



Manor Road / Richmond

Revised Transport Assessment

Sanderson Associates

November 2019

Prepared on behalf of

Avanton Richmond Development Limited

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

Revised Transport Assessment

November 2019

Acknowledgements:

The TRICS database has been used in this report to calculate traffic generations.

Disclaimer

The methodology adopted and the sources of information used by Sanderson Associates (Consulting Engineers) Ltd in providing its services are outlined within this Report.

Any information provided by third parties and referred to herein has not been checked or verified by Sanderson Associates (Consulting Engineers) Ltd, unless otherwise expressly stated within this report.

This report was checked and approved on the 21 November 2019 and the Report is therefore valid on this date, circumstances, regulations and professional standards do change which could subsequently affect the validity of this Report.

Copyright

All intellectual property rights in or arising out of or in connection with this report are owned by Sanderson Associates (Consulting Engineers) Ltd. The report has been prepared for Avanton Richmond Development Limited (the 'Client') who has a licence to copy and use this report only for the purposes for which it was provided. The licence to use and copy this report is subject to other terms and conditions agreed between Sanderson Associates (Consulting Engineers) Ltd and the Client.

This document cannot be assigned or transferred to any third party and no third party may rely upon this document without the express written agreement of both Sanderson Associates (Consulting Engineers) Ltd and the Client.

Report Ref:	11205-001-03	November 2019	
Author:	Brett Littlewood		
Checked & Approved:	Karen Smith MIHE	Date:	21 November 2019

Contents

Page No

Executive Summary	6
1 Introduction.....	7
2 Planning Policy Context.....	10
3 Pre-Application Consultation, Statutory Consultee Comments and Further Consultation	21
4 Site History.....	29
5 Existing Situation	30
6 Accessibility by Non-Car Travel Modes	38
7 Development Proposals	47
8 Healthy Streets Approach	54
9 Multimodal Traffic Generations	57
10 Vehicle Traffic Generations	57
11 Traffic Impact Assessment	70
12 Impact of the Development on the Pedestrian Network.....	73
13 Impact of the Development on Local Bus Services	85
14 Impact of the Development on Local Rail Services.....	89
15 Summary and Conclusions.....	91

Appendices

APPENDIX A

- Figure 1 – Site Location Plan*
- Figure 2 – 500m, 1km & 2km Indicative Walking Radii*
- Figure 3 – 5km & 7.5km Indicative Cycling Radii*
- Figure 4 – Location of Public Transport Facilities*
- Figure 5 – Residential Development Traffic Distribution*
- Figure 6 – Residential Development Traffic Flows*
- Figure 7 – Commercial Development Traffic Distribution*
- Figure 8 – Commercial Development Traffic Flows*
- Figure 9 – Total Development Traffic Flows*
- Figure 10 – 2018 Base Traffic Flows*
- Figure 11 – 2023 Base Traffic Flows*
- Figure 12 – 2028 Base Traffic Flows*

APPENDIX B

- Transport for London – Pre-Application Response*

APPENDIX C

- Traffic Count Data*

APPENDIX D

- Parking Stress Survey Report*

APPENDIX E

- North Sheen Station Pedestrian Survey Report*

APPENDIX F

- Accident Data from Transport for London*

APPENDIX G

- PTAL Report*

APPENDIX H

Drawing 11205-007 - Swept Path Analysis Various Servicing Vehicles

Drawing 11205-008 – Proposed Highway Improvements on Manor Road

Drawing 11205-009 - Swept Path Analysis Proposed Bus Layover Area

Drawing 11205-010 – Layout and Swept Path Analysis Temporary Bus Layover Area

APPENDIX I

Proposed Ground Floor Layout Plan

APPENDIX J

Active Travel Zone Assessment

APPENDIX K

TRICS Data

APPENDIX L

Census Data

APPENDIX M

Refined TRICs Data Output

APPENDIX N

Junctions Output – Site Access/Manor Road

APPENDIX O

Junctions Output – Sainsbury's/Manor Road

APPENDIX P

Predicted Pedestrian Movements

APPENDIX Q

Census Travel by Bus Data

Executive Summary

Sanderson Associates (Consulting Engineers) Ltd has been appointed by Avanton Richmond Development Limited to advise on traffic and transportation issues surrounding the proposed redevelopment of Homebase, Manor Road, North Sheen.

The development proposes the demolition of existing buildings and structures and comprehensive phased residential-led redevelopment to provide residential units (Class C3), flexible retail /community / office uses (Classes A1, A2, A3, D2, B1), a police facility (Use Class B1), a bus layover with driver facilities (Sui Generis Use), provision of car and cycle parking, landscaping, public and private open spaces and all other necessary enabling works on the Homebase site on Manor Road, North Sheen.

This revised Transport Assessment examines the highway and transportation implications of the development and is submitted in support of a revised planning application following the Mayor's direction to take over the original Planning Application for his determination.

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 is 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.

1 Introduction

- 1.1 On behalf of Avanton Richmond Development Ltd, a detailed planning application (ref. 19/0510/FUL) was submitted to the London Borough of Richmond Upon Thames (LBRuT) in February 2019 for the redevelopment of the Homebase store at 84 Manor Road, North Sheen.
- 1.2 The application was considered at LBRuT Planning Committee on 3 July 2019 and was recommended for refusal by LBRuT officers. The Planning Committee resolved that they were minded to refuse the Application in line with the officer's recommendation for six reasons relating to affordable housing; design; residential amenity; living standards; energy; and absence of a legal agreement.
- 1.3 On 29 July 2019 the Mayor issued a Direction pursuant to Article 7 of the Town and Country Planning (Mayor of London) Order 2008 and powers conferred by Section 2A of the Town and Country Planning Act (1990) that he would act as the LPA for the purposes of determining the Application.
- 1.4 Further to the Mayor's direction to take over the Planning Application for his determination, the Applicant, in consultation with the GLA and TfL, has taken the opportunity 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.
- 1.5 The Amended scheme now proposes a residential-led redevelopment of five buildings of between three and ten storeys. The development will provide 433 residential units (Class C3), flexible retail /community / office uses (Classes A1, A2, A3, D2, B1), a police facility (Use Class B1), a bus layover with driver facilities (Sui Generis Use), car and cycle parking, landscaping, public and private open spaces and other necessary enabling works.
- 1.6 The proposed changes necessitate an amendment to the Applications description of development. The revised description of development is detailed overleaf:

Demolition of existing buildings and structures and comprehensive phased residential-led redevelopment to provide residential units (Class C3), flexible retail /community / office uses (Classes A1, A2, A3, D2, B1), a police facility (Use Class B1), a bus layover with driver facilities (Sui Generis Use), provision of car and cycle parking, landscaping, public and private open spaces and all other necessary enabling works.

- 1.7 The amended scheme is referred as the 'Amended Proposed Development' and its previous iteration that was considered at LBRuT Planning Committee in 3 July 2019, is referred to as the 'Original Proposed Development'.
- 1.8 Sanderson Associates (Consulting Engineers) Ltd has been appointed by Avanton Richmond Development Limited to advise on traffic and transportation issues associated with the redevelopment proposals for the Homebase store on Manor Road, North Sheen as indicated on the plan attached at **Appendix A (Figure 1)**.
- 1.9 This is a revised Transport Assessment which has been updated to take into account the amendments to the scheme proposals since the application was "Called In" by the Mayor. The key scheme revisions relevant to transport are detailed below:-
- The proposed new Block (Block E) located on the existing bus layover area to the north of the site which will provide a bus layover area for four buses at ground level along with a driver facility (Sui-Generis Use);
 - Pro-rata increases in disabled car parking provision to reflect changes in unit numbers across the site including the relocation of bays as necessary, and
 - The relocation of cycle parking facilities to distribute same across all blocks.
- 1.10 This revised Transport Assessment also provides a detailed response to previous transport related comments which were raised by statutory consultees during the LBRuT determination period.
- 1.11 In accordance with the Planning Practice Guidance 'Transport evidence bases in plan making and decision taking' this Transport Assessment addresses key transport issues including:

- the local highway network
- the access arrangements to the proposed development
- the existing use of the site
- the proposed development and its operational facilities
- the impact of the development on the local highway network in terms of highway safety
- accessibility of the site in relation to sustainable transport and local facilities

1.12 For the benefit of this report, Sanderson Associates are relying on information obtained during a visit to the site on Wednesday 20 June 2018, when observations were made in relation to prevailing highway conditions. However, this information has been supplemented by further survey work, including CCTV surveys at the North Sheen Rail Station entrance/exit, and discussions with key stakeholders.

1.13 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 associated with the development. The Transport Assessment should be considered in conjunction with the Travel Plan.

1.14 The Amended Proposed Development has been the subject of several pre-submission discussions with the Greater London Authority (GLA) and Transport for London (TfL) which are detailed later in this report.

2 Planning Policy Context

2.1 **National Planning Policy**

2.1.1 The latest National Planning Policy Framework (NPPF) was published in February 2019 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 108 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; and

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

2.1.4 NPPF Paragraphs 109 and 110 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 A Travel Plan has also been prepared in support of the development proposals, and is submitted under a separate cover.

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*

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.

2.3 London Plan Policies

2.3.1 The current London Plan (2016) is the adopted London Plan and is “the overall strategic plan for London” that “sets out an integrated economic, environmental, transport and social framework for the development of London over the next 20–25 years”. All local development documents for each London Borough are to be “in general conformity” with the London Plan.

2.3.2 However, “the draft London Plan is a material consideration in planning decisions” and the latest version of the draft London Plan – Consolidated Suggested Changes version was published July 2019 and key policies applicable to this development are set out below:-

Policy T1 Strategic approach to transport

A Development Plans should support and development proposals should facilitate:

- 1) the delivery of the Mayor’s strategic target of 80 per cent of all trips in London to be made by foot, cycle or public transport by 2041
- 2) the proposed transport schemes set out in Table 10.1.

B All development should make the most effective use of land, reflecting its connectivity and accessibility by existing and future public transport, walking and cycling routes, and ensure that any impacts on London’s transport networks and supporting infrastructure are mitigated.

Policy T2 Healthy Streets

A Development proposals and Development Plans should deliver patterns of land use that facilitate residents making shorter, regular trips by walking or cycling.

B Development Plans should:

- 1) promote and demonstrate the application of the Mayor’s Healthy Streets Approach to: improve health and reduce health inequalities; reduce car dominance, ownership and use, road danger, severance, vehicle emissions and noise; increase walking, cycling and public transport use; improve street safety, comfort, convenience and amenity; and support these outcomes through sensitively designed freight facilities.

2) identify opportunities to improve the balance of space given to people to dwell, walk, cycle, and travel on public transport and in essential vehicles, so space is used more efficiently and streets are greener and more pleasant.

C In Opportunity Areas and other growth areas, new and improved walking, cycling and public transport networks should be planned at an early stage, with delivery phased appropriately to support mode shift towards active travel and public transport. Designs for new or enhanced streets must demonstrate how they deliver against the ten Healthy Streets Indicators.

D Development proposals should:

- 1) demonstrate how they will deliver improvements that support the ten Healthy Streets Indicators in line with Transport for London guidance.
- 2) reduce the dominance of vehicles on London's streets whether stationary or moving.
- 3) be permeable by foot and cycle and connect to local walking and cycling networks as well as public transport.

Policy T4 Assessing and mitigating transport impacts

A Development Plans and development proposals should reflect and be integrated with current and planned transport access, capacity and connectivity.

B When required in accordance with national or local guidance, transport assessments/statements should be submitted with development proposals to ensure that impacts on the capacity of the transport network (including impacts on pedestrians and the cycle network), at the local, network-wide and strategic level, are fully assessed. Transport assessments should focus on embedding the Healthy Streets Approach within, and in the vicinity of, new development. Travel Plans, Parking Design and Management Plans, Construction Logistics Plans and Delivery and Servicing Plans will be required in accordance with relevant Transport for London guidance¹⁴².

C Where appropriate, mitigation, either through direct provision of public transport, walking and cycling facilities and highways improvements or through financial contributions, will be required to address adverse transport impacts that are identified.

D Where the ability to absorb increased travel demand through active travel modes has been exhausted, existing public transport capacity is insufficient to allow for the travel generated by proposed developments, and no firm plans and funding exist for an increase in capacity to cater for the increased demand, planning permission will be contingent on the provision of necessary public transport and active travel infrastructure.

E The cumulative impacts of development on public transport and the road network capacity including walking and cycling, as well as associated effects on public health, should be taken into account and mitigated.

F Development proposals should not increase road danger.

Policy T5 Cycling

A Development Plans and development proposals should help remove barriers to cycling and create a healthy environment in which people choose to cycle. This will be achieved through:

- 1) supporting the delivery of a London-wide network of cycle routes, with new routes and improved infrastructure
- 2) securing the provision of appropriate levels of cycle parking which should be fit for purpose, secure and well-located. Developments should provide cycle parking at least in accordance with the minimum standards set out in Table 10.2 and Figure 10.2, ensuring that a minimum of two short-stay and two long-stay cycle parking spaces are provided where the application of the minimum standards would result in a lower provision.

AA Cycle parking should be designed and laid out in accordance with the guidance contained in the London Cycling Design Standards. Development proposals should demonstrate how cycle parking facilities will cater for larger cycles, including adapted cycles for disabled people.

AB Development Plans requiring more generous provision of cycle parking based on local evidence will be supported.

B Where it is not possible to provide suitable short-stay cycle parking off the public highway, the borough should work with stakeholders to identify an appropriate on-street location for the required provision. This may mean the reallocation of space from other uses such as on-street car parking. Alternatively, in town centres, adding the required provision to general town centre cycle parking is also acceptable. In such cases, a commuted sum should be paid to the local authority to secure provision.

C Where it is not possible to provide adequate cycle parking within residential developments, boroughs must work with developers to propose alternative solutions which meet the objectives of the standards. These may include options such as providing spaces in secure, conveniently-located, on-street parking facilities such as bicycle hangers.

Policy T6 Car parking

A Car parking should be restricted in line with levels of existing and future public transport accessibility and connectivity.

B 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, with developments elsewhere designed to provide the minimum necessary parking ('car-lite'). Car-free development has no general parking but should still provide disabled persons parking in line with Part D of this policy.

BA An absence of local on-street parking controls should not be a barrier to new development, and boroughs should look to implement these controls wherever necessary to allow existing residents to maintain safe and efficient use of their streets.

Appropriate disabled persons parking for Blue Badge holders should be provided as set out in Policy T6.1 Residential parking to Policy T6.5 Non- residential disabled persons parking.

Where car parking is provided in new developments, provision should be made for infrastructure for electric or other Ultra-Low Emission vehicles in line with policies T6.1, T6.2, T6.3 and T6.4.

All operational parking should make this provision, including offering rapid charging. New or re-provided petrol filling stations should provide rapid charging hubs and/or hydrogen refuelling facilities.

Adequate provision should be made for efficient deliveries and servicing and emergency access.

- 2.3.3 The London Mayor's Transport Strategy 2018 has the vision of reducing "Londoners' dependency on cars in favour of increased walking, cycling and public transport use".

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 and key policies applicable to this development in transport terms are replicated below:-

Policy LP 44

Sustainable Travel Choices

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. The Council will:

A Location of development

Encourage high trip generating development to be located in areas with good public transport with sufficient capacity, or which are capable of supporting improvements to provide good public transport accessibility and capacity, taking account of local character and context.

B Walking and cycling

Ensure that new development is designed to maximise permeability within and to the immediate vicinity of the development site through the provision of safe and convenient walking and cycling routes, and to provide opportunities for walking and

cycling, including through the provision of links and enhancements to existing networks.

C Public transport

Ensure that major new developments maximise opportunities to provide safe and convenient access to public transport services. Proposals will be expected to support improvements to existing services and infrastructure where no capacity currently exists or is planned to be provided.

Protect existing public transport interchange facilities unless suitable alternative facilities can be provided which ensure the maintenance of the existing public transport operations. Applications will need to include details setting out how such re-provision will be secured and provided in a timely manner.

D The road network

Ensure that new development does not have a severe impact on the operation, safety or accessibility to the local or strategic highway networks. Any impacts on the local or strategic highway networks, arising from the development itself or the cumulative effects of development, including in relation to on-street parking, should be mitigated through the provision of, or contributions towards, necessary and relevant transport improvements.

In assessing planning applications the cumulative impacts of development on the transport network will be taken into account. Planning applications will need to be supported by the provision of a Transport Assessment if it is a major development, and a Transport Statement if it is a minor development.

F Safeguarding of routes and facilities

Land required for proposed transport schemes as identified in the London Plan and the Council's Local Implementation Plan for Transport will be protected from developments which would prevent their proper implementation.

Local filling stations and supporting services such as car repair facilities will be protected from redevelopment for alternative uses unless exceptional circumstances can be demonstrated that warrant their loss.

G. Taxis and private hire vehicles

Ensure that taxis and private hire vehicles are adequately catered for in appropriate locations.

Policy LP 45

Parking Standards and Servicing

Parking standards

The Council will require new development to make provision for the accommodation of vehicles in order to provide for the needs of the development while minimising the impact of car based travel including on the operation of the road network and local environment, and ensuring making the best use of land. It will achieve this by:

1. Requiring new development to provide for car, cycle, 2 wheel and, where applicable, lorry parking and electric vehicle charging points, in accordance with the standards set out in Appendix 3. Opportunities to minimise car parking through its shared use will be encouraged.
2. Resisting the provision of front garden car parking unless it can be demonstrated that:
 - a. there would be no material impact on road or pedestrian safety;
 - b. there would be no harmful impact on the character of the area, including the streetscape or setting of the property, in line with the policies on Local Character and Design; and
 - c. the existing on-street demand is less than available capacity.
3. Car free housing developments may be appropriate in locations with high public transport accessibility, such as areas with a PTAL of 5 or 6, subject to:
 - a. the provision of disabled parking;
 - b. appropriate servicing arrangements; and
 - c. demonstrating that proper controls can be put in place to ensure that the proposal will not contribute to on-street parking stress in the locality.

All proposals for car free housing will need to be supported by the submission of a Travel Plan.

4. Managing the level of publicly available car parking to support the vitality and viability of town and local centres within the borough whilst limiting its impacts on the road network.

Freight and Servicing

New major development which involves freight movements and has servicing needs will be required to demonstrate through the submission of a Delivery and Servicing Plan and Construction and Logistics Plan that it creates no severe impacts on the efficient and safe operation of the road network and no material harm to the living conditions of nearby residents.

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 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 Pre-Application Consultation, Statutory Consultee Comments and Further Consultation

3.1 The development proposals have been the subject of extensive consultation with a number of key stakeholders commencing with initial pre-application consultations prior to the submission of the first application to LBRuT.

3.2 Further consultations subsequently took place during the LBRuT determination period which have influenced the development of the site layout and in-particular from a transportation perspective the location of the cycle parking/storage and servicing arrangements.

3.3 Since the application was “Called In” by the Mayor for his determination a series of meetings have taken place between the development design team, GLA and TfL to further develop the scheme to submission readiness in advance of the Hearing which is scheduled for January 2020.

3.4 The following sub-sections summarise the transport related discussions which have taken place and which have influenced the Amended Proposed Development.

3.5 *Transport for London*

3.5.1 A formal pre-application meeting took place with Transport for London (TfL) on 9 October 2019 and a copy of the letter of pre-application advice subsequently provided is attached at **Appendix B**.

3.5.2 Subsequent discussions have also taken place regarding the design of the bus terminus facility on the northern portion of the site and the drivers’ facilities that TfL would require.

3.5.3 Five options for the bus layover facility were put forward to TfL for their consideration following the October 2019 meeting. However, the majority of these options were considered unacceptable by TfL as they either did not provide an appropriate number of bus stands or required buses to undertake reversing movements which is contrary to TfL guidelines. On the following pages are the five indicative layouts with the TfL comments below:-

Option 1



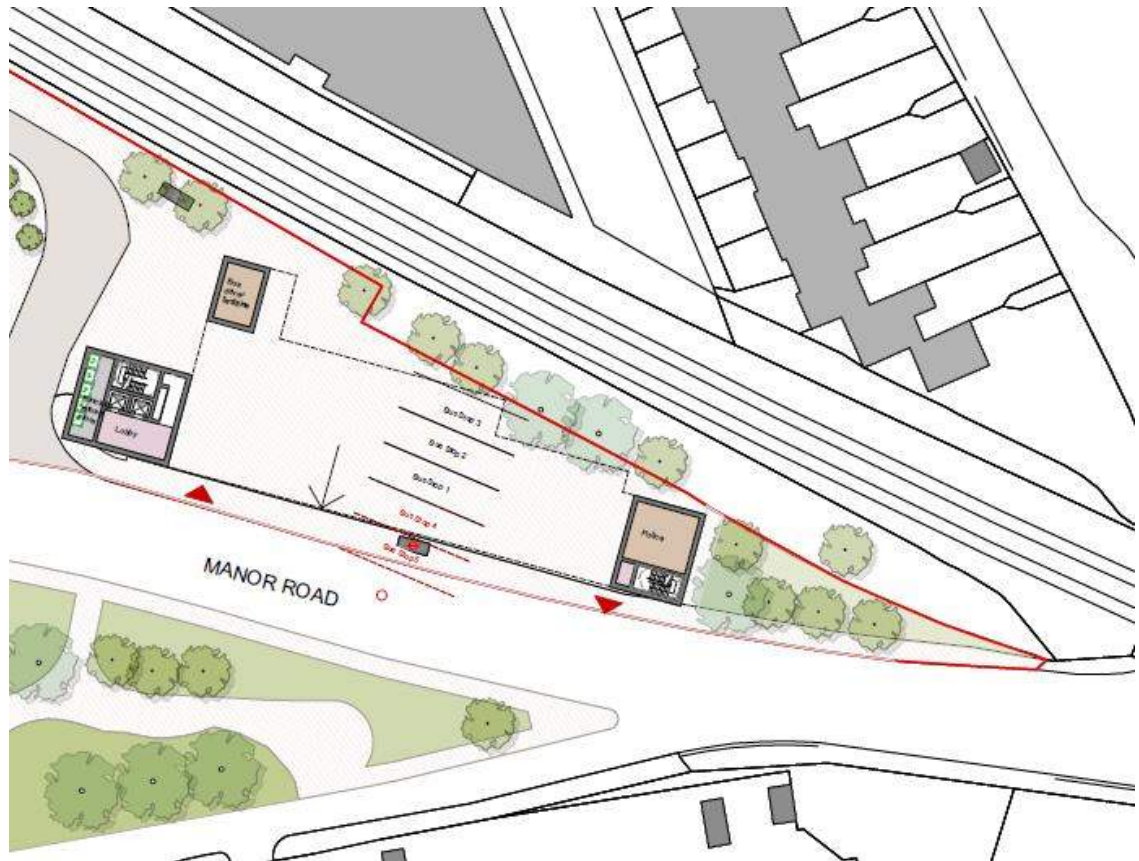
Option 1 – Number of stands acceptable; but TfL will need a more detailed plan which shows the dimensions of each of the standing areas. Bus stop 1 and part of bus stop 2 are shown outside of the building line. TfL would therefore need to understand where the building columns will be located, as this may impact on how buses can manoeuvre and whether you could realistically accommodate the number of stands shown. Swept path analysis for each stop is required to be shown on separate plans using a 12m rigid bus at 10mph (or 5mph depending on site requirements). The drawings also need to demonstrate where bus alighting and boarding will occur on Manor Road. It's still not clear if this is a workable from the information provided to date. **TfL's preferred options subject to further work.**

Option 2



Option 2 – Only provides standing for 2 buses, so would not meet TfL’s operational requirements which require a minimum of 4 stands. Buses would be unable to align flush with the island to be able to deploy ramps. It’s not clear from the drawings provided how easily buses could manoeuvre into and out of bus stop 1. Where would the building columns be located, as this will impact on how buses can manoeuvre and whether you could realistically accommodate the number of stands shown. **Option not acceptable.**

Option 3



Option 3 - Only provides standing for 2 buses, so would not meet TfL's operational requirements which require a minimum of 4 stands. Bus stop 1 appears to be half inside half outside. Where would the building columns be located, as this will impact on how buses can manoeuvre and whether you could realistically accommodate the number of stands shown. **Option not acceptable.**

Option 4



Option 4 – Number of stands acceptable; however whilst the options analysis states reversing not required it is not clear how buses enter or exit the arrangement shown without reversing. Swept path analysis shows the bus encroaching over the kerb line and into disabled persons parking spaces and the landscape area of Block A (North). There is potentially an operational impact for buses entering the access road and encountering a bus reversing. Where would the building columns be located, as this will impact on how buses can manoeuvre and whether you could realistically accommodate the number of stands shown. There are also safety concerns as the majority of manoeuvring occurs on the site access, and you cannot provide a physical separation between buses and pedestrians and cyclist and other general traffic. **Option not acceptable.**

Option 5



Option 5 - Number of stands acceptable; however there are major safety concerns as buses are required to reverse out into the site access road which is also used by pedestrians and cyclists. Reversing buses in a new bus standing arrangement, where you cannot provide a physical separation between buses, pedestrians, cyclist and general traffic, would be unacceptable. **Option not acceptable.**

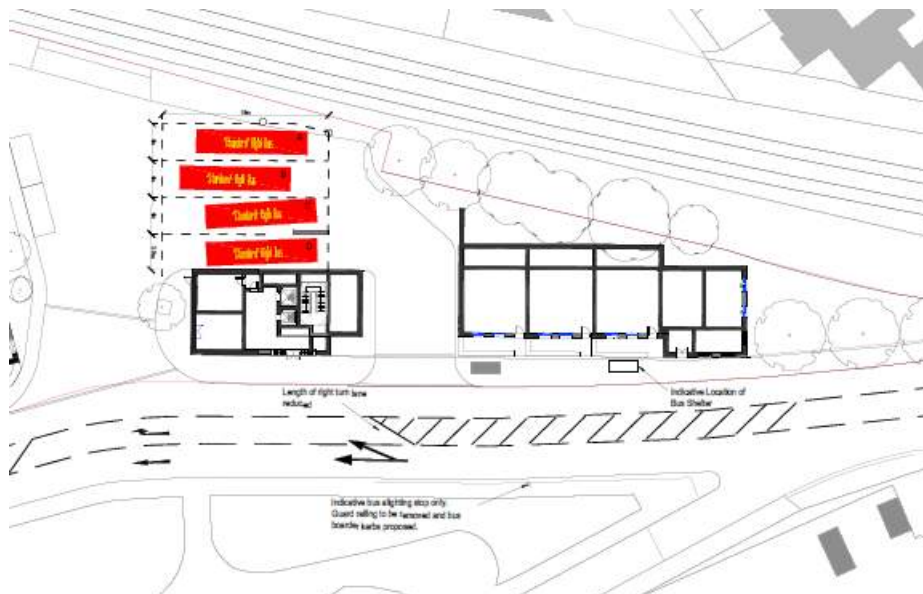
3.5.4 The table below details the key features of each option:-

Option	No. of stands	Reversing required?	Bus driver facility?
1	3	No	Yes
2	3	No	Yes
3	3	No	Yes
4	4	No	Yes
5	4	Yes	Yes

Table 3.5.4 – Summary of Block E Bus Layover Options

3.5.5 A sixth option was suggested by TfL which looked to provide the bus layover stands along the service/access road to the western boundary of the site (adjacent to the railway line). However, when this was reviewed the impact on the site was considered to be too great and it could not be accommodated without buses having to undertake a reversing manoeuvre. This option was not, therefore, progressed.

3.5.6 In order to progress the design of Option 1 further liaison with TfL has taken place and the latest layout is detailed below:-



Option 1 – Updated Layout

3.6 Network Rail

3.6.1 Network Rail provided a series of comments during the LBRuT determination period which resulted in a number of contribution sums being agreed, which are to be secured by a S106 Agreement, including:-

- Railway Safety £15,000
- Level Crossing Improvements £60,000
- Station Access Feasibility £30,000

3.6.2 Following on from the dialogue with Network Rail a pedestrian survey of the activity at the entrance/exit at North Sheen Station has been undertaken and the results are discussed in detail later in this report.

3.7 South Western Rail

- 3.7.1 South Western Rail also provided a number of comments during the LBRuT determination period particularly focusing on the limitations of access to the station for passengers with mobility issues and disabilities as well as potential improvements to passenger facilities within the station itself.
- 3.7.2 During this period a contribution of £40,000.00 was suggested towards improvements within the station. However, the improvement contribution to North Sheen station was not agreed by the applicant during the determination of the original submission application as the works were due to be covered by the Community Infrastructure Levy list and as such it was considered that the works should be funded from this sum.
- 3.7.3 It is, however, acknowledged that the Community Infrastructure Levy regulations have since changed and as such this aspect of the development will likely be the subject of further discussions during the GLA determination period.

4 Site History

- 4.1 In 1991 an application for the erection of two non-food retail units was granted on the former Jewson site.
- 4.2 A further application was granted, in 1992, for change of use from open air car sales to car parking and part bus lay-by facility on the former Tradex site in association with the Homebase store that was under construction at the time.
- 4.3 In 1999 an application for the extension of the garden centre element of the Homebase store was granted.
- 4.4 The site currently consists of Homebase and Pets at Home retail units with associated car parking and servicing area.
- 4.5 In addition, a bus terminus occupies the northern section of the site which provides layover parking for 5 buses, associated with services 493 and R70, which also incorporates an alighting point for passengers. No passenger boarding or waiting facilities are provided within the terminus area.
- 4.6 Buses drive into the terminus area and stop allowing any passengers to alight within the immediate terminus area. The bus then manoeuvres forward and then reverses into the staggered bays to leave the site in forward gear. The manoeuvres can be undertaken within the terminus area and apart from the initial entry and final exit movements there is no conflict with traffic entering or exiting the site.
- 4.7 There is also a bus layover area within the Sainsbury's supermarket site to the east of the Homebase site. This provides two layover stands for service 371.

5 Existing Situation

5.1 The Site and Surrounding Area

5.1.1 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;

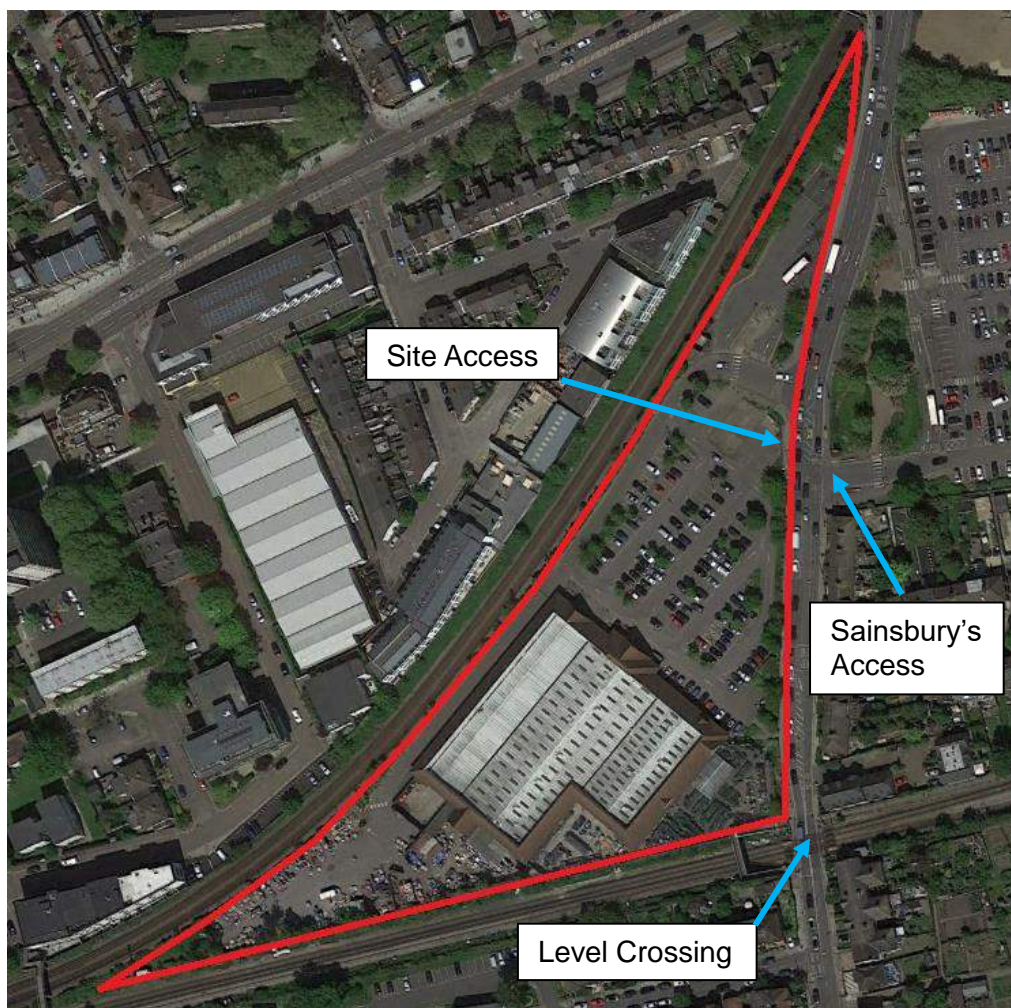


Figure 5.1.1 – Approximate extents of site (Imagery © 2018 Google)

5.1.2 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.

5.1.3 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.

5.1.4 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.

5.2 Existing Traffic Flows

5.2.1 Fully classified traffic counts at both the site access and the access to Sainsbury's opposite were undertaken by Nationwide Data Collection Ltd on 2nd October 2018. 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 C**.

5.2.2 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

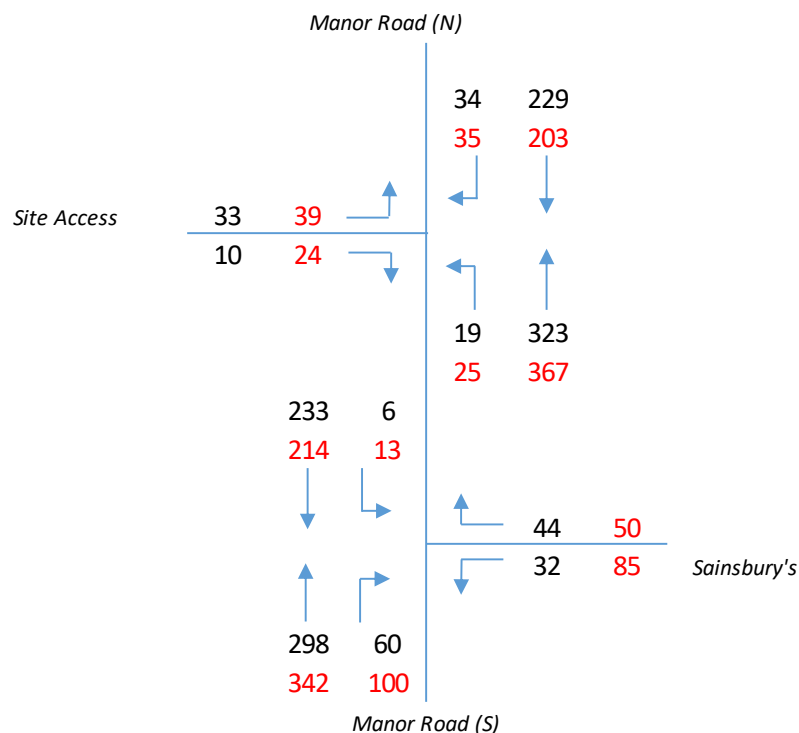


Figure 5.2.2 – Recorded peak hour vehicle movements

5.2.3 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 5.2.3 – Existing total vehicle movements at the site access

5.2.4 However, these numbers include large vehicles, the majority of which are passenger service vehicles that are associated with the bus terminus and will continue to occur. 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 5.2.4 – Existing light vehicle movements at the site access

5.3 Level Crossing

5.3.1 On Manor Road, adjacent to the southern boundary of the site, a level crossing is present, as indicated on Figure 5.1.1. On 2 October 2018, Nationwide Data Collection Ltd undertook surveys of the activations of the level crossing and the associated queues that formed.

5.3.2 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.

5.3.3 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.

5.4 *The Existing Highway Network*

- 5.4.1 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.
- 5.4.2 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.
- 5.4.3 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.
- 5.4.4 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.
- 5.4.5 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, further details of these bus stops are given in section 6.4.
- 5.4.6 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.
- 5.4.7 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.

5.4.8 Towards the eastbound bus stop on Lower Richmond Road (shown on **Figure 4** at **Appendix A**), 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.

5.5 *Parking Stress Survey*

5.5.1 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.

5.5.2 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 D**.

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

5.5.4 Further consideration of the implications of the development on existing on-street parking provision is provided in Section 7.2 of this report.

5.6 *Pedestrian Activity Survey at North Sheen Station*

5.6.1 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.

5.6.2 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.

5.6.3 The full results of the surveys are presented at **Appendix E** 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
AM Total	519	145 (1)	477	134 (2)			458	142 (2)
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
PM Total	193 (1)	330 (1)	208 (13)	302 (6)			199 (2)	293

Table 5.6.3 – Summary of pedestrian activity at North Sheen Station

5.6.4 The base data recorded during this survey is analysed in greater in Section 6.5 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.

5.7 Personal Injury Accident Data

5.7.1 Personal injury accident data has been obtained from Transport for London (TfL) for the local highway network in the vicinity of the site, as shown in figure 5.6.7. This data is for the 60 months to 31st December 2017, the most recent 5 year period available. A full copy of the accident data is included at **Appendix F**.

5.7.2 As can be seen, 31 incidents have occurred in the study area. Two of these incidents were ‘serious’ and the others ‘slight’ in severity with no fatal incidents.

-
- 5.7.3 The majority (25) of the incidents occurred in the vicinity of the A316 roundabout junction. Of these, seven involved a pedestrian, three involved a pedal cycle and one involved a mobility scooter. Of the seven pedestrian incidents it appears that the pedestrian was at fault in three cases.
- 5.7.4 The remaining six incidents occurred at various positions along Manor Road, two involving a pedestrian and one a pedal cycle. In one instance it appears that the pedestrian was at fault.
- 5.7.5 Reasons given for the incidents involving only motorised vehicles include: not looking properly, loss of control, poor turn or manoeuvre, sudden braking, following too close and travelling to fast for conditions.
- 5.7.6 Of the two serious incidents, one involved a pedal cyclist colliding with a car (ref: 0114TW60241). From the information provided it is not clear who was at fault, however it is inferred that either the driver or rider was impaired by alcohol.
- 5.7.7 The other serious incident (ref: 0115TW60298) involved a motorcycle that was travelling at excess speed that then braked suddenly causing the driver to go over the handlebars.
- 5.7.8 The figure provided overleaf illustrates the location of recorded incidents within the study area.

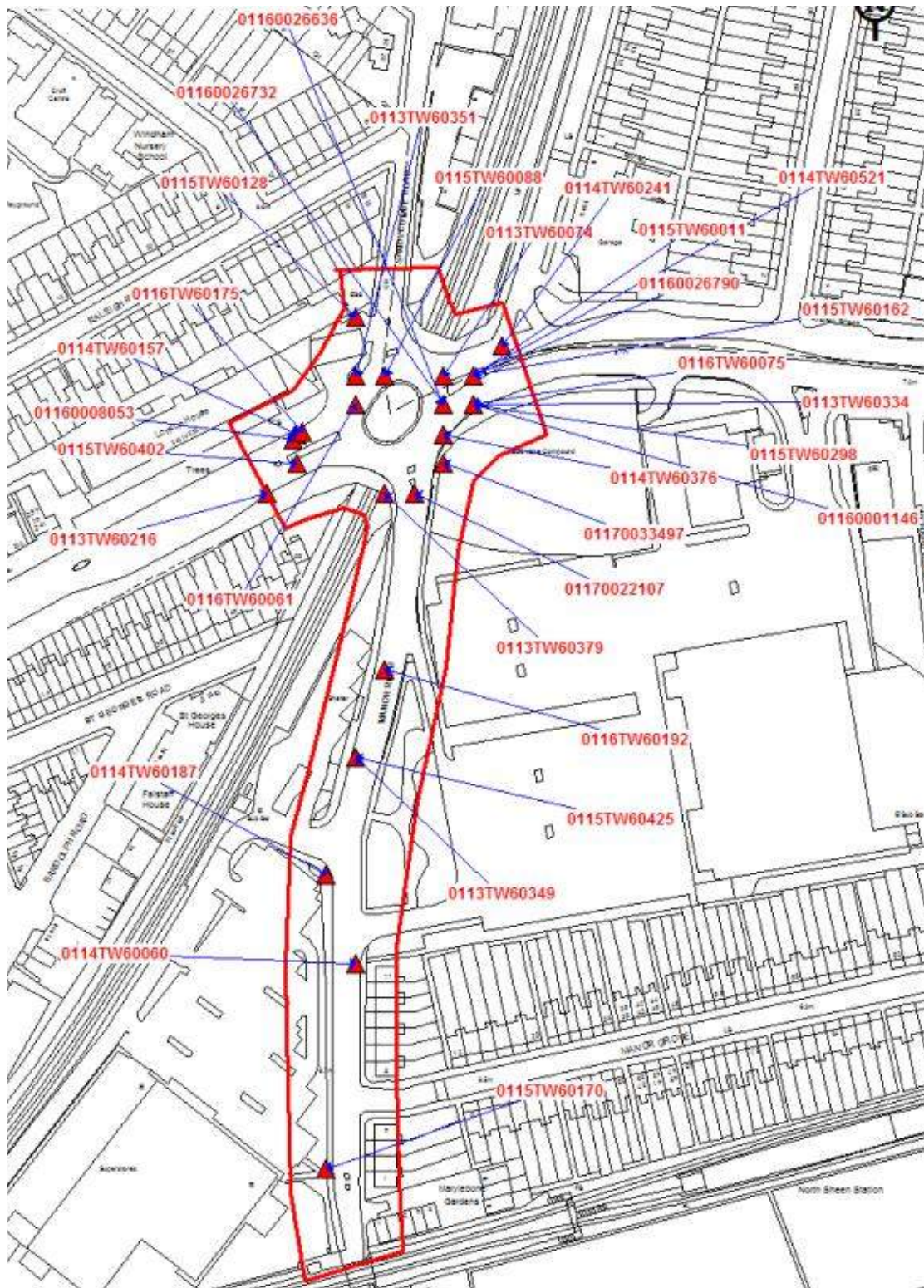


Figure 5.7.8 – Plot of incident locations from TfL

6 Accessibility by Non-Car Travel Modes

6.1 Overview

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

- Accessibility on foot;
- Accessibility by cycle;
- Accessibility by bus; and
- Accessibility by rail and tube

6.1.2 A PTAL (public transport access levels) report has been obtained using the online WebCAT tool and the site has a value of 5; 'very good'. The full report is included at **Appendix G**.

6.2 Accessibility on Foot

6.2.1 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. Walking is the most sustainable form of transport and provides one way of reducing pressure on the environment. People walking are also travelling at a pace that gives them a greater connection with their surroundings and can have positive benefits in relation to a community's security through increased surveillance.

6.2.2 Walking stimulates both personal health and the health of communities and local economies. Government health improvement advice states that just 30 minutes brisk walking 5 times a week can bring about significant reductions in the risk of coronary heart disease, high blood pressure and diabetes.

6.2.3 In relation to acceptable walking distances, Manual for Streets is the latest national guidance on the design of residential roads and offers the following guidance in Section 4.4 "The walkable neighbourhood".

“Walkable neighbourhoods are typically characterised by having a range of facilities within 10 minutes (up to about 800m) walking distance of residential areas which residents may access comfortably on foot. However, this is not an upper limit and PPG13 states that walking offers the greatest potential to replace short car trips, particularly those under 2 km. MfS encourages a reduction in the need to travel by car through the creation of mixed-use neighbourhoods with interconnected street patterns, where daily needs are within walking distance of most residents.” It is noted that PPS 13 has been superseded by NPPF but the general guidance offered in Manual for Streets is considered relevant.

- 6.2.4 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

- 6.2.5 **Appendix A (Figure 2)** 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. The following amenities and facilities are all located within walking distance of the site.

- 6.2.6 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.

-
- 6.2.7 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.
- 6.2.8 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.
- 6.2.9 It is therefore considered that local facilities are highly accessible by pedestrians with a wide range of key amenities within a "walking neighbourhood" from the site.
- 6.2.10 The IHT publication "*Guidelines for Planning for Public Transport in Developments*" identifies maximum walking distances to bus stops as 400m, with 300m desirable. 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.
- 6.3 *Accessibility by Cycle***
- 6.3.1 Like walking, cycling has an important part to play in reducing congestion, improving accessibility and reducing pollution. A further benefit of cycling is linked to increased general health and fitness which has personal benefits as well as economic benefits for the nation in terms of health service costs. The bicycle is generally more affordable than the car and hence there are social equity benefits to the promotion of cycling. Cycling may also allow people without cars to reach destinations that they may otherwise be unable to reach.

6.3.2 It is indicated in PPG13 (2001) that “cycling has the potential to substitute for short car trips, particularly those under 5km and to form part of a longer journey by public transport”. However, ‘Building Sustainable Transport into New Developments’ (2008) identifies that “people may be willing to walk or cycle further where their surroundings are more attractive, safe and stimulating”. Furthermore, the National Travel Survey identifies longer cycle journeys than 5km with an average distance of 5.3km and an 85th percentile distance of 7.4km.

6.3.3 In relation to the application site; cycling distances from local centres and key locations within cycling distance are as follows. The plan at **Appendix A (Figure 3)** indicates destinations which lie within 5km and 7.5km radii of the application site. It is noted that cycling 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 site is accessible by cycle.

Origin/Destination	Distance
North Sheen Station	0.1km
North Sheen	0.7km
Kew	1.3km
Richmond Station	1.5km
Richmond Town Centre	1.6km
Kew Gardens Station	1.7km
East Sheen	2.1km
East Twickenham	2.5km
Chiswick	3.8km
Roehampton	4.2km
Brentford	4.9km
Hammersmith	5.7km
West Kensington	7.2km
Shepherd’s Bush	7.3km
Kington upon Thames	7.4km

6.3.4 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.

6.3.5 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.

6.4 Accessibility by Bus

6.4.1 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. **Appendix A (Figure 4)** details the location of these stops are as follows;

Manor Road

Location:	Manor Road
Reference:	Sainsbury's (SU)
Distance to stop:	Approx 170m from site
Direction of travel:	Buses travelling southbound
Facilities:	Pole with flag, timetable information, road markings
Bus services:	371

Location:	Manor Road
Reference:	Sainsbury's (SC)
Distance to stop:	Approx 180m from site
Direction of travel:	Buses travelling northbound
Facilities:	Pole with flag, shelter with seating, timetable information
Bus services:	371, 493, R70

Lower Mortlake Road

Location:	Lower Mortlake Road
Reference:	Manor Road
Distance to stop:	Approx 340m from site
Direction of travel:	Buses travelling southwest-bound
Facilities:	Pole with flag, lay-by
Bus services:	H22, H37

Location: Lower Mortlake Road
Reference: Manor Circus (SB)
Distance to stop: Approx 420m from site
Direction of travel: Buses travelling southwest-bound
Facilities: Pole with flag, shelter with seating, timetable information, road markings
Bus services: 190, 371, 391, 419, 493, H22, H37, N22, R68, R70

Location: Lower Mortlake Road
Reference: Manor Circus (SA)
Distance to stop: Approx 440m from site
Direction of travel: Buses travelling northeast-bound
Facilities: Pole with flag, shelter with seating, timetable information, road markings
Bus services: 190, 371, 391, 419, 493, H22, H37, N22, R68, R70

Lower Richmond Road

Location: Lower Richmond Road
Reference: Sandycombe Road (SL)
Distance to stop: Approx 390m from site
Direction of travel: Buses travelling northeast-bound
Facilities: Pole with flag, shelter with seating, timetable information, road markings
Bus services: 190, 419, N22, R68

Sandycombe Road

Location: Sandycombe Road
Reference: Gainsborough Road (SP)
Distance to stop: Approx 400m from site
Direction of travel: Buses travelling southbound
Facilities: Pole with flag, shelter with seating, timetable information, road markings
Bus services: 391

6.4.2 A summary of the services available at these bus stops is given below:

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 6.4.2 – Summary of bus services

6.4.3 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.

6.5 Accessibility by Rail and Tube

6.5.1 The closest train station to the site is North Sheen Station located approximately 180m to the east of the site. 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.

-
- 6.5.2 This station provides services to Chiswick, London Waterloo, Wimbledon, Putney and other local destinations.
- 6.5.3 As detailed in Section 5.6 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.
- 6.5.4 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.
- 6.5.5 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.
- 6.5.6 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.
- 6.5.7 In addition, Richmond Station is located approximately 1.5km from the site which equates to a 30 minute walk or 7½ minute cycle journey. Richmond Station is managed by South West Railway and provides 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.
- 6.5.8 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.

-
- 6.5.9 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.
- 6.5.10 District line underground services are also available at approximately 10 minute intervals.
- 6.5.11 Both of these provide links to the wider Transport for London network with a wide range of possibilities for onward travel. The locations of the stations are shown on **Figure 4 at Appendix A.**

Accessibility Summary

- 6.5.12 The site is considered to be 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.
- 6.5.13 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.

7 Development Proposals

7.1 *Development Overview*

- 7.1.1 The development proposes the demolition of existing buildings and structures and comprehensive residential-led redevelopment of five buildings of between three and ten storeys to provide 433 residential units (Class C3), flexible retail /community / office uses (Classes A1, A2, A3, D2, B1), a police facility (Use Class B1), a bus layover with driver facilities (Sui Generis Use), provision of car and cycle parking, landscaping, public and private open spaces and all other necessary enabling works with vehicular access from Manor Road.
- 7.1.2 Block E, which incorporates the bus layover area and associated facility with residential units above, has been designed to accommodate 4 bus stands to serve services 493 and R70. The layover area, the layout of which can be seen in Section 2, has been designed in accordance with TfL's Operational & Construction Guidelines which sets out the design parameters of facilities such as these in terms of stand sizes, clearance heights and manoeuvring space requirements. In order to comply with the guidelines all four bays can be accessed and egressed independently without any reversing manoeuvres being required. Attached at **Appendix H** is **Drawing 11205-009** which shows the swept path analysis of each bus accessing and egressing this area of the site.
- 7.1.3 Also attached at **Appendix H** is **Drawing 11205-008** which details the amendments proposed to the white lining on Manor Road to accommodate the manoeuvre of buses exiting the site and pulling up to the northbound boarding bus stop on Manor Road, which is proposed to be moved some 15 metres to the north to enable passengers to board the bus. A southbound alighting only stop is also proposed on Manor Road as a replacement to the existing facility within the existing bus layover area. These works will be secured via a planning condition and associated S 2778 Agreement (Highways Act 1980).
- 7.1.4 Dedicated driver facilities are also incorporated within Block E along with an area for use by the local police force. The layover will be provided with passive Electric Vehicle Charging capabilities to future proof the operation of the network.

- 7.1.5 During the construction period of Block E, a temporary bus layover area will be provided within the main part of the site. The layout of this area is shown indicatively on **Drawing 11205-010** which is attached at **Appendix H**. the swept path analysis and pedestrian linkages are also shown.
- 7.1.6 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 I**.
- 7.1.7 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.
- 7.1.8 The residential apartments are proposed to be a mix of private and affordable units of different sizes, as shown in the table below.

	Studio / 1 bed	2 bed	3 bed	Total
Private	91	137	34	262
Social	12	36	27	75
Intermediate	45	51	0	96
Total	148	224	61	433

Table 7.1.7 – Schedule of residential accommodation

- 7.1.9 The two commercial units are located at ground floor level of Blocks A and D facing onto Manor Road. The Block D unit section extends towards the level crossing both areas flanking the main entrance to the site, opposite Manor Grove.

7.2 Parking Provision

- 7.2.1 The development is to be “car-free” with no standard car parking spaces provided. Fourteen 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 prepared by Gillespies (see sections 1.24 and 1.25 of the Landscape Addendum report).

-
- 7.2.2 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.
- 7.2.3 The 'Maximum Parking Standards' set out in the London Plan (2016) note that; "*All developments in areas of good public transport accessibility (in all parts of London) should aim for significantly less than 1 space per unit*". Moving forward, the Draft London Plan (2019) proposes that all new developments in areas of PTAL 5 – 6 should be car-free. It is therefore considered that the car-free proposals are in conformity with the current standards and also satisfy the future aspirations of the draft London Plan.
- 7.2.4 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.
- 7.2.5 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 D 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.
- 7.2.6 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.
- 7.3 Cycle Parking**
- 7.3.1 With regards to cycle parking; Chapter 10 – 'Transport' of the draft London Plan sets out the applicable standards for the commercial and residential elements of the development. These are summarised overleaf:

	Use class	Long stay	Short stay
Commercial	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
Residential	C3	1 space per studio/1 bed unit, 2 spaces all other dwellings	1 space per 40 units

Table 7.3.1 – Draft London Plan 2019 - Table 10.2: Minimum Cycle Parking Standards

7.3.2 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	
	Requirement	Provision	Requirement	Provision
Commercial Flexible A1/A2/A3/D2/B7 490sqm	3	3	27	28
Commercial Police Facility B1 26sqm Bus Driver Facility sui-generis 14sqm	1	1	1	1
Residential C3 433 Units	787	798	11	11
Total	791	802	39	40

Table 7.3.2 – Draft London Plan 2019 - Cycle parking requirements for the Amended Proposed Development

7.3.3 The development proposes to provide a total of 798 long stay cycle parking spaces which is above the standards required in order to promote the use of this transport mode. The vast majority of these spaces are within dedicated areas within the confines of the residential blocks. However, two external facilities will serve Blocks A and D which will take the form of secure “containers” located within the communal courtyards. The required short stay cycle parking provision is to be located throughout the open space of the site, incorporated into the landscaping.

7.3.4 Cycle parking, in the form of two Sheffield Stands giving 4 spaces, are located within Block D for the commercial elements of the Amended Proposed Development.

7.3.5 Below is an extract from the Assael Architecture Design and Access Statement Addendum which details the locations of the cycle parking/storage across the site. 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.



Figure 7.3.4 – Location of Cycle Parking/Storage (Assael Architecture)

7.4 Access

7.4.1 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. Highway related works are also proposed on Manor Road in association with the Block E element of the scheme and the proposed bus layover area. A new egress is proposed along with associated amendments to the road markings, relocation of the northbound bus stop and the introduction of a southbound alighting only bus stop.

7.4.2 TfL have plans to make safety improvements to the roundabout junction to the north of the site, with work expected to begin in winter 2019. These works are expected to include signalising 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.

7.4.3 However, during more recent pre-application discussions it has been established that the scheme design costs have risen. We have also been advised that TfL will not have a more accurate cost estimate until the end of concept design at the beginning of 2020 but it is likely that this will result in an uplift of at least £50,000 to the contribution. Therefore, TfL have requested a revised financial contribution of £380,000 towards the implementation of the Manor Circus scheme and this will be negotiated during the determination of the application.

7.5 Servicing

7.5.1 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.

7.5.2 Swept path analysis of a refuse collection vehicle, rigid vehicle, hydraulic inspection platform and fire appliance has been carried out and is detailed on **Drawings 11205-007** attached at **Appendix H**.

7.5.3 Further details regarding the servicing of the development are included within the site's Servicing and Delivery Management Plan, which has been prepared under separate cover.

7.6 Car Club

7.6.1 Two electric car club spaces are to be provided on site. 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.

8 Healthy Streets Approach

- 8.1.1 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 overleaf.
- 8.1.2 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.
- 8.1.3 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.
- 8.1.4 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.



Figure 8.1.1 – Ten Healthy Streets Indicators (Transport for London)

- 8.1.5 In line with the strategies incorporated into the Draft London Plan 2019 and additional guidance published by TfL a detailed Active Travel Zone assessment has been undertaken. This is attached at **Appendix J**.
- 8.1.6 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.
- 8.1.7 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.

8.1.8 Within the Draft London Plan 2019 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 below which is extracted from the "Vision Zero Action Plan".

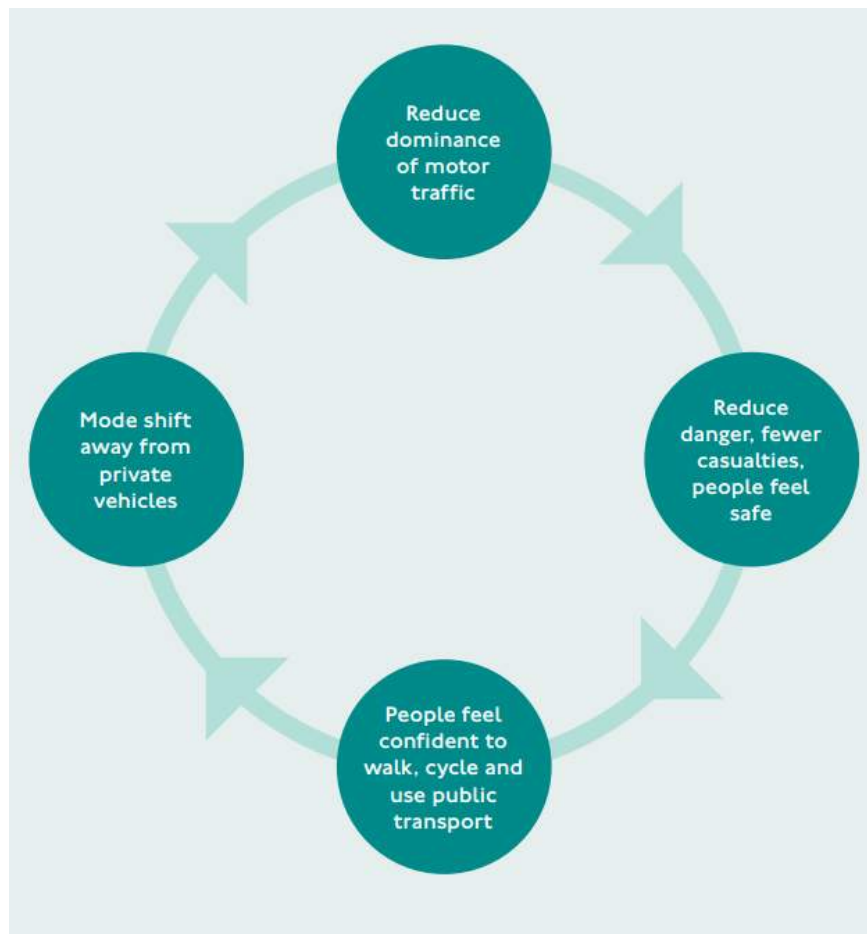


Figure 8.1.7 – Road danger reduction (Transport for London)

8.1.9 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

9 Multimodal Traffic Generations

- 9.1 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.
- 9.2 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.
- 9.3 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.

9.4 *TfL Methodology*

9.4.1 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.

9.4.2 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

9.4.3 The following table provides details of the resulting weekday AM and PM peak hour total person trip rates per unit along with the corresponding generated trips for the proposed private 262 units. The full TRICS outputs are contained in **Appendix K**.

Time	Trip Rate per Unit	Generations from 262 units
Weekday AM Peak (08:00-09:00)	0.542	142
Weekday PM Peak (17:00-18:00)	0.449	118
Weekday Daily	4.565	1,196

Table 9.4.3 – Total person trip generations for private residential element (262 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

- 9.4.4 The following tables provide details of the weekday AM and PM peak hour total person trip rates per unit along with the corresponding generated trips for the proposed 171 affordable units. The full TRICS data is contained in **Appendix K**.

Time	Trip Rate per Unit	Generations from 171 units
Weekday AM Peak (08:00-09:00)	0.646	110
Weekday PM Peak (17:00-18:00)	0.450	77
Weekday Daily	6.702	1146

Table 9.4.4 – Total person trip generations - affordable residential (171 units)

- 9.4.5 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)	252
Weekday PM Peak (17:00-18:00)	195
Weekday Daily	2,342

Table 9.4.5 – Total person trip generations

- 9.4.6 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 L**.

	Richmond upon Thames 004	Richmond upon Thames	England
Method of Travel to Work	% 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 9.4.6 – Census Data – Method of Travel to Work

9.4.7 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 9.4.7 – Adjusted modal splits

9.4.8 The modal splits identified above have been applied to the total person trip rates and generations set out in Table 9.4.5 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.

9.4.9 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.

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

		8 - 9 AM			17 - 18 PM			Daily		
		Arr	Dep	Two-way	Arr	Dep	Two-way	Arr	Dep	Two-way
Method of Travel to Work	%	36	216	252	122	73	195	1150	1192	2342
Underground, Metro, Light Rail, Tram	32.7%	12	71	82	40	24	64	376	390	765
Train	27.1%	10	59	68	33	20	53	312	323	635
Bus, Minibus or Coach	11.3%	4	24	28	14	8	22	130	135	264
Taxi	0.3%	0	1	1	0	0	1	4	4	7
Motorcycle, Scooter or Moped	2.5%	1	5	6	3	2	5	29	30	58
Driving a Car or Van	2.9%	1	6	7	4	2	6	34	35	68
Passenger in a Car or Van	0.1%	0	0	0	0	0	0	1	1	3
Bicycle	8.9%	3	19	22	11	7	17	103	106	209
On Foot	13.0%	5	28	33	16	9	25	150	155	305
Other Method of Travel to Work	1.2%	0	2	3	1	1	2	13	14	27
Bus + Underground		16	95	111	54	32	86	506	524	1030

Table 9.4.10 – AM, PM and Daily Multimodal Trip Generations

Commercial Multimodal Generations

9.4.11 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.

9.4.12 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.

9.5 Sanderson's Methodology

9.5.1 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 M**.

9.5.2 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 9.4.11 and 9.4.12.

Time	Trip Rate per Unit	Generations from 262 Units
Weekday AM Peak (08:00-09:00)	0.334	88
Weekday PM Peak (17:00-18:00)	0.345	90
Weekday Daily	3.637	953

Table 9.5.2a – Total person trip generations for private residential (262 units)

Time	Trip Rate per Unit	Generations from 171 Units
Weekday AM Peak (08:00-09:00)	0.632	108
Weekday PM Peak (17:00-18:00)	0.463	79
Weekday Daily	6.565	1,123

Table 9.5.2b – Total person trip generations - affordable residential (171 units)

Time	Total generations
Weekday AM Peak (08:00-09:00)	196
Weekday PM Peak (17:00-18:00)	169
Weekday Daily	2,076

Table 9.5.2c – Total person trip generations

9.5.3 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 = 5).

-
- 9.5.4 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.
- 9.5.5 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.
- 9.5.6 The 2017 National Travel Survey (Table NTS0409) identifies that commuting (i.e. Travel to Work journeys) accounts for just 15% of all journey purposes. It is considered that the mode of travel associated with other common journey purposes such as education / escort education (12%), shopping (19%), personal business (10%) 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.
- 9.5.7 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.
- 9.5.8 Using the multimodal TRICS data for the 'Privately Owned Flats' element of the development, the predicted modal split is detailed in Table 9.5.8. 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.

		Modal Share			Two-way Trip Generation		
	Mode of Travel	AM	PM	Total	AM	PM	Total
Active Transport	Pedestrians	34%	33%	43%	66	56	893
	Cyclists	1%	2%	1%	2	3	18
Private Transport	Taxis	4%	1%	3%	7	2	59
	Cars	3%	9%	5%	6	15	99
	LGV	1%	1%	1%	2	1	29
	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%	55	39	427
	Overground	5%	4%	3%	11	7	68
	Bus	24%	26%	21%	47*	43*	442*
Total People		100%	100%	100%	196	169	2076

Table 9.5.8 – Predicted modal split based on multimodal TRICS data

9.5.9 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 102 people in the AM peak period, 82 people in the PM peak period and 869 people daily.

9.6 Comparison of results

9.6.1 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 9.6.1 – Modal Split % Comparison

9.6.2 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	765	427
Train	635	68
Bus, Minibus or Coach	264	442
Taxi	7	59
Motorcycle, Scooter or Moped	58	6
Driving a Car or Van	68	99
Passenger in a Car or Van	3	25
Bicycle	209	18
On Foot	305	893
Other Method of Travel to Work	27	0
Bus and Underground	1030	869

Table 9.6.2 – Trip Generation Comparison

9.6.3 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.

9.6.4 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.

9.6.5 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 12 – 14 of this report.

10 Vehicle Traffic Generations

10.1 Trip Generations

10.1.1 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 K and are summarised below:

	Trip Rate Per Dwelling		Traffic Generations from 265 Units		
	Arrivals	Departures	Arrivals	Departures	Total
AM Peak (08:00-09:00)	0.032	0.081	8	21	29
PM Peak (17:00-18:00)	0.054	0.031	14	8	22

Table 10.1.1 (a) – Traffic generations for private residential element (265 units)

	Trip Rate Per Dwelling		Traffic Generations from 171 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	6	15

Table 10.1.1 (b) – Traffic generations for affordable residential element (171 units)

- 10.1.2 The predicted residential vehicle trips are 47 vehicle movements two-way in the AM and 37 in the PM peak hours. This equates to approximately one vehicle every 1½ to 2 minutes in the AM and PM peak hours.
- 10.1.3 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.
- 10.1.4 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.

10.1.5 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.

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

	Time Period	Trip Rates (per 100sqm GFA)		Traffic Generations		
		Arrivals	Departures	Arrivals	Departures	Two-way
Commercial Space (583sqm)	AM (08:00-09:00)	5.180	4.773	30	28	58
	PM (17:00-18:00)	6.369	6.933	34	37	71

Table 10.1.6 - Trip rates and generations for proposed commercial use

10.1.7 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.

10.1.8 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 (480.1sqm)	(08:00-09:00)	8	7	15
	(17:00-18:00)	9	9	18

Table 10.1.8 - Trip generations for proposed commercial use with reductions applied

10.1.9 This equates to approximately one vehicle every 3 -4 minutes in the AM and PM peak hours.

10.2 **Total Traffic Generations**

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

Land Use	Time Period	Traffic Generations		
		Arrivals	Departures	Two-way
Private Flats	AM	8	21	29
Affordable Flats		5	13	18
Commercial		8	7	15
Total		21	41	62
Private Flats	PM	14	8	22
Affordable Flats		9	6	15
Commercial		9	9	18
Total		32	23	55

Table 10.4.1 - Total proposed development vehicle trip generations

10.2.2 Taking into consideration the existing use of the development site, described in Section 5.1, the proposed development could be expected to result in a reduction of 17 traffic movements in the AM peak and 52 in the PM peak.

10.3 **Development Traffic Distribution**

10.3.1 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.

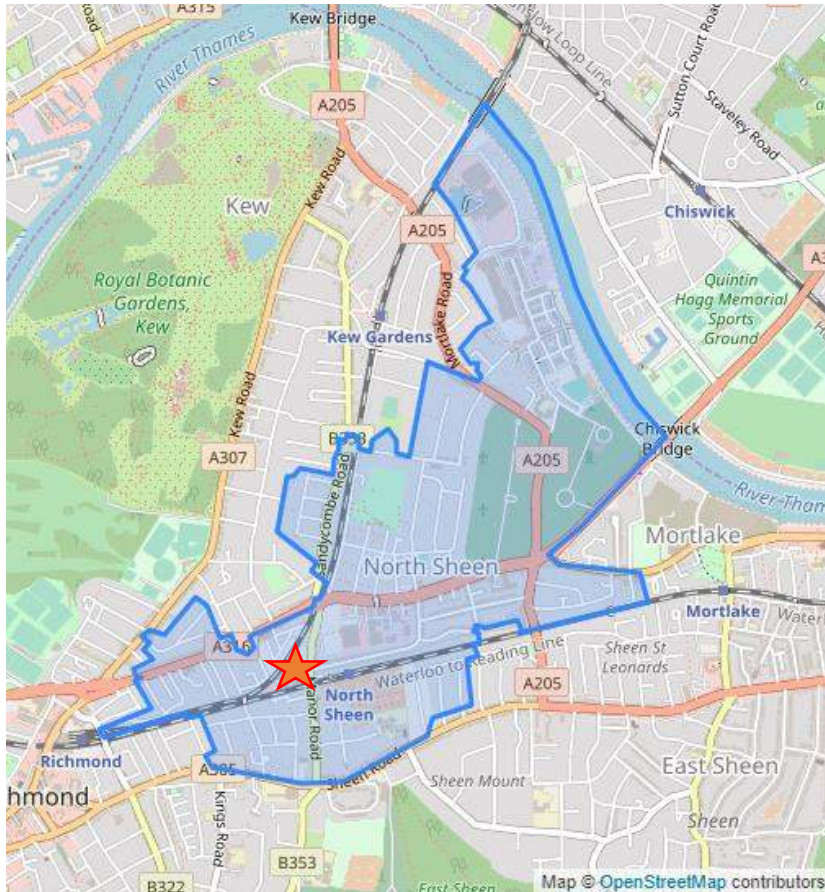


Figure 10.3.1 – Richmond upon Thames 004 MSOA (MapItUK)

- 10.3.2 The traffic distribution and resulting traffic flows are shown at **Appendix A** on **Figures 5 and 6** respectively.
- 10.3.3 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. The traffic distribution and resulting traffic flows are shown at **Appendix A**, on **Figures 7 and 8** respectively.
- 10.3.4 The total development traffic flows are shown on **Figure 9** at **Appendix A**.

11 Traffic Impact Assessment

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

11.2 *Base Traffic Flows*

11.2.1 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.

11.2.2 A diagram showing the base traffic flows is included on **Figure 10** at **Appendix A**.

11.3 *Committed Development*

11.3.1 During the pre-application discussions on the Amended Proposed Development no committed development sites have been identified.

11.4 *Traffic Growth*

11.4.1 The traffic impact of the development has been assessed at the initial year of 2018, an opening year of 2023 and a design year of 2028.

11.4.2 Traffic growth factors have been generated utilising the latest version of TEMPRO (v7.2), adjusted against Table AF15 of the Department for Transport's National Traffic Model Dataset 7.2. The growth factors used are shown below:

2018 to 2023	AM	1.0519	2018 to 2028	AM	1.0905
	PM	1.0510		PM	1.0905

11.4.3 Diagrams showing the base traffic flows growthed to 2023 and 2028 are included at **Appendix A**, on **Figures 11 and 12** respectively.

11.5 *Junction Modelling*

11.5.1 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 2023 and 2028 future years.

Site Access priority junction

11.5.2 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
	2023 Base + Dev AM		2023 Base + Dev PM	
	Max RFC	Max Queue (veh)	Max RFC	Max Queue (veh)
B-AC	0.11	0.1	0.08	0.1
C-B	0.05	0.1	0.08	0.1
	2028 Base + Dev AM		2028 Base + Dev PM	
	Max RFC	Max Queue (veh)	Max RFC	Max Queue (veh)
B-AC	0.11	0.1	0.08	0.1
C-B	0.05	0.1	0.08	0.1

Table 10.5.2 – Junctions results

11.5.3 The output results can be found at **Appendix N**.

11.5.4 This shows that, even in the worst case situation of 2028 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

11.5.5 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
	2023 Base + Dev AM		2023 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
	2028 Base + Dev AM		2028 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 10.5.5 – Junctions results

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

11.5.7 This shows that, even in the worst case situation of 2028 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

11.5.8 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.

12 Impact of the Development on the Pedestrian Network

- 12.1 TfL's multimodal assessment methodology, detailed in Chapter 9 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.
- 12.2 The multimodal trip generations set out within Table 9.4.10 of this report estimates that the development is likely to generate in the order of 33 pedestrian trips (two-way) in AM peak, 25 pedestrian trips (two-way) in the PM peak hour and 305 trips (two-way) daily.
- 12.3 Further to the above, those utilising public transport modes are expected to generate an additional pedestrian demand in the order of 179 trips (two-way) in the AM, 139 trips in the PM and 1,665 trips (two-way) daily. These journeys on foot would be limited to between the site and local bus stops / North Sheen Station.
- 12.4 The following assessment seeks to provide a realistic estimate of the distribution of pedestrian movement about the site and evaluate the suitability of existing crossing facilities.
- 12.5 The chart below shows the split between journey purposes as a % of all walking trips based on the results of the National Travel Survey (Table NTS0409 – Average number of trips by purpose and main mode).

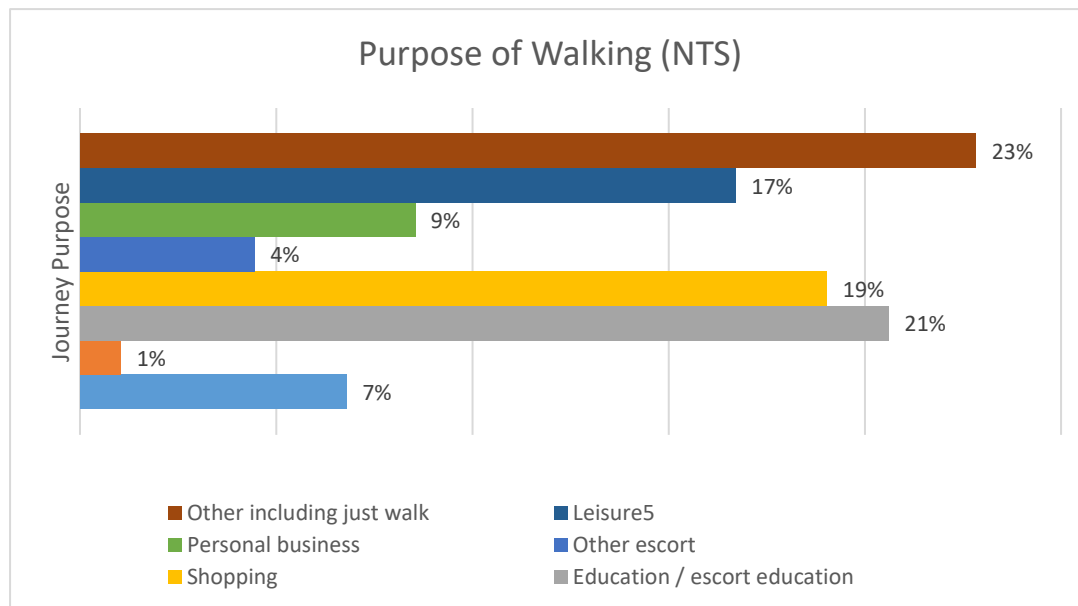


Figure 12.5 – Purpose of Walking (NTS)

12.6 For clarity the journey purposes are defined below;

- **Commuting:-** Trips to / from home to usual place of work
- **Business:-** Personal trips in course of work.
- **Education:-** Trips to school or college.
- **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.
- **Escort trips:-** Accompanying someone else (e.g. taking a child to school)

12.7 Based on the above information, the most common reasons people walk are for education (including escorting others), shopping, leisure and for other reasons including 'Just Walking'.

12.8 **Just Walking (23%)**

12.8.1 This journey purpose would account for 70 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.

12.8.2 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.

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

12.9.1 This journey purpose would account for 64 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.

12.9.2 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	75
5-11 years	54
12 -17 years	32
Total	161

Table 12.9.2 – Proposed Development Child Yield

12.9.3 It is considered that those children walking (including being escorted) to / from school will be mostly primary school children (54 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 64 trips (two-way) associated with education appears to be reasonable.

12.9.4 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)

12.9.5 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).

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

12.10 Shopping (19%)

12.10.1 This journey purpose would account for 114 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.

12.10.2 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.

12.11 Leisure (17%)

12.11.1 This journey purpose would account for 52 trips (two-way) daily. Again, it is considered that these trips would predominantly occur outside of typical network peak periods.

12.11.2 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)

12.11.3 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.

12.12 *Personal Business (9%)*

- 12.12.1 This journey purpose would account for 28 trips (two-way) daily. Again, it is considered that these trips would predominantly occur outside of typical network peak periods.
- 12.12.2 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.
- 12.12.3 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.

12.13 *Commuting (7%)*

- 12.13.1 This journey purpose would account for 22 trips (two-way) daily; a material proportion of which would likely occur during network peak periods.
- 12.13.2 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.

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

- 12.14.1 These journey purposes would account for 12 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.

12.15 Accessing Public Transport

- 12.15.1 As previously noted, those utilising public transport modes are expected to generate an additional pedestrian demand in the order of 179 trips (two-way) in the AM, 139 trips (two-way) in the PM and 1,675 trips (two-way) daily.
- 12.15.2 Pedestrian movements to / from North Sheen Station are expected to be in the order to 68 trips (two-way) in the AM, 53 trips (two-way) in the PM and 636 trips (two-way) daily. These movements would be required to cross Manor Road using the 0.8m wide pedestrian crossing refuge.
- 12.15.3 Pedestrian movements to / from Richmond Underground Station (via bus services along Lower Mortlake Road) are expected to be in the order of 82 trips (two-way) in the AM, 64 trips (two-way) in the PM and 765 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.
- 12.15.4 With regards to pedestrian movements to / from bus stops (specifically for bus journeys) are expected to be in the order of 28 trips (two-way) in the AM, 22 trips (two-way) in the PM and 264 trips (two-way) daily.
- 12.15.5 As described in Chapter 4 of this report, 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'.
- 12.15.6 The total number and distribution of daily pedestrian movements are illustrated within **Appendix P**, 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	104	636	55	545	31	536

Table 12.15.6 – Summary of pedestrian movements

12.16 Review of Crossing Facilities

- 12.16.1 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.
- 12.16.2 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.
- 12.16.3 Details relating to the 'circumstances of the site' and 'behaviour of road users' are provided in the Site Assessment below;

12.17 Highway Description

- 12.17.1 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 (not 0.8m wide as stated by LBRuT), 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.

- 12.17.2 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.
- 12.17.3 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.
- 12.17.4 The road is surfaced, providing adequate skid resistance for vehicles and street lighting is provided in accordance with standards for built-up areas.
- 12.17.5 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.

12.18 Existing Traffic Flows

- 12.18.1 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.
- 12.18.2 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.

- 12.18.3 However, consideration must also be given to the presence of the railway level crossing and its impact on the flow of vehicle traffic.
- 12.18.4 As set out in Section 5.3 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.
- 12.18.5 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.
- 12.18.6 As part of the TA, pedestrian surveys were undertaken identifying crossing movements along Manor Road. The study area and zones are illustrated below:

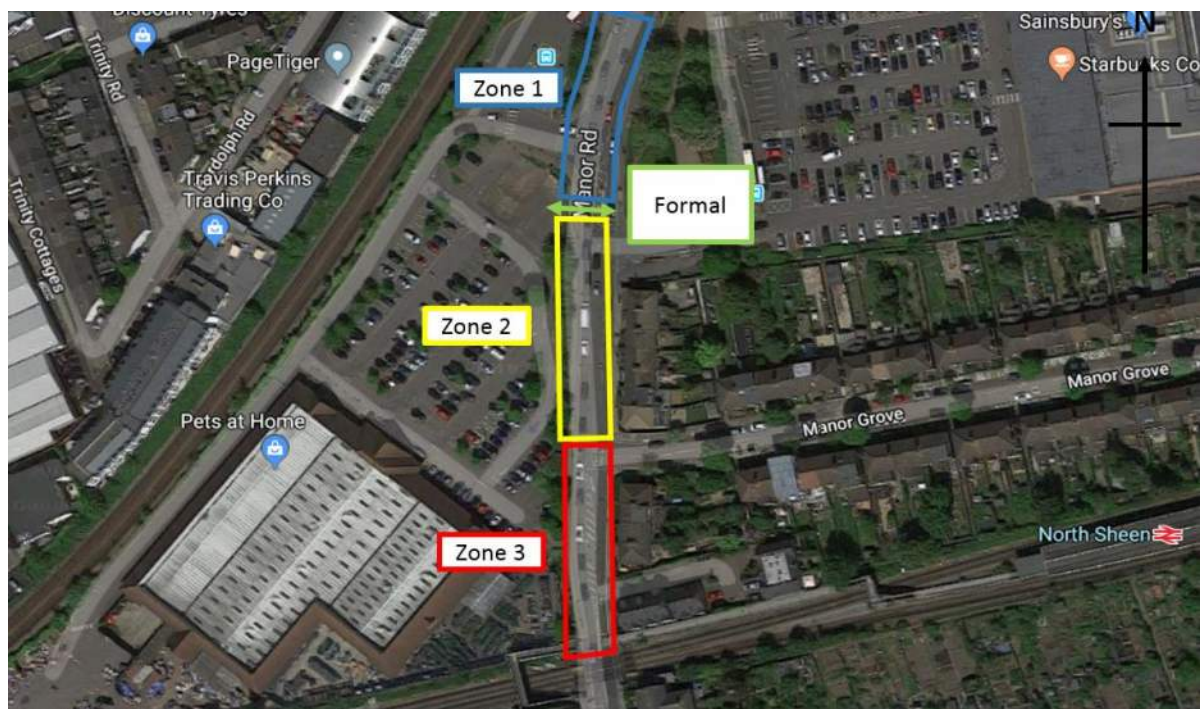


Figure 12.18.6 – Pedestrian survey study area

12.18.7 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
P/TOT	20	13	17	23	16	43	164	187

Table 12.18.7 (a) – 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
P/TOT	41	35	75	37	38	46	193	121

Table 12.18.7 (b) – PM Pedestrian survey results

12.18.8 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.

- 12.18.9 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.
- 12.18.10 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 636 movements daily.

12.19 Accident History

- 12.19.1 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 20 year period between 01/01/1999 and 31/12/2018.

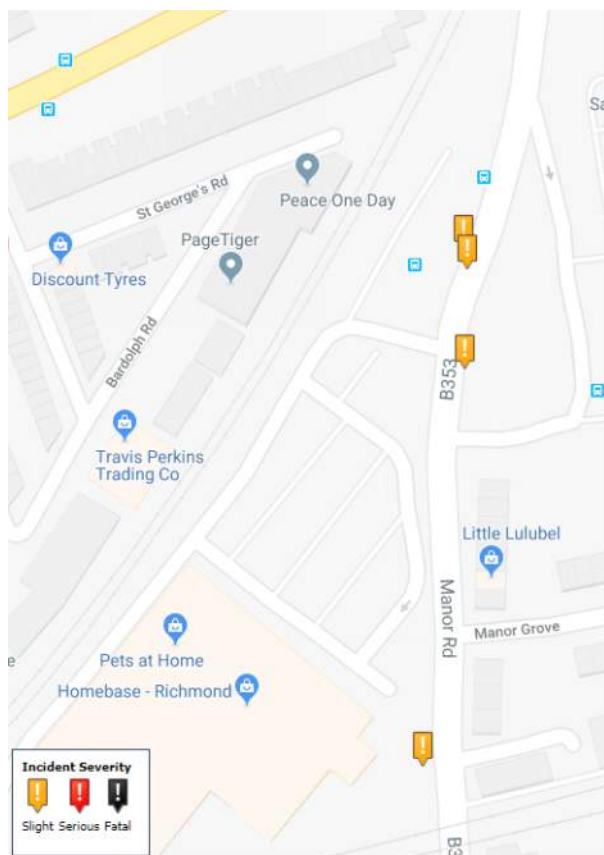


Figure 12.19.1 – Crashmap extract

-
- 12.19.2 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.
- 12.19.3 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.
- 12.19.4 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.

13 Impact of the Development on Local Bus Services

- 13.1 Based on TfL's assessment methodology, it is identified (in Table 9.4.10) that the additional demand for buses which could potentially be generated by the proposed development equates to around 111 people in the AM peak period, 86 people in the PM peak period and 1,030 people daily. These figures include all those using a bus to access Richmond Underground Station.
- 13.2 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.
- 13.3 It is our understanding that TfL recently proposed changes to some local bus services. However, due to local objection these changes are no longer proposed to be implemented. A summary of the proposed changes is provided below:

Service N°	Proposed Change	Approximate change in number of services per hour
H22	Service no longer available	-5
493	Service re-routed via the A305. Stops located approximately 550 - 600m from the site.	-6
419	To be re-numbered to 110. No change to frequency between Hammersmith and Richmond	0
H37	Every 8 minutes instead of every 6 minutes	-3
Total:		-14

Table 13.3 – Summary of proposed TfL changes to bus services

- 13.4 It should be noted that amongst the proposed changes to bus services given on the 'Proposed bus service changes in Richmond, Twickenham and Whitton' consultation information webpage TfL state that:

"Through routes 190, 391, 419 and R68, 17 buses per hour are provided which are sufficient to meet demand."

- 13.5 On this basis, it is understood that the existing demand for bus services in the local area is neither at, nor nearing, full capacity.
- 13.6 Given the anticipated increase in demand (111 people in the AM peak period, 86 people in the PM peak period and 1,030 people daily) and the number of available bus services per hour (55), the number of additional people using each service would likely be modest; in the order of 1 or 2 people. This is considered unlikely to have a material adverse effect on existing bus capacity.
- 13.7 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.
- 13.8 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 13.8 - Direction of bus travel based on 2011 Census: Origin / Destination statistics

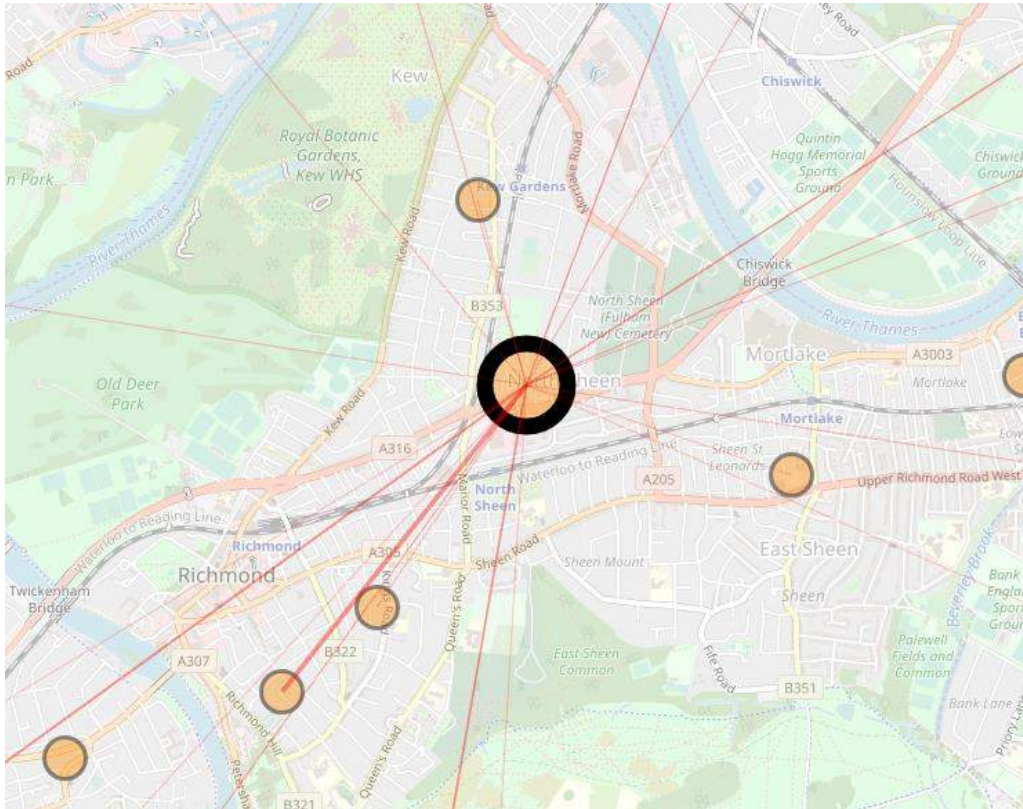


Figure 13.8 - Travel by bus

(Source: <http://commute.datashine.org.uk>)

- 13.9 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 Q**.
- 13.10 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.
- 13.11 Block E, which incorporates the bus layover area and associated facility, with residential units above, has been designed to accommodate 4 bus stands to serve services 493 and R70. The layover area, the layout of which can be seen in Section 2, has been designed in accordance with TfL's Operational & Construction Guidelines which sets out the design parameters of facilities such as these in terms of stand sizes, clearance heights and manoeuvring space requirements. In order to comply with the guidelines all four bays can be accessed and egressed independently without any reversing manoeuvres being required.

-
- 13.12 Attached at Appendix H is Drawing 11205-009 which shows the swept path analysis of each bus accessing and egressing this area of the site.
- 13.13 Also attached at Appendix H is Drawing 11205-008 which details the amendments proposed to the white lining on Manor Road to accommodate the manoeuvre of buses exiting the site and pulling up to the northbound boarding bus stop on Manor Road, which is proposed to be moved some 15 metres to the north to enable passengers to board the bus. A southbound alighting only stop is also proposed on Manor Road as a replacement to the existing facility within the existing bus layover area. These works will be secured via a planning condition and associated S278 Agreement (Highways Act 1980).
- 13.14 Dedicated driver facilities are also incorporated within Block E. The facility will be provided with passive Electric Vehicle Charging capabilities, for all stands, to future proof the operation of the network.
- 13.15 As previously discussed in Section 3.5 a number of options for the bus layover area were prepared for discussion with TfL, however, the majority of these options were dismissed as they either involved reversing movements or did not provide the requisite number of bus stands.
- 13.16 During the construction period of Block E, a temporary bus layover area will be provided within the main part of the site. The layout of this area is shown indicatively on **Drawing 11205-010** which is attached at **Appendix H**. the swept path analysis and pedestrian linkages are also shown.

14 Impact of the Development on Local Rail Services

- 14.1 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.
- 14.2 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.
- 14.3 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.
- 14.4 The results of the surveys (detailed in Section 5.6 and attached at Appendix E) 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.
- 14.5 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.
- 14.6 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.
- 14.7 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.

-
- 14.8 It is identified (in Table 9.4.10) that the additional demand for rail services which could potentially be generated by the proposed development equates to around 69 people in the AM peak period, 53 people in the PM peak period and 638 people daily.
- 14.9 Based on the above, it is considered the development could result in an increase of circa 6 – 9 people per service, or an additional 1 person per carriage, during the peak periods.
- 14.10 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.
- 14.11 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.
- 14.12 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.

15 Summary and Conclusions

- 15.1 Sanderson Associates (Consulting Engineers) Ltd has been appointed by Avanton Richmond Development Limited to advise on traffic and transportation issues surrounding the proposed redevelopment of Homebase Manor Road, North Sheen.
- 15.2 The development proposes the demolition of existing buildings and structures and comprehensive phased residential-led redevelopment to provide residential units (Class C3), flexible retail /community / office uses (Classes A1, A2, A3, D2, B1), a police facility (Use Class B1), a bus layover with driver facilities (Sui Generis Use), provision of car and cycle parking, landscaping, public and private open spaces and all other necessary enabling works with vehicular access from Manor Road.
- 15.3 The residential units are proposed to be a mix of private and affordable units including studios, 1, 2 and 3 bed.
- 15.4 The primary pedestrian and cycle entrance to the site is to be off Manor Road opposite Manor Grove with vehicular access being retained at the existing site access which will also serve the proposed new bus layover area within Block E to the north of the site.
- 15.5 The London Plan (2016) notes that; *“All developments in areas of good public transport accessibility (in all parts of London) should aim for significantly less than 1 space per unit”*. Moving forward, the Draft London Plan (2019) proposes that all new developments in areas of PTAL 5 – 6 should be car-free.
- 15.6 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 draft 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.

-
- 15.7 Cycle parking is proposed in excess of the standards contained within the draft 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.
- 15.8 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. Highway related works are also proposed on Manor Road in association with the Block E element of the scheme and the proposed bus layover area. A new egress is proposed along with associated amendments to the road markings, relocation of the northbound bus stop and the introduction of a southbound alighting only bus stop.
- 15.9 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.
- 15.10 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.
- 15.10.1 In line with the strategies incorporated into the Draft London Plan 2019 and additional guidance published by TfL a detailed Active Travel Zone assessment has been undertaken.
- 15.10.2 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.

- 15.11 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.
- 15.12 Five options for the bus layover facility were put forward to TfL for their consideration following the October 2019 meeting. However, the majority of these options were considered unacceptable by TfL as they either did not provide an appropriate number of bus stands or required buses to undertake reversing movements which is contrary to TfL guidelines.
- 15.13 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 £130,000
 - 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)
- 15.14 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 and this will be negotiated during the determination of the application.
- 15.15 A contribution of £40,000.00 was also previously suggested towards improvements within North Sheen station. However, the improvement contribution to North Sheen station was not agreed by the applicant during the determination of the original submission application as the works were due to be covered by the Community Infrastructure Levy list and as such it was considered that the works should be funded from this sum.

-
- 15.16 It is, however, acknowledged that the Community Infrastructure Levy regulations have since changed and as such this aspect of the development will likely be the subject of further discussions during the GLA determination period.
- 15.17 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

Figure 1 – Site Location Plan

Figure 2 – 500m, 1km & 2km Indicative Walking Radii

Figure 3 – 5km & 7.5km Indicative Cycling Radii

Figure 4 – Location of Public Transport Facilities

Figure 5 – Residential Development Traffic Distribution

Figure 6 – Residential Development Traffic Flows

Figure 7 – Commercial Development Traffic Distribution

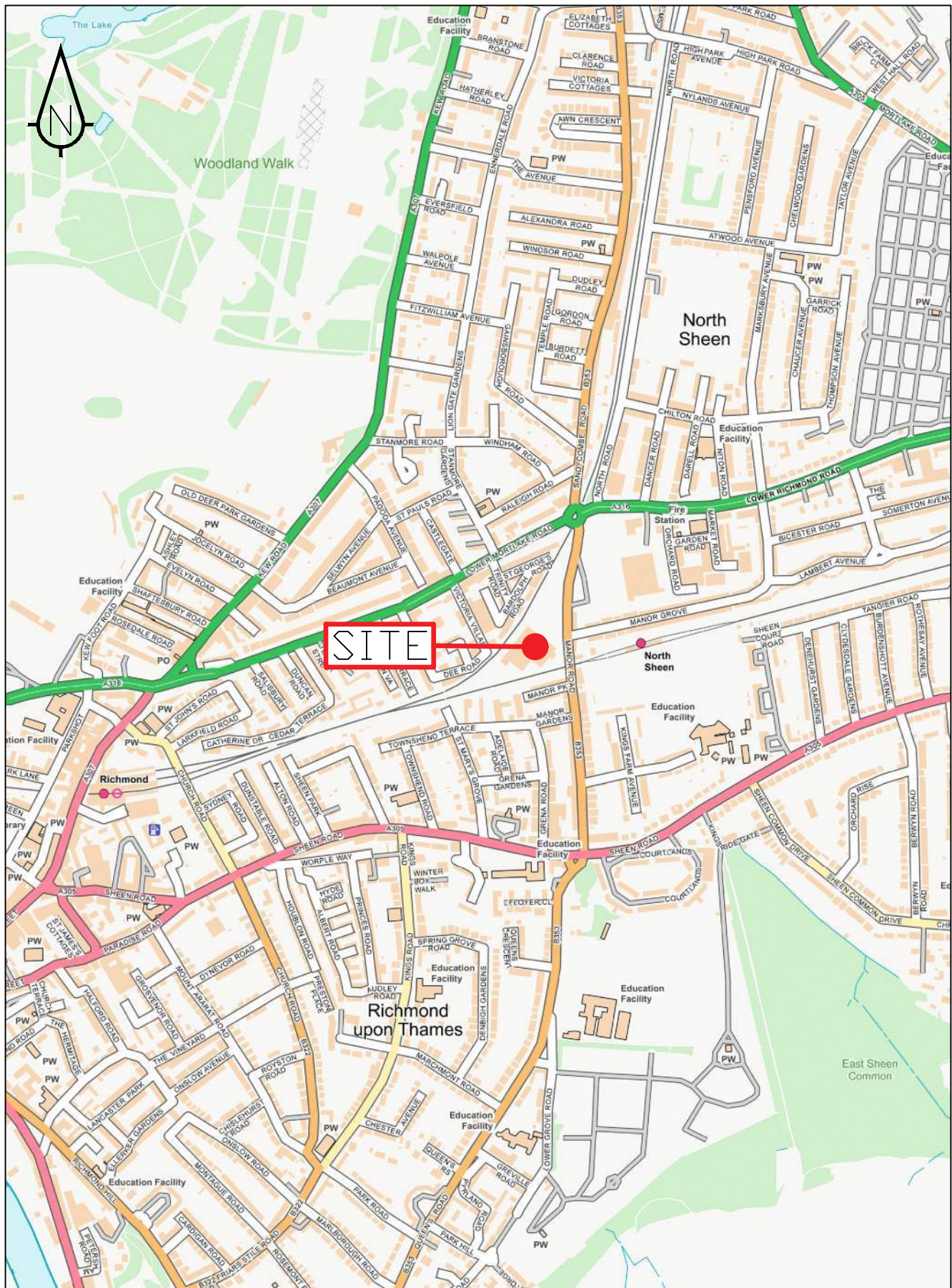
Figure 8 – Commercial Development Traffic Flows

Figure 9 – Total Development Traffic Flows

Figure 10 – 2018 Base Traffic Flows

Figure 11 – 2023 Base Traffic Flows

Figure 12 – 2028 Base Traffic Flows



Site Location Plan

Redevelopment of Homebase,
Manor Road,
North Sheen

Drawn
CH

Scale
NTS

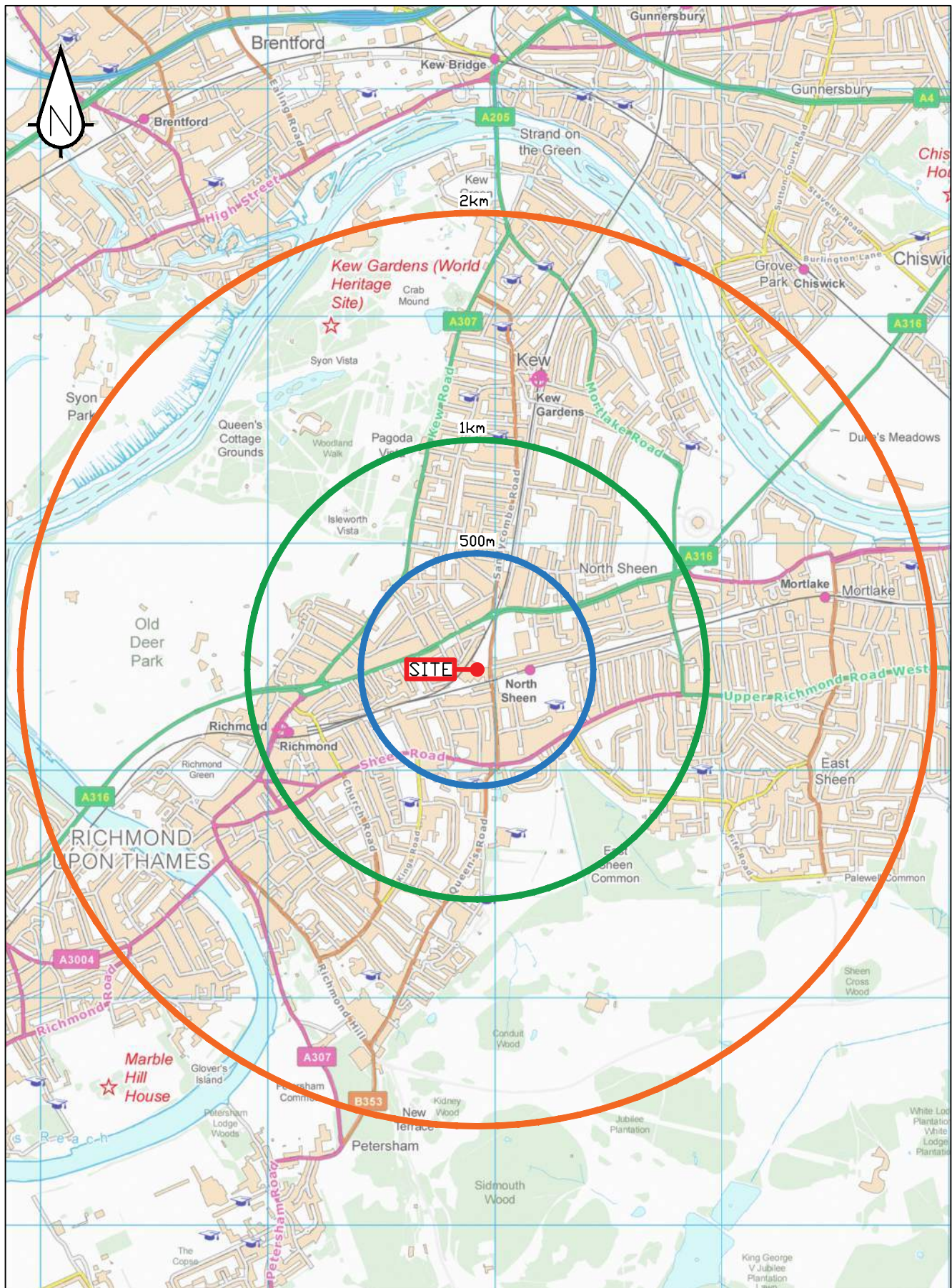
Checked
KS

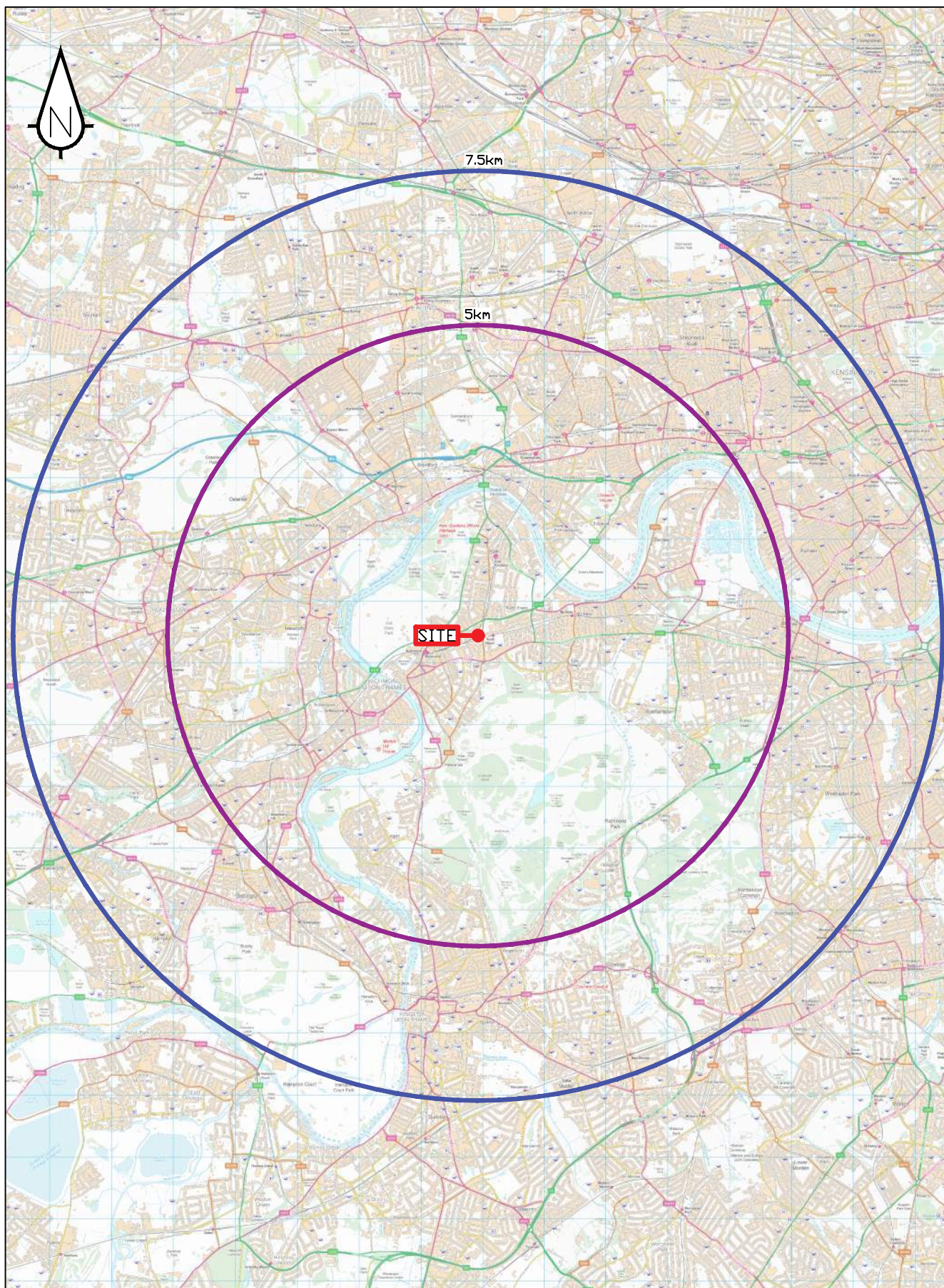
Date
July 2018

Approved
KS

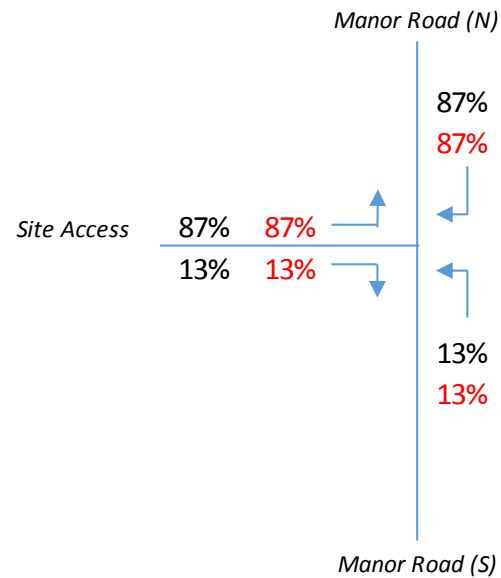
Drawing Number
Figure 1

Size
A4









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

**Residential Development
Traffic Distribution**

Rev	Amendment	Drawn	Date	Checked
Scale	NTS	Draw by	CH	
Drawing Size	A3	Checked by	KS	
Date	January 2019	Approved by	KS	
	Drawing Number	Rev.		
	Figure 5			

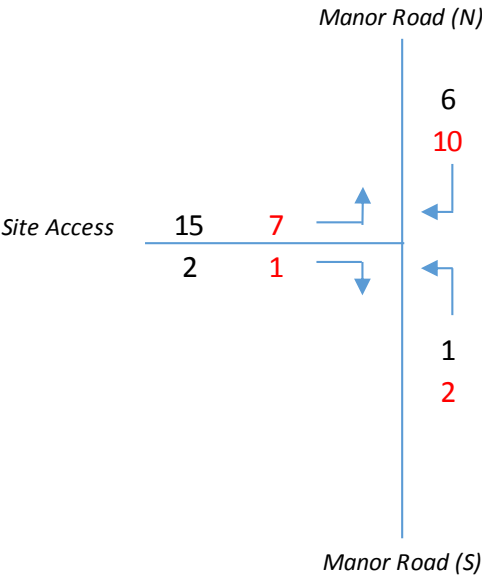
Redevelopment of Homebase,

Manor Road,

North Sheen

Residential Development

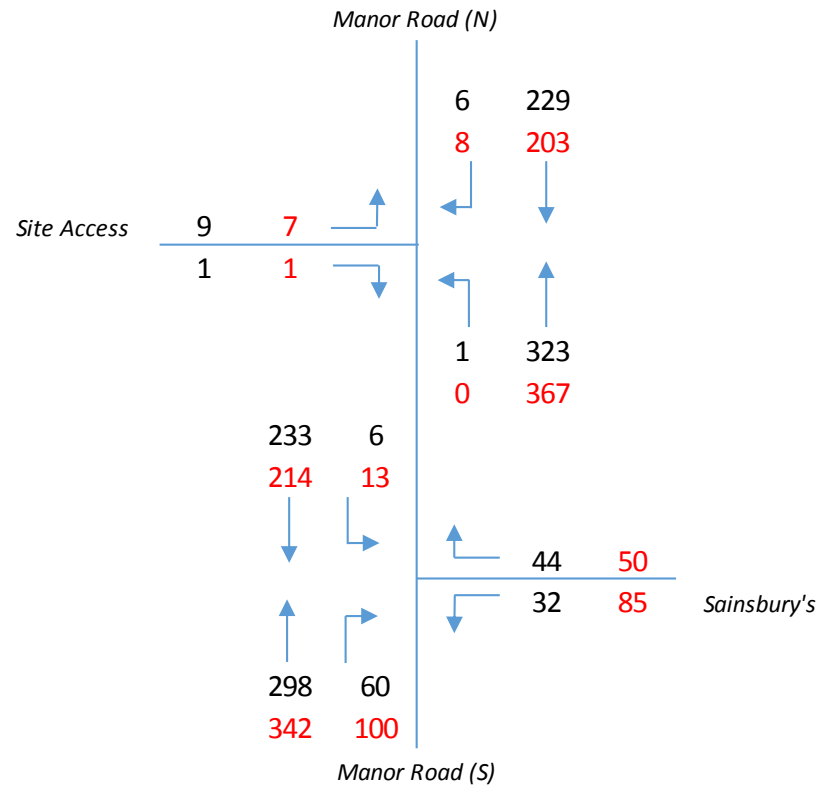
Traffic Flows



Rev	Amendment	Drawn	Date	Checked
Scale NTS		Draw by CH		
Drawing Size A3		Checked by KS		
Date January 2019		Approved by KS		
Drawing Number		Rev.		
Figure 6				

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

**2018 Base
Traffic Flows**



Rev	Amendment	Drawn	Date	Checked
Scale	NTS	Draw by	CH	
Drawing Size	A3	Checked by	KS	
Date	January 2019	Approved by	KS	
	Drawing Number	Rev.		
	Figure 10			

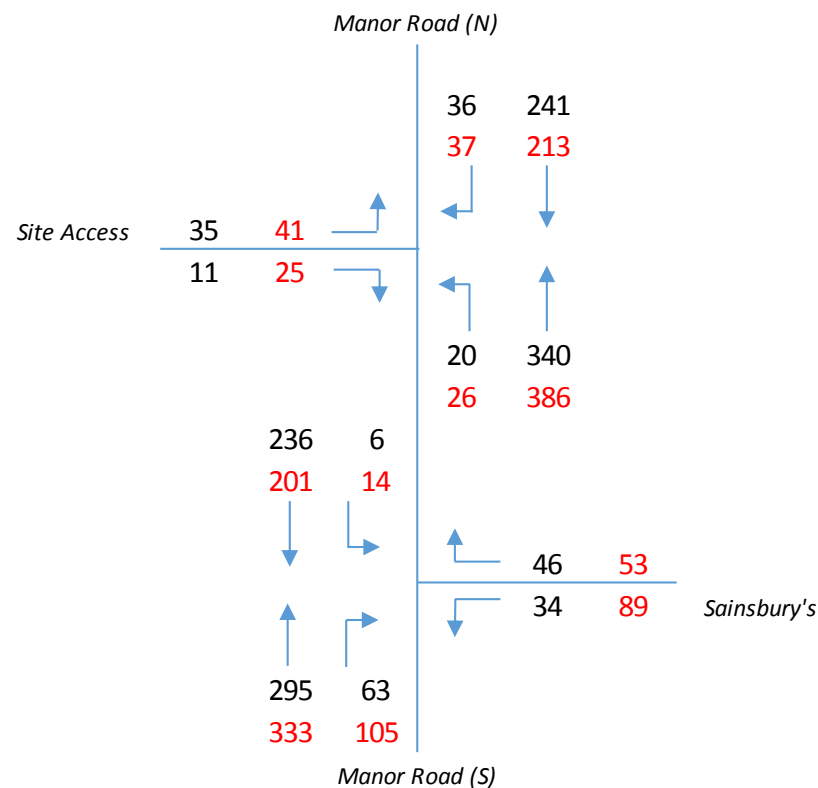
Redevelopment of Homebase,

Manor Road,

North Sheen

2023 Base

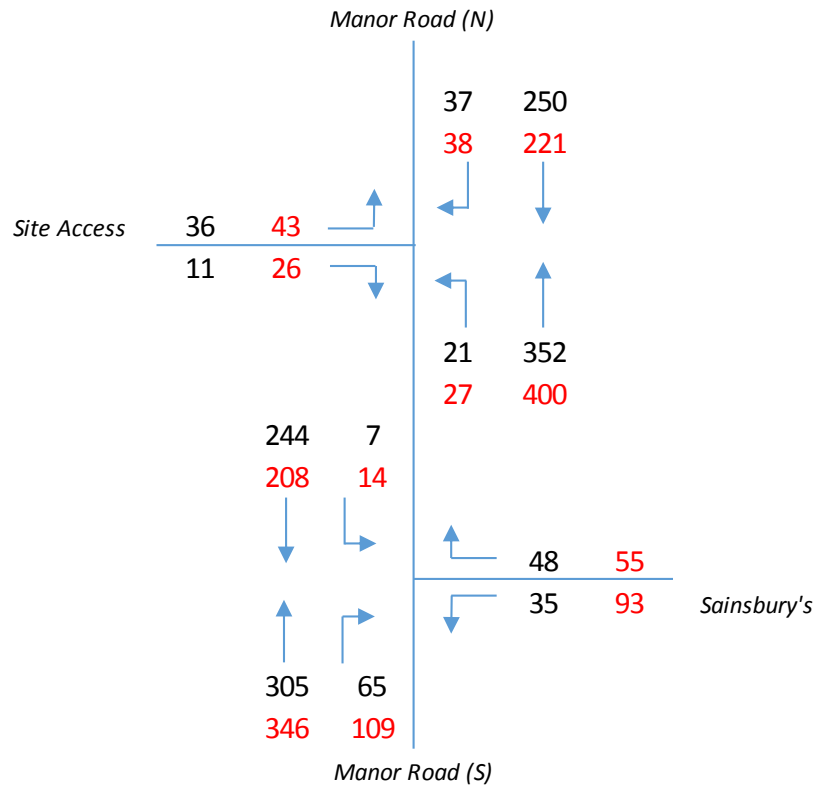
Traffic Flows



Rev	Amendment	Drawn	Date	Checked
Scale	NTS	Draw by	CH	
Drawing Size	A3	Checked by	KS	
Date	January 2019	Approved by	KS	
	Drawing Number	Rev.		
	Figure 11			

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

**2028 Base
Traffic Flows**



Rev	Amendment	Drawn	Date	Checked
Scale	NTS	Draw by	CH	
Drawing Size	A3	Checked by	KS	
Date	January 2019	Approved by	KS	
Drawing Number	Figure 12	Rev.		

APPENDIX B

Transport for London – Pre-Application Response



Our ref: RMND/19/138

Karen Smith
Sanderson Associates
Sanderson House
Jubilee Way
Grange Moor
Wakefield
WF4 4TD

Transport for London
City Planning

5 Endeavour Square
Westfield Avenue
Stratford
London E20 1JN

Phone 020 7222 5600
www.tfl.gov.uk

23rd October 2019

Dear Karen

84 Manor Road Homebase, LB Richmond – Stage 3 TfL's pre-application advice

This letter concerns the recent meeting held with TfL on the 9th October 2019, regarding the revised submission for the redevelopment of the Homebase site at 84 Manor Road in the London Borough of Richmond upon Thames (LBRuT). The focus of this meeting was the development of Block E above the North Sheen Bus Terminus.

The following comments are made by Transport for London officers on a 'without prejudice' basis only and are intended to ensure that this development is successful in transport terms and in line with relevant London Plan policies. You should not interpret them as indicating any subsequent Mayoral decision on any planning application based on the proposed scheme. Furthermore, these comments also do not necessarily represent the views of the Greater London Authority.

Proposed Development

Original Scheme

The original proposal included the provision of 385 residential units and 480sqm of flexible retail/community/office uses.

Updated Scheme

The updated proposals include the introduction of Block E on the northern part of the site above the North Sheen Bus Terminus, and 557sqm of flexible retail/community/office uses. The introduction of Block E will increase the total number of residential units on site to circa 440 units.

The meeting was attended by the following:

Karen Smith
Tom Bennett
Rachel Crick
Emma Gill
John Lynch

Sanderson Associates
ICG Longbow
Avison Young
Avison Young
Assael

Lucy Simpson
Adam Edwards
Ramel Hamilton

TfL Spatial Planning
TfL Delivery Planning
TfL PT Service Planning

This Stage 3 pre-application response is based on the key points discussed at our meeting.

Site context

The site is bound by railway lines to the south and west, Manor Road to the east and includes the North Sheen Bus Terminus to the north. The site is located immediately south of the A316 Manor Circus which forms part of the Transport for London Road Network (TLRN). A level crossing is located on Manor Road immediately south of the site's southern boundary.

The entrance to North Sheen rail station is located on the opposite side of Manor Road, near the site's southern boundary; there are also 10 bus routes within an acceptable walk distance. Based on TfL's Webcat toolkit the application site has a public transport access level (PTAL) of 5, on a scale of 0 to 6b where 6b is the most accessible.

North Sheen Bus Terminus

Current Operation

The existing bus terminus has standing for 5 buses. Two stands are provided for bus route 493 and two stands for bus route R70. Whilst the fifth stand is currently not allocated to a specific route, it allows for resilience on the network.

Bus standing is required for service reliability. Stand space allows TfL to schedule recovery time which assists with providing a reliable service on routes 493 and R70. It also provides driver welfare. The Homebase terminus has a driver toilet that is accessible 24/7.

The current hours of operation of the terminus are between 04:30 and 00:30. Passengers currently alight at the entrance of the bus terminus and board the services at bus stop (SC) located on Manor Road.

The Sainsbury's site opposite also has formal bus standing for 1 bus, which is currently allocated to bus route 371; however this layout can accommodate a second bus informally.

Bus route 493 has a frequency of 5 buses per hour during the day, and bus routes R70 and 371 both have a frequency of 6 buses per hour. Based on the current frequency of the two bus routes, the standing area accommodates 69 buses per day for the route 493 and a further 99 buses per day for the route R70. Bus layover times vary throughout the weekday day and are detailed below:

- 371 – stands for approximately 15 minutes;
- 493 – stands for approximately 16 minutes; and
- R70 - stands for approximately 10-15 minutes.

Layovers tend to be longer on Sundays, but as the routes run at a lower frequency, they do not require more than 2 stand spaces each.

TfL's requirements

TfL's requirement from a bus operations perspective is that 5 stands are required on the existing site. However, there may be room for compromise (4 as an absolute minimum) if a decent standing arrangement is provided.

TfL would also be happy to look at an option where all bus standing is provided on the Sainsbury's site. However, there would need to be enough standing for 6 buses and TfL would require agreement from the owner of that site that this could be used by TfL in perpetuity. Alternatively TfL would also consider an on-street option, provided it meets our requirements in terms of sufficient capacity, location, has access to a toilet and doesn't incur increased mileage.

There are currently no spare bus stands near to the application site. All are either occupied, or required for rail replacement services. Whilst there are 2 bus stands at Queen's Road East Sheen, the route to access these stands is via the level crossing on Manor Road. The average barrier down time at this level crossing is 40 minutes per hour and 46 minutes per hour in the peaks, which would have a significant impact on bus reliability. Additional time would be required in the schedule to extend either route from Manor Road to Queens Road. It would cost approximately £230,000 per annum on a permanent basis to extend one route to this stand and would require installation of a driver toilet at the stand. Furthermore, these stands are currently used for rail replacement so alternative provision for these rail replacement services would also need to be found.

Any over station development is required to be designed in accordance with TfL guidance, which has already been provided to the applicant; and consideration is required for ventilation, lighting and fire safety. TfL are still to advise if there are any specific requirements in terms of bay sizes and fire safety etc.

Any new standing provided will require passive electric charging provision to all stands.

In terms of the bus driver facilities, the provision of a toilet is a necessary requirement and if space permits then an enhanced facility would be welcomed.

Proposed arrangement

Whilst a new bus standing arrangement for 4 stands, was discussed at the meeting (drawing MNR-ASA-ZZ-XX-SK-A-0919), TfL raised safety concerns with this arrangement which required buses to reverse out into the development sites vehicular access, which would also be used by pedestrians and cyclists. TfL advised the applicant to come up with a number of arrangement options, one of which should include the number of bus stands that can be accommodated on site without requiring buses to reverse.

The applicant also queried the use of the bus standing area for refuse collections. TfL would need to see the tracking for this along with the new bus standing arrangement.

Since the meeting, the applicant has provided five potential bus standing options for the site. TfL are currently reviewing these options internally and will provide a formal response separately.

Once the principle of a new layout is agreed, this will be subject to a Stage 1 Road Safety Audit, prior to any determination.

Agent of Change

Draft London Plan Policy D12 Agent of Change places the responsibility for mitigating the impacts from existing noise-generating activities or uses on proposed new noise-sensitive development with the applicant/developer. The applicant must demonstrate that the scheme is designed to enable existing noise-generating uses and activities to remain operational and viable, and provide details of sufficient mitigation measures.

Vision Zero

The applicant is reminded of the Mayor's Vision Zero ambition which is the elimination of all deaths and serious injuries from London's streets by 2041. The Vision Zero approach requires reducing the dominance of motor vehicles and creating streets safe for active travel. The revised Transport Assessment (TA) is required to demonstrate how the scheme will contribute towards the Vision Zero approach.

Trip generation and mode split

As per TfL's original comments, TfL require the residential trip rate assessment to be based on the total person trip rates detailed in Appendix I of the original TA. TfL also require Census data to be used to establish mode share and

adjusted down to account for the limited car parking provision and the remaining trips reassigned pro-rata to the other modes.

Car parking

The development will remain car free with the exception of disabled person car parking which will be revised to account for the uplift in units, and will accord with the draft London Plan. The provision of Electric Vehicle Charging Points (EVCP) including passive provision should also be revised to account for the uplift in units.

A Parking Design and Management Plan will be required which indicates how the car parking will be designed, managed and monitored. It will also need to demonstrate where the additional 7% of disabled car parking spaces will be provided on site should demand arise. Furthermore, parking spaces are required to be leased rather than sold to ensure the land they take up is used as efficiently as possible over the life of the development.

Buses

As stated above, there are currently 10 bus routes (65, 371, 493, 190, 419, H37, R68, R70, 391 and H22) within an acceptable walking distance of the site with stops on Manor Road and Lower Mortlake Road. The TA will need to provide bus trip generation figures by time and by direction, with the peak hour indicated separately. The trip generation figures by direction should consider the existing bus network. As agreed previously, given the distance to the closest Underground station, all Underground trips should be combined with bus trips given that bus services are predominantly likely to be used to access Underground stations. TfL will use this information to assess the impact of the revised development on the bus network, and will confirm if any bus capacity enhancements are required.

TfL recently consulted on proposed changes to bus services within the Richmond area. Based on the result of this consultation there will be no change implemented to the bus services within the vicinity of the site.

North Sheen Rail Station

North Sheen Station and the trains which serve it are operated by South Western Railway. The TA should include details on the capacity of the trains and existing loads to demonstrate that there is sufficient capacity to accommodate demand at North Sheen. It should also highlight the recent rail improvements, which include the rolling out of new trains to increase the capacity of the trains, and whether this benefitted trains serving North Sheen. In addition, Network Rail has recently realigned platforms at Waterloo, to enable all 24 platforms to be used for South Western train services, which allows for an increase in services and reliability.

Whilst not discussed at the meeting, once the updated trip generation assessment is received, TfL will relook at the Network Rail contribution request for the North Sheen Station upgrades.

Cycle Parking

Cycle parking will be provided in accordance with draft London Plan standards. TfL raised concerns with the original application, which included all of the long-stay cycle parking located in one residential block only. Since the meeting, TfL have been advised that it is now proposed to divide up the central cycle store so that long-stay cycle parking is provided in each residential block.

The quantum and location of the cycle parking needs to be clarified in the revised TA. All cycle parking is required to be designed and laid out in accordance with the guidance contained in Chapter 8 of the London Cycling Design Standards (LCDS). The TA should also take into consideration how cycle parking facilities will cater for larger cycles, including adapted cycles for disabled people.

Shower and locker facilities should be provided for the non-residential uses on site.

Manor Circus

The development will generate a significant uplift in pedestrian and cycle trips within the area and a significant proportion of these will use Manor Circus. TfL's Manor Circus improvements scheme will provide residents improved pedestrian and cycle safety at this junction and better links to the cycle networks. TfL previously requested a contribution of £330,000 towards this scheme which was 15% of the estimated final scheme costs. This was considered to be a reasonable request given the uplift in users generated by this development at Manor Circus.

Since this time, the scheme design costs have risen. TfL won't have a more accurate cost estimate until the end of concept design at the beginning of 2020 but is likely to be an uplift of at least £50,000. Therefore TfL request a revised financial contribution of £380,000 towards the implementation of the Manor Circus scheme.

Supporting material

The latest version of the draft London Plan – Consolidated Suggested Changes version was published July 2019 and sets out an integrated economic, environmental, transport and social framework for the development of London over the next 20-25 years. TfL expects all revised proposals to consider the policies set out within this document.

The applicant is advised that the revised TA will need to be produced, in accordance with the latest TfL guidance on Transport Assessments available from: <https://tfl.gov.uk/info-for/urban-planning-and-construction/guidance-for-applicants>

In addition, the applicant is reminded that the revised scheme should reflect the Healthy Streets approach. Guidance on Healthy Streets can be found here: <https://tfl.gov.uk/corporate/about-tfl/how-we-work/planning-for-the-future/healthy-streets>

Community Infrastructure Levy

The development will be liable to Mayoral Community Infrastructure Levy 2 (MCIL2) which came into force on 1st April 2019, as well as borough CIL. The MCIL2 rate for the London Borough of Richmond is £80 per square metre of floorspace.

Summary

As discussed at our meeting and recorded herein there are a number of issues which require further discussions and action. TfL will welcome further involvement and discussion with the applicant and GLA in order to ensure agreement on as many issues as possible prior to the revised scheme being formally submitted.

I hope this provides a useful basis upon which to progress the preparation of the revised scheme and supporting TA and look forward to hearing from you shortly.

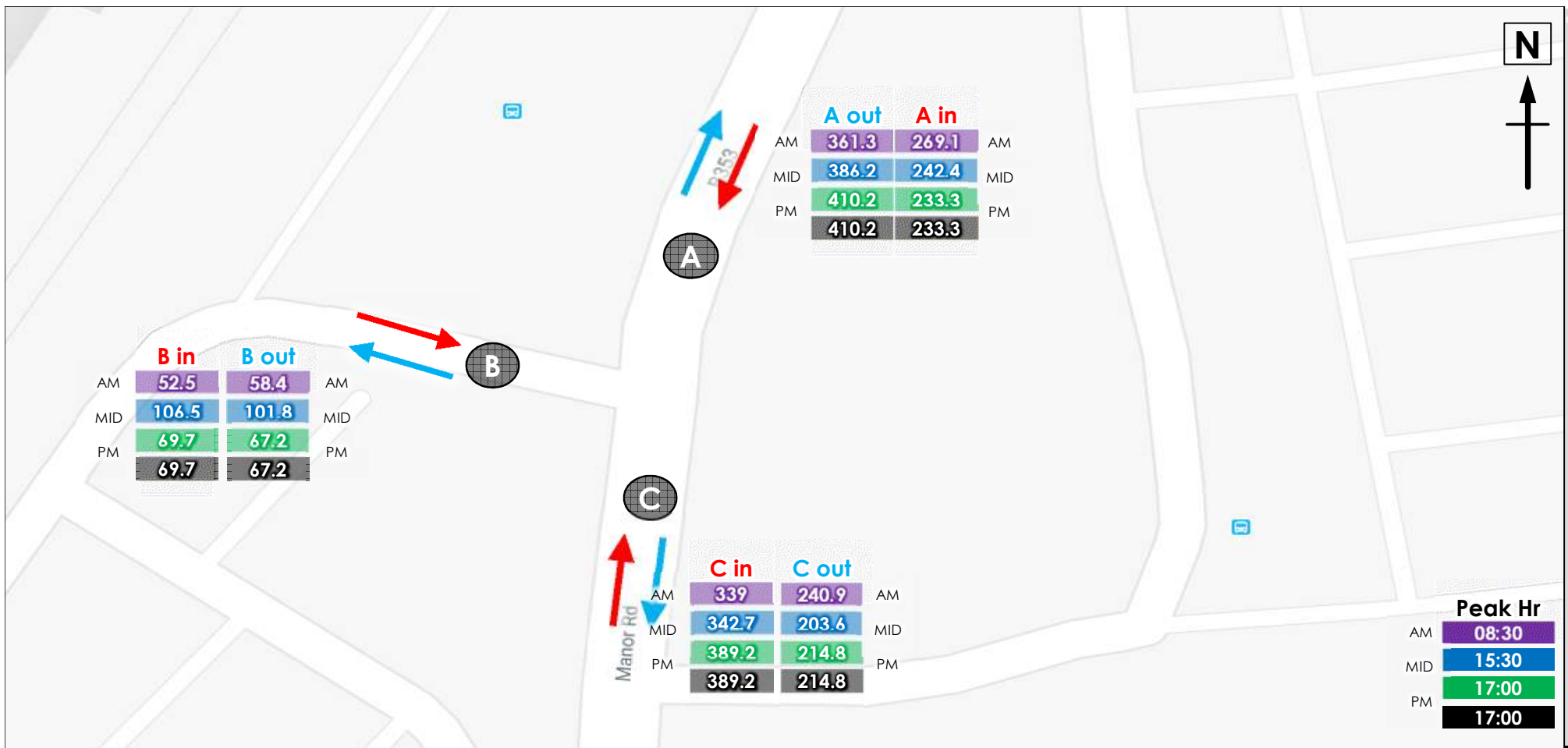
Should you wish to discuss any part of this letter, please contact myself or Lucy Simpson (lucysimpson@tfl.gov.uk - 020 3054 7039).

Yours sincerely



Lucinda Turner
Director of spatial Planning
Email: lucindaturner@tfl.gov.uk
Direct line: 020 3054 7133

APPENDIX C
Traffic Count Data



Arms: A B C

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



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	
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	
07:30	07:45	0	0	0	0	0	0	0	
07:45	08:00	0	0	0	0	0	0	0	
08:00	08:15	0	0	0	0	0	0	0	
08:15	08:30	0	0	0	0	0	0	0	
08:30	08:45	0	0	0	0	0	0	0	
08:45	09:00	0	0	0	0	0	0	0	
09:00	09:15	0	0	0	0	0	0	0	
09:15	09:30	0	0	0	0	0	0	0	
15:00	15:15	0	0	0	0	0	0	0	
15:15	15:30	0	0	0	0	0	0	0	
15:30	15:45	0	0	0	0	0	0	0	
15:45	16:00	0	0	0	0	0	0	0	
16:00	16:15	0	0	0	0	0	0	0	
16:15	16:30	0	0	0	0	0	0	0	
16:30	16:45	0	0	0	0	0	0	0	
16:45	17:00	0	0	0	0	0	0	0	
17:00	17:15	0	0	0	0	0	0	0	
17:15	17:30	0	0	0	0	0	0	0	
17:30	17:45	0	0	0	0	0	0	0	
17:45	18:00	0	0	0	0	0	0	0	
P/TOT		0	0	0	0	0	0	0	
Period I Total:		0	0	0	0	0	0	0	
Period II Total:		0	0	0	0	0	0	0	

per hour									
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	
07:30	08:30	0	0	0	0	0	0	0	
07:45	08:45	0	0	0	0	0	0	0	
08:00	09:00	0	0	0	0	0	0	0	
08:15	09:15	0	0	0	0	0	0	0	
08:30	09:30	0	0	0	0	0	0	0	
08:45	09:45	0	0	0	0	0	0	0	
09:00	10:00	0	0	0	0	0	0	0	
09:15	10:15	0	0	0	0	0	0	0	
15:00	16:00	0	0	0	0	0	0	0	
15:15	16:15	0	0	0	0	0	0	0	
15:30	16:30	0	0	0	0	0	0	0	
15:45	16:45	0	0	0	0	0	0	0	
16:00	17:00	0	0	0	0	0	0	0	
16:15	17:15	0	0	0	0	0	0	0	
16:30	17:30	0	0	0	0	0	0	0	
16:45	17:45	0	0	0	0	0	0	0	
17:00	18:00	0	0	0	0	0	0	0	
17:15	18:15	0	0	0	0	0	0	0	
17:30	18:30	0	0	0	0	0	0	0	
17:45	18:45	0	0	0	0	0	0	0	
P/TOT		0	0	0	0	0	0	0	



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								
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	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								
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	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								
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	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	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								
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	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	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									
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	
07:30	07:45	31	15	5	0	3	0	2	56
07:45	08:00	41	13	3	1	3	0	1	62
08:00	08:15	31	7	4	0	3	1	3	49
08:15	08:30	44	9	2	0	3	2	4	64
08:30	08:45	60	8	3	0	2	1	3	77
08:45	09:00	62	10	2	0	1	1	1	77
09:00	09:15	33	7	5	0	2	0	3	50
09:15	09:30	40	11	3	0	3	0	2	59
15:00	15:15	56	9	1	0	3	3	2	74
15:15	15:30	39	6	3	0	4	1	1	54
15:30	15:45	54	8	2	0	3	3	4	74
15:45	16:00	42	8	0	0	3	0	2	55
16:00	16:15	48	5	1	0	2	1	1	58
16:15	16:30	36	7	1	0	4	3	1	52
16:30	16:45	44	8	2	0	4	1	0	59
16:45	17:00	42	7	0	0	0	0	1	50
17:00	17:15	48	5	2	0	4	2	1	62
17:15	17:30	45	6	1	0	2	3	4	61
17:30	17:45	46	4	0	0	1	1	4	56
17:45	18:00	46	5	0	0	2	2	4	59
P/TOT		888	158	40	1	52	25	44	1208
Period I Total:		342	80	27	1	20	5	19	494
Period II Total:		546	78	13	0	32	20	25	714

per hour									
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	
07:30	08:30	147	44	14	1	12	3	10	231
07:45	08:45	176	37	12	1	11	4	11	252
08:00	09:00	197	34	11	0	9	5	11	267
08:15	09:15	199	34	12	0	8	4	11	268
08:30	09:30	195	36	13	0	8	2	9	263
08:45	09:45	135	28	10	0	6	1	6	186
09:00	10:00	73	18	8	0	5	0	5	109
09:15	10:15	40	11	3	0	3	0	2	59
15:00	16:00	191	31	6	0	13	7	9	257
15:15	16:15	183	27	6	0	12	5	8	241
15:30	16:30	180	28	4	0	12	7	8	239
15:45	16:45	170	28	4	0	13	5	4	224
16:00	17:00	170	27	4	0	10	5	3	219
16:15	17:15	170	27	5	0	12	6	3	223
16:30	17:30	179	26	5	0	10	6	6	232
16:45	17:45	181	22	3	0	7	6	10	229
17:00	18:00	185	20	3	0	9	8	13	238
17:15	18:15	137	15	1	0	5	6	12	176
17:30	18:30	92	9	0	0	3	3	8	115
17:45	18:45	46	5	0	0	2	2	4	59
P/TOT		888	158	40	1	52	25	44	1208



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									
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	
07:30	07:45	2	0	1	0	2	0	0	
07:45	08:00	1	0	0	0	3	0	0	
08:00	08:15	2	1	0	0	2	0	0	
08:15	08:30	5	3	0	0	2	0	0	
08:30	08:45	3	0	0	0	3	0	0	
08:45	09:00	2	0	0	0	1	0	0	
09:00	09:15	4	2	0	0	2	0	0	
09:15	09:30	11	2	0	1	2	0	0	
15:00	15:15	9	0	0	0	2	0	0	
15:15	15:30	8	2	0	0	3	0	0	
15:30	15:45	15	0	0	0	3	2	1	
15:45	16:00	7	1	0	0	2	0	0	
16:00	16:15	17	1	1	0	3	0	0	
16:15	16:30	13	1	0	0	2	0	0	
16:30	16:45	16	0	0	0	4	0	1	
16:45	17:00	7	1	0	0	1	0	0	
17:00	17:15	6	1	0	0	3	0	1	
17:15	17:30	8	1	0	0	2	0	0	
17:30	17:45	6	1	0	0	2	0	0	
17:45	18:00	8	0	0	0	0	0	0	
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									
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	
07:30	08:30	10	4	1	0	9	0	0	
07:45	08:45	11	4	0	0	10	0	0	
08:00	09:00	12	4	0	0	8	0	0	
08:15	09:15	14	5	0	0	8	0	0	
08:30	09:30	20	4	0	1	8	0	0	
08:45	09:45	17	4	0	1	5	0	0	
09:00	10:00	15	4	0	1	4	0	0	
09:15	10:15	11	2	0	1	2	0	0	
15:00	16:00	39	3	0	0	10	2	1	
15:15	16:15	47	4	1	0	11	2	1	
15:30	16:30	52	3	1	0	10	2	1	
15:45	16:45	53	3	1	0	11	0	1	
16:00	17:00	53	3	1	0	10	0	1	
16:15	17:15	42	3	0	0	10	0	2	
16:30	17:30	37	3	0	0	10	0	2	
16:45	17:45	27	4	0	0	8	0	1	
17:00	18:00	28	3	0	0	7	0	1	
17:15	18:15	22	2	0	0	4	0	0	
17:30	18:30	14	1	0	0	2	0	0	
17:45	18:45	8	0	0	0	0	0	0	
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	
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	
07:30	07:45	0	0	0	0	0	0	0	
07:45	08:00	0	0	0	0	0	0	0	
08:00	08:15	0	0	0	0	0	0	0	
08:15	08:30	0	0	0	0	0	0	0	
08:30	08:45	0	0	0	0	0	0	0	
08:45	09:00	0	0	0	0	0	0	0	
09:00	09:15	0	0	0	0	0	0	0	
09:15	09:30	0	0	0	0	0	0	0	
15:00	15:15	0	0	0	0	0	0	0	
15:15	15:30	0	0	0	0	0	0	0	
15:30	15:45	0	0	0	0	0	0	0	
15:45	16:00	0	0	0	0	0	0	0	
16:00	16:15	0	0	0	0	0	0	0	
16:15	16:30	0	0	0	0	0	0	0	
16:30	16:45	0	0	0	0	0	0	0	
16:45	17:00	0	0	0	0	0	0	0	
17:00	17:15	0	0	0	0	0	0	0	
17:15	17:30	0	0	0	0	0	0	0	
17:30	17:45	0	0	0	0	0	0	0	
17:45	18:00	0	0	0	0	0	0	0	
P/TOT		0	0	0	0	0	0	0	
Period I Total:		0	0	0	0	0	0	0	
Period II Total:		0	0	0	0	0	0	0	

per hour									
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	
07:30	08:30	0	0	0	0	0	0	0	
07:45	08:45	0	0	0	0	0	0	0	
08:00	09:00	0	0	0	0	0	0	0	
08:15	09:15	0	0	0	0	0	0	0	
08:30	09:30	0	0	0	0	0	0	0	
08:45	09:45	0	0	0	0	0	0	0	
09:00	10:00	0	0	0	0	0	0	0	
09:15	10:15	0	0	0	0	0	0	0	
15:00	16:00	0	0	0	0	0	0	0	
15:15	16:15	0	0	0	0	0	0	0	
15:30	16:30	0	0	0	0	0	0	0	
15:45	16:45	0	0	0	0	0	0	0	
16:00	17:00	0	0	0	0	0	0	0	
16:15	17:15	0	0	0	0	0	0	0	
16:30	17:30	0	0	0	0	0	0	0	
16:45	17:45	0	0	0	0	0	0	0	
17:00	18:00	0	0	0	0	0	0	0	
17:15	18:15	0	0	0	0	0	0	0	
17:30	18:30	0	0	0	0	0	0	0	
17:45	18:45	0	0	0	0	0	0	0	
P/TOT		0	0	0	0	0	0	0	



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								
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	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	1	2	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
P/TOT		88	8	1	0	1	0	1	99	99.7
Period I Total:		11	0	0	0	1	0	1	13	13.2
Period II Total:		77	8	1	0	0	0	0	86	86.5

		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	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
P/TOT		88	8	1	0	1	0	1	99	99.7



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								
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	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	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								
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	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	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
07:30	07:45	1	0	1	0	1	0	0	3	4.5
07:45	08:00	4	1	0	0	3	0	0	8	11
08:00	08:15	2	1	0	0	2	0	0	5	7
08:15	08:30	9	1	0	0	3	0	0	13	16
08:30	08:45	5	0	0	0	2	0	0	7	9
08:45	09:00	8	2	0	0	0	0	1	11	10.2
09:00	09:15	13	0	0	0	2	0	0	15	17
09:15	09:30	11	5	0	0	3	0	1	20	22.2
15:00	15:15	19	0	0	0	2	0	0	21	23
15:15	15:30	18	1	0	0	3	1	0	23	25.4
15:30	15:45	17	2	0	0	3	1	1	24	25.6
15:45	16:00	16	0	0	0	3	0	1	20	22.2
16:00	16:15	29	1	0	0	1	0	0	31	32
16:15	16:30	11	3	0	0	4	0	0	18	22
16:30	16:45	15	2	1	0	3	0	1	22	24.7
16:45	17:00	13	2	0	0	0	0	0	15	15
17:00	17:15	11	0	0	0	3	0	0	14	17
17:15	17:30	15	1	0	0	2	0	0	18	20
17:30	17:45	12	0	0	0	1	0	0	13	14
17:45	18:00	12	0	0	0	2	0	1	15	16.2
P/TOT		241	22	2	0	43	2	6	316	354
Period I Total:		53	10	1	0	16	0	2	82	96.9
Period II Total:		188	12	1	0	27	2	4	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
07:30	08:30	16	3	1	0	9	0	0	29	38.5
07:45	08:45	20	3	0	0	10	0	0	33	43
08:00	09:00	24	4	0	0	7	0	1	36	42.2
08:15	09:15	35	3	0	0	7	0	1	46	52.2
08:30	09:30	37	7	0	0	7	0	2	53	58.4
08:45	09:45	32	7	0	0	5	0	2	46	49.4
09:00	10:00	24	5	0	0	5	0	1	35	39.2
09:15	10:15	11	5	0	0	3	0	1	20	22.2
15:00	16:00	70	3	0	0	11	2	2	88	96.2
15:15	16:15	80	4	0	0	10	2	2	98	105.2
15:30	16:30	73	6	0	0	11	1	2	93	101.8
15:45	16:45	71	6	1	0	11	0	2	91	100.9
16:00	17:00	68	8	1	0	8	0	1	86	93.7
16:15	17:15	50	7	1	0	10	0	1	69	78.7
16:30	17:30	54	5	1	0	8	0	1	69	76.7
16:45	17:45	51	3	0	0	6	0	0	60	66
17:00	18:00	50	1	0	0	8	0	1	60	67.2
17:15	18:15	39	1	0	0	5	0	1	46	50.2
17:30	18:30	24	0	0	0	3	0	1	28	30.2
17:45	18:45	12	0	0	0	2	0	1	15	16.2
P/TOT		241	22	2	0	43	2	6	316	354



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									
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	
07:30	07:45	77	13	3	0	5	4	2	104
07:45	08:00	47	8	1	0	5	1	2	64
08:00	08:15	61	10	1	1	1	5	5	84
08:15	08:30	58	10	2	1	2	1	4	78
08:30	08:45	61	11	1	0	0	4	3	80
08:45	09:00	78	13	1	1	0	1	3	97
09:00	09:15	61	4	2	0	0	1	1	69
09:15	09:30	63	10	1	0	2	1	0	77
15:00	15:15	55	8	3	0	1	1	4	72
15:15	15:30	39	11	5	1	3	1	1	61
15:30	15:45	72	11	1	2	1	1	1	89
15:45	16:00	46	11	3	0	3	1	0	64
16:00	16:15	53	11	2	1	1	1	1	70
16:15	16:30	57	12	1	1	2	0	2	75
16:30	16:45	53	10	3	0	1	1	3	71
16:45	17:00	54	13	1	0	2	1	1	72
17:00	17:15	56	18	0	0	3	1	2	80
17:15	17:30	80	15	1	0	1	1	4	102
17:30	17:45	75	8	5	0	1	4	2	95
17:45	18:00	73	12	0	0	2	2	1	90
P/TOT		1219	219	37	8	36	33	42	1594

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									
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	
07:30	08:30	243	41	7	2	13	11	13	330
07:45	08:45	227	39	5	2	8	11	14	306
08:00	09:00	258	44	5	3	3	11	15	339
08:15	09:15	258	38	6	2	2	7	11	324
08:30	09:30	263	38	5	1	2	7	7	323
08:45	09:45	202	27	4	1	2	3	4	243
09:00	10:00	124	14	3	0	2	2	1	146
09:15	10:15	63	10	1	0	2	1	0	77
15:00	16:00	212	41	12	3	8	4	6	286
15:15	16:15	210	44	11	4	8	4	3	284
15:30	16:30	228	45	7	4	7	3	4	298
15:45	16:45	209	44	9	2	7	3	6	280
16:00	17:00	217	46	7	2	6	3	7	288
16:15	17:15	220	53	5	1	8	3	8	298
16:30	17:30	243	56	5	0	7	4	10	325
16:45	17:45	265	54	7	0	7	7	9	349
17:00	18:00	284	53	6	0	7	8	9	367
17:15	18:15	228	35	6	0	4	7	7	287
17:30	18:30	148	20	5	0	3	6	3	185
17:45	18:45	73	12	0	0	2	2	1	90
P/TOT		1219	219	37	8	36	33	42	1594



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								
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	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	112	111.4
Period I Total:		19	1	0	0	1	0	0	21	22
Period II Total:		83	6	0	0	0	0	2	91	89.4

		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	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	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	
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	
07:30	07:45	0	0	0	0	0	0	0	
07:45	08:00	0	0	0	0	0	0	0	
08:00	08:15	0	0	0	0	0	0	0	
08:15	08:30	0	0	0	0	0	0	0	
08:30	08:45	0	0	0	0	0	0	0	
08:45	09:00	0	0	0	0	0	0	0	
09:00	09:15	0	0	0	0	0	0	0	
09:15	09:30	0	0	0	0	0	0	0	
15:00	15:15	0	0	0	0	0	0	0	
15:15	15:30	0	0	0	0	0	0	0	
15:30	15:45	0	0	0	0	0	0	0	
15:45	16:00	0	0	0	0	0	0	0	
16:00	16:15	0	0	0	0	0	0	0	
16:15	16:30	0	0	0	0	0	0	0	
16:30	16:45	0	0	0	0	0	0	0	
16:45	17:00	0	0	0	0	0	0	0	
17:00	17:15	0	0	0	0	0	0	0	
17:15	17:30	0	0	0	0	0	0	0	
17:30	17:45	0	0	0	0	0	0	0	
17:45	18:00	0	0	0	0	0	0	0	
P/TOT		0	0	0	0	0	0	0	
Period I Total:		0	0	0	0	0	0	0	
Period II Total:		0	0	0	0	0	0	0	

per hour									
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	
07:30	08:30	0	0	0	0	0	0	0	
07:45	08:45	0	0	0	0	0	0	0	
08:00	09:00	0	0	0	0	0	0	0	
08:15	09:15	0	0	0	0	0	0	0	
08:30	09:30	0	0	0	0	0	0	0	
08:45	09:45	0	0	0	0	0	0	0	
09:00	10:00	0	0	0	0	0	0	0	
09:15	10:15	0	0	0	0	0	0	0	
15:00	16:00	0	0	0	0	0	0	0	
15:15	16:15	0	0	0	0	0	0	0	
15:30	16:30	0	0	0	0	0	0	0	
15:45	16:45	0	0	0	0	0	0	0	
16:00	17:00	0	0	0	0	0	0	0	
16:15	17:15	0	0	0	0	0	0	0	
16:30	17:30	0	0	0	0	0	0	0	
16:45	17:45	0	0	0	0	0	0	0	
17:00	18:00	0	0	0	0	0	0	0	
17:15	18:15	0	0	0	0	0	0	0	
17:30	18:30	0	0	0	0	0	0	0	
17:45	18:45	0	0	0	0	0	0	0	
P/TOT		0	0	0	0	0	0	0	



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

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



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

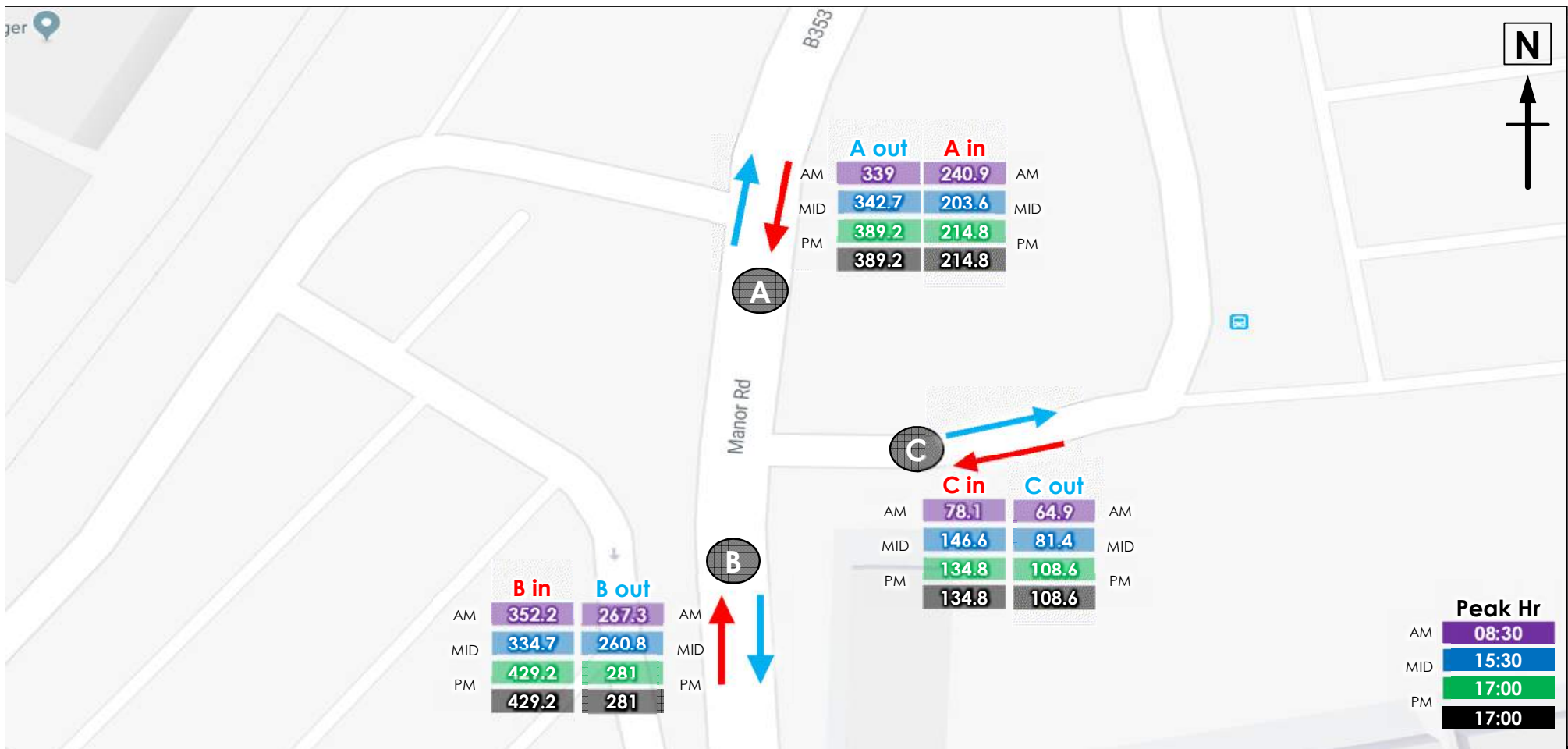
DATE: 02/10/2018
DAY: Tuesday

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
TOT Peak Hour TOT Peak PCU 692.2



Arms: A B C

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



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									
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	
07:30	07:45	0	0	0	0	0	0	0	
07:45	08:00	0	0	0	0	0	0	0	
08:00	08:15	0	0	0	0	0	0	0	
08:15	08:30	0	0	0	0	0	0	0	
08:30	08:45	0	0	0	0	0	0	0	
08:45	09:00	0	0	0	0	0	0	0	
09:00	09:15	0	0	0	0	0	0	0	
09:15	09:30	0	0	0	0	0	0	0	
15:00	15:15	0	0	0	0	0	0	0	
15:15	15:30	0	0	0	0	0	0	0	
15:30	15:45	0	0	0	0	0	0	0	
15:45	16:00	0	0	0	0	0	0	0	
16:00	16:15	0	0	0	0	0	0	0	
16:15	16:30	0	0	0	0	0	0	0	
16:30	16:45	0	0	0	0	0	0	0	
16:45	17:00	0	0	0	0	0	0	0	
17:00	17:15	0	0	0	0	0	0	0	
17:15	17:30	0	0	0	0	0	0	0	
17:30	17:45	0	0	0	0	0	0	0	
17:45	18:00	0	0	0	0	0	0	0	
P/TOT		0	0	0	0	0	0	0	0
Period I Total:		0	0	0	0	0	0	0	0
Period II Total:		0	0	0	0	0	0	0	0

per hour									
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	
07:30	08:30	0	0	0	0	0	0	0	
07:45	08:45	0	0	0	0	0	0	0	
08:00	09:00	0	0	0	0	0	0	0	
08:15	09:15	0	0	0	0	0	0	0	
08:30	09:30	0	0	0	0	0	0	0	
08:45	09:45	0	0	0	0	0	0	0	
09:00	10:00	0	0	0	0	0	0	0	
09:15	10:15	0	0	0	0	0	0	0	
15:00	16:00	0	0	0	0	0	0	0	
15:15	16:15	0	0	0	0	0	0	0	
15:30	16:30	0	0	0	0	0	0	0	
15:45	16:45	0	0	0	0	0	0	0	
16:00	17:00	0	0	0	0	0	0	0	
16:15	17:15	0	0	0	0	0	0	0	
16:30	17:30	0	0	0	0	0	0	0	
16:45	17:45	0	0	0	0	0	0	0	
17:00	18:00	0	0	0	0	0	0	0	
17:15	18:15	0	0	0	0	0	0	0	
17:30	18:30	0	0	0	0	0	0	0	
17:45	18:45	0	0	0	0	0	0	0	
P/TOT		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	0	0	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	0	0	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								
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	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								
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	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									
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	
07:30	07:45	30	15	4	0	2	0	2	53
07:45	08:00	39	12	3	1	0	0	1	56
08:00	08:15	29	6	4	0	1	1	3	44
08:15	08:30	38	8	2	0	0	2	4	54
08:30	08:45	56	8	3	0	0	1	3	71
08:45	09:00	59	9	2	0	1	1	1	73
09:00	09:15	30	7	5	0	0	0	3	45
09:15	09:30	38	6	3	0	2	0	1	50
15:00	15:15	52	10	1	0	1	3	2	69
15:15	15:30	36	7	3	0	1	0	1	48
15:30	15:45	46	8	2	0	0	2	3	61
15:45	16:00	41	8	0	0	0	0	1	50
16:00	16:15	38	5	1	0	1	1	1	47
16:15	16:30	40	6	1	0	0	3	1	51
16:30	16:45	42	8	1	0	1	1	0	53
16:45	17:00	43	7	0	0	0	0	1	51
17:00	17:15	48	6	2	0	1	2	1	60
17:15	17:30	45	6	2	0	0	3	4	60
17:30	17:45	44	4	0	0	0	1	4	53
17:45	18:00	43	5	0	0	0	2	4	54
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									
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	
07:30	08:30	136	41	13	1	3	3	10	207
07:45	08:45	162	34	12	1	1	4	11	225
08:00	09:00	182	31	11	0	2	5	11	242
08:15	09:15	183	32	12	0	1	4	11	243
08:30	09:30	183	30	13	0	3	2	8	239
08:45	09:45	127	22	10	0	3	1	5	168
09:00	10:00	68	13	8	0	2	0	4	95
09:15	10:15	38	6	3	0	2	0	1	50
15:00	16:00	175	33	6	0	2	5	7	228
15:15	16:15	161	28	6	0	2	3	6	206
15:30	16:30	165	27	4	0	1	6	6	209
15:45	16:45	161	27	3	0	2	5	3	201
16:00	17:00	163	26	3	0	2	5	3	202
16:15	17:15	173	27	4	0	2	6	3	215
16:30	17:30	178	27	5	0	2	6	6	224
16:45	17:45	180	23	4	0	1	6	10	224
17:00	18:00	180	21	4	0	1	8	13	227
17:15	18:15	132	15	2	0	0	6	12	167
17:30	18:30	87	9	0	0	0	3	8	107
17:45	18:45	43	5	0	0	0	2	4	54
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
07:30	07:45	77	13	3	0	5	4	2	104	106.5
07:45	08:00	48	8	1	0	5	1	2	65	68.3
08:00	08:15	61	10	1	1	1	5	5	84	79.8
08:15	08:30	59	10	2	1	2	1	4	79	79.5
08:30	08:45	62	11	1	0	0	4	3	81	76.7
08:45	09:00	82	14	1	1	0	1	3	102	100.8
09:00	09:15	68	4	2	0	0	1	1	76	75.6
09:15	09:30	68	10	1	0	3	1	0	83	85.9
15:00	15:15	64	8	3	0	1	1	4	81	79.7
15:15	15:30	45	12	5	1	3	1	1	68	73.4
15:30	15:45	74	12	1	2	1	1	1	92	94.7
15:45	16:00	53	11	3	0	3	1	0	71	74.9
16:00	16:15	66	12	2	1	1	1	1	84	85.9
16:15	16:30	66	13	1	1	2	0	2	85	87.2
16:30	16:45	59	10	3	0	1	1	4	78	76.7
16:45	17:00	62	14	1	0	2	1	1	81	82.1
17:00	17:15	60	18	0	0	3	1	2	84	84.8
17:15	17:30	89	16	1	0	1	1	4	112	109.7
17:30	17:45	81	8	5	0	1	4	2	101	100.5
17:45	18:00	77	12	0	0	2	2	2	95	94.2
P/TOT		1321	226	37	8	37	33	44	1706	1717
Period I Total:		525	80	12	3	16	18	20	674	673.1
Period II Total:		796	146	25	5	21	15	24	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
07:30	08:30	245	41	7	2	13	11	13	332	334.1
07:45	08:45	230	39	5	2	8	11	14	309	304.3
08:00	09:00	264	45	5	3	3	11	15	346	336.8
08:15	09:15	271	39	6	2	2	7	11	338	332.6
08:30	09:30	280	39	5	1	3	7	7	342	339
08:45	09:45	218	28	4	1	3	3	4	261	262.3
09:00	10:00	136	14	3	0	3	2	1	159	161.5
09:15	10:15	68	10	1	0	3	1	0	83	85.9
15:00	16:00	236	43	12	3	8	4	6	312	322.7
15:15	16:15	238	47	11	4	8	4	3	315	328.9
15:30	16:30	259	48	7	4	7	3	4	332	342.7
15:45	16:45	244	46	9	2	7	3	7	318	324.7
16:00	17:00	253	49	7	2	6	3	8	328	331.9
16:15	17:15	247	55	5	1	8	3	9	328	330.8
16:30	17:30	270	58	5	0	7	4	11	355	353.3
16:45	17:45	292	56	7	0	7	7	9	378	377.1
17:00	18:00	307	54	6	0	7	8	10	392	389.2
17:15	18:15	247	36	6	0	4	7	8	308	304.4
17:30	18:30	158	20	5	0	3	6	4	196	194.7
17:45	18:45	77	12	0	0	2	2	2	95	94.2
P/TOT		1321	226	37	8	37	33	44	1706	1717



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									
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	
07:30	07:45	69	12	3	0	3	4	2	93
07:45	08:00	45	5	1	0	2	1	2	56
08:00	08:15	53	9	1	1	0	4	5	73
08:15	08:30	54	7	2	1	0	1	4	69
08:30	08:45	57	9	1	0	0	4	3	74
08:45	09:00	76	13	0	1	0	1	3	94
09:00	09:15	54	3	2	0	0	1	1	61
09:15	09:30	57	9	1	0	1	1	0	69
15:00	15:15	51	7	3	0	0	1	4	66
15:15	15:30	36	11	5	1	1	1	1	56
15:30	15:45	65	12	1	2	0	1	1	82
15:45	16:00	40	9	3	0	1	1	0	54
16:00	16:15	51	11	2	1	0	1	0	66
16:15	16:30	49	11	1	1	0	0	2	64
16:30	16:45	51	10	3	0	0	1	3	68
16:45	17:00	50	11	1	0	1	1	1	65
17:00	17:15	48	17	0	0	1	1	2	69
17:15	17:30	84	15	1	0	0	1	4	105
17:30	17:45	64	8	4	0	0	4	1	81
17:45	18:00	72	12	0	0	0	1	2	87
P/TOT		1126	201	35	8	10	31	41	1452

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									
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	
07:30	08:30	221	33	7	2	5	10	13	291
07:45	08:45	209	30	5	2	2	10	14	272
08:00	09:00	240	38	4	3	0	10	15	310
08:15	09:15	241	32	5	2	0	7	11	298
08:30	09:30	244	34	4	1	1	7	7	298
08:45	09:45	187	25	3	1	1	3	4	224
09:00	10:00	111	12	3	0	1	2	1	130
09:15	10:15	57	9	1	0	1	1	0	69
15:00	16:00	192	39	12	3	2	4	6	258
15:15	16:15	192	43	11	4	2	4	2	258
15:30	16:30	205	43	7	4	1	3	3	266
15:45	16:45	191	41	9	2	1	3	5	252
16:00	17:00	201	43	7	2	1	3	6	263
16:15	17:15	198	49	5	1	2	3	8	266
16:30	17:30	233	53	5	0	2	4	10	307
16:45	17:45	246	51	6	0	2	7	8	320
17:00	18:00	268	52	5	0	1	7	9	342
17:15	18:15	220	35	5	0	0	6	7	273
17:30	18:30	136	20	4	0	0	5	3	168
17:45	18:45	72	12	0	0	0	1	2	87
P/TOT		1126	201	35	8	10	31	41	1452



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	
07:30	07:45	0	0	0	0	0	0	0	0	
07:45	08:00	0	0	0	0	0	0	0	0	
08:00	08:15	0	0	0	0	0	0	0	0	
08:15	08:30	0	0	0	0	0	0	0	0	
08:30	08:45	0	0	0	0	0	0	0	0	
08:45	09:00	0	0	0	0	0	0	0	0	
09:00	09:15	0	0	0	0	0	0	0	0	
09:15	09:30	0	0	0	0	0	0	0	0	
15:00	15:15	0	0	0	0	0	0	0	0	
15:15	15:30	0	0	0	0	0	0	0	0	
15:30	15:45	0	0	0	0	0	0	0	0	
15:45	16:00	0	0	0	0	0	0	0	0	
16:00	16:15	0	0	0	0	0	0	0	0	
16:15	16:30	0	0	0	0	0	0	0	0	
16:30	16:45	0	0	0	0	0	0	0	0	
16:45	17:00	0	0	0	0	0	0	0	0	
17:00	17:15	0	0	0	0	0	0	0	0	
17:15	17:30	0	0	0	0	0	0	0	0	
17:30	17:45	0	0	0	0	0	0	0	0	
17:45	18:00	0	0	0	0	0	0	0	0	
P/TOT		0	0	0	0	0	0	0	0	
Period I Total:		0	0	0	0	0	0	0	0	
Period II Total:		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	
07:30	08:30	0	0	0	0	0	0	0	0	
07:45	08:45	0	0	0	0	0	0	0	0	
08:00	09:00	0	0	0	0	0	0	0	0	
08:15	09:15	0	0	0	0	0	0	0	0	
08:30	09:30	0	0	0	0	0	0	0	0	
08:45	09:45	0	0	0	0	0	0	0	0	
09:00	10:00	0	0	0	0	0	0	0	0	
09:15	10:15	0	0	0	0	0	0	0	0	
15:00	16:00	0	0	0	0	0	0	0	0	
15:15	16:15	0	0	0	0	0	0	0	0	
15:30	16:30	0	0	0	0	0	0	0	0	
15:45	16:45	0	0	0	0	0	0	0	0	
16:00	17:00	0	0	0	0	0	0	0	0	
16:15	17:15	0	0	0	0	0	0	0	0	
16:30	17:30	0	0	0	0	0	0	0	0	
16:45	17:45	0	0	0	0	0	0	0	0	
17:00	18:00	0	0	0	0	0	0	0	0	
17:15	18:15	0	0	0	0	0	0	0	0	
17:30	18:30	0	0	0	0	0	0	0	0	
17:45	18:45	0	0	0	0	0	0	0	0	
P/TOT		0	0	0	0	0	0	0	0	



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	00:15	
07:30	07:45	11	2	1	0	0	1	0	15	14.9		
07:45	08:00	4	1	0	0	0	1	0	6	5.4		
08:00	08:15	10	1	0	0	0	0	0	11	11		
08:15	08:30	5	1	0	0	0	0	1	7	6.2		
08:30	08:45	11	1	0	0	0	0	0	12	12		
08:45	09:00	9	1	0	0	0	0	0	10	10		
09:00	09:15	16	3	0	0	0	0	1	20	19.2		
09:15	09:30	17	0	1	0	0	0	0	18	18.5		
15:00	15:15	9	1	0	0	0	0	1	11	10.2		
15:15	15:30	11	1	0	0	0	0	0	12	12		
15:30	15:45	17	1	0	0	0	0	0	18	18		
15:45	16:00	15	1	0	0	0	0	1	17	16.2		
16:00	16:15	21	0	0	0	0	2	1	24	22		
16:15	16:30	7	0	0	0	0	0	0	7	7		
16:30	16:45	22	1	0	0	0	0	0	23	23		
16:45	17:00	9	0	0	0	0	0	2	11	9.4		
17:00	17:15	17	0	0	0	0	0	2	19	17.4		
17:15	17:30	31	3	0	0	0	0	1	35	34.2		
17:30	17:45	23	1	0	0	0	1	2	27	24.8		
17:45	18:00	15	2	1	0	0	0	1	19	18.7		
P/TOT		280	21	3	0	0	5	13	0	0	322	310.1

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	01:00	
07:30	08:30	30	5	1	0	0	2	1	39	37.5		
07:45	08:45	30	4	0	0	0	1	1	36	34.6		
08:00	09:00	35	4	0	0	0	0	1	40	39.2		
08:15	09:15	41	6	0	0	0	0	2	49	47.4		
08:30	09:30	53	5	1	0	0	0	1	60	59.7		
08:45	09:45	42	4	1	0	0	0	1	48	47.7		
09:00	10:00	33	3	1	0	0	0	1	38	37.7		
09:15	10:15	17	0	1	0	0	0	0	18	18.5		
15:00	16:00	52	4	0	0	0	0	2	58	56.4		
15:15	16:15	64	3	0	0	0	2	2	71	68.2		
15:30	16:30	60	2	0	0	0	2	2	66	63.2		
15:45	16:45	65	2	0	0	0	2	2	71	68.2		
16:00	17:00	59	1	0	0	0	2	3	65	61.4		
16:15	17:15	55	1	0	0	0	0	4	60	56.8		
16:30	17:30	79	4	0	0	0	0	5	88	84		
16:45	17:45	80	4	0	0	0	1	7	92	85.8		
17:00	18:00	86	6	1	0	0	1	6	100	95.1		
17:15	18:15	69	6	1	0	0	1	4	81	77.7		
17:30	18:30	38	3	1	0	0	1	3	46	43.5		
17:45	18:45	15	2	1	0	0	0	1	19	18.7		
P/TOT		280	21	3	0	0	5	13	0	0	322	310.1



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									
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	
07:30	07:45	80	14	4	0	3	5	2	108
07:45	08:00	49	6	1	0	2	2	2	62
08:00	08:15	63	10	1	1	0	4	5	84
08:15	08:30	59	8	2	1	0	1	5	76
08:30	08:45	68	10	1	0	0	4	3	86
08:45	09:00	85	14	0	1	0	1	3	104
09:00	09:15	70	6	2	0	0	1	2	81
09:15	09:30	74	9	2	0	1	1	0	87
15:00	15:15	60	8	3	0	0	1	5	77
15:15	15:30	47	12	5	1	1	1	1	68
15:30	15:45	82	13	1	2	0	1	1	100
15:45	16:00	55	10	3	0	1	1	1	71
16:00	16:15	72	11	2	1	0	3	1	90
16:15	16:30	56	11	1	1	0	0	2	71
16:30	16:45	73	11	3	0	0	1	3	91
16:45	17:00	59	11	1	0	1	1	3	76
17:00	17:15	65	17	0	0	1	1	4	88
17:15	17:30	115	18	1	0	0	1	5	140
17:30	17:45	87	9	4	0	0	5	3	108
17:45	18:00	87	14	1	0	0	1	3	106
P/TOT		1406	222	38	8	10	36	54	1774
Period I Total:		548	77	13	3	6	19	22	688
Period II Total:		858	145	25	5	4	17	32	1086

per hour									
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	
07:30	08:30	251	38	8	2	5	12	14	330
07:45	08:45	239	34	5	2	2	11	15	308
08:00	09:00	275	42	4	3	0	10	16	350
08:15	09:15	282	38	5	2	0	7	13	347
08:30	09:30	297	39	5	1	1	7	8	358
08:45	09:45	229	29	4	1	1	3	5	272
09:00	10:00	144	15	4	0	1	2	2	168
09:15	10:15	74	9	2	0	1	1	0	87
15:00	16:00	244	43	12	3	2	4	8	316
15:15	16:15	256	46	11	4	2	6	4	329
15:30	16:30	265	45	7	4	1	5	5	332
15:45	16:45	256	43	9	2	1	5	7	323
16:00	17:00	260	44	7	2	1	5	9	328
16:15	17:15	253	50	5	1	2	3	12	326
16:30	17:30	312	57	5	0	2	4	15	395
16:45	17:45	326	55	6	0	2	8	15	412
17:00	18:00	354	58	6	0	1	8	15	442
17:15	18:15	289	41	6	0	0	7	11	354
17:30	18:30	174	23	5	0	0	6	6	214
17:45	18:45	87	14	1	0	0	1	3	106
P/TOT		1406	222	38	8	10	36	54	1774



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		
07:30	07:45	33	16	4	0	2	0	2	57	59.4		
07:45	08:00	44	14	4	1	0	0	1	64	66.5		
08:00	08:15	38	8	4	0	1	1	3	55	55		
08:15	08:30	42	9	3	0	0	2	6	62	57.5		
08:30	08:45	60	9	4	0	0	1	3	77	76		
08:45	09:00	67	8	2	0	1	2	0	80	80.8		
09:00	09:15	38	7	5	0	0	0	3	53	53.1		
09:15	09:30	39	8	4	0	2	0	2	55	57.4		
15:00	15:15	66	11	1	0	1	3	2	84	82.1		
15:15	15:30	48	8	3	0	1	0	4	64	63.3		
15:30	15:45	64	7	3	0	0	2	7	83	77.7		
15:45	16:00	45	10	0	0	0	0	1	56	55.2		
16:00	16:15	49	7	2	0	1	1	1	61	61.6		
16:15	16:30	55	7	1	0	0	4	6	73	66.3		
16:30	16:45	50	10	1	0	1	1	0	63	63.9		
16:45	17:00	57	8	0	0	0	0	1	66	65.2		
17:00	17:15	60	6	2	0	1	3	3	75	72.8		
17:15	17:30	59	7	3	0	0	3	7	79	73.1		
17:30	17:45	62	6	1	0	0	2	6	77	71.5		
17:45	18:00	57	5	0	0	0	2	4	68	63.6		
P/TOT		1033	171	47	1	11	27	62	0	0	1352	1322
Period I Total:		361	79	30	1	6	6	20	0	0	503	505.7
Period II Total:		672	92	17	0	5	21	42	0	0	849	816.3

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



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
07:30	07:45	8	1	0	0	2	0	0	11	13
07:45	08:00	3	3	0	0	3	0	0	9	12
08:00	08:15	8	1	0	0	1	1	0	11	11.4
08:15	08:30	5	3	0	0	2	0	0	10	12
08:30	08:45	5	2	0	0	0	0	0	7	7
08:45	09:00	6	1	1	0	0	0	0	8	8.5
09:00	09:15	14	1	0	0	0	0	0	15	15
09:15	09:30	11	1	0	0	2	0	0	14	16
15:00	15:15	13	1	0	0	1	0	0	15	16
15:15	15:30	9	1	0	0	2	0	0	12	14
15:30	15:45	9	0	0	0	1	0	0	10	11
15:45	16:00	13	2	0	0	2	0	0	17	19
16:00	16:15	15	1	0	0	1	0	1	18	18.2
16:15	16:30	17	2	0	0	2	0	0	21	23
16:30	16:45	8	0	0	0	1	0	1	10	10.2
16:45	17:00	12	3	0	0	1	0	0	16	17
17:00	17:15	12	1	0	0	2	0	0	15	17
17:15	17:30	5	1	0	0	1	0	0	7	8
17:30	17:45	17	0	1	0	1	0	1	20	20.7
17:45	18:00	5	0	0	0	2	1	0	8	9.4
P/TOT		195	25	2	0	27	2	3	254	278.4

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
07:30	08:30	24	8	0	0	8	1	0	41	48.4
07:45	08:45	21	9	0	0	6	1	0	37	42.4
08:00	09:00	24	7	1	0	3	1	0	36	38.9
08:15	09:15	30	7	1	0	2	0	0	40	42.5
08:30	09:30	36	5	1	0	2	0	0	44	46.5
08:45	09:45	31	3	1	0	2	0	0	37	39.5
09:00	10:00	25	2	0	0	2	0	0	29	31
09:15	10:15	11	1	0	0	2	0	0	14	16
15:00	16:00	44	4	0	0	6	0	0	54	60
15:15	16:15	46	4	0	0	6	0	1	57	62.2
15:30	16:30	54	5	0	0	6	0	1	66	71.2
15:45	16:45	53	5	0	0	6	0	2	66	70.4
16:00	17:00	52	6	0	0	5	0	2	65	68.4
16:15	17:15	49	6	0	0	6	0	1	62	67.2
16:30	17:30	37	5	0	0	5	0	1	48	52.2
16:45	17:45	46	5	1	0	5	0	1	58	62.7
17:00	18:00	39	2	1	0	6	1	1	50	55.1
17:15	18:15	27	1	1	0	4	1	1	35	38.1
17:30	18:30	22	0	1	0	3	1	1	28	30.1
17:45	18:45	5	0	0	0	2	1	0	8	9.4
P/TOT		195	25	2	0	27	2	3	254	278.4



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									
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	
07:30	07:45	5	1	0	0	0	0	0	6
07:45	08:00	5	2	1	0	0	0	0	8
08:00	08:15	10	2	0	0	0	0	0	12
08:15	08:30	5	1	1	0	0	0	2	9
08:30	08:45	6	1	1	0	0	0	0	8
08:45	09:00	8	0	0	0	0	1	0	9
09:00	09:15	8	0	0	0	0	0	0	8
09:15	09:30	3	2	1	0	0	0	1	7
15:00	15:15	16	1	0	0	0	0	0	17
15:15	15:30	19	1	0	0	0	0	3	23
15:30	15:45	20	0	1	0	0	0	4	25
15:45	16:00	11	2	0	0	0	0	1	14
16:00	16:15	13	2	1	0	0	0	0	16
16:15	16:30	21	1	0	0	0	1	5	28
16:30	16:45	13	2	0	0	0	0	0	15
16:45	17:00	17	1	0	0	0	0	0	18
17:00	17:15	16	1	0	0	0	1	2	20
17:15	17:30	17	1	2	0	0	0	3	23
17:30	17:45	22	2	1	0	0	1	2	28
17:45	18:00	14	0	0	0	0	0	0	14
P/TOT		249	23	9	0	0	4	23	308

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									
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	
07:30	08:30	25	6	2	0	0	0	2	35
07:45	08:45	26	6	3	0	0	0	2	37
08:00	09:00	29	4	2	0	0	1	2	38
08:15	09:15	27	2	2	0	0	1	2	34
08:30	09:30	25	3	2	0	0	1	1	32
08:45	09:45	19	2	1	0	0	1	1	24
09:00	10:00	11	2	1	0	0	0	1	15
09:15	10:15	3	2	1	0	0	0	1	7
15:00	16:00	66	4	1	0	0	0	8	79
15:15	16:15	63	5	2	0	0	0	8	78
15:30	16:30	65	5	2	0	0	1	10	83
15:45	16:45	58	7	1	0	0	1	6	73
16:00	17:00	64	6	1	0	0	1	5	77
16:15	17:15	67	5	0	0	0	2	7	81
16:30	17:30	63	5	2	0	0	1	5	76
16:45	17:45	72	5	3	0	0	2	7	89
17:00	18:00	69	4	3	0	0	2	7	85
17:15	18:15	53	3	3	0	0	1	5	65
17:30	18:30	36	2	1	0	0	1	2	42
17:45	18:45	14	0	0	0	0	0	0	14
P/TOT		249	23	9	0	0	4	23	308



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								
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
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	01:00
07:30	08:30	0	0	0	0	0	0	0	0	0	0
07:45	08:45	0	0	0	0	0	0	0	0	0	0
08:00	09:00	0	0	0	0	0	0	0	0	0	0
08:15	09:15	0	0	0	0	0	0	0	0	0	0
08:30	09:30	0	0	0	0	0	0	0	0	0	0
08:45	09:45	0	0	0	0	0	0	0	0	0	0
09:00	10:00	0	0	0	0	0	0	0	0	0	0
09:15	10:15	0	0	0	0	0	0	0	0	0	0
15:00	16:00	0	0	0	0	0	0	0	0	0	0
15:15	16:15	0	0	0	0	0	0	0	0	0	0
15:30	16:30	0	0	0	0	0	0	0	0	0	0
15:45	16:45	0	0	0	0	0	0	0	0	0	0
16:00	17:00	0	0	0	0	0	0	0	0	0	0
16:15	17:15	0	0	0	0	0	0	0	0	0	0
16:30	17:30	0	0	0	0	0	0	0	0	0	0
16:45	17:45	0	0	0	0	0	0	0	0	0	0
17:00	18:00	0	0	0	0	0	0	0	0	0	0
17:15	18:15	0	0	0	0	0	0	0	0	0	0
17:30	18:30	0	0	0	0	0	0	0	0	0	0
17:45	18:45	0	0	0	0	0	0	0	0	0	0
P/TOT		0	0	0	0	0	0	0	0	0	0



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								
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	13	2	0	0	2	0	0	17	19
07:45	08:00	8	5	1	0	3	0	0	17	20.5
08:00	08:15	18	3	0	0	1	1	0	23	23.4
08:15	08:30	10	4	1	0	2	0	2	19	19.9
08:30	08:45	11	3	1	0	0	0	0	15	15.5
08:45	09:00	14	1	1	0	0	1	0	17	16.9
09:00	09:15	22	1	0	0	0	0	0	23	23
09:15	09:30	14	3	1	0	2	0	1	21	22.7
15:00	15:15	29	2	0	0	1	0	0	32	33
15:15	15:30	28	2	0	0	2	0	3	35	34.6
15:30	15:45	29	0	1	0	1	0	4	35	33.3
15:45	16:00	24	4	0	0	2	0	1	31	32.2
16:00	16:15	28	3	1	0	1	0	1	34	34.7
16:15	16:30	38	3	0	0	2	1	5	49	46.4
16:30	16:45	21	2	0	0	1	0	1	25	25.2
16:45	17:00	29	4	0	0	1	0	0	34	35
17:00	17:15	28	2	0	0	2	1	2	35	34.8
17:15	17:30	22	2	2	0	1	0	3	30	29.6
17:30	17:45	39	2	2	0	1	1	3	48	47
17:45	18:00	19	0	0	0	2	1	0	22	23.4
P/TOT		444	48	11	0	27	6	26	562	570.1

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								
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	49	14	2	0	8	1	2	76	82.8
07:45	08:45	47	15	3	0	6	1	2	74	79.3
08:00	09:00	53	11	3	0	3	2	2	74	75.7
08:15	09:15	57	9	3	0	2	1	2	74	75.3
08:30	09:30	61	8	3	0	2	1	1	76	78.1
08:45	09:45	50	5	2	0	2	1	1	61	62.6
09:00	10:00	36	4	1	0	2	0	1	44	45.7
09:15	10:15	14	3	1	0	2	0	1	21	22.7
15:00	16:00	110	8	1	0	6	0	8	133	133.1
15:15	16:15	109	9	2	0	6	0	9	135	134.8
15:30	16:30	119	10	2	0	6	1	11	149	146.6
15:45	16:45	111	12	1	0	6	1	8	139	138.5
16:00	17:00	116	12	1	0	5	1	7	142	141.3
16:15	17:15	116	11	0	0	6	2	8	143	141.4
16:30	17:30	100	10	2	0	5	1	6	124	124.6
16:45	17:45	118	10	4	0	5	2	8	147	146.4
17:00	18:00	108	6	4	0	6	3	8	135	134.8
17:15	18:15	80	4	4	0	4	2	6	100	100
17:30	18:30	58	2	2	0	3	2	3	70	70.4
17:45	18:45	19	0	0	0	2	1	0	22	23.4
P/TOT		444	48	11	0	27	6	26	562	570.1



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
07:30	07:45	13	2	1	0	0	1	0	17	16.9
07:45	08:00	4	1	0	0	0	1	0	6	5.4
08:00	08:15	11	1	0	0	0	0	0	12	12
08:15	08:30	6	1	0	0	0	0	1	8	7.2
08:30	08:45	13	1	0	0	0	0	0	14	14
08:45	09:00	9	2	0	0	0	0	1	12	11.2
09:00	09:15	16	3	0	0	0	0	1	20	19.2
09:15	09:30	19	0	1	0	0	0	0	20	20.5
15:00	15:15	11	1	0	0	0	0	1	13	12.2
15:15	15:30	18	1	0	0	0	0	0	19	19
15:30	15:45	19	2	0	0	0	0	0	21	21
15:45	16:00	22	1	0	0	0	0	2	25	23.4
16:00	16:15	23	0	0	0	0	2	1	26	24
16:15	16:30	13	0	0	0	0	0	0	13	13
16:30	16:45	27	1	0	0	0	0	0	28	28
16:45	17:00	12	0	0	0	0	0	2	14	12.4
17:00	17:15	21	1	0	0	0	0	2	24	22.4
17:15	17:30	34	3	1	0	0	0	1	39	38.7
17:30	17:45	27	1	0	0	0	1	2	31	28.8
17:45	18:00	15	2	1	0	0	0	1	19	18.7
P/TOT		333	24	4	0	0	5	15	0	0
									381	368
Period I Total:		91	11	2	0	0	2	3	0	0
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
07:30	08:30	34	5	1	0	0	2	1	43	41.5
07:45	08:45	34	4	0	0	0	1	1	40	38.6
08:00	09:00	39	5	0	0	0	0	2	46	44.4
08:15	09:15	44	7	0	0	0	0	3	54	51.6
08:30	09:30	57	6	1	0	0	0	2	66	64.9
08:45	09:45	44	5	1	0	0	0	2	52	50.9
09:00	10:00	35	3	1	0	0	0	1	40	39.7
09:15	10:15	19	0	1	0	0	0	0	20	20.5
15:00	16:00	70	5	0	0	0	0	3	78	75.6
15:15	16:15	82	4	0	0	0	2	3	91	87.4
15:30	16:30	77	3	0	0	0	2	3	85	81.4
15:45	16:45	85	2	0	0	0	2	3	92	88.4
16:00	17:00	75	1	0	0	0	2	3	81	77.4
16:15	17:15	73	2	0	0	0	0	4	79	75.8
16:30	17:30	94	5	1	0	0	0	5	105	101.5
16:45	17:45	94	5	1	0	0	1	7	108	102.3
17:00	18:00	97	7	2	0	0	1	6	113	108.6
17:15	18:15	76	6	2	0	0	1	4	89	86.2
17:30	18:30	42	3	1	0	0	1	3	50	47.5
17:45	18:45	15	2	1	0	0	0	1	19	18.7
P/TOT		333	24	4	0	0	5	15	0	0
									381	368



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 D
Parking Stress Survey Report



Manor Road, Richmond

Parking Stress Survey Report

PARKING STRESS SURVEY REPORT

Development: Manor Road, Richmond

Location: London Borough of Richmond

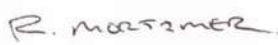

Client: Avanton Richmond Developments Limited

Project Manager: Roger Mortimer

Version No: V01

Date: 26/11/2018

Approvals:

Name	Signature	Title
Roger Mortimer		Project Manager
Penny Winder		Director

CONTENTS PAGE

Introduction.....	4
Project Approach.....	5
Methodology.....	5
Results.....	6
Conclusion.....	14
Appendix A.....	15
Plans.....	16

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 12th and Tuesday 13th 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%
Total	14	29	12	85.71%	13	92.86%	13	44.83%	13	92.86%	13	92.86%	13	44.83%

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%
Total	15	22	10	66.67%	10	66.67%	12	54.55%	10	66.67%	10	66.67%	12	54.55%

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%
Total	21	21	16	76.19%	15	71.43%	18	85.71%	15	71.43%	16	76.19%	18	85.71%

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%
Total	50	50	33	66.00%	31	62.00%	42	84.00%	30	60.00%	30	60.00%	43	86.00%

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%
Total	32	45	27	84.38%	27	84.38%	29	64.44%	24	75.00%	25	78.13%	27	60.00%

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%
Total	44	44	34	77.27%	33	75.00%	39	88.64%	34	77.27%	33	75.00%	38	86.36%

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%
Total	80	87	54	67.50%	52	65.00%	68	78.16%	51	63.75%	52	65.00%	68	78.16%

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%
Total	72	81	48	66.67%	49	68.06%	53	65.43%	50	69.44%	48	66.67%	54	66.67%

* 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%
Total	85	89	57	67.06%	61	71.76%	77	86.52%	52	61.18%	57	67.06%	78	87.64%

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%
Total	19	19	17	89.47%	17	89.47%	14	73.68%	18	94.74%	17	89.47%	14	73.68%

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%
Total	20	34	15	75.00%	15	75.00%	17	50.00%	15	75.00%	15	75.00%	17	50.00%

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%
Total	30	31	25	83.33%	24	80.00%	28	93.33%	25	83.33%	24	80.00%	28	93.33%

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%
Total	55	55	42	76.36%	40	72.73%	48	87.27%	41	74.55%	40	72.73%	49	89.09%

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%
Total	12	12	9	75.00%	9	75.00%	9	75.00%	9	75.00%	9	75.00%	9	75.00%

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%
Total	6	46	2	33.33%	1	16.67%	0	0.00%	1	16.67%	1	16.67%	0	0.00%

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%
Total	20	23	17	85.00%	17	85.00%	17	85.00%	16	80.00%	17	85.00%	16	80.00%

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%
Total	192	192	118	61.46%	114	59.38%	129	67.19%	114	59.38%	108	56.25%	132	68.75%

Manor Park			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	22	22	20	90.91%	19	86.36%	21	95.45%	20	90.91%	20	90.91%	21	95.45%
Total	24	24	21	87.50%	20	83.33%	23	95.83%	22	91.67%	22	91.67%	23	95.83%

Manor 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 %
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%
Total	39	54	30	76.92%	29	74.36%	34	62.96%	27	69.23%	27	69.23%	34	62.96%

Market 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	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%
Total	10	12	7	70.00%	7	70.00%	3	25.00%	9	0.00%	8	80.00%	3	25.00%

Niton 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 %
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%
Total	35	35	21	60.00%	21	60.00%	23	65.71%	21	60.00%	19	54.29%	26	74.29%

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

North 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 %
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%
Total	111	114	70	63.06%	76	68.47%	98	85.96%	67	60.36%	75	67.57%	91	79.82%

Orchard 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 %
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%

Total	30	30	23	76.67%	23	76.67%	9	30.00%	25	83.33%	23	76.67%	8	26.67%
-------	----	----	----	--------	----	--------	---	--------	----	--------	----	--------	---	--------

Pagoda 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 %
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%
Total	32	32	29	90.63%	28	87.50%	32	100.00%	27	84.38%	28	87.50%	33	103.13%

Raleigh Road			Day 1						Day 2					
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%
Total	64	64	63	98.44%	60	93.75%	68	106.25%	61	95.31%	61	95.31%	68	106.25%

Sandycombe 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 %
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%
Total	41	54	36	87.80%	33	80.49%	39	95.12%	36	87.80%	36	87.80%	39	95.12%

Sheen 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	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%
Total	29	41	22	75.86%	22	75.86%	22	53.66%	23	79.31%	22	75.86%	22	53.66%

St George's 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	26	26	15	57.69%	14	53.85%	14	53.85%	16	61.54%	14	53.85%	14	53.85%
Total	26	26	15	57.69%	14	53.85%	14	53.85%	16	61.54%	14	53.85%	14	53.85%

St Mary's 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 %
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%
Total	34	34	22	64.71%	21	61.76%	25	73.53%	23	67.65%	21	61.76%	23	67.65%

Stanmore 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 %
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%
Total	28	29	23	82.14%	24	85.71%	27	93.10%	22	0.00%	22	78.57%	26	89.66%

Temple 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%
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%
Total	39	39	22	56.41%	22	56.41%	34	87.18%	22	56.41%	23	58.97%	33	84.62%

Townshed 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	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%
Total	31	45	23	74.19%	23	74.19%	29	64.44%	25	80.65%	26	83.87%	28	62.22%

Townshed Terrace			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	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%
Total	41	82	31	75.61%	30	73.17%	29	35.37%	31	0.00%	29	70.73%	33	40.24%

Trinity Cottages			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	1	1	0	0.00%	0	0.00%	1	100.00%	1	100.00%	1	100.00%	1	100.00%
Total	1	1	0	0.00%	0	0.00%	1	100.00%	1	100.00%	1	100.00%	1	100.00%

Trinity 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	8	42.11%	9	47.37%	14	73.68%	9	47.37%	7	36.84%	15	78.95%
Total	19	19	8	42.11%	9	47.37%	14	73.68%	9	47.37%	7	36.84%	15	78.95%

Victoria Villas			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	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%
Total	25	28	9	36.00%	8	32.00%	4	14.29%	6	24.00%	8	32.00%	4	14.29%

Windham 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	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%
Total	27	31	17	62.96%	19	70.37%	20	64.52%	19	70.37%	20	74.07%	19	61.29%

* 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	chris@avanton.co.uk

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



Manor Road, Richmond: PSS Day 1 AM

This map is reproduced from Ordnance Survey material with the permission of Ordnance Survey on behalf of the Controller of the Map's Stationery Office (CS). Crown Copyright. Unauthorised reproduction of this map is illegal and may lead to prosecution or civil proceedings.

Alpha Parking Ltd
Licence No. 2018

SCALE	1 : 1250 @ A0 size
DATE	26/11/2018
DRAWING No.	
DRAWN BY	



Manor Road, Richmond: PSS Day 1 Night

This map is reproduced from Ordnance Survey material with the permission of Ordnance Survey on behalf of the Controller of the Map's Stationery Office (C). Crown Copyright. Unauthorised reproduction is prohibited. This map is copyright and may need to be purchased or sold.

SCALE	1 : 1250 at A0 size
DATE	26/11/2018
DRAWING No.	
DRAWN BY	



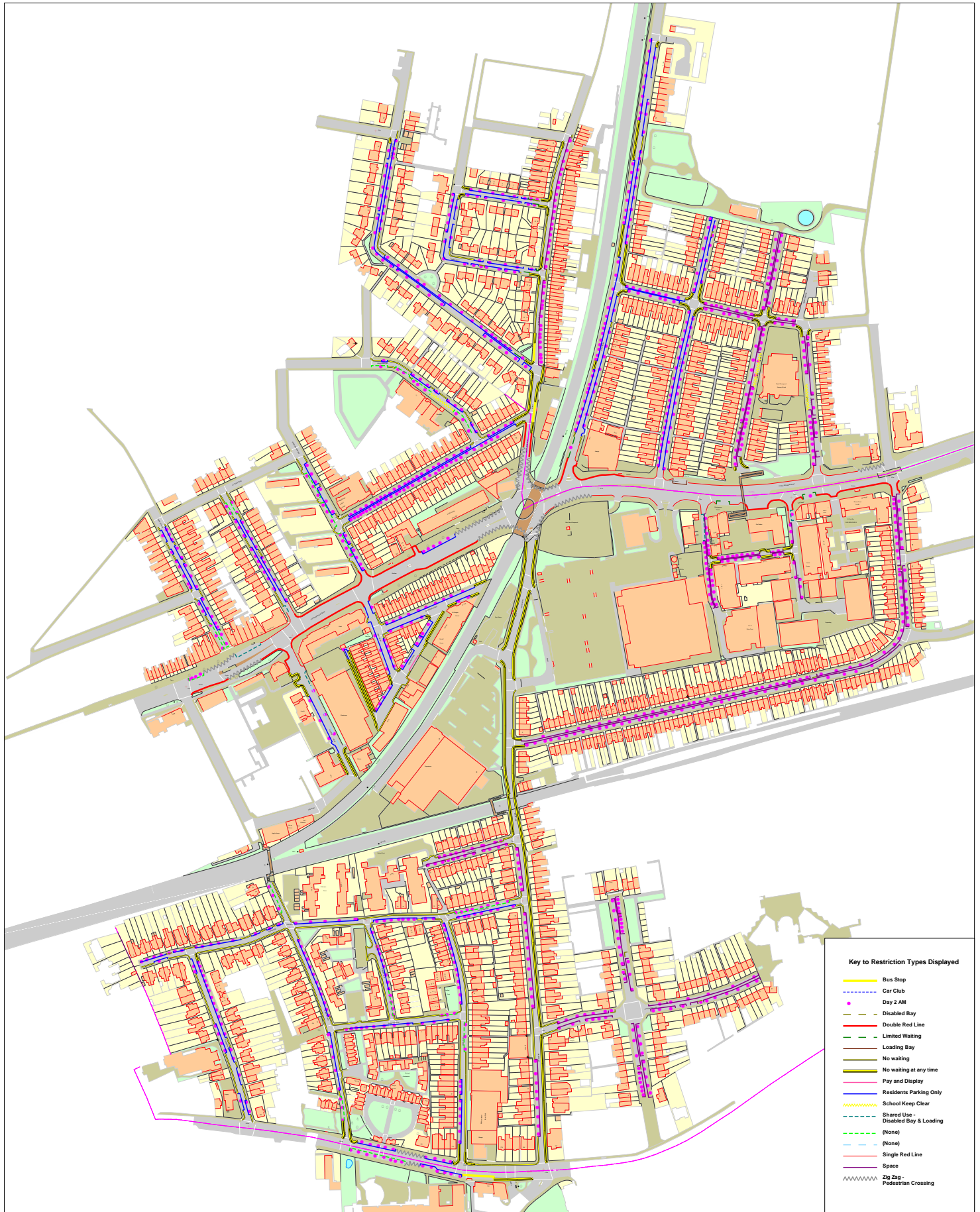
- Key to Restriction Types Displayed**
- Bus Stop
 - Car Club
 - Day 1 PM
 - Disabled Bay
 - Double Red Line
 - Limited Waiting
 - Loading Bay
 - No waiting
 - No waiting at any time
 - Pay and Display
 - Residents Parking Only
 - School Keep Clear
 - Shared Use - Disabled Bay & Loading
 - (None)
 -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



Manor Road, Richmond: PSS Day 1 PM

This map is reproduced from Ordnance Survey material with the permission of Ordnance Survey on behalf of the Controller of the Map's Stationery Office (C). Crown Copyright. Unauthorised reproduction infringes Crown Copyright and may lead to prosecution or civil proceedings. Alpha Parking Ltd Licence No. 2018

SCALE	1 : 1250 @ A0 size
DATE	26/11/2018
DRAWING No.	
DRAWN BY	



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)
- (None)
- Single Red Line
- Space
- Zig Zag - Pedestrian Crossing



Manor Road, Richmond: PSS Day 2 AM

This map is reproduced from Ordnance Survey material with the permission of Ordnance Survey on behalf of the Controller of the Majesty's Stationery Office (C). Crown Copyright. Unauthorised reproduction is prohibited. This map is copyright and may need to be presented or sold. Alpha Parking Ltd. Licence No. 2018

SCALE	1 : 1250 @ A0 size
DATE	26/11/2018
DRAWING No.	
DRAWN BY	



Manor Road, Richmond: PSS Day 2 Night

SCALE	1 : 1250 @ A0 size
DATE	26/11/2018
DRAWING No.	
DRAWN BY	



- 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

This map is reproduced from Ordnance Survey material with the permission of Ordnance Survey on behalf of the Controller of the Map's Stationery Office (C). Crown Copyright. Unauthorised reproduction of this map is illegal and may lead to prosecution or civil proceedings. Alpha Parking Ltd. Licence No. 2018

SCALE	1 : 1250 @ A0 size
DATE	26/11/2018
DRAWING No.	
DRAWN BY	

APPENDIX E

North Sheen Station Pedestrian Survey Report



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

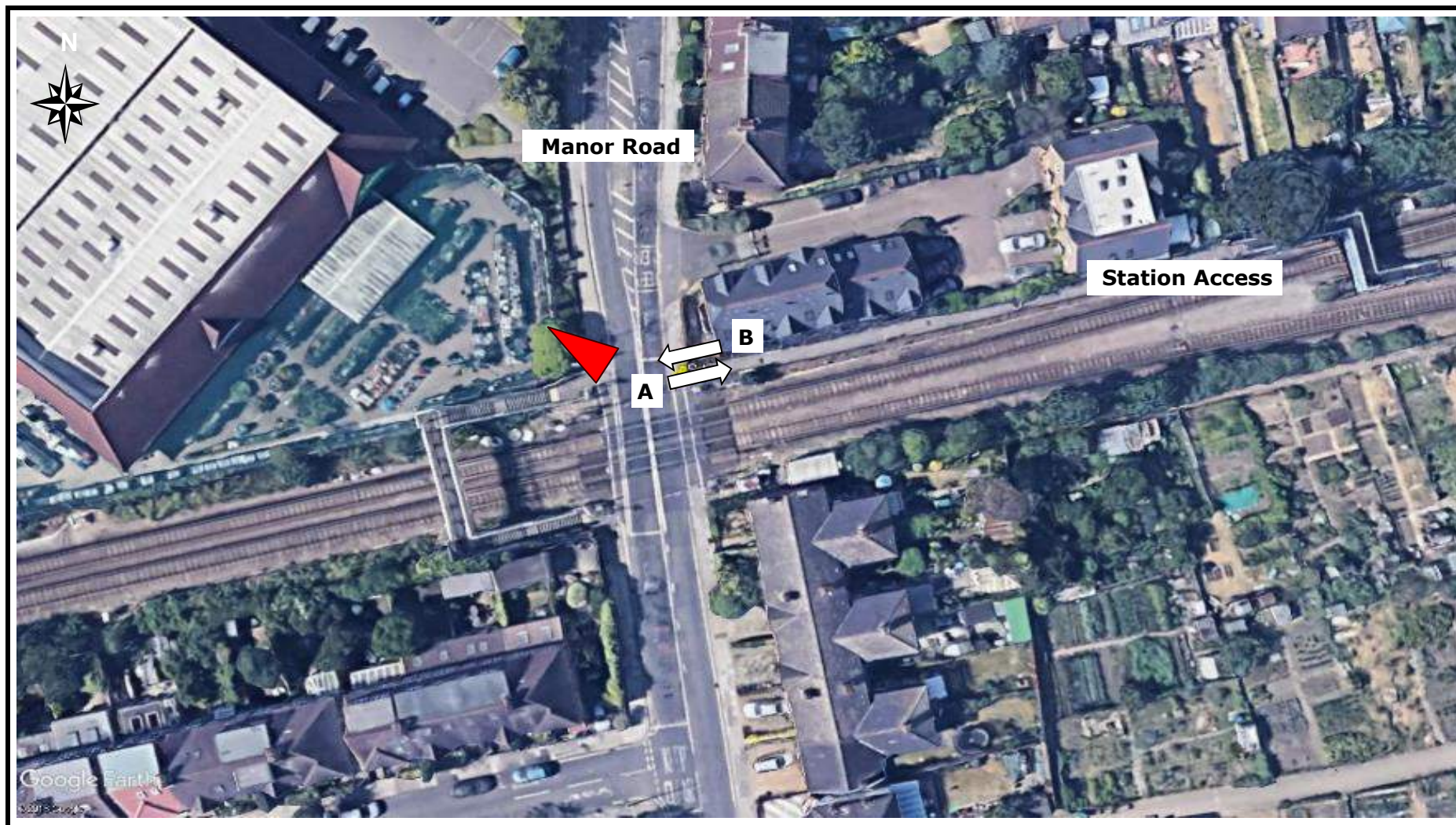
Date: 8th to 10th October 2019

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



	Movement A		Movement B	
Times	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
Hourly Total	259	0	62	1
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
Hourly Total	211	0	72	0
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
Hourly Total	49	0	11	0

	Movement A		Movement B	
Times	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
Hourly Total	36	0	42	0
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
Hourly Total	60	0	105	0
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	<i>Job Number & Name:</i>	23031 Richmond
North Sheen Station	<i>Client:</i>	Sanderson Associates
Pedestrian Counts	<i>Date:</i>	Tuesday 08 October 2019

	Movement A		Movement B	
Times	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

	Movement A		Movement B	
Times	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
Hourly Total	222	0	53	2
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
Hourly Total	197	0	62	0
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
Hourly Total	58	0	19	0

	Movement A		Movement B	
Times	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
Hourly Total	69	1	44	1
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
Hourly Total	55	7	77	1
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	<i>Job Number & Name:</i>	23031 Richmond
North Sheen Station	<i>Client:</i>	Sanderson Associates
Pedestrian Counts	<i>Date:</i>	Wednesday 09 October 2019

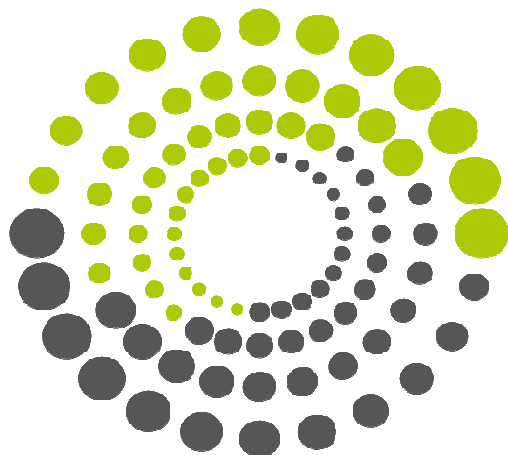
	Movement A		Movement B	
Times	Peds	Cyclists	Peds	Cyclists
17:50 - 17:55	6	0	0	0
17:55 - 18:00	5	0	44	1
Hourly Total	54	4	139	4

	Movement A		Movement B	
Times	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
Hourly Total	228	0	61	2
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
Hourly Total	201	0	65	0
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				
Hourly Total	41	6	5	0

	Movement A		Movement B	
Times	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				
Hourly Total	0	0	0	0
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				
Hourly Total	0	0	0	0
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				

Advanced Transport Research	Job Number & Name:	23031 Richmond
North Sheen Station	Client:	Sanderson Associates
Pedestrian Counts	Date:	Thursday 10 October 2019

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



ADVANCED
TRANSPORT
RESEARCH

Job Number & Name: 23031 Richmond

Site Number/Name: North Sheen Station

Client: Sanderson Associates

Date: 24/10/2019

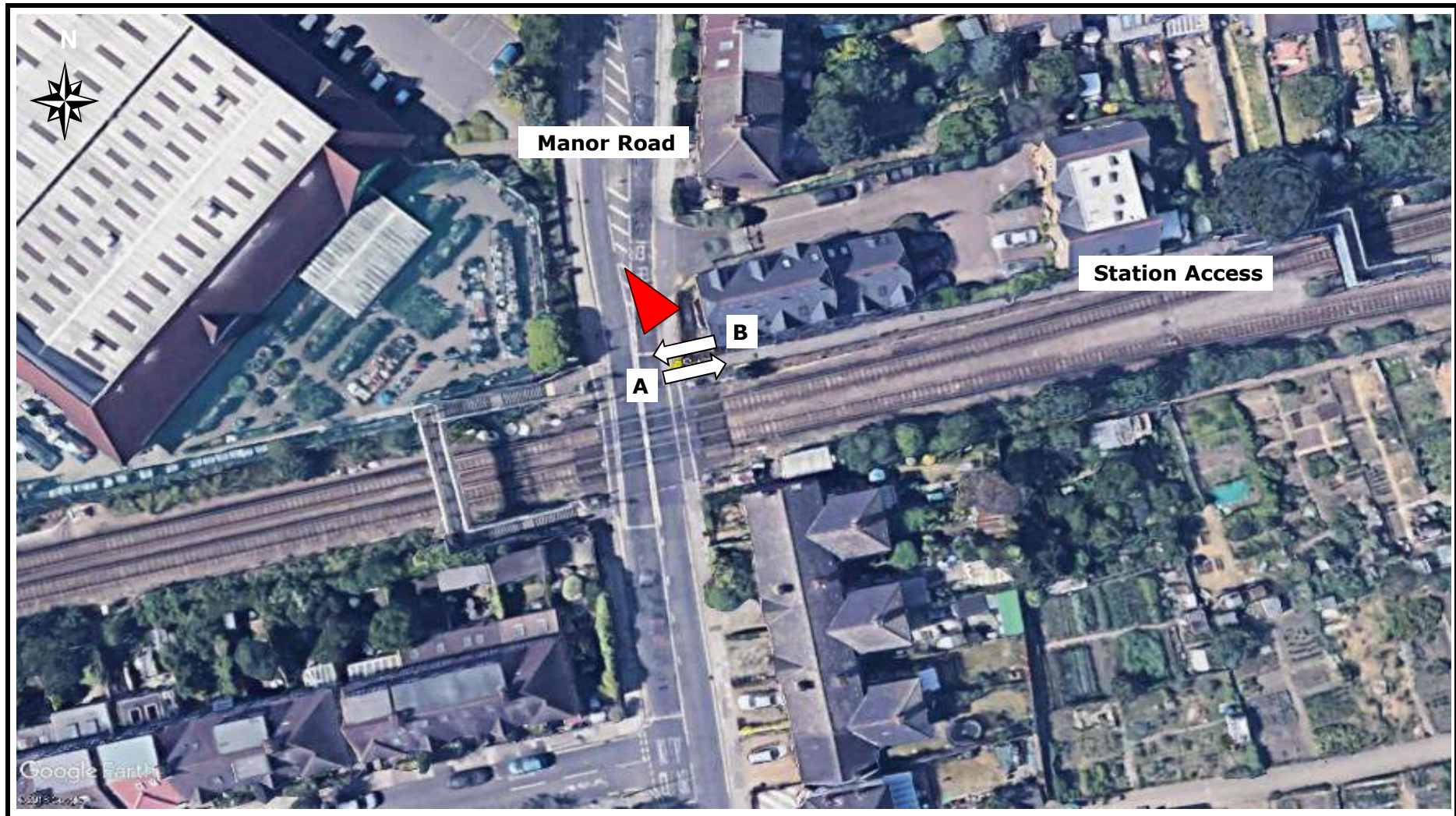
Weather: bright and dry

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

	Movement A		Movement B	
Times	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
Hourly Total	184	0	50	2
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
Hourly Total	216	0	77	0
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
Hourly Total	58	0	15	0

	Movement A		Movement B	
Times	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
Hourly Total	47	0	58	0
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
Hourly Total	51	0	76	1
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

Advanced Transport Research	Job Number & Name:	23031 Richmond
North Sheen Station	Client:	Sanderson Associates
Pedestrian Counts	Date:	Thursday 24 October 2019

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

APPENDIX F

Accident Data from Transport for London

Created: 28-SEP-2018



Richmond Manor Road Personal Injury Collisions 60 mths to 31st Dec 2017

Summary of Accidents Selected

Site Reference and Description (zero accident counts shown in bold)	Date Period	Accidents
WX GIS AREA B24 Manor Road (P)	60 MTS TO DEC-2017	31

The description of how the accident occurred and the contributory factors are the reporting officer's opinion at the time of reporting and may not be the result of extensive investigation



Richmond Manor Road Personal Injury Collisions 60 mths to 31st Dec 2017

WX GIS AREA B24 Manor Road (P)										60 MTS TO DEC-2017 SORTED BY DATE	
1	0113TW60074	SUN 10/03/13 13:20	LIGHT	LOWER RICHMOND ROAD J/W NORTH ROAD	24	LINK 196-198	519010 / 175700				
POLICE - AT SCENE ROAD-DRY			WEATHER-FINE	DUAL CWY	T/STAG JUN	GIVE WAY/UNCONT	ZEBRA				
THE PED STEPPED OUT INTO F.T.S V1'S PATH											
CASUALTY 001 (001) (28 Yrs - F TW9)			SLIGHT	PEDESTRIAN	CROSSING ROAD WITHIN 50M XING S BOUND		FROM DRIVERS N/SIDE				
VEHICLE 001 (000) CAR			(? Yrs - U)	GOING AHEAD OTHER		W TO E	JCT APP				
			BT - DRV NOT CONTACTED		FRONT HIT FIRST						
C001 A 806 (IMPAIRED BY ALCOHOL)											
2	0113TW60216	FRI 28/06/13 08:18	LIGHT	LOWER MORTLAKE ROAD 30M S/W J/W MANOR ROAD	24	LINK 178-196	518950 / 175660				
POLICE - AT SCENE ROAD-WET			RAINING	SINGLE CWY	NO JUN IN 20M	ZEBRA					
V2 HAS FAILED TO SLOW IN TIME AND COLLIDED WITH REAR OF V1.											
CASUALTY 001 (001) (60 Yrs - M KT2)			SLIGHT	DRIVER/RIDER							
VEHICLE 001 (002) CAR			(60 Yrs - M KT2)	SLOWING OR STOPPING		NE TO SW					
			BT - NEGATIVE		BACK HIT FIRST						
VEHICLE 002 (001) GDS => 7.5T			(48 Yrs - M HA4)	GOING AHEAD OTHER		NE TO SW	JNY PART OF WORK				
			BT - NEGATIVE		FRONT HIT FIRST						
V002 A 405 (FAILED TO LOOK PROPERLY)					V002 A 406 (FAILED TO JUDGE OTHER PERSON'S PATH OR SPEED)						
V002 A 308 (FOLLOWING TOO CLOSE)											
3	0113TW60334	WED 11/09/13 15:00	LIGHT	LOWER RICHMOND ROAD J/W MANOR ROAD	24	NODE 196	519020 / 175690				
POLICE - AT SCENE ROAD-DRY			WEATHER-FINE	SINGLE CWY	ROUNDAABOUT	GIVE WAY/UNCONT	ZEBRA				
V1 (MOBILITY SCOOTER) WAS ON CROSSING AND SWERVED DUE TO V2 NOT GIVING WAY											
CASUALTY 001 (001) (76 Yrs - M TW9)			SLIGHT	DRIVER/RIDER							
VEHICLE 001 (002) OTH MOT VEH			(76 Yrs - M TW9)	GOING AHEAD OTHER		N TO S	JCT APP				
			BT - NOT REQUESTED		N/S HIT FIRST						
							FOOTWAY				
VEHICLE 002 (001) CAR			(60 Yrs - M ME14)	GOING AHEAD OTHER		E TO W	JNY PART OF WORK	JCT APP			
			BT - NOT REQUESTED		DID NOT IMPACT						
V001 A 409 (SWERVED)					V002 A 406 (FAILED TO JUDGE OTHER PERSON'S PATH OR SPEED)						
V002 A 602 (CARELESS/RECKLESS/IN A HURRY)					V002 B 304 (DISOBEYED PEDESTRIAN CROSSING FACILITY)						



Richmond Manor Road Personal Injury Collisions 60 mths to 31st Dec 2017

WX GIS AREA B24 Manor Road (P)										60 MTS TO DEC-2017 SORTED BY DATE	
4	0113TW60349	TUE 01/10/13 16:38	LIGHT	NFL:MANOR ROAD 108M S J/W LOWER RICHMOND ROAD				24	LINK 173-196	518980 / 175570	
POLICE - AT SCENE ROAD-WET WEATHER-FINE SINGLE CWY NO JUN IN 20M NO XING FACILITY IN 50M											
NORTHBD V1 PASSED STOPPED VEHICLES TO N/S, PREP TO TURN RIGHT, PED CAS CROSSED WEST TO EAST IN HIS PATH											
CASUALTY 001 (001) (17 Yrs - F TW10) SLIGHT PEDESTRIAN CROSSING ROAD (NOT ON XING) E BOUND FROM DRIVERS O/SIDE MSK											
VEHICLE 001 (000) CAR (33 Yrs - M TW8) TURNING RIGHT S TO E											
BT - NOT REQUESTED N/S HIT FIRST											
C001 A 801 (CROSSED ROAD MASKED BY STATIONARY OR PARKED VEHICLE) C001 B 808 (CARELESS/RECKLESS/IN A HURRY)											
V001 B 405 (FAILED TO LOOK PROPERLY) V001 B 406 (FAILED TO JUDGE OTHER PERSON'S PATH OR SPEED)											
5	0113TW60351	WED 02/10/13 09:47	LIGHT	SANDYCOMBE ROAD J/W LOWER RICHMOND ROAD				24	NODE 196	518980 / 175700	
POLICE - AT SCENE ROAD-DRY WEATHER-FINE SINGLE CWY ROUNDABOUT GIVE WAY/UNCONT ZEBRA											
PED CAS CROSSED ROAD INTO PATH OF NORTHBD V1											
CASUALTY 001 (001) (34 Yrs - F TN23) SLIGHT PEDESTRIAN CROSSING ROAD WITHIN 50M XING N BOUND FROM DRIVERS N/SIDE											
VEHICLE 001 (000) CAR (43 Yrs - F TW1) GOING AHEAD OTHER S TO N JCT MID											
BT - NEGATIVE FRONT HIT FIRST											
V001 A 405 (FAILED TO LOOK PROPERLY) V001 A 406 (FAILED TO JUDGE OTHER PERSON'S PATH OR SPEED)											
6	0113TW60379	FRI 18/10/13 08:05	LIGHT	MANOR ROAD J/W LOWER RICHMOND ROAD [A316]				24	NODE 196	518990 / 175660	
POLICE - AT SCENE ROAD-DRY WEATHER-FINE ROUNDABOUT ROUNDABOUT STOP SIGN ZEBRA											
V1 EAST-BD PUSHING CYCLE WAS STRUCK BY NORTH-BD V1 ON ZEBRA CROSSING											
CASUALTY 001 (001) (28 Yrs - F TW11) SLIGHT PEDESTRIAN CROSSING ROAD ON PED XING E BOUND FROM DRIVERS N/SIDE											
VEHICLE 001 (000) CAR (? Yrs - F 1) GOING AHEAD OTHER S TO N JCT MID											
BT - DRV NOT CONTACTED FRONT HIT FIRST											
V001 A 405 (FAILED TO LOOK PROPERLY) V001 A 403 (POOR TURN OR MANOEUVRE)											
V001 A 406 (FAILED TO JUDGE OTHER PERSON'S PATH OR SPEED)											



Richmond Manor Road Personal Injury Collisions 60 mths to 31st Dec 2017

WX GIS AREA B24 Manor Road (P)										60 MTS TO DEC-2017 SORTED BY DATE			
7	0114TW60060	FRI 07/02/14 10:00	LIGHT	NFL: MANOR ROAD 55M N J/W MANOR GROVE				24	LINK 173-196	518980 / 175500			
POLICE - AT SCENE ROAD-WET			WEATHER-FINE		SINGLE CWY		NO JUN IN 20M		NO XING FACILITY IN 50M				
V1 WAITED TO TURN RIGHT ON MAIN ROAD; NORTHBD V2 LOST CONTROL AND COLLIDED													
CASUALTY 001 (002) (? Yrs - M 1)			SLIGHT		DRIVER/RIDER								
VEHICLE	001 (002)	CAR	(49 Yrs - M TW15)		TURNING RIGHT	E TO N FRONT HIT FIRST							
												BT - NOT REQUESTED	
VEHICLE	002 (001)	M/C 50-125CC	(? Yrs - M 1)		GOING AHEAD OTHER	S TO N FRONT HIT FIRST							
												BT - NOT REQUESTED	
V002 A 410 (LOSS OF CONTROL)					V002 B 405 (FAILED TO LOOK PROPERLY)								
8	0114TW60157	SUN 30/03/14 15:25	LIGHT	LOWER MORTLAKE ROAD J/W SANDYCOMBE ROAD				24	NODE 196	518960 / 175680			
POLICE - AT SCENE ROAD-DRY			WEATHER-FINE		ROUNDAABOUT		ROUNDAABOUT	AUTO SIG	PEDN PHASE AT ATS				
V1 NE-BD WAITNG AT ZEBRA X WAS SHUNTED BY V2.													
CASUALTY 001 (001) (20 Yrs - F W5)			SLIGHT		DRIVER/RIDER								
CASUALTY 002 (001) (13 Yrs - M W5)			SLIGHT		PASSENGER								
VEHICLE	001 (002)	CAR	(20 Yrs - F W5)		GOING AHEAD HELD UP	SW TO NE BACK HIT FIRST							
												Sch Attended : N/K	
												BT - DRV NOT CONTACTED	
LEFT CWY NEARSIDE			JCT MID										
VEHICLE	002 (001)	CAR	(? Yrs - M 1)		GOING AHEAD OTHER	SW TO NE FRONT HIT FIRST							
												BT - DRV NOT CONTACTED	
												LEFT CWY NEARSIDE	
V002 A 408 (SUDDEN BRAKING)					V002 A 405 (FAILED TO LOOK PROPERLY)								
V002 A 406 (FAILED TO JUDGE OTHER PERSON'S PATH OR SPEED)													



Richmond Manor Road Personal Injury Collisions 60 mths to 31st Dec 2017

WX GIS AREA B24 Manor Road (P)										60 MTS TO DEC-2017 SORTED BY DATE	
--------------------------------	--	--	--	--	--	--	--	--	--	-----------------------------------	--

9	0114TW60187	FRI 25/04/14 17:30	LIGHT	NFL: MANOR ROAD 136M S J/W LOWER RICHMOND ROAD	24	LINK 173-196	518970 / 175530				
----------	-------------	--------------------	-------	--	----	--------------	-----------------	--	--	--	--

POLICE - AT SCENE	ROAD-DRY	WEATHER-FINE	SINGLE CWY	NO JUN IN 20M	NO XING FACILITY IN 50M						
-------------------	----------	--------------	------------	---------------	-------------------------	--	--	--	--	--	--

V1 JOINING MAIN ROAD DID NOT SEE V2 APPROACHING AND COLLIDED										
--	--	--	--	--	--	--	--	--	--	--

CASUALTY	001 (002)	(35 Yrs - M KT8)	SLIGHT	DRIVER/RIDER						
----------	-----------	------------------	--------	--------------	--	--	--	--	--	--

VEHICLE	001 (002)	CAR	(56 Yrs - F SW13)	TURNING LEFT	E TO S	O/S HIT FIRST				
BT - NOT REQUESTED										

VEHICLE	002 (001)	PEDAL CYCLE	(35 Yrs - M KT8)	GOING AHEAD OTHER	N TO S	TAKING PUPIL TO/FROM SC				
BT - NOT APPLICABLE										
FRONT HIT FIRST										

V001 A 405 (FAILED TO LOOK PROPERLY)										
--------------------------------------	--	--	--	--	--	--	--	--	--	--

10	0114TW60241	THU 05/06/14 21:10	LIGHT	LOWER RICHMOND ROAD [A316] J/W NORTH ROAD	24	LINK 196-198	519030 / 175710			
-----------	-------------	--------------------	-------	---	----	--------------	-----------------	--	--	--

POLICE - AT SCENE	ROAD-DRY	WEATHER-FINE	DUAL CWY	T/STAG JUN	GIVE WAY/UNCONT	ZEBRA				
-------------------	----------	--------------	----------	------------	-----------------	-------	--	--	--	--

S/B V2 [CYCLIST] CROSSED MAIN ROAD, WAS STRUCK BY E/B V1										
--	--	--	--	--	--	--	--	--	--	--

CASUALTY	001 (001)	(22 Yrs - M KT2)	SERIOUS	DRIVER/RIDER						
----------	-----------	------------------	---------	--------------	--	--	--	--	--	--

VEHICLE	001 (002)	PEDAL CYCLE	(22 Yrs - M KT2)	MOVING OFF	N TO S	JCT MID				
BT - NOT APPLICABLE										
LEFT CWY NEARSIDE										
FRONT HIT FIRST										

VEHICLE	002 (001)	CAR	(22 Yrs - M UB4)	GOING AHEAD OTHER	W TO E	JCT MID				
BT - NOT REQUESTED										
LEFT CWY NEARSIDE										
FRONT HIT FIRST										

V001 B 501 (IMPAIRED BY ALCOHOL)										
----------------------------------	--	--	--	--	--	--	--	--	--	--



Richmond Manor Road Personal Injury Collisions 60 mths to 31st Dec 2017

WX GIS AREA B24 Manor Road (P)										60 MTS TO DEC-2017 SORTED BY DATE	
--------------------------------	--	--	--	--	--	--	--	--	--	-----------------------------------	--

11	0114TW60376	THU 14/08/14 19:00	LIGHT	SANDYCOMBE ROAD J/W LOWER RICHMOND ROAD	24	NODE 196	519010 / 175680				
----	-------------	--------------------	-------	---	----	----------	-----------------	--	--	--	--

POLICE - OVER COU ROAD-WET WEATHER-FINE ROUNDABOUT ROUNDABOUT GIVE WAY/UNCONT ZEBRA

S/B V1 [CYCLIST] ENTERED ROUNDABOUT, WAS STRUCK BY S/B V2 ENTERING FROM V1 RIGHT

CASUALTY 001 (001) (36 Yrs - M TW10) SLIGHT DRIVER/RIDER

VEHICLE	001 (002)	PEDAL CYCLE (36 Yrs - M TW10)	GOING AHEAD RIGHT BEND	N TO NW	JNY PART OF WORK	JCT MID
		BT - NOT APPLICABLE		N/S HIT FIRST		

VEHICLE	002 (001)	CAR (? Yrs - F SW3)	GOING AHEAD LEFT BEND	E TO SW	JCT MID
		BT - DRV NOT CONTACTED		FRONT HIT FIRST	

V002 A 405 (FAILED TO LOOK PROPERLY)

V002 A 406 (FAILED TO JUDGE OTHER PERSON'S PATH OR SPEED)

V002 A 403 (POOR TURN OR MANOEUVRE)

12	0114TW60521	MON 27/10/14 15:35	LIGHT	NFL: LOWER RICHMOND ROAD 37M E J/W MANOR ROAD	24	LINK 196-198	519020 / 175700				
----	-------------	--------------------	-------	---	----	--------------	-----------------	--	--	--	--

POLICE - OVER COU ROAD-DRY WEATHER-FINE DUAL CWY NO JUN IN 20M ZEBRA

E/B V1 STOPPED AT ZEBRA X WAS SHUNTED BY V2

CASUALTY 001 (001) (59 Yrs - M UB4) SLIGHT DRIVER/RIDER

VEHICLE	001 (002)	CAR (59 Yrs - M UB4)	GOING AHEAD HELD UP	W TO E	JNY PART OF WORK
		BT - DRV NOT CONTACTED		BACK HIT FIRST	

VEHICLE	002 (001)	CAR (? Yrs - M 1)	SLOWING OR STOPPING	W TO E	FRONT HIT FIRST
		BT - DRV NOT CONTACTED			

V002 A 403 (POOR TURN OR MANOEUVRE)

V002 A 308 (FOLLOWING TOO CLOSE)

V002 A 406 (FAILED TO JUDGE OTHER PERSON'S PATH OR SPEED)



Richmond Manor Road Personal Injury Collisions 60 mths to 31st Dec 2017

WX GIS AREA B24 Manor Road (P)										60 MTS TO DEC-2017 SORTED BY DATE	
13	0115TW60011	SAT 17/01/15 19:30	DARK	LOWER RICHMOND ROAD J/W NORTH ROAD					24	NODE 196	519020 / 175700
POLICE - AT SCENE ROAD-DRY			WEATHER-FINE		DUAL CWY	ROUNDAABOUT	GIVE WAY/UNCONT ZEBRA				
NE-BD V1 STOPPED TO ACCORD PRECEDENCE AT ZEBRA X, WAS SHUNTED BY V2											
CASUALTY 001 (002) (33 Yrs - F TW16)			SLIGHT		DRIVER/RIDER						
VEHICLE	001 (002)	CAR	(53 Yrs - M W4)			GOING AHEAD HELD UP		SW TO NE		JCT MID	
			BT - NEGATIVE					BACK HIT FIRST			
VEHICLE	002 (001)	CAR	(33 Yrs - F TW16)			SLOWING OR STOPPING		SW TO NE		JCT MID	
			BT - NOT PROVD (MEDCL REASONS)					FRONT HIT FIRST			
V002 A 308 (FOLLOWING TOO CLOSE)						V001 A 408 (SUDDEN BRAKING)					
14	0115TW60088	FRI 30/01/15 11:45	LIGHT	LOWER MORTLAKE ROAD J/W SANDYCOMBE ROAD					24	NODE 196	518990 / 175700
POLICE - OVER COU ROAD-DRY			WEATHER-FINE		ROUNDAABOUT	ROUNDAABOUT	GIVE WAY/UNCONT NO XING FACILITY IN 50M				
NE-BD V1 ENTERED ROUNDAABOUT, WAS UNDERTAKEN AND STRUCK BY V2											
CASUALTY 001 (001) (28 Yrs - M WD5)			SLIGHT		DRIVER/RIDER						
VEHICLE	001 (002)	CAR	(28 Yrs - M WD5)			GOING AHEAD OTHER		SW TO NE		JCT MID	
			BT - DRV NOT CONTACTED					N/S HIT FIRST			
VEHICLE	002 (001)	GDS =< 3.5T	(? Yrs - U 1)			OVERTAKING NEARSIDE		S TO NE		JCT MID	
			BT - DRV NOT CONTACTED					FRONT HIT FIRST			
V002 A 403 (POOR TURN OR MANOEUVRE)						V002 A 406 (FAILED TO JUDGE OTHER PERSON'S PATH OR SPEED)					
15	0115TW60128	SAT 02/05/15 20:25	DARK	NFL: SANDYCOMBE ROAD 35M N J/W MANOR ROAD					24	LINK 196-211	518980 / 175720
POLICE - AT SCENE ROAD-DRY			WEATHER-FINE		SINGLE CWY	NO JUN IN 20M		ZEBRA			
E/B V1 TURNED LEFT OFF ROUNDAABOUT; PED CAS ON ZEBRA X SUDDENLY WALKED INTO FRONT OF V1											
CASUALTY 001 (001) (30 Yrs - M SW15)			SLIGHT		PEDESTRIAN		CROSSING ROAD ON PED XING		W BOUND	FROM DRIVERS O/SIDE	
VEHICLE	001 (000)	CAR	(62 Yrs - F TW9)			GOING AHEAD OTHER		S TO N			
			BT - NEGATIVE					FRONT HIT FIRST			
C001 A 802 (FAILED TO LOOK PROPERLY)						C001 A 803 (FAILED TO JUDGE VEHICLE'S PATH OR SPEED)					



Richmond Manor Road Personal Injury Collisions 60 mths to 31st Dec 2017

WX GIS AREA B24 Manor Road (P)										60 MTS TO DEC-2017 SORTED BY DATE	
16	0115TW60162	SUN 31/05/15 17:56	LIGHT	LOWER RICHMOND ROAD J/W NORTH ROAD				24	LINK 196-198	519020 / 175700	
POLICE - AT SCENE ROAD-DRY			WEATHER-FINE		DUAL CWY	T/STAG JUN	GIVE WAY/UNCONT	ZEBRA			
E/B V3 STOPPED AT ZEBRA X, WAS SHUNTED BY V2 WHICH HAD BEEN SHUNTED BY V1											
CASUALTY 001 (003) (66 Yrs - M TW13)			SLIGHT		DRIVER/RIDER						
VEHICLE	001 (002)	CAR	(32 Yrs - M EN8)		GOING AHEAD HELD UP			W TO E		JCT MID	
			BT - NOT REQUESTED					BACK HIT FIRST			
VEHICLE	002 (001)	CAR	(54 Yrs - F KT3)		SLOWING OR STOPPING			W TO E		JCT MID	
			BT - NOT REQUESTED					FRONT HIT FIRST			
VEHICLE	003 (002)	CAR	(66 Yrs - M TW13)		GOING AHEAD OTHER			W TO E		JCT MID	
			BT - NOT REQUESTED					FRONT HIT FIRST			
V001 B 405 (FAILED TO LOOK PROPERLY)						V002 A 308 (FOLLOWING TOO CLOSE)					
V001 A 308 (FOLLOWING TOO CLOSE)											
17	0115TW60170	THU 04/06/15 04:40	DARK	NFL: MANOR ROAD 23M S J/W MANOR GROVE				24	LINK 173-196	518970 / 175430	
POLICE - AT SCENE ROAD-DRY			WEATHER-FINE		SINGLE CWY	NO JUN IN 20M	NO XING FACILITY IN 50M				
N/B V1 DID NOT KEEP CONTROL ON RH BEND, LEFT ROAD N/S, COLLIDED WITHJ LAMPOST											
CASUALTY 001 (001) (37 Yrs - M TW1)			SLIGHT		DRIVER/RIDER						
CASUALTY 002 (001) (30 Yrs - M TW1)			SLIGHT		PASSENGER FRONT SEAT						
VEHICLE	001 (000)	CAR	(37 Yrs - M TW1)		GOING AHEAD OTHER			S TO N		JNY PART OF WORK	
			BT - NEGATIVE					FRONT HIT FIRST			
			LEFT CWY NEARSIDE		HIT KERB			HIT LAMP POST			
V001 A 410 (LOSS OF CONTROL)						V001 B 503 (FATIGUE)					
18	0115TW60298	SAT 12/09/15 18:30	DARK	NFL: LOWER MORTLAKE ROAD 37M NE J/W MANOR ROAD				24	LINK 196-198	519020 / 175690	
POLICE - AT SCENE ROAD-DRY			WEATHER-FINE		DUAL CWY	NO JUN IN 20M	ZEBRA				
SW-BD V1 AT EXCESS SPEED BRAKED CONFORMED TO GATSO, WENT OVER HANDLEBARS, HIT ROAD FACE DOWN											
CASUALTY 001 (001) (56 Yrs - M SW13)			SERIOUS		DRIVER/RIDER						
VEHICLE	001 (000)	M/C > 500CC	(56 Yrs - M SW13)		SLOWING OR STOPPING			NE TO SW			
			BT - NOT PROVD (MEDCL REASONS)					DID NOT IMPACT			
V001 A 403 (POOR TURN OR MANOEUVRE)						V001 A 408 (SUDDEN BRAKING)					



Richmond Manor Road Personal Injury Collisions 60 mths to 31st Dec 2017

WX GIS AREA B24 Manor Road (P)										60 MTS TO DEC-2017 SORTED BY DATE		
19	0115TW60402	SAT 21/11/15 12:55	LIGHT	NFL: LOWER MORTLAKE ROAD 30M SW J/W SANDYCOMBE ROAD						24	LINK 178-196	518960 / 175670
POLICE - OVER COU ROAD-DRY			WEATHER-FINE		DUAL CWY		NO JUN IN 20M		ZEBRA			
NE-BD IN O/S LANE STRUCK BY V2 CHANGING LANE TO RIGHT WITH NO SIGNAL												
CASUALTY 001 (001) (28 Yrs - M UB1)			SLIGHT		DRIVER/RIDER							
VEHICLE	001 (002)	M/C 50-125CC (28 Yrs - M UB1)				GOING AHEAD OTHER		SW TO NE		COMM TO/FROM WORK		
BT - DRV NOT CONTACTED								N/S HIT FIRST				
VEHICLE	002 (001)	CAR (? Yrs - M TW9)				CHANGE LANE TO RIGHT		SW TO NE				
BT - DRV NOT CONTACTED								O/S HIT FIRST				
V002 A 403 (POOR TURN OR MANOEUVRE)						V002 B 405 (FAILED TO LOOK PROPERLY)						
V002 B 406 (FAILED TO JUDGE OTHER PERSON'S PATH OR SPEED)												
20	0115TW60425	MON 07/12/15 07:15	LIGHT	NFL:MANOR ROAD 105M S J/W LOWER MORTLAKE ROAD						24	LINK 173-196	518980 / 175570
POLICE - AT SCENE ROAD-DRY			WEATHER-FINE		SINGLE CWY		PRIV DRIVE		GIVE WAY/UNCONT ZEBRA			
N/B V1 TURNED RIGHT OFF ROAD, COLLIDED WITH PED CAS IN ROAD												
CASUALTY 001 (001) (26 Yrs - M NG18)			SLIGHT		PEDESTRIAN		CROSSING ROAD WITHIN 50M XING		N BOUND		FROM DRIVERS N/SIDE	
VEHICLE	001 (000)	CAR (74 Yrs - F TW10)				TURNING RIGHT		S TO E		LEAVING MAIN RD		
BT - NEGATIVE								FRONT HIT FIRST				
V001 B 307 (TRAVELLING TOO FAST FOR CONDITIONS)						V001 B 405 (FAILED TO LOOK PROPERLY)						
C001 B 802 (FAILED TO LOOK PROPERLY)												
21	0116TW60192	THU 07/01/16 12:00	LIGHT	NFL: MANOR ROAD 75M S J/W A316 LOWER MORTLAKE ROAD						24	LINK 173-196	518990 / 175600
POLICE - AT SCENE ROAD-DRY			WEATHER-FINE		SINGLE CWY		NO JUN IN 20M		NO XING FACILITY IN 50M			
S/B V1 [BUS] BRAKED FOR STOP, CAS1 STANDING UP ON BOARD FELL OVER												
CASUALTY 001 (001) (73 Yrs - F TW7)			SLIGHT		PASSENGER		STANDING ON PSV					
VEHICLE	001 (000)	BUS/COACH (59 Yrs - M TW7)				SLOWING OR STOPPING		N TO S		JNY PART OF WORK		
BT - NOT REQUESTED								DID NOT IMPACT				
V001 A 408 (SUDDEN BRAKING)												



Richmond Manor Road Personal Injury Collisions 60 mths to 31st Dec 2017

WX GIS AREA B24 Manor Road (P)										60 MTS TO DEC-2017 SORTED BY DATE		
22	0116TW60075	FRI 26/02/16 15:25	LIGHT	NFL: MANOR ROAD 27M NE J/W SANDYCOMBE ROAD [MANOR CIRCUS]	24	LINK 196-198				519020 / 175690		
POLICE - AT SCENE ROAD-DRY			WEATHER-FINE		DUAL CWY		NO JUN IN 20M		ZEBRA			
W/B V2 IN LANE 2 CHANGED LANE LEFT TP LANE 1 BUT SHUNTED V1 IN LANE 1												
CASUALTY 001 (001) (51 Yrs - M TW3)			SLIGHT		DRIVER/RIDER							
VEHICLE 001 (002) CAR			(51 Yrs - M TW3)		GOING AHEAD OTHER		NE TO SW					
BT - NEGATIVE							BACK HIT FIRST					
VEHICLE 002 (001) GDS =< 3.5T			(30 Yrs - M TW20)		CHANGE LANE TO LEFT		NE TO SW		JNY PART OF WORK			
BT - NEGATIVE							N/S HIT FIRST					
										FOREIGN REG RHD		
V002 A 710 (VISION AFFECTED - VEHICLE BLIND SPOT)												
23	0116TW60061	FRI 04/03/16 13:30	LIGHT	MANOR ROAD J./W LOWER MORTLAKE ROAD ROAD [MANOR CIRCUS]	24	NODE 196				518980 / 175690		
POLICE - AT SCENE ROAD-DRY			WEATHER-FINE		ROUNDAABOUT		ROUNDAABOUT		GIVE WAY/UNCONT ZEBRA			
V1 ENTERS ROUNDAABOUT CAUSING CAS1 ON BOARD IN WHEELCHAIR TO FALL OVER IN WHEELCHAIR - [DEFECTIVE WHEELCHAIR BRAKES (C001)]												
CASUALTY 001 (001) (87 Yrs - F TW9)			SLIGHT		PASSENGER		SEATED ON PSV					
VEHICLE 001 (000) BUS/COACH			(46 Yrs - F SW8)		GOING AHEAD RIGHT BEND		SW TO E		JNY PART OF WORK			
BT - NOT REQUESTED							DID NOT IMPACT		JCT MID			
C001 A 999 (OTHER FACTOR)												
24	0116TW60175	SAT 21/05/16 10:15	LIGHT	LOWER MORTLAKE ROAD J/W SANDYCOMBE ROAD	24	NODE 196				518962 / 175681		
POLICE - AT SCENE ROAD-DRY			WEATHER-FINE		SINGLE CWY		ROUNDAABOUT		GIVE WAY/UNCONT ZEBRA			
V1 FAILED CROSSING AND COLLIDED WITH PED												
CASUALTY 001 (001) (80 Yrs - M TW9)			SLIGHT		PEDESTRIAN		CROSSING ROAD ON PED XING		S BOUND FROM DRIVERS N/SIDE			
VEHICLE 001 (000) CAR			(65 Yrs - F TA19)		GOING AHEAD OTHER		SW TO NE		JCT APP			
BT - NOT REQUESTED							N/S HIT FIRST					
V001 A 304 (DISOBEYED PEDESTRIAN CROSSING FACILITY)					V001 A 405 (FAILED TO LOOK PROPERLY)							
C001 B 802 (FAILED TO LOOK PROPERLY)												



Richmond Manor Road Personal Injury Collisions 60 mths to 31st Dec 2017

WX GIS AREA B24 Manor Road (P)										60 MTS TO DEC-2017 SORTED BY DATE	
25	01160026732	SAT 08/10/16 20:50	DARK	LOWER RICHMOND ROAD J/W MANOR ROAD					24	NODE 196	519010 / 175690
POLICE - AT SCENE ROAD-DRY WEATHER-FINE DUAL CWY ROUNDABOUT GIVE WAY/UNCONT NO XING FACILITY IN 50M											
W/B V2 LOST CONTROL, SWERVED TO RIGHT , CROSSED CENTRE RESERVATION PAVING, COLLIDED HEAD-ON WITH E/B V1											
CASUALTY 001 (001) (42 Yrs - M TW7)			SLIGHT	DRIVER/RIDER							
VEHICLE	001 (000)	TAXI (42 Yrs - M TW7)			GOING AHEAD OTHER	W TO E	JNY PART OF WORK		JCT MID		
		BT - NOT REQUESTED				FRONT HIT FIRST					
VEHICLE	002 (000)	GDS =< 3.5T (50 Yrs - M TW1)			CHANGE LANE TO RIGHT	E TO W			JCT MID		
		BT - DRV NOT CONTACTED		SKIDDED	FRONT HIT FIRST						
		LEFT CWY CROSS CENT/RES		HIT KERB							
V002 A 501 (IMPAIRED BY ALCOHOL)											
26	01160026790	SUN 09/10/16 00:34	DARK	LOWER RICHMOND ROAD J/W NORTH ROAD					24	NODE 196	519020 / 175700
POLICE - AT SCENE ROAD-DRY WEATHER-FINE DUAL CWY T/STAG JUN GIVE WAY/UNCONT ZEBRA											
PED CAS RAN ACROSS ROAD ON ZEBRA AND COLLIDED WITH E/B V1											
CASUALTY 001 (001) (16 Yrs - F TW9)			SLIGHT	PEDESTRIAN		CROSSING ROAD ON PED XING	S BOUND	FROM DRIVERS N/SIDE			
VEHICLE	001 (000)	TAXI (42 Yrs - M EC18)			GOING AHEAD OTHER	W TO E	JNY PART OF WORK		JCT MID		
		BT - NOT REQUESTED				FRONT HIT FIRST					
C001 A 803 (FAILED TO JUDGE VEHICLE'S PATH OR SPEED)						C001 A 808 (CARELESS/RECKLESS/IN A HURRY)					
27	01160026636	TUE 11/10/16 14:40	LIGHT	LOWER RICHMOND ROAD J/W MANOR ROAD					24	NODE 196	519010 / 175690
POLICE - AT SCENE ROAD-DRY WEATHER-FINE DUAL CWY ROUNDABOUT GIVE WAY/UNCONT ZEBRA											
E/B V1 STOPPED ACCORDING PRECEDENCE AT ZEBRA X, WAS SHUNTED BY V2											
CASUALTY 001 (001) (45 Yrs - M TW13)			SLIGHT	DRIVER/RIDER							
CASUALTY 002 (001) (45 Yrs - F TW13)			SLIGHT	PASSENGER		FRONT SEAT					
VEHICLE	001 (000)	TAXI (45 Yrs - M TW13)			GOING AHEAD HELD UP	W TO E	JNY PART OF WORK		JCT MID		
		BT - NEGATIVE				BACK HIT FIRST					
VEHICLE	002 (000)	GDS =< 3.5T (32 Yrs - M SO40)			SLOWING OR STOPPING	W TO E	JNY PART OF WORK		JCT MID		
		BT - NEGATIVE				FRONT HIT FIRST					
V002 A 308 (FOLLOWING TOO CLOSE)						V002 A 406 (FAILED TO JUDGE OTHER PERSON'S PATH OR SPEED)					



Richmond Manor Road Personal Injury Collisions 60 mths to 31st Dec 2017

WX GIS AREA B24 Manor Road (P)										60 MTS TO DEC-2017 SORTED BY DATE	
--------------------------------	--	--	--	--	--	--	--	--	--	-----------------------------------	--

29	01160001146	FRI 11/11/16 08:25	LIGHT	LOWER RICHMOND ROAD J/W NORTH ROAD	24	LINK 196-198	519020 / 175690				
----	-------------	--------------------	-------	------------------------------------	----	--------------	-----------------	--	--	--	--

POLICE - AT SCENE	ROAD-DRY	WEATHER-FINE	DUAL CWY	T/STAG JUN	GIVE WAY/UNCONT	ZEBRA					
-------------------	----------	--------------	----------	------------	-----------------	-------	--	--	--	--	--

OTHER OBJECT IN CWY

NOT KNOWN HOW COLLISION OCCURRED

CASUALTY 001 (001) (44 Yrs - M TW13) SLIGHT DRIVER/RIDER

CASUALTY 002 (001) (32 Yrs - F TW9) SLIGHT PEDESTRIAN

CASUALTY 003 (002) (39 Yrs - F TW7) SLIGHT PASSENGER

VEHICLE	001 (000)	CAR	(44 Yrs - M TW13)
BT - NEGATIVE			

SLOWING OR STOPPING	S TO N	COMM TO/FROM WORK
FRONT HIT FIRST		

LEAVING R'ABOUT

HIT OTH OBJECT

FOREIGN REG LHD

VEHICLE	002 (000)	CAR	(42 Yrs - M TW7)
BT - NEGATIVE			

GOING AHEAD HELD UP	S TO N	COMM TO/FROM WORK
FRONT HIT FIRST		

LEAVING R'ABOUT

HIT OTH OBJECT

FOREIGN REG LHD

V001 A 405 (FAILED TO LOOK PROPERLY)

V002 A 408 (SUDDEN BRAKING)

V001 A 108 (ROAD LAYOUT (EG BEND, HILL, NARROW CARRIAGEWAY))

29	01160008053	TUE 20/12/16 23:59	DARK	LOWER MORTLAKE ROAD 10M SW OF J/W MANOR ROAD	24	NODE 196	518959 / 175678				
----	-------------	--------------------	------	--	----	----------	-----------------	--	--	--	--

POLICE - AT SCENE	ROAD-DRY	WEATHER-FINE	DUAL CWY	ROUNDAABOUT	GIVE WAY/UNCONT	NO XING FACILITY IN 50M					
-------------------	----------	--------------	----------	-------------	-----------------	-------------------------	--	--	--	--	--

NOT KNOWN HOW COLLISION OCCURRED

CASUALTY 001 (001) (33 Yrs - M SW14) SLIGHT DRIVER/RIDER

VEHICLE	001 (000)	CAR	(33 Yrs - M SW14)
BT - NOT REQUESTED			

GOING AHEAD HELD UP	W TO E
DID NOT IMPACT	

JCT APP

VEHICLE	002 (000)	CAR	(29 Yrs - F TW16)
BT - POSITIVE			

GOING AHEAD OTHER	W TO E
FRONT HIT FIRST	

JCT APP

V002 A 501 (IMPAIRED BY ALCOHOL)



Richmond Manor Road Personal Injury Collisions 60 mths to 31st Dec 2017

WX GIS AREA B24 Manor Road (P)										60 MTS TO DEC-2017 SORTED BY DATE	
--------------------------------	--	--	--	--	--	--	--	--	--	-----------------------------------	--

30	01170022107	WED 01/03/17 16:40	LIGHT	MANOR ROAD J/W LOWER RICHMOND ROAD	24	NODE 196	519000 / 175660				
----	-------------	--------------------	-------	------------------------------------	----	----------	-----------------	--	--	--	--

POLICE - AT SCENE ROAD-WET WEATHER-UNKNOWN SINGLE CWY ROUNDABOUT GIVE WAY/UNCONT ZEBRA										
--	--	--	--	--	--	--	--	--	--	--

NOT KNOWN HOW COLLISION OCCURRED										
----------------------------------	--	--	--	--	--	--	--	--	--	--

CASUALTY 001 (001) (48 Yrs - F KT2) SLIGHT DRIVER/RIDER										
--	--	--	--	--	--	--	--	--	--	--

VEHICLE	001 (000)	CAR	(48 Yrs - F KT2)	TURNING RIGHT	W TO S	COMM TO/FROM WORK	JCT CLEARED			
BT - NOT REQUESTED					BACK HIT FIRST					

VEHICLE	002 (000)	CAR	(49 Yrs - F TW9)	TURNING RIGHT	W TO S		LEAVING R'ABOUT			
BT - NOT REQUESTED					FRONT HIT FIRST					

V002 B 307 (TRAVELLING TOO FAST FOR CONDITIONS)										
---	--	--	--	--	--	--	--	--	--	--

V002 A 409 (SWERVED)										
----------------------	--	--	--	--	--	--	--	--	--	--

31	01170033497	WED 12/04/17 18:30	DARK	LOWER RICHMOND ROAD J/W MANOR ROAD	24	NODE 196	519010 / 175670				
----	-------------	--------------------	------	------------------------------------	----	----------	-----------------	--	--	--	--

SELF COMPLETION UNKNOWN (S/R) WEATHER-UNKNOWN ROUNDABOUT ROUNDABOUT GIVE WAY/UNCONT NO XING FACILITY IN 50M										
---	--	--	--	--	--	--	--	--	--	--

NOT KNOWN HOW COLLISION OCCURRED										
----------------------------------	--	--	--	--	--	--	--	--	--	--

CASUALTY 001 (001) (40 Yrs - F TW16) SLIGHT DRIVER/RIDER										
--	--	--	--	--	--	--	--	--	--	--

VEHICLE	001 (000)	M/C 50-125CC	(40 Yrs - F TW16)	GOING AHEAD HELD UP	U(TO U(BACK HIT FIRST				
BT - DRV NOT CONTACTED										

VEHICLE	002 (000)	CAR	(? Yrs - F SW13)	UNKNOWN (S/R)	U(TO U(FRONT HIT FIRST				
BT - DRV NOT CONTACTED										

End of Accidents for WX GIS AREA B24 Manor Road (P)										
---	--	--	--	--	--	--	--	--	--	--

End of Report										
---------------	--	--	--	--	--	--	--	--	--	--



Richmond Manor Road Personal Injury Collisions 60 mths to 31st Dec 2017

Summary of Accidents Selected

Site Reference and Description (zero accident counts shown in bold)	Date Period	Accidents
WX GIS AREA B24 Manor Road (P)	60 MTS TO DEC-2017	31

The description of how the accident occurred and the contributory factors are the reporting officer's opinion at the time of reporting and may not be the result of extensive investigation



Richmond Manor Road Personal Injury Collisions 60 mths to 31st Dec 2017

WX GIS AREA B24 Manor Road (P)							60 MTS TO DEC-2017 SORTED BY DATE			
	1	2	3	4	5	6	7	8	9	10
Accident Reference	0113TW60074	0113TW60216	0113TW60334	0113TW60349	0113TW60351	0113TW60379	0114TW60060	0114TW60157	0114TW60187	0114TW60241
Day	SUNDAY	FRIDAY	WEDNESDAY	TUESDAY	WEDNESDAY	FRIDAY	FRIDAY	SUNDAY	FRIDAY	THURSDAY
Date	10/03/2013	28/06/2013	11/09/2013	01/10/2013	02/10/2013	18/10/2013	07/02/2014	30/03/2014	25/04/2014	05/06/2014
Time	13:20	08:18	15:00	16:38	09:47	08:05	10:00	15:25	17:30	21:10
Light Conditions	LIGHT	LIGHT	LIGHT	LIGHT	LIGHT	LIGHT	LIGHT	LIGHT	LIGHT	LIGHT
Road Surface	DRY	WET	DRY	WET	DRY	DRY	WET	DRY	DRY	DRY
Severity	SLIGHT	SLIGHT	SLIGHT	SLIGHT	SLIGHT	SLIGHT	SLIGHT	SLIGHT	SLIGHT	SERIOUS
Conflict										
Pedestrian Location	50M			0	50M	X				
Contributory Factors (* denotes pre 2005)	806 C001 A	405 V002 A 406 V002 A 308 V002 A	409 V001 A 406 V002 A 602 V002 A 304 V002 B	801 C001 A 808 C001 B 405 V001 B 406 V001 B	405 V001 A 406 V001 A	405 V001 A 403 V001 A 406 V001 A	410 V002 A 405 V002 B	408 V002 A 405 V002 A 406 V002 A	405 V001 A	501 V001 B
Easting/Northing	519010 175700	518950 175660	519020 175690	518980 175570	518980 175700	518990 175660	518980 175500	518960 175680	518970 175530	519030 175710

Pedestrian	9	29 %
Wet	5	16 %
Dark	8	26 %

Site Diagram



Severity / Months To	12 12/2013	12 12/2014	12 12/2015	12 12/2016	12 12/2017	Total	Pct
Fatal	0	0	0	0	0	0	0.0 %
Serious	0	1	1	0	0	2	6.5 %
Slight	6	5	7	9	2	29	93.5 %
Total	6	6	8	9	2	31	
Pct	19.4 %	19.4 %	25.8 %	29.0 %	6.5 %		



Richmond Manor Road Personal Injury Collisions 60 mths to 31st Dec 2017

WX GIS AREA B24 Manor Road (P)										60 MTS TO DEC-2017 SORTED BY DATE
	11	12	13	14	15	16	17	18	19	20
Accident Reference	0114TW60376	0114TW60521	0115TW60011	0115TW60088	0115TW60128	0115TW60162	0115TW60170	0115TW60298	0115TW60402	0115TW60425
Day	THURSDAY	MONDAY	SATURDAY	FRIDAY	SATURDAY	SUNDAY	THURSDAY	SATURDAY	SATURDAY	MONDAY
Date	14/08/2014	27/10/2014	17/01/2015	30/01/2015	02/05/2015	31/05/2015	04/06/2015	12/09/2015	21/11/2015	07/12/2015
Time	19:00	15:35	19:30	11:45	20:25	17:56	04:40	18:30	12:55	07:15
Light Conditions	LIGHT	LIGHT	DARK	LIGHT	DARK	LIGHT	DARK	DARK	LIGHT	LIGHT
Road Surface	WET	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY
Severity	SLIGHT	SLIGHT	SLIGHT	SLIGHT	SLIGHT	SLIGHT	SLIGHT	SERIOUS	SLIGHT	SLIGHT
Conflict										
Pedestrian Location					X					50M
Contributory Factors (* denotes pre 2005)	405 V002 A 406 V002 A 403 V002 A	403 V002 A 308 V002 A 406 V002 A	308 V002 A 408 V001 A	403 V002 A 406 V002 A	802 C001 A 803 C001 A	405 V001 B 308 V002 A 308 V001 A	410 V001 A 503 V001 B	403 V001 A 408 V001 A	403 V002 A 405 V002 B 406 V002 B	307 V001 B 405 V001 B 802 C001 B
Easting/Northing	519010 175680	519020 175700	519020 175700	518990 175700	518980 175720	519020 175700	518970 175430	519020 175690	518960 175670	518980 175570



Richmond Manor Road Personal Injury Collisions 60 mths to 31st Dec 2017

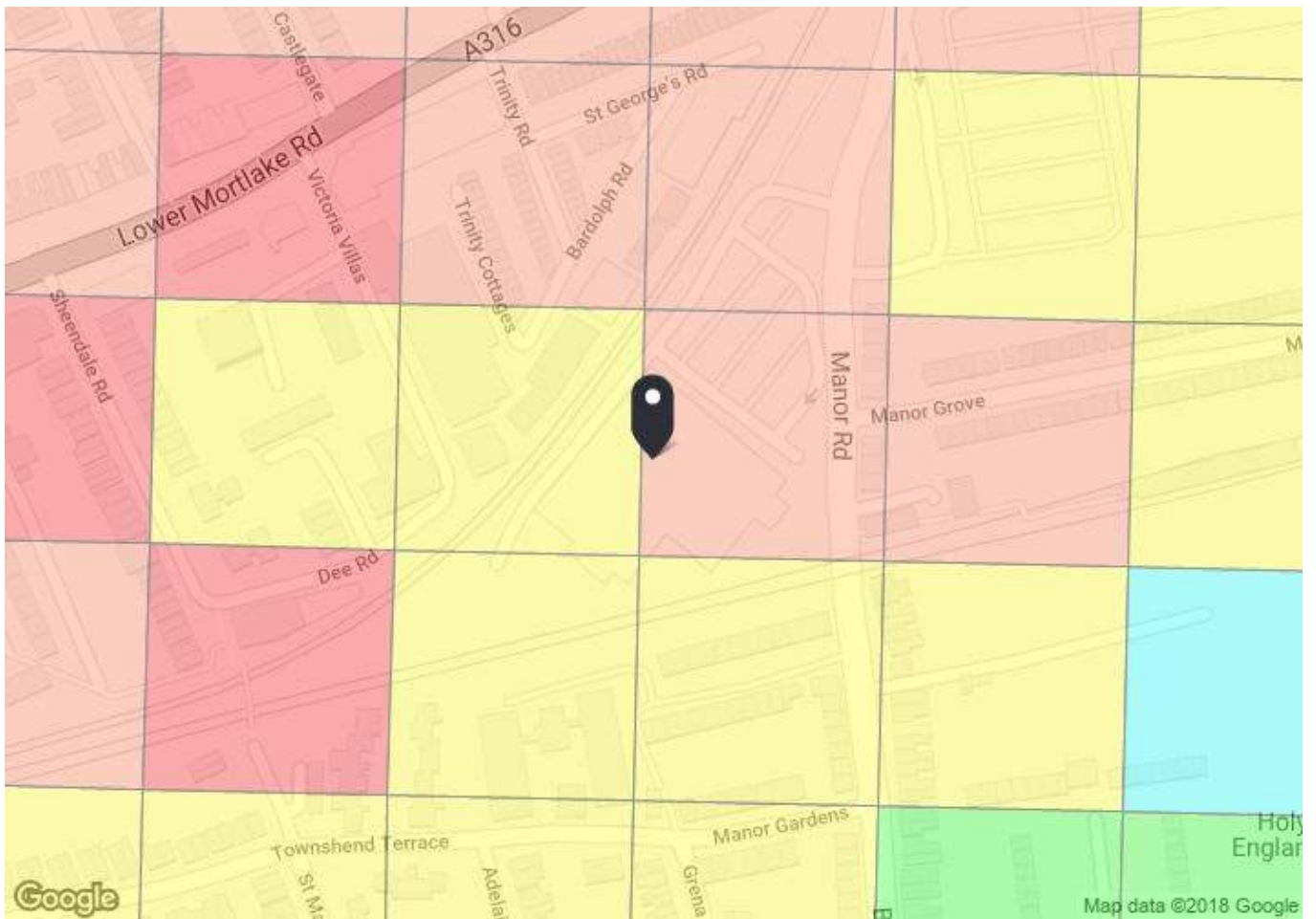
WX GIS AREA B24 Manor Road (P)										60 MTS TO DEC-2017 SORTED BY DATE
	21	22	23	24	25	26	27	28	29	30
Accident Reference	0116TW60192	0116TW60075	0116TW60061	0116TW60175	01160026732	01160026790	01160026636	01160001146	01160008053	01170022107
Day	THURSDAY	FRIDAY	FRIDAY	SATURDAY	SATURDAY	SUNDAY	TUESDAY	FRIDAY	TUESDAY	WEDNESDAY
Date	07/01/2016	26/02/2016	04/03/2016	21/05/2016	08/10/2016	09/10/2016	11/10/2016	11/11/2016	20/12/2016	01/03/2017
Time	12:00	15:25	13:30	10:15	20:50	00:34	14:40	08:25	23:59	16:40
Light Conditions	LIGHT	LIGHT	LIGHT	LIGHT	DARK	DARK	LIGHT	LIGHT	DARK	LIGHT
Road Surface	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	WET
Severity	SLIGHT	SLIGHT	SLIGHT	SLIGHT	SLIGHT	SLIGHT	SLIGHT	SLIGHT	SLIGHT	SLIGHT
Conflict										
Pedestrian Location				X		X		X		
Contributory Factors (* denotes pre 2005)	408 V001 A	710 V002 A	999 C001 A	304 V001 A 405 V001 A 802 C001 B	501 V002 A	803 C001 A 808 C001 A	308 V002 A 406 V002 A	405 V001 A 408 V002 A 108 V001 A	501 V002 A	307 V002 B 409 V002 A
Easting/Northing	518990 175600	519020 175690	518980 175690	518962 175681	519010 175690	519020 175700	519010 175690	519020 175690	518959 175678	519000 175660

**Richmond Manor Road Personal Injury Collisions 60 mths to 31st Dec 2017**

WX GIS AREA B24 Manor Road (P)		60 MTS TO DEC-2017 SORTED BY DATE
	31	
Accident Reference	01170033497	
Day	WEDNESDAY	
Date	12/04/2017	
Time	18:30	
Light Conditions	DARK	
Road Surface	UNKN (S/R)	
Severity	SLIGHT	
Conflict		
Pedestrian Location		
Contributory Factors (* denotes pre 2005)		
Easting/Northing	519010 175670	

APPENDIX G

PTAL Report



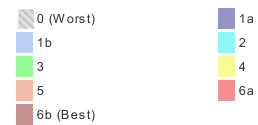
PTAL output for Base Year 5

86 Manor Rd, Richmond TW9 1YB, UK
Easting: 518901, Northing: 175433

Grid Cell: 55572

Report generated: 29/06/2018

Map key - PTAL



Map layers

PTAL (cell size: 100m)

Calculation Parameters

Day of Week	M-F
Time Period	AM Peak
Walk Speed	4.8 kph
Bus Node Max. Walk Access Time (mins)	8
Bus Reliability Factor	2.0
LU Station Max. Walk Access Time (mins)	12
LU Reliability Factor	0.75
National Rail Station Max. Walk Access Time (mins)	12
National Rail Reliability Factor	0.75

Calculation data

Mode Stop		Route	Distance (metres)	Frequency (vph)	Walk Time (mins)	SWT (mins)	TAT (mins)	EDF	Weight	AI
Bus	LOWER MORTLAKE ROAD MANOR CIRCUS	391	386.12	6	4.83	7	11.83	2.54	0.5	1.27
Bus	RICHMOND MANOR CIRCUS	190	335.64	4	4.2	9.5	13.7	2.19	0.5	1.1
Bus	RICHMOND MANOR CIRCUS	419	335.64	4	4.2	9.5	13.7	2.19	0.5	1.1
Bus	RICHMOND MANOR CIRCUS	H37	335.64	10	4.2	5	9.2	3.26	0.5	1.63
Bus	RICHMOND MANOR CIRCUS	R68	335.64	4	4.2	9.5	13.7	2.19	0.5	1.1
Bus	RICHMOND MANOR CIRCUS	H22	335.64	5	4.2	8	12.2	2.46	0.5	1.23
Bus	MANOR ROAD HOMEBASE	493	146.45	5	1.83	8	9.83	3.05	0.5	1.53
Bus	MANOR ROAD HOMEBASE	R70	146.45	6	1.83	7	8.83	3.4	0.5	1.7
Bus	MANOR ROAD SAINSBURY'S	371	98.92	7	1.24	6.29	7.52	3.99	1	3.99
Bus	EAST SHEEN BLACK HORSE	33	464.56	7.5	5.81	6	11.81	2.54	0.5	1.27
Bus	EAST SHEEN BLACK HORSE	337	464.56	5	5.81	8	13.81	2.17	0.5	1.09
Rail	North Sheen	'SHEPRTN-WATRLMN 2H92'	142.14	1	1.78	30.75	32.53	0.92	0.5	0.46
Rail	North Sheen	'WDON-WATRLMN 2K03'	142.14	0.33	1.78	91.66	93.44	0.32	0.5	0.16
Rail	North Sheen	'WATRLMN-WATRLMN 2K09'	142.14	2	1.78	15.75	17.53	1.71	1	1.71
Rail	North Sheen	'WATRLMN-WATRLMN 2O09'	142.14	2	1.78	15.75	17.53	1.71	0.5	0.86
Rail	North Sheen	'WATRLMN-WATRLMN 2R09'	142.14	2	1.78	15.75	17.53	1.71	0.5	0.86
Rail	North Sheen	'HOUNSLW-WATRLMN 2V05'	142.14	0.33	1.78	91.66	93.44	0.32	0.5	0.16
									Total Grid Cell AI:	21.19

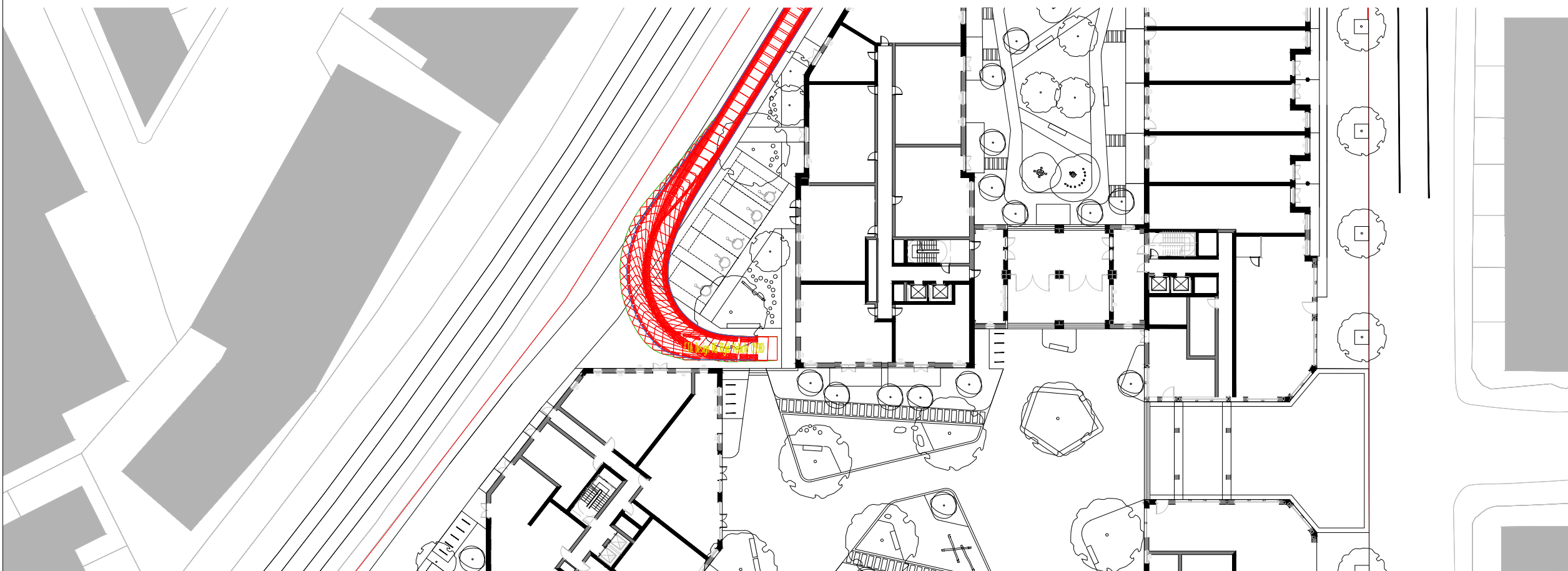
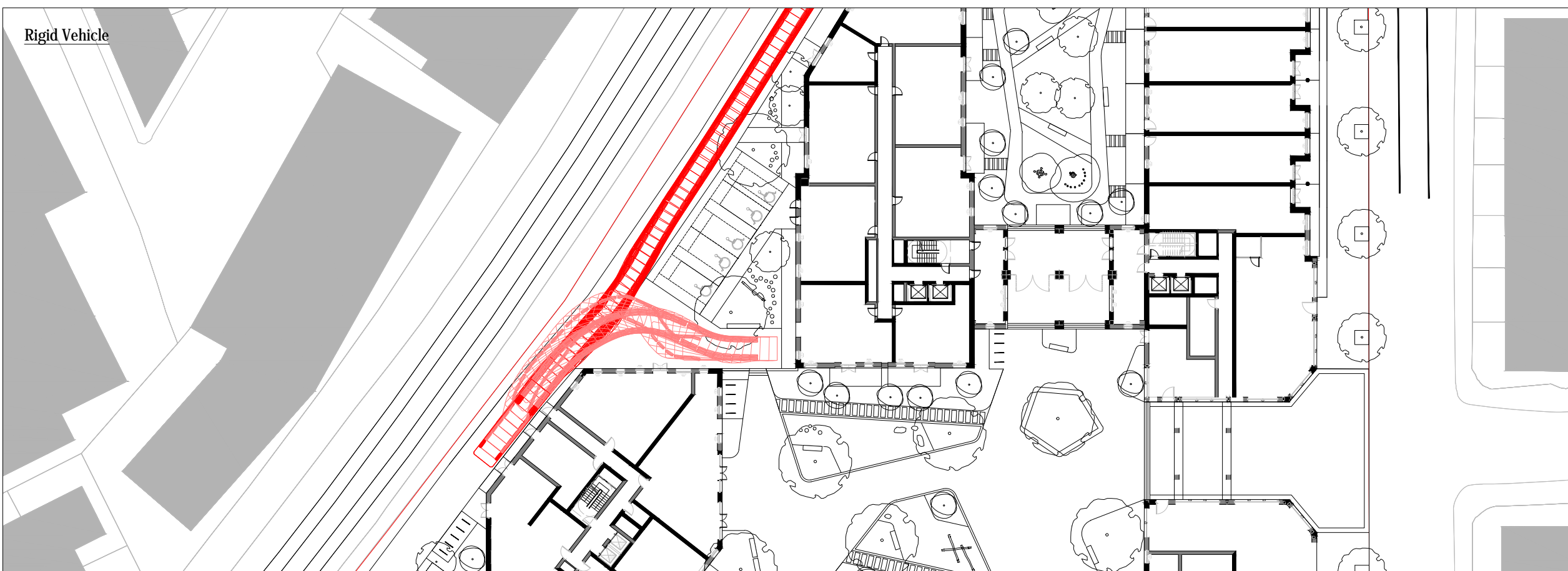
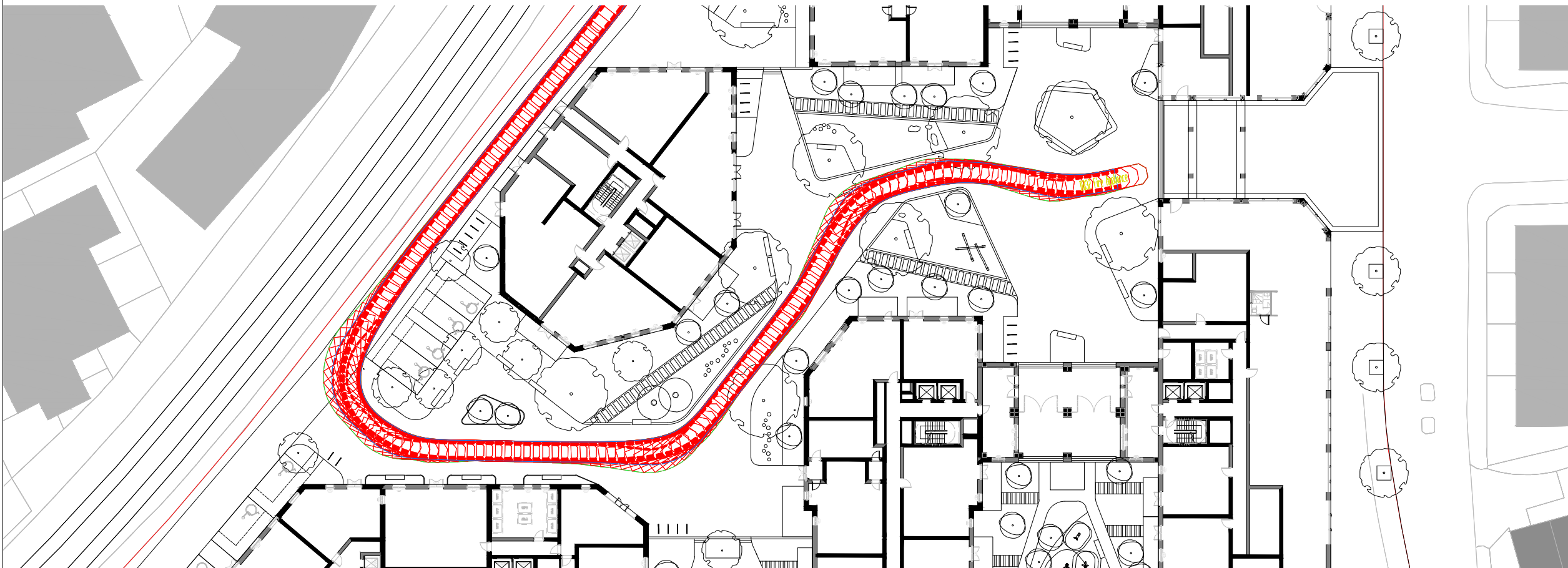
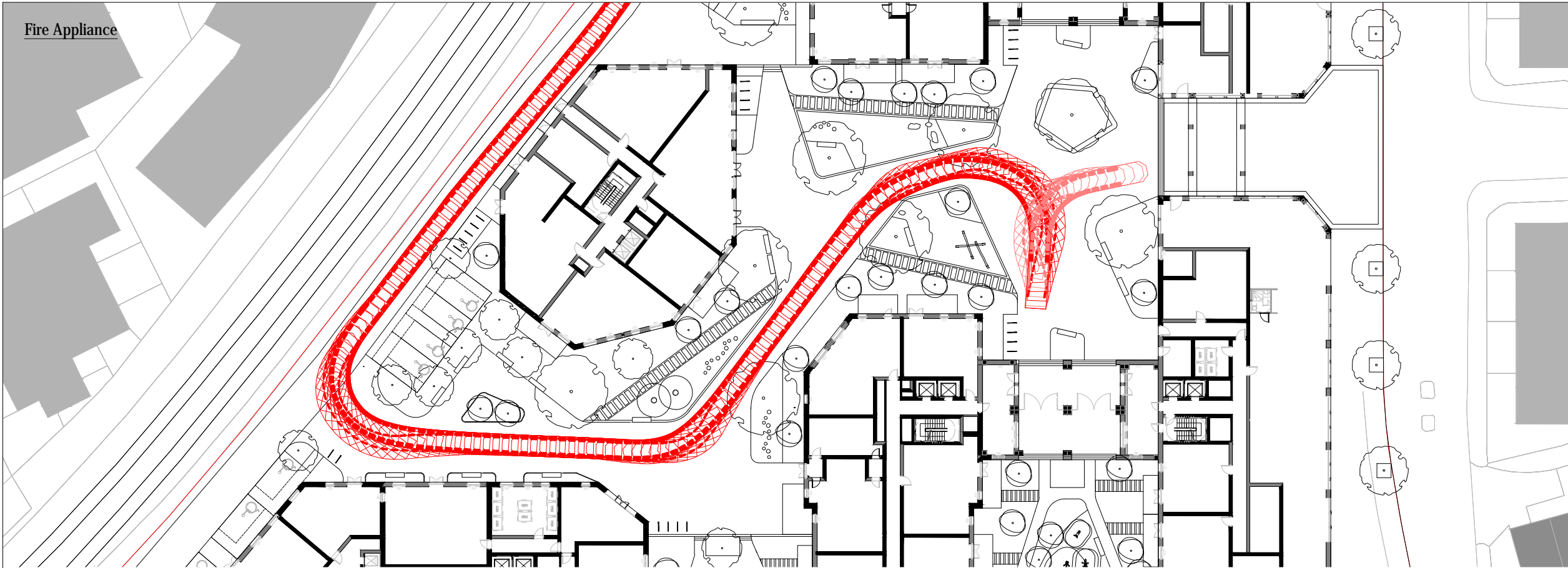
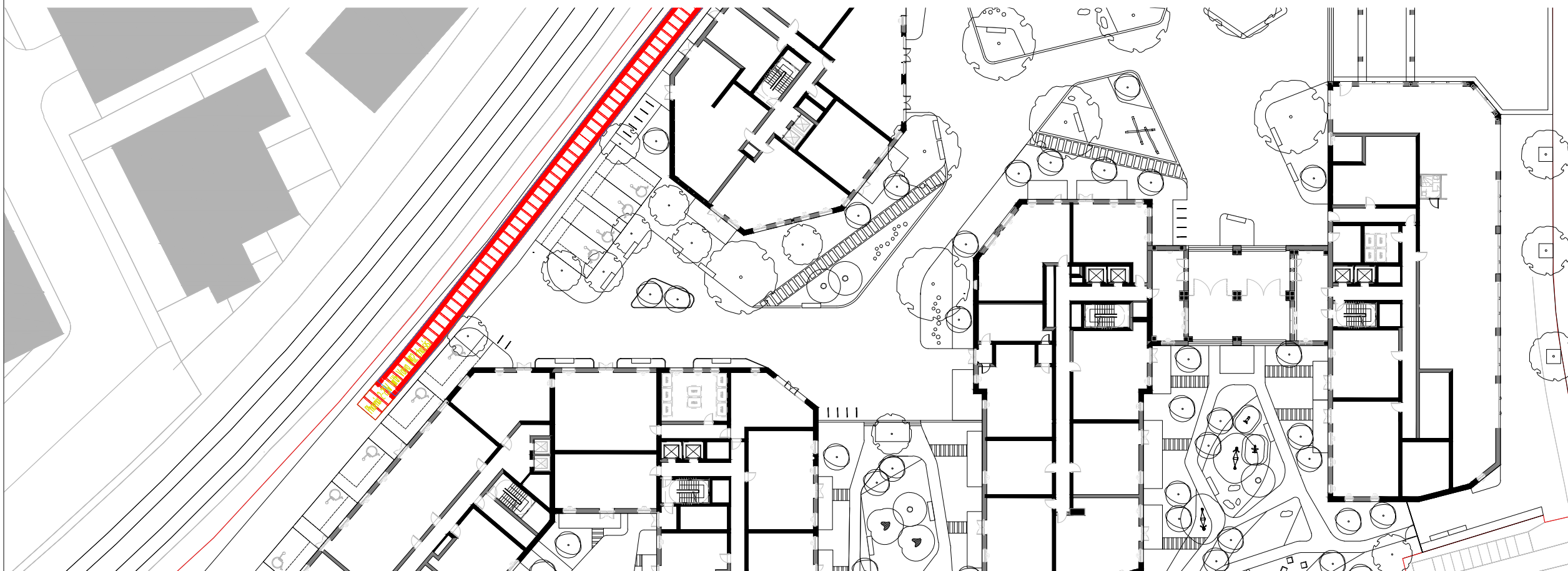
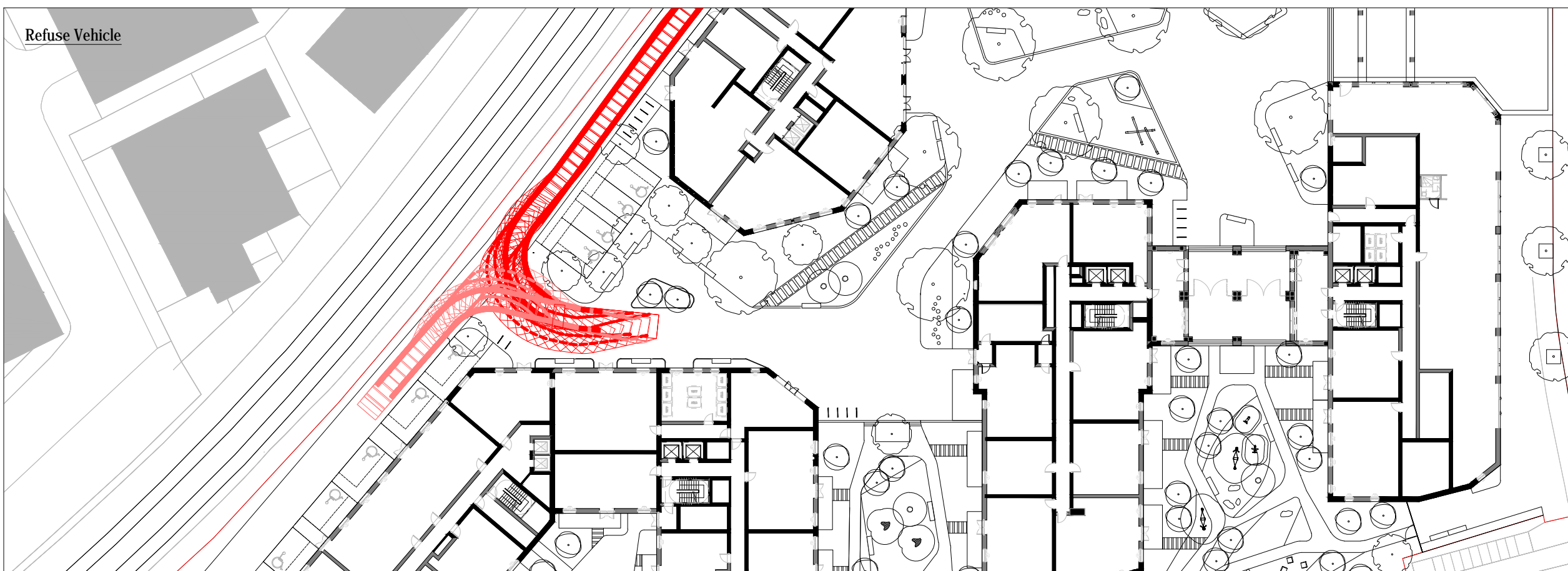
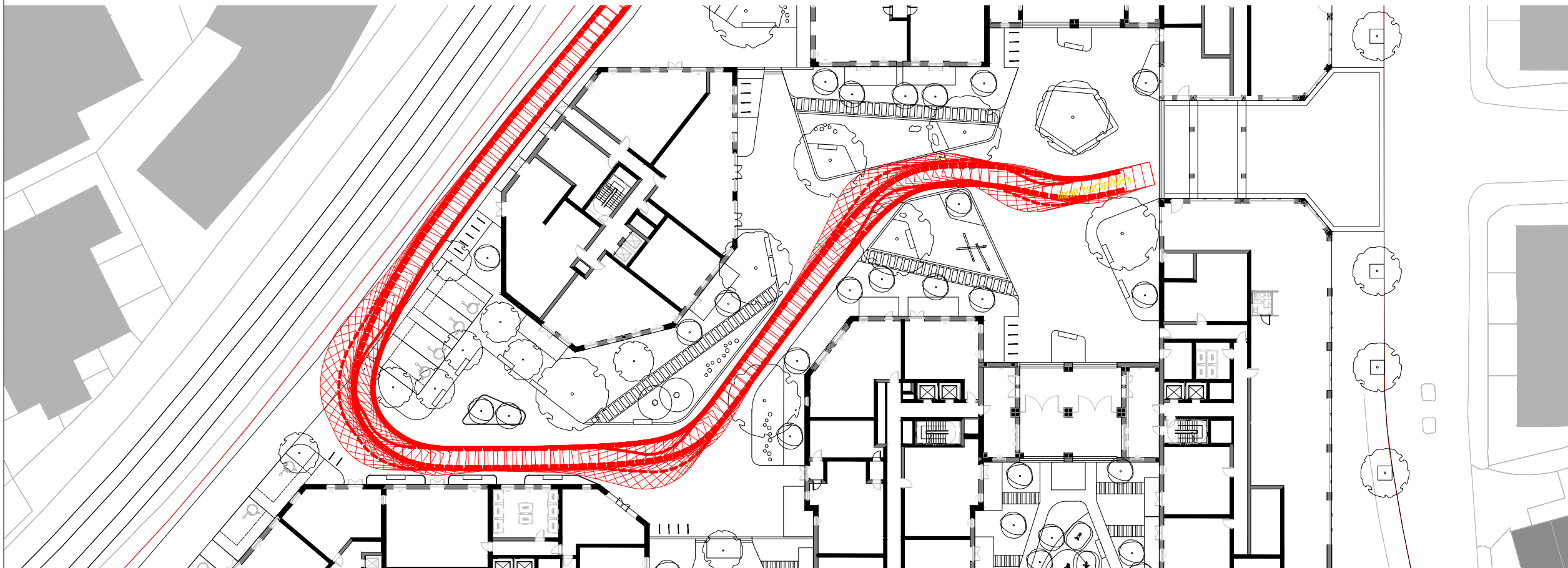
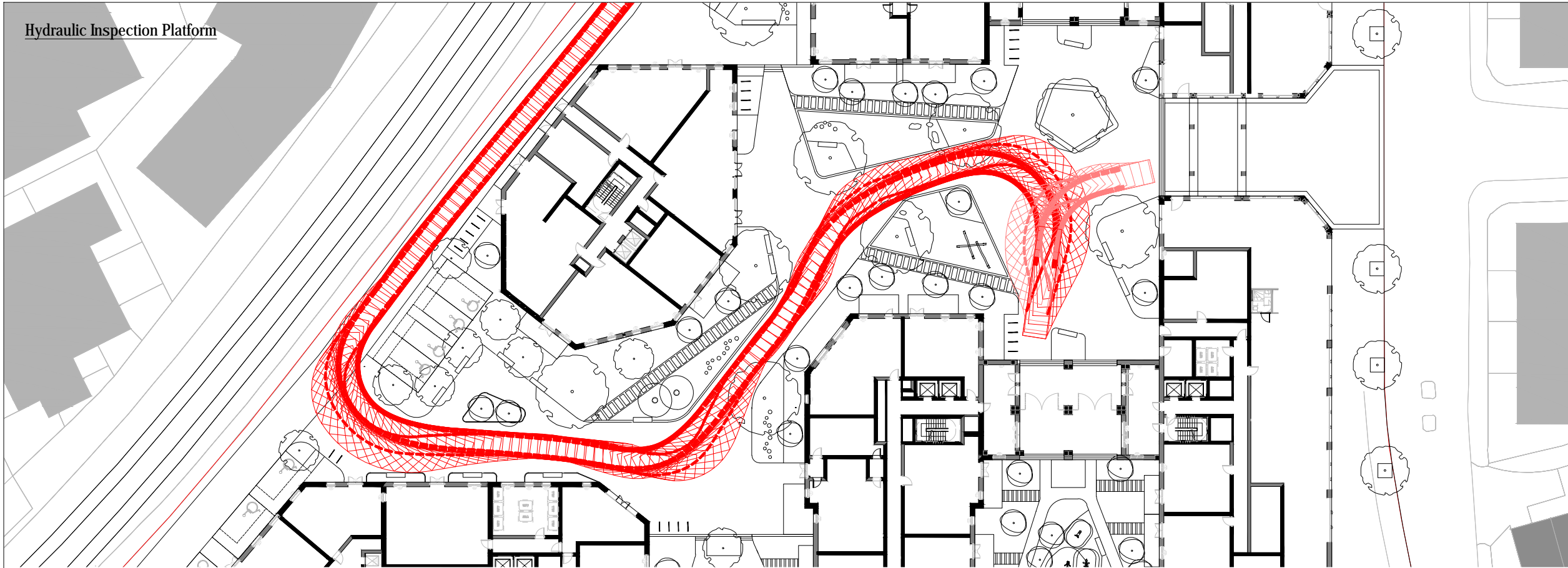
APPENDIX H

Drawing 11205-007 - Swept Path Analysis Various Servicing Vehicles

Drawing 11205-008 – Proposed Highway Improvements on Manor Road

Drawing 11205-009 - Swept Path Analysis Proposed Bus Layover Area

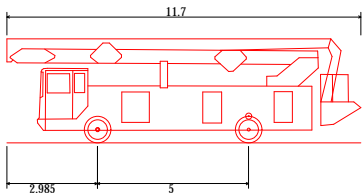
Drawing 11205-010 – Layout and Swept Path Analysis Temporary Bus Layover Area



- 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(s) 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 its 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 its 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.

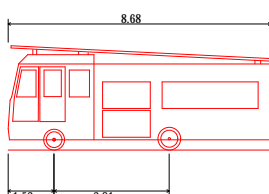


Hydraulic Inspection Platform



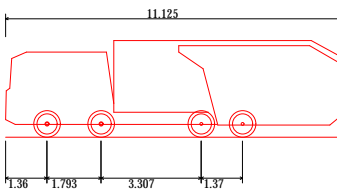
Hydraulic Inspection Platform	
Overall Length	11.700m
Overall Width	2.490m
Overall Body Height	2.435m
Min Body Ground Clearance	0.416m
Track Width	2.486m
Lock to lock time	6.00s
Kerb to Kerb Turning Radius	9.375m

Fire Appliance



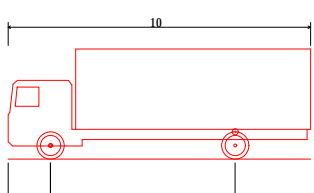
DB32 Fire Appliance	
Overall Length	8.680m
Overall Width	2.180m
Overall Body Height	2.325m
Min Body Ground Clearance	0.337m
Max Track Width	2.121m
Lock to lock time	6.00s
Kerb to Kerb Turning Radius	7.910m

Refuse Vehicle

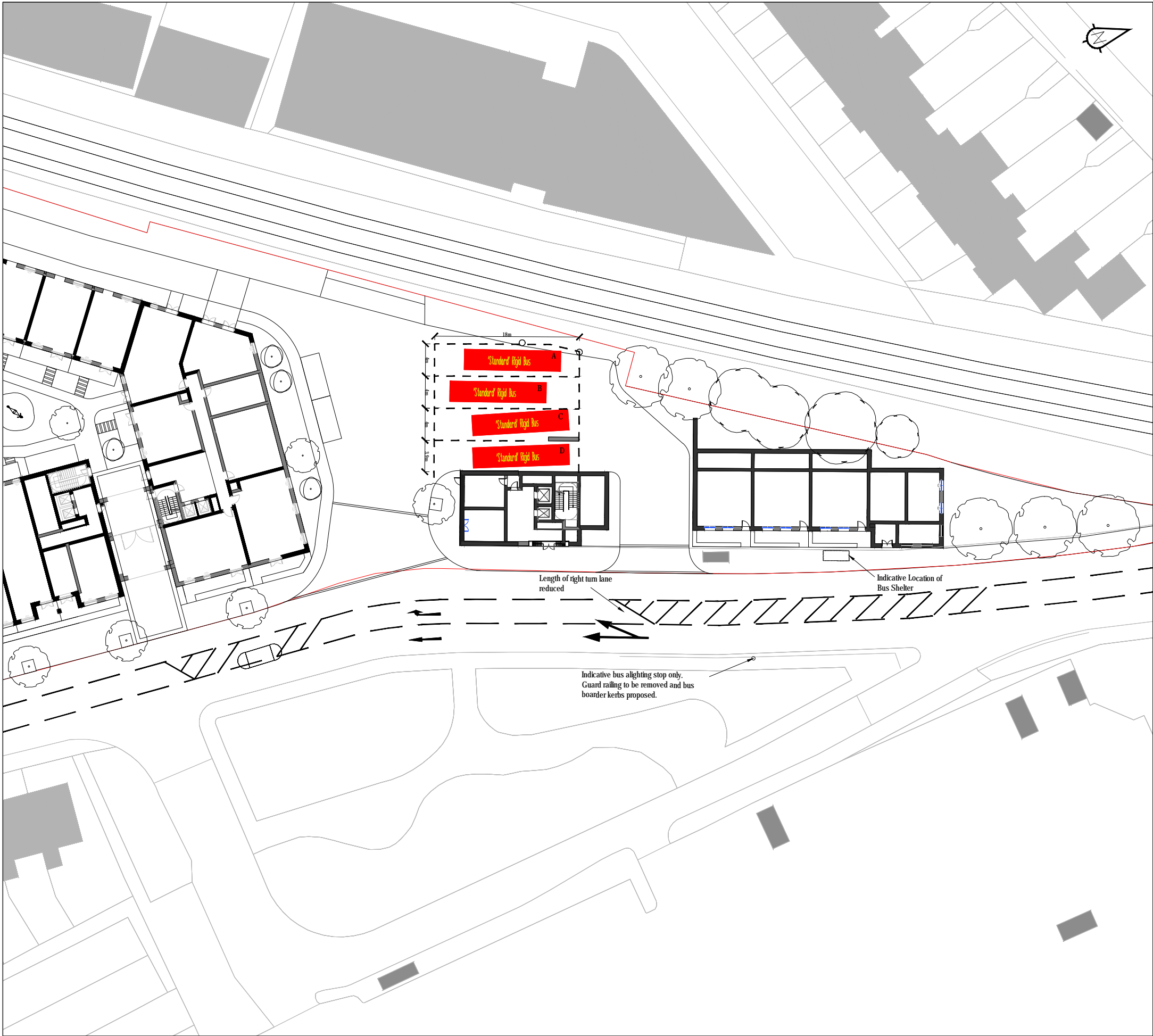


Phoenix 2.25W (with Volvo FM12 chassis)	
Overall Length	11.125m
Overall Width	2.530m
Overall Body Height	3.205m
Min Body Ground Clearance	0.410m
Track Width	2.500m
Lock to lock time	4.00s
Kerb to Kerb Turning Radius	9.250m

Rigid Vehicle



FTA Design HG Rigid Vehicle (1998)	
Overall Length	10.000m
Overall Width	2.500m
Overall Body Height	3.642m
Min Body Ground Clearance	0.440m
Track Width	2.470m
Lock to lock time	3.00s
Kerb to Kerb Turning Radius	11.000m



- 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 plan(s) 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.

Rev	Amendment	Drawn	Date	Checked

Sa

sanderson

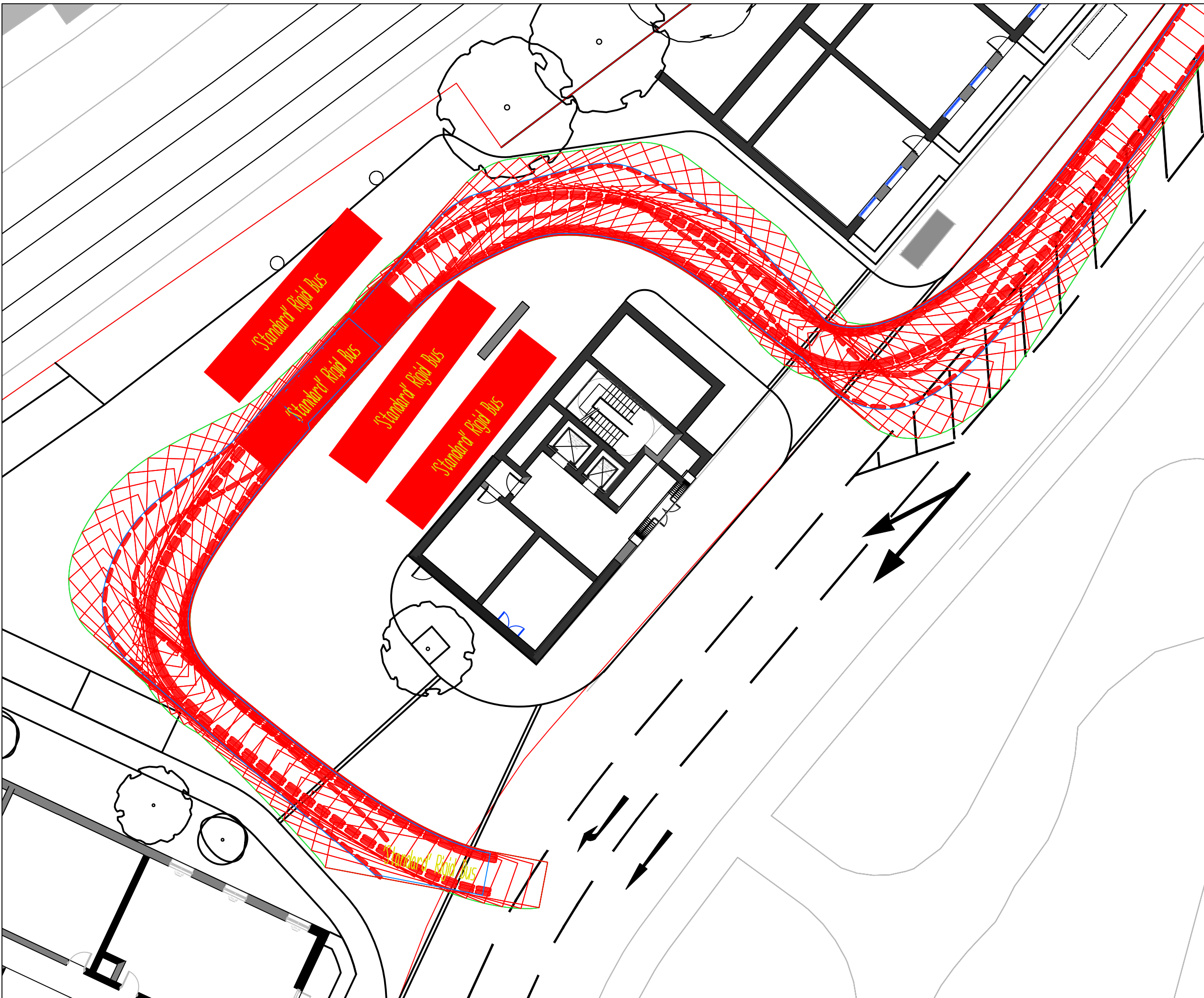
associates

(consulting engineers) ltd

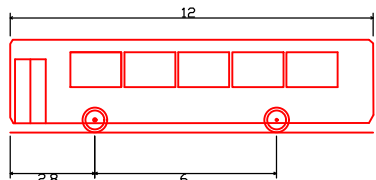
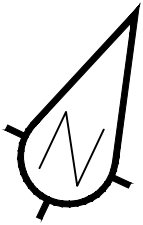
Highways | Traffic | Transportation | Water

T 01924 844080 mail@sandersonassociates.co.uk
F 01924 844081 www.sandersonassociates.co.uk

Project Name		
Redevelopment of Homebase Manor Road North Sheen		
Drawing Title		
Highway Improvement and Bus Stop Locations		
Scale 1:500	Drawn By CH	
Drawing Size A3	Checked By KS	
Date November 2019	Approved By KS	
	Drawing Number 11205-008	Rev -



- 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 plan(s) 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 its 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 its 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.



'Standard' Rigid Bus	12.000m
Overall Length	2.800m
Overall Width	0.300m
Min Body Height	0.300m
Min Body Ground Clearance	0.300m
Track Width	4.000m
Lock to lock time	4.000s
Wall to Wall Turning Radius	10.771m

Rev	Amendment	Drawn	Date	Checked

sanderson[®]
associates
(consulting engineers) ltd
Highways | Traffic | Transportation | Water
T 01924 844080 mail@sandersonassociates.co.uk
F 01924 844081 www.sandersonassociates.co.uk

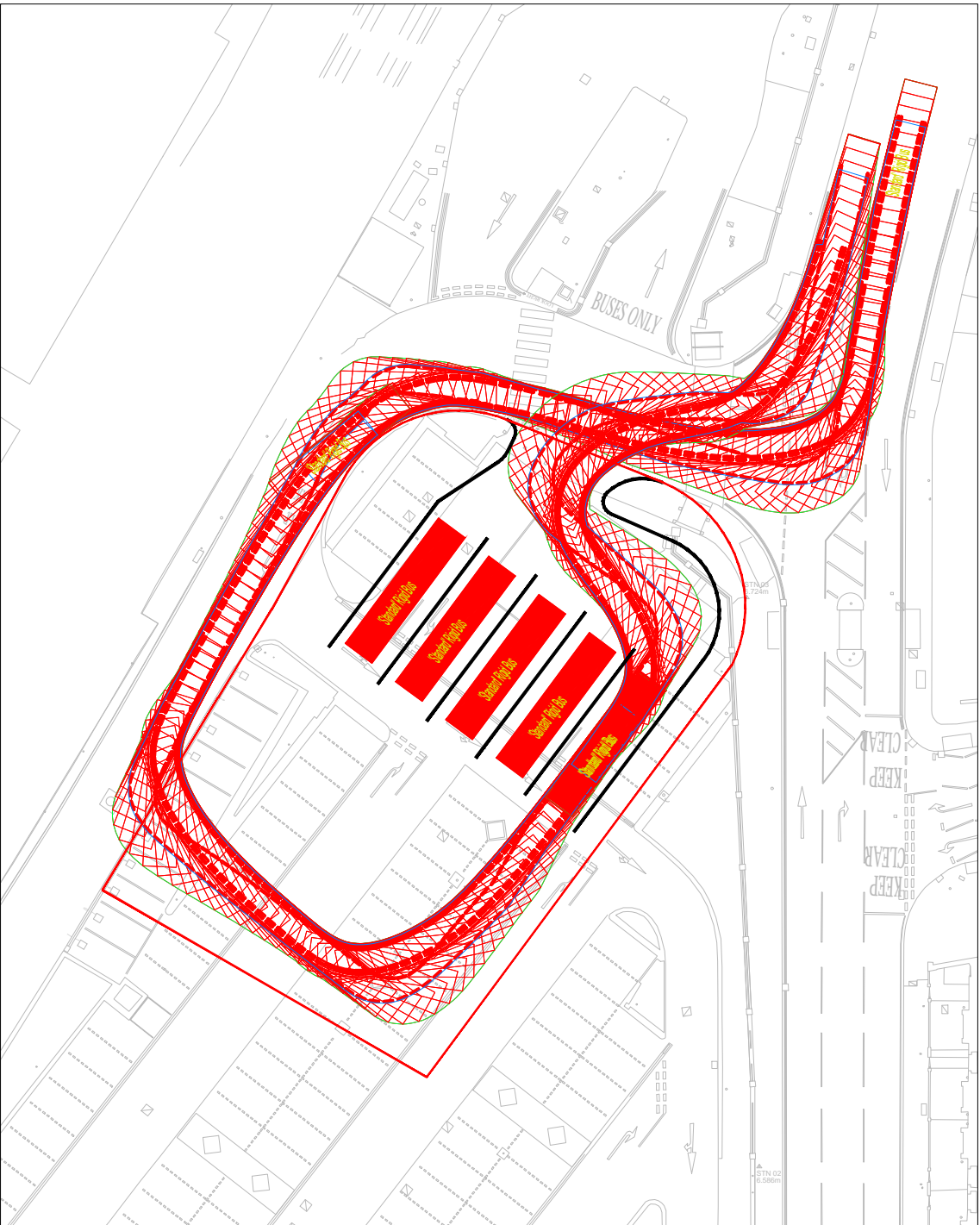
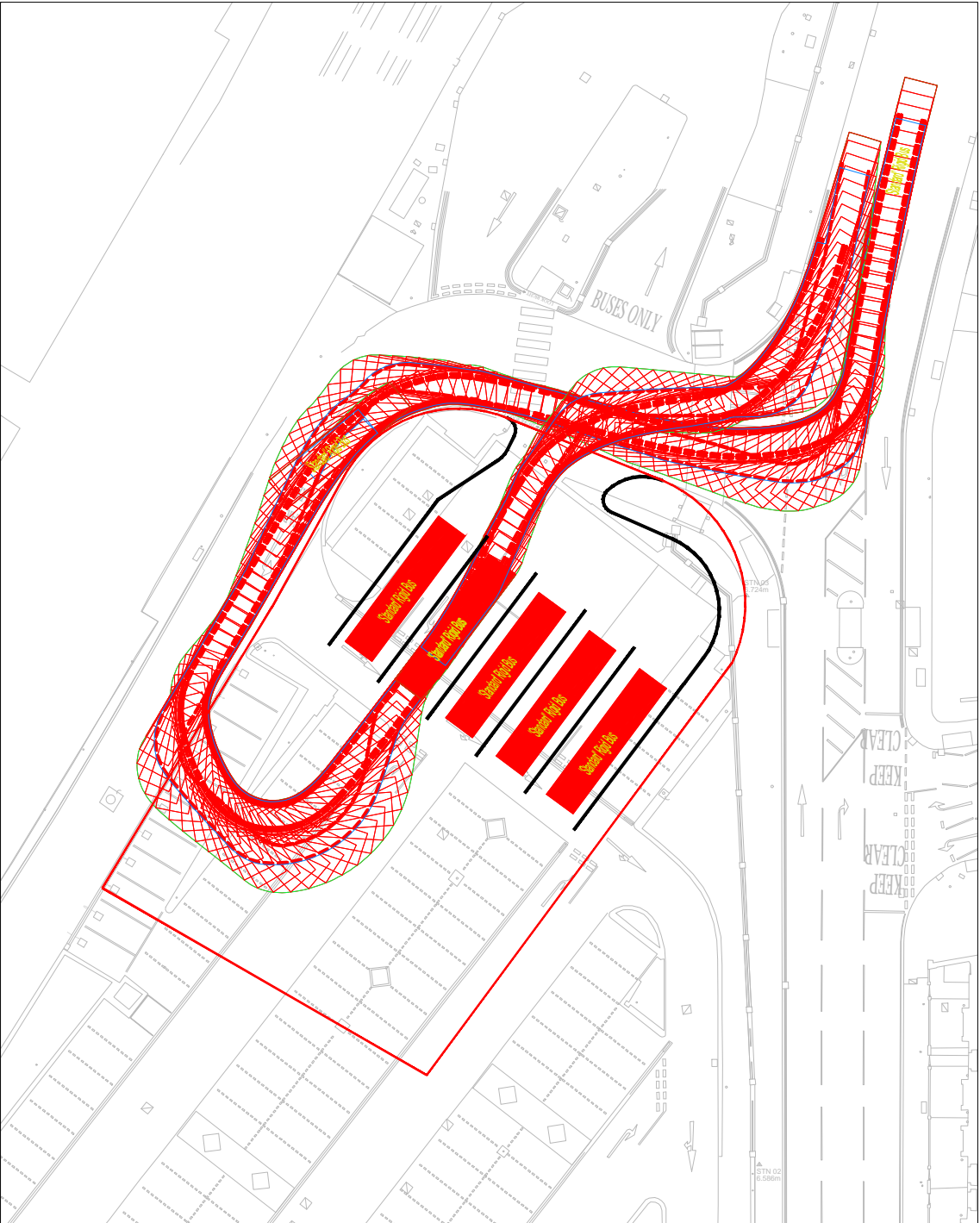
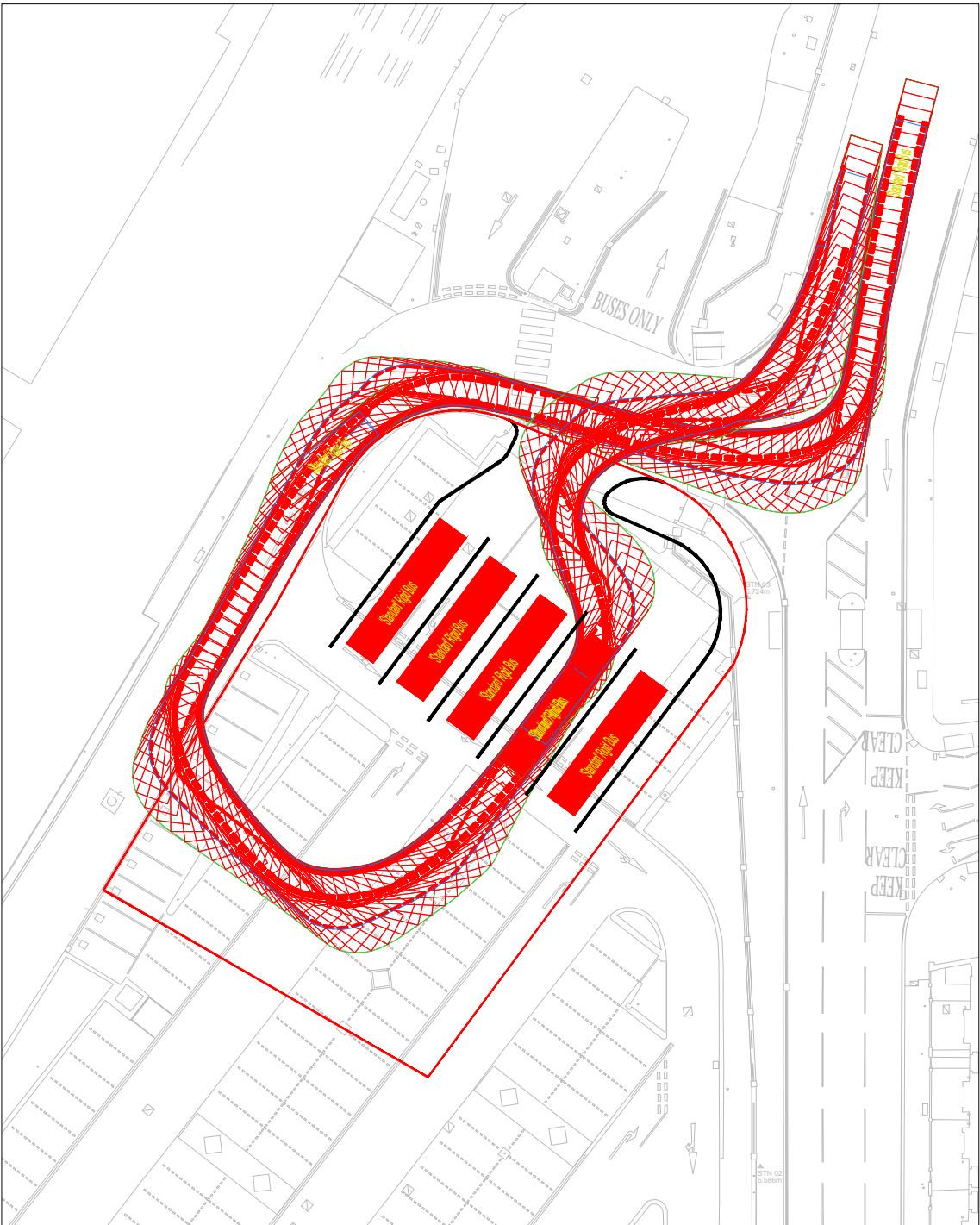
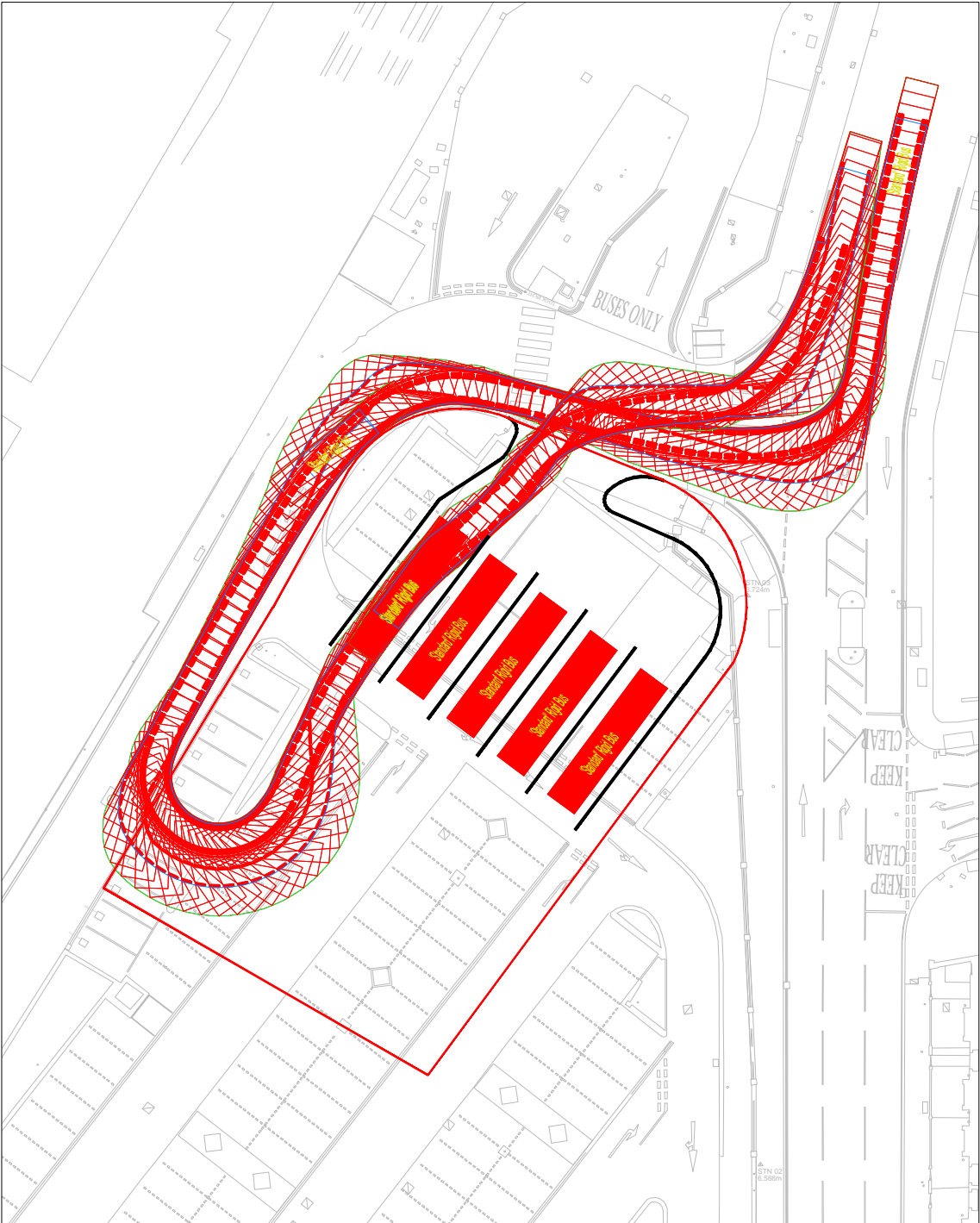
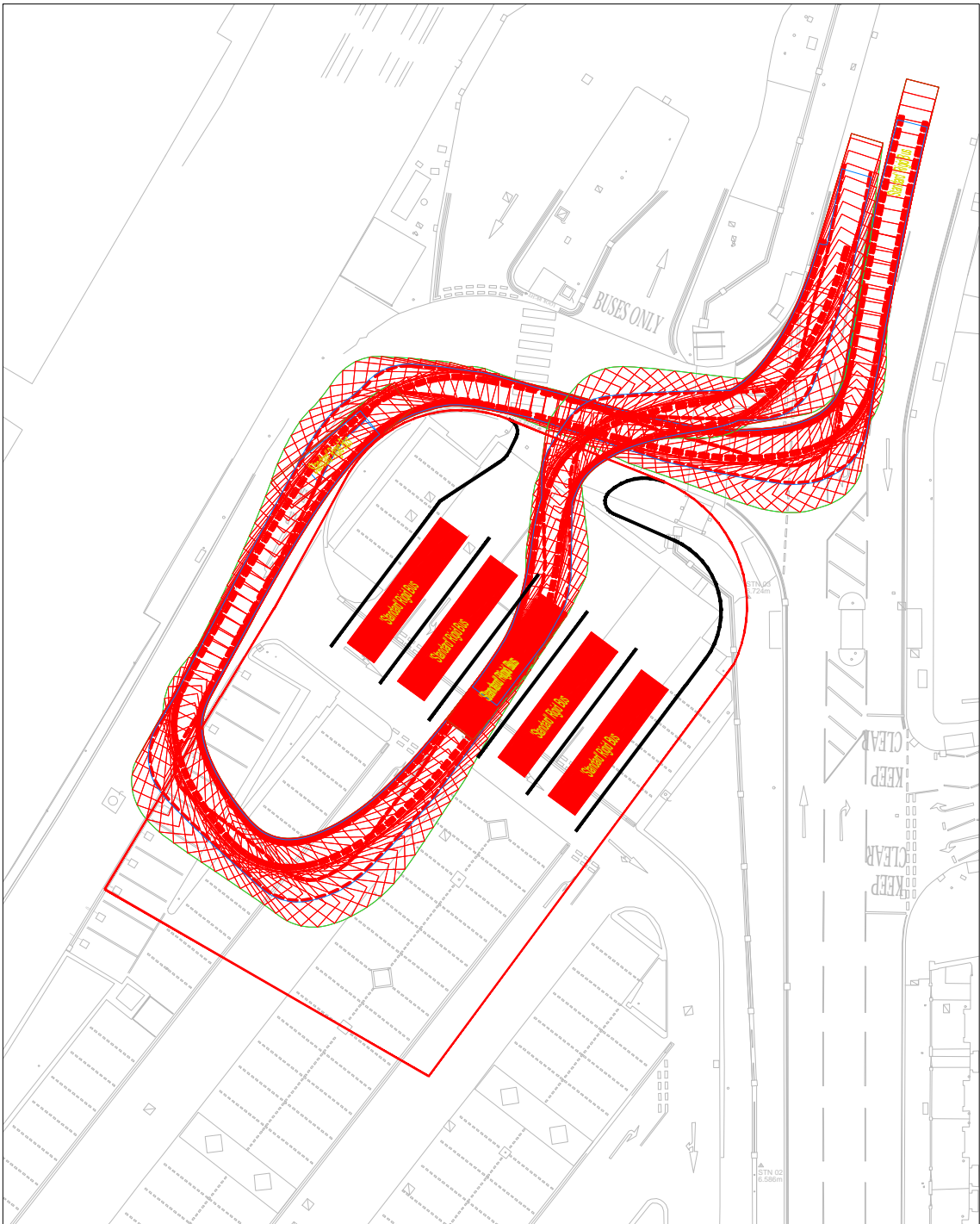
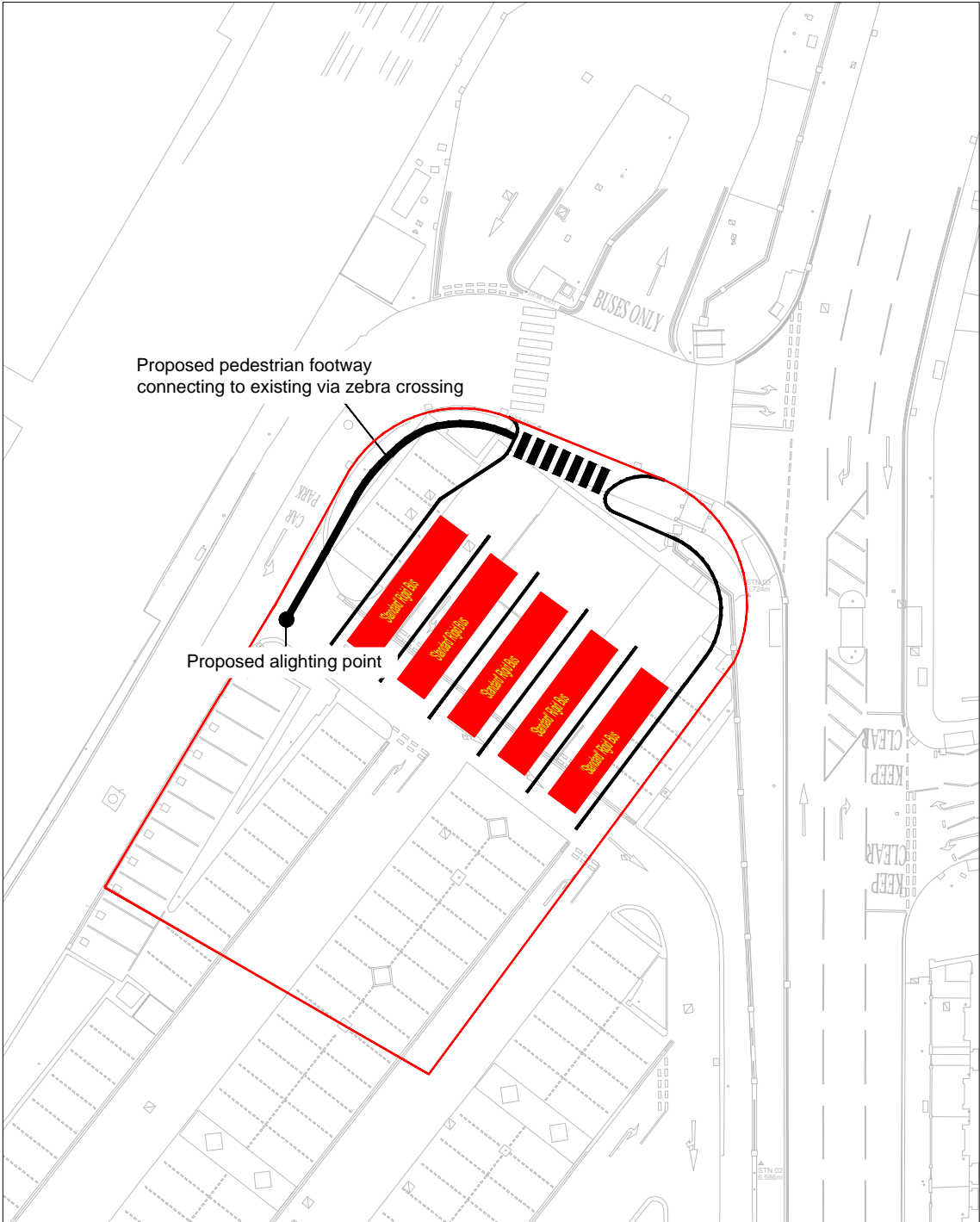
Client
Avanton Richmond Development Ltd

Project Title
Redevelopment of Homebase
Manor Road
North Sheen

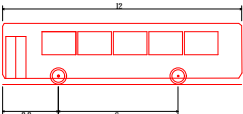
Drawing Title
Bus Swept Path Analysis

Scale	1:200	Drawn By	CH
Drawing Size	A1	Checked By	KS
Date	November 2019	Approved By	KS

Drawing Number	Rev
11205-009	-



- 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 plan(s) 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 its 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 its 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.



Standard Rigid Bus
Overall Length 12.000m
Overall Width 2.550m
Overall Body Height 3.069m
Min Body Ground Clearance 0.392m
Track Width 2.350m
Lock to lock time 4.00s
Wait to Wait Turning Radius 10.77m

Rev	Amendment	Drawn	Date	Checked



T 01924 844080 mail@sandersonassociates.co.uk
F 01924 844081 www.sandersonassociates.co.uk

Client

Avanton Richmind Development Ltd

Project Title

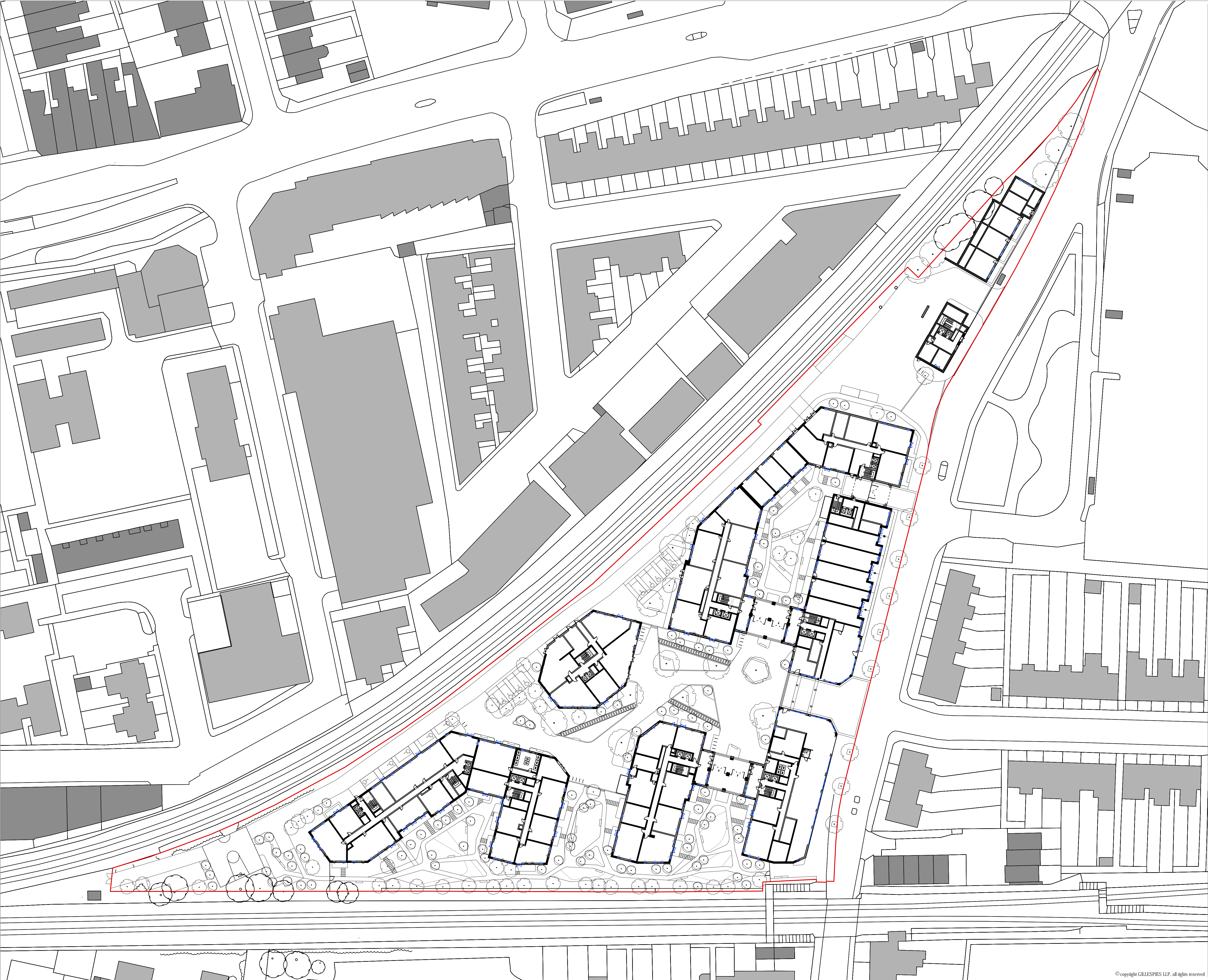
Redevelopment of Homebase
Manor Road
North Sheen

Drawing Title

Temporary Bus Layover Area

Scale	1:500	Drawn By	CH
Drawing Size	A2	Checked By	KS
Date	November 2019	Approved By	KS
Drawing Number		Rev	
11205-010		-	

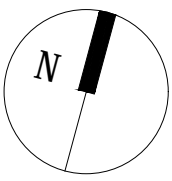
APPENDIX I
Proposed Ground Floor Layout Plan



rev	details	by	date
01	layout issued for tracking	ak	16.10.2019
02	Issued for inclusion in transport assessment	pc	21.11.2019

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



Project title

Manor Road Richmond

Drawing title

Revised Scheme Parking Sketch

INFORMATION

P11559-00-001-805

Client

Avaton

58 Queens Anne Street,
Luton, W1G 5LA

GILLESPIES

APPENDIX J
Active Travel Zone Assessment

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>Easy to Cross</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>Shade and Shelter</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>Places to stop and rest</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>Not too noisy</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>People feel safe</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>



Things to do and see	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.
People feel relaxed	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.
Clean air	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>Easy to Cross</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>Shade and Shelter</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>Places to stop and rest</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>Not too noisy</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>People feel safe</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>



Things to do and see	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.
People feel relaxed	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.
Clean air	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.



Easy to Cross

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.



Shade and Shelter

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.

Places to stop and rest

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.

Not too noisy

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.



People feel safe

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.



Things to do and see	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.
People feel relaxed	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. .
Clean air	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.



Easy to Cross	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.
Shade and Shelter	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.
Places to stop and rest	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.
Not too noisy	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
People feel safe	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.
Things to do and see	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.



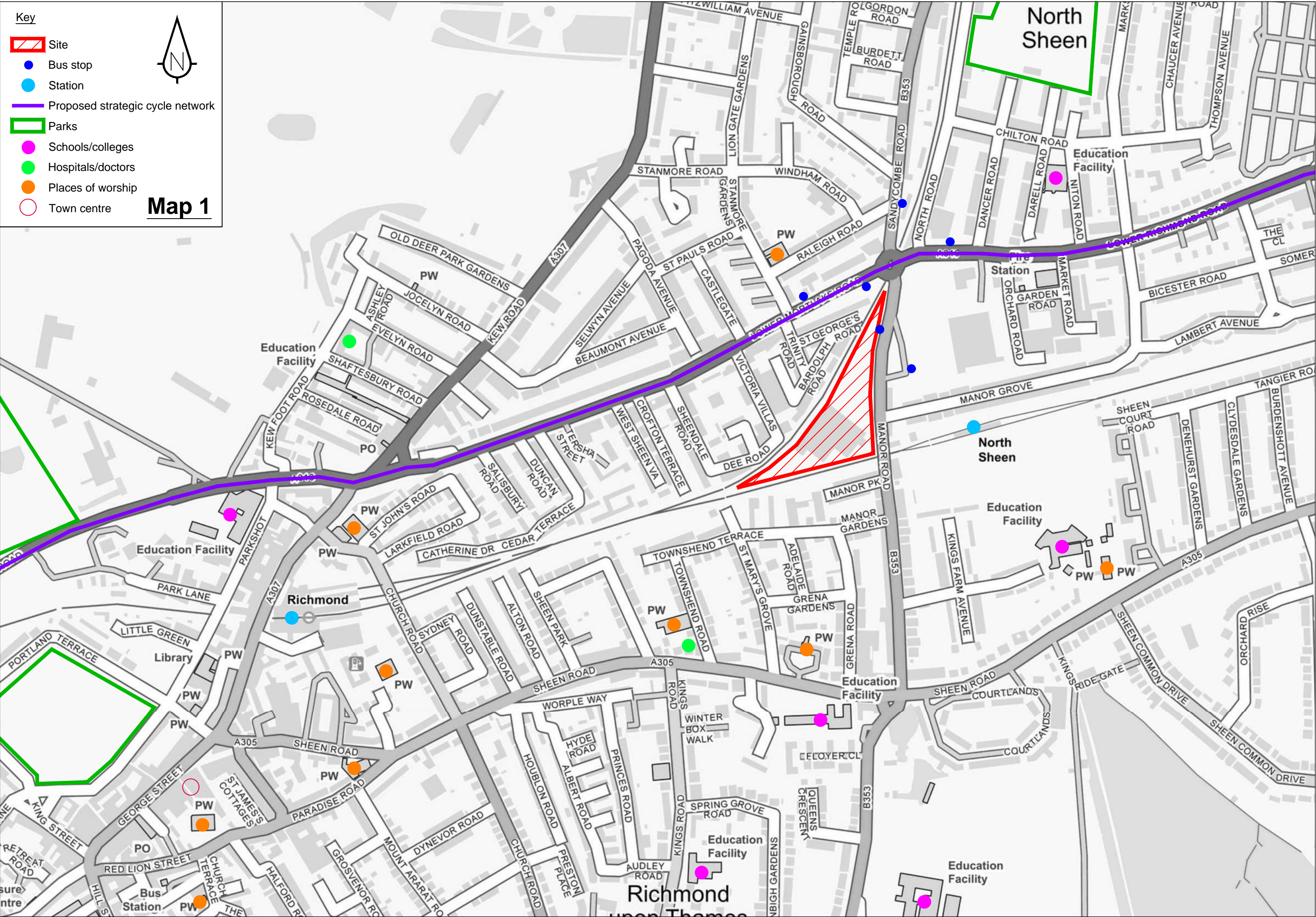
People feel relaxed	The route feels well maintained and clean. The carriageway and footways are well-kept and easy to navigate. A litter bin is provided on the western flank of Manor Road to the south of the level crossing. As previously stated, the speed limit of the roads is 30mph and vehicles are stationary on Manor Road for lengthy periods and drivers are encouraged to turn off their engines.
Clean air	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



Key



Site

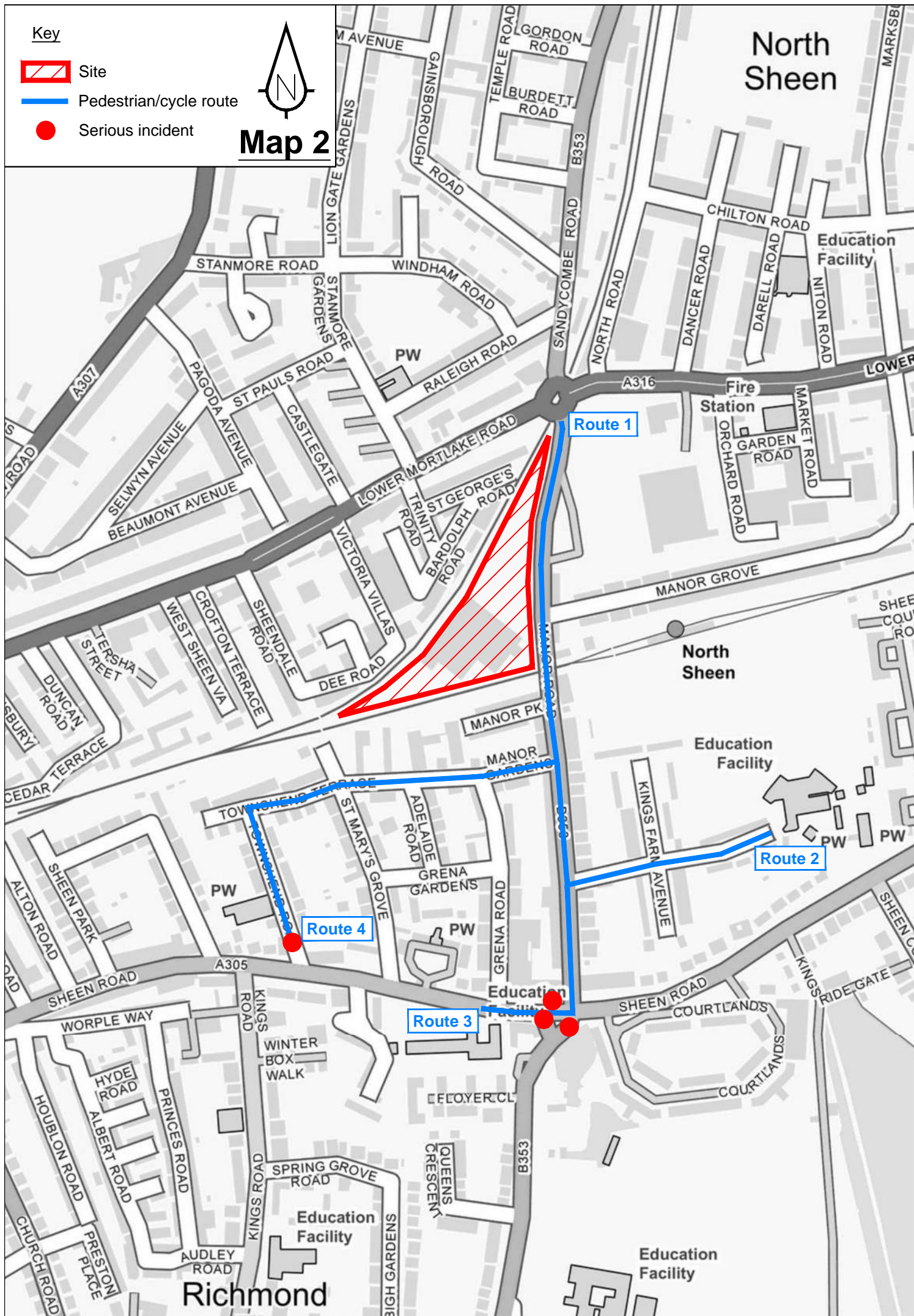


Pedestrian/cycle route








Serious incident

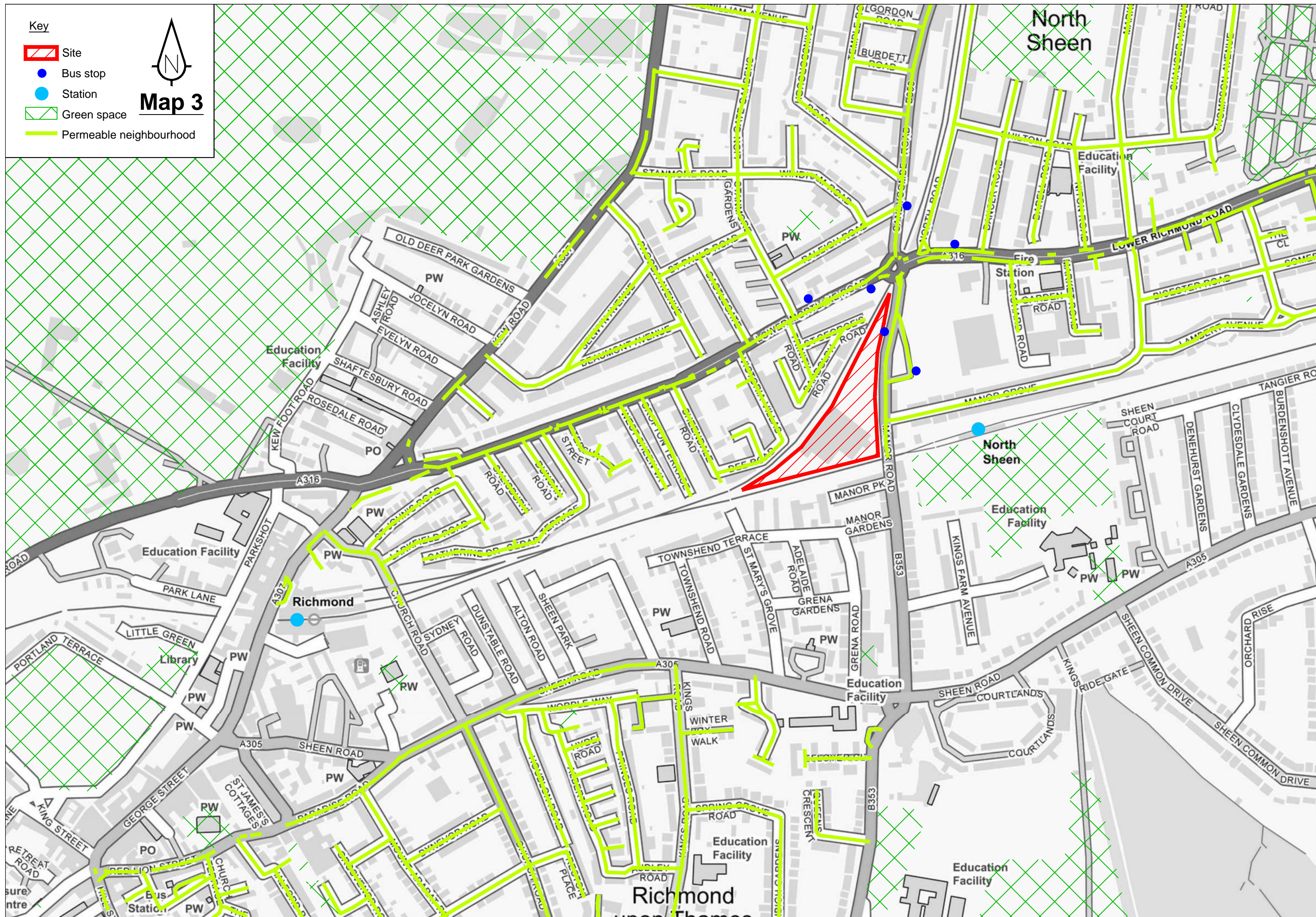
Map 2



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



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

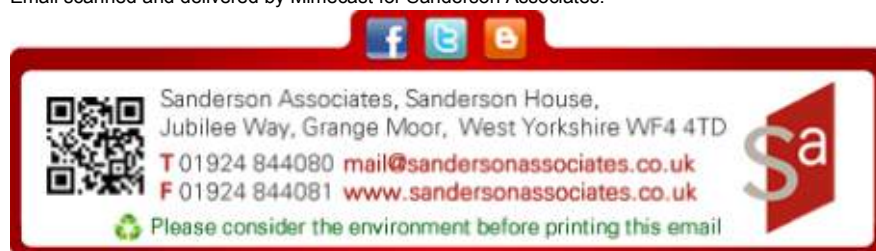
The contents of this e-mail and any attached files are confidential. If you have received this email in error, please notify us immediately at postmaster@tfl.gov.uk and remove it from your system. If received in error, please do not use, disseminate, forward, print or copy this email or its content. Transport for London excludes any warranty and any liability as to the quality or accuracy of the contents of this email and any attached files.

Transport for London is a statutory corporation whose principal office is at 55 Broadway, London, SW1H 0DB. Further information about Transport for London's subsidiary companies can be found on the following link: <http://www.tfl.gov.uk/corporate/about-tfl/>

Although TfL have scanned this email (including attachments) for viruses, recipients are advised to carry out their own virus check before opening any attachments, as TfL accepts no liability for any loss, or damage which may be caused by viruses.

This email was received from outside the Company. Please do not click on any LINKS or ATTACHMENTS where you are unsure of its origin, in such cases delete the email.

Email scanned and delivered by Mimecast for Sanderson Associates.



This email along with any attachments is subject to our Email Disclaimer Policy which is available [here](#).

Sanderson Associates (Consulting Engineers) Limited | Registered in England and Wales | Company No. 3235830
VAT No. GB 873219218 | Registered Office: Sanderson House, Jubilee Way, Grange Moor, WF4 4TD

APPENDIX K

TRICS Data

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	
	Survey date: WEDNESDAY		30/11/16	Survey Type: MANUAL
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	
	Survey date: WEDNESDAY		01/10/14	Survey Type: MANUAL
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	
	Survey date: WEDNESDAY		24/09/14	Survey Type: MANUAL
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	
	Survey date: THURSDAY		21/11/13	Survey Type: MANUAL
5	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
6	IS-03-C-05 LEVER STREET FINSBURY	BLOCK OF FLATS		ISLINGTON
	Edge of Town Centre Built-Up Zone Total Number of dwellings:		15	
	Survey date: WEDNESDAY		29/06/16	Survey Type: MANUAL
7	IS-03-C-06 CALEDONIAN ROAD HOLLOWAY	BLOCK OF FLATS		ISLINGTON
	Edge of Town Centre Residential Zone Total Number of dwellings:		14	
	Survey date: MONDAY		27/06/16	Survey Type: MANUAL
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	
	Survey date: MONDAY		14/06/10	Survey Type: MANUAL

LIST OF SITES relevant to selection parameters (Cont.)

9	KN-03-C-02	BLOCK OF FLATS		KENSINGTON AND CHELSEA
	BECKFORD CLOSE			
	SOUTH KENSINGTON			
	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		KENSINGTON AND CHELSEA
	ALLEN STREET			
	KENSINGTON			
	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		SOUTHWARK
	PARK STREET			
	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		SOUTHWARK
	LAMB WALK			
	BERMONDSEY			
	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		WANDSWORTH
	AMIES STREET			
	CLAPHAM JUNCTION			
	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									
Total Rates:			0.445			0.489			0.934

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.

The survey data, graphs and all associated supporting information, contained within the TRICS Database are published by TRICS Consortium Limited ("the Company") and the Company claims copyright and database rights in this published work. The Company authorises those who possess a current TRICS licence to access the TRICS Database and copy the data contained within the TRICS Database for the licence holders' use only. Any resulting copy must retain all copyrights and other proprietary notices, and any disclaimer contained thereon.

The Company accepts no responsibility for loss which may arise from reliance on data contained in the TRICS Database. [No warranty of any kind, express or implied, is made as to the data contained in the TRICS Database.]

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									
Total Rates:			0.045			0.042			0.087

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									
Total Rates:			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									
Total Rates:			0.900			0.906			1.806

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									
Total Rates:			0.691			0.817			1.508

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									
Total Rates:		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.

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

IS ISLINGTON

1 days

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

Thursday

Friday

1 days

1 days

1 days

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

Selected survey types:

Manual count

Directional ATC Count

3 days

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

Suburban Area (PPS6 Out of Centre)

1

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.

LIST OF SITES relevant to selection parameters

- | | | | |
|---|------------------------------------|-----------------|---------------------|
| 1 | HG-03-D-03 | BLOCKS OF FLATS | HARINGEY |
| | COMMERCE ROAD | | |
| | WOOD GREEN | | |
| | WOODSIDE PARK | | |
| | Suburban Area (PPS6 Out of Centre) | | |
| | Residential Zone | | |
| | Total Number of dwellings: | 90 | |
| | Survey date: FRIDAY | 26/09/14 | Survey Type: MANUAL |
| 2 | IS-03-D-03 | BLOCK OF FLATS | ISLINGTON |
| | HAWES STREET | | |
| | ISLINGTON | | |
| | Suburban Area (PPS6 Out of Centre) | | |
| | Residential Zone | | |
| | Total Number of dwellings: | 36 | |
| | Survey date: THURSDAY | 21/11/13 | Survey Type: MANUAL |
| 3 | IS-03-D-04 | BLOCKS OF FLATS | ISLINGTON |
| | LIVERPOOL ROAD | | |
| | HIGHBURY | | |
| | Edge of Town Centre | | |
| | Residential Zone | | |
| | Total Number of dwellings: | 247 | |
| | Survey date: MONDAY | 27/06/16 | 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-D-01	PTAL Rating 2

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									
Total Rates:			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.

The survey data, graphs and all associated supporting information, contained within the TRICS Database are published by TRICS Consortium Limited ("the Company") and the Company claims copyright and database rights in this published work. The Company authorises those who possess a current TRICS licence to access the TRICS Database and copy the data contained within the TRICS Database for the licence holders' use only. Any resulting copy must retain all copyrights and other proprietary notices, and any disclaimer contained thereon.

The Company accepts no responsibility for loss which may arise from reliance on data contained in the TRICS Database. [No warranty of any kind, express or implied, is made as to the data contained in the TRICS Database.]

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									
Total Rates:			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									
Total Rates:			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									
Total Rates:			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									
Total Rates:		0.764			0.706				1.470

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									
Total Rates:			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.

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
------------------	---

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.

1	CH-01-I-02	LOCAL SHOPS				CHESHIRE
	CHRISTLETON ROAD					
	BOUGHTON HEATH					
	CHESTER					
	Neighbourhood Centre (PPS6 Local Centre)					
	Residential Zone					
	Total Gross floor area:		260	sqm		
	Survey date: TUESDAY		15/05/12		Survey Type: MANUAL	
2	CH-01-I-03	LOCAL SHOPS				CHESHIRE
	MILL LANE					
	BACHE					
	CHESTER					
	Neighbourhood Centre (PPS6 Local Centre)					
	Residential Zone					
	Total Gross floor area:		365	sqm		
	Survey date: THURSDAY		17/05/12		Survey Type: MANUAL	
3	EB-01-I-01	LOCAL SHOPS				CITY OF EDINBURGH
	COLINTON ROAD					
	CRAIGLOCKHART					
	EDINBURGH					
	Suburban Area (PPS6 Out of Centre)					
	Residential Zone					
	Total Gross floor area:		825	sqm		
	Survey date: THURSDAY		28/10/10		Survey Type: MANUAL	
4	GS-01-I-01	LOCAL SHOPS				GLOUCESTERSHIRE
	SALISBURY AVENUE					
	WARDEN HILL					
	CHELTENHAM					
	Suburban Area (PPS6 Out of Centre)					
	Residential Zone					
	Total Gross floor area:		525	sqm		
	Survey date: MONDAY		26/04/10		Survey Type: MANUAL	
5	LE-01-I-02	LOCAL SHOPS				LEICESTERSHIRE
	RYDER ROAD					
	LEICESTER					
	Edge of Town					
	Residential Zone					
	Total Gross floor area:		550	sqm		
	Survey date: TUESDAY		28/10/14		Survey Type: MANUAL	
6	SH-01-I-02	LOCAL SHOPS				SHROPSHIRE
	WREKIN DRIVE					
	DONNINGTON					
	TELFORD					
	Edge of Town					
	Residential Zone					
	Total Gross floor area:		900	sqm		
	Survey date: THURSDAY		24/10/13		Survey Type: MANUAL	
7	TV-01-I-03	LOCAL SHOPS				TEES VALLEY
	ACKLAM ROAD					
	ACKLAM					
	MIDDLESBROUGH					
	Neighbourhood Centre (PPS6 Local Centre)					
	Residential Zone					
	Total Gross floor area:		1840	sqm		
	Survey date: FRIDAY		04/10/13		Survey Type: MANUAL	
8	TV-01-I-04	LOCAL SHOPS				TEES VALLEY
	CARGO FLEET LANE					
	ORMESBY					
	MIDDLESBROUGH					
	Neighbourhood Centre (PPS6 Local Centre)					
	Residential Zone					
	Total Gross floor area:		585	sqm		
	Survey date: MONDAY		07/10/13		Survey Type: MANUAL	

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									
Total Rates:		91.303			91.213			182.516	

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.

The survey data, graphs and all associated supporting information, contained within the TRICS Database are published by TRICS Consortium Limited ("the Company") and the Company claims copyright and database rights in this published work. The Company authorises those who possess a current TRICS licence to access the TRICS Database and copy the data contained within the TRICS Database for the licence holders' use only. Any resulting copy must retain all copyrights and other proprietary notices, and any disclaimer contained thereon.

The Company accepts no responsibility for loss which may arise from reliance on data contained in the TRICS Database. [No warranty of any kind, express or implied, is made as to the data contained in the TRICS Database.]

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 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 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									
Total Rates:		3.286			3.036			6.322	

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.

The survey data, graphs and all associated supporting information, contained within the TRICS Database are published by TRICS Consortium Limited ("the Company") and the Company claims copyright and database rights in this published work. The Company authorises those who possess a current TRICS licence to access the TRICS Database and copy the data contained within the TRICS Database for the licence holders' use only. Any resulting copy must retain all copyrights and other proprietary notices, and any disclaimer contained thereon.

The Company accepts no responsibility for loss which may arise from reliance on data contained in the TRICS Database. [No warranty of any kind, express or implied, is made as to the data contained in the TRICS Database.]

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 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 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									
Total Rates:		118.856			118.709			237.565	

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.*

The survey data, graphs and all associated supporting information, contained within the TRICS Database are published by TRICS Consortium Limited ("the Company") and the Company claims copyright and database rights in this published work. The Company authorises those who possess a current TRICS licence to access the TRICS Database and copy the data contained within the TRICS Database for the licence holders' use only. Any resulting copy must retain all copyrights and other proprietary notices, and any disclaimer contained thereon.

The Company accepts no responsibility for loss which may arise from reliance on data contained in the TRICS Database. [No warranty of any kind, express or implied, is made as to the data contained in the TRICS Database.]

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 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 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									
Total Rates:			93.335			93.040			186.375

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.

The survey data, graphs and all associated supporting information, contained within the TRICS Database are published by TRICS Consortium Limited ("the Company") and the Company claims copyright and database rights in this published work. The Company authorises those who possess a current TRICS licence to access the TRICS Database and copy the data contained within the TRICS Database for the licence holders' use only. Any resulting copy must retain all copyrights and other proprietary notices, and any disclaimer contained thereon.

The Company accepts no responsibility for loss which may arise from reliance on data contained in the TRICS Database. [No warranty of any kind, express or implied, is made as to the data contained in the TRICS Database.]

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 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 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									
Total Rates:		4.823			4.675			9.498	

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.

The survey data, graphs and all associated supporting information, contained within the TRICS Database are published by TRICS Consortium Limited ("the Company") and the Company claims copyright and database rights in this published work. The Company authorises those who possess a current TRICS licence to access the TRICS Database and copy the data contained within the TRICS Database for the licence holders' use only. Any resulting copy must retain all copyrights and other proprietary notices, and any disclaimer contained thereon.

The Company accepts no responsibility for loss which may arise from reliance on data contained in the TRICS Database. [No warranty of any kind, express or implied, is made as to the data contained in the TRICS Database.]

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 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 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									
Total Rates:		220.304			219.462			439.766	

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.

The survey data, graphs and all associated supporting information, contained within the TRICS Database are published by TRICS Consortium Limited ("the Company") and the Company claims copyright and database rights in this published work. The Company authorises those who possess a current TRICS licence to access the TRICS Database and copy the data contained within the TRICS Database for the licence holders' use only. Any resulting copy must retain all copyrights and other proprietary notices, and any disclaimer contained thereon.

The Company accepts no responsibility for loss which may arise from reliance on data contained in the TRICS Database. [No warranty of any kind, express or implied, is made as to the data contained in the TRICS Database.]

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 shown. Finally, the number of survey days that have been manually removed from the selected set outside of the standard filtering procedure are displayed.

APPENDIX L

Census Data

We use cookies to ensure you get the best experience on our website. By using this site, you agree to our cookie policy.

[Hide](#)

nomis

official labour market statistics



QS701EW - Method of travel to work

[Edit query](#)

[View data](#) [Change format](#)

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

ONS Crown Copyright Reserved [from Nomis on 21 August 2018] [i](#)

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

Method of Travel to Work i	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 M
Refined TRICs Data Output

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 <i>Survey date: WEDNESDAY 30/11/16</i>		
2	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>		
3	SK-03-C-02 LAMB WALK BERMONDSEY	BLOCK OF FLATS	SOUTHWARK
	Edge of Town Centre Built-Up Zone Total Number of dwellings: 29 <i>Survey date: THURSDAY 23/04/15</i>		
			<i>Survey Type: MANUAL</i>

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

MANUALLY DESELECTED SITES

Site Ref	Reason for Deselection
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									
Total Rates:			0.159			0.169			0.328

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.

The survey data, graphs and all associated supporting information, contained within the TRICS Database are published by TRICS Consortium Limited ("the Company") and the Company claims copyright and database rights in this published work. The Company authorises those who possess a current TRICS licence to access the TRICS Database and copy the data contained within the TRICS Database for the licence holders' use only. Any resulting copy must retain all copyrights and other proprietary notices, and any disclaimer contained thereon.

The Company accepts no responsibility for loss which may arise from reliance on data contained in the TRICS Database. [No warranty of any kind, express or implied, is made as to the data contained in the TRICS Database.]

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 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 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									
Total Rates:			0.052			0.052			0.104

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									
Total Rates:			0.002			0.002			0.004

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									
Total Rates:			0.016			0.015			0.031

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									
Total Rates:			0.178			0.203			0.381

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									
Total Rates:			0.753			0.811			1.564

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									
Total Rates:			0.357			0.417			0.774

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									
Total Rates:			0.377			0.511			0.888

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									
Total Rates:			0.735			0.932			1.667

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									
Total Rates:			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									
Total Rates:			0.083			0.090			0.173

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 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									
Total Rates:			0.025			0.026			0.051

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

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

TRIP RATE for Land Use 03 - RESIDENTIAL/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									
Total Rates:			0.004			0.006			0.010

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

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

TRIP RATE for Land Use 03 - RESIDENTIAL/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									
Total Rates:			0.316			0.432			0.748

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									
Total Rates:			0.006			0.007			0.013

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									
Total Rates:			0.051			0.068			0.119

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									
Total Rates:			0.010			0.007			0.017

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									
Total Rates:			0.357			0.417			0.774

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.

Calculation Reference: AUDIT-109307-190613-0630

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
 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:)

Parking Spaces Range: All Surveys Included

Percentage of dwellings privately owned: All Surveys Included

Public Transport Provision:

Selection by: Include all surveys

Date Range: 01/01/11 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

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

Selected survey types:

Manual count 2 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) 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:

Residential Zone 2

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 2 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:

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

2 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

*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

2 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

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

LIST OF SITES relevant to selection parameters

1	IS-03-D-03 HAWES STREET ISLINGTON	BLOCK OF FLATS	ISLINGTON
	Suburban Area (PPS6 Out of Centre) Residential Zone		
	Total Number of dwellings: 36		
	Survey date: THURSDAY		Survey Type: MANUAL
	21/11/13		
2	IS-03-D-04 LIVERPOOL ROAD HIGHBURY	BLOCKS OF FLATS	ISLINGTON
	Edge of Town Centre Residential Zone		
	Total Number of dwellings: 247		
	Survey date: MONDAY		Survey Type: MANUAL
	27/06/16		

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 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	2	142	0.025	2	142	0.046	2	142	0.071
08:00 - 09:00	2	142	0.032	2	142	0.064	2	142	0.096
09:00 - 10:00	2	142	0.028	2	142	0.042	2	142	0.070
10:00 - 11:00	2	142	0.025	2	142	0.021	2	142	0.046
11:00 - 12:00	2	142	0.032	2	142	0.042	2	142	0.074
12:00 - 13:00	2	142	0.035	2	142	0.042	2	142	0.077
13:00 - 14:00	2	142	0.021	2	142	0.025	2	142	0.046
14:00 - 15:00	2	142	0.018	2	142	0.021	2	142	0.039
15:00 - 16:00	2	142	0.035	2	142	0.028	2	142	0.063
16:00 - 17:00	2	142	0.053	2	142	0.053	2	142	0.106
17:00 - 18:00	2	142	0.057	2	142	0.046	2	142	0.103
18:00 - 19:00	2	142	0.078	2	142	0.035	2	142	0.113
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									
Total Rates:			0.556			0.538			1.094

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.*

The survey data, graphs and all associated supporting information, contained within the TRICS Database are published by TRICS Consortium Limited ("the Company") and the Company claims copyright and database rights in this published work. The Company authorises those who possess a current TRICS licence to access the TRICS Database and copy the data contained within the TRICS Database for the licence holders' use only. Any resulting copy must retain all copyrights and other proprietary notices, and any disclaimer contained thereon.

The Company accepts no responsibility for loss which may arise from reliance on data contained in the TRICS Database. [No warranty of any kind, express or implied, is made as to the data contained in the TRICS Database.]

Parameter summary

Trip rate parameter range selected:	36 - 247 (units:)
Survey date date range:	01/01/11 - 27/06/16
Number of weekdays (Monday-Friday):	3
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 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 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	2	142	0.011	2	142	0.011	2	142	0.022
08:00 - 09:00	2	142	0.007	2	142	0.007	2	142	0.014
09:00 - 10:00	2	142	0.004	2	142	0.004	2	142	0.008
10:00 - 11:00	2	142	0.004	2	142	0.004	2	142	0.008
11:00 - 12:00	2	142	0.000	2	142	0.000	2	142	0.000
12:00 - 13:00	2	142	0.011	2	142	0.011	2	142	0.022
13:00 - 14:00	2	142	0.000	2	142	0.000	2	142	0.000
14:00 - 15:00	2	142	0.000	2	142	0.000	2	142	0.000
15:00 - 16:00	2	142	0.000	2	142	0.000	2	142	0.000
16:00 - 17:00	2	142	0.011	2	142	0.011	2	142	0.022
17:00 - 18:00	2	142	0.007	2	142	0.007	2	142	0.014
18:00 - 19:00	2	142	0.000	2	142	0.000	2	142	0.000
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	0.004	1	247	0.008
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			0.059			0.059			0.118

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 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	2	142	0.000	2	142	0.000	2	142	0.000
08:00 - 09:00	2	142	0.000	2	142	0.000	2	142	0.000
09:00 - 10:00	2	142	0.000	2	142	0.000	2	142	0.000
10:00 - 11:00	2	142	0.000	2	142	0.000	2	142	0.000
11:00 - 12:00	2	142	0.004	2	142	0.004	2	142	0.008
12:00 - 13:00	2	142	0.000	2	142	0.000	2	142	0.000
13:00 - 14:00	2	142	0.000	2	142	0.000	2	142	0.000
14:00 - 15:00	2	142	0.000	2	142	0.000	2	142	0.000
15:00 - 16:00	2	142	0.000	2	142	0.000	2	142	0.000
16:00 - 17:00	2	142	0.000	2	142	0.000	2	142	0.000
17:00 - 18:00	2	142	0.000	2	142	0.000	2	142	0.000
18:00 - 19:00	2	142	0.000	2	142	0.000	2	142	0.000
19:00 - 20:00	1	247	0.000	1	247	0.000	1	247	0.000
20:00 - 21:00	1	247	0.000	1	247	0.000	1	247	0.000
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			0.004			0.004			0.008

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 PSVS

Calculation factor: 1 DWELLS

BOLD print indicates peak (busiest) period

Time Range	ARRIVALS			DEPARTURES			TOTALS		
	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate
00:00 - 01:00									
01:00 - 02:00									
02:00 - 03:00									
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00									
06:00 - 07:00									
07:00 - 08:00	2	142	0.000	2	142	0.000	2	142	0.000
08:00 - 09:00	2	142	0.000	2	142	0.000	2	142	0.000
09:00 - 10:00	2	142	0.000	2	142	0.000	2	142	0.000
10:00 - 11:00	2	142	0.000	2	142	0.000	2	142	0.000
11:00 - 12:00	2	142	0.000	2	142	0.000	2	142	0.000
12:00 - 13:00	2	142	0.000	2	142	0.000	2	142	0.000
13:00 - 14:00	2	142	0.004	2	142	0.004	2	142	0.008
14:00 - 15:00	2	142	0.000	2	142	0.000	2	142	0.000
15:00 - 16:00	2	142	0.004	2	142	0.004	2	142	0.008
16:00 - 17:00	2	142	0.000	2	142	0.000	2	142	0.000
17:00 - 18:00	2	142	0.000	2	142	0.000	2	142	0.000
18:00 - 19:00	2	142	0.000	2	142	0.000	2	142	0.000
19:00 - 20:00	1	247	0.000	1	247	0.000	1	247	0.000
20:00 - 21:00	1	247	0.000	1	247	0.000	1	247	0.000
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			0.008			0.008			0.016

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

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

TRIP RATE for Land Use 03 - RESIDENTIAL/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	2	142	0.004	2	142	0.004	2	142	0.008
08:00 - 09:00	2	142	0.004	2	142	0.000	2	142	0.004
09:00 - 10:00	2	142	0.000	2	142	0.000	2	142	0.000
10:00 - 11:00	2	142	0.004	2	142	0.000	2	142	0.004
11:00 - 12:00	2	142	0.000	2	142	0.007	2	142	0.007
12:00 - 13:00	2	142	0.000	2	142	0.004	2	142	0.004
13:00 - 14:00	2	142	0.000	2	142	0.004	2	142	0.004
14:00 - 15:00	2	142	0.018	2	142	0.018	2	142	0.036
15:00 - 16:00	2	142	0.004	2	142	0.007	2	142	0.011
16:00 - 17:00	2	142	0.007	2	142	0.004	2	142	0.011
17:00 - 18:00	2	142	0.004	2	142	0.004	2	142	0.008
18:00 - 19:00	2	142	0.011	2	142	0.007	2	142	0.018
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									
Total Rates:			0.060			0.071			0.131

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.

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	2	142	0.025	2	142	0.039	2	142	0.064
08:00 - 09:00	2	142	0.032	2	142	0.085	2	142	0.117
09:00 - 10:00	2	142	0.028	2	142	0.057	2	142	0.085
10:00 - 11:00	2	142	0.025	2	142	0.018	2	142	0.043
11:00 - 12:00	2	142	0.028	2	142	0.046	2	142	0.074
12:00 - 13:00	2	142	0.035	2	142	0.039	2	142	0.074
13:00 - 14:00	2	142	0.021	2	142	0.025	2	142	0.046
14:00 - 15:00	2	142	0.028	2	142	0.021	2	142	0.049
15:00 - 16:00	2	142	0.049	2	142	0.025	2	142	0.074
16:00 - 17:00	2	142	0.067	2	142	0.067	2	142	0.134
17:00 - 18:00	2	142	0.060	2	142	0.071	2	142	0.131
18:00 - 19:00	2	142	0.085	2	142	0.039	2	142	0.124
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									
Total Rates:			0.629			0.613			1.242

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	2	142	0.011	2	142	0.060	2	142	0.071
08:00 - 09:00	2	142	0.067	2	142	0.307	2	142	0.374
09:00 - 10:00	2	142	0.138	2	142	0.184	2	142	0.322
10:00 - 11:00	2	142	0.071	2	142	0.088	2	142	0.159
11:00 - 12:00	2	142	0.095	2	142	0.163	2	142	0.258
12:00 - 13:00	2	142	0.124	2	142	0.124	2	142	0.248
13:00 - 14:00	2	142	0.102	2	142	0.057	2	142	0.159
14:00 - 15:00	2	142	0.120	2	142	0.138	2	142	0.258
15:00 - 16:00	2	142	0.403	2	142	0.244	2	142	0.647
16:00 - 17:00	2	142	0.272	2	142	0.113	2	142	0.385
17:00 - 18:00	2	142	0.124	2	142	0.085	2	142	0.209
18:00 - 19:00	2	142	0.131	2	142	0.127	2	142	0.258
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									
Total Rates:			1.909			1.916			3.825

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 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	2	142	0.011	2	142	0.042	2	142	0.053
08:00 - 09:00	2	142	0.000	2	142	0.095	2	142	0.095
09:00 - 10:00	2	142	0.004	2	142	0.039	2	142	0.043
10:00 - 11:00	2	142	0.007	2	142	0.035	2	142	0.042
11:00 - 12:00	2	142	0.014	2	142	0.032	2	142	0.046
12:00 - 13:00	2	142	0.053	2	142	0.011	2	142	0.064
13:00 - 14:00	2	142	0.028	2	142	0.039	2	142	0.067
14:00 - 15:00	2	142	0.018	2	142	0.018	2	142	0.036
15:00 - 16:00	2	142	0.039	2	142	0.018	2	142	0.057
16:00 - 17:00	2	142	0.049	2	142	0.011	2	142	0.060
17:00 - 18:00	2	142	0.057	2	142	0.018	2	142	0.075
18:00 - 19:00	2	142	0.071	2	142	0.000	2	142	0.071
19:00 - 20:00	1	247	0.024	1	247	0.008	1	247	0.032
20:00 - 21:00	1	247	0.061	1	247	0.000	1	247	0.061
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			0.436			0.366			0.802

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 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	2	142	0.004	2	142	0.032	2	142	0.036
08:00 - 09:00	2	142	0.000	2	142	0.042	2	142	0.042
09:00 - 10:00	2	142	0.000	2	142	0.035	2	142	0.035
10:00 - 11:00	2	142	0.004	2	142	0.021	2	142	0.025
11:00 - 12:00	2	142	0.014	2	142	0.004	2	142	0.018
12:00 - 13:00	2	142	0.004	2	142	0.028	2	142	0.032
13:00 - 14:00	2	142	0.011	2	142	0.018	2	142	0.029
14:00 - 15:00	2	142	0.004	2	142	0.028	2	142	0.032
15:00 - 16:00	2	142	0.032	2	142	0.007	2	142	0.039
16:00 - 17:00	2	142	0.035	2	142	0.007	2	142	0.042
17:00 - 18:00	2	142	0.028	2	142	0.014	2	142	0.042
18:00 - 19:00	2	142	0.057	2	142	0.007	2	142	0.064
19:00 - 20:00	1	247	0.073	1	247	0.028	1	247	0.101
20:00 - 21:00	1	247	0.016	1	247	0.008	1	247	0.024
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			0.282			0.279			0.561

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 COACH PASSENGERS

Calculation factor: 1 DWELLS

BOLD print indicates peak (busiest) period

Time Range	ARRIVALS			DEPARTURES			TOTALS		
	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate
00:00 - 01:00									
01:00 - 02:00									
02:00 - 03:00									
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00									
06:00 - 07:00									
07:00 - 08:00	2	142	0.000	2	142	0.000	2	142	0.000
08:00 - 09:00	2	142	0.000	2	142	0.000	2	142	0.000
09:00 - 10:00	2	142	0.000	2	142	0.000	2	142	0.000
10:00 - 11:00	2	142	0.000	2	142	0.000	2	142	0.000
11:00 - 12:00	2	142	0.000	2	142	0.000	2	142	0.000
12:00 - 13:00	2	142	0.000	2	142	0.000	2	142	0.000
13:00 - 14:00	2	142	0.000	2	142	0.007	2	142	0.007
14:00 - 15:00	2	142	0.000	2	142	0.000	2	142	0.000
15:00 - 16:00	2	142	0.007	2	142	0.000	2	142	0.007
16:00 - 17:00	2	142	0.000	2	142	0.000	2	142	0.000
17:00 - 18:00	2	142	0.000	2	142	0.000	2	142	0.000
18:00 - 19:00	2	142	0.000	2	142	0.000	2	142	0.000
19:00 - 20:00	1	247	0.000	1	247	0.000	1	247	0.000
20:00 - 21:00	1	247	0.000	1	247	0.000	1	247	0.000
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			0.007			0.007			0.014

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	2	142	0.014	2	142	0.074	2	142	0.088
08:00 - 09:00	2	142	0.000	2	142	0.138	2	142	0.138
09:00 - 10:00	2	142	0.004	2	142	0.074	2	142	0.078
10:00 - 11:00	2	142	0.011	2	142	0.057	2	142	0.068
11:00 - 12:00	2	142	0.028	2	142	0.035	2	142	0.063
12:00 - 13:00	2	142	0.057	2	142	0.039	2	142	0.096
13:00 - 14:00	2	142	0.039	2	142	0.064	2	142	0.103
14:00 - 15:00	2	142	0.021	2	142	0.046	2	142	0.067
15:00 - 16:00	2	142	0.078	2	142	0.025	2	142	0.103
16:00 - 17:00	2	142	0.085	2	142	0.018	2	142	0.103
17:00 - 18:00	2	142	0.085	2	142	0.032	2	142	0.117
18:00 - 19:00	2	142	0.127	2	142	0.007	2	142	0.134
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									
Total Rates:			0.723			0.653			1.376

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	2	142	0.053	2	142	0.177	2	142	0.230
08:00 - 09:00	2	142	0.102	2	142	0.530	2	142	0.632
09:00 - 10:00	2	142	0.170	2	142	0.314	2	142	0.484
10:00 - 11:00	2	142	0.110	2	142	0.163	2	142	0.273
11:00 - 12:00	2	142	0.152	2	142	0.251	2	142	0.403
12:00 - 13:00	2	142	0.216	2	142	0.205	2	142	0.421
13:00 - 14:00	2	142	0.163	2	142	0.148	2	142	0.311
14:00 - 15:00	2	142	0.187	2	142	0.223	2	142	0.410
15:00 - 16:00	2	142	0.534	2	142	0.300	2	142	0.834
16:00 - 17:00	2	142	0.431	2	142	0.201	2	142	0.632
17:00 - 18:00	2	142	0.272	2	142	0.191	2	142	0.463
18:00 - 19:00	2	142	0.353	2	142	0.180	2	142	0.533
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									
Total Rates:			3.318			3.247			6.565

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.

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

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	2	142	0.011	2	142	0.028	2	142	0.039
08:00 - 09:00	2	142	0.018	2	142	0.039	2	142	0.057
09:00 - 10:00	2	142	0.011	2	142	0.011	2	142	0.022
10:00 - 11:00	2	142	0.007	2	142	0.011	2	142	0.018
11:00 - 12:00	2	142	0.018	2	142	0.025	2	142	0.043
12:00 - 13:00	2	142	0.007	2	142	0.018	2	142	0.025
13:00 - 14:00	2	142	0.007	2	142	0.011	2	142	0.018
14:00 - 15:00	2	142	0.007	2	142	0.011	2	142	0.018
15:00 - 16:00	2	142	0.011	2	142	0.014	2	142	0.025
16:00 - 17:00	2	142	0.028	2	142	0.021	2	142	0.049
17:00 - 18:00	2	142	0.032	2	142	0.018	2	142	0.050
18:00 - 19:00	2	142	0.057	2	142	0.021	2	142	0.078
19:00 - 20:00	1	247	0.065	1	247	0.040	1	247	0.105
20:00 - 21:00	1	247	0.032	1	247	0.016	1	247	0.048
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			0.311			0.284			0.595

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 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	2	142	0.000	2	142	0.004	2	142	0.004
08:00 - 09:00	2	142	0.004	2	142	0.004	2	142	0.008
09:00 - 10:00	2	142	0.007	2	142	0.011	2	142	0.018
10:00 - 11:00	2	142	0.007	2	142	0.007	2	142	0.014
11:00 - 12:00	2	142	0.011	2	142	0.011	2	142	0.022
12:00 - 13:00	2	142	0.014	2	142	0.011	2	142	0.025
13:00 - 14:00	2	142	0.004	2	142	0.007	2	142	0.011
14:00 - 15:00	2	142	0.004	2	142	0.004	2	142	0.008
15:00 - 16:00	2	142	0.007	2	142	0.000	2	142	0.007
16:00 - 17:00	2	142	0.000	2	142	0.007	2	142	0.007
17:00 - 18:00	2	142	0.007	2	142	0.004	2	142	0.011
18:00 - 19:00	2	142	0.007	2	142	0.004	2	142	0.011
19:00 - 20:00	1	247	0.004	1	247	0.004	1	247	0.008
20:00 - 21:00	1	247	0.000	1	247	0.000	1	247	0.000
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			0.076			0.078			0.154

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 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	2	142	0.000	2	142	0.000	2	142	0.000
08:00 - 09:00	2	142	0.000	2	142	0.000	2	142	0.000
09:00 - 10:00	2	142	0.004	2	142	0.004	2	142	0.008
10:00 - 11:00	2	142	0.000	2	142	0.000	2	142	0.000
11:00 - 12:00	2	142	0.000	2	142	0.004	2	142	0.004
12:00 - 13:00	2	142	0.000	2	142	0.000	2	142	0.000
13:00 - 14:00	2	142	0.000	2	142	0.000	2	142	0.000
14:00 - 15:00	2	142	0.000	2	142	0.000	2	142	0.000
15:00 - 16:00	2	142	0.004	2	142	0.007	2	142	0.011
16:00 - 17:00	2	142	0.004	2	142	0.000	2	142	0.004
17:00 - 18:00	2	142	0.004	2	142	0.004	2	142	0.008
18:00 - 19:00	2	142	0.004	2	142	0.004	2	142	0.008
19:00 - 20:00	1	247	0.008	1	247	0.008	1	247	0.016
20:00 - 21:00	1	247	0.004	1	247	0.000	1	247	0.004
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			0.032			0.031			0.063

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 Servicing 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	2	142	0.000	2	142	0.000	2	142	0.000
08:00 - 09:00	2	142	0.007	2	142	0.000	2	142	0.007
09:00 - 10:00	2	142	0.004	2	142	0.011	2	142	0.015
10:00 - 11:00	2	142	0.007	2	142	0.007	2	142	0.014
11:00 - 12:00	2	142	0.018	2	142	0.014	2	142	0.032
12:00 - 13:00	2	142	0.014	2	142	0.014	2	142	0.028
13:00 - 14:00	2	142	0.000	2	142	0.004	2	142	0.004
14:00 - 15:00	2	142	0.004	2	142	0.004	2	142	0.008
15:00 - 16:00	2	142	0.007	2	142	0.000	2	142	0.007
16:00 - 17:00	2	142	0.004	2	142	0.011	2	142	0.015
17:00 - 18:00	2	142	0.007	2	142	0.007	2	142	0.014
18:00 - 19:00	2	142	0.004	2	142	0.004	2	142	0.008
19:00 - 20:00	1	247	0.004	1	247	0.004	1	247	0.008
20:00 - 21:00	1	247	0.000	1	247	0.000	1	247	0.000
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			0.080			0.080			0.160

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 N

Junctions Output – Site Access/Manor Road

Junctions 9			
PICADY 9 - Priority Intersection Module			
Version: 9.0.1.4646 [] © Copyright TRL Limited, 2018			
For sales and distribution information, program advice and maintenance, contact TRL: Tel: +44 (0)1344 770758 email: software@trl.co.uk Web: http://www.trlsoftware.co.uk			
The users of this computer program for the solution of an engineering problem are in no way relieved of their responsibility for the correctness of the solution			

Filename: Site access - Manor Road.j9

Path: J:\10000\10500\10596_HomebaseRichmondFair\engineering\Traffic_Programs\Junctions

Report generation date: 13/12/2018 11:57:29

- »2018 Base, AM
- »2018 Base, PM
- »2023 Base, AM
- »2023 Base, PM
- »2028 Base, AM
- »2028 Base, PM
- »2023 Base + Dev, AM
- »2023 Base + Dev, PM
- »2028 Base + Dev, AM
- »2028 Base + Dev, PM

Summary of junction performance

	AM				PM			
	Queue (Veh)	Delay (s)	RFC	LOS	Queue (Veh)	Delay (s)	RFC	LOS
2018 Base								
Stream B-AC	0.1	8.55	0.10	A	0.2	8.90	0.15	A
Stream C-B	0.1	7.88	0.08	A	0.1	8.44	0.08	A
2023 Base								
Stream B-AC	0.0	12.34	0.04	B	0.0	12.57	0.03	B
Stream C-B	0.0	12.67	0.02	B	0.0	12.96	0.03	B
2028 Base								
Stream B-AC	0.0	12.43	0.04	B	0.0	12.68	0.03	B
Stream C-B	0.0	12.75	0.02	B	0.0	13.05	0.03	B
2023 Base + Dev								
Stream B-AC	0.1	8.59	0.08	A	0.1	8.98	0.06	A
Stream C-B	0.0	8.90	0.04	A	0.1	9.12	0.06	A
2028 Base + Dev								
Stream B-AC	0.1	8.66	0.08	A	0.1	9.07	0.06	A
Stream C-B	0.0	8.96	0.04	A	0.1	9.18	0.06	A

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

File summary

File Description

Title	(untitled)
Location	
Site number	
Date	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	2023 Base	AM	ONE HOUR	08:15	09:45	15	✓		
D4	2023 Base	PM	ONE HOUR	16:45	18:15	15	✓		
D5	2028 Base	AM	ONE HOUR	08:15	09:45	15	✓		
D6	2028 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	2023 Base + Dev	AM	ONE HOUR	08:15	09:45	15	✓	Simple	D3+D7
D10	2023 Base + Dev	PM	ONE HOUR	16:45	18:15	15	✓	Simple	D4+D8
D11	2028 Base + Dev	AM	ONE HOUR	08:15	09:45	15	✓	Simple	D5+D7
D12	2028 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	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	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	One lane	4.60	34	30

Slope / Intercept / Capacity

Priority Intersection Slopes and Intercepts

Junction	Stream	Intercept (Veh/hr)	Slope for A-B	Slope for A-C	Slope for C-A	Slope for C-B
1	B-A	584	0.103	0.259	0.163	0.371
1	B-C	746	0.110	0.279	-	-
1	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		ONE HOUR	✓	342	100.000
B		ONE HOUR	✓	43	100.000
C		ONE HOUR	✓	263	100.000

Origin-Destination Data

Demand (Veh/hr)

	To			
From		A	B	C
	A	0	19	323
	B	10	0	33
	C	229	34	0

Vehicle Mix

Heavy Vehicle Percentages

	To			
From		A	B	C
	A	0	5	7
	B	10	0	27
	C	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)	LOS
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)	LOS
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)	LOS
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)	LOS
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)	LOS
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)	LOS
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	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		ONE HOUR	✓	392	100.000
B		ONE HOUR	✓	63	100.000
C		ONE HOUR	✓	238	100.000

Origin-Destination Data

Demand (Veh/hr)

	To			
		A	B	C
From	A	0	25	367
	B	24	0	39
	C	203	35	0

Vehicle Mix

Heavy Vehicle Percentages

	To			
		A	B	C
From	A	0	0	2
	B	4	0	18
	C	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)	LOS
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)	LOS
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)	LOS
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)	LOS
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)	LOS
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)	LOS
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				

2023 Base, AM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction Type	Major road direction	Junction Delay (s)	Junction LOS
1	untitled	T-Junction	Two-way	0.62	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	2023 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		ONE HOUR	✓	341	100.000
B		ONE HOUR	✓	10	100.000
C		ONE HOUR	✓	247	100.000

Origin-Destination Data

Demand (Veh/hr)

	To			
		A	B	C
	A	0	1	340
	B	1	0	9
	C	241	6	0

Vehicle Mix

Heavy Vehicle Percentages

	To			
		A	B	C
	A	0	100	7
	B	100	0	100
	C	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	0.04	12.34	0.0	B	9	14
C-A					221	332
C-B	0.02	12.67	0.0	B	6	8
A-B					1	1
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)	LOS
B-AC	8	2	322	0.023	7	0.0	0.0	11.440	B
C-A	181	45			181				
C-B	5	1	307	0.015	4	0.0	0.0	11.901	B
A-B	1	0.19			1				
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)	LOS
B-AC	9	2	314	0.029	9	0.0	0.0	11.803	B
C-A	217	54			217				
C-B	5	1	300	0.018	5	0.0	0.0	12.213	B
A-B	1	0.22			1				
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)	LOS
B-AC	11	3	303	0.036	11	0.0	0.0	12.333	B
C-A	265	66			265				
C-B	7	2	291	0.023	7	0.0	0.0	12.670	B
A-B	1	0.28			1				
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)	LOS
B-AC	11	3	303	0.036	11	0.0	0.0	12.335	B
C-A	265	66			265				
C-B	7	2	291	0.023	7	0.0	0.0	12.670	B
A-B	1	0.28			1				
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)	LOS
B-AC	9	2	314	0.029	9	0.0	0.0	11.805	B
C-A	217	54			217				
C-B	5	1	300	0.018	5	0.0	0.0	12.217	B
A-B	1	0.22			1				
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)	LOS
B-AC	8	2	322	0.023	8	0.0	0.0	11.449	B
C-A	181	45			181				
C-B	5	1	307	0.015	5	0.0	0.0	11.906	B
A-B	1	0.19			1				
A-C	256	64			256				

2023 Base, PM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction Type	Major road direction	Junction Delay (s)	Junction LOS
1	untitled	T-Junction	Two-way	0.63	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
D4	2023 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		ONE HOUR	✓	386	100.000
B		ONE HOUR	✓	8	100.000
C		ONE HOUR	✓	221	100.000

Origin-Destination Data

Demand (Veh/hr)

	To			
		A	B	C
	A	0	0	386
	B	1	0	7
	C	213	8	0

Vehicle Mix

Heavy Vehicle Percentages

	To			
		A	B	C
	A	0	100	2
	B	100	0	100
	C	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	0.03	12.57	0.0	B	7	11
C-A					195	293
C-B	0.03	12.96	0.0	B	7	11
A-B					0	0
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)	LOS
B-AC	6	2	316	0.019	6	0.0	0.0	11.609	B
C-A	160	40			160				
C-B	6	2	304	0.020	6	0.0	0.0	12.071	B
A-B	0	0			0				
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)	LOS
B-AC	7	2	307	0.023	7	0.0	0.0	11.996	B
C-A	191	48			191				
C-B	7	2	297	0.024	7	0.0	0.0	12.431	B
A-B	0	0			0				
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)	LOS
B-AC	9	2	295	0.030	9	0.0	0.0	12.572	B
C-A	235	59			235				
C-B	9	2	287	0.031	9	0.0	0.0	12.956	B
A-B	0	0			0				
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)	LOS
B-AC	9	2	295	0.030	9	0.0	0.0	12.572	B
C-A	235	59			235				
C-B	9	2	287	0.031	9	0.0	0.0	12.959	B
A-B	0	0			0				
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)	LOS
B-AC	7	2	307	0.023	7	0.0	0.0	12.001	B
C-A	191	48			191				
C-B	7	2	297	0.024	7	0.0	0.0	12.435	B
A-B	0	0			0				
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)	LOS
B-AC	6	2	316	0.019	6	0.0	0.0	11.617	B
C-A	160	40			160				
C-B	6	2	304	0.020	6	0.0	0.0	12.079	B
A-B	0	0			0				
A-C	291	73			291				

2028 Base, AM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction Type	Major road direction	Junction Delay (s)	Junction LOS
1	untitled	T-Junction	Two-way	0.60	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	2028 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		ONE HOUR	✓	353	100.000
B		ONE HOUR	✓	10	100.000
C		ONE HOUR	✓	256	100.000

Origin-Destination Data

Demand (Veh/hr)

	To			
	A	B	C	
From	A	0	1	352
	B	1	0	9
	C	250	6	0

Vehicle Mix

Heavy Vehicle Percentages

	To			
	A	B	C	
From	A	0	100	7
	B	100	0	100
	C	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	0.04	12.43	0.0	B	9	14
C-A					229	344
C-B	0.02	12.75	0.0	B	6	8
A-B					1	1
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)	LOS
B-AC	8	2	321	0.023	7	0.0	0.0	11.493	B
C-A	188	47			188				
C-B	5	1	306	0.015	4	0.0	0.0	11.950	B
A-B	1	0.19			1				
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)	LOS
B-AC	9	2	312	0.029	9	0.0	0.0	11.870	B
C-A	225	56			225				
C-B	5	1	299	0.018	5	0.0	0.0	12.274	B
A-B	1	0.22			1				
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)	LOS
B-AC	11	3	301	0.037	11	0.0	0.0	12.424	B
C-A	275	69			275				
C-B	7	2	289	0.023	7	0.0	0.0	12.751	B
A-B	1	0.28			1				
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)	LOS
B-AC	11	3	301	0.037	11	0.0	0.0	12.426	B
C-A	275	69			275				
C-B	7	2	289	0.023	7	0.0	0.0	12.751	B
A-B	1	0.28			1				
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)	LOS
B-AC	9	2	312	0.029	9	0.0	0.0	11.875	B
C-A	225	56			225				
C-B	5	1	299	0.018	5	0.0	0.0	12.276	B
A-B	1	0.22			1				
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)	LOS
B-AC	8	2	321	0.023	8	0.0	0.0	11.502	B
C-A	188	47			188				
C-B	5	1	306	0.015	5	0.0	0.0	11.955	B
A-B	1	0.19			1				
A-C	265	66			265				

2028 Base, PM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction Type	Major road direction	Junction Delay (s)	Junction LOS
1	untitled	T-Junction	Two-way	0.62	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	2028 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		ONE HOUR	✓	400	100.000
B		ONE HOUR	✓	8	100.000
C		ONE HOUR	✓	229	100.000

Origin-Destination Data

Demand (Veh/hr)

	To			
		A	B	C
	A	0	0	400
	B	1	0	7
	C	221	8	0

Vehicle Mix

Heavy Vehicle Percentages

	To			
		A	B	C
	A	0	100	2
	B	100	0	100
	C	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	0.03	12.68	0.0	B	7	11
C-A					203	304
C-B	0.03	13.05	0.0	B	7	11
A-B					0	0
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)	LOS
B-AC	6	2	314	0.019	6	0.0	0.0	11.670	B
C-A	166	42			166				
C-B	6	2	303	0.020	6	0.0	0.0	12.126	B
A-B	0	0			0				
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)	LOS
B-AC	7	2	305	0.024	7	0.0	0.0	12.074	B
C-A	199	50			199				
C-B	7	2	295	0.024	7	0.0	0.0	12.502	B
A-B	0	0			0				
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)	LOS
B-AC	9	2	293	0.030	9	0.0	0.0	12.675	B
C-A	243	61			243				
C-B	9	2	285	0.031	9	0.0	0.0	13.050	B
A-B	0	0			0				
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)	LOS
B-AC	9	2	293	0.030	9	0.0	0.0	12.678	B
C-A	243	61			243				
C-B	9	2	285	0.031	9	0.0	0.0	13.053	B
A-B	0	0			0				
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)	LOS
B-AC	7	2	305	0.024	7	0.0	0.0	12.079	B
C-A	199	50			199				
C-B	7	2	295	0.024	7	0.0	0.0	12.504	B
A-B	0	0			0				
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)	LOS
B-AC	6	2	314	0.019	6	0.0	0.0	11.678	B
C-A	166	42			166				
C-B	6	2	303	0.020	6	0.0	0.0	12.135	B
A-B	0	0			0				
A-C	301	75			301				

2023 Base + Dev, AM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction Type	Major road direction	Junction Delay (s)	Junction LOS
1	untitled	T-Junction	Two-way	0.83	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically	Relationship type	Relationship
D9	2023 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		ONE HOUR	✓	345	100.000
B		ONE HOUR	✓	33	100.000
C		ONE HOUR	✓	257	100.000

Origin-Destination Data

Demand (Veh/hr)

	To			
		A	B	C
From	A	0	5	340
	B	5	0	28
	C	241	16	0

Vehicle Mix

Heavy Vehicle Percentages

	To			
		A	B	C
From	A	0	20	7
	B	20	0	32
	C	3	38	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	0.08	8.59	0.1	A	30	45
C-A					221	332
C-B	0.04	8.90	0.0	A	15	22
A-B					5	7
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)	LOS
B-AC	25	6	486	0.051	25	0.0	0.1	7.798	A
C-A	181	45			181				
C-B	12	3	446	0.027	12	0.0	0.0	8.294	A
A-B	4	1			4				
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)	LOS
B-AC	30	7	473	0.063	30	0.1	0.1	8.113	A
C-A	217	54			217				
C-B	14	4	436	0.033	14	0.0	0.0	8.540	A
A-B	4	1			4				
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)	LOS
B-AC	36	9	455	0.080	36	0.1	0.1	8.588	A
C-A	265	66			265				
C-B	18	4	422	0.042	18	0.0	0.0	8.901	A
A-B	6	1			6				
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)	LOS
B-AC	36	9	455	0.080	36	0.1	0.1	8.589	A
C-A	265	66			265				
C-B	18	4	422	0.042	18	0.0	0.0	8.901	A
A-B	6	1			6				
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)	LOS
B-AC	30	7	473	0.063	30	0.1	0.1	8.117	A
C-A	217	54			217				
C-B	14	4	436	0.033	14	0.0	0.0	8.543	A
A-B	4	1			4				
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)	LOS
B-AC	25	6	486	0.051	25	0.1	0.1	7.806	A
C-A	181	45			181				
C-B	12	3	446	0.027	12	0.0	0.0	8.298	A
A-B	4	1			4				
A-C	256	64			256				

2023 Base + Dev, PM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction Type	Major road direction	Junction Delay (s)	Junction LOS
1	untitled	T-Junction	Two-way	0.83	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically	Relationship type	Relationship
D10	2023 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		ONE HOUR	✓	392	100.000
B		ONE HOUR	✓	25	100.000
C		ONE HOUR	✓	235	100.000

Origin-Destination Data

Demand (Veh/hr)

	To			
From		A	B	C
	A	0	6	386
	B	6	0	19
	C	213	22	0

Vehicle Mix

Heavy Vehicle Percentages

	To			
From		A	B	C
	A	0	0	2
	B	17	0	37
	C	4	36	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	0.06	8.98	0.1	A	23	34
C-A					195	293
C-B	0.06	9.12	0.1	A	20	30
A-B					6	8
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)	LOS
B-AC	19	5	462	0.041	19	0.0	0.0	8.115	A
C-A	160	40			160				
C-B	17	4	445	0.037	16	0.0	0.0	8.393	A
A-B	5	1			5				
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)	LOS
B-AC	22	6	448	0.050	22	0.0	0.1	8.457	A
C-A	191	48			191				
C-B	20	5	434	0.046	20	0.0	0.0	8.685	A
A-B	5	1			5				
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)	LOS
B-AC	28	7	428	0.064	27	0.1	0.1	8.980	A
C-A	235	59			235				
C-B	24	6	419	0.058	24	0.0	0.1	9.114	A
A-B	7	2			7				
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)	LOS
B-AC	28	7	428	0.064	28	0.1	0.1	8.982	A
C-A	235	59			235				
C-B	24	6	419	0.058	24	0.1	0.1	9.116	A
A-B	7	2			7				
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)	LOS
B-AC	22	6	448	0.050	23	0.1	0.1	8.463	A
C-A	191	48			191				
C-B	20	5	434	0.046	20	0.1	0.0	8.689	A
A-B	5	1			5				
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)	LOS
B-AC	19	5	462	0.041	19	0.1	0.0	8.123	A
C-A	160	40			160				
C-B	17	4	445	0.037	17	0.0	0.0	8.399	A
A-B	5	1			5				
A-C	291	73			291				

2028 Base + Dev, AM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction Type	Major road direction	Junction Delay (s)	Junction LOS
1	untitled	T-Junction	Two-way	0.81	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	2028 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		ONE HOUR	✓	357	100.000
B		ONE HOUR	✓	33	100.000
C		ONE HOUR	✓	266	100.000

Origin-Destination Data

Demand (Veh/hr)

	To			
		A	B	C
From	A	0	5	352
	B	5	0	28
	C	250	16	0

Vehicle Mix

Heavy Vehicle Percentages

	To			
		A	B	C
From	A	0	20	7
	B	20	0	32
	C	3	38	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	0.08	8.66	0.1	A	30	45
C-A					229	344
C-B	0.04	8.96	0.0	A	15	22
A-B					5	7
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)	LOS
B-AC	25	6	484	0.051	25	0.0	0.1	7.837	A
C-A	188	47			188				
C-B	12	3	444	0.027	12	0.0	0.0	8.328	A
A-B	4	1			4				
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)	LOS
B-AC	30	7	471	0.063	30	0.1	0.1	8.163	A
C-A	225	56			225				
C-B	14	4	434	0.033	14	0.0	0.0	8.584	A
A-B	4	1			4				
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)	LOS
B-AC	36	9	452	0.080	36	0.1	0.1	8.654	A
C-A	275	69			275				
C-B	18	4	419	0.042	18	0.0	0.0	8.959	A
A-B	6	1			6				
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)	LOS
B-AC	36	9	452	0.080	36	0.1	0.1	8.659	A
C-A	275	69			275				
C-B	18	4	419	0.042	18	0.0	0.0	8.959	A
A-B	6	1			6				
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)	LOS
B-AC	30	7	471	0.063	30	0.1	0.1	8.168	A
C-A	225	56			225				
C-B	14	4	434	0.033	14	0.0	0.0	8.587	A
A-B	4	1			4				
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)	LOS
B-AC	25	6	484	0.051	25	0.1	0.1	7.845	A
C-A	188	47			188				
C-B	12	3	444	0.027	12	0.0	0.0	8.334	A
A-B	4	1			4				
A-C	265	66			265				

2028 Base + Dev, PM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction Type	Major road direction	Junction Delay (s)	Junction LOS
1	untitled	T-Junction	Two-way	0.81	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	2028 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		ONE HOUR	✓	406	100.000
B		ONE HOUR	✓	25	100.000
C		ONE HOUR	✓	243	100.000

Origin-Destination Data

Demand (Veh/hr)

	To			
		A	B	C
From	A	0	6	400
	B	6	0	19
	C	221	22	0

Vehicle Mix

Heavy Vehicle Percentages

	To			
		A	B	C
From	A	0	0	2
	B	17	0	37
	C	4	36	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	0.06	9.07	0.1	A	23	34
C-A					203	304
C-B	0.06	9.18	0.1	A	20	30
A-B					6	8
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)	LOS
B-AC	19	5	460	0.041	19	0.0	0.0	8.162	A
C-A	166	42			166				
C-B	17	4	443	0.037	16	0.0	0.0	8.433	A
A-B	5	1			5				
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)	LOS
B-AC	22	6	445	0.051	22	0.0	0.1	8.519	A
C-A	199	50			199				
C-B	20	5	432	0.046	20	0.0	0.0	8.736	A
A-B	5	1			5				
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)	LOS
B-AC	28	7	425	0.065	27	0.1	0.1	9.065	A
C-A	243	61			243				
C-B	24	6	416	0.058	24	0.0	0.1	9.183	A
A-B	7	2			7				
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)	LOS
B-AC	28	7	425	0.065	28	0.1	0.1	9.067	A
C-A	243	61			243				
C-B	24	6	416	0.058	24	0.1	0.1	9.185	A
A-B	7	2			7				
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)	LOS
B-AC	22	6	445	0.051	23	0.1	0.1	8.523	A
C-A	199	50			199				
C-B	20	5	432	0.046	20	0.1	0.0	8.738	A
A-B	5	1			5				
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)	LOS
B-AC	19	5	460	0.041	19	0.1	0.0	8.169	A
C-A	166	42			166				
C-B	17	4	443	0.037	17	0.0	0.0	8.441	A
A-B	5	1			5				
A-C	301	75			301				

APPENDIX O

Junctions Output – Sainsbury's/Manor Road

Junctions 9			
PICADY 9 - Priority Intersection Module			
Version: 9.0.1.4646 [] © Copyright TRL Limited, 2018			
For sales and distribution information, program advice and maintenance, contact TRL: Tel: +44 (0)1344 770758 email: software@trl.co.uk Web: http://www.trlsoftware.co.uk			
The users of this computer program for the solution of an engineering problem are in no way relieved of their responsibility for the correctness of the solution			

Filename: Sainsbuy's - Manor Road.j9

Path: J:\10000\10500\10596_HomebaseRichmondFair\engineering\Traffic_Programs\Junctions

Report generation date: 13/12/2018 13:59:13

- »2018 Base, AM
- »2018 Base, PM
- »2023 Base, AM
- »2023 Base, PM
- »2028 Base, AM
- »2028 Base, PM
- »2023 Base + Dev, AM
- »2023 Base + Dev, PM
- »2028 Base + Dev, AM
- »2028 Base + Dev, PM

Summary of junction performance

	AM				PM			
	Queue (Veh)	Delay (s)	RFC	LOS	Queue (Veh)	Delay (s)	RFC	LOS
2018 Base								
Stream B-C	0.1	7.66	0.07	A	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
2023 Base								
Stream B-C	0.1	7.72	0.07	A	0.2	8.49	0.19	A
Stream B-A	0.2	12.69	0.15	B	0.2	14.58	0.19	B
Stream C-AB	0.1	6.37	0.11	A	0.2	6.73	0.18	A
2028 Base								
Stream B-C	0.1	7.79	0.08	A	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
2023 Base + Dev								
Stream B-C	0.1	7.73	0.07	A	0.2	8.51	0.19	A
Stream B-A	0.2	12.76	0.15	B	0.2	14.69	0.19	B
Stream C-AB	0.1	6.39	0.11	A	0.2	6.75	0.18	A
2028 Base + Dev								
Stream B-C	0.1	7.81	0.08	A	0.2	8.66	0.20	A
Stream B-A	0.2	13.05	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

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	2023 Base	AM	ONE HOUR	08:15	09:45	15	✓	Simple	D13*1.0519
D4	2023 Base	PM	ONE HOUR	16:45	18:15	15	✓	Simple	D14*1.0510
D5	2028 Base	AM	ONE HOUR	08:15	09:45	15	✓	Simple	D13*1.0905
D6	2028 Base	PM	ONE HOUR	16:45	18:15	15	✓	Simple	D14*1.0905
D7	Development	AM	ONE HOUR	08:15	09:45	15			
D8	Development	PM	ONE HOUR	16:45	18:15	15			
D9	2023 Base + Dev	AM	ONE HOUR	08:15	09:45	15	✓	Simple	D3+D7
D10	2023 Base + Dev	PM	ONE HOUR	16:45	18:15	15	✓	Simple	D4+D8
D11	2028 Base + Dev	AM	ONE HOUR	08:15	09:45	15	✓	Simple	D5+D7
D12	2028 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 - 2023 Base + Dev, AM	Demand Set relationships are chained. This may slow down the file.

Junction Network

Junctions

Junction	Name	Junction Type	Major road direction	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	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	Two lanes	2.80	2.80	32	19

Slope / Intercept / Capacity

Priority Intersection Slopes and Intercepts

Junction	Stream	Intercept (Veh/hr)	Slope for A-B	Slope for A-C	Slope for C-A	Slope for C-B
1	B-A	487	0.087	0.220	0.139	0.315
1	B-C	623	0.094	0.237	-	-
1	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		ONE HOUR	✓	239	100.000
B		ONE HOUR	✓	76	100.000
C		ONE HOUR	✓	358	100.000

Origin-Destination Data

Demand (Veh/hr)

	To			
From		A	B	C
	A	0	6	233
	B	44	0	32
	C	298	60	0

Vehicle Mix

Heavy Vehicle Percentages

	To			
From		A	B	C
	A	0	0	7
	B	7	0	6
	C	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)	LOS
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)	LOS
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)	LOS
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)	LOS
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)	LOS
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)	LOS
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 - 2023 Base + Dev, AM	Demand Set relationships are chained. This may slow down the file.

Junction Network

Junctions

Junction	Name	Junction Type	Major road direction	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		ONE HOUR	✓	227	100.000
B		ONE HOUR	✓	135	100.000
C		ONE HOUR	✓	442	100.000

Origin-Destination Data

Demand (Veh/hr)

	To			
	A	B	C	
From	A	0	13	214
	B	50	0	85
	C	342	100	0

Vehicle Mix

Heavy Vehicle Percentages

	To			
	A	B	C	
From	A	0	8	2
	B	14	0	4
	C	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)	LOS
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)	LOS
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)	LOS
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)	LOS
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)	LOS
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)	LOS
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				

2023 Base, AM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Demand Set Relationship	D9 - 2023 Base + Dev, AM	Demand Set relationships are chained. This may slow down the file.

Junction Network

Junctions

Junction	Name	Junction Type	Major road direction	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	2023 Base	AM	ONE HOUR	08:15	09:45	15	✓	Simple	D13*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		ONE HOUR	✓	242	100.000
B		ONE HOUR	✓	80	100.000
C		ONE HOUR	✓	358	100.000

Origin-Destination Data

Demand (Veh/hr)

	To			
		A	B	C
	A	0	6	236
	B	46	0	34
	C	295	63	0

Vehicle Mix

Heavy Vehicle Percentages

	To			
		A	B	C
	A	0	0	7
	B	7	0	6
	C	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	12.69	0.2	B	42	64
C-AB	0.11	6.37	0.1	A	58	87
C-A					270	405
A-B					6	9
A-C					216	324

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)	LOS
B-C	25	6	531	0.048	25	0.0	0.0	7.119	A
B-A	35	9	373	0.093	34	0.0	0.1	10.615	B
C-AB	48	12	659	0.072	47	0.0	0.1	5.884	A
C-A	222	55			222				
A-B	5	1			5				
A-C	177	44			177				

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)	LOS
B-C	30	8	519	0.058	30	0.0	0.1	7.358	A
B-A	42	10	357	0.117	41	0.1	0.1	11.409	B
C-AB	57	14	648	0.087	57	0.1	0.1	6.082	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)	LOS
B-C	37	9	504	0.074	37	0.1	0.1	7.715	A
B-A	51	13	335	0.152	51	0.1	0.2	12.677	B
C-AB	69	17	634	0.110	69	0.1	0.1	6.372	A
C-A	324	81			324				
A-B	7	2			7				
A-C	259	65			259				

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)	LOS
B-C	37	9	504	0.074	37	0.1	0.1	7.717	A
B-A	51	13	335	0.152	51	0.2	0.2	12.693	B
C-AB	69	17	634	0.110	69	0.1	0.1	6.372	A
C-A	324	81			324				
A-B	7	2			7				
A-C	259	65			259				

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)	LOS
B-C	30	8	519	0.058	30	0.1	0.1	7.364	A
B-A	42	10	357	0.117	42	0.2	0.1	11.431	B
C-AB	57	14	648	0.087	57	0.1	0.1	6.085	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)	LOS
B-C	25	6	531	0.048	25	0.1	0.1	7.125	A
B-A	35	9	373	0.093	35	0.1	0.1	10.651	B
C-AB	48	12	659	0.072	48	0.1	0.1	5.890	A
C-A	222	55			222				
A-B	5	1			5				
A-C	177	44			177				

2023 Base, PM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Demand Set Relationship	D9 - 2023 Base + Dev, AM	Demand Set relationships are chained. This may slow down the file.

Junction Network

Junctions

Junction	Name	Junction Type	Major road direction	Junction Delay (s)	Junction LOS
1	untitled	T-Junction	Two-way	2.90	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	2023 Base	PM	ONE HOUR	16:45	18:15	15	✓	Simple	D14*1.0510

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		ONE HOUR	✓	214	100.000
B		ONE HOUR	✓	142	100.000
C		ONE HOUR	✓	438	100.000

Origin-Destination Data

Demand (Veh/hr)

	To			
		A	B	C
	A	0	14	201
	B	53	0	89
	C	333	105	0

Vehicle Mix

Heavy Vehicle Percentages

	To			
		A	B	C
	A	0	8	2
	B	14	0	4
	C	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	14.58	0.2	B	48	72
C-AB	0.18	6.73	0.2	A	96	145
C-A					306	459
A-B					13	19
A-C					184	276

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)	LOS
B-C	67	17	550	0.122	67	0.0	0.1	7.449	A
B-A	40	10	344	0.115	39	0.0	0.1	11.798	B
C-AB	79	20	671	0.118	79	0.0	0.1	6.069	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)	LOS
B-C	80	20	538	0.149	80	0.1	0.2	7.854	A
B-A	47	12	327	0.144	47	0.1	0.2	12.840	B
C-AB	94	24	663	0.143	94	0.1	0.2	6.334	A
C-A	300	75			300				
A-B	12	3			12				
A-C	180	45			180				

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)	LOS
B-C	98	25	523	0.188	98	0.2	0.2	8.476	A
B-A	58	14	305	0.190	58	0.2	0.2	14.549	B
C-AB	116	29	650	0.178	116	0.2	0.2	6.728	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)	LOS
B-C	98	25	523	0.188	98	0.2	0.2	8.486	A
B-A	58	14	305	0.190	58	0.2	0.2	14.581	B
C-AB	116	29	650	0.178	116	0.2	0.2	6.731	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)	LOS
B-C	80	20	538	0.149	81	0.2	0.2	7.871	A
B-A	47	12	327	0.144	47	0.2	0.2	12.880	B
C-AB	94	24	663	0.143	95	0.2	0.2	6.343	A
C-A	300	75			300				
A-B	12	3			12				
A-C	180	45			180				

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)	LOS
B-C	67	17	549	0.122	67	0.2	0.1	7.476	A
B-A	40	10	344	0.115	40	0.2	0.1	11.857	B
C-AB	79	20	671	0.118	79	0.2	0.1	6.081	A
C-A	251	63			251				
A-B	10	3			10				
A-C	151	38			151				

2028 Base, AM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Demand Set Relationship	D9 - 2023 Base + Dev, AM	Demand Set relationships are chained. This may slow down the file.

Junction Network

Junctions

Junction	Name	Junction Type	Major road direction	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	2028 Base	AM	ONE HOUR	08:15	09:45	15	✓	Simple	D13*1.0905

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		ONE HOUR	✓	251	100.000
B		ONE HOUR	✓	83	100.000
C		ONE HOUR	✓	371	100.000

Origin-Destination Data

Demand (Veh/hr)

	To			
		A	B	C
From	A	0	7	244
	B	48	0	35
	C	305	65	0

Vehicle Mix

Heavy Vehicle Percentages

	To			
		A	B	C
From	A	0	0	7
	B	7	0	6
	C	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)	LOS
B-C	26	7	529	0.050	26	0.0	0.1	7.158	A
B-A	36	9	370	0.098	36	0.0	0.1	10.753	B
C-AB	49	12	657	0.075	49	0.0	0.1	5.920	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)	LOS
B-C	31	8	517	0.061	31	0.1	0.1	7.413	A
B-A	43	11	353	0.122	43	0.1	0.1	11.598	B
C-AB	59	15	646	0.091	59	0.1	0.1	6.128	A
C-A	274	69			274				
A-B	6	1			6				
A-C	220	55			220				

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)	LOS
B-C	38	10	500	0.077	38	0.1	0.1	7.791	A
B-A	53	13	330	0.160	53	0.1	0.2	12.964	B
C-AB	72	18	632	0.114	72	0.1	0.1	6.431	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)	LOS
B-C	38	10	500	0.077	38	0.1	0.1	7.794	A
B-A	53	13	330	0.160	53	0.2	0.2	12.983	B
C-AB	72	18	632	0.114	72	0.1	0.1	6.433	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)	LOS
B-C	31	8	517	0.061	31	0.1	0.1	7.418	A
B-A	43	11	353	0.122	43	0.2	0.1	11.626	B
C-AB	59	15	646	0.091	59	0.1	0.1	6.133	A
C-A	274	69			274				
A-B	6	1			6				
A-C	220	55			220				

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)	LOS
B-C	26	7	528	0.050	26	0.1	0.1	7.168	A
B-A	36	9	370	0.098	36	0.1	0.1	10.790	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				

2028 Base, PM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Demand Set Relationship	D9 - 2023 Base + Dev, AM	Demand Set relationships are chained. This may slow down the file.

Junction Network

Junctions

Junction	Name	Junction Type	Major road direction	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	2028 Base	PM	ONE HOUR	16:45	18:15	15	✓	Simple	D14*1.0905

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		ONE HOUR	✓	222	100.000
B		ONE HOUR	✓	147	100.000
C		ONE HOUR	✓	455	100.000

Origin-Destination Data

Demand (Veh/hr)

	To			
		A	B	C
	A	0	14	208
	B	55	0	93
	C	346	109	0

Vehicle Mix

Heavy Vehicle Percentages

	To			
		A	B	C
	A	0	8	2
	B	14	0	4
	C	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)	LOS
B-C	70	17	547	0.127	69	0.0	0.1	7.518	A
B-A	41	10	341	0.121	41	0.0	0.1	11.976	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)	LOS
B-C	83	21	536	0.156	83	0.1	0.2	7.951	A
B-A	49	12	324	0.152	49	0.1	0.2	13.097	B
C-AB	98	25	661	0.148	98	0.1	0.2	6.397	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)	LOS
B-C	102	26	519	0.197	102	0.2	0.2	8.619	A
B-A	60	15	300	0.200	60	0.2	0.2	14.954	B
C-AB	120	30	648	0.185	120	0.2	0.2	6.813	A
C-A	381	95			381				
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)	LOS
B-C	102	26	519	0.197	102	0.2	0.2	8.629	A
B-A	60	15	300	0.200	60	0.2	0.2	14.993	B
C-AB	120	30	648	0.185	120	0.2	0.2	6.818	A
C-A	381	95			381				
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)	LOS
B-C	83	21	536	0.156	84	0.2	0.2	7.969	A
B-A	49	12	323	0.152	49	0.2	0.2	13.142	B
C-AB	98	25	661	0.148	98	0.2	0.2	6.404	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)	LOS
B-C	70	17	547	0.128	70	0.2	0.1	7.549	A
B-A	41	10	340	0.121	41	0.2	0.1	12.042	B
C-AB	82	21	670	0.123	82	0.2	0.1	6.130	A
C-A	260	65			260				
A-B	11	3			11				
A-C	157	39			157				

2023 Base + Dev, AM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Demand Set Relationship	D9 - 2023 Base + Dev, AM	Demand Set relationships are chained. This may slow down the file.

Junction Network

Junctions

Junction	Name	Junction Type	Major road direction	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	2023 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		ONE HOUR	✓	246	100.000
B		ONE HOUR	✓	80	100.000
C		ONE HOUR	✓	362	100.000

Origin-Destination Data

Demand (Veh/hr)

	To			
		A	B	C
	A	0	6	240
	B	46	0	34
	C	299	63	0

Vehicle Mix

Heavy Vehicle Percentages

	To			
		A	B	C
	A	0	0	7
	B	7	0	6
	C	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	7.73	0.1	A	31	46
B-A	0.15	12.76	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					220	330

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)	LOS
B-C	25	6	530	0.048	25	0.0	0.0	7.124	A
B-A	35	9	372	0.094	34	0.0	0.1	10.647	B
C-AB	48	12	658	0.072	47	0.0	0.1	5.892	A
C-A	225	56			225				
A-B	5	1			5				
A-C	180	45			180				

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)	LOS
B-C	30	8	519	0.058	30	0.0	0.1	7.370	A
B-A	42	10	356	0.117	41	0.1	0.1	11.453	B
C-AB	57	14	648	0.088	57	0.1	0.1	6.092	A
C-A	268	67			268				
A-B	6	1			6				
A-C	215	54			215				

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)	LOS
B-C	37	9	503	0.074	37	0.1	0.1	7.732	A
B-A	51	13	333	0.153	51	0.1	0.2	12.741	B
C-AB	69	17	633	0.110	69	0.1	0.1	6.385	A
C-A	329	82			329				
A-B	7	2			7				
A-C	264	66			264				

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)	LOS
B-C	37	9	502	0.074	37	0.1	0.1	7.734	A
B-A	51	13	333	0.153	51	0.2	0.2	12.760	B
C-AB	69	17	633	0.110	69	0.1	0.1	6.385	A
C-A	329	82			329				
A-B	7	2			7				
A-C	264	66			264				

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)	LOS
B-C	30	8	518	0.058	30	0.1	0.1	7.374	A
B-A	42	10	356	0.117	42	0.2	0.1	11.478	B
C-AB	57	14	648	0.088	57	0.1	0.1	6.097	A
C-A	268	67			268				
A-B	6	1			6				
A-C	215	54			215				

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)	LOS
B-C	25	6	530	0.048	25	0.1	0.1	7.138	A
B-A	35	9	372	0.094	35	0.1	0.1	10.686	B
C-AB	48	12	658	0.072	48	0.1	0.1	5.898	A
C-A	225	56			225				
A-B	5	1			5				
A-C	180	45			180				

2023 Base + Dev, PM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Demand Set Relationship	D9 - 2023 Base + Dev, AM	Demand Set relationships are chained. This may slow down the file.

Junction Network

Junctions

Junction	Name	Junction Type	Major road direction	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	2023 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		ONE HOUR	✓	219	100.000
B		ONE HOUR	✓	142	100.000
C		ONE HOUR	✓	444	100.000

Origin-Destination Data

Demand (Veh/hr)

	To			
		A	B	C
	A	0	14	206
	B	53	0	89
	C	339	105	0

Vehicle Mix

Heavy Vehicle Percentages

	To			
		A	B	C
	A	0	8	2
	B	14	0	3
	C	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	8.51	0.2	A	82	123
B-A	0.19	14.69	0.2	B	48	72
C-AB	0.18	6.75	0.2	A	96	145
C-A					311	467
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)	LOS
B-C	67	17	549	0.123	67	0.0	0.1	7.463	A
B-A	40	10	342	0.116	39	0.0	0.1	11.845	B
C-AB	79	20	670	0.118	79	0.0	0.1	6.080	A
C-A	255	64			255				
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)	LOS
B-C	80	20	537	0.149	80	0.1	0.2	7.873	A
B-A	47	12	326	0.145	47	0.1	0.2	12.911	B
C-AB	94	24	661	0.143	94	0.1	0.2	6.348	A
C-A	305	76			305				
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)	LOS
B-C	98	25	521	0.189	98	0.2	0.2	8.503	A
B-A	58	14	303	0.191	58	0.2	0.2	14.657	B
C-AB	116	29	649	0.178	116	0.2	0.2	6.747	A
C-A	373	93			373				
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)	LOS
B-C	98	25	521	0.189	98	0.2	0.2	8.514	A
B-A	58	14	303	0.191	58	0.2	0.2	14.692	B
C-AB	116	29	649	0.178	116	0.2	0.2	6.750	A
C-A	373	93			373				
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)	LOS
B-C	80	20	537	0.150	81	0.2	0.2	7.888	A
B-A	47	12	326	0.145	47	0.2	0.2	12.953	B
C-AB	94	24	661	0.143	95	0.2	0.2	6.357	A
C-A	305	76			305				
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)	LOS
B-C	67	17	548	0.123	67	0.2	0.1	7.487	A
B-A	40	10	342	0.116	40	0.2	0.1	11.907	B
C-AB	79	20	670	0.118	79	0.2	0.1	6.092	A
C-A	255	64			255				
A-B	10	3			10				
A-C	155	39			155				

2028 Base + Dev, AM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Demand Set Relationship	D9 - 2023 Base + Dev, AM	Demand Set relationships are chained. This may slow down the file.

Junction Network

Junctions

Junction	Name	Junction Type	Major road direction	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	2028 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		ONE HOUR	✓	255	100.000
B		ONE HOUR	✓	83	100.000
C		ONE HOUR	✓	375	100.000

Origin-Destination Data

Demand (Veh/hr)

	To			
		A	B	C
	A	0	7	248
	B	48	0	35
	C	309	65	0

Vehicle Mix

Heavy Vehicle Percentages

	To			
		A	B	C
	A	0	0	7
	B	7	0	6
	C	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	7.81	0.1	A	32	48
B-A	0.16	13.05	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					228	342

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)	LOS
B-C	26	7	528	0.050	26	0.0	0.1	7.168	A
B-A	36	9	369	0.098	36	0.0	0.1	10.786	B
C-AB	49	12	656	0.075	49	0.0	0.1	5.928	A
C-A	233	58			233				
A-B	5	1			5				
A-C	187	47			187				

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)	LOS
B-C	31	8	516	0.061	31	0.1	0.1	7.426	A
B-A	43	11	352	0.123	43	0.1	0.1	11.643	B
C-AB	59	15	645	0.091	59	0.1	0.1	6.138	A
C-A	278	70			278				
A-B	6	1			6				
A-C	223	56			223				

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)	LOS
B-C	38	10	499	0.077	38	0.1	0.1	7.809	A
B-A	53	13	329	0.161	53	0.1	0.2	13.034	B
C-AB	72	18	630	0.114	72	0.1	0.1	6.444	A
C-A	341	85			341				
A-B	7	2			7				
A-C	273	68			273				

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)	LOS
B-C	38	10	499	0.077	38	0.1	0.1	7.812	A
B-A	53	13	329	0.161	53	0.2	0.2	13.053	B
C-AB	72	18	630	0.114	72	0.1	0.1	6.447	A
C-A	341	85			341				
A-B	7	2			7				
A-C	273	68			273				

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)	LOS
B-C	31	8	516	0.061	31	0.1	0.1	7.430	A
B-A	43	11	352	0.123	43	0.2	0.1	11.671	B
C-AB	59	15	645	0.091	59	0.1	0.1	6.143	A
C-A	278	70			278				
A-B	6	1			6				
A-C	223	56			223				

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)	LOS
B-C	26	7	528	0.050	26	0.1	0.1	7.178	A
B-A	36	9	369	0.098	36	0.1	0.1	10.825	B
C-AB	49	12	656	0.075	49	0.1	0.1	5.936	A
C-A	233	58			233				
A-B	5	1			5				
A-C	187	47			187				

2028 Base + Dev, PM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Demand Set Relationship	D9 - 2023 Base + Dev, AM	Demand Set relationships are chained. This may slow down the file.

Junction Network

Junctions

Junction	Name	Junction Type	Major road direction	Junction Delay (s)	Junction LOS
1	untitled	T-Junction	Two-way	2.94	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	2028 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		ONE HOUR	✓	227	100.000
B		ONE HOUR	✓	147	100.000
C		ONE HOUR	✓	461	100.000

Origin-Destination Data

Demand (Veh/hr)

	To			
		A	B	C
	A	0	14	213
	B	55	0	93
	C	352	109	0

Vehicle Mix

Heavy Vehicle Percentages

	To			
		A	B	C
	A	0	8	2
	B	14	0	4
	C	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	484
A-B					13	20
A-C					196	294

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)	LOS
B-C	70	17	547	0.128	69	0.0	0.1	7.532	A
B-A	41	10	339	0.121	41	0.0	0.1	12.027	B
C-AB	82	21	669	0.123	82	0.0	0.1	6.128	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)	LOS
B-C	83	21	535	0.156	83	0.1	0.2	7.971	A
B-A	49	12	322	0.152	49	0.1	0.2	13.170	B
C-AB	98	25	659	0.149	98	0.1	0.2	6.411	A
C-A	316	79			316				
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)	LOS
B-C	102	26	518	0.197	102	0.2	0.2	8.644	A
B-A	60	15	298	0.201	60	0.2	0.2	15.072	C
C-AB	120	30	646	0.186	120	0.2	0.2	6.832	A
C-A	387	97			387				
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)	LOS
B-C	102	26	518	0.197	102	0.2	0.2	8.658	A
B-A	60	15	298	0.201	60	0.2	0.2	15.111	C
C-AB	120	30	646	0.186	120	0.2	0.2	6.838	A
C-A	387	97			387				
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)	LOS
B-C	83	21	534	0.156	84	0.2	0.2	7.989	A
B-A	49	12	322	0.152	49	0.2	0.2	13.219	B
C-AB	98	25	659	0.149	98	0.2	0.2	6.420	A
C-A	316	79			316				
A-B	13	3			13				
A-C	192	48			192				

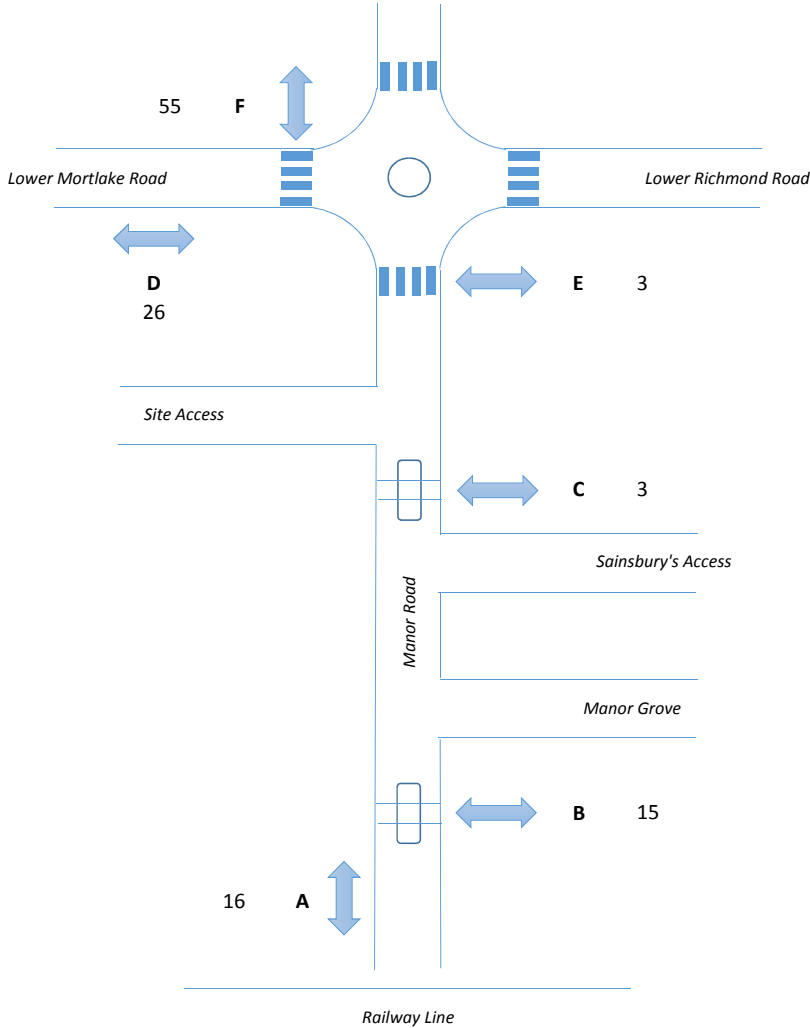
18:00 - 18:15

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
B-C	70	17	546	0.128	70	0.2	0.1	7.563	A
B-A	41	10	339	0.121	41	0.2	0.1	12.094	B
C-AB	82	21	669	0.123	82	0.2	0.1	6.140	A
C-A	265	66			265				
A-B	11	3			11				
A-C	161	40			161				

APPENDIX P

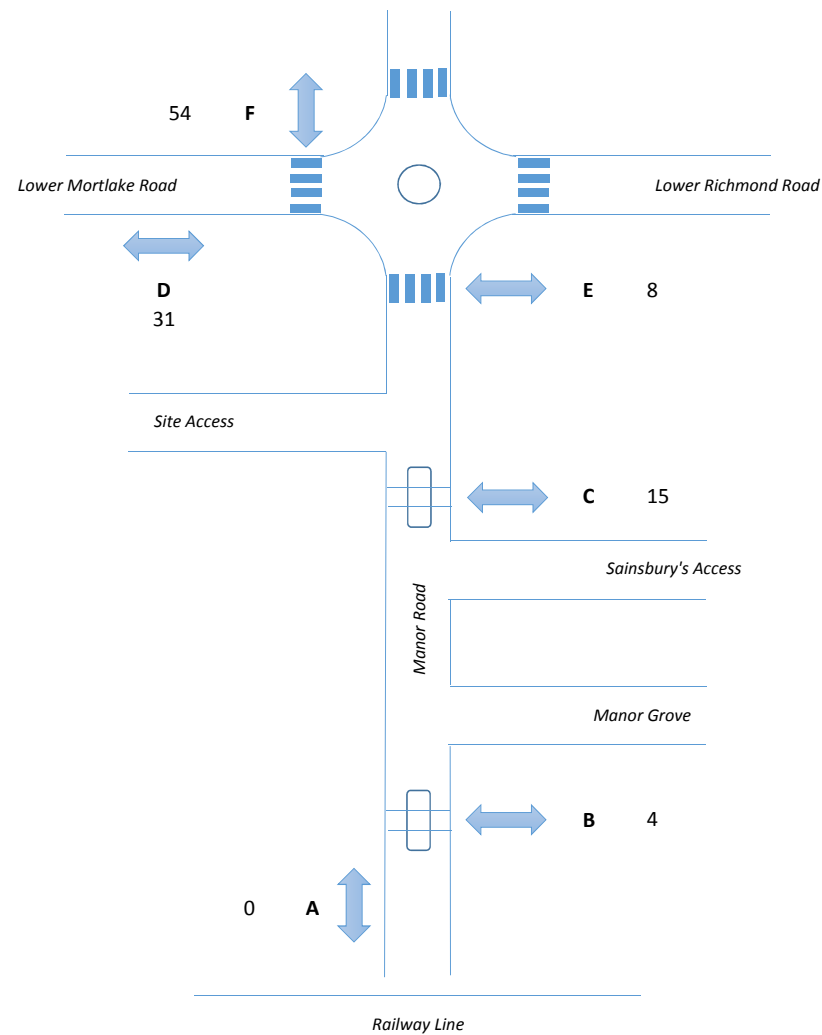
Predicted Pedestrian Movements

AM Peak Hour Pedestrian Movements



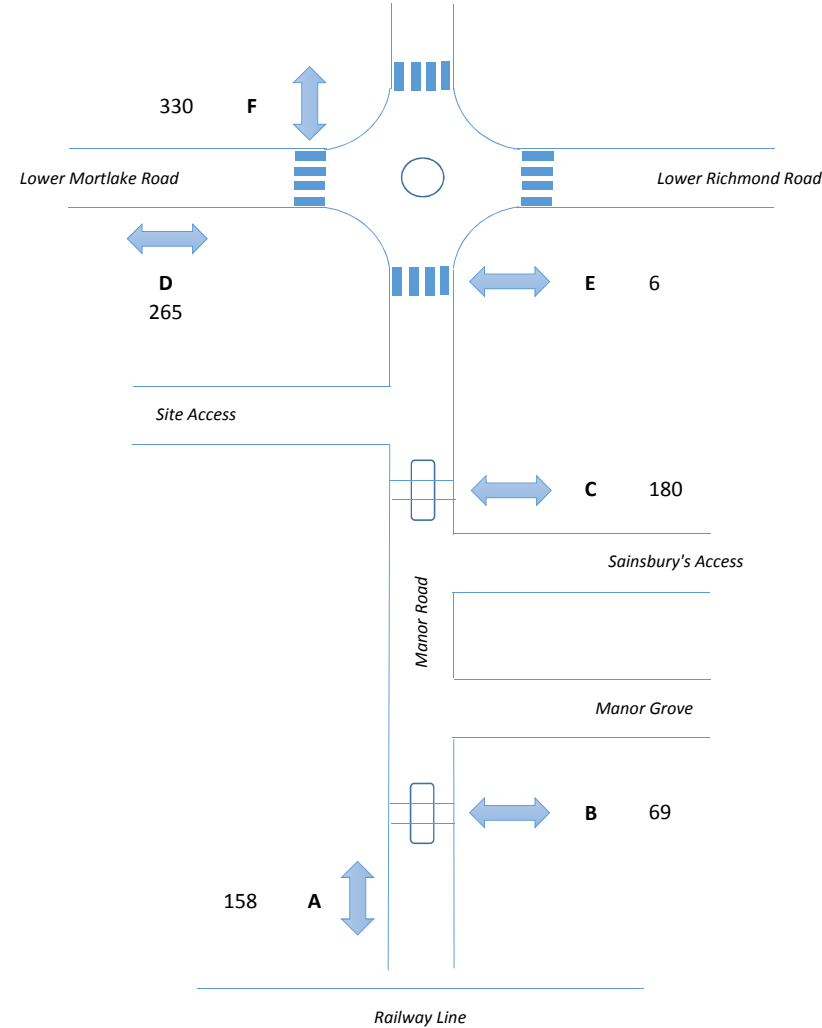
	Link					
Trip Purpose	A	B	C	D	E	F
Education	16	8				9
Commuting				5	3	3
Richmond Underground Station				36		
Bus			3	14		14
North Sheen Station		7				
Shopping						
Walking						
Leisure						
Personal Business						
Other						
Total	16	15	3	55	3	26

PM Peak Hour Pedestrian Movements



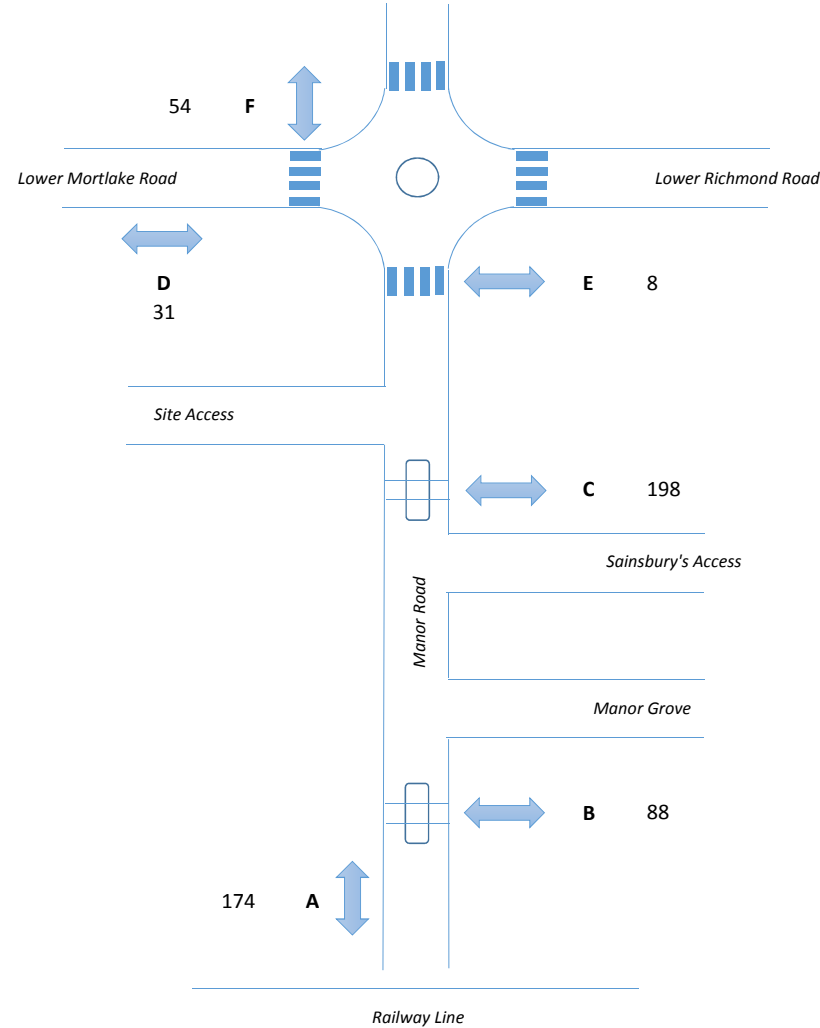
	Link					
Trip Purpose	A	B	C	D	E	F
Education						
Commuting				8	4	4
Richmond Underground Station						30
Bus			3	15		16
North Sheen Station		4				
Shopping			12			
Walking						
Leisure						
Personal Business						
Other				8	4	4
Total	0	4	15	31	8	54

Off-Peak Pedestrian Movements



	Link					
Trip Purpose	A	B	C	D	E	F
Education	48	24				21
Commuting				7	3	5
Richmond Underground Station				111		111
Bus			24	105		104
North Sheen Station		35				
Shopping			102			
Walking	69			35		34
Leisure	41	10				51
Personal Business			54			
Other				7	3	4
Total	158	69	180	265	6	330

Daily Pedestrian Movements



	Link					
Trip Purpose	A	B	C	D	E	F
Education	64	32				30
Commuting				8	4	4
Richmond Underground Station				147		141
Bus			30	134		134
North Sheen Station		46				
Shopping			114			
Walking	69			35		34
Leisure	41	10				51
Personal Business			54			
Other				15	7	8
Total	174	88	198	339	11	402

APPENDIX Q

Census Travel by Bus Data

WU03EW - Location of usual residence and place of work by method of travel to work (MSOA level)

ONS Crown Copyright Reserved [from Nomis on 10 April 2019]

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

	usual residence E02000787 : Richmond upon Thames 004		%
place of work : 2011 super output area - middle layer			
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%