LISMORE HOMES LIMITED

Residential Development Baldoyle GA2

Traffic and Transport Assessment

BARRY & PARTNERS
consulting engineers

CIVIL • STRUCTURAL • ENVIRONMENTAL • TRANSPORTATION

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SECTION 1: INTRODUCTION

1.1 Background

J. B. Barry and Partners Limited was commissioned by Lismore Homes Limited to undertake a site-specific Traffic and Transport Assessment (TTA) to support a Planning Application for Baldoyle GA2, a residential development on lands at Stapolin, Baldoyle, Dublin 13. The Baldoyle GA2 development corresponds to Growth Area 2 in the Baldoyle Stapolin Local Area Plan 2013-2019 as extended. Growth Area 1 is currently under construction and Growth Area 3 has recently received planning permission from An Bord Pleanala.

GA2 is a Strategic Housing Development for the construction of 1,007 residential apartments (consisting of 58 no. studio units, 247 no. 1 bedroom units, 94 no. 2 bedroom 3 person units, 563 no. 2 bedroom 4 person units, and 45 no. 3 bedroom units), communal residential community rooms, and a ground floor creche in 16 no. buildings with heights varying from 4 to 12 storeys, basement and surface level car parking, secure bicycle parking, landscaping, water supply connection at Red Arches Road, and all ancillary site development works on a site located in the townland of Stapolin, Baldoyle, Dublin 13.

It is noted that the proposed 1,007 units for the GA2 development is higher that the future land use assumptions noted in the South Fingal Transport Study (2019). However due to the high-quality public transport (existing and proposed) and cycling infrastructure in the area, Baldoyle is an ideal location for higher density developments. Baldoyle is also in close proximity to the city centre and growing employment areas, so will require higher density developments in the future.

The proposed development site is located in Stapolin townland, Baldoyle, Dublin 13 as shown in Figure 1 below.

Figure 1: Location of Proposed Development (Google Maps, annotation by J.B. Barry & Partners)

1.2 Consultation and Scoping Study

Preplanning meetings were held with Fingal County Council (FCC) including the Roads and Traffic department on the 2nd of September and the 16th of December 2020 to discuss the study area and agree the traffic junctions under consideration for this TTA. Following analysis of the surrounding area, it was agreed that the study area would include the following three junctions surrounding the development;

- Junction 1- Hole In The Wall / Grange Road / R139 roundabout;
- Junction 2- Grange Road / Grange Rise / Longfield Road;
- Junction 3- Coast Road / Red Arches Road roundabout;

These junctions were selected as they are considered the junctions most likely to be affected by traffic associated with the proposed development. As a result, these three junctions will form the study area for the TTA. The locations of the three junctions are illustrated in **Figure 2** below. Due to the current Covid-19 restrictions, traffic in the surrounding area is considerably less than normal. Therefore, it was agreed with FCC that historical traffic counts (pre-covid) were acceptable for analysing the junctions.

1.3 Objectives

This report provides an assessment of the potential traffic impacts associated with the proposed development. In this regard, the assessment aims to:

- Identify the existing environment in terms of traffic and transportation;
- Quantify the likely vehicle traffic flows to and from the development from and to the surrounding road network;
- Identify and quantify the likely traffic impacts on the surrounding road network resulting from the development; and
- Identify suitable measures to mitigate traffic and transportation impacts, if any, associated directly with the development.

The assessment is based on the findings of site visits, traffic observations, on-site traffic counts, architectural plans, and consultations with the Design Team.

1.4 Methodology

The methodology adopted for this report is summarised as follows:

- Reference was made to site layout drawings issued by the project architect and the proposed plans for the site;
- An inspection of the local road network was undertaken during am and pm peak traffic periods;
- Proposed access arrangements for the development onto the surrounding road network were considered;
- The traffic survey location and survey times were selected so as to best reflect the likely traffic generation from the subject development, particularly at proposed site access/egress points;
- Existing traffic volumes on the surrounding road network were analysed;

In preparing this assessment, reference has been made to the following documents:

- TII Traffic and Transport Assessment Guidelines;
- TII PE-PAG-02017 - Project Appraisal Guidelines for National Roads Unit 5.3 - Travel Demand Projections.
- Design Manual for Urban Roads and Streets (DMURS);
- Fingal Development Plan 2017 – 2023; and
- Baldoyle Stapolin Local Area Plan (2013-2019 extended),

SECTION 2: RECEIVING ENVIRONMENT

2.1 Site Location

The proposed development site is located on Stapolin Lands, Baldoyle North, Dublin 13 as shown in Figure 2 below.

Figure 2 – Development Location – Stapolin Lands, Baldoyle North, Dublin 13 (source Google Maps, annotation by JB Barry & Partners)

The subject site is located to the west of Coast Road and to the north of Grange Road. Access to the site will be gained via Red Arches Road to the South and Longfield Road to the East respectively. Refer to planning documentation and architect's plans for a more detailed description of the proposed development and the positioning of the buildings relative to the site boundary and access roads/links.

2.2 Local Road Network

The local road network in the vicinity of the subject site is illustrated graphically in Figure 2 above. The existing Grange Road and Coast Road, which run along the south and east of the site respectively will form the two access points to the development. Figures 3 to 7 following illustrate the three existing junctions to be analysed adjacent to the development.

The signalised crossroads junction of Grange Road/Grange Rise/Longfield Road located at the southern end of the development lands provides a high level of service for all road users including cars, buses, HGV's, cyclists, and pedestrians together with the visual and mobility impaired. See **Figure 3** following for a photograph of the junction of Grange Road/Grange Rise/Longfield Road.

Figure 3 - Junction of Grange Road/Grange Rise/Longfield Road (source Google Maps)

Longfield Road has a road pavement width of 17.0 metres in the vicinity of the junction including provision for an outbound bus lane which will have signal priority at the junction once a bus service is operational within the site. Footpath and cycle facilities are also provided along its length. See **Figure 4** following for a photograph of Longfield Road on the approach to the signalised junction on Grange Road.

Figure 4 - Longfield Road (source Google Maps)

Grange Road is a wide bi-directional two-lane distributor road providing a strategic link to the M50 to the west and to Coast Road to the east. Grange Rise serves Baldoyle Industrial Estate and Abbey Business Park and is a bi-directional two-lane local access road with a width of 9.3 metres.

Access to the site from the east is gained via Red Arches Road and the roundabout junction of Coast Road/Red Arches Road. The roundabout is operational since 2006 and provides a high level of service for all road users including cars, buses, HGV's, cyclists, and pedestrians together with the visual and mobility impaired. See **Figure 5** following for a photograph of the roundabout junction of Coast Road/Red Arches Road.

Figure 5 - Roundabout Junction of Coast Road/Red Arches Road (source Google Maps)

Red Arches Road provides a direct link between the Stapolin site and Coast Road/Baldoyle to the east. The road has a pavement width of 7.5 metres with off road cycle lanes and footpaths along its length. See **Figure 6** following for a photograph of Red Arches Road.

Figure 6 - Red Arches Road (source Google Maps)

The signalised roundabout junction of Hole in The Wall/R139/Grange Road located to the south west of the development lands provides a high level of service for all road users including cars, buses, HGV's, cyclists, and pedestrians together with the visual and mobility impaired. See **Figure 7** following for a photograph of the junction of Hole in The Wall/R139/Grange Road.

Grange Road and R139 are wide bi-directional two-lane distributor roads providing a strategic link to the M50 to the south west and to Coast Road to the east. R139 has a carriageway width of approximately 15.0m.

A pedestrian footpath runs along all arms of the roundabout as well as a high quality off-road cycle lane that runs around the roundabout.

Figure 7 - Roundabout Junction of Hole in The Wall/ R139/ Grange Road (source Google Maps)

The subject site, as well as surrounding phases of development, is well serviced internally by a road network which has been designed based on a clear hierarchy of street functions as follows:-

- Main Streets: These roads are 7.5 metres wide with additional space for indented parallel parking. These roads have been designed to cater for large volumes of traffic flows through the development, providing the highest level of connectivity, whilst still catering for other road users. Bus services will run along these routes.

- Secondary Streets: These roads are narrower than the main streets at 5.5 metres in width with additional space for indented parallel parking. These roads have been designed to provide access to the key areas around the site without generally connecting through the site.

- Narrow Streets: These roads are typically 4.0 metres wide with a lower level of additional road space for parking. These roads have been designed for local access only with the lowest level of connectivity. They will be pedestrian / cyclist dominated areas with shared road surfaces. They have been designed to cater for a low level of vehicular activity; however emergency vehicles can still be accommodated.

2.3 Public Transport

2.3.1 Existing Public Transport

The proposed development is well situated next to high-quality existing public transport services. The main Dublin-Belfast railway line bounds the site to the west. The line caters for DART services to and from Malahide to the north and Greystones, Bray and all Dublin stations to the south as well as a limited number of Northern Commuter services to and from Drogheda and Dundalk. At peak times, services run approx. once every 15 minutes linking the site with Dublin city centre. Clongriffin DART station, opened to the public in April 2010 is located approximately 500m from the GA2 development site.

In addition, the following Dublin Bus Routes currently service the study area:

- 102 - Dublin Airport to Sutton station via Coast Road & Baldoyle
- 15- Clongriffin to Ballycllen Road

Phase 1 of the new BusConnects network launched on 27th June with the introduction of H-Spine (H1, H2, H3, H9) and Route 6 (all operated by Dublin Bus). The following BusConnects Routes currently service the study area:

- H1- Baldoyle to City Centre
- H2- Malahide to City Centre

Bus stops are located along Grange Road on both upstream sides of the signal-controlled junction with Grange Rise/Longfield Road and regular bus services operate along the Malahide Quality Bus Corridor, Coast Road and other roads in the vicinity of the site as shown in **Figure 8**.

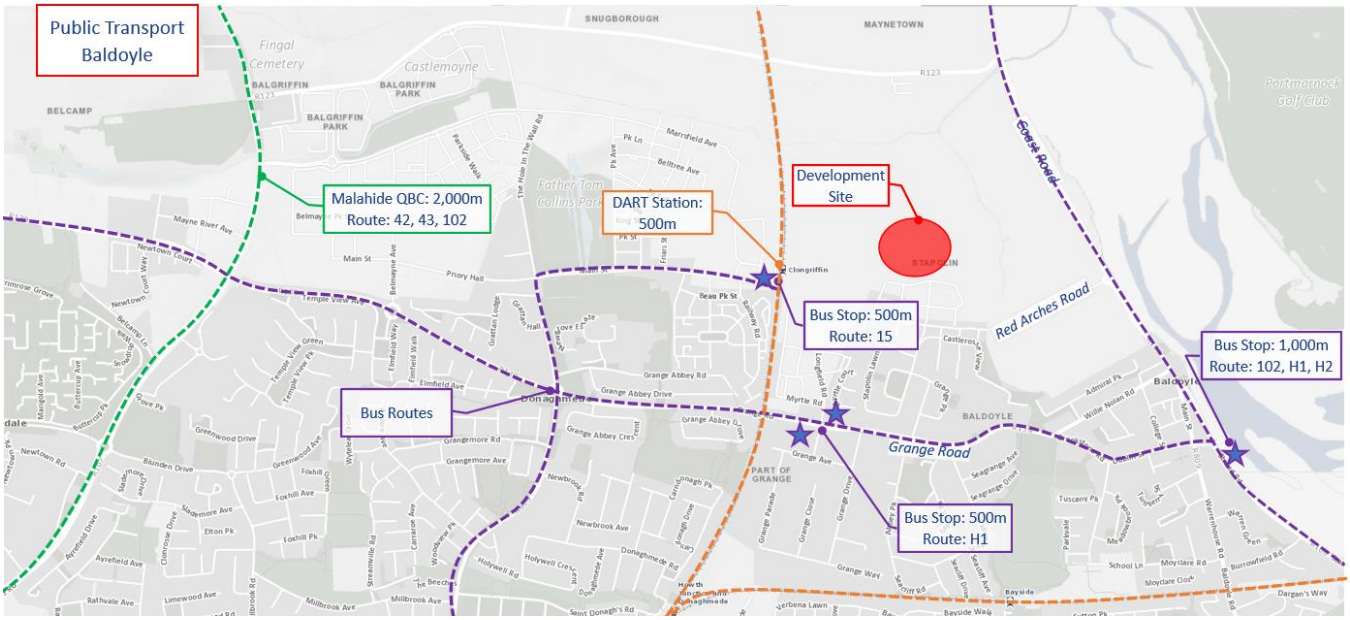

Figure 8: Public Transport Baldoyle

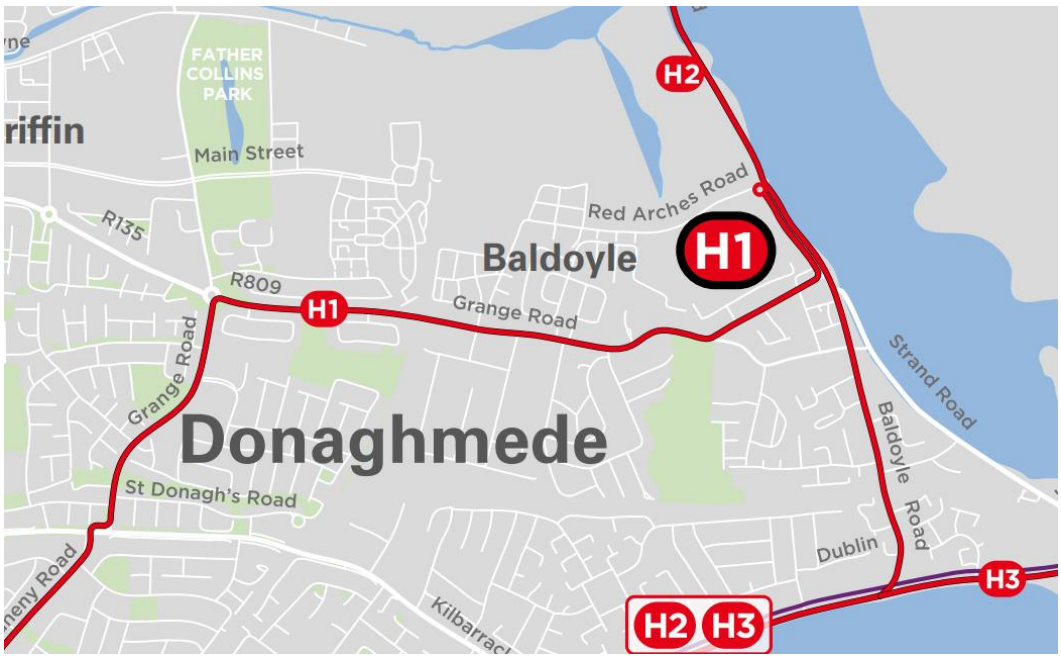

Figure 9: Phase 1 of the new BusConnects network as per www.busconnects.ie

2.3.2 Proposed Transport Proposals

Bus Connects proposes 16 No. Core Bus Corridors extending radially from Dublin City Centre to the surrounding suburbs. Bus Connects also proposes to introduce numerous new bus routes in close proximity to the development. **Figure 9** taken from the latest Bus Connects proposal illustrates proposed new routes in the vicinity of the proposed development. The proposed Clongriffin to City Centre Core Bus Corridor (CBC) shown in **Figure 9** is planned to originate at Clongriffin DART Station. This CBC scheme will deliver a public transport service with higher speeds and quality of service than traditional bus services. Such enhancements will be achieved by improved road infrastructure, the provision of appropriate vehicles, rapid and frequent operations.

Figure 9: Proposed Bus Connects Routes beside Baldoyle (Source www.busconnects.ie)

2.4 Existing Cycling and Pedestrian Facilities

The proposed development is very well catered for in terms of facilities for pedestrians and cyclists. Both the Coast Road Roundabout and Grange Road signalised junction are provided with pedestrian and cyclist facilities which link footpaths and cycle lanes on the external road network with similar facilities within the Stapolin Village development.

Longfield Road and Red Arches Road are provided with separate dedicated off road cycle lanes which tie-in seamlessly with cycle facilities at both junctions. See **Figure 10** following for photographs of off road cycle lanes on Longfield Road and Red Arches Road.

Longfield Road

Red Arches Road

Figure 10 – Off Road Cycle Lanes (source Google Maps)

Within the development site, the road layout design and traffic management measures ensure low vehicle speeds are maintained on development roads providing a safe environment for cyclists to travel. High quality pedestrian footpaths of minimum width 1.8 metres are provided on both sides of all development roads which provide good pedestrian linkage with all parts of the development and to existing external footpaths on the surrounding road network.

The site layout has been designed to ensure swift easy access for residents and workers to new on-site public transport nodes such as the train station and bus stop facilities. In the vicinity of the subject development access points, cycle facilities are in place on many roads on the surrounding road network as shown in NTA Greater Dublin Area Cycle Network Plan (**Figure 11** below).

Figure 11 – Off Road Cycle Lanes (source Google Maps, annotation by JB Barry & Partners)

As discussed above, in line with the Baldoyle-Stapolin LAP Objective TM 4, the development is ideally placed to facilitate enhanced patronage and efficient utilisation of public transport and promote walking and cycling.

SECTION 3: BASE YEAR 2021 – TRAFFIC VOLUMES

3.1 Traffic Survey

To determine current traffic behaviour in the vicinity of the subject site, a vehicle turning movement survey was obtained at all three junctions under consideration (See **Figure 2**). Due to the current Covid-19 restrictions, traffic in the surrounding area is considerably less than normal. Therefore, historical traffic counts were obtained for each junction;

- Junction 1- Hole In The Wall / Grange Road / R139 roundabout (2019)
- Junction 2- Grange Road / Grange Rise / Longfield Road (2019)
- Junction 3- Coast Road / Red Arches Road roundabout (2018)

The vehicle turning movement survey for Junction 1 was undertaken on Wednesday, January 31st, 2018, on Tuesday, May 21st, 2019 for Junction 2 and on Wednesday, January 31st, 2018 for Junction 3. The counts captured all turning movements at these junctions. The traffic survey at each junction was factored up[1] to 2021 figures to ensure consistency across all junctions. The counts were carried out over a 12-hour period (07:00 to 19:00) to cover both the morning and evening peak periods.

The morning peak hour was identified as 08:00-09:00 for all three junctions. The evening peak hour was identified as 18:00-19:00 at Junction 1, 15:00-16:00 at Junction 2 and 13:00-14:00 at Junction 3. The peak hours identified concur with visual observations made on site. Data was collected in 15-minute intervals and the following count classifications were employed:

- Cars;
- Light Goods Vehicles (LGV);
- Motorcycles (M/C)
- Oversize Goods Vehicles 1 (OGV 1);
- Oversize Goods Vehicles 2 (OGV 2);
- Public Service Vehicles (PSV); and
- Pedal Cycles (P/C).

A full transcription of the turning movement survey is included in **Appendix 1** herein.

The evening peak hour was observed to be more intense than the morning peak hour. However, in order to carry out a robust traffic analysis of the surrounding road network, the traffic modelling exercise following herein will be based on traffic flows recorded for both the weekday AM and PM peak hours.

A summary of the factored up 2021 vehicle turning movement surveys for the morning and evening peak hour periods is shown in **Figures 12 and 13** below.

[1] Traffic flows were factored up in accordance with Table 5.3.2 of Transport Infrastructure Ireland publication, Project Appraisal Guidelines. The medium growth rate factors were used.

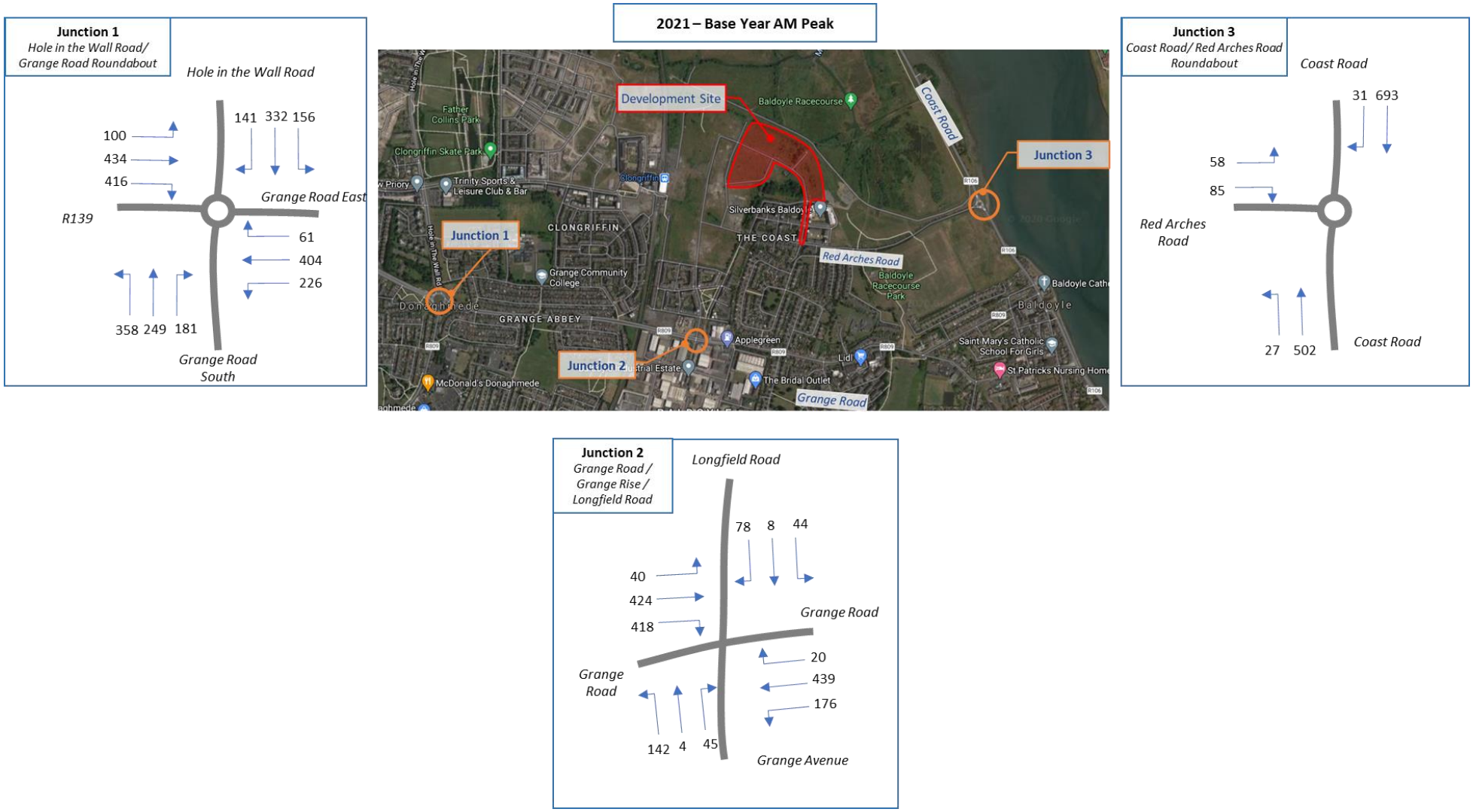

Figure 12: Traffic Flow 2021 Base Year AM Peak

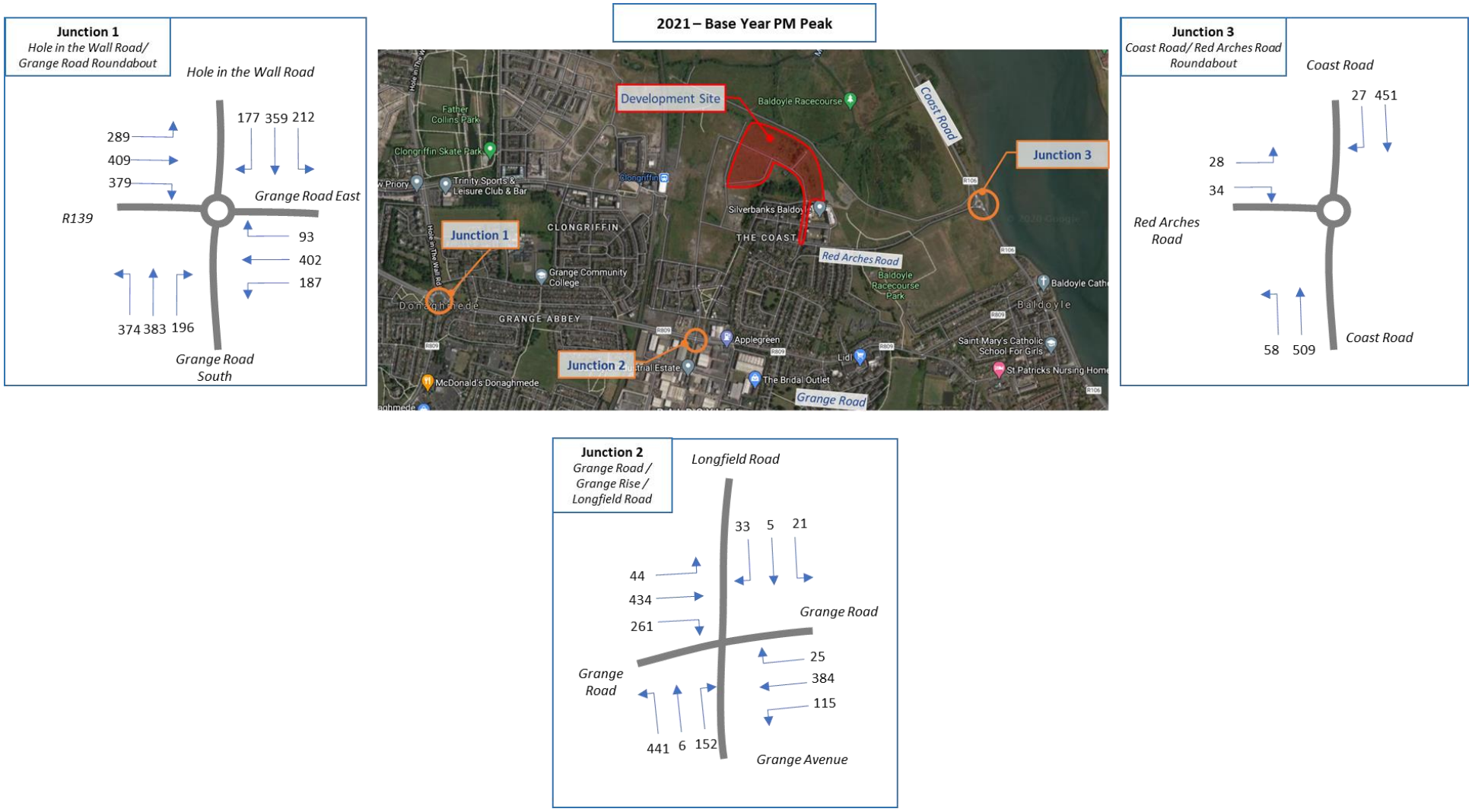

Figure 13: Traffic Flow 2021 Base Year PM Peak

3.2 Junction Capacity Assessment for Base Year 2021

A traffic capacity assessment of all three junctions was undertaken utilising the surveyed results shown in **Figures 12** and **13** in Section 3.1 and TRL's PICADY (Priority Intersection Capacity and Delay), OSCADY (Optimised Signal Capacity and Delay) and ARCADY (Assessment of Roundabout Capacity and Delay) traffic modelling software. A summary of the results of this analysis for the morning and evening peak hours is shown in **Tables 1 to 3** following. Each junction was modelled using it's own PM Peak time as outlined in Section 3.1.

- Junction 1- Hole In The Wall / Grange Road / R139 roundabout (2019)
- Junction 2- Grange Road / Grange Rise / Longfield Road (2019)
- Junction 3- Coast Road / Red Arches Road roundabout (2018)

Table 1: Junction 1- Hole In The Wall / Grange Road / R139 roundabout

2021 Morning and Evening Peak Hour

	Max. RFC		Max. Queue (PCU)		Average Delay (Seconds)	
Approach Arm	**AM**	**PM**	**AM**	**PM**	**AM**	**PM**
Grange Road (East)	0.54	0.54	1	1	6	6
Grange Road (South)	0.66	0.82	2	5	9	17
R139	0.77	0.95	4	14	13	44
Hole in The Wall	0.53	0.61	1	2	6	8

Table 2: Junction 2- Grange Road / Grange Rise / Longfield Road

2021 Morning and Evening Peak Hour

	Max. RFC		Max. Queue (PCU)		Average Delay (Seconds)	
Approach Arm	**AM**	**PM**	**AM**	**PM**	**AM**	**PM**
Grange Road (East)	0.92	0.83	22	17	72	58
Grange Avenue	0.44	0.76	6	20	46	59
Grange Road (West)	0.92	0.75	31	23	67	52
Longfield Road	0.57	0.24	6	2	76	62

Table 3: Junction 3- Coast Road / Red Arches Road roundabout

2021 Morning and Evening Peak Hour

	Max. RFC		Max. Queue (PCU)		Average Delay (Seconds)	
Approach Arm	**AM**	**PM**	**AM**	**PM**	**AM**	**PM**
Coast Road (North)	0.59	0.38	1.6	0.7	7	5
Red Arches Road	0.37	0.39	0.6	0.7	4	4
Coast Road (South)	0.13	0.06	0.2	0.1	4	4

A sample traffic modelling output file is included in this report in **Appendix 2**.

The normal design threshold for the ratio of flow to capacity (RFC) is 0.85 for a roundabout. **Table 1** demonstrates that Junction 1 exceeds the normal design threshold during the evening peak hour but operates within the theoretical capacity of 1.0. However, **Table 3** demonstrates that Junction 3 currently operates well within the normal design threshold during the morning and evening peak hour considered.

The normal design threshold for the ratio of flow to capacity (RFC) is 0.9 for a signalised junction. **Table 2** demonstrates that Junction 2- Grange Road / Grange Rise / Longfield Road the junction operates above the normal design threshold during the morning peak hour considered on the Grange Road arm (East and West).

SECTION 4: ACCESS ARRANGEMENTS AND ROAD SAFETY

4.1 Access Arrangement

It is proposed to utilise the two existing access points to the development from Red Arches Road onto Coast Road and from Longfield Road onto Grange Road. Pedestrian and cyclists' movements are fully catered for within the proposed development. Internal footpaths and walkways will be provided which link the proposed development to Red Arches Road and Longfield Road.

Within the development site, the road layout design and traffic management measures ensure low vehicle speeds are maintained on development roads providing a safe environment for cyclists to travel. High quality pedestrian footpaths of minimum width 1.8 metres are provided on both sides of all development roads which provide good pedestrian linkage with all parts of the development and to existing external footpaths on the surrounding road network.

Currently all construction traffic access/egress the site via the construction route coming from Moyne Road. The route is for construction traffic only and does not interfere with the general public within the greater Baldoyle development.

4.2 Road Safety Assessment

All development traffic will enter and exit the site via the new access junctions on Red Arches Road and Longfield Road. The Road Safety Authority (RSA) database of road collision information was interrogated to establish if the surrounding road network in the vicinity of the proposed development access holds records relating to historical collision occurrence (**Figure 14** below).

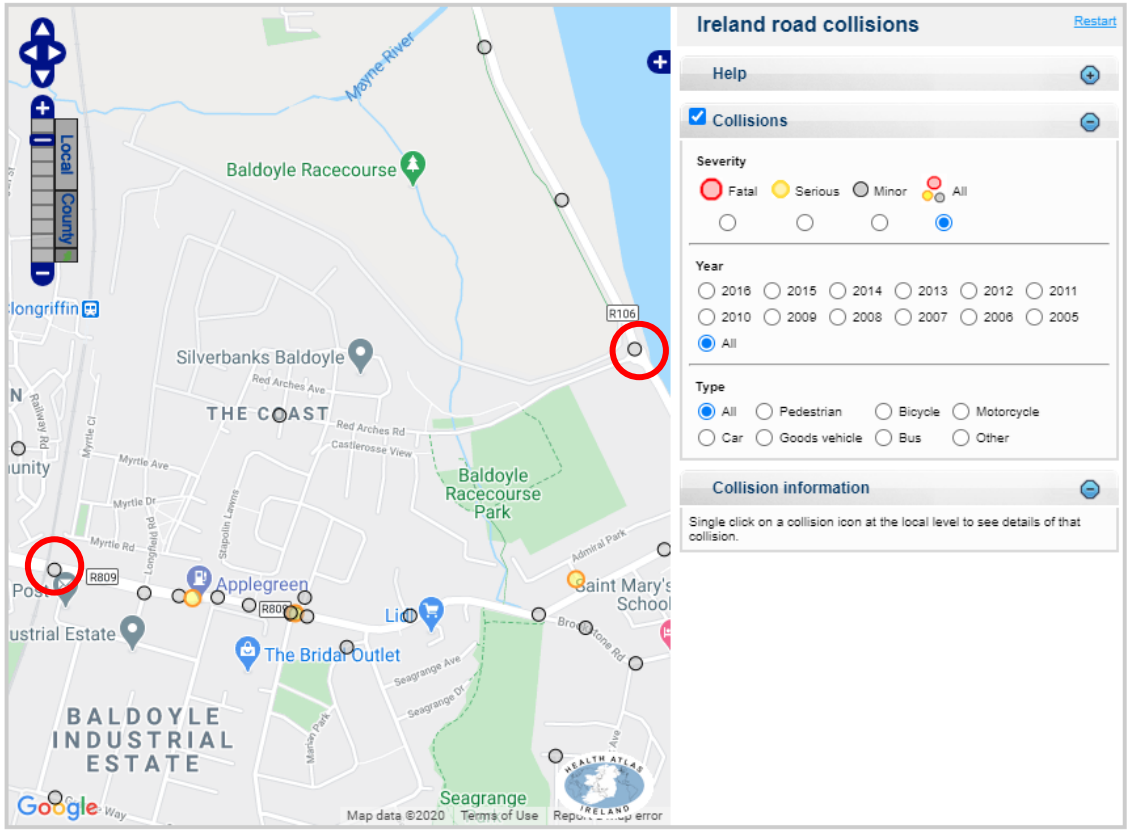

Figure 14: RSA record of collisions

The exercise revealed that there was one minor collision recorded at the eastern junction on the Coast Road and one minor collision at the southern junction on Grange Road between 2005 and 2016. A number of minor collisions and two serious collisions were also recorded along Grange Road. The circumstances of these collisions are varied and there is no pattern of collisions at this junction. It is not considered that the proposed development would result in any traffic safety implications.

SECTION 5: TRIP GENERATION AND ASSIGNMENT

5.1 Development Trip Generation and Modal Split

5.1.1 Introduction

The Trip Rate Information Computer System (TRICS) database was interrogated to derive the potential development trip generation rates. Utilising data supplied by the TRICS database, **Table 5a** below details the estimated trip generation for the proposed residential development and creche during the morning and evening peak hours being considered for this study. The TRICS morning and evening peak hours were 08:00 to 09:00 and 17:00 to 18:00 respectively. The full TRICS output files are contained in **Appendix 3**.

When estimating trip generation for a residential development using TRICS the trip rate for car drivers generally accounts for a 65% modal split of total trips. However, in order to produce a more accurate assessment of the traffic impart, an investigation into the likely modal split was undertaken.

5.1.2 2016 Census Modal Choice

Census 2016 Small Area Population Statistics were analysed in order to determine existing travel to work, school and college trends of the surrounding apartment developments in the Baldoyle area. For the purposes of this analysis, 5 No. locations, which are characterised as being predominately apartment complexes were utilised. These locations mirror closely the proposed Baldoyle GA2 apartment development and are illustrated in **Figure 15** below, marked in purple. Small Area populations in the area which comprised mainly semi-detached housing units or residential/industrial areas were excluded from this analysis.

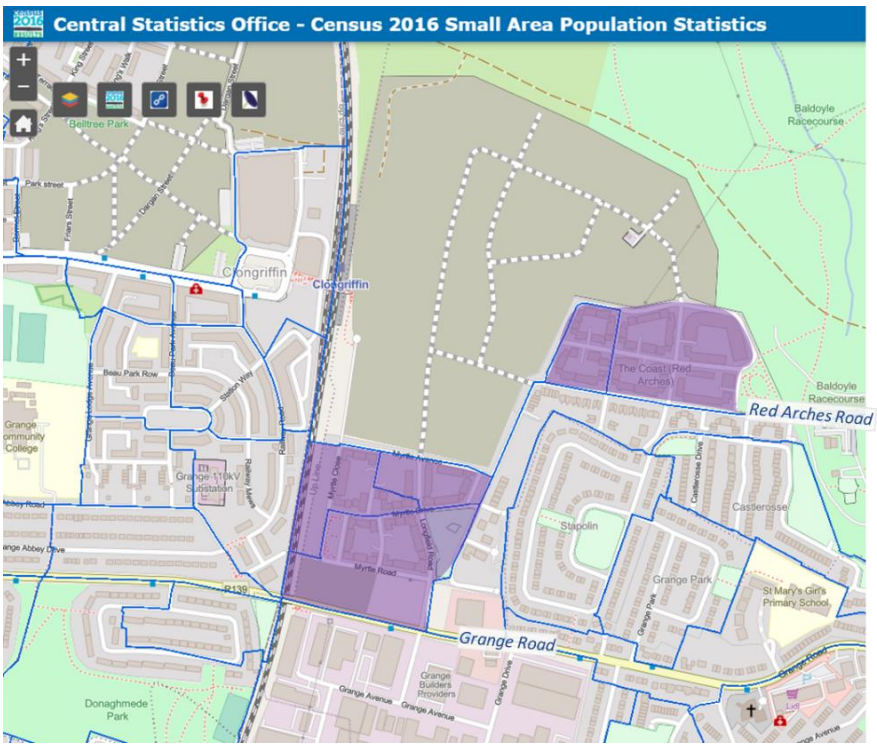

Figure 15: Census 2016 Data Locations (Source: Central Statistics Office)

Table 4 outlines the modal split for households traveling to work, school or college of the surrounding apartment residential developments. The analysis indicates that a modal split of 31.4% for car drivers is observed in the area, far lower than the 65% modal split found in TRICS.

Table 4: Mode Choice Summary

Mode Choice	No. of Households	%
Car driver	*274*	**31.4%**
Car passenger	*103*	**11.8%**
On foot	*117*	**13.4%**
Bicycle	*56*	**6.4%**
Bus	*57*	**6.5%**
Train / DART	*211*	**24.2%**
Other	*45*	**5.2%**
	873	**100%**

5.1.3 PTAL – Public Transport Accessibility Level

As mentioned above, when estimating trip generation for a residential development using TRICS, the trip rate for cars accounts for a 65% modal split. This is in line with the national average modal split as well as the modal split of a location with a Public Transport Accessibility Level (PTAL) of 1 (South Fingal Transport Study 2012: Section 5). As the Baldoyle GA2 development has a PTAL of 4[2] (South Fingal Transport Study 2012: Section 5), a modal split of 41% for car drivers is generally applicable. A Public Transport Accessibility Level (PTAL) is defined as a numerical value which determines the quality of access to public transport from a particular location. The value is based on the proximity to a service, the frequency of the service, and the nature of the service. Baldoyle GA2 has a PTAL of 4 due to the proximity of the DART and Bus.

5.1.4 Conclusion

It can be concluded from the analysis that the car trips generated by the development will result in a modal split of c.30% to 40%. As a result, the trip rates derived by TRICS should be attenuated. This trip attenuation will more accurately reflect the trip generation of the Baldoyle GA2 development due to its proximity to Clongriffin DART station and Dublin bus routes. It is also in line with the regional and national strategies to promote and encourage sustainable transport. Furthermore, it is highly likely that this modal split will actually be lower due to the proposed sustainable parking strategy which will encourage less of a reliance on private cars and a greater focus on sustainable transport such as cycling.

Utilising data supplied by the TRICS database including trip attenuation principles, **Table 5a** following details the estimated trip generation for the proposed development and Creche during the morning and evening peak hours being considered for this study. For the purpose of this analysis, a modal split of 35% for the private car was used to reflect the likely outcome for the proposed development.

Additionally, the trips generated by the creche facility will most likely come from within the Baldoyle/Stapolin residential area and form part of the GA2 residential trips (ie. people using the creche will live within the GA2 development or the adjacent Baldoyle GA1/GA3 developments, rather than the wider Donaghmede/ Clongriffin area). Therefore, these trips will also be attenuated.

[2] *The South Fingal Transport Study 2019 does not reference "Public Transport Accessibility Level"; therefore the 2012 study is referenced. The traffic and transport assessment for the Baldoyle development will use these assumptions.*

Table 5a: TRICS Trip Generation Residential Housing Development and Creche

	Time	Factor	TRICS Arrival Rate	TRICS Departure Rate	Hourly Trips *(65% modal split)*		Attenuated Hourly Trips *(35% modal split)*	
					Trips In	Trips Out	Trips In	Trips Out
Residential Units	Morning Peak Hour	1,007 units	0.063 *(per unit)*	0.196 *(per unit)*	63	198	**34**	**107**
	Evening Peak Hour		0.164 *(per unit)*	0.079 *(per unit)*	165	80	**92**	**43**
Creche	Morning Peak Hour	820m^2	3.396 *(per 100m^2)*	2.806 *(per 100m^2)*	28	23	**15**	**12**
	Evening Peak Hour		2.412 *(per 100m^2)*	2.904 *(per 100m^2)*	20	24	**11**	**13**
TOTAL	Morning Peak Hour	-	-	-	-	-	**49**	**119**
	Evening Peak Hour		-	-	-	-	**103**	**56**

5.2 Trip Distribution

It was assumed for the purposes of this study that the future development traffic will likely be weighted more towards the Red Arches Road onto the Coast Road rather than the alternative Grange Road junction This is due to the proximity of the development to Coast Road and likely quicker journey times/less congestion via the Coast Road. By the year of opening 2026, it is anticipated that 60% of vehicles will enter and exit the subject site via the Coast Road Junction and 40% of vehicles will enter and exit the subject site via the Grange Road Junction. This will be the case during the morning and evening peak hours.

The future development traffic distribution at the surrounding junctions themselves will mirror existing traffic patterns i.e. development generated flows will be split through the junctions proportionally to existing flows. Once development traffic reaches the Red Arches Road/Coast Road junction; 40% of vehicles will travel north towards Portmarnock and 60% will travel south towards Baldoyle village, this split is evident for both the morning and evening peak hours. Equally, 40% of vehicles arriving back at the Red Arches Road/Coast Road junction will come from the north and 60% will come from the south. Once development traffic reaches the Longfield Road/Grange Road junction; 60% of vehicles will travel west towards the Donaghmede roundabout, 33% will travel east towards Baldoyle village and 7% will travel south towards Baldoyle Industrial Estate, this is also evident for both the morning and evening peak hours. Equally, when vehicles arrive back at the Longfield Road/Grange Road junction, they will follow the same proportions.

See **Figure 16** below for a graphical representation of the trip distribution in and out of the development. The trip distribution will be the same for the morning and evening peak.

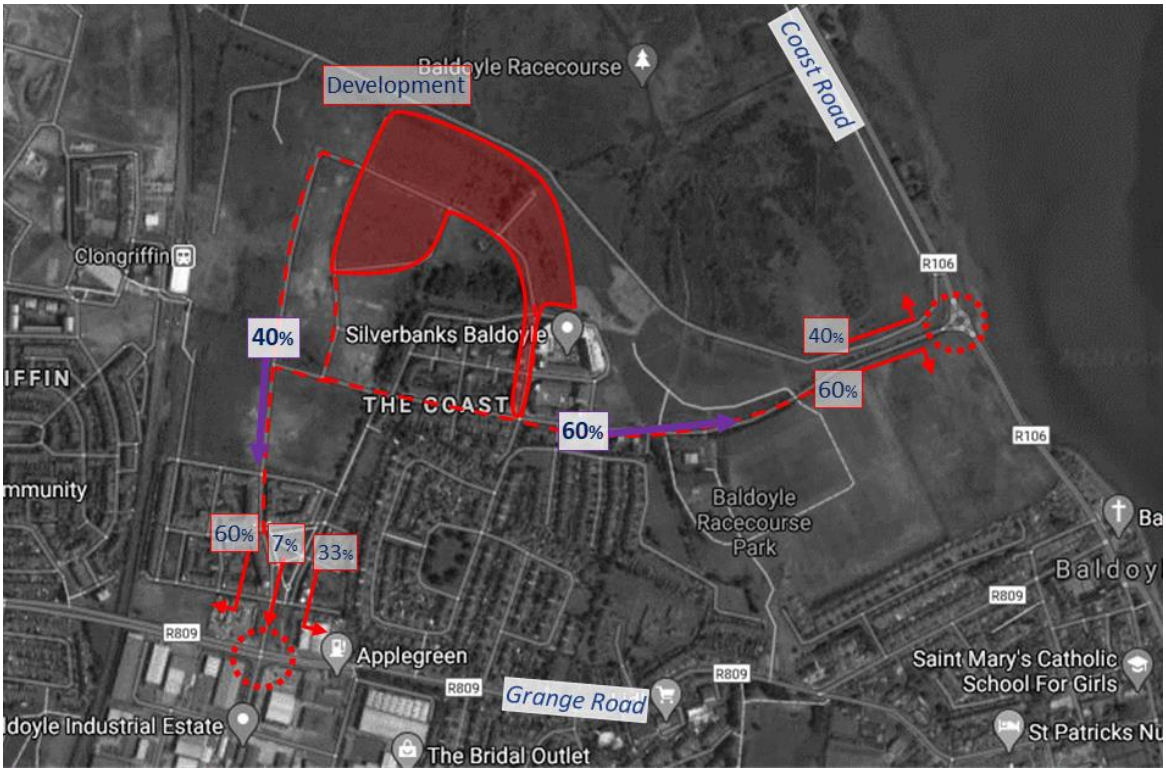

Figure 16: Trip Distribution Percentages (AM peak and PM peak)

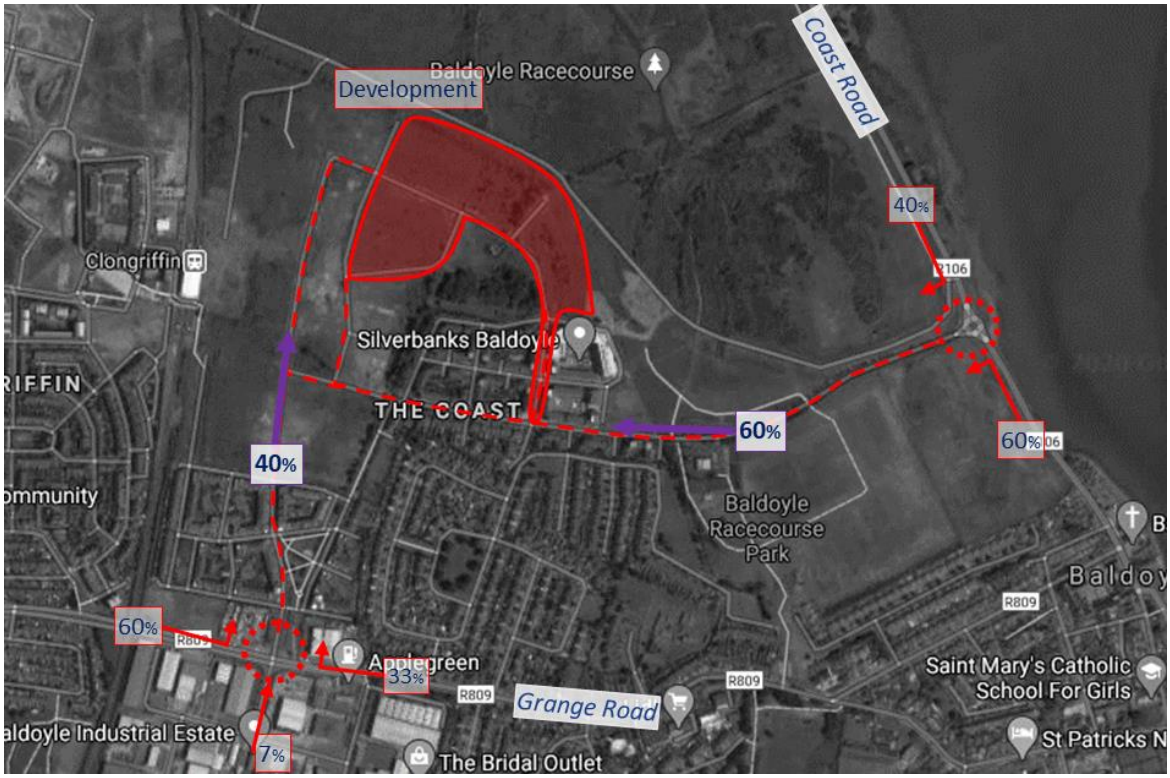

Figure 16: Trip Distribution Percentages (AM peak and PM peak)

5.3 Neighbouring Developments

5.3.1 Introduction

A review was conducted of neighbouring developments which have been granted planning permission or currently seeking planning permission in the vicinity of the proposed GA2 development. The exercise is to identify any nearby developments with the potential to significantly increase vehicular traffic flows on the surrounding road network.

5.3.2 Neighbouring Committed Developments

Three locations where identified which have been granted planning permission and have started construction or nearing a construction start.

- A 16-classroom primary school with 22 no. car parking spaces and vehicular access to/from Myrtle Road connecting to Longfield Road. (Planning Ref: F19A/0461).
- A residential development as part of Baldoyle Stapolin Growth Area 1 (GA1), consisting of 99 houses which are currently under construction. The development formed part of a previously permitted planning application (Planning Ref F16A/0412 and APB PL06f.248970), which also included the rest of the GA1 site. The remainder of the GA1 site will be subject to another planning application.

For the purposes of this analysis, it has been assumed that the two developments above will be fully constructed and operational by the GA2 year of opening c. 2026 and therefore will be included in the "Without" development scenarios.

5.3.3 Neighbouring Future Developments

Three neighbouring developments where identified which are currently seeking planning permission and have submitted applications.

- The GA1 development will consist of 882 new residential dwellings, residential tenant amenities, village centre and creche. (Planning Ref ABP-307288-20).
- The GA3 development will consist of 1,221 new residential dwellings, residential tenant amenities, creche, café/restaurant and public realm. (Planning Ref ABP-309599-21).
- A Hotel and Retirement Home on Red Arches Road, directly off Junction 3- Coast Road / Red Arches Road roundabout, consisting of a 150 no. bedroom hotel and a 150 no. bedroom retirement and respite care home. (Planning Ref F14A/0109 and ABP Ref. PL 06F.243832).

It is not known if the GA1, GA3 and the hotel/retirement home developments will be completed by the year of opening or even granted permission. However, in order to produce a conservative assessment, these neighbouring developments will be added to the traffic modelling scenarios. The combination of all three Growth Areas will act as a **"Stress Test"** Scenario and will be modelled in the year of opening 2026 and design year 2041.

5.3.4 Trip Generation

The trip generation of the neighbouring committed and future developments have been sourced from the traffic and transport statements submitted as part of the relevant planning applications referenced above.

Table 5b following details the trip generation of committed developments and **Table 5c** details the trip generation of potential future developments.

Table 5b: TRICS Trip Generation Committed Developments

	Time	Factor	Hourly Trips	
			Trips In	Trips Out
School	Morning Peak Hour	-	68	68
	Evening Peak Hour		-	-
GA1 (99 Units Under Construction)	Morning Peak Hour	-	18	37
	Evening Peak Hour		28	19
TOTAL	Morning Peak Hour	-	**127**	**105**
	Evening Peak Hour		**28**	**19**

Table 5c: TRICS Trip Generation Future Developments

	Time	Factor	Hourly Trips	
			Trips In	Trips Out
Hotel and Retirement Home	Morning Peak Hour	-	41	40
	Evening Peak Hour		50	51
GA1	Morning Peak Hour	-	127	224
	Evening Peak Hour		192	155
GA3	Morning Peak Hour	-	72	213
	Evening Peak Hour		142	102
TOTAL	Morning Peak Hour	-	**240**	**477**
	Evening Peak Hour		**384**	**308**
TOTAL (including GA2)	Morning Peak Hour	-	**287**	**596**
	Evening Peak Hour		**489**	**368**
TOTAL (including committed developments)	Morning Peak Hour	-	**414**	**701**
	Evening Peak Hour		**517**	**387**

5.4 Trip Assessment Years

Assuming planning permission is granted for the development in the beginning of 2022 and allowing for a 3-4 year construction period, it is estimated that the proposed development will be fully operational by the year 2026.

Traffic analysis associated with this study will focus on the following future development operational scenarios:

- Residential Development Year of Opening – 2026
- 15 Year Design Horizon – 2041

The projected 2026 and 2041 design year traffic flows were calculated by factoring up the 2018/2019 recorded traffic flows in accordance with Table 5.3.2 of Transport Infrastructure Ireland publication, Project Appraisal Guidelines. The medium growth rate factors have been utilised.

Figures 17 and 18 illustrate the 2023 Year of Opening for the "without" development, "**with**" development (the proposed GA2) and "**stress test**" (combination of all three Growth Areas) scenarios. **Figures 19 and 20** illustrate the 2041 Design Year Horizon for the "without" development, "**with**" development and "**stress test**" scenarios.

Figure 17: Traffic Flow 2026 Opening Year AM Peak

Figure 18: Traffic Flow 2026 Opening Year PM Peak

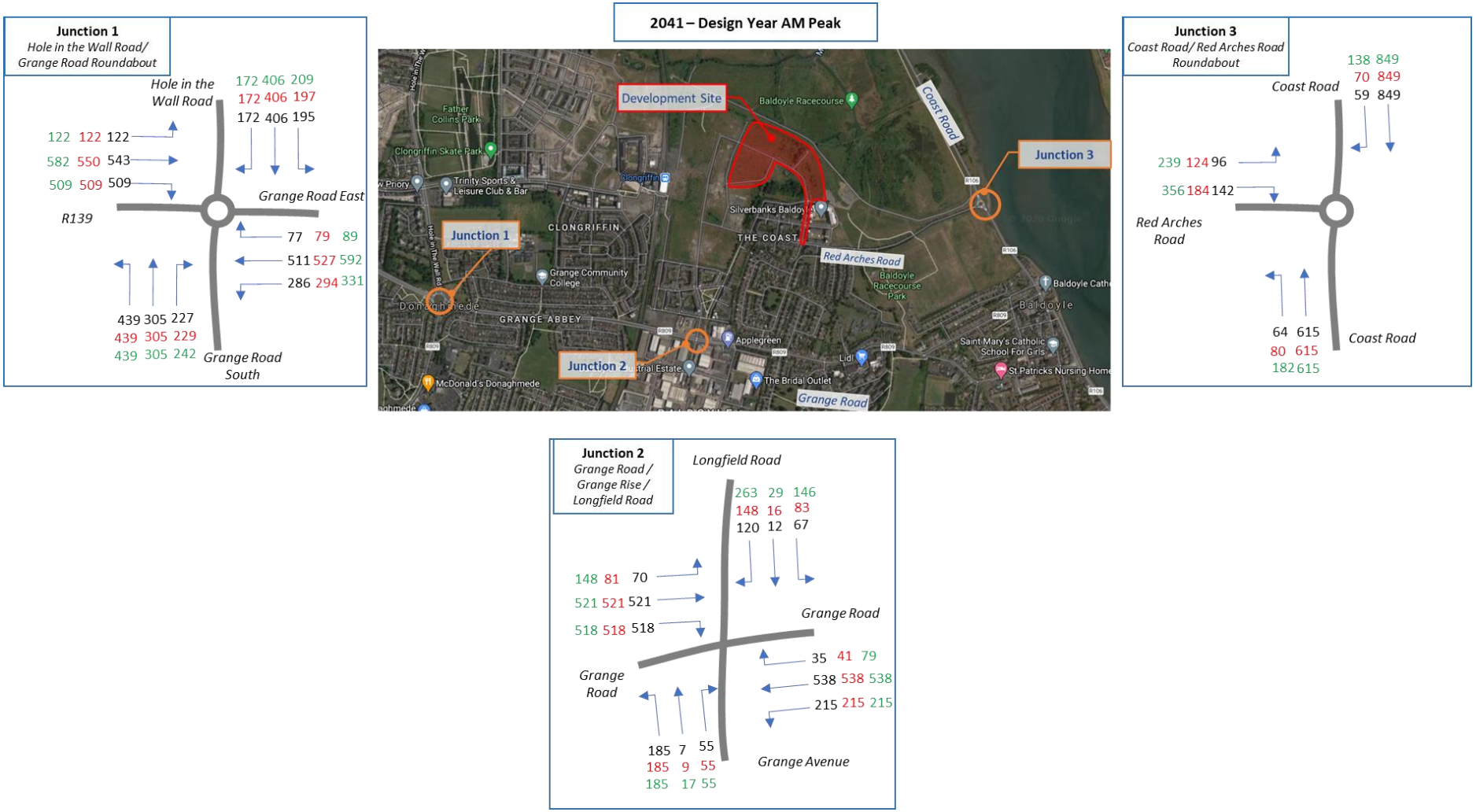

Figure 19: Traffic Flow 2041 Design Year AM Peak

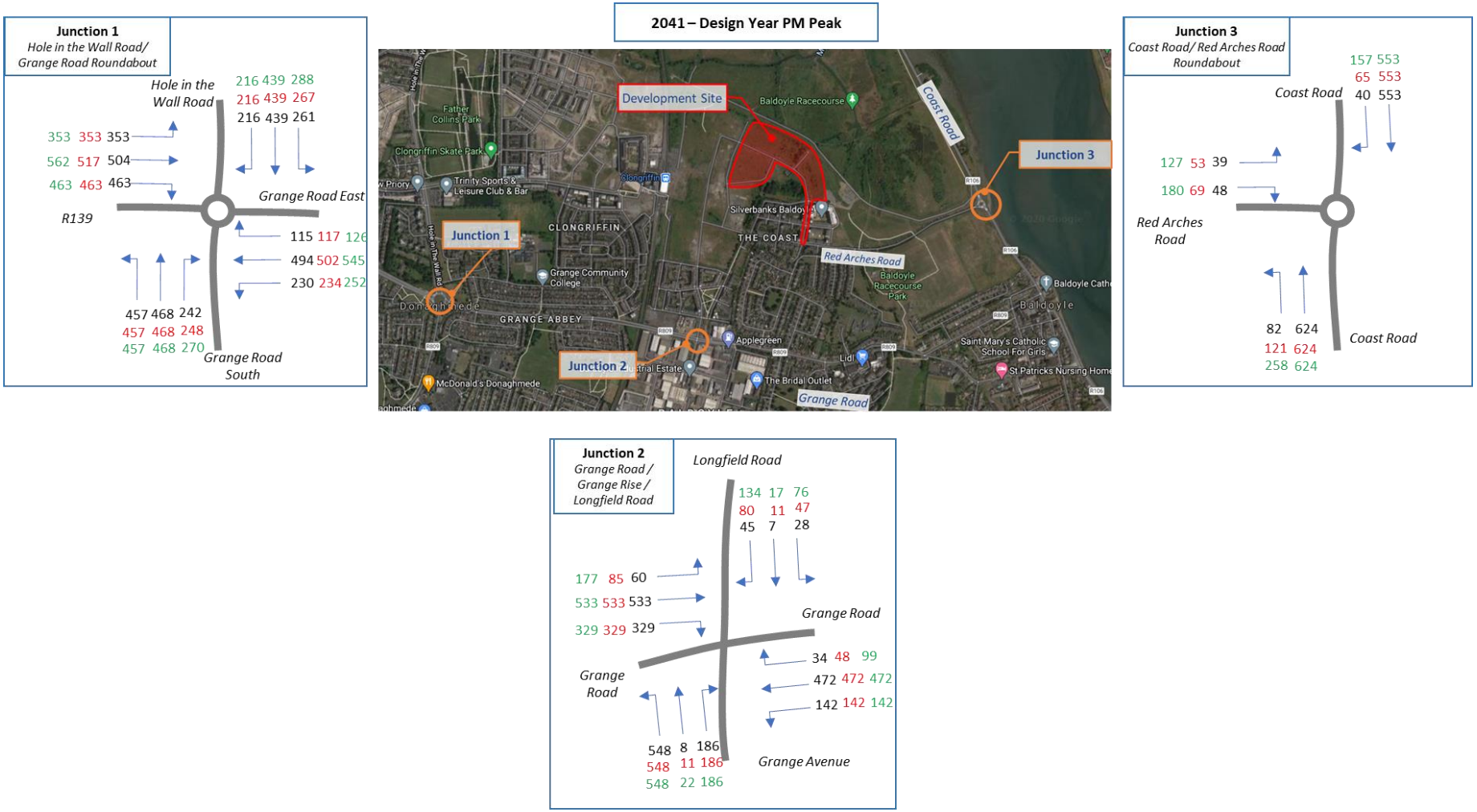

Figure 20: Traffic Flow 2041 Design Year PM Peak

SECTION 6: TRAFFIC IMPACT

6.1 Background

To assess the future traffic impact of the proposed development, capacity assessments were undertaken using TRL's PICADY, OSCADY and ARCADY software on the following junctions;

- Junction 1- Hole In The Wall / Grange Road / R139 roundabout
- Junction 2- Grange Road / Grange Rise / Longfield Road
- Junction 3- Coast Road / Red Arches Road roundabout

The junctions were modelled for the 2026 year of Opening and 2041 the 15 Year Design Horizon for the morning and evening peak hour periods using the flow diagrams shown in **Figure 17 to 20** in the previous section. Each junction was modelling using their own PM Peak time as outlined in Section 3.1.

To demonstrate the direct traffic impact associated with the proposed development, the traffic modelling exercise was carried out for the "without" development, "**with**" development (the proposed GA2) and "**stress test**" (combination of all three Growth Areas) scenarios. A sample traffic modelling output file is included in this report in **Appendix 2**.

6.2 Operational Phase 2026 Opening Year

A summary of the results of the analysis for the 2026 year of opening the "without" development, "**with**" development and "**stress test**" scenarios., morning and evening peak hours is shown in **Tables 7** to **9** following.

Table 7: Junction 1- Hole In The Wall / Grange Road / R139 roundabout

2026 Opening Year Morning and Evening Peak Hour

	Max. RFC		Max. Queue (PCU)		Average Delay (Seconds)	
Approach Arm	**AM**	**PM**	**AM**	**PM**	**AM**	**PM**
Grange Road (East)	0.63 0.65 0.75	0.61 0.62 0.67	2 2 3	2 2 2	8 8 11	7 8 9
Grange Road (South)	0.74 0.75 0.79	0.92 0.93 0.97	3 3 4	10 11 16	12 12 15	34 37 53
R139	0.86 0.87 0.91	1.06 1.08 1.13	6 7 9	49 57 83	21 22 28	127 144 200
Hole in The Wall	0.61 0.62 0.64	0.68 0.69 0.72	2 2 2	2 2 3	8 8 9	9 10 11

The normal design threshold for the ratio of flow to capacity (RFC) is 0.85 for a roundabout junction. **Table 7** demonstrates that Junction 1- Hole in The Wall / Grange Road / R139 exceeds the normal design threshold during the morning and evening peak hour considered for the R139 and Grange Road (South) arms. The R139 arm during the PM peak period will also exceed the normal theoretical capacity of 1.0 with queuing and delays

evident. However, this is the case for both the "Without", "**with**" development (the proposed GA2) and "**stress test**" (combination of all three Growth Areas) scenarios.

It is clear from the comparative analysis presented above in terms of Max RFC, Max Queue size and Average Delay, that the proposed development will have an imperceptible impact on the Junction. The few vehicle trips generated by the development during the peak hours will be well diluted when distributed by the time it reaches the Hole In the Wall roundabout and hence will have a minimal traffic impact.

Table 8: Junction 2- Grange Road / Grange Rise / Longfield Road

2026 Opening Year Morning and Evening Peak Hour

	Max. RFC		Max. Queue (PCU)		Average Delay (Seconds)	
Approach Arm	**AM**	**PM**	**AM**	**PM**	**AM**	**PM**
Grange Road (East)	0.95 0.97 1.03	0.88 0.88 0.88	29 32 47	20 20 21	83 93 138	65 65 65
Grange Avenue	0.61 0.62 0.74	0.84 0.84 0.88	9 9 10	25 25 28	59 61 75	71 73 85
Grange Road (West)	0.97 0.97 1.02	0.80 0.84 0.94	42 44 58	27 29 37	81 84 113	58 61 78
Longfield Road	0.88 0.90 1.02	0.31 0.57 0.95	12 14 31	3 6 14	136 130 153	66 77 47

The normal design threshold for the ratio of flow to capacity (RFC) is 0.90 for a signalised junction. **Table 8** demonstrates that Junction 2- Grange Road / Grange Rise / Longfield Road will exceed the normal design threshold during the morning peak hour considered. This is the case for both the "Without", "**with**" development (the proposed GA2) and "**stress test**" (combination of all three Growth Areas) scenarios. It is clear from the comparative analysis presented above in terms of Max RFC, Max Queue size and Average Delay, that the proposed development will have an imperceptible impact on the Junction. While the "**with**" development and "**stress test**" scenarios do have a noticeable effect on the Longfield Road arm, it is to be expected, as at this stage, once a junction is at or nearing capacity any slight increase, whether it is background traffic growth or new trip generation, will have a noticeable increase in queues/delays.

Table 9: Junction 3- Coast Road / Red Arches Road roundabout

2026 Opening Year Morning and Evening Peak Hour

	Max. RFC		Max. Queue (PCU)		Average Delay (Seconds)	
Approach Arm	**AM**	**PM**	**AM**	**PM**	**AM**	**PM**
Coast Road (North)	0.67 0.70 0.82	0.42 0.44 0.55	2.0 2.5 5	0.8 0.8 1.3	9 10 18	5 6 7
Red Arches Road	0.43 0.44 0.52	0.43 0.46 0.59	1 1 1.1	0.8 0.9 1.5	4 5 6	4 5 6
Coast Road (South)	0.21 0.27 0.54	0.07 0.10 0.28	0.3 0.4 1.3	0.1 0.1 0.4	4 5 7	4 4 5

The normal design threshold for the ratio of flow to capacity (RFC) is 0.85 for a roundabout junction. **Tables 9** demonstrates that Junction 3- Coast Road / Red Arches Road will operate within the normal design threshold during the morning and evening peak hour considered. This is the case for both the "Without", "**with**" development (the proposed GA2) and "**stress test**" (combination of all three Growth Areas) scenarios. The analysis indicates that the development will have an imperceptible impact on the Junction.

6.3 Operational Phase 2041 Design Year Horizon

A summary of the results of the analysis for the 2038 design year opening "without" development, "**with**" development (the proposed GA2) and "**stress test**" (combination of all three Growth Areas) scenarios, morning and evening peak hours is shown in **Tables 10** to **12** following.

Table 10: Junction 1- Hole In The Wall / Grange Road / R139 roundabout

2041 Opening Year Morning and Evening Peak Hour

	Max. RFC		Max. Queue (PCU)		Average Delay (Seconds)	
Approach Arm	**AM**	**PM**	**AM**	**PM**	**AM**	**PM**
Grange Road (East)	0.75 0.77 0.87	0.71 0.72 0.77	3 4 7	3 3 4	12 13 22	10 11 13
Grange Road (South)	0.87 0.88 0.93	1.08 1.09 1.14	7 7 11	60 66 92	24 24 39	153 161 229
R139	0.99 1.01 1.05	1.22 1.23 1.27	24 30 45	144 155 197	69 70 114	430 461 575
Hole in The Wall	0.74 0.74 0.76	0.77 0.77 0.80	3 3 3	4 4 4	13 13 14	13 13 15

The normal design threshold for the ratio of flow to capacity (RFC) is 0.85 for a roundabout junction. **Table 10** demonstrates that Junction 1- Hole in The Wall / Grange Road / R139 exceeds the normal design threshold during the morning and evening peak hour considered for the R139 and Grange Road (South) arms. The R139 and Grange Road (South) arms will also exceed the normal theoretical capacity of 1.0 with queuing and delays evident. However, this is the case for both the "Without", "**with**" development (the proposed GA2) and "**stress test**" (combination of all three Growth Areas) scenarios.

It is clear from the comparative analysis presented above in terms of Max RFC, Max Queue size and Average Delay, that the proposed development will have an imperceptible impact on the Junction. The few vehicle trips generated by the development during the peak hours will be well diluted when distributed by the time it reaches the Hole In the Wall roundabout and hence will have a minimal traffic impact.

Table 11: Junction 2- Grange Road / Grange Rise / Longfield Road

2041 Opening Year Morning and Evening Peak Hour

	Max. RFC		Max. Queue (PCU)		Average Delay (Seconds)	
Approach Arm	**AM**	**PM**	**AM**	**PM**	**AM**	**PM**
Grange Road (East)	1.05 1.06 1.14	0.95 0.96 0.96	53 47 84	27 29 29	150 161 308	88 90 90
Grange Avenue	0.73 0.76 0.85	0.96 0.96 0.96	11 12 13	35 34 42	69 74 88	102 102 102
Grange Road (West)	1.03 1.06 1.15	0.87 0.91 1.01	59 66 96	35 38 58	105 120 208	72 78 121
Longfield Road	0.98 1.00 1.15	0.36 0.64 0.93	16 20 45	4 7 15	176 174 290	72 88 141

The normal design threshold for the ratio of flow to capacity (RFC) is 0.90 for a signalised junction. **Table 11** demonstrates that Junction 2- Grange Road / Grange Rise / Longfield Road will exceed the normal design threshold during the morning and evening peak hour considered. This is the case for both the "Without", "**with**" development (the proposed GA2) and "**stress test**" (combination of all three Growth Areas) scenarios. It is clear from the comparative analysis presented above in terms of Max RFC, Max Queue size and Average Delay, that the proposed development will have an imperceptible impact on the Junction. While the "**with**" development and "**stress test**" scenarios do have a noticeable effect on the Longfield Road arm, it is to be expected, as at this stage, once a junction is at or nearing capacity any slight increase, whether it is background traffic growth or new trip generation, will have a noticeable increase in queues/delays.

Table 12: Junction 3- Coast Road / Red Arches Road

2041 Opening Year Morning and Evening Peak Hour

	Max. RFC		Max. Queue (PCU)		Average Delay (Seconds)	
Approach Arm	**AM**	**PM**	**AM**	**PM**	**AM**	**PM**
Coast Road (North)	0.76 0.77 0.92	0.47 0.49 0.61	3 4 10	1 1 2	13 14 37	5 6 8
Red Arches Road	0.48 0.47 0.58	0.49 0.51 0.65	1 1 2	1 1 2	5 5 6	5 5 7
Coast Road (South)	0.23 0.24 0.58	0.09 0.11 0.30	0.3 0.5 2	0 1 1	5 5 9	4 4 5

The normal design threshold for the ratio of flow to capacity (RFC) is 0.90 for a roundabout junction. **Tables 12** demonstrates that Junction 3- Coast Road / Red Arches Road will operate within the normal design threshold during the morning and evening peak hour considered. This is the case for both the "Without", "**with**" development (the proposed GA2) and "**stress test**" (combination of all three Growth Areas) scenarios. The analysis indicates that the development will have an imperceptible impact on the Junction. A sample traffic modelling output file is included in this report in **Appendix 2**.

6.4 Conclusion

As demonstrated above, Junction 3- Coast Road / Red Arches Road has a high level of residual capacity both in the 2026 and the 2041 future years. This will have the effect of attracting development trips away from the signalised Junction 2- Grange Road / Grange Rise / Longfield Road and therefore also Junction 1 – Hole in the Wall Road / Grange Road / R139 roundabout during peak hours as the road network flows 'balance out'.

In heavily trafficked urban environments, it is common for signalised junctions to exceed capacity with a degree of saturation well in excess of 1.0. As echoed within the South Fingal Transport Study, providing more road space to cater for private vehicles will undermine the area strategy which is to create a modal shift from car use to public transport. Therefore, any queuing and delay experienced by drivers at the signal-controlled Junction 2 may be considered a demand management measure which serves to promote the modal shift towards public transport. The national aspiration is not to provide additional road space within towns and cities for future traffic growth in order to deter car use and promote public transport. Lastly, it is evident from the analysis that the development will have an imperceptible/minimal impact on all three junctions.

6.5 Construction Traffic

Before the development commences, a full and detailed construction management plan should be submitted to and agreed in writing with the Planning Authority, which shall include, inter alia, a construction programme for the works, hours of operation, a traffic management plan, noise and dust mitigation measures, including details of a truck wheel wash at the site entrance, and details of construction lighting. A Construction Manager should be appointed to liaise directly with the various sections of Fingal County Council. The construction management plan should take into account construction vehicle routing and timing to mitigate any issues with vehicles on Longfield Road and Red Arches Road. Currently all construction traffic access/egress the site via the construction route coming from Moyne Road. The route is for construction traffic only and does not interfere with the general public within the greater Baldoyle development.

SECTION 7: PARKING PROVISION AND MANAGEMENT

7.1 Proposed Parking Provision

Preplanning meetings were held with Fingal County Council including the Roads and Traffic department on the 2nd of September and the 16th of December 2020 to discuss the proposed Baldoyle GA2 development. FCC advised that the car parking and cycle parking requirements of the Development Plan were to apply to the proposed development.

Although the requirements of Fingal County Council with regard to car parking is acknowledged, it is proposed that a sustainable approach to parking will be incorporated into the development. The parking strategy utilised is derived from "Sustainable Urban Housing: Design Standards for New Apartments", which places a strong emphasis on bicycle parking. As per the standards, cycling is a:

"flexible, efficient and attractive transport option for urban living and these guidelines require that this transport mode is fully integrated into the design and operation of all new apartment development schemes."

The Baldoyle GA2 development is well situated next to high-quality off-road cycling infrastructure including the Baldoyle to Portmarnock Green Way and the S2S Greenway as mentioned in Section 2.4 above. There is an opportunity to maximise the benefit deriving from appropriate cycle parking provision.

The proposed development is also well situated next to high-quality existing public transport services, as well as planned future public transport upgrades as mentioned in Section 2.3 above. Additionally, the development is in an "Intermediate Urban Location" as per the standards and therefore the quantum of car parking can be reduced:

"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."

In line with the Baldoyle-Stapolin LAP Objective TM 2, the development seeks to put a strong emphasis on sustainable forms of transport. Due to the close proximity of the proposed development to existing and future high frequency and high capacity public transport services, as well as high-quality off-road cycling infrastructure, the parking strategy for the proposed development is based upon the principles of "Sustainable Urban Housing: Design Standards for New Apartments" in order to further promote sustainable transport modes thus minimising the need for car usage and associated car parking.

As per the apartment standards, it is proposed that car parking will be reduced due to the exceptional public transport and cycle facilities in the area. **Table 13** summarises the car parking and cycle parking proposed to be provided within the development. The majority of car parking will be provided in the basement areas. The basement car parking provision of 605 spaces equates to 0.6 car parking spaces per residential unit, with 124 additional visitor car parking spaces available on the surface. Bicycle parking provision amounts to a total of 1,754 surface residential cycle parking spaces (1 space per room) and 500 surface visitor cycle parking spaces (one space per two units). A creche set-down area has also been provided and 14 no. additional car parking spaces are allocated adjacent to the creche area at ground level to facilitate staff parking, short duration parking and childcare facility pickup / drop off.

Table 13: Car Parking and Bicycle Parking

	Land Use	Parking Provided	*Ratio*
Car Parking	**Residential Units**	605 Basement Car Parking Spaces	*0.6 spaces per residential unit*
		124 Surface/Visitor Car Parking Spaces	*1 space per 8 residential units*
	Creche Facility	14 Surface /Long-term/Short-term/Drop-off Car Parking Spaces	*1 space per 58m²*
Cycle Parking	**Residential Units**	1,754 Surface Residential Cycle Parking Spaces	*1 bicycle space per residential bedroom*
		500 Surface Visitor Cycle Parking Spaces	*1 bicycle space per 2 residential units*

The proposed car parking strategy at 0.6 basement car parking spaces per apartment will discourage reliance on the private car, resulting in a less negative effect on traffic in the surrounding area and is in line with a number of recent An Bord Pleanala decisions for similar developments. This strategy agrees with the projection that car ownership levels will not increase in the Baldoyle Area (and throughout the city) due to the increased investment in public transport infrastructure such as Bus Connects, DART and MetroLink.

Car Parking Management

In line with the Baldoyle-Stapolin LAP Objective TM28, it is understood that car parking management and control often forms the most practical and effective method of encouraging modal shift. Access to the underground residential car parking will be regulated by means of barrier controlled systems. It is proposed that the majority of on street visitor car parking will be taken in charge by the Local Authority. However, a number of on street parking spaces including the creche parking will remain under the control of the management company. As required in Objective TM28 of the Baldoyle-Stapolin LAP a Car Park Management Plan is contained in Section 4.1.4 of the Residential Travel Plan which is a separate document contained within the planning application documentation.

SECTION 8: SUMMARY & CONCLUSION

This TTA examines the impacts of the proposed Baldoyle GA2 residential development on lands at Stapolin, Baldoyle North, Dublin 13. The assessment has addressed:

- Existing traffic behaviour;
- Trip generation associated with the proposed residential development;
- Traffic impact of the proposal; and
- Proposed car and bicycle parking.

Vehicle turning movement surveys were obtained at three junctions in the surrounding area, which captured all turning movements at the junctions. These were agreed with the Roads and Transportation Department of Fingal County Council and were considered to be the most relevant major external junctions on the surrounding road network to the site that would be directly affected by the proposed development. Due to the current Covid-19 restrictions, traffic in the surrounding area is considerably less than normal. Therefore, historical traffic counts were obtained for each junction. The traffic survey at each junction was then factored up to 2021 figures to ensure consistency across all junctions.

- Junction 1- Hole in The Wall / Grange Road / R139 roundabout (2019);
- Junction 2- Grange Road / Grange Rise / Longfield Road (2019);
- Junction 3- Coast Road / Red Arches Road roundabout (2018);

Expected trip generation for the proposed residential development was estimated utilising the TRICS database and was revealed to be in total 49 trips inbound and 119 trips outbound in the morning peak hour and 103 trips inbound and 56 trips outbound in the evening peak hour.

The analysis and operational assessment of the proposed residential development at the three junctions revealed that at present Junction 1- Hole in The Wall / Grange Road / R139 roundabout and Junction 2- Grange Road / Grange Rise / Longfield Road just begin to exceed their normal design threshold in 2021 but operate within their theoretical capacity of 1.0. Junction 3- Coast Road / Red Arches Road roundabout operates below the normal design threshold during the morning and evening peak hour considered.

In the year of opening (2026) and design year (2041), three different assessment scenarios were looked at; the "Without", "**with**" development (the proposed GA2) and "**stress test**" (combination of all three Growth Areas) scenarios. It was assumed that all future development traffic will mirror existing travel flows when exiting the development.

In the year of opening (2026), Junction 3- Coast Road / Red Arches Road roundabout will continue to operate below the normal design threshold during the morning and evening peak hours. However, Junction 1- Hole in The Wall / Grange Road / R139 roundabout during the morning and evening peak hours and Junction 2- Grange Road / Grange Rise / Longfield Road during the morning and evening peak hour will operate above the normal design threshold. It must be noted that this will be the case for both the "Without", "**with**" development (the proposed GA2) and "**stress test**" (combination of all three Growth Areas) scenarios. However, the analyses indicate that the development will have an imperceptible impact on the Junctions.

In the design year (2041), Junction 3- Coast Road / Red Arches Road roundabout will continue to operate within the normal design threshold during AM and PM peak hour. This is the case for the "Without", "**with**" development (the proposed GA2) and "**stress test**" (combination of all three Growth Areas) scenarios. Junction 1- Hole in The Wall / Grange Road / R139 roundabout and Junction 2- Grange Road / Grange Rise / Longfield Road will continue to exceed the normal design threshold for the AM and PM peak hours. This is the case for the "Without", "**with**" development (the proposed GA2) and "**stress test**" (combination of all three Growth Areas) scenarios. However, the analyses indicate that the development will have an imperceptible impact on the Junctions.

The analysis and operational assessment of the key junctions in the vicinity of the study area confirms that the Grange Road signalised junction will operate at or close to capacity. The Coast Road roundabout will operate within capacity. This will have the effect of attracting development trips away from the signalised junction as the road network flows 'balance out'. This is also considered acceptable as providing more road space to cater for private vehicles will undermine the area strategy which is to create a modal shift from car use to public transport.

The proposed development is well positioned within the Baldoyle Stapolin LAP lands to avail of excellent links to Clongriffin DART station and Dublin Bus routes as well as neighbouring phases of development and the two key junctions onto the external road network at Coast Road Roundabout and Grange Road signalised junction.

The parking strategy utilised is derived from "Sustainable Urban Housing: Design Standards for New Apartments". As per the standards, it is proposed that car parking will be reduced due to the exceptional public transport and cycle facilities in the area. The proposed car parking strategy at 0.6 basement car parking spaces per apartment will discourage reliance on the private car, resulting in a less negative effect on traffic in the surrounding area.

This study concludes that from a traffic and road safety perspective, the proposed residential development as described herein, does not pose any significant residual impacts.

Appendix 1: Traffic Survey Results

IDASO

Survey Name: HDR 20 128 Grange Rd
Site: Site 1
Location: —
Date: Wed 31-Jan-2018

	A => A							A => B							A => C							A => D						
TIME	CAR	LGV	OGV1	OGV2	5V (BUS	TOT	PCU	CAR	LGV	OGV1	OGV2	5V (BUS	TOT	PCU	CAR	LGV	OGV1	OGV2	5V (BUS	TOT	PCU	CAR	LGV	OGV1	OGV2	5V (BUS	TOT	PCU
07:00	0	1	0	0	0	1	1	8	2	0	0	0	10	10	38	3	0	0	0	41	41	43	8	0	0	1	52	53
07:15	1	0	0	0	0	1	1	17	1	0	0	0	18	18	55	4	0	0	2	61	63	33	9	0	0	2	44	46
07:30	0	0	0	0	0	0	0	29	3	0	0	0	32	32	50	6	1	0	0	57	57.5	60	5	0	0	3	68	71
07:45	0	0	0	0	0	0	0	38	2	0	0	0	40	40	92	7	1	0	0	100	100.5	48	8	0	1	5	62	68.3
07:00 H/TOT	1	1	0	0	0	2	2	92	8	0	0	0	100	100	235	20	2	0	2	259	262	184	30	0	1	11	226	238.3
08:00	0	0	0	0	0	0	0	35	3	1	0	1	40	41.5	108	6	1	1	0	116	117.8	51	3	1	0	3	58	61.5
08:15	0	0	0	0	0	0	0	34	1	0	0	0	35	35	60	3	0	0	0	63	63	29	2	0	0	2	33	35
08:30	0	0	0	0	0	0	0	25	2	0	0	0	27	27	74	3	0	0	0	77	77	18	3	0	0	2	23	25
08:45	0	0	0	0	0	0	0	44	1	0	0	0	45	45	60	1	0	0	0	61	61	10	2	0	1	0	13	14.3
08:00 H/TOT	0	0	0	0	0	0	0	138	7	1	0	1	147	148.5	302	13	1	1	0	317	318.8	108	10	1	1	7	127	135.8
09:00	0	0	0	0	0	0	0	40	2	1	0	0	43	43.5	57	3	0	0	0	60	60	20	4	0	1	3	28	32.3
09:15	1	0	0	0	0	1	1	41	7	0	0	0	48	48	98	2	0	0	0	100	100	38	2	1	0	2	43	45.5
09:30	0	0	0	0	0	0	0	24	2	0	0	0	26	26	44	5	0	0	0	49	49	40	6	1	0	4	51	55.5
09:45	0	0	0	0	0	0	0	24	2	0	0	0	26	26	41	3	1	0	0	45	45.5	25	3	2	0	1	31	33
09:00 H/TOT	1	0	0	0	0	1	1	129	13	1	0	0	143	143.5	240	13	1	0	0	254	254.5	123	15	4	1	10	153	166.3
10:00	0	0	0	0	0	0	0	16	4	0	0	0	20	20	44	5	0	0	0	49	49	30	0	0	0	2	32	34
10:15	0	0	0	0	0	0	0	4	1	1	0	0	6	6.5	40	7	0	0	0	47	47	25	5	0	0	3	33	36
10:30	1	0	0	0	0	1	1	18	1	0	0	0	19	19	47	6	0	0	1	54	55	33	3	0	0	1	37	38
10:45	1	0	0	0	0	1	1	18	1	0	1	0	20	21.3	32	5	0	0	0	37	37	28	5	0	1	2	36	39.3
10:00 H/TOT	2	0	0	0	0	2	2	56	7	1	1	0	65	66.8	163	23	0	0	1	187	188	116	13	0	1	8	138	147.3
11:00	0	0	0	0	0	0	0	17	3	1	0	0	21	21.5	38	2	2	0	0	42	43	21	2	2	0	3	28	32
11:15	1	0	0	0	0	1	1	23	1	0	0	0	24	24	47	6	0	0	0	53	53	18	4	2	0	2	26	29
11:30	1	1	0	0	0	2	2	9	3	0	0	0	12	12	39	2	0	0	0	41	41	30	5	0	0	1	36	37
11:45	0	0	0	0	0	0	0	23	2	0	0	0	25	25	50	3	1	0	0	54	54.5	27	5	0	0	2	34	36
11:00 H/TOT	2	1	0	0	0	3	3	72	9	1	0	0	82	82.5	174	13	3	0	0	190	191.5	96	16	4	0	8	124	134
12:00	0	0	0	0	0	0	0	18	4	0	0	0	22	22	46	1	1	0	0	48	48.5	29	6	1	0	1	37	38.5
12:15	0	0	0	0	0	0	0	25	2	1	0	0	28	28.5	43	4	3	0	0	50	51.5	23	4	2	0	2	31	34
12:30	0	0	0	0	0	0	0	21	5	0	0	0	26	26	53	4	0	0	0	57	57	16	2	1	0	1	20	21.5
12:45	0	0	0	0	0	0	0	27	1	0	0	0	28	28	73	6	0	0	1	80	81	26	4	1	0	2	33	35.5
12:00 H/TOT	0	0	0	0	0	0	0	91	12	1	0	0	104	104.5	215	15	4	0	1	235	238	94	16	5	0	6	121	129.5
13:00	0	0	0	0	0	0	0	16	0	0	0	0	16	16	57	4	0	0	0	61	61	31	6	1	0	1	39	40.5
13:15	0	0	0	0	0	0	0	30	2	1	0	0	33	33.5	77	3	0	0	0	80	80	32	1	1	1	3	38	42.8
13:30	1	0	0	0	0	1	1	46	1	1	0	0	48	48.5	56	2	0	1	0	59	60.3	37	4	2	0	2	45	48
13:45	0	0	0	0	0	0	0	27	1	0	0	0	28	28	52	4	0	0	0	56	56	28	0	0	0	2	30	32
13:00 H/TOT	1	0	0	0	0	1	1	119	4	2	0	0	125	126	242	13	0	1	0	256	257.3	128	11	4	1	8	152	163.3
14:00	0	0	0	0	0	0	0	23	4	1	0	0	28	28.5	74	4	0	0	1	79	80	20	0	0	3	2	25	30.9
14:15	0	0	0	0	0	0	0	34	1	0	0	0	35	35	56	3	0	0	0	59	59	11	4	1	1	1	18	20.8
14:30	1	0	0	0	0	1	1	28	0	0	0	0	28	28	60	2	1	0	0	63	63.5	24	3	0	0	2	29	31
14:45	0	0	0	0	0	0	0	24	3	1	0	0	28	28.5	63	0	0	0	0	63	63	33	1	0	0	2	36	38
14:00 H/TOT	1	0	0	0	0	1	1	109	8	2	0	0	119	120	253	9	1	0	1	264	265.5	88	8	1	4	7	108	120.7
15:00	1	0	0	0	0	1	1	12	2	0	0	0	14	14	65	6	1	0	0	72	72.5	22	4	1	0	1	28	29.5
15:15	1	0	0	0	0	1	1	17	2	0	0	0	19	19	36	2	0	0	1	39	40	24	1	0	0	2	27	29
15:30	6	0	0	0	1	7	8	26	2	0	0	0	28	28	67	3	2	0	0	72	73	45	3	0	0	1	49	50
15:45	6	0	0	0	0	6	6	22	0	0	0	0	22	22	55	3	0	0	0	58	58	36	5	1	0	0	42	42.5
15:00 H/TOT	14	0	0	0	1	15	16	77	6	0	0	0	83	83	223	14	3	0	1	241	243.5	127	13	2	0	4	146	151
16:00	4	1	0	0	0	5	5	30	3	0	0	0	33	33	75	7	0	0	0	82	82	33	11	1	0	3	48	51.5
16:15	3	0	0	0	0	3	3	31	4	0	0	0	35	35	57	8	1	0	0	66	66.5	31	2	0	0	3	36	39
16:30	3	1	0	0	0	4	4	26	3	0	0	0	29	29	87	8	1	0	0	96	96.5	33	11	0	0	1	45	46
16:45	1	0	0	0	0	1	1	44	3	0	0	0	47	47	56	4	2	0	0	62	63	32	6	0	0	2	40	42
16:00 H/TOT	11	2	0	0	0	13	13	131	13	0	0	0	144	144	275	27	4	0	0	306	308	129	30	1	0	9	169	178.5
17:00	1	0	0	0	0	1	1	29	0	0	0	0	29	29	83	4	0	0	0	87	87	32	4	2	1	1	40	43.3
17:15	5	0	0	0	0	5	5	20	0	0	0	0	20	20	67	5	0	0	0	72	72	29	4	0	0	2	35	37
17:30	3	0	0	0	0	3	3	36	0	0	0	0	36	36	63	2	0	0	0	65	65	35	5	0	0	1	41	42
17:45	2	0	0	0	0	2	2	45	2	0	0	0	47	47	76	4	0	0	0	80	80	25	2	0	0	2	29	31
17:00 H/TOT	11	0	0	0	0	11	11	130	2	0	0	0	132	132	289	15	0	0	0	304	304	121	15	2	1	6	145	153.3
18:00	4	0	0	0	0	4	4	68	2	0	0	0	70	70	89	2	0	0	0	91	91	41	2	0	1	1	45	47.3
18:15	2	0	0	0	0	2	2	57	2	0	0	0	59	59	90	4	1	0	0	95	95.5	35	1	0	0	2	38	40
18:30	1	0	0	0	0	1	1	30	1	0	0	0	31	31	60	3	0	0	0	63	63	32	2	0	0	1	35	36
18:45	2	0	0	0	0	2	2	40	2	0	0	0	42	42	86	7	0	0	0	93	93	38	2	0	0	3	43	46
18:00 H/TOT	9	0	0	0	0	9	9	195	7	0	0	0	202	202	325	16	1	0	0	342	342.5	146	7	0	1	7	161	169.3
12 TOT	53	4	0	0	1	58	59	1339	96	9	1	1	1446	1453	2936	191	20	2	6	3155	3174	1460	184	24	11	91	1770	1887

B => A							B => B							B => C							B => D							C => A							C => B							C => C							C => D					
CAR	LGV	OGV1	OGV2	5V (BUS	TOT	PCU	CAR	LGV	OGV1	OGV2	5V (BUS	TOT	PCU	CAR	LGV	OGV1	OGV2	5V (BUS	TOT	PCU	CAR	LGV	OGV1	OGV2	5V (BUS	TOT	PCU	CAR	LGV	OGV1	OGV2	5V (BUS	TOT	PCU	CAR	LGV	OGV1	OGV2	5V (BUS	TOT	PCU	CAR	LGV	OGV1	OGV2	5V (BUS	TOT	PCU	CAR	LGV	OGV1	OGV2	5V (BUS	TOT
1	0	0	0	0	1	1	0	0	0	0	0	0	0	12	6	0	1	1	20	22.3	67	14	2	0	0	83	84	15	4	1	0	1	21	22.5	10	2	0	0	0	12	12	0	0	0	0	0	0	0	67	8	0	0	2	77
5	1	0	0	0	6	6	0	0	0	0	0	0	0	22	4	0	0	1	27	28	76	3	1	1	0	81	82.8	16	5	0	0	0	21	21	12	1	0	0	1	14	15	0	0	0	0	0	0	0	62	11	3	3	2	81
6	1	0	0	0	7	7	0	1	0	0	0	1	1	30	2	2	0	1	35	37	88	7	1	2	0	98	101.1	28	5	1	1	3	38	42.8	17	3	0	0	0	20	20	0	0	0	0	0	0	0	70	10	2	0	1	83
7	1	0	0	0	8	8	0	1	0	0	0	1	1	33	4	2	0	2	41	44	86	8	2	1	0	97	99.3	40	4	2	0	0	46	47	32	4	2	0	0	38	39	0	0	0	0	0	0	0	84	8	0	0	2	94
19	3	0	0	0	22	22	0	2	0	0	0	2	2	97	16	4	1	5	123	131.3	317	32	6	4	0	359	367.2	99	18	4	1	4	126	133.3	71	10	2	0	1	84	86	0	0	0	0	0	0	0	283	37	5	3	7	335
8	1	0	0	0	9	9	0	0	0	0	0	0	0	24	4	0	0	1	29	30	67	12	1	1	0	81	82.8	63	6	1	1	0	71	72.8	27	6	0	0	1	34	35	0	0	0	0	0	0	0	74	5	1	1	1	82
15	2	0	0	0	17	17	0	0	0	0	0	0	0	48	7	1	0	2	58	60.5	96	10	3	1	1	111	114.8	51	2	0	0	0	53	53	26	8	0	0	1	35	36	0	0	0	0	0	0	0	74	12	1	0	1	88
14	5	0	0	0	19	19	0	0	0	0	0	0	0	56	6	1	0	0	63	63.5	66	8	0	0	2	76	78	49	1	0	0	0	50	50	31	7	1	0	1	40	41.5	0	0	0	0	0	0	0	79	8	2	1	1	91
11	2	0	0	0	13	13	0	0	0	0	0	0	0	53	1	3	0	1	58	60.5	91	12	3	4	3	113	122.7	60	2	0	0	1	63	64	57	3	0	0	0	60	60	0	0	0	0	0	0	0	70	7	0	0	0	77
48	10	0	0	0	58	58	0	0	0	0	0	0	0	181	18	5	0	4	208	214.5	320	42	7	6	6	381	398.3	223	11	1	1	1	237	239.8	141	24	1	0	3	169	172.5	0	0	0	0	0	0	0	297	32	4	2	3	338
20	1	0	0	0	21	21	1	0	0	0	0	1	1	40	9	1	1	2	53	56.8	76	7	1	4	0	88	93.7	46	2	1	0	0	49	49.5	60	6	0	0	1	67	68	0	0	0	0	0	0	0	116	2	3	0	0	121
10	4	0	0	0	14	14	0	0	0	0	0	0	0	65	7	1	0	0	73	73.5	80	14	3	4	1	102	109.7	58	1	1	0	0	60	60.5	42	5	1	0	1	49	50.5	0	0	0	0	0	0	0	100	8	2	1	0	111
18	7	1	0	0	26	26.5	0	0	0	0	0	0	0	37	4	1	0	1	43	44.5	77	10	2	2	2	93	98.6	43	3	0	0	0	46	46	50	12	1	0	1	64	65.5	0	0	0	0	0	0	0	62	9	3	2	0	76
5	1	1	0	0	7	7.5	0	0	0	0	0	0	0	50	4	0	0	1	55	56	81	17	6	3	0	107	113.9	45	1	0	0	0	46	46	28	3	1	2	1	35	39.1	0	0	0	0	0	0	0	57	9	1	1	0	68
53	13	2	0	0	68	69	1	0	0	0	0	1	1	192	24	3	1	4	224	230.8	314	48	12	13	3	390	415.9	192	7	2	0	0	201	202	180	26	3	2	4	215	223.1	0	0	0	0	0	0	0	335	28	9	4	0	376
10	3	0	0	0	13	13	0	0	0	0	0	0	0	35	3	3	0	1	42	44.5	64	14	5	0	0	83	85.5	38	3	1	1	0	43	44.8	36	5	3	0	1	45	47.5	0	0	0	0	0	0	0	70	6	1	2	0	79
10	4	1	0	0	15	15.5	0	0	0	0	0	0	0	27	5	1	1	1	35	37.8	56	28	4	2	0	90	94.6	39	4	1	1	0	45	46.8	37	5	1	1	0	44	45.8	0	0	0	0	0	0	0	47	6	0	0	0	53
5	0	0	0	0	5	5	1	0	0	0	0	1	1	49	5	0	0	0	54	54	60	20	4	3	0	87	92.9	40	2	1	0	0	43	43.5	38	11	1	0	1	51	52.5	0	0	0	0	0	0	0	67	6	2	1	0	76
5	4	0	0	0	9	9	0	0	0	0	0	0	0	38	7	1	0	1	47	48.5	61	16	2	5	0	84	91.5	35	4	0	0	0	39	39	30	1	1	0	1	33	34.5	0	0	0	0	0	0	0	67	9	2	0	1	79
30	11	1	0	0	42	42.5	1	0	0	0	0	1	1	149	20	5	1	3	178	184.8	241	78	15	10	0	344	364.5	152	13	3	2	0	170	174.1	141	22	6	1	3	173	180.3	0	0	0	0	0	0	0	251	27	5	3	1	287
21	3	1	0	0	25	25.5	0	0	0	0	0	0	0	42	1	2	0	1	46	48	78	16	4	2	0	100	104.6	45	7	0	0	0	52	52	35	8	1	0	2	46	48.5	0	0	0	0	0	0	0	51	8	2	0	2	63
12	3	0	0	0	15	15	0	0	0	0	0	0	0	44	7	3	0	2	56	59.5	65	15	6	3	0	89	95.9	49	7	0	0	2	58	60	31	4	1	0	0	36	36.5	0	0	0	0	0	0	0	54	6	2	0	1	63
6	3	0	0	0	9	9	0	0	0	0	0	0	0	49	3	1	0	0	53	53.5	61	22	5	6	0	94	104.3	45	4	0	0	0	49	49	36	7	1	0	1	45	46.5	0	0	0	0	0	0	0	60	8	3	2	0	73
8	7	0	0	0	15	15	0	0	0	0	0	0	0	36	8	0	0	1	45	46	76	22	7	1	1	107	112.8	44	4	0	0	0	48	48	28	4	0	1	1	34	36.3	0	0	0	0	0	0	0	74	9	2	0	1	86
47	16	1	0	0	64	64.5	0	0	0	0	0	0	0	171	19	6	0	4	200	207	280	75	22	12	1	390	417.6	183	22	0	0	2	207	209	130	23	3	1	4	161	167.8	0	0	0	0	0	0	0	239	31	9	2	4	285
19	4	0	0	0	23	23	0	0	0	0	0	0	0	34	2	1	0	1	38	39.5	69	15	5	5	0	94	103	66	6	0	0	0	72	72	45	8	3	0	1	57	59.5	0	0	0	0	0	0	0	64	5	1	1	0	71
11	5	0	0	0	16	16	0	0	0	0	0	0	0	28	11	2	0	1	42	44	74	30	3	1	0	108	110.8	44	4	2	0	0	50	51	58	7	2	0	0	67	68	0	0	0	0	0	0	0	70	8	2	1	0	81
14	6	0	0	0	20	20	0	0	0	0	0	0	0	44	7	1	0	0	52	52.5	65	23	4	2	0	94	98.6	60	1	0	0	0	61	61	45	9	2	0	1	57	59	0	0	0	0	0	0	0	55	8	2	0	1	66
15	2	0	0	0	17	17	0	0	0	0	0	0	0	59	6	1	0	1	67	68.5	68	27	5	3	0	103	109.4	55	1	0	0	1	57	58	45	4	0	0	1	50	51	0	0	0	0	0	0	0	53	6	3	0	0	62
59	17	0	0	0	76	76	0	0	0	0	0	0	0	165	26	5	0	3	199	204.5	276	95	17	11	0	399	421.8	225	12	2	0	1	240	242	193	28	7	0	3	231	237.5	0	0	0	0	0	0	0	242	27	8	2	1	280
15	1	0	0	0	16	16	0	0	0	0	0	0	0	59	8	1	0	1	69	70.5	83	25	4	2	0	114	118.6	49	2	1	0	0	52	52.5	33	6	0	0	0	39	39	0	0	0	0	0	0	0	75	5	1	2	0	83
21	2	1	0	0	24	24.5	0	0	0	0	0	0	0	64	2	1	0	0	67	67.5	92	13	4	3	1	113	119.9	63	2	0	0	0	65	65	44	4	0	0	1	49	50	0	0	0	0	0	0	0	79	12	2	0	1	94
16	1	0	0	0	17	17	0	0	0	0	0	0	0	53	2	0	0	1	56	57	103	24	3	3	1	134	140.4	49	5	0	0	0	54	54	36	3	1	0	1	41	42.5	0	0	0	0	0	0	0	91	5	0	0	0	96
10	2	0	0	0	12	12	0	0	0	0	0	0	0	34	6	0	0	1	41	42	74	19	3	1	0	97	99.8	67	2	0	0	1	70	71	50	5	0	0	1	56	57	0	0	0	0	0	0	0	87	5	4	1	1	98
62	6	1	0	0	69	69.5	0	0	0	0	0	0	0	210	18	2	0	3	233	237	352	81	14	9	2	458	478.7	228	11	1	0	1	241	242.5	163	18	1	0	3	185	188.5	0	0	0	0	0	0	0	332	27	7	3	2	371
15	2	0	0	0	17	17	0	0	0	0	0	0	0	39	1	0	0	1	41	42	67	17	8	4	0	96	105.2	66	5	0	0	0	71	71	52	5	2	0	1	60	62	0	0	0	0	0	0	0	69	6	3	1	0	79
18	3	2	0	0	23	24	0	0	0	0	0	0	0	56	3	0	0	1	60	61	80	24	4	0	0	108	110	65	4	0	1	0	70	71.3	57	5	1	0	3	66	69.5	0	0	0	0	0	0	0	62	8	2	2	1	75
17	2	0	0	0	19	19	0	0	0	0	0	0	0	45	2	0	0	0	47	47	88	20	5	1	0	114	117.8	65	2	0	0	0	67	67	31	3	0	0	0	34	34	0	0	0	0	0	0	0	65	6	4	1	1	77
19	4	1	0	0	24	24.5	0	0	0	0	0	0	0	43	4	0	0	2	49	51	103	19	5	3	0	130	136.4	81	4	0	0	1	86	87	47	4	2	0	0	53	54	0	0	0	0	0	0	0	103	5	0	0	1	109
69	11	3	0	0	83	84.5	0	0	0	0	0	0	0	183	10	0	0	4	197	201	338	80	22	8	0	448	469.4	277	15	0	1	1	294	296.3	187	17	5	0	4	213	219.5	0	0	0	0	0	0	0	299	25	9	4	3	340
12	1	0	0	0	13	13	0	0	0	0	0	0	0	31	3	1	0	1	36	37.5	91	15	5	2	0	113	118.1	70	3	0	0	1	74	75	46	4	0	0	1	51	52	0	0	0	0	0	0	0	97	8	3	1	2	111
20	4	0	0	1	25	26	0	0	0	0	0	0	0	46	7	0	0	0	53	53	134	21	3	2	0	160	164.1	71	4	0	0	0	75	75	49	2	0	0	2	53	55	0	0	0	0	0	0	0	58	8	2	0	2	70
20	0	1	0	0	21	21.5	0	0	0	0	0	0	0	50	4	1	0	1	56	57.5	108	15	3	2	0	128	132.1	72	8	0	0	0	80	80	34	9	0	0	1	44	45	0	0	0	0	0	0	0	60	5	2	1	1	69
15	1	0	0	0	16	16	0	0	0	0	0	0	0	45	7	0	0	1	53	54	101	15	4	3	1	124	130.9	86	5	0	0	0	91	91	36	8	1	0	1	46	47.5	0	0	0	0	0	0	0	84	11	3	0	1	99
67	6	1	0	1	75	76.5	0	0	0	0	0	0	0	172	21	2	0	3	198	202	434	66	15	9	1	525	545.2	299	20	0	0	1	320	321	165	23	1	0	5	194	199.5	0	0	0	0	0	0	0	299	32	10	2	6	349
13	3	0	0	0	16	16	0	0	0	0	0	0	0	50	5	2	0	1	58	60	94	24	3	0	1	122	124.5	65	4	0	0	0	69	69	47	1	1	0	0	49	49.5	0	0	0	0	0	0	0	77	11	3	2	0	93
16	2	0	0	0	18	18	0	0	0	0	0	0	0	38	4	0	0	1	43	44	99	23	3	1	0	126	128.8	70	4	0	0	0	74	74	42	5	0	0	1	48	49	0	0	0	0	0	0	0	91	11	1	0	0	103
20	5	0	0	0	25	25	1	0	0	0	0	1	1	45	6	2	0	0	53	54	108	28	0	1	0	137	138.3	76	13	0	0	0	89	89	57	3	2	0	0	62	63	0	0	0	0	0	0	0	76	12	0	0	0	88
28	3	0	0	0	31	31	0	0	0	0	0	0	0	51	3	0	0	1	55	56	114	17	1	0	0	132	132.5	77	9	0	0	0	86	86	57	4	1	0	2	64	66.5	0	0	0	0	0	0	0	71	15	1	0	0	87
77	13	0	0	0	90	90	1	0	0	0	0	1	1	184	18	4	0	3	209	214	415	92	7	2	1	517	524.1	288	30	0	0	0	318	318	203	13	4	0	3	223	228	0	0	0	0	0	0	0	315	49	5	2	0	371
24	3	0	0	0	27	27	0	0	0	0	0	0	0	50	4	0	0	0	54	54	92	20	1	1	0	114	115.8	85	6	1	0	0	92	92.5	48	4	0	0	0	52	52	0	0	0	0	0	0	0	58	4	1	1	1	65
26	3	0	0	0	29	29	0	0	0	0	0	0	0	54	2	1	0	2	59	61.5	99	13	0	0	0	112	112	96	7	0	0	0	103	103	48	3	1	0	1	53	54.5	0	0	0	0	0	0	0	72	10	1	0	0	83
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15	2	0	0	0	17	17	0	0	0	0	0	0	0	59	4	0	0	1	64	65	97	11	0	0	1	109	110	83	7	0	0	0	90	90	50	0	0	0	0	50	50	0	0	0	0	0	0	0	87	4	1	0	1	93
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17	3	0	0	0	20	20	0	0	0	0	0	0	0	34	2	0	0	1	37	38	102	8	0	0	0	110	110	74	3	0	0	0	77	77	32	1	0	0	1	34	35	0	0	0	0	0	0	0	70	6	0	0	0	76
21	1	0	0	0	22	22	0	0	0	0	0	0	0	29	4	0	0	1	34	35	64	5	0	0	0	69	69	91	4	0	0	0	95	95	58	3	0	0	2	63	65	0	0	0	0	0	0	0	70	7	0	0	1	78
82	7	0	0	0	89	89	0	0	0	0	0	0	0	158	14	0	0	3	175	178	347	34	0	0	1	382	383	353	10	0	0	1	364	365	173	8	0	0	3	184	187	0	0	0	0	0	0	0	327	26	1	0	1	355
686	121	9	0	1	817	822.5	3	2	0	0	0	5	5	2075	215	38	3	43	2374	2440	4014	778	139	85	16	5032	5228	2864	193	14	5	13	3089	3116	1948	223	36	4	38	2249	2310	0	0	0	0	0	0	0	3518	369	75	28	30	4020

	D => A							D => B							D => C							D => D						
PCU	CAR	LGV	OGV1	OGV2	5V (BUS	TOT	PCU	CAR	LGV	OGV1	OGV2	5V (BUS	TOT	PCU	CAR	LGV	OGV1	OGV2	5V (BUS	TOT	PCU	CAR	LGV	OGV1	OGV2	5V (BUS	TOT	PCU
79	19	1	1	1	6	28	35.8	42	11	1	0	1	55	56.5	25	5	0	0	1	31	32	0	0	0	0	0	0	0
88.4	26	6	1	0	3	36	39.5	103	10	1	3	2	119	125.4	29	5	1	0	2	37	39.5	0	0	0	0	0	0	0
85	18	4	1	0	1	24	25.5	117	31	1	4	0	153	158.7	47	11	0	0	0	58	58	0	0	0	0	0	0	0
96	41	4	0	1	1	47	49.3	114	13	1	1	0	129	130.8	56	8	0	1	1	66	68.3	0	0	0	0	0	0	0
348.4	104	15	3	2	11	135	150.1	376	65	4	8	3	456	471.4	157	29	1	1	4	192	197.8	0	0	0	0	0	0	0
84.8	35	2	0	0	2	39	41	127	17	1	0	0	145	145.5	111	10	2	0	2	125	128	0	0	0	0	0	0	0
89.5	19	0	0	0	0	19	19	99	4	0	2	1	106	109.6	85	6	2	2	2	97	102.6	0	0	0	0	0	0	0
94.3	13	1	0	0	1	15	16	65	10	3	0	0	78	79.5	78	9	1	0	0	88	88.5	0	0	0	0	0	0	0
77	17	0	0	1	1	19	21.3	68	14	1	4	0	87	92.7	80	1	0	1	0	82	83.3	0	0	0	0	0	0	0
345.6	84	3	0	1	4	92	97.3	359	45	5	6	1	416	427.3	354	26	5	3	4	392	402.4	0	0	0	0	0	0	0
122.5	32	0	0	0	2	34	36	72	19	4	3	0	98	103.9	45	6	4	1	0	56	59.3	0	0	0	0	0	0	0
113.3	22	1	1	0	5	29	34.5	71	16	2	4	0	93	99.2	70	8	3	1	0	82	84.8	0	0	0	0	0	0	0
80.1	16	6	2	0	2	26	29	73	8	5	2	0	88	93.1	60	1	0	2	1	64	67.6	0	0	0	0	0	0	0
69.8	24	3	0	0	2	29	31	65	7	7	0	0	79	82.5	50	3	1	0	1	55	56.5	0	0	0	0	0	0	0
385.7	94	10	3	0	11	118	130.5	281	50	18	9	0	358	378.7	225	18	8	4	2	257	268.2	0	0	0	0	0	0	0
82.1	26	1	0	0	3	30	33	76	17	2	2	1	98	102.6	48	5	2	0	0	55	56	0	0	0	0	0	0	0
53	19	1	0	0	2	22	24	68	17	2	4	0	91	97.2	44	7	2	0	1	54	56	0	0	0	0	0	0	0
78.3	18	5	2	0	1	26	28	84	14	4	1	0	103	106.3	40	8	2	2	0	52	55.6	0	0	0	0	0	0	0
81	20	2	0	0	3	25	28	60	13	8	2	0	83	89.6	39	5	1	0	0	45	45.5	0	0	0	0	0	0	0
294.4	83	9	2	0	9	103	113	288	61	16	9	1	375	395.7	171	25	7	2	1	206	213.1	0	0	0	0	0	0	0
66	28	1	2	0	1	32	34	69	15	4	0	1	89	92	45	10	3	1	1	60	63.8	0	0	0	0	0	0	0
65	30	1	2	0	1	34	36	62	14	2	3	1	82	87.9	56	6	1	0	1	64	65.5	0	0	0	0	0	0	0
77.1	25	2	1	0	1	29	30.5	67	13	6	5	1	92	102.5	75	2	3	2	0	82	86.1	0	0	0	0	0	0	0
88	25	4	0	0	3	32	35	47	19	3	1	1	71	74.8	63	6	1	0	1	71	72.5	0	0	0	0	0	0	0
296.1	108	8	5	0	6	127	135.5	245	61	15	9	4	334	357.2	239	24	8	3	3	277	287.9	0	0	0	0	0	0	0
72.8	26	5	1	0	2	34	36.5	71	31	2	3	0	107	111.9	54	5	1	1	0	61	62.8	0	0	0	0	0	0	0
83.3	15	3	2	0	0	20	21	66	25	6	4	1	102	111.2	54	10	0	1	1	66	68.3	0	0	0	0	0	0	0
68	27	5	1	0	3	36	39.5	72	15	6	3	1	97	104.9	61	7	2	0	0	70	71	0	0	0	0	0	0	0
63.5	23	2	0	0	0	25	25	72	18	3	3	1	97	103.4	61	9	0	0	0	70	70	0	0	0	0	0	0	0
287.6	91	15	4	0	5	115	122	281	89	17	13	3	403	431.4	230	31	3	2	1	267	272.1	0	0	0	0	0	0	0
86.1	40	6	1	0	2	49	51.5	74	11	3	2	0	90	94.1	66	6	4	0	0	76	78	1	0	0	0	0	1	1
96	32	0	0	3	1	36	40.9	81	8	2	2	1	94	98.6	95	5	1	1	1	103	105.8	0	0	0	0	0	0	0
96	26	1	0	2	3	32	37.6	81	24	6	0	0	111	114	63	8	2	1	1	75	78.3	0	0	0	0	0	0	0
102.3	23	4	0	0	1	28	29	80	22	2	1	0	105	107.3	75	6	2	1	2	86	90.3	0	0	0	0	0	0	0
380.4	121	11	1	5	7	145	159	316	65	13	5	1	400	414	299	25	9	3	4	340	352.4	1	0	0	0	0	1	1
81.8	22	0	0	0	3	25	28	88	19	4	1	1	113	117.3	87	7	1	0	0	95	95.5	0	0	0	0	0	0	0
79.6	21	1	0	0	2	24	26	111	11	4	1	1	128	132.3	70	14	2	2	1	89	93.6	0	0	0	0	0	0	0
81.3	26	7	0	0	1	34	35	123	7	3	2	0	135	139.1	75	9	2	1	2	89	93.3	0	0	0	0	0	0	0
110	31	4	0	0	3	38	41	85	12	5	1	0	103	106.8	58	2	2	0	0	62	63	0	0	0	0	0	0	0
352.7	100	12	0	0	9	121	130	407	49	16	5	2	479	495.5	290	32	7	3	3	335	345.4	0	0	0	0	0	0	0
115.8	36	2	1	0	1	40	41.5	68	16	3	3	0	90	95.4	79	4	4	1	0	88	91.3	0	0	0	0	0	0	0
73	40	4	0	0	0	44	44	82	21	3	1	0	107	109.8	64	16	0	0	1	81	82	0	0	0	0	0	0	0
72.3	38	8	0	0	0	46	46	57	12	1	1	0	71	72.8	60	3	1	2	0	66	69.1	0	0	0	0	0	0	0
101.5	40	4	0	0	4	48	52	79	11	0	0	0	90	90	69	5	0	0	0	74	74	0	0	0	0	0	0	0
362.6	154	18	1	0	5	178	183.5	286	60	7	5	0	358	368	272	28	5	3	1	309	316.4	0	0	0	0	0	0	0
97.1	35	6	1	0	3	45	48.5	74	12	2	1	0	89	91.3	70	6	0	0	1	77	78	0	0	0	0	0	0	0
103.5	33	6	0	0	3	42	45	58	7	7	0	0	72	75.5	75	11	2	0	1	89	91	0	0	0	0	0	0	0
88	42	1	0	1	1	45	47.3	73	12	0	1	0	86	87.3	102	11	0	0	0	113	113	0	0	0	0	0	0	0
87.5	40	4	0	0	1	45	46	79	9	4	0	0	92	94	74	11	2	0	1	88	90	0	0	0	0	0	0	0
376.1	150	17	1	1	8	177	186.8	284	40	13	2	0	339	348.1	321	39	4	0	3	367	372	0	0	0	0	0	0	0
67.8	41	3	2	0	0	46	47	87	6	0	0	0	93	93	95	13	0	0	0	108	108	0	0	0	0	0	0	0
83.5	51	6	0	0	3	60	63	86	6	1	0	0	93	93.5	83	4	0	0	1	88	89	0	0	0	0	0	0	0
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94.5	47	3	0	0	2	52	54	92	8	0	1	0	101	102.3	84	8	0	1	0	93	94.3	0	0	0	0	0	0	0
337.8	190	13	2	0	5	210	216	352	26	1	1	0	380	381.8	355	30	0	1	1	387	389.3	0	0	0	0	0	0	0
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96	60	10	0	0	1	71	72	103	5	0	0	0	108	108	87	4	0	0	0	91	91	0	0	0	0	0	0	0
76	62	5	0	0	2	69	71	93	9	1	0	0	103	103.5	75	4	0	0	3	82	85	0	0	0	0	0	0	0
79	62	7	0	0	2	71	73	75	3	0	0	0	78	78	72	7	0	1	3	83	87.3	0	0	0	0	0	0	0
356.5	240	25	0	0	5	270	275	362	25	2	0	0	389	390	328	19	0	1	7	355	363.3	0	0	0	0	0	0	0
4124	1519	156	22	9	85	1791	1899	3837	636	127	72	15	4687	4859	3241	326	57	26	34	3684	3780	1	0	0	0	0	1	1

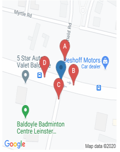
IDASO

Survey Name: HDR 20 128 Grange Rd

Site: Site 2

Location: --

Date: Tue 21-May-2019



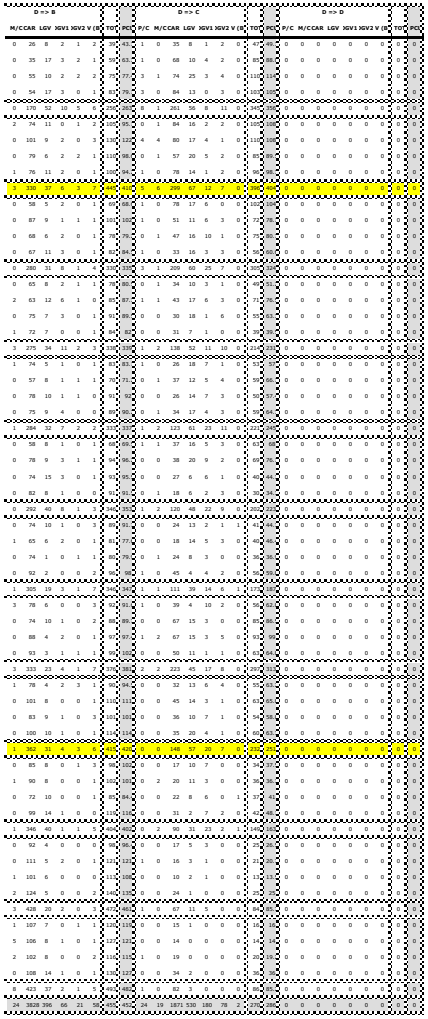
TIME	A => A									A => B									A => C								
	P/C	M/C	CAR	LGV	OGV1	OGV2	PSV (BUS)	TOT	PCU	P/C	M/C	CAR	LGV	OGV1	OGV2	PSV (BUS)	TOT	PCU	P/C	M/C	CAR	LGV	OGV1	OGV2	PSV (BUS)	TOT	PCU
07:00	0	0	0	0	0	0	0	0	0	0	0	4	0	0	0	0	4	4	0	0	0	0	0	0	0	0	0
07:15	0	0	0	0	0	0	0	0	0	0	0	3	0	0	0	0	3	3	3	0	1	0	0	0	0	4	1.6
07:30	0	0	0	0	0	0	0	0	0	0	0	9	1	0	0	0	10	10	0	0	0	0	0	0	0	0	0
07:45	0	0	0	0	0	0	0	0	0	1	0	5	0	0	0	0	6	5.2	0	0	1	0	0	0	0	1	1
H/TOT	0	0	0	0	0	0	0	0	0	1	0	21	1	0	0	0	23	22.	3	0	2	0	0	0	0	5	2.6
08:00	0	0	0	0	0	0	0	0	0	0	0	11	0	0	0	0	11	11	0	0	1	2	0	0	0	3	3
08:15	0	0	0	0	0	0	0	0	0	1	0	10	0	0	0	0	11	10.	0	0	0	0	0	0	0	0	0
08:30	0	0	0	0	0	0	0	0	0	0	0	13	0	0	0	0	13	13	1	0	0	0	0	0	0	1	0.2
08:45	0	0	0	0	0	0	0	0	0	1	0	6	2	0	0	0	9	8.2	1	0	4	0	0	0	0	5	4.2
H/TOT	0	0	0	0	0	0	0	0	0	2	0	40	2	0	0	0	44	42.4	2	0	5	2	0	0	0	9	7.4
09:00	0	0	0	0	0	0	0	0	0	0	0	9	0	0	0	0	9	9	0	0	4	2	0	0	0	6	6
09:15	0	0	0	0	0	0	0	0	0	1	0	5	0	0	0	0	6	5.2	0	0	0	0	0	0	0	0	0
09:30	0	0	0	0	0	0	0	0	0	0	0	5	0	0	0	0	5	5	0	0	2	0	0	0	0	2	2
09:45	0	0	0	0	0	0	0	0	0	0	0	4	0	0	0	0	4	4	0	0	1	0	0	0	0	1	1
H/TOT	0	0	0	0	0	0	0	0	0	1	0	23	0	0	0	0	24	23.	0	0	7	2	0	0	0	9	9
10:00	0	0	0	0	0	0	0	0	0	2	0	2	2	0	0	0	6	4.4	0	0	1	0	0	0	0	1	1
10:15	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	1	0	0	1	1	0	0	0	2	2
10:30	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	2	2	0	0	3	0	0	0	0	3	3
10:45	0	0	0	0	0	0	0	0	0	0	0	3	0	0	0	0	3	3	0	0	1	0	0	0	0	1	1
H/TOT	0	0	0	0	0	0	0	0	0	2	0	8	2	0	0	0	12	10.4	0	0	6	1	0	0	0	7	7
11:00	0	0	0	0	0	0	0	0	0	0	0	3	2	0	0	0	5	5	0	0	0	0	0	0	0	0	0
11:15	0	0	0	0	0	0	0	0	0	0	0	4	0	0	0	0	4	4	0	0	1	0	0	0	0	1	1
11:30	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	1	0	0	0	0	0	0	0	0	0
11:45	0	0	0	0	0	0	0	0	0	0	0	3	0	1	0	0	4	4.5	0	0	2	0	0	0	0	2	2
H/TOT	0	0	0	0	0	0	0	0	0	0	0	10	3	1	0	0	14	14.5	0	0	3	0	0	0	0	3	3
12:00	0	0	0	0	0	0	0	0	0	0	0	8	0	0	0	0	8	8	0	0	0	0	0	0	0	0	0
12:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	1
12:30	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	2	2	0	0	0	0	0	0	0	0	0
12:45	0	0	0	0	0	0	0	0	0	0	0	3	0	0	0	0	3	3	0	0	0	0	0	0	0	0	0
H/TOT	0	0	0	0	0	0	0	0	0	0	0	13	0	0	0	0	13	13	0	0	1	0	0	0	0	1	1
13:00	0	0	0	0	0	0	0	0	0	0	0	4	0	0	0	0	4	4	0	0	0	0	0	0	0	0	0
13:15	0	0	0	0	0	0	0	0	0	0	0	5	0	0	0	0	5	5	0	0	1	0	0	0	0	1	1
13:30	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	2	2	0	0	0	0	0	0	0	0	0
13:45	0	0	0	0	0	0	0	0	0	0	0	7	0	0	0	0	7	7	0	0	1	0	0	0	0	1	1
H/TOT	0	0	0	0	0	0	0	0	0	0	0	18	0	0	0	0	18	18	0	0	2	0	0	0	0	2	2
14:00	0	0	0	0	0	0	0	0	0	0	0	8	0	0	0	0	8	8	1	0	0	0	0	0	0	1	0.2
14:15	0	0	0	0	0	0	0	0	0	0	0	7	0	0	0	0	7	7	0	0	1	0	0	0	0	1	1
14:30	0	0	0	0	0	0	0	0	0	0	0	11	1	0	0	0	12	12	0	0	0	0	0	0	0	0	0
14:45	0	0	0	0	0	0	0	0	0	0	0	3	1	0	0	0	4	4	0	0	0	0	0	0	0	0	0
H/TOT	0	0	0	0	0	0	0	0	0	0	0	29	2	0	0	0	31	31	1	0	1	0	0	0	0	2	1.2
15:00	0	0	0	0	0	0	0	0	0	0	0	4	0	0	0	0	4	4	0	0	3	0	0	0	0	3	3
15:15	0	0	0	0	0	0	0	0	0	0	0	7	1	0	0	0	8	8	0	0	1	0	0	0	0	1	1
15:30	0	0	0	0	0	0	0	0	0	0	0	4	0	0	0	0	4	4	0	0	1	0	0	0	0	1	1
15:45	0	0	0	0	0	0	0	0	0	0	0	4	0	0	0	0	4	4	0	0	0	0	0	0	0	0	0
H/TOT	0	0	0	0	0	0	0	0	0	0	0	19	1	0	0	0	20	20	0	0	5	0	0	0	0	5	5
16:00	0	0	0	0	0	0	0	0	0	0	0	4	1	0	0	0	5	5	0	0	1	0	0	0	0	1	1
16:15	0	0	0	0	0	0	0	0	0	0	0	9	0	0	0	0	9	9	0	0	0	0	0	0	0	0	0
16:30	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	2	2	0	0	2	0	0	0	0	2	2
16:45	0	0	0	0	0	0	0	0	0	0	0	9	0	0	0	0	9	9	0	0	0	0	0	0	0	0	0
H/TOT	0	0	0	0	0	0	0	0	0	0	0	24	1	0	0	0	25	25	0	0	3	0	0	0	0	3	3
17:00	0	0	0	0	0	0	0	0	0	1	0	3	0	0	0	0	4	3.2	0	0	1	0	0	0	0	1	1
17:15	0	0	0	0	0	0	0	0	0	0	0	7	0	0	0	0	7	7	0	0	0	0	0	0	0	0	0
17:30	0	0	0	0	0	0	0	0	0	0	0	6	1	0	0	0	7	7	0	0	1	0	0	0	0	1	1
17:45	0	0	0	0	0	0	0	0	0	0	0	13	0	0	0	0	13	13	0	0	0	0	0	0	0	0	0
H/TOT	0	0	0	0	0	0	0	0	0	1	0	29	1	0	0	0	31	30.2	0	0	2	0	0	0	0	2	2
18:00	0	0	0	0	0	0	0	0	0	0	1	7	2	0	0	0	10	9.4	0	0	0	0	0	0	0	0	0
18:15	0	0	0	0	0	0	0	0	0	0	0	6	0	0	0	0	6	6	0	0	0	0	0	0	0	0	0
18:30	0	0	0	0	0	0	0	0	0	0	0	6	1	0	0	0	7	7	0	0	1	0	0	0	0	1	1
18:45	0	0	0	0	0	0	0	0	0	0	0	6	1	0	0	0	7	7	0	0	0	0	0	0	0	0	0
H/TOT	0	0	0	0	0	0	0	0	0	0	1	25	4	0	0	0	30	29.4	0	0	1	0	0	0	0	1	1
12 TOT	0	0	0	0	0	0	0	0	0	7	1	259	17	1	0	0	285	279	6	0	38	5	0	0	0	49	44.2

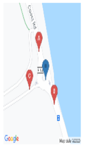
TIME	A => D									B => A									B => B								
	P/C	M/C	CAR	LGV	OGV1	OGV2	PSV (BUS)	TOT	PCU	P/C	M/C	CAR	LGV	OGV1	OGV2	PSV (BUS)	TOT	PCU	P/C	M/C	CAR	LGV	OGV1	OGV2	PSV (BUS)	TOT	PCU
07:00	1	0	13	4	0	0	0	18	17.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:15	0	0	15	0	0	0	0	15	15	0	0	3	1	0	0	0	4	4	0	0	0	0	0	0	0	0	0
07:30	0	0	19	0	0	0	0	19	19	0	0	5	0	0	0	0	5	5	0	0	0	0	0	0	0	0	0
07:45	0	0	12	2	0	0	0	14	14	0	0	6	2	0	0	0	8	8	0	0	0	0	0	0	0	0	0
H/TOT	1	0	59	6	0	0	0	66	65.	0	0	14	3	0	0	0	17	17	0	0	0	0	0	0	0	0	0
08:00	0	2	20	1	0	0	0	23	21.	0	0	5	0	0	0	0	5	5	0	0	0	0	0	0	0	0	0
08:15	2	2	21	0	0	0	0	25	22.	0	0	3	0	0	0	0	3	3	0	0	0	0	0	0	0	0	0
08:30	1	0	18	1	0	0	0	20	19.	0	0	4	0	0	0	0	4	4	0	0	0	0	0	0	0	0	0
08:45	0	0	11	1	0	0	0	12	12	0	0	7	0	0	0	0	7	7	0	0	0	0	0	0	0	0	0
H/TOT	3	4	70	3	0	0	0	80	75.	0	0	19	0	0	0	0	19	19	0	0	0	0	0	0	0	0	0
09:00	0	0	13	1	0	0	0	14	14	0	0	5	0	0	0	0	5	5	0	0	0	0	0	0	0	0	0
09:15	0	0	4	1	0	0	0	5	5	1	0	5	1	0	0	0	7	6.2	0	0	0	0	0	0	0	0	0
09:30	0	0	8	3	0	0	0	11	11	0	0	2	1	0	0	0	3	3	0	0	0	0	0	0	0	0	0
09:45	1	0	10	0	0	0	0	11	10.	0	0	2	1	0	0	0	3	3	0	0	0	0	0	0	0	0	0
H/TOT	1	0	35	5	0	0	0	41	40.	1	0	14	3	0	0	0	18	17.	0	0	0	0	0	0	0	0	0
10:00	0	0	8	0	0	0	0	8	8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:15	0	0	3	0	0	0	0	3	3	0	0	2	0	1	0	0	3	3.5	0	0	0	0	0	0	0	0	0
10:30	0	0	6	1	1	0	0	8	8.5	0	0	1	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0
10:45	0	0	5	1	0	0	0	6	6	0	0	1	1	0	0	0	2	2	0	0	0	0	0	0	0	0	0
H/TOT	0	0	22	2	1	0	0	25	25.	0	0	4	1	1	0	0	6	6.5	0	0	0	0	0	0	0	0	0
11:00	0	0	5	0	0	0	0	5	5	0	0	2	0	0	0	0	2	2	0	0	0	0	0	0	0	0	0
11:15	0	0	8	0	0	0	0	8	8	0	0	3	0	0	0	0	3	3	0	0	0	0	0	0	0	0	0
11:30	0	0	4	0	0	0	0	4	4	0	0	5	0	0	0	0	5	5	0	0	0	0	0	0	0	0	0
11:45	0	0	7	0	0	0	0	7	7	0	0	2	0	0	0	0	2	2	0	0	0	0	0	0	0	0	0
H/TOT	0	0	24	0	0	0	0	24	24	0	0	12	0	0	0	0	12	12	0	0	0	0	0	0	0	0	0
12:00	0	0	6	0	0	0	0	6	6	0	0	4	0	1	0	0	5	5.5	0	0	0	0	0	0	0	0	0
12:15	0	0	13	0	1	1	0	15	16.	1	0	2	2	0	0	0	5	4.2	0	0	0	0	0	0	0	0	0
12:30	0	0	4	0	0	0	0	4	4	0	0	2	0	0	0	0	2	2	0	0	0	0	0	0	0	0	0
12:45	0	0	5	2	1	1	0	9	10.	0	0	1	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0
H/TOT	0	0	28	2	2	2	0	34	37.	1	0	9	2	1	0	0	13	12.	0	0	0	0	0	0	0	0	0
13:00	0	0	6	0	0	0	0	6	6	0	0	4	1	0	0	0	5	5	0	0	0	0	0	0	0	0	0
13:15	0	0	6	2	0	0	0	8	8	0	0	4	0	0	0	0	4	4	0	0	0	0	0	0	0	0	0
13:30	0	0	2	1	0	0	0	3	3	0	0	4	1	0	0	0	5	5	0	0	0	0	0	0	0	0	0
13:45	1	0	9	1	0	0	0	11	10.	0	0	7	0	0	0	0	7	7	0	0	0	0	0	0	0	0	0
H/TOT	1	0	23	4	0	0	0	28	27.	0	0	19	2	0	0	0	21	21	0	0	0	0	0	0	0	0	0
14:00	0	0	12	1	0	0	0	13	13	0	0	5	0	0	0	0	5	5	0	0	0	0	0	0	0	0	0
14:15	1	0	2	0	0	0	0	3	2.2	0	0	7	0	0	0	0	7	7	0	0	0	0	0	0	0	0	0
14:30	0	0	7	0	0	0	0	7	7	0	0	5	0	0	0	0	5	5	0	0	0	0	0	0	0	0	0
14:45	0	0	5	0	0	0	0	5	5	1	0	10	0	0	0	0	11	10.	0	0	0	0	0	0	0	0	0
H/TOT	1	0	26	1	0	0	0	28	27.	1	0	27	0	0	0	0	28	27.	0	0	0	0	0	0	0	0	0
15:00	0	0	8	1	0	0	0	9	9	2	0	6	1	0	0	0	9	7.4	0	0	0	0	0	0	0	0	0
15:15	0	0	6	2	0	0	0	8	8	0	0	6	2	0	0	0	8	8	0	0	0	0	0	0	0	0	0
15:30	1	0	7	2	0	0	0	10	9.2	0	0	6	0	0	0	0	6	6	0	0	0	0	0	0	0	0	0
15:45	1	0	6	0	0	0	0	7	6.2	0	0	3	0	0	0	0	3	3	0	0	0	0	0	0	0	0	0
H/TOT	2	0	27	5	0	0	0	34	32.	2	0	21	3	0	0	0	26	24.	0	0	0	0	0	0	0	0	0
16:00	0	0	7	0	0	0	0	7	7	0	0	10	0	0	0	0	10	10	0	0	0	0	0	0	0	0	0
16:15	0	0	12	0	0	0	0	12	12	1	0	3	0	0	0	0	4	3.2	0	0	0	0	0	0	0	0	0
16:30	1	0	10	0	0	0	0	11	10.	0	0	9	0	0	0	0	9	9	0	0	0	0	0	0	0	0	0
16:45	0	2	7	0	1	0	0	10	9.3	0	0	5	1	1	0	0	7	7.5	0	0	0	0	0	0	0	0	0
H/TOT	1	2	36	0	1	0	0	40	38.	1	0	27	1	1	0	0	30	29.	0	0	0	0	0	0	0	0	0
17:00	0	0	8	1	0	0	0	9	9	0	0	6	0	0	0	0	6	6	0	0	0	0	0	0	0	0	0
17:15	0	0	7	0	0	0	0	7	7	0	0	5	0	0	0	0	5	5	0	0	0	0	0	0	0	0	0
17:30	0	0	12	1	0	0	0	13	13	0	0	11	0	0	0	0	11	11	0	0	0	0	0	0	0	0	0
17:45	0	0	9	2	0	0	0	11	11	0	0	3	0	0	0	0	3	3	0	0	0	0	0	0	0	0	0
H/TOT	0	0	36	4	0	0	0	40	40	0	0	25	0	0	0	0	25	25	0	0	0	0	0	0	0	0	0
18:00	0	0	7	0	0	0	0	7	7	0	0	9	0	0	0	0	9	9	0	0	0	0	0	0	0	0	0
18:15	0	0	6	0	0	0	0	6	6	0	0	8	2	0	0	0	10	10	0	0	0	0	0	0	0	0	0
18:30	0	0	6	0	0	0	0	6	6	0	0	11	0	0	0	0	11	11	0	0	0	0	0	0	0	0	0
18:45	1	0	10	1	0	0	0	12	11.	0	0	2	1	0	0	0	3	3	0	0	0	0	0	0	0	0	0
H/TOT	1	0	29	1	0	0	0	31	30.	0	0	30	3	0	0	0	33	33	0	0	0	0	0	0	0	0	0
12 TOT	11	6	415	33	4	2	0	471	463	6	0	221	18	3	0	0	248	245	0	0	0	0	0	0	0	0	0

TIME	B => C									B => D									C => A								
	P/C	M/C	CAR	LGV	OGV1	OGV2	PSV (BUS)	TOT	PCU	P/C	M/C	CAR	LGV	OGV1	OGV2	PSV (BUS)	TOT	PCU	P/C	M/C	CAR	LGV	OGV1	OGV2	PSV (BUS)	TOT	PCU
07:00	0	0	4	2	0	0	0	6	6	3	0	52	11	2	0	0	68	66.	0	0	1	0	0	0	0	1	1
07:15	0	0	17	2	3	0	0	22	23.	2	1	72	6	0	0	2	83	82.	0	0	0	0	0	0	0	0	0
07:30	0	0	17	3	0	0	0	20	20	4	0	70	9	0	1	1	85	84.	0	0	0	0	0	0	0	0	0
07:45	1	0	30	5	1	0	0	37	36.	1	0	77	13	0	0	1	92	92.	0	0	0	0	0	0	0	0	0
H/TOT	1	0	68	12	4	0	0	85	86.	10	1	271	39	2	1	4	328	326	0	0	1	0	0	0	0	1	1
08:00	0	0	34	5	0	0	0	39	39	1	1	75	7	0	0	2	86	86.	0	0	0	1	0	0	0	1	1
08:15	1	0	39	8	0	0	0	48	47.	3	1	93	9	0	0	1	107	105	0	0	2	0	0	0	0	2	2
08:30	0	0	31	5	0	0	0	36	36	2	0	116	10	2	0	2	132	133	0	0	0	0	0	0	0	0	0
08:45	0	0	41	7	0	0	0	48	48	0	1	80	4	3	2	3	93	99.	0	0	0	1	0	0	0	1	1
H/TOT	1	0	145	25	0	0	0	171	170	6	3	364	30	5	2	8	418	425	0	0	2	2	0	0	0	4	4
09:00	1	0	26	4	1	0	0	32	31.	2	0	74	4	0	0	4	84	86.	0	0	0	0	0	0	0	0	0
09:15	0	0	29	7	2	0	0	38	39	1	1	86	12	1	0	4	105	108	0	0	0	0	0	0	0	0	0
09:30	0	1	18	6	2	1	0	28	29.	1	0	89	9	1	0	0	100	99.	0	0	0	1	0	0	0	1	1
09:45	0	0	14	3	1	0	0	18	18.	1	0	64	8	1	0	1	75	75.	0	0	1	0	0	0	0	1	1
H/TOT	1	1	87	20	6	1	0	116	119	5	1	313	33	3	0	9	364	370	0	0	1	1	0	0	0	2	2
10:00	0	0	28	7	1	0	0	36	36.	1	0	71	9	2	0	1	84	85.	0	0	0	1	0	0	0	1	1
10:15	0	0	21	7	0	0	0	28	28	0	0	64	10	0	1	1	76	78.	0	0	0	0	0	0	0	0	0
10:30	0	0	26	5	2	0	0	33	34	0	0	89	5	3	1	0	98	101	0	0	0	0	0	0	0	0	0
10:45	0	0	24	7	1	0	0	32	32.	1	1	65	10	4	0	1	82	83.	0	0	1	0	0	0	0	1	1
H/TOT	0	0	99	26	4	0	0	129	131	2	1	289	34	9	2	3	340	348	0	0	1	1	0	0	0	2	2
11:00	0	0	15	4	0	0	0	19	19	0	1	64	5	6	0	1	77	80.	0	0	1	1	1	0	0	3	3.5
11:15	0	0	24	7	3	0	0	34	35.	1	0	74	9	2	1	1	88	90.	0	0	2	0	0	0	0	2	2
11:30	0	0	17	4	2	0	0	23	24	0	0	78	7	3	2	2	92	98.	0	0	0	0	0	0	0	0	0
11:45	0	0	13	7	2	0	0	22	23	3	1	70	10	4	0	0	88	87	0	0	0	0	0	0	0	0	0
H/TOT	0	0	69	22	7	0	0	98	102	4	2	286	31	15	3	4	345	356	0	0	3	1	1	0	0	5	5.5
12:00	0	0	21	4	0	0	0	25	25	0	1	69	10	5	0	1	86	88.	0	0	0	0	0	0	0	0	0
12:15	1	0	23	10	2	0	0	36	36.	1	0	77	6	1	0	1	86	86.	0	0	1	0	0	0	0	1	1
12:30	2	0	26	6	0	0	0	34	32.	4	0	81	10	2	0	0	97	94.	0	0	0	0	0	0	0	0	0
12:45	0	0	16	5	2	0	0	23	24	0	1	70	10	4	0	1	86	88.	0	0	0	0	0	0	0	0	0
H/TOT	3	0	86	25	4	0	0	118	118	5	2	297	36	12	0	3	355	359	0	0	1	0	0	0	0	1	1
13:00	0	0	10	3	0	0	0	13	13	2	2	87	6	4	1	1	103	105	0	0	0	0	0	0	0	0	0
13:15	0	1	25	5	1	0	0	32	31.	4	1	104	8	5	1	1	124	125	0	0	1	0	0	0	0	1	1
13:30	0	0	33	2	1	1	0	37	38.	2	0	84	12	3	1	1	103	105	0	0	0	0	0	0	0	0	0
13:45	0	0	34	5	1	0	0	40	40.	1	1	65	8	1	0	0	76	75.	0	0	0	0	0	0	0	0	0
H/TOT	0	1	102	15	3	1	0	122	124	9	4	340	34	13	3	3	406	410	0	0	1	0	0	0	0	1	1
14:00	0	0	22	7	0	0	0	29	29	1	0	67	14	5	0	1	88	90.	0	0	1	0	0	0	0	1	1
14:15	0	0	32	3	0	1	0	36	37.	3	0	65	8	1	0	1	78	77.	0	0	1	0	0	0	0	1	1
14:30	0	0	33	5	0	0	0	38	38	3	0	62	11	0	0	0	76	73.	0	0	2	0	0	0	0	2	2
14:45	0	0	21	5	0	0	0	26	26	6	2	75	7	2	0	3	95	93	0	0	1	0	0	0	0	1	1
H/TOT	0	0	108	20	0	1	0	129	130	13	2	269	40	8	0	5	337	334	0	0	5	0	0	0	0	5	5
15:00	0	0	26	4	1	0	0	31	31.	4	0	82	12	1	0	1	100	98.	0	0	2	0	0	0	0	2	2
15:15	0	0	20	6	1	0	0	27	27.	4	0	93	13	1	0	2	113	112	0	0	2	0	0	0	0	2	2
15:30	1	0	28	5	1	0	0	35	34.	4	0	73	6	2	2	0	87	87.	0	0	2	0	0	0	0	2	2
15:45	0	0	12	6	0	0	0	18	18	7	0	60	5	0	2	1	75	73	0	0	0	0	0	0	0	0	0
H/TOT	1	0	86	21	3	0	0	111	112	19	0	308	36	4	4	4	375	371	0	0	6	0	0	0	0	6	6
16:00	0	0	13	7	0	0	0	20	20	31	0	90	8	0	0	2	131	108	0	0	1	0	0	0	0	1	1
16:15	0	0	19	5	0	0	0	24	24	4	0	70	19	0	0	1	94	91.	0	0	0	0	0	0	0	0	0
16:30	0	1	22	3	1	0	0	27	26.	5	0	80	12	0	0	0	97	93	0	0	0	0	0	0	0	0	0
16:45	0	0	23	1	0	0	0	24	24	6	0	57	8	1	1	1	74	72	0	1	2	0	0	0	0	3	2.4
H/TOT	0	1	77	16	1	0	0	95	94.	46	0	297	47	1	1	4	396	365	0	1	3	0	0	0	0	4	3.4
17:00	0	0	17	2	1	0	0	20	20.	4	0	80	6	1	1	1	93	92.	2	0	2	0	0	0	0	4	2.4
17:15	0	0	10	2	1	0	0	13	13.	1	1	55	14	2	1	1	75	76.	1	0	2	0	0	0	0	3	2.2
17:30	0	0	7	1	0	0	0	8	8	5	0	79	6	1	0	0	91	87.	0	0	2	1	0	0	0	3	3
17:45	0	0	12	2	0	0	0	14	14	2	0	62	8	1	0	2	75	75.	0	1	0	0	0	0	0	1	0.4
H/TOT	0	0	46	7	2	0	0	55	56	12	1	276	34	5	2	4	334	333	3	1	6	1	0	0	0	11	8
18:00	0	0	5	4	0	0	0	9	9	2	1	79	9	0	0	2	93	92.	0	0	1	0	0	0	0	1	1
18:15	0	0	5	1	0	0	0	6	6	4	0	79	11	1	0	2	97	96.	0	0	0	0	0	0	0	0	0
18:30	0	0	9	0	0	0	0	9	9	3	1	99	5	0	0	0	108	105	0	0	0	1	0	0	0	1	1
18:45	0	0	13	1	0	0	0	14	14	3	0	89	7	0	0	2	101	101	0	0	0	0	0	0	0	0	0
H/TOT	0	0	32	6	0	0	0	38	38	12	2	346	32	1	0	6	399	395	0	0	1	1	0	0	0	2	2
12 TOT	7	3	1005	215	34	3	0	126	128	143	19	3656	426	78	18	57	439	439	3	2	31	7	1	0	0	44	40.

TIME	C => B									C => C									C => D								
	P/C	M/C	CAR	LGV	OGV1	OGV2	PSV (BUS)	TOT	PCU	P/C	M/C	CAR	LGV	OGV1	OGV2	PSV (BUS)	TOT	PCU	P/C	M/C	CAR	LGV	OGV1	OGV2	PSV (BUS)	TOT	PCU
07:00	0	0	3	1	0	0	0	4	4	0	0	0	0	0	0	0	0	0	1	0	46	4	1	1	1	54	56
07:15	1	0	4	0	0	0	0	5	4.2	0	0	0	0	0	0	0	0	0	0	0	11	4	1	0	0	16	16.
07:30	0	0	5	5	0	0	0	10	10	0	0	0	0	0	0	0	0	0	1	0	14	6	4	0	0	25	26.
07:45	0	0	6	4	3	0	0	13	14.	0	0	0	0	0	0	0	0	0	0	1	10	8	5	0	0	24	25.
H/TOT	1	0	18	10	3	0	0	32	32.	0	0	0	0	0	0	0	0	0	2	1	81	22	11	1	1	119	125
08:00	0	0	5	5	0	0	0	10	10	0	0	0	0	0	0	0	0	0	0	0	12	7	5	4	0	28	35.
08:15	0	0	6	3	0	0	0	9	9	0	0	0	0	0	0	0	0	0	0	0	12	8	6	1	0	27	31.
08:30	1	0	5	5	0	0	0	11	10.	0	0	0	0	0	0	0	0	0	0	1	15	8	2	1	0	27	28.
08:45	0	0	6	4	1	1	0	12	13.	0	0	0	0	0	0	0	0	0	1	0	15	9	8	2	0	35	40.
H/TOT	1	0	22	17	1	1	0	42	43	0	0	0	0	0	0	0	0	0	1	1	54	32	21	8	0	117	137
09:00	0	0	10	7	1	0	0	18	18.	0	0	0	0	0	0	0	0	0	0	0	15	14	4	2	0	35	39.
09:15	0	0	7	7	0	0	0	14	14	0	0	0	0	0	0	0	0	0	0	0	21	13	7	3	0	44	51.
09:30	1	0	11	7	1	0	0	20	19.	0	0	0	0	0	0	0	0	0	1	0	27	17	5	6	0	56	65.
09:45	0	1	13	5	0	0	0	19	18.	0	0	0	0	0	0	0	0	0	0	0	31	14	7	1	0	53	57.
H/TOT	1	1	41	26	2	0	0	71	70.	0	0	0	0	0	0	0	0	0	1	0	94	58	23	12	0	188	214
10:00	0	0	18	7	2	0	0	27	28	0	0	0	0	0	0	0	0	0	0	0	20	19	8	1	0	48	53.
10:15	0	0	17	4	1	0	0	22	22.	0	0	0	0	0	0	0	0	0	0	0	29	17	4	3	0	53	58.
10:30	0	0	24	7	1	0	0	32	32.	0	0	0	0	0	0	0	0	0	0	0	26	10	7	3	0	46	53.
10:45	1	0	18	8	0	0	0	27	26.	0	0	0	0	0	0	0	0	0	0	0	38	16	4	3	0	61	66.
H/TOT	1	0	77	26	4	0	0	108	109	0	0	0	0	0	0	0	0	0	0	0	113	62	23	10	0	208	233
11:00	0	0	16	7	2	0	0	25	26	0	0	0	0	0	0	0	0	0	1	0	23	16	3	5	0	48	55.
11:15	0	0	20	6	0	0	0	26	26	0	0	0	0	0	0	0	0	0	0	0	37	17	6	1	0	61	65.
11:30	0	1	18	5	2	0	0	26	26.	0	0	0	0	0	0	0	0	0	0	1	39	15	3	1	0	59	61.
11:45	0	0	12	5	5	0	0	22	24.	0	0	0	0	0	0	0	0	0	1	0	43	16	10	3	0	73	81.
H/TOT	0	1	66	23	9	0	0	99	103	0	0	0	0	0	0	0	0	0	2	1	142	64	22	10	0	241	263
12:00	0	0	18	3	0	0	0	21	21	0	0	0	0	0	0	0	0	0	0	1	26	13	4	3	0	47	52.
12:15	0	0	18	8	2	0	0	28	29	0	0	0	0	0	0	0	0	0	3	1	41	18	2	3	0	68	69.
12:30	0	0	31	9	0	0	0	40	40	0	0	0	0	0	0	0	0	0	0	1	39	15	5	0	1	61	63.
12:45	0	0	22	5	3	0	0	30	31.	0	0	0	0	0	0	0	0	0	1	0	48	12	4	3	0	68	73.
H/TOT	0	0	89	25	5	0	0	119	122	0	0	0	0	0	0	0	0	0	4	3	154	58	15	9	1	244	259
13:00	1	1	42	4	1	0	0	49	48.	0	0	0	0	0	0	0	0	0	0	0	53	13	6	3	0	75	81.
13:15	0	1	19	4	2	0	0	26	26.	0	0	0	0	0	0	0	0	0	1	0	37	4	3	3	0	48	52.
13:30	0	0	15	2	0	0	0	17	17	0	0	0	0	0	0	0	0	0	0	1	26	9	2	2	0	40	43
13:45	0	0	5	3	0	0	0	8	8	0	0	0	0	0	0	0	0	0	3	0	18	7	4	0	0	32	31.
H/TOT	1	2	81	13	3	0	0	100	99.	0	0	0	0	0	0	0	0	0	4	1	134	33	15	8	0	195	209
14:00	0	0	16	6	1	0	0	23	23.	0	0	0	0	0	0	0	0	0	1	0	47	11	6	2	0	67	71.
14:15	0	0	25	4	1	0	0	30	30.	0	0	0	0	0	0	0	0	0	0	0	43	8	9	0	0	60	64.
14:30	0	0	26	1	1	1	0	29	30.	0	0	0	0	0	0	0	0	0	1	0	49	10	6	3	0	69	75.
14:45	0	0	33	6	0	0	0	39	39	0	0	0	0	0	0	0	0	0	1	1	44	22	1	3	0	72	75
H/TOT	0	0	100	17	3	1	0	121	124	0	0	0	0	0	0	0	0	0	3	1	183	51	22	8	0	268	286
15:00	0	0	26	4	0	0	0	30	30	0	0	0	0	0	0	0	0	0	0	2	54	13	3	2	0	74	76.
15:15	0	0	27	2	0	0	0	29	29	0	0	0	0	0	0	0	0	0	0	0	89	7	4	2	0	102	107
15:30	1	0	34	4	2	0	0	41	41.	0	0	0	0	0	0	0	0	0	1	1	88	20	5	4	0	119	125
15:45	0	0	39	6	1	0	0	46	46.	0	0	0	0	0	0	0	0	0	0	1	94	14	4	1	0	114	117
H/TOT	1	0	126	16	3	0	0	146	147	0	0	0	0	0	0	0	0	0	1	4	325	54	16	9	0	409	426
16:00	0	0	28	7	0	0	0	35	35	0	0	0	0	0	0	0	0	0	0	0	70	10	2	2	0	84	87.
16:15	0	0	16	5	0	0	0	21	21	0	0	0	0	0	0	0	0	0	0	1	60	13	3	1	0	78	80.
16:30	0	0	38	3	2	0	0	43	44	0	0	0	0	0	0	0	0	0	0	1	81	16	3	1	0	102	104
16:45	0	0	50	4	3	0	0	57	58.	0	0	0	0	0	0	0	0	0	0	1	86	10	0	2	0	99	101
H/TOT	0	0	132	19	5	0	0	156	159	0	0	0	0	0	0	0	0	0	0	3	297	49	8	6	0	363	373
17:00	0	0	50	3	1	0	0	54	54.	0	0	0	0	0	0	0	0	0	0	1	130	15	3	0	0	149	150
17:15	0	0	31	6	0	0	0	37	37	0	0	0	0	0	0	0	0	0	0	0	70	3	0	0	0	73	73
17:30	1	0	32	2	0	0	0	35	34.	0	0	0	0	0	0	0	0	0	2	0	91	10	0	0	0	103	101
17:45	0	0	30	3	0	0	0	33	33	0	0	0	0	0	0	0	0	0	1	0	46	4	2	0	0	53	53.
H/TOT	1	0	143	14	1	0	0	159	159	0	0	0	0	0	0	0	0	0	3	1	337	32	5	0	0	378	378
18:00	0	0	27	0	0	0	0	27	27	0	0	0	0	0	0	0	0	0	0	0	39	1	0	0	0	40	40
18:15	0	0	13	1	0	0	0	14	14	0	0	0	0	0	0	0	0	0	1	0	30	5	0	0	0	36	35.
18:30	0	0	9	0	0	0	1	10	11	0	0	0	0	0	0	0	0	0	0	0	18	4	0	0	0	22	22
18:45	0	0	18	1	0	0	0	19	19	0	0	0	0	0	0	0	0	0	0	0	30	4	0	0	0	34	34
H/TOT	0	0	67	2	0	0	1	70	71	0	0	0	0	0	0	0	0	0	1	0	117	14	0	0	0	132	131
12 TOT	7	4	962	208	39	2	1	122	123	0	0	0	0	0	0	0	0	0	22	16	2031	529	181	81	2	286	303

TIME	D => A									
	P/C	M/C	CAR	LGV	OGV1	OGV2	PSV (BUS)	TOT	PCU	P/C
07:00	0	0	4	0	0	0	0	4	4	0
07:15	0	0	2	1	0	0	0	3	3	1
07:30	0	0	6	0	0	0	0	6	6	4
07:45	2	0	7	0	0	1	0	10	9.7	8
H/TOT	2	0	19	1	0	1	0	23	22.	13
08:00	0	0	5	1	0	0	0	6	6	15
08:15	1	0	7	0	1	0	0	9	8.7	15
08:30	0	0	8	2	0	0	0	10	10	20
08:45	0	0	13	1	0	0	0	14	14	9
H/TOT	1	0	33	4	1	0	0	39	38.	59
09:00	0	0	10	3	1	0	0	14	14.	3
09:15	0	0	10	1	0	0	0	11	11	2
09:30	0	0	4	0	0	0	0	4	4	1
09:45	0	0	7	0	0	0	0	7	7	0
H/TOT	0	0	31	4	1	0	0	36	36.	6
10:00	0	0	4	0	0	0	0	4	4	1
10:15	0	0	5	0	0	0	0	5	5	1
10:30	0	0	4	0	0	0	0	4	4	5
10:45	0	0	1	0	0	0	0	1	1	3
H/TOT	0	0	14	0	0	0	0	14	14	10
11:00	1	0	4	1	0	0	0	6	5.2	1
11:15	0	0	5	0	0	0	0	5	5	2
11:30	0	0	2	0	0	0	0	2	2	1
11:45	0	0	3	1	0	0	0	4	4	1
H/TOT	1	0	14	2	0	0	0	17	16.	5
12:00	0	0	4	0	0	0	0	4	4	0
12:15	0	0	6	0	0	0	0	6	6	2
12:30	0	0	4	0	0	0	0	4	4	0
12:45	0	0	7	0	0	0	0	7	7	0
H/TOT	0	0	21	0	0	0	0	21	21	2
13:00	0	0	5	2	0	0	0	7	7	1
13:15	0	0	9	0	0	0	0	9	9	6
13:30	0	0	5	0	0	0	0	5	5	3
13:45	0	0	10	1	0	0	0	11	11	0
H/TOT	0	0	29	3	0	0	0	32	32	10
14:00	0	0	2	1	0	0	0	3	3	2
14:15	0	0	8	0	0	0	0	8	8	1
14:30	0	0	11	0	0	0	0	11	11	2
14:45	0	0	6	1	0	0	0	7	7	0
H/TOT	0	0	27	2	0	0	0	29	29	5
15:00	0	0	9	2	0	0	0	11	11	1
15:15	1	0	7	1	0	0	0	9	8.2	0
15:30	0	0	11	0	0	0	0	11	11	5
15:45	0	0	12	0	0	0	0	12	12	2
H/TOT	1	0	39	3	0	0	0	43	42.	8
16:00	1	0	8	0	0	0	0	9	8.2	1
16:15	2	0	16	0	0	0	0	18	16.	2
16:30	0	1	8	1	0	0	0	10	9.4	2
16:45	0	1	13	0	0	0	0	14	13.	5
H/TOT	3	2	45	1	0	0	0	51	47.	10
17:00	0	0	15	2	0	0	0	17	17	2
17:15	0	0	11	0	0	0	0	11	11	2
17:30	2	0	10	2	0	0	0	14	12.	5
17:45	2	0	16	0	0	0	0	18	16.	7
H/TOT	4	0	52	4	0	0	0	60	56.	16
18:00	1	0	11	0	0	0	0	12	11.	3
18:15	1	1	12	1	0	0	0	15	13.	6
18:30	0	0	12	1	0	0	0	13	13	2
18:45	0	0	9	1	0	0	0	10	10	6
H/TOT	2	1	44	3	0	0	0	50	47.	17
12 TOT	14	3	368	27	2	1	0	415	404	161





IDASO

Survey Name: HDR 20 128 Grange Rd

Site: Site 3

Location: —

Date: Wed 31-Jan-2018

	A => A							A => B							A => C							B => A						
TIME	CAR	LGV	OGV1	OGV2	SV (BU	TOT	PCU	CAR	LGV	OGV1	OGV2	SV (BU	TOT	PCU	CAR	LGV	OGV1	OGV2	SV (BU	TOT	PCU	CAR	LGV	OGV1	OGV2	SV (BU	TOT	PCU
07:00	0	0	0	0	1	1	2	41	10	0	0	2	53	55	3	1	0	0	0	4	4	25	1	1	0	4	31	35.5
07:15	0	0	0	0	0	0	0	45	9	1	0	1	56	57.5	6	3	0	0	0	9	9	30	2	0	0	2	34	36
07:30	0	0	0	0	0	0	0	85	13	0	0	3	101	104	6	2	0	0	0	8	8	56	8	0	0	1	65	66
07:45	0	0	0	0	0	0	0	109	17	2	0	2	130	133	9	2	0	0	0	11	11	65	3	0	0	5	73	78
H/TOT	0	0	0	0	1	1	2	280	49	3	0	8	340	349.5	24	8	0	0	0	32	32	176	14	1	0	12	203	215.5
08:00	0	0	0	0	0	0	0	135	19	1	0	7	162	169.5	4	2	0	0	0	6	6	91	6	1	0	0	98	98.5
08:15	0	0	0	0	0	0	0	180	11	1	0	1	193	194.5	3	3	0	0	0	6	6	113	8	3	0	1	125	127.5
08:30	1	0	0	0	0	1	1	136	15	0	0	2	153	155	8	2	0	0	0	10	10	116	8	1	0	3	128	131.5
08:45	0	0	0	0	0	0	0	119	14	3	0	2	138	141.5	8	0	0	0	0	8	8	107	12	1	0	0	120	120.5
H/TOT	1	0	0	0	0	1	1	570	59	5	0	12	646	660.5	23	7	0	0	0	30	30	427	34	6	0	4	471	478
09:00	0	0	0	0	0	0	0	117	12	4	1	3	137	143.3	7	1	0	0	0	8	8	100	10	1	0	2	113	115.5
09:15	0	0	0	0	0	0	0	91	16	3	1	2	113	117.8	5	2	0	0	0	7	7	85	10	0	1	2	98	101.3
09:30	0	0	0	0	0	0	0	75	18	1	1	0	95	96.8	0	0	0	0	0	0	0	74	12	1	0	1	88	89.5
09:45	1	0	0	0	0	1	1	62	7	1	1	2	73	76.8	5	1	0	0	0	6	6	73	6	3	1	1	84	87.8
H/TOT	1	0	0	0	0	1	1	345	53	9	4	7	418	434.7	17	4	0	0	0	21	21	332	38	5	2	6	383	394.1
10:00	0	0	0	0	0	0	0	45	11	4	1	1	62	66.3	5	0	0	0	0	5	5	66	6	2	0	0	74	75
10:15	0	0	0	0	0	0	0	57	10	2	1	2	72	76.3	1	0	0	0	0	1	1	59	6	2	2	1	70	74.6
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10:45	0	0	0	0	0	0	0	70	14	1	1	0	86	87.8	7	5	0	0	0	12	12	57	12	3	1	1	74	77.8
H/TOT	1	0	0	0	0	1	1	244	46	8	3	3	304	314.9	17	6	0	0	0	23	23	248	28	7	3	3	289	299.4
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11:30	0	0	0	0	0	0	0	63	10	1	0	0	74	74.5	4	1	1	0	0	6	6.5	93	7	2	1	2	105	109.3
11:45	0	0	0	0	0	0	0	69	8	2	3	0	82	86.9	3	0	0	0	0	3	3	63	7	4	0	0	74	76
H/TOT	0	0	0	0	0	0	0	274	41	5	5	5	330	344	10	1	1	0	0	12	12.5	280	47	10	4	3	344	357.2
12:00	0	1	0	0	0	1	1	56	11	1	1	1	70	72.8	2	2	0	0	0	4	4	83	9	1	1	2	96	99.8
12:15	1	0	0	0	0	1	1	70	5	3	0	3	81	85.5	3	2	0	0	0	5	5	89	7	1	1	0	98	99.8
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12:45	0	0	0	0	0	0	0	79	12	3	0	1	95	97.5	6	1	0	0	0	7	7	88	12	0	0	0	100	100
H/TOT	1	1	0	0	0	2	2	291	34	10	2	5	342	354.6	16	5	0	0	0	21	21	345	42	5	2	5	399	409.1
13:00	0	0	0	0	0	0	0	75	12	1	0	1	89	90.5	12	0	0	0	0	12	12	121	12	0	0	1	134	135
13:15	1	0	0	0	0	1	1	98	6	2	0	2	108	111	6	0	0	0	0	6	6	105	8	0	0	2	115	117
13:30	1	0	0	0	0	1	1	93	6	1	0	1	101	102.5	5	0	0	0	0	5	5	102	11	2	0	1	116	118
13:45	1	0	0	0	0	1	1	103	11	3	1	2	120	124.8	3	0	0	0	0	3	3	96	9	4	0	2	111	115
H/TOT	3	0	0	0	0	3	3	369	35	7	1	6	418	428.8	26	0	0	0	0	26	26	424	40	6	0	6	476	485
14:00	0	0	0	0	0	0	0	93	10	1	0	0	104	104.5	3	0	0	0	0	3	3	90	5	2	1	0	98	100.3
14:15	0	0	0	0	0	0	0	93	8	2	0	3	106	110	4	1	0	0	0	5	5	79	9	5	0	1	94	97.5
14:30	0	0	0	0	0	0	0	102	5	1	2	1	111	115.1	9	0	1	0	0	10	10.5	81	8	2	0	1	92	94
14:45	0	0	0	0	0	0	0	92	6	0	0	0	98	98	7	0	0	0	0	7	7	99	10	2	0	5	116	122
H/TOT	0	0	0	0	0	0	0	380	29	4	2	4	419	427.6	23	1	1	0	0	25	25.5	349	32	11	1	7	400	413.8
15:00	1	0	0	0	0	1	1	88	4	2	0	1	95	97	1	0	0	0	0	1	1	120	10	7	2	4	143	153.1
15:15	0	0	0	0	0	0	0	81	7	2	0	1	91	93	6	0	0	0	0	6	6	99	15	3	0	2	119	122.5
15:30	0	0	0	0	0	0	0	85	4	2	0	2	93	96	8	1	0	0	0	9	9	99	21	3	0	1	124	126.5
15:45	0	0	0	0	0	0	0	108	7	1	0	2	118	120.5	8	0	0	0	0	8	8	101	9	1	0	3	114	117.5
H/TOT	1	0	0	0	0	1	1	362	22	7	0	6	397	406.5	23	1	0	0	0	24	24	419	55	14	2	10	500	519.6
16:00	0	0	0	0	0	0	0	78	9	1	0	0	88	88.5	5	1	0	0	0	6	6	108	28	2	0	2	140	143
16:15	0	0	0	0	0	0	0	82	6	0	0	2	90	92	6	0	0	0	0	6	6	113	23	1	0	2	139	141.5
16:30	3	0	0	0	0	3	3	76	11	0	0	1	88	89	8	0	0	0	0	8	8	106	17	2	0	0	125	126
16:45	0	0	0	0	0	0	0	88	7	0	0	2	97	99	10	0	0	0	0	10	10	100	17	1	0	1	119	120.5

	B => B							B => C							C => A							C => B							C => C							
TIME	CAR	LGV	OGV1	OGV2	SV (BU	TOT	PCU	CAR	LGV	OGV1	OGV2	SV (BU	TOT	PCU	CAR	LGV	OGV1	OGV2	SV (BU	TOT	PCU	CAR	LGV	OGV1	OGV2	SV (BU	TOT	PCU	CAR	LGV	OGV1	OGV2	SV (BU	TOT	PCU	
07:00	0	0	0	0	0	0	0	2	2	0	0	0	4	4	4	1	0	0	0	5	5	10	1	0	0	0	11	11	0	0	0	0	0	0	0	
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07:30	0	0	0	0	1	1	2	5	1	0	0	0	6	6	12	0	0	0	0	12	12	5	1	0	0	0	6	6	0	0	0	0	0	0	0	
07:45	0	0	0	0	1	1	2	10	2	0	0	0	12	12	10	1	0	0	0	11	11	15	2	0	0	0	17	17	0	0	0	0	0	0	0	
H/TOT	0	0	0	0	5	5	10	19	7	0	0	0	26	26	36	3	0	0	0	39	39	39	4	0	0	0	43	43	0	0	0	0	0	0	0	717
08:00	0	0	0	0	2	2	4	3	0	0	0	0	3	3	15	1	0	0	0	16	16	24	0	0	0	0	24	24	0	0	0	0	0	0	0	321
08:15	0	0	0	0	0	0	0	7	0	0	0	0	7	7	17	1	0	0	0	18	18	22	1	0	0	0	23	23	0	0	0	0	0	0	0	376
08:30	1	0	0	0	1	2	3	5	1	0	0	0	6	6	12	0	0	0	0	12	12	19	1	0	0	0	20	20	1	0	0	0	0	1	1	339.5
08:45	1	0	0	0	1	2	3	10	0	0	0	0	10	10	9	0	0	0	0	9	9	12	2	0	0	0	14	14	0	0	0	0	0	0	0	306
H/TOT	2	0	0	0	4	6	10	25	1	0	0	0	26	26	53	2	0	0	0	55	55	77	4	0	0	0	81	81	1	0	0	0	0	1	1	1342.5
09:00	1	0	0	0	1	2	3	11	0	0	0	0	11	11	9	0	0	0	0	9	9	18	1	0	0	0	19	19	0	0	0	0	0	0	0	308.8
09:15	1	0	0	0	0	1	1	9	1	0	0	0	10	10	7	0	0	0	0	7	7	11	0	0	0	0	11	11	0	0	0	0	0	0	0	255.1
09:30	1	0	0	0	2	3	5	7	0	0	0	0	7	7	6	1	0	0	0	7	7	6	0	0	0	0	6	6	0	0	0	0	0	0	0	211.3
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H/TOT	3	0	0	0	4	7	11	34	4	0	0	0	38	38	28	4	0	0	0	32	32	41	3	0	0	0	44	44	1	0	0	0	0	1	1	976.8
10:00	0	0	0	0	0	0	0	4	1	1	0	0	6	6.5	1	1	0	0	0	2	2	8	2	0	0	0	10	10	0	0	0	0	0	0	0	164.8
10:15	0	0	0	0	1	1	2	3	2	0	0	0	5	5	8	0	0	0	0	8	8	3	1	0	0	0	4	4	0	0	0	0	0	0	0	170.9
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H/TOT	3	0	0	0	3	6	9	19	6	1	0	0	26	26.5	18	1	1	0	0	20	20.5	26	8	0	0	0	34	34	0	0	0	0	0	0	0	728.3
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11:15	1	0	0	0	1	2	3	1	1	0	0	0	2	2	3	0	0	0	0	3	3	5	2	0	0	0	7	7	0	0	0	0	0	0	0	201.3
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H/TOT	3	1	0	1	2	7	10.3	13	4	0	0	1	18	19	14	0	0	0	0	14	14	16	6	0	0	0	22	22	1	0	0	0	0	1	1	780
12:00	0	0	0	0	0	0	0	8	0	0	0	0	8	8	8	0	1	0	0	9	9.5	6	0	0	0	1	7	8	0	0	0	0	0	0	0	203.1
12:15	1	0	0	0	1	2	3	8	1	0	0	0	9	9	5	0	0	0	0	5	5	6	1	0	0	0	7	7	0	0	0	0	0	0	0	215.3
12:30	2	0	0	0	1	3	4	7	1	0	0	0	8	8	1	0	0	0	0	1	1	9	0	0	0	0	9	9	1	0	0	0	0	1	1	236.3
12:45	0	0	0	0	0	0	0	5	0	0	0	0	5	5	3	0	0	0	0	3	3	6	0	0	0	0	6	6	0	0	0	0	0	0	0	218.5
H/TOT	3	0	0	0	2	5	7	28	2	0	0	0	30	30	17	0	1	0	0	18	18.5	27	1	0	0	1	29	30	1	0	0	0	0	1	1	873.2
13:00	1	0	0	0	1	2	3	9	1	0	0	0	10	10	8	0	0	0	0	8	8	7	2	0	0	0	9	9	0	0	0	0	0	0	0	267.5
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13:30	1	0	0	0	0	1	1	7	2	0	0	0	9	9	3	0	0	0	0	3	3	8	2	0	0	0	10	10	0	0	0	0	0	0	0	249.5
13:45	5	0	0	0	1	6	7	18	1	0	0	0	19	19	8	0	0	0	0	8	8	5	0	0	0	0	5	5	0	0	0	0	0	0	0	282.8
H/TOT	7	0	0	0	3	10	13	43	5	0	3	0	51	54.9	27	0	0	0	0	27	27	27	5	0	0	0	32	32	0	0	0	0	0	0	0	1069.7
14:00	1	0	0	0	2	3	5	3	0	0	0	0	3	3	8	2	0	0	0	10	10	12	1	0	0	0	13	13	0	0	0	0	0	0	0	238.8
14:15	0	0	0	0	1	1	2	6	0	0	0	0	6	6	5	1	0	0	0	6	6	5	0	0	0	0	5	5	0	0	0	0	0	0	0	231.5
14:30	1	0	0	0	1	2	3	4	1	0	0	0	5	5	4	1	0	0	0	5	5	11	0	0	0	0	11	11	0	0	0	0	0	0	0	243.6
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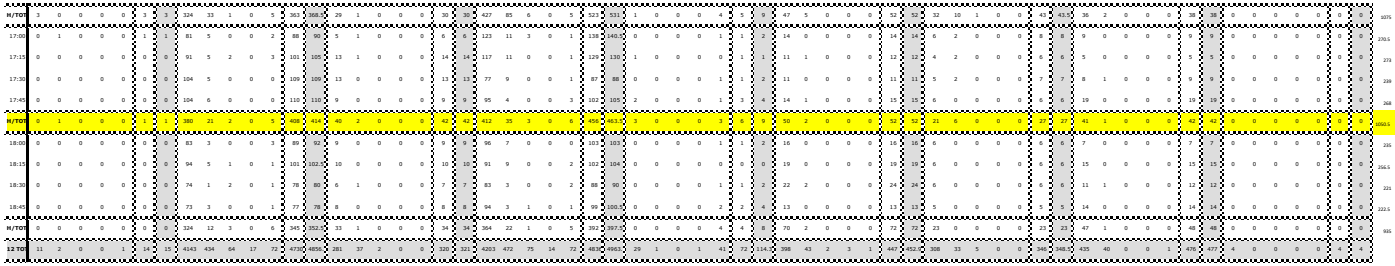
H/TOT	2	0	0	0	4	6	10	23	2	0	0	0	25	25	24	4	1	0	0	29	29.5	30	2	0	0	0	32	32	0	0	0	0	0	0	0	963.4
15:00	0	0	0	0	1	1	2	7	0	0	0	0	7	7	3	1	0	0	0	4	4	8	0	0	0	0	8	8	0	0	0	0	0	0	0	273.1
15:15	0	0	0	0	1	1	2	5	0	1	0	0	6	6.5	8	0	0	0	0	8	8	4	0	0	0	0	4	4	0	0	0	0	0	0	0	242
15:30	1	0	0	0	1	2	3	3	2	0	0	0	5	5	2	2	1	0	0	5	5.5	8	0	0	0	0	8	8	0	0	0	0	0	0	0	253
15:45	1	0	0	0	0	1	1	12	1	0	0	0	13	13	2	0	0	0	0	2	2	8	3	0	0	0	11	11	0	0	0	0	0	0	0	273
H/TOT	2	0	0	0	3	5	8	27	3	1	0	0	31	31.5	15	3	1	0	0	19	19.5	28	3	0	0	0	31	31	0	0	0	0	0	0	0	1041.1
16:00	1	0	0	0	1	2	3	13	1	0	0	0	14	14	9	4	0	0	0	13	13	7	1	0	0	0	8	8	0	0	0	0	0	0	0	275.5
16:15	0	0	0	0	1	1	2	13	2	0	0	0	15	15	5	5	1	0	0	11	11.5	10	0	0	0	0	10	10	0	0	0	0	0	0	0	278
16:30	0	0	0	0	0	0	0	8	0	0	0	0	8	8	8	1	0	0	0	9	9	10	1	0	0	0	11	11	0	0	0	0	0	0	0	254
16:45	0	0	0	0	2	2	4	13	2	0	0	0	15	15	10	0	0	0	0	10	10	9	0	0	0	0	9	9	0	0	0	0	0	0	0	267.5



Appendix 2: Traffic Modelling Output File

Junctions 9

ARCADY 9 - Roundabout Module

Version: 9.5.0.6896

For sales and distribution information, program advice and maintenance, contact TRL:
+44 (0)1344 379777 software@trl.co.uk www.trlsoftware.co.uk

Filename: Junction 1 - Hole in the Wall 3.j9
Path: O:\20 Projects\20211 - Baldoyle Phase 5\00.WIP\Model\TRL
Report generation date: 07/03/2022 12:11:56

Summary of junction performance

	AM								PM							
	Queue (PCU)	95% Queue (PCU)	Delay (s)	RFC	LOS	Junction Delay (s)	Junction LOS	Network Residual Capacity	Queue (PCU)	95% Queue (PCU)	Delay (s)	RFC	LOS	Junction Delay (s)	Junction LOS	Network Residual Capacity
Baseline 2021 - 2021																
Arm 1	1.3	2.0	6.13	0.54	A	8.85	A	16 % [Arm 3]	1.3	2.1	6.19	0.54	A	21.22	C	-2 % [Arm 3]
Arm 2	2.1	3.0	8.68	0.66	A				4.7	24.0	16.77	0.82	C			
Arm 3	3.6	15.4	12.58	0.77	B				13.7	69.0	44.14	0.95	E			
Arm 4	1.2	2.5	6.43	0.53	A				1.7	2.0	7.59	0.61	A			

	DN AM								DN PM									
	Queue (PCU)	95% Queue (PCU)	Delay (s)	RFC	LOS	Junction Delay (s)	Junction LOS	Network Residual Capacity	Queue (PCU)	95% Queue (PCU)	Delay (s)	RFC	LOS	Junction Delay (s)	Junction LOS	Network Residual Capacity	Queue (PCU)	95 Que (PC
Opening Year 2026 - 20																		
Arm 1	1.8	2.1	7.88	0.63	A	13.00	B	6 % [Arm 3]	1.7	1.9	7.43	0.61	A	52.20	F	-10 % [Arm 3]	2.0	2.
Arm 2	3.0	11.6	11.82	0.74	B				9.9	54.4	33.50	0.92	D				3.2	12.
Arm 3	6.4	32.2	20.94	0.86	C				49.4	114.4	126.99	1.06	F				6.7	33.
Arm 4	1.7	2.7	8.22	0.61	A				2.3	4.5	9.40	0.68	A				1.7	2.

	DN AM								DN PM									
	Queue (PCU)	95% Queue (PCU)	Delay (s)	RFC	LOS	Junction Delay (s)	Junction LOS	Network Residual Capacity	Queue (PCU)	95% Queue (PCU)	Delay (s)	RFC	LOS	Junction Delay (s)	Junction LOS	Network Residual Capacity	Queue (PCU)	95 Que (PC
Future Year 2041 - 204																		
Arm 1	3.2	12.7	12.44	0.75	B	32.84	D	-6 % [Arm 3]	2.6	7.5	10.32	0.71	B	180.60	F	-20 % [Arm 3]	3.6	15.
Arm 2	6.7	34.5	23.84	0.87	C				60.1	123.9	153.04	1.08	F				7.2	38.
Arm 3	24.3	90.6	68.93	0.99	F				143.7	220.0	429.67	1.22	F				29.5	96.
Arm 4	2.9	10.6	12.82	0.74	B				3.5	15.0	12.74	0.77	B				3.0	11.

	AM								PM							
	Queue (PCU)	95% Queue (PCU)	Delay (s)	RFC	LOS	Junction Delay (s)	Junction LOS	Network Residual Capacity	Queue (PCU)	95% Queue (PCU)	Delay (s)	RFC	LOS	Junction Delay (s)	Junction LOS	Network Residual Capacity
Stress Test 2041 - Stress 2026																
Arm 1	3.1	11.5	11.41	0.75	B	17.27	C	2 % [Arm 3]	2.2	3.6	8.72	0.67	A	83.68	F	-15 % [Arm 3]
Arm 2	4.0	19.0	15.28	0.79	C				17.5	77.8	56.38	0.97	F			
Arm 3	9.0	49.7	29.10	0.91	D				86.4	150.9	208.06	1.13	F			
Arm 4	1.9	3.3	9.20	0.64	A				2.7	8.5	10.76	0.72	B			
Stress Test 2041 - Stress 2041																
Arm 1	6.5	32.7	22.17	0.87	C	52.44	F	-10 % [Arm 3]	3.6	15.9	13.15	0.77	B	245.88	F	-24 % [Arm 3]
Arm 2	10.9	58.5	38.74	0.93	E				92.1	155.5	228.71	1.14	F			
Arm 3	45.4	112.1	113.64	1.05	F				196.8	220.0	575.38	1.27	F			
Arm 4	3.3	14.0	14.35	0.76	B				4.2	20.8	15.14	0.80	C			

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. Junction LOS and Junction Delay are demand-weighted averages. Network Residual Capacity indicates the amount by which network flow could be increased before a user-definable threshold (see Analysis Options) is met.

File summary

File Description

Title	
Location	
Site number	
Date	16/10/2020
Version	
Status	(new file)
Identifier	
Client	
Jobnumber	
Enumerator	JBBARRY\TransportPC
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	Residual capacity criteria type	RFC Threshold	Average Delay threshold (s)	Queue threshold (PCU)
5.75	✓		✓	Delay	0.85	36.00	20.00

Analysis Set Details

ID	Name	Include in report	Use specific Demand Set (s)	Specific Demand Set (s)	Network flow scaling factor (%)	Network capacity scaling factor (%)
A2	Opening Year 2026	✓	✓	D3,D4,D5,D6	100.000	100.000

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
D12	Stress 2041	AM	ONE HOUR	07:45	09:15	15	✓

Opening Year 2026 - Stress 2041, AM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Pedestrian Crossing	Arm 1 - Pedestrian crossing	Pedestrian crossing uses default flow of 0. Is this correct?
Warning	Pedestrian Crossing	Arm 2 - Pedestrian crossing	Pedestrian crossing uses default flow of 0. Is this correct?
Warning	Pedestrian Crossing	Arm 3 - Pedestrian crossing	Pedestrian crossing uses default flow of 0. Is this correct?
Warning	Pedestrian Crossing	Arm 4 - Pedestrian crossing	Pedestrian crossing uses default flow of 0. Is this correct?
Warning	Queue variations	Analysis Options	Queue percentiles may be unreliable if the mean queue in any time segment is very low or very high.

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	untitled	Standard Roundabout		1, 2, 3, 4	52.44	F

Junction Network Options

Driving side	Lighting	Network residual capacity (%)	First arm reaching threshold
Left	Normal/unknown	-10	Arm 3

Arms

Arms

Arm	Name	Description
1	Grange Rd East	
2	Hole in The Wall South	
3	Grange Rd West	
4	Hole In The Wall North	

Roundabout Geometry

Arm	V - Approach road half-width (m)	E - Entry width (m)	l' - Effective flare length (m)	R - Entry radius (m)	D - Inscribed circle diameter (m)	PHI - Conflict (entry) angle (deg)	Exit only
1	6.60	7.20	25.0	21.0	55.0	51.0	
2	6.00	6.10	7.0	18.4	55.0	52.0	
3	5.40	7.50	4.0	17.6	55.0	62.0	
4	7.00	7.00	0.0	17.2	55.0	41.0	

Pelican/Puffin Crossings

Arm	Space between crossing and junc. entry (Signalised) (PCU)	Amber time preceding red (s)	Amber time regarded as green (s)	Time from traffic red start to green man start (s)	Time period green man shown (s)	Clearance Period (s)	Traffic minimum green (s)
1	4.00	3.00	2.90	1.00	6.00	6.00	7.00
2	4.00	3.00	2.90	1.00	6.00	6.00	7.00
3	4.00	3.00	2.90	1.00	6.00	6.00	7.00
4	2.00	3.00	2.90	1.00	6.00	6.00	7.00

Slope / Intercept / Capacity

Roundabout Slope and Intercept used in model

Arm	Final slope	Final intercept (PCU/hr)
1	0.622	2016
2	0.562	1698
3	0.543	1653
4	0.630	2023

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

Traffic Demand

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 (%)
1		ONE HOUR	✓	1016	100.000
2		ONE HOUR	✓	986	100.000
3		ONE HOUR	✓	1213	100.000
4		ONE HOUR	✓	787	100.000

Demand overview (Pedestrians)

Arm	Profile type	Average pedestrian flow (Ped/hr)
1	[ONEHOUR]	0.00
2	[ONEHOUR]	0.00
3	[ONEHOUR]	0.00
4	[ONEHOUR]	0.00

Origin-Destination Data

Demand (PCU/hr)

		To			
		1	2	3	4
From	1	0	332	595	89
	2	242	0	439	305
	3	582	509	0	122
	4	209	406	172	0

Vehicle Mix

Heavy Vehicle Percentages

		To			
		1	2	3	4
From	1	10	10	10	10
	2	10	10	10	10
	3	10	10	10	10
	4	10	10	10	10

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max 95th percentile Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
1	0.87	22.17	6.5	32.7	C	932	1398
2	0.93	38.74	10.9	58.5	E	905	1357
3	1.05	113.64	45.4	112.1	F	1113	1670
4	0.76	14.35	3.3	14.0	B	722	1083

Main Results for each time segment

07:45 - 08:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	765	191	813	0.00	1510	0.507	760	772	0.0	1.1	5.253	A
2	742	186	641	0.00	1338	0.555	737	932	0.0	1.3	6.531	A
3	913	228	475	0.00	1395	0.655	905	902	0.0	2.0	7.961	A
4	592	148	995	0.00	1396	0.424	589	386	0.0	0.8	4.889	A

08:00 - 08:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	913	228	972	0.00	1411	0.647	910	922	1.1	2.0	7.850	A
2	886	222	767	0.00	1267	0.699	882	1115	1.3	2.5	10.154	B
3	1090	273	569	0.00	1344	0.811	1081	1080	2.0	4.4	14.565	B
4	707	177	1189	0.00	1274	0.555	705	461	0.8	1.4	6.940	A

08:15 - 08:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	1119	280	1153	0.00	1298	0.862	1103	1085	2.0	5.9	18.904	C
2	1086	271	930	0.00	1176	0.924	1059	1326	2.5	9.2	28.923	D
3	1336	334	684	0.00	1281	1.042	1244	1305	4.4	27.4	58.255	F
4	867	217	1378	0.00	1154	0.751	859	549	1.4	3.1	13.119	B

08:30 - 08:45

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	1119	280	1166	0.00	1290	0.867	1116	1101	5.9	6.5	22.170	C
2	1086	271	941	0.00	1170	0.928	1079	1342	9.2	10.9	38.736	E
3	1336	334	696	0.00	1275	1.048	1264	1323	27.4	45.4	113.642	F
4	867	217	1401	0.00	1140	0.760	866	559	3.1	3.3	14.355	B

08:45 - 09:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	913	228	1048	0.00	1363	0.670	930	1014	6.5	2.3	9.480	A
2	886	222	782	0.00	1259	0.704	919	1196	10.9	2.7	12.710	B
3	1090	273	591	0.00	1332	0.819	1248	1110	45.4	6.0	64.734	F
4	707	177	1348	0.00	1173	0.603	714	491	3.3	1.7	8.738	A

09:00 - 09:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	765	191	827	0.00	1501	0.510	769	787	2.3	1.2	5.447	A
2	742	186	648	0.00	1334	0.556	748	949	2.7	1.4	6.812	A
3	913	228	482	0.00	1391	0.656	929	914	6.0	2.2	8.832	A
4	592	148	1019	0.00	1381	0.429	596	392	1.7	0.8	5.065	A

Queue Variation Results for each time segment

07:45 - 08:00

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	1.12	0.61	1.11	1.55	1.61			N/A	N/A
2	1.35	0.61	1.25	1.72	1.97			N/A	N/A
3	2.03	0.29	1.19	3.40	4.27			N/A	N/A
4	0.80	0.61	1.10	1.54	1.60			N/A	N/A

08:00 - 08:15

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	1.97	0.05	0.53	5.20	8.24			N/A	N/A
2	2.47	0.06	0.63	6.62	10.52			N/A	N/A
3	4.37	0.07	1.31	12.08	18.65			N/A	N/A
4	1.35	0.06	0.79	3.02	4.31			N/A	N/A

08:15 - 08:30

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	5.95	0.04	0.42	15.07	32.25			N/A	N/A
2	9.21	0.07	1.60	26.70	43.16			N/A	N/A
3	27.36	2.72	21.11	56.31	70.48			N/A	N/A
4	3.13	0.03	0.33	3.13	14.01			N/A	N/A

08:30 - 08:45

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	6.53	0.04	0.35	9.45	32.67			N/A	N/A
2	10.93	0.05	0.51	30.56	58.45			N/A	N/A
3	45.35	6.11	36.47	90.73	112.14			N/A	N/A
4	3.35	0.03	0.31	3.35	9.96			N/A	N/A

08:45 - 09:00

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	2.30	0.05	0.53	6.21	9.99			N/A	N/A
2	2.73	0.04	0.45	7.41	13.66			N/A	N/A
3	5.99	0.05	0.53	17.16	30.15			N/A	N/A
4	1.71	0.09	1.18	3.65	5.03			N/A	N/A

09:00 - 09:15

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	1.16	0.03	0.35	2.28	5.85			N/A	N/A
2	1.40	0.03	0.33	1.97	6.85			N/A	N/A
3	2.16	0.03	0.32	2.16	8.69			N/A	N/A
4	0.83	0.04	0.40	1.97	3.41			N/A	N/A

Junctions 9

OSCADY 9 - Signalised Intersection Module

Version: 9.5.0.6896

For sales and distribution information, program advice and maintenance, contact TRL:
+44 (0)1344 379777 software@trl.co.uk www.trlsoftware.co.uk

Filename: Junction 2 - Longfield Road 3.j9
Path: O:\20 Projects\20211 - Baldoyle Phase 5\00.WIP\Model\TRL
Report generation date: 09/03/2022 10:03:41

Summary of junction performance

	AM								PM							
	Queue (PCU)	95% Queue (PCU)	Delay (s)	DOS	LOS	Junction Delay (s)	Junction LOS	Network Residual Capacity	Queue (PCU)	95% Queue (PCU)	Delay (s)	DOS	LOS	Junction Delay (s)	Junction LOS	Network Residual Capacity
	Baseline 2021 - 2021															
Arm A	71.9	?	398.83	1.18	F	267.15	F	-100 % [Arm A - Traffic Stream 2]	23.8	?	103.86	0.98	F	86.72	F	-100 % [Arm A - Traffic Stream 2]
Arm B	5.5	?	42.19	0.38	D				25.4	?	95.45	0.92	F			
Arm C	70.6	?	253.54	1.21	F				26.0	?	71.06	0.88	E			
Arm D	3.9	?	44.17	0.26	D				1.8	?	41.93	0.11	D			

	AM								PM							
	Queue (PCU)	95% Queue (PCU)	Delay (s)	DOS	LOS	Junction Delay (s)	Junction LOS	Network Residual Capacity	Queue (PCU)	95% Queue (PCU)	Delay (s)	DOS	LOS	Junction Delay (s)	Junction LOS	Network Residual Capacity
	Opening Year 2026 - DN 2026															
Arm A	121.8	?	729.18	1.30	F	468.87	F	-100 % [Arm A - Traffic Stream 2]	43.5	?	196.71	1.08	F	142.97	F	-100 % [Arm A - Traffic Stream 2]
Arm B	6.3	?	43.84	0.44	D				41.8	?	152.06	1.02	F			
Arm C	110.1	?	454.05	1.34	F				38.3	?	106.63	0.98	F			
Arm D	5.6	?	46.31	0.38	D				2.2	?	42.32	0.14	D			
	Opening Year 2026 - DS 2026															
Arm A	122.0	?	723.32	1.30	F	456.48	F	-100 % [Arm A - Traffic Stream 2]	44.0	?	193.06	1.08	F	149.32	F	-100 % [Arm A - Traffic Stream 2]
Arm B	6.4	?	44.07	0.45	D				42.8	?	155.50	1.03	F			
Arm C	112.7	?	449.96	1.34	F				47.3	?	130.10	1.03	F			
Arm D	7.2	?	48.57	0.47	D				4.0	?	44.20	0.26	D			

	AM								PM							
	Queue (PCU)	95% Queue (PCU)	Delay (s)	DOS	LOS	Junction Delay (s)	Junction LOS	Network Residual Capacity	Queue (PCU)	95% Queue (PCU)	Delay (s)	DOS	LOS	Junction Delay (s)	Junction LOS	Network Residual Capacity
	Future 2041 - DN 2041															
Arm A	233.0	?	1365.12	1.51	F			-100 %	76.4	?	413.78	1.19	F			-100 %

Arm B	7.3	?	44.53	0.49	D	807.49	F	[Arm A - Traffic Stream 2]	102.5	?	508.21	1.25	F	347.55	F	[Arm A - Traffic Stream 2]
Arm C	187.6	?	717.63	1.46	F				72.3	?	198.17	1.08	F			
Arm D	6.2	?	47.13	0.41	D				2.4	?	42.54	0.16	D			
	Future 2041 - DS 2041															
Arm A	233.1	?	1355.11	1.51	F	803.79	F	-100 % [Arm A - Traffic Stream 2]	86.4	?	506.37	1.22	F	374.06	F	-100 % [Arm A - Traffic Stream 2]
Arm B	7.4	?	45.00	0.51	D				87.4	?	395.39	1.16	F			
Arm C	196.5	?	747.96	1.46	F				95.3	?	312.82	1.16	F			
Arm D	7.9	?	49.62	0.51	D				4.3	?	44.46	0.28	D			

	AM								**PM**							
	Queue (PCU)	**95% Queue (PCU)**	**Delay (s)**	**DOS**	**LOS**	**Junction Delay (s)**	**Junction LOS**	**Network Residual Capacity**	**Queue (PCU)**	**95% Queue (PCU)**	**Delay (s)**	**DOS**	**LOS**	**Junction Delay (s)**	**Junction LOS**	**Network Residual Capacity**
	Stress Test - Stress 2026															
Arm A	122.9	?	689.37	1.30	F	437.43	F	-100 % [Arm A - Traffic Stream 2]	39.1	?	139.65	1.05	F	234.01	F	-100 % [Arm A - Traffic Stream 2]
Arm B	6.8	?	46.05	0.51	D				60.2	?	265.24	1.20	F			
Arm C	142.9	?	487.08	1.34	F				91.6	?	320.15	1.19	F			
Arm D	16.2	?	75.05	0.87	E				6.9	?	47.90	0.45	D			
	Stress Test - Stress 2041															
Arm A	233.8	?	1295.12	1.51	F	846.63	F	-100 % [Arm A - Traffic Stream 2]	78.5	?	380.30	1.19	F	483.03	F	-100 % [Arm A - Traffic Stream 2]
Arm B	7.8	?	47.17	0.57	D				114.6	?	576.84	1.34	F			
Arm C	257.4	?	987.08	1.46	F				153.0	?	580.23	1.31	F			
Arm D	18.0	?	82.88	0.91	F				7.2	?	48.34	0.46	D			

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. Junction LOS and Junction Delay are demand-weighted averages. Network Residual Capacity indicates the amount by which network flow could be increased before a user-definable threshold (see Analysis Options) is met.

File summary

File Description

Title	
Location	
Site number	
Date	30/09/2020
Version	
Status	(new file)
Identifier	
Client	
Jobnumber	
Enumerator	JBBARRY\TransportPC
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	Residual capacity criteria type	DOS Threshold	Average Delay threshold (s)	Queue threshold (PCU)
5.75	✓		✓	Delay	0.85	36.00	20.00

Demand Set Summary

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D1	2021	AM	ONE HOUR	07:45	09:15	15	✓
D2	2021	PM	ONE HOUR	14:45	16:15	15	✓
D3	DN 2026	AM	ONE HOUR	07:45	09:15	15	✓
D4	DN 2026	PM	ONE HOUR	14:45	16:15	15	✓
D5	DS 2026	AM	ONE HOUR	07:45	09:15	15	✓
D6	DS 2026	PM	ONE HOUR	14:45	16:15	15	✓
D7	DN 2041	AM	ONE HOUR	07:45	09:15	15	✓
D8	DN 2041	PM	ONE HOUR	14:45	16:15	15	✓
D9	DS 2041	AM	ONE HOUR	07:45	09:15	15	✓

D10	DS 2041	PM	ONE HOUR	14:45	16:15	15	✓
D11	Stress 2026	AM	ONE HOUR	07:45	09:15	15	✓
D12	Stress 2041	AM	ONE HOUR	07:45	09:15	15	✓
D13	Stress 2026	PM	ONE HOUR	14:45	16:15	15	✓
D14	Stress 2041	PM	ONE HOUR	14:45	16:15	15	✓

Baseline 2021 - 2021, AM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Queue percentiles	Analysis Options	Queue percentiles cannot be calculated for signalised junction unless in Lane Simulation mode.
Warning	Queue variations	Analysis Options	Queue percentiles may be unreliable if the mean queue in any time segment is very low or very high.

Analysis Set Details

ID	Name	Include in report	Use specific Demand Set (s)	Specific Demand Set (s)	Network flow scaling factor (%)	Network capacity scaling factor (%)
A1	Baseline 2021	✓	✓	D1,D2	100.000	100.000

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Junction Delay (s)	Junction LOS
1	untitled	Signalised		267.15	F

Junction Network Options

Driving side	Lighting	Network residual capacity (%)	First arm reaching threshold
Left	Normal/unknown	-100	Arm A - Traffic Stream 2

Arms

Arms

Arm	Name	Description
A	untitled	
B	untitled	
C	untitled	
D	untitled	

OSCADY Traffic Streams

Arm	Traffic Stream	Phase	Notional EEG (s)	Signals EEG (s)	Destination arms	Straight move
A	1	A	0.00	0.00	B, C	C
	2	B	0.00	0.00	D	C
B	1	D	0.00	0.00	C	D
	2	C	0.00	0.00	A, D	D
C	1	H	0.00	0.00	A, D	A
	2	I	0.00	0.00	B	A
D	1	F	0.00	0.00	A, B	B
	2	E	0.00	0.00	C	B

OSCADY Lanes

Arm	Traffic Stream	Destination arms	Gradient (%)	Width (m)	Turning radius (m)	Nearside lane	Has bay
A	1	B, C	0	3.50	15.80	✓	
	2	D	0	3.00	18.00		
B	1	C	0	3.00	12.40	✓	
	2	A, D	0	3.00	26.80		
C	1	A, D	0	4.50	15.40	✓	
	2	B	0	3.50	14.90		
D	1	A, B	0	3.75	19.60		
	2	C	0	3.00	19.70	✓	

Signal Timings

Junction 1

Junction	Sequence to use	Cycle time (s)	Maximum cycle time (s)	Start displacement (s)	End displacement (s)
1	1	120	120	1.40	2.90

Optimisation options

Junction	Optimise stage lengths	Optimise cycle time	Optimiser demand source	Optimiser message
1	✓	✓	Average	Timings provide capacity maximisation.

Phases

Junction	Phase	Name	Minimum green (s)
1	A		7
	B		7
	C		7
	D		7
	E		7
	F		7
	G		12
	H		7
	I		7

Library Stages

Junction	Library Stage	Phases in stage	User stage minimum (s)	Run every N cycles	Probability of running (%)
1	1	A, H	20		
	2	B, D, I	20		
	3	D, C	5		
	4	F, E	20		
	5	G	5		

Stage Sequences

Junction	Sequence	Name	Stage IDs	Stage ends
1	1		1, 2, 3, 4, 5	39, 66, 78, 103, 0
	2		1, 2, 3, 5, 4	10, 25, 40, 59, 73
	3		1, 2, 4, 3, 5	10, 25, 40, 54, 73
	4		1, 2, 4, 5, 3	10, 25, 40, 59, 73
	5		1, 2, 5, 3, 4	10, 25, 45, 59, 73
	6		1, 2, 5, 4, 3	10, 25, 45, 59, 73
	7		1, 3, 2, 4, 5	10, 25, 40, 54, 73
	8		1, 3, 2, 5, 4	10, 25, 40, 59, 73
	9		1, 3, 4, 2, 5	10, 25, 40, 54, 73
	10		1, 3, 4, 5, 2	10, 25, 40, 59, 73

Intergreen Matrix for Junction 1

		To								
		A	B	C	D	E	F	G	H	I
From	A			5	5	5	5	5		5
	B			5		5	5	5	5	
	C	5	5			5	5	5	5	5
	D	5				5		5		
	E	5	5	5	5			5	5	5
	F	5	5	5				5	5	5
	G	5	5	5	5	5	5		5	5
	H		5	5		5	5	5		
	I	5		5		5	5	5		

Interstage Matrix for Junction 1

		To				
		1	2	3	4	5
From	1	0	5	5	5	5
	2	5	0	5	5	5
	3	5	5	0	5	5
	4	5	5	5	0	5
	5	5	5	5	5	0

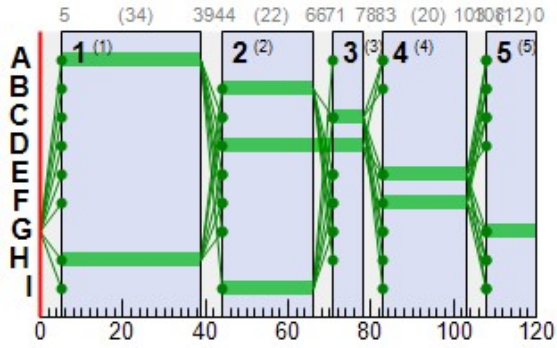
Resultant Stages

Junction	Resultant Stage	Library Stage ID	Phases in this stage	Stage start (s)	Stage end (s)	Stage duration (s)	User stage minimum (s)	Stage minimum (s)
1	1	1	A,H	5	39	34	20	20
	2	2	B,D,I	44	66	22	20	20
	3	3	D,C	71	78	7	5	7
	4	4	F,E	83	103	20	20	20
	5	5	G	108	0	12	5	12

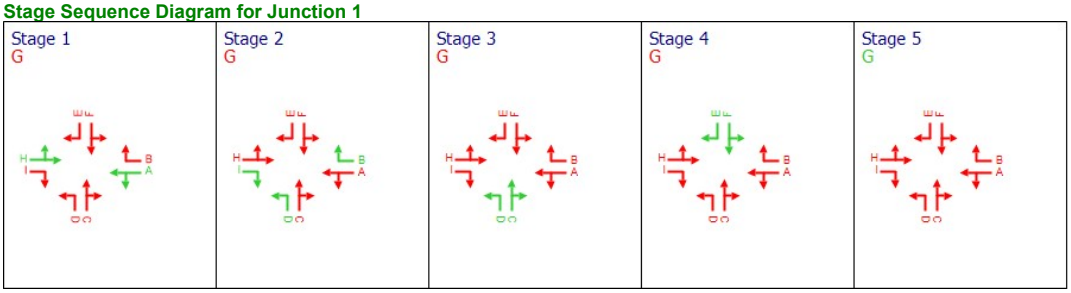
Resultant Phase Green Periods

Junction	Phase	Green period	Start time (s)	End time (s)	Duration (s)
1	A	1	5	39	34
	B	1	44	66	22
	C	1	71	78	7
	D	1	44	78	34
	E	1	83	103	20
	F	1	83	103	20
	G	1	108	0	12
	H	1	5	39	34
	I	1	44	66	22

Phase Timings Diagram for Junction 1



Stage Sequence Diagram for Junction 1



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	2021	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	✓	624	100.000
B		ONE HOUR	✓	187	100.000
C		ONE HOUR	✓	866	100.000
D		ONE HOUR	✓	127	100.000

Origin-Destination Data

Demand (PCU/hr)

		To			
		A	B	C	D
From	A	0	173	432	19
	B	44	0	139	4
	C	417	410	0	39
	D	43	8	76	0

Vehicle Mix

Heavy Vehicle Percentages

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

Results

Results Summary for whole modelled period

Arm	Max DOS	Max Delay (s)	Max Queue (PCU)	Max 95th percentile Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
A	1.18	398.83	71.9	?	F	573	859
B	0.38	42.19	5.5	?	D	172	257
C	1.21	253.54	70.6	?	F	795	1192
D	0.26	44.17	3.9	?	D	117	175

Main Results for each time segment

07:45 - 08:00

Arm	Traffic Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Calculated saturation flow (PCU/hr)	Effective green time (s)	NEEG (s)	Capacity (PCU/hr)	DOS	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Signalised level of service
A	1	455	114	1913	35.50	0.00	566	0.805	405	0.0	12.7	53.386	D
	2	14	4	1897	23.50	0.00	371	0.039	13	0.0	0.4	39.352	D
B	1	105	26	1708	35.50	0.00	505	0.207	95	0.0	2.5	32.913	C
	2	36	9	1955	8.50	0.00	138	0.261	31	0.0	1.2	58.653	E
C	1	343	86	2048	35.50	0.00	606	0.567	309	0.0	8.5	40.685	D
	2	309	77	1912	23.50	0.00	375	0.824	267	0.0	10.4	68.179	E
D	1	38	10	2001	21.50	0.00	359	0.107	34	0.0	1.1	42.009	D
	2	57	14	1780	21.50	0.00	319	0.179	51	0.0	1.6	43.386	D

08:00 - 08:15

Arm	Traffic Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Calculated saturation flow (PCU/hr)	Effective green time (s)	NEEG (s)	Capacity (PCU/hr)	DOS	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Signalised level of service
A	1	544	136	1913	35.50	0.00	566	0.961	517	12.7	19.5	76.980	E
	2	17	4	1897	23.50	0.00	371	0.046	17	0.4	0.5	39.462	D
B	1	125	31	1708	35.50	0.00	505	0.247	123	2.5	3.0	33.636	C
	2	43	11	1956	8.50	0.00	139	0.312	42	1.2	1.4	60.550	E
C	1	410	102	2048	35.50	0.00	606	0.677	402	8.5	10.5	44.994	D
	2	369	92	1912	23.50	0.00	375	0.984	343	10.4	16.8	99.695	F
D	1	46	11	2000	21.50	0.00	358	0.128	45	1.1	1.3	42.345	D
	2	68	17	1780	21.50	0.00	319	0.214	67	1.6	1.9	44.061	D

08:15 - 08:30

Arm	Traffic Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Calculated saturation flow (PCU/hr)	Effective green time (s)	NEEG (s)	Capacity (PCU/hr)	DOS	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Signalised level of service
A	1	666	167	1913	35.50	0.00	566	1.177	560	19.5	46.1	145.195	F
	2	21	5	1897	23.50	0.00	371	0.056	21	0.5	0.6	39.615	D
B	1	153	38	1708	35.50	0.00	505	0.303	150	3.0	3.7	34.707	C
	2	53	13	1954	8.50	0.00	138	0.382	51	1.4	1.8	63.455	E
C	1	502	126	2048	35.50	0.00	606	0.829	488	10.5	14.1	55.140	E
	2	451	113	1912	23.50	0.00	375	1.205	371	16.8	36.9	177.436	F
D	1	56	14	2001	21.50	0.00	359	0.157	55	1.3	1.6	42.819	D
	2	84	21	1780	21.50	0.00	319	0.262	82	1.9	2.4	45.050	D

08:30 - 08:45

Arm	Traffic Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Calculated saturation flow (PCU/hr)	Effective green time (s)	NEEG (s)	Capacity (PCU/hr)	DOS	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Signalised level of service
A	1	666	167	1913	35.50	0.00	566	1.177	565	46.1	71.4	282.745	F
	2	21	5	1897	23.50	0.00	371	0.056	21	0.6	0.6	39.615	D
B	1	153	38	1708	35.50	0.00	505	0.303	153	3.7	3.7	34.721	C
	2	53	13	1954	8.50	0.00	138	0.382	53	1.8	1.8	63.821	E
C	1	502	126	2048	35.50	0.00	606	0.829	502	14.1	14.3	57.744	E
	2	451	113	1912	23.50	0.00	375	1.205	374	36.9	56.3	333.486	F
D	1	56	14	2001	21.50	0.00	359	0.157	56	1.6	1.6	42.823	D
	2	84	21	1780	21.50	0.00	319	0.262	84	2.4	2.4	45.073	D

08:45 - 09:00

Arm	Traffic Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Calculated saturation flow (PCU/hr)	Effective green time (s)	NEEG (s)	Capacity (PCU/hr)	DOS	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Signalised level of service
A	1	544	136	1913	35.50	0.00	566	0.961	560	71.4	67.4	410.116	F
	2	17	4	1897	23.50	0.00	371	0.046	17	0.6	0.5	39.462	D
B	1	125	31	1708	35.50	0.00	505	0.247	128	3.7	3.0	33.653	C
	2	43	11	1956	8.50	0.00	139	0.312	45	1.8	1.4	60.992	E
C	1	410	102	2048	35.50	0.00	606	0.677	425	14.3	10.6	46.086	D
	2	369	92	1912	23.50	0.00	375	0.984	369	56.3	56.3	478.343	F
D	1	46	11	2000	21.50	0.00	358	0.128	47	1.6	1.3	42.350	D
	2	68	17	1780	21.50	0.00	319	0.214	70	2.4	1.9	44.089	D

09:00 - 09:15

Arm	Traffic Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Calculated saturation flow (PCU/hr)	Effective green time (s)	NEEG (s)	Capacity (PCU/hr)	DOS	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Signalised level of service
A	1	455	114	1913	35.50	0.00	566	0.805	570	67.4	38.9	357.785	F
	2	14	4	1897	23.50	0.00	371	0.039	15	0.5	0.4	39.352	D
B	1	105	26	1708	35.50	0.00	505	0.207	107	3.0	2.5	32.926	C
	2	36	9	1955	8.50	0.00	138	0.261	37	1.4	1.2	58.980	E
C	1	343	86	2048	35.50	0.00	606	0.567	351	10.6	8.6	41.051	D
	2	309	77	1912	23.50	0.00	375	0.824	376	56.3	39.4	489.871	F
D	1	38	10	2001	21.50	0.00	359	0.107	39	1.3	1.1	42.014	D
	2	57	14	1780	21.50	0.00	319	0.179	58	1.9	1.6	43.408	D

Queue Variation Results for each time segment

07:45 - 08:00

Arm	Traffic Stream	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
A	1	0.00	~1	~1	~1	~1			N/A	N/A
	2	0.00	~1	~1	~1	~1			N/A	N/A
B	1	0.00	~1	~1	~1	~1			N/A	N/A
	2	0.00	~1	~1	~1	~1			N/A	N/A
C	1	0.00	~1	~1	~1	~1			N/A	N/A
	2	0.00	~1	~1	~1	~1			N/A	N/A
D	1	0.00	~1	~1	~1	~1			N/A	N/A
	2	0.00	~1	~1	~1	~1			N/A	N/A

08:00 - 08:15

Arm	Traffic Stream	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
A	1	0.00	~1	~1	~1	~1			N/A	N/A
	2	0.00	~1	~1	~1	~1			N/A	N/A
B	1	0.00	~1	~1	~1	~1			N/A	N/A
	2	0.00	~1	~1	~1	~1			N/A	N/A
C	1	0.00	~1	~1	~1	~1			N/A	N/A
	2	0.00	~1	~1	~1	~1			N/A	N/A
D	1	0.00	~1	~1	~1	~1			N/A	N/A
	2	0.00	~1	~1	~1	~1			N/A	N/A

08:15 - 08:30

Arm	Traffic Stream	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
A	1	0.00	~1	~1	~1	~1			N/A	N/A

	2	0.00	~1	~1	~1	~1			N/A	N/A
B	1	0.00	~1	~1	~1	~1			N/A	N/A
	2	0.00	~1	~1	~1	~1			N/A	N/A
C	1	0.00	~1	~1	~1	~1			N/A	N/A
	2	0.00	~1	~1	~1	~1			N/A	N/A
D	1	0.00	~1	~1	~1	~1			N/A	N/A
	2	0.00	~1	~1	~1	~1			N/A	N/A

08:30 - 08:45

Arm	Traffic Stream	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
A	1	0.00	~1	~1	~1	~1			N/A	N/A
	2	0.00	~1	~1	~1	~1			N/A	N/A
B	1	0.00	~1	~1	~1	~1			N/A	N/A
	2	0.00	~1	~1	~1	~1			N/A	N/A
C	1	0.00	~1	~1	~1	~1			N/A	N/A
	2	0.00	~1	~1	~1	~1			N/A	N/A
D	1	0.00	~1	~1	~1	~1			N/A	N/A
	2	0.00	~1	~1	~1	~1			N/A	N/A

08:45 - 09:00

Arm	Traffic Stream	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
A	1	0.00	~1	~1	~1	~1			N/A	N/A
	2	0.00	~1	~1	~1	~1			N/A	N/A
B	1	0.00	~1	~1	~1	~1			N/A	N/A
	2	0.00	~1	~1	~1	~1			N/A	N/A
C	1	0.00	~1	~1	~1	~1			N/A	N/A
	2	0.00	~1	~1	~1	~1			N/A	N/A
D	1	0.00	~1	~1	~1	~1			N/A	N/A
	2	0.00	~1	~1	~1	~1			N/A	N/A

09:00 - 09:15

Arm	Traffic Stream	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
A	1	0.00	~1	~1	~1	~1			N/A	N/A
	2	0.00	~1	~1	~1	~1			N/A	N/A
B	1	0.00	~1	~1	~1	~1			N/A	N/A
	2	0.00	~1	~1	~1	~1			N/A	N/A
C	1	0.00	~1	~1	~1	~1			N/A	N/A
	2	0.00	~1	~1	~1	~1			N/A	N/A
D	1	0.00	~1	~1	~1	~1			N/A	N/A
	2	0.00	~1	~1	~1	~1			N/A	N/A

Baseline 2021 - 2021, PM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Queue percentiles	Analysis Options	Queue percentiles cannot be calculated for signalised junction unless in Lane Simulation mode.
Warning	Queue variations	Analysis Options	Queue percentiles may be unreliable if the mean queue in any time segment is very low or very high.

Analysis Set Details

ID	Name	Include in report	Use specific Demand Set (s)	Specific Demand Set (s)	Network flow scaling factor (%)	Network capacity scaling factor (%)
A1	Baseline 2021	✓	✓	D1,D2	100.000	100.000

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Junction Delay (s)	Junction LOS
1	untitled	Signalised		86.72	F

Junction Network Options

Driving side	Lighting	Network residual capacity (%)	First arm reaching threshold
Left	Normal/unknown	-100	Arm A - Traffic Stream 2

Arms

Arms

Arm	Name	Description
A	untitled	
B	untitled	
C	untitled	
D	untitled	

OSCADY Traffic Streams

Arm	Traffic Stream	Phase	Notional EEG (s)	Signals EEG (s)	Destination arms	Straight move
A	1	A	0.00	0.00	B, C	C
	2	B	0.00	0.00	D	C
B	1	D	0.00	0.00	C	D
	2	C	0.00	0.00	A, D	D
C	1	H	0.00	0.00	A, D	A
	2	I	0.00	0.00	B	A
D	1	F	0.00	0.00	A, B	B
	2	E	0.00	0.00	C	B

OSCADY Lanes

Arm	Traffic Stream	Destination arms	Gradient (%)	Width (m)	Turning radius (m)	Nearside lane	Has bay
A	1	B, C	0	3.50	15.80	✓	
	2	D	0	3.00	18.00		
B	1	C	0	3.00	12.40	✓	
	2	A, D	0	3.00	26.80		
C	1	A, D	0	4.50	15.40	✓	
	2	B	0	3.50	14.90		
D	1	A, B	0	3.75	19.60		
	2	C	0	3.00	19.70	✓	

Signal Timings

Junction 1

Junction	Sequence to use	Cycle time (s)	Maximum cycle time (s)	Start displacement (s)	End displacement (s)
1	1	120	120	1.40	2.90

Optimisation options

Junction	Optimise stage lengths	Optimise cycle time	Optimiser demand source	Optimiser message
1	✓	✓	Average	Timings provide delay minimisation.

Phases

Junction	Phase	Name	Minimum green (s)
1	A		7
	B		7
	C		7
	D		7
	E		7
	F		7
	G		12
	H		7
	I		7

Library Stages

Junction	Library Stage	Phases in stage	User stage minimum (s)	Run every N cycles	Probability of running (%)
1	1	A, H	20		
	2	B, D, I	20		
	3	D, C	5		
	4	F, E	20		
	5	G	5		

Stage Sequences

Junction	Sequence	Name	Stage IDs	Stage ends
1	1		1, 2, 3, 4, 5	38, 63, 78, 103, 0
	2		1, 2, 3, 5, 4	10, 25, 40, 59, 73
	3		1, 2, 4, 3, 5	10, 25, 40, 54, 73
	4		1, 2, 4, 5, 3	10, 25, 40, 59, 73
	5		1, 2, 5, 3, 4	10, 25, 45, 59, 73
	6		1, 2, 5, 4, 3	10, 25, 45, 59, 73
	7		1, 3, 2, 4, 5	10, 25, 40, 54, 73
	8		1, 3, 2, 5, 4	10, 25, 40, 59, 73
	9		1, 3, 4, 2, 5	10, 25, 40, 54, 73
	10		1, 3, 4, 5, 2	10, 25, 40, 59, 73

Intergreen Matrix for Junction 1

		To								
		A	B	C	D	E	F	G	H	I
From	A			5	5	5	5	5		5
	B			5		5	5	5	5	
	C	5	5			5	5	5	5	5
	D	5				5		5		
	E	5	5	5	5			5	5	5
	F	5	5	5				5	5	5
	G	5	5	5	5	5	5		5	5
	H		5	5		5	5	5		
	I	5		5		5	5	5		

Interstage Matrix for Junction 1

		To				
		1	2	3	4	5
From	1	0	5	5	5	5
	2	5	0	5	5	5
	3	5	5	0	5	5
	4	5	5	5	0	5
	5	5	5	5	5	0

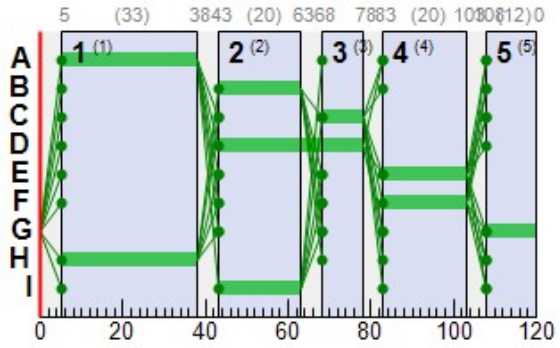
Resultant Stages

Junction	Resultant Stage	Library Stage ID	Phases in this stage	Stage start (s)	Stage end (s)	Stage duration (s)	User stage minimum (s)	Stage minimum (s)
1	1	1	A,H	5	38	33	20	20
	2	2	B,D,I	43	63	20	20	20
	3	3	D,C	68	78	10	5	7
	4	4	F,E	83	103	20	20	20
	5	5	G	108	0	12	5	12

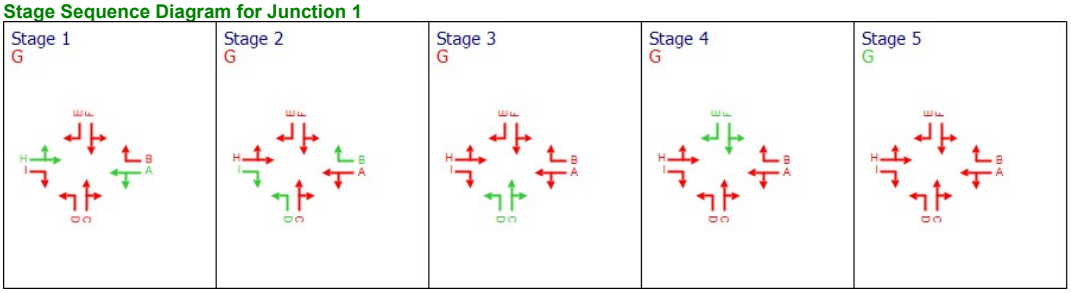
Resultant Phase Green Periods

Junction	Phase	Green period	Start time (s)	End time (s)	Duration (s)
1	A	1	5	38	33
	B	1	43	63	20
	C	1	68	78	10
	D	1	43	78	35
	E	1	83	103	20
	F	1	83	103	20
	G	1	108	0	12
	H	1	5	38	33
	I	1	43	63	20

Phase Timings Diagram for Junction 1



Stage Sequence Diagram for Junction 1



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	2021	PM	ONE HOUR	14:45	16:15	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	✓	516	100.000
B		ONE HOUR	✓	588	100.000
C		ONE HOUR	✓	726	100.000
D		ONE HOUR	✓	58	100.000

Origin-Destination Data

Demand (PCU/hr)

		To			
		A	B	C	D
From	A	0	114	377	25
	B	149	0	433	6
	C	427	256	0	43
	D	20	5	33	0

Vehicle Mix

Heavy Vehicle Percentages

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

Results

Results Summary for whole modelled period

Arm	Max DOS	Max Delay (s)	Max Queue (PCU)	Max 95th percentile Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
A	0.98	103.86	23.8	?	F	473	710
B	0.92	95.45	25.4	?	F	540	809
C	0.88	71.06	26.0	?	E	666	999
D	0.11	41.93	1.8	?	D	53	80

Main Results for each time segment

14:45 - 15:00

Arm	Traffic Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Calculated saturation flow (PCU/hr)	Effective green time (s)	NEEG (s)	Capacity (PCU/hr)	DOS	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Signalised level of service
A	1	370	92	1923	34.50	0.00	553	0.669	331	0.0	9.6	45.787	D
	2	19	5	1897	21.50	0.00	340	0.055	17	0.0	0.5	41.240	D
B	1	326	81	1708	36.50	0.00	520	0.627	293	0.0	8.2	43.157	D
	2	117	29	1950	11.50	0.00	187	0.624	100	0.0	4.1	70.392	E
C	1	354	88	2047	34.50	0.00	588	0.601	318	0.0	9.0	42.644	D
	2	193	48	1912	21.50	0.00	343	0.562	170	0.0	5.7	53.341	D
D	1	19	5	2009	21.50	0.00	360	0.052	17	0.0	0.5	41.172	D
	2	25	6	1780	21.50	0.00	319	0.078	22	0.0	0.7	41.626	D

15:00 - 15:15

Arm	Traffic Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Calculated saturation flow (PCU/hr)	Effective green time (s)	NEEG (s)	Capacity (PCU/hr)	DOS	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Signalised level of service
A	1	441	110	1923	34.50	0.00	553	0.798	430	9.6	12.4	54.252	D
	2	22	6	1897	21.50	0.00	340	0.066	22	0.5	0.6	41.406	D
B	1	389	97	1708	36.50	0.00	520	0.749	381	8.2	10.4	49.970	D
	2	139	35	1950	11.50	0.00	187	0.746	134	4.1	5.4	82.874	F
C	1	423	106	2047	34.50	0.00	588	0.718	414	9.0	11.2	47.964	D
	2	230	58	1912	21.50	0.00	343	0.672	224	5.7	7.2	59.031	E
D	1	22	6	2004	21.50	0.00	359	0.063	22	0.5	0.6	41.326	D
	2	30	7	1780	21.50	0.00	319	0.093	29	0.7	0.8	41.875	D

15:15 - 15:30

Arm	Traffic Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Calculated saturation flow (PCU/hr)	Effective green time (s)	NEEG (s)	Capacity (PCU/hr)	DOS	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Signalised level of service
A	1	541	135	1922	34.50	0.00	553	0.978	508	12.4	20.5	81.389	F
	2	28	7	1897	21.50	0.00	340	0.081	27	0.6	0.8	41.636	D
B	1	477	119	1708	36.50	0.00	520	0.917	456	10.4	15.5	69.017	E
	2	171	43	1950	11.50	0.00	187	0.913	159	5.4	8.4	110.630	F
C	1	517	129	2047	34.50	0.00	588	0.879	499	11.2	15.7	61.911	E
	2	282	70	1912	21.50	0.00	343	0.823	271	7.2	9.8	72.047	E
D	1	28	7	2009	21.50	0.00	360	0.076	27	0.6	0.8	41.533	D
	2	36	9	1780	21.50	0.00	319	0.114	36	0.8	1.0	42.225	D

15:30 - 15:45

Arm	Traffic Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Calculated saturation flow (PCU/hr)	Effective green time (s)	NEEG (s)	Capacity (PCU/hr)	DOS	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Signalised level of service
A	1	541	135	1922	34.50	0.00	553	0.978	531	20.5	23.0	107.032	F
	2	28	7	1897	21.50	0.00	340	0.081	28	0.8	0.8	41.637	D
B	1	477	119	1708	36.50	0.00	520	0.917	474	15.5	16.3	80.437	F
	2	171	43	1950	11.50	0.00	187	0.913	168	8.4	9.1	137.387	F
C	1	517	129	2047	34.50	0.00	588	0.879	516	15.7	16.0	67.561	E
	2	282	70	1912	21.50	0.00	343	0.823	281	9.8	10.0	77.474	E
D	1	28	7	2009	21.50	0.00	360	0.076	28	0.8	0.8	41.534	D
	2	36	9	1780	21.50	0.00	319	0.114	36	1.0	1.0	42.227	D

15:45 - 16:00

Arm	Traffic Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Calculated saturation flow (PCU/hr)	Effective green time (s)	NEEG (s)	Capacity (PCU/hr)	DOS	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Signalised level of service
A	1	441	110	1923	34.50	0.00	553	0.798	482	23.0	12.8	68.193	E
	2	22	6	1897	21.50	0.00	340	0.066	23	0.8	0.6	41.407	D
B	1	389	97	1708	36.50	0.00	520	0.749	412	16.3	10.6	54.601	D
	2	139	35	1950	11.50	0.00	187	0.746	152	9.1	5.9	103.987	F
C	1	423	106	2047	34.50	0.00	588	0.718	441	16.0	11.3	50.089	D
	2	230	58	1912	21.50	0.00	343	0.672	241	10.0	7.3	61.944	E
D	1	22	6	2004	21.50	0.00	359	0.063	23	0.8	0.6	41.327	D
	2	30	7	1780	21.50	0.00	319	0.093	30	1.0	0.8	41.878	D

16:00 - 16:15

Arm	Traffic Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Calculated saturation flow (PCU/hr)	Effective green time (s)	NEEG (s)	Capacity (PCU/hr)	DOS	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Signalised level of service
A	1	370	92	1923	34.50	0.00	553	0.669	382	12.8	9.7	47.133	D
	2	19	5	1897	21.50	0.00	340	0.055	19	0.6	0.5	41.241	D
B	1	326	81	1708	36.50	0.00	520	0.627	335	10.6	8.3	44.078	D
	2	117	29	1950	11.50	0.00	187	0.624	123	5.9	4.3	76.685	E
C	1	354	88	2047	34.50	0.00	588	0.601	363	11.3	9.0	43.191	D
	2	193	48	1912	21.50	0.00	343	0.562	199	7.3	5.8	54.402	D
D	1	19	5	2009	21.50	0.00	360	0.052	19	0.6	0.5	41.173	D
	2	25	6	1780	21.50	0.00	319	0.078	25	0.8	0.7	41.629	D

Queue Variation Results for each time segment

14:45 - 15:00

Arm	Traffic Stream	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
A	1	0.00	~1	~1	~1	~1			N/A	N/A
	2	0.00	~1	~1	~1	~1			N/A	N/A
B	1	0.00	~1	~1	~1	~1			N/A	N/A
	2	0.00	~1	~1	~1	~1			N/A	N/A
C	1	0.00	~1	~1	~1	~1			N/A	N/A
	2	0.00	~1	~1	~1	~1			N/A	N/A
D	1	0.00	~1	~1	~1	~1			N/A	N/A
	2	0.00	~1	~1	~1	~1			N/A	N/A

15:00 - 15:15

Arm	Traffic Stream	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
A	1	0.00	~1	~1	~1	~1			N/A	N/A
	2	0.00	~1	~1	~1	~1			N/A	N/A
B	1	0.00	~1	~1	~1	~1			N/A	N/A
	2	0.00	~1	~1	~1	~1			N/A	N/A
C	1	0.00	~1	~1	~1	~1			N/A	N/A
	2	0.00	~1	~1	~1	~1			N/A	N/A
D	1	0.00	~1	~1	~1	~1			N/A	N/A
	2	0.00	~1	~1	~1	~1			N/A	N/A

15:15 - 15:30

Arm	Traffic Stream	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
A	1	0.00	~1	~1	~1	~1			N/A	N/A

	2	0.00	~1	~1	~1	~1			N/A	N/A
B	1	0.00	~1	~1	~1	~1			N/A	N/A
	2	0.00	~1	~1	~1	~1			N/A	N/A
C	1	0.00	~1	~1	~1	~1			N/A	N/A
	2	0.00	~1	~1	~1	~1			N/A	N/A
D	1	0.00	~1	~1	~1	~1			N/A	N/A
	2	0.00	~1	~1	~1	~1			N/A	N/A

15:30 - 15:45

Arm	Traffic Stream	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
A	1	0.00	~1	~1	~1	~1			N/A	N/A
	2	0.00	~1	~1	~1	~1			N/A	N/A
B	1	0.00	~1	~1	~1	~1			N/A	N/A
	2	0.00	~1	~1	~1	~1			N/A	N/A
C	1	0.00	~1	~1	~1	~1			N/A	N/A
	2	0.00	~1	~1	~1	~1			N/A	N/A
D	1	0.00	~1	~1	~1	~1			N/A	N/A
	2	0.00	~1	~1	~1	~1			N/A	N/A

15:45 - 16:00

Arm	Traffic Stream	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
A	1	0.00	~1	~1	~1	~1			N/A	N/A
	2	0.00	~1	~1	~1	~1			N/A	N/A
B	1	0.00	~1	~1	~1	~1			N/A	N/A
	2	0.00	~1	~1	~1	~1			N/A	N/A
C	1	0.00	~1	~1	~1	~1			N/A	N/A
	2	0.00	~1	~1	~1	~1			N/A	N/A
D	1	0.00	~1	~1	~1	~1			N/A	N/A
	2	0.00	~1	~1	~1	~1			N/A	N/A

16:00 - 16:15

Arm	Traffic Stream	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
A	1	0.00	~1	~1	~1	~1			N/A	N/A
	2	0.00	~1	~1	~1	~1			N/A	N/A
B	1	0.00	~1	~1	~1	~1			N/A	N/A
	2	0.00	~1	~1	~1	~1			N/A	N/A
C	1	0.00	~1	~1	~1	~1			N/A	N/A
	2	0.00	~1	~1	~1	~1			N/A	N/A
D	1	0.00	~1	~1	~1	~1			N/A	N/A
	2	0.00	~1	~1	~1	~1			N/A	N/A

Opening Year 2026 - DN 2026, AM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Queue percentiles	Analysis Options	Queue percentiles cannot be calculated for signalised junction unless in Lane Simulation mode.
Warning	Queue variations	Analysis Options	Queue percentiles may be unreliable if the mean queue in any time segment is very low or very high.

Analysis Set Details

ID	Name	Include in report	Use specific Demand Set (s)	Specific Demand Set (s)	Network flow scaling factor (%)	Network capacity scaling factor (%)
A2	Opening Year 2026	✓	✓	D3,D4,D5,D6	100.000	100.000

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Junction Delay (s)	Junction LOS
1	untitled	Signalised		468.87	F

Junction Network Options

Driving side	Lighting	Network residual capacity (%)	First arm reaching threshold
Left	Normal/unknown	-100	Arm A - Traffic Stream 2

Arms

Arms

Arm	Name	Description
A	untitled	
B	untitled	
C	untitled	
D	untitled	

OSCADY Traffic Streams

Arm	Traffic Stream	Phase	Notional EEG (s)	Signals EEG (s)	Destination arms	Straight move
A	1	A	0.00	0.00	B, C	C
	2	B	0.00	0.00	D	C
B	1	D	0.00	0.00	C	D
	2	C	0.00	0.00	A, D	D
C	1	H	0.00	0.00	A, D	A
	2	I	0.00	0.00	B	A
D	1	F	0.00	0.00	A, B	B
	2	E	0.00	0.00	C	B

OSCADY Lanes

Arm	Traffic Stream	Destination arms	Gradient (%)	Width (m)	Turning radius (m)	Nearside lane	Has bay
A	1	B, C	0	3.50	15.80	✓	
	2	D	0	3.00	18.00		
B	1	C	0	3.00	12.40	✓	
	2	A, D	0	3.00	26.80		
C	1	A, D	0	4.50	15.40	✓	
	2	B	0	3.50	14.90		
D	1	A, B	0	3.75	19.60		
	2	C	0	3.00	19.70	✓	

Signal Timings

Junction 1

Junction	Sequence to use	Cycle time (s)	Maximum cycle time (s)	Start displacement (s)	End displacement (s)
1	1	120	120	1.40	2.90

Optimisation options

Junction	Optimise stage lengths	Optimise cycle time	Optimiser demand source	Optimiser message
1	✓	✓	Average	Timings provide capacity maximisation.

Phases

Junction	Phase	Name	Minimum green (s)
1	A		7
	B		7
	C		7
	D		7
	E		7
	F		7
	G		12
	H		7
	I		7

Library Stages

Junction	Library Stage	Phases in stage	User stage minimum (s)	Run every N cycles	Probability of running (%)
1	1	A, H	20		
	2	B, D, I	20		
	3	C, D	5		
	4	E, F	20		
	5	G	5		

Stage Sequences

Junction	Sequence	Name	Stage IDs	Stage ends
1	1		1, 2, 3, 4, 5	39, 66, 78, 103, 0
	2		1, 2, 3, 5, 4	18, 41, 64, 92, 115
	3		1, 2, 4, 3, 5	18, 41, 64, 87, 115
	4		1, 2, 4, 5, 3	18, 41, 64, 92, 115
	5		1, 2, 5, 3, 4	18, 41, 69, 92, 115
	6		1, 2, 5, 4, 3	18, 41, 69, 92, 115
	7		1, 3, 2, 4, 5	18, 41, 64, 87, 115
	8		1, 3, 2, 5, 4	18, 41, 64, 92, 115
	9		1, 3, 4, 2, 5	18, 41, 64, 87, 115
	10		1, 3, 4, 5, 2	18, 41, 64, 92, 115

Intergreen Matrix for Junction 1

		To								
		A	B	C	D	E	F	G	H	I
From	A			5	5	5	5	5		5
	B			5		5	5	5	5	
	C	5	5			5	5	5	5	5
	D	5				5		5		
	E	5	5	5	5			5	5	5
	F	5	5	5				5	5	5
	G	5	5	5	5	5	5		5	5
	H		5	5		5	5	5		
	I	5		5		5	5	5		

Interstage Matrix for Junction 1

		To				
		1	2	3	4	5
From	1	0	5	5	5	5
	2	5	0	5	5	5
	3	5	5	0	5	5
	4	5	5	5	0	5
	5	5	5	5	5	0

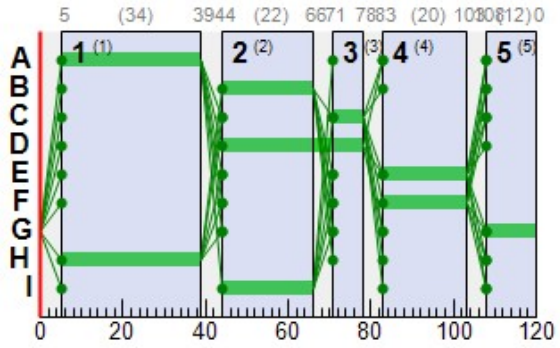
Resultant Stages

Junction	Resultant Stage	Library Stage ID	Phases in this stage	Stage start (s)	Stage end (s)	Stage duration (s)	User stage minimum (s)	Stage minimum (s)
1	1	1	A,H	5	39	34	20	20
	2	2	B,D,I	44	66	22	20	20
	3	3	C,D	71	78	7	5	7
	4	4	E,F	83	103	20	20	20
	5	5	G	108	0	12	5	12

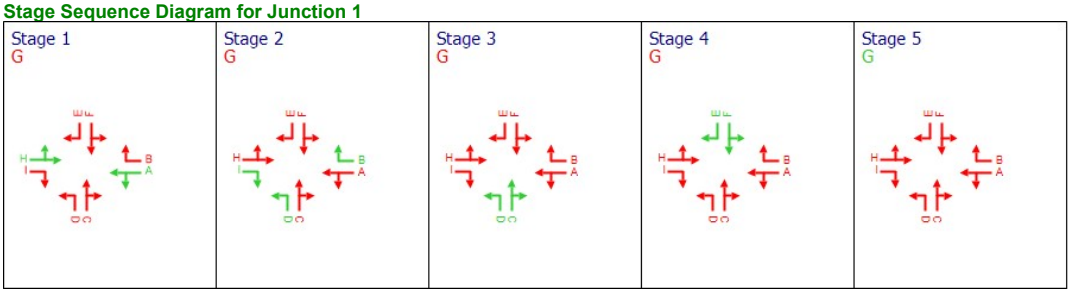
Resultant Phase Green Periods

Junction	Phase	Green period	Start time (s)	End time (s)	Duration (s)
1	A	1	5	39	34
	B	1	44	66	22
	C	1	71	78	7
	D	1	44	78	34
	E	1	83	103	20
	F	1	83	103	20
	G	1	108	0	12
	H	1	5	39	34
	I	1	44	66	22

Phase Timings Diagram for Junction 1



Stage Sequence Diagram for Junction 1



Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D3	DN 2026	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	✓	699	100.000
B		ONE HOUR	✓	214	100.000
C		ONE HOUR	✓	979	100.000
D		ONE HOUR	✓	181	100.000

Origin-Destination Data

Demand (PCU/hr)

		To			
		A	B	C	D
From	A	0	190	476	33
	B	49	0	158	7
	C	460	455	0	64
	D	61	11	109	0

Vehicle Mix

Heavy Vehicle Percentages

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

Results

Results Summary for whole modelled period

Arm	Max DOS	Max Delay (s)	Max Queue (PCU)	Max 95th percentile Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
A	1.30	729.18	121.8	?	F	641	962
B	0.44	43.84	6.3	?	D	196	295
C	1.34	454.05	110.1	?	F	898	1348
D	0.38	46.31	5.6	?	D	166	249

Main Results for each time segment

07:45 - 08:00

Arm	Traffic Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Calculated saturation flow (PCU/hr)	Effective green time (s)	NEEG (s)	Capacity (PCU/hr)	DOS	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Signalised level of service
A	1	501	125	1913	35.50	0.00	566	0.886	440	0.0	15.3	61.860	E
	2	25	6	1897	23.50	0.00	371	0.067	22	0.0	0.7	39.773	D
B	1	119	30	1708	35.50	0.00	505	0.235	108	0.0	2.8	33.414	C
	2	42	11	1958	8.50	0.00	139	0.304	37	0.0	1.4	60.132	E
C	1	394	99	2041	35.50	0.00	604	0.653	354	0.0	10.0	43.867	D
	2	343	86	1912	23.50	0.00	375	0.915	290	0.0	13.1	80.068	F
D	1	54	14	2000	21.50	0.00	358	0.151	48	0.0	1.5	42.728	D
	2	82	21	1780	21.50	0.00	319	0.257	73	0.0	2.3	44.929	D

08:00 - 08:15

Arm	Traffic Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Calculated saturation flow (PCU/hr)	Effective green time (s)	NEEG (s)	Capacity (PCU/hr)	DOS	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Signalised level of service
A	1	599	150	1913	35.50	0.00	566	1.058	545	15.3	28.8	102.534	F
	2	30	7	1897	23.50	0.00	371	0.080	29	0.7	0.8	39.972	D
B	1	142	36	1708	35.50	0.00	505	0.281	140	2.8	3.4	34.277	C
	2	50	13	1959	8.50	0.00	139	0.363	49	1.4	1.7	62.621	E
C	1	471	118	2041	35.50	0.00	604	0.780	460	10.0	12.8	51.135	D
	2	409	102	1912	23.50	0.00	375	1.092	362	13.1	24.9	132.302	F
D	1	65	16	2000	21.50	0.00	358	0.181	64	1.5	1.8	43.233	D
	2	98	24	1780	21.50	0.00	319	0.307	96	2.3	2.8	46.054	D

08:15 - 08:30

Arm	Traffic Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Calculated saturation flow (PCU/hr)	Effective green time (s)	NEEG (s)	Capacity (PCU/hr)	DOS	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Signalised level of service
A	1	733	183	1913	35.50	0.00	566	1.296	565	28.8	70.9	212.857	F
	2	36	9	1897	23.50	0.00	371	0.098	36	0.8	1.0	40.251	D
B	1	174	43	1708	35.50	0.00	505	0.344	171	3.4	4.2	35.570	D
	2	62	15	1959	8.50	0.00	139	0.444	60	1.7	2.1	66.478	E
C	1	577	144	2041	35.50	0.00	604	0.956	548	12.8	20.0	73.844	E
	2	501	125	1912	23.50	0.00	375	1.338	374	24.9	56.7	258.166	F
D	1	79	20	2000	21.50	0.00	358	0.221	78	1.8	2.2	43.967	D
	2	120	30	1780	21.50	0.00	319	0.376	117	2.8	3.4	47.775	D

08:30 - 08:45

Arm	Traffic Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Calculated saturation flow (PCU/hr)	Effective green time (s)	NEEG (s)	Capacity (PCU/hr)	DOS	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Signalised level of service
A	1	733	183	1913	35.50	0.00	566	1.296	566	70.9	112.8	418.554	F
	2	36	9	1897	23.50	0.00	371	0.098	36	1.0	1.0	40.252	D
B	1	174	43	1708	35.50	0.00	505	0.344	174	4.2	4.2	35.592	D
	2	62	15	1959	8.50	0.00	139	0.444	62	2.1	2.1	67.113	E
C	1	577	144	2041	35.50	0.00	604	0.956	571	20.0	21.6	91.366	F
	2	501	125	1912	23.50	0.00	375	1.338	374	56.7	88.4	485.806	F
D	1	79	20	2000	21.50	0.00	358	0.221	79	2.2	2.2	43.978	D
	2	120	30	1780	21.50	0.00	319	0.376	120	3.4	3.4	47.846	D

08:45 - 09:00

Arm	Traffic Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Calculated saturation flow (PCU/hr)	Effective green time (s)	NEEG (s)	Capacity (PCU/hr)	DOS	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Signalised level of service
A	1	599	150	1913	35.50	0.00	566	1.058	566	112.8	121.0	666.628	F
	2	30	7	1897	23.50	0.00	371	0.080	30	1.0	0.8	39.974	D
B	1	142	36	1708	35.50	0.00	505	0.281	145	4.2	3.4	34.302	C
	2	50	13	1959	8.50	0.00	139	0.363	52	2.1	1.7	63.358	E
C	1	471	118	2041	35.50	0.00	604	0.780	505	21.6	13.1	58.639	E
	2	409	102	1912	23.50	0.00	375	1.092	374	88.4	97.1	775.113	F
D	1	65	16	2000	21.50	0.00	358	0.181	66	2.2	1.8	43.247	D
	2	98	24	1780	21.50	0.00	319	0.307	101	3.4	2.8	46.138	D

09:00 - 09:15

Arm	Traffic Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Calculated saturation flow (PCU/hr)	Effective green time (s)	NEEG (s)	Capacity (PCU/hr)	DOS	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Signalised level of service
A	1	501	125	1913	35.50	0.00	566	0.886	563	121.0	105.7	763.341	F
	2	25	6	1897	23.50	0.00	371	0.067	25	0.8	0.7	39.775	D
B	1	119	30	1708	35.50	0.00	505	0.235	121	3.4	2.8	33.433	C
	2	42	11	1958	8.50	0.00	139	0.304	43	1.7	1.4	60.650	E
C	1	394	99	2041	35.50	0.00	604	0.653	406	13.1	10.1	44.798	D
	2	343	86	1912	23.50	0.00	375	0.915	372	97.1	89.8	925.365	F
D	1	54	14	2000	21.50	0.00	358	0.151	55	1.8	1.5	42.739	D
	2	82	21	1780	21.50	0.00	319	0.257	84	2.8	2.3	44.989	D

Queue Variation Results for each time segment

07:45 - 08:00

Arm	Traffic Stream	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
A	1	0.00	~1	~1	~1	~1			N/A	N/A
	2	0.00	~1	~1	~1	~1			N/A	N/A
B	1	0.00	~1	~1	~1	~1			N/A	N/A
	2	0.00	~1	~1	~1	~1			N/A	N/A
C	1	0.00	~1	~1	~1	~1			N/A	N/A
	2	0.00	~1	~1	~1	~1			N/A	N/A
D	1	0.00	~1	~1	~1	~1			N/A	N/A
	2	0.00	~1	~1	~1	~1			N/A	N/A

08:00 - 08:15

Arm	Traffic Stream	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
A	1	0.00	~1	~1	~1	~1			N/A	N/A
	2	0.00	~1	~1	~1	~1			N/A	N/A
B	1	0.00	~1	~1	~1	~1			N/A	N/A
	2	0.00	~1	~1	~1	~1			N/A	N/A
C	1	0.00	~1	~1	~1	~1			N/A	N/A
	2	0.00	~1	~1	~1	~1			N/A	N/A
D	1	0.00	~1	~1	~1	~1			N/A	N/A
	2	0.00	~1	~1	~1	~1			N/A	N/A

08:15 - 08:30

Arm	Traffic Stream	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
A	1	0.00	~1	~1	~1	~1			N/A	N/A

	2	0.00	~1	~1	~1	~1			N/A	N/A
B	1	0.00	~1	~1	~1	~1			N/A	N/A
	2	0.00	~1	~1	~1	~1			N/A	N/A
C	1	0.00	~1	~1	~1	~1			N/A	N/A
	2	0.00	~1	~1	~1	~1			N/A	N/A
D	1	0.00	~1	~1	~1	~1			N/A	N/A
	2	0.00	~1	~1	~1	~1			N/A	N/A

08:30 - 08:45

Arm	Traffic Stream	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
A	1	0.00	~1	~1	~1	~1			N/A	N/A
	2	0.00	~1	~1	~1	~1			N/A	N/A
B	1	0.00	~1	~1	~1	~1			N/A	N/A
	2	0.00	~1	~1	~1	~1			N/A	N/A
C	1	0.00	~1	~1	~1	~1			N/A	N/A
	2	0.00	~1	~1	~1	~1			N/A	N/A
D	1	0.00	~1	~1	~1	~1			N/A	N/A
	2	0.00	~1	~1	~1	~1			N/A	N/A

08:45 - 09:00

Arm	Traffic Stream	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
A	1	0.00	~1	~1	~1	~1			N/A	N/A
	2	0.00	~1	~1	~1	~1			N/A	N/A
B	1	0.00	~1	~1	~1	~1			N/A	N/A
	2	0.00	~1	~1	~1	~1			N/A	N/A
C	1	0.00	~1	~1	~1	~1			N/A	N/A
	2	0.00	~1	~1	~1	~1			N/A	N/A
D	1	0.00	~1	~1	~1	~1			N/A	N/A
	2	0.00	~1	~1	~1	~1			N/A	N/A

09:00 - 09:15

Arm	Traffic Stream	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
A	1	0.00	~1	~1	~1	~1			N/A	N/A
	2	0.00	~1	~1	~1	~1			N/A	N/A
B	1	0.00	~1	~1	~1	~1			N/A	N/A
	2	0.00	~1	~1	~1	~1			N/A	N/A
C	1	0.00	~1	~1	~1	~1			N/A	N/A
	2	0.00	~1	~1	~1	~1			N/A	N/A
D	1	0.00	~1	~1	~1	~1			N/A	N/A
	2	0.00	~1	~1	~1	~1			N/A	N/A

Junctions 9

ARCADY 9 - Roundabout Module

Version: 9.5.0.6896

For sales and distribution information, program advice and maintenance, contact TRL:
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Filename: Junction 3 - Coast Rd_Red Arches 3.j9
Path: O:\20 Projects\20211 - Baldoyle Phase 5\00.WIP\Model\TRL
Report generation date: 08/03/2022 07:15:13

Summary of junction performance

	AM								PM							
	Queue (PCU)	95% Queue (PCU)	Delay (s)	RFC	LOS	Junction Delay (s)	Junction LOS	Network Residual Capacity	Queue (PCU)	95% Queue (PCU)	Delay (s)	RFC	LOS	Junction Delay (s)	Junction LOS	Network Residual Capacity
Baseline 2021 - 2021																
Arm 1	1.6	1.9	7.13	0.59	A	5.57	A	53 % [Arm 1]	0.7	2.9	4.58	0.38	A	4.26	A	137 % [Arm 2]
Arm 2	0.6	2.9	3.95	0.37	A				0.7	2.9	4.07	0.39	A			
Arm 3	0.2	0.5	3.79	0.13	A				0.1	0.5	3.49	0.06	A			

	DN AM								DN PM									
	Queue (PCU)	95% Queue (PCU)	Delay (s)	RFC	LOS	Junction Delay (s)	Junction LOS	Network Residual Capacity	Queue (PCU)	95% Queue (PCU)	Delay (s)	RFC	LOS	Junction Delay (s)	Junction LOS	Network Residual Capacity	Queue (PCU)	95 Que (PC
Opening Year 2026 - 202																		
Arm 1	2.2	4.3	9.12	0.67	A	6.70	A	34 % [Arm 1]	0.8	2.7	4.91	0.42	A	4.56	A	113 % [Arm 2]	2.5	6.6
Arm 2	0.8	2.5	4.40	0.43	A				0.8	2.5	4.39	0.43	A				0.9	2.3
Arm 3	0.3	1.2	4.25	0.21	A				0.1	0.5	3.64	0.07	A				0.4	1.2

	DN AM								DN PM									
	Queue (PCU)	95% Queue (PCU)	Delay (s)	RFC	LOS	Junction Delay (s)	Junction LOS	Network Residual Capacity	Queue (PCU)	95% Queue (PCU)	Delay (s)	RFC	LOS	Junction Delay (s)	Junction LOS	Network Residual Capacity	Queue (PCU)	95 Que (PC
Future Year 2041 - 204																		
Arm 1	3.4	14.6	12.58	0.76	B	8.64	A	19 % [Arm 1]	1.0	2.0	5.44	0.47	A	5.06	A	89 % [Arm 2]	3.9	18.
Arm 2	1.0	1.7	4.87	0.48	A				1.0	1.6	4.89	0.49	A				1.1	1.6
Arm 3	0.3	1.4	4.61	0.23	A				0.1	0.5	3.86	0.09	A				0.5	1.9

	AM								PM							
	Queue (PCU)	95% Queue (PCU)	Delay (s)	RFC	LOS	Junction Delay (s)	Junction LOS	Network Residual Capacity	Queue (PCU)	95% Queue (PCU)	Delay (s)	RFC	LOS	Junction Delay (s)	Junction LOS	Network Residual Capacity
Stress Test - Stress 2026																
Arm 1	4.8	24.7	18.32	0.82	C	11.16	B	9 % [Arm 1]	1.3	1.6	6.72	0.55	A	6.21	A	53 % [Arm 2]
Arm 2	1.2	1.6	5.47	0.52	A				1.5	1.9	6.35	0.59	A			
Arm 3	1.3	2.2	7.27	0.54	A				0.4	1.5	4.70	0.28	A			
Stress Test - Stress 2041																
Arm 1	10.4	56.5	36.66	0.92	E	19.40	C	-1 % [Arm 1]	1.7	2.0	7.72	0.61	A	7.15	A	40 % [Arm 2]
Arm 2	1.5	1.8	6.18	0.58	A				2.0	3.0	7.42	0.65	A			
Arm 3	1.5	2.3	8.35	0.58	A				0.5	1.9	5.05	0.30	A			

There are warnings associated with one or more model runs - see the 'Data Errors and Warnings' tables for each Analysis or Demand Set.

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

File summary

File Description

Title	
Location	
Site number	
Date	02/10/2020
Version	
Status	(new file)
Identifier	
Client	
Jobnumber	
Enumerator	JBBARRY\TransportPC
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	Residual capacity criteria type	RFC Threshold	Average Delay threshold (s)	Queue threshold (PCU)
5.75	✓		✓	Delay	0.85	36.00	20.00

Analysis Set Details

ID	Name	Include in report	Use specific Demand Set (s)	Specific Demand Set (s)	Network flow scaling factor (%)	Network capacity scaling factor (%)
A2	Opening Year 2026	✓	✓	D3,D4,D5,D6	100.000	100.000

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
D14	Stress 2041	PM	ONE HOUR	12:45	14:15	15	✓

Opening Year 2026 - Stress 2041, PM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Queue variations	Analysis Options	Queue percentiles may be unreliable if the mean queue in any time segment is very low or very high.

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	untitled	Standard Roundabout		1, 2, 3	7.15	A

Junction Network Options

Driving side	Lighting	Network residual capacity (%)	First arm reaching threshold
Left	Normal/unknown	40	Arm 2

Arms

Arms

Arm	Name	Description
1	untitled	
2	untitled	
3	untitled	

Roundabout Geometry

Arm	V - Approach road half-width (m)	E - Entry width (m)	l' - Effective flare length (m)	R - Entry radius (m)	D - Inscribed circle diameter (m)	PHI - Conflict (entry) angle (deg)	Exit only
1	4.30	6.10	2.9	18.6	16.5	42.0	
2	4.75	7.00	2.9	33.0	16.5	38.0	
3	4.00	6.25	7.8	36.0	16.5	37.0	

Slope / Intercept / Capacity

Roundabout Slope and Intercept used in model

Arm	Final slope	Final intercept (PCU/hr)
1	0.593	1416
2	0.646	1619
3	0.636	1563

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

Traffic Demand

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 (%)
1		ONE HOUR	✓	714	100.000
2		ONE HOUR	✓	882	100.000
3		ONE HOUR	✓	307	100.000

Origin-Destination Data

Demand (PCU/hr)

		To		
		1	2	3
From	1	4	553	157
	2	624	0	258
	3	127	180	0

Vehicle Mix

Heavy Vehicle Percentages

		To		
		1	2	3
From	1	10	10	10
	2	10	10	10
	3	10	10	10

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max 95th percentile Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
1	0.61	7.72	1.7	2.0	A	655	983
2	0.65	7.42	2.0	3.0	A	809	1214
3	0.30	5.05	0.5	1.9	A	282	423

Main Results for each time segment

12:45 - 13:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	538	134	135	1336	0.402	535	566	0.0	0.7	4.922	A
2	664	166	121	1541	0.431	661	549	0.0	0.8	4.484	A
3	231	58	470	1263	0.183	230	311	0.0	0.2	3.830	A

13:00 - 13:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	642	160	162	1320	0.486	641	678	0.7	1.0	5.814	A
2	793	198	144	1525	0.520	791	658	0.8	1.2	5.386	A
3	276	69	564	1204	0.229	276	372	0.2	0.3	4.265	A

13:15 - 13:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	786	197	198	1299	0.605	784	829	1.0	1.7	7.647	A
2	971	243	177	1505	0.645	968	805	1.2	2.0	7.338	A
3	338	85	689	1124	0.301	337	455	0.3	0.5	5.032	A

13:30 - 13:45

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	786	197	198	1299	0.605	786	831	1.7	1.7	7.721	A
2	971	243	177	1504	0.646	971	807	2.0	2.0	7.424	A
3	338	85	691	1123	0.301	338	457	0.5	0.5	5.047	A

13:45 - 14:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	642	160	162	1320	0.486	644	681	1.7	1.1	5.880	A
2	793	198	145	1525	0.520	796	661	2.0	1.2	5.455	A
3	276	69	567	1202	0.230	277	375	0.5	0.3	4.283	A

14:00 - 14:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	538	134	136	1336	0.402	539	570	1.1	0.7	4.977	A
2	664	166	121	1540	0.431	665	553	1.2	0.8	4.534	A
3	231	58	474	1261	0.183	231	313	0.3	0.2	3.848	A

Queue Variation Results for each time segment

12:45 - 13:00

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	0.73	0.61	1.10	1.54	1.60			N/A	N/A
2	0.83	0.61	1.10	1.54	1.60			N/A	N/A
3	0.25	0.00	0.00	0.25	0.25			N/A	N/A

13:00 - 13:15

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	1.03	0.10	0.99	1.63	2.02			N/A	N/A
2	1.18	0.08	0.96	2.13	2.96			N/A	N/A
3	0.33	0.00	0.00	0.33	0.33			N/A	N/A

13:15 - 13:30

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	1.65	0.03	0.29	1.65	1.65			N/A	N/A
2	1.96	0.03	0.30	1.96	1.96			N/A	N/A
3	0.47	0.03	0.28	0.50	0.53			N/A	N/A

13:30 - 13:45

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	1.67	0.03	0.29	1.67	1.67			N/A	N/A
2	1.98	0.03	0.29	1.98	1.98			N/A	N/A
3	0.47	0.03	0.35	1.49	1.87			N/A	N/A

13:45 - 14:00

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	1.05	0.13	1.05	1.52	1.93			N/A	N/A
2	1.21	0.12	1.12	1.94	2.36			N/A	N/A
3	0.33	0.00	0.00	0.33	0.33			N/A	N/A

14:00 - 14:15

Arm	Mean (PCU)	Q05 (PCU)	Q50 (PCU)	Q90 (PCU)	Q95 (PCU)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	0.75	0.06	0.69	1.43	1.43			N/A	N/A
2	0.84	0.06	0.69	1.41	1.96			N/A	N/A
3	0.25	0.00	0.00	0.25	0.25			N/A	N/A

Appendix 3: TRICS Output File

Calculation Reference: AUDIT-729001-220322-0327

TRIP RATE CALCULATION SELECTION PARAMETERS:

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

Selected regions and areas:

02	SOUTH EAST		
	BD	BEDFORDSHIRE	3 days
	ES	EAST SUSSEX	1 days
	EX	ESSEX	1 days
	HC	HAMPSHIRE	1 days
	HF	HERTFORDSHIRE	2 days
04	EAST ANGLIA		
	CA	CAMBRIDGESHIRE	1 days
	NF	NORFOLK	2 days
	SF	SUFFOLK	3 days
05	EAST MIDLANDS		
	NT	NOTTINGHAMSHIRE	2 days
06	WEST MIDLANDS		
	WM	WEST MIDLANDS	1 days
07	YORKSHIRE & NORTH LINCOLNSHIRE		
	SY	SOUTH YORKSHIRE	1 days
08	NORTH WEST		
	MS	MERSEYSIDE	1 days
11	SCOTLAND		
	SA	SOUTH AYRSHIRE	1 days
	SR	STIRLING	2 days
13	MUNSTER		
	WA	WATERFORD	1 days
14	LEINSTER		
	LU	LOUTH	1 days
15	GREATER DUBLIN		
	DL	DUBLIN	5 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: 51 to 332 (units:)
Range Selected by User: 50 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 23/06/21

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	15 days
Wednesday	5 days
Thursday	5 days
Friday	2 days

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

Selected survey types:

Manual count	29 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 undertaking using machines.

Selected Locations:

Edge of Town Centre	14
Suburban Area (PPS6 Out of Centre)	11
Edge of Town	1
Neighbourhood Centre (PPS6 Local Centre)	3

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	16
Built-Up Zone	6
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	29 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	3 days
15,001 to 20,000	2 days
20,001 to 25,000	3 days
25,001 to 50,000	15 days
50,001 to 100,000	2 days

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

Population within 5 miles:

25,001 to 50,000	1 days
50,001 to 75,000	7 days
75,001 to 100,000	1 days
125,001 to 250,000	8 days
250,001 to 500,000	6 days
500,001 or More	6 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	13 days
1.1 to 1.5	15 days
1.6 to 2.0	1 days

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

Travel Plan:

Yes	3 days
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	29 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

TRIP RATE for Land Use 03 - RESIDENTIAL/C - FLATS PRIVATELY OWNED
TOTAL VEHICLES
Calculation factor: 1 DWELLS
Estimated TRIP rate value per 1007 DWELLS shown in shaded columns
BOLD print indicates peak (busiest) period

	ARRIVALS				DEPARTURES				TOTALS			
Time Range	No. Days	Ave. DWELLS	Trip Rate	Estimated Trip Rate	No. Days	Ave. DWELLS	Trip Rate	Estimated Trip Rate	No. Days	Ave. DWELLS	Trip Rate	Estimated 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	29	97	0.041	41.095	29	97	0.154	155.445	29	97	0.195	196.540
08:00 - 09:00	29	97	0.063	63.250	29	97	0.196	197.255	29	97	0.259	260.505
09:00 - 10:00	29	97	0.065	65.394	29	97	0.080	80.760	29	97	0.145	146.154
10:00 - 11:00	29	97	0.059	59.677	29	97	0.076	76.115	29	97	0.135	135.792
11:00 - 12:00	29	97	0.060	60.034	29	97	0.076	76.829	29	97	0.136	136.863
12:00 - 13:00	29	97	0.088	88.264	29	97	0.086	86.835	29	97	0.174	175.099
13:00 - 14:00	29	97	0.074	74.328	29	97	0.081	81.832	29	97	0.155	156.160
14:00 - 15:00	29	97	0.081	81.832	29	97	0.077	77.544	29	97	0.158	159.376
15:00 - 16:00	29	97	0.094	95.054	29	97	0.066	66.109	29	97	0.160	161.163
16:00 - 17:00	29	97	0.118	118.996	29	97	0.073	73.613	29	97	0.191	192.609
17:00 - 18:00	29	97	0.164	165.094	29	97	0.079	79.331	29	97	0.243	244.425
18:00 - 19:00	29	97	0.162	162.950	29	97	0.096	96.483	29	97	0.258	259.433
19:00 - 20:00												
20:00 - 21:00												
21:00 - 22:00												
22:00 - 23:00												
23:00 - 24:00												
Total Rates:			1.069	1075.968			1.140	1148.151			2.209	2224.119

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

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

Parameter summary

Trip rate parameter range selected:	51 - 332 (units:)
Survey date date range:	01/01/13 - 23/06/21
Number of weekdays (Monday-Friday):	29
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 show. Finally, the number of survey days that have been manually removed from the selected set outside of the standard filtering procedure are displayed.

TRIP RATE for Land Use 04 - EDUCATION/D - NURSERY
VEHICLES
Calculation factor: 100 sqm
Estimated TRIP rate value per 820 SQM shown in shaded columns
BOLD print indicates peak (busiest) period

	ARRIVALS				DEPARTURES				TOTALS			
Time Range	No. Days	Ave. GFA	Trip Rate	Estimated Trip Rate	No. Days	Ave. GFA	Trip Rate	Estimated Trip Rate	No. Days	Ave. GFA	Trip Rate	Estimated 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	2	328	0.152	1.250	2	328	0.000	0.000	2	328	0.152	1.250
07:00 - 08:00	22	462	1.742	14.288	22	462	0.788	6.458	22	462	2.530	20.746
08:00 - 09:00	22	462	3.396	27.850	22	462	2.806	23.006	22	462	6.202	50.856
09:00 - 10:00	22	462	1.782	14.611	22	462	1.644	13.481	22	462	3.426	28.092
10:00 - 11:00	22	462	0.502	4.117	22	462	0.374	3.068	22	462	0.876	7.185
11:00 - 12:00	22	462	0.689	5.651	22	462	0.522	4.278	22	462	1.211	9.929
12:00 - 13:00	22	462	1.299	10.656	22	462	1.427	11.705	22	462	2.726	22.361
13:00 - 14:00	22	462	0.876	7.184	22	462	1.309	10.736	22	462	2.185	17.920
14:00 - 15:00	22	462	0.650	5.328	22	462	0.640	5.247	22	462	1.290	10.575
15:00 - 16:00	22	462	0.847	6.942	22	462	1.034	8.476	22	462	1.881	15.418
16:00 - 17:00	22	462	1.496	12.270	22	462	1.644	13.481	22	462	3.140	25.751
17:00 - 18:00	22	462	2.412	19.778	22	462	2.904	23.814	22	462	5.316	43.592
18:00 - 19:00	21	477	0.160	1.311	21	477	0.759	6.227	21	477	0.919	7.538
19:00 - 20:00	1	400	0.000	0.000	1	400	0.000	0.000	1	400	0.000	0.000
20:00 - 21:00												
21:00 - 22:00												
22:00 - 23:00												
23:00 - 24:00												
Total Rates:			16.003	131.236			15.851	129.977			31.854	261.213

Parameter summary

Trip rate parameter range selected:	150 - 1300 (units: sqm)
Survey date date range:	01/01/12 - 27/09/19
Number of weekdays (Monday-Friday):	22
Number of Saturdays:	0
Number of Sundays:	0
Surveys automatically removed from selection:	1
Surveys manually removed from selection:	0