

# Stocking Lane SHD 2

Traffic and Transport Assessment

MacCabe Durney Barnes

Project number: 60599961

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## Executive Summary

This Traffic and Transport Assessment has been prepared by AECOM to accompany an application for a proposed Strategic Housing Development (SHD) comprising of 131 no. residential units on a greenfield site located off Stocking Lane, Ballyboden, Dublin 16. This application has been made on foot of the refusal of the most recent SHD application on the subject site (ABP Ref: 308763-20).

Based upon the information and analysis presented within this TTA, the assessment demonstrates how the scheme has been designed from a traffic and transportation perspective, to integrate within the existing network and to minimise any potential traffic impacts.

This TTA demonstrates that the additional traffic to the site upon the existing base scenarios during the opening year, and future year scenarios.

The percentage impact of additional vehicular traffic generated by the proposed development is less than 10%. In consideration of the Traffic Impact Analysis, the junction modelling results indicate that the development will have a minor impact upon the base scenario.

The scheme also proposes a number of transport infrastructure improvements which will enhance walking and cycling for future residents and the existing community. Measures include additional footpaths and cycle lanes along Stocking Lane, whilst also improving pedestrian and cyclist connectivity between Stocking Lane to the west and Springvale to the east.

Accordingly, it is concluded that the proposals will not result in a material deterioration of existing road conditions and as a result there are no significant traffic or transportation related reasons that should prevent the granting of planning permission for the proposed development.

## Pre Application Consultation (PAC)

A Pre Application Consultation (PAC) was held with the following parties:

- **S247 SDCC:** A formal pre application consultation was held between SDCC (South Dublin County Council) and the applicant on the 16<sup>th</sup> of April 2021.
- **ABP Meeting:** a tripartite meeting was held between ABP, South Dublin County Council and the Applicant on the 23<sup>rd</sup> of June 2021.

The above correspondence provided an opportunity to present the emerging proposals from a traffic and transport perspective. Appendix A of this report includes each respective ABP item and how it has been responded to and incorporated into the design where feasible.

## Proposed Development

The proposed development comprises 131 no. residential dwellings which include 29 no. one bed apartments, 61 no. two bed apartments, 20 no. three bed apartments, 1 no. three bedroom house, 11 no. four bed houses and 9 no. five bed houses. In addition, the scheme includes a separate retail (65 sq. m) and creche (128 sq.m) units.

## Proposed Car Parking

As per pre-application discussions with the SDCC Roads Department, both the SDCC Development Plan Standards (2016 – 2022) and Design Standards for New Apartment Guidelines have been adhered to when determining a suitable amount of car parking for the proposed development. The maximum car parking requirement for the scale and type of proposed development is 189 no. spaces.

It is therefore proposed to provide a total of 167 car parking spaces, which is within the maximum SDCC standard (152 no. residential spaces, 5 no. visitor spaces, 4 no. creche spaces, 5 no. retail spaces and 1 no. car share space). Inclusive of the residential spaces, provision will be given to 24 no. electric charging points and 6 no. mobility impaired spaces.

## Proposed Cycle Parking

As per pre-application discussions with the SDCC Roads Department, the SDCC Development Plan Standards (2016 – 2022) and section 4.17 of the Design Standards for New Apartment Guidelines (March 2018) have been adhered to when determining a suitable amount of cycle parking for the proposed development. The cycle parking

requirement for the proposed development in accordance with the SDCC Development Plan is 129 no cycle parking spaces while the Design Standards for New Apartment Guidelines is 267 no. cycle parking spaces. It is proposed to provide 288 spaces in total to cater for both requirements.

## Proposed Internal Roads Layout and Site Access

The proposed internal roads layout has been designed in accordance with the Design Manual for Urban Roads and Streets (DMURS) guidelines to cater for the anticipated vehicle, cyclist and pedestrian demand of the development.

It is proposed to construct a new access point along Stocking Lane leading onto a 5.5m carriageway. Note where perpendicular parking is located, a 0.25m strip has been added between the carriageway and the parking spaces to facilitate parked cars manoeuvring.

Internal 1.8 m wide pedestrian footpaths are proposed, and internal uncontrolled pedestrian crossings are provided in the form of dropped kerbs and tactile paving at crossing points.

Raised tables at junctions are delineated shared surface areas are also proposed to enhance the road safety within the site.

The proposed corner radii at the junctions comply with DMURS with 4.5-6.0m for occasional larger vehicles, in order to reduce vehicular speeds and reduce pedestrian crossing distances.

## Site Access

The main vehicular access/egress to serve the development will be a simple priority junction with Stocking Lane.

A visibility splay assessment and swept path analysis have been undertaken to demonstrate that the proposed development can cater for traffic to safely access and egress the site and manoeuvre within the development.

## Proposed External Infrastructure Improvements

The scheme proposes the following transport infrastructure improvements which will enhance walking and cycling for future residents and the existing community:

- Footpath and Cycle Lane along Stocking Lane, it is proposed to introduce a new 2m wide footpath and 2m wide cycle lane on the eastern side of Stocking Lane.
- Pedestrian and Cycle Permeability, It is proposed to introduce a pedestrian and cycle connection from the proposed development into Springvale. This will assist to improve permeability from Springvale on Stocking Lane, which includes additional bus stops and services and promote east-west permeability through the subject site; and
- Pedestrian Crossing, through pre-planning consultation with SDCC, it was agreed that proposed site layout would include two new crossings along Stocking Lane. This will facilitate pedestrians and cyclists crossing on the western side of Stocking Lane where an existing footpath and cycle lane is located.

## Traffic Impact

The overall development will generate a trip generation of 49 no. and 46 no. two way movements during the AM and PM peak hours respectively. These figures were obtained using the Trip Rate Information Computer System Database.

The percentage impact of additional traffic generated by the proposed development is less than 10% at the site access and less than 5% at the Stocking Lane / Scholarstown Road junction during the AM and PM peak hours. This is less than the TII percentage impact standards to warrant detailed assessment of the proposed access junction (over 10%, of the existing two – way flows on the adjoining highway). To provide for a robust and comprehensive assessment of the proposed development, AECOM have undertaken detailed traffic modelling of the proposed site access junction.

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# 1. Introduction

## 1.1 Background

AECOM have been commissioned by MacCabe Durney Barnes (MDB) to prepare a Traffic and Transport Assessment (TTA) to accompany a planning application to South Dublin County Council (SDCC) for a proposed mixed use development on a greenfield site located off Stocking Lane, Ballyboden, Dublin 16.

The proposed development comprises 131 no. residential dwellings, a retail unit (65 sq. m) and a crèche (128 sq. m) on lands to the east of Stocking Lane. The details of the residential units can be summarised as follows:

- 29 no. 1 bedroom apartments;
- 61 no. 2 bedroom apartments;
- 20 no. 3 bedroom apartments;
- 1 no. 3 bedroom house;
- 11 no. 4 bedroom houses; and
- 9 no. 5 bedroom houses.

The proposed development also comprises of 167 no. car parking spaces, 288 no. cycle parking spaces and 5 no. motorcycle spaces. The site location is illustrated in Figure 1.1 below.



Figure 1.1 – Site Location (Source Google maps)

## 1.2 Planning History

### 1.2.1 Mixed Use Development, SDCC Ref: SD18A/0225

The site was subject to a planning application in April 2018, which was refused by SDCC (Reg Ref: SD18A/0225). The key transportation reasons for refusal are outlined below:

- *The proposed development does not comply with the Design Manual for Urban Roads and Streets (DMURS) Guidelines (Department of Environment, Community and Local Government 2013).*
- *The design has not appropriately accommodated pedestrian accessibility. The circuitous route of the footpaths throughout the site, which includes sharp corner bends, manoeuvring around car parking spaces and grass verges is not considered acceptable in terms of walkability and accessibility through the site.*

- *The design of the pedestrian link between the subject site and Springvale is poor, considering that the ramp must be usable by pedestrians, wheelchair users and cyclists. The gradient at the turning point of the ramp seems very steep for users.*
- *Details of the proposed pedestrian access points leading to Stocking Lane have not been provided.*
- *Some of the drawings have inconsistencies and are poorly presented, inhibiting the comprehensive assessment of the overall design, for example the width of the car parking spaces differs in some instances and are not completely rectangular in shape.*

## 1.2.2 Strategic Housing Development, SDCC Ref: SHD3ABP-308763-20

The site was subject to a SHD application in November 2020, which was refused by ABP (Reg Ref: SHD3ABP-308763-20) for concerns around building height and separation distances.

## 1.3 Objectives

The main objective of this assessment is to examine the potential traffic impact of the proposed development and its access arrangements on the adjacent local road network. The net change in traffic on the network due to the additional traffic has been calculated and its influence on the adjacent local road network has been investigated.

In order to complete this report, AECOM has referred to the following documents:

- South Dublin County Council Development Plan (2016 – 2022);
- Greater Dublin Area Cycle Network Plan (NTA<sup>1</sup>, 2013);
- Sustainable Urban Housing Design Standards for New Apartments Guidelines for planning Authorities (Department of Housing, Local Government and Heritage, December 2020);
- Design Manual for Urban Roads and Streets, DMURS (Department of Transport, Tourism and Sport, May 2019);
- Geometric Design of Junctions (priority junctions, direct accesses, roundabouts, grade separated, and compact grade separated junctions), DN-GEO-03060 (TII<sup>2</sup>, June 2017);
- Traffic and Transport Assessment Guidelines, PE-PDV-02045 (TII, May 2014); and
- The NTA Greater Dublin Area Cycle Plan (December 2013).

## 1.4 Report Structure

The remainder of this report is divided into the following sections:

- Section 2 details the existing site characteristics including the surrounding transport infrastructure and any future infrastructure proposals;
- Section 3 discusses the proposed development as part of this application and gives a brief outline of the proposed internal road network and site layout;
- Section 4 sets out the Design Manual for Urban Roads and Streets Statement of Compliance;
- Section 5 considers a high level traffic impact of the proposed development;
- Section 6 details the operational performance of the identified junctions for a range of different traffic scenarios following the commission of the development;
- Section 7 outlines the framework for a Mobility Management Plan for perspective residents / staff of the site;
- Section 8 outlines the framework for a Construction Traffic Management Plan; and
- Section 9 provides a summary of AECOMs appraisal together with the main conclusions of the assessment.

<sup>1</sup> NTA – National Transport Authority

<sup>2</sup> TII – Transport Infrastructure Ireland

## 2. Existing Conditions

### 2.1 Introduction

This chapter includes a review of the existing baseline conditions of the site including public transport provision, walking and cycling facilities and the current operation of the surrounding public network. AECOM undertook a number of site audits to identify the existing conditions in the vicinity of the site. The findings from AECOM’s analysis are presented within this chapter.

### 2.2 Location

The site is located within the M50 and is approximately 8 kilometres south west of the city centre. The site currently comprises of a greenfield site, situated off Stocking Lane and does not currently generate any traffic. The surrounding area predominately consists of individual residential dwellings along Stocking Lane to the north and south and Springvale residential estate to the east. The Ballyboden Water Treatment Plant is located directly adjacent to the subject site, on the western side of Stocking Lane.

### 2.3 Land Use Zoning

The subject land is zoned within the SDCC Development Plan to ‘*protect and / or improve residential amenity*’, as illustrated in Figure 2.1 below. It is noted that a Roads Objective is also illustrated on the Zoning Map for Stocking Lane, connecting Taylor’s Lane at the north to Grange Road (R113) at the south. The proposal is to ‘*enhance pedestrian and cycling facilities and exploit the tourist potential of the route*’.

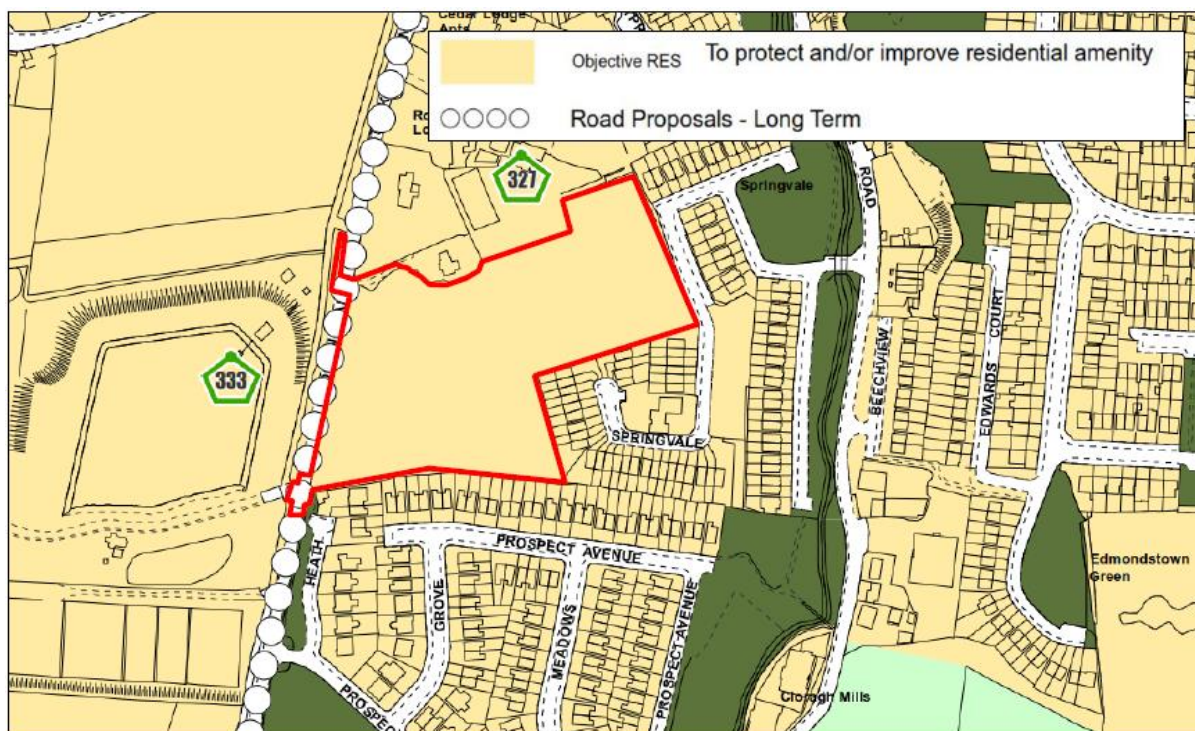


Figure 2.1 – SDCC Development Plan Zoning Objectives (Map 10)

## 2.4 Existing Transportation infrastructure

### 2.4.1 Background

An important stage in the development of a Traffic and Transport Assessment is the identification and appreciation of the local network’s existing transport conditions and vehicle movement characteristics.

An audit of the local road network has therefore been undertaken to establish the existing transport conditions and vehicle movement patterns across the existing network.

## 2.4.2 Existing Pedestrian / Cyclist Environment

### 2.4.2.1 Pedestrian Facilities

The majority of the roads approaching the subject site incorporate good quality pedestrian facilities. In the immediate vicinity of the subject site, pedestrians can benefit from an existing off road footpath of approximately 2.0m width and street lighting on the western side of Stocking Lane, which is separated from the carriageway as shown in Figure 2.2 and Figure 2.3.

### 2.4.2.2 Cycle Facilities

Similarly, to the pedestrian facilities, the cycling facilities are of good quality. In the immediate vicinity of the subject site, cyclists can benefit from a shared pedestrian/ cycle way of approximately 2.0m width each and street lighting on the western side of Stocking Lane, which is separated from the carriageway, as shown below in Figure 2.2 and Figure 2.3.



Figure 2.2 – Existing Crossing



Figure 2.3 – Off Road Cycleway/Footpath on the Western Side

In addition to the aforementioned cycle facilities, there are a variety of facilities available on the routes leading to the site as illustrated in Figure 2.4.

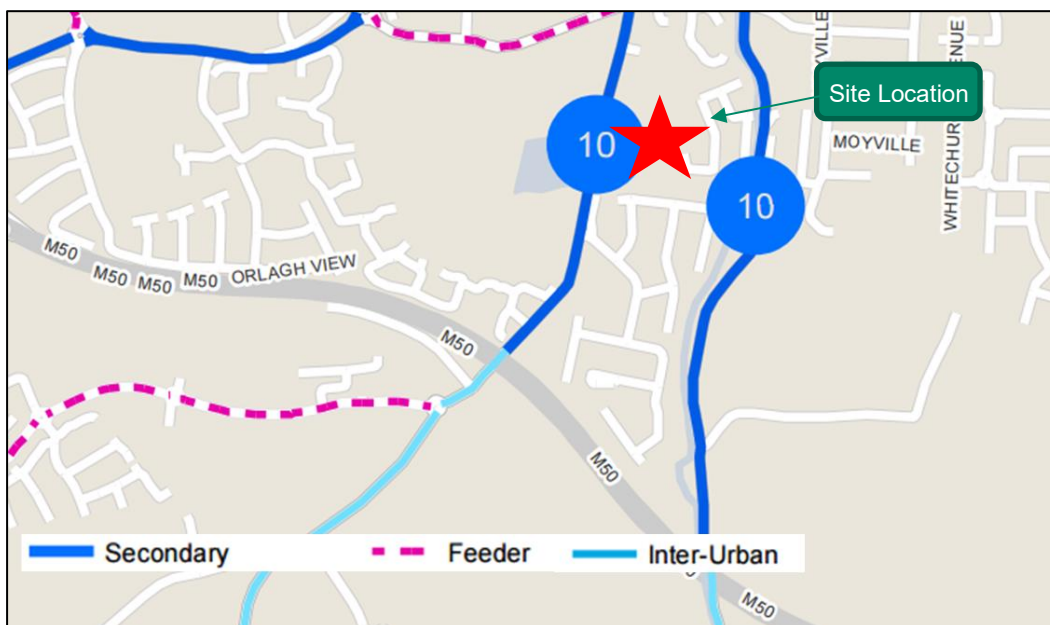


Figure 2.4 – NTA Cycle Network

## 2.4.3 Existing Local Road Network

### 2.4.3.1 Stocking Lane (R115)

Stocking Lane extends in both a northern and southern direction towards the city centre (via Ballyboden) and the Dublin Mountains, respectively. The road is single lane in both directions and varies in width. The carriageway is approximately 6.4m wide at the proposed site entrance.

Stocking Lane is an existing Regional Road, and therefore the designated speed limit is 80km/h. On approach to Scholarstown Wood, existing 50 km/h speed limit signage is located along Stocking Lane approximately 70m north of the existing site entrance. Please see Figure 2.5 and Figure 2.6 below for reference.



Figure 2.5 – Off Road Cycle and Footpath, R115



Figure 2.6 – Existing Speed Limit Signage, R115

#### 2.4.3.2 Scholarstown Road

To the north of the site, Scholarstown Road forms two arms of the signalised T-Junction with Stocking Lane. The carriageway is approximately 5.5m wide with approx. 1.8m wide pedestrian footpaths located on the northern side of the carriageway. Controlled pedestrian crossings are located on the Scholarstown Road / Stocking Lane signalised junction to support pedestrian crossing movements.

Scholarstown Road connects onto Edmondstown Road to the east and forms two arms of a 4-arm roundabout junction with Templeogue Road and Ballyboden Way to the west. The carriageway benefits from pedestrian crossings, public lighting and a newly upgraded bus stop along the southern side of the carriageway, as shown in Figure 2.7 and Figure 2.8.



Figure 2.7 – Scholarstown Road Facing West



Figure 2.8 – Scholarstown Road / Stocking Lane Junction

#### 2.4.3.3 Springvale

Springvale is an existing residential estate, situated to the east of the proposed development. The estate is accessed via Edmondstown Road (R116), a regional road parallel to Stocking Lane.

#### 2.4.4 Sustainable Transport – Dublin Bus

The subject site is well served in terms of public transport provision. The 15B Dublin Bus route travels along Scholarstown Road to the north of the subject site and along Stocking Lane to the west of the site.

The 15B links Stocking Lane to Grand Canal Dock via St. Stephens Green. Three other Dublin Bus services within close proximity to the subject site include Route 15, 161 and 61.

**Table 2.1 – Bus Service Times**

Service No.	Bus Provider	Route	Typical Peak Hour Frequency (minutes)		
			Mon – Fri	Saturday	Sunday
15B	Dublin Bus	Ringsend Road – Pearse Street – Rathmines – Terenure Cross – Stocking Avenue	Every 15 mins	Every 20 mins	Every 30 mins
15	Dublin Bus	Clongriffin – Artane – Fairview – IFSC – Aungier Street – Rathmines – Terenure – Tempelogue Bridge – Ballycullen Road	Every 10 Mins	Every 15 mins	Every 15 mins
161	Go-Ahead	Dundrum – Whitechurch - Rockbrook	Every 90 mins	No Service	No Service
61	Dublin Bus	Eden Quay – Ranelagh – Milltown – Nutgrove Avenue - Whitechurch	Every 60 – 75 mins	Every 60 mins	Every 60 mins

### 2.4.5 Luas

The Luas green line serves Dundrum and is located approximately 6.5km east of the site. A park and ride facility is operational at the Balally Luas Stop, approximately 5.7km east of the subject site.

### 2.4.6 Sustainable Transport – Car Sharing

There is 1 no. GoCar hire stations located within a 1.5km walking catchment of the subject site. GoCar members can book cars online or via the app for durations of as little as an hour. They then unlock the car with their phone or a GoCard; the keys are in the car, with fuel, insurance and city parking all included. The benefits of such car sharing services include:

- The reduction of cars on the road and therefore traffic congestion, noise and air pollution;
- Frees up land traditionally used for private parking spaces;
- Encourages and potentially increases use of public transport, walking and cycling as the need for car ownership is reduced;
- Car sharing allows those who cannot afford a car the opportunity to drive, encouraging social inclusivity; and
- 1 Car share replaces approximately 20 private car parking spaces.

Table 2.2 provides additional details in relation to walking distance from the site and the type of GoCar vehicle available.

**Table 2.2 – Go Base Details**

Ref No.	Go Base Location	Vehicle Class	Approx. Distance from the Development (Walking Time)
1	Whitechurch Way, Clarkstown	2 No. GoCity	1.3km (16 minute walk)

## 2.5 Emerging Transportation infrastructure

### 2.5.1 Local Road Proposals

In order to enhance the pedestrian connectivity of the development, AECOM has reviewed the potential upgrade to the existing pedestrian crossing facility at the north-western corner of the site, as illustrated in Figure 3.7. These works would be undertaken by the SDCC Roads Authority and are for illustrative purposes only. The extended raised table does not form part of the planning application. The upgrade would facilitate pedestrians / cyclists from the proposed development accessing the off road cycle lane and footpath on the western side of Stocking Lane.

### 2.5.2 Bus Connects

The National Transport Authority published details of their emerging Bus Connects scheme, which includes a package of measures to improve walking, cycling and bus priority lanes across Co Dublin.

Whilst the Bus Connects schemes do not extend up to the respective site, bus services from the site to the city centre will join up with the proposed 'Rathfarnham to City Centre, Corridor No. 12', which includes a package of measures that will enhance journey times for buses travelling from the proposed site to the City Centre via Rathfarnham and Rathmines etc.

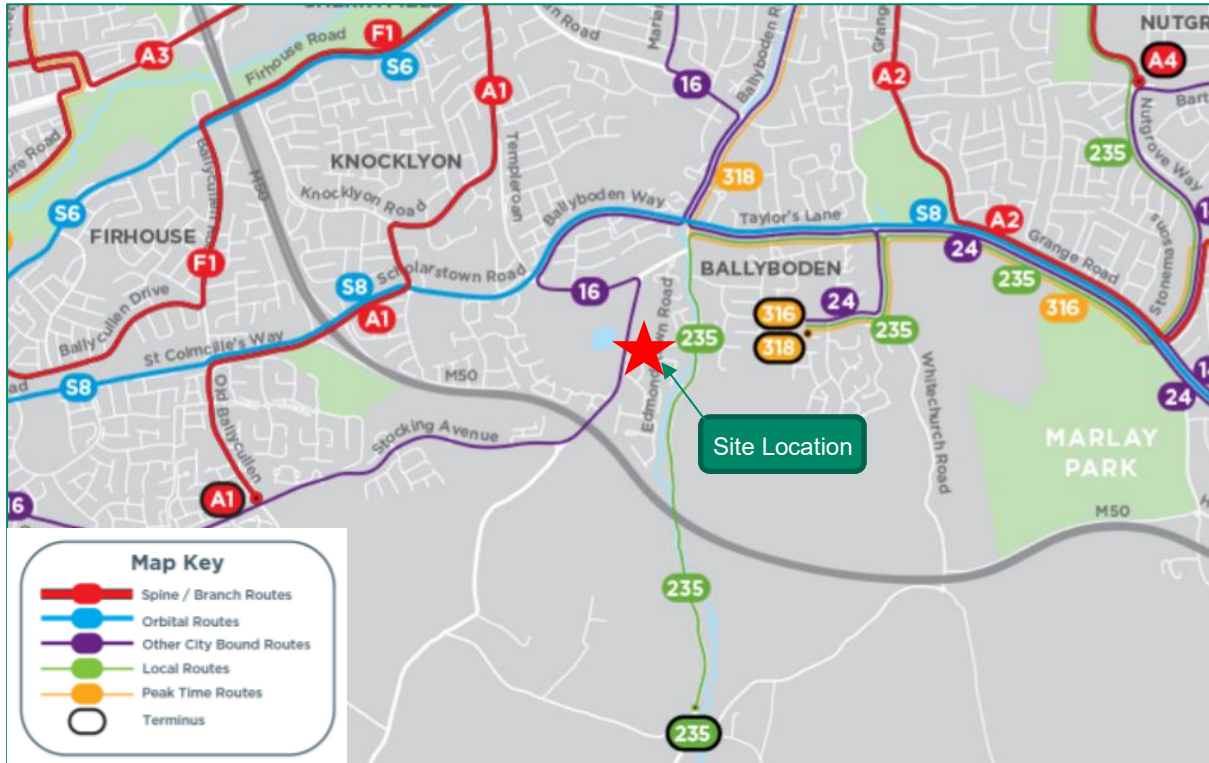


Figure 2.9 – Bus Connects Proposed Routes

### 2.6 Existing Site Access

An existing vehicular access is available at the North West corner of the site off Stocking Lane, via the private dwelling to the north.



Figure 2.10 – Site Access

## 2.7 Road Collision Statistics

A review of the Road Safety Authority (RSA) traffic collision database has been undertaken for the road network in the vicinity of the proposed site to identify any collision trends. This review will assist to identify any potential safety concerns in relation to the existing road network.

Traffic collision data was obtained for the period 2005 – 2016, which is the most recent data available from the RSA website. It should be noted that information relating to report incidents for the years 2017, 2018, 2019 and 2020 is not yet available on the Road Safety Authority (RSA) website. The RSA records detail only those occasions where the incident was officially recorded such as the Garda being present to formally record details of the incident.

The incidents are categorised into class of severity, which includes minor, serious and fatal collisions. The collision locations are shown in Figure 2.11 below.

Upon reviewing the RSA website, it was found that in the vicinity of the site there have been no minor, serious or fatal collisions within the extents of the subject site and nearby road network on Stocking Lane.

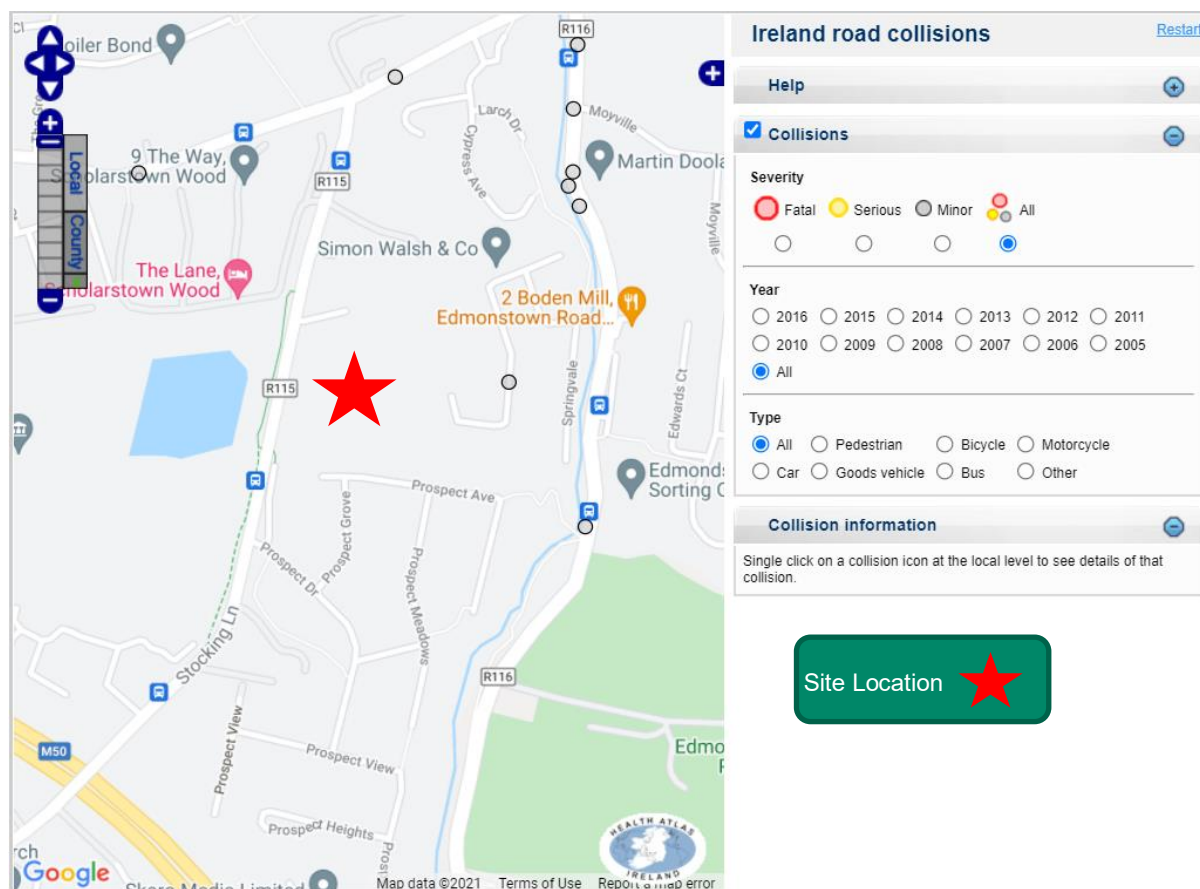


Figure 2.11 – RSA Collisions Map (Source: www.rsa.ie)

## 2.8 Existing Conditions Summary

The subject site is positioned within the urban environment to benefit from access to / from the site utilising sustainable forms of travel including walking, cycling and public transport.

The sites proximity to the nearby bus stops, a number of which are within a 1.5km walking catchment, giving perspective residents access to the wider bus network.

Most notably are the bus services offered within Scholarstown which travel towards Rathmines, Ranelagh and further to the city centre on a frequent basis.

The site is situated within a 6.5km catchment of both the Dundrum and Balally LUAS stations which is served by a LUAS every 6-8 minutes which further enhances the sustainability characteristics of the site. These services travel towards Dublin City and will allow residents / staff to avail of the wider bus network or train services.



### 3. Proposed Development

#### 3.1 Introduction

This chapter details the proposed development with regard to the transportation elements which include the internal roads layout, proposed pedestrian/ cycling infrastructure and parking provisions within the development area.

#### 3.2 Proposed Development.

The proposed development comprises 131 no. residential dwellings, a retail unit (65 sq. m) and a crèche (128 sq. m) on lands to the east of Stocking Lane. The details of the residential units can be summarised as follows:

- 29 no. 1 bedroom apartments;
- 61 no. 2 bedroom apartments;
- 20 no. 3 bedroom apartments;
- 1 no. 3 bedroom house;
- 11 no. 4 bedroom houses; and
- 9 no. 5 bedroom houses.

The proposed development also comprises of 167 no. car parking spaces, 288 no. cycle parking spaces and 5 no. motorcycle spaces.



Figure 3.1 – Proposed Site Layout (AECOM Drawing: PR402491-ACM-01-00-DR-CE-10-0001)

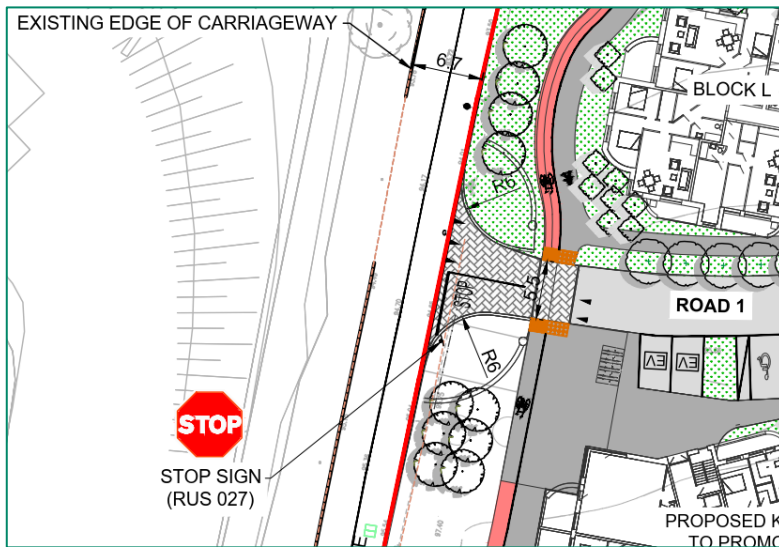
#### 3.3 Site Access

It is proposed that the site will have one new vehicular access, an uncontrolled priority junction as indicated in Figure 3.2, approximately 70m south of the existing access to the site off Stocking Lane.

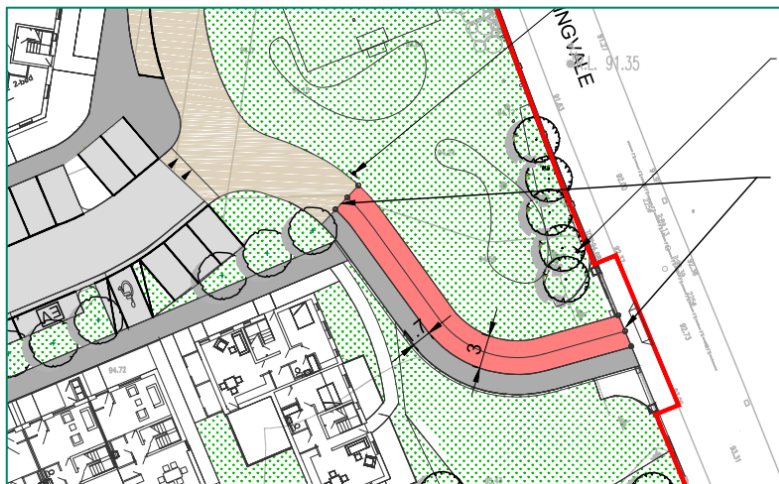
A secondary cyclist and pedestrian access is proposed into Springvale from the eastern side of the site which ensures permeability into the adjacent lands whilst restricting vehicular movements. The design characteristics of the Springvale link are summarised as follows:

- 3.0m wide cycle track allowing two way cycle movements and a 1.5m footpath; and

- Bollards are proposed at the start and end of this pedestrian / cyclist link to prohibit vehicles accessing from the east.



**Figure 3.2 – Proposed new Vehicle Site Access Point on Stocking Lane (AECOM Drawing: PR402491-ACM-01-00-DR-CE-10-0001)**



**Figure 3.3 – Proposed Secondary Bicycle and Pedestrian Access into Springvale (AECOM Drawing: PR402491-ACM-01-00-DR-CE-10-0001)**

### 3.4 Visibility Splay

A review has been undertaken of the visibility splay requirements for the proposed vehicular entrance onto Stocking Lane in relation to the DMURS requirements. The site entrance is proposed to comply with the visibility requirements as per DMURS for a 50km/h road with bus services i.e. a 49m x 2.4m visibility splay. Please see AECOM drawing no. PR402491-ACM-01-00-DR-CE-10-0101, which indicates that a visibility splay is achievable at the existing site entrance for a 50 km/h design speed.

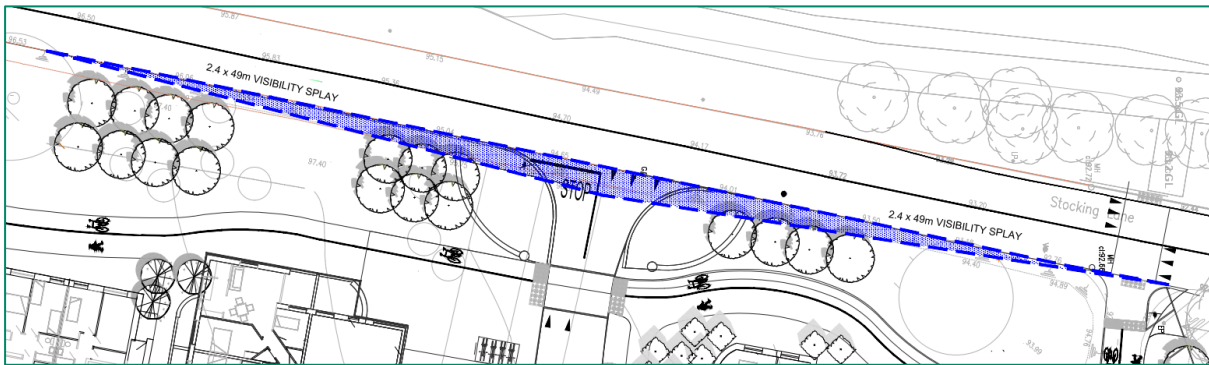


Figure 3.4 – Visibility Splay (AECOM Drawing: PR402491-ACM-01-00-DR-CE-10-0101)

### 3.5 Servicing

An autotrack analysis has been carried out at the site access junction to demonstrate its capability to cater for a 10.2m long refuse lorry and 7.7m long fire tender. The results of the analysis show that the site access junction can accommodate servicing vehicles accessing, manoeuvring and exiting the site. This is shown in AECOM drawing no. PR402491-ACM-01-00-DR-CE-10-0102.

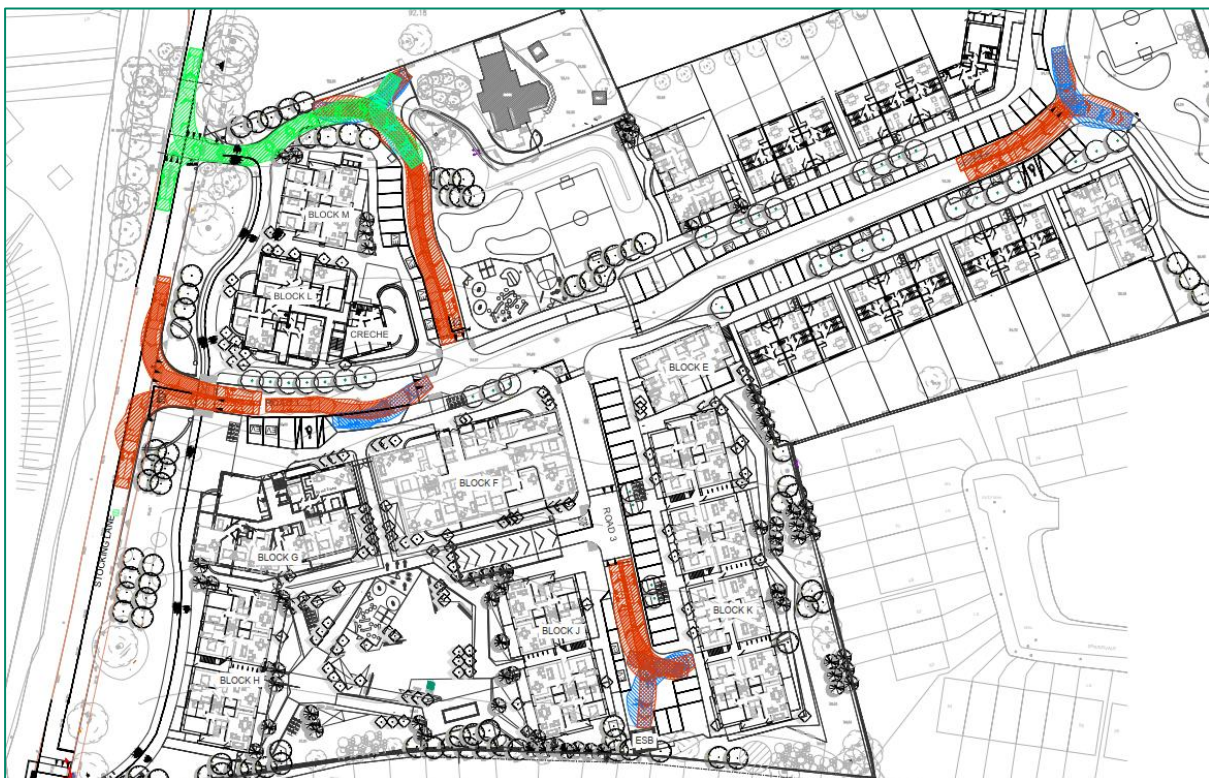


Figure 3.5 – Auto Tracking (AECOM Drawing: PR402491-ACM-01-00-DR-CE-10-0102)

### 3.6 Pedestrian and Cyclist Permeability

It is proposed to provide high quality pedestrian and cycle access throughout the site. Pedestrian and cycle access will be available off Stocking Lane (the western boundary) at 3 no. locations, whilst pedestrian and cycle access is proposed to the east towards Springvale. This design will ultimately assist to provide permeability for both existing and future residents to access the existing services and bus stops etc.

Internal pedestrian crossing facilities will connect the proposed residential development with the crèche building and the public open space within the development. This will provide a safe passage for pedestrian and cyclist movements for the development.

The internal footpaths are proposed to be a minimum 1.8m width. At internal crossing locations, tactile paving is proposed at the crossing points.

A homezone style arrangement is proposed at 2 no. locations, as per the DMURS guidelines, this will create a shared surface for all road users, to promote low vehicular speeds and a sense of priority for pedestrians and cyclists.

### 3.7 Pedestrian Crossing Upgrades

#### 3.7.1 New Controlled Crossing along Stocking Lane

In order to enhance the pedestrian connectivity of the development, AECOM has reviewed the potential upgrade to the existing pedestrian crossing facility at the north-eastern corner of the site, as illustrated Figure 3.6. The upgrade would facilitate pedestrians / cyclists from the proposed development accessing the off road cycle lane and footpath on the western side of Stocking Lane.

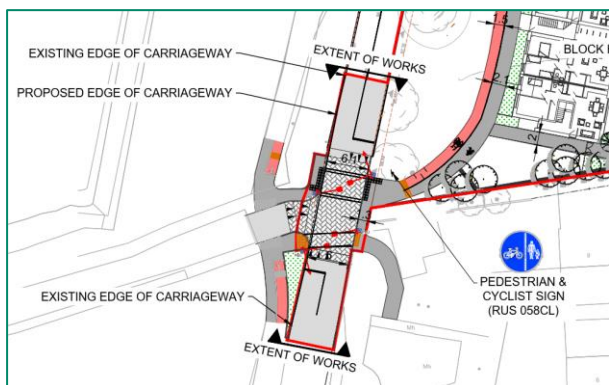


Figure 3.6 – South West Proposed Crossing Point (AECOM Drawing: PR402491-ACM-01-00-DR-CE-10-0001)

#### 3.7.2 New Uncontrolled Crossing along Stocking Lane

In addition, the scheme includes a new uncontrolled pedestrian crossing at the north western side. The scheme also includes a new footpath to connect the proposed crossing to the existing footpath along the western side of Stocking Lane as illustrated in Figure 3.7.

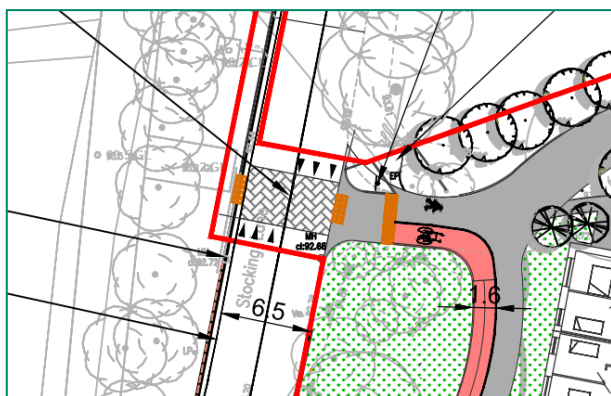


Figure 3.7 – North West Proposed Crossing Point (AECOM Drawing: PR402491-ACM-01-00-DR-CE-10-0001)

### 3.8 Proposed Basement

The proposed basement is located in the south western corner of the subject site. Access to the basement car park will be a priority controlled junction arrangement off the internal estate Road 3, leading to a proposed ramp. The design of the basement has taken into consideration the *'Design Recommendations for Multi-Storey and Underground Car Parks (Fourth Edition, published by the Institute of Structural Engineers)'*. The key design parameters of the basement are summarised as follows:

- 6.0m wide internal carriageway to allow for ease of access for two-way traffic;
- Ramp designed as per the *'Design Recommendations for Multi-Storey and Underground Car Parks'*; and
- Access into the basement ramp comprises of a raised table and tactile paving to provide pedestrian priority.

### 3.9 Car Parking Provision

In order to determine the appropriate quantum of vehicle parking for the proposed residential development, reference has been made to the following guidance:-

- Chapter 4 of Sustainable Urban Housing: Design Standards For New Apartments Guidelines For Planning Authorities, as published by the Department of Housing, Local Government and Heritage (DHLGH), December 2020; and
- Table 11.23 of the current South Dublin Council County Development Plan (2016-2022);

#### Sustainable Urban Housing: Design Standards for New Apartments, Guidelines for Planning Authorities Department of Housing, Local Government and Heritage (DHLGH)

The Department of Housing, Local Government and Heritage has recently published (December 2020) new guidance 'Sustainable Urban Housing: Design Standards for New Apartments' (SUHDS). In relation to car parking, within 'Intermediate Urban Locations' the document states 'In suburban/urban locations served by public transport or close to town centres or employment areas and particularly for housing schemes with more than 45 dwellings per hectare net (18 per acre), planning authorities must consider a reduced overall car parking standard and apply an appropriate maximum car parking standard.'

Accordingly the subject site, can be classified as an 'Intermediate Urban Location' (as per section 2.4 of the SUHDS) due to the good quality pedestrian and cyclist links, immediately adjacent to the 15B bus route which has a 15 min peak hour frequency, vicinity to schools, shops and local amenities. Furthermore the site is located to benefit from the emerging Bus Connects Route 12 (Rathfarnham to City Centre)

AECOM believe parking provision for the proposed apartments should be provided in accordance with the Department of Housing, Local Government and Heritage SUHDS guidance as referred to above, and as such the quantum of vehicle parking provided on site should be '**reduced overall car parking standard and apply an appropriate maximum car parking standard**'.

#### South Dublin County Development Plan 2016-2022

The South Dublin County Development Plan 2016-2022 states the following in relation to car parking:-

- 'It is the policy of Council to take a balanced approach to the provision of car parking with the aim of meeting the needs of businesses and communities whilst promoting a transition towards more sustainable forms of transportation.'
- 'Tables 11.23 and 11.24 set out the Maximum Parking rates for non-residential and residential development. Parking rates are divided into two main categories:
  - Zone 1: General rate applicable throughout the County.
  - Zone 2 (Non Residential): More restrictive rates for application within town and village centres, within 800 metres of a Train or Luas station and within 400 metres of a high quality bus service (including proposed services that have proceeded to construction).
  - Zone 2 (Residential): More restrictive rates for application within town and village centres, within 400 metres of a high quality public transport service <sup>5</sup> (includes a train station, Luas station or bus stop with a high quality service)'

(<sup>5</sup> A high frequency route is where buses operate with a minimum 10 minute frequency at peak times and a 20 minute off-peak frequency).

The Development Plan goes on to say:

'The number of spaces provided for any particular development should not exceed the maximum provision. The maximum provision should not be viewed as a target and a lower rate of parking may be acceptable subject to:

- The proximity of the site to public transport and the quality of the transport service it provides. (This should be clearly outlined in a Design Statement submitted with a planning application),
- The proximity of the development to services that fulfil occasional and day to day needs,
- The existence of a robust and achievable Workforce Management or Mobility Management Plan for the development,
- The ability of people to fulfil multiple needs in a single journey,

- *The levels of car dependency generated by particular uses within the development,*
- *The ability of residents to live in close proximity to the workplace,*
- *Peak hours of demand and the ability to share spaces between different uses,*
- *Uses for which parking rates can be accumulated, and*
- *The ability of the surrounding road network to cater for an increase in traffic.'*

With regard to the proposed development schedule, the associated SDCC **Maximum** car parking requirements are outlined in Table 3.1. It should be noted that the apartment standards have been superseded by the SUHDS rates to promote active and sustainable modes of transport amongst perspective residents.

Given the location of the site, it is proposed to conservatively apply the Zone 1 parking standards for the proposed development, which are inclusive of visitor parking spaces. Table 3.1 illustrates the maximum car parking requirements and the proposed parking provision for the development. The table below applies to the worst-case scenario (peripheral and/or less accessible urban locations) rather than the applicable intermediate location which does not specify a maximum standard in the SUHDS Guidelines.

**Table 3.1 – Car Parking Requirements (SDCC Development Plan 2016 – 2022)**

Land Use	SUHDS Requirement (Max) <sup>3</sup>	SDCC Maximum Car Parking Standard (Zone 1)	No. Units	Maximum Parking Requirement	
1 Bedroom Apartment	1 space	n/a	29 units	29	110
2 Bedroom Apartment	1 space	n/a	61 units	61	
3 Bedroom Apartment	1 space	n/a	20 units	20	
Apartment Visitor	1 space for every 4 units	n/a	110 units	28	28
3 Bedroom house	n/a	2 space per unit	1 unit	2	42
4 Bedroom House	n/a	2 space per unit	11 units	22	
5 Bedroom House	n/a	2 spaces per unit	9 units	18	
Crèche	n/a	1 space per classroom	4 classrooms	4	9
Retail Unit	n/a	1 space per 15 sq. m	65 sq. m	5	
<b>Total</b>				<b>189</b>	<b>189</b>

The proposed development for the 131 residential units includes 167 car parking spaces at surface and basement levels (152 no. residential spaces, 5 no. visitor spaces, 4 no. creche spaces, 5 no. retail spaces and 1 no. car share space). However, it is noted that both the Apartment standards and CDP standards are in effect **maximum** standards and not the minimum required on site.

AECOM believe this level of car parking should be acceptable given the sites public transport accessibility, the provision of a car share space, electric vehicle spaces and mobility impaired spaces. A framework for a Mobility Management Plan has also been prepared by AECOM and is included in Chapter 7 of this report.

### 3.9.1 Electric Charging Spaces

The SDCC Development Plan notes in Section 11.4.3 that a provision of 10% of the total car parking spaces should be dedicated to electric charging points. Given the proposed total car parking spaces is 167 no. spaces, provision of 24 electric spaces has been proposed which consists of 16 no. surface EV spaces as illustrated on AECOM Drawing PR402491-ACM-01-00-DR-CE-10-0001 and 8 no. basement spaces which are illustrated on the

<sup>3</sup> *Peripheral Rate applied in worst case scenario*

architect's drawing no. 2183-122. Ducting will be provided to support subsequent installation in accordance with SI No. 393/2021.

### 3.9.2 Visitor Spaces

It is noted that SDCC recommends for the provision of conveniently located on-street parking for visitors. It is proposed to provide 5 no. spaces. Please refer to the architect's site layout illustrating the visitor parking provision requirements.

### 3.9.3 Mobility Impaired Spaces

It is noted that SDCC Development Plan recommends referring to the Part M Building Regulations (2010) which notes a provision of 5% of the total car parking spaces to be dedicated to mobility impaired spaces. This equates to 6 no. mobility impaired spaces. Please refer to the architect's layout for mobility impaired space details.

## 3.10 Cycle Parking Provision

The appropriate level of cycle parking provision for the proposed development has been provided in accordance with the following:

- Section 4.17 of the Design Standards for New Apartment Guidelines; and
- Table 4.6.1 of the SDCC Development Plan

The standards provide a guide on the number of required cycle spaces acceptable for new developments in terms of short and long stay parking. The cycle parking rates for both the SDCC and the Design Standards for New Apartment Guidelines are illustrated in Table 3.2 with Table 3.3 showing the cycle parking requirement based on the schedule of accommodation.

**Table 3.2 – Cycle Parking Standards**

Land Use	SDCC Cycle Parking Requirement		Design Standards for New Apartment Guidelines Standards	
	Long Term Cycle Parking Standard	Short Stay Cycle Parking Standard	Long Term Cycle Parking Standard	Short Stay Cycle Parking Standard
Apartment	1 space per unit	1 space per 10 apartments	1 space per bedroom	1 space per 2 units
Crèche	1 space per staff	1 space per 10 children	N/A	N/A
Retail Unit	1 per 5 staff	1 per 50 sq. m GFA	N/A	N/A

**Table 3.3 – Cycle Parking Requirements & Development Provision**

Land Use	Quantum	SDCC Cycle Parking Requirements			Design Standards for New Apartment Guidelines Requirements			Development Provision		
		Long Stay	Short Stay	Total	Long Stay	Short Stay	Total	Long Stay	Short Stay	Total
Houses	21 units	Provided within the curtilage of the house / garden								
1 Bed Apartment	29 units	29	3	32	29	15	44	288		
2 Bed Apartment	61 units	61	6	68	122	31	153			
3 Bed Apartment	20 units	20	2	22	60	10	70			
Crèche	3 Staff, 22 Children	2	3	5	N/A					
Retail Unit	5 Staff, 65 sq.m	1	2	3	N/A					
<b>Totals</b>		<b>113</b>	<b>16</b>	<b>129</b>	<b>211</b>	<b>56</b>	<b>267</b>	<b>288</b>		

In reference to Table 3.3 above, the proposals include the provision of a total of 288 bicycle parking spaces in total on-site within the development. The SDCC bicycle parking standards are considered to be 'minimum' standards, whereas the Design Standards for New Apartment Guidelines are considered to be the preferred level of provision in situations where on-site car parking has been substantially or completely removed as permitted in certain situations by the corresponding Design Standards for New Apartment Guidelines car parking guidance.

Accordingly, the design approach in regard to the specification of bicycle parking on-site, in the context of the sites' accessibility characteristics (including the proposed car parking provision), is considered to be appropriate and is above both the SDCC and Design Standards for New Apartment Guidelines cycle parking standards.

In reference to Table 3.3 above, it can be established that the proposed on-site bicycle parking provision of 288 spaces (including Short and Long-term parking spaces) is approximately 222% more than the 129 parking spaces required by the SDCC development management standards.

It is proposed within the Mobility Management Plan to monitor the usage of the cycle stands following the opening of the proposed development. Should demand meet the proposed level of cycle parking, the management company will allocate additional cycle parking for the development i.e. increasing the number of cycle stands. There is ample space to add more cycle stands following a review of the demand.

As illustrated in Table 3.3, the cycle parking requirement for the proposed development is 129 spaces. It is proposed to provide **288 spaces** in total. Please see the architect's layout for further details.

### 3.11 Motorcycle Parking Provision

An element of motorcycle parking has also been included within the site layout. A total of 5 motorcycle parking stands are proposed to be located within the development within the basement. Please refer to the architects submitted layouts.

### 3.12 Deliveries

A layby has been included within the site design to facilitate loading and unloading for the retail unit.



## 4. DMURS Statement of Compliance

### 4.1 General

This chapter comprises of a Statement of Compliance, prepared as per the Strategic Housing Development (SHD) Section 5 Pre Application Consultation Request, Section 19, which stipulates the following:

*Please submit a statement indicating, in the prospective applicant's opinion, the proposal is consistent with the Design Manual for Urban Roads and Streets (Department of Transport, Tourism and Sport & Department of Environment, Community and Local Government, 2013).*

### 4.2 Proposed External Upgrades

The planning application comprises proposals to upgrade the Stocking Lane signalised pedestrian crossing. These upgrades look at widening the crossing point to provide for a joint access from development and the nearby housing estate.

### 4.3 Internal Proposed Development Layout

The internal layout design has been informed by the DMURS guidelines (May 2019). The following measures are examples of where compliance with the DMURS guidelines has been demonstrated:

**Pedestrian Capability:** As per Figure 4.34 of DMURS, the internal footpaths have been proposed at a minimum width of 1.8m, which is the space required to allow two buggies or wheelchairs to pass each other or travel side by side.

**Cyclist Capability:** As per Section 4.3.5 of DMURS, the proposed internal cycle tracks are off-road and are 2m in width which have been designed in accordance with the requirements set out in the National Cycle Manual. This off-road cycle track provides for safe movement of cyclists in a north-south direction along Stocking Lane road by segregating cyclists from vehicular traffic. A 3m cycle track to Springvale is proposed.

**Carriageway Widths:** The internal carriageway width is typically 5.5m as per the DMURS guidelines (Section 4.4.1) for a local street. The carriageway width reduces to 4.8m along the north-western cul-de-sac road as per DMURS. The cul-de-sac lane located north of the internal roundabout is 5.5m in width to facilitate vehicles reversing out of properties 1 to 4.

**Pedestrian Crossings:** There are a number of pedestrian crossings proposed throughout the site, which comprise of tactile paving and flushed kerbs to facilitate pedestrian movements crossing the carriageways at the junctions. Raised tables are proposed in a number of locations to let vehicular and pedestrian / cycling traffic know that they are entering an area of conflict and must proceed with caution.

**Corner Radii:** The proposed corner radii at the junctions comply with DMURS (Section 4.3.3) to 4.5 – 6.0m for occasional larger vehicles, in order to reduce vehicular speeds and reduce pedestrian crossing distances.

**Car Parking:** Car parking provision is mainly proposed off street for residents. These on street parking spaces are proposed to reduce overspill parking / parking on footpaths and effectively calm traffic. All car parking spaces are proposed at the required dimensions i.e. 2.4m x 4.8m for a standard parking space. The standard length of the parallel parking spaces is 6m.

**Landscaping:** Section 4.2.7 of DMURS recommends providing softer landscaping areas in order to provide a sense of "place function" within the development. The site therefore provides a significant amount of landscaping, including trees located along the site access roads to provide a sense of enclosure. There's also a public open space within the northern portion of the development which also comprises of pedestrian and cycle way facilities.

**Materials and Finishes:** DMURS also gives guidance on the types of materials and finishes to be used in order to provide a sense of calm for traffic and improve legibility for vulnerable road users. All carriageways, footpaths and tactile paving will be of visually contrasting colour. It should also be noted that the proposed turning head to the east, catering for large refuse vehicles has been incorporated into the landscape design as a combined basketball and mini goal unit. The road markings will be flush so as to permit refuse vehicles and fire tenders manoeuvring within the development infrequently.

**Signing and Lining:** As per Section 4.2.4 of DMURS, signing and lining has been provided appropriately at the required locations throughout the development. However, the proposed development has been designed to have a self-regulating approach to increase the road safety as opposed to relying on mandatory and warning signs.

**Permeability:** The new connection onto Springvale will achieve additional permeability for pedestrian and cyclists, which is as per the DMURS guidelines (Section 3.3), to 'maximise permeability, particularly for pedestrians and cyclists. When designing new street networks, designers should implement solutions that support the development of sustainable communities such as limited the use of cul-de-sacs that provide no through access'.

## 5. Trip Generation and Distribution

### 5.1 General

The purpose of this section is to determine the overall number of trips that will be generated by the proposed development. Following quantification of the trip generation, these trips will be distributed onto the adjoining road network to allow a robust traffic assessment of the site access junction off Stocking Lane.

### 5.2 Existing Traffic Flows

It should be noted that the site is currently in agricultural use and therefore generates very limited traffic flows.

### 5.3 Proposed Development Trip Generation

The latest version of the Trip Rate Information Computer System (TRICS v 7.8.2) was interrogated to calculate the quantum of vehicle trips likely to be generated by a development of the scale and type proposed.

The TRICS source data used for this analysis has eliminated any sites surveyed within the region of the “Greater London” or located within a “Town Centre”. This is to ensure a robust analysis with realistic vehicular arrival and departure rates. The full outputs from the TRICS analysis is included within Appendix B of this report, whilst the trip rates and the resulting trip generations for the peak periods are illustrated in Table 5.1 and Table 5.2 below.

**Table 5.1 – Proposed Trip Rates**

Development	TRICs Land Use	AM Peak Hour (08:00 – 09:00)		PM Peak Hour (17:00 – 18:00)	
		Arrivals	Departures	Arrivals	Departures
<b>Apartments</b>	03 C – Flats Privately Owned	0.063	0.221	0.181	0.085
<b>Houses</b>	03 A - Houses Privately Owned	0.138	0.366	0.340	0.166
<b>Creche</b>	04 D – Nursery	3.400	2.371	2.036	2.707
<b>Retail Units</b>	01 M – Mixed Use Shopping Malls	0.285	0.060	0.273	0.565

**Table 5.2 – Proposed Trip Generation**

Development	Quantum	AM Peak Hour (08:00 – 09:00)		PM Peak Hour (17:00 – 18:00)	
		Arrivals	Departures	Arrivals	Departures
<b>Apartments</b>	110 dwellings	7	24	20	9
<b>Houses</b>	21 dwellings	3	8	7	3
<b>Creche</b>	128 sqm	4	3	3	3
<b>Retail Units</b>	65 sqm	0	0	0	0
<b>One Way Traffic Flows</b>		14	35	30	16
<b>Two Way Traffic Flows</b>		49		46	

Table 5.2 above demonstrates that the anticipated trip generations associated with the development is 49 and 46 trips respectively during the morning (08:00 – 09:00) and evening (17:00 – 18:00) peak hour periods.

### 5.4 Trip Distribution

To understand the potential distribution of the trips arriving and departing the site, the base traffic survey results have been interrogated. Traffic counts were undertaken in December 2017. They are pre-pandemic and therefore represent a worst-case scenario with the appropriate growth rates being applied. The base traffic surveys indicate the direction that motorists are currently travelling from when arriving onto the immediate road network during the typical peak period. Figure 5.1 illustrates the proposed trip distribution patterns, during the AM and PM peak hours. The trip distributions have been included within Appendix B of this report.

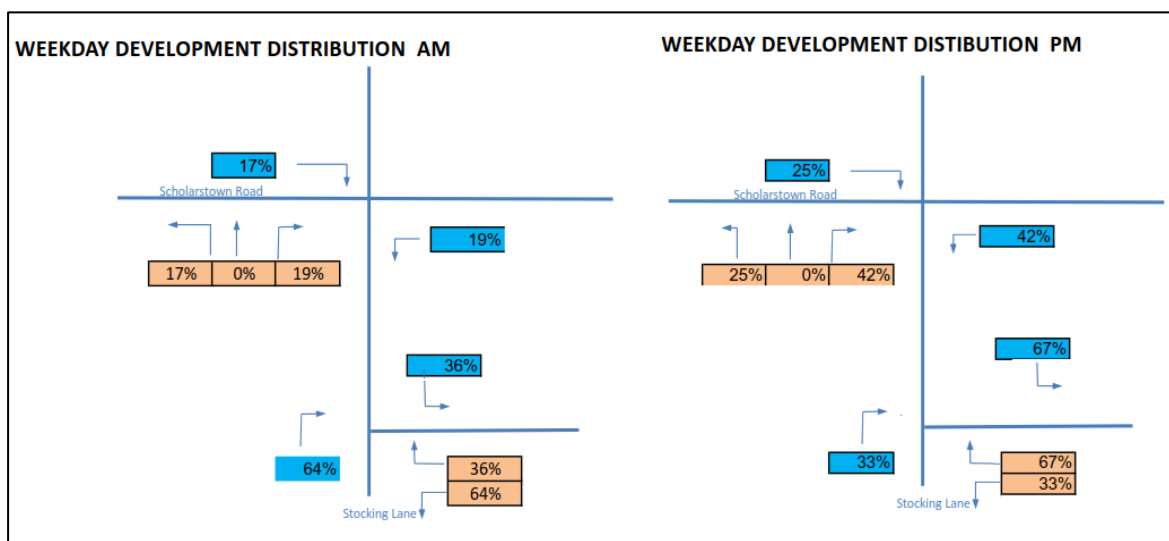


Figure 5.1 – Trip Distribution

As shown in Figure 5.1, 64% of trips in the AM and 33% in the PM of trips travelling from the site have been assigned towards the direction of the M50 to the south of the site and 36% in the AM (67% in the PM) towards Ballyboden, to the north of the site.

## 5.5 Vehicular Traffic Growth

The TTA adopts an Opening Design Year of 2023. In accordance with TII Guidance, Future Design years (+5 and +15 years) of 2028 and 2038 will therefore be adopted.

The Transport Infrastructure Ireland (TII) 'Project Appraisal Guidelines for National Roads Unit 5.3 – Travel Demand Projections (May 2019)' sets out growth rates for forecasting future year traffic for use in scheme modelling and appraisal. It is noted that in respect of Stocking Lane, which is in the 'Dublin Metropolitan' area, the growth during the period 2016 – 2030 is set at 1.62% per annum for medium growth which reduces 0.51% per annum from 2030 – 2040 (LV rates used).

The development has assessed the opening year of the development (2023) and the two horizon year assessments (2028 and 2038), as per the TII Traffic Assessment Guidelines. The assessment years used for this assessment are as follows:

- 2017 to 2023 – 1.0837 (or 8.37%);
- 2017 to 2028 – 1.1743 (or 17.43%); and
- 2017 to 2038 – 1.2686 (or 26.86%).

## 5.6 Threshold Analysis

The TII Guidelines for Transport Assessments state that the thresholds for junction analysis in Transport Assessments are as follows:

- 'Traffic to and from the development exceeds 10% of the existing two-way traffic flow on the adjoining highway.'
- 'Traffic to and from the development exceeds 5% of the existing two-way flow on the adjoining highway, where traffic congestion exists or will exist within the assessment period or in other sensitive locations.'

## 5.7 Impact of the Proposed Development

A comparison was made between the pre-development and post-development scenarios, to identify the percentage impact of the development on Stocking Lane.

The projected percentage impact of operational traffic on the surrounding road junctions in the year of opening (2022) is set out in Table 5.3 and shown indicatively in Figure 5.2.



**Figure 5.2 – Proposed Development Impact at Junction Locations (Source: Google Maps)**

It should be noted that the opening year of the development has been assessed only (2023). Any future year base flows would be greater than the flows presented in Table 5.3, hence a smaller percentage impact in comparison to the development flows would be recorded.

**Table 5.3 – Percentage Impacts**

Junction	Traffic Flows	AM Peak (08:00 – 09:00)	PM Peak (17:00 – 18:00)
<b>1. Scholarstown Road/ Stocking Lane</b>	Base Flows at Junction	1224	1022
	Development	18	31
	<b>% Impact</b>	<b>1.4%</b>	<b>3.0%</b>
<b>2. Site Access/Stocking Lane</b>	Base Flows at Junction	928	907
	Development	49	46
	<b>% Impact</b>	<b>5.3%</b>	<b>5.0%</b>

On the basis of the TII traffic and Transport Assessment Guidelines (May 2014), given the impact upon Junction 1 does not exceed 10% (or even 5%) and Junction 2 does not exceed 10% modelling will not be required at these junctions. Although not required, AECOM will undertake detailed traffic modelling for Junction 2. Each of the junctions is discussed in more detail in the paragraphs below.

**Junction 1:** 1.4% and 3.0% upon the Scholarstown Road / Stocking Lane 3-arm signalised junction in the respective AM and PM peak therefore modelling is not required for this junction. The traffic impacts upon this junction will be nominal.

**Junction 2:** 5.3% and 5.0% upon the Stocking Lane / Site Access priority controlled junction in the respective AM and PM peak, therefore modelling is not required for this junction in line with the TII Traffic and Transport Assessment Guidelines, May 2014. Although not required, to provide a comprehensive assessment of the proposed development AECOM will undertake junction modelling analysis using Junctions 9 software.

To summarise the percentage impact assessment, it has been found that neither Junction 1 (Scholarstown Road / Stocking Lane) or Junction 2 (Stocking Lane / Site Access) require traffic modelling. Further to this, to provide for a robust assessment of the proposed development, Junction 2 will be analysed using the industry standard Transport Research Laboratory (TRL) Junctions 9 software package.

## 6. Network Analysis

### 6.1 Introduction

This chapter presents the impact analysis to identify the potential effects of the proposed development upon the surrounding road network at the junctions as identified in Chapter 5 of this report. Figure 6.1 shows the junctions that have been analysed as part of this assessment. As the junction is an unsignalized priority controlled junction it will be assessed using the industry standard Junctions 9 (PICADY) software developed by TRL.



Figure 6.1 – Junctions to be Analysed (Source: Google Maps)

### 6.2 Junction Analysis

The operational assessment of the local road network has been undertaken TRL Junctions 9 for non-signalised junctions. When considering priority controlled junctions, a Ratio to Flow Capacity (RFC) of greater than 85% (0.85) would indicate a junction to be approaching capacity, as operation above this RFC value is poor and deteriorates quickly resulting in traffic congestion in the form of longer queues.

Junctions 9 is an industry standard software to model the capacity and queuing of non-signalised junctions (Priority controlled, intersections, roundabouts). The meaning of the acronyms used within the capacity assessment results are discussed below.

- RFC Ratio to Flow Capacity (for non-signalised junctions)
- Q Queue length (PCU's) i.e. 1 PCU equates to a 5.75m long car

It is generally accepted that RFC values of 0.85 (85%) and less are indicators that a junction is operating within capacity. Junctions are only identified as operating over capacity if these values are exceeded.

## 6.2.1 Stocking Lane / Site Access

A model was completed for observed traffic volume scenario for AM and PM and future assessment years, as shown in Table 6.1 below. Full Junctions 9 results are contained within Appendix C.

**Table 6.1 – Stocking Lane / Site Access Analysis**

Assessment Year	Arm	AM		PM	
		Queue (PCU)	RFC	Queue (PCU)	RFC
2017 Baseline	Site Access	0	0	0	0
	Stocking Lane (Southern Arm)	0	0	0	0
2023 Without Development	Site Access	0	0	0	0
	Stocking Lane (Southern Arm)	0	0	0	0
2023 With Development	Site Access	0.1	0.09	0.1	0.05
	Stocking Lane (Southern Arm)	0	0.03	0	0.03
2028 Without Development	Site Access	0	0	0	0
	Stocking Lane (Southern Arm)	0	0	0	0
2028 With Development	Site Access	0.1	0.09	0.1	0.06
	Stocking Lane (Southern Arm)	0	0.03	0	0.03
2038 Without Development	Site Access	0	0	0	0
	Stocking Lane (Southern Arm)	0	0	0	0
2038 With Development	Site Access	0.1	0.10	0.1	0.06
	Stocking Lane (Southern Arm)	0	0.03	0	0.03

Based on the analysis of Site Access Junction, it is clear that with the inclusion of the junction along the Stocking Lane, the junction will continue to operate within capacity throughout the 2023 (opening year) to the 2038 (opening year + 15) assessment with the development in place.

As demonstrated in the 2023 assessment year, the proposed site access will result in a RFC value of 0.09 (9%) with a corresponding queue of 0.1 PCU during the AM Peak period whilst during the PM Peak it is anticipated that the RFC will be 0.5 (5%) with a corresponding queue of 0.1 PCU.

When comparing the 2038 assessment years with and without development, the proposed development results in a RFC of 0.10 (10%) with a queue of 0.1 PCU during the AM Peak Period. During the PM peak period it is anticipated that the site access arm will result in a 0.6 RFC with a corresponding queue of 0.1 PCU.

## 7. Framework Mobility Management Plan

### 7.1 General

This section will present an overview of the Mobility Management Measures for the proposed development. A review of the key measures and policies outlined in the current SDCC Development Plan (2016 – 2022) has been undertaken.

Upon completion of the development, when the scheme is occupied it is recommended that an updated Mobility Management Plan is undertaken in unison with travel surveys for staff and visitors, which will inform travel targets for site users.

### 7.2 Objectives

The objectives of this section are as follows:

- To discourage private car as a means of travel to and from the development;
- To increase and facilitate the number of people choosing to walk, cycle or travel by public transport to the development;
- To work with SDCC, the National Transport Authority and public transport providers to support and encourage resident and staff up take;
- To develop an integrated and unified public transport, private vehicle, business fleet management and suppliers of commercial services to the development; and
- To liaise and co-operate with adjacent developments in relation to a coordinated approach to Mobility Management between the various employment areas.
- To achieve the above targets, measures have been proposed for the specific modes of transport. These are based on existing infrastructure and public transport systems. These objectives are preliminary and will be further developed in the light of ongoing monitoring as the proposed development is occupied and information becomes available on future travel behaviour of residents and staff.

It is recommended that an Action Plan Coordinator is appointed, as someone who will take ownership of implementing the measures.

### 7.3 Monitoring

A critical part of any MMP is ongoing monitoring. It is proposed that an initial evaluation of the operation of the plan will take place one year into the operation.

On occupation of the development it would be proposed to undertake travel attitude surveys to establish baseline modal split of staff. This would assist considerably in the setting of appropriate trip rate and modal share targets for the development.

An after study should then be undertaken following the operation of the MMP for a reasonable period of time. The two datasets could then be compared to review what changes are necessary after implementation of the various infrastructural measures and initiatives.

Campaigns and promotions would be run throughout the year to maintain public awareness of modes of travel other than the car and the benefits accrued to both the individual and the environment.

The occupiers of the proposed development will be encouraged to continually monitor the MMP initiatives in order to maximise on their success. Monitoring results could be included in the annual report or a separate environmental report. The results will also be forwarded to SDCC at intervals to be determined by agreement.



<i>Walking</i>		
<b>Initiatives</b>	<b>Responsibility / Ownership</b>	<b>Timescale</b>
Provision of details on how to access the site on foot. Details would include safe walking routes and location of the nearest bus stops.  Promote walking events / lunchtime walks  Annual Team Walking Events I.e. Pedometer Challenge  Provide umbrella for employees of development on wet days  Offer in house health checks for staff of development interested in getting more active	The Action Plan Co-ordinator	This will be established prior to occupation.
<i>Cycling</i>		
<b>Initiatives</b>	<b>Responsibility / Ownership</b>	<b>Timescale</b>
Launch Cycle to Work scheme for Staff of development  Establish a Staff Bicycle User Group  Encourage establishment of a cycling club / society  Provision for cyclist equipment i.e. pump, allen keys, lights, puncture repairs  Display maps of local cycle network on notice boards  Participate in national cycle week  Survey and monitor cycle parking occupancy  Install and or upgrade cycle lockers, showers and drying rooms	The Action Plan Co-ordinator	This will be established prior to occupation.

<b>Public Transport</b>		
<b>Initiatives</b>	<b>Responsibility / Ownership</b>	<b>Timescale</b>
<p>Provision of public transport maps and timetables in prominent locations on site. Information should be kept up to date. This information could also be available online.</p> <p>Re-advertise and promote the Tax saver monthly and annual commuter tickets for public transport to staff of the development.</p> <p>Display a local area map with public transport stops / route numbers marked.</p> <p>Publicise real time passenger information apps and websites where relevant.</p> <p>Discuss with public transport operators fare structures and ticketing options.</p> <p>Liaise with public transport operators regarding service frequencies to the development.</p> <p>Provide attractive, good quality waiting areas.</p>	<p>The Action Plan Co-ordinator</p>	<p>This will be established prior to occupation.</p>
<b>Car Sharing</b>		
<b>Initiatives</b>	<b>Responsibility / Ownership</b>	<b>Timescale</b>
<p>Encouragement of employees and visitors of the development to use other modes of travel other than private car.</p> <p>Where it is necessary for car use to travel to and from work, staff should be made aware of other people who are either within close proximity of their homes (for staff).</p> <p>Hold a coffee morning / launch event for potential car sharers</p>	<p>The Action Plan Co-ordinator</p>	<p>This will be established prior to occupation.</p>
<b>Construction Phase</b>		
<b>Initiatives</b>	<b>Responsibility / Ownership</b>	<b>Timescale</b>
<p>Provide a preliminary Construction Traffic Management Plan to provide detailed mitigation of construction traffic associated with the proposed development.</p>	<p>The Contractor / SDCC Roads &amp; Traffic Department</p>	<p>This will be established and agreed prior to construction.</p>

## 7.4 MMP Summary

MacCabe Durney Barnes are committed to implementing a MMP and will monitor progress and take remedial actions as necessary.

## 8. Framework Construction Traffic Management Plan

This chapter deals directly with the impacts of construction of the subject development. As with any construction project, the contractor will be required to prepare a comprehensive traffic management plan for the construction phase. The purpose of such a plan is to outline measures to manage the expected construction traffic activity during the construction period.

This chapter will provide an overview of the likely routing of construction vehicles, based on a most likely scenario of construction. It should be noted that the impacts of the construction will be temporary, and it will be the contractor's responsibility to prepare a Traffic Management Plan for the approval of South Dublin County Council in advance of any works.

Subject to receipt of grant of the application for the scheme, a detailed Construction Management Plan will be prepared by an appointed contractor. The appointed contractor will be responsible for preparing and seeking agreement with SDCC ensuring that SDCC's requirements are met, prior to undertaking the works on site.

### 8.1 Policy Guidance

Guidance for the temporary control of traffic to facilitate the safety of the public during the works is provided below:

- Traffic Signs Manual Chapter 8 Temporary Traffic Measures and Signs for Roadworks (2019);
- Traffic Management Guidelines, Department of Transport (2003); and
- Requirements of SDCC.

### 8.2 Likely Construction Programme & Phasing

The site as proposed would be expected to require some 16 – 18 months (approximately) to complete from occupation of the site.

### 8.3 Construction Route

To minimise construction impacts upon the surrounding road network, it is recommended that all construction traffic enters and exits the M50 Junction 12 taking the Scholarstown Road exit to Stocking Lane / Edmondstown. At the roundabout take the 2<sup>nd</sup> exit continuing along Scholarstown road. At the Scholarstown Road / Ballyboden Way Roundabout take the 3<sup>rd</sup> exit continuing on Scholarstown road. Continuing along Scholarstown Road traffic would turn right onto Stocking Lane from the Scholarstown Road / Stocking Lane junction. The site access point is located approximately 300m on the left hand side of Stocking Lane. This route has been selected as it minimises the interaction construction traffic will have with the surrounding residential areas.

### 8.4 Parking

It is proposed that all construction vehicles will be accommodated within the respective site location. The contractor will be responsible for ensuring no site operatives park outside the development site, to protect the amenity of the local residents.

### 8.5 Mitigation Measures

A list of the proposed traffic management measures to be adopted during the construction works is included overleaf. Please note that this is not an exhaustive list, and that it will be the appointed contractor's responsibility to prepare a detailed construction management plan.

Warning signs / Advanced warning signs will be installed at appropriate locations in advance of the construction access locations;

Construction and delivery vehicles will be instructed to use only the approved and agreed means of access; and movement of construction vehicles will be restricted to these designated routes;

### 8.6 Hours of Operation

Site development and building works shall be carried out between the hours of operation recommended by SDCC to safeguard the residential amenities of properties in the vicinity. The typical hours of operation are as follows:

- Monday to Friday, 8am – 7pm, Saturdays 8am – 2pm and no works on Sundays or Public holidays.

## 8.7 Traffic Management Measures

Below is a list of proposed traffic management measures to be considered during the construction works. Please note that this is not an exhaustive list, and that it will be the appointed contractor's responsibility to prepare a detailed construction management plan.

- Warning signs / Advanced warning signs will be installed at appropriate locations in advance of the construction access locations;
- Construction and delivery vehicles will be instructed to use only the approved and agreed means of access; and movement of construction vehicles will be restricted to these designated routes;
- Appropriate vehicles will be used to minimise environmental impacts from transporting construction material, for example the use of dust covers on trucks carrying dust producing material;
- Speed limits of construction vehicles to be managed by appropriate signage, to promote low vehicular speeds within the site;
- Parking of site vehicles will be managed and will not be permitted on public roads, unless proposed within a designated area that is subject to traffic management measures and agreed with SDCC;
- A road sweeper will be employed to clean the public roads adjacent to the site of any residual debris that may be deposited on the public roads leading away from the construction works;
- On site wheel washing will be undertaken for construction trucks and vehicles to remove any debris prior to leaving the site, this is to remove any potential debris on the local roads;
- All vehicles will be suitably serviced and maintained to avoid any leaks or spillage of oil, petrol or diesel. Spill kits will be available on site. All scheduled maintenance carried out off-site will not be carried out on the public highway; and
- Safe and secure pedestrian facilities are to be provided where construction works obscure any existing pedestrian footways. Alternative pedestrian facilities will be provided in these instances, supported by physical barriers to segregate traffic and pedestrian movements, and to be identified by appropriate signage. Pedestrian facilities will cater for vulnerable users including mobility impaired persons.

The mitigation measures will therefore ensure that the presence of construction traffic will not lead to any significant environmental degradation or safety concerns. Furthermore, it is in the interests of the construction programme that deliveries, particularly concrete deliveries are not unduly hampered by traffic congestion, and as a result continuous review of haulage routes, delivery timings and access arrangements will be undertaken as construction progresses to ensure smooth operation.

## 9. Summary & Conclusion

### 9.1 Overview

This TTA has been compiled for a Strategic Housing Development application for a proposed residential site comprising of 110 no. residential apartment units, 21 no. residential houses, residential service amenities, open space, a retail unit and a crèche. The site currently comprises a vacant greenfield site located adjacent to Stocking Lane.

The proposed 110 no. residential apartments comprises of 29 no. 1 beds, 61 no. two beds, 20 no. 3 beds and the 21 no. residential houses comprises of 1 no. 3 bed, 11 no. 4 beds and 9 no. 5 beds. The proposed site layout is illustrated within the Architect's site layout plan.

In addition, the scheme includes for a crèche (128 sq. m) and retail unit (65 sq. m), all of which are located within the confines of the site.

The purpose of this TTA is to quantify the existing transport environment and to detail the results of the assessment to identify the potential level of traffic impact generated by the proposed development. The TTA found that based on the trip generation associated with the development that no modelling was required on the existing junctions due to the percentage increase being below the TII standards. To provide for a comprehensive assessment of the development AECOM undertook detailed traffic modelling using Junctions 9 software.

#### 9.1.1 Roads Layout

It is proposed that the site would be accessed by a new entrance off Stocking Lane approximately 70m south of the existing access to the site. A secondary cyclist and pedestrian access point is also proposed off Springvale.

The proposed roads layout has been designed in compliance with DMURS. A visibility splay assessment and swept path analysis have been undertaken to demonstrate that the proposed development can cater for traffic to safely access and egress the site and manoeuvre within the development.

#### 9.1.2 Car Parking

Both the SDCC Development Plan Standards (2016 – 2022) and Section 4.17 of the Design Standards for New Apartments Guidelines (March 2018) has been referred to in relation to the required car parking provision. The maximum car parking requirement for the scale and type of proposed development is 189 no. spaces.

It is therefore proposed to provide a total of 167 car parking spaces, which is within the maximum SDCC standard (157 no. dedicated residential spaces, 5 no. crèche spaces and 5 no. retail spaces). Inclusive of the residential spaces, provision will be given to 24 no. electric vehicle charging spaces, 5 no. visitor parking spaces and 6 no. mobility impaired spaces.

#### 9.1.3 Cycle Parking

Both the SDCC Development Plan Standards (2016 – 2022) and Section 4.17 of the Design Standards for New Apartments Guidelines (March 2018) have been adhered to when determining a suitable amount of cycle parking for the proposed development. The cycle parking requirement for the proposed development in accordance with the SDCC Development Plan is 129 cycle parking spaces while the Design Standards for New Apartment Guidelines is 267 cycle parking spaces. It is proposed to provide 288 spaces in total to cater for both requirements.

#### 9.1.4 Proposed Motorcycle Parking

An element of motorcycle parking has also been included within the site layout. A standard provision of 4% of the total car parking spaces has been given resulting in 5 no. motorcycle spaces to be located within the basement.

#### 9.1.5 Trip Generation

An analysis has been undertaken using the industry standard TRICS database. The results demonstrate the anticipated arrivals and departures for the Weekday AM and PM peak hours. In total, 49 and 46 two way vehicular trips are anticipated to be generated during the morning (08:00 – 09:00) and evening (17:00 – 18:00) peak hours respectively.

### **9.1.6 Mobility Management Plan**

Measures and opportunities have been presented within the MMP to promote sustainable travel associated with the proposed development from the outset and the opportunity exists to monitor and update measures and initiatives in accordance with resident feedback and emerging policies.

## **9.2 Conclusion**

Based upon the information and analysis presented within this TTA the following subsections demonstrate how the scheme has been designed from a traffic and transport perspective to integrate within the existing network and to minimise potential impacts.

## **Appendix A Response to An Bord Pleanála Opinion**

An Bord Pleanála  
64 Marlborough Street  
Dublin 1

27<sup>th</sup> September 2021

**AECOM Response to An Bord Pleanala Opinion for the proposed SHD application at Stocking Lane, Ballyboden, Dublin 16.**

Dear Sir/Madam

**1. INTRODUCTION**

AECOM has prepared a response to the An Bord Pleanala (ABP) Opinion in relation to the proposed Strategic Housing Development at Stocking Lane, Ballyboden, Dublin 16 (ABP Ref No: ABP – 310111 -21). This response should be read in conjunction with AECOM's updated Traffic and Transport Assessment that accompanies this planning submission.

The subsequent sections set out the response to the traffic and transport items raised within the opinion issued by ABP, of which there were two items, as follows.

Item 2 – Access Options to Springvale

“Transportation assessment of access options between the site and Springvale to the east, including assessment of vehicular, cyclist and pedestrian access options.”

Item 7 – Car Parking Rationale

“A rationale for the proposed car parking provision should be prepared, to include details of car parking management, car share schemes and a mobility management plan.”

The following sections set out the response to the traffic and transport items raised within the opinion issued by ABP.

**2. AECOM RESPONSE TO ABP OPINION – Item 2 – Access Options to Springvale**

**Item 2 – Access Options to Springvale**

“Transportation assessment of access options between the site and Springvale to the east, including assessment of vehicular, cyclist and pedestrian access options.”

**Applicant Response:**

**Planning Policy**

*The South Dublin County Development Plan 2016-2022 sets out the statutory road objectives for County. There is no roads objective relating to the creation of a new link in the network with the provision of a road connecting the two regional roads of Stocking Lane with Edmonstown Road via the subject site and the adjoining Springvale estate. The following policy and objectives are listed within the County Development Plan in relation to walking and cycling:*

**TM Policy 3** on Walking and Cycling states: *It is the policy of the Council to re-balance movement priorities towards more sustainable modes of transportation by prioritising the development of walking and cycling facilities within a safe and traffic calmed street environment.*



**TM3 Objective 2:** *To ensure that connectivity for pedestrians and cyclists is maximised in new communities and improved within existing areas in order to maximise access to local shops, schools, public transport services and other amenities, while seeking to minimise opportunities for anti-social behaviour and respecting the wishes of local communities.*

**TM3 Objective 3:** *To ensure that all streets and street networks are designed to prioritise the movement of pedestrians and cyclists within a safe and comfortable environment for a wide range of ages, abilities and journey types.*

The Sustainable Residential Development in Urban Areas – Guidelines for Planning Authority DEHLG (2009) under section 3.14 states In relation the connectivity and permeability:

*“Convenient access needs to be provided between and within areas, particularly to larger community and commercial facilities and to places of work. Routes within the area should be accessible for everyone and as direct as possible, and for this reason “gated estates” should be discouraged. The design process should consider what levels of permeability are appropriate for different street users, with permeability for pedestrians and cyclists taking precedence over permeability for vehicles. ...”*

Section 3.15 further states:

*“When designing a street layout for a new residential area, designers should assess the need for, and specific roles of:*

*.....*

*(e) Maximum permeability for pedestrians and cyclists*

*....*

*(g) Residential streets with limited through motor traffic;*

*(h) Consideration of provision for low design speeds (such as 30 kph) and facilities for pedestrians and cyclists;.....”*

The Design Manual for Urban Roads and Streets (DMURS) indicates in section 3.4.1

*“The limited use of vehicular cul-de-sacs may be considered in Neighbourhoods and Suburbs where there is a particular concern regarding through traffic..... Additional design measures should be applied to ensure that pedestrian and cycle links are not perceived as ‘anti-social spaces’. Links should maintain clear sight lines and be overlooked by development....”*

The Guidance also indicates that shared surface zones can also be used by emergency vehicles. There is no specified width for an emergency access. Furthermore, there is no specified development size threshold above which there is a specific requirement for a second access in relation to a residential development.

## **Planning History**

### **P.A Ref. Ref: D18A-0225**

Planning permission was refused for a number of reasons for a development of 95 units on the site. A cycle/pedestrian ramp was included in the proposal but no road link. This was not raised as an issued in the Transportation Report for the application. No reason for refusal relating to the non-provision of a road linking to the Springvale Estate was given.

### **Pre App APB 305712-19**

Pre-application for 108 units, 1 creche and 1 shop (submitted October 2019)

The Transportation Department Report (8<sup>th</sup> November 2019) states

*“The Roads Department believe that a second emergency vehicle access should be developed to the boundary of the Springvale estate. There are level differences, but these can be addressed with earthworks within the subject site. This access is required to allow alternative routes in the event of an emergency. This route would also benefit the Springvale estate as it provides an alternative route for these residents in the event of a road blockage in that estate.”*

Conclusion No.1 states:

*“An additional emergency/future vehicular access must be created into Springvale by lowering the subject site on its eastern boundary to tie into the levels at Springvale Estate.”*

The An Bord Pleanála Opinion (dated 10<sup>th</sup> December 2019) states:

*“4. Vehicular Links*

*Further consideration and/or justification of the documents as they relate to the provision of a vehicular linkages to adjoining lands. In particular the applicant is invited to explore the feasibility of providing a vehicular access to Springvale which may require re-profiling of the site to provide this vehicular access to the east, or to provide a rationale/justification for the access arrangements/links in their final application.”*

Meetings were held with the Transport section on the Council on the 5<sup>th</sup> May 2020 and 11<sup>th</sup> June 2020. The Council initially at that stage sought a full vehicular link to Springvale. Following discussions, rising bollards, which would be raised during the AM peak period, were incorporated into the eastern link to Springvale. This was to avoid rat-running through the proposed development and Springvale during the morning peak which would otherwise have occurred when linking two regional roads, Stocking Lane (R115) and Edmonstown (R116). With the proposals in place, the Council subsequently issued a letter of consent which allowed for the application to be submitted.

**SHD Application ABP-308763-20**

The application was submitted in November 2020, which included restricted vehicular access to Springvale with the use of rising bollards during the AM peak. Cycle and pedestrian access were open at all other times.

The Roads Department of the 22<sup>nd</sup> January 2021 stated in relation to the connection to Springvale “recommended SDCC recommend that this link remains open at all times”. The Planning Report of the 1st February 2021 recommended under condition 2

*(i) The Springvale vehicular access street shall be open at all times and provided without bollards, and all sections of the access street shall be taken in charge.*

*(j) The Springvale vehicular access street shall be modified as follows: the road width should be 6.0m at the junction with the Springvale estate and the narrow section should be 20m further west. This will avoid stopped vehicles at the junction which may cause a traffic hazard.*

The Inspector considered the matter in some detail. In relation to the pedestrian and cycle access to Springvale, section 12.7.13. of his report, he concludes:

*“I am satisfied that the provision of this pedestrian and cyclist route would support planning policy and would not be detrimental to road safety or the amenities of residents within Springvale.”*

In relation to the restricted use of the through route (AM restrictions), section 12.7.17 of the Inspector’s report noted that the proposed development

*“...would substantially increase traffic movement from the development and other areas directly passing 17 of the houses within Springvale and at the junction with Edmondstown Road..... I would also note that while a roadway width of approximately 6m running through Springvale is available, the alignment of the road features relatively acute bends, steep inclines and the road is also used informally for car parking by residents.”*

Section 12.7.18 of his report states:

*“In conclusion, I am satisfied that sufficient rationale or justification for the vehicular route through Springvale, either in a permanent or for exclusive periods of the day, is not in evidence nor has it been provided as part of the application. According to the Guidelines for Planning Authority on Sustainable Residential Development in Urban Areas, the principles of connectivity and permeability should influence the design and layout of urban housing, and national planning policy provides a clear preference in the prioritisation of walking and cycling accessibility. Local planning policy, including policy TM3-Objective 2 of the Development Plan, and the Permeability Best Practice Guide clearly support the provision of a competitive advantage to walking and cycling over other modes. Consequently, this secondary vehicular access aspect of the proposed development should be omitted in the event of a permission and a revised layout for the associated area should be provided as a*

*condition, in the event of a grant of planning permission. Accordingly, a grant of permission for the proposed development would need to ensure that the development would be capable of solely being served by the proposed vehicular access off Stocking Lane, which I consider directly below."*

## Options Considered

Section 7.14 of the Development Management Guidelines for Planning Authorities 2007, indicates that all substantial reasons for refusal should be given in any decision. Accordingly, and having regard to the fact that the refusal of the SHD did not refer to the access arrangements to Springvale and that the Inspector had indicated that in the event of a grant of permission the secondary vehicular access to Springvale should be omitted, the scheme put forward at pre application consultation phase for the current application was for a cycle and pedestrian only link to Springvale. It should be noted that ABP, in their Opinion, considered this to be a reasonable basis for an application and did not require further consideration of the issue.

Three options are considered in response to Item 2 of the Opinion which are as follows:

- **Option 1** - Full unrestricted vehicular, pedestrian and cycle connection through to Springvale (option currently sought by the Council)
- **Option 2** - Vehicular, pedestrian and cycle connection through to Springvale, but restricted in the AM peak through use of barrier or other traffic control measure (option proposed in previous SHD application)
- **Option 3** - Cycle and pedestrian connection only to Springvale (option currently proposed)

These options are assessed against grounds

- a) Policy
- b) Amenity
- c) Traffic and Roads

## Options Assessment

### Option 1 - Full unrestricted vehicular, pedestrian and cycle connection

#### Policy

There is no road objective in the Development Plan which seeks a new link in the road network between the two regional roads of Stocking Lane and Edmonstown Road. In addition, there is no policy which determines the threshold number of units above which a second access needs to be provided to a housing development. The Sustainable Residential Development in Urban Areas Guidelines do promote permeability between residential areas, but paragraph 3.14 indicates that with permeability for pedestrians and cyclists takes precedence over permeability for vehicles. This option 1, could potentially conflict with TM Policy 3 of the Development Plan which seeks to prioritise cycling and walking over car movements in traffic calmed streets.

#### Amenity

The potential for adverse impact upon the amenities of residents of Springvale was highlighted in the Inspector's report in relation to the previous SHD application on site (Ref: ABP-308763-20). It would draw external traffic between Edmonstown and Stocking Lane through both the Springvale and the proposed development. The volumes of traffic are likely to be such as to erode the amenities of existing and future residents. The eastern home zone within the scheme would be undermined by through traffic and increase in traffic flows through Springvale could alter the relatively quiet residential environment there, particularly during peak periods.

#### Traffic and Roads

In the event that an unrestricted through route from Stocking Lane to the Edmonstown Road is facilitated via the site, this would result in a significant volume of traffic utilising the proposed development vehicular connection into Springvale. Given that both the proposed development and Springvale are residential estates this would result in a car dominant neighbourhood roads which raises further concerns around road safety for existing and perspective residents, which is not in line with the guidance provided in the Design Manual for Urban Roads and Streets.

The Inspector in the previous SHD application noted that there were acute bends in Springvale and it was not designed to cater for through traffic.

## **Option 2 - Restricted vehicular access during AM peak and full pedestrian and cycle connection**

### Policy

The Sustainable Residential Development in Urban Areas Guidelines promotes permeability between residential areas, but paragraph 3.14 indicates that permeability for pedestrians and cyclists taking precedence over permeability for vehicles. While this option may not be evidently in conflict with TM Policy 3 of the Development Plan, the Inspector on the previous SHD application referred to TM3 Objective 2 which emphasised the importance of pedestrian and cycle connectivity while respecting the wishes of local communities.

### Amenity

The potential for adverse impact upon the amenities of residents of Springvale was highlighted in the Inspector's report in relation to the previous SHD application on site (Ref: ABP-308763-20). While the restriction of traffic during the morning AM peak would significantly reduce the impacts upon amenities in comparison with Option 1, there is potential for an impact upon amenities of existing and future residents during the rest of the day.

### Traffic and Roads

Owing to the restrictions on the Springvale link, with the use of rising bollards in the morning peak period, the impact of the development during that period would be the same as the same as for Option 3. All traffic would exit the scheme onto Stocking Lane during the AM peak and the TTA accompanying this application clearly demonstrates that the road network on the western side of the site can accommodate the development.

The Inspector in the previous SHD application noted that there were acute bends in Springvale and it was not designed to cater for through traffic. This option includes the use of rising bollards at the top and bottom of the link which would be up outside the morning peak period. Issues of management, operation and safety were raised in relation to this option in the last application. These matters could be addressed by way of detailed design and agreement with the Roads Department.

## **Option 3 - Full pedestrian and cycle connection**

### Policy

This option appropriately balances the needs of ensuring permeability for sustainable modes of transport (i.e. cycling and walking), ensuring appropriately traffic calmed residential areas, and respecting the wishes of existing communities. It is therefore considered that it accords with section 3.14 of the Sustainable Residential Development in Urban Areas Guidelines and TM Policy 3 of the Development Plan.

### Amenity

Generally, the amenities of existing Springvale residents and future residents of the scheme are protected as there is no through traffic. While cycle and pedestrian connections can give rise to concerns for existing residents, they will significantly benefit from being able to access bus services on Stocking Lane, the proposed creche and shop within the scheme and schools on Scholarstown Road.

### Traffic and Roads

All traffic would exit the scheme onto Stocking Lane during the AM peak and the TTA accompanying this application clearly demonstrates that the road network on the western side of the site can accommodate the development.

**Option 3** is the one that has been selected for this application.

### 3. AECOM RESPONSE TO ABP OPINION - Item 7 – Car Parking Rationale

#### Item 7 – Car Parking Rationale

*“A rationale for the proposed car parking provision should be prepared, to include details of car parking management, car share schemes and a mobility management plan.”*

#### Applicant Response:

It is proposed to provide a total of 167 car parking spaces to cater for the proposed development of which consists of the following:

- 152 no. residential spaces;
- 5 no. visitor spaces;
- 4 no. creche spaces;
- 5 no. retail spaces; and
- 1 no. car share space

The rationale for the proposed quantum of parking is set out above in Section 3.9. This car parking requirement has been provided for taking cognisance of both the South Dublin County Development Plan and the Design Standard for New Apartment Guidelines as demonstrated in Section 3.9 of the Traffic and Transport Assessment. Both the South Dublin County Development Plan and the Design Standards for New Apartments have been taken as the maximum rates for car parking to be provided for the development. The car parking ratio for the residential units is 1.16 spaces per unit with the car parking being allocated as follows, with the dedicated spaces (mobility impaired, EV) being allocated to specific units:

**Table 1 – Car Parking Allocation**

No. and Type of Units	Ratio	Total
21 houses	2 spaces per unit	42 spaces
29 no. 1 bed	0.52 spaces per unit	19 spaces
61 no. 2 bed	1 space per unit	61 spaces
20 no. 3 bed	1.5 spaces per unit	30 spaces
<b>Total</b>		<b>152 spaces</b>

The applicant will also accommodate a space dedicated to a car sharing club (e.g. car club) which will benefit the prospective residents and those living in the vicinity of the site. Details of plans for mobility management are included in the TTA.

Finally, it is important to reiterate that the site is located adjacent to a bus stop which will accommodate the transport needs of the future residents.

Car parking management would be carried out by an appointed management company. The management company will be responsible for enforcing the car parking arrangements on the site which prospective residents will be made aware of prior to moving in. The management company will be responsible for the following:

- Regular checks of the car park to ensure appropriate parking.
- Internal warning signs to be erected to warn visitors of parking restriction.
- Letters to be sent to all residents informing them of the agreed parking strategy.

### 3. Summary

To conclude a range of options have been considered for the access arrangement with Springvale and it was found that Option 3 (Full Pedestrian and Cycle Connection) is the most appropriate. The car parking for the proposed development has been provided having regard to the maximum standards as set out in the South Dublin County Development Plan and to the relevant standards as set out in the Design Standards for New Apartment Guidelines with the car parking rationale detailed in section 3.9 of the accompanying TTA.

## Appendix B TRICS Outputs

Calculation Reference: AUDIT-204602-210915-0901

## TRIP RATE CALCULATION SELECTION PARAMETERS:

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

Selected regions and areas:

02	SOUTH EAST	
	BD BEDFORDSHIRE	1 days
	ES EAST SUSSEX	3 days
	EX ESSEX	1 days
	HC HAMPSHIRE	3 days
	HF HERTFORDSHIRE	1 days
	KC KENT	6 days
	SC SURREY	3 days
	WS WEST SUSSEX	6 days
03	SOUTH WEST	
	DC DORSET	1 days
	DV DEVON	3 days
	SM SOMERSET	3 days
	WL WILTSHIRE	1 days
04	EAST ANGLIA	
	CA CAMBRIDGESHIRE	2 days
	NF NORFOLK	8 days
	SF SUFFOLK	4 days
05	EAST MIDLANDS	
	DS DERBYSHIRE	1 days
	LE LEICESTERSHIRE	1 days
	NR NORTHAMPTONSHIRE	2 days
06	WEST MIDLANDS	
	SH SHROPSHIRE	2 days
	ST STAFFORDSHIRE	2 days
	WK WARWICKSHIRE	3 days
	WM WEST MIDLANDS	1 days
	WO WORCESTERSHIRE	1 days
07	YORKSHIRE & NORTH LINCOLNSHIRE	
	NE NORTH EAST LINCOLNSHIRE	1 days
	NY NORTH YORKSHIRE	5 days
	SY SOUTH YORKSHIRE	3 days
	WY WEST YORKSHIRE	1 days
08	NORTH WEST	
	CH CHESHIRE	3 days
	GM GREATER MANCHESTER	1 days
	LC LANCASHIRE	1 days
	MS MERSEYSIDE	1 days
09	NORTH	
	DH DURHAM	3 days
	TW TYNE & WEAR	2 days
10	WALES	
	PS POWYS	1 days
	VG VALE OF GLAMORGAN	1 days
11	SCOTLAND	
	FA FALKIRK	2 days
	HI HIGHLAND	1 days
12	CONNAUGHT	
	CS SLIGO	2 days
	LT LEITRIM	1 days
	RO ROSCOMMON	2 days
13	MUNSTER	
	WA WATERFORD	1 days
14	LEINSTER	
	CC CARLOW	1 days
	WC WICKLOW	1 days
	WX WEXFORD	1 days
15	GREATER DUBLIN	
	DL DUBLIN	1 days
16	ULSTER (REPUBLIC OF IRELAND)	
	CV CAVAN	2 days
	DN DONEGAL	5 days
17	ULSTER (NORTHERN IRELAND)	
	AN ANTRIM	2 days
	DO DOWN	1 days

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

## Primary Filtering selection:

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

Parameter: No of Dwellings  
 Actual Range: 6 to 1882 (units: )  
 Range Selected by User: 4 to 4334 (units: )

Parking Spaces Range: All Surveys Included

Parking Spaces per Dwelling Range: All Surveys Included

Bedrooms per Dwelling Range: All Surveys Included

Percentage of dwellings privately owned: All Surveys Included

Public Transport Provision:

Selection by: Include all surveys

Date Range: 01/01/13 to 20/10/20

*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	22 days
Tuesday	17 days
Wednesday	28 days
Thursday	24 days
Friday	14 days

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

Selected survey types:

Manual count	103 days
Directional ATC Count	2 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)	28
Edge of Town	55
Neighbourhood Centre (PPS6 Local Centre)	22

*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	79
Village	18
No Sub Category	8

*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 105 days

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

Population within 500m Range:

All Surveys Included



## Secondary Filtering selection (Cont.):

Population within 1 mile:

1,000 or Less	5 days
1,001 to 5,000	26 days
5,001 to 10,000	23 days
10,001 to 15,000	24 days
15,001 to 20,000	11 days
20,001 to 25,000	7 days
25,001 to 50,000	8 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:

5,000 or Less	4 days
5,001 to 25,000	18 days
25,001 to 50,000	13 days
50,001 to 75,000	13 days
75,001 to 100,000	18 days
100,001 to 125,000	2 days
125,001 to 250,000	25 days
250,001 to 500,000	10 days
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:

0.6 to 1.0	30 days
1.1 to 1.5	65 days
1.6 to 2.0	10 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	20 days
No	85 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	104 days
2 Poor	1 days

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

Covid-19 Restrictions	Yes	At least one survey within the selected data set was undertaken at a time of Covid-19 restrictions
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LIST OF SITES relevant to selection parameters

1	AN-03-A-08 BALLINDERRY ROAD LISBURN	HOUSES & FLATS	ANTRIM
	Suburban Area (PPS6 Out of Centre) Residential Zone Total No of Dwellings: 204 <i>Survey date: TUESDAY 29/10/13</i>		
	<i>Survey Type: MANUAL</i>		
2	AN-03-A-09 SLOEFIELD DRIVE CARRICKFERGUS	DETACHED & SEMI-DETACHED	ANTRIM
	Edge of Town No Sub Category Total No of Dwellings: 151 <i>Survey date: WEDNESDAY 12/10/16</i>		
	<i>Survey Type: MANUAL</i>		
3	BD-03-A-03 CARNOUSTIE DRIVE BEDFORD GREAT DENHAM	DETACHED HOUSES	BEDFORDSHIRE
	Edge of Town Residential Zone Total No of Dwellings: 30 <i>Survey date: THURSDAY 15/10/20</i>		
	<i>Survey Type: MANUAL</i>		
4	CA-03-A-05 EASTFIELD ROAD PETERBOROUGH	DETACHED HOUSES	CAMBRIDGESHIRE
	Suburban Area (PPS6 Out of Centre) Residential Zone Total No of Dwellings: 28 <i>Survey date: MONDAY 17/10/16</i>		
	<i>Survey Type: MANUAL</i>		
5	CA-03-A-06 CRAFT'S WAY NEAR CAMBRIDGE BAR HILL	MIXED HOUSES	CAMBRIDGESHIRE
	Neighbourhood Centre (PPS6 Local Centre) Village Total No of Dwellings: 207 <i>Survey date: FRIDAY 22/06/18</i>		
	<i>Survey Type: MANUAL</i>		
6	CC-03-A-01 R417 ANTHY ROAD CARLOW	DETACHED HOUSES	CARLOW
	Edge of Town Residential Zone Total No of Dwellings: 23 <i>Survey date: WEDNESDAY 25/05/16</i>		
	<i>Survey Type: MANUAL</i>		
7	CH-03-A-09 GREYSTOKE ROAD MACCLESFIELD HURDSFIELD	TERRACED HOUSES	CHESHIRE
	Edge of Town Residential Zone Total No of Dwellings: 24 <i>Survey date: MONDAY 24/11/14</i>		
	<i>Survey Type: MANUAL</i>		
8	CH-03-A-10 MEADOW DRIVE NORTHWICH BARNTON	SEMI-DETACHED & TERRACED	CHESHIRE
	Edge of Town Residential Zone Total No of Dwellings: 40 <i>Survey date: TUESDAY 04/06/19</i>		
	<i>Survey Type: MANUAL</i>		

LIST OF SITES relevant to selection parameters (Cont.)

9	CH-03-A-11	TOWN HOUSES		CHESHIRE
	LONDON ROAD			
	NORTHWICH			
	LEFTWICH			
	Suburban Area (PPS6 Out of Centre)			
	Residential Zone			
	Total No of Dwellings:		24	
	Survey date: THURSDAY		06/06/19	Survey Type: MANUAL
10	CS-03-A-03	MIXED HOUSES		SLIGO
	TOP ROAD			
	STRANDHILL			
	STRANDHILL			
	Neighbourhood Centre (PPS6 Local Centre)			
	Village			
	Total No of Dwellings:		30	
	Survey date: THURSDAY		27/10/16	Survey Type: MANUAL
11	CS-03-A-04	DETACHED & SEMI -DETACHED		SLIGO
	R292			
	STRANDHILL			
	Neighbourhood Centre (PPS6 Local Centre)			
	Village			
	Total No of Dwellings:		63	
	Survey date: THURSDAY		27/10/16	Survey Type: MANUAL
12	CV-03-A-02	DETACHED & SEMI DETACHED		CAVAN
	R212 DUBLIN ROAD			
	CAVAN			
	KILLYNEBBER			
	Edge of Town			
	No Sub Category			
	Total No of Dwellings:		80	
	Survey date: MONDAY		22/05/17	Survey Type: MANUAL
13	CV-03-A-03	DETACHED HOUSES		CAVAN
	R212 DUBLIN ROAD			
	CAVAN			
	PULLAMORE NEAR			
	Edge of Town			
	No Sub Category			
	Total No of Dwellings:		37	
	Survey date: MONDAY		22/05/17	Survey Type: MANUAL
14	DC-03-A-08	BUNGALOWS		DORSET
	HURSTDENE ROAD			
	BOURNEMOUTH			
	CASTLE LANE WEST			
	Edge of Town			
	Residential Zone			
	Total No of Dwellings:		28	
	Survey date: MONDAY		24/03/14	Survey Type: MANUAL
15	DH-03-A-01	SEMI DETACHED		DURHAM
	GREENFIELDS ROAD			
	BISHOP AUCKLAND			
	Suburban Area (PPS6 Out of Centre)			
	Residential Zone			
	Total No of Dwellings:		50	
	Survey date: TUESDAY		28/03/17	Survey Type: MANUAL

LIST OF SITES relevant to selection parameters (Cont.)

16	DH-03-A-02	MIXED HOUSES	DURHAM
	LEAZES LANE		
	BISHOP AUCKLAND		
	ST HELEN AUCKLAND		
	Neighbourhood Centre (PPS6 Local Centre)		
	Residential Zone		
	Total No of Dwellings:	125	
	Survey date: MONDAY	27/03/17	Survey Type: MANUAL
17	DH-03-A-03	SEMI -DETACHED & TERRACED	DURHAM
	PILGRIMS WAY		
	DURHAM		
	Edge of Town		
	Residential Zone		
	Total No of Dwellings:	57	
	Survey date: FRIDAY	19/10/18	Survey Type: MANUAL
18	DL-03-A-10	SEMI DETACHED & DETACHED	DUBLIN
	R124		
	MALAHIDE		
	SAINT HELENS		
	Edge of Town		
	Residential Zone		
	Total No of Dwellings:	65	
	Survey date: WEDNESDAY	20/06/18	Survey Type: MANUAL
19	DN-03-A-03	DETACHED/SEMI -DETACHED	DONEGAL
	THE GRANGE		
	LETTERKENNY		
	GLENCAR IRISH		
	Edge of Town		
	Residential Zone		
	Total No of Dwellings:	50	
	Survey date: MONDAY	01/09/14	Survey Type: MANUAL
20	DN-03-A-04	SEMI -DETACHED	DONEGAL
	GORTLEE ROAD		
	LETTERKENNY		
	GORTLEE		
	Edge of Town		
	Residential Zone		
	Total No of Dwellings:	83	
	Survey date: FRIDAY	26/09/14	Survey Type: MANUAL
21	DN-03-A-05	DETACHED/SEMI -DETACHED	DONEGAL
	GORTLEE ROAD		
	LETTERKENNY		
	GORTLEE		
	Suburban Area (PPS6 Out of Centre)		
	Residential Zone		
	Total No of Dwellings:	146	
	Survey date: WEDNESDAY	03/09/14	Survey Type: MANUAL
22	DN-03-A-06	DETACHED HOUSING	DONEGAL
	GLENFIN ROAD		
	BALLYBOFEY		
	Edge of Town		
	Residential Zone		
	Total No of Dwellings:	6	
	Survey date: WEDNESDAY	10/10/18	Survey Type: MANUAL
23	DN-03-A-08	SEMI DETACHED & DETACHED	DONEGAL
	CHURCH ROAD		
	CARNDONAGH		
	Suburban Area (PPS6 Out of Centre)		
	Residential Zone		
	Total No of Dwellings:	36	
	Survey date: WEDNESDAY	30/09/20	Survey Type: MANUAL

LIST OF SITES relevant to selection parameters (Cont.)

24	DO-03-A-03 OLD MILL HEIGHTS BELFAST DUNDONALD Edge of Town Residential Zone Total No of Dwellings: <i>Survey date: WEDNESDAY</i>	DETACHED/SEMI DETACHED       79 23/10/13	DOWN	<i>Survey Type: MANUAL</i>
25	DS-03-A-02 RADBOURNE LANE DERBY  Edge of Town Residential Zone Total No of Dwellings: <i>Survey date: TUESDAY</i>	MIXED HOUSES       371 10/07/18	DERBYSHIRE	<i>Survey Type: MANUAL</i>
26	DV-03-A-01 BRONSHILL ROAD TORQUAY  Suburban Area (PPS6 Out of Centre) Residential Zone Total No of Dwellings: <i>Survey date: WEDNESDAY</i>	TERRACED HOUSES       37 30/09/15	DEVON	<i>Survey Type: MANUAL</i>
27	DV-03-A-02 MILLHEAD ROAD HONITON  Suburban Area (PPS6 Out of Centre) Residential Zone Total No of Dwellings: <i>Survey date: FRIDAY</i>	HOUSES & BUNGALOWS       116 25/09/15	DEVON	<i>Survey Type: MANUAL</i>
28	DV-03-A-03 LOWER BRAND LANE HONITON  Suburban Area (PPS6 Out of Centre) Residential Zone Total No of Dwellings: <i>Survey date: MONDAY</i>	TERRACED & SEMI DETACHED       70 28/09/15	DEVON	<i>Survey Type: MANUAL</i>
29	ES-03-A-03 SHEPHAM LANE POLEGATE  Edge of Town Residential Zone Total No of Dwellings: <i>Survey date: MONDAY</i>	MIXED HOUSES & FLATS       212 11/07/16	EAST SUSSEX	<i>Survey Type: MANUAL</i>
30	ES-03-A-04 NEW LYDD ROAD CAMBER  Edge of Town Residential Zone Total No of Dwellings: <i>Survey date: FRIDAY</i>	MIXED HOUSES & FLATS       134 15/07/16	EAST SUSSEX	<i>Survey Type: MANUAL</i>

LIST OF SITES relevant to selection parameters (Cont.)

31	ES-03-A-05 RATTLE ROAD NEAR EASTBOURNE STONE CROSS Edge of Town Residential Zone Total No of Dwellings: 99 <i>Survey date: WEDNESDAY 05/06/19</i>	MIXED HOUSES & FLATS	EAST SUSSEX	<i>Survey Type: MANUAL</i>
32	EX-03-A-02 MANOR ROAD CHIGWELL GRANGE HILL Edge of Town Residential Zone Total No of Dwellings: 97 <i>Survey date: MONDAY 27/11/17</i>	DETACHED & SEMI-DETACHED	ESSEX	<i>Survey Type: MANUAL</i>
33	FA-03-A-01 MANDELA AVENUE FALKIRK  Suburban Area (PPS6 Out of Centre) Residential Zone Total No of Dwellings: 37 <i>Survey date: THURSDAY 30/05/13</i>	SEMI-DETACHED/TERRACED	FALKIRK	<i>Survey Type: MANUAL</i>
34	FA-03-A-02 ROSEBANK AVENUE & SPRINGFIELD DRIVE FALKIRK  Suburban Area (PPS6 Out of Centre) Residential Zone Total No of Dwellings: 161 <i>Survey date: WEDNESDAY 29/05/13</i>	MIXED HOUSES	FALKIRK	<i>Survey Type: MANUAL</i>
35	GM-03-A-11 RUSHFORD STREET MANCHESTER LEVENSHULME Neighbourhood Centre (PPS6 Local Centre) Residential Zone Total No of Dwellings: 37 <i>Survey date: MONDAY 26/09/16</i>	TERRACED & SEMI-DETACHED	GREATER MANCHESTER	<i>Survey Type: MANUAL</i>
36	HC-03-A-21 PRIESTLEY ROAD BASINGSTOKE HOUNDMILLS Edge of Town Residential Zone Total No of Dwellings: 39 <i>Survey date: TUESDAY 13/11/18</i>	TERRACED & SEMI-DETACHED	HAMPSHIRE	<i>Survey Type: MANUAL</i>
37	HC-03-A-22 BOW LAKE GARDENS NEAR EASTLEIGH BISHOPSTOKE Edge of Town Residential Zone Total No of Dwellings: 40 <i>Survey date: WEDNESDAY 31/10/18</i>	MIXED HOUSES	HAMPSHIRE	<i>Survey Type: MANUAL</i>

LIST OF SITES relevant to selection parameters (Cont.)

38	HC-03-A-23 CANADA WAY LIPHOOK	HOUSES & FLATS	HAMPSHIRE
	Suburban Area (PPS6 Out of Centre) Residential Zone Total No of Dwellings: 62 <i>Survey date: TUESDAY 19/11/19</i>		<i>Survey Type: MANUAL</i>
39	HF-03-A-03 HARE STREET ROAD BUNTINGFORD	MIXED HOUSES	HERTFORDSHIRE
	Edge of Town Residential Zone Total No of Dwellings: 160 <i>Survey date: MONDAY 08/07/19</i>		<i>Survey Type: MANUAL</i>
40	HI-03-A-14 KING BRUDE ROAD INVERNESS SCORGUIE	SEMI-DETACHED & TERRACED	HIGHLAND
	Suburban Area (PPS6 Out of Centre) Residential Zone Total No of Dwellings: 40 <i>Survey date: WEDNESDAY 23/03/16</i>		<i>Survey Type: MANUAL</i>
41	KC-03-A-03 HYTHE ROAD ASHFORD WILLESBOROUGH	MIXED HOUSES & FLATS	KENT
	Suburban Area (PPS6 Out of Centre) Residential Zone Total No of Dwellings: 51 <i>Survey date: THURSDAY 14/07/16</i>		<i>Survey Type: MANUAL</i>
42	KC-03-A-04 KILN BARN ROAD AYLESFORD DITTON	SEMI-DETACHED & TERRACED	KENT
	Edge of Town Residential Zone Total No of Dwellings: 110 <i>Survey date: FRIDAY 22/09/17</i>		<i>Survey Type: MANUAL</i>
43	KC-03-A-05 ROCHESTER ROAD NEAR CHATHAM BURHAM	DETACHED & SEMI-DETACHED	KENT
	Neighbourhood Centre (PPS6 Local Centre) Village Total No of Dwellings: 8 <i>Survey date: FRIDAY 22/09/17</i>		<i>Survey Type: MANUAL</i>
44	KC-03-A-06 MARGATE ROAD HERNE BAY	MIXED HOUSES & FLATS	KENT
	Suburban Area (PPS6 Out of Centre) Residential Zone Total No of Dwellings: 363 <i>Survey date: WEDNESDAY 27/09/17</i>		<i>Survey Type: MANUAL</i>

LIST OF SITES relevant to selection parameters (Cont.)

45	KC-03-A-07 RECULVER ROAD HERNE BAY	MIXED HOUSES		KENT
	Edge of Town Residential Zone Total No of Dwellings:		288	
	<i>Survey date: WEDNESDAY</i>		<i>27/09/17</i>	<i>Survey Type: MANUAL</i>
46	KC-03-A-08 MAIDSTONE ROAD CHARING	MIXED HOUSES		KENT
	Neighbourhood Centre (PPS6 Local Centre) Village Total No of Dwellings:		159	
	<i>Survey date: TUESDAY</i>		<i>22/05/18</i>	<i>Survey Type: MANUAL</i>
47	LC-03-A-31 GREENSIDE PRESTON COTTAM	DETACHED HOUSES		LANCASHIRE
	Edge of Town Residential Zone Total No of Dwellings:		32	
	<i>Survey date: FRIDAY</i>		<i>17/11/17</i>	<i>Survey Type: MANUAL</i>
48	LE-03-A-02 MELBOURNE ROAD IBSTOCK	DETACHED & OTHERS		LEICESTERSHIRE
	Neighbourhood Centre (PPS6 Local Centre) Village Total No of Dwellings:		85	
	<i>Survey date: THURSDAY</i>		<i>28/06/18</i>	<i>Survey Type: MANUAL</i>
49	LT-03-A-01 ARD NA SI CARRICK-ON-SHANNON ATTIRORY	SEMI-DETACHED & DETACHED		LEITRIM
	Suburban Area (PPS6 Out of Centre) Residential Zone Total No of Dwellings:		90	
	<i>Survey date: FRIDAY</i>		<i>24/04/15</i>	<i>Survey Type: MANUAL</i>
50	MS-03-A-03 BEMPTON ROAD LIVERPOOL OTTERSPOOL	DETACHED		MERSEYSIDE
	Suburban Area (PPS6 Out of Centre) Residential Zone Total No of Dwellings:		15	
	<i>Survey date: FRIDAY</i>		<i>21/06/13</i>	<i>Survey Type: MANUAL</i>
51	NE-03-A-02 HANOVER WALK SCUNTHORPE	SEMI DETACHED & DETACHED		NORTH EAST LINCOLNSHIRE
	Edge of Town No Sub Category Total No of Dwellings:		432	
	<i>Survey date: MONDAY</i>		<i>12/05/14</i>	<i>Survey Type: MANUAL</i>
52	NF-03-A-03 HALING WAY THETFORD	DETACHED HOUSES		NORFOLK
	Edge of Town Residential Zone Total No of Dwellings:		10	
	<i>Survey date: WEDNESDAY</i>		<i>16/09/15</i>	<i>Survey Type: MANUAL</i>



LIST OF SITES relevant to selection parameters (Cont.)

53	NF-03-A-04	MIXED HOUSES		NORFOLK
	NORTH WALSHAM ROAD NORTH WALSHAM			
	Edge of Town Residential Zone			
	Total No of Dwellings:	40		
	Survey date:	WEDNESDAY	18/09/19	Survey Type: MANUAL
54	NF-03-A-05	MIXED HOUSES		NORFOLK
	HEATH DRIVE HOLT			
	Edge of Town Residential Zone			
	Total No of Dwellings:	40		
	Survey date:	THURSDAY	19/09/19	Survey Type: MANUAL
55	NF-03-A-06	MIXED HOUSES		NORFOLK
	BEAUFORT WAY GREAT YARMOUTH BRADWELL			
	Edge of Town Residential Zone			
	Total No of Dwellings:	275		
	Survey date:	MONDAY	23/09/19	Survey Type: MANUAL
56	NF-03-A-10	MIXED HOUSES & FLATS		NORFOLK
	HUNSTANTON ROAD HUNSTANTON			
	Edge of Town Residential Zone			
	Total No of Dwellings:	17		
	Survey date:	WEDNESDAY	12/09/18	Survey Type: DIRECTIONAL ATC COUNT
57	NF-03-A-16	MIXED HOUSES & FLATS		NORFOLK
	NORWICH COMMON WYMONDHAM			
	Edge of Town Residential Zone			
	Total No of Dwellings:	138		
	Survey date:	TUESDAY	20/10/15	Survey Type: DIRECTIONAL ATC COUNT
58	NF-03-A-21	MIXED HOUSES & FLATS		NORFOLK
	SIR ALFRED MUNNINGS RD NEAR NORWICH COSTESSEY			
	Neighbourhood Centre (PPS6 Local Centre) Village			
	Total No of Dwellings:	1882		
	Survey date:	TUESDAY	13/10/20	Survey Type: MANUAL
59	NF-03-A-22	MIXED HOUSES & FLATS		NORFOLK
	ROUND HOUSE WAY NORWICH CRINGLEFORD			
	Edge of Town Residential Zone			
	Total No of Dwellings:	984		
	Survey date:	TUESDAY	13/10/20	Survey Type: MANUAL
60	NR-03-A-02	DETACHED & SEMI-DETACHED		NORTHAMPTONSHIRE
	HARLESTONE ROAD NEAR NORTHAMPTON CHAPEL BRAMPTON			
	Neighbourhood Centre (PPS6 Local Centre) Village			
	Total No of Dwellings:	47		
	Survey date:	TUESDAY	20/10/20	Survey Type: MANUAL

LIST OF SITES relevant to selection parameters (Cont.)

61	NR-03-A-03 MAIN STREET NEAR WELLINGBOROUGH LITTLE HARROWDEN Neighbourhood Centre (PPS6 Local Centre) Village	MIXED HOUSES & FLATS		NORTHAMPTONSHIRE
	Total No of Dwellings:		44	
	Survey date: <i>TUESDAY</i>		<i>20/10/20</i>	<i>Survey Type: MANUAL</i>
62	NY-03-A-08 NICHOLAS STREET YORK	TERRACED HOUSES		NORTH YORKSHIRE
	Suburban Area (PPS6 Out of Centre) Residential Zone			
	Total No of Dwellings:		21	
	Survey date: <i>MONDAY</i>		<i>16/09/13</i>	<i>Survey Type: MANUAL</i>
63	NY-03-A-09 GRAMMAR SCHOOL LANE NORTHALLERTON	MIXED HOUSING		NORTH YORKSHIRE
	Suburban Area (PPS6 Out of Centre) Residential Zone			
	Total No of Dwellings:		52	
	Survey date: <i>MONDAY</i>		<i>16/09/13</i>	<i>Survey Type: MANUAL</i>
64	NY-03-A-10 BOROUGHBRIDGE ROAD RIPON	HOUSES AND FLATS		NORTH YORKSHIRE
	Edge of Town No Sub Category			
	Total No of Dwellings:		71	
	Survey date: <i>TUESDAY</i>		<i>17/09/13</i>	<i>Survey Type: MANUAL</i>
65	NY-03-A-11 HORSEFAIR BOROUGHBRIDGE	PRIVATE HOUSING		NORTH YORKSHIRE
	Edge of Town Residential Zone			
	Total No of Dwellings:		23	
	Survey date: <i>WEDNESDAY</i>		<i>18/09/13</i>	<i>Survey Type: MANUAL</i>
66	NY-03-A-13 CATTERICK ROAD CATTERICK GARRISON OLD HOSPITAL COMPOUND	TERRACED HOUSES		NORTH YORKSHIRE
	Suburban Area (PPS6 Out of Centre) Residential Zone			
	Total No of Dwellings:		10	
	Survey date: <i>WEDNESDAY</i>		<i>10/05/17</i>	<i>Survey Type: MANUAL</i>
67	PS-03-A-02 GUNROG ROAD WELSHPOOL	DETACHED/SEMI-DETACHED		POWYS
	Suburban Area (PPS6 Out of Centre) Residential Zone			
	Total No of Dwellings:		28	
	Survey date: <i>MONDAY</i>		<i>11/05/15</i>	<i>Survey Type: MANUAL</i>
68	RO-03-A-03 N61 BOYLE GREATMEADOW	DETACHED HOUSES		ROSCOMMON
	Edge of Town No Sub Category			
	Total No of Dwellings:		23	
	Survey date: <i>THURSDAY</i>		<i>25/09/14</i>	<i>Survey Type: MANUAL</i>

LIST OF SITES relevant to selection parameters (Cont.)

69	RO-03-A-04 EAGLE COURT ROSCOMMON ARDNANAGH Suburban Area (PPS6 Out of Centre) Residential Zone Total No of Dwellings: 39 <i>Survey date: FRIDAY 26/09/14</i>	SEMI DET. & BUNGALOWS	ROSCOMMON	<i>Survey Type: MANUAL SURREY</i>
70	SC-03-A-04 HIGH ROAD BYFLEET  Edge of Town Residential Zone Total No of Dwellings: 71 <i>Survey date: THURSDAY 23/01/14</i>	DETACHED & TERRACED		<i>Survey Type: MANUAL SURREY</i>
71	SC-03-A-05 REIGATE ROAD HORLEY  Edge of Town Residential Zone Total No of Dwellings: 207 <i>Survey date: MONDAY 01/04/19</i>	MIXED HOUSES		<i>Survey Type: MANUAL SURREY</i>
72	SC-03-A-06 AMLETS LANE CRANLEIGH  Neighbourhood Centre (PPS6 Local Centre) Village Total No of Dwellings: 116 <i>Survey date: THURSDAY 08/10/20</i>	MIXED HOUSES & FLATS		<i>Survey Type: MANUAL SURREY</i>
73	SF-03-A-05 VALE LANE BURY ST EDMUNDS  Edge of Town Residential Zone Total No of Dwellings: 18 <i>Survey date: WEDNESDAY 09/09/15</i>	DETACHED HOUSES		<i>Survey Type: MANUAL SUFFOLK</i>
74	SF-03-A-06 BURY ROAD KENTFORD  Neighbourhood Centre (PPS6 Local Centre) Village Total No of Dwellings: 38 <i>Survey date: FRIDAY 22/09/17</i>	DETACHED & SEMI-DETACHED		<i>Survey Type: MANUAL SUFFOLK</i>
75	SF-03-A-07 FOXHALL ROAD IPSWICH  Suburban Area (PPS6 Out of Centre) Residential Zone Total No of Dwellings: 73 <i>Survey date: THURSDAY 09/05/19</i>	MIXED HOUSES		<i>Survey Type: MANUAL SUFFOLK</i>
76	SF-03-A-08 STANNINGFIELD ROAD NEAR BURY ST EDMUNDS GREAT WHELNETHAM Neighbourhood Centre (PPS6 Local Centre) Village Total No of Dwellings: 34 <i>Survey date: WEDNESDAY 16/09/20</i>	MIXED HOUSES		<i>Survey Type: MANUAL SUFFOLK</i>

LIST OF SITES relevant to selection parameters (Cont.)

77	SH-03-A-05 SANDCROFT TELFORD SUTTON HILL Edge of Town Residential Zone Total No of Dwellings: <i>Survey date: THURSDAY</i>	SEMI -DETACHED/TERRACED      54 24/10/13	SHROPSHIRE        <i>Survey Type: MANUAL</i>
78	SH-03-A-06 ELLESMERE ROAD SHREWSBURY  Edge of Town Residential Zone Total No of Dwellings: <i>Survey date: THURSDAY</i>	BUNGALOWS      16 22/05/14	SHROPSHIRE        <i>Survey Type: MANUAL</i>
79	SM-03-A-01 WEMBDON ROAD BRIDGWATER NORTHFIELD Edge of Town Residential Zone Total No of Dwellings: <i>Survey date: THURSDAY</i>	DETACHED & SEMI      33 24/09/15	SOMERSET        <i>Survey Type: MANUAL</i>
80	SM-03-A-02 HYDE LANE NEAR TAUNTON CREECH SAINT MICHAEL Neighbourhood Centre (PPS6 Local Centre) Village Total No of Dwellings: <i>Survey date: TUESDAY</i>	MIXED HOUSES      42 25/09/18	SOMERSET        <i>Survey Type: MANUAL</i>
81	SM-03-A-03 HYDE LANE NEAR TAUNTON CREECH ST MICHAEL Neighbourhood Centre (PPS6 Local Centre) Village Total No of Dwellings: <i>Survey date: TUESDAY</i>	MIXED HOUSES      41 25/09/18	SOMERSET        <i>Survey Type: MANUAL</i>
82	ST-03-A-07 BEACONSIDE STAFFORD MARSTON GATE Edge of Town Residential Zone Total No of Dwellings: <i>Survey date: WEDNESDAY</i>	DETACHED & SEMI -DETACHED      248 22/11/17	STAFFORDSHIRE        <i>Survey Type: MANUAL</i>
83	ST-03-A-08 SILKMORE CRESCENT STAFFORD MEADOWCROFT PARK Edge of Town Residential Zone Total No of Dwellings: <i>Survey date: WEDNESDAY</i>	DETACHED HOUSES      26 22/11/17	STAFFORDSHIRE        <i>Survey Type: MANUAL</i>
84	SY-03-A-01 A19 BENTLEY ROAD DONCASTER BENTLEY RISE Suburban Area (PPS6 Out of Centre) Residential Zone Total No of Dwellings: <i>Survey date: WEDNESDAY</i>	SEMI DETACHED HOUSES      54 18/09/13	SOUTH YORKSHIRE        <i>Survey Type: MANUAL</i>

LIST OF SITES relevant to selection parameters (Cont.)

85	SY-03-A-02 MANOR ROAD NEAR SHEFFIELD WALES Neighbourhood Centre (PPS6 Local Centre) Village Total No of Dwellings: 25 <i>Survey date: THURSDAY 10/09/20</i>	DETACHED & BUNGALOWS	SOUTH YORKSHIRE	<i>Survey Type: MANUAL</i>
86	SY-03-A-03 CHURCH LANE NEAR BARNSELY WORSBROUGH Neighbourhood Centre (PPS6 Local Centre) Village Total No of Dwellings: 19 <i>Survey date: WEDNESDAY 09/09/20</i>	BUNGALOWS & DETACHED	SOUTH YORKSHIRE	<i>Survey Type: MANUAL</i>
87	TW-03-A-02 WEST PARK ROAD GATESHEAD  Suburban Area (PPS6 Out of Centre) Residential Zone Total No of Dwellings: 16 <i>Survey date: MONDAY 07/10/13</i>	SEMI -DETACHED	TYNE & WEAR	<i>Survey Type: MANUAL</i>
88	TW-03-A-03 STATION ROAD NEAR NEWCASTLE BACKWORTH Neighbourhood Centre (PPS6 Local Centre) Village Total No of Dwellings: 33 <i>Survey date: FRIDAY 13/11/15</i>	MIXED HOUSES	TYNE & WEAR	<i>Survey Type: MANUAL</i>
89	VG-03-A-01 ARTHUR STREET BARRY  Edge of Town Residential Zone Total No of Dwellings: 12 <i>Survey date: MONDAY 08/05/17</i>	SEMI -DETACHED & TERRACED	VALE OF GLAMORGAN	<i>Survey Type: MANUAL</i>
90	WA-03-A-04 MAYPARK LANE WATERFORD  Edge of Town Residential Zone Total No of Dwellings: 280 <i>Survey date: TUESDAY 24/06/14</i>	DETACHED	WATERFORD	<i>Survey Type: MANUAL</i>
91	WC-03-A-01 STATION ROAD WICKLOW CORPORATION MURRAGH Edge of Town No Sub Category Total No of Dwellings: 50 <i>Survey date: MONDAY 28/05/18</i>	DETACHED HOUSES	WICKLOW	<i>Survey Type: MANUAL</i>
92	WK-03-A-02 NARBERTH WAY COVENTRY POTTERS GREEN Edge of Town Residential Zone Total No of Dwellings: 17 <i>Survey date: THURSDAY 17/10/13</i>	BUNGALOWS	WARWICKSHIRE	<i>Survey Type: MANUAL</i>

LIST OF SITES relevant to selection parameters (Cont.)

93	WK-03-A-03 BRESE AVENUE WARWICK GUYS CLIFFE Suburban Area (PPS6 Out of Centre) Residential Zone Total No of Dwellings: Survey date: WEDNESDAY	DETACHED HOUSES      23 25/09/19	WARWICKSHIRE	Survey Type: MANUAL
94	WK-03-A-04 DALEHOUSE LANE KENILWORTH  Edge of Town Residential Zone Total No of Dwellings: Survey date: FRIDAY	DETACHED HOUSES      49 27/09/19	WARWICKSHIRE	Survey Type: MANUAL
95	WL-03-A-02 HEADLANDS GROVE SWINDON  Suburban Area (PPS6 Out of Centre) Residential Zone Total No of Dwellings: Survey date: THURSDAY	SEMI DETACHED      27 22/09/16	WILTSHIRE	Survey Type: MANUAL
96	WM-03-A-04 OSBORNE ROAD COVENTRY EARLSDON Neighbourhood Centre (PPS6 Local Centre) Residential Zone Total No of Dwellings: Survey date: MONDAY	TERRACED HOUSES      39 21/11/16	WEST MIDLANDS	Survey Type: MANUAL
97	WO-03-A-07 RYE GRASS LANE REDDITCH  Edge of Town Residential Zone Total No of Dwellings: Survey date: THURSDAY	MIXED HOUSES & FLATS      47 01/10/20	WORCESTERSHIRE	Survey Type: MANUAL
98	WS-03-A-04 HILLS FARM LANE HORSHAM BROADBRIDGE HEATH Edge of Town Residential Zone Total No of Dwellings: Survey date: THURSDAY	MIXED HOUSES      151 11/12/14	WEST SUSSEX	Survey Type: MANUAL
99	WS-03-A-07 EMMS LANE NEAR HORSHAM BROOKS GREEN Neighbourhood Centre (PPS6 Local Centre) Village Total No of Dwellings: Survey date: THURSDAY	BUNGALOWS      57 19/10/17	WEST SUSSEX	Survey Type: MANUAL

LIST OF SITES relevant to selection parameters (Cont.)

100	WS-03-A-08	MIXED HOUSES	WEST SUSSEX
	ROUNDSTONE LANE ANGMERING		
	Edge of Town Residential Zone		
	Total No of Dwellings:	180	
	Survey date: THURSDAY	19/04/18	Survey Type: MANUAL
101	WS-03-A-09	MIXED HOUSES & FLATS	WEST SUSSEX
	LITTLEHAMPTON ROAD WORTHING WEST DURRINGTON		
	Edge of Town Residential Zone		
	Total No of Dwellings:	197	
	Survey date: THURSDAY	05/07/18	Survey Type: MANUAL
102	WS-03-A-10	MIXED HOUSES	WEST SUSSEX
	TODDINGTON LANE LITTLEHAMPTON WICK		
	Edge of Town Residential Zone		
	Total No of Dwellings:	79	
	Survey date: WEDNESDAY	07/11/18	Survey Type: MANUAL
103	WS-03-A-11	MIXED HOUSES	WEST SUSSEX
	ELLIS ROAD WEST HORSHAM S BROADBRIDGE HEATH		
	Edge of Town Residential Zone		
	Total No of Dwellings:	918	
	Survey date: TUESDAY	02/04/19	Survey Type: MANUAL
104	WX-03-A-01	SEMI-DETACHED	WEXFORD
	CLONARD ROAD WEXFORD		
	Suburban Area (PPS6 Out of Centre) No Sub Category		
	Total No of Dwellings:	34	
	Survey date: THURSDAY	25/09/14	Survey Type: MANUAL
105	WY-03-A-01	MIXED HOUSING	WEST YORKSHIRE
	SPRING VALLEY CRESCENT LEEDS BRAMLEY		
	Neighbourhood Centre (PPS6 Local Centre) Residential Zone		
	Total No of Dwellings:	46	
	Survey date: WEDNESDAY	21/09/16	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.*

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

TOTAL 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	105	116	0.068	105	116	0.273	105	116	0.341
08:00 - 09:00	105	116	0.138	105	116	0.366	105	116	0.504
09:00 - 10:00	105	116	0.143	105	116	0.177	105	116	0.320
10:00 - 11:00	105	116	0.121	105	116	0.145	105	116	0.266
11:00 - 12:00	105	116	0.129	105	116	0.145	105	116	0.274
12:00 - 13:00	105	116	0.156	105	116	0.150	105	116	0.306
13:00 - 14:00	105	116	0.158	105	116	0.155	105	116	0.313
14:00 - 15:00	105	116	0.177	105	116	0.187	105	116	0.364
15:00 - 16:00	105	116	0.246	105	116	0.175	105	116	0.421
16:00 - 17:00	105	116	0.273	105	116	0.162	105	116	0.435
17:00 - 18:00	105	116	0.340	105	116	0.166	105	116	0.506
18:00 - 19:00	105	116	0.276	105	116	0.169	105	116	0.445
19:00 - 20:00	1	97	0.062	1	97	0.052	1	97	0.114
20:00 - 21:00	1	97	0.031	1	97	0.021	1	97	0.052
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			2.318			2.343			4.661

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

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

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#### Parameter summary

Trip rate parameter range selected:	6 - 1882 (units: )
Survey date range:	01/01/13 - 20/10/20
Number of weekdays (Monday-Friday):	105
Number of Saturdays:	0
Number of Sundays:	0
Surveys automatically removed from selection:	16
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.



Calculation Reference: AUDIT-204602-210915-0939

## TRIP RATE CALCULATION SELECTION PARAMETERS:

Land Use : 01 - RETAIL  
 Category : M - MIXED SHOPPING MALLS  
 TOTAL VEHICLES

Selected regions and areas:

04 EAST ANGLIA  
 CA CAMBRIDGESHIRE 1 days

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

## Primary Filtering selection:

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

Parameter: Gross floor area  
 Actual Range: 19750 to 19750 (units: sqm)  
 Range Selected by User: 482 to 37000 (units: sqm)

Parking Spaces Range: All Surveys Included

Public Transport Provision:

Selection by: Include all surveys

Date Range: 01/01/13 to 16/10/16

*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:

Sunday 1 days

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

Selected survey types:

Manual count 1 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

*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:

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:

n/a 1 days

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

Population within 500m Range:

All Surveys Included

## Secondary Filtering selection (Cont.):

Population within 1 mile:

20,001 to 25,000 1 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

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

1.1 to 1.5 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.*Petrol filling station:

Included in the survey count 0 days

Excluded from count or no filling station 1 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 1 days

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

No PTAL Present 1 days

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

LIST OF SITES relevant to selection parameters

1	CA-01-M-01	SHOPPING CENTRE	CAMBRI DGESHI RE
	VIERSEN PLATZ		
	PETERBOROUGH		
	Edge of Town Centre		
	Built-Up Zone		
	Total Gross floor area:	19750 sqm	
	Survey date: SUNDAY	16/10/16	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.*

TRIP RATE for Land Use 01 - RETAIL/M - MIXED SHOPPING MALLS

TOTAL 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									
07:00 - 08:00									
08:00 - 09:00									
09:00 - 10:00	1	19750	0.476	1	19750	0.157	1	19750	0.633
10:00 - 11:00	1	19750	1.210	1	19750	0.618	1	19750	1.828
11:00 - 12:00	1	19750	1.478	1	19750	1.124	1	19750	2.602
12:00 - 13:00	1	19750	1.549	1	19750	1.544	1	19750	3.093
13:00 - 14:00	1	19750	1.484	1	19750	1.327	1	19750	2.811
14:00 - 15:00	1	19750	1.514	1	19750	1.691	1	19750	3.205
15:00 - 16:00	1	19750	1.144	1	19750	1.691	1	19750	2.835
16:00 - 17:00	1	19750	0.309	1	19750	1.109	1	19750	1.418
17:00 - 18:00									
18:00 - 19:00									
19:00 - 20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
<b>Total Rates:</b>			<b>9.164</b>			<b>9.261</b>			<b>18.425</b>

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

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

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#### Parameter summary

Trip rate parameter range selected:	19750 - 19750 (units: sqm)
Survey date range:	01/01/13 - 16/10/16
Number of weekdays (Monday-Friday):	0
Number of Saturdays:	0
Number of Sundays:	1
Surveys automatically removed from selection:	0
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.

Calculation Reference: AUDIT-204602-210915-0915

## TRIP RATE CALCULATION SELECTION PARAMETERS:

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

Selected regions and areas:

02	SOUTH EAST	
	ES EAST SUSSEX	1 days
03	SOUTH WEST	
	DC DORSET	1 days
04	EAST ANGLIA	
	CA CAMBRIDGESHIRE	1 days
	NF NORFOLK	1 days
	SF SUFFOLK	2 days
05	EAST MIDLANDS	
	DS DERBYSHIRE	1 days
	LE LEICESTERSHIRE	1 days
	NT NOTTINGHAMSHIRE	2 days
07	YORKSHIRE & NORTH LINCOLNSHIRE	
	RI EAST RIDING OF YORKSHIRE	1 days
08	NORTH WEST	
	MS MERSEYSIDE	2 days
09	NORTH	
	CB CUMBRIA	2 days
11	SCOTLAND	
	EB CITY OF EDINBURGH	1 days
	SR STIRLING	1 days
12	CONNAUGHT	
	GA GALWAY	1 days
13	MUNSTER	
	WA WATERFORD	1 days
15	GREATER DUBLIN	
	DL DUBLIN	6 days
17	ULSTER (NORTHERN IRELAND)	
	AN ANTRIM	1 days

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

## Primary Filtering selection:

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

Parameter: No of Dwellings  
 Actual Range: 9 to 332 (units: )  
 Range Selected by User: 6 to 372 (units: )

Parking Spaces Range: All Surveys Included

Parking Spaces per Dwelling Range: All Surveys Included

Bedrooms per Dwelling Range: All Surveys Included

Percentage of dwellings privately owned: All Surveys Included

Public Transport Provision:

Selection by: Include all surveys

Date Range: 01/01/13 to 23/10/20

*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	3 days
Tuesday	12 days
Wednesday	6 days
Thursday	1 days
Friday	4 days

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

Selected survey types:

Manual count	26 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)	20
Edge of Town	4
Neighbourhood Centre (PPS6 Local Centre)	2

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

Selected Location Sub Categories:

Development Zone	2
Residential Zone	19
No Sub Category	5

*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 26 days

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

Population within 500m Range:

All Surveys Included

## Secondary Filtering selection (Cont.):

Population within 1 mile:

1,001 to 5,000	3 days
5,001 to 10,000	1 days
10,001 to 15,000	4 days
15,001 to 20,000	1 days
20,001 to 25,000	7 days
25,001 to 50,000	9 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:

5,001 to 25,000	1 days
25,001 to 50,000	1 days
50,001 to 75,000	6 days
125,001 to 250,000	4 days
250,001 to 500,000	7 days
500,001 or More	7 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	1 days
0.6 to 1.0	11 days
1.1 to 1.5	14 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	26 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	26 days
-----------------	---------

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

Covid-19 Restrictions	Yes	At least one survey within the selected data set was undertaken at a time of Covid-19 restrictions
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LIST OF SITES relevant to selection parameters (Cont.)

9	DL-03-C-15	BLOCKS OF FLATS	DUBLIN
	MONKSTOWN ROAD DUBLIN MONKSTOWN Suburban Area (PPS6 Out of Centre) Residential Zone Total No of Dwellings: 20 <i>Survey date: WEDNESDAY 01/10/14</i>		
	<i>Survey Type: MANUAL</i>		
10	DL-03-C-16	BLOCKS OF FLATS	DUBLIN
	BOTANIC AVENUE DUBLIN DRUMCONDRA Suburban Area (PPS6 Out of Centre) Residential Zone Total No of Dwellings: 31 <i>Survey date: TUESDAY 22/11/16</i>		
	<i>Survey Type: MANUAL</i>		
11	DL-03-C-17	BLOCKS OF FLATS	DUBLIN
	FINGLAS ROAD DUBLIN FINGLAS Suburban Area (PPS6 Out of Centre) Residential Zone Total No of Dwellings: 332 <i>Survey date: FRIDAY 23/10/20</i>		
	<i>Survey Type: MANUAL</i>		
12	DS-03-C-03	BLOCKS OF FLATS	DERBYSHIRE
	CAESAR STREET DERBY  Suburban Area (PPS6 Out of Centre) Residential Zone Total No of Dwellings: 30 <i>Survey date: WEDNESDAY 25/09/19</i>		
	<i>Survey Type: MANUAL</i>		
13	EB-03-C-01	BLOCKS OF FLATS	CITY OF EDINBURGH
	MYRESIDE ROAD EDINBURGH CRAIGLOCKHART Suburban Area (PPS6 Out of Centre) Residential Zone Total No of Dwellings: 32 <i>Survey date: TUESDAY 26/05/15</i>		
	<i>Survey Type: MANUAL</i>		
14	ES-03-C-01	BLOCK OF FLATS	EAST SUSSEX
	OLD SHOREHAM RD BRIGHTON HOVE Suburban Area (PPS6 Out of Centre) Residential Zone Total No of Dwellings: 71 <i>Survey date: TUESDAY 26/09/17</i>		
	<i>Survey Type: MANUAL</i>		
15	GA-03-C-01	FLATS	GALWAY
	BALLYLOUGHANE ROAD GALWAY  Suburban Area (PPS6 Out of Centre) No Sub Category Total No of Dwellings: 34 <i>Survey date: THURSDAY 31/10/13</i>		
	<i>Survey Type: MANUAL</i>		
16	LE-03-C-01	BLOCK OF FLATS	LEICESTERSHIRE
	NEW STREET LEICESTER OADBY Neighbourhood Centre (PPS6 Local Centre) Residential Zone Total No of Dwellings: 19 <i>Survey date: FRIDAY 16/10/20</i>		
	<i>Survey Type: MANUAL</i>		

LIST OF SITES relevant to selection parameters (Cont.)

17	MS-03-C-02	BLOCKS OF FLATS	MERSEYSIDE
	SOUTH FERRY QUAY		
	LIVERPOOL		
	BRUNSWICK DOCK		
	Suburban Area (PPS6 Out of Centre)		
	Development Zone		
	Total No of Dwellings:	184	
	Survey date: <i>TUESDAY</i>	<i>13/11/18</i>	<i>Survey Type: MANUAL</i>
18	MS-03-C-03	BLOCK OF FLATS	MERSEYSIDE
	MARINERS WHARF		
	LIVERPOOL		
	QUEENS DOCK		
	Suburban Area (PPS6 Out of Centre)		
	Development Zone		
	Total No of Dwellings:	9	
	Survey date: <i>TUESDAY</i>	<i>13/11/18</i>	<i>Survey Type: MANUAL</i>
19	NF-03-C-02	MIXED FLATS & HOUSES	NORFOLK
	HALL ROAD		
	NORWICH		
	LAKENHAM		
	Suburban Area (PPS6 Out of Centre)		
	Residential Zone		
	Total No of Dwellings:	82	
	Survey date: <i>MONDAY</i>	<i>18/11/19</i>	<i>Survey Type: MANUAL</i>
20	NT-03-C-01	HOUSES (SPLIT INTO FLATS)	NOTTINGHAMSHIRE
	LAWRENCE WAY		
	NOTTINGHAM		
	Suburban Area (PPS6 Out of Centre)		
	No Sub Category		
	Total No of Dwellings:	56	
	Survey date: <i>TUESDAY</i>	<i>08/11/16</i>	<i>Survey Type: MANUAL</i>
21	NT-03-C-02	HOUSES (SPLIT INTO FLATS)	NOTTINGHAMSHIRE
	CASTLE MARINA ROAD		
	NOTTINGHAM		
	Suburban Area (PPS6 Out of Centre)		
	No Sub Category		
	Total No of Dwellings:	135	
	Survey date: <i>WEDNESDAY</i>	<i>09/11/16</i>	<i>Survey Type: MANUAL</i>
22	RI-03-C-01	FLATS	EAST RIDING OF YORKSHIRE
	465 PRIORY ROAD		
	HULL		
	Edge of Town		
	Residential Zone		
	Total No of Dwellings:	20	
	Survey date: <i>TUESDAY</i>	<i>13/05/14</i>	<i>Survey Type: MANUAL</i>
23	SF-03-C-03	BLOCKS OF FLATS	SUFFOLK
	TOLLGATE LANE		
	BURY ST EDMUNDS		
	Suburban Area (PPS6 Out of Centre)		
	Residential Zone		
	Total No of Dwellings:	30	
	Survey date: <i>WEDNESDAY</i>	<i>03/12/14</i>	<i>Survey Type: MANUAL</i>
24	SF-03-C-04	BLOCKS OF FLATS	SUFFOLK
	SAINT MARY'S ROAD		
	IPSWICH		
	Suburban Area (PPS6 Out of Centre)		
	Residential Zone		
	Total No of Dwellings:	56	
	Survey date: <i>WEDNESDAY</i>	<i>16/09/20</i>	<i>Survey Type: MANUAL</i>

LIST OF SITES relevant to selection parameters (Cont.)

25	SR-03-C-03	BLOCK OF FLATS & TERRACED	STIRLING
	KERSEBONNY ROAD		
	STIRLING		
	CAMBUSBARRON		
	Edge of Town		
	Residential Zone		
	Total No of Dwellings:	82	
	Survey date: TUESDAY	01/09/20	Survey Type: MANUAL
26	WA-03-C-01	BLOCKS OF FLATS	WATERFORD
	UPPER YELLOW ROAD		
	WATERFORD		
	Suburban Area (PPS6 Out of Centre)		
	Residential Zone		
	Total No of Dwellings:	51	
	Survey date: TUESDAY	12/05/15	Survey Type: MANUAL

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

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

TOTAL 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	26	67	0.040	26	67	0.152	26	67	0.192
08:00 - 09:00	26	67	0.063	26	67	0.221	26	67	0.284
09:00 - 10:00	26	67	0.080	26	67	0.097	26	67	0.177
10:00 - 11:00	26	67	0.056	26	67	0.076	26	67	0.132
11:00 - 12:00	26	67	0.061	26	67	0.076	26	67	0.137
12:00 - 13:00	26	67	0.079	26	67	0.086	26	67	0.165
13:00 - 14:00	26	67	0.081	26	67	0.091	26	67	0.172
14:00 - 15:00	26	67	0.100	26	67	0.087	26	67	0.187
15:00 - 16:00	26	67	0.113	26	67	0.073	26	67	0.186
16:00 - 17:00	26	67	0.127	26	67	0.077	26	67	0.204
17:00 - 18:00	26	67	0.181	26	67	0.085	26	67	0.266
18:00 - 19:00	26	67	0.152	26	67	0.100	26	67	0.252
19:00 - 20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			1.133			1.221			2.354

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

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

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#### Parameter summary

Trip rate parameter range selected:	9 - 332 (units: )
Survey date range:	01/01/13 - 23/10/20
Number of weekdays (Monday-Friday):	26
Number of Saturdays:	0
Number of Sundays:	0
Surveys automatically removed from selection:	0
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.

Calculation Reference: AUDIT-204602-210915-0912

## TRIP RATE CALCULATION SELECTION PARAMETERS:

Land Use : 04 - EDUCATION  
 Category : D - NURSERY  
 TOTAL VEHICLES

Selected regions and areas:

02	SOUTH EAST	
	ES EAST SUSSEX	1 days
03	SOUTH WEST	
	WL WILTSHIRE	1 days
04	EAST ANGLIA	
	CA CAMBRIDGESHIRE	1 days
05	EAST MIDLANDS	
	DS DERBYSHIRE	1 days
	LE LEICESTERSHIRE	1 days
	LN LINCOLNSHIRE	1 days
06	WEST MIDLANDS	
	WK WARWICKSHIRE	1 days
09	NORTH	
	TV TEES VALLEY	1 days
	TW TYNE & WEAR	1 days
11	SCOTLAND	
	DU DUNDEE CITY	1 days
	SR STIRLING	1 days
12	CONNAUGHT	
	RO ROSCOMMON	1 days

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

## Primary Filtering selection:

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

Parameter: Gross floor area  
 Actual Range: 150 to 725 (units: sqm)  
 Range Selected by User: 120 to 2350 (units: sqm)

Parking Spaces Range: All Surveys Included

Public Transport Provision:

Selection by: Include all surveys

Date Range: 01/01/13 to 27/09/19

*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	3 days
Thursday	3 days
Friday	4 days

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

Selected survey types:

Manual count	12 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)	5
Edge of Town	6
Neighbourhood Centre (PPS6 Local 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:

*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:

E(f) 12 days

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

Population within 500m Range:

All Surveys Included

Population within 1 mile:

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

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

0.5 or Less	1 days
0.6 to 1.0	3 days
1.1 to 1.5	7 days
2.1 to 2.5	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:

No 12 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 12 days

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

LIST OF SITES relevant to selection parameters

1	CA-04-D-02 EASTFIELD ROAD PETERBOROUGH	NURSERY		CAMBRI DGESHI RE
	Suburban Area (PPS6 Out of Centre) Residential Zone Total Gross floor area: 400 sqm <i>Survey date: TUESDAY 18/10/16</i>			<i>Survey Type: MANUAL</i>
2	DS-04-D-02 MAXWELL AVENUE DERBY DARLEY ABBEY	NURSERY		DERBYSHIRE
	Edge of Town Residential Zone Total Gross floor area: 415 sqm <i>Survey date: THURSDAY 12/07/18</i>			<i>Survey Type: MANUAL</i>
3	DU-04-D-01 LONGTOWN TERRACE DUNDEE	NURSERY		DUNDEE CITY
	Suburban Area (PPS6 Out of Centre) Residential Zone Total Gross floor area: 325 sqm <i>Survey date: MONDAY 24/04/17</i>			<i>Survey Type: MANUAL</i>
4	ES-04-D-01 CONNAUGHT ROAD BRIGHTON HOVE	NURSERY		EAST SUSSEX
	Neighbourhood Centre (PPS6 Local Centre) Residential Zone Total Gross floor area: 185 sqm <i>Survey date: FRIDAY 22/09/17</i>			<i>Survey Type: MANUAL</i>
5	LE-04-D-01 WIGSTON ROAD LEICESTER OADBY	NURSERY		LEICESTERSHIRE
	Edge of Town Residential Zone Total Gross floor area: 375 sqm <i>Survey date: THURSDAY 30/10/14</i>			<i>Survey Type: MANUAL</i>
6	LN-04-D-01 NEWARK ROAD LINCOLN SWALLOW BECK	NURSERY		LINCOLNSHIRE
	Suburban Area (PPS6 Out of Centre) Residential Zone Total Gross floor area: 600 sqm <i>Survey date: TUESDAY 31/10/17</i>			<i>Survey Type: MANUAL</i>
7	RO-04-D-01 PARK VIEW ROSCOMMON CRUBY HILL	NURSERY		ROSCOMMON
	Edge of Town Residential Zone Total Gross floor area: 500 sqm <i>Survey date: FRIDAY 26/09/14</i>			<i>Survey Type: MANUAL</i>
8	SR-04-D-01 HENDERSON STREET STIRLING BRIDGE OF ALLAN	NURSERY		STIRLING
	Edge of Town No Sub Category Total Gross floor area: 250 sqm <i>Survey date: MONDAY 16/06/14</i>			<i>Survey Type: MANUAL</i>
9	TV-04-D-01 COTSWOLD DRIVE REDCAR	NURSERY		TEES VALLEY
	Edge of Town Residential Zone Total Gross floor area: 150 sqm <i>Survey date: FRIDAY 19/05/17</i>			<i>Survey Type: MANUAL</i>

LIST OF SITES relevant to selection parameters (Cont.)

10	TW-04-D-03	NURSERY		TYNE & WEAR
	JUBILEE ROAD			
	NEWCASTLE UPON TYNE			
	GOSFORTH			
	Suburban Area (PPS6 Out of Centre)			
	Residential Zone			
	Total Gross floor area:	725 sqm		
	Survey date: <i>TUESDAY</i>	<i>21/05/19</i>		<i>Survey Type: MANUAL</i>
11	WK-04-D-01	NURSERY		WARWICKSHIRE
	THE RIDGEWAY			
	STRATFORD UPON AVON			
	Edge of Town			
	Residential Zone			
	Total Gross floor area:	340 sqm		
	Survey date: <i>FRIDAY</i>	<i>29/06/18</i>		<i>Survey Type: MANUAL</i>
12	WL-04-D-01	NURSERY		WILTSHIRE
	SHREWSBURY ROAD			
	SWINDON			
	WALCOT			
	Suburban Area (PPS6 Out of Centre)			
	Residential Zone			
	Total Gross floor area:	500 sqm		
	Survey date: <i>THURSDAY</i>	<i>22/09/16</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.*



TRIP RATE for Land Use 04 - EDUCATION/D - NURSERY

TOTAL 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	400	0.000	1	400	0.000	1	400	0.000
07:00 - 08:00	12	397	1.826	12	397	0.860	12	397	2.686
08:00 - 09:00	12	397	3.400	12	397	2.371	12	397	5.771
09:00 - 10:00	12	397	1.700	12	397	1.553	12	397	3.253
10:00 - 11:00	12	397	0.588	12	397	0.378	12	397	0.966
11:00 - 12:00	12	397	0.672	12	397	0.441	12	397	1.113
12:00 - 13:00	12	397	1.343	12	397	1.763	12	397	3.106
13:00 - 14:00	12	397	0.986	12	397	1.343	12	397	2.329
14:00 - 15:00	12	397	0.944	12	397	0.818	12	397	1.762
15:00 - 16:00	12	397	0.797	12	397	1.175	12	397	1.972
16:00 - 17:00	12	397	1.448	12	397	1.574	12	397	3.022
17:00 - 18:00	12	397	2.036	12	397	2.707	12	397	4.743
18:00 - 19:00	11	420	0.195	11	420	0.845	11	420	1.040
19:00 - 20:00	1	400	0.000	1	400	0.000	1	400	0.000
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			15.935			15.828			31.763

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

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

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#### Parameter summary

Trip rate parameter range selected:	150 - 725 (units: sqm)
Survey date range:	01/01/13 - 27/09/19
Number of weekdays (Monday-Friday):	12
Number of Saturdays:	0
Number of Sundays:	0
Surveys automatically removed from selection:	0
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 C Junctions 9 Results

<b>Junctions 9</b>
<b>PICADY 9 - Priority Intersection Module</b>
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**Filename:** Site Access Model.j9

**Path:** \\eu.aecomnet.com\EMIA\UK\IEDBL2\Jobs\PR-402491\_Stocking\_Lane\_SHD\400\_Technical\430\_TechnicalArea\_X\2021 Application

**Report generation date:** 28/09/2021 08:21:54

- 
- »2017 Baseline, AM
  - »2017 Baseline, PM
  - »2023 Without Dev, AM
  - »2023 Without Dev, PM
  - »2028 Without Dev, AM
  - »2028 Without Dev, PM
  - »2038 Without Dev, AM
  - »2038 Without Dev, PM
  - »2023 With Dev, AM
  - »2023 With Dev, PM
  - »2028 With Dev, AM
  - »2028 With Dev, PM
  - »2038 With Dev, AM
  - »2038 With Dev, PM

## Summary of junction performance

	AM		PM	
	Queue (PCU)	RFC	Queue (PCU)	RFC
<b>2017 Baseline</b>				
Stream B-AC	0.0	0.00	0.0	0.00
Stream C-AB	0.0	0.00	0.0	0.00
<b>2023 Without Dev</b>				
Stream B-AC	0.0	0.00	0.0	0.00
Stream C-AB	0.0	0.00	0.0	0.00
<b>2028 Without Dev</b>				
Stream B-AC	0.0	0.00	0.0	0.00
Stream C-AB	0.0	0.00	0.0	0.00
<b>2038 Without Dev</b>				
Stream B-AC	0.0	0.00	0.0	0.00
Stream C-AB	0.0	0.00	0.0	0.00
<b>2023 With Dev</b>				
Stream B-AC	0.1	0.09	0.1	0.05
Stream C-AB	0.0	0.03	0.0	0.03
<b>2028 With Dev</b>				
Stream B-AC	0.1	0.09	0.1	0.06
Stream C-AB	0.0	0.03	0.0	0.03
<b>2038 With Dev</b>				
Stream B-AC	0.1	0.10	0.1	0.06
Stream C-AB	0.0	0.03	0.0	0.03

*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	19/08/2020
Version	
Status	(new file)
Identifier	
Client	
Jobnumber	
Enumerator	EU\Zac.Cave
Description	

## Units

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

## 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	2017 Baseline	AM	ONE HOUR	07:45	09:15	15	✓		
D2	2017 Baseline	PM	ONE HOUR	16:45	18:15	15	✓		
D3	2023 Without Dev	AM	ONE HOUR	07:45	09:15	15	✓	Simple	D1*1.0837
D4	2023 Without Dev	PM	ONE HOUR	16:45	18:15	15	✓	Simple	D2*1.0837
D5	2028 Without Dev	AM	ONE HOUR	07:45	09:15	15	✓	Simple	D1*1.1743
D6	2028 Without Dev	PM	ONE HOUR	16:45	18:15	15	✓	Simple	D2*1.1743
D7	2038 Without Dev	AM	ONE HOUR	07:45	09:15	15	✓	Simple	D1*1.2686
D8	2038 Without Dev	PM	ONE HOUR	16:45	18:15	15	✓	Simple	D2*1.2686
D9	Dev Flows	AM	ONE HOUR	07:45	09:15	15			
D10	Dev Flows	PM	ONE HOUR	16:45	18:15	15			
D11	2023 With Dev	AM	ONE HOUR	07:45	09:15	15	✓	Simple	D3+D9
D12	2023 With Dev	PM	ONE HOUR	16:45	18:15	15	✓	Simple	D4+D10
D13	2028 With Dev	AM	ONE HOUR	07:45	09:15	15	✓	Simple	D5+D9
D14	2028 With Dev	PM	ONE HOUR	16:45	18:15	15	✓	Simple	D6+D10
D15	2038 With Dev	AM	ONE HOUR	07:45	09:15	15	✓	Simple	D7+D9
D16	2038 With Dev	PM	ONE HOUR	16:45	18:15	15	✓	Simple	D8+D10

### Analysis Set Details

ID	Include in report	Network flow scaling factor (%)	Network capacity scaling factor (%)
A1	✓	100.000	100.000

# 2017 Baseline, AM

## Data Errors and Warnings

Severity	Area	Item	Description
Warning	Demand Set Relationship	D11 - 2023 With 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	Site Access Junction	T-Junction	Two-way	0.00	A

### Junction Network Options

Driving side	Lighting
Left	Normal/unknown

## Arms

### Arms

Arm	Name	Description	Arm type
A	Stocking Lane (Northern Arm)		Major
B	Site Access (Eastern Arm)		Minor
C	Stocking Lane (Southern Arm)		Major

### Major Arm Geometry

Arm	Width of carriageway (m)	Has kerbed central reserve	Has right turn bay	Visibility for right turn (m)	Blocks?	Blocking queue (PCU)
C	6.00			110.0	✓	0.00

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

### Minor Arm Geometry

Arm	Minor arm type	Lane width (m)	Visibility to left (m)	Visibility to right (m)
B	One lane	3.00	25	20

## Slope / Intercept / Capacity

### Priority Intersection Slopes and Intercepts

Junction	Stream	Intercept (PCU/hr)	Slope for A-B	Slope for A-C	Slope for C-A	Slope for C-B
1	B-A	496	0.090	0.228	0.144	0.326
1	B-C	637	0.098	0.247	-	-
1	C-B	638	0.247	0.247	-	-

*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	2017 Baseline	AM	ONE HOUR	07:45	09:15	15	✓

Default vehicle mix	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 (PCU/hr)	Scaling Factor (%)
A		ONE HOUR	✓	306	100.000
B		ONE HOUR	✓	0	100.000
C		ONE HOUR	✓	551	100.000

## Origin-Destination Data

### Demand (PCU/hr)

	To			
	A	B	C	
From	A	0	0	306
	B	0	0	0
	C	551	0	0

### Proportions

	To			
	A	B	C	
From	A	0.00	0.00	1.00
	B	0.33	0.33	0.33
	C	1.00	0.00	0.00

## Vehicle Mix

### Heavy Vehicle Percentages

	To			
	A	B	C	
From	A	10	10	10
	B	10	10	10
	C	10	10	10

### Average PCU Per Veh

	To			
	A	B	C	
From	A	1.100	1.100	1.100
	B	1.100	1.100	1.100
	C	1.100	1.100	1.100

## Detailed Demand Data

### Demand for each time segment

Time Segment	Arm	Demand (PCU/hr)	Demand in PCU (PCU/hr)
07:45-08:00	A	230	230
	B	0	0
	C	415	415
08:00-08:15	A	275	275
	B	0	0
	C	495	495
08:15-08:30	A	337	337
	B	0	0
	C	607	607
08:30-08:45	A	337	337
	B	0	0
	C	607	607
08:45-09:00	A	275	275
	B	0	0
	C	495	495
09:00-09:15	A	230	230
	B	0	0
	C	415	415

## Results

### Results Summary for whole modelled period

Stream	Max RFC	Max delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
B-AC	0.00	0.00	0.0	A	0	0
C-AB	0.00	0.00	0.0	A	0	0
C-A					506	758
A-B					0	0
A-C					281	421

### Main Results for each time segment

#### 07:45 - 08:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
B-AC	0	0	462	0.000	0	0.0	0.0	0.000	A
C-AB	0	0	581	0.000	0	0.0	0.0	0.000	A
C-A	415	104			415				
A-B	0	0			0				
A-C	230	58			230				

#### 08:00 - 08:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
B-AC	0	0	442	0.000	0	0.0	0.0	0.000	A
C-AB	0	0	570	0.000	0	0.0	0.0	0.000	A
C-A	495	124			495				
A-B	0	0			0				
A-C	275	69			275				

#### 08:15 - 08:30

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
B-AC	0	0	415	0.000	0	0.0	0.0	0.000	A
C-AB	0	0	554	0.000	0	0.0	0.0	0.000	A
C-A	607	152			607				
A-B	0	0			0				
A-C	337	84			337				

#### 08:30 - 08:45

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
B-AC	0	0	415	0.000	0	0.0	0.0	0.000	A
C-AB	0	0	554	0.000	0	0.0	0.0	0.000	A
C-A	607	152			607				
A-B	0	0			0				
A-C	337	84			337				



**08:45 - 09:00**

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
B-AC	0	0	442	0.000	0	0.0	0.0	0.000	A
C-AB	0	0	570	0.000	0	0.0	0.0	0.000	A
C-A	495	124			495				
A-B	0	0			0				
A-C	275	69			275				

**09:00 - 09:15**

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
B-AC	0	0	462	0.000	0	0.0	0.0	0.000	A
C-AB	0	0	581	0.000	0	0.0	0.0	0.000	A
C-A	415	104			415				
A-B	0	0			0				
A-C	230	58			230				

# 2017 Baseline, PM

## Data Errors and Warnings

Severity	Area	Item	Description
Warning	Demand Set Relationship	D11 - 2023 With 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	Site Access Junction	T-Junction	Two-way	0.00	A

### Junction Network Options

Driving side	Lighting
Left	Normal/unknown

## Traffic Demand

### Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D2	2017 Baseline	PM	ONE HOUR	16:45	18:15	15	✓

Default vehicle mix	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 (PCU/hr)	Scaling Factor (%)
A		ONE HOUR	✓	559	100.000
B		ONE HOUR	✓	0	100.000
C		ONE HOUR	✓	278	100.000

## Origin-Destination Data

### Demand (PCU/hr)

		To		
		A	B	C
From	A	0	0	559
	B	0	0	0
	C	278	0	0

### Proportions

		To		
		A	B	C
From	A	0.00	0.00	1.00
	B	0.33	0.33	0.33
	C	1.00	0.00	0.00

## Vehicle Mix

### Heavy Vehicle Percentages

		To		
		A	B	C
From	A	10	10	10
	B	10	10	10
	C	10	10	10

### Average PCU Per Veh

		To		
		A	B	C
From	A	1.100	1.100	1.100
	B	1.100	1.100	1.100
	C	1.100	1.100	1.100

## Detailed Demand Data

### Demand for each time segment

Time Segment	Arm	Demand (PCU/hr)	Demand in PCU (PCU/hr)
16:45-17:00	A	421	421
	B	0	0
	C	209	209
17:00-17:15	A	503	503
	B	0	0
	C	250	250
17:15-17:30	A	615	615
	B	0	0
	C	306	306
17:30-17:45	A	615	615
	B	0	0
	C	306	306
17:45-18:00	A	503	503
	B	0	0
	C	250	250
18:00-18:15	A	421	421
	B	0	0
	C	209	209

## Results

### Results Summary for whole modelled period

Stream	Max RFC	Max delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
B-AC	0.00	0.00	0.0	A	0	0
C-AB	0.00	0.00	0.0	A	0	0
C-A					255	383
A-B					0	0
A-C					513	769

### Main Results for each time segment

#### 16:45 - 17:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
B-AC	0	0	436	0.000	0	0.0	0.0	0.000	A
C-AB	0	0	534	0.000	0	0.0	0.0	0.000	A
C-A	209	52			209				
A-B	0	0			0				
A-C	421	105			421				

#### 17:00 - 17:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
B-AC	0	0	412	0.000	0	0.0	0.0	0.000	A
C-AB	0	0	514	0.000	0	0.0	0.0	0.000	A
C-A	250	62			250				
A-B	0	0			0				
A-C	503	126			503				

**17:15 - 17:30**

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
B-AC	0	0	379	0.000	0	0.0	0.0	0.000	A
C-AB	0	0	486	0.000	0	0.0	0.0	0.000	A
C-A	306	77			306				
A-B	0	0			0				
A-C	615	154			615				

**17:30 - 17:45**

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
B-AC	0	0	379	0.000	0	0.0	0.0	0.000	A
C-AB	0	0	486	0.000	0	0.0	0.0	0.000	A
C-A	306	77			306				
A-B	0	0			0				
A-C	615	154			615				

**17:45 - 18:00**

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
B-AC	0	0	412	0.000	0	0.0	0.0	0.000	A
C-AB	0	0	514	0.000	0	0.0	0.0	0.000	A
C-A	250	62			250				
A-B	0	0			0				
A-C	503	126			503				

**18:00 - 18:15**

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
B-AC	0	0	436	0.000	0	0.0	0.0	0.000	A
C-AB	0	0	534	0.000	0	0.0	0.0	0.000	A
C-A	209	52			209				
A-B	0	0			0				
A-C	421	105			421				

# 2023 Without Dev, AM

## Data Errors and Warnings

Severity	Area	Item	Description
Warning	Demand Set Relationship	D11 - 2023 With 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	Site Access Junction	T-Junction	Two-way	0.00	A

### Junction Network Options

Driving side	Lighting
Left	Normal/unknown

## Traffic Demand

### Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically	Relationship type	Relationship
D3	2023 Without Dev	AM	ONE HOUR	07:45	09:15	15	✓	Simple	D1*1.0837

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 (PCU/hr)	Scaling Factor (%)
A		ONE HOUR	✓	332	100.000
B		ONE HOUR	✓	0	100.000
C		ONE HOUR	✓	597	100.000

## Origin-Destination Data

### Demand (PCU/hr)

From	To			
	A	B	C	
A	0	0	332	
B	0	0	0	
C	597	0	0	

### Proportions

From	To			
	A	B	C	
A	0.00	0.00	1.00	
B	0.33	0.33	0.33	
C	1.00	0.00	0.00	

## Vehicle Mix

### Heavy Vehicle Percentages

From	To			
	A	B	C	
A	0	0	10	
B	0	0	0	
C	10	0	0	

### Average PCU Per Veh

From	To			
	A	B	C	
A	1.000	1.000	1.100	
B	1.000	1.000	1.000	
C	1.100	1.000	1.000	

## Detailed Demand Data

### Demand for each time segment

Time Segment	Arm	Demand (PCU/hr)	Demand in PCU (PCU/hr)
07:45-08:00	A	250	250
	B	0	0
	C	450	450
08:00-08:15	A	298	298
	B	0	0
	C	537	537
08:15-08:30	A	365	365
	B	0	0
	C	657	657
08:30-08:45	A	365	365
	B	0	0
	C	657	657
08:45-09:00	A	298	298
	B	0	0
	C	537	537
09:00-09:15	A	250	250
	B	0	0
	C	450	450

## Results

### Results Summary for whole modelled period

Stream	Max RFC	Max delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
B-AC	0.00	0.00	0.0	A	0	0
C-AB	0.00	0.00	0.0	A	0	0
C-A					548	822
A-B					0	0
A-C					304	456

### Main Results for each time segment

#### 07:45 - 08:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
B-AC	0	0	453	0.000	0	0.0	0.0	0.000	A
C-AB	0	0	576	0.000	0	0.0	0.0	0.000	A
C-A	450	112			450				
A-B	0	0			0				
A-C	250	62			250				

#### 08:00 - 08:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
B-AC	0	0	432	0.000	0	0.0	0.0	0.000	A
C-AB	0	0	564	0.000	0	0.0	0.0	0.000	A
C-A	537	134			537				
A-B	0	0			0				
A-C	298	75			298				

**08:15 - 08:30**

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
B-AC	0	0	402	0.000	0	0.0	0.0	0.000	A
C-AB	0	0	547	0.000	0	0.0	0.0	0.000	A
C-A	657	164			657				
A-B	0	0			0				
A-C	365	91			365				

**08:30 - 08:45**

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
B-AC	0	0	402	0.000	0	0.0	0.0	0.000	A
C-AB	0	0	547	0.000	0	0.0	0.0	0.000	A
C-A	657	164			657				
A-B	0	0			0				
A-C	365	91			365				

**08:45 - 09:00**

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
B-AC	0	0	432	0.000	0	0.0	0.0	0.000	A
C-AB	0	0	564	0.000	0	0.0	0.0	0.000	A
C-A	537	134			537				
A-B	0	0			0				
A-C	298	75			298				

**09:00 - 09:15**

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
B-AC	0	0	453	0.000	0	0.0	0.0	0.000	A
C-AB	0	0	576	0.000	0	0.0	0.0	0.000	A
C-A	450	112			450				
A-B	0	0			0				
A-C	250	62			250				

# 2023 Without Dev, PM

## Data Errors and Warnings

Severity	Area	Item	Description
Warning	Demand Set Relationship	D11 - 2023 With 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	Site Access Junction	T-Junction	Two-way	0.00	A

### Junction Network Options

Driving side	Lighting
Left	Normal/unknown

## Traffic Demand

### Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically	Relationship type	Relationship
D4	2023 Without Dev	PM	ONE HOUR	16:45	18:15	15	✓	Simple	D2*1.0837

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 (PCU/hr)	Scaling Factor (%)
A		ONE HOUR	✓	606	100.000
B		ONE HOUR	✓	0	100.000
C		ONE HOUR	✓	301	100.000

## Origin-Destination Data

### Demand (PCU/hr)

	To			
	A	B	C	
From	A	0	0	606
	B	0	0	0
	C	301	0	0

### Proportions

	To			
	A	B	C	
From	A	0.00	0.00	1.00
	B	0.33	0.33	0.33
	C	1.00	0.00	0.00

## Vehicle Mix

### Heavy Vehicle Percentages

	To			
	A	B	C	
From	A	0	0	10
	B	0	0	0
	C	10	0	0

### Average PCU Per Veh

	To			
	A	B	C	
From	A	1.000	1.000	1.100
	B	1.000	1.000	1.000
	C	1.100	1.000	1.000



## Detailed Demand Data

### Demand for each time segment

Time Segment	Arm	Demand (PCU/hr)	Demand in PCU (PCU/hr)
16:45-17:00	A	456	456
	B	0	0
	C	227	227
17:00-17:15	A	545	545
	B	0	0
	C	271	271
17:15-17:30	A	667	667
	B	0	0
	C	332	332
17:30-17:45	A	667	667
	B	0	0
	C	332	332
17:45-18:00	A	545	545
	B	0	0
	C	271	271
18:00-18:15	A	456	456
	B	0	0
	C	227	227

## Results

### Results Summary for whole modelled period

Stream	Max RFC	Max delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
B-AC	0.00	0.00	0.0	A	0	0
C-AB	0.00	0.00	0.0	A	0	0
C-A					276	415
A-B					0	0
A-C					556	834

### Main Results for each time segment

#### 16:45 - 17:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
B-AC	0	0	426	0.000	0	0.0	0.0	0.000	A
C-AB	0	0	525	0.000	0	0.0	0.0	0.000	A
C-A	227	57			227				
A-B	0	0			0				
A-C	456	114			456				

#### 17:00 - 17:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
B-AC	0	0	400	0.000	0	0.0	0.0	0.000	A
C-AB	0	0	503	0.000	0	0.0	0.0	0.000	A
C-A	271	68			271				
A-B	0	0			0				
A-C	545	136			545				

**17:15 - 17:30**

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
B-AC	0	0	364	0.000	0	0.0	0.0	0.000	A
C-AB	0	0	473	0.000	0	0.0	0.0	0.000	A
C-A	332	83			332				
A-B	0	0			0				
A-C	667	167			667				

**17:30 - 17:45**

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
B-AC	0	0	364	0.000	0	0.0	0.0	0.000	A
C-AB	0	0	473	0.000	0	0.0	0.0	0.000	A
C-A	332	83			332				
A-B	0	0			0				
A-C	667	167			667				

**17:45 - 18:00**

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
B-AC	0	0	400	0.000	0	0.0	0.0	0.000	A
C-AB	0	0	503	0.000	0	0.0	0.0	0.000	A
C-A	271	68			271				
A-B	0	0			0				
A-C	545	136			545				

**18:00 - 18:15**

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
B-AC	0	0	426	0.000	0	0.0	0.0	0.000	A
C-AB	0	0	525	0.000	0	0.0	0.0	0.000	A
C-A	227	57			227				
A-B	0	0			0				
A-C	456	114			456				

# 2028 Without Dev, AM

## Data Errors and Warnings

Severity	Area	Item	Description
Warning	Demand Set Relationship	D11 - 2023 With 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	Site Access Junction	T-Junction	Two-way	0.00	A

### Junction Network Options

Driving side	Lighting
Left	Normal/unknown

## Traffic Demand

### Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically	Relationship type	Relationship
D5	2028 Without Dev	AM	ONE HOUR	07:45	09:15	15	✓	Simple	D1*1.1743

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 (PCU/hr)	Scaling Factor (%)
A		ONE HOUR	✓	359	100.000
B		ONE HOUR	✓	0	100.000
C		ONE HOUR	✓	647	100.000

## Origin-Destination Data

### Demand (PCU/hr)

		To			
		A	B	C	
From	A	0	0	359	
	B	0	0	0	
	C	647	0	0	

### Proportions

		To			
		A	B	C	
From	A	0.00	0.00	1.00	
	B	0.33	0.33	0.33	
	C	1.00	0.00	0.00	

## Vehicle Mix

### Heavy Vehicle Percentages

		To			
		A	B	C	
From	A	0	0	10	
	B	0	0	0	
	C	10	0	0	

### Average PCU Per Veh

		To			
		A	B	C	
From	A	1.000	1.000	1.100	
	B	1.000	1.000	1.000	
	C	1.100	1.000	1.000	

## Detailed Demand Data

### Demand for each time segment

Time Segment	Arm	Demand (PCU/hr)	Demand in PCU (PCU/hr)
07:45-08:00	A	271	271
	B	0	0
	C	487	487
08:00-08:15	A	323	323
	B	0	0
	C	582	582
08:15-08:30	A	396	396
	B	0	0
	C	712	712
08:30-08:45	A	396	396
	B	0	0
	C	712	712
08:45-09:00	A	323	323
	B	0	0
	C	582	582
09:00-09:15	A	271	271
	B	0	0
	C	487	487

## Results

### Results Summary for whole modelled period

Stream	Max RFC	Max delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
B-AC	0.00	0.00	0.0	A	0	0
C-AB	0.00	0.00	0.0	A	0	0
C-A					594	891
A-B					0	0
A-C					330	495

### Main Results for each time segment

#### 07:45 - 08:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
B-AC	0	0	444	0.000	0	0.0	0.0	0.000	A
C-AB	0	0	571	0.000	0	0.0	0.0	0.000	A
C-A	487	122			487				
A-B	0	0			0				
A-C	271	68			271				

#### 08:00 - 08:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
B-AC	0	0	421	0.000	0	0.0	0.0	0.000	A
C-AB	0	0	558	0.000	0	0.0	0.0	0.000	A
C-A	582	145			582				
A-B	0	0			0				
A-C	323	81			323				

**08:15 - 08:30**

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
B-AC	0	0	388	0.000	0	0.0	0.0	0.000	A
C-AB	0	0	540	0.000	0	0.0	0.0	0.000	A
C-A	712	178			712				
A-B	0	0			0				
A-C	396	99			396				

**08:30 - 08:45**

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
B-AC	0	0	388	0.000	0	0.0	0.0	0.000	A
C-AB	0	0	540	0.000	0	0.0	0.0	0.000	A
C-A	712	178			712				
A-B	0	0			0				
A-C	396	99			396				

**08:45 - 09:00**

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
B-AC	0	0	421	0.000	0	0.0	0.0	0.000	A
C-AB	0	0	558	0.000	0	0.0	0.0	0.000	A
C-A	582	145			582				
A-B	0	0			0				
A-C	323	81			323				

**09:00 - 09:15**

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
B-AC	0	0	444	0.000	0	0.0	0.0	0.000	A
C-AB	0	0	571	0.000	0	0.0	0.0	0.000	A
C-A	487	122			487				
A-B	0	0			0				
A-C	271	68			271				

# 2028 Without Dev, PM

## Data Errors and Warnings

Severity	Area	Item	Description
Warning	Demand Set Relationship	D11 - 2023 With 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	Site Access Junction	T-Junction	Two-way	0.00	A

### Junction Network Options

Driving side	Lighting
Left	Normal/unknown

## Traffic Demand

### Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically	Relationship type	Relationship
D6	2028 Without Dev	PM	ONE HOUR	16:45	18:15	15	✓	Simple	D2*1.1743

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 (PCU/hr)	Scaling Factor (%)
A		ONE HOUR	✓	656	100.000
B		ONE HOUR	✓	0	100.000
C		ONE HOUR	✓	326	100.000

## Origin-Destination Data

### Demand (PCU/hr)

		To			
		A	B	C	
From	A	0	0	656	
	B	0	0	0	
	C	326	0	0	

### Proportions

		To			
		A	B	C	
From	A	0.00	0.00	1.00	
	B	0.33	0.33	0.33	
	C	1.00	0.00	0.00	

## Vehicle Mix

### Heavy Vehicle Percentages

		To			
		A	B	C	
From	A	0	0	10	
	B	0	0	0	
	C	10	0	0	

### Average PCU Per Veh

		To			
		A	B	C	
From	A	1.000	1.000	1.100	
	B	1.000	1.000	1.000	
	C	1.100	1.000	1.000	

## Detailed Demand Data

### Demand for each time segment

Time Segment	Arm	Demand (PCU/hr)	Demand in PCU (PCU/hr)
16:45-17:00	A	494	494
	B	0	0
	C	246	246
17:00-17:15	A	590	590
	B	0	0
	C	293	293
17:15-17:30	A	723	723
	B	0	0
	C	359	359
17:30-17:45	A	723	723
	B	0	0
	C	359	359
17:45-18:00	A	590	590
	B	0	0
	C	293	293
18:00-18:15	A	494	494
	B	0	0
	C	246	246

## Results

### Results Summary for whole modelled period

Stream	Max RFC	Max delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
B-AC	0.00	0.00	0.0	A	0	0
C-AB	0.00	0.00	0.0	A	0	0
C-A					300	449
A-B					0	0
A-C					602	904

### Main Results for each time segment

#### 16:45 - 17:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
B-AC	0	0	415	0.000	0	0.0	0.0	0.000	A
C-AB	0	0	516	0.000	0	0.0	0.0	0.000	A
C-A	246	61			246				
A-B	0	0			0				
A-C	494	124			494				

#### 17:00 - 17:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
B-AC	0	0	387	0.000	0	0.0	0.0	0.000	A
C-AB	0	0	492	0.000	0	0.0	0.0	0.000	A
C-A	293	73			293				
A-B	0	0			0				
A-C	590	148			590				

**17:15 - 17:30**

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
B-AC	0	0	347	0.000	0	0.0	0.0	0.000	A
C-AB	0	0	459	0.000	0	0.0	0.0	0.000	A
C-A	359	90			359				
A-B	0	0			0				
A-C	723	181			723				

**17:30 - 17:45**

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
B-AC	0	0	347	0.000	0	0.0	0.0	0.000	A
C-AB	0	0	459	0.000	0	0.0	0.0	0.000	A
C-A	359	90			359				
A-B	0	0			0				
A-C	723	181			723				

**17:45 - 18:00**

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
B-AC	0	0	387	0.000	0	0.0	0.0	0.000	A
C-AB	0	0	492	0.000	0	0.0	0.0	0.000	A
C-A	293	73			293				
A-B	0	0			0				
A-C	590	148			590				

**18:00 - 18:15**

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
B-AC	0	0	415	0.000	0	0.0	0.0	0.000	A
C-AB	0	0	516	0.000	0	0.0	0.0	0.000	A
C-A	246	61			246				
A-B	0	0			0				
A-C	494	124			494				



# 2038 Without Dev, AM

## Data Errors and Warnings

Severity	Area	Item	Description
Warning	Demand Set Relationship	D11 - 2023 With 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	Site Access Junction	T-Junction	Two-way	0.00	A

### Junction Network Options

Driving side	Lighting
Left	Normal/unknown

## Traffic Demand

### Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically	Relationship type	Relationship
D7	2038 Without Dev	AM	ONE HOUR	07:45	09:15	15	✓	Simple	D1*1.2686

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 (PCU/hr)	Scaling Factor (%)
A		ONE HOUR	✓	388	100.000
B		ONE HOUR	✓	0	100.000
C		ONE HOUR	✓	699	100.000

## Origin-Destination Data

### Demand (PCU/hr)

		To			
		A	B	C	
From	A	0	0	388	
	B	0	0	0	
	C	699	0	0	

### Proportions

		To			
		A	B	C	
From	A	0.00	0.00	1.00	
	B	0.33	0.33	0.33	
	C	1.00	0.00	0.00	

## Vehicle Mix

### Heavy Vehicle Percentages

		To			
		A	B	C	
From	A	0	0	10	
	B	0	0	0	
	C	10	0	0	

### Average PCU Per Veh

		To			
		A	B	C	
From	A	1.000	1.000	1.100	
	B	1.000	1.000	1.000	
	C	1.100	1.000	1.000	

## Detailed Demand Data

### Demand for each time segment

Time Segment	Arm	Demand (PCU/hr)	Demand in PCU (PCU/hr)
07:45-08:00	A	292	292
	B	0	0
	C	526	526
08:00-08:15	A	349	349
	B	0	0
	C	628	628
08:15-08:30	A	427	427
	B	0	0
	C	770	770
08:30-08:45	A	427	427
	B	0	0
	C	770	770
08:45-09:00	A	349	349
	B	0	0
	C	628	628
09:00-09:15	A	292	292
	B	0	0
	C	526	526

## Results

### Results Summary for whole modelled period

Stream	Max RFC	Max delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
B-AC	0.00	0.00	0.0	A	0	0
C-AB	0.00	0.00	0.0	A	0	0
C-A					641	962
A-B					0	0
A-C					356	534

### Main Results for each time segment

#### 07:45 - 08:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
B-AC	0	0	435	0.000	0	0.0	0.0	0.000	A
C-AB	0	0	565	0.000	0	0.0	0.0	0.000	A
C-A	526	132			526				
A-B	0	0			0				
A-C	292	73			292				

#### 08:00 - 08:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
B-AC	0	0	409	0.000	0	0.0	0.0	0.000	A
C-AB	0	0	551	0.000	0	0.0	0.0	0.000	A
C-A	628	157			628				
A-B	0	0			0				
A-C	349	87			349				

**08:15 - 08:30**

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
B-AC	0	0	373	0.000	0	0.0	0.0	0.000	A
C-AB	0	0	532	0.000	0	0.0	0.0	0.000	A
C-A	770	192			770				
A-B	0	0			0				
A-C	427	107			427				

**08:30 - 08:45**

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
B-AC	0	0	373	0.000	0	0.0	0.0	0.000	A
C-AB	0	0	532	0.000	0	0.0	0.0	0.000	A
C-A	770	192			770				
A-B	0	0			0				
A-C	427	107			427				

**08:45 - 09:00**

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
B-AC	0	0	409	0.000	0	0.0	0.0	0.000	A
C-AB	0	0	551	0.000	0	0.0	0.0	0.000	A
C-A	628	157			628				
A-B	0	0			0				
A-C	349	87			349				

**09:00 - 09:15**

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
B-AC	0	0	435	0.000	0	0.0	0.0	0.000	A
C-AB	0	0	565	0.000	0	0.0	0.0	0.000	A
C-A	526	132			526				
A-B	0	0			0				
A-C	292	73			292				

# 2038 Without Dev, PM

## Data Errors and Warnings

Severity	Area	Item	Description
Warning	Demand Set Relationship	D11 - 2023 With 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	Site Access Junction	T-Junction	Two-way	0.00	A

### Junction Network Options

Driving side	Lighting
Left	Normal/unknown

## Traffic Demand

### Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically	Relationship type	Relationship
D8	2038 Without Dev	PM	ONE HOUR	16:45	18:15	15	✓	Simple	D2*1.2686

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 (PCU/hr)	Scaling Factor (%)
A		ONE HOUR	✓	709	100.000
B		ONE HOUR	✓	0	100.000
C		ONE HOUR	✓	353	100.000

## Origin-Destination Data

### Demand (PCU/hr)

		To			
		A	B	C	
From	A	0	0	709	
	B	0	0	0	
	C	353	0	0	

### Proportions

		To			
		A	B	C	
From	A	0.00	0.00	1.00	
	B	0.33	0.33	0.33	
	C	1.00	0.00	0.00	

## Vehicle Mix

### Heavy Vehicle Percentages

		To			
		A	B	C	
From	A	0	0	10	
	B	0	0	0	
	C	10	0	0	

### Average PCU Per Veh

		To			
		A	B	C	
From	A	1.000	1.000	1.100	
	B	1.000	1.000	1.000	
	C	1.100	1.000	1.000	

## Detailed Demand Data

### Demand for each time segment

Time Segment	Arm	Demand (PCU/hr)	Demand in PCU (PCU/hr)
16:45-17:00	A	534	534
	B	0	0
	C	266	266
17:00-17:15	A	638	638
	B	0	0
	C	317	317
17:15-17:30	A	781	781
	B	0	0
	C	388	388
17:30-17:45	A	781	781
	B	0	0
	C	388	388
17:45-18:00	A	638	638
	B	0	0
	C	317	317
18:00-18:15	A	534	534
	B	0	0
	C	266	266

## Results

### Results Summary for whole modelled period

Stream	Max RFC	Max delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
B-AC	0.00	0.00	0.0	A	0	0
C-AB	0.00	0.00	0.0	A	0	0
C-A					324	485
A-B					0	0
A-C					651	976

### Main Results for each time segment

#### 16:45 - 17:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
B-AC	0	0	403	0.000	0	0.0	0.0	0.000	A
C-AB	0	0	506	0.000	0	0.0	0.0	0.000	A
C-A	266	66			266				
A-B	0	0			0				
A-C	534	133			534				

#### 17:00 - 17:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
B-AC	0	0	372	0.000	0	0.0	0.0	0.000	A
C-AB	0	0	480	0.000	0	0.0	0.0	0.000	A
C-A	317	79			317				
A-B	0	0			0				
A-C	638	159			638				

**17:15 - 17:30**

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
B-AC	0	0	329	0.000	0	0.0	0.0	0.000	A
C-AB	0	0	445	0.000	0	0.0	0.0	0.000	A
C-A	388	97			388				
A-B	0	0			0				
A-C	781	195			781				

**17:30 - 17:45**

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
B-AC	0	0	329	0.000	0	0.0	0.0	0.000	A
C-AB	0	0	445	0.000	0	0.0	0.0	0.000	A
C-A	388	97			388				
A-B	0	0			0				
A-C	781	195			781				

**17:45 - 18:00**

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
B-AC	0	0	372	0.000	0	0.0	0.0	0.000	A
C-AB	0	0	480	0.000	0	0.0	0.0	0.000	A
C-A	317	79			317				
A-B	0	0			0				
A-C	638	159			638				

**18:00 - 18:15**

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
B-AC	0	0	403	0.000	0	0.0	0.0	0.000	A
C-AB	0	0	506	0.000	0	0.0	0.0	0.000	A
C-A	266	66			266				
A-B	0	0			0				
A-C	534	133			534				

# 2023 With Dev, AM

## Data Errors and Warnings

Severity	Area	Item	Description
Warning	Demand Set Relationship	D11 - 2023 With 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	Site Access Junction	T-Junction	Two-way	0.44	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	2023 With Dev	AM	ONE HOUR	07:45	09:15	15	✓	Simple	D3+D9

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 (PCU/hr)	Scaling Factor (%)
A		ONE HOUR	✓	337	100.000
B		ONE HOUR	✓	36	100.000
C		ONE HOUR	✓	606	100.000

## Origin-Destination Data

### Demand (PCU/hr)

	To			
	A	B	C	
From	A	0	5	332
	B	13	0	23
	C	597	9	0

### Proportions

	To			
	A	B	C	
From	A	0.00	0.01	0.99
	B	0.36	0.00	0.64
	C	0.99	0.01	0.00

## Vehicle Mix

### Heavy Vehicle Percentages

	To			
	A	B	C	
From	A	0	0	10
	B	0	0	0
	C	10	0	0

### Average PCU Per Veh

	To			
	A	B	C	
From	A	1.000	1.000	1.100
	B	1.000	1.000	1.000
	C	1.100	1.000	1.000

## Detailed Demand Data

### Demand for each time segment

Time Segment	Arm	Demand (PCU/hr)	Demand in PCU (PCU/hr)
07:45-08:00	A	253	253
	B	27	27
	C	456	456
08:00-08:15	A	303	303
	B	32	32
	C	545	545
08:15-08:30	A	371	371
	B	40	40
	C	667	667
08:30-08:45	A	371	371
	B	40	40
	C	667	667
08:45-09:00	A	303	303
	B	32	32
	C	545	545
09:00-09:15	A	253	253
	B	27	27
	C	456	456

## Results

### Results Summary for whole modelled period

Stream	Max RFC	Max delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
B-AC	0.09	9.20	0.1	A	33	50
C-AB	0.03	4.37	0.0	A	21	31
C-A					536	803
A-B					5	7
A-C					304	456

### Main Results for each time segment

#### 07:45 - 08:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
B-AC	27	7	480	0.056	27	0.0	0.1	7.943	A
C-AB	14	3	881	0.016	14	0.0	0.0	4.353	A
C-A	442	111			442				
A-B	4	0.94			4				
A-C	250	62			250				

#### 08:00 - 08:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
B-AC	32	8	460	0.070	32	0.1	0.1	8.421	A
C-AB	19	5	932	0.021	19	0.0	0.0	4.150	A
C-A	526	131			526				
A-B	4	1			4				
A-C	298	75			298				



**08:15 - 08:30**

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
B-AC	40	10	431	0.092	40	0.1	0.1	9.192	A
C-AB	29	7	1004	0.029	29	0.0	0.0	3.912	A
C-A	639	160			639				
A-B	6	1			6				
A-C	365	91			365				

**08:30 - 08:45**

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
B-AC	40	10	431	0.092	40	0.1	0.1	9.196	A
C-AB	29	7	1004	0.029	29	0.0	0.0	3.925	A
C-A	639	160			639				
A-B	6	1			6				
A-C	365	91			365				

**08:45 - 09:00**

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
B-AC	32	8	460	0.070	32	0.1	0.1	8.428	A
C-AB	19	5	932	0.021	19	0.0	0.0	4.183	A
C-A	526	131			526				
A-B	4	1			4				
A-C	298	75			298				

**09:00 - 09:15**

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
B-AC	27	7	480	0.056	27	0.1	0.1	7.954	A
C-AB	14	3	881	0.016	14	0.0	0.0	4.370	A
C-A	442	111			442				
A-B	4	0.94			4				
A-C	250	62			250				

# 2023 With Dev, PM

## Data Errors and Warnings

Severity	Area	Item	Description
Warning	Demand Set Relationship	D11 - 2023 With 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	Site Access Junction	T-Junction	Two-way	0.32	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	2023 With Dev	PM	ONE HOUR	16:45	18:15	15	✓	Simple	D4+D10

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 (PCU/hr)	Scaling Factor (%)
A		ONE HOUR	✓	626	100.000
B		ONE HOUR	✓	16	100.000
C		ONE HOUR	✓	311	100.000

## Origin-Destination Data

### Demand (PCU/hr)

		To			
		A	B	C	
From	A	0	20	606	
	B	11	0	5	
	C	301	10	0	

### Proportions

		To			
		A	B	C	
From	A	0.00	0.03	0.97	
	B	0.69	0.00	0.31	
	C	0.97	0.03	0.00	

## Vehicle Mix

### Heavy Vehicle Percentages

		To			
		A	B	C	
From	A	0	10	10	
	B	10	0	10	
	C	10	10	0	

### Average PCU Per Veh

		To			
		A	B	C	
From	A	1.000	1.100	1.100	
	B	1.100	1.000	1.100	
	C	1.100	1.100	1.000	

## Detailed Demand Data

### Demand for each time segment

Time Segment	Arm	Demand (PCU/hr)	Demand in PCU (PCU/hr)
16:45-17:00	A	471	471
	B	12	12
	C	234	234
17:00-17:15	A	563	563
	B	14	14
	C	280	280
17:15-17:30	A	689	689
	B	18	18
	C	343	343
17:30-17:45	A	689	689
	B	18	18
	C	343	343
17:45-18:00	A	563	563
	B	14	14
	C	280	280
18:00-18:15	A	471	471
	B	12	12
	C	234	234

## Results

### Results Summary for whole modelled period

Stream	Max RFC	Max delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
B-AC	0.05	12.69	0.1	B	15	22
C-AB	0.03	5.90	0.0	A	16	23
C-A					270	405
A-B					18	28
A-C					556	834

### Main Results for each time segment

#### 16:45 - 17:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
B-AC	12	3	395	0.031	12	0.0	0.0	10.343	B
C-AB	11	3	682	0.017	11	0.0	0.0	5.899	A
C-A	223	56			223				
A-B	15	4			15				
A-C	456	114			456				

#### 17:00 - 17:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
B-AC	14	4	367	0.039	14	0.0	0.0	11.213	B
C-AB	15	4	694	0.021	15	0.0	0.0	5.825	A
C-A	265	66			265				
A-B	18	4			18				
A-C	545	136			545				

**17:15 - 17:30**

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
B-AC	18	4	330	0.053	18	0.0	0.1	12.689	B
C-AB	21	5	713	0.029	21	0.0	0.0	5.718	A
C-A	322	81			322				
A-B	22	6			22				
A-C	667	167			667				

**17:30 - 17:45**

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
B-AC	18	4	330	0.053	18	0.1	0.1	12.694	B
C-AB	21	5	713	0.029	21	0.0	0.0	5.719	A
C-A	322	81			322				
A-B	22	6			22				
A-C	667	167			667				

**17:45 - 18:00**

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
B-AC	14	4	367	0.039	14	0.1	0.0	11.222	B
C-AB	15	4	695	0.021	15	0.0	0.0	5.828	A
C-A	265	66			265				
A-B	18	4			18				
A-C	545	136			545				

**18:00 - 18:15**

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
B-AC	12	3	395	0.031	12	0.0	0.0	10.352	B
C-AB	11	3	682	0.017	11	0.0	0.0	5.902	A
C-A	223	56			223				
A-B	15	4			15				
A-C	456	114			456				

# 2028 With Dev, AM

## Data Errors and Warnings

Severity	Area	Item	Description
Warning	Demand Set Relationship	D11 - 2023 With 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	Site Access Junction	T-Junction	Two-way	0.42	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
D13	2028 With Dev	AM	ONE HOUR	07:45	09:15	15	✓	Simple	D5+D9

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 (PCU/hr)	Scaling Factor (%)
A		ONE HOUR	✓	364	100.000
B		ONE HOUR	✓	36	100.000
C		ONE HOUR	✓	656	100.000

## Origin-Destination Data

### Demand (PCU/hr)

	To			
	A	B	C	
From	A	0	5	359
	B	13	0	23
	C	647	9	0

### Proportions

	To			
	A	B	C	
From	A	0.00	0.01	0.99
	B	0.36	0.00	0.64
	C	0.99	0.01	0.00

## Vehicle Mix

### Heavy Vehicle Percentages

	To			
	A	B	C	
From	A	0	0	10
	B	0	0	0
	C	10	0	0

### Average PCU Per Veh

	To			
	A	B	C	
From	A	1.000	1.000	1.100
	B	1.000	1.000	1.000
	C	1.100	1.000	1.000

## Detailed Demand Data

### Demand for each time segment

Time Segment	Arm	Demand (PCU/hr)	Demand in PCU (PCU/hr)
07:45-08:00	A	274	274
	B	27	27
	C	494	494
08:00-08:15	A	328	328
	B	32	32
	C	590	590
08:15-08:30	A	401	401
	B	40	40
	C	722	722
08:30-08:45	A	401	401
	B	40	40
	C	722	722
08:45-09:00	A	328	328
	B	32	32
	C	590	590
09:00-09:15	A	274	274
	B	27	27
	C	494	494

## Results

### Results Summary for whole modelled period

Stream	Max RFC	Max delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
B-AC	0.09	9.52	0.1	A	33	50
C-AB	0.03	4.28	0.0	A	22	34
C-A					580	869
A-B					5	7
A-C					330	495

### Main Results for each time segment

#### 07:45 - 08:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
B-AC	27	7	471	0.057	27	0.0	0.1	8.094	A
C-AB	15	4	903	0.016	15	0.0	0.0	4.262	A
C-A	479	120			479				
A-B	4	0.94			4				
A-C	271	68			271				

#### 08:00 - 08:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
B-AC	32	8	449	0.072	32	0.1	0.1	8.630	A
C-AB	21	5	959	0.022	21	0.0	0.0	4.051	A
C-A	569	142			569				
A-B	4	1			4				
A-C	323	81			323				

**08:15 - 08:30**

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
B-AC	40	10	418	0.095	40	0.1	0.1	9.514	A
C-AB	32	8	1038	0.031	32	0.0	0.0	3.803	A
C-A	691	173			691				
A-B	6	1			6				
A-C	396	99			396				

**08:30 - 08:45**

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
B-AC	40	10	418	0.095	40	0.1	0.1	9.518	A
C-AB	32	8	1038	0.031	32	0.0	0.0	3.818	A
C-A	691	173			691				
A-B	6	1			6				
A-C	396	99			396				

**08:45 - 09:00**

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
B-AC	32	8	449	0.072	32	0.1	0.1	8.638	A
C-AB	21	5	959	0.022	21	0.0	0.0	4.082	A
C-A	569	142			569				
A-B	4	1			4				
A-C	323	81			323				

**09:00 - 09:15**

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
B-AC	27	7	471	0.057	27	0.1	0.1	8.104	A
C-AB	15	4	903	0.016	15	0.0	0.0	4.279	A
C-A	479	120			479				
A-B	4	0.94			4				
A-C	271	68			271				

# 2028 With Dev, PM

## Data Errors and Warnings

Severity	Area	Item	Description
Warning	Demand Set Relationship	D11 - 2023 With 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	Site Access Junction	T-Junction	Two-way	0.31	A

### Junction Network Options

Driving side	Lighting
Left	Normal/unknown

## Traffic Demand

### Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically	Relationship type	Relationship
D14	2028 With Dev	PM	ONE HOUR	16:45	18:15	15	✓	Simple	D6+D10

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 (PCU/hr)	Scaling Factor (%)
A		ONE HOUR	✓	676	100.000
B		ONE HOUR	✓	16	100.000
C		ONE HOUR	✓	336	100.000

## Origin-Destination Data

### Demand (PCU/hr)

From	To			
	A	B	C	
A	0	20	656	
B	11	0	5	
C	326	10	0	

### Proportions

From	To			
	A	B	C	
A	0.00	0.03	0.97	
B	0.69	0.00	0.31	
C	0.97	0.03	0.00	

## Vehicle Mix

### Heavy Vehicle Percentages

From	To			
	A	B	C	
A	0	10	10	
B	10	0	10	
C	10	10	0	

### Average PCU Per Veh

From	To			
	A	B	C	
A	1.000	1.100	1.100	
B	1.100	1.000	1.100	
C	1.100	1.100	1.000	



## Detailed Demand Data

### Demand for each time segment

Time Segment	Arm	Demand (PCU/hr)	Demand in PCU (PCU/hr)
16:45-17:00	A	509	509
	B	12	12
	C	253	253
17:00-17:15	A	608	608
	B	14	14
	C	302	302
17:15-17:30	A	745	745
	B	18	18
	C	370	370
17:30-17:45	A	745	745
	B	18	18
	C	370	370
17:45-18:00	A	608	608
	B	14	14
	C	302	302
18:00-18:15	A	509	509
	B	12	12
	C	253	253

## Results

### Results Summary for whole modelled period

Stream	Max RFC	Max delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
B-AC	0.06	13.42	0.1	B	15	22
C-AB	0.03	5.86	0.0	A	16	25
C-A					292	438
A-B					18	28
A-C					602	904

### Main Results for each time segment

#### 16:45 - 17:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
B-AC	12	3	383	0.031	12	0.0	0.0	10.660	B
C-AB	12	3	688	0.017	12	0.0	0.0	5.857	A
C-A	242	60			242				
A-B	15	4			15				
A-C	494	124			494				

#### 17:00 - 17:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
B-AC	14	4	354	0.041	14	0.0	0.0	11.665	B
C-AB	15	4	701	0.022	15	0.0	0.0	5.772	A
C-A	287	72			287				
A-B	18	4			18				
A-C	590	148			590				

**17:15 - 17:30**

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
B-AC	18	4	313	0.056	18	0.0	0.1	13.419	B
C-AB	22	5	723	0.030	22	0.0	0.0	5.651	A
C-A	348	87			348				
A-B	22	6			22				
A-C	723	181			723				

**17:30 - 17:45**

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
B-AC	18	4	313	0.056	18	0.1	0.1	13.425	B
C-AB	22	5	723	0.030	22	0.0	0.0	5.652	A
C-A	348	87			348				
A-B	22	6			22				
A-C	723	181			723				

**17:45 - 18:00**

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
B-AC	14	4	354	0.041	14	0.1	0.0	11.673	B
C-AB	16	4	701	0.022	16	0.0	0.0	5.775	A
C-A	287	72			287				
A-B	18	4			18				
A-C	590	148			590				

**18:00 - 18:15**

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
B-AC	12	3	383	0.031	12	0.0	0.0	10.672	B
C-AB	12	3	688	0.017	12	0.0	0.0	5.857	A
C-A	242	60			242				
A-B	15	4			15				
A-C	494	124			494				

# 2038 With Dev, AM

## Data Errors and Warnings

Severity	Area	Item	Description
Warning	Demand Set Relationship	D11 - 2038 With 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	Site Access Junction	T-Junction	Two-way	0.41	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
D15	2038 With Dev	AM	ONE HOUR	07:45	09:15	15	✓	Simple	D7+D9

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 (PCU/hr)	Scaling Factor (%)
A		ONE HOUR	✓	393	100.000
B		ONE HOUR	✓	36	100.000
C		ONE HOUR	✓	708	100.000

## Origin-Destination Data

### Demand (PCU/hr)

	To			
	A	B	C	
From	A	0	5	388
	B	13	0	23
	C	699	9	0

### Proportions

	To			
	A	B	C	
From	A	0.00	0.01	0.99
	B	0.36	0.00	0.64
	C	0.99	0.01	0.00

## Vehicle Mix

### Heavy Vehicle Percentages

	To			
	A	B	C	
From	A	0	0	10
	B	0	0	0
	C	10	0	0

### Average PCU Per Veh

	To			
	A	B	C	
From	A	1.000	1.000	1.100
	B	1.000	1.000	1.000
	C	1.100	1.000	1.000

## Detailed Demand Data

### Demand for each time segment

Time Segment	Arm	Demand (PCU/hr)	Demand in PCU (PCU/hr)
07:45-08:00	A	296	296
	B	27	27
	C	533	533
08:00-08:15	A	353	353
	B	32	32
	C	636	636
08:15-08:30	A	433	433
	B	40	40
	C	780	780
08:30-08:45	A	433	433
	B	40	40
	C	780	780
08:45-09:00	A	353	353
	B	32	32
	C	636	636
09:00-09:15	A	296	296
	B	27	27
	C	533	533

## Results

### Results Summary for whole modelled period

Stream	Max RFC	Max delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
B-AC	0.10	9.88	0.1	A	33	50
C-AB	0.03	4.19	0.0	A	24	37
C-A					625	938
A-B					5	7
A-C					356	534

### Main Results for each time segment

#### 07:45 - 08:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
B-AC	27	7	463	0.059	27	0.0	0.1	8.259	A
C-AB	16	4	926	0.017	16	0.0	0.0	4.171	A
C-A	517	129			517				
A-B	4	0.94			4				
A-C	292	73			292				

#### 08:00 - 08:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
B-AC	32	8	438	0.074	32	0.1	0.1	8.862	A
C-AB	22	6	987	0.023	22	0.0	0.0	3.951	A
C-A	614	154			614				
A-B	4	1			4				
A-C	349	87			349				

**08:15 - 08:30**

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
B-AC	40	10	404	0.098	40	0.1	0.1	9.879	A
C-AB	35	9	1073	0.033	35	0.0	0.0	3.696	A
C-A	744	186			744				
A-B	6	1			6				
A-C	427	107			427				

**08:30 - 08:45**

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
B-AC	40	10	404	0.098	40	0.1	0.1	9.885	A
C-AB	35	9	1074	0.033	35	0.0	0.0	3.708	A
C-A	744	186			744				
A-B	6	1			6				
A-C	427	107			427				

**08:45 - 09:00**

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
B-AC	32	8	438	0.074	32	0.1	0.1	8.869	A
C-AB	22	6	987	0.023	22	0.0	0.0	3.984	A
C-A	614	154			614				
A-B	4	1			4				
A-C	349	87			349				

**09:00 - 09:15**

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
B-AC	27	7	463	0.059	27	0.1	0.1	8.272	A
C-AB	16	4	926	0.017	16	0.0	0.0	4.190	A
C-A	517	129			517				
A-B	4	0.94			4				
A-C	292	73			292				

# 2038 With Dev, PM

## Data Errors and Warnings

Severity	Area	Item	Description
Warning	Demand Set Relationship	D11 - 2038 With 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	Site Access Junction	T-Junction	Two-way	0.31	A

### Junction Network Options

Driving side	Lighting
Left	Normal/unknown

## Traffic Demand

### Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically	Relationship type	Relationship
D16	2038 With Dev	PM	ONE HOUR	16:45	18:15	15	✓	Simple	D8+D10

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 (PCU/hr)	Scaling Factor (%)
A		ONE HOUR	✓	729	100.000
B		ONE HOUR	✓	16	100.000
C		ONE HOUR	✓	363	100.000

## Origin-Destination Data

### Demand (PCU/hr)

		To			
		A	B	C	
From	A	0	20	709	
	B	11	0	5	
	C	353	10	0	

### Proportions

		To			
		A	B	C	
From	A	0.00	0.03	0.97	
	B	0.69	0.00	0.31	
	C	0.97	0.03	0.00	

## Vehicle Mix

### Heavy Vehicle Percentages

		To			
		A	B	C	
From	A	0	10	10	
	B	10	0	10	
	C	10	10	0	

### Average PCU Per Veh

		To			
		A	B	C	
From	A	1.000	1.100	1.100	
	B	1.100	1.000	1.100	
	C	1.100	1.100	1.000	

## Detailed Demand Data

### Demand for each time segment

Time Segment	Arm	Demand (PCU/hr)	Demand in PCU (PCU/hr)
16:45-17:00	A	549	549
	B	12	12
	C	273	273
17:00-17:15	A	655	655
	B	14	14
	C	326	326
17:15-17:30	A	803	803
	B	18	18
	C	399	399
17:30-17:45	A	803	803
	B	18	18
	C	399	399
17:45-18:00	A	655	655
	B	14	14
	C	326	326
18:00-18:15	A	549	549
	B	12	12
	C	273	273

## Results

### Results Summary for whole modelled period

Stream	Max RFC	Max delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
B-AC	0.06	14.29	0.1	B	15	22
C-AB	0.03	5.81	0.0	A	17	26
C-A					315	473
A-B					18	28
A-C					651	976

### Main Results for each time segment

#### 16:45 - 17:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
B-AC	12	3	371	0.032	12	0.0	0.0	11.008	B
C-AB	12	3	693	0.018	12	0.0	0.0	5.811	A
C-A	261	65			261				
A-B	15	4			15				
A-C	534	133			534				

#### 17:00 - 17:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
B-AC	14	4	339	0.042	14	0.0	0.0	12.178	B
C-AB	16	4	709	0.023	16	0.0	0.0	5.716	A
C-A	310	77			310				
A-B	18	4			18				
A-C	638	159			638				

**17:15 - 17:30**

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
B-AC	18	4	295	0.060	18	0.0	0.1	14.276	B
C-AB	23	6	733	0.032	23	0.0	0.0	5.581	A
C-A	376	94			376				
A-B	22	6			22				
A-C	781	195			781				

**17:30 - 17:45**

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
B-AC	18	4	295	0.060	18	0.1	0.1	14.285	B
C-AB	24	6	733	0.032	24	0.0	0.0	5.582	A
C-A	376	94			376				
A-B	22	6			22				
A-C	781	195			781				

**17:45 - 18:00**

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
B-AC	14	4	339	0.042	14	0.1	0.0	12.187	B
C-AB	16	4	709	0.023	16	0.0	0.0	5.717	A
C-A	310	77			310				
A-B	18	4			18				
A-C	638	159			638				

**18:00 - 18:15**

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
B-AC	12	3	371	0.032	12	0.0	0.0	11.023	B
C-AB	12	3	694	0.018	12	0.0	0.0	5.814	A
C-A	261	65			261				
A-B	15	4			15				
A-C	534	133			534				



