addition, the development will enhance the routes along the site frontage by providing improved footways, landscaping, places to rest and overlooking buildings.

Images from Google Streetview, as well as photographs from our site visit, have been utilised in this report.

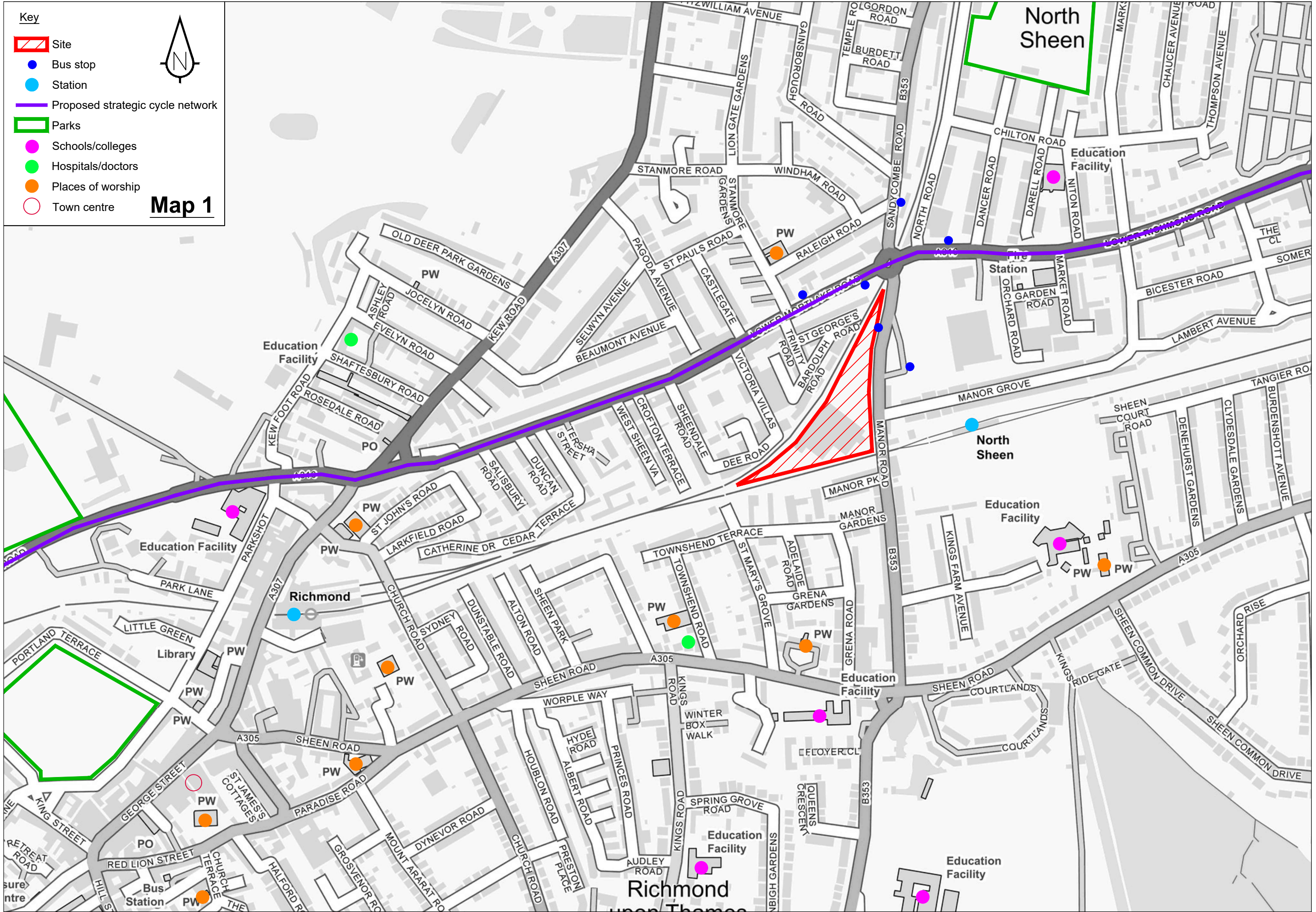
***ATZ APPENDIX***

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**Key**

-  Site
-  Bus stop
-  Station
-  Proposed strategic cycle network
-  Parks
-  Schools/colleges
-  Hospitals/doctors
-  Places of worship
-  Town centre

**Map 1**



Key



Site

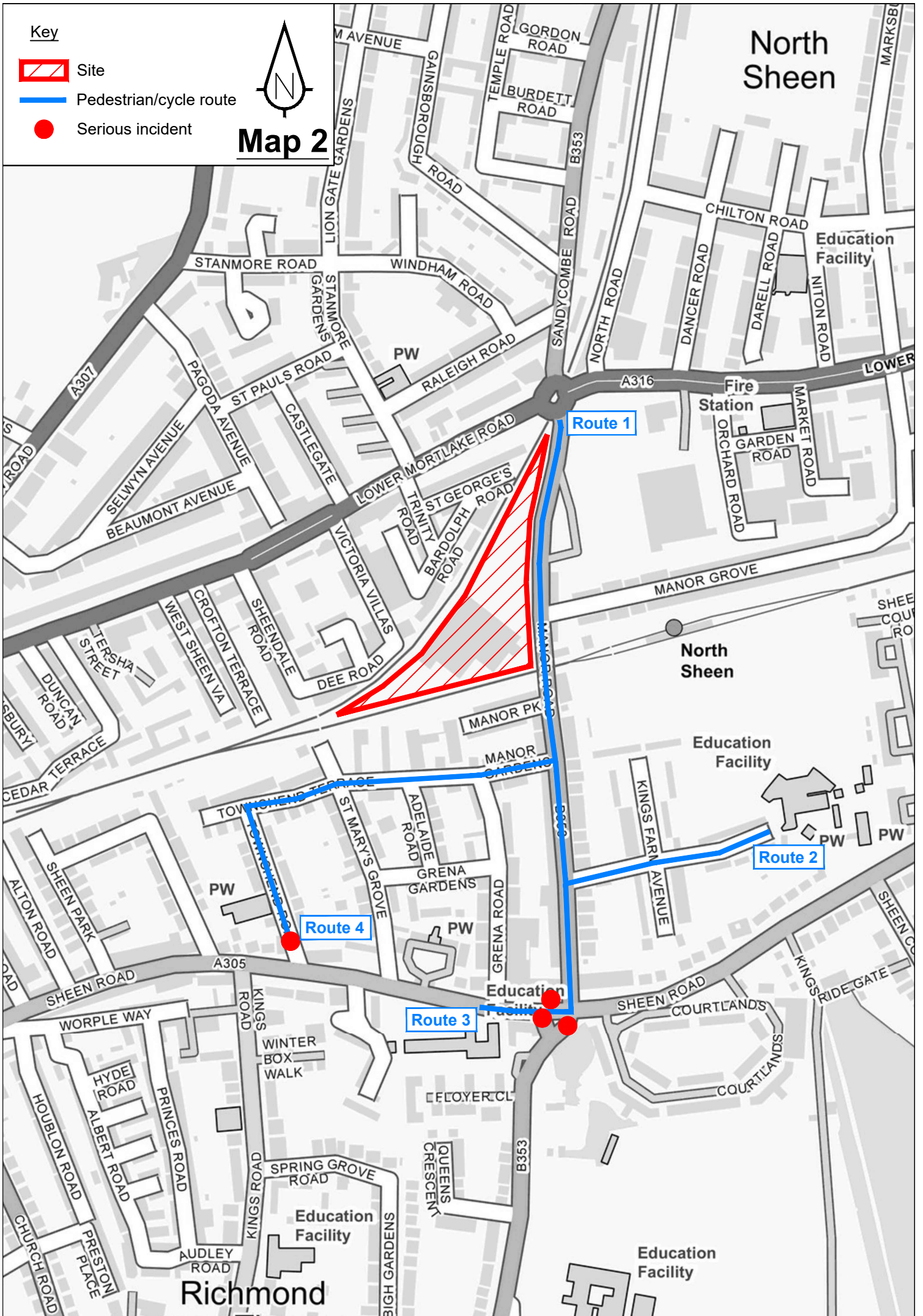


Pedestrian/cycle route








Serious incident

# Map 2

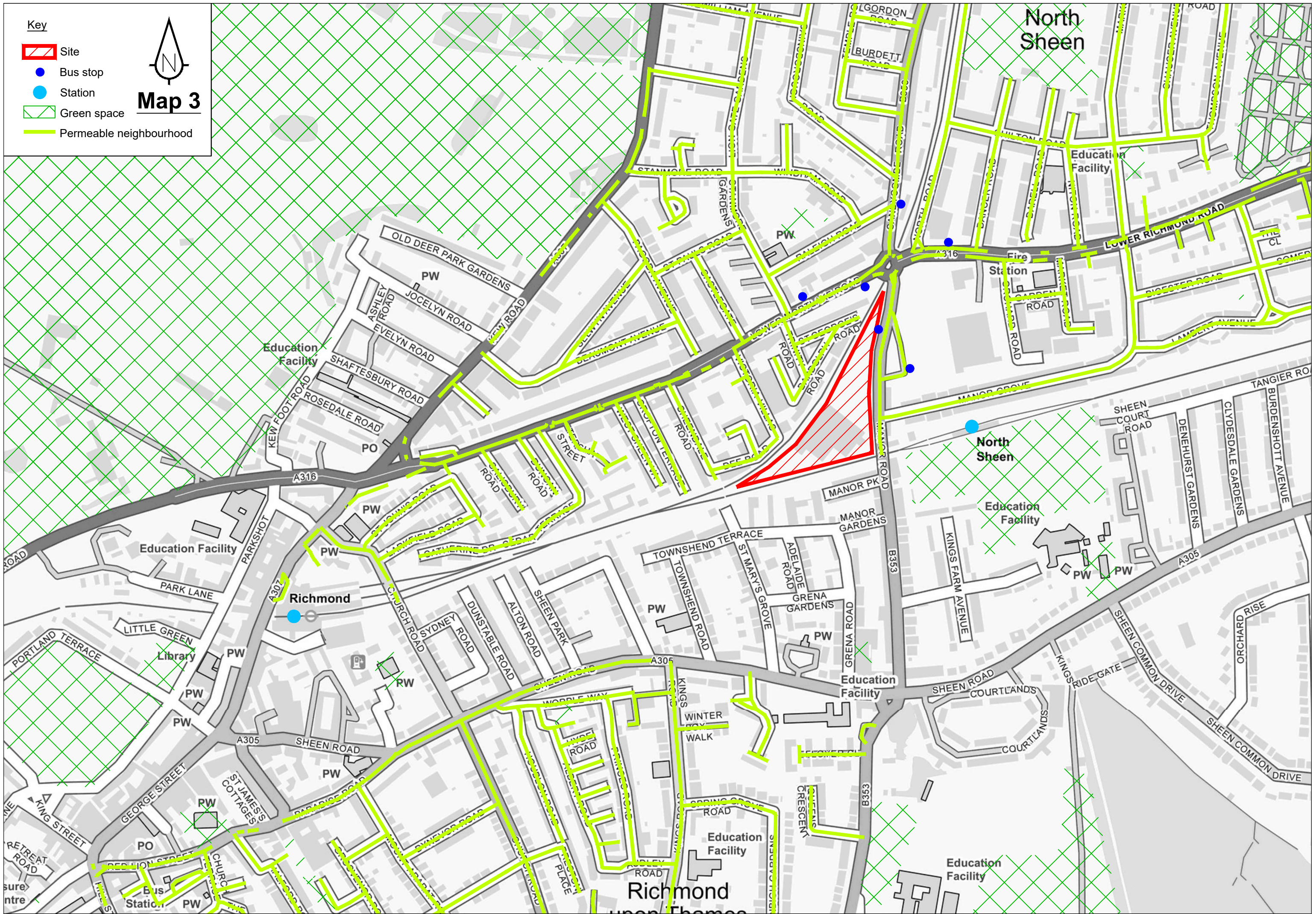


Key

-  Site
-  Bus stop
-  Station
-  Green space
-  Permeable neighbourhood



Map 3



Subject: RE: 84 Manor Road Homebase, LB Richmond – Stage 3 TfL’s pre-application advice - 10596/11205  
 Date: 31/10/2019 12:25  
 From: "Simpson Lucy" <LucySimpson@tfl.gov.uk>  
 To: "Karen Smith" <Karen.Smith@sandersonassociates.co.uk>

Hi Karen,

The updated TA should pick up on ATZs, but I am happy for the extent of this to be Manor Road up to Manor Circus and south of the level crossing, you should probably also include to the nearest primary school and doctors surgery. However if the closest school/surgery is north of Manor Circus I am happy for you to exclude Manor Circus given the improvement scheme that will be implemented there in the future.

In terms of the bus standing area, we have been having a discussion regarding this and have thought of a potential option which may be workable. Could you investigate an option to provide bus standing along the site access road, parallel to the railway line, with provision for bus turning in the south west corner of the site. It may require some rejigging of the site and maybe loss of landscaping but it would allow you to completely free up the existing bus standing site?

Kind regards

Lucy

---

**From:** Karen Smith [mailto:Karen.Smith@sandersonassociates.co.uk]  
**Sent:** 31 October 2019 11:09  
**To:** Simpson Lucy  
**Subject:** FW: 84 Manor Road Homebase, LB Richmond – Stage 3 TfL’s pre-application advice - 10596/11205

Good Morning Lucy,

I would be grateful if you would confirm whether a full Active Travel Zone assessment is required as part of the updated TA for the Manor Road project.

If you recall we did include a “Healthy Streets” section in our original TA and it would be appreciated if you could confirm what exactly you want to see in the updated TA.

--  
 Kind Regards



**Karen Smith** MIHE  
 Tel: 01924 844080 Mob: 07827 927667  
 Associate Director

[CLICK TO VIEW MY CONTACT DETAILS](#)

---

**From:** Spatial Planning [mailto:SpatialPlanning@tfl.gov.uk]  
**Sent:** 23 October 2019 16:57  
**To:** Karen Smith <Karen.Smith@sandersonassociates.co.uk>  
**Cc:** 'Tom.Bennett@icglongbow.com' <Tom.Bennett@icglongbow.com>; 'Rachel.Crick@avisonyoung.com' <Rachel.Crick@avisonyoung.com>; 'Emma.Gill@avisonyoung.com' <Emma.Gill@avisonyoung.com>; 'johnlynch@assael.co.uk' <johnlynch@assael.co.uk>; 'Luke.Butler@london.gov.uk' <Luke.Butler@london.gov.uk>; Hamilton Ramel <RamelHamilton@tfl.gov.uk>; Edwards Adam <Adam.Edwards@tfl.gov.uk>; Simpson Lucy <LucySimpson@tfl.gov.uk>; 'planning@london.gov.uk' <planning@london.gov.uk>  
**Subject:** 84 Manor Road Homebase, LB Richmond – Stage 3 TfL’s pre-application advice

Dear Ms Smith

Following on from your recent pre-application meeting for the above site, please find Transport

for London's formal advice letter attached for your information. Should you have any questions about these comments, please contact Lucy Simpson.

Your views are important to us and in order to improve our service, we would appreciate it if you would complete and send back the enclosed feedback form ASAP.

Kind regards,

TfL Spatial Planning

\*\*\*\*\*

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***APPENDIX H***  
***TRICS - Privately Owned Flats***

---

Calculation Reference: AUDIT-109307-181108-1127

## TRIP RATE CALCULATION SELECTION PARAMETERS:

Land Use : 03 - RESIDENTIAL  
 Category : C - FLATS PRIVATELY OWNED  
 MULTI-MODAL VEHICLES

Selected regions and areas:

01	GREATER LONDON	
	BT BRENT	1 days
	HG HARINGEY	1 days
	HK HACKNEY	1 days
	IS ISLINGTON	4 days
	KI KINGSTON	1 days
	KN KENSINGTON AND CHELSEA	2 days
	SK SOUTHWARK	2 days
	WH WANDSWORTH	1 days

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

## Secondary Filtering selection:

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

Parameter: Number of dwellings  
 Actual Range: 9 to 472 (units: )  
 Range Selected by User: 9 to 493 (units: )

Public Transport Provision:

Selection by: Include all surveys

Date Range: 01/01/10 to 03/07/18

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

Selected survey days:

Monday	2 days
Tuesday	1 days
Wednesday	5 days
Thursday	3 days
Friday	2 days

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

Selected survey types:

Manual count	13 days
Directional ATC Count	0 days

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

Selected Locations:

Edge of Town Centre	9
Suburban Area (PPS6 Out of Centre)	4

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

Selected Location Sub Categories:

Development Zone	2
Residential Zone	7
Built-Up Zone	3
No Sub Category	1

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

Secondary Filtering selection:

Use Class:

C3 13 days

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

Population within 1 mile:

5,001 to 10,000	1 days
10,001 to 15,000	1 days
25,001 to 50,000	2 days
50,001 to 100,000	5 days
100,001 or More	4 days

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

Population within 5 miles:

125,001 to 250,000	1 days
250,001 to 500,000	1 days
500,001 or More	11 days

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

Car ownership within 5 miles:

0.5 or Less	5 days
0.6 to 1.0	7 days
1.1 to 1.5	1 days

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

Travel Plan:

Yes	2 days
No	11 days

*This data displays the number of surveys within the selected set that were undertaken at sites with Travel Plans in place, and the number of surveys that were undertaken at sites without Travel Plans.*

PTAL Rating:

4 Good	1 days
5 Very Good	2 days
6a Excellent	7 days
6b (High) Excellent	3 days

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

LIST OF SITES relevant to selection parameters

1	BT-03-C-02 ENGINEERS WAY WEMBLEY	BLOCKS OF FLATS		BRENT
	Suburban Area (PPS6 Out of Centre) Development Zone Total Number of dwellings: 472 <i>Survey date: WEDNESDAY 30/11/16</i>			
2	HG-03-C-02 HIGH ROAD WOOD GREEN WOODSIDE PARK	BLOCK OF FLATS		HARINGEY
	Suburban Area (PPS6 Out of Centre) Residential Zone Total Number of dwellings: 30 <i>Survey date: WEDNESDAY 01/10/14</i>			
3	HK-03-C-03 GREEN LANES FINSBURY PARK MANOR HOUSE	BLOCK OF FLATS		HACKNEY
	Suburban Area (PPS6 Out of Centre) Residential Zone Total Number of dwellings: 10 <i>Survey date: WEDNESDAY 24/09/14</i>			
4	IS-03-C-03 FLORENCE STREET ISLINGTON	BLOCK OF FLATS		ISLINGTON
	Suburban Area (PPS6 Out of Centre) Residential Zone Total Number of dwellings: 9 <i>Survey date: THURSDAY 21/11/13</i>			
5	IS-03-C-04 CITY ROAD ISLINGTON	BLOCK OF FLATS		ISLINGTON
	Edge of Town Centre Development Zone Total Number of dwellings: 157 <i>Survey date: THURSDAY 14/07/16</i>			
6	IS-03-C-05 LEVER STREET FINSBURY	BLOCK OF FLATS		ISLINGTON
	Edge of Town Centre Built-Up Zone Total Number of dwellings: 15 <i>Survey date: WEDNESDAY 29/06/16</i>			
7	IS-03-C-06 CALEDONIAN ROAD HOLLOWAY	BLOCK OF FLATS		ISLINGTON
	Edge of Town Centre Residential Zone Total Number of dwellings: 14 <i>Survey date: MONDAY 27/06/16</i>			
8	KI-03-C-02 SOPWITH WAY KINGSTON UPON THAMES	BLOCK OF FLATS		KINGSTON
	Edge of Town Centre No Sub Category Total Number of dwellings: 132 <i>Survey date: MONDAY 14/06/10</i>			

LIST OF SITES relevant to selection parameters (Cont.)

9	KN-03-C-02 BLOCK OF FLATS BECKFORD CLOSE SOUTH KENSINGTON		KENSINGTON AND CHELSEA
	Edge of Town Centre Residential Zone Total Number of dwellings:	294	
	Survey date: TUESDAY	15/06/10	Survey Type: MANUAL
10	KN-03-C-03 BLOCK OF FLATS ALLEN STREET KENSINGTON		KENSINGTON AND CHELSEA
	Edge of Town Centre Residential Zone Total Number of dwellings:	72	
	Survey date: FRIDAY	11/05/12	Survey Type: MANUAL
11	SK-03-C-01 BLOCK OF FLATS PARK STREET SOUTHWARK		SOUTHWARK
	Edge of Town Centre Built-Up Zone Total Number of dwellings:	53	
	Survey date: FRIDAY	19/09/14	Survey Type: MANUAL
12	SK-03-C-02 BLOCK OF FLATS LAMB WALK BERMONDSEY		SOUTHWARK
	Edge of Town Centre Built-Up Zone Total Number of dwellings:	29	
	Survey date: THURSDAY	23/04/15	Survey Type: MANUAL
13	WH-03-C-01 BLOCKS OF FLATS AMIES STREET CLAPHAM JUNCTION		WANDSWORTH
	Edge of Town Centre Residential Zone Total Number of dwellings:	30	
	Survey date: WEDNESDAY	09/05/12	Survey Type: MANUAL

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

MANUALLY DESELECTED SITES

Site Ref	Reason for Deselection
BT-03-C-01	PTAL Rating 3
EN-03-C-03	PTAL Rating 0
HO-03-C-03	PTAL Rating 2
HV-03-C-01	PTAL Rating 2
HV-03-C-02	PTAL Rating 2
KI-03-C-03	PTAL Rating 2
RD-03-C-03	PTAL Rating 1b

TRIP RATE for Land Use 03 - RESIDENTIAL/C - FLATS PRIVATELY OWNED  
MULTI-MODAL VEHICLES

Calculation factor: 1 DWELLS

BOLD print indicates peak (busiest) period

Time Range	ARRIVALS			DEPARTURES			TOTALS		
	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate
00:00 - 01:00									
01:00 - 02:00									
02:00 - 03:00									
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00									
06:00 - 07:00									
07:00 - 08:00	13	101	0.011	13	101	0.047	13	101	0.058
08:00 - 09:00	13	101	0.032	13	101	0.081	13	101	0.113
09:00 - 10:00	13	101	0.035	13	101	0.034	13	101	0.069
10:00 - 11:00	13	101	0.024	13	101	0.033	13	101	0.057
11:00 - 12:00	13	101	0.031	13	101	0.024	13	101	0.055
12:00 - 13:00	13	101	0.025	13	101	0.027	13	101	0.052
13:00 - 14:00	13	101	0.033	13	101	0.030	13	101	0.063
14:00 - 15:00	13	101	0.027	13	101	0.033	13	101	0.060
15:00 - 16:00	13	101	0.038	13	101	0.027	13	101	0.065
16:00 - 17:00	13	101	0.039	13	101	0.036	13	101	0.075
17:00 - 18:00	13	101	0.054	13	101	0.031	13	101	0.085
18:00 - 19:00	13	101	0.049	13	101	0.042	13	101	0.091
19:00 - 20:00	6	164	0.024	6	164	0.023	6	164	0.047
20:00 - 21:00	6	164	0.023	6	164	0.021	6	164	0.044
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
<b>Total Rates:</b>			<b>0.445</b>			<b>0.489</b>			<b>0.934</b>

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

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

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#### Parameter summary

Trip rate parameter range selected:	9 - 472 (units: )
Survey date date range:	01/01/10 - 03/07/18
Number of weekdays (Monday-Friday):	13
Number of Saturdays:	0
Number of Sundays:	0
Surveys automatically removed from selection:	0
Surveys manually removed from selection:	7

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

TRIP RATE for Land Use 03 - RESIDENTIAL/C - FLATS PRIVATELY OWNED  
MULTI-MODAL CYCLISTS

Calculation factor: 1 DWELLS

BOLD print indicates peak (busiest) period

Time Range	ARRIVALS			DEPARTURES			TOTALS		
	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate
00:00 - 01:00									
01:00 - 02:00									
02:00 - 03:00									
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00									
06:00 - 07:00									
07:00 - 08:00	13	101	0.002	13	101	0.005	13	101	0.007
08:00 - 09:00	13	101	0.000	13	101	0.009	13	101	0.009
09:00 - 10:00	13	101	0.002	13	101	0.005	13	101	0.007
10:00 - 11:00	13	101	0.004	13	101	0.002	13	101	0.006
11:00 - 12:00	13	101	0.002	13	101	0.002	13	101	0.004
12:00 - 13:00	13	101	0.003	13	101	0.003	13	101	0.006
13:00 - 14:00	13	101	0.002	13	101	0.001	13	101	0.003
14:00 - 15:00	13	101	0.002	13	101	0.000	13	101	0.002
15:00 - 16:00	13	101	0.000	13	101	0.001	13	101	0.001
16:00 - 17:00	13	101	0.002	13	101	0.002	13	101	0.004
17:00 - 18:00	13	101	0.005	13	101	0.002	13	101	0.007
18:00 - 19:00	13	101	0.008	13	101	0.004	13	101	0.012
19:00 - 20:00	6	164	0.009	6	164	0.006	6	164	0.015
20:00 - 21:00	6	164	0.004	6	164	0.000	6	164	0.004
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
<b>Total Rates:</b>			<b>0.045</b>			<b>0.042</b>			<b>0.087</b>

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

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

TRIP RATE for Land Use 03 - RESIDENTIAL/C - FLATS PRIVATELY OWNED  
MULTI-MODAL VEHICLE OCCUPANTS

Calculation factor: 1 DWELLS

BOLD print indicates peak (busiest) period

Time Range	ARRIVALS			DEPARTURES			TOTALS		
	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate
00:00 - 01:00									
01:00 - 02:00									
02:00 - 03:00									
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00									
06:00 - 07:00									
07:00 - 08:00	13	101	0.013	13	101	0.055	13	101	0.068
08:00 - 09:00	13	101	0.030	13	101	0.131	13	101	0.161
09:00 - 10:00	13	101	0.041	13	101	0.039	13	101	0.080
10:00 - 11:00	13	101	0.026	13	101	0.041	13	101	0.067
11:00 - 12:00	13	101	0.030	13	101	0.028	13	101	0.058
12:00 - 13:00	13	101	0.030	13	101	0.035	13	101	0.065
13:00 - 14:00	13	101	0.041	13	101	0.035	13	101	0.076
14:00 - 15:00	13	101	0.035	13	101	0.039	13	101	0.074
15:00 - 16:00	13	101	0.067	13	101	0.030	13	101	0.097
16:00 - 17:00	13	101	0.050	13	101	0.036	13	101	0.086
17:00 - 18:00	13	101	0.076	13	101	0.042	13	101	0.118
18:00 - 19:00	13	101	0.056	13	101	0.046	13	101	0.102
19:00 - 20:00	6	164	0.030	6	164	0.031	6	164	0.061
20:00 - 21:00	6	164	0.029	6	164	0.031	6	164	0.060
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
<b>Total Rates:</b>			0.554			0.619			1.173

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

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

TRIP RATE for Land Use 03 - RESIDENTIAL/C - FLATS PRIVATELY OWNED

MULTI-MODAL PEDESTRIANS

Calculation factor: 1 DWELLS

BOLD print indicates peak (busiest) period

Time Range	ARRIVALS			DEPARTURES			TOTALS		
	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate
00:00 - 01:00									
01:00 - 02:00									
02:00 - 03:00									
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00									
06:00 - 07:00									
07:00 - 08:00	13	101	0.030	13	101	0.060	13	101	0.090
08:00 - 09:00	13	101	0.031	13	101	0.137	13	101	0.168
09:00 - 10:00	13	101	0.030	13	101	0.060	13	101	0.090
10:00 - 11:00	13	101	0.042	13	101	0.068	13	101	0.110
11:00 - 12:00	13	101	0.081	13	101	0.052	13	101	0.133
12:00 - 13:00	13	101	0.073	13	101	0.055	13	101	0.128
13:00 - 14:00	13	101	0.052	13	101	0.084	13	101	0.136
14:00 - 15:00	13	101	0.061	13	101	0.068	13	101	0.129
15:00 - 16:00	13	101	0.087	13	101	0.059	13	101	0.146
16:00 - 17:00	13	101	0.102	13	101	0.071	13	101	0.173
17:00 - 18:00	13	101	0.099	13	101	0.078	13	101	0.177
18:00 - 19:00	13	101	0.083	13	101	0.044	13	101	0.127
19:00 - 20:00	6	164	0.070	6	164	0.032	6	164	0.102
20:00 - 21:00	6	164	0.059	6	164	0.038	6	164	0.097
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
<b>Total Rates:</b>			<b>0.900</b>			<b>0.906</b>			<b>1.806</b>

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

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

TRIP RATE for Land Use 03 - RESIDENTIAL/C - FLATS PRIVATELY OWNED  
MULTI-MODAL PUBLIC TRANSPORT USERS

Calculation factor: 1 DWELLS

BOLD print indicates peak (busiest) period

Time Range	ARRIVALS			DEPARTURES			TOTALS		
	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate
00:00 - 01:00									
01:00 - 02:00									
02:00 - 03:00									
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00									
06:00 - 07:00									
07:00 - 08:00	13	101	0.007	13	101	0.121	13	101	0.128
08:00 - 09:00	13	101	0.020	13	101	0.185	13	101	0.205
09:00 - 10:00	13	101	0.018	13	101	0.074	13	101	0.092
10:00 - 11:00	13	101	0.018	13	101	0.053	13	101	0.071
11:00 - 12:00	13	101	0.029	13	101	0.047	13	101	0.076
12:00 - 13:00	13	101	0.032	13	101	0.055	13	101	0.087
13:00 - 14:00	13	101	0.047	13	101	0.039	13	101	0.086
14:00 - 15:00	13	101	0.049	13	101	0.041	13	101	0.090
15:00 - 16:00	13	101	0.045	13	101	0.028	13	101	0.073
16:00 - 17:00	13	101	0.068	13	101	0.045	13	101	0.113
17:00 - 18:00	13	101	0.106	13	101	0.043	13	101	0.149
18:00 - 19:00	13	101	0.115	13	101	0.038	13	101	0.153
19:00 - 20:00	6	164	0.090	6	164	0.027	6	164	0.117
20:00 - 21:00	6	164	0.047	6	164	0.021	6	164	0.068
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
<b>Total Rates:</b>			<b>0.691</b>			<b>0.817</b>			<b>1.508</b>

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

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

TRIP RATE for Land Use 03 - RESIDENTIAL/C - FLATS PRIVATELY OWNED  
MULTI-MODAL TOTAL PEOPLE

Calculation factor: 1 DWELLS

BOLD print indicates peak (busiest) period

Time Range	ARRIVALS			DEPARTURES			TOTALS		
	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate
00:00 - 01:00									
01:00 - 02:00									
02:00 - 03:00									
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00									
06:00 - 07:00									
07:00 - 08:00	13	101	0.051	13	101	0.241	13	101	0.292
08:00 - 09:00	13	101	0.080	13	101	0.462	13	101	0.542
09:00 - 10:00	13	101	0.091	13	101	0.178	13	101	0.269
10:00 - 11:00	13	101	0.090	13	101	0.164	13	101	0.254
11:00 - 12:00	13	101	0.142	13	101	0.130	13	101	0.272
12:00 - 13:00	13	101	0.137	13	101	0.147	13	101	0.284
13:00 - 14:00	13	101	0.142	13	101	0.159	13	101	0.301
14:00 - 15:00	13	101	0.146	13	101	0.148	13	101	0.294
15:00 - 16:00	13	101	0.198	13	101	0.118	13	101	0.316
16:00 - 17:00	13	101	0.222	13	101	0.154	13	101	0.376
17:00 - 18:00	13	101	0.285	13	101	0.164	13	101	0.449
18:00 - 19:00	13	101	0.262	13	101	0.131	13	101	0.393
19:00 - 20:00	6	164	0.199	6	164	0.095	6	164	0.294
20:00 - 21:00	6	164	0.139	6	164	0.090	6	164	0.229
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
<b>Total Rates:</b>			2.184			2.381			4.565

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

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

***APPENDIX I***  
***TRICS - Affordable Flats***

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Calculation Reference: AUDIT-109307-181108-1106

## TRIP RATE CALCULATION SELECTION PARAMETERS:

Land Use : 03 - RESIDENTIAL  
 Category : D - AFFORDABLE/LOCAL AUTHORITY FLATS  
 MULTI-MODAL VEHICLES

Selected regions and areas:

01	GREATER LONDON	
	HG HARINGEY	1 days
	IS ISLINGTON	2 days

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

## Secondary Filtering selection:

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

Parameter:	Number of dwellings
Actual Range:	36 to 247 (units: )
Range Selected by User:	15 to 339 (units: )

Public Transport Provision:

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

Date Range:	01/01/10 to 27/06/16
-------------	----------------------

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

Selected survey days:

Monday	1 days
Thursday	1 days
Friday	1 days

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

Selected survey types:

Manual count	3 days
Directional ATC Count	0 days

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

Selected Locations:

Edge of Town Centre	1
Suburban Area (PPS6 Out of Centre)	2

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

Selected Location Sub Categories:

Residential Zone	3
------------------	---

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

## Secondary Filtering selection:

Use Class:

C3	3 days
----	--------

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

Secondary Filtering selection (Cont.):

Population within 1 mile:

50,001 to 100,000	1 days
100,001 or More	2 days

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

Population within 5 miles:

500,001 or More	3 days
-----------------	--------

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

Car ownership within 5 miles:

0.5 or Less	2 days
0.6 to 1.0	1 days

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

Travel Plan:

No	3 days
----	--------

*This data displays the number of surveys within the selected set that were undertaken at sites with Travel Plans in place, and the number of surveys that were undertaken at sites without Travel Plans.*

PTAL Rating:

4 Good	1 days
5 Very Good	1 days
6a Excellent	1 days

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



TRIP RATE for Land Use 03 - RESIDENTIAL/D - AFFORDABLE/LOCAL AUTHORITY FLATS  
MULTI-MODAL VEHICLES

Calculation factor: 1 DWELLS

BOLD print indicates peak (busiest) period

Time Range	ARRIVALS			DEPARTURES			TOTALS		
	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate
00:00 - 01:00									
01:00 - 02:00									
02:00 - 03:00									
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00									
06:00 - 07:00									
07:00 - 08:00	3	124	0.035	3	124	0.048	3	124	0.083
08:00 - 09:00	3	124	0.027	3	124	0.078	3	124	0.105
09:00 - 10:00	3	124	0.024	3	124	0.048	3	124	0.072
10:00 - 11:00	3	124	0.029	3	124	0.024	3	124	0.053
11:00 - 12:00	3	124	0.032	3	124	0.043	3	124	0.075
12:00 - 13:00	3	124	0.038	3	124	0.046	3	124	0.084
13:00 - 14:00	3	124	0.027	3	124	0.024	3	124	0.051
14:00 - 15:00	3	124	0.021	3	124	0.019	3	124	0.040
15:00 - 16:00	3	124	0.043	3	124	0.029	3	124	0.072
16:00 - 17:00	3	124	0.054	3	124	0.048	3	124	0.102
17:00 - 18:00	3	124	0.054	3	124	0.038	3	124	0.092
18:00 - 19:00	3	124	0.072	3	124	0.040	3	124	0.112
19:00 - 20:00	1	247	0.077	1	247	0.053	1	247	0.130
20:00 - 21:00	1	247	0.040	1	247	0.020	1	247	0.060
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
<b>Total Rates:</b>			0.573			0.558			1.131

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

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

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#### Parameter summary

Trip rate parameter range selected:	36 - 247 (units: )
Survey date date range:	01/01/10 - 27/06/16
Number of weekdays (Monday-Friday):	3
Number of Saturdays:	0
Number of Sundays:	0
Surveys automatically removed from selection:	0
Surveys manually removed from selection:	1

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

TRIP RATE for Land Use 03 - RESIDENTIAL/D - AFFORDABLE/LOCAL AUTHORITY FLATS  
MULTI-MODAL CYCLISTS

Calculation factor: 1 DWELLS

BOLD print indicates peak (busiest) period

Time Range	ARRIVALS			DEPARTURES			TOTALS		
	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate
00:00 - 01:00									
01:00 - 02:00									
02:00 - 03:00									
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00									
06:00 - 07:00									
07:00 - 08:00	3	124	0.003	3	124	0.005	3	124	0.008
08:00 - 09:00	3	124	0.003	3	124	0.000	3	124	0.003
09:00 - 10:00	3	124	0.000	3	124	0.005	3	124	0.005
10:00 - 11:00	3	124	0.005	3	124	0.003	3	124	0.008
11:00 - 12:00	3	124	0.000	3	124	0.008	3	124	0.008
12:00 - 13:00	3	124	0.000	3	124	0.003	3	124	0.003
13:00 - 14:00	3	124	0.000	3	124	0.003	3	124	0.003
14:00 - 15:00	3	124	0.021	3	124	0.019	3	124	0.040
15:00 - 16:00	3	124	0.003	3	124	0.005	3	124	0.008
16:00 - 17:00	3	124	0.011	3	124	0.008	3	124	0.019
17:00 - 18:00	3	124	0.003	3	124	0.005	3	124	0.008
18:00 - 19:00	3	124	0.008	3	124	0.005	3	124	0.013
19:00 - 20:00	1	247	0.000	1	247	0.000	1	247	0.000
20:00 - 21:00	1	247	0.004	1	247	0.012	1	247	0.016
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
<b>Total Rates:</b>			0.061			0.081			0.142

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

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

TRIP RATE for Land Use 03 - RESIDENTIAL/D - AFFORDABLE/LOCAL AUTHORITY FLATS  
MULTI-MODAL VEHICLE OCCUPANTS

Calculation factor: 1 DWELLS

BOLD print indicates peak (busiest) period

Time Range	ARRIVALS			DEPARTURES			TOTALS		
	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate
00:00 - 01:00									
01:00 - 02:00									
02:00 - 03:00									
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00									
06:00 - 07:00									
07:00 - 08:00	3	124	0.035	3	124	0.043	3	124	0.078
08:00 - 09:00	3	124	0.027	3	124	0.097	3	124	0.124
09:00 - 10:00	3	124	0.029	3	124	0.067	3	124	0.096
10:00 - 11:00	3	124	0.029	3	124	0.021	3	124	0.050
11:00 - 12:00	3	124	0.032	3	124	0.046	3	124	0.078
12:00 - 13:00	3	124	0.043	3	124	0.046	3	124	0.089
13:00 - 14:00	3	124	0.027	3	124	0.024	3	124	0.051
14:00 - 15:00	3	124	0.029	3	124	0.019	3	124	0.048
15:00 - 16:00	3	124	0.062	3	124	0.027	3	124	0.089
16:00 - 17:00	3	124	0.067	3	124	0.059	3	124	0.126
17:00 - 18:00	3	124	0.056	3	124	0.056	3	124	0.112
18:00 - 19:00	3	124	0.083	3	124	0.048	3	124	0.131
19:00 - 20:00	1	247	0.101	1	247	0.049	1	247	0.150
20:00 - 21:00	1	247	0.045	1	247	0.032	1	247	0.077
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
<b>Total Rates:</b>			0.665			0.634			1.299

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

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

TRIP RATE for Land Use 03 - RESIDENTIAL/D - AFFORDABLE/LOCAL AUTHORITY FLATS  
MULTI-MODAL PEDESTRIANS

Calculation factor: 1 DWELLS

BOLD print indicates peak (busiest) period

Time Range	ARRIVALS			DEPARTURES			TOTALS		
	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate
00:00 - 01:00									
01:00 - 02:00									
02:00 - 03:00									
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00									
06:00 - 07:00									
07:00 - 08:00	3	124	0.024	3	124	0.080	3	124	0.104
08:00 - 09:00	3	124	0.059	3	124	0.284	3	124	0.343
09:00 - 10:00	3	124	0.134	3	124	0.166	3	124	0.300
10:00 - 11:00	3	124	0.075	3	124	0.094	3	124	0.169
11:00 - 12:00	3	124	0.091	3	124	0.139	3	124	0.230
12:00 - 13:00	3	124	0.121	3	124	0.137	3	124	0.258
13:00 - 14:00	3	124	0.118	3	124	0.086	3	124	0.204
14:00 - 15:00	3	124	0.121	3	124	0.131	3	124	0.252
15:00 - 16:00	3	124	0.359	3	124	0.228	3	124	0.587
16:00 - 17:00	3	124	0.263	3	124	0.121	3	124	0.384
17:00 - 18:00	3	124	0.123	3	124	0.088	3	124	0.211
18:00 - 19:00	3	124	0.150	3	124	0.121	3	124	0.271
19:00 - 20:00	1	247	0.166	1	247	0.186	1	247	0.352
20:00 - 21:00	1	247	0.085	1	247	0.040	1	247	0.125
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
<b>Total Rates:</b>			1.889			1.901			3.790

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

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

TRIP RATE for Land Use 03 - RESIDENTIAL/D - AFFORDABLE/LOCAL AUTHORITY FLATS  
MULTI-MODAL PUBLIC TRANSPORT USERS

Calculation factor: 1 DWELLS

BOLD print indicates peak (busiest) period

Time Range	ARRIVALS			DEPARTURES			TOTALS		
	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate
00:00 - 01:00									
01:00 - 02:00									
02:00 - 03:00									
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00									
06:00 - 07:00									
07:00 - 08:00	3	124	0.013	3	124	0.088	3	124	0.101
08:00 - 09:00	3	124	0.000	3	124	0.177	3	124	0.177
09:00 - 10:00	3	124	0.008	3	124	0.072	3	124	0.080
10:00 - 11:00	3	124	0.008	3	124	0.046	3	124	0.054
11:00 - 12:00	3	124	0.024	3	124	0.035	3	124	0.059
12:00 - 13:00	3	124	0.046	3	124	0.056	3	124	0.102
13:00 - 14:00	3	124	0.043	3	124	0.056	3	124	0.099
14:00 - 15:00	3	124	0.035	3	124	0.043	3	124	0.078
15:00 - 16:00	3	124	0.097	3	124	0.024	3	124	0.121
16:00 - 17:00	3	124	0.091	3	124	0.027	3	124	0.118
17:00 - 18:00	3	124	0.091	3	124	0.027	3	124	0.118
18:00 - 19:00	3	124	0.134	3	124	0.011	3	124	0.145
19:00 - 20:00	1	247	0.097	1	247	0.036	1	247	0.133
20:00 - 21:00	1	247	0.077	1	247	0.008	1	247	0.085
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
<b>Total Rates:</b>			<b>0.764</b>			<b>0.706</b>			<b>1.470</b>

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

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

TRIP RATE for Land Use 03 - RESIDENTIAL/D - AFFORDABLE/LOCAL AUTHORITY FLATS  
MULTI-MODAL TOTAL PEOPLE

Calculation factor: 1 DWELLS

BOLD print indicates peak (busiest) period

Time Range	ARRIVALS			DEPARTURES			TOTALS		
	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate
00:00 - 01:00									
01:00 - 02:00									
02:00 - 03:00									
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00									
06:00 - 07:00									
07:00 - 08:00	3	124	0.075	3	124	0.217	3	124	0.292
08:00 - 09:00	3	124	0.088	3	124	0.558	3	124	0.646
09:00 - 10:00	3	124	0.172	3	124	0.311	3	124	0.483
10:00 - 11:00	3	124	0.118	3	124	0.164	3	124	0.282
11:00 - 12:00	3	124	0.147	3	124	0.228	3	124	0.375
12:00 - 13:00	3	124	0.209	3	124	0.241	3	124	0.450
13:00 - 14:00	3	124	0.188	3	124	0.169	3	124	0.357
14:00 - 15:00	3	124	0.206	3	124	0.212	3	124	0.418
15:00 - 16:00	3	124	0.520	3	124	0.284	3	124	0.804
16:00 - 17:00	3	124	0.432	3	124	0.214	3	124	0.646
17:00 - 18:00	3	124	0.273	3	124	0.177	3	124	0.450
18:00 - 19:00	3	124	0.375	3	124	0.185	3	124	0.560
19:00 - 20:00	1	247	0.364	1	247	0.271	1	247	0.635
20:00 - 21:00	1	247	0.211	1	247	0.093	1	247	0.304
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
<b>Total Rates:</b>			3.378			3.324			6.702

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

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

***APPENDIX J***

***2011 Census: Method of Travel to Work data***

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# nomis

official labour market statistics



## QS701EW - Method of travel to work

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### QS701EW - Method of travel to work [i](#)

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Population All usual residents aged 16 to 74  
 Units Persons  
 Date 2011  
 Rural Urban [i](#) Total

Method of Travel to Work <a href="#">i</a>	msoa2011:E02000787 : Richmond upon Thames 004	ualad09:Richmond upon Thames	country:England
All categories: Method of travel to work	8,010	137,779	38,881,374
Work mainly at or from home	470	8,870	1,349,568
Underground, metro, light rail, tram	1,271	10,605	1,027,625
Train	1,054	21,768	1,343,684
Bus, minibus or coach	439	7,531	1,886,539
Taxi	12	237	131,465
Motorcycle, scooter or moped	97	1,654	206,550
Driving a car or van	1,578	32,271	14,345,882
Passenger in a car or van	68	1,341	1,264,553
Bicycle	347	6,062	742,675
On foot	506	8,138	2,701,453
Other method of travel to work	45	727	162,727

#### Warnings and notes:

In order to protect against disclosure of personal information, records have been swapped between different geographic areas. Some counts will be affected, particularly small counts at the lowest geographies

***APPENDIX K***  
***TRICS – Advanced Filtering***

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Calculation Reference: AUDIT-109307-180802-0824

## TRIP RATE CALCULATION SELECTION PARAMETERS:

Land Use : 03 - RESIDENTIAL  
 Category : C - FLATS PRIVATELY OWNED  
 MULTI-MODAL VEHICLES

Selected regions and areas:

01	GREATER LONDON	
	BT BRENT	1 days
	IS ISLINGTON	1 days
	SK SOUTHWARK	1 days

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

## Secondary Filtering selection:

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

Parameter: Number of dwellings  
 Actual Range: 29 to 472 (units: )  
 Range Selected by User: 25 to 493 (units: )

Public Transport Provision:

Selection by: Include all surveys

Date Range: 01/01/10 to 30/11/16

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

Selected survey days:

Wednesday	1 days
Thursday	2 days

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

Selected survey types:

Manual count	3 days
Directional ATC Count	0 days

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

Selected Locations:

Edge of Town Centre	2
Suburban Area (PPS6 Out of Centre)	1

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

Selected Location Sub Categories:

Development Zone	2
Built-Up Zone	1

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

## Secondary Filtering selection:

Use Class:

C3	3 days
----	--------

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

Secondary Filtering selection (Cont.):

Population within 1 mile:

25,001 to 50,000	1 days
100,001 or More	2 days

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

Population within 5 miles:

500,001 or More	3 days
-----------------	--------

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

Car ownership within 5 miles:

0.5 or Less	2 days
0.6 to 1.0	1 days

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

Travel Plan:

Yes	2 days
No	1 days

*This data displays the number of surveys within the selected set that were undertaken at sites with Travel Plans in place, and the number of surveys that were undertaken at sites without Travel Plans.*

PTAL Rating:

5 Very Good	1 days
6a Excellent	1 days
6b (High) Excellent	1 days

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

LIST OF SITES relevant to selection parameters

1	BT-03-C-02 ENGINEERS WAY WEMBLEY	BLOCKS OF FLATS	BRENT
	Suburban Area (PPS6 Out of Centre) Development Zone		
	Total Number of dwellings:	472	
	Survey date: WEDNESDAY	30/11/16	Survey Type: MANUAL
2	IS-03-C-04 CITY ROAD ISLINGTON	BLOCK OF FLATS	ISLINGTON
	Edge of Town Centre Development Zone		
	Total Number of dwellings:	157	
	Survey date: THURSDAY	14/07/16	Survey Type: MANUAL
3	SK-03-C-02 LAMB WALK BERMONDSEY	BLOCK OF FLATS	SOUTHWARK
	Edge of Town Centre Built-Up Zone		
	Total Number of dwellings:	29	
	Survey date: THURSDAY	23/04/15	Survey Type: MANUAL

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

MANUALLY DESELECTED SITES

Site Ref	Reason for Deselection
HG-03-C-02	Parking ratio
KI-03-C-02	Parking ratio
KN-03-C-02	Parking ratio
KN-03-C-03	Parking ratio
SK-03-C-01	Parking ratio
WH-03-C-01	Parking ratio

TRIP RATE for Land Use 03 - RESIDENTIAL/C - FLATS PRIVATELY OWNED

MULTI-MODAL VEHICLES

Calculation factor: 1 DWELLS

BOLD print indicates peak (busiest) period

Time Range	ARRIVALS			DEPARTURES			TOTALS		
	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate
00:00 - 01:00									
01:00 - 02:00									
02:00 - 03:00									
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00									
06:00 - 07:00									
07:00 - 08:00	3	219	0.005	3	219	0.011	3	219	0.016
08:00 - 09:00	3	219	0.011	3	219	0.015	3	219	0.026
09:00 - 10:00	3	219	0.009	3	219	0.014	3	219	0.023
10:00 - 11:00	3	219	0.011	3	219	0.014	3	219	0.025
11:00 - 12:00	3	219	0.012	3	219	0.009	3	219	0.021
12:00 - 13:00	3	219	0.006	3	219	0.011	3	219	0.017
13:00 - 14:00	3	219	0.021	3	219	0.021	3	219	0.042
14:00 - 15:00	3	219	0.012	3	219	0.009	3	219	0.021
15:00 - 16:00	3	219	0.003	3	219	0.005	3	219	0.008
16:00 - 17:00	3	219	0.018	3	219	0.020	3	219	0.038
17:00 - 18:00	3	219	0.023	3	219	0.011	3	219	0.034
18:00 - 19:00	3	219	0.014	3	219	0.006	3	219	0.020
19:00 - 20:00	3	219	0.005	3	219	0.009	3	219	0.014
20:00 - 21:00	3	219	0.009	3	219	0.014	3	219	0.023
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
<b>Total Rates:</b>			<b>0.159</b>			<b>0.169</b>			<b>0.328</b>

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

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

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#### Parameter summary

Trip rate parameter range selected:	29 - 472 (units: )
Survey date date range:	01/01/10 - 30/11/16
Number of weekdays (Monday-Friday):	3
Number of Saturdays:	0
Number of Sundays:	0
Surveys automatically removed from selection:	0
Surveys manually removed from selection:	6

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

TRIP RATE for Land Use 03 - RESIDENTIAL/C - FLATS PRIVATELY OWNED

MULTI-MODAL TAXIS

Calculation factor: 1 DWELLS

BOLD print indicates peak (busiest) period

Time Range	ARRIVALS			DEPARTURES			TOTALS		
	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate
00:00 - 01:00									
01:00 - 02:00									
02:00 - 03:00									
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00									
06:00 - 07:00									
07:00 - 08:00	3	219	0.005	3	219	0.005	3	219	0.010
08:00 - 09:00	3	219	0.006	3	219	0.006	3	219	0.012
09:00 - 10:00	3	219	0.002	3	219	0.002	3	219	0.004
10:00 - 11:00	3	219	0.003	3	219	0.003	3	219	0.006
11:00 - 12:00	3	219	0.005	3	219	0.005	3	219	0.010
12:00 - 13:00	3	219	0.002	3	219	0.002	3	219	0.004
13:00 - 14:00	3	219	0.006	3	219	0.006	3	219	0.012
14:00 - 15:00	3	219	0.003	3	219	0.003	3	219	0.006
15:00 - 16:00	3	219	0.000	3	219	0.000	3	219	0.000
16:00 - 17:00	3	219	0.005	3	219	0.005	3	219	0.010
17:00 - 18:00	3	219	0.002	3	219	0.002	3	219	0.004
18:00 - 19:00	3	219	0.005	3	219	0.005	3	219	0.010
19:00 - 20:00	3	219	0.002	3	219	0.002	3	219	0.004
20:00 - 21:00	3	219	0.006	3	219	0.006	3	219	0.012
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
<b>Total Rates:</b>			<b>0.052</b>			<b>0.052</b>			<b>0.104</b>

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

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

TRIP RATE for Land Use 03 - RESIDENTIAL/C - FLATS PRIVATELY OWNED

MULTI-MODAL OGVS

Calculation factor: 1 DWELLS

BOLD print indicates peak (busiest) period

Time Range	ARRIVALS			DEPARTURES			TOTALS		
	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate
00:00 - 01:00									
01:00 - 02:00									
02:00 - 03:00									
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00									
06:00 - 07:00									
07:00 - 08:00	3	219	0.000	3	219	0.000	3	219	0.000
08:00 - 09:00	3	219	0.000	3	219	0.000	3	219	0.000
09:00 - 10:00	3	219	0.000	3	219	0.000	3	219	0.000
10:00 - 11:00	3	219	0.000	3	219	0.000	3	219	0.000
11:00 - 12:00	3	219	0.000	3	219	0.000	3	219	0.000
12:00 - 13:00	3	219	0.000	3	219	0.000	3	219	0.000
13:00 - 14:00	3	219	0.000	3	219	0.000	3	219	0.000
14:00 - 15:00	3	219	0.002	3	219	0.002	3	219	0.004
15:00 - 16:00	3	219	0.000	3	219	0.000	3	219	0.000
16:00 - 17:00	3	219	0.000	3	219	0.000	3	219	0.000
17:00 - 18:00	3	219	0.000	3	219	0.000	3	219	0.000
18:00 - 19:00	3	219	0.000	3	219	0.000	3	219	0.000
19:00 - 20:00	3	219	0.000	3	219	0.000	3	219	0.000
20:00 - 21:00	3	219	0.000	3	219	0.000	3	219	0.000
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
<b>Total Rates:</b>			<b>0.002</b>			<b>0.002</b>			<b>0.004</b>

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

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

TRIP RATE for Land Use 03 - RESIDENTIAL/C - FLATS PRIVATELY OWNED

MULTI-MODAL CYCLISTS

Calculation factor: 1 DWELLS

BOLD print indicates peak (busiest) period

Time Range	ARRIVALS			DEPARTURES			TOTALS		
	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate
00:00 - 01:00									
01:00 - 02:00									
02:00 - 03:00									
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00									
06:00 - 07:00									
07:00 - 08:00	3	219	0.002	3	219	0.006	3	219	0.008
08:00 - 09:00	3	219	0.000	3	219	0.003	3	219	0.003
09:00 - 10:00	3	219	0.000	3	219	0.000	3	219	0.000
10:00 - 11:00	3	219	0.000	3	219	0.000	3	219	0.000
11:00 - 12:00	3	219	0.000	3	219	0.000	3	219	0.000
12:00 - 13:00	3	219	0.002	3	219	0.003	3	219	0.005
13:00 - 14:00	3	219	0.000	3	219	0.000	3	219	0.000
14:00 - 15:00	3	219	0.000	3	219	0.000	3	219	0.000
15:00 - 16:00	3	219	0.000	3	219	0.000	3	219	0.000
16:00 - 17:00	3	219	0.000	3	219	0.000	3	219	0.000
17:00 - 18:00	3	219	0.005	3	219	0.000	3	219	0.005
18:00 - 19:00	3	219	0.002	3	219	0.000	3	219	0.002
19:00 - 20:00	3	219	0.002	3	219	0.003	3	219	0.005
20:00 - 21:00	3	219	0.003	3	219	0.000	3	219	0.003
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
<b>Total Rates:</b>			<b>0.016</b>			<b>0.015</b>			<b>0.031</b>

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

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

TRIP RATE for Land Use 03 - RESIDENTIAL/C - FLATS PRIVATELY OWNED

MULTI-MODAL VEHICLE OCCUPANTS

Calculation factor: 1 DWELLS

BOLD print indicates peak (busiest) period

Time Range	ARRIVALS			DEPARTURES			TOTALS		
	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate
00:00 - 01:00									
01:00 - 02:00									
02:00 - 03:00									
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00									
06:00 - 07:00									
07:00 - 08:00	3	219	0.002	3	219	0.012	3	219	0.014
08:00 - 09:00	3	219	0.009	3	219	0.017	3	219	0.026
09:00 - 10:00	3	219	0.011	3	219	0.018	3	219	0.029
10:00 - 11:00	3	219	0.012	3	219	0.018	3	219	0.030
11:00 - 12:00	3	219	0.011	3	219	0.012	3	219	0.023
12:00 - 13:00	3	219	0.008	3	219	0.012	3	219	0.020
13:00 - 14:00	3	219	0.026	3	219	0.023	3	219	0.049
14:00 - 15:00	3	219	0.015	3	219	0.009	3	219	0.024
15:00 - 16:00	3	219	0.003	3	219	0.006	3	219	0.009
16:00 - 17:00	3	219	0.023	3	219	0.018	3	219	0.041
17:00 - 18:00	3	219	0.029	3	219	0.012	3	219	0.041
18:00 - 19:00	3	219	0.014	3	219	0.008	3	219	0.022
19:00 - 20:00	3	219	0.003	3	219	0.015	3	219	0.018
20:00 - 21:00	3	219	0.012	3	219	0.023	3	219	0.035
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
<b>Total Rates:</b>			<b>0.178</b>			<b>0.203</b>			<b>0.381</b>

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

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

TRIP RATE for Land Use 03 - RESIDENTIAL/C - FLATS PRIVATELY OWNED

MULTI-MODAL PEDESTRIANS

Calculation factor: 1 DWELLS

BOLD print indicates peak (busiest) period

Time Range	ARRIVALS			DEPARTURES			TOTALS		
	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate
00:00 - 01:00									
01:00 - 02:00									
02:00 - 03:00									
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00									
06:00 - 07:00									
07:00 - 08:00	3	219	0.035	3	219	0.070	3	219	0.105
08:00 - 09:00	3	219	0.023	3	219	0.090	3	219	0.113
09:00 - 10:00	3	219	0.015	3	219	0.041	3	219	0.056
10:00 - 11:00	3	219	0.044	3	219	0.046	3	219	0.090
11:00 - 12:00	3	219	0.099	3	219	0.059	3	219	0.158
12:00 - 13:00	3	219	0.058	3	219	0.065	3	219	0.123
13:00 - 14:00	3	219	0.036	3	219	0.088	3	219	0.124
14:00 - 15:00	3	219	0.055	3	219	0.073	3	219	0.128
15:00 - 16:00	3	219	0.058	3	219	0.061	3	219	0.119
16:00 - 17:00	3	219	0.105	3	219	0.078	3	219	0.183
17:00 - 18:00	3	219	0.067	3	219	0.047	3	219	0.114
18:00 - 19:00	3	219	0.046	3	219	0.033	3	219	0.079
19:00 - 20:00	3	219	0.062	3	219	0.033	3	219	0.095
20:00 - 21:00	3	219	0.050	3	219	0.027	3	219	0.077
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
<b>Total Rates:</b>			<b>0.753</b>			<b>0.811</b>			<b>1.564</b>

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

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

TRIP RATE for Land Use 03 - RESIDENTIAL/C - FLATS PRIVATELY OWNED

MULTI-MODAL BUS/TRAM PASSENGERS

Calculation factor: 1 DWELLS

BOLD print indicates peak (busiest) period

Time Range	ARRIVALS			DEPARTURES			TOTALS		
	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate
00:00 - 01:00									
01:00 - 02:00									
02:00 - 03:00									
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00									
06:00 - 07:00									
07:00 - 08:00	3	219	0.003	3	219	0.046	3	219	0.049
08:00 - 09:00	3	219	0.006	3	219	0.074	3	219	0.080
09:00 - 10:00	3	219	0.009	3	219	0.032	3	219	0.041
10:00 - 11:00	3	219	0.015	3	219	0.030	3	219	0.045
11:00 - 12:00	3	219	0.014	3	219	0.026	3	219	0.040
12:00 - 13:00	3	219	0.018	3	219	0.029	3	219	0.047
13:00 - 14:00	3	219	0.027	3	219	0.024	3	219	0.051
14:00 - 15:00	3	219	0.026	3	219	0.021	3	219	0.047
15:00 - 16:00	3	219	0.030	3	219	0.020	3	219	0.050
16:00 - 17:00	3	219	0.038	3	219	0.023	3	219	0.061
17:00 - 18:00	3	219	0.058	3	219	0.030	3	219	0.088
18:00 - 19:00	3	219	0.068	3	219	0.027	3	219	0.095
19:00 - 20:00	3	219	0.027	3	219	0.018	3	219	0.045
20:00 - 21:00	3	219	0.018	3	219	0.017	3	219	0.035
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
<b>Total Rates:</b>			<b>0.357</b>			<b>0.417</b>			<b>0.774</b>

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

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

TRIP RATE for Land Use 03 - RESIDENTIAL/C - FLATS PRIVATELY OWNED

MULTI-MODAL TOTAL RAIL PASSENGERS

Calculation factor: 1 DWELLS

BOLD print indicates peak (busiest) period

Time Range	ARRIVALS			DEPARTURES			TOTALS		
	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate
00:00 - 01:00									
01:00 - 02:00									
02:00 - 03:00									
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00									
06:00 - 07:00									
07:00 - 08:00	3	219	0.006	3	219	0.067	3	219	0.073
08:00 - 09:00	3	219	0.009	3	219	0.103	3	219	0.112
09:00 - 10:00	3	219	0.015	3	219	0.046	3	219	0.061
10:00 - 11:00	3	219	0.017	3	219	0.038	3	219	0.055
11:00 - 12:00	3	219	0.021	3	219	0.035	3	219	0.056
12:00 - 13:00	3	219	0.015	3	219	0.033	3	219	0.048
13:00 - 14:00	3	219	0.024	3	219	0.024	3	219	0.048
14:00 - 15:00	3	219	0.036	3	219	0.024	3	219	0.060
15:00 - 16:00	3	219	0.023	3	219	0.023	3	219	0.046
16:00 - 17:00	3	219	0.026	3	219	0.026	3	219	0.052
17:00 - 18:00	3	219	0.064	3	219	0.033	3	219	0.097
18:00 - 19:00	3	219	0.040	3	219	0.027	3	219	0.067
19:00 - 20:00	3	219	0.052	3	219	0.017	3	219	0.069
20:00 - 21:00	3	219	0.029	3	219	0.015	3	219	0.044
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
<b>Total Rates:</b>			<b>0.377</b>			<b>0.511</b>			<b>0.888</b>

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

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

TRIP RATE for Land Use 03 - RESIDENTIAL/C - FLATS PRIVATELY OWNED

MULTI-MODAL PUBLIC TRANSPORT USERS

Calculation factor: 1 DWELLS

BOLD print indicates peak (busiest) period

Time Range	ARRIVALS			DEPARTURES			TOTALS		
	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate
00:00 - 01:00									
01:00 - 02:00									
02:00 - 03:00									
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00									
06:00 - 07:00									
07:00 - 08:00	3	219	0.009	3	219	0.112	3	219	0.121
08:00 - 09:00	3	219	0.015	3	219	0.178	3	219	0.193
09:00 - 10:00	3	219	0.024	3	219	0.078	3	219	0.102
10:00 - 11:00	3	219	0.032	3	219	0.068	3	219	0.100
11:00 - 12:00	3	219	0.035	3	219	0.061	3	219	0.096
12:00 - 13:00	3	219	0.033	3	219	0.062	3	219	0.095
13:00 - 14:00	3	219	0.052	3	219	0.049	3	219	0.101
14:00 - 15:00	3	219	0.062	3	219	0.046	3	219	0.108
15:00 - 16:00	3	219	0.053	3	219	0.043	3	219	0.096
16:00 - 17:00	3	219	0.064	3	219	0.049	3	219	0.113
17:00 - 18:00	3	219	0.122	3	219	0.064	3	219	0.186
18:00 - 19:00	3	219	0.108	3	219	0.055	3	219	0.163
19:00 - 20:00	3	219	0.079	3	219	0.035	3	219	0.114
20:00 - 21:00	3	219	0.047	3	219	0.032	3	219	0.079
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
<b>Total Rates:</b>			<b>0.735</b>			<b>0.932</b>			<b>1.667</b>

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

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

TRIP RATE for Land Use 03 - RESIDENTIAL/C - FLATS PRIVATELY OWNED

MULTI-MODAL TOTAL PEOPLE

Calculation factor: 1 DWELLS

BOLD print indicates peak (busiest) period

Time Range	ARRIVALS			DEPARTURES			TOTALS		
	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate
00:00 - 01:00									
01:00 - 02:00									
02:00 - 03:00									
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00									
06:00 - 07:00									
07:00 - 08:00	3	219	0.047	3	219	0.201	3	219	0.248
08:00 - 09:00	3	219	0.047	3	219	0.287	3	219	0.334
09:00 - 10:00	3	219	0.050	3	219	0.137	3	219	0.187
10:00 - 11:00	3	219	0.088	3	219	0.132	3	219	0.220
11:00 - 12:00	3	219	0.144	3	219	0.132	3	219	0.276
12:00 - 13:00	3	219	0.100	3	219	0.143	3	219	0.243
13:00 - 14:00	3	219	0.114	3	219	0.160	3	219	0.274
14:00 - 15:00	3	219	0.132	3	219	0.128	3	219	0.260
15:00 - 16:00	3	219	0.114	3	219	0.109	3	219	0.223
16:00 - 17:00	3	219	0.191	3	219	0.144	3	219	0.335
17:00 - 18:00	3	219	0.222	3	219	0.123	3	219	0.345
18:00 - 19:00	3	219	0.169	3	219	0.096	3	219	0.265
19:00 - 20:00	3	219	0.146	3	219	0.087	3	219	0.233
20:00 - 21:00	3	219	0.112	3	219	0.082	3	219	0.194
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
<b>Total Rates:</b>			1.676			1.961			3.637

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

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

TRIP RATE for Land Use 03 - RESIDENTIAL/C - FLATS PRIVATELY OWNED

MULTI-MODAL CARS

Calculation factor: 1 DWELLS

BOLD print indicates peak (busiest) period

Time Range	ARRIVALS			DEPARTURES			TOTALS		
	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate
00:00 - 01:00									
01:00 - 02:00									
02:00 - 03:00									
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00									
06:00 - 07:00									
07:00 - 08:00	3	219	0.000	3	219	0.006	3	219	0.006
08:00 - 09:00	3	219	0.003	3	219	0.008	3	219	0.011
09:00 - 10:00	3	219	0.005	3	219	0.009	3	219	0.014
10:00 - 11:00	3	219	0.008	3	219	0.011	3	219	0.019
11:00 - 12:00	3	219	0.003	3	219	0.003	3	219	0.006
12:00 - 13:00	3	219	0.003	3	219	0.006	3	219	0.009
13:00 - 14:00	3	219	0.012	3	219	0.009	3	219	0.021
14:00 - 15:00	3	219	0.005	3	219	0.003	3	219	0.008
15:00 - 16:00	3	219	0.002	3	219	0.003	3	219	0.005
16:00 - 17:00	3	219	0.006	3	219	0.008	3	219	0.014
17:00 - 18:00	3	219	0.021	3	219	0.008	3	219	0.029
18:00 - 19:00	3	219	0.009	3	219	0.002	3	219	0.011
19:00 - 20:00	3	219	0.003	3	219	0.006	3	219	0.009
20:00 - 21:00	3	219	0.003	3	219	0.008	3	219	0.011
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
<b>Total Rates:</b>			<b>0.083</b>			<b>0.090</b>			<b>0.173</b>

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

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

TRIP RATE for Land Use 03 - RESIDENTIAL/C - FLATS PRIVATELY OWNED

MULTI-MODAL LGVS

Calculation factor: 1 DWELLS

BOLD print indicates peak (busiest) period

Time Range	ARRIVALS			DEPARTURES			TOTALS		
	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate
00:00 - 01:00									
01:00 - 02:00									
02:00 - 03:00									
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00									
06:00 - 07:00									
07:00 - 08:00	3	219	0.000	3	219	0.000	3	219	0.000
08:00 - 09:00	3	219	0.002	3	219	0.002	3	219	0.004
09:00 - 10:00	3	219	0.003	3	219	0.003	3	219	0.006
10:00 - 11:00	3	219	0.000	3	219	0.000	3	219	0.000
11:00 - 12:00	3	219	0.005	3	219	0.002	3	219	0.007
12:00 - 13:00	3	219	0.002	3	219	0.003	3	219	0.005
13:00 - 14:00	3	219	0.003	3	219	0.006	3	219	0.009
14:00 - 15:00	3	219	0.002	3	219	0.000	3	219	0.002
15:00 - 16:00	3	219	0.002	3	219	0.002	3	219	0.004
16:00 - 17:00	3	219	0.006	3	219	0.006	3	219	0.012
17:00 - 18:00	3	219	0.000	3	219	0.002	3	219	0.002
18:00 - 19:00	3	219	0.000	3	219	0.000	3	219	0.000
19:00 - 20:00	3	219	0.000	3	219	0.000	3	219	0.000
20:00 - 21:00	3	219	0.000	3	219	0.000	3	219	0.000
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
<b>Total Rates:</b>			<b>0.025</b>			<b>0.026</b>			<b>0.051</b>

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

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

TRIP RATE for Land Use 03 - RESIDENTIAL/C - FLATS PRIVATELY OWNED

MULTI-MODAL MOTOR CYCLES

Calculation factor: 1 DWELLS

BOLD print indicates peak (busiest) period

Time Range	ARRIVALS			DEPARTURES			TOTALS		
	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate
00:00 - 01:00									
01:00 - 02:00									
02:00 - 03:00									
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00									
06:00 - 07:00									
07:00 - 08:00	3	219	0.000	3	219	0.000	3	219	0.000
08:00 - 09:00	3	219	0.000	3	219	0.000	3	219	0.000
09:00 - 10:00	3	219	0.000	3	219	0.000	3	219	0.000
10:00 - 11:00	3	219	0.000	3	219	0.000	3	219	0.000
11:00 - 12:00	3	219	0.000	3	219	0.000	3	219	0.000
12:00 - 13:00	3	219	0.000	3	219	0.000	3	219	0.000
13:00 - 14:00	3	219	0.000	3	219	0.000	3	219	0.000
14:00 - 15:00	3	219	0.002	3	219	0.002	3	219	0.004
15:00 - 16:00	3	219	0.000	3	219	0.000	3	219	0.000
16:00 - 17:00	3	219	0.002	3	219	0.002	3	219	0.004
17:00 - 18:00	3	219	0.000	3	219	0.000	3	219	0.000
18:00 - 19:00	3	219	0.000	3	219	0.000	3	219	0.000
19:00 - 20:00	3	219	0.000	3	219	0.002	3	219	0.002
20:00 - 21:00	3	219	0.000	3	219	0.000	3	219	0.000
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
<b>Total Rates:</b>			<b>0.004</b>			<b>0.006</b>			<b>0.010</b>

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

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

TRIP RATE for Land Use 03 - RESIDENTIAL/C - FLATS PRIVATELY OWNED

MULTI-MODAL Underground Passengers

Calculation factor: 1 DWELLS

BOLD print indicates peak (busiest) period

Time Range	ARRIVALS			DEPARTURES			TOTALS		
	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate
00:00 - 01:00									
01:00 - 02:00									
02:00 - 03:00									
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00									
06:00 - 07:00									
07:00 - 08:00	3	219	0.006	3	219	0.052	3	219	0.058
08:00 - 09:00	3	219	0.009	3	219	0.084	3	219	0.093
09:00 - 10:00	3	219	0.012	3	219	0.033	3	219	0.045
10:00 - 11:00	3	219	0.011	3	219	0.033	3	219	0.044
11:00 - 12:00	3	219	0.017	3	219	0.032	3	219	0.049
12:00 - 13:00	3	219	0.014	3	219	0.024	3	219	0.038
13:00 - 14:00	3	219	0.021	3	219	0.021	3	219	0.042
14:00 - 15:00	3	219	0.026	3	219	0.024	3	219	0.050
15:00 - 16:00	3	219	0.020	3	219	0.023	3	219	0.043
16:00 - 17:00	3	219	0.026	3	219	0.026	3	219	0.052
17:00 - 18:00	3	219	0.049	3	219	0.030	3	219	0.079
18:00 - 19:00	3	219	0.035	3	219	0.024	3	219	0.059
19:00 - 20:00	3	219	0.043	3	219	0.011	3	219	0.054
20:00 - 21:00	3	219	0.027	3	219	0.015	3	219	0.042
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
<b>Total Rates:</b>			<b>0.316</b>			<b>0.432</b>			<b>0.748</b>

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

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

TRIP RATE for Land Use 03 - RESIDENTIAL/C - FLATS PRIVATELY OWNED

MULTI-MODAL DLR Passengers

Calculation factor: 1 DWELLS

BOLD print indicates peak (busiest) period

Time Range	ARRIVALS			DEPARTURES			TOTALS		
	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate
00:00 - 01:00									
01:00 - 02:00									
02:00 - 03:00									
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00									
06:00 - 07:00									
07:00 - 08:00	3	219	0.000	3	219	0.000	3	219	0.000
08:00 - 09:00	3	219	0.000	3	219	0.002	3	219	0.002
09:00 - 10:00	3	219	0.000	3	219	0.003	3	219	0.003
10:00 - 11:00	3	219	0.000	3	219	0.000	3	219	0.000
11:00 - 12:00	3	219	0.000	3	219	0.000	3	219	0.000
12:00 - 13:00	3	219	0.000	3	219	0.000	3	219	0.000
13:00 - 14:00	3	219	0.000	3	219	0.002	3	219	0.002
14:00 - 15:00	3	219	0.000	3	219	0.000	3	219	0.000
15:00 - 16:00	3	219	0.000	3	219	0.000	3	219	0.000
16:00 - 17:00	3	219	0.000	3	219	0.000	3	219	0.000
17:00 - 18:00	3	219	0.006	3	219	0.000	3	219	0.006
18:00 - 19:00	3	219	0.000	3	219	0.000	3	219	0.000
19:00 - 20:00	3	219	0.000	3	219	0.000	3	219	0.000
20:00 - 21:00	3	219	0.000	3	219	0.000	3	219	0.000
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
<b>Total Rates:</b>			<b>0.006</b>			<b>0.007</b>			<b>0.013</b>

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

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

TRIP RATE for Land Use 03 - RESIDENTIAL/C - FLATS PRIVATELY OWNED

MULTI-MODAL Overground Passengers

Calculation factor: 1 DWELLS

BOLD print indicates peak (busiest) period

Time Range	ARRIVALS			DEPARTURES			TOTALS		
	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate
00:00 - 01:00									
01:00 - 02:00									
02:00 - 03:00									
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00									
06:00 - 07:00									
07:00 - 08:00	3	219	0.000	3	219	0.014	3	219	0.014
08:00 - 09:00	3	219	0.000	3	219	0.018	3	219	0.018
09:00 - 10:00	3	219	0.003	3	219	0.008	3	219	0.011
10:00 - 11:00	3	219	0.005	3	219	0.002	3	219	0.007
11:00 - 12:00	3	219	0.003	3	219	0.003	3	219	0.006
12:00 - 13:00	3	219	0.002	3	219	0.009	3	219	0.011
13:00 - 14:00	3	219	0.003	3	219	0.002	3	219	0.005
14:00 - 15:00	3	219	0.011	3	219	0.000	3	219	0.011
15:00 - 16:00	3	219	0.003	3	219	0.000	3	219	0.003
16:00 - 17:00	3	219	0.000	3	219	0.000	3	219	0.000
17:00 - 18:00	3	219	0.008	3	219	0.003	3	219	0.011
18:00 - 19:00	3	219	0.005	3	219	0.003	3	219	0.008
19:00 - 20:00	3	219	0.008	3	219	0.006	3	219	0.014
20:00 - 21:00	3	219	0.000	3	219	0.000	3	219	0.000
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
<b>Total Rates:</b>			<b>0.051</b>			<b>0.068</b>			<b>0.119</b>

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

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

TRIP RATE for Land Use 03 - RESIDENTIAL/C - FLATS PRIVATELY OWNED

MULTI-MODAL National Rail Passengers

Calculation factor: 1 DWELLS

BOLD print indicates peak (busiest) period

Time Range	ARRIVALS			DEPARTURES			TOTALS		
	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate
00:00 - 01:00									
01:00 - 02:00									
02:00 - 03:00									
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00									
06:00 - 07:00									
07:00 - 08:00	3	219	0.000	3	219	0.002	3	219	0.002
08:00 - 09:00	3	219	0.000	3	219	0.000	3	219	0.000
09:00 - 10:00	3	219	0.000	3	219	0.002	3	219	0.002
10:00 - 11:00	3	219	0.002	3	219	0.003	3	219	0.005
11:00 - 12:00	3	219	0.002	3	219	0.000	3	219	0.002
12:00 - 13:00	3	219	0.000	3	219	0.000	3	219	0.000
13:00 - 14:00	3	219	0.000	3	219	0.000	3	219	0.000
14:00 - 15:00	3	219	0.000	3	219	0.000	3	219	0.000
15:00 - 16:00	3	219	0.000	3	219	0.000	3	219	0.000
16:00 - 17:00	3	219	0.000	3	219	0.000	3	219	0.000
17:00 - 18:00	3	219	0.002	3	219	0.000	3	219	0.002
18:00 - 19:00	3	219	0.000	3	219	0.000	3	219	0.000
19:00 - 20:00	3	219	0.002	3	219	0.000	3	219	0.002
20:00 - 21:00	3	219	0.002	3	219	0.000	3	219	0.002
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
<b>Total Rates:</b>			<b>0.010</b>			<b>0.007</b>			<b>0.017</b>

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

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

TRIP RATE for Land Use 03 - RESIDENTIAL/C - FLATS PRIVATELY OWNED

MULTI-MODAL Bus Passengers

Calculation factor: 1 DWELLS

BOLD print indicates peak (busiest) period

Time Range	ARRIVALS			DEPARTURES			TOTALS		
	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate
00:00 - 01:00									
01:00 - 02:00									
02:00 - 03:00									
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00									
06:00 - 07:00									
07:00 - 08:00	3	219	0.003	3	219	0.046	3	219	0.049
08:00 - 09:00	3	219	0.006	3	219	0.074	3	219	0.080
09:00 - 10:00	3	219	0.009	3	219	0.032	3	219	0.041
10:00 - 11:00	3	219	0.015	3	219	0.030	3	219	0.045
11:00 - 12:00	3	219	0.014	3	219	0.026	3	219	0.040
12:00 - 13:00	3	219	0.018	3	219	0.029	3	219	0.047
13:00 - 14:00	3	219	0.027	3	219	0.024	3	219	0.051
14:00 - 15:00	3	219	0.026	3	219	0.021	3	219	0.047
15:00 - 16:00	3	219	0.030	3	219	0.020	3	219	0.050
16:00 - 17:00	3	219	0.038	3	219	0.023	3	219	0.061
17:00 - 18:00	3	219	0.058	3	219	0.030	3	219	0.088
18:00 - 19:00	3	219	0.068	3	219	0.027	3	219	0.095
19:00 - 20:00	3	219	0.027	3	219	0.018	3	219	0.045
20:00 - 21:00	3	219	0.018	3	219	0.017	3	219	0.035
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
<b>Total Rates:</b>			<b>0.357</b>			<b>0.417</b>			<b>0.774</b>

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

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

***APPENDIX L***  
***TRICS – Commercial***

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Calculation Reference: AUDIT-109307-180719-0709

## TRIP RATE CALCULATION SELECTION PARAMETERS:

Land Use : 01 - RETAIL  
 Category : I - SHOPPING CENTRE - LOCAL SHOPS  
 MULTI-MODAL VEHICLES

Selected regions and areas:

03	SOUTH WEST	
	GS GLOUCESTERSHIRE	1 days
05	EAST MIDLANDS	
	LE LEICESTERSHIRE	1 days
06	WEST MIDLANDS	
	SH SHROPSHIRE	1 days
08	NORTH WEST	
	CH CHESHIRE	2 days
09	NORTH	
	TV TEES VALLEY	2 days
	TW TYNE & WEAR	1 days
11	SCOTLAND	
	EB CITY OF EDINBURGH	1 days

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

## Secondary Filtering selection:

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

Parameter: Gross floor area  
 Actual Range: 260 to 1840 (units: sqm)  
 Range Selected by User: 240 to 2500 (units: sqm)

Public Transport Provision:

Selection by: Include all surveys

Date Range: 01/01/10 to 28/10/14

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

Selected survey days:

Monday	2 days
Tuesday	2 days
Wednesday	1 days
Thursday	3 days
Friday	1 days

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

Selected survey types:

Manual count	9 days
Directional ATC Count	0 days

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

Selected Locations:

Suburban Area (PPS6 Out of Centre)	2
Edge of Town	2
Neighbourhood Centre (PPS6 Local Centre)	5

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

Selected Location Sub Categories:

Residential Zone	9
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*This data displays the number of surveys per location sub-category within the selected set. The location sub-categories consist of Commercial Zone, Industrial Zone, Development Zone, Residential Zone, Retail Zone, Built-Up Zone, Village, Out of Town, High Street and No Sub Category.*

Secondary Filtering selection:

Use Class:

A1 8 days

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

Population within 1 mile:

5,001 to 10,000	1 days
10,001 to 15,000	1 days
15,001 to 20,000	1 days
20,001 to 25,000	2 days
25,001 to 50,000	3 days
50,001 to 100,000	1 days

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

Population within 5 miles:

100,001 to 125,000	3 days
125,001 to 250,000	2 days
250,001 to 500,000	4 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	3 days
1.1 to 1.5	6 days

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

Petrol filling station:

Included in the survey count	0 days
Excluded from count or no filling station	9 days

*This data displays the number of surveys within the selected set that include petrol filling station activity, and the number of surveys that do not.*

Travel Plan:

No 9 days

*This data displays the number of surveys within the selected set that were undertaken at sites with Travel Plans in place, and the number of surveys that were undertaken at sites without Travel Plans.*

PTAL Rating:

No PTAL Present 9 days

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



LIST OF SITES relevant to selection parameters (Cont.)

9	TW-01-I-02	LOCAL SHOPS	TYNE & WEAR
	DURHAM ROAD		
	BARNES PARK		
	SUNDERLAND		
	Neighbourhood Centre (PPS6 Local Centre)		
	Residential Zone		
	Total Gross floor area:	540 sqm	
	Survey date: WEDNESDAY	21/11/12	Survey Type: MANUAL

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

TRIP RATE for Land Use 01 - RETAIL/I - SHOPPING CENTRE - LOCAL SHOPS

MULTI-MODAL VEHICLES

Calculation factor: 100 sqm

BOLD print indicates peak (busiest) period

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 - 01:00									
01:00 - 02:00									
02:00 - 03:00									
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00									
06:00 - 07:00	1	540	1.296	1	540	1.296	1	540	2.592
07:00 - 08:00	9	710	5.102	9	710	4.491	9	710	9.593
08:00 - 09:00	9	710	5.180	9	710	4.773	9	710	9.953
09:00 - 10:00	9	710	6.385	9	710	5.681	9	710	12.066
10:00 - 11:00	9	710	5.743	9	710	5.274	9	710	11.017
11:00 - 12:00	9	710	6.682	9	710	6.792	9	710	13.474
12:00 - 13:00	9	710	8.404	9	710	7.966	9	710	16.370
13:00 - 14:00	9	710	7.308	9	710	7.199	9	710	14.507
14:00 - 15:00	9	710	6.119	9	710	6.510	9	710	12.629
15:00 - 16:00	9	710	5.696	9	710	6.025	9	710	11.721
16:00 - 17:00	9	710	6.041	9	710	5.790	9	710	11.831
17:00 - 18:00	9	710	6.369	9	710	6.933	9	710	13.302
18:00 - 19:00	9	710	6.620	9	710	7.105	9	710	13.725
19:00 - 20:00	7	824	6.054	7	824	6.036	7	824	12.090
20:00 - 21:00	7	824	4.458	7	824	4.909	7	824	9.367
21:00 - 22:00	6	823	3.846	6	823	4.433	6	823	8.279
22:00 - 23:00									
23:00 - 24:00									
<b>Total Rates:</b>			<b>91.303</b>			<b>91.213</b>			<b>182.516</b>

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

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

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#### Parameter summary

Trip rate parameter range selected:	260 - 1840 (units: sqm)
Survey date date range:	01/01/10 - 28/10/14
Number of weekdays (Monday-Friday):	9
Number of Saturdays:	0
Number of Sundays:	0
Surveys automatically removed from selection:	1
Surveys manually removed from selection:	0

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

TRIP RATE for Land Use 01 - RETAIL/I - SHOPPING CENTRE - LOCAL SHOPS

MULTI-MODAL CYCLISTS

Calculation factor: 100 sqm

BOLD print indicates peak (busiest) period

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 - 01:00									
01:00 - 02:00									
02:00 - 03:00									
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00									
06:00 - 07:00	1	540	0.185	1	540	0.000	1	540	0.185
07:00 - 08:00	9	710	0.235	9	710	0.156	9	710	0.391
08:00 - 09:00	9	710	0.235	9	710	0.235	9	710	0.470
09:00 - 10:00	9	710	0.188	9	710	0.188	9	710	0.376
10:00 - 11:00	9	710	0.172	9	710	0.141	9	710	0.313
11:00 - 12:00	9	710	0.188	9	710	0.188	9	710	0.376
12:00 - 13:00	9	710	0.125	9	710	0.156	9	710	0.281
13:00 - 14:00	9	710	0.156	9	710	0.172	9	710	0.328
14:00 - 15:00	9	710	0.156	9	710	0.203	9	710	0.359
15:00 - 16:00	9	710	0.391	9	710	0.329	9	710	0.720
16:00 - 17:00	9	710	0.407	9	710	0.360	9	710	0.767
17:00 - 18:00	9	710	0.125	9	710	0.203	9	710	0.328
18:00 - 19:00	9	710	0.313	9	710	0.266	9	710	0.579
19:00 - 20:00	7	824	0.191	7	824	0.208	7	824	0.399
20:00 - 21:00	7	824	0.017	7	824	0.069	7	824	0.086
21:00 - 22:00	6	823	0.202	6	823	0.162	6	823	0.364
22:00 - 23:00									
23:00 - 24:00									
<b>Total Rates:</b>			<b>3.286</b>			<b>3.036</b>			<b>6.322</b>

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

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

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#### Parameter summary

Trip rate parameter range selected:	260 - 1840 (units: sqm)
Survey date date range:	01/01/10 - 28/10/14
Number of weekdays (Monday-Friday):	9
Number of Saturdays:	0
Number of Sundays:	0
Surveys automatically removed from selection:	1
Surveys manually removed from selection:	0

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

TRIP RATE for Land Use 01 - RETAIL/I - SHOPPING CENTRE - LOCAL SHOPS

MULTI-MODAL VEHICLE OCCUPANTS

Calculation factor: 100 sqm

BOLD print indicates peak (busiest) period

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 - 01:00									
01:00 - 02:00									
02:00 - 03:00									
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00									
06:00 - 07:00	1	540	1.481	1	540	1.481	1	540	2.962
07:00 - 08:00	9	710	6.150	9	710	5.336	9	710	11.486
08:00 - 09:00	9	710	6.808	9	710	6.088	9	710	12.896
09:00 - 10:00	9	710	7.872	9	710	6.886	9	710	14.758
10:00 - 11:00	9	710	7.465	9	710	6.761	9	710	14.226
11:00 - 12:00	9	710	8.513	9	710	8.685	9	710	17.198
12:00 - 13:00	9	710	10.579	9	710	10.203	9	710	20.782
13:00 - 14:00	9	710	8.998	9	710	9.202	9	710	18.200
14:00 - 15:00	9	710	7.887	9	710	8.513	9	710	16.400
15:00 - 16:00	9	710	7.512	9	710	8.044	9	710	15.556
16:00 - 17:00	9	710	7.903	9	710	7.606	9	710	15.509
17:00 - 18:00	9	710	8.576	9	710	9.609	9	710	18.185
18:00 - 19:00	9	710	9.484	9	710	9.969	9	710	19.453
19:00 - 20:00	7	824	8.604	7	824	8.656	7	824	17.260
20:00 - 21:00	7	824	5.984	7	824	6.366	7	824	12.350
21:00 - 22:00	6	823	5.040	6	823	5.304	6	823	10.344
22:00 - 23:00									
23:00 - 24:00									
<b>Total Rates:</b>			<b>118.856</b>			<b>118.709</b>			<b>237.565</b>

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

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

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#### Parameter summary

Trip rate parameter range selected:	260 - 1840 (units: sqm)
Survey date date range:	01/01/10 - 28/10/14
Number of weekdays (Monday-Friday):	9
Number of Saturdays:	0
Number of Sundays:	0
Surveys automatically removed from selection:	1
Surveys manually removed from selection:	0

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

TRIP RATE for Land Use 01 - RETAIL/I - SHOPPING CENTRE - LOCAL SHOPS  
MULTI-MODAL PEDESTRIANS

Calculation factor: 100 sqm

BOLD print indicates peak (busiest) period

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 - 01:00									
01:00 - 02:00									
02:00 - 03:00									
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00									
06:00 - 07:00	1	540	4.259	1	540	3.333	1	540	7.592
07:00 - 08:00	9	710	3.552	9	710	2.754	9	710	6.306
08:00 - 09:00	9	710	8.419	9	710	8.858	9	710	17.277
09:00 - 10:00	9	710	7.293	9	710	6.401	9	710	13.694
10:00 - 11:00	9	710	6.964	9	710	6.745	9	710	13.709
11:00 - 12:00	9	710	6.776	9	710	6.729	9	710	13.505
12:00 - 13:00	9	710	8.701	9	710	7.997	9	710	16.698
13:00 - 14:00	9	710	7.324	9	710	7.371	9	710	14.695
14:00 - 15:00	9	710	6.463	9	710	6.682	9	710	13.145
15:00 - 16:00	9	710	10.391	9	710	10.704	9	710	21.095
16:00 - 17:00	9	710	5.822	9	710	6.009	9	710	11.831
17:00 - 18:00	9	710	4.413	9	710	5.196	9	710	9.609
18:00 - 19:00	9	710	4.085	9	710	4.413	9	710	8.498
19:00 - 20:00	7	824	3.435	7	824	3.712	7	824	7.147
20:00 - 21:00	7	824	2.827	7	824	3.140	7	824	5.967
21:00 - 22:00	6	823	2.611	6	823	2.996	6	823	5.607
22:00 - 23:00									
23:00 - 24:00									
<b>Total Rates:</b>			<b>93.335</b>			<b>93.040</b>			<b>186.375</b>

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

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#### Parameter summary

Trip rate parameter range selected:	260 - 1840 (units: sqm)
Survey date date range:	01/01/10 - 28/10/14
Number of weekdays (Monday-Friday):	9
Number of Saturdays:	0
Number of Sundays:	0
Surveys automatically removed from selection:	1
Surveys manually removed from selection:	0

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

TRIP RATE for Land Use 01 - RETAIL/I - SHOPPING CENTRE - LOCAL SHOPS  
MULTI-MODAL PUBLIC TRANSPORT USERS

Calculation factor: 100 sqm

BOLD print indicates peak (busiest) period

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 - 01:00									
01:00 - 02:00									
02:00 - 03:00									
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00									
06:00 - 07:00	1	540	0.741	1	540	1.111	1	540	1.852
07:00 - 08:00	9	710	0.219	9	710	0.188	9	710	0.407
08:00 - 09:00	9	710	0.203	9	710	0.376	9	710	0.579
09:00 - 10:00	9	710	0.156	9	710	0.141	9	710	0.297
10:00 - 11:00	9	710	0.203	9	710	0.172	9	710	0.375
11:00 - 12:00	9	710	0.360	9	710	0.516	9	710	0.876
12:00 - 13:00	9	710	0.407	9	710	0.313	9	710	0.720
13:00 - 14:00	9	710	0.532	9	710	0.250	9	710	0.782
14:00 - 15:00	9	710	0.266	9	710	0.282	9	710	0.548
15:00 - 16:00	9	710	0.469	9	710	0.203	9	710	0.672
16:00 - 17:00	9	710	0.282	9	710	0.219	9	710	0.501
17:00 - 18:00	9	710	0.219	9	710	0.156	9	710	0.375
18:00 - 19:00	9	710	0.156	9	710	0.188	9	710	0.344
19:00 - 20:00	7	824	0.243	7	824	0.156	7	824	0.399
20:00 - 21:00	7	824	0.104	7	824	0.121	7	824	0.225
21:00 - 22:00	6	823	0.263	6	823	0.283	6	823	0.546
22:00 - 23:00									
23:00 - 24:00									
<b>Total Rates:</b>			<b>4.823</b>			<b>4.675</b>			<b>9.498</b>

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

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

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#### Parameter summary

Trip rate parameter range selected:	260 - 1840 (units: sqm)
Survey date date range:	01/01/10 - 28/10/14
Number of weekdays (Monday-Friday):	9
Number of Saturdays:	0
Number of Sundays:	0
Surveys automatically removed from selection:	1
Surveys manually removed from selection:	0

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

TRIP RATE for Land Use 01 - RETAIL/I - SHOPPING CENTRE - LOCAL SHOPS

MULTI-MODAL TOTAL PEOPLE

Calculation factor: 100 sqm

BOLD print indicates peak (busiest) period

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 - 01:00									
01:00 - 02:00									
02:00 - 03:00									
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00									
06:00 - 07:00	1	540	6.667	1	540	5.926	1	540	12.593
07:00 - 08:00	9	710	10.156	9	710	8.435	9	710	18.591
08:00 - 09:00	9	710	15.665	9	710	15.556	9	710	31.221
09:00 - 10:00	9	710	15.509	9	710	13.615	9	710	29.124
10:00 - 11:00	9	710	14.804	9	710	13.818	9	710	28.622
11:00 - 12:00	9	710	15.837	9	710	16.119	9	710	31.956
12:00 - 13:00	9	710	19.812	9	710	18.670	9	710	38.482
13:00 - 14:00	9	710	17.011	9	710	16.995	9	710	34.006
14:00 - 15:00	9	710	14.773	9	710	15.681	9	710	30.454
15:00 - 16:00	9	710	18.764	9	710	19.280	9	710	38.044
16:00 - 17:00	9	710	14.413	9	710	14.194	9	710	28.607
17:00 - 18:00	9	710	13.333	9	710	15.164	9	710	28.497
18:00 - 19:00	9	710	14.038	9	710	14.836	9	710	28.874
19:00 - 20:00	7	824	12.472	7	824	12.732	7	824	25.204
20:00 - 21:00	7	824	8.933	7	824	9.696	7	824	18.629
21:00 - 22:00	6	823	8.117	6	823	8.745	6	823	16.862
22:00 - 23:00									
23:00 - 24:00									
<b>Total Rates:</b>			<b>220.304</b>			<b>219.462</b>			<b>439.766</b>

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

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

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#### Parameter summary

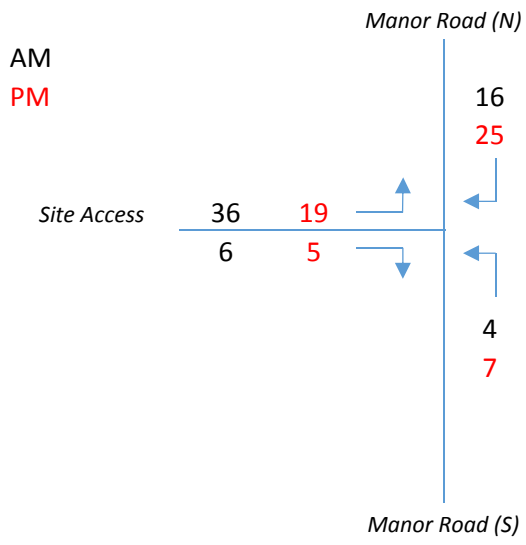
Trip rate parameter range selected:	260 - 1840 (units: sqm)
Survey date date range:	01/01/10 - 28/10/14
Number of weekdays (Monday-Friday):	9
Number of Saturdays:	0
Number of Sundays:	0
Surveys automatically removed from selection:	1
Surveys manually removed from selection:	0

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

***APPENDIX M***  
***Development Traffic Flows***

---

### Total Development Traffic



***APPENDIX N***  
***Base Traffic Flows***

---

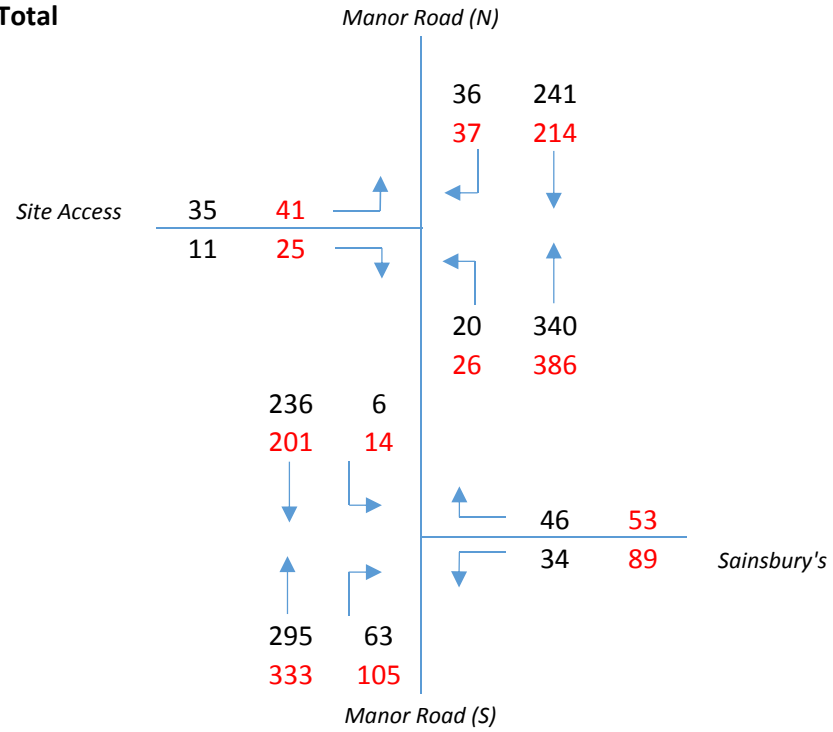
# 2024 w Sains

## 2024 Base Flows

1.0526 AM 08:30 - 09:30

1.0519 PM 17:00 - 18:00

### Total



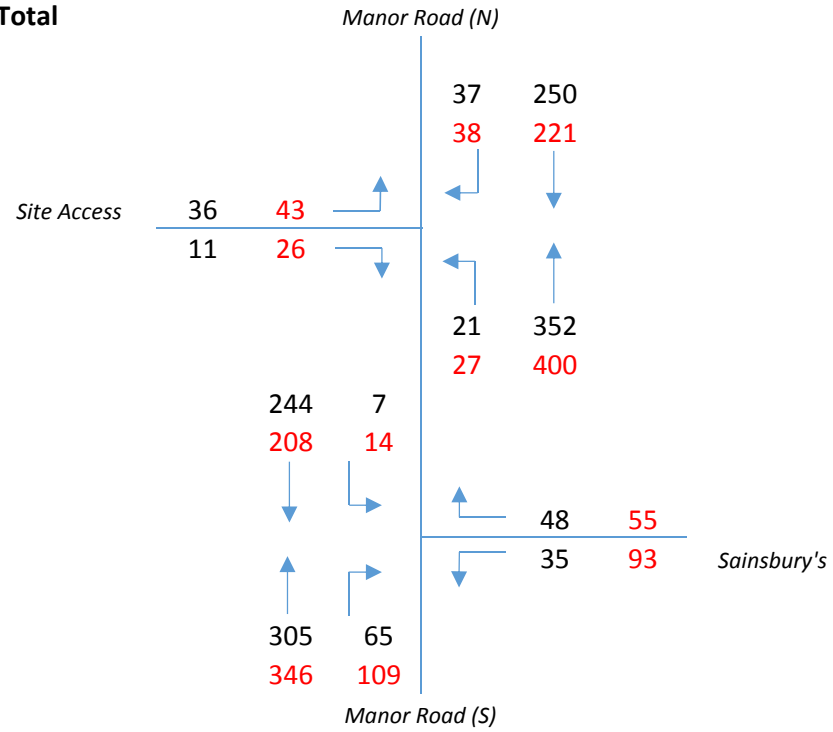
# 2029 w Sains

## 2029 Base Flows

1.0898 AM 08:30 - 09:30

1.0900 PM 17:00 - 18:00

### Total



***APPENDIX O***  
***Junctions 9 Output – Site Access***

---

Junctions 9
PICADY 9 - Priority Intersection Module
Version: 9.5.1.7462 © Copyright TRL Limited, 2019
For sales and distribution information, program advice and maintenance, contact TRL: +44 (0)1344 379777 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 - Manor Road.j9  
 Path: J:\11000\11500\11566\_ManorRoadRichmondFail\engineering\Traffic\_Programs\Junctions 9  
 Report generation date: 16/07/2020 10:20:36

- »2018 Base, AM
- »2018 Base, PM
- »2024 Base, AM
- »2024 Base, PM
- »2029 Base, AM
- »2029 Base, PM
- »2024 Base + Dev, AM
- »2024 Base + Dev, PM
- »2029 Base + Dev, AM
- »2029 Base + Dev, PM

**Summary of junction performance**

	AM					PM				
	Set ID	Queue (Veh)	Delay (s)	RFC	LOS	Set ID	Queue (Veh)	Delay (s)	RFC	LOS
<b>2018 Base</b>										
Stream B-AC	D1	0.1	8.55	0.10	A	D2	0.2	8.90	0.15	A
Stream C-B		0.1	7.88	0.08	A		0.1	8.44	0.08	A
<b>2024 Base</b>										
Stream B-AC	D3	0.2	15.89	0.18	C	D4	0.2	16.23	0.19	C
Stream C-B		0.2	14.65	0.14	B		0.2	15.09	0.15	C
<b>2029 Base</b>										
Stream B-AC	D5	0.2	16.11	0.19	C	D6	0.4	20.45	0.30	C
Stream C-B		0.2	14.84	0.14	B		0.2	15.31	0.15	C
<b>2024 Base + Dev</b>										
Stream B-AC	D9	0.4	13.30	0.26	B	D10	0.3	14.43	0.24	B
Stream C-B		0.2	12.89	0.17	B		0.2	12.84	0.20	B
<b>2029 Base + Dev</b>										
Stream B-AC	D11	0.4	13.56	0.27	B	D12	0.5	19.32	0.35	C
Stream C-B		0.2	13.11	0.18	B		0.3	13.09	0.20	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	13/12/2018
Version	
Status	(new file)
Identifier	
Client	
Jobnumber	
Enumerator	SANDERSONASSOC\carly.hoyle
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	Veh	Veh	perHour	s	-Min	perMin

### Analysis Options

Vehicle length (m)	Calculate Queue Percentiles	Calculate detailed queueing delay	Calculate residual capacity	RFC Threshold	Average Delay threshold (s)	Queue threshold (PCU)
5.75				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)	Run automatically	Relationship type	Relationship
D1	2018 Base	AM	ONE HOUR	08:15	09:45	15	✓		
D2	2018 Base	PM	ONE HOUR	16:45	18:15	15	✓		
D3	2024 Base	AM	ONE HOUR	08:15	09:45	15	✓		
D4	2024 Base	PM	ONE HOUR	16:45	18:15	15	✓		
D5	2029 Base	AM	ONE HOUR	08:15	09:45	15	✓		
D6	2029 Base	PM	ONE HOUR	16:45	18:15	15	✓		
D7	Development	AM	ONE HOUR	08:15	09:45	15			
D8	Development	PM	ONE HOUR	16:45	18:15	15			
D9	2024 Base + Dev	AM	ONE HOUR	08:15	09:45	15	✓	Simple	D3+D7
D10	2024 Base + Dev	PM	ONE HOUR	16:45	18:15	15	✓	Simple	D4+D8
D11	2029 Base + Dev	AM	ONE HOUR	08:15	09:45	15	✓	Simple	D5+D7
D12	2029 Base + Dev	PM	ONE HOUR	16:45	18:15	15	✓	Simple	D6+D8

### Analysis Set Details

ID	Include in report	Network flow scaling factor (%)	Network capacity scaling factor (%)
A1	✓	100.000	100.000

# 2018 Base, AM

## Data Errors and Warnings

No errors or warnings

## Junction Network

### Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	untitled	T-Junction	Two-way		1.11	A

### Junction Network Options

Driving side	Lighting
Left	Normal/unknown

## Arms

### Arms

Arm	Name	Description	Arm type
A	Manor Road (S)		Major
B	Site Access		Minor
C	Mano Road (N)		Major

### 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)
C - Mano Road (N)	6.80		✓	3.25	69.0		-

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 - Site Access	One lane	4.60	34	30

## Slope / Intercept / Capacity

### Priority Intersection Slopes and Intercepts

Stream	Intercept (Veh/hr)	Slope for A-B	Slope for A-C	Slope for C-A	Slope for C-B
B-A	584	0.103	0.259	0.163	0.371
B-C	746	0.110	0.279	-	-
C-B	684	0.256	0.256	-	-

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)	Run automatically
D1	2018 Base	AM	ONE HOUR	08:15	09:45	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

### Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
A - Manor Road (S)		ONE HOUR	✓	342	100.000
B - Site Access		ONE HOUR	✓	43	100.000
C - Mano Road (N)		ONE HOUR	✓	263	100.000

## Origin-Destination Data

### Demand (Veh/hr)

		To		
		A - Manor Road (S)	B - Site Access	C - Mano Road (N)
From	A - Manor Road (S)	0	19	323
	B - Site Access	10	0	33
	C - Mano Road (N)	229	34	0

## Vehicle Mix

### Heavy Vehicle Percentages

		To		
		A - Manor Road (S)	B - Site Access	C - Mano Road (N)
From	A - Manor Road (S)	0	5	7
	B - Site Access	10	0	27
	C - Mano Road (N)	3	18	0

## Results

### Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/hr)	Total Junction Arrivals (Veh)
B-AC	0.10	8.55	0.1	A	39	59
C-A					210	315
C-B	0.08	7.88	0.1	A	31	47
A-B					17	26
A-C					296	445

### Main Results for each time segment

#### 08:15 - 08:30

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-AC	32	8	502	0.065	32	0.0	0.1	7.660	A
C-A	172	43			172				
C-B	26	6	522	0.049	25	0.0	0.1	7.245	A
A-B	14	4			14				
A-C	243	61			243				

**08:30 - 08:45**

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-AC	39	10	488	0.079	39	0.1	0.1	8.010	A
C-A	206	51			206				
C-B	31	8	510	0.060	31	0.1	0.1	7.500	A
A-B	17	4			17				
A-C	290	73			290				

**08:45 - 09:00**

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-AC	47	12	469	0.101	47	0.1	0.1	8.544	A
C-A	252	63			252				
C-B	37	9	494	0.076	37	0.1	0.1	7.875	A
A-B	21	5			21				
A-C	356	89			356				

**09:00 - 09:15**

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-AC	47	12	468	0.101	47	0.1	0.1	8.547	A
C-A	252	63			252				
C-B	37	9	494	0.076	37	0.1	0.1	7.877	A
A-B	21	5			21				
A-C	356	89			356				

**09:15 - 09:30**

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-AC	39	10	488	0.079	39	0.1	0.1	8.016	A
C-A	206	51			206				
C-B	31	8	510	0.060	31	0.1	0.1	7.505	A
A-B	17	4			17				
A-C	290	73			290				

**09:30 - 09:45**

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-AC	32	8	502	0.065	32	0.1	0.1	7.672	A
C-A	172	43			172				
C-B	26	6	522	0.049	26	0.1	0.1	7.252	A
A-B	14	4			14				
A-C	243	61			243				

# 2018 Base, PM

## Data Errors and Warnings

No errors or warnings

## Junction Network

### Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	untitled	T-Junction	Two-way		1.38	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)	Run automatically
D2	2018 Base	PM	ONE HOUR	16:45	18:15	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

### Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
A - Manor Road (S)		ONE HOUR	✓	392	100.000
B - Site Access		ONE HOUR	✓	63	100.000
C - Mano Road (N)		ONE HOUR	✓	238	100.000

## Origin-Destination Data

### Demand (Veh/hr)

		To		
		A - Manor Road (S)	B - Site Access	C - Mano Road (N)
From	A - Manor Road (S)	0	25	367
	B - Site Access	24	0	39
	C - Mano Road (N)	203	35	0

## Vehicle Mix

### Heavy Vehicle Percentages

		To		
		A - Manor Road (S)	B - Site Access	C - Mano Road (N)
From	A - Manor Road (S)	0	0	2
	B - Site Access	4	0	18
	C - Mano Road (N)	4	23	0

## Results

### Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/hr)	Total Junction Arrivals (Veh)
B-AC	0.15	8.90	0.2	A	58	87
C-A					186	279
C-B	0.08	8.44	0.1	A	32	48
A-B					23	34
A-C					337	505

### Main Results for each time segment

#### 16:45 - 17:00

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-AC	47	12	515	0.092	47	0.0	0.1	7.679	A
C-A	153	38			153				
C-B	26	7	494	0.053	26	0.0	0.1	7.691	A
A-B	19	5			19				
A-C	276	69			276				

#### 17:00 - 17:15

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-AC	57	14	498	0.114	57	0.1	0.1	8.151	A
C-A	182	46			182				
C-B	31	8	482	0.065	31	0.1	0.1	7.990	A
A-B	22	6			22				
A-C	330	82			330				

#### 17:15 - 17:30

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-AC	69	17	474	0.146	69	0.1	0.2	8.893	A
C-A	224	56			224				
C-B	39	10	465	0.083	38	0.1	0.1	8.438	A
A-B	28	7			28				
A-C	404	101			404				

#### 17:30 - 17:45

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-AC	69	17	474	0.146	69	0.2	0.2	8.900	A
C-A	224	56			224				
C-B	39	10	465	0.083	39	0.1	0.1	8.439	A
A-B	28	7			28				
A-C	404	101			404				

17:45 - 18:00

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-AC	57	14	498	0.114	57	0.2	0.1	8.163	A
C-A	182	46			182				
C-B	31	8	482	0.065	32	0.1	0.1	7.995	A
A-B	22	6			22				
A-C	330	82			330				

18:00 - 18:15

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-AC	47	12	515	0.092	48	0.1	0.1	7.697	A
C-A	153	38			153				
C-B	26	7	494	0.053	26	0.1	0.1	7.700	A
A-B	19	5			19				
A-C	276	69			276				

# 2024 Base, AM

## Data Errors and Warnings

No errors or warnings

## Junction Network

### Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	untitled	T-Junction	Two-way		3.09	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)	Run automatically
D3	2024 Base	AM	ONE HOUR	08:15	09:45	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

### Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
A - Manor Road (S)		ONE HOUR	✓	360	100.000
B - Site Access		ONE HOUR	✓	46	100.000
C - Mano Road (N)		ONE HOUR	✓	277	100.000

## Origin-Destination Data

### Demand (Veh/hr)

		To		
		A - Manor Road (S)	B - Site Access	C - Mano Road (N)
From	A - Manor Road (S)	0	20	340
	B - Site Access	11	0	35
	C - Mano Road (N)	241	36	0

## Vehicle Mix

### Heavy Vehicle Percentages

		To		
		A - Manor Road (S)	B - Site Access	C - Mano Road (N)
From	A - Manor Road (S)	0	100	7
	B - Site Access	100	0	100
	C - Mano Road (N)	3	100	0

## Results

### Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/hr)	Total Junction Arrivals (Veh)
B-AC	0.18	15.89	0.2	C	42	63
C-A					221	332
C-B	0.14	14.65	0.2	B	33	50
A-B					18	28
A-C					312	468

### Main Results for each time segment

#### 08:15 - 08:30

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-AC	35	9	301	0.115	34	0.0	0.1	13.472	B
C-A	181	45			181				
C-B	27	7	303	0.089	27	0.0	0.1	12.997	B
A-B	15	4			15				
A-C	256	64			256				

#### 08:30 - 08:45

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-AC	41	10	291	0.142	41	0.1	0.2	14.407	B
C-A	217	54			217				
C-B	32	8	296	0.109	32	0.1	0.1	13.662	B
A-B	18	4			18				
A-C	306	76			306				

#### 08:45 - 09:00

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-AC	51	13	277	0.183	50	0.2	0.2	15.856	C
C-A	265	66			265				
C-B	40	10	285	0.139	39	0.1	0.2	14.632	B
A-B	22	6			22				
A-C	374	94			374				

#### 09:00 - 09:15

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-AC	51	13	277	0.183	51	0.2	0.2	15.888	C
C-A	265	66			265				
C-B	40	10	285	0.139	40	0.2	0.2	14.649	B
A-B	22	6			22				
A-C	374	94			374				

09:15 - 09:30

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-AC	41	10	291	0.142	42	0.2	0.2	14.450	B
C-A	217	54			217				
C-B	32	8	296	0.109	33	0.2	0.1	13.681	B
A-B	18	4			18				
A-C	306	76			306				

09:30 - 09:45

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-AC	35	9	301	0.115	35	0.2	0.1	13.541	B
C-A	181	45			181				
C-B	27	7	303	0.089	27	0.1	0.1	13.043	B
A-B	15	4			15				
A-C	256	64			256				

# 2024 Base, PM

## Data Errors and Warnings

No errors or warnings

## Junction Network

### Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	untitled	T-Junction	Two-way		3.13	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)	Run automatically
D4	2024 Base	PM	ONE HOUR	16:45	18:15	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

### Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
A - Manor Road (S)		ONE HOUR	✓	412	100.000
B - Site Access		ONE HOUR	✓	46	100.000
C - Mano Road (N)		ONE HOUR	✓	251	100.000

## Origin-Destination Data

### Demand (Veh/hr)

		To		
		A - Manor Road (S)	B - Site Access	C - Mano Road (N)
From	A - Manor Road (S)	0	26	386
	B - Site Access	11	0	35
	C - Mano Road (N)	214	37	0

## Vehicle Mix

### Heavy Vehicle Percentages

		To		
		A - Manor Road (S)	B - Site Access	C - Mano Road (N)
From	A - Manor Road (S)	0	100	2
	B - Site Access	100	0	100
	C - Mano Road (N)	4	100	0

## Results

### Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/hr)	Total Junction Arrivals (Veh)
B-AC	0.19	16.23	0.2	C	42	63
C-A					196	295
C-B	0.15	15.09	0.2	C	34	51
A-B					24	36
A-C					354	531

### Main Results for each time segment

#### 16:45 - 17:00

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-AC	35	9	298	0.116	34	0.0	0.1	13.639	B
C-A	161	40			161				
C-B	28	7	299	0.093	27	0.0	0.1	13.234	B
A-B	20	5			20				
A-C	291	73			291				

#### 17:00 - 17:15

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-AC	41	10	287	0.144	41	0.1	0.2	14.631	B
C-A	192	48			192				
C-B	33	8	291	0.114	33	0.1	0.1	13.967	B
A-B	23	6			23				
A-C	347	87			347				

#### 17:15 - 17:30

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-AC	51	13	272	0.186	50	0.2	0.2	16.194	C
C-A	236	59			236				
C-B	41	10	279	0.146	41	0.1	0.2	15.070	C
A-B	29	7			29				
A-C	425	106			425				

#### 17:30 - 17:45

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-AC	51	13	272	0.186	51	0.2	0.2	16.229	C
C-A	236	59			236				
C-B	41	10	279	0.146	41	0.2	0.2	15.091	C
A-B	29	7			29				
A-C	425	106			425				

17:45 - 18:00

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-AC	41	10	287	0.144	42	0.2	0.2	14.680	B
C-A	192	48			192				
C-B	33	8	291	0.114	33	0.2	0.1	13.995	B
A-B	23	6			23				
A-C	347	87			347				

18:00 - 18:15

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-AC	35	9	297	0.116	35	0.2	0.1	13.713	B
C-A	161	40			161				
C-B	28	7	299	0.093	28	0.1	0.1	13.283	B
A-B	20	5			20				
A-C	291	73			291				

# 2029 Base, AM

## Data Errors and Warnings

No errors or warnings

## Junction Network

### Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	untitled	T-Junction	Two-way		3.10	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)	Run automatically
D5	2029 Base	AM	ONE HOUR	08:15	09:45	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

### Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
A - Manor Road (S)		ONE HOUR	✓	373	100.000
B - Site Access		ONE HOUR	✓	47	100.000
C - Mano Road (N)		ONE HOUR	✓	287	100.000

## Origin-Destination Data

### Demand (Veh/hr)

		To		
		A - Manor Road (S)	B - Site Access	C - Mano Road (N)
From	A - Manor Road (S)	0	21	352
	B - Site Access	11	0	36
	C - Mano Road (N)	250	37	0

## Vehicle Mix

### Heavy Vehicle Percentages

		To		
		A - Manor Road (S)	B - Site Access	C - Mano Road (N)
From	A - Manor Road (S)	0	100	7
	B - Site Access	100	0	100
	C - Mano Road (N)	3	100	0

## Results

### Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/hr)	Total Junction Arrivals (Veh)
B-AC	0.19	16.11	0.2	C	43	65
C-A					229	344
C-B	0.14	14.84	0.2	B	34	51
A-B					19	29
A-C					323	485

### Main Results for each time segment

#### 08:15 - 08:30

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-AC	35	9	300	0.118	35	0.0	0.1	13.573	B
C-A	188	47			188				
C-B	28	7	302	0.092	27	0.0	0.1	13.101	B
A-B	16	4			16				
A-C	265	66			265				

#### 08:30 - 08:45

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-AC	42	11	289	0.146	42	0.1	0.2	14.542	B
C-A	225	56			225				
C-B	33	8	294	0.113	33	0.1	0.1	13.792	B
A-B	19	5			19				
A-C	316	79			316				

#### 08:45 - 09:00

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-AC	52	13	275	0.188	52	0.2	0.2	16.072	C
C-A	275	69			275				
C-B	41	10	283	0.144	41	0.1	0.2	14.824	B
A-B	23	6			23				
A-C	388	97			388				

#### 09:00 - 09:15

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-AC	52	13	275	0.188	52	0.2	0.2	16.107	C
C-A	275	69			275				
C-B	41	10	283	0.144	41	0.2	0.2	14.841	B
A-B	23	6			23				
A-C	388	97			388				

09:15 - 09:30

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-AC	42	11	289	0.146	42	0.2	0.2	14.591	B
C-A	225	56			225				
C-B	33	8	294	0.113	33	0.2	0.1	13.818	B
A-B	19	5			19				
A-C	316	79			316				

09:30 - 09:45

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-AC	35	9	300	0.118	36	0.2	0.1	13.640	B
C-A	188	47			188				
C-B	28	7	302	0.092	28	0.1	0.1	13.150	B
A-B	16	4			16				
A-C	265	66			265				

# 2029 Base, PM

## Data Errors and Warnings

No errors or warnings

## Junction Network

### Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	untitled	T-Junction	Two-way		4.40	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)	Run automatically
D6	2029 Base	PM	ONE HOUR	16:45	18:15	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

### Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
A - Manor Road (S)		ONE HOUR	✓	427	100.000
B - Site Access		ONE HOUR	✓	69	100.000
C - Mano Road (N)		ONE HOUR	✓	259	100.000

## Origin-Destination Data

### Demand (Veh/hr)

		To		
		A - Manor Road (S)	B - Site Access	C - Mano Road (N)
From	A - Manor Road (S)	0	27	400
	B - Site Access	26	0	43
	C - Mano Road (N)	221	38	0

## Vehicle Mix

### Heavy Vehicle Percentages

		To		
		A - Manor Road (S)	B - Site Access	C - Mano Road (N)
From	A - Manor Road (S)	0	100	2
	B - Site Access	100	0	100
	C - Mano Road (N)	4	100	0

## Results

### Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/hr)	Total Junction Arrivals (Veh)
B-AC	0.30	20.45	0.4	C	63	95
C-A					203	304
C-B	0.15	15.31	0.2	C	35	52
A-B					25	37
A-C					367	551

### Main Results for each time segment

#### 16:45 - 17:00

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-AC	52	13	280	0.186	51	0.0	0.2	15.675	C
C-A	166	42			166				
C-B	29	7	298	0.096	28	0.0	0.1	13.345	B
A-B	20	5			20				
A-C	301	75			301				

#### 17:00 - 17:15

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-AC	62	16	268	0.231	62	0.2	0.3	17.407	C
C-A	199	50			199				
C-B	34	9	289	0.118	34	0.1	0.1	14.119	B
A-B	24	6			24				
A-C	360	90			360				

#### 17:15 - 17:30

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-AC	76	19	252	0.301	75	0.3	0.4	20.337	C
C-A	243	61			243				
C-B	42	10	277	0.151	42	0.1	0.2	15.288	C
A-B	30	7			30				
A-C	440	110			440				

#### 17:30 - 17:45

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-AC	76	19	252	0.302	76	0.4	0.4	20.447	C
C-A	243	61			243				
C-B	42	10	277	0.151	42	0.2	0.2	15.309	C
A-B	30	7			30				
A-C	440	110			440				

17:45 - 18:00

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-AC	62	16	268	0.231	62	0.4	0.3	17.543	C
C-A	199	50			199				
C-B	34	9	289	0.118	34	0.2	0.1	14.148	B
A-B	24	6			24				
A-C	360	90			360				

18:00 - 18:15

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-AC	52	13	280	0.186	52	0.3	0.2	15.843	C
C-A	166	42			166				
C-B	29	7	298	0.096	29	0.1	0.1	13.396	B
A-B	20	5			20				
A-C	301	75			301				

# 2024 Base + Dev, AM

## Data Errors and Warnings

No errors or warnings

## Junction Network

### Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	untitled	T-Junction	Two-way		3.33	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)	Run automatically	Relationship type	Relationship
D9	2024 Base + Dev	AM	ONE HOUR	08:15	09:45	15	✓	Simple	D3+D7

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

### Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
A - Manor Road (S)		ONE HOUR	✓	364	100.000
B - Site Access		ONE HOUR	✓	88	100.000
C - Mano Road (N)		ONE HOUR	✓	293	100.000

## Origin-Destination Data

### Demand (Veh/hr)

		To		
		A - Manor Road (S)	B - Site Access	C - Mano Road (N)
From	A - Manor Road (S)	0	24	340
	B - Site Access	17	0	71
	C - Mano Road (N)	241	52	0

## Vehicle Mix

### Heavy Vehicle Percentages

		To		
		A - Manor Road (S)	B - Site Access	C - Mano Road (N)
From	A - Manor Road (S)	0	83	7
	B - Site Access	65	0	49
	C - Mano Road (N)	3	69	0

## Results

### Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/hr)	Total Junction Arrivals (Veh)
B-AC	0.26	13.30	0.4	B	81	121
C-A					221	332
C-B	0.17	12.89	0.2	B	48	72
A-B					22	33
A-C					312	468

### Main Results for each time segment

#### 08:15 - 08:30

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-AC	66	17	399	0.166	65	0.0	0.2	10.778	B
C-A	181	45			181				
C-B	39	10	358	0.109	39	0.0	0.1	11.257	B
A-B	18	5			18				
A-C	256	64			256				

#### 08:30 - 08:45

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-AC	79	20	386	0.205	79	0.2	0.3	11.731	B
C-A	217	54			217				
C-B	47	12	349	0.134	47	0.1	0.2	11.900	B
A-B	22	5			22				
A-C	306	76			306				

#### 08:45 - 09:00

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-AC	97	24	368	0.264	97	0.3	0.4	13.260	B
C-A	265	66			265				
C-B	57	14	337	0.170	57	0.2	0.2	12.869	B
A-B	26	7			26				
A-C	374	94			374				

#### 09:00 - 09:15

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-AC	97	24	368	0.264	97	0.4	0.4	13.300	B
C-A	265	66			265				
C-B	57	14	337	0.170	57	0.2	0.2	12.887	B
A-B	26	7			26				
A-C	374	94			374				

09:15 - 09:30

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-AC	79	20	386	0.205	79	0.4	0.3	11.772	B
C-A	217	54			217				
C-B	47	12	349	0.134	47	0.2	0.2	11.927	B
A-B	22	5			22				
A-C	306	76			306				

09:30 - 09:45

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-AC	66	17	399	0.166	66	0.3	0.2	10.846	B
C-A	181	45			181				
C-B	39	10	358	0.109	39	0.2	0.1	11.302	B
A-B	18	5			18				
A-C	256	64			256				

# 2024 Base + Dev, PM

## Data Errors and Warnings

No errors or warnings

## Junction Network

### Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	untitled	T-Junction	Two-way		3.31	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)	Run automatically	Relationship type	Relationship
D10	2024 Base + Dev	PM	ONE HOUR	16:45	18:15	15	✓	Simple	D4+D8

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

### Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
A - Manor Road (S)		ONE HOUR	✓	419	100.000
B - Site Access		ONE HOUR	✓	70	100.000
C - Mano Road (N)		ONE HOUR	✓	276	100.000

## Origin-Destination Data

### Demand (Veh/hr)

		To		
		A - Manor Road (S)	B - Site Access	C - Mano Road (N)
From	A - Manor Road (S)	0	33	386
	B - Site Access	16	0	54
	C - Mano Road (N)	214	62	0

## Vehicle Mix

### Heavy Vehicle Percentages

		To		
		A - Manor Road (S)	B - Site Access	C - Mano Road (N)
From	A - Manor Road (S)	0	79	2
	B - Site Access	69	0	65
	C - Mano Road (N)	4	60	0

## Results

### Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/hr)	Total Junction Arrivals (Veh)
B-AC	0.24	14.43	0.3	B	64	96
C-A					196	295
C-B	0.20	12.84	0.2	B	57	85
A-B					30	45
A-C					354	531

### Main Results for each time segment

#### 16:45 - 17:00

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-AC	53	13	358	0.147	52	0.0	0.2	11.740	B
C-A	161	40			161				
C-B	47	12	374	0.125	46	0.0	0.1	10.967	B
A-B	25	6			25				
A-C	291	73			291				

#### 17:00 - 17:15

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-AC	63	16	345	0.182	63	0.2	0.2	12.748	B
C-A	192	48			192				
C-B	56	14	363	0.153	56	0.1	0.2	11.696	B
A-B	30	7			30				
A-C	347	87			347				

#### 17:15 - 17:30

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-AC	77	19	327	0.236	77	0.2	0.3	14.387	B
C-A	236	59			236				
C-B	68	17	349	0.196	68	0.2	0.2	12.820	B
A-B	36	9			36				
A-C	425	106			425				

#### 17:30 - 17:45

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-AC	77	19	327	0.236	77	0.3	0.3	14.430	B
C-A	236	59			236				
C-B	68	17	349	0.196	68	0.2	0.2	12.843	B
A-B	36	9			36				
A-C	425	106			425				

17:45 - 18:00

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-AC	63	16	345	0.182	63	0.3	0.2	12.800	B
C-A	192	48			192				
C-B	56	14	363	0.153	56	0.2	0.2	11.725	B
A-B	30	7			30				
A-C	347	87			347				

18:00 - 18:15

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-AC	53	13	358	0.147	53	0.2	0.2	11.813	B
C-A	161	40			161				
C-B	47	12	374	0.125	47	0.2	0.1	11.015	B
A-B	25	6			25				
A-C	291	73			291				

# 2029 Base + Dev, AM

## Data Errors and Warnings

No errors or warnings

## Junction Network

### Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	untitled	T-Junction	Two-way		3.35	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)	Run automatically	Relationship type	Relationship
D11	2029 Base + Dev	AM	ONE HOUR	08:15	09:45	15	✓	Simple	D5+D7

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

### Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
A - Manor Road (S)		ONE HOUR	✓	377	100.000
B - Site Access		ONE HOUR	✓	89	100.000
C - Mano Road (N)		ONE HOUR	✓	303	100.000

## Origin-Destination Data

### Demand (Veh/hr)

From	To		
	A - Manor Road (S)	B - Site Access	C - Mano Road (N)
A - Manor Road (S)	0	25	352
B - Site Access	17	0	72
C - Mano Road (N)	250	53	0

## Vehicle Mix

### Heavy Vehicle Percentages

From	To		
	A - Manor Road (S)	B - Site Access	C - Mano Road (N)
A - Manor Road (S)	0	84	7
B - Site Access	65	0	50
C - Mano Road (N)	3	70	0

## Results

### Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/hr)	Total Junction Arrivals (Veh)
B-AC	0.27	13.56	0.4	B	82	123
C-A					229	344
C-B	0.18	13.11	0.2	B	49	73
A-B					23	34
A-C					323	485

### Main Results for each time segment

#### 08:15 - 08:30

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-AC	67	17	396	0.169	66	0.0	0.2	10.905	B
C-A	188	47			188				
C-B	40	10	355	0.112	39	0.0	0.1	11.405	B
A-B	19	5			19				
A-C	265	66			265				

#### 08:30 - 08:45

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-AC	80	20	382	0.209	80	0.2	0.3	11.894	B
C-A	225	56			225				
C-B	48	12	346	0.138	48	0.1	0.2	12.064	B
A-B	22	6			22				
A-C	316	79			316				

#### 08:45 - 09:00

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-AC	98	24	363	0.270	98	0.3	0.4	13.500	B
C-A	275	69			275				
C-B	58	15	333	0.175	58	0.2	0.2	13.099	B
A-B	28	7			28				
A-C	388	97			388				

#### 09:00 - 09:15

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-AC	98	24	363	0.270	98	0.4	0.4	13.561	B
C-A	275	69			275				
C-B	58	15	333	0.175	58	0.2	0.2	13.108	B
A-B	28	7			28				
A-C	388	97			388				

09:15 - 09:30

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-AC	80	20	382	0.209	80	0.4	0.3	11.946	B
C-A	225	56			225				
C-B	48	12	346	0.138	48	0.2	0.2	12.092	B
A-B	22	6			22				
A-C	316	79			316				

09:30 - 09:45

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-AC	67	17	395	0.169	67	0.3	0.2	10.976	B
C-A	188	47			188				
C-B	40	10	355	0.112	40	0.2	0.1	11.431	B
A-B	19	5			19				
A-C	265	66			265				

# 2029 Base + Dev, PM

## Data Errors and Warnings

No errors or warnings

## Junction Network

### Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	untitled	T-Junction	Two-way		4.63	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)	Run automatically	Relationship type	Relationship
D12	2029 Base + Dev	PM	ONE HOUR	16:45	18:15	15	✓	Simple	D6+D8

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

### Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
A - Manor Road (S)		ONE HOUR	✓	434	100.000
B - Site Access		ONE HOUR	✓	93	100.000
C - Mano Road (N)		ONE HOUR	✓	284	100.000

## Origin-Destination Data

### Demand (Veh/hr)

From	To		
	A - Manor Road (S)	B - Site Access	C - Mano Road (N)
A - Manor Road (S)	0	34	400
B - Site Access	31	0	62
C - Mano Road (N)	221	63	0

## Vehicle Mix

### Heavy Vehicle Percentages

From	To		
	A - Manor Road (S)	B - Site Access	C - Mano Road (N)
A - Manor Road (S)	0	79	2
B - Site Access	84	0	69
C - Mano Road (N)	4	60	0

## Results

### Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/hr)	Total Junction Arrivals (Veh)
B-AC	0.35	19.32	0.5	C	85	128
C-A					203	304
C-B	0.20	13.09	0.3	B	58	87
A-B					31	47
A-C					367	551

### Main Results for each time segment

#### 16:45 - 17:00

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-AC	70	18	322	0.217	69	0.0	0.3	14.169	B
C-A	166	42			166				
C-B	47	12	370	0.128	47	0.0	0.1	11.107	B
A-B	26	6			26				
A-C	301	75			301				

#### 17:00 - 17:15

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-AC	84	21	308	0.271	83	0.3	0.4	15.983	C
C-A	199	50			199				
C-B	57	14	359	0.158	56	0.1	0.2	11.877	B
A-B	31	8			31				
A-C	360	90			360				

#### 17:15 - 17:30

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-AC	102	26	289	0.355	102	0.4	0.5	19.186	C
C-A	243	61			243				
C-B	69	17	344	0.201	69	0.2	0.2	13.070	B
A-B	37	9			37				
A-C	440	110			440				

#### 17:30 - 17:45

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-AC	102	26	289	0.355	102	0.5	0.5	19.319	C
C-A	243	61			243				
C-B	69	17	344	0.201	69	0.2	0.3	13.093	B
A-B	37	9			37				
A-C	440	110			440				

17:45 - 18:00

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-AC	84	21	308	0.271	84	0.5	0.4	16.137	C
C-A	199	50			199				
C-B	57	14	359	0.158	57	0.3	0.2	11.910	B
A-B	31	8			31				
A-C	360	90			360				

18:00 - 18:15

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-AC	70	18	322	0.218	70	0.4	0.3	14.343	B
C-A	166	42			166				
C-B	47	12	370	0.128	48	0.2	0.1	11.158	B
A-B	26	6			26				
A-C	301	75			301				

***APPENDIX P***

***Junctions 9 Output – Sainsbury's junction***

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Junctions 9
PICADY 9 - Priority Intersection Module
Version: 9.5.1.7462 © Copyright TRL Limited, 2019
For sales and distribution information, program advice and maintenance, contact TRL: +44 (0)1344 379777 software@trl.co.uk www.trlsoftware.co.uk
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Filename: Sainsbuy's - Manor Road.j9  
 Path: J:\11000\11500\11566\_ManorRoadRichmondFail\engineering\Traffic\_Programs\Junctions 9  
 Report generation date: 16/07/2020 10:40:44

- »2018 Base, AM
- »2018 Base, PM
- »2024 Base, AM
- »2024 Base, PM
- »2029 Base, AM
- »2029 Base, PM
- »2024 Base + Dev, AM
- »2024 Base + Dev, PM
- »2029 Base + Dev, AM
- »2029 Base + Dev, PM

**Summary of junction performance**

	AM					PM				
	Set ID	Queue (Veh)	Delay (s)	RFC	LOS	Set ID	Queue (Veh)	Delay (s)	RFC	LOS
<b>2018 Base</b>										
Stream B-C	D1	0.1	7.66	0.07	A	D2	0.2	8.43	0.18	A
Stream B-A		0.2	12.53	0.14	B		0.2	14.56	0.18	B
Stream C-AB		0.1	6.32	0.10	A		0.2	6.71	0.17	A
<b>2024 Base</b>										
Stream B-C	D3	0.1	7.72	0.07	A	D4	0.2	8.49	0.19	A
Stream B-A		0.2	12.70	0.15	B		0.2	14.59	0.19	B
Stream C-AB		0.1	6.37	0.11	A		0.2	6.73	0.18	A
<b>2029 Base</b>										
Stream B-C	D5	0.1	7.79	0.08	A	D6	0.2	8.63	0.20	A
Stream B-A		0.2	12.98	0.16	B		0.2	14.99	0.20	B
Stream C-AB		0.1	6.43	0.11	A		0.2	6.82	0.19	A
<b>2024 Base + Dev</b>										
Stream B-C	D9	0.1	7.74	0.07	A	D10	0.2	8.52	0.19	A
Stream B-A		0.2	12.79	0.15	B		0.2	14.71	0.19	B
Stream C-AB		0.1	6.39	0.11	A		0.2	6.75	0.18	A
<b>2029 Base + Dev</b>										
Stream B-C	D11	0.1	7.82	0.08	A	D12	0.2	8.66	0.20	A
Stream B-A		0.2	13.07	0.16	B		0.2	15.11	0.20	C
Stream C-AB		0.1	6.45	0.11	A		0.2	6.84	0.19	A

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

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

## File summary

### File Description

<b>Title</b>	(untitled)
<b>Location</b>	
<b>Site number</b>	
<b>Date</b>	13/12/2018
<b>Version</b>	
<b>Status</b>	(new file)
<b>Identifier</b>	
<b>Client</b>	
<b>Jobnumber</b>	
<b>Enumerator</b>	SANDERSONASSOC\carly.hoyle
<b>Description</b>	

## 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	Veh	Veh	perHour	s	-Min	perMin

## Analysis Options

Vehicle length (m)	Calculate Queue Percentiles	Calculate detailed queueing delay	Calculate residual capacity	RFC Threshold	Average Delay threshold (s)	Queue threshold (PCU)
5.75				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)	Run automatically	Relationship type	Relationship
D1	2018 Base	AM	ONE HOUR	08:15	09:45	15	✓		
D2	2018 Base	PM	ONE HOUR	16:45	18:15	15	✓		
D3	2024 Base	AM	ONE HOUR	08:15	09:45	15	✓	Simple	D13*1.0526
D4	2024 Base	PM	ONE HOUR	16:45	18:15	15	✓	Simple	D14*1.0519
D5	2029 Base	AM	ONE HOUR	08:15	09:45	15	✓	Simple	D13*1.0898
D6	2029 Base	PM	ONE HOUR	16:45	18:15	15	✓	Simple	D14*1.0900
D7	Development	AM	ONE HOUR	08:15	09:45	15			
D8	Development	PM	ONE HOUR	16:45	18:15	15			
D9	2024 Base + Dev	AM	ONE HOUR	08:15	09:45	15	✓	Simple	D3+D7
D10	2024 Base + Dev	PM	ONE HOUR	16:45	18:15	15	✓	Simple	D4+D8
D11	2029 Base + Dev	AM	ONE HOUR	08:15	09:45	15	✓	Simple	D5+D7
D12	2029 Base + Dev	PM	ONE HOUR	16:45	18:15	15	✓	Simple	D6+D8
D13	2018 Base (-Existing site)	AM	ONE HOUR	08:15	09:45	15			
D14	2018 Base (-Existing site)	PM	ONE HOUR	16:45	18:15	15			

## Analysis Set Details

ID	Include in report	Network flow scaling factor (%)	Network capacity scaling factor (%)
A1	✓	100.000	100.000

# 2018 Base, AM

## Data Errors and Warnings

Severity	Area	Item	Description
Warning	Demand Set Relationship	D9 - 2024 Base + Dev, AM	Demand Set relationships are chained. This may slow down the file.

## Junction Network

### Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	untitled	T-Junction	Two-way		1.76	A

### Junction Network Options

Driving side	Lighting
Left	Normal/unknown

## Arms

### Arms

Arm	Name	Description	Arm type
A	Manor Road (N)		Major
B	Sainsbury's		Minor
C	Manor Road (S)		Major

### 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)
C - Manor Road (S)	6.40		✓	3.25	130.0	✓	11.00

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 (Left) (m)	Lane Width (Right) (m)	Visibility to left (m)	Visibility to right (m)
B - Sainsbury's	Two lanes	2.80	2.80	32	19

## Slope / Intercept / Capacity

### Priority Intersection Slopes and Intercepts

Stream	Intercept (Veh/hr)	Slope for A-B	Slope for A-C	Slope for C-A	Slope for C-B
B-A	487	0.087	0.220	0.139	0.315
B-C	623	0.094	0.237	-	-
C-B	723	0.275	0.275	-	-

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)	Run automatically
D1	2018 Base	AM	ONE HOUR	08:15	09:45	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

### Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
A - Manor Road (N)		ONE HOUR	✓	239	100.000
B - Sainsbury's		ONE HOUR	✓	76	100.000
C - Manor Road (S)		ONE HOUR	✓	358	100.000

## Origin-Destination Data

### Demand (Veh/hr)

		To		
		A - Manor Road (N)	B - Sainsbury's	C - Manor Road (S)
From	A - Manor Road (N)	0	6	233
	B - Sainsbury's	44	0	32
	C - Manor Road (S)	298	60	0

## Vehicle Mix

### Heavy Vehicle Percentages

		To		
		A - Manor Road (N)	B - Sainsbury's	C - Manor Road (S)
From	A - Manor Road (N)	0	0	7
	B - Sainsbury's	7	0	6
	C - Manor Road (S)	2	2	0

## Results

### Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/hr)	Total Junction Arrivals (Veh)
B-C	0.07	7.66	0.1	A	29	44
B-A	0.14	12.53	0.2	B	40	61
C-AB	0.10	6.32	0.1	A	55	83
C-A					273	410
A-B					6	8
A-C					214	321

### Main Results for each time segment

#### 08:15 - 08:30

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	24	6	532	0.045	24	0.0	0.0	7.085	A
B-A	33	8	374	0.089	33	0.0	0.1	10.538	B
C-AB	45	11	659	0.069	45	0.0	0.1	5.856	A
C-A	224	56			224				
A-B	5	1			5				
A-C	175	44			175				

#### 08:30 - 08:45

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	29	7	521	0.055	29	0.0	0.1	7.315	A
B-A	40	10	358	0.111	39	0.1	0.1	11.301	B
C-AB	54	13	649	0.083	54	0.1	0.1	6.046	A
C-A	268	67			268				
A-B	5	1			5				
A-C	209	52			209				

#### 08:45 - 09:00

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	35	9	505	0.070	35	0.1	0.1	7.656	A
B-A	48	12	336	0.144	48	0.1	0.2	12.513	B
C-AB	66	17	635	0.104	66	0.1	0.1	6.323	A
C-A	328	82			328				
A-B	7	2			7				
A-C	257	64			257				

#### 09:00 - 09:15

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	35	9	505	0.070	35	0.1	0.1	7.658	A
B-A	48	12	336	0.144	48	0.2	0.2	12.529	B
C-AB	66	17	635	0.104	66	0.1	0.1	6.323	A
C-A	328	82			328				
A-B	7	2			7				
A-C	257	64			257				

#### 09:15 - 09:30

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	29	7	521	0.055	29	0.1	0.1	7.321	A
B-A	40	10	358	0.111	40	0.2	0.1	11.323	B
C-AB	54	13	649	0.083	54	0.1	0.1	6.048	A
C-A	268	67			268				
A-B	5	1			5				
A-C	209	52			209				

09:30 - 09:45

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	24	6	532	0.045	24	0.1	0.0	7.094	A
B-A	33	8	374	0.089	33	0.1	0.1	10.574	B
C-AB	45	11	659	0.069	45	0.1	0.1	5.864	A
C-A	224	56			224				
A-B	5	1			5				
A-C	175	44			175				

# 2018 Base, PM

## Data Errors and Warnings

Severity	Area	Item	Description
Warning	Demand Set Relationship	D9 - 2024 Base + Dev, AM	Demand Set relationships are chained. This may slow down the file.

## Junction Network

### Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	untitled	T-Junction	Two-way		2.72	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)	Run automatically
D2	2018 Base	PM	ONE HOUR	16:45	18:15	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

### Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
A - Manor Road (N)		ONE HOUR	✓	227	100.000
B - Sainsbury's		ONE HOUR	✓	135	100.000
C - Manor Road (S)		ONE HOUR	✓	442	100.000

## Origin-Destination Data

### Demand (Veh/hr)

		To		
		A - Manor Road (N)	B - Sainsbury's	C - Manor Road (S)
From	A - Manor Road (N)	0	13	214
	B - Sainsbury's	50	0	85
	C - Manor Road (S)	342	100	0

## Vehicle Mix

### Heavy Vehicle Percentages

		To		
		A - Manor Road (N)	B - Sainsbury's	C - Manor Road (S)
From	A - Manor Road (N)	0	8	2
	B - Sainsbury's	14	0	4
	C - Manor Road (S)	2	1	0

## Results

### Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/hr)	Total Junction Arrivals (Veh)
B-C	0.18	8.43	0.2	A	78	117
B-A	0.18	14.56	0.2	B	46	69
C-AB	0.17	6.71	0.2	A	92	138
C-A					314	471
A-B					12	18
A-C					196	295

### Main Results for each time segment

#### 16:45 - 17:00

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	64	16	548	0.117	63	0.0	0.1	7.422	A
B-A	38	9	342	0.110	37	0.0	0.1	11.789	B
C-AB	75	19	669	0.113	75	0.0	0.1	6.057	A
C-A	257	64			257				
A-B	10	2			10				
A-C	161	40			161				

#### 17:00 - 17:15

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	76	19	537	0.142	76	0.1	0.2	7.818	A
B-A	45	11	325	0.138	45	0.1	0.2	12.827	B
C-AB	90	22	659	0.136	90	0.1	0.2	6.318	A
C-A	307	77			307				
A-B	12	3			12				
A-C	192	48			192				

#### 17:15 - 17:30

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	94	23	521	0.180	93	0.2	0.2	8.423	A
B-A	55	14	302	0.182	55	0.2	0.2	14.528	B
C-AB	110	28	647	0.170	110	0.2	0.2	6.706	A
C-A	377	94			377				
A-B	14	4			14				
A-C	236	59			236				

#### 17:30 - 17:45

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	94	23	520	0.180	94	0.2	0.2	8.433	A
B-A	55	14	302	0.182	55	0.2	0.2	14.559	B
C-AB	110	28	647	0.170	110	0.2	0.2	6.709	A
C-A	377	94			377				
A-B	14	4			14				
A-C	236	59			236				

17:45 - 18:00

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	76	19	536	0.142	77	0.2	0.2	7.832	A
B-A	45	11	325	0.138	45	0.2	0.2	12.867	B
C-AB	90	22	659	0.136	90	0.2	0.2	6.327	A
C-A	307	77			307				
A-B	12	3			12				
A-C	192	48			192				

18:00 - 18:15

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	64	16	548	0.117	64	0.2	0.1	7.448	A
B-A	38	9	342	0.110	38	0.2	0.1	11.847	B
C-AB	75	19	669	0.113	75	0.2	0.1	6.071	A
C-A	257	64			257				
A-B	10	2			10				
A-C	161	40			161				

# 2024 Base, AM

## Data Errors and Warnings

Severity	Area	Item	Description
Warning	Demand Set Relationship	D9 - 2024 Base + Dev, AM	Demand Set relationships are chained. This may slow down the file.

## Junction Network

### Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	untitled	T-Junction	Two-way		1.85	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)	Run automatically	Relationship type	Relationship
D3	2024 Base	AM	ONE HOUR	08:15	09:45	15	✓	Simple	D13*1.0526

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

### Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
A - Manor Road (N)		ONE HOUR	✓	242	100.000
B - Sainsbury's		ONE HOUR	✓	80	100.000
C - Manor Road (S)		ONE HOUR	✓	358	100.000

## Origin-Destination Data

### Demand (Veh/hr)

		To		
		A - Manor Road (N)	B - Sainsbury's	C - Manor Road (S)
From	A - Manor Road (N)	0	6	236
	B - Sainsbury's	46	0	34
	C - Manor Road (S)	295	63	0

## Vehicle Mix

### Heavy Vehicle Percentages

		To		
		A - Manor Road (N)	B - Sainsbury's	C - Manor Road (S)
From	A - Manor Road (N)	0	0	7
	B - Sainsbury's	7	0	6
	C - Manor Road (S)	2	2	0

## Results

### Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/hr)	Total Junction Arrivals (Veh)
B-C	0.07	7.72	0.1	A	31	46
B-A	0.15	12.70	0.2	B	42	64
C-AB	0.11	6.37	0.1	A	58	87
C-A					270	406
A-B					6	9
A-C					216	325

### Main Results for each time segment

#### 08:15 - 08:30

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	25	6	531	0.048	25	0.0	0.0	7.120	A
B-A	35	9	373	0.093	34	0.0	0.1	10.618	B
C-AB	48	12	659	0.072	47	0.0	0.1	5.885	A
C-A	222	55			222				
A-B	5	1			5				
A-C	178	44			178				

#### 08:30 - 08:45

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	30	8	519	0.058	30	0.0	0.1	7.359	A
B-A	42	10	357	0.117	42	0.1	0.1	11.413	B
C-AB	57	14	648	0.088	57	0.1	0.1	6.083	A
C-A	265	66			265				
A-B	6	1			6				
A-C	212	53			212				

#### 08:45 - 09:00

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	37	9	504	0.074	37	0.1	0.1	7.716	A
B-A	51	13	335	0.152	51	0.1	0.2	12.682	B
C-AB	70	17	634	0.110	69	0.1	0.1	6.373	A
C-A	325	81			325				
A-B	7	2			7				
A-C	260	65			260				

#### 09:00 - 09:15

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	37	9	503	0.074	37	0.1	0.1	7.719	A
B-A	51	13	334	0.152	51	0.2	0.2	12.698	B
C-AB	70	17	634	0.110	70	0.1	0.1	6.373	A
C-A	325	81			325				
A-B	7	2			7				
A-C	260	65			260				

09:15 - 09:30

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	30	8	519	0.058	30	0.1	0.1	7.365	A
B-A	42	10	357	0.117	42	0.2	0.1	11.435	B
C-AB	57	14	648	0.088	57	0.1	0.1	6.088	A
C-A	265	66			265				
A-B	6	1			6				
A-C	212	53			212				

09:30 - 09:45

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	25	6	531	0.048	25	0.1	0.1	7.129	A
B-A	35	9	373	0.093	35	0.1	0.1	10.656	B
C-AB	48	12	659	0.072	48	0.1	0.1	5.893	A
C-A	222	55			222				
A-B	5	1			5				
A-C	178	44			178				

# 2024 Base, PM

## Data Errors and Warnings

Severity	Area	Item	Description
Warning	Demand Set Relationship	D9 - 2024 Base + Dev, AM	Demand Set relationships are chained. This may slow down the file.

## Junction Network

### Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	untitled	T-Junction	Two-way		2.91	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)	Run automatically	Relationship type	Relationship
D4	2024 Base	PM	ONE HOUR	16:45	18:15	15	✓	Simple	D14*1.0519

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

### Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
A - Manor Road (N)		ONE HOUR	✓	215	100.000
B - Sainsbury's		ONE HOUR	✓	142	100.000
C - Manor Road (S)		ONE HOUR	✓	439	100.000

## Origin-Destination Data

### Demand (Veh/hr)

From	To		
	A - Manor Road (N)	B - Sainsbury's	C - Manor Road (S)
A - Manor Road (N)	0	14	201
B - Sainsbury's	53	0	89
C - Manor Road (S)	333	105	0

## Vehicle Mix

### Heavy Vehicle Percentages

From	To		
	A - Manor Road (N)	B - Sainsbury's	C - Manor Road (S)
A - Manor Road (N)	0	8	2
B - Sainsbury's	14	0	4
C - Manor Road (S)	2	1	0

## Results

### Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/hr)	Total Junction Arrivals (Veh)
B-C	0.19	8.49	0.2	A	82	123
B-A	0.19	14.59	0.2	B	48	72
C-AB	0.18	6.73	0.2	A	97	145
C-A					306	459
A-B					13	19
A-C					184	277

### Main Results for each time segment

#### 16:45 - 17:00

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	67	17	549	0.123	67	0.0	0.1	7.451	A
B-A	40	10	344	0.115	39	0.0	0.1	11.802	B
C-AB	79	20	671	0.118	79	0.0	0.1	6.070	A
C-A	251	63			251				
A-B	10	3			10				
A-C	151	38			151				

#### 17:00 - 17:15

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	80	20	538	0.149	80	0.1	0.2	7.856	A
B-A	47	12	327	0.144	47	0.1	0.2	12.846	B
C-AB	95	24	662	0.143	94	0.1	0.2	6.335	A
C-A	300	75			300				
A-B	12	3			12				
A-C	181	45			181				

#### 17:15 - 17:30

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	98	25	523	0.188	98	0.2	0.2	8.479	A
B-A	58	14	305	0.190	58	0.2	0.2	14.558	B
C-AB	116	29	650	0.178	116	0.2	0.2	6.730	A
C-A	367	92			367				
A-B	15	4			15				
A-C	221	55			221				

#### 17:30 - 17:45

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	98	25	522	0.188	98	0.2	0.2	8.490	A
B-A	58	14	305	0.190	58	0.2	0.2	14.590	B
C-AB	116	29	650	0.178	116	0.2	0.2	6.733	A
C-A	367	92			367				
A-B	15	4			15				
A-C	221	55			221				

17:45 - 18:00

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	80	20	538	0.149	81	0.2	0.2	7.871	A
B-A	47	12	327	0.145	48	0.2	0.2	12.886	B
C-AB	95	24	662	0.143	95	0.2	0.2	6.345	A
C-A	300	75			300				
A-B	12	3			12				
A-C	181	45			181				

18:00 - 18:15

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	67	17	549	0.123	67	0.2	0.1	7.474	A
B-A	40	10	343	0.115	40	0.2	0.1	11.859	B
C-AB	79	20	671	0.118	79	0.2	0.1	6.085	A
C-A	251	63			251				
A-B	10	3			10				
A-C	151	38			151				

# 2029 Base, AM

## Data Errors and Warnings

Severity	Area	Item	Description
Warning	Demand Set Relationship	D9 - 2024 Base + Dev, AM	Demand Set relationships are chained. This may slow down the file.

## Junction Network

### Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	untitled	T-Junction	Two-way		1.88	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)	Run automatically	Relationship type	Relationship
D5	2029 Base	AM	ONE HOUR	08:15	09:45	15	✓	Simple	D13*1.0898

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

### Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
A - Manor Road (N)		ONE HOUR	✓	251	100.000
B - Sainsbury's		ONE HOUR	✓	83	100.000
C - Manor Road (S)		ONE HOUR	✓	371	100.000

## Origin-Destination Data

### Demand (Veh/hr)

		To		
		A - Manor Road (N)	B - Sainsbury's	C - Manor Road (S)
From	A - Manor Road (N)	0	7	244
	B - Sainsbury's	48	0	35
	C - Manor Road (S)	305	65	0

## Vehicle Mix

### Heavy Vehicle Percentages

		To		
		A - Manor Road (N)	B - Sainsbury's	C - Manor Road (S)
From	A - Manor Road (N)	0	0	7
	B - Sainsbury's	7	0	6
	C - Manor Road (S)	2	2	0

## Results

### Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/hr)	Total Junction Arrivals (Veh)
B-C	0.08	7.79	0.1	A	32	48
B-A	0.16	12.98	0.2	B	44	66
C-AB	0.11	6.43	0.1	A	60	90
C-A					280	420
A-B					6	9
A-C					224	336

### Main Results for each time segment

#### 08:15 - 08:30

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	26	7	529	0.050	26	0.0	0.1	7.157	A
B-A	36	9	370	0.098	36	0.0	0.1	10.750	B
C-AB	49	12	657	0.075	49	0.0	0.1	5.919	A
C-A	230	57			230				
A-B	5	1			5				
A-C	184	46			184				

#### 08:30 - 08:45

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	31	8	517	0.061	31	0.1	0.1	7.412	A
B-A	43	11	353	0.122	43	0.1	0.1	11.594	B
C-AB	59	15	646	0.091	59	0.1	0.1	6.127	A
C-A	274	69			274				
A-B	6	1			6				
A-C	219	55			219				

#### 08:45 - 09:00

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	38	10	500	0.077	38	0.1	0.1	7.790	A
B-A	53	13	330	0.160	53	0.1	0.2	12.959	B
C-AB	72	18	632	0.114	72	0.1	0.1	6.429	A
C-A	336	84			336				
A-B	7	2			7				
A-C	269	67			269				

#### 09:00 - 09:15

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	38	10	500	0.077	38	0.1	0.1	7.793	A
B-A	53	13	330	0.160	53	0.2	0.2	12.978	B
C-AB	72	18	632	0.114	72	0.1	0.1	6.432	A
C-A	336	84			336				
A-B	7	2			7				
A-C	269	67			269				

09:15 - 09:30

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	31	8	517	0.061	31	0.1	0.1	7.419	A
B-A	43	11	353	0.122	43	0.2	0.1	11.622	B
C-AB	59	15	646	0.091	59	0.1	0.1	6.132	A
C-A	274	69			274				
A-B	6	1			6				
A-C	219	55			219				

09:30 - 09:45

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	26	7	529	0.050	26	0.1	0.1	7.167	A
B-A	36	9	370	0.098	36	0.1	0.1	10.788	B
C-AB	49	12	657	0.075	49	0.1	0.1	5.928	A
C-A	230	57			230				
A-B	5	1			5				
A-C	184	46			184				

# 2029 Base, PM

## Data Errors and Warnings

Severity	Area	Item	Description
Warning	Demand Set Relationship	D9 - 2024 Base + Dev, AM	Demand Set relationships are chained. This may slow down the file.

## Junction Network

### Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	untitled	T-Junction	Two-way		2.96	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)	Run automatically	Relationship type	Relationship
D6	2029 Base	PM	ONE HOUR	16:45	18:15	15	✓	Simple	D14*1.0900

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

### Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
A - Manor Road (N)		ONE HOUR	✓	222	100.000
B - Sainsbury's		ONE HOUR	✓	147	100.000
C - Manor Road (S)		ONE HOUR	✓	455	100.000

## Origin-Destination Data

### Demand (Veh/hr)

		To		
		A - Manor Road (N)	B - Sainsbury's	C - Manor Road (S)
From	A - Manor Road (N)	0	14	208
	B - Sainsbury's	55	0	93
	C - Manor Road (S)	346	109	0

## Vehicle Mix

### Heavy Vehicle Percentages

		To		
		A - Manor Road (N)	B - Sainsbury's	C - Manor Road (S)
From	A - Manor Road (N)	0	8	2
	B - Sainsbury's	14	0	4
	C - Manor Road (S)	2	1	0

## Results

### Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/hr)	Total Junction Arrivals (Veh)
B-C	0.20	8.63	0.2	A	85	128
B-A	0.20	14.99	0.2	B	50	75
C-AB	0.19	6.82	0.2	A	100	150
C-A					317	476
A-B					13	20
A-C					191	287

### Main Results for each time segment

#### 16:45 - 17:00

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	70	17	547	0.127	69	0.0	0.1	7.517	A
B-A	41	10	341	0.120	40	0.0	0.1	11.974	B
C-AB	82	21	670	0.123	82	0.0	0.1	6.117	A
C-A	260	65			260				
A-B	11	3			11				
A-C	157	39			157				

#### 17:00 - 17:15

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	83	21	536	0.155	83	0.1	0.2	7.950	A
B-A	49	12	324	0.151	49	0.1	0.2	13.094	B
C-AB	98	24	661	0.148	98	0.1	0.2	6.396	A
C-A	311	78			311				
A-B	13	3			13				
A-C	187	47			187				

#### 17:15 - 17:30

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	102	26	519	0.196	102	0.2	0.2	8.617	A
B-A	60	15	300	0.200	60	0.2	0.2	14.949	B
C-AB	120	30	648	0.185	120	0.2	0.2	6.812	A
C-A	380	95			380				
A-B	16	4			16				
A-C	229	57			229				

#### 17:30 - 17:45

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	102	26	519	0.196	102	0.2	0.2	8.627	A
B-A	60	15	300	0.200	60	0.2	0.2	14.988	B
C-AB	120	30	648	0.185	120	0.2	0.2	6.817	A
C-A	380	95			380				
A-B	16	4			16				
A-C	229	57			229				

17:45 - 18:00

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	83	21	536	0.156	84	0.2	0.2	7.966	A
B-A	49	12	323	0.151	49	0.2	0.2	13.142	B
C-AB	98	24	661	0.148	98	0.2	0.2	6.403	A
C-A	311	78			311				
A-B	13	3			13				
A-C	187	47			187				

18:00 - 18:15

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	70	17	547	0.127	70	0.2	0.1	7.548	A
B-A	41	10	340	0.121	41	0.2	0.1	12.038	B
C-AB	82	21	670	0.123	82	0.2	0.1	6.131	A
C-A	260	65			260				
A-B	11	3			11				
A-C	157	39			157				

# 2024 Base + Dev, AM

## Data Errors and Warnings

Severity	Area	Item	Description
Warning	Demand Set Relationship	D9 - 2024 Base + Dev, AM	Demand Set relationships are chained. This may slow down the file.

## Junction Network

### Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	untitled	T-Junction	Two-way		1.84	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)	Run automatically	Relationship type	Relationship
D9	2024 Base + Dev	AM	ONE HOUR	08:15	09:45	15	✓	Simple	D3+D7

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

### Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
A - Manor Road (N)		ONE HOUR	✓	248	100.000
B - Sainsbury's		ONE HOUR	✓	80	100.000
C - Manor Road (S)		ONE HOUR	✓	362	100.000

## Origin-Destination Data

### Demand (Veh/hr)

		To		
		A - Manor Road (N)	B - Sainsbury's	C - Manor Road (S)
From	A - Manor Road (N)	0	6	242
	B - Sainsbury's	46	0	34
	C - Manor Road (S)	299	63	0

## Vehicle Mix

### Heavy Vehicle Percentages

		To		
		A - Manor Road (N)	B - Sainsbury's	C - Manor Road (S)
From	A - Manor Road (N)	0	0	7
	B - Sainsbury's	7	0	6
	C - Manor Road (S)	2	2	0

## Results

### Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/hr)	Total Junction Arrivals (Veh)
B-C	0.07	7.74	0.1	A	31	46
B-A	0.15	12.79	0.2	B	42	64
C-AB	0.11	6.39	0.1	A	58	87
C-A					274	411
A-B					6	9
A-C					222	333

### Main Results for each time segment

#### 08:15 - 08:30

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	25	6	530	0.048	25	0.0	0.0	7.129	A
B-A	35	9	372	0.094	34	0.0	0.1	10.659	B
C-AB	48	12	657	0.072	47	0.0	0.1	5.897	A
C-A	225	56			225				
A-B	5	1			5				
A-C	182	46			182				

#### 08:30 - 08:45

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	30	8	518	0.058	30	0.0	0.1	7.377	A
B-A	42	10	355	0.117	42	0.1	0.1	11.470	B
C-AB	57	14	647	0.088	57	0.1	0.1	6.098	A
C-A	269	67			269				
A-B	6	1			6				
A-C	217	54			217				

#### 08:45 - 09:00

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	37	9	502	0.074	37	0.1	0.1	7.741	A
B-A	51	13	333	0.153	51	0.1	0.2	12.767	B
C-AB	70	17	633	0.110	69	0.1	0.1	6.391	A
C-A	329	82			329				
A-B	7	2			7				
A-C	266	67			266				

#### 09:00 - 09:15

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	37	9	502	0.074	37	0.1	0.1	7.744	A
B-A	51	13	333	0.153	51	0.2	0.2	12.786	B
C-AB	70	17	633	0.110	70	0.1	0.1	6.393	A
C-A	329	82			329				
A-B	7	2			7				
A-C	266	67			266				

09:15 - 09:30

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	30	8	518	0.058	30	0.1	0.1	7.381	A
B-A	42	10	355	0.117	42	0.2	0.1	11.495	B
C-AB	57	14	647	0.088	57	0.1	0.1	6.101	A
C-A	269	67			269				
A-B	6	1			6				
A-C	217	54			217				

09:30 - 09:45

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	25	6	530	0.048	25	0.1	0.1	7.140	A
B-A	35	9	372	0.094	35	0.1	0.1	10.698	B
C-AB	48	12	657	0.072	48	0.1	0.1	5.903	A
C-A	225	56			225				
A-B	5	1			5				
A-C	182	46			182				

# 2024 Base + Dev, PM

## Data Errors and Warnings

Severity	Area	Item	Description
Warning	Demand Set Relationship	D9 - 2024 Base + Dev, AM	Demand Set relationships are chained. This may slow down the file.

## Junction Network

### Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	untitled	T-Junction	Two-way		2.88	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)	Run automatically	Relationship type	Relationship
D10	2024 Base + Dev	PM	ONE HOUR	16:45	18:15	15	✓	Simple	D4+D8

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

### Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
A - Manor Road (N)		ONE HOUR	✓	220	100.000
B - Sainsbury's		ONE HOUR	✓	142	100.000
C - Manor Road (S)		ONE HOUR	✓	446	100.000

## Origin-Destination Data

### Demand (Veh/hr)

From	To		
	A - Manor Road (N)	B - Sainsbury's	C - Manor Road (S)
A - Manor Road (N)	0	14	206
B - Sainsbury's	53	0	89
C - Manor Road (S)	340	105	0

## Vehicle Mix

### Heavy Vehicle Percentages

From	To		
	A - Manor Road (N)	B - Sainsbury's	C - Manor Road (S)
A - Manor Road (N)	0	8	2
B - Sainsbury's	14	0	3
C - Manor Road (S)	2	1	0

## Results

### Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/hr)	Total Junction Arrivals (Veh)
B-C	0.19	8.52	0.2	A	82	123
B-A	0.19	14.71	0.2	B	48	72
C-AB	0.18	6.75	0.2	A	97	145
C-A					312	469
A-B					13	19
A-C					189	283

### Main Results for each time segment

#### 16:45 - 17:00

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	67	17	549	0.123	67	0.0	0.1	7.465	A
B-A	40	10	342	0.116	39	0.0	0.1	11.853	B
C-AB	79	20	670	0.118	79	0.0	0.1	6.081	A
C-A	256	64			256				
A-B	10	3			10				
A-C	155	39			155				

#### 17:00 - 17:15

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	80	20	537	0.150	80	0.1	0.2	7.875	A
B-A	47	12	326	0.145	47	0.1	0.2	12.922	B
C-AB	95	24	661	0.143	94	0.1	0.2	6.349	A
C-A	306	77			306				
A-B	12	3			12				
A-C	185	46			185				

#### 17:15 - 17:30

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	98	25	521	0.189	98	0.2	0.2	8.507	A
B-A	58	14	303	0.191	58	0.2	0.2	14.674	B
C-AB	116	29	649	0.178	116	0.2	0.2	6.749	A
C-A	375	94			375				
A-B	15	4			15				
A-C	227	57			227				

#### 17:30 - 17:45

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	98	25	521	0.189	98	0.2	0.2	8.517	A
B-A	58	14	303	0.191	58	0.2	0.2	14.709	B
C-AB	116	29	649	0.178	116	0.2	0.2	6.752	A
C-A	375	94			375				
A-B	15	4			15				
A-C	227	57			227				

17:45 - 18:00

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	80	20	537	0.150	81	0.2	0.2	7.892	A
B-A	47	12	325	0.145	48	0.2	0.2	12.964	B
C-AB	95	24	661	0.143	95	0.2	0.2	6.358	A
C-A	306	77			306				
A-B	12	3			12				
A-C	185	46			185				

18:00 - 18:15

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	67	17	548	0.123	67	0.2	0.1	7.488	A
B-A	40	10	342	0.116	40	0.2	0.1	11.913	B
C-AB	79	20	670	0.118	79	0.2	0.1	6.093	A
C-A	256	64			256				
A-B	10	3			10				
A-C	155	39			155				

# 2029 Base + Dev, AM

## Data Errors and Warnings

Severity	Area	Item	Description
Warning	Demand Set Relationship	D9 - 2024 Base + Dev, AM	Demand Set relationships are chained. This may slow down the file.

## Junction Network

### Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	untitled	T-Junction	Two-way		1.87	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)	Run automatically	Relationship type	Relationship
D11	2029 Base + Dev	AM	ONE HOUR	08:15	09:45	15	✓	Simple	D5+D7

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

### Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
A - Manor Road (N)		ONE HOUR	✓	257	100.000
B - Sainsbury's		ONE HOUR	✓	83	100.000
C - Manor Road (S)		ONE HOUR	✓	375	100.000

## Origin-Destination Data

### Demand (Veh/hr)

From	To		
	A - Manor Road (N)	B - Sainsbury's	C - Manor Road (S)
A - Manor Road (N)	0	7	250
B - Sainsbury's	48	0	35
C - Manor Road (S)	309	65	0

## Vehicle Mix

### Heavy Vehicle Percentages

From	To		
	A - Manor Road (N)	B - Sainsbury's	C - Manor Road (S)
A - Manor Road (N)	0	0	7
B - Sainsbury's	7	0	6
C - Manor Road (S)	2	2	0

## Results

### Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/hr)	Total Junction Arrivals (Veh)
B-C	0.08	7.82	0.1	A	32	48
B-A	0.16	13.07	0.2	B	44	66
C-AB	0.11	6.45	0.1	A	60	90
C-A					284	426
A-B					6	9
A-C					230	344

### Main Results for each time segment

#### 08:15 - 08:30

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	26	7	528	0.050	26	0.0	0.1	7.172	A
B-A	36	9	369	0.098	36	0.0	0.1	10.793	B
C-AB	49	12	656	0.075	49	0.0	0.1	5.931	A
C-A	233	58			233				
A-B	5	1			5				
A-C	188	47			188				

#### 08:30 - 08:45

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	31	8	516	0.061	31	0.1	0.1	7.431	A
B-A	43	11	352	0.123	43	0.1	0.1	11.653	B
C-AB	59	15	645	0.091	59	0.1	0.1	6.142	A
C-A	278	69			278				
A-B	6	1			6				
A-C	225	56			225				

#### 08:45 - 09:00

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	38	10	499	0.077	38	0.1	0.1	7.816	A
B-A	53	13	328	0.161	53	0.1	0.2	13.050	B
C-AB	72	18	630	0.114	72	0.1	0.1	6.450	A
C-A	340	85			340				
A-B	7	2			7				
A-C	275	69			275				

#### 09:00 - 09:15

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	38	10	499	0.077	38	0.1	0.1	7.819	A
B-A	53	13	328	0.161	53	0.2	0.2	13.069	B
C-AB	72	18	630	0.114	72	0.1	0.1	6.453	A
C-A	340	85			340				
A-B	7	2			7				
A-C	275	69			275				

09:15 - 09:30

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	31	8	516	0.061	31	0.1	0.1	7.439	A
B-A	43	11	352	0.123	43	0.2	0.1	11.679	B
C-AB	59	15	645	0.091	59	0.1	0.1	6.147	A
C-A	278	69			278				
A-B	6	1			6				
A-C	225	56			225				

09:30 - 09:45

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	26	7	527	0.050	26	0.1	0.1	7.185	A
B-A	36	9	369	0.098	36	0.1	0.1	10.831	B
C-AB	49	12	656	0.075	49	0.1	0.1	5.940	A
C-A	233	58			233				
A-B	5	1			5				
A-C	188	47			188				

# 2029 Base + Dev, PM

## Data Errors and Warnings

Severity	Area	Item	Description
Warning	Demand Set Relationship	D9 - 2024 Base + Dev, AM	Demand Set relationships are chained. This may slow down the file.

## Junction Network

### Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	untitled	T-Junction	Two-way		2.93	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)	Run automatically	Relationship type	Relationship
D12	2029 Base + Dev	PM	ONE HOUR	16:45	18:15	15	✓	Simple	D6+D8

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

### Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
A - Manor Road (N)		ONE HOUR	✓	227	100.000
B - Sainsbury's		ONE HOUR	✓	147	100.000
C - Manor Road (S)		ONE HOUR	✓	462	100.000

## Origin-Destination Data

### Demand (Veh/hr)

		To		
		A - Manor Road (N)	B - Sainsbury's	C - Manor Road (S)
From	A - Manor Road (N)	0	14	213
	B - Sainsbury's	55	0	93
	C - Manor Road (S)	353	109	0

## Vehicle Mix

### Heavy Vehicle Percentages

		To		
		A - Manor Road (N)	B - Sainsbury's	C - Manor Road (S)
From	A - Manor Road (N)	0	8	2
	B - Sainsbury's	14	0	4
	C - Manor Road (S)	2	1	0

## Results

### Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/hr)	Total Junction Arrivals (Veh)
B-C	0.20	8.66	0.2	A	85	128
B-A	0.20	15.11	0.2	C	50	75
C-AB	0.19	6.84	0.2	A	100	150
C-A					323	485
A-B					13	20
A-C					196	293

### Main Results for each time segment

#### 16:45 - 17:00

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	70	17	547	0.128	69	0.0	0.1	7.531	A
B-A	41	10	339	0.121	40	0.0	0.1	12.029	B
C-AB	82	21	669	0.123	82	0.0	0.1	6.127	A
C-A	265	66			265				
A-B	11	3			11				
A-C	161	40			161				

#### 17:00 - 17:15

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	83	21	535	0.156	83	0.1	0.2	7.969	A
B-A	49	12	322	0.152	49	0.1	0.2	13.172	B
C-AB	98	24	659	0.149	98	0.1	0.2	6.410	A
C-A	317	79			317				
A-B	13	3			13				
A-C	192	48			192				

#### 17:15 - 17:30

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	102	26	518	0.197	102	0.2	0.2	8.642	A
B-A	60	15	298	0.201	60	0.2	0.2	15.075	C
C-AB	120	30	646	0.186	120	0.2	0.2	6.831	A
C-A	388	97			388				
A-B	16	4			16				
A-C	235	59			235				

#### 17:30 - 17:45

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	102	26	518	0.197	102	0.2	0.2	8.656	A
B-A	60	15	298	0.201	60	0.2	0.2	15.114	C
C-AB	120	30	646	0.186	120	0.2	0.2	6.836	A
C-A	388	97			388				
A-B	16	4			16				
A-C	235	59			235				

17:45 - 18:00

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	83	21	535	0.156	84	0.2	0.2	7.987	A
B-A	49	12	322	0.152	49	0.2	0.2	13.218	B
C-AB	98	24	659	0.149	98	0.2	0.2	6.417	A
C-A	317	79			317				
A-B	13	3			13				
A-C	192	48			192				

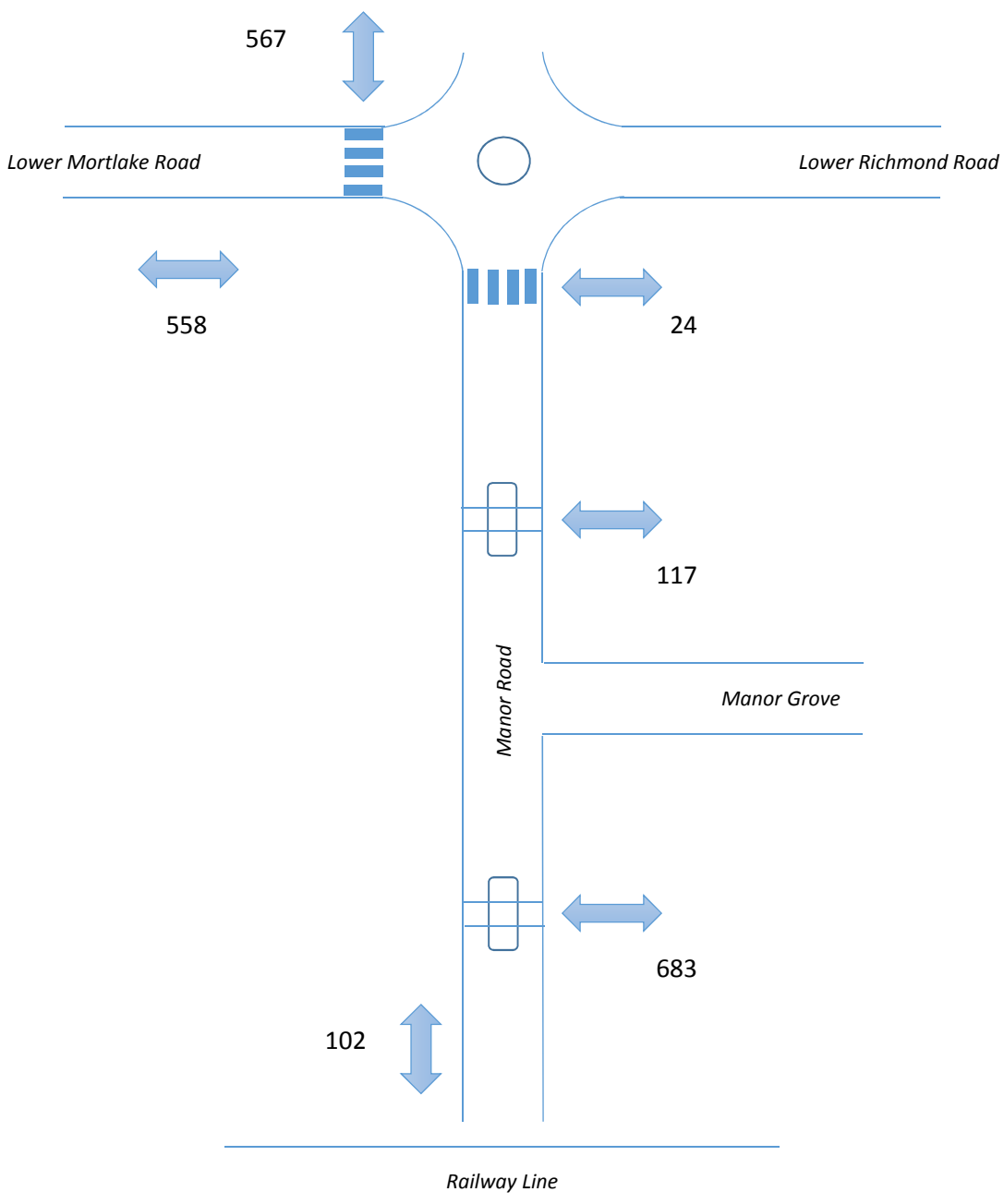
18:00 - 18:15

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	70	17	546	0.128	70	0.2	0.1	7.559	A
B-A	41	10	339	0.121	41	0.2	0.1	12.095	B
C-AB	82	21	669	0.123	82	0.2	0.1	6.142	A
C-A	265	66			265				
A-B	11	3			11				
A-C	161	40			161				

***APPENDIX Q***  
***Pedestrian Distribution***

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**Daily Pedestrian Movements**



***APPENDIX R***

***2011 Census: Origin / Destination statistics for bus travel***

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## WU03EW - Location of usual residence and place of work by method of travel to work (MSOA level)

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population All usual residents aged 16 and over in employment the week before the census  
units Persons  
date 2011  
method of travel to work Bus, minibus or coach

place of work : 2011 super output area - middle layer	usual residence E02000787 : Richmond upon Thames 004		%
	E02000791 : Richmond upon Thames 008	41	18%
E02000797 : Richmond upon Thames 014	22	10%	
E02000606 : Kingston upon Thames 009	19	8%	
E02000384 : Hammersmith and Fulham 013	16	7%	
E02006792 : Hounslow 029	14	6%	
E02000784 : Richmond upon Thames 001	10	4%	
E02000787 : Richmond upon Thames 004	10	4%	
E02000804 : Richmond upon Thames 021	10	4%	
E02000372 : Hammersmith and Fulham 001	8	3%	
E02000932 : Wandsworth 010	8	3%	
E02000268 : Ealing 031	8	3%	
E02000387 : Hammersmith and Fulham 016	7	3%	
E02000531 : Hounslow 006	7	3%	
E02000539 : Hounslow 014	7	3%	
E02000785 : Richmond upon Thames 002	7	3%	
E02000789 : Richmond upon Thames 006	7	3%	
E02000938 : Wandsworth 016	6	3%	
E02000602 : Kingston upon Thames 005	6	3%	
E02000788 : Richmond upon Thames 005	6	3%	
E02000798 : Richmond upon Thames 015	6	3%	
E02000801 : Richmond upon Thames 018	6	3%	
Total	231	100%	