

TOBIN

Galway County Council

**Housing Development at Cosmona,
Loughrea,
Co. Galway**

**Traffic and Transportation
Assessment**



Comhairle Chontae na Gaillimhe
Galway County Council

BUILT ON KNOWLEDGE

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Appendix B. JUNCTION 10 ARCADY DETAILED OUTPUT

Appendix C. JUNCTION 10 PICADY DETAILED OUTPUT

Appendix D. ROAD SAFETY AUDIT

1.0 NON-TECHNICAL SUMMARY

The Non-Technical Summary is a synopsis of the Traffic and Transportation assessment for the proposed residential development located in Cosmona, Loughrea, Co. Galway. The proposed development is located on a 2.54 ha site and is currently a greenfield site.

The lands surrounding the site to the south and west are currently primarily greenfield. A Burial Ground listed as a protected structure (323-NIAH 3033703) is located to the west of the proposed development. The R350 Road is located along the eastern boundary and Hazelwood Road along the northern site boundary.

The site is well located near the centre of Loughrea town with the majority of the town located within a 10-minute walking time. As part of the enabling works for the development, vehicle access to the proposed development will be gained through the R350 Road and the Hazelwood Road located along the northern boundary of the proposed development.

The proposed layout for the development has been reproduced in sketch format in Figure 1-1 and is detailed in the series of drawings as submitted with this application.

The proposed development will consist of:

- a) The construction of 56 new housing units, comprising of: including 44 no. houses and 12 no. apartments, comprising of:
 - 44 no. houses, including
 - 16 no. 2 bedroom houses
 - 25 no. 3 bedroom houses
 - 2 no. 4 bedroom houses
 - 1 no. 5 bedroom house
 - 12 no. apartments, including
 - 6 no. 1 bedroom apartments
 - 6 no. 2 bedroom apartments
- b) Varied boundary treatments and landscaping works;
- c) All ancillary site development works and site services necessary to facilitate the proposed development, including an UE pumping station and parking for the existing graveyard adjacent to the west of the site adjacent to a Burial Ground which is a Protected Structure 323 NIAH GA105066.



Figure 1-1: Proposed Site Layout

1.1 PERMEABILITY & PUBLIC TRANSPORT

There are pedestrian linkages to the proposed development site with footpaths located along the R350 Road which connects to the Loughrea town pedestrian infrastructure. The walking network in Loughrea is comprised of existing footpaths adjoining public roads. The main approaches to the town have shared pedestrian / cyclist footpaths. There is no dedicated cycling network within the centre of the town and cyclists utilise the existing roadway.

It is proposed that pedestrian links within the development will be permeable and enhance the connectivity between existing and proposed recreation and amenity zones within the surrounding areas. Pedestrian and cyclist connectivity from the proposed development will be provided to the adjoining development (Pl. Ref. 2460551) along the southern boundary of the subject site. Pedestrian connectivity from the proposed development will tie-in and extend the existing infrastructure along the R350 Road and Hazelwood Road.

The proposed development site is served by public transport with a number of bus services. Public transport links are within easy walking access with the closest approximately a 10-minute walk away from the proposed development site with access to further public transport links available from here. These bus-stops connects Loughrea with Galway City, Offaly, and other surrounding counties.

A total of 25 no. of bicycle parking spaces are being provided for at the proposed development.

1.2 MOBILITY MANAGEMENT

Chapter 8 focuses on the mobility management for the proposed development site which aims to meet the following measures and requirements:

- Provide a comprehensive outline of the Public Transport Services available to the future users of the development.
- Outline the various methods which can be employed to facilitate a positive change in travel patterns at the site.

1.2.1 JUNCTION ANALYSIS

The summation of the proposed development has been assessed using PICADY and Linsig for the traffic generated volumes for the expected year of opening in 2026 and the design years 2031 and 2041.

A number of assumptions were made in this report, as outlined in Section 5, 'Trip Generation and Trip Distribution'.

Junction 1

The ARCADY analysis results indicate that the existing roundabout junction is currently operating within capacity for all traffic Streams in both the morning and evening peak periods. This will continue to be the case for the 2026 Opening Year scenario with slight increases projected in the RFC and queue lengths for both the morning and evening peak periods.

For the design year 2041, the junction is forecast to operate well within capacity for all Streams in both the morning and evening peak periods for the No Development scenario. The inclusion of the potential development traffic will result in an increase in both delays and queueing for all

traffic Streams, and Arm 3 begins to approach capacity as it operates with an RFC of 0.84 in the AM period. However, the Junction is projected to continue to operate within capacity.

Junction 2 & 3

The PICADY analysis results indicate that the existing priority junctions (Junction 2 & 3) are currently operating within capacity for all traffic Streams in both the morning and evening peak periods. This will continue to be the case for the 2026 Opening Year scenario with slight increases projected in the RFC and queue lengths for both the morning and evening peak periods.

For the design year 2041, the junctions are forecast to operate well within capacity for all Streams in both the morning and evening peak periods for the No Development scenario. The inclusion of the potential development traffic will result in an increase in both delays and queueing for all traffic Streams, but the Junctions are projected to continue to operate well within capacity.

Note also that the traffic analysis has been carried out on the network without any allowance for trip rate reductions based on mobility management measures or possible future upgrades to the network to ensure the analysis is as robust as possible.

A total of 114 car parking spaces are being provided for at the proposed development.

2.0 INTRODUCTION

2.1 INTRODUCTION

TOBIN have been appointed by Galway County Council to provide Traffic and Transportation Engineering Services for the proposed residential development located along the R350 Road, Cosmona, Loughrea, Co. Galway. Access to the site is provided via the R350 Road and 2 vehicle access points off the Hazelwood Estate Road. A secondary pedestrian/cycle access will also be provided from Hazelwood Road. The existing site area is 2.54 ha, comprising of a greenfield site.

In preparing this report, TOBIN has made reference to:

- The Galway County Council Development Plan 2022 – 2028 (GCDP);
- TII Publications - Traffic and Transport Assessment Guidelines PE-PDV-02045 (May 2014); and
- TII Publications - Project Appraisal Guidelines for National Roads Unit 5.3: Travel Demand Projections PE-PAG-02017 (May 2019)

2.2 OBJECTIVES

The objective of this Report is to assess the impact the proposed development will have on the existing surrounding road network. This Report will calculate the expected volume of traffic that will be generated by the proposed development and assess the impact that this traffic will have on the operational capacity of the road network in the vicinity of the development. The junctions to be analysed as part of this Report are the following:

- Junction 1: Roundabout Junction – N65 / R350 / R380
- Junction 2: Priority Junction – R350 / Hazelwood
- Junction 3: Priority Junction – R350 / Mount Carmel Crescent / Abbey Street

In accordance with the Traffic and Transport Assessment Guidelines, ways to promote non-car access to the proposed development will also be explored. This will include convenient pedestrian and cycle interconnection between existing and proposed developments and public transport facilities. Existing public transport networks will be examined. A walking and cycling accessibility assessment will also be conducted to determine the distances to main attractions and public transport connections and to also illustrate the benefits of walking or using a bicycle to access a particular development.

2.3 SCOPING

The proposed development and any potential traffic impacts were discussed with Galway County Council Roads and Transportation Department. All items discussed were implemented within the proposed design.

2.4 ROAD SAFETY AUDIT

A Stage 1 Road Safety Audit (RSA) was also carried out on the proposed development design and its recommendations incorporated into the final scheme design. All problems raised by the Road Safety Audit Team were noted by the Design Team and addressed within the proposed development design. The RSA Feedback Form was signed by all parties and the process concluded. The points raised and responses are outlined below.



- **Problem 2.1 – Cyclists Entering the Carriageway**
 - **Problem:** The design drawings show that the shared footpath/cycletrack ends suddenly at the main access road of the adjacent Hazelwood estate. Cyclists and pedestrians at the end of the track may have limited visibility to the east due to overgrown vegetation. Drivers in the Hazelwood estate may not anticipate cyclists and pedestrians emerging onto the roadway. It is also noted that no dropped kerb and tactile paving is provided opposite the crossing to enable pedestrians cross over to the opposing footpath. This situation could increase the risk of collisions involving pedestrians and cyclists.
 - **Response:** The recommendation is accepted by the Design Team with adequate sight lines provided and also appropriate drop kerbs and tactile paving, see drawing 11942-2004 & 2005 for details.
- **Problem 2.2 – Right of Way**
 - **Problem:** The design drawings indicate a relatively long and straight access road adjacent to the entrance. It is unclear who has right of way at this junction. A lack of clarity may lead to side swipe vehicle collisions at this location.
 - **Response:** The recommendation is accepted by the Design Team with adequate guidance provided to motorists relating to right of way, see drawing 11942-2004 for details.
- **Problem 2.3 – Safe Access to/from Parking Spaces**
 - **Problem:** The parking spaces indicated below are located adjacent to a grass verge. Drivers of vehicles exiting or egressing the parked vehicle will be required to traverse a grass verge or travel along the access road. By doing so they would be at an increased risk of being struck by a passing vehicle.
 - **Response:** The problem is not accepted by the Design Team as this parking is a proposed access to the existing graveyard to the east of the site – a pedestrian link will instead be provided to the site boundary with the graveyard, see drawing 11942-2004 for details.
- **Problem 2.4 – Safe Access to/from Parking Spaces**
 - **Problem:** A narrow grass strip is proposed between car parking spaces and the adjacent footpath in numerous locations throughout the development. Drivers of vehicles exiting or egressing the parked vehicle will be required to traverse the grass verge or travel along the access road to access the adjacent footpath. By doing so they would be at an increased risk of being struck by a passing vehicle.
 - **Response:** The recommendation is accepted by the Design Team with the provision of safe access to and from parking bays for pedestrians, see drawing 11942-2004 for details.
- **Problem 2.5 – Termination for Cyclists from Cycle Track**
 - **Problem:** The drawings show a designated cyclist path, but it finishes suddenly at both ends without any details regarding its termination. The absence of features to help cyclists integrate with existing traffic and pedestrian facilities may heighten the risk of collisions involving cyclists.
 - **Response:** The recommendation is accepted by the Design Team with adequate provisions made to guide cyclists on and off the cycle track, see drawing 11942-2004 for details.
- **Problem 2.6 – Termination for pedestrians from footpath**
 - **Problem:** The drawings show a new footpath within the proposed development, but it finishes suddenly at both ends without any details regarding its tie-in to the existing footpaths. The absence of connections to the existing footpaths may increase the risk of collisions involving pedestrians.

- **Response:** Alternative measures are proposed by the Design Team with the extension of the footpath to the north to create an uncontrolled crossing, and a Lidl development of the lands to the south will provide pedestrian connectivity. This measure was accepted by the auditors.
- **Problem 2.7 – Visibility Splays**
 - **Problem:** Visibility splays are indicated for both exits into the Hazelwood estate from the Cosmona Development. These visibility splays extend across existing vegetation and shrubbed areas. Over time, excessive growth coupled with a lack of ownership/maintenance may result in visibility splays being reduced. This may contribute to collisions when vehicles are exiting the junctions.
 - **Response:** The recommendation is accepted by the Design Team with the provision of adequate visibility splays that are to be maintained, see drawing 11942-2004 for details.
- **Problem 2.8 – Pedestrians Entering the Shared footpath/cycletrack**
 - **Problem:** Pedestrians may not expect to encounter cyclists on the shared footpath/cycletrack and may not make room for cyclists to pass. This may be a particular issue for visually impaired persons, who may enter the shared surface unbeknown to them, resulting in collisions between cyclists and pedestrians.
 - **Response:** The recommendation is accepted by the Design Team with appropriate warning tactile provided where footpaths meet the shared footpath/cycletrack, see drawing 11942-2004 for details.
- **Problem 2.9 – Inadequate Visibility**
 - **Problem:** A number of uncontrolled pedestrian crossings are proposed throughout the development. However, it is unclear whether adequate inter-visibility is provided between drivers of vehicles approaching the crossings and pedestrians stopped waiting to cross. Obstructions to intervisibility may include planting, refuse bins and parked vehicles adjacent to pedestrian crossings.
 - **Response:** The recommendation is accepted by the Design Team with adequate intervisibility provided between motorists and pedestrians at uncontrolled crossings.
- **Problem 2.10 – Cyclist Access to Cycle Surface**
 - **Problem:** It appears there is a full height kerb between the carriageway and the cycle lane. While a drop kerb is indicated for pedestrians, no height for the kerb at the cycle lane is indicated on the drawings. TL404 indicates that kerbs are not recommended in the path of cyclists at the edge of the road. Cyclists may lose control when attempting to mount a kerb.
 - **Response:** The recommendation is accepted by the Design Team with the provision of a suitable and level transition from the carriageway to the cycle track, see drawing 11942-2004 for details.
- **Problem 2.11 – Cyclist Speed**
 - **Problem:** The design drawings indicate a gentle swept path for cyclists as they approach the crossing point. Cyclists approaching at speed may have difficulty stopping to give right of way to vehicles entering/exiting the development. This may result in side-swipe collisions between vehicles and cyclists.
 - **Response:** The recommendation is accepted by the Design Team with a suitable alignment of the approach provided that promotes cyclists to slow down, see drawing 11942-2004 for details.
- **Problem 2.12 – Slow Zone Signage**
 - **Problem:** The design drawings indicate Slow Signage and other speed signage throughout. The Traffic Signs Manual indicates that Slow Zone signage for built up areas is 30km/h, however differing speeds are indicated on the design drawings. Confusion regarding the exact speed limit may cause drivers to ignore



the actual speed limit, thus increasing the likelihood of accidents and collisions.

- **Response:** The recommendation is accepted by the Design Team with appropriate speed signage provided throughout the development, see drawing 11942-2004 for details.
- **Problem 2.13 – Driver Confusion**
 - **Problem:** The design drawings indicate a new pedestrian footpath and crossing within the development. The drawings do not indicate what is proposed for the existing footpath that is between the boundary wall and the R350. Multiple crossing points in close proximity may cause confusion for motorists resulting in an increased likelihood of vehicle & pedestrian collisions.
 - **Response:** The recommendation is accepted by the Design Team with the removal of the existing footpath to limit pedestrians crossing at multiple locations, see drawing 11942-2004 for details.
- **Problem 2.14 – Pedestrian Delineation**
 - **Problem:** Footpaths and shared surfaces are planned within the development. However, it may not be clear to visually impaired pedestrians where the dedicated footpaths ends, and the shared surfaces begin. Consequently, they might inadvertently step onto the shared surface without realizing it, which could increase the risk of being struck by a passing vehicle.
 - **Response:** The recommendation is accepted by the Design Team with the provision of appropriate warning tactile at the interfaces of footpaths and shared surfaces, see drawing 11942-2004 for details.
- **Problem 2.15 – Disabled Parking**
 - **Problem:** There are five disabled parking spaces, with four located in the southwest corner of the development. However, there are significant areas within the development that lack any disabled parking. Once parked, individuals with disabilities may need to navigate several road crossings to reach their destination, raising the risk of collisions between pedestrians and vehicles.
 - **Response:** The problem is not accepted by the Design Team as accessible parking has been located in close proximity to the single storey units where council tenants are most likely to require accessible parking, see drawing 11942-2004 for details.
- **Problem 2.16 – Street Lighting**
 - **Problem:** No public lighting is indicated on the design drawings. Road safety would be enhanced with the provision of street lighting.
 - **Response:** The recommendation is accepted by the Design Team with adequate street lighting to be provided throughout the development.

2.5 STRUCTURE OF THE REPORT

This Report is divided into eight chapters:

- Chapter 1 is a Non-Technical Summary.
- Chapter 2 includes this introduction.
- Chapter 3 describes the proposed development, and its location.
- Chapter 4 provides an overview of the existing and proposed traffic conditions, explaining how this information was obtained.
- Chapter 5 outlines the assumptions that have been made in the calculation of traffic generated by the development and the factors used to forecast the future road network traffic.
- Chapter 6 explains the methodology used and the results of the analysis performed on the nominated junctions.
- Chapter 7 addresses issues relating to road safety, parking provision, pedestrians & cyclists and access for people with disabilities.
- Chapter 8 addresses the Mobility Management measures for the proposed Development.
- Chapter 9 concludes the Report.

3.0 PROPOSED DEVELOPMENT

3.1 SITE LOCATION

The proposed residential development site is located in Cosmona, Loughrea, Co. Galway. The site location is shown in Figure 3-1 below.



Figure 3-1: Site Location © Google

3.2 DESCRIPTION OF PROPOSED DEVELOPMENT

Planning permission is being sought by Galway County Council for development on a site which extends to 2.54 ha off the R350 Road in Loughrea, Galway.

The proposed development will consist of:

- Demolition of existing natural stone across the site (approx. 275m), partial demolition of concrete blockwork wall along the southern site boundary,
- Construction of 56 no. dwelling units comprising:
 - 1 no. 2 storey, 5 no. bedroom detached house
 - 2 no. 2 storey, 4 no. bedroom end-terrace houses
 - 12 no. 2 storey, 3 no. bedroom end-terrace houses
 - 9 no. 2 storey, 3 no. bedroom mid-terrace houses
 - 3 no. 2 storey, 3 no. detached bedroom houses
 - 1 no. 1 storey, 3 no. bedroom detached house
 - 2 no. 1 storey, 2 no. bedroom detached houses
 - 4 no. 1 storey, 2 no. bedroom semi-detached houses
 - 2 no. 2 storey, 2 no. bedroom mid-terrace houses
 - 6 no. 1 storey, 2 no. bedroom semi-detached houses
 - 1 no. 1 storey, 2 no. bedroom mid terrace house
 - 1 no. 1 storey, 2 no. bedroom detached house
 - 6 no. 2 storey, 2 no. bedrooms apartments
 - 6 no. 1 storey, 1 no. bedroom apartments
- Construction of roads, footpaths, car parking, open space areas, external bicycle parking.
- Provision of hard and soft landscaping and boundary treatments.
- Provision of 1 no. vehicular entrance from R350 Road, 2 no. vehicular entrances and 1 no. pedestrian/cyclist entrance from the Hazelwood Road.
- Provision of all associated surface water and foul water drainage services and connections (including nature-based drainage solutions), ESB substation and all associated site works and ancillary services necessary to facilitate the proposed development.

3.3 CUMULATIVE IMPACTS

Traffic and Transport Assessment shall consider all committed developments within the vicinity of the site. This includes sites which have previously been granted planning permission, but which are yet to become operational.

There are three major developments within the vicinity of the proposed site. See table below for details of the committed development that have been granted planning permission but have not yet become operational.

Table 3-1: Major Committed Developments

Major Committed Developments			
Planning Ref. No.	Status	Location	Description
2361131	Granted (Conditional)	Gorteenabohogy, Loughrea, Co.Galway	(1) to construct a warehouse unit including ancillary office space & delivery area (2) use of 2no. existing site entrances onto existing roadway servicing Cottage Hill Commercial Park (3) connection to existing services (4) hard & soft landscaping (5) provision for car parking, bicycle parking, bin stores & lighting, together with all associated site works & services
22748	Granted (Conditional)	Cosmona, Loughrea, Co.Galway	for (1) demolition of existing derelict house (2) construction of a residential development consisting of an overall 13 no. units comprising of (a) 1 no. 4 bed detached house, (b) 4 no. 3 bed semi-detached houses & (c) 8 no. 2 bed houses in 2 blocks of 4 and all associated site works and connection to services and (3) new vehicular site access onto local road. Gross floor space of proposed works: 1292.8 sqm
191672	Granted (Conditional)	Caherwalter, Loughrea, Co.Galway	for development consisting of the proposed construction of 42 No residential dwellings consisting of; 32 No. Type A - four bedroom semi-detached, 6 No. Type B - three bedroom semi-detached, 4 No. Type C - three bedroom terraced houses, vehicular entrance to site from Danesfort Drive, boundary treatments, public open space, provision of foul and surface water connection/disposal, site lighting and all associated site works. Gross floor space of proposed works: c.5716 sqm.

There are also a number granted permission in the last 5 years for one-off houses and extensions to existing dwellings in the vicinity of the proposed development.

In order to ensure that the junction to the proposed development can accommodate the expected traffic flows have been assessed as discussed in Sections 5 and 6. Impacts of the network improvements have also been applied to the existing baseflow traffics volumes.

4.0 EXISTING AND PROPOSED TRAFFIC CONDITIONS

4.1 TRAFFIC SURVEY

In order to determine the magnitude of the existing traffic flows, the results of a manual junction turning count survey were used. These traffic surveys were carried out by Traffinomics at the following junctions and dates:

- Junction 1: Roundabout Junction – N65 / R350 / R380 (Traffinomics Survey 25th January 2024)
- Junction 2: Priority Junction – R350 / Hazelwood (Traffinomics Survey 21st May 2024)
- Junction 3: Priority Junction – R350 / Mount Carmel Crescent / Abbey Street (Traffinomics Survey 21st May 2024)

These surveys distinguished between light good vehicles and heavy good vehicles. The traffic count data is included in **Appendix A** of this Report. The results of this survey indicated that the peak traffic levels through the junctions occurred between the hours of 08:15-09:15 in the AM period and between 17:00-18:00 in the PM period.

Annual growth indices were applied to the 2024 traffic flows to determine background traffic flows for the assessment years.

4.2 EXISTING ROAD NETWORK

The current R350 road is a single carriageway road (approximately 7.0m wide in the vicinity of the proposed development access). The current speed limit of the road is 50km/h in the vicinity of the proposed development site. The Hazelwood Road is a single carriageway road (approximately 6.0m wide in the vicinity of the proposed development access). Footpaths are provided along both sides of the R350 Road and along the northern side of the Hazelwood Road.

4.3 PROPOSED NETWORK IMPROVEMENTS

There are no proposed infrastructure upgrade works within the vicinity of the proposed development.

4.4 PROPOSED SITE ACCESS JUNCTION

The main access point to the proposed development for pedestrians, cyclists and vehicles is located to the east of the site linking onto the R350 Road. Two additional vehicle access points are provided from the Hazelwood Road. To increase site permeability, pedestrian and cyclist connectivity onto the R350 Road and Hazelwood Road will also be provided to account for pedestrian and cyclist desire lines.

The R350 Road provides a linkage from Loughrea town centre to the N65 Road. The proposed site access will be situated within a 50km/h default urban speed zone and will tie into and extend the existing footpath infrastructure on the R350 Road.

5.0 TRIP GENERATION AND DISTRIBUTION

5.1 OPENING AND FUTURE YEAR FLOWS AND ENVIRONMENT

The proposed development will be constructed in one phase. Therefore, the opening year of 2026 was utilised for the purpose of the traffic assessment. In addition to the opening years and in accordance with TII guidelines, the capacity assessment was also based on traffic conditions forecast for the design years 2031 (+5 years) and 2041 (+ 15 years).

Annual growth indices for the transport modelling were obtained from the TII document PEPAG-02017 - Project Appraisal Guidelines for National Roads Unit 5.3 - Travel Demand Projections, with cumulative growth forecasts shown for the Galway Area in Table 5-1. The derived growth factors were applied to the 2024 traffic flows to determine background traffic flows for the assessment years. The assessment is split into light vehicles and heavy vehicles.

Table 5-1: Growth Factors for light vehicle (LV) and heavy vehicles (HV)

	2026	2031	2041
LV	1.052	1.179	1.314
HV	1.091	1.325	1.619

5.2 TRIP GENERATION

The volume of traffic expected to be generated during the AM and PM peak hours for the proposed development were established from the Trip Rate Information Computer System (TRICS) database, a computerised database and analysis package for planning and development. TRICS generates rates to represent various land uses. These trip rates are generated from developments of a similar nature.

5.2.1 TRIP GENERATION OF PROPOSED DEVELOPMENT

The volume of traffic expected to be generated by the proposed development associated with this planning application is based on the current schedule of accommodation issued by Vincent Hannon Architects as shown in the following Tables:

Table 5-2: Expected Trip Generation for Proposed Development for AM Peak Hour

EXPECTED TRIP GENERATION FOR PROPOSED DEVELOPMENT FOR AM PEAK HOUR			
Development Type	Units	Arrivals	Departures
Proposed Dwellings	56	8	18
Total		8	18

Table 5-3: Expected Trip Generation for Proposed Development for PM Peak Hour

EXPECTED TRIP GENERATION FOR PROPOSED DEVELOPMENT FOR PM PEAK HOUR			
Development Type	Units	Arrivals	Departures
Proposed Dwellings	56	16	9
Total		16	9

Table 5-4 AM and PM Peak Hour Trips

Total Numbers of vehicles	Arrivals	Departures
AM	8	18
PM	16	9

5.3 TRIP DISTRIBUTION

5.3.1 TRIP DISTRIBUTION OF COMMITTED DEVELOPMENT

Trip distribution of the committed development currently in the vicinity of the proposed development site has been accounted for in the analysis.

5.3.2 TRIP DISTRIBUTION OF PROPOSED DEVELOPMENT

It was envisaged the proposed distribution matches the existing traffic distribution at each of the junctions. The existing development trip distribution per peak hour are shown in the following Figures.

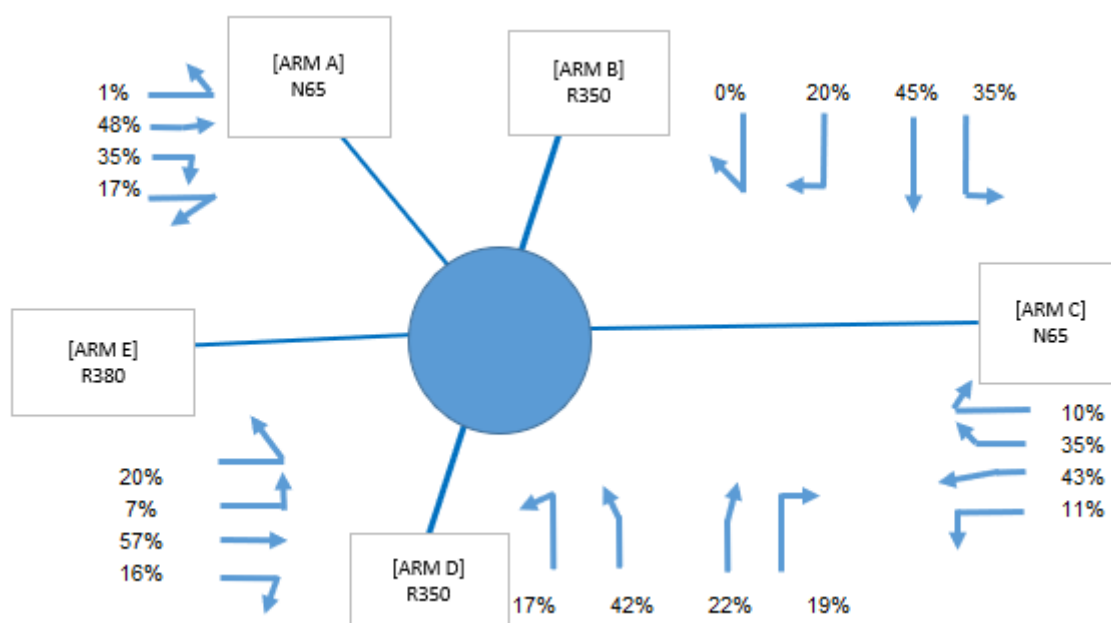


Figure 5-1: Traffic Distribution for AM Peak Hour at Junction 1

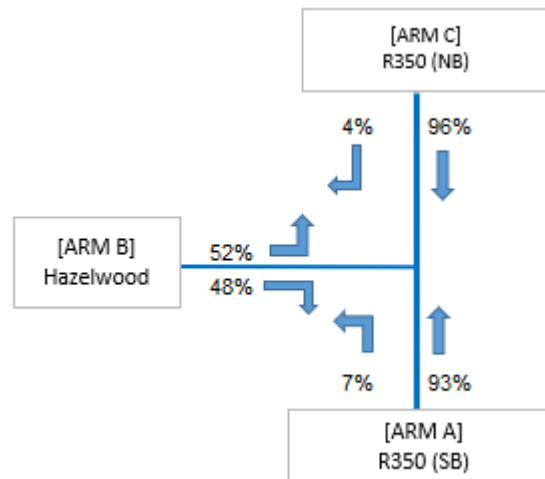


Figure 5-2: Traffic Distribution for AM Peak Hour at Junction 2

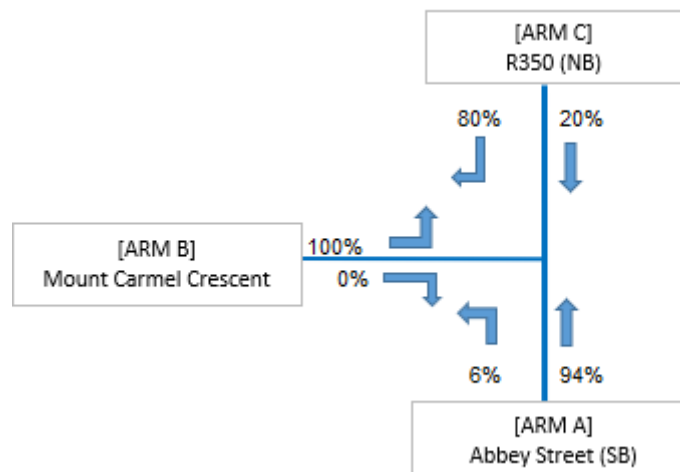


Figure 5-3: Traffic Distribution for AM Peak Hour at Junction 3

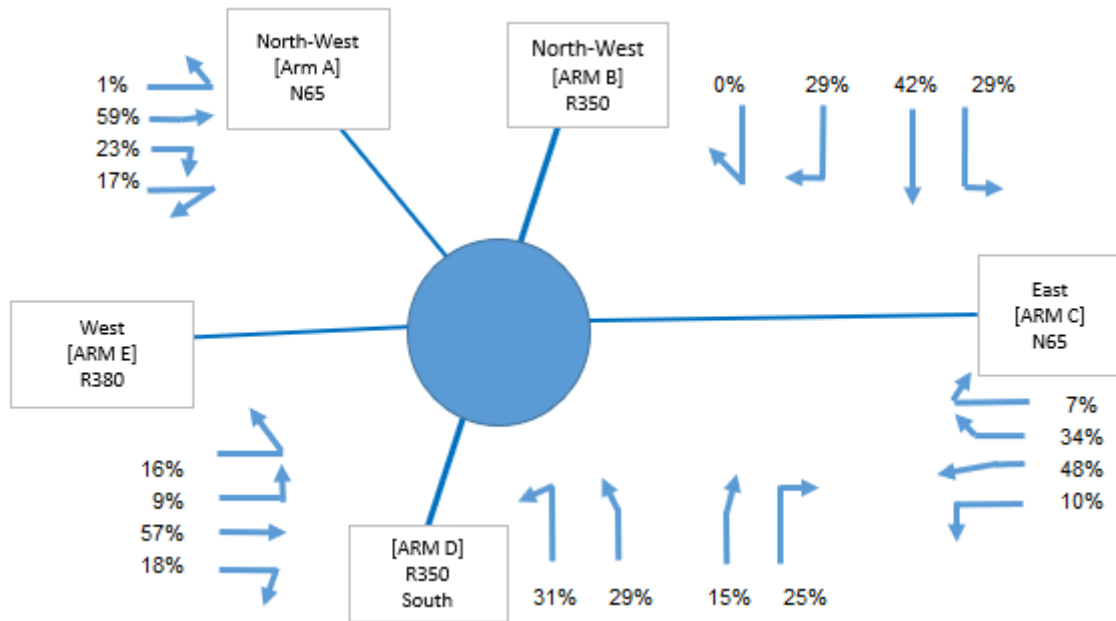


Figure 5-4: Traffic Distribution for PM Peak Hour at Junction 1

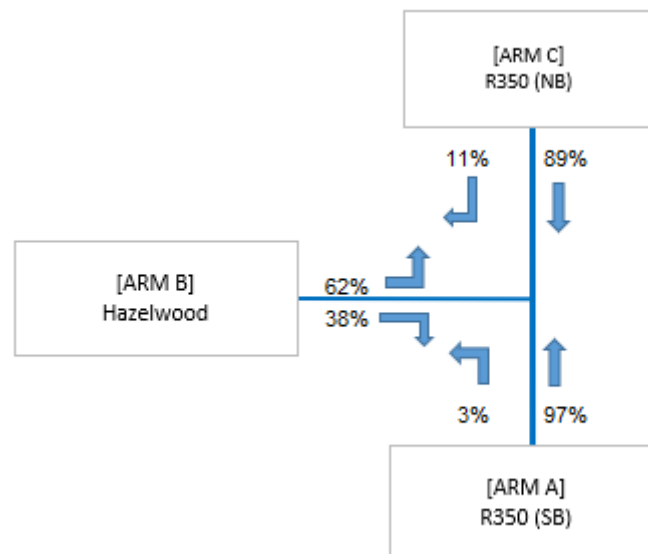


Figure 5-5: Traffic Distribution for PM Peak Hour at Junction 2

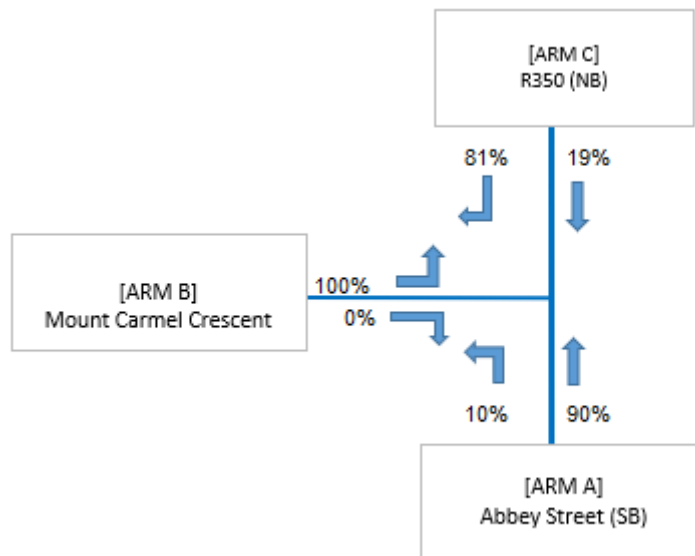


Figure 5-6: Traffic Distribution for PM Peak Hour at Junction 3

5.4 TRIP DISTRIBUTION OF BASEFLOW PLUS GENERATED TRAFFIC

The baseline plus generated traffic (with both committed and proposed development) for the year of opening 2026 and the design year 2041 for both the AM and PM peak hours are shown in the Figures below.

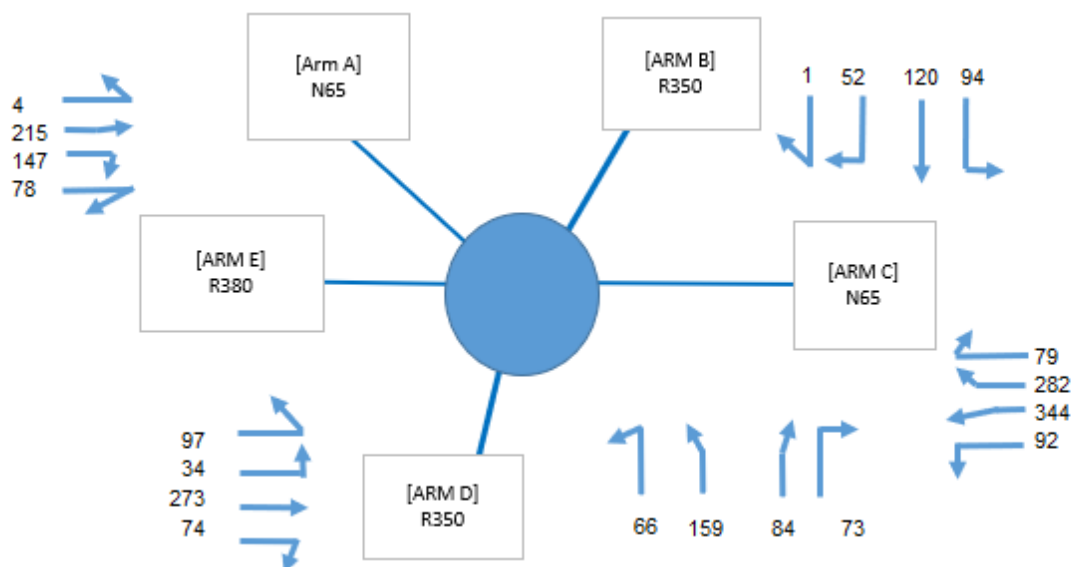


Figure 5-7: Baseflow Traffic 2024 AM Peak - Junction 1

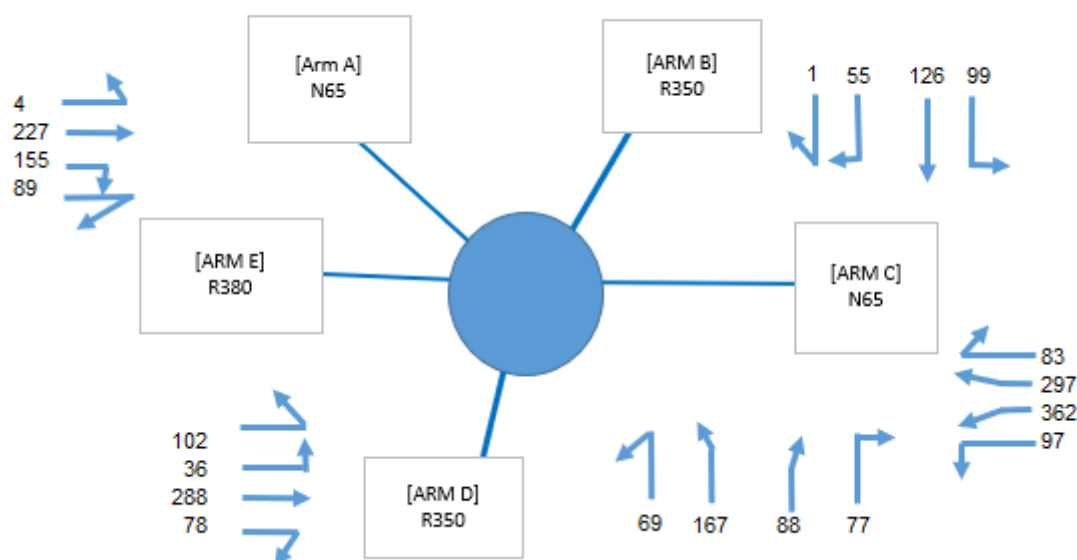


Figure 5-8: Baseflow Traffic 2026 AM Peak - Junction 1

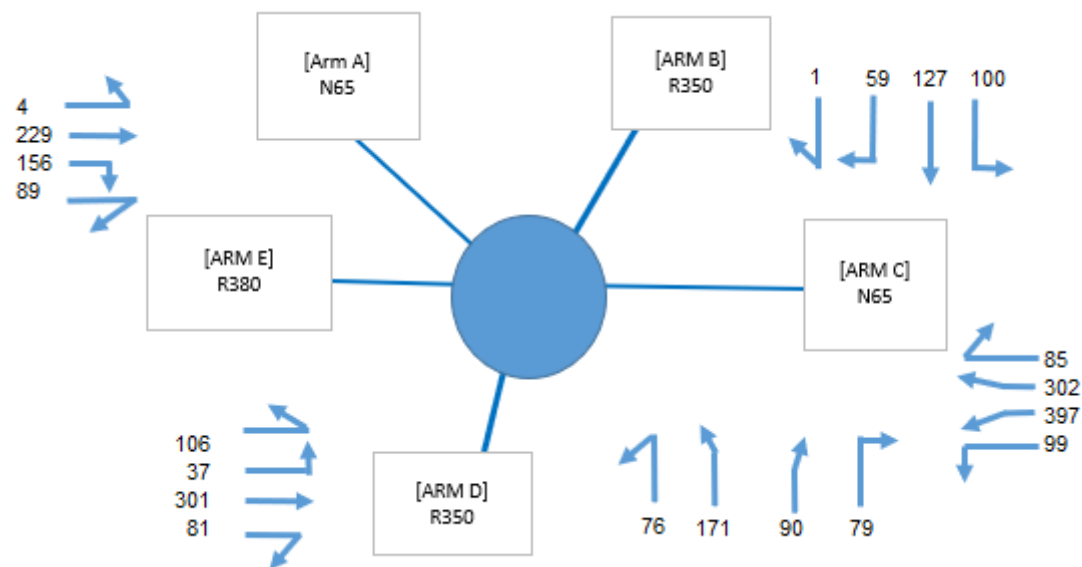


Figure 5-9: Baseflow Plus Generated Traffic 2026 AM Peak – Junction 1

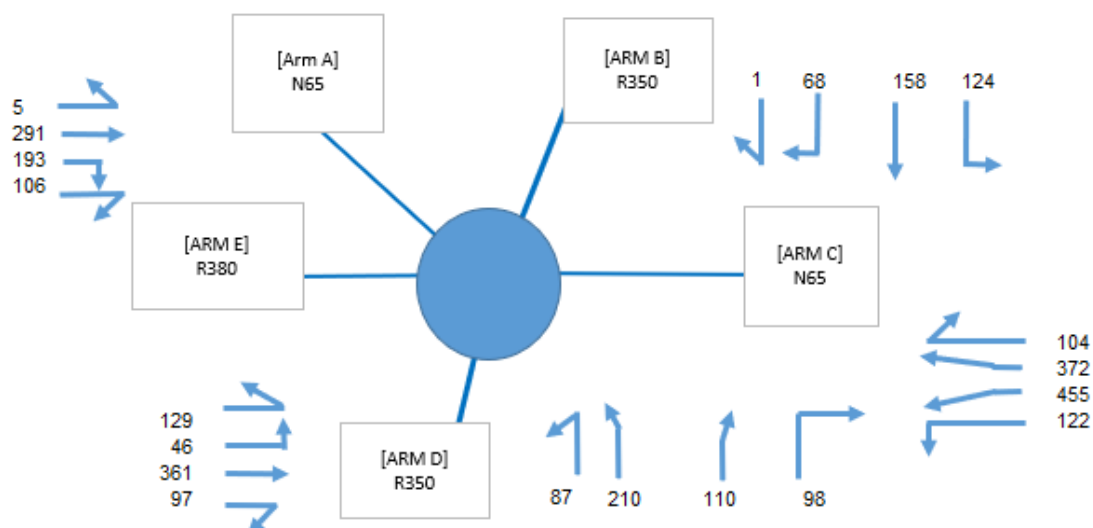


Figure 5-10: Baseflow Traffic 2041 AM Peak – Junction 1

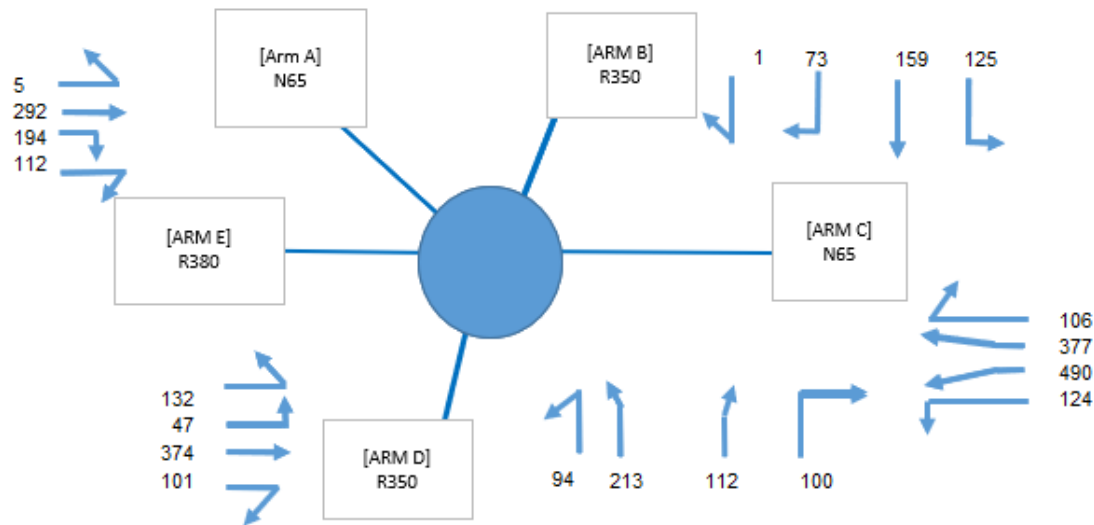


Figure 5-11: Baseflow Plus Generated Traffic 2041 AM Peak – Junction 1

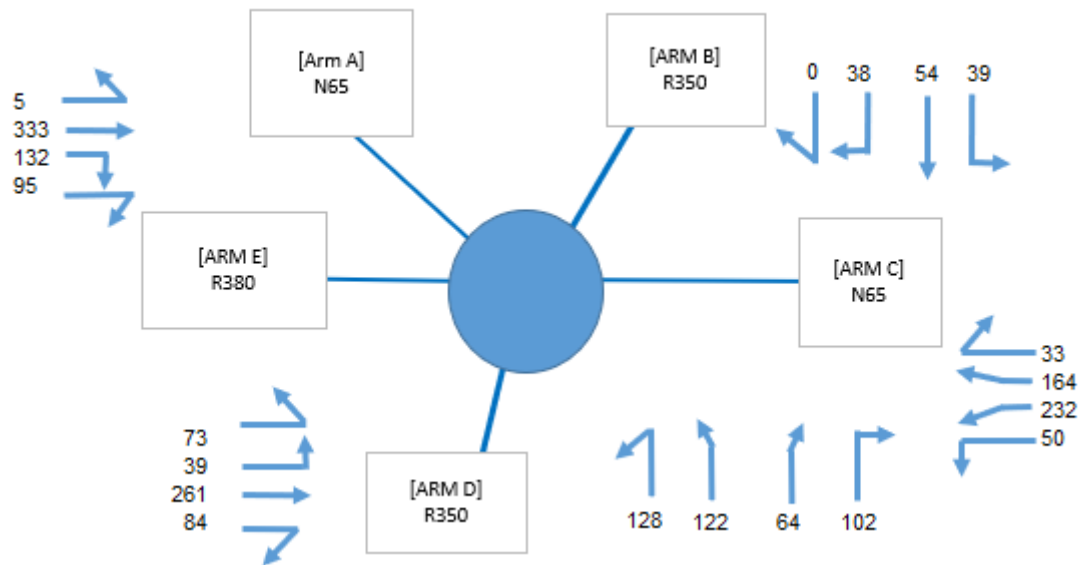


Figure 5-12: Baseflow Traffic 2024 PM Peak – Junction 1

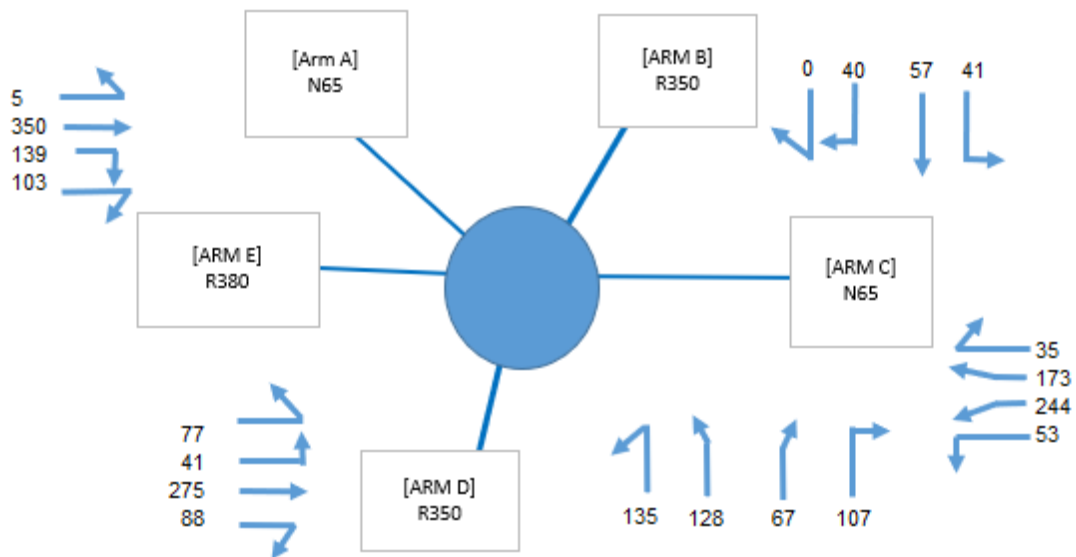


Figure 5-13: Baseflow Traffic 2026 PM Peak – Junction 1

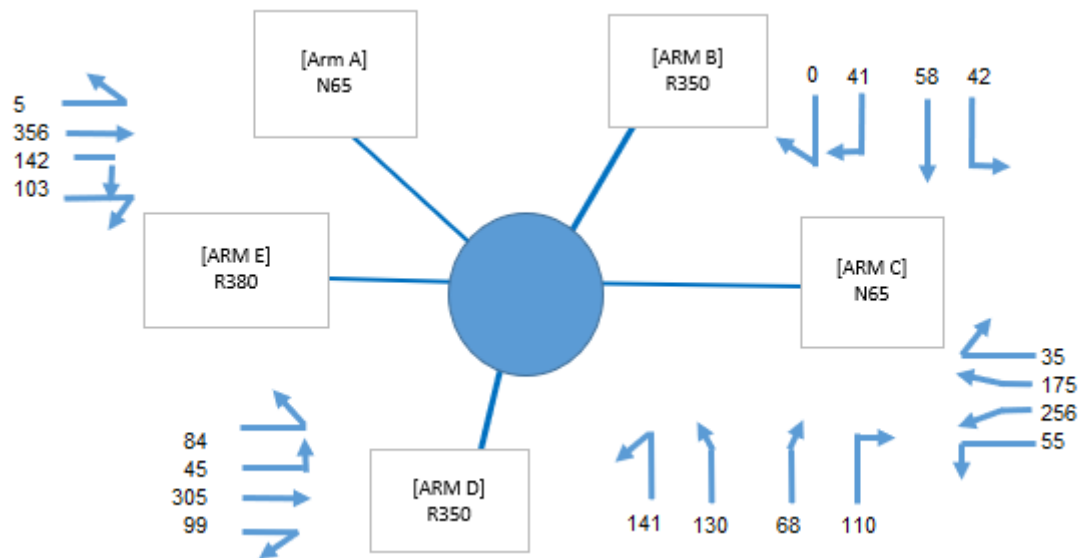


Figure 5-14: Baseflow Plus Generated Traffic 2026 PM Peak – Junction 1

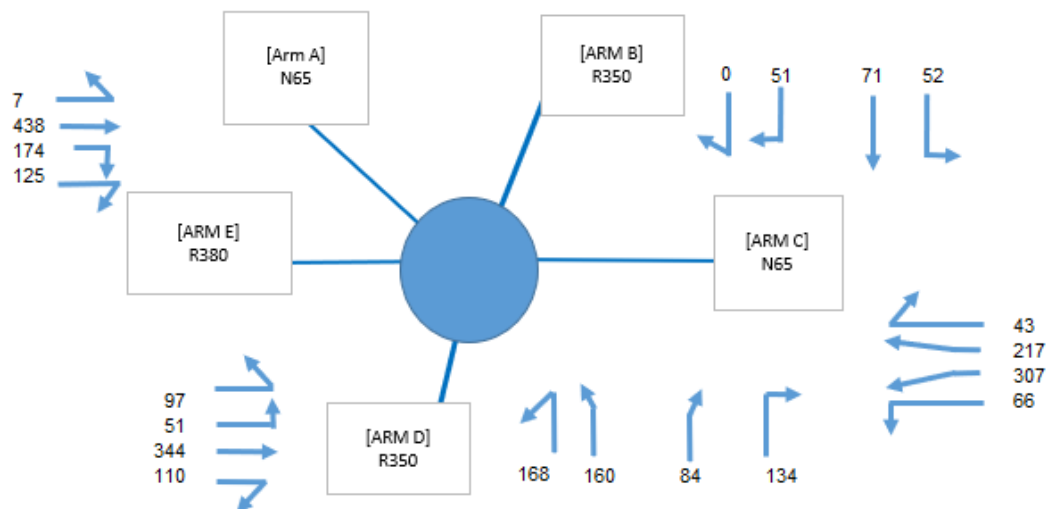


Figure 5-15: Baseflow Traffic 2041 PM Peak – Junction 1

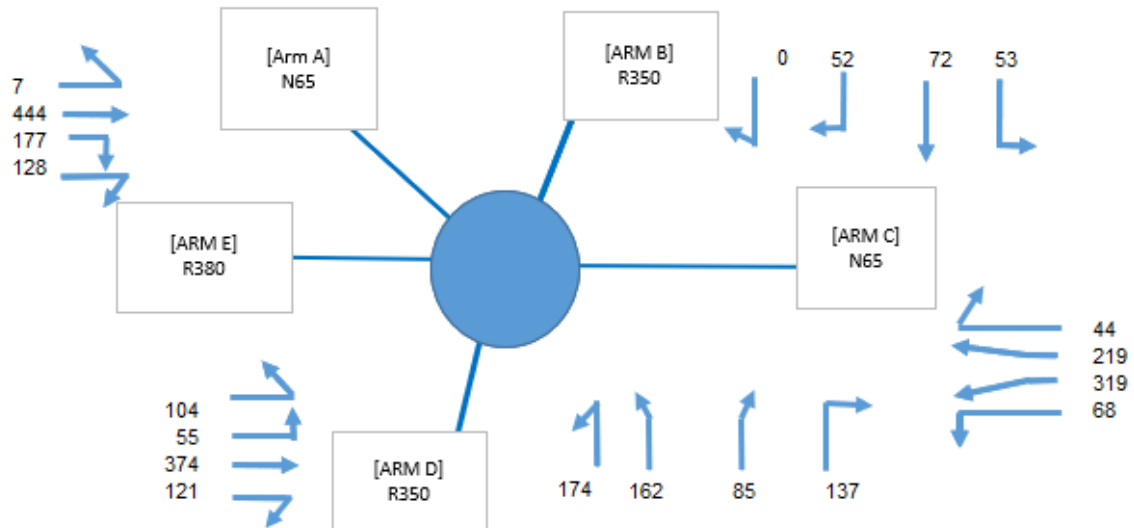


Figure 5-16: Baseflow Plus Generated Traffic 2041 PM Peak – Junction 1

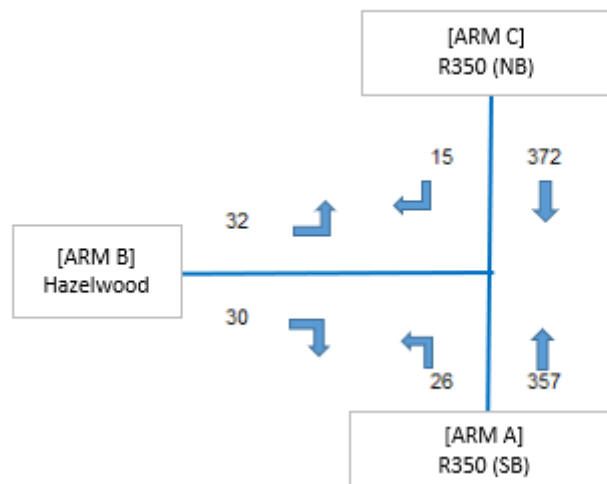


Figure 5-17: Baseflow Traffic 2024 AM Peak – Junction 2

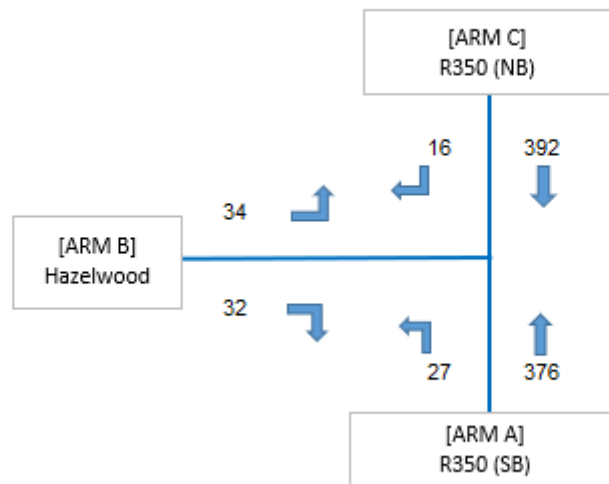


Figure 5-18: Baseflow Traffic 2026 AM Peak – Junction 2

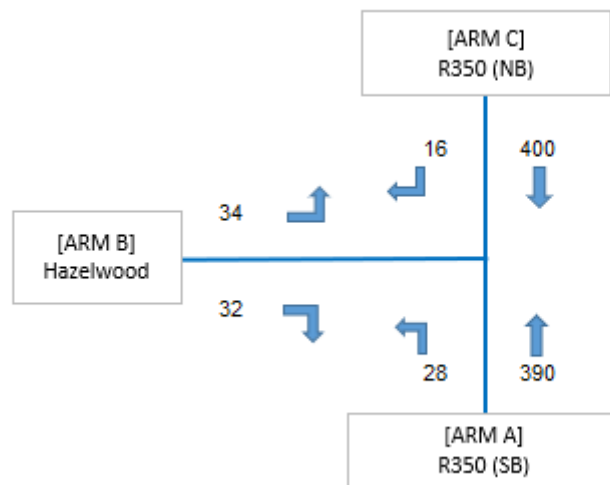


Figure 5-19: Baseflow Plus Generated Traffic 2026 AM Peak – Junction 2

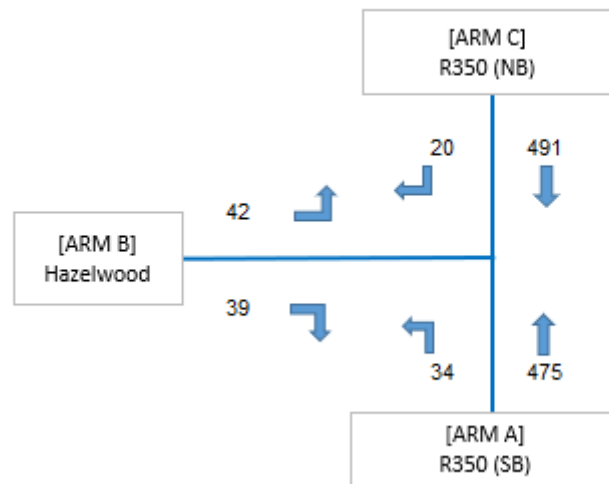


Figure 5-20: Baseflow Traffic 2041 AM Peak – Junction 2

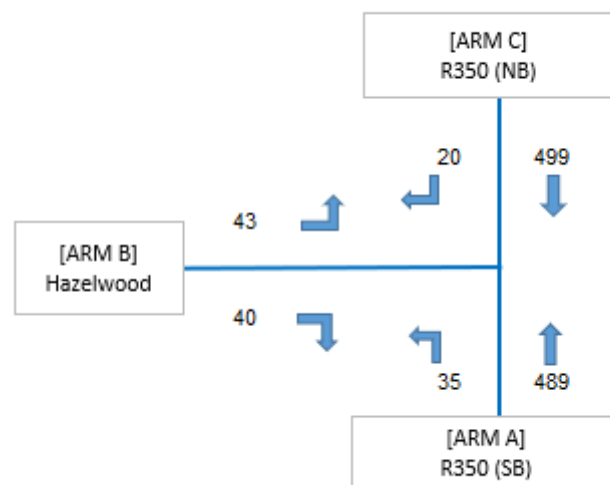


Figure 5-21: Baseflow Plus Generated Traffic 2041 AM Peak – Junction 2

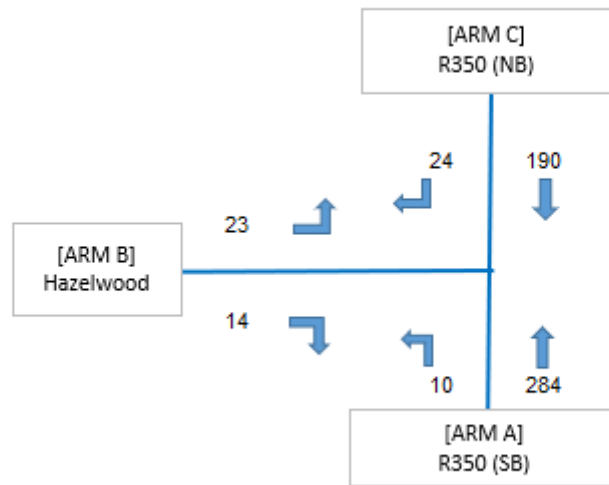


Figure 5-22: Baseflow Traffic 2024 PM Peak – Junction 2

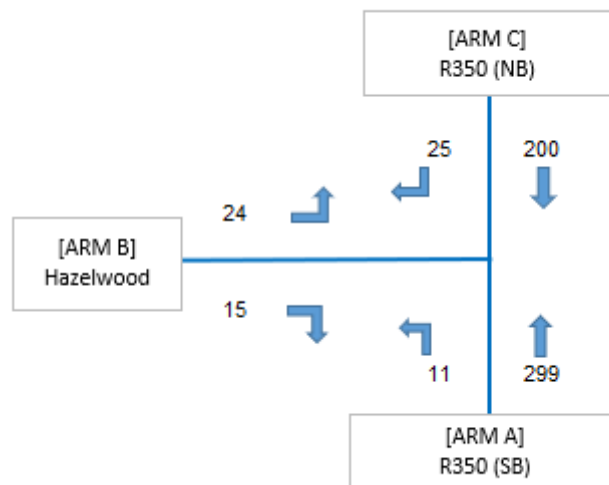


Figure 5-23: Baseflow Traffic 2026 PM Peak – Junction 2

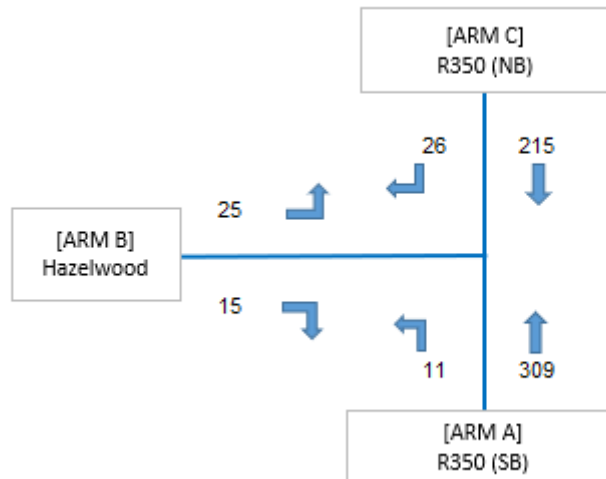


Figure 5-24: Baseflow Plus Generated Traffic 2026 PM Peak – Junction 2

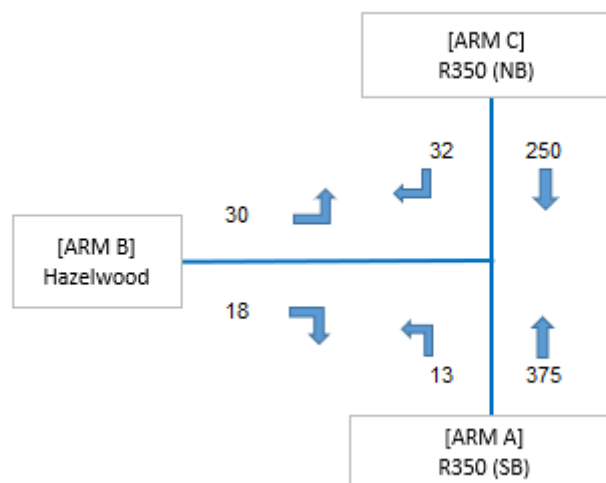


Figure 5-25: Baseflow Traffic 2041 PM Peak – Junction 2

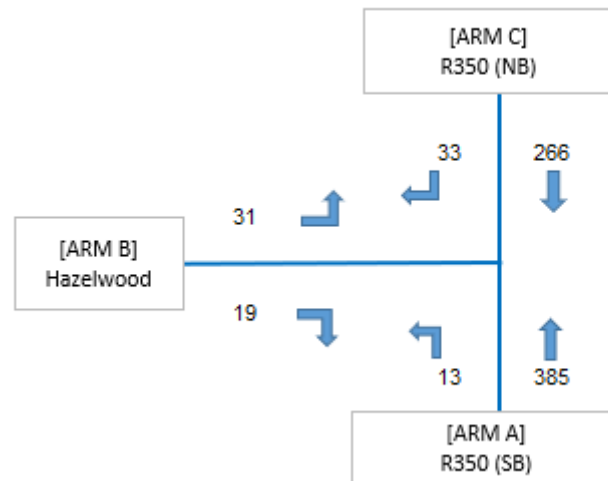


Figure 5-26: Baseflow Plus Generated Traffic 2041 PM Peak – Junction 2

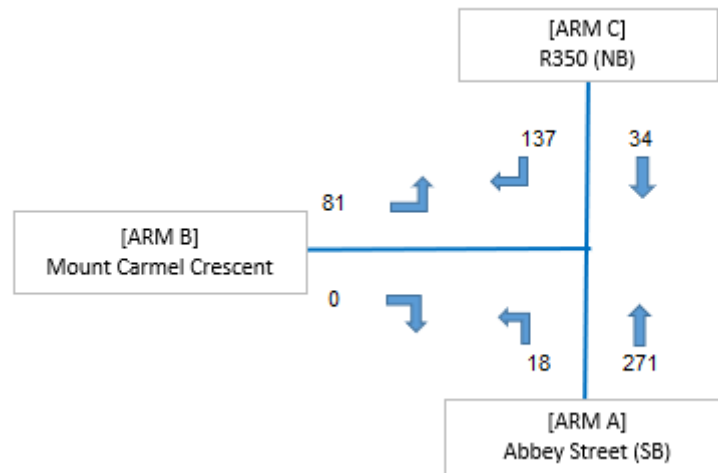


Figure 5-27: Baseflow Traffic 2024 AM Peak – Junction 3

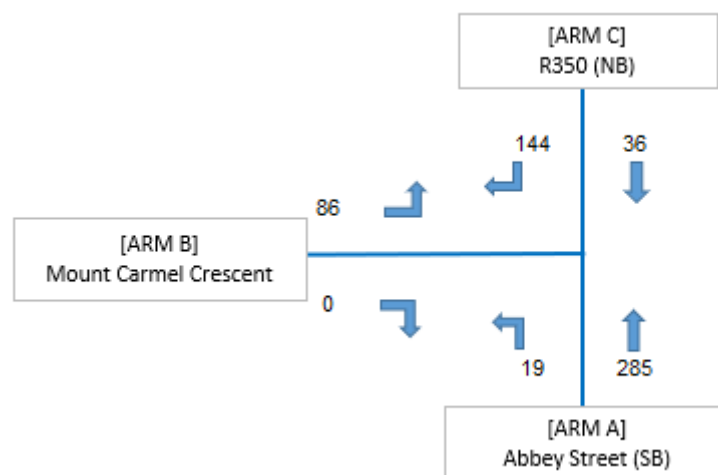


Figure 5-28: Baseflow Traffic 2026 AM Peak – Junction 3

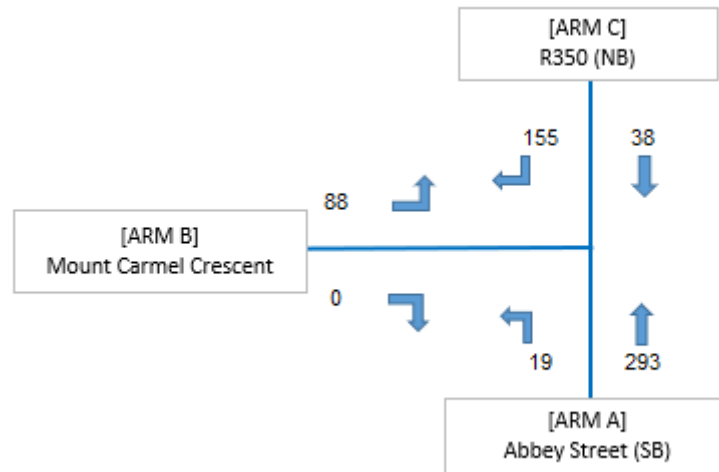


Figure 5-29: Baseflow Plus Generated Traffic 2026 AM Peak – Junction 3

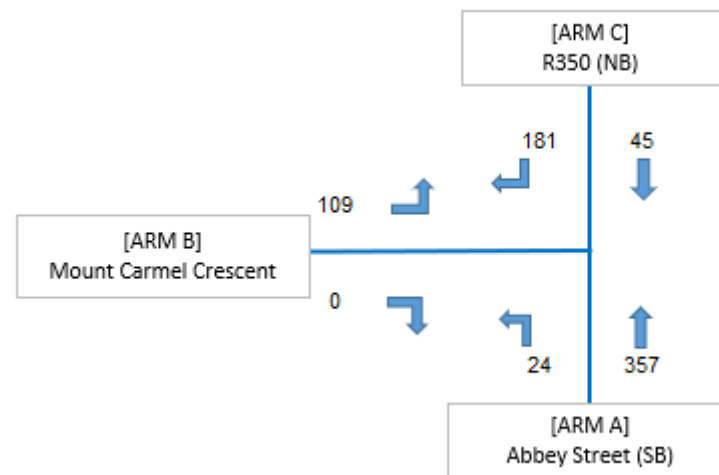


Figure 5-30: Baseflow Traffic 2041 AM Peak – Junction 3

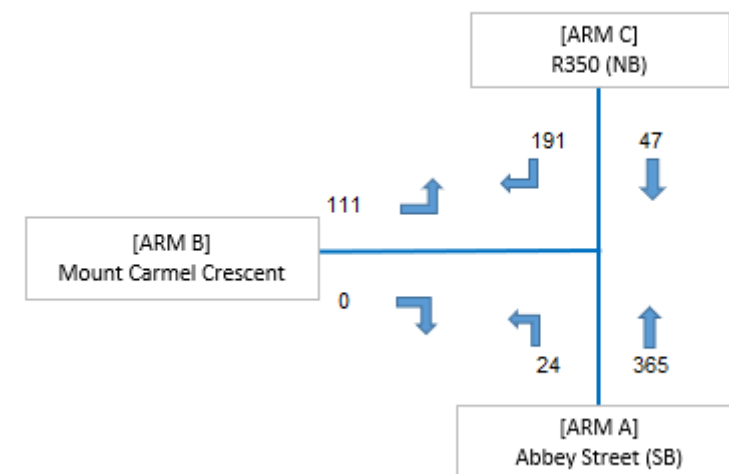


Figure 5-31: Baseflow Plus Generated Traffic 2041 AM Peak – Junction 3

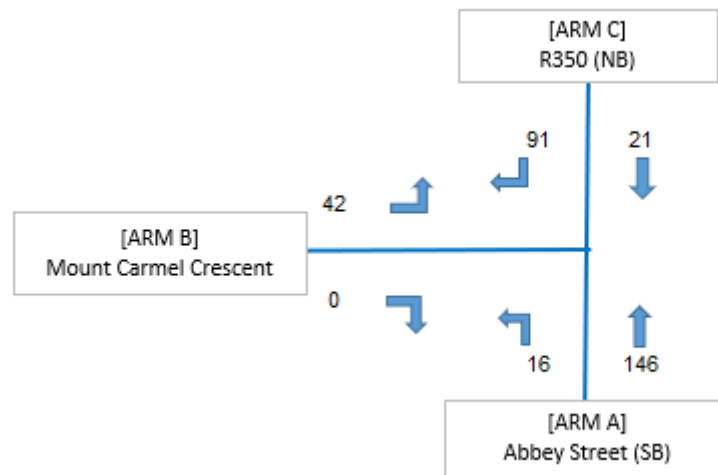


Figure 5-32: Baseflow Traffic 2024 PM Peak – Junction 3

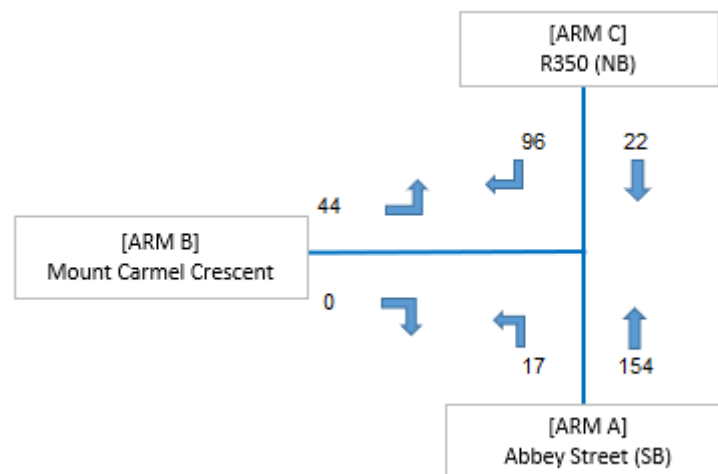


Figure 5-33: Baseflow Traffic 2026 PM Peak – Junction 3

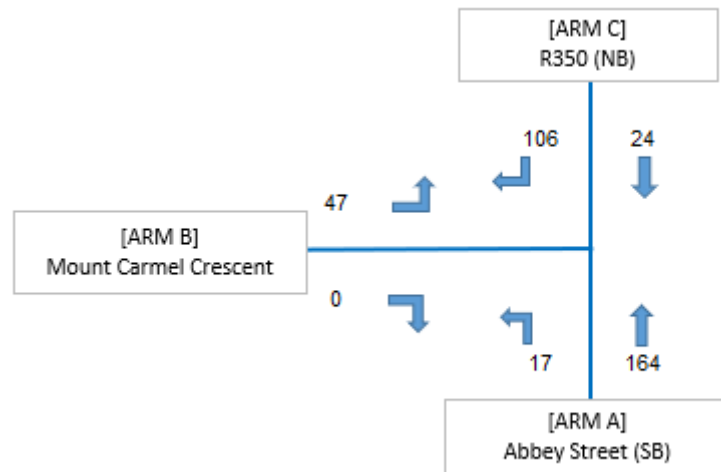


Figure 5-34: Baseflow Plus Generated Traffic 2026 PM Peak – Junction 3

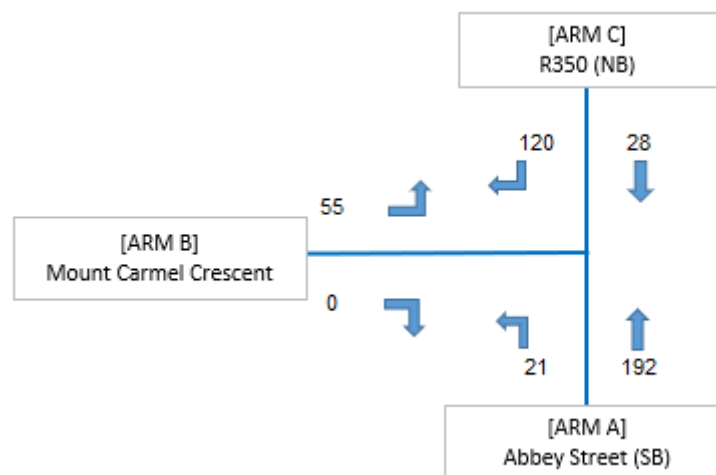


Figure 5-35: Baseflow Traffic 2041 PM Peak – Junction 3

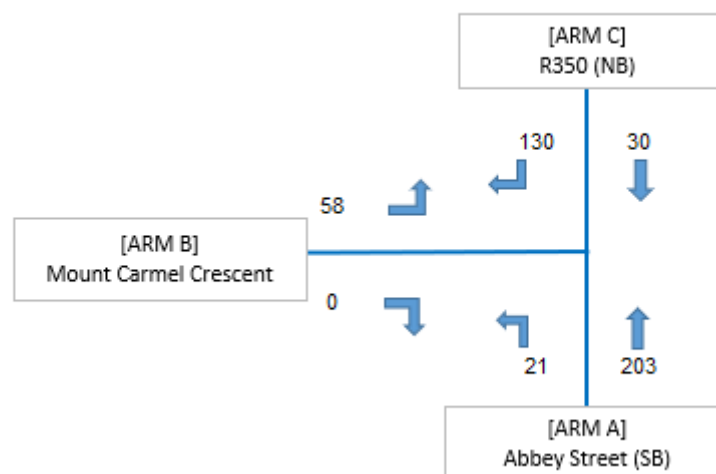


Figure 5-36: Baseflow Plus Generated Traffic 2041 PM Peak – Junction 3

6.0 JUNCTION ANALYSIS

6.1 INTRODUCTION AND METHODOLOGY

The existing roundabout junction (Junction 1) has been analysed using the computer program JUNCTIONS 10 - ARCADY. The existing priority junctions (Junction 2 & 3) have been analysed using the Transport Research Laboratory (TRL) computer program JUNCTIONS 10 - PICADY. JUNCTIONS 10 is a widely accepted tool used for the analysis of priority junctions and roundabouts.

The key parameters examined in the results of the analysis are:

- The Ratio of Flow to Capacity Value (RFC) - The desirable RFC Values for junctions assessed using PICADY is less than 0.85. Values over 1.00 indicate that the approach arm is over capacity.
- Degree of Saturation (DOS) - The desirable DOS Values for junctions assessed is less than 0.90 / 90% which is generally taken as the maximum acceptable Degree of Saturation for a Lane to avoid significant performance issues on the Lane. Values over 1.00 indicate that the approach arm is over capacity.
- Maximum queue length on any approach to the junctions; and
- Average delay for each vehicle passing through the junction during the modelled period.
- PRC - Practical Reserve Capacity (%) is calculated from the maximum degree of saturation on a Lane controlled by the Stage Stream and is measure of how much additional traffic could pass through a junction by the Stage Stream whilst maintaining a maximum degree of saturation of 90% on all Lanes.

ARCADY / PICADY requires the following input data:

- Basic modelling parameters (usually peak hour traffic counts synthesised over a 90-minute model period)
- Geometric parameters (including lane numbers, widths, visibility, storage provision, etc.)
- Traffic demand data (usually peak hour origin/destination table with composition of heavy goods vehicles input)

*For the purpose of this report, the varying vehicle types have been segregated into Light vehicles (LV) and Heavy Vehicles (HV) prior to input. Traffic volumes input into ARCADY / PICADY were in vehicles and, accordingly, commercial vehicle composition was set to the percentage of that arm.

The results of the analysis are presented in the following Sections.

6.1.1 ASSESSMENT RESULTS

The analysis results for the junctions are outlined in the following Sections. The full results of the ARCADY analysis are provided in **Appendix B** and the full set of the PICADY analysis are provided in **Appendix C**.

6.1.2 JUNCTION 1 ROUNDABOUT JUNCTION – N65 / R350 / R380

A summary of the analysis results for the existing roundabout junction on the N65 / R350 / R380 for the AM and PM peak hours are provided in the Table below. Full outputs from JUNCTION 10 ARCADY are included in **Appendix B**.

Table 6-1: Junction 1 – AM & PM Peak Hours

	AM					PM				
	Set ID	Queue (PCU)	Delay (s)	RFC	LOS	Set ID	Queue (PCU)	Delay (s)	RFC	LOS
	2024									
Arm 1	D1	0.5	4.00	0.35	A	D2	0.8	4.56	0.43	A
Arm 2		0.4	5.07	0.29	A		0.2	4.55	0.15	A
Arm 3		1.4	5.66	0.58	A		0.5	3.53	0.34	A
Arm 4		0.6	5.20	0.37	A		0.6	4.61	0.36	A
Arm 5		0.5	3.58	0.34	A		0.4	3.18	0.30	A
	2026 Base									
Arm 1	D3	0.6	4.23	0.37	A	D7	0.9	4.87	0.46	A
Arm 2		0.3	4.66	0.20	A		0.2	4.74	0.16	A
Arm 3		1.5	5.75	0.59	A		0.3	3.04	0.22	A
Arm 4		0.7	5.56	0.40	A		0.6	4.31	0.36	A
Arm 5		0.6	3.76	0.36	A		0.5	3.30	0.32	A
	2026 Base + Dev									
Arm 1	D4	0.8	5.40	0.43	A	D8	0.7	3.92	0.42	A
Arm 2		0.5	5.50	0.32	A		0.2	4.06	0.15	A
Arm 3		1.8	6.89	0.65	A		0.6	3.74	0.37	A
Arm 4		0.7	5.90	0.42	A		0.5	4.32	0.31	A
Arm 5		1.6	6.28	0.62	A		0.2	2.59	0.17	A
	2041 Base									
Arm 1	D5	1.0	5.63	0.50	A	D9	1.6	6.91	0.61	A
Arm 2		0.8	7.32	0.44	A		0.3	5.87	0.24	A
Arm 3		4.0	12.75	0.80	B		0.3	3.21	0.25	A
Arm 4		1.3	8.32	0.56	A		0.9	5.15	0.46	A
Arm 5		1.0	4.98	0.48	A		0.7	4.01	0.42	A
	2041 Base + Dev									
Arm 1	D6	1.1	5.82	0.51	A	D10	1.2	6.01	0.54	A
Arm 2		0.8	7.63	0.45	A		0.3	5.81	0.24	A
Arm 3		5.1	15.83	0.84	C		0.9	4.45	0.47	A
Arm 4		1.4	9.16	0.59	A		1.1	6.74	0.53	A
Arm 5		1.0	5.19	0.50	A		0.7	4.07	0.42	A

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

The ARCADY analysis results indicate that the junction is currently operating within capacity for all traffic Streams in both the morning and evening peak periods. This will continue to be the case for the 2026 Opening Year scenario with slight increases projected in the RFC and queue lengths for both the morning and evening peak periods.

For the design year 2041, the junction is forecast to operate well within capacity for all Streams in both the morning and evening peak periods for the No Development scenario. The inclusion of the potential development traffic will result in an increase in both delays and queueing for all traffic Streams, and Arm 3 begins to approach capacity as it operates with an RFC of 0.84 in the AM period. However, the Junction is projected to continue to operate within capacity.

6.1.3 JUNCTION 2 PRIORITY JUNCTION – R350 / HAZELWOOD

A summary of the analysis results for the existing priority junction on the R350 / Hazelwood for the AM and PM peak hours are provided in the Table below. Full outputs from JUNCTION 10 PICADY are included in **Appendix C**.

Table 6-2: Junction 2 – AM & PM Peak Hours

	AM					PM				
	Set ID	Queue (PCU)	Delay (s)	RFC	LOS	Set ID	Queue (PCU)	Delay (s)	RFC	LOS
	2024									
Stream B-AC	D1	0.2	10.05	0.16	B	D2	0.1	8.12	0.08	A
Stream C-AB		0.1	4.95	0.04	A		0.1	5.56	0.05	A
	2026 Base									
Stream B-AC	D3	0.2	10.42	0.17	B	D7	0.1	8.28	0.09	A
Stream C-AB		0.1	4.92	0.04	A		0.1	5.56	0.06	A
	2026 Base + Dev									
Stream B-AC	D4	0.2	10.57	0.18	B	D8	0.1	8.35	0.09	A
Stream C-AB		0.1	4.91	0.05	A		0.1	5.52	0.06	A
	2041 Base									
Stream B-AC	D5	0.3	12.50	0.24	B	D9	0.1	9.02	0.12	A
Stream C-AB		0.1	4.75	0.06	A		0.1	5.53	0.08	A
	2041 Base + Dev									
Stream B-AC	D6	0.3	12.82	0.25	B	D10	0.2	11.68	0.15	B
Stream C-AB		0.1	4.74	0.06	A		0.2	6.09	0.10	A

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

The PICADY analysis results indicate that the junction is currently operating within capacity for all traffic Streams in both the morning and evening peak periods. This will continue to be the case for the 2026 Opening Year scenario with slight increases projected in the RFC and queue lengths for both the morning and evening peak periods.

For the design year 2041, the junction is forecast to operate well within capacity for all Streams in both the morning and evening peak periods for the No Development scenario. The inclusion of the potential development traffic will result in an increase in both delays and queueing for all traffic Streams, but the Junction is projected to continue to operate well within capacity.

6.1.4 JUNCTION 3 PRIORITY JUNCTION – R350 / MOUNT CARMEL CRESCENT / ABBEY STREET

A summary of the analysis results for the existing priority junction on the R350 / Mount Carmel Crescent / Abbey Street for the AM and PM peak hours are provided in the Table below. Full outputs from JUNCTION 10 PICADY are included in **Appendix C**.

Table 6-3: Junction 3 – AM & PM Peak Hours

	AM					PM				
	Set ID	Queue (PCU)	Delay (s)	RFC	LOS	Set ID	Queue (PCU)	Delay (s)	RFC	LOS
	2024									
Stream B-AC	D1	0.2	7.58	0.16	A	D2	0.1	6.52	0.08	A
Stream C-AB		0.4	8.61	0.28	A		0.2	7.21	0.17	A
	2026 Base									
Stream B-AC	D3	0.2	7.65	0.17	A	D7	0.1	6.58	0.08	A
Stream C-AB		0.4	8.74	0.29	A		0.2	7.33	0.18	A
	2026 Base + Dev									
Stream B-AC	D4	0.2	7.81	0.17	A	D8	0.1	6.65	0.09	A
Stream C-AB		0.5	9.19	0.32	A		0.3	7.53	0.20	A
	2041 Base									
Stream B-AC	D5	0.3	8.58	0.22	A	D9	0.1	6.86	0.10	A
Stream C-AB		0.7	10.45	0.39	B		0.3	7.91	0.23	A
	2041 Base + Dev									
Stream B-AC	D6	0.3	8.67	0.23	A	D10	0.1	6.95	0.11	A
Stream C-AB		0.7	10.88	0.41	B		0.4	8.15	0.26	A

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

The PICADY analysis results indicate that the junction is currently operating within capacity for all traffic Streams in both the morning and evening peak periods. This will continue to be the case for the 2026 Opening Year scenario with slight increases projected in the RFC and queue lengths for both the morning and evening peak periods.

For the design year 2041, the junction is forecast to operate well within capacity for all Streams in both the morning and evening peak periods for the No Development scenario. The inclusion of the potential development traffic will result in an increase in both delays and queueing for all traffic Streams, but the Junction is projected to continue to operate well within capacity.

7.0 OTHER ROAD ISSUES

7.1 ROAD SAFETY

Forward visibility for the proposed arms onto the R350 Road and Hazelwood Road has been provided in accordance with the Design Manual for Urban Roads and Streets (DMURS), as illustrated in drawing 11942-2005 - Proposed Visibility Splays, which accompanies this planning application. The internal visibility splays of 14 x 2.4 metres have been provided for within the internal road layout, with the proposed speed limit of 20km/h in accordance with DMURS 2019 Guidelines.

As noted previously, a Stage 1 Road Safety Audit has been carried out on the proposed design for the site and the recommendations have been incorporated to the site layout. A copy of the completed RSA is included in **Appendix D** of this Report.

7.2 PARKING PROVISION

The parking provisions at the site have been calculated in accordance with the parking Guidelines set out in the following.

- Galway County Development Plan (GCDP) 2022 – 2028

The car parking requirements for the development are set out in Table 15.5 of the Galway County Development Plan 2022-2028 (GCCDP). The detailed breakdown of the parking provided is shown in Table 7-1 below. A total of 114 no. car parking spaces will be provided onsite including 4 no. spaces for the adjacent graveyard. The parking provision for the proposed development is shown below.

Table 7-1: Car Parking Requirements

Car Parking	Requirement	Units	Parking Required	Parking Provided
Proposed Residential Development	Table 15.5 – Dwellings (1-3 bedrooms) – 1.5 spaces per dwelling	53	80	114
	Table 15.5 – Dwellings (4+ bedrooms) – 2 spaces per dwelling	3	6	
Totals		-	86	114

To meet the parking requirements of the Galway County Development Plan 2022-2028 and Building for Everyone – External Environment, the number of accessible car parking spaces will total to 4 no. spaces in accordance with the provision of four spaces in every 100 for buildings not normally visited by the public. The proposed development will also provide ducting infrastructure to 20% of car parking spaces to allow for future EV parking compatibility in accordance with the Galway County Development Plan 2022-2028.

7.3 SWEPT PATH ANALYSIS

Autotrack analysis has been carried out on the final site layout including the access road entrance to the site. The purpose of the Autotrack analysis is to identify and resolve potential issues and conflict points during the design stage. The analysis has been undertaken to include for a large car, refuse truck, fire tender, and a rigid vehicle. Details of this analysis on the final layout are shown on Drawing Number 11942-2006, 2007, 2008, which accompanies this planning application.

8.0 MOBILITY MANAGEMENT

8.1 PEDESTRIANS & CYCLISTS

8.1.1 PEDESTRIANS

The R350 and Hazelwood Road have footways present along the road leading to the proposed site. The Figure below identifies the existing pedestrian linkages to the proposed development site.



Figure 8-1: Existing Pedestrian Linkages

As part of the proposed development, drop kerbs and tactile paving will be provided at the site access. These, along with dedicated walking avenues will be provided within the site. The inclusion of these attractive, well-designed walking routes will encourage pedestrians to access the local facilities on foot as opposed to taking their personal vehicles.

8.1.2 CYCLISTS

For commuter journeys, cycling can be considered as a feasible means of transport for those working within 8 km of the development. Loughrea town centre is located approximately 0.95 km to the south. This represents a 5-minute cycle time for the average cyclist from the proposed development. Cycling enthusiasts and regular cyclists will likely cycle rather than use vehicle transport.

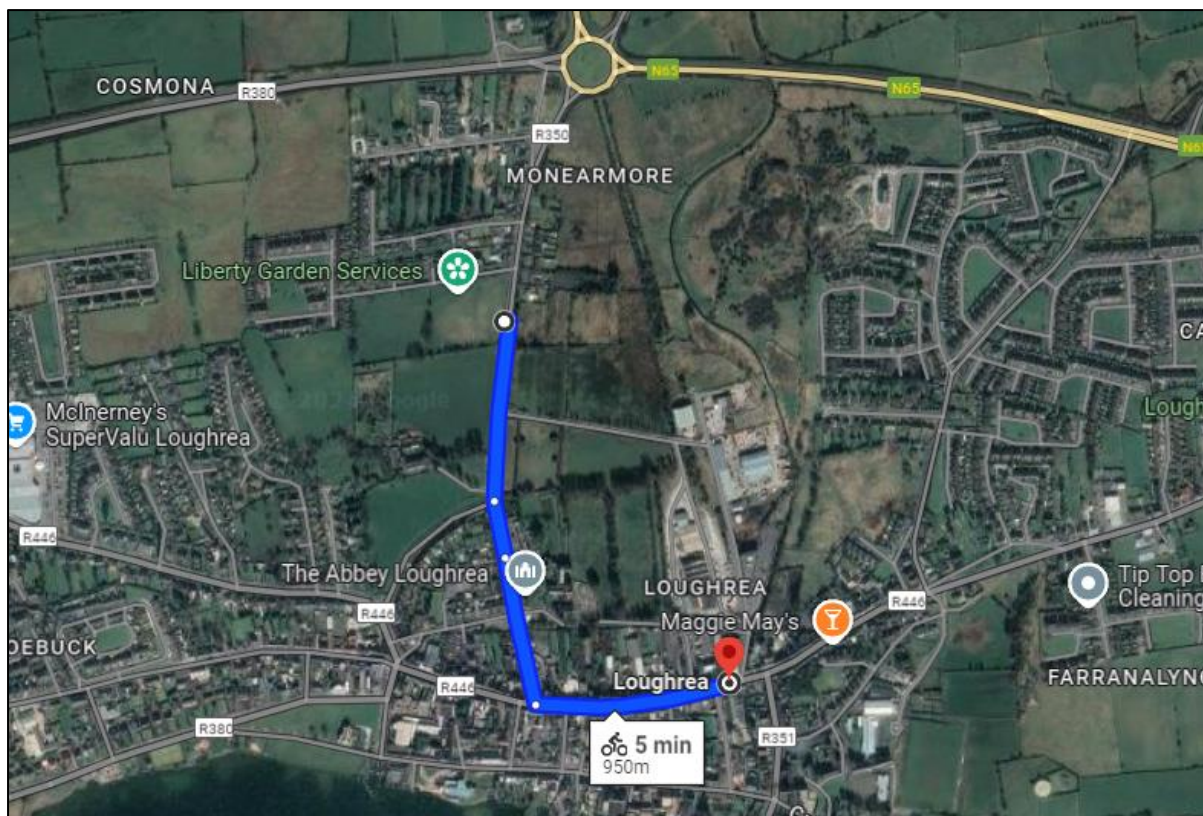


Figure 8-2: Cycle Times to Town Centre

The Bike to Work scheme currently being promoted by the Government allows employees to purchase a bicycle and safety equipment up to the value of €1,250.00 for a regular bike and €1,500.00 for an electric bicycle. Employees can use a salary sacrifice to pay, allowing them to save up to 52% on the retail price of the bike and safety equipment. It is likely that this attractive option will be availed of by residents in the proposed development due to the proximity of the site to Loughrea town centre.

The bicycle parking provisions at the site have been calculated in accordance with the parking Guidelines set out in the following.

- Galway County Council Development Plan 2022-2028

A calculated total of 24 bicycle spaces are required for the development site. For the houses with direct access to a rear garden it is proposed to provide the required bicycle parking spaces within the curtilage of the house. For houses without direct access to a rear garden individual bicycle parking spaces will be provided to the front of houses. It is proposed to provide a total of 25 bicycle parking spaces for the proposed development. See the Table below for the bicycle parking calculation.

Table 8-1: Bicycle Parking Requirements

Elements	GCDP	Bed/Car Spaces Provided	Bicycle Spaces Required	Provision
Houses & Apartments – without garden access	Housing Developments: 1 private space per bed space, minimum 2 spaces 1 visitor bicycle space per two housing units	18 beds / 12 units	24	25
Houses & Apartments – With garden access	Housing Developments: 1 private space per bed space, minimum 2 spaces 1 visitor bicycle space per two housing units	120 beds / 44 units	Bicycle parking for all houses will be provided within the rear gardens	
Totals			24	25

A total of 25 cycle parking spaces are provided within the development which is in accordance with the requirements set out in the Galway County Council Development Plan 2022-2028.

Given the relatively compact urban form of Loughrea there is significant potential for modal shift from the private car to walking and cycling as a mode of transport, particularly if improved linkages between the town centre and residential areas are realised and new developments focus on connectivity, legibility and permeability.

The Table below gives typical cycle and walking distance and times to main attractions from the proposed development.

Table 8-2 Proposed Development - Typical Cycle & Walking Distances & Time

Attraction	Cycle Distance (km)	Cycle Time (mins)	Walk Distance (km)	Walk Time (mins)
Mothercare Creche & Montessori	0.10	1 min	0.10	1 min
Loughrea Abbey	0.45	1 min	0.45	6 min
Cairde Early Learning Centre	0.65	3 min	0.65	9 min
Loughrea Supervalve	1.30	6 min	1.30	19 min
Gaelscoil Riabhach	1.70	6 min	1.70	24 min

8.1.3 FUTURE CYCLE NETWORK

The CycleConnects for Loughrea Urban area was developed by AECOM on behalf of the National Transport Authority (NTA). The urban network is comprised of an inner primary orbital route and a larger amalgamation of both primary and secondary routes that encompasses the town. As shown in the figure below there are routes identified by CycleConnects linking the proposed development to its surrounding area. This will ensure the future cycling network towards the proposed development will provide a viable alternative to other trip types.

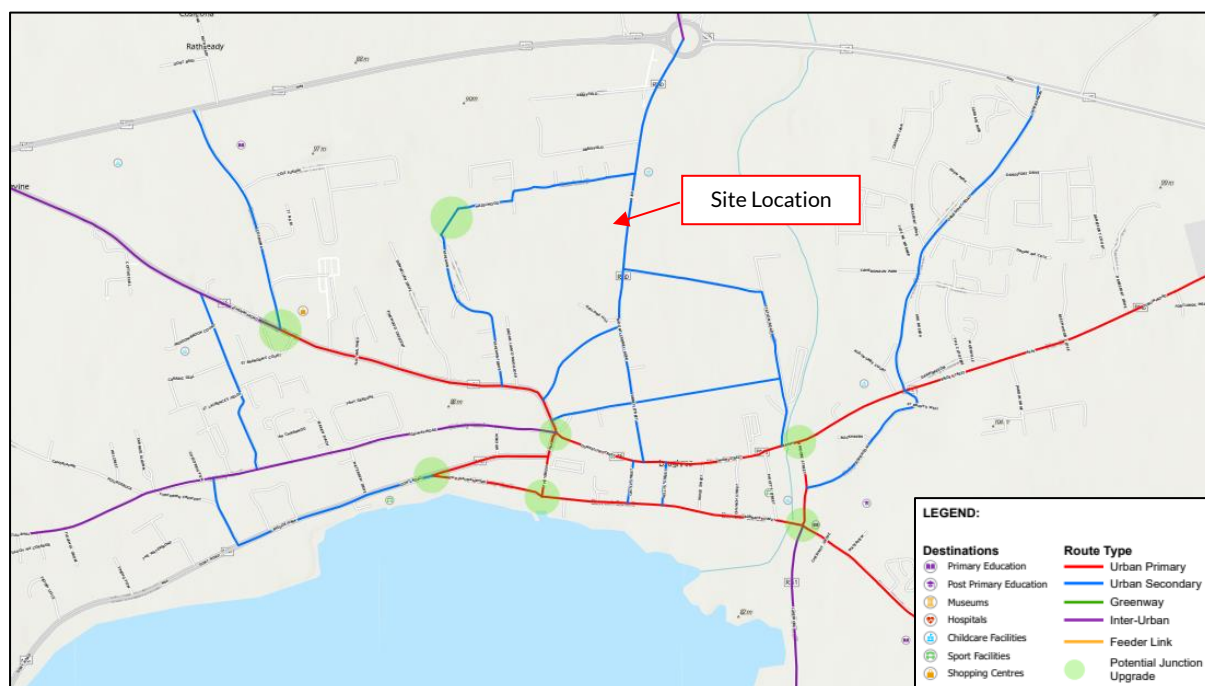


Figure 8-3: Cycle Connects Proposed Loughrea Urban Network

8.2 PUBLIC TRANSPORT

Loughrea is served by a number of regional and local bus routes as detailed below. These bus routes serve the Main Street bus stop and is approximately a 10-minute walk from the proposed development. The detailed timetables for each bus route are located in the Mobility Management Plan which accompanies this planning application.

8.3 MOBILITY OBJECTIVES

The Mobility Management objectives for the proposed development are:

- To integrate sustainable transport measures into the management and operation of the proposed residential development for both residents and visitors.
- To reduce the overall number of single occupant vehicle trips for work.
- To encourage the use of public transport, walking and cycling for journeys to work (and to increase the mode share).

8.4 DEVELOPMENT CONSTRUCTION PHASE

The construction works associated with the proposed development are expected to be undertaken in one single phase. It is estimated that the construction works will be completed within 12 months of commencement. This will be confirmed upon appointment of a Main Contractor. A comprehensive Traffic Management Plan will be prepared for the construction phase of the works. This will address such items as the volume and approach routes of construction vehicles, onsite parking, construction signage, etc.

The main traffic types expected for the construction phase are envisaged as follows:

- Private light vehicles (cars and vans, etc) driven to and from the site by construction and supervisory staff.
- Larger vehicles (HGVs) which will facilitate material deliveries and removals to and from the site.

It is estimated that for a development of this size, 20 – 30 site operatives will be employed at the height of the construction works. This would equate to an approx. parking requirement for 20 vehicles. Car parking for construction workers and visitors will be located within the construction compound.

Access to the proposed development site is envisaged to be through the new access which will be constructed off the R350 Road. The site entrance will be sufficiently wide for HGVs and construction vehicles to enter the site without causing an obstruction on the main road network. Provision will be made to ensure there is sufficient space within the site for HGVs to turn before joining the public road network.

Signage will be erected on all approaches to the site to notify motorists of the construction works ahead. Signage at the site entrances will be provided to ensure members of the public do not enter the site road mistakenly.

Construction works will be coordinated to ensure construction traffic will have limited impact on the surrounding road network and to have minimum impact on peak morning and evening traffic periods.

Insofar as is possible, ground excavation works will be scheduled during periods of dry weather to minimise potential for silt laden run-off from the works. A wheel wash system will be set up in the event there is a risk of debris deposit on the road. Also, routine cleaning / sweeping of the road and footpaths in the frontage of the site will be required.

9.0 CONCLUSIONS AND RECOMMENDATIONS

9.1 CONCLUSIONS

There are good pedestrian and cycling linkages to the proposed development site with footpath accesses points to the site.

The proposed development site is well served by public transport with a number of bus services operating adjacent to the site. Public transport links are within easy walking access with the closest approximately a 10-minute walk away from the proposed development site with access to further public transport links available from here.

9.2 JUNCTION ANALYSIS

A review of committed developments in the surrounding area has been carried out and all committed developments considered. The summation of the proposed and committed development has been assessed using JUNCTION 10 ARCADY and JUNCTION 10 PICADY for the traffic generated volumes for the expected year of opening in 2026 and the design years 2031 and 2041.

A number of assumptions were made in this report, as outlined in Section 5, 'Trip Generation and Trip Distribution'.

Junction 1

The ARCADY analysis results indicate that the existing roundabout junction is currently operating within capacity for all traffic Streams in both the morning and evening peak periods. This will continue to be the case for the 2026 Opening Year scenario with slight increases projected in the RFC and queue lengths for both the morning and evening peak periods.

For the design year 2041, the junction is forecast to operate well within capacity for all Streams in both the morning and evening peak periods for the No Development scenario. The inclusion of the potential development traffic will result in an increase in both delays and queueing for all traffic Streams, and Arm 3 begins to approach capacity as it operates with an RFC of 0.84 in the AM period. However, the Junction is projected to continue to operate within capacity.

Junction 2 & 3

The PICADY analysis results indicate that the existing priority junctions (Junction 2 & 3) are currently operating within capacity for all traffic Streams in both the morning and evening peak periods. This will continue to be the case for the 2026 Opening Year scenario with slight increases projected in the RFC and queue lengths for both the morning and evening peak periods.

For the design year 2041, the junctions are forecast to operate well within capacity for all Streams in both the morning and evening peak periods for the No Development scenario. The inclusion of the potential development traffic will result in an increase in both delays and queueing for all traffic Streams, but the Junctions are projected to continue to operate well within capacity.

Note also that the traffic analysis has been carried out on the network without any allowance for trip rate reductions based on mobility management measures or possible future upgrades to the network to ensure the analysis is as robust as possible.

A total of 114 car parking spaces are being provided for the proposed development.

9.3 MOBILITY MANAGEMENT

Chapter 8 focuses on the mobility management for the proposed development site which aims to meet the following measures and requirements:

- Provide a comprehensive outline of the Public Transport Services available to the future users of the proposed development.
- Outline the various methods which can be employed to facilitate a positive change in travel patterns at the site.

9.4 RECOMMENDATIONS

This Report recommends that:

- Site access junction visibility splays should be provided in accordance with the relevant guidance. Visibility splays should be kept free of all restrictions.
- Pedestrian footway links with associated dropped kerbing and tactile paving to be provided at all pedestrian crossing points.

Appendix A. TRAFFIC COUNT DATA

	B=>C							B ==>D							B ==> E							B ==> A							
	MOVEMENT 1							MOVEMENT 2							MOVEMENT 3							MOVEMENT 4							
TIME	CAR	LGV	OGV1	OGV2	BUS	TOT	PCU	CAR	LGV	OGV1	OGV2	BUS	TOT	PCU	CAR	LGV	OGV1	OGV2	BUS	TOT	PCU	CAR	LGV	OGV1	OGV2	BUS	TOT	PCU	
07:00	2	0	0	0	0	2	2	3	0	0	0	0	3	3	1	0	0	0	0	1	1	0	0	0	0	0	0	0	
07:15	2	0	0	0	0	2	2	2	2	0	0	0	4	4	1	0	0	0	0	1	1	0	1	0	0	0	1	1	
07:30	1	0	0	0	0	1	1	4	1	0	0	0	5	5	2	0	0	0	0	2	2	0	1	0	0	0	1	1	
07:45	2	4	2	0	0	8	9	7	4	1	0	0	12	13	1	3	1	0	0	5	6	0	2	0	0	0	2	2	
H/TOT	7	4	2	0	0	13	14	16	7	1	0	0	24	25	5	3	1	0	0	9	10	0	4	0	0	0	4	4	
08:00	4	1	0	0	0	5	5	8	1	1	0	0	10	11	4	1	0	0	0	5	5	0	0	0	1	0	1	2	
08:15	10	1	0	0	0	11	11	11	2	0	0	0	13	13	3	1	1	0	0	5	6	0	0	0	0	0	0	0	
08:30	20	0	0	1	0	21	22	16	2	0	0	0	18	18	2	0	0	0	0	2	2	1	0	0	0	0	1	1	
08:45	24	0	1	0	0	25	26	13	1	0	0	0	14	14	8	0	1	0	0	9	10	0	0	0	0	0	0	0	
H/TOT	58	2	1	1	0	62	64	48	6	1	0	0	55	56	17	2	2	0	0	21	22	1	0	0	1	0	2	3	
09:00	10	2	0	0	0	12	12	24	1	0	0	0	25	25	11	1	0	0	0	12	12	0	0	0	0	0	0	0	
09:15	10	1	3	0	1	15	18	7	3	0	0	0	10	10	7	2	2	2	1	14	19	0	0	0	0	0	0	0	
09:30	6	0	0	0	0	6	6	4	3	1	0	0	8	9	2	2	0	0	0	4	4	0	0	0	0	0	0	0	
09:45	1	0	0	0	0	1	1	10	2	0	0	0	12	12	4	1	0	0	0	5	5	2	0	0	0	0	2	2	
H/TOT	27	3	3	0	1	34	37	45	9	1	0	0	55	56	24	6	2	2	1	35	40	2	0	0	0	0	2	2	
10:00	5	2	0	0	0	7	7	10	2	1	0	0	13	14	4	0	1	0	0	5	6	0	0	0	0	0	0	0	
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10:45	3	1	0	0	1	5	6	13	2	0	0	0	15	15	3	1	0	0	1	5	6	0	0	0	0	1	1	2	
H/TOT	16	5	0	0	1	22	23	31	9	1	1	1	43	46	16	2	1	0	1	20	22	2	0	0	0	0	2	4	6
11:00	7	0	1	0	0	8	9	6	3	0	0	0	9	9	2	0	0	0	0	2	2	0	0	0	0	0	0	0	
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11:45	1	1	0	0	0	2	2	10	2	1	0	0	13	14	2	0	1	1	0	4	6	0	0	0	0	0	0	0	
H/TOT	15	4	1	0	0	20	21	33	10	1	0	0	44	45	11	4	2	1	0	18	20	0	0	0	0	0	0	0	
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12:30	5	0	1	0	0	6	7	8	1	1	0	0	10	11	0	2	1	0	0	3	4	0	0	0	0	0	0	0	
12:45	7	1	0	0	0	8	8	6	3	0	0	0	9	9	2	1	0	0	0	3	3	1	0	0	0	0	1	1	
H/TOT	15	4	2	1	0	22	24	29	6	1	0	0	36	37	9	3	1	0	0	13	14	1	0	0	0	0	1	1	

TIME	MOVEMENT 1					TOT	PCU	MOVEMENT 2					TOT	PCU	MOVEMENT 3					TOT	PCU	MOVEMENT 4					TOT	PCU
	CAR	LGV	OGV1	OGV2	BUS			CAR	LGV	OGV1	OGV2	BUS			CAR	LGV	OGV1	OGV2	BUS			CAR	LGV	OGV1	OGV2	BUS		
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13:15	4	1	0	0	0	5	5	7	0	0	0	0	7	7	5	2	0	0	0	7	7	2	1	0	0	1	4	5
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13:45	4	1	0	0	0	5	5	4	3	1	0	0	8	9	5	1	0	0	0	6	6	1	0	0	0	0	1	1
H/TOT	14	4	0	1	1	20	22	23	5	2	0	1	31	33	22	4	1	0	0	27	28	4	1	0	0	8	13	21
14:00	9	0	0	0	1	10	11	8	1	0	0	0	9	9	2	2	1	0	2	7	10	2	0	0	0	1	3	4
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14:45	8	3	1	0	0	12	13	14	3	0	0	1	18	19	5	1	0	0	0	6	6	0	2	0	0	0	2	2
H/TOT	25	4	2	0	1	32	34	37	5	0	0	1	43	44	12	5	2	0	3	22	26	2	2	0	0	1	5	6
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15:45	4	1	0	0	0	5	5	10	1	0	0	0	11	11	1	0	0	0	0	1	1	1	0	0	0	0	1	1
H/TOT	36	3	2	1	0	42	44	57	4	0	0	0	61	61	17	2	0	0	0	19	19	5	1	0	0	1	7	8
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16:45	8	1	0	0	0	9	9	14	3	1	0	0	18	19	5	3	1	0	0	9	10	0	0	0	0	0	0	0
H/TOT	37	7	2	0	0	46	47	42	12	1	0	0	55	56	21	4	4	0	0	29	31	1	0	1	0	0	2	3
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17:45	6	2	0	0	0	8	8	17	2	0	0	0	19	19	14	1	0	0	0	15	15	0	0	0	0	0	0	0
H/TOT	26	11	0	1	0	38	39	46	8	0	0	0	54	54	32	4	0	0	1	37	38	0	0	0	0	0	0	0
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18:30	18	2	0	0	0	20	20	8	1	0	0	0	9	9	14	0	0	0	0	14	14	0	0	0	0	0	0	0
18:45	8	0	0	0	0	8	8	8	2	0	0	0	10	10	11	0	0	0	0	11	11	3	0	0	0	0	3	3
H/TOT	48	3	0	0	0	51	51	32	7	0	0	0	39	39	44	1	0	0	0	45	45	3	0	0	0	0	3	3
P/TOT	294	46	12	4	4	402	420	377	72	7	1	3	540	549	210	33	13	2	6	295	313	20	8	1	1	12	43	57

A=>B								A=>C								A=>D								A=>E							
MOVEMENT 5								MOVEMENT 6								MOVEMENT 7								MOVEMENT 8							
CAR	LGV	OGV1	OGV2	BUS	TOT	PCU	CAR	LGV	OGV1	OGV2	BUS	TOT	PCU	CAR	LGV	OGV1	OGV2	BUS	TOT	PCU	CAR	LGV	OGV1	OGV2	BUS	TOT	PCU				
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1	0	0	0	0	1	1	1	17	4	2	2	1	26	31	10	0	0	0	0	10	10	3	0	0	0	0	3	3			
0	0	0	0	0	0	0	0	11	1	2	2	0	16	20	13	1	1	0	0	15	16	9	2	0	0	0	11	11			
1	1	0	0	1	3	4	4	54	12	10	5	1	82	95	39	5	1	0	0	45	46	26	4	2	1	0	33	35			
1	0	0	0	0	1	1	1	24	5	2	3	0	34	39	10	3	0	0	0	13	13	5	1	0	0	0	6	6			
0	0	0	0	0	0	0	0	19	2	1	0	0	22	23	6	9	0	0	0	15	15	8	1	1	0	0	10	11			
0	0	0	0	0	0	0	0	19	0	1	0	0	20	21	11	5	0	0	0	16	16	10	0	0	1	0	11	12			
0	0	0	0	0	0	0	0	17	9	0	2	0	28	31	17	2	0	0	1	20	21	9	0	1	1	1	12	15			
1	0	0	0	0	1	1	1	79	16	4	5	0	104	113	44	19	0	0	1	64	65	32	2	2	2	1	39	44			

MOVEMENT 5							MOVEMENT 6							MOVEMENT 7								MOVEMENT 8							
CAR	LGV	OGV1	OGV2	BUS	TOT	PCU	CAR	LGV	OGV1	OGV2	BUS	TOT	PCU	CAR	LGV	OGV1	OGV2	BUS	TOT	PCU	CAR	LGV	OGV1	OGV2	BUS	TOT	PCU		
0	0	0	0	0	0	0	17	4	2	0	0	23	24	13	2	1	0	1	17	19	3	1	0	0	1	5	6		
0	0	0	0	0	0	0	20	3	1	1	0	25	27	4	4	0	0	0	8	8	6	1	0	0	0	7	7		
0	0	0	0	0	0	0	13	7	1	0	0	21	22	13	2	1	0	0	16	17	11	3	3	0	0	17	19		
1	0	0	0	0	1	1	23	6	2	2	0	33	37	11	5	0	0	0	16	16	7	2	0	1	0	10	11		
1	0	0	0	0	1	1	73	20	6	3	0	102	109	41	13	2	0	1	57	59	27	7	3	1	1	39	43		
0	0	0	0	0	0	0	17	3	2	0	0	22	23	16	2	1	0	0	19	20	11	0	0	2	0	13	16		
0	0	0	0	0	0	0	20	3	0	3	1	27	32	19	5	0	0	0	24	24	9	5	0	1	2	17	20		
1	0	0	0	0	1	1	25	13	0	0	0	38	38	16	4	1	1	0	22	24	8	1	0	0	1	10	11		
0	0	0	1	0	1	2	28	6	0	5	0	39	46	19	1	0	0	0	20	20	6	1	1	1	1	0	9	11	
1	0	0	1	0	2	3	90	25	2	8	1	126	138	70	12	2	1	0	85	87	34	7	1	4	3	49	58		
2	0	0	0	0	2	2	33	8	4	1	0	46	49	23	3	1	0	1	28	30	13	3	0	0	2	18	20		
1	0	0	0	1	2	3	22	9	2	0	0	33	34	32	0	0	0	0	32	32	11	1	0	1	0	13	14		
1	0	0	0	0	1	1	54	11	1	0	1	67	69	21	2	1	0	0	24	25	12	0	0	0	0	12	12		
1	0	0	0	0	1	1	46	4	1	0	0	51	52	14	8	0	0	0	22	22	10	1	1	0	0	12	13		
5	0	0	0	1	6	7	155	32	8	1	1	197	203	90	13	2	0	1	106	108	46	5	1	1	2	55	59		
0	0	0	0	0	0	0	53	12	0	3	0	68	72	16	6	0	0	0	22	22	15	1	1	2	0	19	22		
0	0	0	0	0	0	0	53	9	1	2	0	65	68	29	8	0	0	0	37	37	20	2	0	0	0	22	22		
1	1	0	0	0	2	2	63	14	6	2	0	85	91	27	2	0	0	0	29	29	11	3	0	0	1	15	16		
1	0	0	0	0	1	1	86	15	3	0	0	104	106	36	6	3	0	1	46	49	19	2	1	0	0	22	23		
2	1	0	0	0	3	3	255	50	10	7	0	322	336	108	22	3	0	1	134	137	65	8	2	2	1	78	83		
0	0	0	0	0	0	0	60	8	0	1	0	69	70	34	4	2	0	0	40	41	26	5	0	0	0	31	31		
0	0	0	0	0	0	0	82	13	1	0	0	96	97	18	5	1	0	0	24	25	17	3	0	0	0	20	20		
2	0	0	0	0	2	2	60	12	1	0	0	73	74	28	6	0	0	0	34	34	20	2	0	0	0	22	22		
3	0	0	0	0	3	3	84	8	2	0	0	94	95	30	2	0	0	1	33	34	18	3	1	0	0	22	23		
5	0	0	0	0	5	5	286	41	4	1	0	332	335	110	17	3	0	1	131	134	81	13	1	0	0	95	96		
1	0	0	0	0	1	1	37	6	1	1	0	45	47	28	3	0	0	0	31	31	17	2	0	0	0	19	19		
3	0	0	0	0	3	3	56	5	0	1	0	62	63	26	4	1	0	0	31	32	15	2	0	0	0	17	17		
3	0	0	0	0	3	3	61	5	0	0	0	66	66	26	3	1	0	0	30	31	10	1	0	0	0	11	11		
2	0	0	0	0	2	2	35	9	0	1	0	45	46	24	1	0	0	0	25	25	16	0	0	0	0	16	16		
9	0	0	0	0	9	9	189	25	1	3	0	218	222	104	11	2	0	0	117	118	58	5	0	0	0	63	63		
28	5	2	1	9	49	61	1392	283	52	52	7	1972	2094	787	135	18	3	5	1057	1076	422	64	15	16	10	599	644		

E=> A							E=> B							E=>C							E=> D						
MOVEMENT 9							MOVEMENT 10							MOVEMENT 11							MOVEMENT 12						
CAR	LGV	OGV1	OGV2	BUS	TOT	PCU	CAR	LGV	OGV1	OGV2	BUS	TOT	PCU	CAR	LGV	OGV1	OGV2	BUS	TOT	PCU	CAR	LGV	OGV1	OGV2	BUS	TOT	PCU
9	1	0	2	0	12	15	2	0	0	0	0	2	2	7	2	0	1	0	10	11	1	0	1	0	0	2	3
4	0	0	1	1	6	8	3	0	0	0	0	3	3	18	2	2	0	0	22	23	1	1	0	0	0	2	2
12	4	1	0	0	17	18	2	0	0	0	0	2	2	20	4	1	0	0	25	26	6	0	0	0	0	6	6
13	2	0	0	0	15	15	1	4	0	0	0	5	5	23	8	0	0	4	35	39	3	0	0	0	0	3	3
38	7	1	3	1	50	55	8	4	0	0	0	12	12	68	16	3	1	4	92	99	11	1	1	0	0	13	14
5	2	1	0	0	8	9	2	0	0	0	0	2	2	34	6	2	0	0	42	43	7	1	0	0	0	8	8
9	3	0	0	0	12	12	1	0	0	0	0	1	1	46	3	2	0	0	51	52	7	5	1	0	0	13	14
15	3	1	1	0	20	22	1	1	1	1	1	5	8	57	6	2	0	0	65	66	21	3	0	0	0	24	24
14	3	0	1	0	18	19	8	0	0	0	0	8	8	49	6	1	1	0	57	59	17	2	0	0	0	19	19
43	11	2	2	0	58	62	12	1	1	1	1	16	19	186	21	7	1	0	215	220	52	11	1	0	0	64	65
11	4	0	0	0	15	15	6	0	0	0	0	6	6	26	4	1	0	1	32	34	4	2	0	0	0	6	6
8	1	0	1	1	11	13	2	1	0	0	1	4	5	22	4	0	0	2	28	30	11	1	0	0	0	12	12
3	0	0	0	0	3	3	0	1	1	0	1	3	5	21	4	0	0	1	26	27	13	0	0	0	0	13	13
3	0	1	0	0	4	5	4	1	0	0	0	5	5	20	4	0	0	0	24	24	8	2	0	0	0	10	10
25	5	1	1	1	33	36	12	3	1	0	2	18	21	89	16	1	0	4	110	115	36	5	0	0	0	41	41
11	1	0	1	0	13	14	1	0	0	0	1	2	3	13	4	0	1	0	18	19	7	0	0	0	0	7	7
3	3	0	0	0	6	6	4	1	1	0	0	6	7	17	3	0	0	2	22	24	5	0	0	0	0	5	5
1	0	1	2	0	4	7	4	1	0	0	1	6	7	13	5	1	0	0	19	20	7	1	1	0	0	9	10
10	0	1	1	1	13	16	4	1	0	1	0	6	7	12	3	1	1	1	18	21	7	0	0	0	0	7	7
25	4	2	4	1	36	43	13	3	1	1	2	20	24	55	15	2	2	3	77	84	26	1	1	0	0	28	29
5	2	2	1	0	10	12	5	0	0	0	0	5	5	17	0	1	1	0	19	21	4	1	0	0	0	5	5
9	1	2	0	0	12	13	4	0	0	0	0	4	4	15	6	0	1	0	22	23	6	1	1	1	0	9	11
11	0	2	0	0	13	14	7	1	0	0	0	8	8	19	5	0	1	0	25	26	6	1	0	0	0	7	7
8	0	1	0	0	9	10	6	0	1	0	0	7	8	10	4	0	0	0	14	14	6	1	0	0	0	7	7
33	3	7	1	0	44	49	22	1	1	0	0	24	25	61	15	1	3	0	80	84	22	4	1	1	0	28	30
7	2	1	1	0	11	13	7	1	0	0	0	8	8	41	8	0	0	0	49	49	5	2	0	0	0	7	7
15	0	1	1	0	17	19	6	0	0	0	1	7	8	17	1	1	1	0	20	22	10	1	0	0	0	11	11
7	1	0	0	0	8	8	7	0	0	0	0	7	7	30	7	3	0	0	40	42	11	1	0	0	0	12	12
10	1	0	0	0	11	11	2	1	1	0	0	4	5	27	2	3	0	0	32	34	5	2	0	0	0	7	7
39	4	2	2	0	47	51	22	2	1	0	1	26	28	115	18	7	1	0	141	146	31	6	0	0	0	37	37

MOVEMENT 9							MOVEMENT 10							MOVEMENT 11								MOVEMENT 12							
CAR	LGV	OGV1	OGV2	BUS	TOT	PCU	CAR	LGV	OGV1	OGV2	BUS	TOT	PCU	CAR	LGV	OGV1	OGV2	BUS	TOT	PCU	CAR	LGV	OGV1	OGV2	BUS	TOT	PCU		
10	2	2	2	0	16	20	9	1	0	1	2	13	16	28	4	2	1	1	36	39	4	2	0	0	0	6	6		
8	1	0	0	0	9	9	9	0	0	0	1	10	11	28	5	0	0	0	33	33	5	0	0	0	0	5	5		
9	4	1	1	0	15	17	8	1	2	0	0	11	12	34	2	1	0	0	37	38	9	0	0	0	0	9	9		
11	1	2	0	0	14	15	5	1	2	0	0	8	9	24	4	0	0	0	28	28	12	3	0	0	0	15	15		
38	8	5	3	0	54	60	31	3	4	1	3	42	48	114	15	3	1	1	134	138	30	5	0	0	0	35	35		
9	1	1	0	0	11	12	4	1	0	0	0	5	5	36	5	1	0	0	42	43	4	2	0	0	0	6	6		
13	3	0	0	0	16	16	2	2	0	0	0	4	4	23	5	1	0	1	30	32	2	0	0	0	0	2	2		
11	1	3	0	0	15	17	14	2	1	1	0	18	20	28	4	0	0	0	32	32	11	0	0	0	0	11	11		
12	1	1	3	0	17	21	5	0	0	0	2	7	9	27	5	0	0	1	33	34	9	0	0	0	0	9	9		
45	6	5	3	0	59	65	25	5	1	1	2	34	38	114	19	2	0	2	137	140	26	2	0	0	0	28	28		
10	1	1	0	0	12	13	2	0	0	0	0	2	2	34	3	1	0	1	39	41	9	3	0	0	1	13	14		
14	2	1	0	0	17	18	7	1	1	0	0	9	10	28	4	0	0	0	32	32	14	1	0	0	0	15	15		
13	2	2	1	0	18	20	5	2	0	0	0	7	7	34	4	3	1	0	42	45	13	1	0	0	0	14	14		
12	1	0	1	1	15	17	8	1	1	0	0	10	11	33	5	0	0	1	39	40	7	0	0	0	0	7	7		
49	6	4	2	1	62	68	22	4	2	0	0	28	29	129	16	4	1	2	152	157	43	5	0	0	1	49	50		
15	3	1	1	0	20	22	7	3	1	0	0	11	12	30	6	1	0	0	37	38	10	2	0	0	1	13	14		
8	6	1	0	0	15	16	7	1	0	0	0	8	8	46	3	1	0	0	50	51	12	4	0	0	0	16	16		
7	3	1	0	0	11	12	8	0	0	0	0	8	8	34	8	3	0	0	45	47	14	2	0	0	0	16	16		
9	0	0	1	1	11	13	11	2	0	0	0	13	13	53	11	0	0	0	64	64	16	2	0	0	0	18	18		
39	12	3	2	1	57	62	33	6	1	0	0	40	41	163	28	5	0	0	196	199	52	10	0	0	1	63	64		
20	5	0	0	0	25	25	0	2	0	0	0	2	2	46	5	2	0	0	53	54	21	3	0	0	0	24	24		
12	2	0	0	0	14	14	12	2	0	0	0	14	14	55	12	2	0	0	69	70	20	4	0	0	0	24	24		
15	2	2	0	0	19	20	8	2	1	0	0	11	12	66	11	1	0	0	78	79	11	3	0	0	0	14	14		
11	2	0	1	0	14	15	12	0	0	0	0	12	12	51	8	0	0	1	60	61	20	2	0	0	0	22	22		
58	11	2	1	0	72	74	32	6	1	0	0	39	40	218	36	5	0	1	260	264	72	12	0	0	0	84	84		
14	1	0	0	0	15	15	10	1	0	0	0	11	11	40	6	0	0	0	46	46	14	1	0	0	0	15	15		
7	0	0	0	1	8	9	19	3	0	0	0	22	22	35	5	0	0	0	40	40	12	0	0	0	0	12	12		
13	0	0	0	0	13	13	13	2	1	0	0	16	17	38	11	1	0	0	50	51	10	1	0	0	0	11	11		
8	0	0	0	0	8	8	12	2	0	0	0	14	14	48	5	0	0	0	53	53	9	0	0	0	0	9	9		
42	1	0	0	1	44	45	54	8	1	0	0	63	64	161	27	1	0	0	189	190	45	2	0	0	0	47	47		
402	71	25	21	6	616	670	242	43	13	4	10	362	386	1297	209	33	6	17	1783	1834	393	54	3	0	2	517	522		

D => E								D => A								D => B								D => C							
MOVEMENT 13								MOVEMENT 14								MOVEMENT 15								MOVEMENT 16							
CAR	LGV	OGV1	OGV2	BUS	TOT	PCU		CAR	LGV	OGV1	OGV2	BUS	TOT	PCU		CAR	LGV	OGV1	OGV2	BUS	TOT	PCU		CAR	LGV	OGV1	OGV2	BUS	TOT	PCU	
0	0	1	0	0	1	2		39	1	0	0	0	40	40		2	0	0	0	0	2	2		2	0	0	0	0	2	2	
8	1	0	0	0	9	9		27	4	1	0	0	32	33		0	0	0	0	0	0	0		3	0	0	0	0	3	3	
2	1	0	0	0	3	3		24	7	1	0	0	32	33		4	1	1	0	0	6	7		2	0	0	0	0	2	2	
1	2	0	0	0	3	3		27	1	0	0	0	28	28		5	1	0	0	0	6	6		5	4	0	0	0	9	9	
11	4	1	0	0	16	17		117	13	2	0	0	132	133		11	2	1	0	0	14	15		12	4	0	0	0	16	16	
9	0	0	1	0	10	11		24	8	0	0	0	32	32		5	3	0	0	0	8	8		5	1	0	0	0	6	6	
10	0	0	0	0	10	10		37	1	0	0	0	38	38		3	3	1	0	0	7	8		11	1	0	0	2	14	16	
15	1	0	0	0	16	16		30	5	0	0	0	35	35		6	2	0	0	0	8	8		12	1	0	0	1	14	15	
16	0	0	0	0	16	16		17	1	0	0	1	19	20		23	1	0	0	0	24	24		13	2	0	0	0	15	15	
50	1	0	1	0	52	53		108	15	0	0	1	124	125		37	9	1	0	0	47	48		41	5	0	0	3	49	52	
6	2	0	0	0	8	8		20	0	2	0	0	22	23		13	2	0	0	0	15	15		8	1	0	0	0	9	9	
12	2	0	0	0	14	14		20	1	0	0	0	21	21		5	1	0	0	0	6	6		4	2	0	0	0	6	6	
6	0	0	0	0	6	6		15	1	0	0	1	17	18		2	2	1	0	0	5	6		4	1	0	0	0	5	5	
5	4	2	0	0	11	12		12	3	1	0	0	16	17		6	3	0	0	0	9	9		1	0	0	0	0	1	1	
29	8	2	0	0	39	40		67	5	3	0	1	76	79		26	8	1	0	0	35	36		17	4	0	0	0	21	21	
11	1	0	0	0	12	12		11	1	0	0	0	12	12		8	2	0	0	1	11	12		6	1	0	0	0	7	7	
6	1	0	0	0	7	7		6	0	3	0	1	10	13		9	1	0	0	0	10	10		6	1	0	0	0	7	7	
10	1	0	0	0	11	11		12	0	1	0	0	13	14		3	3	0	0	1	7	8		3	4	0	0	0	7	7	
8	0	0	0	0	8	8		9	0	0	0	0	9	9		5	0	0	0	0	5	5		9	0	1	0	0	10	11	
35	3	0	0	0	38	38		38	1	4	0	1	44	47		25	6	0	0	2	33	35		24	6	1	0	0	31	32	
7	1	0	0	0	8	8		13	2	0	0	0	15	15		8	0	0	0	0	8	8		5	2	0	0	0	7	7	
10	1	0	0	0	11	11		10	0	1	0	0	11	12		4	2	0	0	0	6	6		8	2	1	0	0	11	12	
14	0	0	0	0	14	14		14	1	0	1	0	16	17		13	4	0	0	0	17	17		4	4	1	0	0	9	10	
10	0	0	0	0	10	10		18	0	0	0	0	18	18		9	2	2	0	0	13	14		4	0	0	0	0	4	4	
41	2	0	0	0	43	43		55	3	1	1	0	60	62		34	8	2	0	0	44	45		21	8	2	0	0	31	32	
6	0	0	0	0	6	6		9	2	0	0	0	11	11		7	1	0	0	0	8	8		8	1	0	0	0	9	9	
13	1	0	0	0	14	14		18	3	0	0	0	21	21		11	2	0	0	0	13	13		6	3	0	0	0	9	9	
15	1	0	0	0	16	16		8	2	0	1	0	11	12		9	1	1	0	0	11	12		8	3	1	1	0	13	15	
15	4	0	1	0	20	21		13	1	0	0	0	14	14		3	3	0	0	1	7	8		6	1	1	0	0	8	9	
49	6	0	1	0	56	57		48	8	0	1	0	57	58		30	7	1	0	1	39	41		28	8	2	1	0	39	41	

MOVEMENT 13							MOVEMENT 14							MOVEMENT 15							MOVEMENT 16						
CAR	LGV	OGV1	OGV2	BUS	TOT	PCU	CAR	LGV	OGV1	OGV2	BUS	TOT	PCU	CAR	LGV	OGV1	OGV2	BUS	TOT	PCU	CAR	LGV	OGV1	OGV2	BUS	TOT	PCU
9	3	0	0	0	12	12	19	1	0	0	0	20	20	10	6	0	0	0	16	16	4	2	0	0	0	6	6
11	3	0	0	0	14	14	15	1	2	0	0	18	19	7	7	0	0	0	14	14	8	3	0	0	0	11	11
9	3	1	0	0	13	14	10	0	0	0	0	10	10	4	2	0	0	0	6	6	4	0	0	0	0	4	4
7	1	0	0	0	8	8	8	1	0	0	0	9	9	10	0	0	0	0	10	10	7	0	0	0	0	7	7
36	10	1	0	0	47	48	52	3	2	0	0	57	58	31	15	0	0	0	46	46	23	5	0	0	0	28	28
7	0	0	0	0	7	7	12	1	0	0	0	13	13	3	2	0	0	0	5	5	0	4	0	0	0	4	4
17	2	0	0	0	19	19	9	0	0	0	1	10	11	6	2	0	0	0	8	8	9	2	0	0	0	11	11
20	0	0	0	0	20	20	9	8	1	0	0	18	19	14	0	0	1	1	16	18	8	1	0	0	0	9	9
23	0	1	0	0	24	25	15	1	1	0	0	17	18	12	2	0	0	0	14	14	6	1	1	0	0	8	9
67	2	1	0	0	70	71	45	10	2	0	1	58	60	35	6	0	1	1	43	45	23	8	1	0	0	32	33
14	0	0	0	1	15	16	18	0	0	0	0	18	18	12	3	1	0	0	16	17	4	5	0	0	0	9	9
23	3	0	0	0	26	26	21	2	0	0	0	23	23	14	1	0	0	0	15	15	2	0	0	0	1	3	4
21	2	0	0	0	23	23	18	1	1	0	0	20	21	17	1	0	0	0	18	18	8	0	0	0	0	8	8
8	2	0	0	0	10	10	14	1	1	0	0	16	17	5	2	0	0	1	8	9	9	0	0	0	1	10	11
66	7	0	0	1	74	75	71	4	2	0	0	77	78	48	7	1	0	1	57	59	23	5	0	0	2	30	32
25	1	0	0	0	26	26	17	3	0	0	0	20	20	8	4	0	0	0	12	12	10	3	0	0	0	13	13
16	1	0	0	0	17	17	22	8	0	0	0	30	30	6	2	0	0	0	8	8	9	0	0	0	0	9	9
19	1	0	0	0	20	20	23	2	0	0	0	25	25	4	3	0	0	0	7	7	10	0	0	0	0	10	10
20	2	0	0	0	22	22	12	5	0	0	0	17	17	7	2	0	0	0	9	9	10	2	0	0	0	12	12
80	5	0	0	0	85	85	74	18	0	0	0	92	92	25	11	0	0	0	36	36	39	5	0	0	0	44	44
31	5	0	0	0	36	36	19	0	0	0	0	19	19	20	5	1	0	0	26	27	24	4	1	0	0	29	30
32	3	1	0	0	36	37	27	2	0	0	0	29	29	11	2	1	0	0	14	15	24	7	1	0	0	32	33
23	5	1	0	0	29	30	42	1	1	0	0	44	45	8	1	0	0	0	9	9	24	5	1	0	0	30	31
25	2	0	0	0	27	27	28	2	0	0	0	30	30	11	4	0	0	0	15	15	9	2	0	0	0	11	11
111	15	2	0	0	128	129	116	5	1	0	0	122	123	50	12	2	0	0	64	65	81	18	3	0	0	102	104
29	5	0	0	0	34	34	24	3	0	0	0	27	27	17	2	1	0	0	20	21	9	1	0	0	0	10	10
16	1	0	0	0	17	17	18	0	0	0	0	18	18	17	1	0	0	0	18	18	4	0	1	0	0	5	6
4	1	0	0	0	5	5	19	2	0	0	0	21	21	12	1	0	0	0	13	13	8	0	0	0	0	8	8
17	1	0	0	0	18	18	24	3	0	0	0	27	27	9	0	0	0	0	9	9	11	0	0	0	0	11	11
66	8	0	0	0	74	74	85	8	0	0	0	93	93	55	4	1	0	0	60	61	32	1	1	0	0	34	35
551	63	7	1	1	722	729	773	82	16	0	4	992	1007	343	80	7	1	4	518	529	315	61	6	0	5	457	468

C ==> D							C==> E							C ==> A							C ==> B						
MOVEMENT 17							MOVEMENT 18							MOVEMENT 19							MOVEMENT 20						
CAR	LGV	OGV1	OGV2	BUS	TOT	PCU	CAR	LGV	OGV1	OGV2	BUS	TOT	PCU	CAR	LGV	OGV1	OGV2	BUS	TOT	PCU	CAR	LGV	OGV1	OGV2	BUS	TOT	PCU
0	0	0	0	0	0	0	16	6	0	1	0	23	24	48	15	1	1	1	66	69	1	1	0	0	0	2	2
0	0	0	0	0	0	0	14	0	1	1	1	17	20	66	15	1	1	0	83	85	0	1	0	0	0	1	1
4	0	0	0	0	4	4	31	4	1	0	2	38	41	63	9	1	1	0	74	76	0	1	0	0	0	1	1
3	0	0	0	0	3	3	13	7	0	0	2	22	24	49	4	1	1	3	58	63	5	1	1	0	0	7	8
7	0	0	0	0	7	7	74	17	2	2	5	100	109	226	43	4	4	4	281	292	6	4	1	0	0	11	12
4	1	0	0	0	5	5	28	4	4	0	0	36	38	46	16	0	0	0	62	62	3	1	0	1	0	5	6
4	0	0	0	0	4	4	42	4	4	0	1	51	54	51	6	1	0	0	58	59	5	1	1	0	0	7	8
7	3	0	0	0	10	10	49	7	1	0	1	58	60	41	9	2	2	0	54	58	9	0	1	1	0	11	13
16	2	2	0	2	22	25	59	6	0	0	0	65	65	35	7	1	1	0	44	46	13	2	0	0	0	15	15
31	6	2	0	2	41	44	178	21	9	0	2	210	217	173	38	4	3	0	218	224	30	4	2	2	0	38	42
16	2	0	0	0	18	18	49	5	0	0	1	55	56	30	9	2	0	0	41	42	13	2	0	0	0	15	15
3	0	0	0	0	3	3	40	9	2	0	1	52	54	24	9	0	0	0	33	33	7	2	0	0	0	9	9
4	2	1	0	0	7	8	25	0	1	0	1	27	29	30	5	1	2	0	38	41	3	2	0	0	0	5	5
8	4	1	0	0	13	14	19	7	3	2	0	31	35	18	5	1	2	0	26	29	2	1	0	0	0	3	3
31	8	2	0	0	41	42	133	21	6	2	3	165	174	102	28	4	4	0	138	145	25	7	0	0	0	32	32
2	1	0	0	0	3	3	19	5	1	0	0	25	26	33	8	0	0	0	41	41	1	0	0	0	0	1	1
3	0	0	0	0	3	3	21	4	1	0	0	26	27	16	4	4	1	0	25	28	1	0	1	0	1	3	5
4	1	0	0	0	5	5	29	3	0	0	0	32	32	24	4	1	0	0	29	30	1	1	1	0	0	3	4
2	0	1	0	0	3	4	14	5	2	1	0	22	24	12	2	1	0	0	15	16	5	1	0	0	0	6	6
11	2	1	0	0	14	15	83	17	4	1	0	105	108	85	18	6	1	0	110	114	8	2	2	0	1	13	15
2	0	0	0	0	2	2	15	5	0	0	0	20	20	18	5	2	2	1	28	33	1	0	1	0	0	2	3
3	0	0	0	0	3	3	19	1	0	0	0	20	20	20	5	2	4	0	31	37	2	0	1	0	0	3	4
4	1	0	0	0	5	5	22	5	0	0	1	28	29	7	3	1	1	0	12	14	2	1	0	0	0	3	3
3	0	0	0	0	3	3	20	2	0	0	0	22	22	21	2	2	3	0	28	33	0	1	1	0	0	2	3
12	1	0	0	0	13	13	76	13	0	0	1	90	91	66	15	7	10	1	99	117	5	2	3	0	0	10	12
2	0	0	0	0	2	2	21	7	3	0	0	31	33	21	1	1	4	0	27	33	6	0	0	0	0	6	6
1	0	0	0	0	1	1	21	6	1	0	0	28	29	15	2	0	0	1	18	19	3	0	0	0	0	3	3
2	1	0	0	0	3	3	26	5	1	1	0	33	35	11	4	2	3	0	20	25	1	1	1	0	0	3	4
2	1	0	0	0	3	3	22	3	0	0	0	25	25	23	2	1	3	0	29	33	4	1	0	0	0	5	5
7	2	0	0	0	9	9	90	21	5	1	0	117	121	70	9	4	10	1	94	110	14	2	1	0	0	17	18

MOVEMENT 17							MOVEMENT 18							MOVEMENT 19								MOVEMENT 20							
CAR	LGV	OGV1	OGV2	BUS	TOT	PCU	CAR	LGV	OGV1	OGV2	BUS	TOT	PCU	CAR	LGV	OGV1	OGV2	BUS	TOT	PCU	CAR	LGV	OGV1	OGV2	BUS	TOT	PCU		
5	1	0	0	0	6	6	30	8	0	3	1	42	47	25	1	1	1	0	28	30	1	1	0	0	1	3	4		
5	0	0	0	0	5	5	30	3	1	0	0	34	35	18	1	1	1	0	21	23	3	0	0	1	0	4	5		
6	0	0	0	1	7	8	27	6	0	0	2	35	37	12	4	1	0	0	17	18	4	0	0	0	0	4	4		
4	2	0	0	0	6	6	32	5	2	0	0	39	40	12	8	1	0	0	21	22	1	0	0	0	0	1	1		
20	3	0	0	1	24	25	119	22	3	3	3	150	158	67	14	4	2	0	87	92	9	1	0	1	1	12	14		
5	0	0	0	0	5	5	21	6	1	1	0	29	31	26	9	2	0	1	38	40	3	0	0	0	0	3	3		
4	0	1	0	0	5	6	29	6	1	0	0	36	37	17	3	3	2	1	26	31	4	3	1	0	0	8	9		
2	1	0	0	0	3	3	24	6	0	0	3	33	36	21	7	2	1	0	31	33	7	0	0	0	1	8	9		
6	0	1	0	0	7	8	28	5	1	2	0	36	39	14	3	1	0	0	18	19	2	0	0	0	0	2	2		
17	1	2	0	0	20	21	102	23	3	3	3	134	142	78	22	8	3	2	113	123	16	3	1	0	1	21	23		
5	0	0	0	0	5	5	28	4	1	0	0	33	34	16	4	1	2	0	23	26	3	0	0	0	0	3	3		
8	1	0	0	0	9	9	39	1	0	0	0	40	40	25	4	1	2	0	32	35	14	3	0	0	0	17	17		
8	0	0	0	0	8	8	35	2	1	0	1	39	41	21	8	0	3	0	32	36	9	1	0	0	0	10	10		
3	1	0	0	1	5	6	32	7	0	0	0	39	39	15	5	1	0	0	21	22	2	1	0	1	0	4	5		
24	2	0	0	1	27	28	134	14	2	0	1	151	153	77	21	3	7	0	108	119	28	5	0	1	0	34	35		
11	3	0	0	0	14	14	28	1	0	1	0	30	31	25	6	3	0	2	36	40	9	3	1	0	0	13	14		
9	2	0	0	0	11	11	32	7	1	0	1	41	43	24	3	1	1	0	29	31	8	2	0	0	0	10	10		
12	3	0	0	0	15	15	33	4	1	0	1	39	41	27	6	1	2	0	36	39	5	2	0	0	0	7	7		
6	0	0	0	0	6	6	41	6	0	1	0	48	49	24	6	0	0	1	31	32	3	1	0	0	0	4	4		
38	8	0	0	0	46	46	134	18	2	2	2	158	164	100	21	5	3	3	132	141	25	8	1	0	0	34	35		
19	1	0	0	1	21	22	23	4	1	0	0	28	29	41	9	1	0	0	51	52	8	2	0	0	0	10	10		
7	1	1	0	0	9	10	58	8	0	1	0	67	68	38	8	0	0	1	47	48	4	0	0	0	0	4	4		
10	0	0	0	0	10	10	26	11	2	1	0	40	42	34	6	0	0	0	40	40	8	0	0	0	0	8	8		
8	1	0	0	0	9	9	82	10	1	0	1	94	96	21	2	0	1	0	24	25	10	1	0	0	0	11	11		
44	3	1	0	1	49	51	189	33	4	2	1	229	235	134	25	1	1	1	162	165	30	3	0	0	0	33	33		
10	5	0	0	0	15	15	34	2	1	0	0	37	38	29	1	0	0	0	30	30	3	3	0	0	0	6	6		
5	0	0	0	0	5	5	34	3	0	0	0	37	37	21	6	0	0	1	28	29	8	5	0	0	0	13	13		
2	1	0	0	0	3	3	30	2	0	0	0	32	32	28	7	0	2	0	37	40	7	0	0	0	0	7	7		
5	0	1	0	0	6	7	31	6	0	0	0	37	37	18	4	0	1	0	23	24	7	1	0	0	0	8	8		
22	6	1	0	0	29	30	129	13	1	0	0	143	144	96	18	0	3	1	118	123	25	9	0	0	0	34	34		
245	39	9	0	5	320	330	1275	199	36	15	20	1752	1814	1138	248	39	31	11	1660	1764	202	46	7	4	3	289	303		

	C=> A							C=> B							B => C						
TIME	MOVEMENT 1						PCU	MOVEMENT 2						PCU	MOVEMENT 3						PCU
	CAR	LGV	OGV1	OGV2	BUS	TOT		CAR	LGV	OGV1	OGV2	BUS	TOT		CAR	LGV	OGV1	OGV2	BUS	TOT	
07:00	11	0	0	1	0	12	13	0	0	0	0	0	0	0	5	1	0	0	0	6	6
07:15	11	3	0	0	0	14	14	1	0	0	0	0	1	1	1	1	0	0	0	2	2
07:30	16	3	2	0	0	21	22	1	0	0	0	0	1	1	1	0	0	0	0	1	1
07:45	27	4	1	0	0	32	33	2	0	0	0	0	2	2	6	0	0	0	0	6	6
H/TOT	65	10	3	1	0	79	82	4	0	0	0	0	4	4	13	2	0	0	0	15	15
08:00	23	5	1	1	0	30	32	2	0	0	0	0	2	2	7	0	0	0	0	7	7
08:15	59	11	0	0	0	70	70	4	1	0	0	0	5	5	4	0	0	0	0	4	4
08:30	52	4	0	0	1	57	58	0	0	0	0	0	0	0	8	1	0	0	0	9	9
08:45	66	6	1	0	0	73	74	1	0	0	0	0	1	1	9	1	0	0	0	10	10
H/TOT	200	26	2	1	1	230	233	7	1	0	0	0	8	8	28	2	0	0	0	30	30
09:00	47	8	0	0	1	56	57	3	0	0	0	0	3	3	3	0	0	0	0	3	3
09:15	57	10	2	0	1	70	72	2	0	0	0	0	2	2	2	1	0	0	0	3	3
09:30	39	9	1	0	0	49	50	2	0	0	0	0	2	2	3	0	0	0	0	3	3
09:45	38	1	4	0	0	43	45	2	0	0	0	0	2	2	2	0	0	0	0	2	2
H/TOT	181	28	7	0	2	218	224	9	0	0	0	0	9	9	10	1	0	0	0	11	11
10:00	30	8	0	1	0	39	40	0	0	0	0	0	0	0	5	0	0	0	0	5	5
10:15	25	5	1	0	0	31	32	2	0	0	0	0	2	2	0	0	0	0	0	0	0
10:30	26	6	3	0	1	36	39	0	0	0	0	0	0	0	3	1	0	0	0	4	4
10:45	40	6	1	0	1	48	50	1	0	0	0	0	1	1	2	0	0	0	0	2	2
H/TOT	121	25	5	1	2	154	160	3	0	0	0	0	3	3	10	1	0	0	0	11	11
11:00	34	6	0	1	0	41	42	1	0	0	0	0	1	1	2	0	0	0	0	2	2
11:15	24	5	2	0	0	31	32	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:30	26	10	2	0	0	38	39	1	0	0	0	0	1	1	0	0	0	0	0	0	0
11:45	38	5	1	0	0	44	45	0	0	0	0	0	0	0	1	1	0	0	0	2	2
H/TOT	122	26	5	1	0	154	158	2	0	0	0	0	2	2	3	1	0	0	0	4	4
12:00	34	7	3	0	0	44	46	1	0	0	0	0	1	1	2	0	0	0	0	2	2
12:15	30	7	0	0	0	37	37	2	1	0	0	0	3	3	3	0	0	0	0	3	3
12:30	35	5	1	0	0	41	42	1	1	0	0	0	2	2	3	0	0	0	0	3	3
12:45	41	4	2	0	1	48	50	5	0	0	0	0	5	5	0	0	0	0	0	0	0
H/TOT	140	23	6	0	1	170	174	9	2	0	0	0	11	11	8	0	0	0	0	8	8

TIME	MOVEMENT 1					TOT	PCU	MOVEMENT 2					TOT	PCU	MOVEMENT 3					TOT	PCU
	CAR	LGV	OGV1	OGV2	BUS			CAR	LGV	OGV1	OGV2	BUS			CAR	LGV	OGV1	OGV2	BUS		
13:00	34	9	1	0	0	44	45	1	0	0	0	0	1	1	3	0	0	0	0	3	3
13:15	35	3	2	0	0	40	41	1	1	0	0	0	2	2	2	0	0	0	0	2	2
13:30	42	6	1	0	1	50	52	5	0	0	0	0	5	5	1	1	0	0	0	2	2
13:45	29	4	1	1	1	36	39	1	1	0	0	0	2	2	7	0	0	0	0	7	7
H/TOT	140	22	5	1	2	170	176	8	2	0	0	0	10	10	13	1	0	0	0	14	14
14:00	26	5	3	0	0	34	36	3	0	0	0	0	3	3	3	1	0	0	0	4	4
14:15	41	5	1	1	0	48	50	2	0	0	0	0	2	2	4	0	0	0	0	4	4
14:30	32	8	3	0	0	43	45	1	0	0	0	0	1	1	4	0	0	0	0	4	4
14:45	33	5	2	0	0	40	41	0	0	0	0	0	0	0	1	1	0	0	0	2	2
H/TOT	132	23	9	1	0	165	171	6	0	0	0	0	6	6	12	2	0	0	0	14	14
15:00	41	5	1	0	1	48	50	5	0	0	0	0	5	5	3	0	0	0	0	3	3
15:15	35	9	0	0	0	44	44	3	0	0	0	0	3	3	5	0	0	0	0	5	5
15:30	37	11	0	0	1	49	50	3	0	0	0	0	3	3	1	0	0	0	0	1	1
15:45	57	5	0	0	2	64	66	2	1	0	0	0	3	3	4	0	0	0	0	4	4
H/TOT	170	30	1	0	4	205	210	13	1	0	0	0	14	14	13	0	0	0	0	13	13
16:00	56	10	1	0	0	67	68	3	0	0	0	0	3	3	5	0	0	0	0	5	5
16:15	47	7	2	0	0	56	57	5	0	0	0	0	5	5	4	0	0	0	0	4	4
16:30	40	7	2	1	0	50	52	5	0	0	0	0	5	5	1	0	0	0	0	1	1
16:45	50	9	1	0	1	61	63	3	0	0	0	0	3	3	2	0	0	0	0	2	2
H/TOT	193	33	6	1	1	234	239	16	0	0	0	0	16	16	12	0	0	0	0	12	12
17:00	45	5	0	0	1	51	52	6	0	0	0	0	6	6	5	0	0	0	0	5	5
17:15	42	9	0	0	0	51	51	7	0	0	0	0	7	7	8	0	0	0	0	8	8
17:30	41	11	2	0	0	54	55	5	0	0	0	0	5	5	5	0	0	0	0	5	5
17:45	28	4	1	0	0	33	34	5	1	0	0	0	6	6	4	1	0	0	0	5	5
H/TOT	156	29	3	0	1	189	192	23	1	0	0	0	24	24	22	1	0	0	0	23	23
18:00	35	3	0	0	0	38	38	7	0	0	0	0	7	7	1	0	0	0	0	1	1
18:15	30	1	1	0	0	32	33	3	0	0	0	0	3	3	2	0	0	0	0	2	2
18:30	24	6	0	0	1	31	32	4	0	0	0	0	4	4	2	0	0	0	0	2	2
18:45	21	8	0	0	0	29	29	3	0	0	0	0	3	3	8	0	0	0	0	8	8
H/TOT	110	18	1	0	1	130	132	17	0	0	0	0	17	17	13	0	0	0	0	13	13
P/TOT	1468	244	42	6	14	1774	2149	106	5	0	0	0	111	124	146	10	0	0	0	156	168

B => A							A=>B								A=>C							
MOVEMENT 4							MOVEMENT 5							MOVEMENT 6								
CAR	LGV	OGV1	OGV2	BUS	TOT	PCU	CAR	LGV	OGV1	OGV2	BUS	TOT	PCU	CAR	LGV	OGV1	OGV2	BUS	TOT	PCU		
2	1	0	0	0	3	3	2	0	0	0	0	2	2	25	2	2	0	0	29	30		
1	1	0	0	0	2	2	1	1	0	0	0	2	2	32	5	2	0	0	39	40		
5	0	0	0	0	5	5	3	0	0	0	0	3	3	24	3	1	0	0	28	29		
1	0	0	0	0	1	1	0	0	0	0	0	0	0	31	8	1	0	0	40	41		
9	2	0	0	0	11	11	6	1	0	0	0	7	7	112	18	6	0	0	136	139		
3	0	0	0	0	3	3	2	0	0	0	0	2	2	27	2	2	0	0	31	32		
5	1	0	0	0	6	6	2	1	0	0	0	3	3	55	5	0	0	1	61	62		
7	0	0	0	0	7	7	2	0	0	0	0	2	2	42	5	0	0	1	48	49		
7	1	0	0	0	8	8	3	0	0	0	0	3	3	49	9	3	0	1	62	65		
22	2	0	0	0	24	24	9	1	0	0	0	10	10	173	21	5	0	3	202	208		
2	1	0	0	0	3	3	4	2	0	0	0	6	6	46	10	1	0	2	59	62		
1	1	0	0	0	2	2	5	0	0	0	0	5	5	43	6	2	0	2	53	56		
1	1	0	0	0	2	2	4	1	0	0	0	5	5	35	2	2	0	0	39	40		
5	0	0	0	0	5	5	1	1	0	0	0	2	2	39	3	2	0	0	44	45		
9	3	0	0	0	12	12	14	4	0	0	0	18	18	163	21	7	0	4	195	203		
1	1	0	0	0	2	2	1	0	0	0	0	1	1	21	3	1	0	0	25	26		
3	1	0	0	0	4	4	3	2	0	0	0	5	5	39	12	1	1	1	54	57		
1	0	0	0	0	1	1	4	0	0	0	0	4	4	29	11	0	1	0	41	42		
2	0	0	0	0	2	2	2	0	0	0	0	2	2	31	3	1	0	0	35	36		
7	2	0	0	0	9	9	10	2	0	0	0	12	12	120	29	3	2	1	155	160		
1	0	0	0	0	1	1	2	0	0	0	0	2	2	28	5	2	0	0	35	36		
4	0	0	0	0	4	4	2	0	0	0	0	2	2	25	3	0	0	0	28	28		
2	0	0	0	0	2	2	1	0	0	0	0	1	1	36	2	0	0	0	38	38		
2	0	0	0	0	2	2	3	1	0	0	0	4	4	28	6	1	0	0	35	36		
9	0	0	0	0	9	9	8	1	0	0	0	9	9	117	16	3	0	0	136	138		
1	1	0	0	0	2	2	2	1	0	0	0	3	3	32	4	1	2	0	39	42		
1	1	0	0	0	2	2	3	0	0	0	0	3	3	28	8	2	0	1	39	41		
2	1	0	0	0	3	3	0	0	0	0	0	0	0	39	4	5	0	0	48	51		
0	0	0	0	0	0	0	2	1	0	0	0	3	3	32	1	1	0	0	34	35		
4	3	0	0	0	7	7	7	2	0	0	0	9	9	131	17	9	2	1	160	168		

MOVEMENT 4							MOVEMENT 5							MOVEMENT 6						
CAR	LGV	OGV1	OGV2	BUS	TOT	PCU	CAR	LGV	OGV1	OGV2	BUS	TOT	PCU	CAR	LGV	OGV1	OGV2	BUS	TOT	PCU
1	1	0	0	0	2	2	1	0	0	0	0	1	1	40	5	0	0	0	45	45
1	0	0	0	0	1	1	1	1	0	0	0	2	2	36	4	1	0	0	41	42
3	0	0	0	0	3	3	4	0	0	0	0	4	4	32	6	1	0	0	39	40
1	1	0	0	0	2	2	2	0	0	0	0	2	2	33	1	1	1	1	37	40
6	2	0	0	0	8	8	8	1	0	0	0	9	9	141	16	3	1	1	162	166
1	0	0	0	0	1	1	2	0	0	0	0	2	2	34	5	1	1	0	41	43
1	0	0	0	0	1	1	1	1	0	0	0	2	2	38	9	2	0	0	49	50
2	0	0	0	1	3	4	5	0	0	0	1	6	7	31	4	0	0	0	35	35
0	0	0	0	0	0	0	4	0	0	0	0	4	4	43	6	4	0	0	53	55
4	0	0	0	1	5	6	12	1	0	0	1	14	15	146	24	7	1	0	178	183
0	0	0	0	0	0	0	3	0	0	0	0	3	3	35	5	1	0	0	41	42
1	0	0	0	0	1	1	4	0	0	0	0	4	4	29	7	2	0	2	40	43
3	0	0	0	1	4	5	2	0	0	0	1	3	4	34	7	0	0	0	41	41
4	0	0	0	0	4	4	1	0	0	0	0	1	1	32	6	0	0	2	40	42
8	0	0	0	1	9	10	10	0	0	0	1	11	12	130	25	3	0	4	162	168
4	1	0	0	0	5	5	8	0	0	0	0	8	8	77	3	0	0	0	80	80
1	0	0	0	0	1	1	6	0	0	0	0	6	6	67	4	0	0	0	71	71
2	1	0	0	0	3	3	3	1	0	0	0	4	4	45	7	0	0	0	52	52
2	1	0	0	0	3	3	3	0	0	0	0	3	3	53	8	1	1	1	64	67
9	3	0	0	0	12	12	20	1	0	0	0	21	21	242	22	1	1	1	267	270
2	0	0	0	0	2	2	3	0	0	0	0	3	3	75	7	1	1	1	85	88
4	0	0	0	0	4	4	4	0	0	0	0	4	4	57	6	0	0	0	63	63
4	0	0	0	0	4	4	2	1	0	0	0	3	3	59	10	0	0	0	69	69
4	0	0	0	0	4	4	0	0	0	0	0	0	0	58	7	0	0	0	65	65
14	0	0	0	0	14	14	9	1	0	0	0	10	10	249	30	1	1	1	282	285
2	0	0	0	0	2	2	4	1	0	0	0	5	5	57	9	1	0	1	68	70
1	0	0	0	0	1	1	3	0	0	0	0	3	3	49	5	0	0	0	54	54
1	0	0	0	0	1	1	2	1	0	0	0	3	3	40	7	0	0	2	49	51
2	0	0	0	0	2	2	0	0	0	0	0	0	0	42	2	0	0	0	44	44
6	0	0	0	0	6	6	9	2	0	0	0	11	11	188	23	1	0	3	215	219
94	14	0	0	2	110	128	107	14	0	0	2	123	143	1664	229	37	6	18	1954	2304

	C=> A							C=> B							B => C						
TIME	MOVEMENT 1						PCU	MOVEMENT 2						PCU	MOVEMENT 3						PCU
	CAR	LGV	OGV1	OGV2	BUS	TOT		CAR	LGV	OGV1	OGV2	BUS	TOT		CAR	LGV	OGV1	OGV2	BUS	TOT	
07:00	1	0	0	0	0	1	1	11	2	0	1	0	14	15	7	1	0	0	0	8	8
07:15	0	0	0	0	0	0	0	8	3	0	0	0	11	11	8	1	2	0	0	11	12
07:30	5	0	0	0	0	5	5	9	0	2	0	0	11	12	2	0	1	0	0	3	4
07:45	4	1	0	0	0	5	5	13	5	0	0	0	18	18	4	5	0	0	0	9	9
H/TOT	10	1	0	0	0	11	11	41	10	2	1	0	54	56	21	7	3	0	0	31	33
08:00	3	1	0	0	0	4	4	11	4	2	0	0	17	18	7	1	0	0	0	8	8
08:15	2	0	0	0	0	2	2	24	7	0	0	0	31	31	10	0	0	0	0	10	10
08:30	4	0	0	0	0	4	4	21	2	0	0	1	24	25	7	0	0	0	1	8	9
08:45	10	0	0	0	0	10	10	14	4	0	0	0	18	18	4	6	1	0	0	11	12
H/TOT	19	1	0	0	0	20	20	70	17	2	0	1	90	92	28	7	1	0	1	37	39
09:00	5	1	0	0	0	6	6	19	2	0	0	0	21	21	11	4	0	0	1	16	17
09:15	12	0	0	0	0	12	12	18	4	0	0	1	23	24	10	1	0	0	0	11	11
09:30	4	0	0	0	0	4	4	19	4	1	0	0	24	25	8	1	0	0	0	9	9
09:45	11	0	0	0	0	11	11	17	0	0	0	0	17	17	9	0	0	0	0	9	9
H/TOT	32	1	0	0	0	33	33	73	10	1	0	1	85	87	38	6	0	0	1	45	46
10:00	7	0	0	0	0	7	7	10	2	0	0	0	12	12	4	1	0	0	0	5	5
10:15	2	1	0	0	0	3	3	11	3	0	0	0	14	14	3	1	0	0	0	4	4
10:30	4	0	0	0	0	4	4	12	4	1	0	1	18	20	3	1	0	0	0	4	4
10:45	2	1	0	0	0	3	3	13	4	0	0	0	17	17	9	2	0	0	0	11	11
H/TOT	15	2	0	0	0	17	17	46	13	1	0	1	61	63	19	5	0	0	0	24	24
11:00	4	0	0	0	0	4	4	13	4	0	0	0	17	17	8	1	0	0	0	9	9
11:15	6	0	0	0	0	6	6	12	2	0	0	0	14	14	5	0	0	0	0	5	5
11:30	6	1	0	0	0	7	7	11	4	1	0	0	16	17	9	1	0	0	0	10	10
11:45	11	2	0	0	0	13	13	11	3	0	0	0	14	14	7	1	0	0	0	8	8
H/TOT	27	3	0	0	0	30	30	47	13	1	0	0	61	62	29	3	0	0	0	32	32
12:00	6	0	0	0	0	6	6	11	1	1	0	0	13	14	3	2	0	0	0	5	5
12:15	4	0	0	0	0	4	4	6	4	0	0	0	10	10	1	4	0	0	0	5	5
12:30	5	0	0	0	0	5	5	18	3	1	0	0	22	23	8	0	0	0	0	8	8
12:45	2	0	0	0	0	2	2	18	5	0	0	0	23	23	7	1	0	0	0	8	8
H/TOT	17	0	0	0	0	17	17	53	13	2	0	0	68	69	19	7	0	0	0	26	26

TIME	MOVEMENT 1					TOT	PCU	MOVEMENT 2					TOT	PCU	MOVEMENT 3					TOT	PCU
	CAR	LGV	OGV1	OGV2	BUS			CAR	LGV	OGV1	OGV2	BUS			CAR	LGV	OGV1	OGV2	BUS		
13:00	7	0	0	0	0	7	7	9	2	1	0	0	12	13	8	0	0	0	0	8	8
13:15	2	0	1	0	0	3	4	12	0	0	0	0	12	12	1	0	0	0	0	1	1
13:30	5	0	0	0	0	5	5	17	5	0	0	0	22	22	8	2	1	0	0	11	12
13:45	5	0	0	0	0	5	5	15	1	0	0	1	17	18	4	0	0	0	0	4	4
H/TOT	19	0	1	0	0	20	21	53	8	1	0	1	63	65	21	2	1	0	0	24	25
14:00	2	0	1	0	0	3	4	11	1	1	0	0	13	14	3	3	0	0	0	6	6
14:15	5	0	0	0	0	5	5	19	1	1	0	0	21	22	1	2	0	0	0	3	3
14:30	0	0	0	0	0	0	0	10	4	1	0	1	16	18	4	0	0	0	0	4	4
14:45	5	0	0	0	0	5	5	12	3	1	0	0	16	17	6	3	1	0	0	10	11
H/TOT	12	0	1	0	0	13	14	52	9	4	0	1	66	69	14	8	1	0	0	23	24
15:00	6	0	0	0	0	6	6	13	4	0	0	0	17	17	10	1	0	0	0	11	11
15:15	3	0	0	0	0	3	3	17	2	0	0	0	19	19	8	0	0	0	1	9	10
15:30	4	0	0	0	0	4	4	12	3	0	0	1	16	17	9	0	0	0	1	10	11
15:45	5	0	0	0	0	5	5	12	4	0	0	2	18	20	7	2	0	0	0	9	9
H/TOT	18	0	0	0	0	18	18	54	13	0	0	3	70	73	34	3	0	0	2	39	41
16:00	14	0	0	0	0	14	14	17	3	0	0	0	20	20	9	1	0	0	0	10	10
16:15	5	0	0	0	0	5	5	17	4	1	0	0	22	23	17	2	0	0	0	19	19
16:30	5	1	0	0	0	6	6	16	3	2	0	0	21	22	7	1	0	0	0	8	8
16:45	6	0	0	0	0	6	6	17	4	0	0	0	21	21	6	3	0	0	0	9	9
H/TOT	30	1	0	0	0	31	31	67	14	3	0	0	84	86	39	7	0	0	0	46	46
17:00	5	0	0	0	0	5	5	18	1	0	0	0	19	19	11	0	1	0	0	12	13
17:15	5	0	0	0	0	5	5	26	3	0	0	0	29	29	11	0	0	0	0	11	11
17:30	4	1	0	0	0	5	5	20	6	1	0	0	27	28	5	2	0	0	0	7	7
17:45	6	0	0	0	0	6	6	14	2	0	0	0	16	16	11	1	0	0	0	12	12
H/TOT	20	1	0	0	0	21	21	78	12	1	0	0	91	92	38	3	1	0	0	42	43
18:00	4	0	0	0	0	4	4	17	1	0	0	0	18	18	5	2	0	0	0	7	7
18:15	3	0	0	0	0	3	3	22	1	1	0	0	24	25	10	2	0	0	0	12	12
18:30	4	0	0	0	0	4	4	13	5	0	0	0	18	18	7	3	0	0	0	10	10
18:45	2	0	0	0	0	2	2	14	5	0	0	0	19	19	5	1	0	0	0	6	6
H/TOT	13	0	0	0	0	13	13	66	12	1	0	0	79	80	27	8	0	0	0	35	35
P/TOT	188	7	2	0	0	197	245	600	118	16	1	8	743	891	279	56	7	0	4	346	412

B => A								A=>B								A=>C								
MOVEMENT 4								MOVEMENT 5								MOVEMENT 6								
CAR	LGV	OGV1	OGV2	BUS	TOT	PCU		CAR	LGV	OGV1	OGV2	BUS	TOT	PCU		CAR	LGV	OGV1	OGV2	BUS	TOT	PCU		
0	0	0	0	0	0	0		0	0	0	0	0	0	0		19	1	3	0	0	23	25		
0	0	0	0	0	0	0		0	1	0	0	0	1	1		23	5	0	0	0	28	28		
1	0	0	0	0	1	1		1	0	1	0	0	2	3		23	3	0	1	0	27	28		
1	0	0	0	0	1	1		0	1	0	0	0	1	1		21	2	1	0	0	24	25		
2	0	0	0	0	2	2		1	2	1	0	0	4	5		86	11	4	1	0	102	105		
0	0	0	0	0	0	0		0	0	0	0	0	0	0		19	0	1	0	0	20	21		
0	0	0	0	0	0	0		4	2	1	0	0	7	8		42	7	0	0	1	50	51		
0	0	0	0	0	0	0		4	1	0	0	0	5	5		38	3	0	0	1	42	43		
0	0	0	0	0	0	0		0	0	0	0	0	0	0		35	6	1	0	0	42	43		
0	0	0	0	0	0	0		8	3	1	0	0	12	13		134	16	2	0	2	154	157		
0	0	0	0	0	0	0		1	1	0	0	0	2	2		36	9	0	0	0	45	45		
1	0	0	0	0	1	1		4	0	0	0	0	4	4		26	4	1	0	1	32	34		
1	0	0	0	0	1	1		2	0	0	0	0	2	2		32	3	1	0	0	36	37		
1	0	0	0	0	1	1		2	0	0	0	0	2	2		17	3	1	0	0	21	22		
3	0	0	0	0	3	3		9	1	0	0	0	10	10		111	19	3	0	1	134	137		
3	0	0	0	0	3	3		5	1	0	0	0	6	6		14	2	0	0	0	16	16		
1	1	0	0	0	2	2		3	2	0	0	0	5	5		27	4	1	0	0	32	33		
5	1	0	0	0	6	6		14	0	0	0	0	14	14		27	7	0	0	0	34	34		
2	0	0	0	0	2	2		3	0	0	0	0	3	3		23	0	0	0	0	23	23		
11	2	0	0	0	13	13		25	3	0	0	0	28	28		91	13	1	0	0	105	106		
1	0	0	0	0	1	1		2	0	0	0	0	2	2		17	3	2	0	0	22	23		
0	0	0	0	0	0	0		9	2	0	0	0	11	11		17	2	0	0	0	19	19		
3	0	0	0	0	3	3		5	0	0	0	0	5	5		23	3	0	0	1	27	28		
1	0	0	0	0	1	1		6	1	0	0	0	7	7		23	5	0	0	0	28	28		
5	0	0	0	0	5	5		22	3	0	0	0	25	25		80	13	2	0	1	96	98		
1	0	0	0	0	1	1		4	1	0	0	0	5	5		26	4	2	0	0	32	33		
1	0	0	0	0	1	1		3	0	0	0	0	3	3		21	1	1	0	0	23	24		
0	0	0	0	0	0	0		2	1	0	0	0	3	3		31	1	4	0	0	36	38		
0	0	0	0	0	0	0		4	0	0	0	0	4	4		20	0	0	0	0	20	20		
2	0	0	0	0	2	2		13	2	0	0	0	15	15		98	6	7	0	0	111	115		

MOVEMENT 4							MOVEMENT 5							MOVEMENT 6						
CAR	LGV	OGV1	OGV2	BUS	TOT	PCU	CAR	LGV	OGV1	OGV2	BUS	TOT	PCU	CAR	LGV	OGV1	OGV2	BUS	TOT	PCU
0	0	0	0	0	0	0	4	0	0	0	0	4	4	25	1	0	0	0	26	26
1	0	0	0	0	1	1	2	1	0	0	0	3	3	33	5	0	0	0	38	38
0	0	0	0	0	0	0	2	0	0	0	0	2	2	24	3	0	0	0	27	27
0	0	0	0	0	0	0	1	0	0	0	0	1	1	23	0	0	0	0	23	23
1	0	0	0	0	1	1	9	1	0	0	0	10	10	105	9	0	0	0	114	114
0	0	0	0	0	0	0	5	0	0	0	0	5	5	23	5	1	0	0	29	30
1	0	0	0	0	1	1	5	0	0	0	0	5	5	27	5	0	0	0	32	32
0	0	0	0	0	0	0	3	0	0	0	0	3	3	30	2	1	0	0	33	34
2	0	0	0	0	2	2	4	1	0	0	0	5	5	27	2	1	0	0	30	31
3	0	0	0	0	3	3	17	1	0	0	0	18	18	107	14	3	0	0	124	126
0	0	0	0	0	0	0	5	0	0	0	0	5	5	17	1	0	0	0	18	18
0	0	0	0	0	0	0	5	0	0	0	0	5	5	23	6	0	0	1	30	31
0	0	0	0	0	0	0	7	0	0	0	0	7	7	23	4	0	0	1	28	29
0	0	0	0	0	0	0	8	0	0	0	0	8	8	28	3	0	0	2	33	35
0	0	0	0	0	0	0	25	0	0	0	0	25	25	91	14	0	0	4	109	113
1	0	0	0	0	1	1	2	0	1	0	0	3	4	48	0	0	0	0	48	48
0	0	0	0	0	0	0	4	1	0	0	0	5	5	34	2	0	0	0	36	36
2	0	0	0	0	2	2	4	0	0	0	0	4	4	24	4	0	0	2	30	32
1	0	0	0	0	1	1	5	0	0	0	0	5	5	40	4	0	0	0	44	44
4	0	0	0	0	4	4	15	1	1	0	0	17	18	146	10	0	0	2	158	160
0	0	0	0	0	0	0	2	0	0	0	0	2	2	38	2	0	0	0	40	40
0	0	0	0	0	0	0	7	0	0	0	0	7	7	35	3	0	0	0	38	38
0	0	0	0	0	0	0	3	0	0	0	0	3	3	30	4	0	0	0	34	34
0	0	0	0	0	0	0	4	0	0	0	0	4	4	28	6	0	0	0	34	34
0	0	0	0	0	0	0	16	0	0	0	0	16	16	131	15	0	0	0	146	146
0	0	0	0	0	0	0	4	1	0	0	0	5	5	37	7	0	0	0	44	44
0	0	0	0	0	0	0	5	1	0	0	0	6	6	29	1	1	0	0	31	32
0	0	0	0	0	0	0	0	1	0	0	0	1	1	28	4	0	0	0	32	32
0	0	0	0	0	0	0	6	1	0	0	0	7	7	24	1	0	0	0	25	25
0	0	0	0	0	0	0	15	4	0	0	0	19	19	118	13	1	0	0	132	133
24	2	0	0	0	26	33	140	16	3	0	0	159	201	1120	134	14	1	9	1278	1508

Appendix B. JUNCTION 10 ARCADY DETAILED OUTPUT

Junctions 10		
ARCADY 10 - Roundabout Module		
Version: 10.0.3.1598		
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Filename: J1 Roundabout.j10

Path: J:\Projects\11942 - Housing Development at Cosmona, Loughrea, Co. Galway\05-Design\01-Calculations\Traffic

Report generation date: 27/09/2024 12:24:23

-
- »2024, AM
 - »2024, PM
 - »2026 Base, AM
 - »2026 Base + Dev, AM
 - »2041 Base , AM
 - »2041 Base + Dev , AM
 - »2026 Base, PM
 - »2026 Base + Dev, PM
 - »2041 Base , PM
 - »2041 Base + Dev , PM

Summary of junction performance

	AM					PM				
	Set ID	Queue (PCU)	Delay (s)	RFC	LOS	Set ID	Queue (PCU)	Delay (s)	RFC	LOS
	2024									
Arm 1	D1	0.5	4.00	0.35	A	D2	0.8	4.56	0.43	A
Arm 2		0.4	5.07	0.29	A		0.2	4.55	0.15	A
Arm 3		1.4	5.66	0.58	A		0.5	3.53	0.34	A
Arm 4		0.6	5.20	0.37	A		0.6	4.61	0.36	A
Arm 5		0.5	3.58	0.34	A		0.4	3.18	0.30	A
	2026 Base									
Arm 1	D3	0.6	4.23	0.37	A	D7	0.9	4.87	0.46	A
Arm 2		0.3	4.66	0.20	A		0.2	4.74	0.16	A
Arm 3		1.5	5.75	0.59	A		0.3	3.04	0.22	A
Arm 4		0.7	5.56	0.40	A		0.6	4.31	0.36	A
Arm 5		0.6	3.76	0.36	A		0.5	3.30	0.32	A
	2026 Base + Dev									
Arm 1	D4	0.8	5.40	0.43	A	D8	0.7	3.92	0.42	A
Arm 2		0.5	5.50	0.32	A		0.2	4.06	0.15	A
Arm 3		1.8	6.89	0.65	A		0.6	3.74	0.37	A
Arm 4		0.7	5.90	0.42	A		0.5	4.32	0.31	A
Arm 5		1.6	6.28	0.62	A		0.2	2.59	0.17	A
	2041 Base									
Arm 1	D5	1.0	5.63	0.50	A	D9	1.6	6.91	0.61	A
Arm 2		0.8	7.32	0.44	A		0.3	5.87	0.24	A
Arm 3		4.0	12.75	0.80	B		0.3	3.21	0.25	A
Arm 4		1.3	8.32	0.56	A		0.9	5.15	0.46	A
Arm 5		1.0	4.98	0.48	A		0.7	4.01	0.42	A
	2041 Base + Dev									
Arm 1	D6	1.1	5.82	0.51	A	D10	1.2	6.01	0.54	A
Arm 2		0.8	7.63	0.45	A		0.3	5.81	0.24	A
Arm 3		5.1	15.83	0.84	C		0.9	4.45	0.47	A
Arm 4		1.4	9.16	0.59	A		1.1	6.74	0.53	A
Arm 5		1.0	5.19	0.50	A		0.7	4.07	0.42	A

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

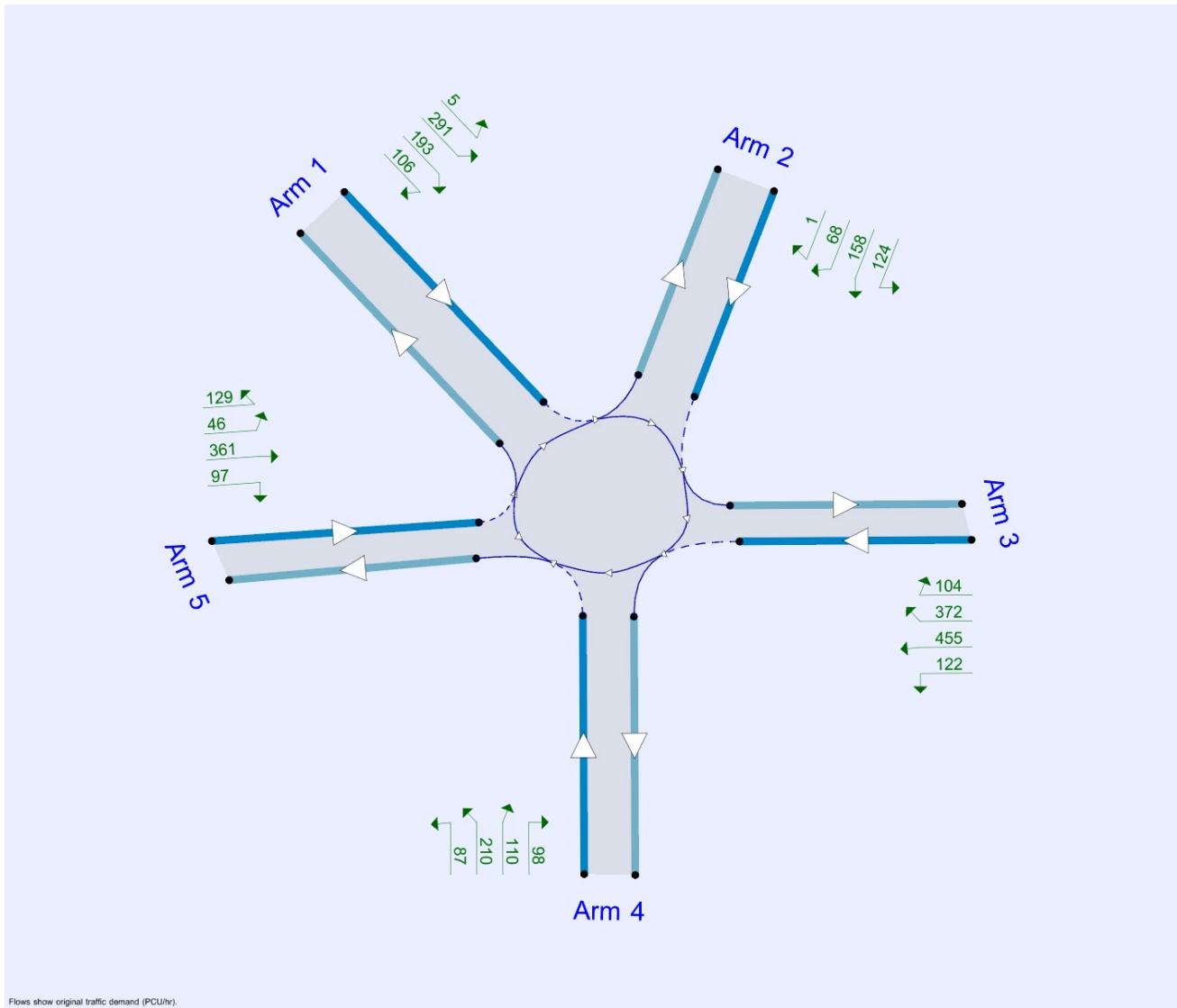
File summary

File Description

Title	N65 / R350 Roundabout
Location	Loughrea
Site number	1
Date	26/09/2024
Version	
Status	(new file)
Identifier	
Client	Galway Co Co
Jobnumber	
Enumerator	TOBIN/Micheal Geraghty
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

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

Demand Set Summary

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)
D1	2024	AM	ONE HOUR	08:00	09:30	15
D2	2024	PM	ONE HOUR	16:45	18:15	15
D3	2026 Base	AM	ONE HOUR	08:00	09:30	15
D4	2026 Base + Dev	AM	ONE HOUR	08:00	09:30	15
D5	2041 Base	AM	ONE HOUR	08:00	09:30	15
D6	2041 Base + Dev	AM	ONE HOUR	08:00	09:30	15
D7	2026 Base	PM	ONE HOUR	16:45	18:15	15
D8	2026 Base + Dev	PM	ONE HOUR	16:45	18:15	15
D9	2041 Base	PM	ONE HOUR	16:45	18:15	15
D10	2041 Base + Dev	PM	ONE HOUR	16:45	18:15	15

Analysis Set Details

ID	Network flow scaling factor (%)
A1	100.000

2024, AM

Data Errors and Warnings

No errors or warnings

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, 5	4.79	A

Junction Network

Driving side	Lighting	Network delay (s)	Network LOS
Left	Normal/unknown	4.79	A

Arms

Arms

Arm	Name	Description	No give-way line
1	N65 N		
2	R380 N		
3	untitled		
4	untitled		
5	untitled		

Roundabout Geometry

Arm	V - Approach road half-width (m)	E - Entry width (m)	I' - Effective flare length (m)	R - Entry radius (m)	D - Inscribed circle diameter (m)	PHI - Conflict (entry) angle (deg)	Entry only	Exit only
1	3.50	6.00	25.0	20.0	95.0	12.0		
2	3.00	5.50	15.0	15.0	95.0	25.0		
3	3.50	6.00	25.0	30.0	95.0	10.0		
4	3.00	5.50	25.0	25.0	95.0	25.0		
5	6.00	6.00	0.0	25.0	95.0	15.0		

Slope / Intercept / Capacity

Roundabout Slope and Intercept used in model

Arm	Final slope	Final intercept (PCU/hr)
1	0.471	1736
2	0.411	1404
3	0.481	1774
4	0.433	1523
5	0.498	1930

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

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)
D1	2024	AM	ONE HOUR	08:00	09:30	15

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

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
1		✓	444	100.000
2		✓	267	100.000
3		✓	797	100.000
4		✓	382	100.000
5		✓	478	100.000

Origin-Destination Data

Demand (PCU/hr)

	To					
		1	2	3	4	5
From	1	0	4	215	147	78
	2	1	0	94	120	52
	3	282	79	0	92	344
	4	159	84	73	0	66
	5	97	34	273	74	0

Vehicle Mix

Heavy Vehicle Percentages

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

Detailed Demand Data

Demand for each time segment

Time Segment	Arm	Demand (PCU/hr)	Demand in PCU (PCU/hr)
08:00-08:15	1	334	334
	2	201	201
	3	600	600
	4	288	288
	5	360	360
08:15-08:30	1	399	399
	2	240	240
	3	716	716
	4	343	343
	5	430	430
08:30-08:45	1	489	489
	2	294	294
	3	878	878
	4	421	421
	5	526	526
08:45-09:00	1	489	489
	2	294	294
	3	878	878
	4	421	421
	5	526	526
09:00-09:15	1	399	399
	2	240	240
	3	716	716
	4	343	343
	5	430	430
09:15-09:30	1	334	334
	2	201	201
	3	600	600
	4	288	288
	5	360	360

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS
1	0.35	4.00	0.5	A
2	0.29	5.07	0.4	A
3	0.58	5.66	1.4	A
4	0.37	5.20	0.6	A
5	0.34	3.58	0.5	A

Main Results for each time segment

08:00 - 08:15

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	334	463	1519	0.220	333	0.3	3.125	A
2	201	645	1139	0.176	200	0.2	3.892	A
3	600	354	1604	0.374	598	0.6	3.627	A
4	288	627	1252	0.230	286	0.3	3.789	A
5	360	508	1677	0.215	359	0.3	2.803	A

08:15 - 08:30

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	399	554	1476	0.270	399	0.4	3.443	A
2	240	772	1087	0.221	240	0.3	4.316	A
3	716	424	1571	0.456	716	0.8	4.277	A
4	343	751	1198	0.287	343	0.4	4.281	A
5	430	609	1627	0.264	429	0.4	3.088	A

08:30 - 08:45

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	489	678	1417	0.345	488	0.5	3.989	A
2	294	946	1016	0.289	293	0.4	5.060	A
3	878	519	1525	0.575	875	1.4	5.618	A
4	421	918	1125	0.374	420	0.6	5.185	A
5	526	745	1560	0.337	526	0.5	3.577	A

08:45 - 09:00

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	489	679	1417	0.345	489	0.5	3.995	A
2	294	947	1015	0.289	294	0.4	5.070	A
3	878	520	1525	0.576	877	1.4	5.657	A
4	421	920	1124	0.374	421	0.6	5.202	A
5	526	746	1559	0.338	526	0.5	3.582	A

09:00 - 09:15

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	399	556	1475	0.271	400	0.4	3.452	A
2	240	774	1086	0.221	241	0.3	4.327	A
3	716	425	1570	0.456	719	0.9	4.308	A
4	343	754	1197	0.287	344	0.4	4.299	A
5	430	611	1626	0.264	430	0.4	3.097	A

09:15 - 09:30

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	334	465	1518	0.220	335	0.3	3.137	A
2	201	648	1138	0.177	201	0.2	3.905	A
3	600	356	1603	0.374	601	0.6	3.657	A
4	288	630	1250	0.230	288	0.3	3.807	A
5	360	511	1676	0.215	360	0.3	2.814	A

2024, PM

Data Errors and Warnings

No errors or warnings

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, 5	4.02	A

Junction Network

Driving side	Lighting	Network delay (s)	Network LOS
Left	Normal/unknown	4.02	A

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)
D2	2024	PM	ONE HOUR	16:45	18:15	15

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

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
1		✓	565	100.000
2		✓	131	100.000
3		✓	479	100.000
4		✓	416	100.000
5		✓	457	100.000

Origin-Destination Data

Demand (PCU/hr)

	To					
From		1	2	3	4	5
	1	0	5	333	132	95
	2	0	0	39	54	38
	3	164	33	0	50	232
	4	122	64	102	0	128
	5	73	39	261	84	0

Vehicle Mix

Heavy Vehicle Percentages

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

Detailed Demand Data

Demand for each time segment

Time Segment	Arm	Demand (PCU/hr)	Demand in PCU (PCU/hr)
16:45-17:00	1	425	425
	2	99	99
	3	361	361
	4	313	313
	5	344	344
17:00-17:15	1	508	508
	2	118	118
	3	431	431
	4	374	374
	5	411	411
17:15-17:30	1	622	622
	2	144	144
	3	527	527
	4	458	458
	5	503	503
17:30-17:45	1	622	622
	2	144	144
	3	527	527
	4	458	458
	5	503	503
17:45-18:00	1	508	508
	2	118	118
	3	431	431
	4	374	374
	5	411	411
18:00-18:15	1	425	425
	2	99	99
	3	361	361
	4	313	313
	5	344	344

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS
1	0.43	4.56	0.8	A
2	0.15	4.55	0.2	A
3	0.34	3.53	0.5	A
4	0.36	4.61	0.6	A
5	0.30	3.18	0.4	A

Main Results for each time segment

16:45 - 17:00

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	425	437	1531	0.278	424	0.4	3.346	A
2	99	755	1094	0.090	98	0.1	3.675	A
3	361	302	1629	0.221	359	0.3	2.876	A
4	313	422	1340	0.234	312	0.3	3.568	A
5	344	364	1749	0.197	343	0.3	2.629	A

17:00 - 17:15

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	508	524	1490	0.341	507	0.5	3.771	A
2	118	904	1033	0.114	118	0.1	4.002	A
3	431	362	1600	0.269	430	0.4	3.123	A
4	374	505	1304	0.287	374	0.4	3.946	A
5	411	436	1714	0.240	411	0.3	2.838	A

17:15 - 17:30

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	622	641	1435	0.434	621	0.8	4.551	A
2	144	1107	950	0.152	144	0.2	4.545	A
3	527	443	1561	0.338	527	0.5	3.531	A
4	458	618	1255	0.365	457	0.6	4.601	A
5	503	533	1665	0.302	503	0.4	3.180	A

17:30 - 17:45

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	622	642	1434	0.434	622	0.8	4.564	A
2	144	1109	949	0.152	144	0.2	4.550	A
3	527	444	1561	0.338	527	0.5	3.534	A
4	458	619	1255	0.365	458	0.6	4.610	A
5	503	534	1665	0.302	503	0.4	3.183	A

17:45 - 18:00

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	508	525	1489	0.341	509	0.5	3.787	A
2	118	907	1032	0.114	118	0.1	4.008	A
3	431	363	1600	0.269	431	0.4	3.130	A
4	374	506	1304	0.287	375	0.4	3.957	A
5	411	437	1713	0.240	411	0.3	2.841	A

18:00 - 18:15

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	425	439	1530	0.278	426	0.4	3.362	A
2	99	759	1093	0.090	99	0.1	3.684	A
3	361	304	1628	0.221	361	0.3	2.886	A
4	313	424	1340	0.234	314	0.3	3.585	A
5	344	366	1748	0.197	344	0.3	2.634	A

2026 Base, AM

Data Errors and Warnings

No errors or warnings

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, 5	4.92	A

Junction Network

Driving side	Lighting	Network delay (s)	Network LOS
Left	Normal/unknown	4.92	A

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)
D3	2026 Base	AM	ONE HOUR	08:00	09:30	15

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

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
1		✓	475	100.000
2		✓	181	100.000
3		✓	839	100.000
4		✓	401	100.000
5		✓	505	100.000

Origin-Destination Data

Demand (PCU/hr)

	To					
	1	2	3	4	5	
From	1	0	4	227	155	89
	2	1	0	99	26	55
	3	297	83	0	97	362
	4	167	88	77	0	69
	5	102	36	288	78	1

Vehicle Mix

Heavy Vehicle Percentages

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

Detailed Demand Data

Demand for each time segment

Time Segment	Arm	Demand (PCU/hr)	Demand in PCU (PCU/hr)
08:00-08:15	1	358	358
	2	136	136
	3	632	632
	4	302	302
	5	380	380
08:15-08:30	1	427	427
	2	163	163
	3	754	754
	4	360	360
	5	454	454
08:30-08:45	1	523	523
	2	199	199
	3	924	924
	4	442	442
	5	556	556
08:45-09:00	1	523	523
	2	199	199
	3	924	924
	4	442	442
	5	556	556
09:00-09:15	1	427	427
	2	163	163
	3	754	754
	4	360	360
	5	454	454
09:15-09:30	1	358	358
	2	136	136
	3	632	632
	4	302	302
	5	380	380

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS
1	0.37	4.23	0.6	A
2	0.20	4.66	0.3	A
3	0.59	5.75	1.5	A
4	0.40	5.56	0.7	A
5	0.36	3.76	0.6	A

Main Results for each time segment

08:00 - 08:15

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	358	488	1507	0.237	356	0.3	3.221	A
2	136	686	1122	0.121	136	0.1	3.739	A
3	632	304	1628	0.388	629	0.6	3.654	A
4	302	666	1235	0.245	301	0.3	3.914	A
5	380	535	1664	0.228	379	0.3	2.876	A

08:15 - 08:30

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	427	585	1461	0.292	427	0.4	3.581	A
2	163	822	1067	0.153	163	0.2	4.083	A
3	754	364	1600	0.472	753	0.9	4.320	A
4	360	797	1178	0.306	360	0.4	4.476	A
5	454	640	1612	0.282	454	0.4	3.194	A

08:30 - 08:45

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	523	716	1400	0.374	522	0.6	4.222	A
2	199	1006	991	0.201	199	0.3	4.660	A
3	924	445	1560	0.592	922	1.5	5.712	A
4	442	976	1101	0.401	441	0.7	5.540	A
5	556	783	1541	0.361	555	0.6	3.754	A

08:45 - 09:00

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	523	717	1399	0.374	523	0.6	4.231	A
2	199	1007	991	0.201	199	0.3	4.665	A
3	924	446	1560	0.592	924	1.5	5.752	A
4	442	978	1100	0.401	441	0.7	5.563	A
5	556	785	1540	0.361	556	0.6	3.760	A

09:00 - 09:15

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	427	586	1460	0.292	428	0.4	3.592	A
2	163	824	1066	0.153	163	0.2	4.091	A
3	754	365	1599	0.472	756	0.9	4.357	A
4	360	800	1176	0.306	361	0.5	4.499	A
5	454	643	1610	0.282	455	0.4	3.204	A

09:15 - 09:30

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	358	491	1506	0.238	358	0.3	3.231	A
2	136	690	1121	0.122	136	0.1	3.752	A
3	632	305	1628	0.388	633	0.6	3.682	A
4	302	670	1233	0.245	302	0.3	3.938	A
5	380	538	1663	0.229	381	0.3	2.888	A

2026 Base + Dev, AM

Data Errors and Warnings

No errors or warnings

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, 5	6.19	A

Junction Network

Driving side	Lighting	Network delay (s)	Network LOS
Left	Normal/unknown	6.19	A

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)
D4	2026 Base + Dev	AM	ONE HOUR	08:00	09:30	15

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

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
1		✓	478	100.000
2		✓	287	100.000
3		✓	883	100.000
4		✓	416	100.000
5		✓	862	100.000

Origin-Destination Data

Demand (PCU/hr)

	To					
	1	2	3	4	5	
From	1	0	4	229	156	89
	2	1	0	100	127	59
	3	302	85	0	99	397
	4	171	90	79	0	76
	5	106	374	301	81	0

Vehicle Mix

Heavy Vehicle Percentages

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

Detailed Demand Data

Demand for each time segment

Time Segment	Arm	Demand (PCU/hr)	Demand in PCU (PCU/hr)
08:00-08:15	1	360	360
	2	216	216
	3	665	665
	4	313	313
	5	649	649
08:15-08:30	1	430	430
	2	258	258
	3	794	794
	4	374	374
	5	775	775
08:30-08:45	1	526	526
	2	316	316
	3	972	972
	4	458	458
	5	949	949
08:45-09:00	1	526	526
	2	316	316
	3	972	972
	4	458	458
	5	949	949
09:00-09:15	1	430	430
	2	258	258
	3	794	794
	4	374	374
	5	775	775
09:15-09:30	1	360	360
	2	216	216
	3	665	665
	4	313	313
	5	649	649

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS
1	0.43	5.40	0.8	A
2	0.32	5.50	0.5	A
3	0.65	6.89	1.8	A
4	0.42	5.90	0.7	A
5	0.62	6.28	1.6	A

Main Results for each time segment

08:00 - 08:15

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	360	757	1380	0.261	358	0.4	3.625	A
2	216	701	1116	0.194	215	0.2	4.055	A
3	665	385	1589	0.418	662	0.7	3.933	A
4	313	699	1220	0.257	312	0.3	4.026	A
5	649	546	1659	0.391	646	0.6	3.606	A

08:15 - 08:30

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	430	907	1310	0.328	429	0.5	4.208	A
2	258	839	1060	0.243	258	0.3	4.560	A
3	794	461	1553	0.511	792	1.1	4.803	A
4	374	837	1160	0.322	373	0.5	4.651	A
5	775	653	1605	0.483	774	0.9	4.396	A

08:30 - 08:45

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	526	1109	1215	0.433	525	0.8	5.369	A
2	316	1027	983	0.322	315	0.5	5.480	A
3	972	564	1503	0.647	969	1.8	6.808	A
4	458	1024	1080	0.424	457	0.7	5.874	A
5	949	799	1533	0.619	946	1.6	6.216	A

08:45 - 09:00

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	526	1112	1213	0.434	526	0.8	5.397	A
2	316	1029	982	0.322	316	0.5	5.497	A
3	972	565	1503	0.647	972	1.8	6.891	A
4	458	1027	1078	0.425	458	0.7	5.904	A
5	949	801	1531	0.620	949	1.6	6.282	A

09:00 - 09:15

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	430	911	1308	0.329	431	0.5	4.233	A
2	258	843	1058	0.244	259	0.3	4.581	A
3	794	462	1552	0.511	797	1.1	4.865	A
4	374	842	1159	0.323	375	0.5	4.682	A
5	775	657	1604	0.483	778	1.0	4.446	A

09:15 - 09:30

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	360	762	1378	0.261	360	0.4	3.645	A
2	216	705	1115	0.194	216	0.2	4.076	A
3	665	387	1588	0.419	666	0.7	3.972	A
4	313	704	1218	0.257	314	0.4	4.051	A
5	649	549	1657	0.392	650	0.7	3.641	A

2041 Base , AM

Data Errors and Warnings

No errors or warnings

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, 5	8.51	A

Junction Network

Driving side	Lighting	Network delay (s)	Network LOS
Left	Normal/unknown	8.51	A

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)
D5	2041 Base	AM	ONE HOUR	08:00	09:30	15

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

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
1		✓	595	100.000
2		✓	351	100.000
3		✓	1053	100.000
4		✓	505	100.000
5		✓	633	100.000

Origin-Destination Data

Demand (PCU/hr)

	To					
	1	2	3	4	5	
From	1	0	5	291	193	106
	2	1	0	124	158	68
	3	372	104	0	122	455
	4	210	110	98	0	87
	5	129	46	361	97	0

Vehicle Mix

Heavy Vehicle Percentages

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

Detailed Demand Data

Demand for each time segment

Time Segment	Arm	Demand (PCU/hr)	Demand in PCU (PCU/hr)
08:00-08:15	1	448	448
	2	264	264
	3	793	793
	4	380	380
	5	477	477
08:15-08:30	1	535	535
	2	316	316
	3	947	947
	4	454	454
	5	569	569
08:30-08:45	1	655	655
	2	386	386
	3	1159	1159
	4	556	556
	5	697	697
08:45-09:00	1	655	655
	2	386	386
	3	1159	1159
	4	556	556
	5	697	697
09:00-09:15	1	535	535
	2	316	316
	3	947	947
	4	454	454
	5	569	569
09:15-09:30	1	448	448
	2	264	264
	3	793	793
	4	380	380
	5	477	477

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS
1	0.50	5.63	1.0	A
2	0.44	7.32	0.8	A
3	0.80	12.75	4.0	B
4	0.56	8.32	1.3	A
5	0.48	4.98	1.0	A

Main Results for each time segment

08:00 - 08:15

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	448	612	1449	0.309	446	0.5	3.693	A
2	264	859	1051	0.251	263	0.3	4.632	A
3	793	467	1550	0.512	789	1.1	4.783	A
4	380	828	1164	0.327	378	0.5	4.647	A
5	477	670	1597	0.298	475	0.4	3.294	A

08:15 - 08:30

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	535	732	1392	0.384	534	0.6	4.320	A
2	316	1029	982	0.321	315	0.5	5.482	A
3	947	559	1505	0.629	944	1.7	6.490	A
4	454	992	1094	0.415	453	0.7	5.709	A
5	569	803	1531	0.372	568	0.6	3.842	A

08:30 - 08:45

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	655	896	1315	0.498	654	1.0	5.594	A
2	386	1259	887	0.436	385	0.8	7.269	A
3	1159	684	1445	0.802	1151	3.9	12.075	B
4	556	1210	999	0.556	554	1.3	8.182	A
5	697	980	1443	0.483	696	1.0	4.943	A

08:45 - 09:00

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	655	898	1314	0.499	655	1.0	5.629	A
2	386	1262	886	0.436	386	0.8	7.320	A
3	1159	686	1445	0.803	1159	4.0	12.751	B
4	556	1217	996	0.558	556	1.3	8.319	A
5	697	985	1440	0.484	697	1.0	4.978	A

09:00 - 09:15

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	535	736	1390	0.385	536	0.6	4.351	A
2	316	1033	980	0.322	317	0.5	5.524	A
3	947	562	1504	0.629	956	1.8	6.775	A
4	454	1003	1089	0.417	456	0.7	5.806	A
5	569	810	1527	0.373	570	0.6	3.874	A

09:15 - 09:30

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	448	616	1447	0.310	449	0.5	3.719	A
2	264	864	1049	0.252	265	0.3	4.665	A
3	793	470	1548	0.512	795	1.1	4.878	A
4	380	835	1161	0.327	381	0.5	4.701	A
5	477	676	1594	0.299	477	0.4	3.316	A

2041 Base + Dev , AM

Data Errors and Warnings

No errors or warnings

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, 5	9.83	A

Junction Network

Driving side	Lighting	Network delay (s)	Network LOS
Left	Normal/unknown	9.83	A

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)
D6	2041 Base + Dev	AM	ONE HOUR	08:00	09:30	15

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

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
1		✓	603	100.000
2		✓	358	100.000
3		✓	1097	100.000
4		✓	519	100.000
5		✓	654	100.000

Origin-Destination Data

Demand (PCU/hr)

	To					
	1	2	3	4	5	
From	1	0	5	292	194	112
	2	1	0	125	159	73
	3	377	106	0	124	490
	4	213	112	100	0	94
	5	132	47	374	101	0

Vehicle Mix

Heavy Vehicle Percentages

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

Detailed Demand Data

Demand for each time segment

Time Segment	Arm	Demand (PCU/hr)	Demand in PCU (PCU/hr)
08:00-08:15	1	454	454
	2	270	270
	3	826	826
	4	391	391
	5	492	492
08:15-08:30	1	542	542
	2	322	322
	3	986	986
	4	467	467
	5	588	588
08:30-08:45	1	664	664
	2	394	394
	3	1208	1208
	4	571	571
	5	720	720
08:45-09:00	1	664	664
	2	394	394
	3	1208	1208
	4	571	571
	5	720	720
09:00-09:15	1	542	542
	2	322	322
	3	986	986
	4	467	467
	5	588	588
09:15-09:30	1	454	454
	2	270	270
	3	826	826
	4	391	391
	5	492	492

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS
1	0.51	5.82	1.1	A
2	0.45	7.63	0.8	A
3	0.84	15.83	5.1	C
4	0.59	9.16	1.4	A
5	0.50	5.19	1.0	A

Main Results for each time segment

08:00 - 08:15

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	454	630	1440	0.315	452	0.5	3.747	A
2	270	879	1043	0.258	268	0.4	4.712	A
3	826	480	1544	0.535	821	1.2	5.032	A
4	391	868	1147	0.341	389	0.5	4.816	A
5	492	681	1592	0.309	491	0.5	3.354	A

08:15 - 08:30

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	542	754	1382	0.392	541	0.7	4.409	A
2	322	1053	972	0.331	321	0.5	5.619	A
3	986	574	1498	0.658	983	1.9	7.061	A
4	467	1039	1073	0.435	466	0.8	6.019	A
5	588	815	1525	0.386	587	0.6	3.940	A

08:30 - 08:45

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	664	921	1303	0.510	662	1.1	5.776	A
2	394	1288	875	0.450	393	0.8	7.567	A
3	1208	703	1436	0.841	1196	4.9	14.542	B
4	571	1265	975	0.586	569	1.4	8.958	A
5	720	994	1436	0.501	719	1.0	5.148	A

08:45 - 09:00

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	664	925	1301	0.510	664	1.1	5.817	A
2	394	1291	874	0.451	394	0.8	7.626	A
3	1208	705	1436	0.841	1207	5.1	15.832	C
4	571	1275	971	0.589	571	1.4	9.163	A
5	720	1000	1432	0.503	720	1.0	5.193	A

09:00 - 09:15

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	542	759	1379	0.393	544	0.7	4.446	A
2	322	1058	970	0.332	323	0.5	5.667	A
3	986	577	1497	0.659	999	2.0	7.520	A
4	467	1053	1067	0.437	469	0.8	6.155	A
5	588	825	1520	0.387	589	0.7	3.984	A

09:15 - 09:30

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	454	634	1438	0.316	455	0.5	3.772	A
2	270	885	1041	0.259	270	0.4	4.751	A
3	826	483	1542	0.535	829	1.2	5.155	A
4	391	876	1144	0.342	392	0.5	4.877	A
5	492	687	1589	0.310	493	0.5	3.379	A

2026 Base, PM

Data Errors and Warnings

No errors or warnings

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, 5	4.06	A

Junction Network

Driving side	Lighting	Network delay (s)	Network LOS
Left	Normal/unknown	4.06	A

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)
D7	2026 Base	PM	ONE HOUR	16:45	18:15	15

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

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
1		✓	597	100.000
2		✓	138	100.000
3		✓	305	100.000
4		✓	437	100.000
5		✓	481	100.000

Origin-Destination Data

Demand (PCU/hr)

	To					
From		1	2	3	4	5
	1	0	5	350	139	103
	2	0	0	41	57	40
	3	173	35	0	53	44
	4	128	67	107	0	135
	5	77	41	275	88	0

Vehicle Mix

Heavy Vehicle Percentages

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

Detailed Demand Data

Demand for each time segment

Time Segment	Arm	Demand (PCU/hr)	Demand in PCU (PCU/hr)
16:45-17:00	1	449	449
	2	104	104
	3	230	230
	4	329	329
	5	362	362
17:00-17:15	1	537	537
	2	124	124
	3	274	274
	4	393	393
	5	432	432
17:15-17:30	1	657	657
	2	152	152
	3	336	336
	4	481	481
	5	530	530
17:30-17:45	1	657	657
	2	152	152
	3	336	336
	4	481	481
	5	530	530
17:45-18:00	1	537	537
	2	124	124
	3	274	274
	4	393	393
	5	432	432
18:00-18:15	1	449	449
	2	104	104
	3	230	230
	4	329	329
	5	362	362

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS
1	0.46	4.87	0.9	A
2	0.16	4.74	0.2	A
3	0.22	3.04	0.3	A
4	0.36	4.31	0.6	A
5	0.32	3.30	0.5	A

Main Results for each time segment

16:45 - 17:00

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	449	460	1520	0.296	448	0.4	3.452	A
2	104	797	1077	0.096	103	0.1	3.759	A
3	230	320	1620	0.142	229	0.2	2.652	A
4	329	296	1395	0.236	328	0.3	3.442	A
5	362	383	1740	0.208	361	0.3	2.682	A

17:00 - 17:15

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	537	551	1477	0.363	536	0.6	3.937	A
2	124	954	1013	0.123	124	0.1	4.121	A
3	274	383	1590	0.172	274	0.2	2.805	A
4	393	355	1369	0.287	392	0.4	3.759	A
5	432	458	1702	0.254	432	0.3	2.911	A

17:15 - 17:30

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	657	674	1419	0.463	656	0.9	4.844	A
2	152	1168	925	0.164	152	0.2	4.736	A
3	336	469	1549	0.217	336	0.3	3.043	A
4	481	434	1335	0.360	480	0.6	4.299	A
5	530	561	1651	0.321	529	0.5	3.294	A

17:30 - 17:45

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	657	675	1419	0.463	657	0.9	4.868	A
2	152	1169	924	0.164	152	0.2	4.742	A
3	336	470	1548	0.217	336	0.3	3.044	A
4	481	435	1335	0.360	481	0.6	4.305	A
5	530	562	1651	0.321	530	0.5	3.297	A

17:45 - 18:00

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	537	552	1477	0.363	538	0.6	3.955	A
2	124	956	1012	0.123	124	0.1	4.130	A
3	274	385	1589	0.173	274	0.2	2.809	A
4	393	356	1369	0.287	393	0.4	3.769	A
5	432	459	1702	0.254	433	0.4	2.915	A

18:00 - 18:15

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	449	462	1519	0.296	450	0.4	3.469	A
2	104	800	1076	0.097	104	0.1	3.772	A
3	230	322	1620	0.142	230	0.2	2.656	A
4	329	298	1394	0.236	329	0.3	3.455	A
5	362	384	1739	0.208	362	0.3	2.688	A

2026 Base + Dev, PM

Data Errors and Warnings

No errors or warnings

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, 5	3.77	A

Junction Network

Driving side	Lighting	Network delay (s)	Network LOS
Left	Normal/unknown	3.77	A

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)
D8	2026 Base + Dev	PM	ONE HOUR	16:45	18:15	15

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

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
1		✓	606	100.000
2		✓	141	100.000
3		✓	521	100.000
4		✓	349	100.000
5		✓	263	100.000

Origin-Destination Data

Demand (PCU/hr)

	To					
From		1	2	3	4	5
	1	0	5	356	142	103
	2	0	0	42	58	41
	3	175	35	0	55	256
	4	130	68	10	0	141
	5	84	45	35	99	0

Vehicle Mix

Heavy Vehicle Percentages

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

Detailed Demand Data

Demand for each time segment

Time Segment	Arm	Demand (PCU/hr)	Demand in PCU (PCU/hr)
16:45-17:00	1	456	456
	2	106	106
	3	392	392
	4	263	263
	5	198	198
17:00-17:15	1	545	545
	2	127	127
	3	468	468
	4	314	314
	5	236	236
17:15-17:30	1	667	667
	2	155	155
	3	574	574
	4	384	384
	5	290	290
17:30-17:45	1	667	667
	2	155	155
	3	574	574
	4	384	384
	5	290	290
17:45-18:00	1	545	545
	2	127	127
	3	468	468
	4	314	314
	5	236	236
18:00-18:15	1	456	456
	2	106	106
	3	392	392
	4	263	263
	5	198	198

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS
1	0.42	3.92	0.7	A
2	0.15	4.06	0.2	A
3	0.37	3.74	0.6	A
4	0.31	4.32	0.5	A
5	0.17	2.59	0.2	A

Main Results for each time segment

16:45 - 17:00

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	456	219	1633	0.279	455	0.4	3.050	A
2	106	559	1175	0.090	106	0.1	3.468	A
3	392	332	1615	0.243	391	0.3	2.954	A
4	263	458	1325	0.198	262	0.3	3.446	A
5	198	314	1774	0.112	197	0.1	2.317	A

17:00 - 17:15

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	545	262	1613	0.338	544	0.5	3.366	A
2	127	669	1130	0.112	127	0.1	3.696	A
3	468	398	1583	0.296	468	0.4	3.245	A
4	314	548	1286	0.244	313	0.3	3.771	A
5	236	375	1744	0.136	236	0.2	2.424	A

17:15 - 17:30

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	667	321	1585	0.421	666	0.7	3.914	A
2	155	819	1068	0.145	155	0.2	4.061	A
3	574	487	1540	0.372	573	0.6	3.739	A
4	384	671	1233	0.312	384	0.5	4.317	A
5	290	460	1702	0.170	289	0.2	2.587	A

17:30 - 17:45

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	667	321	1585	0.421	667	0.7	3.921	A
2	155	820	1068	0.145	155	0.2	4.064	A
3	574	488	1540	0.373	574	0.6	3.743	A
4	384	672	1232	0.312	384	0.5	4.324	A
5	290	460	1701	0.170	290	0.2	2.587	A

17:45 - 18:00

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	545	263	1613	0.338	546	0.5	3.375	A
2	127	671	1129	0.112	127	0.1	3.700	A
3	468	399	1583	0.296	469	0.4	3.252	A
4	314	549	1285	0.244	314	0.3	3.777	A
5	236	376	1743	0.136	237	0.2	2.427	A

18:00 - 18:15

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	456	220	1633	0.279	457	0.4	3.061	A
2	106	561	1174	0.090	106	0.1	3.472	A
3	392	334	1614	0.243	393	0.3	2.965	A
4	263	460	1324	0.198	263	0.3	3.459	A
5	198	315	1774	0.112	198	0.1	2.321	A

2041 Base , PM

Data Errors and Warnings

No errors or warnings

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, 5	5.19	A

Junction Network

Driving side	Lighting	Network delay (s)	Network LOS
Left	Normal/unknown	5.19	A

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)
D9	2041 Base	PM	ONE HOUR	16:45	18:15	15

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

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
1		✓	744	100.000
2		✓	174	100.000
3		✓	333	100.000
4		✓	546	100.000
5		✓	602	100.000

Origin-Destination Data

Demand (PCU/hr)

	To					
From		1	2	3	4	5
	1	0	7	438	174	125
	2	0	0	52	71	51
	3	217	43	0	66	7
	4	160	84	134	0	168
	5	97	51	344	110	0

Vehicle Mix

Heavy Vehicle Percentages

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

Detailed Demand Data

Demand for each time segment

Time Segment	Arm	Demand (PCU/hr)	Demand in PCU (PCU/hr)
16:45-17:00	1	560	560
	2	131	131
	3	251	251
	4	411	411
	5	453	453
17:00-17:15	1	669	669
	2	156	156
	3	299	299
	4	491	491
	5	541	541
17:15-17:30	1	819	819
	2	192	192
	3	367	367
	4	601	601
	5	663	663
17:30-17:45	1	819	819
	2	192	192
	3	367	367
	4	601	601
	5	663	663
17:45-18:00	1	669	669
	2	156	156
	3	299	299
	4	491	491
	5	541	541
18:00-18:15	1	560	560
	2	131	131
	3	251	251
	4	411	411
	5	453	453

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS
1	0.61	6.91	1.6	A
2	0.24	5.87	0.3	A
3	0.25	3.21	0.3	A
4	0.46	5.15	0.9	A
5	0.42	4.01	0.7	A

Main Results for each time segment

16:45 - 17:00

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	560	575	1466	0.382	558	0.6	3.953	A
2	131	994	996	0.131	130	0.2	4.155	A
3	251	398	1583	0.158	250	0.2	2.716	A
4	411	332	1379	0.298	409	0.4	3.766	A
5	453	479	1692	0.268	452	0.4	2.963	A

17:00 - 17:15

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	669	688	1413	0.473	668	0.9	4.825	A
2	156	1190	916	0.171	156	0.2	4.738	A
3	299	477	1545	0.194	299	0.2	2.907	A
4	491	398	1351	0.363	490	0.6	4.249	A
5	541	573	1645	0.329	541	0.5	3.330	A

17:15 - 17:30

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	819	842	1340	0.611	817	1.5	6.841	A
2	192	1455	807	0.238	191	0.3	5.845	A
3	367	583	1494	0.245	366	0.3	3.213	A
4	601	487	1312	0.458	600	0.9	5.131	A
5	663	701	1581	0.419	662	0.7	3.999	A

17:30 - 17:45

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	819	843	1340	0.612	819	1.6	6.914	A
2	192	1459	805	0.238	192	0.3	5.866	A
3	367	585	1493	0.246	367	0.3	3.215	A
4	601	488	1312	0.458	601	0.9	5.147	A
5	663	702	1581	0.419	663	0.7	4.009	A

17:45 - 18:00

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	669	690	1412	0.474	671	0.9	4.880	A
2	156	1195	914	0.171	157	0.2	4.758	A
3	299	479	1544	0.194	300	0.2	2.913	A
4	491	399	1350	0.364	492	0.6	4.267	A
5	541	575	1644	0.329	542	0.5	3.343	A

18:00 - 18:15

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	560	577	1465	0.382	561	0.6	3.991	A
2	131	999	994	0.132	131	0.2	4.175	A
3	251	400	1582	0.158	251	0.2	2.724	A
4	411	334	1378	0.298	412	0.4	3.788	A
5	453	481	1691	0.268	454	0.4	2.977	A

2041 Base + Dev , PM

Data Errors and Warnings

No errors or warnings

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, 5	5.32	A

Junction Network

Driving side	Lighting	Network delay (s)	Network LOS
Left	Normal/unknown	5.32	A

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)
D10	2041 Base + Dev	PM	ONE HOUR	16:45	18:15	15

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

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
1		✓	656	100.000
2		✓	177	100.000
3		✓	650	100.000
4		✓	558	100.000
5		✓	604	100.000

Origin-Destination Data

Demand (PCU/hr)

	To					
	1	2	3	4	5	
From	1	0	7	444	77	128
	2	0	0	53	72	52
	3	219	44	0	68	319
	4	162	85	137	0	174
	5	104	5	374	121	0

Vehicle Mix

Heavy Vehicle Percentages

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

Detailed Demand Data

Demand for each time segment

Time Segment	Arm	Demand (PCU/hr)	Demand in PCU (PCU/hr)
16:45-17:00	1	494	494
	2	133	133
	3	489	489
	4	420	420
	5	455	455
17:00-17:15	1	590	590
	2	159	159
	3	584	584
	4	502	502
	5	543	543
17:15-17:30	1	722	722
	2	195	195
	3	716	716
	4	614	614
	5	665	665
17:30-17:45	1	722	722
	2	195	195
	3	716	716
	4	614	614
	5	665	665
17:45-18:00	1	590	590
	2	159	159
	3	584	584
	4	502	502
	5	543	543
18:00-18:15	1	494	494
	2	133	133
	3	489	489
	4	420	420
	5	455	455

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS
1	0.54	6.01	1.2	A
2	0.24	5.81	0.3	A
3	0.47	4.45	0.9	A
4	0.53	6.74	1.1	A
5	0.42	4.07	0.7	A

Main Results for each time segment

16:45 - 17:00

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	494	575	1466	0.337	492	0.5	3.798	A
2	133	961	1010	0.132	133	0.2	4.173	A
3	489	337	1612	0.304	488	0.4	3.249	A
4	420	572	1276	0.329	418	0.5	4.278	A
5	455	485	1689	0.269	453	0.4	2.995	A

17:00 - 17:15

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	590	688	1413	0.417	589	0.7	4.496	A
2	159	1150	932	0.171	159	0.2	4.737	A
3	584	404	1580	0.370	584	0.6	3.665	A
4	502	684	1227	0.409	501	0.7	5.058	A
5	543	581	1641	0.331	542	0.5	3.371	A

17:15 - 17:30

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	722	842	1340	0.539	720	1.2	5.964	A
2	195	1407	826	0.236	194	0.3	5.794	A
3	716	494	1537	0.466	715	0.9	4.438	A
4	614	837	1160	0.529	613	1.1	6.689	A
5	665	711	1577	0.422	664	0.7	4.058	A

17:30 - 17:45

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	722	843	1340	0.539	722	1.2	6.006	A
2	195	1410	825	0.236	195	0.3	5.812	A
3	716	495	1536	0.466	716	0.9	4.453	A
4	614	839	1160	0.530	614	1.1	6.739	A
5	665	712	1576	0.422	665	0.7	4.069	A

17:45 - 18:00

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	590	690	1412	0.418	592	0.7	4.530	A
2	159	1155	930	0.171	160	0.2	4.755	A
3	584	406	1579	0.370	585	0.6	3.682	A
4	502	687	1226	0.409	503	0.7	5.099	A
5	543	583	1640	0.331	544	0.5	3.384	A

18:00 - 18:15

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	494	577	1465	0.337	495	0.5	3.825	A
2	133	966	1008	0.132	133	0.2	4.192	A
3	489	339	1611	0.304	490	0.4	3.262	A
4	420	574	1274	0.330	421	0.5	4.311	A
5	455	488	1688	0.269	455	0.4	3.008	A

Appendix C. JUNCTION 10 PICADY DETAILED OUTPUT

Junctions 10										
PICADY 10 - Priority Intersection Module										
Version: 10.0.3.1598										
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+44 (0)1344 379777 software@trl.co.uk trlsoftware.com										
The users of this computer program for the solution of an engineering problem are in no way relieved of their responsibility for the correctness of the solution										

Filename: J2 Hazelwood.j10

Path: J:\Projects\11942 - Housing Development at Cosmona, Loughrea, Co. Galway\05-Design\01-Calculations\Traffic

Report generation date: 27/09/2024 12:27:19

- »2024, AM
- »2024, PM
- »2026 Base, AM
- »2026 Base + Dev, AM
- »2041 Base , AM
- »2041 Base + Dev, AM
- »2026 Base, PM
- »2026 Base + Dev, PM
- »2041 Base, PM
- »2041 Base + Dev , PM

Summary of junction performance

	AM					PM				
	Set ID	Queue (PCU)	Delay (s)	RFC	LOS	Set ID	Queue (PCU)	Delay (s)	RFC	LOS
	2024									
Stream B-AC	D1	0.2	10.05	0.16	B	D2	0.1	8.12	0.08	A
Stream C-AB		0.1	4.95	0.04	A		0.1	5.56	0.05	A
	2026 Base									
Stream B-AC	D3	0.2	10.42	0.17	B	D7	0.1	8.28	0.09	A
Stream C-AB		0.1	4.92	0.04	A		0.1	5.56	0.06	A
	2026 Base + Dev									
Stream B-AC	D4	0.2	10.57	0.18	B	D8	0.1	8.35	0.09	A
Stream C-AB		0.1	4.91	0.05	A		0.1	5.52	0.06	A
	2041 Base									
Stream B-AC	D5	0.3	12.50	0.24	B	D9	0.1	9.02	0.12	A
Stream C-AB		0.1	4.75	0.06	A		0.1	5.53	0.08	A
	2041 Base + Dev									
Stream B-AC	D6	0.3	12.82	0.25	B	D10	0.2	11.68	0.15	B
Stream C-AB		0.1	4.74	0.06	A		0.2	6.09	0.10	A

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

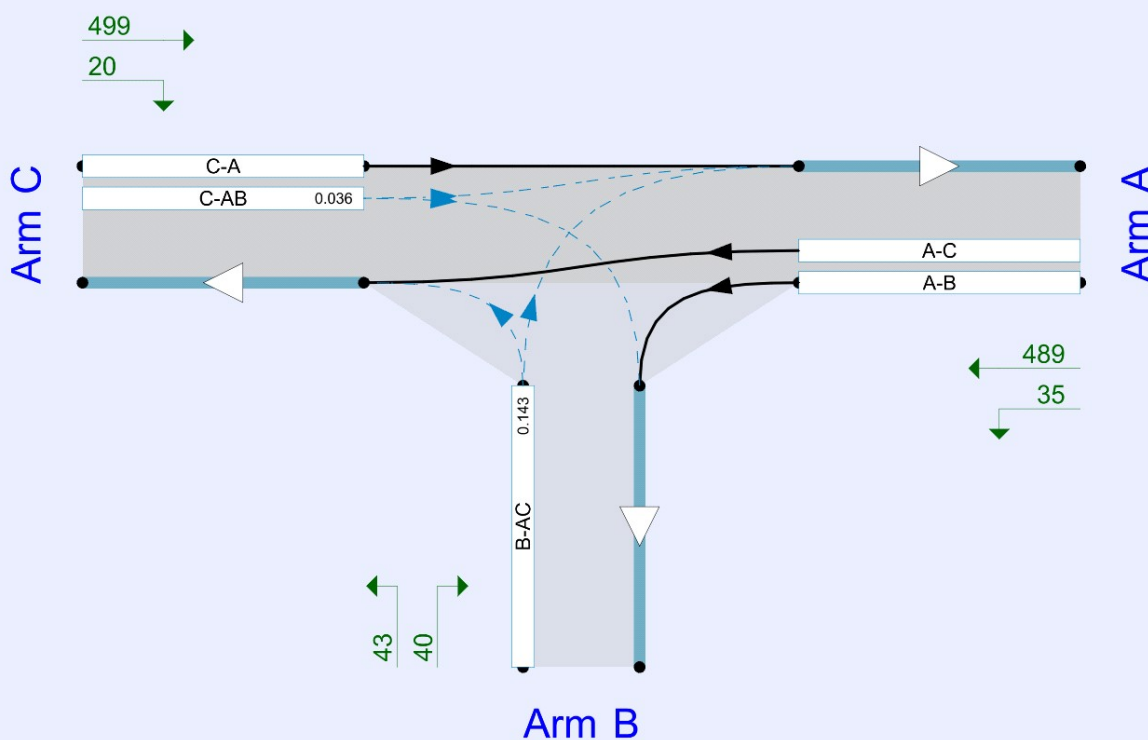
File summary

File Description

Title	J2 Cosmona
Location	Loughrea
Site number	
Date	26/09/2024
Version	
Status	(new file)
Identifier	
Client	Galway Co Co
Jobnumber	11942
Enumerator	TOBIN\Micheal Geraghty
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



Flows show original traffic demand (PCU/hr).
Streams (downstream end) show RFC (l)

The junction diagram reflects the last run of Junctions.

Analysis Options

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

Demand Set Summary

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)
D1	2024	AM	ONE HOUR	00:00	01:30	15
D2	2024	PM	ONE HOUR	16:45	18:15	15
D3	2026 Base	AM	ONE HOUR	00:00	01:30	15
D4	2026 Base + Dev	AM	ONE HOUR	00:00	01:30	15
D5	2041 Base	AM	ONE HOUR	00:00	01:30	15
D6	2041 Base + Dev	AM	ONE HOUR	00:00	01:30	15
D7	2026 Base	PM	ONE HOUR	16:45	18:15	15
D8	2026 Base + Dev	PM	ONE HOUR	16:45	18:15	15
D9	2041 Base	PM	ONE HOUR	16:45	18:15	15
D10	2041 Base + Dev	PM	ONE HOUR	16:45	18:15	15

Analysis Set Details

ID	Network flow scaling factor (%)
A1	100.000

2024, AM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Arm A Direction	Arm B Direction	Arm C Direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	R350 / Hazelwood	T-Junction	Two-way	Two-way	Two-way		0.91	A

Junction Network

Driving side	Lighting	Network delay (s)	Network LOS
Left	Normal/unknown	0.91	A

Arms

Arms

Arm	Name	Description	Arm type
A	R350 (S)		Major
B	Hazelwood		Minor
C	R350 (N)		Major

Major Arm Geometry

Arm	Width of carriageway (m)	Has kerbed central reserve	Has right-turn storage	Visibility for right turn (m)	Blocks?	Blocking queue (PCU)
C	6.00			100.0	✓	0.00

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

Minor Arm Geometry

Arm	Minor arm type	Lane width (m)	Visibility to left (m)	Visibility to right (m)
B	One lane	3.00	60	25

Slope / Intercept / Capacity

Priority Intersection Slopes and Intercepts

Stream	Intercept (PCU/hr)	Slope for A-B	Slope for A-C	Slope for C-A	Slope for C-B
B-A	509	0.093	0.234	0.148	0.335
B-C	640	0.098	0.248	-	-
C-B	632	0.245	0.245	-	-

The slopes and intercepts shown above include custom intercept adjustments only.

Streams may be combined, in which case capacity will be adjusted.

Values are shown for the first time segment only; they may differ for subsequent time segments.

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)
D1	2024	AM	ONE HOUR	00:00	01:30	15

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

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A		✓	383	100.000
B		✓	62	100.000
C		✓	387	100.000

Origin-Destination Data

Demand (PCU/hr)

	To			
		A	B	C
	A	0	26	357
	B	30	0	32
	C	372	15	0

Vehicle Mix

Heavy Vehicle Percentages

	To			
		A	B	C
	A	0	0	3
	B	0	0	0
	C	3	0	0

Detailed Demand Data

Demand for each time segment

Time Segment	Arm	Demand (PCU/hr)	Demand in PCU (PCU/hr)
00:00-00:15	A	288	288
	B	47	47
	C	291	291
00:15-00:30	A	344	344
	B	56	56
	C	348	348
00:30-00:45	A	422	422
	B	68	68
	C	426	426
00:45-01:00	A	422	422
	B	68	68
	C	426	426
01:00-01:15	A	344	344
	B	56	56
	C	348	348
01:15-01:30	A	288	288
	B	47	47
	C	291	291

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS
B-AC	0.16	10.05	0.2	B
C-AB	0.04	4.95	0.1	A
C-A				
A-B				
A-C				

Main Results for each time segment

00:00 - 00:15

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	47	473	0.099	46	0.1	8.432	A
C-AB	18	754	0.024	18	0.0	4.944	A
C-A	273			273			
A-B	20			20			
A-C	269			269			

00:15 - 00:30

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	56	453	0.123	56	0.1	9.046	A
C-AB	24	780	0.030	24	0.0	4.814	A
C-A	324			324			
A-B	23			23			
A-C	321			321			

00:30 - 00:45

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	68	426	0.160	68	0.2	10.041	B
C-AB	33	818	0.041	33	0.1	4.650	A
C-A	393			393			
A-B	29			29			
A-C	393			393			

00:45 - 01:00

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	68	426	0.160	68	0.2	10.052	B
C-AB	33	818	0.041	33	0.1	4.655	A
C-A	393			393			
A-B	29			29			
A-C	393			393			

01:00 - 01:15

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	56	453	0.123	56	0.1	9.060	A
C-AB	24	780	0.030	24	0.0	4.825	A
C-A	324			324			
A-B	23			23			
A-C	321			321			

01:15 - 01:30

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	47	473	0.099	47	0.1	8.454	A
C-AB	18	754	0.024	18	0.0	4.951	A
C-A	273			273			
A-B	20			20			
A-C	269			269			

2024, PM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Arm A Direction	Arm B Direction	Arm C Direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	R350 / Hazelwood	T-Junction	Two-way	Two-way	Two-way		0.88	A

Junction Network

Driving side	Lighting	Network delay (s)	Network LOS
Left	Normal/unknown	0.88	A

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)
D2	2024	PM	ONE HOUR	16:45	18:15	15

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

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A		✓	294	100.000
B		✓	37	100.000
C		✓	214	100.000

Origin-Destination Data

Demand (PCU/hr)

	To			
	A	B	C	
From	A	0	10	284
	B	14	0	23
	C	190	24	0

Vehicle Mix

Heavy Vehicle Percentages

	To			
	A	B	C	
From	A	0	0	3
	B	0	0	0
	C	3	0	0

Detailed Demand Data

Demand for each time segment

Time Segment	Arm	Demand (PCU/hr)	Demand in PCU (PCU/hr)
16:45-17:00	A	221	221
	B	28	28
	C	161	161
17:00-17:15	A	264	264
	B	33	33
	C	192	192
17:15-17:30	A	324	324
	B	41	41
	C	236	236
17:30-17:45	A	324	324
	B	41	41
	C	236	236
17:45-18:00	A	264	264
	B	33	33
	C	192	192
18:00-18:15	A	221	221
	B	28	28
	C	161	161

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS
B-AC	0.08	8.12	0.1	A
C-AB	0.05	5.56	0.1	A
C-A				
A-B				
A-C				

Main Results for each time segment

16:45 - 17:00

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	28	516	0.054	28	0.1	7.368	A
C-AB	23	675	0.034	23	0.0	5.553	A
C-A	138			138			
A-B	8			8			
A-C	214			214			

17:00 - 17:15

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	33	503	0.066	33	0.1	7.668	A
C-AB	29	684	0.042	29	0.1	5.530	A
C-A	164			164			
A-B	9			9			
A-C	255			255			

17:15 - 17:30

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	41	484	0.084	41	0.1	8.117	A
C-AB	38	698	0.054	38	0.1	5.500	A
C-A	198			198			
A-B	11			11			
A-C	313			313			

17:30 - 17:45

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	41	484	0.084	41	0.1	8.118	A
C-AB	38	698	0.054	38	0.1	5.505	A
C-A	198			198			
A-B	11			11			
A-C	313			313			

17:45 - 18:00

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	33	503	0.066	33	0.1	7.671	A
C-AB	29	684	0.042	29	0.1	5.542	A
C-A	164			164			
A-B	9			9			
A-C	255			255			

18:00 - 18:15

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	28	516	0.054	28	0.1	7.379	A
C-AB	23	675	0.034	23	0.0	5.563	A
C-A	138			138			
A-B	8			8			
A-C	214			214			

2026 Base, AM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Arm A Direction	Arm B Direction	Arm C Direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	R350 / Hazelwood	T-Junction	Two-way	Two-way	Two-way		0.95	A

Junction Network

Driving side	Lighting	Network delay (s)	Network LOS
Left	Normal/unknown	0.95	A

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)
D3	2026 Base	AM	ONE HOUR	00:00	01:30	15

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

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A		✓	403	100.000
B		✓	66	100.000
C		✓	408	100.000

Origin-Destination Data

Demand (PCU/hr)

	To			
	A	B	C	
From	A	0	27	376
	B	32	0	34
	C	392	16	0

Vehicle Mix

Heavy Vehicle Percentages

	To			
	A	B	C	
From	A	0	0	3
	B	0	0	0
	C	3	0	0

Detailed Demand Data

Demand for each time segment

Time Segment	Arm	Demand (PCU/hr)	Demand in PCU (PCU/hr)
00:00-00:15	A	303	303
	B	50	50
	C	307	307
00:15-00:30	A	362	362
	B	59	59
	C	367	367
00:30-00:45	A	444	444
	B	73	73
	C	449	449
00:45-01:00	A	444	444
	B	73	73
	C	449	449
01:00-01:15	A	362	362
	B	59	59
	C	367	367
01:15-01:30	A	303	303
	B	50	50
	C	307	307

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS
B-AC	0.17	10.42	0.2	B
C-AB	0.04	4.92	0.1	A
C-A				
A-B				
A-C				

Main Results for each time segment

00:00 - 00:15

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	50	467	0.106	49	0.1	8.601	A
C-AB	20	761	0.026	20	0.0	4.909	A
C-A	287			287			
A-B	20			20			
A-C	283			283			

00:15 - 00:30

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	59	447	0.133	59	0.2	9.283	A
C-AB	26	789	0.033	26	0.0	4.775	A
C-A	341			341			
A-B	24			24			
A-C	338			338			

00:30 - 00:45

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	73	418	0.174	72	0.2	10.405	B
C-AB	37	829	0.044	37	0.1	4.607	A
C-A	412			412			
A-B	30			30			
A-C	414			414			

00:45 - 01:00

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	73	418	0.174	73	0.2	10.417	B
C-AB	37	829	0.044	37	0.1	4.614	A
C-A	412			412			
A-B	30			30			
A-C	414			414			

01:00 - 01:15

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	59	447	0.133	60	0.2	9.301	A
C-AB	26	789	0.033	26	0.0	4.786	A
C-A	341			341			
A-B	24			24			
A-C	338			338			

01:15 - 01:30

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	50	467	0.106	50	0.1	8.626	A
C-AB	20	761	0.026	20	0.0	4.917	A
C-A	287			287			
A-B	20			20			
A-C	283			283			

2026 Base + Dev, AM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Arm A Direction	Arm B Direction	Arm C Direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	R350 / Hazelwood	T-Junction	Two-way	Two-way	Two-way		0.94	A

Junction Network

Driving side	Lighting	Network delay (s)	Network LOS
Left	Normal/unknown	0.94	A

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)
D4	2026 Base + Dev	AM	ONE HOUR	00:00	01:30	15

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

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A		✓	418	100.000
B		✓	66	100.000
C		✓	416	100.000

Origin-Destination Data

Demand (PCU/hr)

	To			
	A	B	C	
From	A	0	28	390
	B	32	0	34
	C	400	16	0

Vehicle Mix

Heavy Vehicle Percentages

	To			
	A	B	C	
From	A	0	0	3
	B	0	0	0
	C	3	0	0

Detailed Demand Data

Demand for each time segment

Time Segment	Arm	Demand (PCU/hr)	Demand in PCU (PCU/hr)
00:00-00:15	A	315	315
	B	50	50
	C	313	313
00:15-00:30	A	376	376
	B	59	59
	C	374	374
00:30-00:45	A	460	460
	B	73	73
	C	458	458
00:45-01:00	A	460	460
	B	73	73
	C	458	458
01:00-01:15	A	376	376
	B	59	59
	C	374	374
01:15-01:30	A	315	315
	B	50	50
	C	313	313

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS
B-AC	0.18	10.57	0.2	B
C-AB	0.05	4.91	0.1	A
C-A				
A-B				
A-C				

Main Results for each time segment

00:00 - 00:15

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	50	464	0.107	49	0.1	8.669	A
C-AB	20	763	0.026	20	0.0	4.899	A
C-A	293			293			
A-B	21			21			
A-C	294			294			

00:15 - 00:30

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	59	443	0.134	59	0.2	9.379	A
C-AB	26	792	0.033	26	0.0	4.763	A
C-A	348			348			
A-B	25			25			
A-C	351			351			

00:30 - 00:45

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	73	413	0.176	72	0.2	10.553	B
C-AB	38	833	0.045	37	0.1	4.593	A
C-A	421			421			
A-B	31			31			
A-C	429			429			

00:45 - 01:00

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	73	413	0.176	73	0.2	10.568	B
C-AB	38	833	0.045	38	0.1	4.600	A
C-A	420			420			
A-B	31			31			
A-C	429			429			

01:00 - 01:15

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	59	443	0.134	60	0.2	9.396	A
C-AB	26	792	0.033	27	0.0	4.775	A
C-A	348			348			
A-B	25			25			
A-C	351			351			

01:15 - 01:30

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	50	464	0.107	50	0.1	8.695	A
C-AB	20	763	0.026	20	0.0	4.905	A
C-A	293			293			
A-B	21			21			
A-C	294			294			

2041 Base , AM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Arm A Direction	Arm B Direction	Arm C Direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	R350 / Hazelwood	T-Junction	Two-way	Two-way	Two-way		1.11	A

Junction Network

Driving side	Lighting	Network delay (s)	Network LOS
Left	Normal/unknown	1.11	A

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)
D5	2041 Base	AM	ONE HOUR	00:00	01:30	15

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

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A		✓	509	100.000
B		✓	81	100.000
C		✓	511	100.000

Origin-Destination Data

Demand (PCU/hr)

	To			
	A	B	C	
From	A	0	34	475
	B	39	0	42
	C	491	20	0

Vehicle Mix

Heavy Vehicle Percentages

	To			
	A	B	C	
From	A	0	0	3
	B	0	0	0
	C	3	0	0

Detailed Demand Data

Demand for each time segment

Time Segment	Arm	Demand (PCU/hr)	Demand in PCU (PCU/hr)
00:00-00:15	A	383	383
	B	61	61
	C	385	385
00:15-00:30	A	458	458
	B	73	73
	C	459	459
00:30-00:45	A	560	560
	B	89	89
	C	563	563
00:45-01:00	A	560	560
	B	89	89
	C	563	563
01:00-01:15	A	458	458
	B	73	73
	C	459	459
01:15-01:30	A	383	383
	B	61	61
	C	385	385

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS
B-AC	0.24	12.50	0.3	B
C-AB	0.06	4.75	0.1	A
C-A				
A-B				
A-C				

Main Results for each time segment

00:00 - 00:15

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	61	441	0.138	60	0.2	9.454	A
C-AB	28	797	0.035	28	0.0	4.744	A
C-A	357			357			
A-B	26			26			
A-C	358			358			

00:15 - 00:30

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	73	414	0.176	73	0.2	10.527	B
C-AB	38	834	0.046	38	0.1	4.592	A
C-A	421			421			
A-B	31			31			
A-C	427			427			

00:30 - 00:45

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	89	377	0.236	89	0.3	12.463	B
C-AB	57	887	0.064	56	0.1	4.410	A
C-A	506			506			
A-B	37			37			
A-C	523			523			

00:45 - 01:00

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	89	377	0.236	89	0.3	12.495	B
C-AB	57	887	0.064	57	0.1	4.416	A
C-A	506			506			
A-B	37			37			
A-C	523			523			

01:00 - 01:15

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	73	414	0.176	73	0.2	10.563	B
C-AB	38	834	0.046	39	0.1	4.607	A
C-A	421			421			
A-B	31			31			
A-C	427			427			

01:15 - 01:30

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	61	441	0.138	61	0.2	9.495	A
C-AB	28	797	0.035	28	0.0	4.753	A
C-A	357			357			
A-B	26			26			
A-C	358			358			

2041 Base + Dev, AM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Arm A Direction	Arm B Direction	Arm C Direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	R350 / Hazelwood	T-Junction	Two-way	Two-way	Two-way		1.14	A

Junction Network

Driving side	Lighting	Network delay (s)	Network LOS
Left	Normal/unknown	1.14	A

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)
D6	2041 Base + Dev	AM	ONE HOUR	00:00	01:30	15

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

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A		✓	524	100.000
B		✓	83	100.000
C		✓	519	100.000

Origin-Destination Data

Demand (PCU/hr)

	To			
	A	B	C	
From	A	0	35	489
	B	40	0	43
	C	499	20	0

Vehicle Mix

Heavy Vehicle Percentages

	To			
	A	B	C	
From	A	0	0	3
	B	0	0	0
	C	3	0	0

Detailed Demand Data

Demand for each time segment

Time Segment	Arm	Demand (PCU/hr)	Demand in PCU (PCU/hr)
00:00-00:15	A	394	394
	B	62	62
	C	391	391
00:15-00:30	A	471	471
	B	75	75
	C	467	467
00:30-00:45	A	577	577
	B	91	91
	C	571	571
00:45-01:00	A	577	577
	B	91	91
	C	571	571
01:00-01:15	A	471	471
	B	75	75
	C	467	467
01:15-01:30	A	394	394
	B	62	62
	C	391	391

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS
B-AC	0.25	12.82	0.3	B
C-AB	0.06	4.74	0.1	A
C-A				
A-B				
A-C				

Main Results for each time segment

00:00 - 00:15

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	62	437	0.143	62	0.2	9.576	A
C-AB	28	799	0.036	28	0.0	4.734	A
C-A	362			362			
A-B	26			26			
A-C	368			368			

00:15 - 00:30

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	75	410	0.182	74	0.2	10.713	B
C-AB	39	836	0.047	39	0.1	4.581	A
C-A	428			428			
A-B	31			31			
A-C	440			440			

00:30 - 00:45

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	91	372	0.246	91	0.3	12.786	B
C-AB	58	890	0.065	58	0.1	4.397	A
C-A	514			514			
A-B	39			39			
A-C	538			538			

00:45 - 01:00

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	91	372	0.246	91	0.3	12.823	B
C-AB	58	890	0.065	58	0.1	4.405	A
C-A	514			514			
A-B	39			39			
A-C	538			538			

01:00 - 01:15

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	75	410	0.182	75	0.2	10.751	B
C-AB	39	837	0.047	39	0.1	4.594	A
C-A	428			428			
A-B	31			31			
A-C	440			440			

01:15 - 01:30

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	62	437	0.143	63	0.2	9.621	A
C-AB	29	799	0.036	29	0.1	4.742	A
C-A	362			362			
A-B	26			26			
A-C	368			368			

2026 Base, PM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Arm A Direction	Arm B Direction	Arm C Direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	R350 / Hazelwood	T-Junction	Two-way	Two-way	Two-way		0.90	A

Junction Network

Driving side	Lighting	Network delay (s)	Network LOS
Left	Normal/unknown	0.90	A

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)
D7	2026 Base	PM	ONE HOUR	16:45	18:15	15

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

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A		✓	310	100.000
B		✓	39	100.000
C		✓	225	100.000

Origin-Destination Data

Demand (PCU/hr)

	To			
	A	B	C	
From	A	0	11	299
	B	15	0	24
	C	200	25	0

Vehicle Mix

Heavy Vehicle Percentages

	To			
	A	B	C	
From	A	0	0	3
	B	0	0	0
	C	3	0	0

Detailed Demand Data

Demand for each time segment

Time Segment	Arm	Demand (PCU/hr)	Demand in PCU (PCU/hr)
16:45-17:00	A	233	233
	B	29	29
	C	169	169
17:00-17:15	A	279	279
	B	35	35
	C	202	202
17:15-17:30	A	341	341
	B	43	43
	C	248	248
17:30-17:45	A	341	341
	B	43	43
	C	248	248
17:45-18:00	A	279	279
	B	35	35
	C	202	202
18:00-18:15	A	233	233
	B	29	29
	C	169	169

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS
B-AC	0.09	8.28	0.1	A
C-AB	0.06	5.56	0.1	A
C-A				
A-B				
A-C				

Main Results for each time segment

16:45 - 17:00

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	29	511	0.057	29	0.1	7.462	A
C-AB	24	677	0.036	24	0.0	5.545	A
C-A	145			145			
A-B	8			8			
A-C	225			225			

17:00 - 17:15

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	35	497	0.071	35	0.1	7.786	A
C-AB	30	687	0.044	30	0.1	5.520	A
C-A	172			172			
A-B	10			10			
A-C	269			269			

17:15 - 17:30

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	43	478	0.090	43	0.1	8.276	A
C-AB	40	701	0.057	40	0.1	5.492	A
C-A	208			208			
A-B	12			12			
A-C	329			329			

17:30 - 17:45

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	43	478	0.090	43	0.1	8.279	A
C-AB	40	702	0.057	40	0.1	5.498	A
C-A	207			207			
A-B	12			12			
A-C	329			329			

17:45 - 18:00

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	35	497	0.071	35	0.1	7.793	A
C-AB	31	687	0.044	31	0.1	5.534	A
C-A	172			172			
A-B	10			10			
A-C	269			269			

18:00 - 18:15

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	29	511	0.057	29	0.1	7.470	A
C-AB	24	677	0.036	24	0.0	5.556	A
C-A	145			145			
A-B	8			8			
A-C	225			225			

2026 Base + Dev, PM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Arm A Direction	Arm B Direction	Arm C Direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	R350 / Hazelwood	T-Junction	Two-way	Two-way	Two-way		0.89	A

Junction Network

Driving side	Lighting	Network delay (s)	Network LOS
Left	Normal/unknown	0.89	A

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)
D8	2026 Base + Dev	PM	ONE HOUR	16:45	18:15	15

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

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A		✓	320	100.000
B		✓	40	100.000
C		✓	241	100.000

Origin-Destination Data

Demand (PCU/hr)

	To			
	A	B	C	
From	A	0	11	309
	B	15	0	25
	C	215	26	0

Vehicle Mix

Heavy Vehicle Percentages

	To			
	A	B	C	
From	A	0	0	3
	B	0	0	0
	C	3	0	0

Detailed Demand Data

Demand for each time segment

Time Segment	Arm	Demand (PCU/hr)	Demand in PCU (PCU/hr)
16:45-17:00	A	241	241
	B	30	30
	C	181	181
17:00-17:15	A	288	288
	B	36	36
	C	217	217
17:15-17:30	A	352	352
	B	44	44
	C	265	265
17:30-17:45	A	352	352
	B	44	44
	C	265	265
17:45-18:00	A	288	288
	B	36	36
	C	217	217
18:00-18:15	A	241	241
	B	30	30
	C	181	181

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS
B-AC	0.09	8.35	0.1	A
C-AB	0.06	5.52	0.1	A
C-A				
A-B				
A-C				

Main Results for each time segment

16:45 - 17:00

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	30	510	0.059	30	0.1	7.494	A
C-AB	26	683	0.038	25	0.1	5.509	A
C-A	156			156			
A-B	8			8			
A-C	233			233			

17:00 - 17:15

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	36	495	0.073	36	0.1	7.833	A
C-AB	32	694	0.047	32	0.1	5.478	A
C-A	184			184			
A-B	10			10			
A-C	278			278			

17:15 - 17:30

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	44	475	0.093	44	0.1	8.348	A
C-AB	43	711	0.061	43	0.1	5.443	A
C-A	222			222			
A-B	12			12			
A-C	340			340			

17:30 - 17:45

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	44	475	0.093	44	0.1	8.351	A
C-AB	43	711	0.061	43	0.1	5.449	A
C-A	222			222			
A-B	12			12			
A-C	340			340			

17:45 - 18:00

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	36	495	0.073	36	0.1	7.838	A
C-AB	32	695	0.047	33	0.1	5.490	A
C-A	184			184			
A-B	10			10			
A-C	278			278			

18:00 - 18:15

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	30	510	0.059	30	0.1	7.503	A
C-AB	26	683	0.038	26	0.1	5.518	A
C-A	156			156			
A-B	8			8			
A-C	233			233			

2041 Base, PM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Arm A Direction	Arm B Direction	Arm C Direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	R350 / Hazelwood	T-Junction	Two-way	Two-way	Two-way		0.97	A

Junction Network

Driving side	Lighting	Network delay (s)	Network LOS
Left	Normal/unknown	0.97	A

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)
D9	2041 Base	PM	ONE HOUR	16:45	18:15	15

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

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A		✓	388	100.000
B		✓	48	100.000
C		✓	282	100.000

Origin-Destination Data

Demand (PCU/hr)

	To			
	A	B	C	
From	A	0	13	375
	B	18	0	30
	C	250	32	0

Vehicle Mix

Heavy Vehicle Percentages

	To			
	A	B	C	
From	A	0	0	3
	B	0	0	0
	C	3	0	0

Detailed Demand Data

Demand for each time segment

Time Segment	Arm	Demand (PCU/hr)	Demand in PCU (PCU/hr)
16:45-17:00	A	292	292
	B	36	36
	C	212	212
17:00-17:15	A	349	349
	B	43	43
	C	254	254
17:15-17:30	A	427	427
	B	53	53
	C	310	310
17:30-17:45	A	427	427
	B	53	53
	C	310	310
17:45-18:00	A	349	349
	B	43	43
	C	254	254
18:00-18:15	A	292	292
	B	36	36
	C	212	212

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS
B-AC	0.12	9.02	0.1	A
C-AB	0.08	5.53	0.1	A
C-A				
A-B				
A-C				

Main Results for each time segment

16:45 - 17:00

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	36	495	0.073	36	0.1	7.842	A
C-AB	33	690	0.048	33	0.1	5.521	A
C-A	179			179			
A-B	10			10			
A-C	282			282			

17:00 - 17:15

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	43	477	0.090	43	0.1	8.298	A
C-AB	42	703	0.060	42	0.1	5.498	A
C-A	211			211			
A-B	12			12			
A-C	337			337			

17:15 - 17:30

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	53	452	0.117	53	0.1	9.010	A
C-AB	57	722	0.079	57	0.1	5.473	A
C-A	253			253			
A-B	14			14			
A-C	413			413			

17:30 - 17:45

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	53	452	0.117	53	0.1	9.016	A
C-AB	57	722	0.079	57	0.1	5.480	A
C-A	253			253			
A-B	14			14			
A-C	413			413			

17:45 - 18:00

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	43	477	0.090	43	0.1	8.306	A
C-AB	42	703	0.060	43	0.1	5.511	A
C-A	211			211			
A-B	12			12			
A-C	337			337			

18:00 - 18:15

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	36	495	0.073	36	0.1	7.857	A
C-AB	33	690	0.048	33	0.1	5.532	A
C-A	179			179			
A-B	10			10			
A-C	282			282			

2041 Base + Dev , PM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Arm A Direction	Arm B Direction	Arm C Direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	R350 / Hazelwood	T-Junction	Two-way	Two-way	Two-way		0.87	A

Junction Network

Driving side	Lighting	Network delay (s)	Network LOS
Left	Normal/unknown	0.87	A

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)
D10	2041 Base + Dev	PM	ONE HOUR	16:45	18:15	15

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

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A		✓	698	100.000
B		✓	50	100.000
C		✓	299	100.000

Origin-Destination Data

Demand (PCU/hr)

	To			
		A	B	C
	A	0	13	685
	B	19	0	31
	C	266	33	0

Vehicle Mix

Heavy Vehicle Percentages

	To			
		A	B	C
	A	0	0	3
	B	0	0	0
	C	3	0	0

Detailed Demand Data

Demand for each time segment

Time Segment	Arm	Demand (PCU/hr)	Demand in PCU (PCU/hr)
16:45-17:00	A	525	525
	B	38	38
	C	225	225
17:00-17:15	A	627	627
	B	45	45
	C	269	269
17:15-17:30	A	769	769
	B	55	55
	C	329	329
17:30-17:45	A	769	769
	B	55	55
	C	329	329
17:45-18:00	A	627	627
	B	45	45
	C	269	269
18:00-18:15	A	525	525
	B	38	38
	C	225	225

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS
B-AC	0.15	11.68	0.2	B
C-AB	0.10	6.09	0.2	A
C-A				
A-B				
A-C				

Main Results for each time segment

16:45 - 17:00

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	38	435	0.087	37	0.1	9.050	A
C-AB	36	647	0.056	36	0.1	5.938	A
C-A	189			189			
A-B	10			10			
A-C	516			516			

17:00 - 17:15

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	45	405	0.111	45	0.1	9.991	A
C-AB	47	654	0.072	47	0.1	5.992	A
C-A	222			222			
A-B	12			12			
A-C	616			616			

17:15 - 17:30

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	55	363	0.152	55	0.2	11.661	B
C-AB	65	665	0.098	65	0.2	6.079	A
C-A	264			264			
A-B	14			14			
A-C	754			754			

17:30 - 17:45

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	55	363	0.152	55	0.2	11.678	B
C-AB	65	665	0.098	65	0.2	6.094	A
C-A	264			264			
A-B	14			14			
A-C	754			754			

17:45 - 18:00

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	45	405	0.111	45	0.1	10.012	B
C-AB	47	654	0.072	47	0.1	6.014	A
C-A	222			222			
A-B	12			12			
A-C	616			616			

18:00 - 18:15

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	38	435	0.087	38	0.1	9.074	A
C-AB	36	648	0.056	36	0.1	5.951	A
C-A	189			189			
A-B	10			10			
A-C	516			516			

Junctions 10										
PICADY 10 - Priority Intersection Module										
Version: 10.0.3.1598										
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Filename: J3 Cosmona.j10

Path: J:\Projects\11942 - Housing Development at Cosmona, Loughrea, Co. Galway\05-Design\01-Calculations\Traffic

Report generation date: 27/09/2024 12:28:32

- »2024, AM
- »2024, PM
- »2026 Base, AM
- »2026 Base + Dev, AM
- »2041 Base , AM
- »2041 Base + Dev, AM
- »2026 Base, PM
- »2026 Base + Dev, PM
- »2041 Base, PM
- »2041 Base + Dev , PM

Summary of junction performance

	AM					PM				
	Set ID	Queue (PCU)	Delay (s)	RFC	LOS	Set ID	Queue (PCU)	Delay (s)	RFC	LOS
	2024									
Stream B-AC	D1	0.2	7.58	0.16	A	D2	0.1	6.52	0.08	A
Stream C-AB		0.4	8.61	0.28	A		0.2	7.21	0.17	A
	2026 Base									
Stream B-AC	D3	0.2	7.65	0.17	A	D7	0.1	6.58	0.08	A
Stream C-AB		0.4	8.74	0.29	A		0.2	7.33	0.18	A
	2026 Base + Dev									
Stream B-AC	D4	0.2	7.81	0.17	A	D8	0.1	6.65	0.09	A
Stream C-AB		0.5	9.19	0.32	A		0.3	7.53	0.20	A
	2041 Base									
Stream B-AC	D5	0.3	8.58	0.22	A	D9	0.1	6.86	0.10	A
Stream C-AB		0.7	10.45	0.39	B		0.3	7.91	0.23	A
	2041 Base + Dev									
Stream B-AC	D6	0.3	8.67	0.23	A	D10	0.1	6.95	0.11	A
Stream C-AB		0.7	10.88	0.41	B		0.4	8.15	0.26	A

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

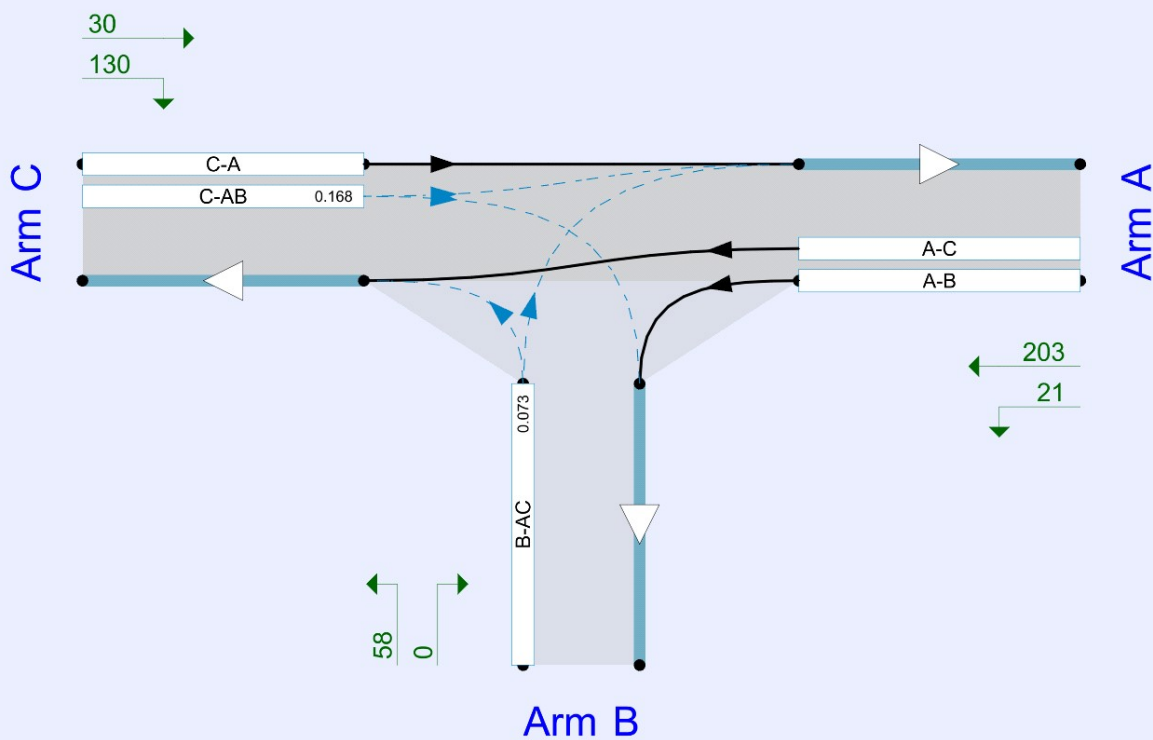
File summary

File Description

Title	J3 Cosmona
Location	Loughrea
Site number	
Date	26/09/2024
Version	
Status	(new file)
Identifier	
Client	Galway Co Co
Jobnumber	11942
Enumerator	TOBIN\Micheal Geraghty
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



Flows show original traffic demand (PCU/hr).
Streams (downstream end) show RFC (l)

The junction diagram reflects the last run of Junctions.

Analysis Options

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

Demand Set Summary

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)
D1	2024	AM	ONE HOUR	00:00	01:30	15
D2	2024	PM	ONE HOUR	16:45	18:15	15
D3	2026 Base	AM	ONE HOUR	00:00	01:30	15
D4	2026 Base + Dev	AM	ONE HOUR	00:00	01:30	15
D5	2041 Base	AM	ONE HOUR	00:00	01:30	15
D6	2041 Base + Dev	AM	ONE HOUR	00:00	01:30	15
D7	2026 Base	PM	ONE HOUR	16:45	18:15	15
D8	2026 Base + Dev	PM	ONE HOUR	16:45	18:15	15
D9	2041 Base	PM	ONE HOUR	16:45	18:15	15
D10	2041 Base + Dev	PM	ONE HOUR	16:45	18:15	15

Analysis Set Details

ID	Network flow scaling factor (%)
A1	100.000

2024, AM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Arm A Direction	Arm B Direction	Arm C Direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	R350 / Hazelwood	T-Junction	Two-way	Two-way	Two-way		3.45	A

Junction Network

Driving side	Lighting	Network delay (s)	Network LOS
Left	Normal/unknown	3.45	A

Arms

Arms

Arm	Name	Description	Arm type
A	Abbey St		Major
B	MT Carmel Crescent		Minor
C	R350		Major

Major Arm Geometry

Arm	Width of carriageway (m)	Has kerbed central reserve	Has right-turn storage	Visibility for right turn (m)	Blocks?	Blocking queue (PCU)
C	6.00			100.0	✓	0.00

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

Minor Arm Geometry

Arm	Minor arm type	Lane width (m)	Visibility to left (m)	Visibility to right (m)
B	One lane	3.00	60	25

Slope / Intercept / Capacity

Priority Intersection Slopes and Intercepts

Stream	Intercept (PCU/hr)	Slope for A-B	Slope for A-C	Slope for C-A	Slope for C-B
B-A	509	0.093	0.234	0.148	0.335
B-C	640	0.098	0.248	-	-
C-B	632	0.245	0.245	-	-

The slopes and intercepts shown above include custom intercept adjustments only.

Streams may be combined, in which case capacity will be adjusted.

Values are shown for the first time segment only; they may differ for subsequent time segments.

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)
D1	2024	AM	ONE HOUR	00:00	01:30	15

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

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A		✓	287	100.000
B		✓	81	100.000
C		✓	171	100.000

Origin-Destination Data

Demand (PCU/hr)

	To			
		A	B	C
	A	0	16	271
	B	0	0	81
	C	34	137	0

Vehicle Mix

Heavy Vehicle Percentages

	To			
		A	B	C
	A	0	0	3
	B	0	0	0
	C	3	0	0

Detailed Demand Data

Demand for each time segment

Time Segment	Arm	Demand (PCU/hr)	Demand in PCU (PCU/hr)
00:00-00:15	A	216	216
	B	61	61
	C	129	129
00:15-00:30	A	258	258
	B	73	73
	C	154	154
00:30-00:45	A	316	316
	B	89	89
	C	188	188
00:45-01:00	A	316	316
	B	89	89
	C	188	188
01:00-01:15	A	258	258
	B	73	73
	C	154	154
01:15-01:30	A	216	216
	B	61	61
	C	129	129

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS
B-AC	0.16	7.58	0.2	A
C-AB	0.28	8.61	0.4	A
C-A				
A-B				
A-C				

Main Results for each time segment

00:00 - 00:15

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	61	588	0.104	61	0.1	6.820	A
C-AB	108	596	0.181	107	0.2	7.350	A
C-A	21			21			
A-B	12			12			
A-C	204			204			

00:15 - 00:30

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	73	578	0.126	73	0.1	7.124	A
C-AB	130	590	0.220	130	0.3	7.835	A
C-A	24			24			
A-B	14			14			
A-C	244			244			

00:30 - 00:45

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	89	564	0.158	89	0.2	7.577	A
C-AB	161	580	0.278	161	0.4	8.589	A
C-A	27			27			
A-B	18			18			
A-C	298			298			

00:45 - 01:00

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	89	564	0.158	89	0.2	7.580	A
C-AB	161	580	0.278	161	0.4	8.608	A
C-A	27			27			
A-B	18			18			
A-C	298			298			

01:00 - 01:15

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	73	578	0.126	73	0.1	7.131	A
C-AB	130	590	0.220	130	0.3	7.860	A
C-A	24			24			
A-B	14			14			
A-C	244			244			

01:15 - 01:30

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	61	588	0.104	61	0.1	6.834	A
C-AB	108	596	0.181	108	0.2	7.387	A
C-A	21			21			
A-B	12			12			
A-C	204			204			

2024, PM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Arm A Direction	Arm B Direction	Arm C Direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	R350 / Hazelwood	T-Junction	Two-way	Two-way	Two-way		3.01	A

Junction Network

Driving side	Lighting	Network delay (s)	Network LOS
Left	Normal/unknown	3.01	A

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)
D2	2024	PM	ONE HOUR	16:45	18:15	15

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

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A		✓	162	100.000
B		✓	42	100.000
C		✓	112	100.000

Origin-Destination Data

Demand (PCU/hr)

	To			
		A	B	C
	A	0	16	146
	B	0	0	42
	C	21	91	0

Vehicle Mix

Heavy Vehicle Percentages

	To			
		A	B	C
	A	0	0	3
	B	0	0	0
	C	3	0	0

Detailed Demand Data

Demand for each time segment

Time Segment	Arm	Demand (PCU/hr)	Demand in PCU (PCU/hr)
16:45-17:00	A	122	122
	B	32	32
	C	84	84
17:00-17:15	A	146	146
	B	38	38
	C	101	101
17:15-17:30	A	178	178
	B	46	46
	C	123	123
17:30-17:45	A	178	178
	B	46	46
	C	123	123
17:45-18:00	A	146	146
	B	38	38
	C	101	101
18:00-18:15	A	122	122
	B	32	32
	C	84	84

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS
B-AC	0.08	6.52	0.1	A
C-AB	0.17	7.21	0.2	A
C-A				
A-B				
A-C				

Main Results for each time segment

16:45 - 17:00

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	32	611	0.052	31	0.1	6.207	A
C-AB	70	613	0.115	70	0.1	6.633	A
C-A	14			14			
A-B	12			12			
A-C	110			110			

17:00 - 17:15

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	38	606	0.062	38	0.1	6.337	A
C-AB	84	609	0.139	84	0.2	6.866	A
C-A	16			16			
A-B	14			14			
A-C	131			131			

17:15 - 17:30

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	46	598	0.077	46	0.1	6.522	A
C-AB	104	604	0.173	104	0.2	7.209	A
C-A	19			19			
A-B	18			18			
A-C	161			161			

17:30 - 17:45

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	46	598	0.077	46	0.1	6.522	A
C-AB	104	604	0.173	104	0.2	7.213	A
C-A	19			19			
A-B	18			18			
A-C	161			161			

17:45 - 18:00

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	38	606	0.062	38	0.1	6.341	A
C-AB	84	609	0.139	85	0.2	6.879	A
C-A	16			16			
A-B	14			14			
A-C	131			131			

18:00 - 18:15

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	32	611	0.052	32	0.1	6.213	A
C-AB	70	613	0.115	70	0.1	6.650	A
C-A	14			14			
A-B	12			12			
A-C	110			110			

2026 Base, AM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Arm A Direction	Arm B Direction	Arm C Direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	R350 / Hazelwood	T-Junction	Two-way	Two-way	Two-way		3.63	A

Junction Network

Driving side	Lighting	Network delay (s)	Network LOS
Left	Normal/unknown	3.63	A

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)
D3	2026 Base	AM	ONE HOUR	00:00	01:30	15

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

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A		✓	283	100.000
B		✓	86	100.000
C		✓	180	100.000

Origin-Destination Data

Demand (PCU/hr)

	To			
	A	B	C	
From	A	0	18	265
	B	0	0	86
	C	36	144	0

Vehicle Mix

Heavy Vehicle Percentages

	To			
	A	B	C	
From	A	0	0	3
	B	0	0	0
	C	3	0	0

Detailed Demand Data

Demand for each time segment

Time Segment	Arm	Demand (PCU/hr)	Demand in PCU (PCU/hr)
00:00-00:15	A	213	213
	B	65	65
	C	136	136
00:15-00:30	A	254	254
	B	77	77
	C	162	162
00:30-00:45	A	312	312
	B	95	95
	C	198	198
00:45-01:00	A	312	312
	B	95	95
	C	198	198
01:00-01:15	A	254	254
	B	77	77
	C	162	162
01:15-01:30	A	213	213
	B	65	65
	C	136	136

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS
B-AC	0.17	7.65	0.2	A
C-AB	0.29	8.74	0.4	A
C-A				
A-B				
A-C				

Main Results for each time segment

00:00 - 00:15

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	65	589	0.110	64	0.1	6.856	A
C-AB	114	598	0.190	113	0.2	7.412	A
C-A	22			22			
A-B	14			14			
A-C	200			200			

00:15 - 00:30

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	77	579	0.134	77	0.2	7.171	A
C-AB	137	592	0.232	137	0.3	7.919	A
C-A	25			25			
A-B	16			16			
A-C	238			238			

00:30 - 00:45

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	95	565	0.167	95	0.2	7.640	A
C-AB	170	583	0.292	170	0.4	8.719	A
C-A	28			28			
A-B	20			20			
A-C	292			292			

00:45 - 01:00

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	95	565	0.167	95	0.2	7.646	A
C-AB	170	583	0.292	170	0.4	8.739	A
C-A	28			28			
A-B	20			20			
A-C	292			292			

01:00 - 01:15

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	77	579	0.134	77	0.2	7.182	A
C-AB	137	592	0.232	137	0.3	7.948	A
C-A	25			25			
A-B	16			16			
A-C	238			238			

01:15 - 01:30

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	65	589	0.110	65	0.1	6.873	A
C-AB	114	598	0.190	114	0.2	7.453	A
C-A	22			22			
A-B	14			14			
A-C	200			200			

2026 Base + Dev, AM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Arm A Direction	Arm B Direction	Arm C Direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	R350 / Hazelwood	T-Junction	Two-way	Two-way	Two-way		3.72	A

Junction Network

Driving side	Lighting	Network delay (s)	Network LOS
Left	Normal/unknown	3.72	A

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)
D4	2026 Base + Dev	AM	ONE HOUR	00:00	01:30	15

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

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A		✓	312	100.000
B		✓	88	100.000
C		✓	193	100.000

Origin-Destination Data

Demand (PCU/hr)

	To			
	A	B	C	
From	A	0	19	293
	B	0	0	88
	C	38	155	0

Vehicle Mix

Heavy Vehicle Percentages

	To			
	A	B	C	
From	A	0	0	3
	B	0	0	0
	C	3	0	0

Detailed Demand Data

Demand for each time segment

Time Segment	Arm	Demand (PCU/hr)	Demand in PCU (PCU/hr)
00:00-00:15	A	235	235
	B	66	66
	C	145	145
00:15-00:30	A	280	280
	B	79	79
	C	174	174
00:30-00:45	A	344	344
	B	97	97
	C	212	212
00:45-01:00	A	344	344
	B	97	97
	C	212	212
01:00-01:15	A	280	280
	B	79	79
	C	174	174
01:15-01:30	A	235	235
	B	66	66
	C	145	145

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS
B-AC	0.17	7.81	0.2	A
C-AB	0.32	9.19	0.5	A
C-A				
A-B				
A-C				

Main Results for each time segment

00:00 - 00:15

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	66	584	0.114	66	0.1	6.946	A
C-AB	123	594	0.206	122	0.3	7.616	A
C-A	23			23			
A-B	14			14			
A-C	221			221			

00:15 - 00:30

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	79	573	0.138	79	0.2	7.289	A
C-AB	148	587	0.252	148	0.3	8.208	A
C-A	25			25			
A-B	17			17			
A-C	263			263			

00:30 - 00:45

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	97	558	0.174	97	0.2	7.806	A
C-AB	184	577	0.319	184	0.5	9.159	A
C-A	28			28			
A-B	21			21			
A-C	323			323			

00:45 - 01:00

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	97	558	0.174	97	0.2	7.812	A
C-AB	184	577	0.319	184	0.5	9.188	A
C-A	28			28			
A-B	21			21			
A-C	323			323			

01:00 - 01:15

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	79	573	0.138	79	0.2	7.298	A
C-AB	148	587	0.252	149	0.4	8.244	A
C-A	25			25			
A-B	17			17			
A-C	263			263			

01:15 - 01:30

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	66	584	0.114	66	0.1	6.963	A
C-AB	123	594	0.207	123	0.3	7.666	A
C-A	23			23			
A-B	14			14			
A-C	221			221			

2041 Base , AM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Arm A Direction	Arm B Direction	Arm C Direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	R350 / Hazelwood	T-Junction	Two-way	Two-way	Two-way		4.16	A

Junction Network

Driving side	Lighting	Network delay (s)	Network LOS
Left	Normal/unknown	4.16	A

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)
D5	2041 Base	AM	ONE HOUR	00:00	01:30	15

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

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A		✓	381	100.000
B		✓	109	100.000
C		✓	226	100.000

Origin-Destination Data

Demand (PCU/hr)

	To			
	A	B	C	
From	A	0	24	357
	B	0	0	109
	C	45	181	0

Vehicle Mix

Heavy Vehicle Percentages

	To			
	A	B	C	
From	A	0	0	3
	B	0	0	0
	C	3	0	0

Detailed Demand Data

Demand for each time segment

Time Segment	Arm	Demand (PCU/hr)	Demand in PCU (PCU/hr)
00:00-00:15	A	287	287
	B	82	82
	C	170	170
00:15-00:30	A	343	343
	B	98	98
	C	203	203
00:30-00:45	A	419	419
	B	120	120
	C	249	249
00:45-01:00	A	419	419
	B	120	120
	C	249	249
01:00-01:15	A	343	343
	B	98	98
	C	203	203
01:15-01:30	A	287	287
	B	82	82
	C	170	170

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS
B-AC	0.22	8.58	0.3	A
C-AB	0.39	10.45	0.7	B
C-A				
A-B				
A-C				

Main Results for each time segment

00:00 - 00:15

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	82	571	0.144	81	0.2	7.340	A
C-AB	145	585	0.247	143	0.3	8.143	A
C-A	26			26			
A-B	18			18			
A-C	269			269			

00:15 - 00:30

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	98	558	0.176	98	0.2	7.816	A
C-AB	175	576	0.304	175	0.5	8.975	A
C-A	28			28			
A-B	22			22			
A-C	321			321			

00:30 - 00:45

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	120	540	0.222	120	0.3	8.566	A
C-AB	219	564	0.387	218	0.7	10.398	B
C-A	30			30			
A-B	26			26			
A-C	393			393			

00:45 - 01:00

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	120	540	0.222	120	0.3	8.578	A
C-AB	219	564	0.388	219	0.7	10.450	B
C-A	30			30			
A-B	26			26			
A-C	393			393			

01:00 - 01:15

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	98	558	0.176	98	0.2	7.836	A
C-AB	175	576	0.304	176	0.5	9.036	A
C-A	28			28			
A-B	22			22			
A-C	321			321			

01:15 - 01:30

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	82	571	0.144	82	0.2	7.363	A
C-AB	145	585	0.247	145	0.3	8.213	A
C-A	25			25			
A-B	18			18			
A-C	269			269			

2041 Base + Dev, AM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Arm A Direction	Arm B Direction	Arm C Direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	R350 / Hazelwood	T-Junction	Two-way	Two-way	Two-way		4.36	A

Junction Network

Driving side	Lighting	Network delay (s)	Network LOS
Left	Normal/unknown	4.36	A

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)
D6	2041 Base + Dev	AM	ONE HOUR	00:00	01:30	15

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

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A		✓	389	100.000
B		✓	111	100.000
C		✓	238	100.000

Origin-Destination Data

Demand (PCU/hr)

	To			
	A	B	C	
From	A	0	24	365
	B	0	0	111
	C	47	191	0

Vehicle Mix

Heavy Vehicle Percentages

	To			
	A	B	C	
From	A	0	0	3
	B	0	0	0
	C	3	0	0

Detailed Demand Data

Demand for each time segment

Time Segment	Arm	Demand (PCU/hr)	Demand in PCU (PCU/hr)
00:00-00:15	A	293	293
	B	84	84
	C	179	179
00:15-00:30	A	350	350
	B	100	100
	C	214	214
00:30-00:45	A	428	428
	B	122	122
	C	262	262
00:45-01:00	A	428	428
	B	122	122
	C	262	262
01:00-01:15	A	350	350
	B	100	100
	C	214	214
01:15-01:30	A	293	293
	B	84	84
	C	179	179

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS
B-AC	0.23	8.67	0.3	A
C-AB	0.41	10.88	0.7	B
C-A				
A-B				
A-C				

Main Results for each time segment

00:00 - 00:15

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	84	570	0.147	83	0.2	7.382	A
C-AB	153	585	0.262	152	0.4	8.305	A
C-A	26			26			
A-B	18			18			
A-C	275			275			

00:15 - 00:30

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	100	556	0.179	100	0.2	7.880	A
C-AB	185	576	0.322	185	0.5	9.221	A
C-A	29			29			
A-B	22			22			
A-C	328			328			

00:30 - 00:45

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	122	537	0.227	122	0.3	8.656	A
C-AB	232	564	0.411	231	0.7	10.817	B
C-A	30			30			
A-B	26			26			
A-C	402			402			

00:45 - 01:00

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	122	537	0.227	122	0.3	8.668	A
C-AB	232	564	0.411	232	0.7	10.882	B
C-A	30			30			
A-B	26			26			
A-C	402			402			

01:00 - 01:15

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	100	556	0.179	100	0.2	7.896	A
C-AB	186	576	0.322	186	0.5	9.295	A
C-A	28			28			
A-B	22			22			
A-C	328			328			

01:15 - 01:30

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	84	570	0.147	84	0.2	7.411	A
C-AB	153	585	0.262	154	0.4	8.385	A
C-A	26			26			
A-B	18			18			
A-C	275			275			

2026 Base, PM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Arm A Direction	Arm B Direction	Arm C Direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	R350 / Hazelwood	T-Junction	Two-way	Two-way	Two-way		3.06	A

Junction Network

Driving side	Lighting	Network delay (s)	Network LOS
Left	Normal/unknown	3.06	A

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)
D7	2026 Base	PM	ONE HOUR	16:45	18:15	15

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

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A		✓	171	100.000
B		✓	44	100.000
C		✓	118	100.000

Origin-Destination Data

Demand (PCU/hr)

	To			
		A	B	C
	A	0	17	154
	B	0	0	44
	C	22	96	0

Vehicle Mix

Heavy Vehicle Percentages

	To			
		A	B	C
	A	0	0	3
	B	0	0	0
	C	3	0	0

Detailed Demand Data

Demand for each time segment

Time Segment	Arm	Demand (PCU/hr)	Demand in PCU (PCU/hr)
16:45-17:00	A	129	129
	B	33	33
	C	89	89
17:00-17:15	A	154	154
	B	40	40
	C	106	106
17:15-17:30	A	188	188
	B	48	48
	C	130	130
17:30-17:45	A	188	188
	B	48	48
	C	130	130
17:45-18:00	A	154	154
	B	40	40
	C	106	106
18:00-18:15	A	129	129
	B	33	33
	C	89	89

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS
B-AC	0.08	6.58	0.1	A
C-AB	0.18	7.33	0.2	A
C-A				
A-B				
A-C				

Main Results for each time segment

16:45 - 17:00

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	33	610	0.054	33	0.1	6.237	A
C-AB	74	611	0.122	74	0.1	6.693	A
C-A	15			15			
A-B	13			13			
A-C	116			116			

17:00 - 17:15

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	40	604	0.066	40	0.1	6.378	A
C-AB	89	607	0.147	89	0.2	6.948	A
C-A	17			17			
A-B	15			15			
A-C	138			138			

17:15 - 17:30

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	48	596	0.081	48	0.1	6.576	A
C-AB	110	602	0.183	110	0.2	7.322	A
C-A	20			20			
A-B	19			19			
A-C	170			170			

17:30 - 17:45

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	48	596	0.081	48	0.1	6.576	A
C-AB	110	602	0.183	110	0.2	7.328	A
C-A	20			20			
A-B	19			19			
A-C	170			170			

17:45 - 18:00

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	40	604	0.066	40	0.1	6.382	A
C-AB	89	608	0.147	89	0.2	6.961	A
C-A	17			17			
A-B	15			15			
A-C	138			138			

18:00 - 18:15

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	33	610	0.054	33	0.1	6.246	A
C-AB	74	611	0.122	74	0.1	6.711	A
C-A	15			15			
A-B	13			13			
A-C	116			116			

2026 Base + Dev, PM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Arm A Direction	Arm B Direction	Arm C Direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	R350 / Hazelwood	T-Junction	Two-way	Two-way	Two-way		3.19	A

Junction Network

Driving side	Lighting	Network delay (s)	Network LOS
Left	Normal/unknown	3.19	A

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)
D8	2026 Base + Dev	PM	ONE HOUR	16:45	18:15	15

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

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A		✓	181	100.000
B		✓	47	100.000
C		✓	130	100.000

Origin-Destination Data

Demand (PCU/hr)

	To			
	A	B	C	
From	A	0	17	164
	B	0	0	47
	C	24	106	0

Vehicle Mix

Heavy Vehicle Percentages

	To			
	A	B	C	
From	A	0	0	3
	B	0	0	0
	C	3	0	0

Detailed Demand Data

Demand for each time segment

Time Segment	Arm	Demand (PCU/hr)	Demand in PCU (PCU/hr)
16:45-17:00	A	136	136
	B	35	35
	C	98	98
17:00-17:15	A	163	163
	B	42	42
	C	117	117
17:15-17:30	A	199	199
	B	52	52
	C	143	143
17:30-17:45	A	199	199
	B	52	52
	C	143	143
17:45-18:00	A	163	163
	B	42	42
	C	117	117
18:00-18:15	A	136	136
	B	35	35
	C	98	98

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS
B-AC	0.09	6.65	0.1	A
C-AB	0.20	7.53	0.3	A
C-A				
A-B				
A-C				

Main Results for each time segment

16:45 - 17:00

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	35	608	0.058	35	0.1	6.283	A
C-AB	82	611	0.135	82	0.2	6.805	A
C-A	16			16			
A-B	13			13			
A-C	123			123			

17:00 - 17:15

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	42	602	0.070	42	0.1	6.434	A
C-AB	99	607	0.163	99	0.2	7.093	A
C-A	18			18			
A-B	15			15			
A-C	147			147			

17:15 - 17:30

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	52	593	0.087	52	0.1	6.649	A
C-AB	122	601	0.203	122	0.3	7.519	A
C-A	21			21			
A-B	19			19			
A-C	181			181			

17:30 - 17:45

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	52	593	0.087	52	0.1	6.649	A
C-AB	122	601	0.203	122	0.3	7.530	A
C-A	21			21			
A-B	19			19			
A-C	181			181			

17:45 - 18:00

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	42	602	0.070	42	0.1	6.439	A
C-AB	99	607	0.163	99	0.2	7.108	A
C-A	18			18			
A-B	15			15			
A-C	147			147			

18:00 - 18:15

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	35	608	0.058	35	0.1	6.289	A
C-AB	82	611	0.135	82	0.2	6.827	A
C-A	16			16			
A-B	13			13			
A-C	123			123			

2041 Base, PM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Arm A Direction	Arm B Direction	Arm C Direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	R350 / Hazelwood	T-Junction	Two-way	Two-way	Two-way		3.29	A

Junction Network

Driving side	Lighting	Network delay (s)	Network LOS
Left	Normal/unknown	3.29	A

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)
D9	2041 Base	PM	ONE HOUR	16:45	18:15	15

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

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A		✓	213	100.000
B		✓	55	100.000
C		✓	148	100.000

Origin-Destination Data

Demand (PCU/hr)

	To			
	A	B	C	
From	A	0	21	192
	B	0	0	55
	C	28	120	0

Vehicle Mix

Heavy Vehicle Percentages

	To			
	A	B	C	
From	A	0	0	3
	B	0	0	0
	C	3	0	0

Detailed Demand Data

Demand for each time segment

Time Segment	Arm	Demand (PCU/hr)	Demand in PCU (PCU/hr)
16:45-17:00	A	160	160
	B	41	41
	C	111	111
17:00-17:15	A	191	191
	B	49	49
	C	133	133
17:15-17:30	A	235	235
	B	61	61
	C	163	163
17:30-17:45	A	235	235
	B	61	61
	C	163	163
17:45-18:00	A	191	191
	B	49	49
	C	133	133
18:00-18:15	A	160	160
	B	41	41
	C	111	111

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS
B-AC	0.10	6.86	0.1	A
C-AB	0.23	7.91	0.3	A
C-A				
A-B				
A-C				

Main Results for each time segment

16:45 - 17:00

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	41	602	0.069	41	0.1	6.412	A
C-AB	94	607	0.154	93	0.2	7.002	A
C-A	18			18			
A-B	16			16			
A-C	145			145			

17:00 - 17:15

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	49	595	0.083	49	0.1	6.597	A
C-AB	113	602	0.187	112	0.2	7.360	A
C-A	20			20			
A-B	19			19			
A-C	173			173			

17:15 - 17:30

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	61	585	0.104	60	0.1	6.863	A
C-AB	139	595	0.234	139	0.3	7.894	A
C-A	24			24			
A-B	23			23			
A-C	211			211			

17:30 - 17:45

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	61	585	0.104	61	0.1	6.863	A
C-AB	139	595	0.234	139	0.3	7.907	A
C-A	24			24			
A-B	23			23			
A-C	211			211			

17:45 - 18:00

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	49	595	0.083	50	0.1	6.599	A
C-AB	113	602	0.187	113	0.2	7.378	A
C-A	20			20			
A-B	19			19			
A-C	173			173			

18:00 - 18:15

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	41	602	0.069	41	0.1	6.419	A
C-AB	94	607	0.154	94	0.2	7.031	A
C-A	18			18			
A-B	16			16			
A-C	145			145			

2041 Base + Dev , PM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Arm A Direction	Arm B Direction	Arm C Direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	R350 / Hazelwood	T-Junction	Two-way	Two-way	Two-way		3.43	A

Junction Network

Driving side	Lighting	Network delay (s)	Network LOS
Left	Normal/unknown	3.43	A

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)
D10	2041 Base + Dev	PM	ONE HOUR	16:45	18:15	15

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

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A		✓	224	100.000
B		✓	58	100.000
C		✓	160	100.000

Origin-Destination Data

Demand (PCU/hr)

	To			
		A	B	C
	A	0	21	203
	B	0	0	58
	C	30	130	0

Vehicle Mix

Heavy Vehicle Percentages

	To			
		A	B	C
	A	0	0	3
	B	0	0	0
	C	3	0	0

Detailed Demand Data

Demand for each time segment

Time Segment	Arm	Demand (PCU/hr)	Demand in PCU (PCU/hr)
16:45-17:00	A	169	169
	B	44	44
	C	120	120
17:00-17:15	A	201	201
	B	52	52
	C	144	144
17:15-17:30	A	247	247
	B	64	64
	C	176	176
17:30-17:45	A	247	247
	B	64	64
	C	176	176
17:45-18:00	A	201	201
	B	52	52
	C	144	144
18:00-18:15	A	169	169
	B	44	44
	C	120	120

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS
B-AC	0.11	6.95	0.1	A
C-AB	0.26	8.15	0.4	A
C-A				
A-B				
A-C				

Main Results for each time segment

16:45 - 17:00

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	44	600	0.073	43	0.1	6.462	A
C-AB	102	606	0.168	101	0.2	7.116	A
C-A	19			19			
A-B	16			16			
A-C	153			153			

17:00 - 17:15

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	52	593	0.088	52	0.1	6.660	A
C-AB	122	601	0.204	122	0.3	7.526	A
C-A	21			21			
A-B	19			19			
A-C	182			182			

17:15 - 17:30

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	64	582	0.110	64	0.1	6.944	A
C-AB	152	594	0.255	151	0.4	8.136	A
C-A	25			25			
A-B	23			23			
A-C	224			224			

17:30 - 17:45

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	64	582	0.110	64	0.1	6.946	A
C-AB	152	594	0.255	152	0.4	8.152	A
C-A	25			25			
A-B	23			23			
A-C	224			224			

17:45 - 18:00

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	52	593	0.088	52	0.1	6.665	A
C-AB	122	601	0.204	123	0.3	7.547	A
C-A	21			21			
A-B	19			19			
A-C	182			182			

18:00 - 18:15

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	44	600	0.073	44	0.1	6.471	A
C-AB	102	606	0.168	102	0.2	7.159	A
C-A	19			19			
A-B	16			16			
A-C	153			153			

Appendix D. ROAD SAFETY AUDIT

24151-01-001

HOUSING DEVELOPMENT AT COSMONA, LOUGHREA, CO. GALWAY

Road Safety Audit Stage 1/2

for

TOBIN CONSULTING

SEPTEMBER 2024



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DOCUMENT CONTROL SHEET

Project Title	Housing Development at Cosmona, Loughrea, Co. Galway
Project No.	24151-01
Client	Tobin Consulting
Document Title	Road Safety Audit Stage 1/2
Document No.	24151-01-001

Status	Author(s)	Reviewed By	Approved By	Issue Date
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2. STAGE 1/2 AUDIT	5
3. AUDIT TEAM STATEMENT	13
4. SAFETY AUDIT FEEDBACK FORM	14
APPENDIX A	16

1. INTRODUCTION

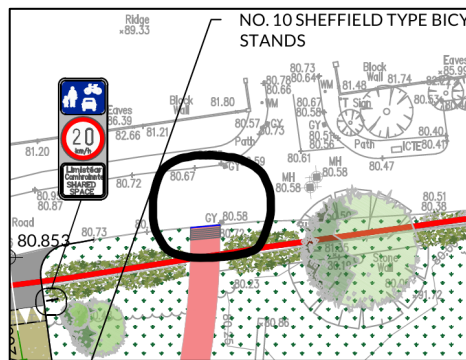
- 1.1 This report describes a Stage 1/2 Road Safety Audit carried out at a proposed housing development at Cosmona in Loughrea, Co. Galway. The site is a greenfield site adjacent to the R350 Loughrea to Bullaun Road. The land use is currently agricultural grass land. At the northern end of the proposed development, Cosmona will be connected to the Hazelwood estate via access roads and pedestrian/cycleways. The audit was carried out on 13th of September 2024 in the offices of Roadplan Consulting, Kilkenny.
- 1.2 The audit team members were as follows:
- George Frisby, BE CEng MIEI
Auditor Number GF51255
 - Adrian Gildea, BE MIEI
Auditor Number AG7435152
- 1.3 Both audit team members visited the site on the 4th of September 2024. The audit comprised of an examination of the drawings relating to the scheme supplied by Tobin Consulting Engineers and an examination of the site.
- 1.4 The speed limit at the proposed site exit onto the R350 is 50km/h.
- 1.5 This Stage 1/2 Audit has been carried out in accordance with the relevant sections of TII GE-STY-01024. The team has examined only those issues within the design relating to the road safety implications of the scheme and has therefore not examined or verified the compliance of the design to any other criteria.
- 1.6 All problems described in this report are considered by the audit team to require action in order to improve the safety of the scheme and minimise accident occurrence.
- 1.7 Appendix A contains copies of the audited drawings.

2. STAGE 1/2 AUDIT

2.1 **Problem:** Cyclists Entering the Carriageway

Location: Hazelwood Estate

The design drawings show that the shared footpath/cycletrack ends suddenly at the main access road of the adjacent Hazelwood estate. Cyclists and pedestrians at the end of the track may have limited visibility to the east due to overgrown vegetation. Drivers in the Hazelwood estate may not anticipate cyclists and pedestrians emerging onto the roadway. It is also noted that no dropped kerb and tactile paving is provided opposite the crossing to enable pedestrians cross over to the opposing footpath. This situation could increase the risk of collisions involving pedestrians and cyclists.



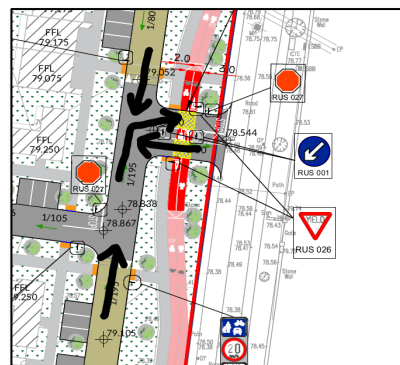
Recommendation:

Ensure sight lines comply with design standards and that motorists are warned of the presence of pedestrians and cyclists. Provide appropriate dropped kerbs and tactile paving in the footpath opposite.

2.2 **Problem:** Right of Way

Location: Entrance Avenue

The design drawings indicate a relatively long and straight access road adjacent to the entrance. It is unclear who has right of way at this junction. A lack of clarity may lead to side swipe vehicle collisions at this location.

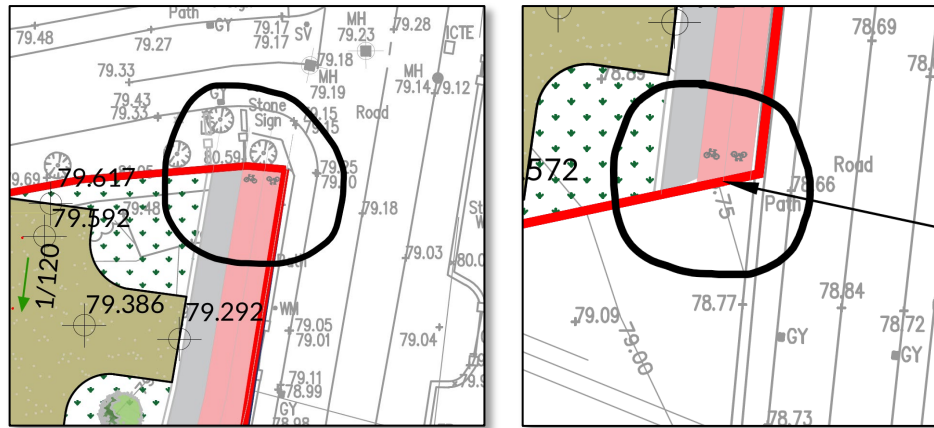


Recommendation:

Ensure adequate guidance is provided to motorists relating to the right of way at this location.

2.5 Problem: Termination for Cyclists from Cycle Track**Location:** Northern & Southern end of the Site

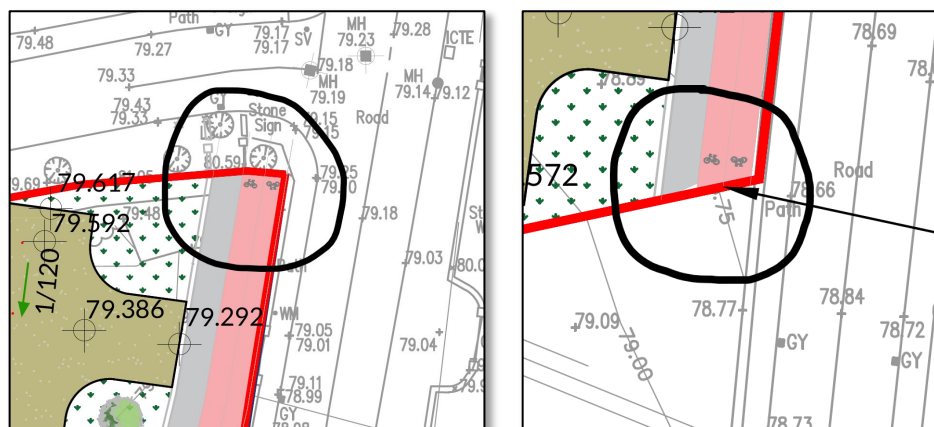
The drawings show a designated cyclist path, but it finishes suddenly at both ends without any details regarding its termination. The absence of features to help cyclists integrate with existing traffic and pedestrian facilities may heighten the risk of collisions involving cyclists

**Recommendation:**

Ensure adequate features are designed and constructed to guide cyclists on and off the cycle track.

2.6 Problem: Termination for pedestrians from footpath**Location:** Northern & Southern end of the Site

The drawings show a new footpath within the proposed development, but it finishes suddenly at both ends without any details regarding its tie-in to the existing footpaths. The absence of connections to the existing footpaths may increase the risk of collisions involving pedestrians.

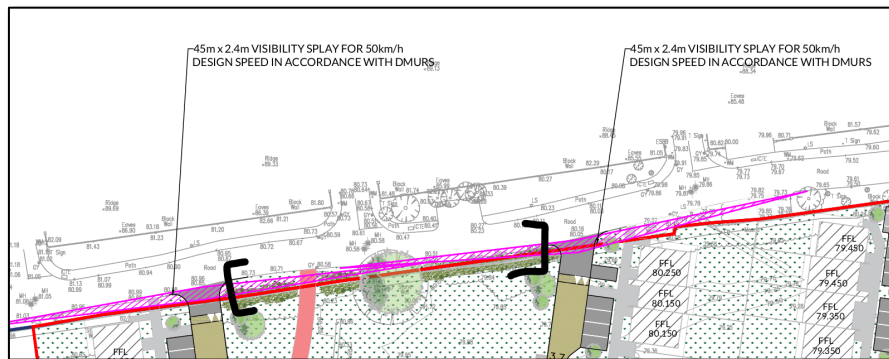
**Recommendation:**

Provide appropriate footpath connections to the existing footpaths.

2.7 **Problem:** Visibility Splays

Location: Exiting into Hazelwood Estate

Visibility splays are indicated for both exits into the Hazelwood estate from the Cosmona Development. These visibility splays extend across existing vegetation and shrubbed areas. Over time, excessive growth coupled with a lack of ownership/maintenance may result in visibility splays being reduced. This may contribute to collisions when vehicles are exiting the junctions.



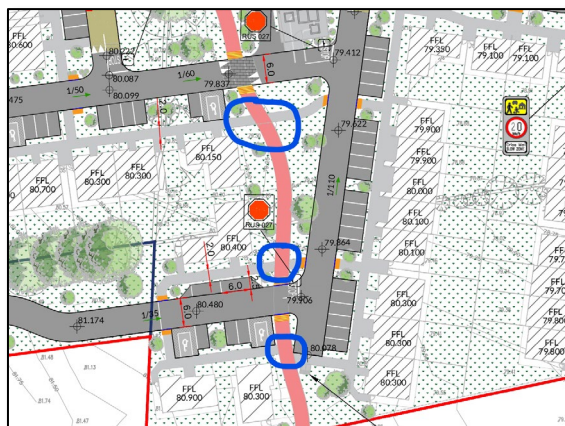
Recommendation:

Ensure adequate visibility splays are provided and maintained. Remove trees & shrubbed areas within the extents of the visibility splays.

2.8 **Problem:** Pedestrians Entering the Shared footpath/cycletrack

Location: Multiple Locations

Pedestrians may not expect to encounter cyclists on the shared footpath/cycletrack and may not make room for cyclists to pass. This may be a particular issue for visually impaired persons, who may enter the shared surface unbeknown to them, resulting in collisions between cyclists and pedestrians.



Recommendation:

Provide appropriate warning for pedestrians where the footpaths meet the shared footpath/cycletrack.

2.9 **Problem:** Inadequate Visibility
Location: Uncontrolled Pedestrian Crossings

A number of uncontrolled pedestrian crossings are proposed throughout the development. However, it is unclear whether adequate inter-visibility is provided between drivers of vehicles approaching the crossings and pedestrians stopped waiting to cross. Obstructions to intervisibility may include planting, refuse bins and parked vehicles adjacent to pedestrian crossings.

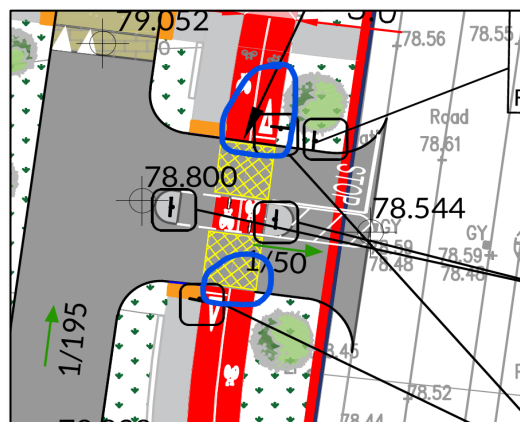


Recommendation:

Ensure adequate intervisibility between motorists & pedestrians is provided at uncontrolled crossings.

2.10 **Problem:** Cyclist Access to Cycle Surface
Location: Development Access Point

It appears there is a full height kerb between the carriageway and the cycle lane. While a drop kerb is indicated for pedestrians, no height for the kerb at the cycle lane is indicated on the drawings. TL404 indicates that kerbs are not recommended in the path of cyclists at the edge of the road. Cyclists may lose control when attempting to mount a kerb.

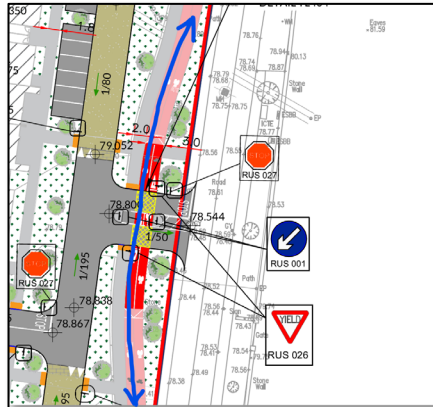


Recommendation:

Provide a suitable and level transition from the carriageway to the cycle track in accordance with the new Cycle Design Manual.

2.11 **Problem:** Cyclist Speed
Location: Main Entrance Crossing

The design drawings indicate a gentle swept path for cyclists as they approach the crossing point. Cyclists approaching at speed may have difficulty stopping to give right of way to vehicles entering/exiting the development. This may result in side-swipe collisions between vehicles and cyclists.

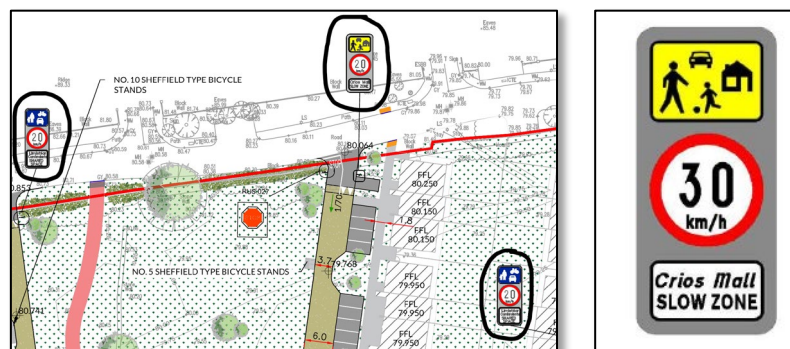


Recommendation:

Ensure the approach to the crossing for cyclists incorporates a suitable alignment that promotes cyclists to slow down in advance of the crossing, as outlined in TL404.

2.12 **Problem:** Slow Zone Signage
Location: Throughout

The design drawings indicate Slow Signage and other speed signage throughout. The Traffic Signs Manual indicates that Slow Zone signage for built up areas is 30km/h, however differing speeds are indicated on the design drawings. Confusion regarding the exact speed limit may cause drivers to ignore the actual speed limit, thus increasing the likelihood of accidents and collisions.



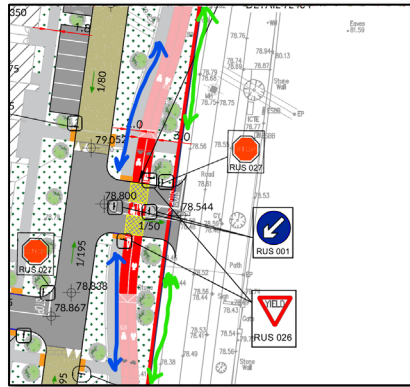
Recommendation:

Ensure speed limits throughout the development are as per the applicable legislation and the relative design standards.

2.13 Problem: Driver Confusion

Location: Main Entrance

The design drawings indicate a new pedestrian footpath and crossing within the development. The drawings do not indicate what is proposed for the existing footpath that is between the boundary wall and the R350. Multiple crossing points in close proximity may cause confusion for motorists resulting in an increased likelihood of vehicle & pedestrian collisions.

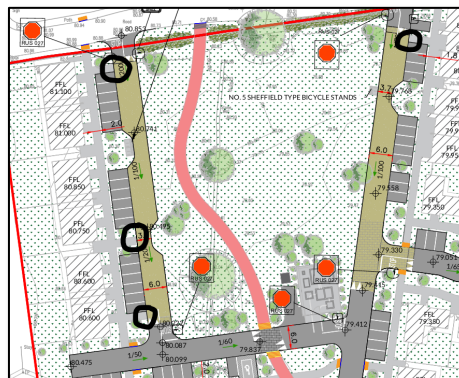
**Recommendation:**

Remove the existing footpath to limit pedestrians crossing at multiple locations.

2.14 Problem: Pedestrian Delineation

Location: Shared Surfaces

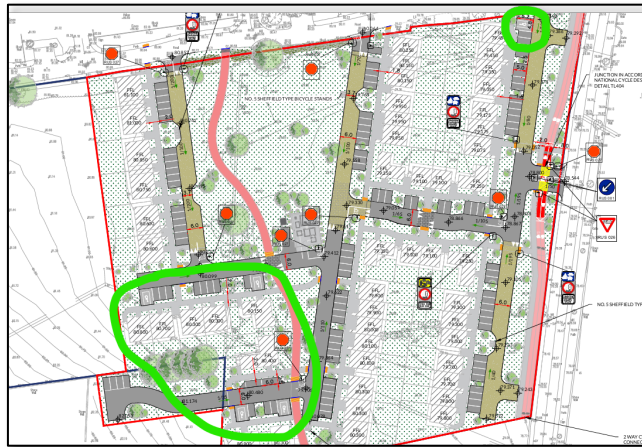
Footpaths and shared surfaces are planned within the development. However, it may not be clear to visually impaired pedestrians where the dedicated footpaths ends, and the shared surfaces begin. Consequently, they might inadvertently step onto the shared surface without realizing it, which could increase the risk of being struck by a passing vehicle.

**Recommendation:**

Provide appropriate tactile warning at the interfaces of footpaths and shared surface.

2.15 Problem: Disabled Parking**Location:** Throughout

There are five disabled parking spaces, with four located in the southwest corner of the development. However, there are significant areas within the development that lack any disabled parking. Once parked, individuals with disabilities may need to navigate several road crossings to reach their destination, raising the risk of collisions between pedestrians and vehicles

**Recommendation:**

Provide a more even distribution of disabled parking across the site.

2.16 Problem: Street Lighting**Location:** Throughout

No public lighting is indicated on the design drawings. Road safety would be enhanced with the provision of street lighting.

Recommendation:

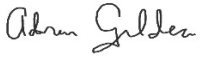
Ensure adequate street lighting is provided throughout the development.

3. AUDIT TEAM STATEMENT

- 3.1 We certify that we have examined the drawings listed in Appendix A and have inspected the site. This examination has been carried out with the sole purpose of identifying any features of the scheme that could be removed or modified to improve the safety of the scheme.

Signed.....  George Frisby

Date13th September 2024.....

Signed.....  Adrian Gildea

Date13th September 2024.....

4. SAFETY AUDIT FEEDBACK FORM

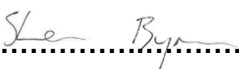
Scheme: Housing Development at Cosmona, Loughrea, Co. Galway

Document Number: 24151-01-001

Audit Stage: Stage 1/2 RSA

Date Audit Completed: 13th September 2024

Paragraph No. in Safety Audit Report	To Be Completed By Designer			To Be Completed by Audit Team Leader
	Problem accepted (yes/no)	Recommended measure Accepted (yes/no)	Describe alternative measure(s). Give reasons for not accepting recommended measure. Only complete if recommended measure is not accepted.	Alternative measures or reasons accepted by auditors (yes/no)
2.1	Yes	Yes	-----	-----
2.2	Yes	Yes	-----	-----
2.3	No	No	This parking is a proposed access to the existing graveyard to the east of the site – a pedestrian link will instead be provided to the site boundary with the graveyard.	Yes
2.4	Yes	Yes	-----	-----
2.5	Yes	Yes	-----	-----
2.6	Yes	No	The footpath to the north will be extended to tie create an uncontrolled crossing. Lidl are developing the lands to the south which will provide connectivity to the south	Yes
2.7	Yes	Yes	-----	-----
2.8	Yes	Yes	-----	-----
2.9	Yes	Yes	-----	-----
2.10	Yes	Yes	-----	-----
2.11	Yes	Yes	-----	-----
2.12	Yes	Yes	-----	-----
2.13	Yes	Yes	-----	-----
2.14	Yes	Yes	-----	-----
2.15	No	No	Accessible parking has been located in close proximity to the single storey units where council tenants are most likely to require accessible parking.	Yes
2.16	Yes	Yes	-----	-----

Safety Audit**Signed off** ...SHANE BYRNE..... **Design Team Leader****Print Name**.....**Date** ...24/09/2024...**Safety Audit****Signed off**..... **Employer****Print Name** Alan Brogan**Date** 25/09/2024**Safety Audit****Signed off**..... **Audit Team Leader****Print Name** GEORGE FRISBY**Date** 26/9/24

Please complete and return to:

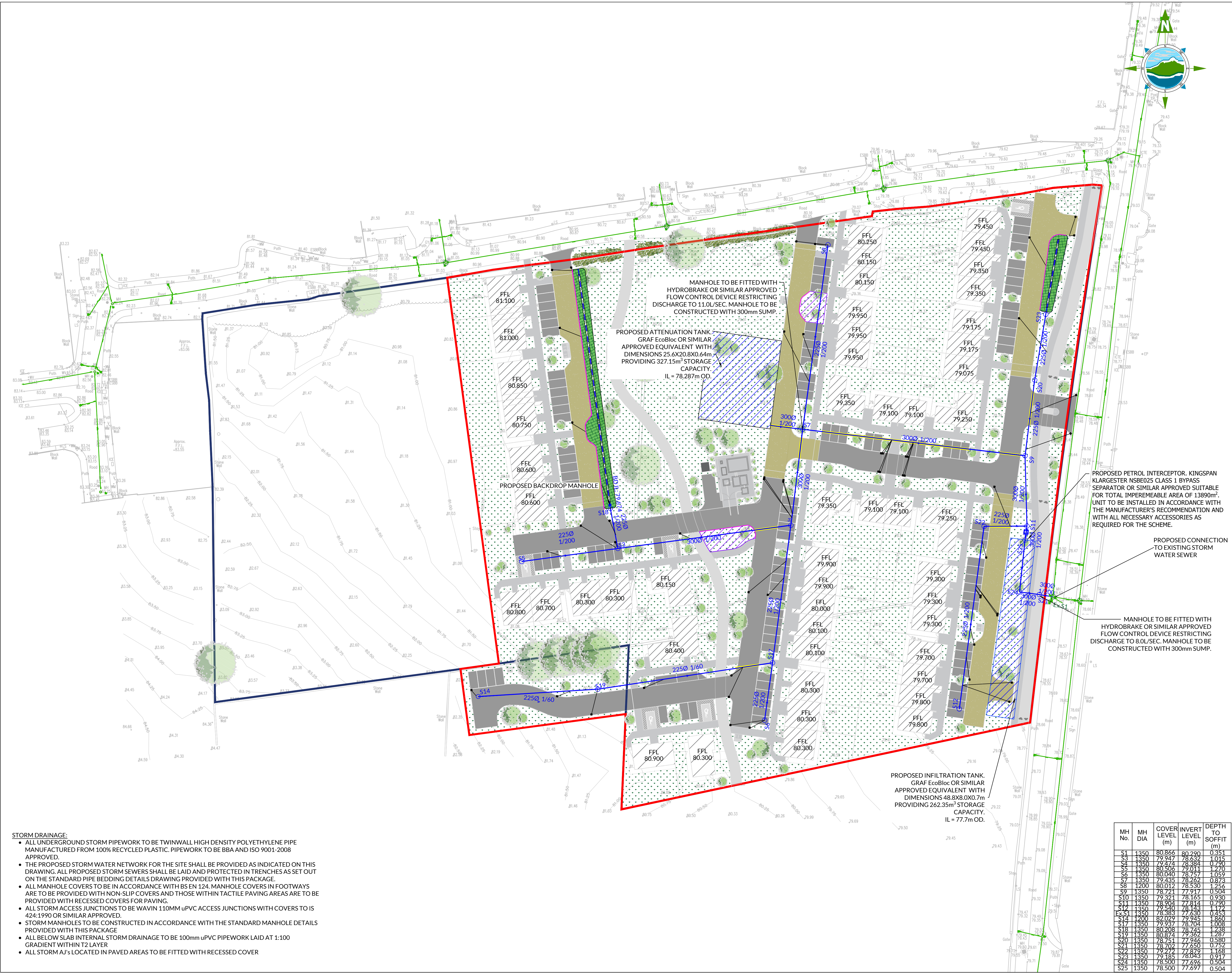
Roadplan Consulting,
7, Ormonde Road
Kilkenny
E-mail: info@roadplan.ie

APPENDIX A

List of Drawings Examined

The following drawings have been provided electronically in PDF format by Tobin are appended.

Drawing Number	Rev	Drawing Title
11942-2002	-	Proposed Storm Water Drainage Layout
11942-2004	-	Proposed Road Layout Sheet 1
11942-2005	-	Visibility Splays
11942-2006	-	Swept Path Analysis Sheet 1 of 3
11942-2007	-	Swept Path Analysis Sheet 2 of 3
11942-2008	-	Swept Path Analysis Sheet 3 of 3



THE INFORMATION ON THIS DRAWING IS TO THE ORDNANCE SURVEY IRELAND ITM COORDINATE SYSTEM

LEGEND:

PROPOSED STORM SEWER & MANHOLE

PROPOSED STORM SEWER & BACKDROP MANHOLE

EXISTING STORM SEWER & MANHOLE

PROPOSED INFILTRATION TANK

PROPOSED SWALE

PROPOSED DRAINAGE KERB DISCHARGING TO SWALE VIA ACO SWALE INLET UNIT WITH GALVANISED MESH GRATING @ 15M C/C

ROPOSED GULLY LOCATION AND Ø100MM PVC CONNECTION PIPE

CONCRETE COVER

PERFORATED COLLECTOR DRAINAGE PIPE

RAIN GARDEN

NOTES:

1. FIGURED DIMENSIONS ONLY TO BE TAKEN FROM THIS DRAWING.

2. ALL DRAWINGS TO BE CHECKED BY THE CONTRACTOR ON SITE.

3. ENGINEER/EMPLOYERS REPRESENTATIVE, AS APPROPRIATE, TO BE INFORMED BY THE CONTRACTOR OF ANY DISCREPANCIES BEFORE ANY WORK COMMENCES.

4. THE CONTRACTOR SHALL UNDERTAKE A THOROUGH CHECK FOR THE ACTUAL LOCATION OF ALL SERVICES/UTILITIES, ABOVE AND BELOW GROUND, BEFORE ANY WORK COMMENCES.

5. ALL LEVELS SHOWN RELATE TO ORDNANCE SURVEY DATUM AT MALIN HEAD.

DO	09.08.2024	Draft for Issue	A.O	S.B
Rev	Date	Description	By	Chkd.

Client:

Galway County Council

Project:

Housing Development at Cosmona, Loughrea, Co. Galway

Title:

Proposed Storm Water Drainage Layout

Scale @ A1:

1:500

Prepared by:

A.O

Checked by:

S.B

Date:

02.07.24

Drawing Status:

Planning

TOBIN

Tel: +353 (0)91 565 211

Email: info@tobin.ie

www.tobin.ie

Drawing No.:

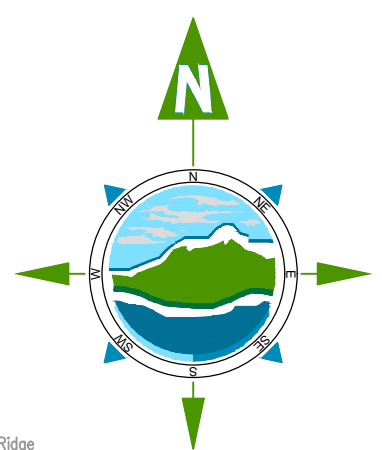
11942-2002

Revision:

DO

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THE INFORMATION ON THIS DRAWING IS TO THE ORDNANCE SURVEY IRELAND ITM COORDINATE SYSTEM

- LEGEND
- PROPOSED ASPHALT ROAD
 - PROPOSED CYCLE PATH
 - SHARED WALKWAY/CYCLE TRACK
 - PROPOSED FOOTPATH
 - SHARED SURFACE - IMPRINTED / COLOURED ASPHALT
 - IMPRINTED MACADAM RAISED TABLE / RAISED CROSSING
 - PCC KERB
 - DROP KERB
 - TACTILE PAVING
 - PROPOSED ROAD LEVEL
 - PROPOSED ROAD GRADIENT
 - PROPOSED BUILDING

Rev	Date	Description	By	Chkd.
D1	16.08.2024	Draft for Issue	AO	SB
D0	09.08.2024	Draft for Issue	A.O	S.B

Client: Galway County Council

Project: Housing Development at Cosmona, Loughrea, Co. Galway

Title: Proposed Roads Layout

Scale @ A1: 1:500

Prepared by: A.O Checked by: S.B Date: 07.06.2024

Drawing Status: PLANNING

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www.tobin.ie

Drawing No.: 11942-2004 Revision: D1



THE INFORMATION ON THIS DRAWING
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LEGEND:

- PROPOSED ASPHALT ROAD
- PROPOSED CYCLE PATH
- PROPOSED FOOTPATH
- VISIBILITY SPLAY IN
ACCORDANCE WITH DMURS
REQUIREMENT
- PROPOSED RED LINE
PLANNING BOUNDARY

NOTES:

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DO	13.08.2024	Draft for Issue	A.O	S.B
Rev	Date	Description	By	Chkd.

Client: Galway County Council

Project: Housing Development at
Cosmona, Loughrea,
Co. Galway

Title:
Proposed Visibility Splays

Scale @ A1: 1:500

Prepared by: G.M Checked by: S.B Date: 07.06.2024

Drawing Status: Planning

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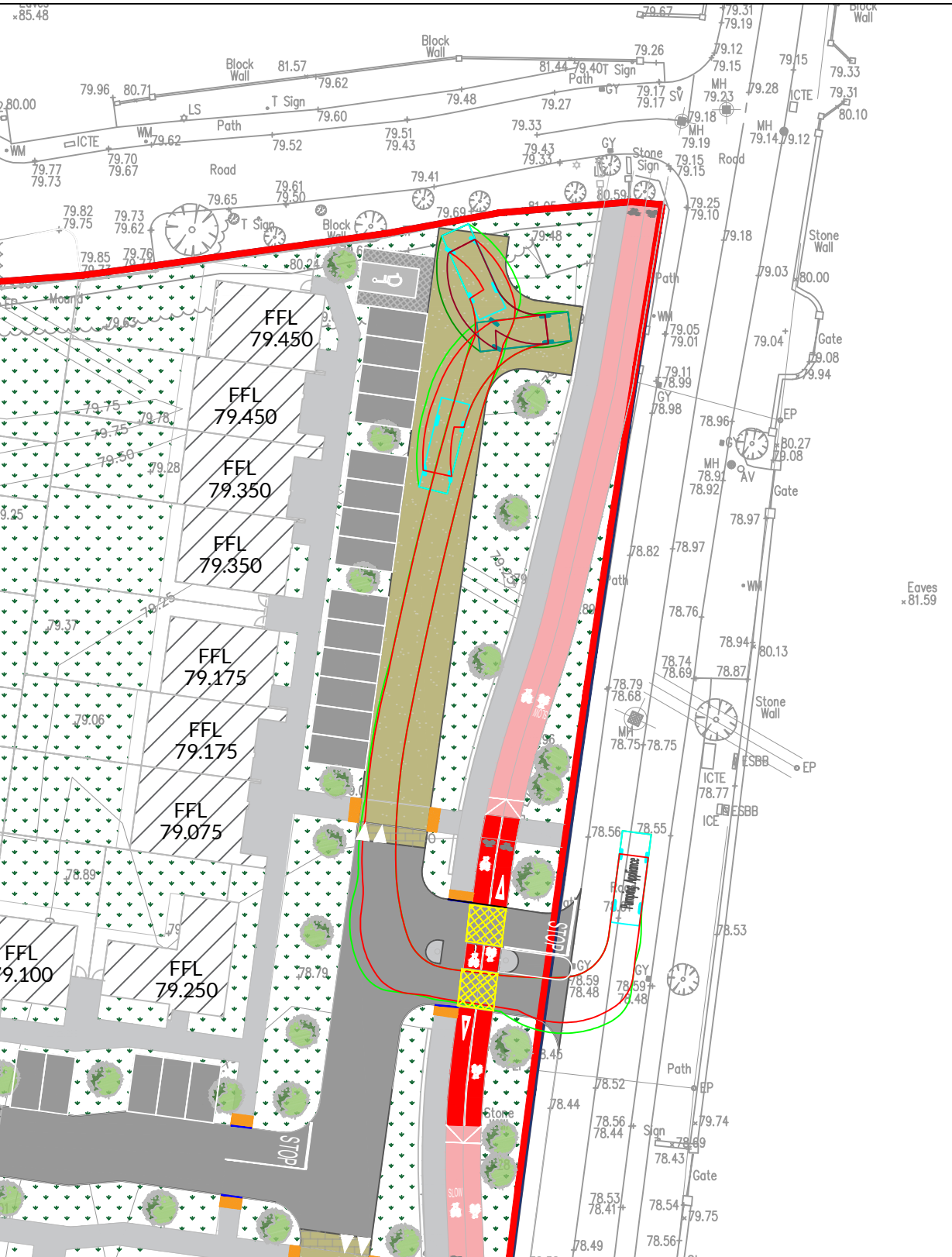
Drawing No.: 11942-2005
Revision: DO



SWEPT PATH ANALYSIS - REFUSE VEHICLE
SCALE 1:500



SWEPT PATH ANALYSIS - REFUSE VEHICLE
SCALE 1:500

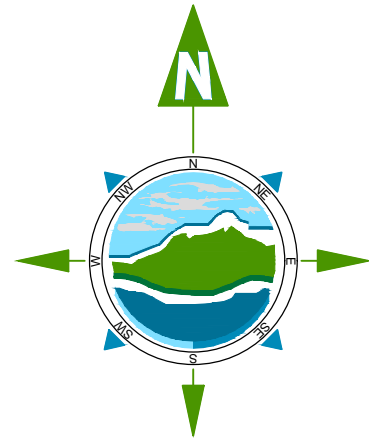


SWEPT PATH ANALYSIS - FIRE TENDER
SCALE 1:500



SWEPT PATH ANALYSIS - FIRE TENDER
SCALE 1:500

- NOTES:
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 - ALL LEVELS SHOWN RELATE TO ORDNANCE SURVEY DATUM AT MALIN HEAD.

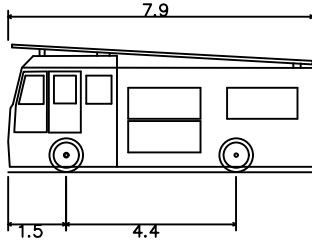


THE INFORMATION ON THIS DRAWING IS TO THE ORDNANCE SURVEY IRELAND ITM COORDINATE SYSTEM

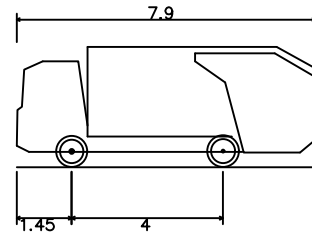
LEGEND:

- WHEEL TRACK - FORWARD MOVEMENT
- SWEPT PATH OF VEHICLE BODY - FORWARD MOVEMENT
- WHEEL TRACK - REVERSING MOVEMENT
- SWEPT PATH OF VEHICLE BODY - REVERSING MOVEMENT
- Vehicle Plan

VEHICLE PROFILE



Pumping Appliance
Overall Length 7.900m
Overall Width 2.400m
Overall Body Height 3.300m
Min Body Ground Clearance 0.140m
Track Width 2.500m
Lock-to-lock time 4.00m
Curb to curb Turning Radius 7.750m



DB32 Refuse Vehicle
Overall Length 7.900m
Overall Width 2.400m
Overall Body Height 3.183m
Min Body Ground Clearance 0.588m
Max Track Width 2.400m
Lock-to-lock time 6.00s
Curb to curb Turning Radius 9.625m



SWEPT PATH ANALYSIS - REFUSE VEHICLE
SCALE 1:500



SWEPT PATH ANALYSIS - FIRE TENDER
SCALE 1:500

DO	13.08.2024	Draft for Issue	A.O. S.B.
Rev	Date	Description	By Chkd.

Client: Galway County Council

Project: Housing Development at
Cosmona, Loughrea,
Co. Galway

Title: SWEPT PATH ANALYSIS
SHEET 1 OF 3

Scale @ A1: As Shown

Prepared by: A.O. Checked by: S.B. Date: 07.06.2024

Drawing Status: PLANNING

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Drawing No.: 11942-2006
Revision: DO



SWEPT PATH ANALYSIS - LARGE CAR
SCALE 1:500



SWEPT PATH ANALYSIS - LARGE CAR
SCALE 1:500



SWEPT PATH ANALYSIS - LARGE CAR
SCALE 1:500



SWEPT PATH ANALYSIS - LARGE CAR
SCALE 1:500

THE INFORMATION ON THIS DRAWING
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ITM COORDINATE SYSTEM

LEGEND:

- WHEEL TRACK - FORWARD MOVEMENT
- SWEPT PATH OF VEHICLE BODY - FORWARD MOVEMENT
- WHEEL TRACK - REVERSING MOVEMENT
- SWEPT PATH OF VEHICLE BODY - REVERSING MOVEMENT
- VEHICLE PLAN

VEHICLE PROFILE

Large Car (2006)

Overall Length	5.079m
Overall Width	1.872m
Overall Height	1.525m
Min. Body Ground Clearance	0.240m
Max. Track Width	1.831m
Lock-to-lock time	4.00s
Curb to Curb Turning Radius	5.900m

- NOTES:
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DO	13.08.2024	Draft for Issue	A.O	S.B
Rev	Date	Description	By	Chkd.

Client: Galway County Council

Project: Housing Development at
Cosmona, Loughrea,
Co. Galway

Title: Swept Path Analysis
Sheet 2 of 3

Scale @ A1: 1:250

Prepared by: G.M Checked by: S.B Date: 07.06.2024

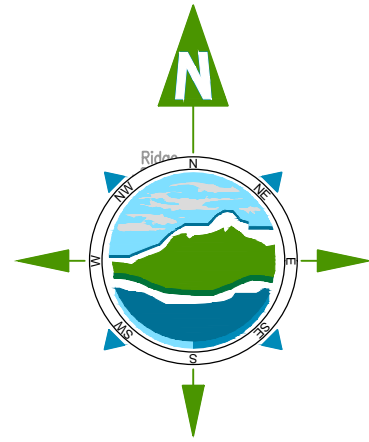
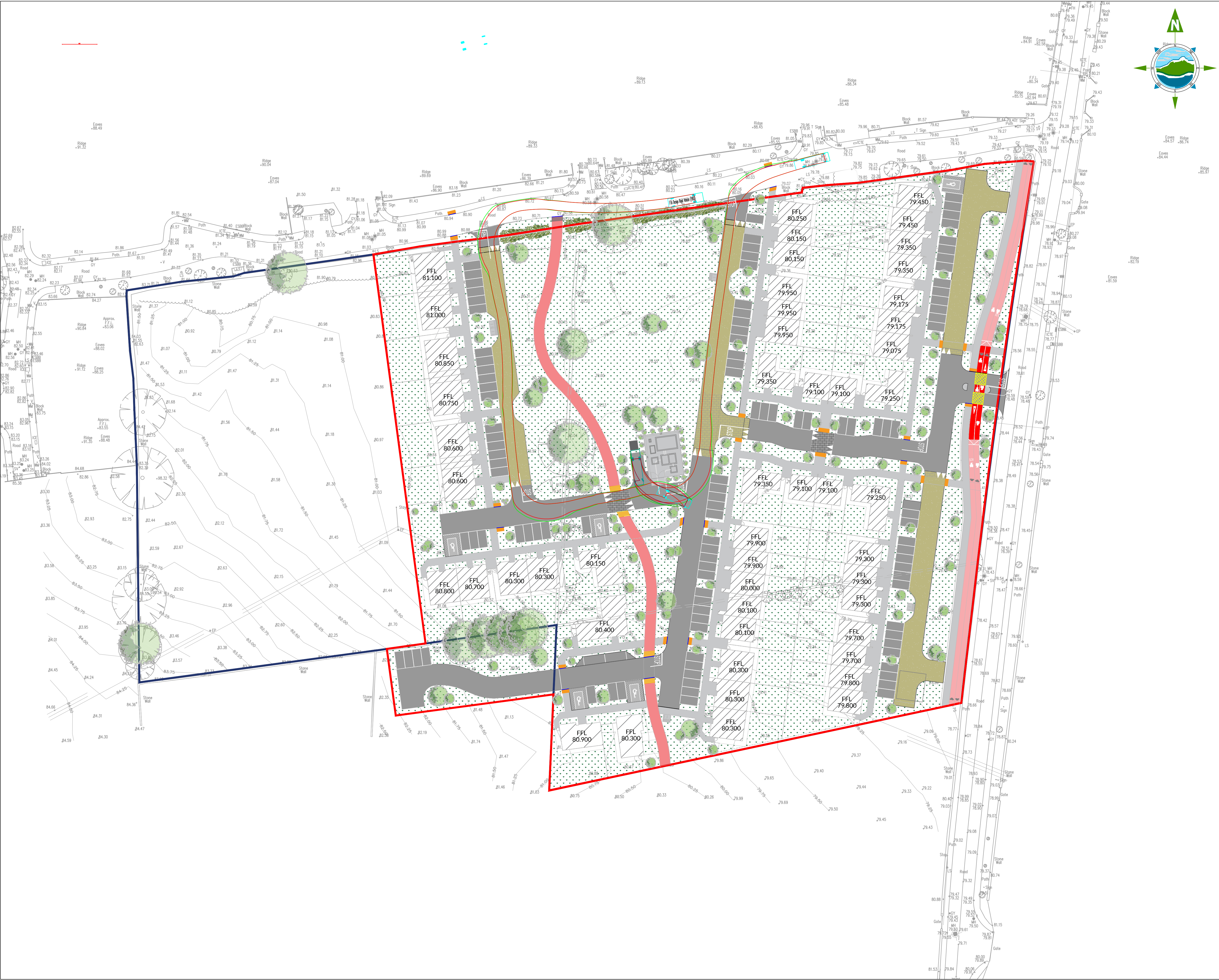
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Drawing No.: 11942-2007
Revision: DO

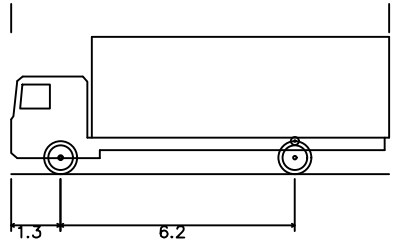


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LEGEND:

- WHEEL TRACK - FORWARD MOVEMENT
- SWEPT PATH OF VEHICLE BODY - FORWARD MOVEMENT
- WHEEL TRACK - REVERSING MOVEMENT
- SWEPT PATH OF VEHICLE BODY - REVERSING MOVEMENT
- VEHICLE PLAN

VEHICLE PROFILE



FTA Design Rigid Vehicle
Overall Length 10.000m
Overall Width 2.500m
Min Body Height 3.332m
Min Body Ground Clearance 0.422m
Track Width 2.500m
Lock-to-lock time 4.00s
Curb to Curb Turning Radius 12.000m

- NOTES:**
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DO	13.08.2024	Draft for Issue	A.O	S.B
Rev	Date	Description	By	Chkd.

Client: Galway County Council

Project: Housing Development at Cosmona, Loughrea, Co. Galway

Title: SWEPT PATH ANALYSIS SHEET 3 OF 3

Scale @ A1: 1:500

Prepared by: A.O Checked by: S.B Date: 07.06.2024

Drawing Status: Planning

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Drawing No.: 11942-2008
Revision: DO



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