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APPENDIX 15-1

***Traffic and
Transportation
Assessment***

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Kingston Stables Ltd.

Residential Development at Kingston,
Knocknacarra, Galway.

Traffic and Transportation Assessment

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Appendix A. TRAFFIC COUNT DATA

Appendix B. JUNCTION 10 ARCADY DETAILED OUTPUT

Appendix C. ROAD SAFETY AUDIT

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1.0 NON-TECHNICAL SUMMARY

The Non-Technical Summary is a synopsis of the Traffic and Transportation assessment for the proposed residential development at Western Distributor Road, Knocknacarra, Co. Galway. The proposed development is located on a 8.74 ha site and is currently a greenfield site, approximately 6.0km west of Galway City centre.

The proposed development is bounded to the north by a greenfield site, high-density residential developments bound the site to the east, and greenfield sites and dwellings to the west. Residential dwellings and the Kingston Road (R337) bound the south of the site. The surrounding greenfield sites form part of a potential future masterplan scheme – a leisure and recreational facility to the north-east of the proposed development, and a commercial development to the north of the proposed development.

As part of the enabling works for the development, vehicular access to the proposed development will be gained from the Western Distributor Road, from an existing roundabout. There is also a second proposed access off the Kingston Road, north of the Galway Golf Club, in the vicinity of an existing laneway. The laneway will undergo upgrade works in accordance with Design Manual for Urban Roads and Streets (DMURS).

Pedestrian paths and cycle routes will be provided throughout the site, linking onto the existing Western Distributor Road and Kingston Road infrastructure.

The proposed development will consist of the following:

1. Provision of 362 no. residential units in 4 no. development areas with a mix of apartment and house types on a site area of 5.37 ha. The buildings range between 2 no. and 6 no. storeys in height. The development will comprise the following:
 - 4 no. 2-bed townhouses;
 - 40 no. 3-bed townhouses;
 - 21 no. 4-bed townhouses;
 - 15 no. 1-bedroom duplex apartments;
 - 46 no. 2-bedroom duplex apartments;
 - 15 no. 2-bedroom duplex houses;
 - 46 no. 3-bedroom duplex houses;
 - 114 no. 1-bedroom apartments;
 - 56 no. 2-bedroom apartments;
 - 5 no. 3-bedroom apartments.
2. Demolition of existing structures (333.8 sqm);
3. Vehicular access to the proposed development from a permitted road (Planning Reference 24/60370 refers);
4. The provision of new active travel cycle and pedestrian access from Millers Lane;
5. Upgrades to the existing access at Kingston Road

6. The provision of a childcare facility (440 sq.m.);
7. The provision of public open space;
8. The provision of 665 no. bicycle parking spaces;
9. The provision of 313 no. car parking spaces;
10. Public lighting, bin stores, signage, services, ESB substation, site landscaping and all ancillary site development and enabling works.

An Environmental Impact Assessment (EIAR) and Natura Impact Statement (NIS) have been prepared in respect of the proposed development

1.1 PERMEABILITY & PUBLIC TRANSPORT

There are good pedestrian linkages to the proposed development site with footpaths along the Western Distributor Road and the Kingston Road leading to the access points of the site. There are formal cycle lanes in place along the Western Distributor Road leading to the proposed development. Pedestrian paths and cycle routes will be provided throughout the development as part of the active travel scheme on-going in the area. It is proposed that these linkages within the development will be permeable and enhance the connectivity between existing and proposed recreation and amenity zones within the surrounding areas.

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 2-minute walk away from the proposed development site with access to further public transport links available from here.

A total of 665 no. of bicycle parking spaces are being provided for at the proposed development.

1.2 JUNCTION ANALYSIS

1.2.1 Analysis Approach

The summation of the proposed development has been assessed using ARCADY and PICADY for the traffic generated volumes for the expected year of opening in 2026 and the design year 2041. A number of assumptions were made in this report, as outlined in Section 5, 'Trip Generation and Trip Distribution'. Following consultation with the Galway City Council (GCC) Transportation Department, the following existing junctions in the vicinity of the proposed development were analysed to ascertain the potential impact of the proposed development:

- i. Junction 1 – Bothar Stiofain / Western Distributor Road / Altan
- ii. Junction 2 – Gort Na Bro / Western Distributor Road / An Logan

The potential future Western Distributor Road (WDR) Active Travel scheme was also discussed with GCC's Transportation and Active Travel Departments. This proposed scheme aims to develop new and upgraded cycling infrastructure along the Western Distributor Road (WDR). During this consultation it was agreed that this TTA would review the potential future geometric changes to the Bothar Stiofain / Western Distributor Road / Altan Roundabout

(Junction 1) and include it as part of this Traffic and Transport Assessment (TTA). For this reason a number of design scenarios have been considered, as part of a holistic and conservative analysis for the area. See summary table below which indicates the design scenarios conducted as part of this TTA.

Table 1-1: Junction Analysis Scenarios

Junction Ref:	Junction Design	Traffic Design Years and Scenarios
Junction 1	Existing Roundabout Layout	2023 Existing
		2026 Base
		2026 Base + Committed Developments
		2026 Base + Committed & Proposed Developments
		2041 Base + Committed Developments
		2041 Base + Committed & Proposed Developments
		2041 Base + Committed & Masterplan
	Potential Future Active Travel Scheme Design	2026 Base
		2026 Base + Committed Developments
		2026 Base + Committed & Proposed Developments
		2041 Base + Committed Developments & Estimated Active Travel Scheme Reduction Factor
		2041 Base + Committed & Proposed Developments & Estimated Active Travel Scheme Reduction Factor
		2041 Base + Committed & Masterplan & Estimated Active Travel Scheme Reduction Factor
		2041 Base + Committed & Masterplan & Galway City Ring
Junction 2	Existing Roundabout Layout	2023 Existing
		2026 Base
		2026 Base + Committed Developments
		2026 Base + Committed & Proposed Developments
		2041 Base + Committed Developments
		2041 Base + Committed & Proposed Developments
		2041 Base + Committed & Masterplan

1.2.2 Junction 1 – Bothar Stiofain / Western Distributor Road / Altan (Existing Roundabout Layout)

The ARCADY analysis results indicate the junction is currently operating within capacity for all traffic Streams in both the 2023 morning and evening peak periods. This will continue to be the case for the 2026 Year scenario (base scenario and base plus committed and proposed scenario), with slight increases projected in the RFC and queue lengths for both the morning and evening peak periods.

For the design year 2041 base scenario, the junction is forecast to operate within capacity. The addition of potential development traffic from the proposed development and nearby committed developments results in Arm 4 approaching capacity in the AM period as an RFC of 0.89 is recorded.

The inclusion of the masterplan development (commercial development and aquatic centre facility) is projected to increase RFC and queue lengths for both the morning and evening peak periods, with Arm 2 and 3 approaching capacity in the PM period. An RFC of 1.08 is recorded in the AM period for Arm 4, which indicates the approach arm is exceeding capacity. Although Arm 4 marginally exceeds capacity, the analysis does not take account of any Mobility Management measures identified for the site. It is also estimated that a proportion of the proposed and masterplan trip generation will be pass through trips of the existing Western Distributor Road. Although a reduction factor could be applied to the proposed trip rates, it has not been applied as part of a conservative analysis.

1.2.3 Junction 1.1 – Bothar Stiofain / Western Distributor Road / Altan (Active Travel Layout)

The ARCADY analysis results indicate the active travel junction is predicted to operate within capacity for all traffic Streams in both the 2026 morning and evening peak periods. This will continue to be the case for the 2026 Base plus committed and proposed scenarios, with slight increases projected in the RFC and queue lengths for both the morning and evening peak periods.

For all 2041 design scenarios, excluding the Galway City Ring Road scenario, a 10% reduction has been applied to the background traffic based on the projected modal split objectives and targets, refer to Chapter 5 for details. For the design year 2041 base scenario, the junction is forecast to operate within capacity. The addition of committed and proposed development traffic is projected to increase RFC and queue lengths for both the morning and evening peak periods, however the junction is predicted to operate within capacity. The inclusion of the masterplan development (commercial development and aquatic centre facility) is projected to increase RFC and queue lengths for both the morning and evening peak periods, with Arm 4 in the AM and Arm 2 in the PM approaching capacity, however, the junction is predicted to operate within capacity.

For the design year 2041 with the inclusion of the masterplan and the Galway City Ring Road impact, all Junctions and Streams are forecast to operate within capacity in both the morning and evening peak periods. This design scenario applied a reduction to the background traffic based on the projected impact of the proposed N6 Galway City Ring Road, refer to Chapter 5 for details.

It is estimated that a proportion of the proposed and masterplan trip generation will be pass through trips of the existing Western Distributor Road. Although a reduction factor could be applied to the proposed trip rates, it has not been applied as part of a conservative analysis.

1.2.4 Junction 2 – Gort Na Bro / Western Distributor Road / An Logan (Existing Roundabout Layout)

The ARCADY analysis results indicate that the junction is currently operating within capacity for all traffic Streams in both the morning and evening 2023 peak periods. This will continue to

be the case for the 2026 Year scenarios (base scenario and base plus committed and proposed scenario), with slight increases projected in the RFC and queue lengths for both the morning and evening peak periods.

For the design year 2041 base scenario, the junction is forecast to operate well within capacity. The addition of traffic from the proposed development and nearby committed developments results in Arm 1 approaching capacity in the AM period as an RFC of 0.87 is recorded. However, the junction is forecast to operate within capacity.

The inclusion of the masterplan development (commercial development and aquatic centre facility) results in a projected increase in RFC and queue lengths for both the morning and evening peak periods, with Arm 1 in the AM, and Arm 4 in the PM approaching capacity. However, the junction is forecast to continue to operate within capacity.

Traffic Analysis

The preceding analysis does not take account of any Mobility Management measures identified for the site. It is also estimated that a proportion of the proposed and masterplan trip generation will be pass through trips of the existing Western Distributor Road. Although a reduction factor could be applied to the proposed trip rates, it has not been applied as part of a conservative analysis.

General

A total of 313 no. car parking spaces and 665 no. bicycle parking spaces will be provided onsite.

The site is accessible for pedestrians with a footpath network linking the site to its environs and a large residential catchment.

There are five bus stops within 450m of the proposed site, Altan Apartments bus stop, Hawthorn Place bus stop, Gort Na Bró bus stop, Shangort Road bus stop and Kingston Gardens bus stop. These bus-stops connects the proposed development with Galway City, Mayo, and other surrounding counties.

1.3 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 development.
- Outline the various methods which can be employed to facilitate a positive change in travel patterns at the site.

2.0 INTRODUCTION

2.1 INTRODUCTION

TOBIN have been appointed by Kingston Stables Ltd. to provide Traffic and Transportation Engineering Services for the proposed Large Residential Development (LRD) at Kingston, Knocknacarra, Galway. Vehicular access to the proposed development will be gained via a priority T-junction off the Altan arm of the Western Distributor Road / Bothar Stiofain / Altan roundabout and pedestrian / cyclist access from the Kingston Road at the location of an existing laneway. Both these accesses are to undergo upgrade/improvement works to facilitate the development. The existing site area is 8.74 ha, comprising of a brownfield / greenfield site.

In preparing this report, TOBIN have made reference to:

- The Galway City Council Development Plan 2023 – 2029 (GCCDP);
- 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 – Bothair Stiofain / Western Distributor Road / Altan
- Junction 2: Roundabout Junction - Gort Na Bro / Western Distributor Road / An Logan

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 at a number of meetings with Galway City Council Roads and Transportation Department, Active Travel Departments and the Recreation and Parks Department. There were a number of items discussed during these meetings, including a change to the priority of the Altan school access road, Bothar Stiofain Active Travel Scheme, the Kingston Road junction upgrade works and the potential future cycling scheme located along the Western Distributor Road. Following these

discussions TOBIN have incorporated these items into the Traffic and Transport Assessment and the overall planning application

2.4 ROAD SAFETY AUDIT

A Stage 1 Road Safety Audit (RSA) was carried out on the proposed roads layout design. All points raised by the Road Safety Audit Team to remedy the issues were noted by the Design Team, and the layout was subsequently amended to address the items raised. The RSA Feedback Form was signed by all parties and the process concluded. The points raised and responses to each item is outlined below.

- **Problem 3.2.1 – Long and Straight Roads**
 - **Problem:** There are long and straight roads within the development. Long and straight roads have a poor historic record of undesirably high vehicle speeds.
 - **Response:** The design team accepts the problem and recommendation with additional traffic calming provided throughout the development, please refer to drawing 11893-2009-2012 for details.
- **Problem 3.2.2 – Internal Junction Radii**
 - **Problem:** The internal junctions appear to have large radii. This can result in motorists undertaking high-speed left turns.
 - **Response:** The design team accepts the problem and recommendation with all junction radii designed in accordance with DMURS and vehicle swept path requirements, please refer to drawing 11893-2009-2012 for details.
- **Problem 3.2.3 – Kerb Heights**
 - **Problem:** The drawings indicate the kerb between the carriageway and cycle track, and also the cycle track and the footpath, are to be 25mm high. The 25mm height is likely to be difficult to identify by all users.
 - **Response:** The design team accepts the problem and recommendation with a 65mm kerb provided between the road and cycle track in accordance with the cycle design manual, please refer to section on drawing 11893-2012 for details.
- **Problem 3.2.4 – Footpath Transition onto Shared Surface**
 - **Problem:** There is no guidance offered to sight-impaired pedestrians to advise they are transitioning from a segregated footpath into an area shared with motor vehicles.
 - **Response:** The design team accepts the problem and recommendation with additional tactile surfacing and signage provided to indicate the change of environment, please refer to drawing 11893-2010 for details.
- **Problem 3.2.5 – Cyclists Junction Visibility – Kingston Road**
 - **Problem:** Junction visibility onto Kingston Road is restricted in both directions by boundary walls and vegetation.

- **Response:** The design team accepts the problem and recommendation with adequate visibility splays added to the road layout drawings for clarity, please refer to drawing 11893-2009 for details.
- **Problem 3.2.6 – Homezones**
 - **Problem:** There are large sections of the development assigned as “homezones” Although the carriageway is a different colour the surface appears to remain a carriageway, being wide, uniform width, road markings and generally straight alignments. It is likely motorists will drive on these sections as if they were on a standard carriageway, even though there is no segregated footpath for pedestrians.
 - **Response:** The design team accepts the problem and recommendation with the proposed home zones designed in accordance with the design principles of DMURS. A road width of 4.8m has been implemented throughout the homezone areas, which reduces vehicle speeds and vehicle dominance. Where perpendicular parking spaces are provided, an additional 1.2m of delineated homezone area is provided to enable vehicle access to parking spaces. The paving delineation will be provided as per DMURS section 4.4.2, please refer to drawing numbers 11893-2009, 11893-2010, 11893-2011 & 11893-2012 for details.
- **Problem 3.2.7 – Refuse Vehicles**
 - **Problem:** The swept path analysis for the refuse vehicle has been undertaken with use of a very small vehicle, unlikely to be used in this area. There is concern large vehicles may not be able to navigate the development and may over-ride footpaths, cycle tracks or parking spaces.
 - **Response:** The design team accepts the problem and recommendation. Barna Waste was consulted to determine the dimensions of the large refuse vehicle used. Please refer to the accompanying swept path analysis which implements the larger refuse vehicle which operates within the area.
- **Problem 3.2.8 – Active Travel Path - Gradient**
 - **Problem:** There is a section of active travel path that appears to be to a steep gradient. The design incorporates switch-back ramps in order for users to navigate the gradient. This will require cyclists to both travel down a steep ramp and also undertake a 90-degree turn at the bottom of the ramp.
 - **Response:** The design team accepts the problem and recommendation with staggered barriers implemented at the top of the ramped active travel path and cyclist dismount signage implemented at both the top and bottom of the ramp, please refer to drawing number 11893-2011 for details.
- **Problem 3.2.9 – Carriageway Horizontal Alignments**
 - **Problem:** The development includes carriageways with tight horizontal bends. These bands are unlikely to be suitable for the passage of opposing vehicles. The Design Team has introduced yield road markings, assumed to be for this very

reason. Users of the development are likely to become complacent and ignore these yield road markings. This is of particular concern for two-wheeled vehicles who may believe they will be able to squeeze past opposing vehicles.

- **Response:** The design team accepts the problem and recommendation with the carriageway altered to ensure opposing vehicles can pass each other, please refer to drawing 11893-2011 for details.
- **Problem 3.2.10 – Termination of Active Travel Path**
 - **Problem:** It is not clear from the design what the cyclists is meant to do at the start and end of the active travel path.
 - **Response:** The design team accepts the problem and recommendation with the start and ends of the active travel paths updated to accommodate safe transitions to/from the carriageway for cyclists, please refer to drawings 11893-2009 & 11893-2011 for details.
- **Problem 3.2.11 – Footpath Widths**
 - **Problem:** The footpath space between parked vehicles and buildings appears to be very narrow. Wheelchair users may have difficulty in passing through this space and may attempt to walk.
 - **Response:** The design team accepts the problem and recommendation with a minimum access width of 1.2m provided to all access points.
- **Problem 3.3.1 – Access to Dwelling Houses to the North of Kingston Road**
 - **Problem:** There are vehicular accesses indicated off the spine road close to the Kingston Road junction. Driver visibility to pedestrians, cyclists and motorised vehicles may be restricted by boundary treatments.

It is noted that a “cyclist dismount” sign is located on the shared use path here. It is likely cyclists will ignore this sign and continue to cycle through the driveway.
 - **Response:** The design team accepts the problem and recommendation with additional signage and warning pavers provided along the active travel route to warn drivers of single house access. Please note that this is a single residential access and vehicle trips to and from the access point will be infrequent, please refer to drawing number 11893-2009 for details.

2.5 STRUCTURE OF THE REPORT

This Report is divided into nine 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 and the Construction Phase.
- Chapter 8 addresses the Mobility Management measures for the proposed Development.
- Chapter 9 concludes the Report.

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3.0 PROPOSED DEVELOPMENT

3.1 SITE LOCATION

The proposed residential development site is located off the Western Distributor Road, approximately 6.0km west of Eyre Square, Galway City. The site location is shown in Figure 3-1 below, and the site layout is shown graphically in the design team drawings accompanying this application.

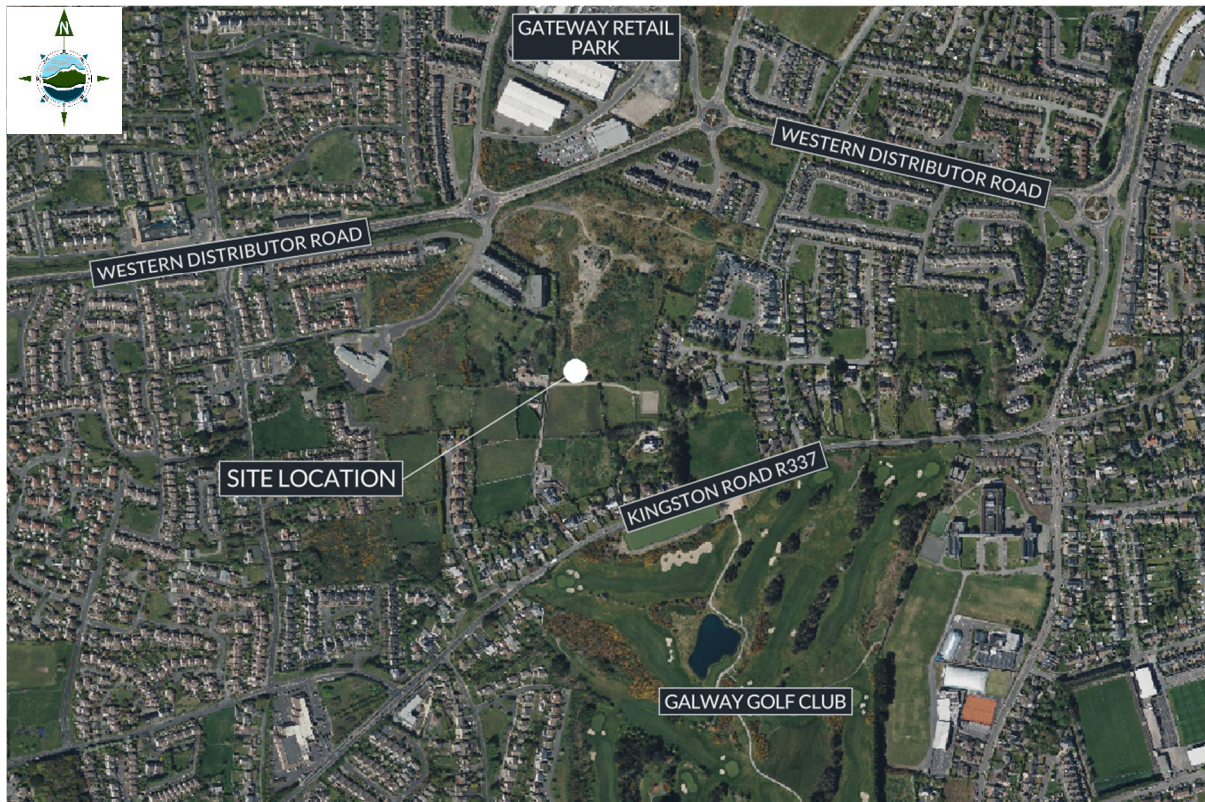


Figure 3-1: Site Location ©Microsoft Bing

3.2 DESCRIPTION OF PROPOSED DEVELOPMENT

Planning permission is sought by Kingston Stables Ltd for development of a Large-Scale Residential Development (LRD) for a 10-year planning permission, on a site which extends to 5.37 ha on lands located at Knocknacarra, Galway.

The proposed development will consist of the following:

1. Provision of 362 no. residential units in 4 no. development areas with a mix of apartment and house types on a site area of 5.37 ha. The buildings range between 2 no. and 6 no. storeys in height. The development will comprise the following:
 - 4 no. 2-bed townhouses;
 - 40 no. 3-bed townhouses;
 - 21 no. 4-bed townhouses;

- 15 no. 1-bedroom duplex apartments;
 - 46 no. 2-bedroom duplex apartments;
 - 15 no. 2-bedroom duplex houses;
 - 46 no. 3-bedroom duplex houses;
 - 114 no. 1-bedroom apartments;
 - 56 no. 2-bedroon apartments;
 - 5 no. 3-bedroom apartments.
2. Demolition of existing structures (333.8 sqm);
 3. Vehicular access to the proposed development from a permitted road (Planning Reference 24/60370 refers);
 4. The provision of new active travel cycle and pedestrian access from Millers Lane;
 5. Upgrades to the existing access at Kingston Road
 6. The provision of a childcare facility (440 sq.m.);
 7. The provision of public open space;
 8. The provision of 665 no. bicycle parking spaces;
 9. The provision of 313 no. car parking spaces;
 10. Public lighting, bin stores, signage, services, ESB substation, site landscaping and all ancillary site development and enabling works.

An Environmental Impact Assessment (EIAR) and Natura Impact Statement (NIS) have been prepared in respect of 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 five 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
2460021	Granted (Conditional)	Galway Business Park, Knocknacarra, Galway	Permission for development which consists of 3 no. offices blocks (GFA: 14,650 sqm) and all associated site development works as follows: Block 1: 8 storey office building providing offices, stair and lift cores and plant rooms (GFA: 7,330 sqm). Block 2: 6 storey

			office building providing offices, stair and lift cores and plant rooms (GFA: 4,445 sqm). Block 3: 4 storey office building providing offices, stair and lift cores and plant rooms (GFA: 2,875 sqm). The development includes a surface car park which comprises of 167 no. car parking spaces (including 9 no. accessible spaces and 33 no. EV charging spaces), and 216 no. bicycle parking spaces (including 22 no. electric bicycle charging spaces) and 9 no. motorbike spaces. Provision of new vehicular access to site. Provision of bin stores, ESB substation, roof mounted solar PV, landscaping, boundary treatments, staff changing facilities, public lighting and all other site development works and services ancillary to the proposed development. A Natura Impact Assessment (NIS) will be submitted to the planning authority with the planning application.
233	Granted (Conditional)	Gort na Bró, Rahoon , Galway	Permission for LRD which consists of 1:Provision of 227 no. residential apartments in 7 no. blocks comprising the following:a. Block A1: 14 no. 1 bed apartments & 24 no. 2 bed apartments in a block ranging between 3-5 storeys in height;b. Block A2: 25 no. 1 bed apartments & 15 no. 2 bed apartments in a block ranging between 1.5-5 stories in height;c. Block B1: 3 no. 1 bed apartments, 18 no. 2 bed apartments & 3 no. 3 bed apartments in a block ranging between 3-4 storeys in height;d. Block B2: 13 no. 1 bed apartments & 21 no. 2 bed apartments in a block ranging between 3-5 storeys in height.e. Block B3: 5 no. 1 bed apartments, 22 no. 2 bed apartments & 1 no. 1 bed apartment in a block ranging between 3-5 storeys in height;f. Block B4: 11 no. 1 bed apartments & 26 no. 2 bed apartments in a block ranging between 3-5 storeys in height;g. Block B5: 13 no. 1 bed apartments & 13 no. 2 bed apartments in a block ranging between 3-4 storeys in height. 2. Provision of 1,009.5 sq.m of ground floor commercial units as follows:i. Unit A101: 411.7 sq.m; ii. Unit A102: 138.2 sq.m; iii. Unit B201: 99.7 sq.m; iv. Unit B202: 133.9 sq.m; v. Unit B3013: 226.2 sq.m. 3. Provision of a Community Facility (117.8 sq.m); 4. Provision of Tenant Amenity Facilities (99.4 sq.m); 5. Provision of a Childcare Facility (335.5 sq.m) as well as an external secure play area (225.8 sq.m); 6. Provision of 49 no. surface car parking spaces including EV charging spaces; 7. Provision of bicycle parking comprising 114 no. short stay and 436 no. long stay spaces; 8. Provision of realigned road between Gort na Bró and Gateway Retail Park Road; 9. Change of use of existing underground void to 181 bay underground car park; 10. Provision of shared communal and private open spaces, bin storage, public lighting, site landscaping, services, signage, substation, and all associated site development works required to accommodate the proposed development. An Environmental Impact Assessment (EIAR) and Natura

			Impact Statement (NIS) have been prepared in respect of the proposed development.
23157	Granted (Conditional)	Clybaun Road and, Mincloon Cross, Galway	Permission for development which consists of the provision of 2no. 3-storey duplex buildings; - Duplex block No. 1 will contain 15 no. units, comprising 1no. 1-bedroom apartment, 6no. 2-bedroom apartments, 2no. 2-bedroom maisonettes, 6no. 3-bedroom maisonettes and integrated bin & bicycle stores, - Duplex block No.2 will contain 14no. units, comprising 1no. 1-bedroom apartment, 5no. 2-bedroom apartments, 2no. 2-bedroom maisonettes, 6no. 3-bedroom maisonettes, integrated bin stores and crèche, -Provision of connection to existing internal road, surface parking and landscaping, along with all ancillary site works and services
1730	Granted (Conditional)	West of the Ballymoneen Road, at the Junction with the Western Distributor Road, Knocknacarra, Galway	Permission for development on a site which extends to 2.62 ha. The proposed development will consist of the following: (1) Demolition of existing agricultural shed; (2) Construction of 91 no. residential units comprising: (a) 32 no. three-bed semi-detached units and 15 no. three-bed terraced units with the option to convert the attic space for habitable use; (b) 20 no. lower ground floor two-bed apartment units with 20 no. duplex three-bed townhouse units above; and (c) 4 no. three-bed townhouses over ground floor commercial units. (3) Construction of 4 no. ground floor retail units (284 sqm) with residential accommodation above. (4) Construction of a corner block of commercial units over three floors (330 sqm). (5) Development of a childcare facility (380 sqm) and associated outdoor play areas and car parking. (6) Provision of shared communal and private open space, car parking, site landscaping and public lighting, services and ancillary facilities, pedestrian access from the Western Distributor Road, vehicular access from the Ballymoneen Road and via the Leargán development located immediately west of the proposed site and all associated site development works
20327	Granted (Conditional)	Mincloon, Clybaun Road and Mincloon Cross,, Galway	E.O.D on PL Ref: 14/248: Permission for development which will consist of a total of 58 residential units made up of 32 no. 4 bedroom semi detached 2 and ½ storey houses, 12 no. 4 bedroom 2 and ½ storey detached houses, 2 no. 5 bedroom that is part 2 and ½ storey and part 2 storey detached house, 6 no. 4 bedroom 2 and ½ storey terraced houses and 6 no. 3 bedroom 2 and ½ storey terraced houses. Six of the residential units with on-site parking are proposed to have individual vehicular

			access directly from the Clybaun Road. Development also to include all associated communal and private open spaces, hard and soft landscaping, site development works and services including connection to the main sewer and proposed internal road layout with 1 new vehicular access to the site from the Clybaun Road, with new paths and new boundary walls and served by 102 shared surface parking as well as the realignment/widening of the Clybaun Road for part of the length of the proposed new development fronting onto the Clybaun Road as well as the provision of a new public footpath along the Clybaun and Rahoon Road
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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.

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 at the following junctions and dates:

Traffic Survey A:	Roundabout Junction – Bothair Stiofain / Western Distributor Road / Altan (IDASO Survey 07 th November 2023)
Traffic Survey B:	Roundabout Junction - Gort Na Bro / Western Distributor Road / An Logan (IDASO Survey 07 th November 2023)

These surveys distinguished between light good vehicles and heavy good vehicles and were utilised to analysis the junctions indicated below. 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 08:00-09:00 in the AM period and between 16:30-17:30 in the PM period. Annual growth indices were applied to the traffic flows to determine background traffic flows for the assessment years.



Figure 4-1: Traffic Survey Junction Locations

4.2 EXISTING ROAD NETWORK

The Western Distributor Road is a single carriageway road (approximately 6.5m wide in the vicinity of the proposed development) with cycle lanes (approximately 1.5 wide) and footpaths located on both side of the Western Distributor Road on the approach to the development site. The current speed limit of the road is 50km/h in the vicinity of the proposed development site.

The Kingston Road (R337) is a single carriageway road (approximately 6.0m wide in the vicinity of the proposed development) and a footpath located on the northern side of the Kingston Road on the approach to the development site. The current speed limit of the road is 50km/h in the vicinity of the proposed development site.

4.3 PROPOSED NETWORK IMPROVEMENTS

4.3.1 GALWAY CITY RING ROAD

The N6 Galway City Transport Project involves the proposed provision of the Galway City Ring Road outside Galway city providing relief for traffic congestion within the city. The ring road extends from the R336 (West of Barna Village) regional road around the city connecting to the N6 at Briarhill and onto the M6. The proposed year of opening for the Galway City Ring Road is currently unknown.

4.3.2 BÓTHAR STIOFÁIN CYCLE NETWORK

The Bóthar Stiofáin Cycle Network Scheme is 870m in length, stretching from the junction with Western Distributor Road at the south to the junction with Ragoon Road at the north. The proposed scheme involves the provision of a 14m wide cross-section with 2m raised adjacent cycle tracks on both sides of the road which will require some land-take from the eastern side. Raised zebra crossings at suitable intervals will also be installed.

This proposal comprising of Bothár Stiofáin (which is identified in the Galway Transport Strategy as a Primary Cycle Route) is now being progressed under Part 8, Article 81 of the Planning Development Regulations 2001 (as amended).

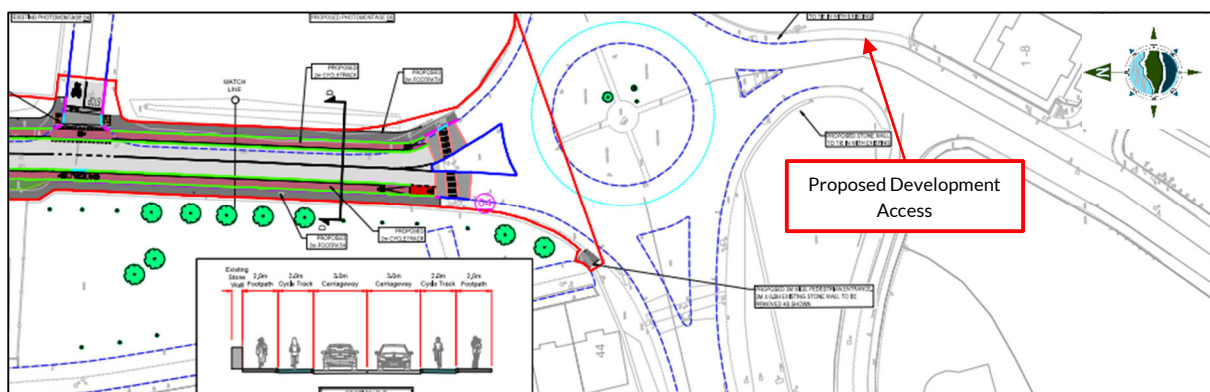


Figure 4-2: Proposed Bóthar Stiofáin Cycle Network tie-in with Western Distributor Road

4.3.3 WESTERN DISTRIBUTOR ROAD - ACTIVE TRAVEL SCHEME

Galway City Council is progressing plans to develop new and upgraded cycling infrastructure along the Western Distributor Road (WDR), including the six current roundabouts along the route. The enhanced facilities will be complemented by the recent upgrade works at Miller's Lane and the proposed Bóthar Stiofáin Cycle Network. This project is at concept design stage, and a number of options for this scheme are currently being developed and assessed.

An indicative roundabout design for the Bother Stiofain / Western Distributor Road (Junction 1) was issued by Galway City Council Active Travel Department for the purposes of this Traffic and Transport Assessment. This indicative roundabout design has been incorporated into the Active Travel junction design scenarios, please refer to Section 5.2.4 and 6.1.3 for details.

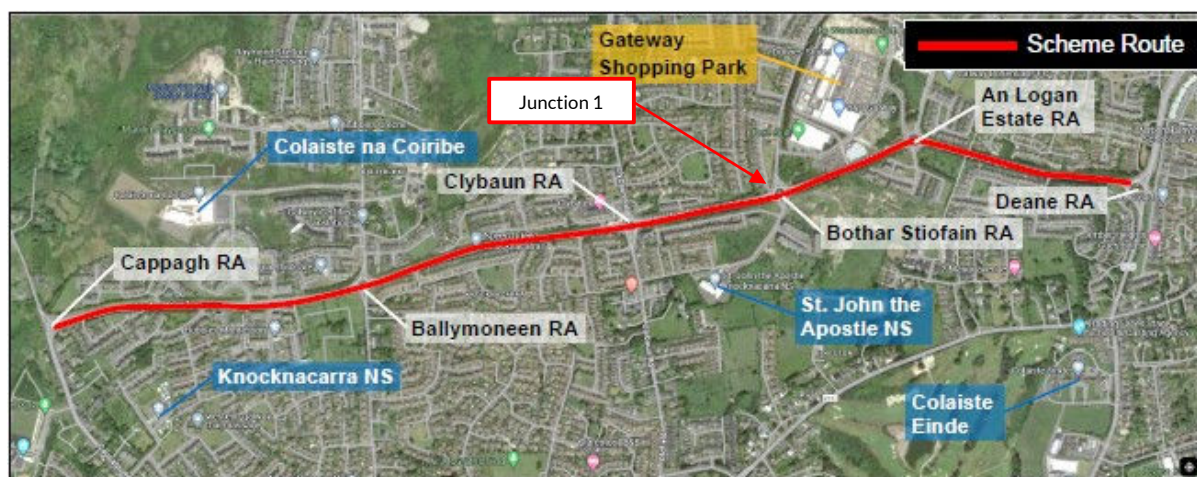


Figure 4-3: Extent of the proposed works on the Western Distributor Road

4.4 PROPOSED SITE ACCESS JUNCTION

Vehicular access to the site is proposed along the Altan Road via the southern arm of the Bothar Stiofain roundabout on the Western Distributor Road (Junction 1). Currently the roundabouts southern arm services Altan and Gort Siar, existing residential developments, and the Knocknacarra National School. The granted Planning Permission reference 24/60370 contains proposals to amend the Altan road such that the road priority is given to the proposed site and a new priority T-junction is provided for the Knocknacarra school. This proposed road layout design also incorporates footpaths and cycle lanes on both sides of the road, see Figure below and Drawing 11893-2012 which accompanies this planning application. As already mentioned in Section 2.3, this road layout has been discussed with Galway City Council's Road Department.

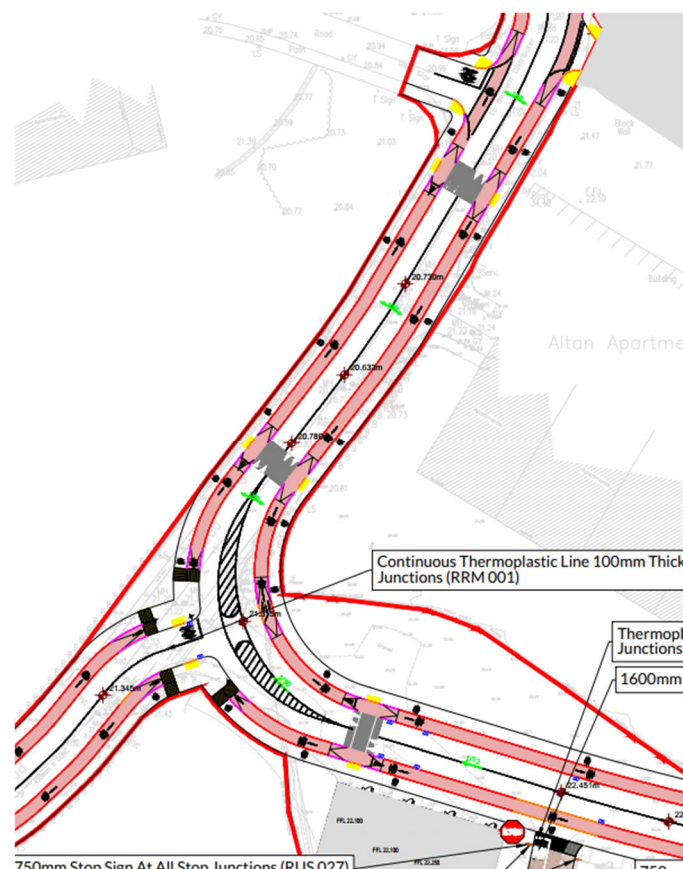


Figure 4-4: Proposed Altan Road Upgrade Works

There is also a second proposed pedestrian / cyclist access off the Kingston Road, north of the Galway Golf Club, in the vicinity of an existing laneway. The laneway will undergo upgrade works in accordance with Design Manual for Urban Roads and Streets (DMURS). Refer to Drawing 11893-2009 which accompanies this planning application

Pedestrian paths and cycle routes will be provided throughout the site, linking onto the existing Western Distributor Road and Kingston Road infrastructure. The Western Distributor Road provides a linkage to the Ragoon to the east and Knocknacarra to the west. 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 along the Western Distributor Road and the Kingston Road. Street lighting is provided along all approaches to the site.

5.0 TRIP GENERATION AND DISTRIBUTION

5.1 OPENING AND FUTURE YEAR FLOWS AND ENVIRONMENT

The proposed development is anticipated to be constructed in three phases. 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 Metropolitan Area in the Table 5-1. The derived growth factors were applied to the traffic flows to determine background traffic flows for the assessment years. The assessment is split into light vehicles and heavy vehicles.

The low sensitivity growth rates for Galway Metropolitan Area have been utilised for the traffic modelling scenarios. As the land has been zoned for development the Masterplan Development represents a significant portion of the proposed future background traffic growth, therefore, the low sensitivity growth rates have been applied to the Base flows. The derived growth factors were applied to the 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) - 2023

	2026	2031	2041
LV	1.047	1.122	1.212
HV	1.062	1.167	1.379

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 Reddy Architecture as shown in the following Tables:

Table 5-2: Phase 1 Expected Trip Generation for Proposed Development for AM Peak Hour

PHASE 1 EXPECTED TRIP GENERATION FOR PROPOSED DEVELOPMENT FOR AM PEAK HOUR			
Development Type	Units	Arrivals	Departures
Altan Quarter - Residential	21	3	7
Miller's Quarter - Residential	40	6	13
Orchard Quarter	175	25	58
Total		34	78

Table 5-3: Phase 1 Expected Trip Generation for Proposed Development for PM Peak Hour

PHASE 1 EXPECTED TRIP GENERATION FOR PROPOSED DEVELOPMENT FOR PM PEAK HOUR			
Development Type	Units	Arrivals	Departures
Altan Quarter - Residential	21	3	7
Miller's Quarter - Residential	40	12	7
Orchard Quarter	175	51	29
Total		66	43

Table 5-4: Phase 2 Expected Trip Generation for Proposed Development for AM Peak Hour

PHASE 2 EXPECTED TRIP GENERATION FOR PROPOSED DEVELOPMENT FOR AM PEAK HOUR			
Development Type	Units	Arrivals	Departures
Threadneedle Quarter - Residential	126	18	41
Total		18	41

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

PHASE 2 EXPECTED TRIP GENERATION FOR PROPOSED DEVELOPMENT FOR PM PEAK HOUR			
Development Type	Units	Arrivals	Departures
Threadneedle Quarter - Residential	126	37	21
Total		37	21

Table 5-6: Phase 1 and 2 AM and PM Peak Hour Trips

Total Numbers of vehicles	Arrivals	Departures
AM	53	119
PM	103	64

5.2.2 TRIP GENERATION OF MASTERPLAN

There are lands adjacent to the proposed development that make up a part of a larger masterplan (refer to Architects Design statement). An allowance for the remaining residential zoned lands, retail development and aquatic centre facility which will utilise Junction 1 has been allocated in the traffic volumes for the development of the masterplan.

The traffic volumes for the proposed retail development and the traffic volumes for the swimming facility were established from the TRICS database as shown in the tables below. The estimated peak traffic volumes generated by the proposed development and masterplan for the site are illustrated in the tables below.

Table 5-7: Expected Trip Generation for Proposed Development & Masterplan for AM Peak Hour

EXPECTED TRIP GENERATION FOR PROPOSED DEVELOPMENT & MASTERPLAN FOR AM PEAK HOUR			
Development Type	Units	Arrivals	Departures
Altan Quarter - Residential	21	3	7
Threadneedle Quarter - Residential	126	18	41
Orchard Quarter - Residential	175	25	58
Miller's Quarter - Residential	40	6	13
Remaining Resi zoned land (estimate)	70	10	23
Musgraves - Retail	7313 m ²	177	112
Swimming Pool	5130 m ²	35	21
Total		274	275

Table 5-8: Expected Trip Generation for Proposed Development & Masterplan for PM Peak Hour

EXPECTED TRIP GENERATION FOR PROPOSED DEVELOPMENT & MASTERPLAN FOR PM PEAK HOUR			
Development Type	Units	Arrivals	Departures
Altan Quarter - Residential	21	6	4
Threadneedle Quarter - Residential	126	37	21
Orchard Quarter - Residential	175	51	29
Miller's Quarter - Residential	40	12	7
Remaining Resi zoned land (estimate)	70	20	11
Musgraves - Retail	7313 m ²	269	272
Swimming Pool	5130 m ²	48	57
Total		433	401

Table 5-9 AM and PM Peak Hour Trips (via Junction 1)

Total Numbers of vehicles	Arrivals	Departures
AM	274	275
PM	433	401

5.2.3 TRIP GENERATION FOR THE GALWAY CITY RING ROAD

From the Galway City Ring Road online information (<http://www.n6galwaycity.ie/>) the A.3.1 Traffic Modelling report was utilised in order to determine the reduction of traffic due to the construction of the Ring Road. It was assumed the same reduction of traffic will be applied for the proposed design year. Therefore, using the traffic survey undertaken in 2023 as mentioned

in Section 4.1, the reduction factors were applied to the surrounding Western Distributor Road and Bothar an Stiofain to account for the potential construction of the Galway City Ring Road.

5.2.4 TRIP GENERATION FOR THE ACTIVE TRAVEL SCENARIO

As outlined in Sections 4.3.2 and 4.3.3, Galway City Council have initiated and are actively implementing Active Travel Schemes across the city. These schemes align with Galway City's and national mobility objectives and targets. The NTA's Achieving Effective Workplace Travel Plans: Guidance for Local Authorities sets a car commuting target of 45%, with the remainder made up from walking, cycling, public transport, and other sustainable modes of transport.

In light of the national modal split targets and the rollout of Active Travel cycle routes, alongside the Galway BusConnects scheme, it is anticipated the percentage of car commuting will decrease over time. According to the 2022 Census data for the Barna Electoral Division, covering Knocknacarra and Salthill areas, 70% of people currently commute by car. Achieving the 45% target in this area would therefore require a 25% reduction in car usage.

To evaluate the Active Travel roundabout design, a reduction factor has been applied to the base traffic flows to align this TTA with both local and national modal split targets. This reduction factor is exclusively applied to the 2041 Active Travel roundabout design scenarios and has not been applied to any other design years. While a 25% reduction would align directly with the target, we have opted for a conservative 10% reduction, supporting Galway City Council's sustainable transport objectives, adhering to national targets, while also incorporating a factor of safety in our assumptions. Please refer to Section 6.1.3 which demonstrates the analysis results for the Active Travel Roundabout design.

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.

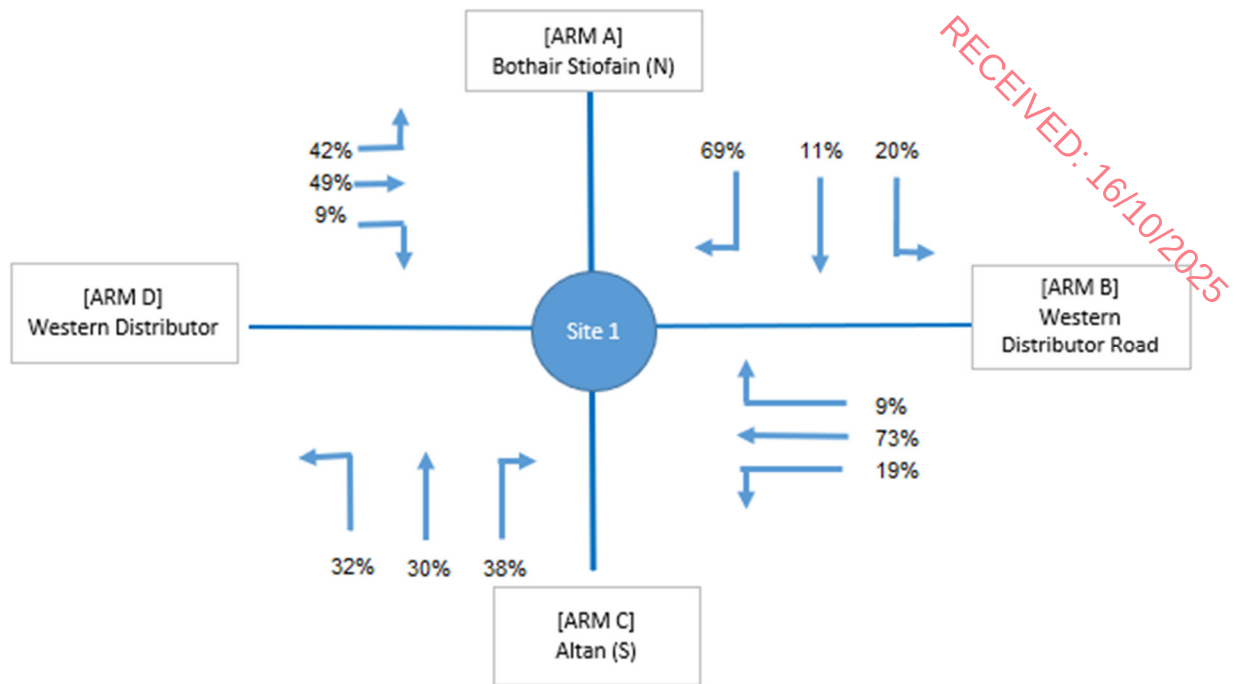


Figure 5-1: Traffic Distribution for AM Peak Hour at Junction 1

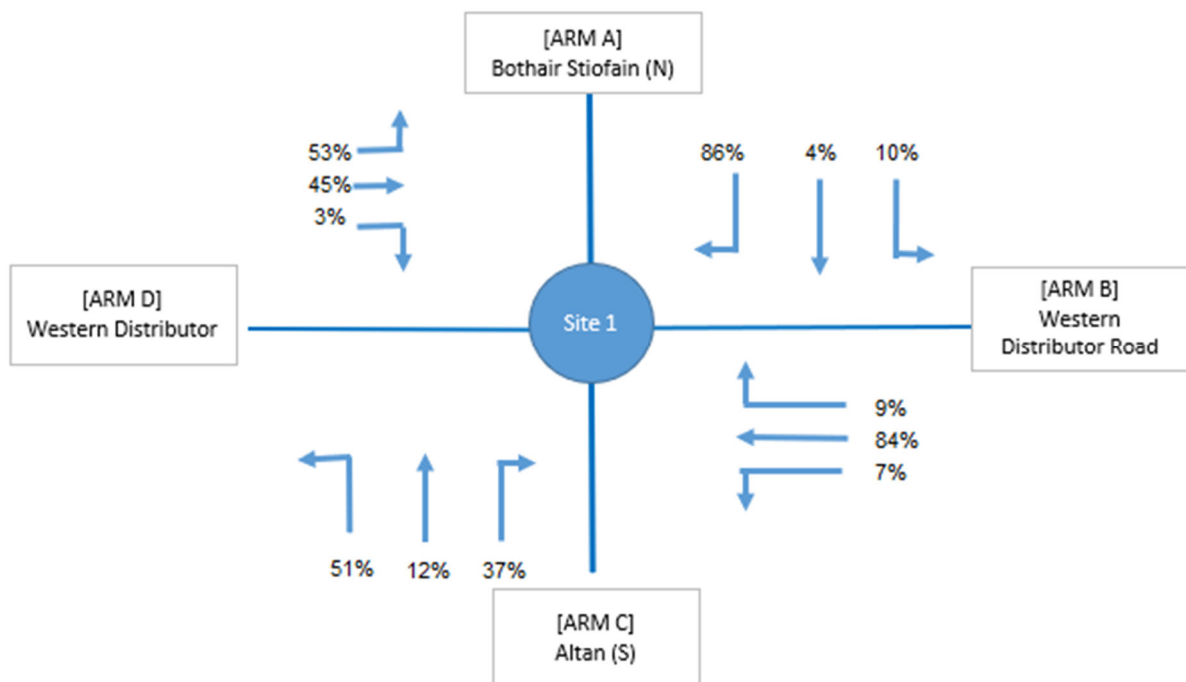


Figure 5-2: Traffic Distribution for PM Peak Hour at Junction 1

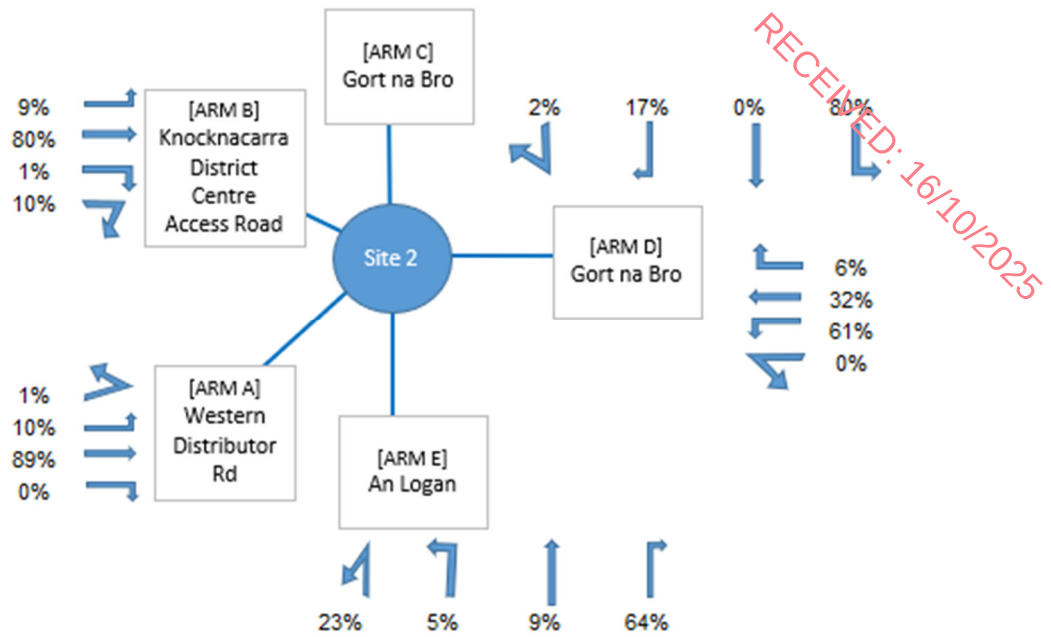


Figure 5-3: Traffic Distribution for AM Peak Hour at Junction 2

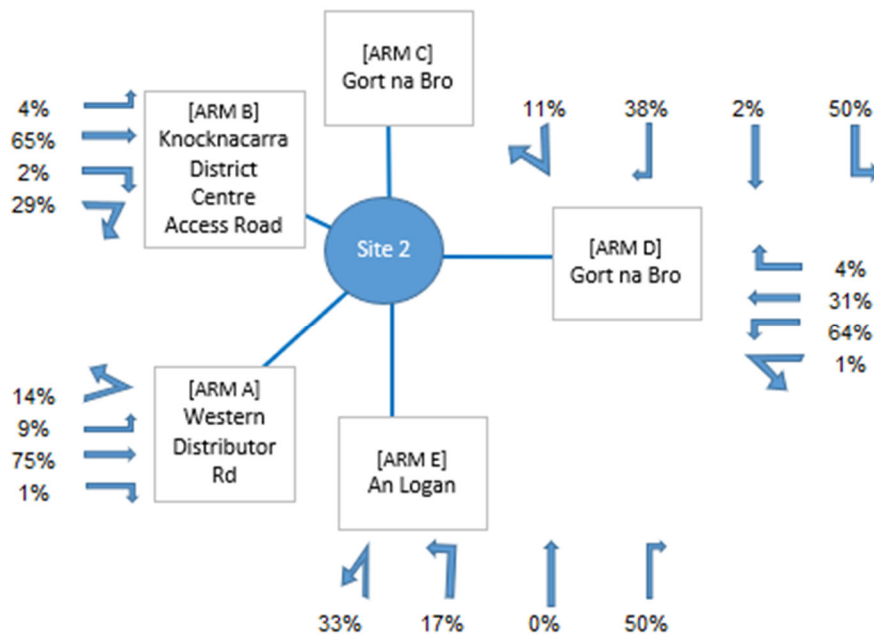


Figure 5-4: Traffic Distribution for PM Peak Hour at Junction 2

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. The baseline plus generated masterplan traffic for the design year 2041 for both the AM and PM peak hours are shown in the Figures below. See the Table below which identifies the modelling scenarios conducted as part of this Traffic and Transport Assessment. This modelling scenarios have been agreed with Galway City Council's Road and Active Travel Departments.

Table 5-10: Junction Traffic Flows Modelling Scenarios

Junction Ref:	Junction Design	Traffic Design Years and Scenarios
Junction 1	Existing Roundabout Layout	2023 Existing
		2026 Base
		2026 Base + Committed Developments
		2026 Base + Committed & Proposed Developments
		2041 Base + Committed Developments
		2041 Base + Committed & Proposed Developments
		2041 Base + Committed & Masterplan
	Potential Future Active Travel Scheme Design	2026 Base
		2026 Base + Committed Developments
		2026 Base + Committed & Proposed Developments
		2041 Base + Committed Developments & Estimated Active Travel Scheme Reduction Factor
		2041 Base + Committed & Proposed Developments & Estimated Active Travel Scheme Reduction Factor
		2041 Base + Committed & Masterplan & Estimated Active Travel Scheme Reduction Factor
		2041 Base + Committed & Masterplan & Galway City Ring
Junction 2	Existing Roundabout Layout	2023 Existing
		2026 Base
		2026 Base + Committed Developments
		2026 Base + Committed & Proposed Developments
		2041 Base + Committed Developments
		2041 Base + Committed & Proposed Developments
		2041 Base + Committed & Masterplan

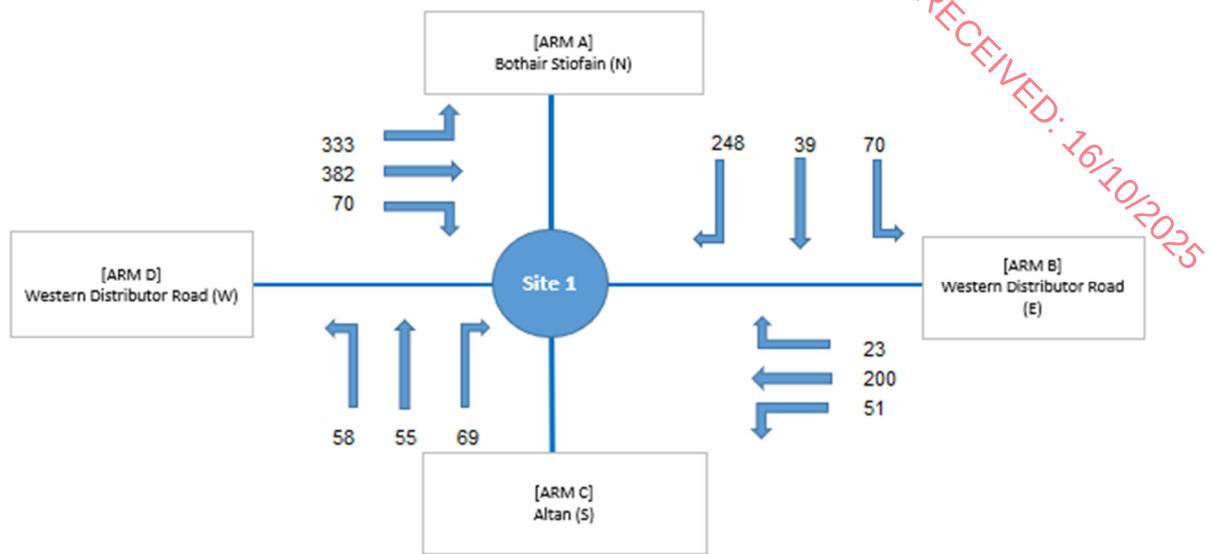


Figure 5-5: Baseflow Traffic 2023 AM Peak - Junction 1

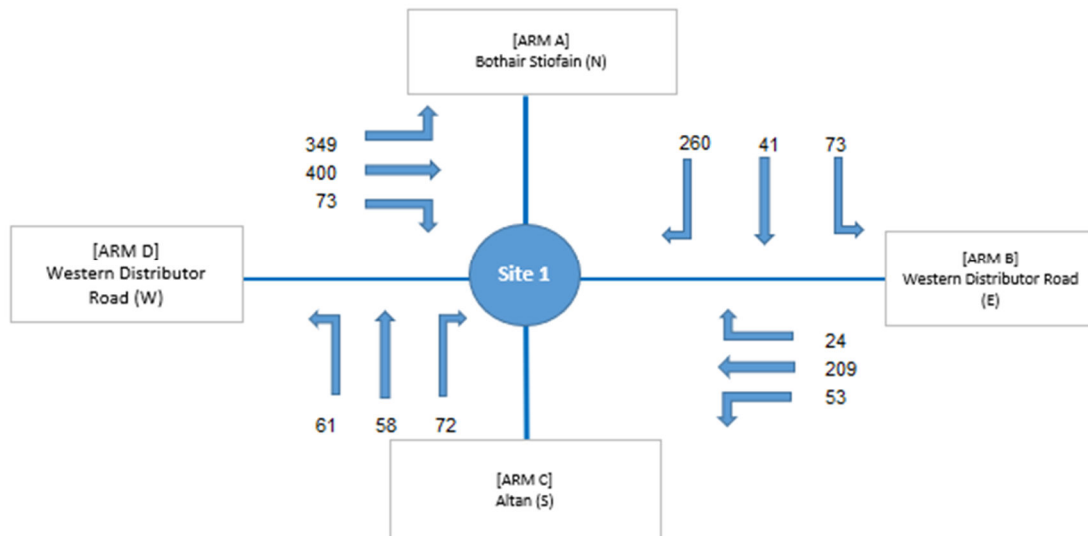


Figure 5-6: Baseflow Traffic 2026 AM Peak - Junction 1

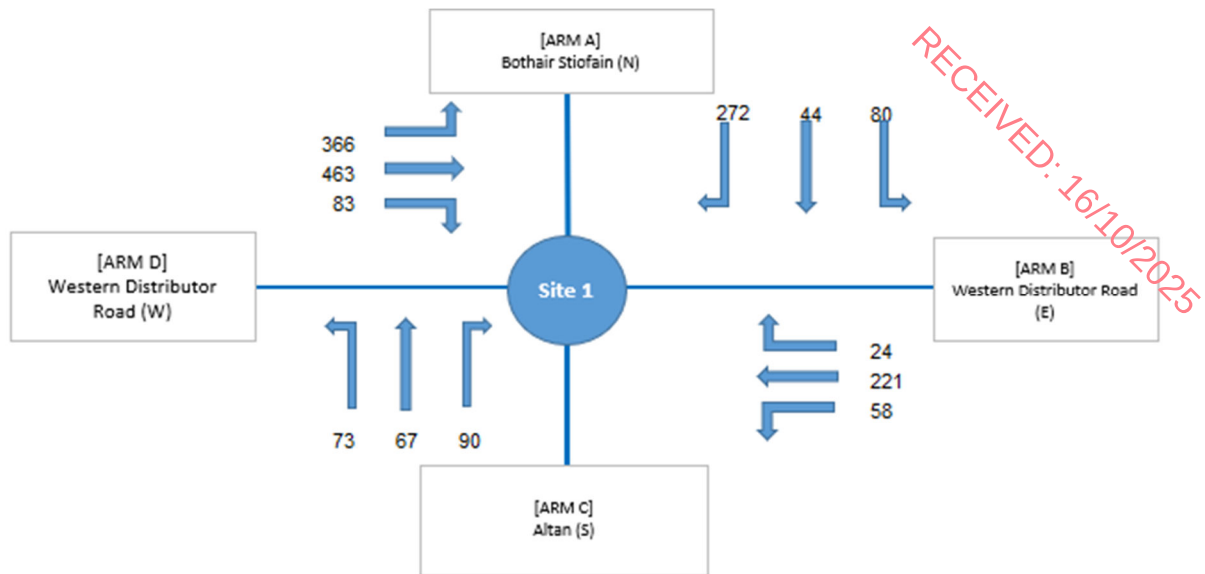


Figure 5-7: Baseflow + Comm. & Proposed Development Generated Traffic 2026 AM Peak – Junction 1

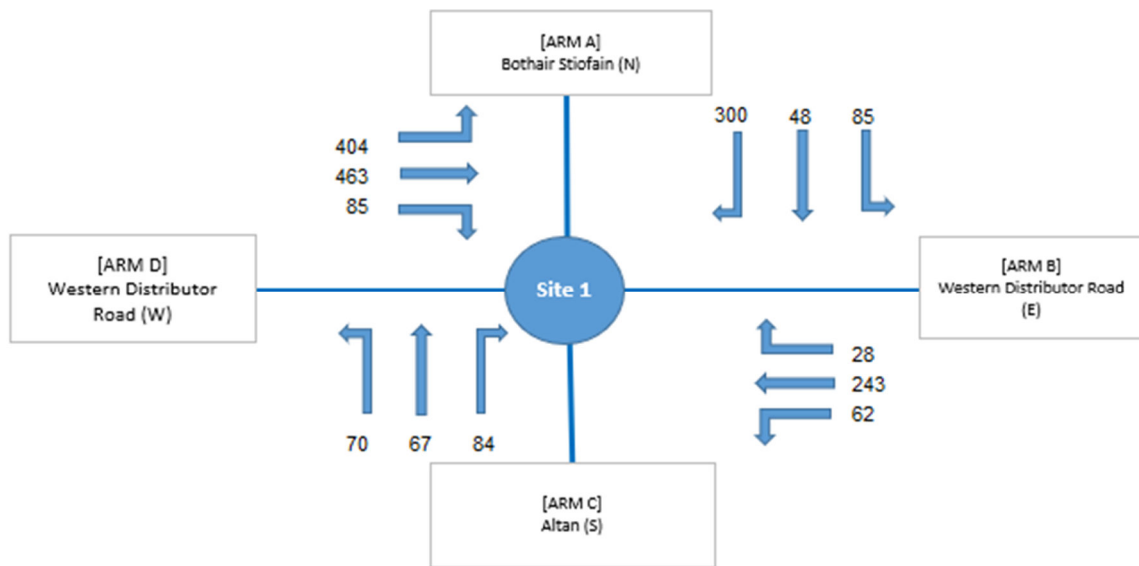


Figure 5-8: Baseflow Traffic 2041 AM Peak – Junction 1

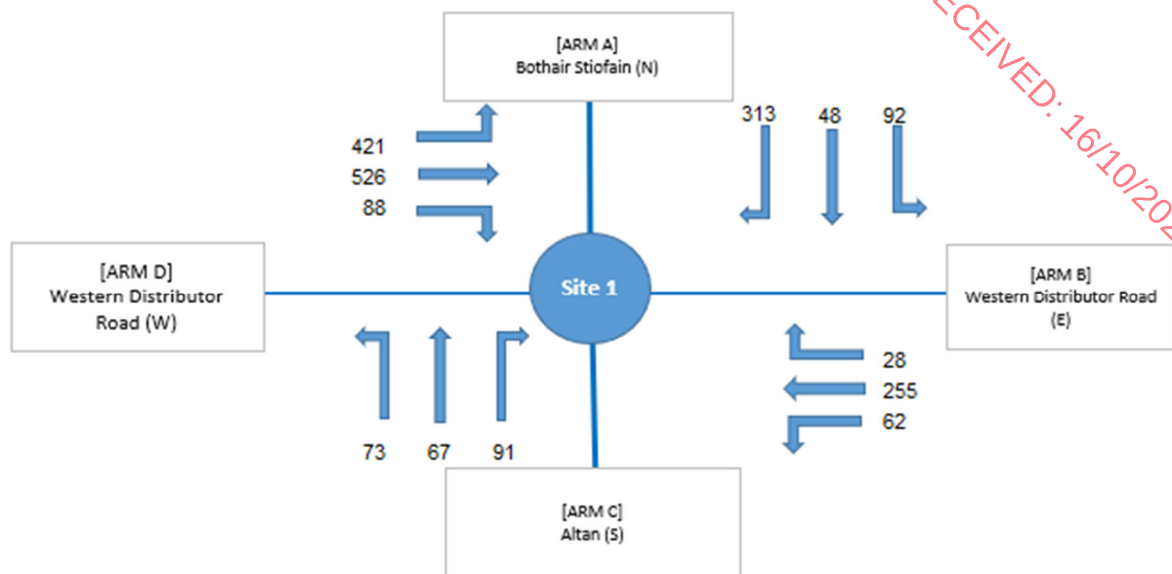


Figure 5-9: Baseflow + Comm. Development Generated Traffic 2041 AM Peak – Junction 1

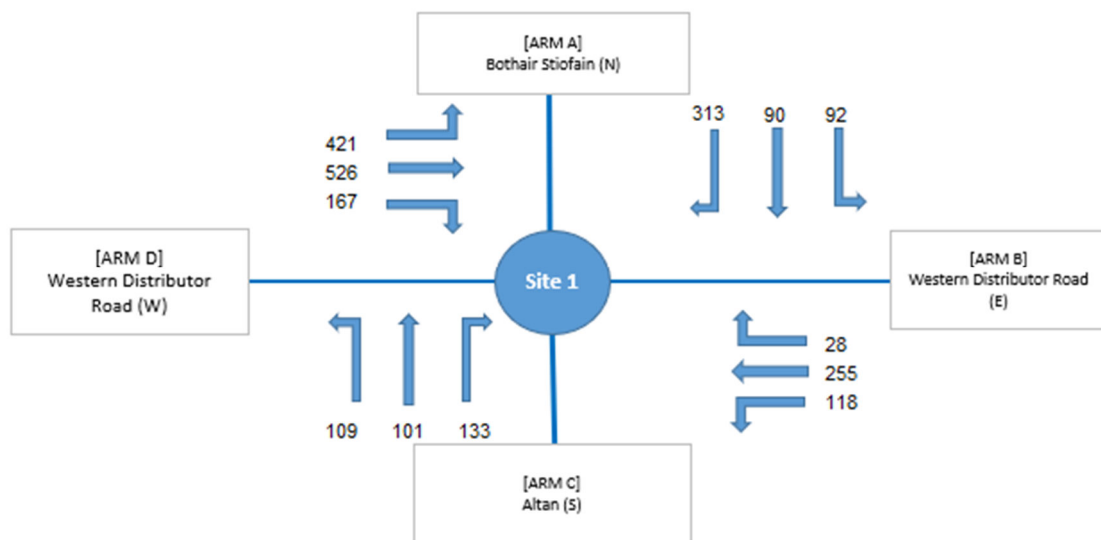


Figure 5-10: Baseflow + Comm. & Proposed Development Generated Traffic 2041 AM Peak – Junction 1

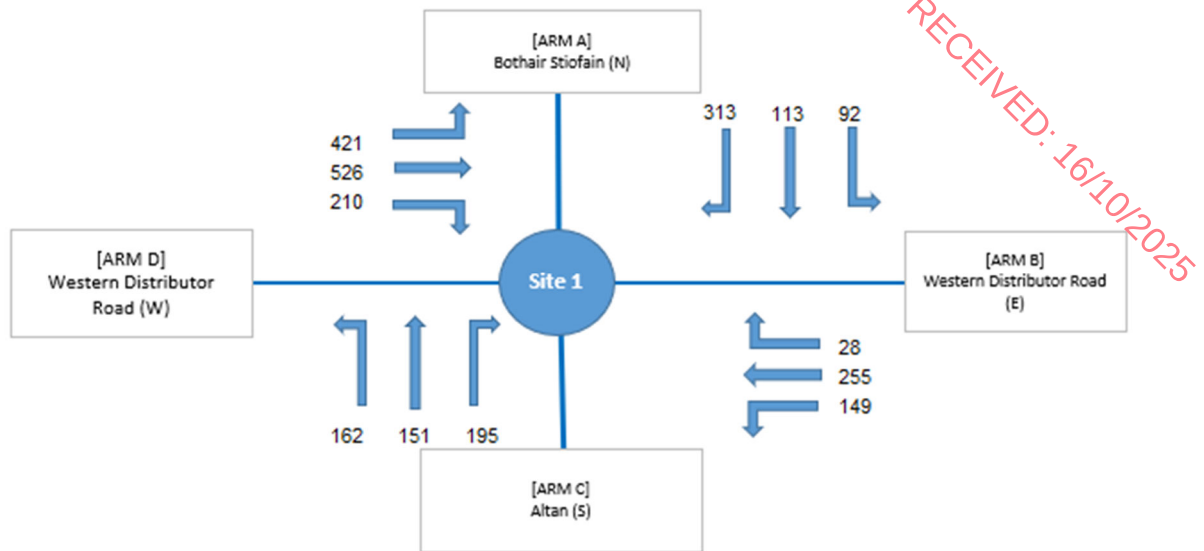


Figure 5-11: Baseflow + Comm. & Proposed Development Generated Traffic + Masterplan 2041 AM Peak - Junction 1

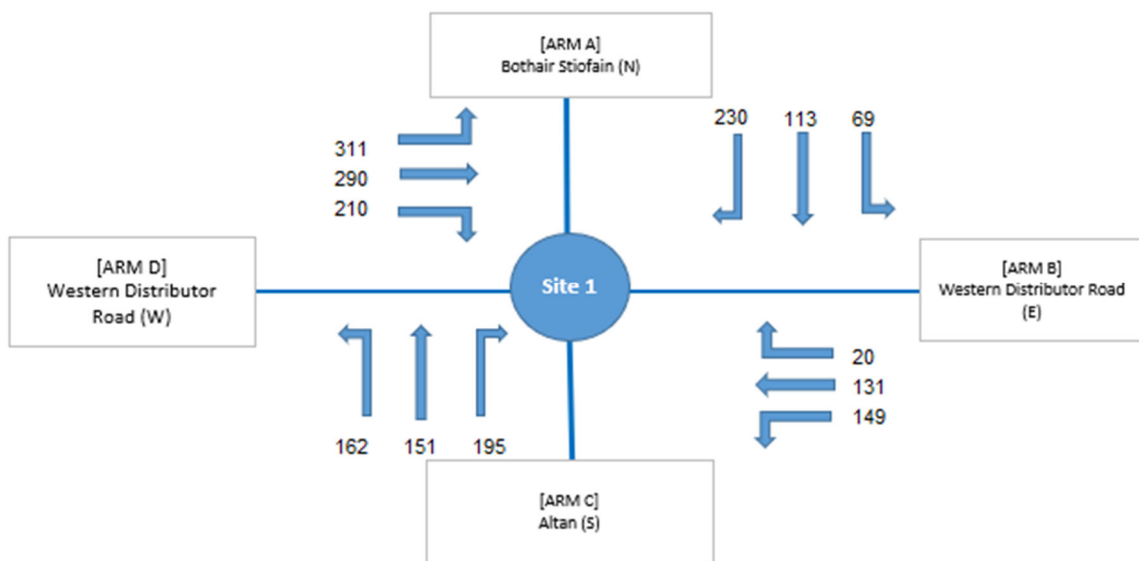


Figure 5-12: Baseflow + Comm. & Proposed Development Generated Traffic + Masterplan + Galway City Ring Road 2041 AM Peak - Junction 1

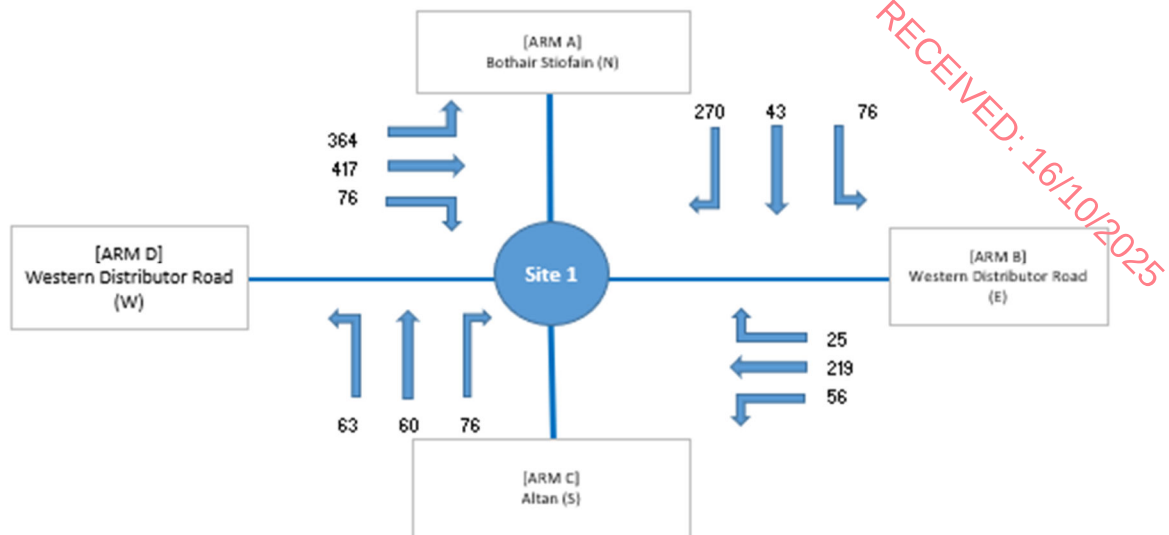


Figure 5-13: Baseflow + WDR Active Travel Scheme 2041 AM Peak – Junction 1



Figure 5-14: Baseflow + Comm. & Proposed Development Generated Traffic + WDR Active Travel Scheme 2041 AM Peak – Junction 1

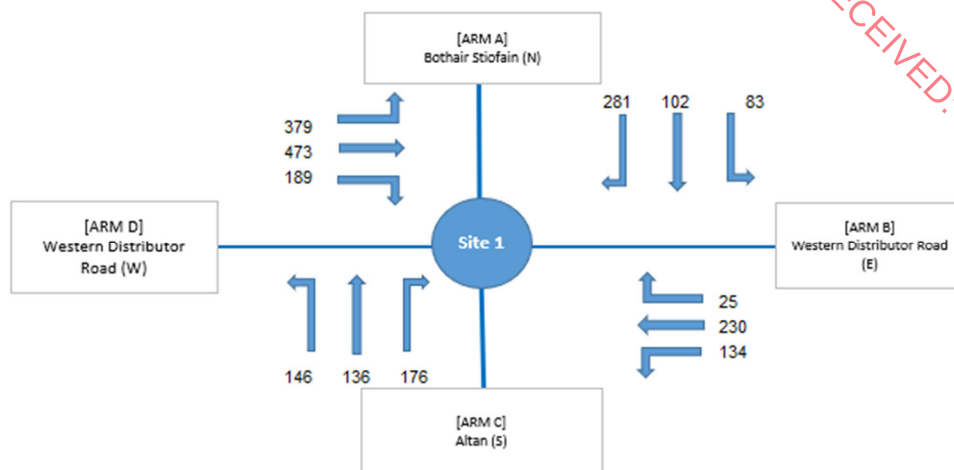


Figure 5-15: Baseflow + Comm. & Proposed Development Generated Traffic + Masterplan + WDR Active Travel Scheme 2041 AM Peak - Junction 1

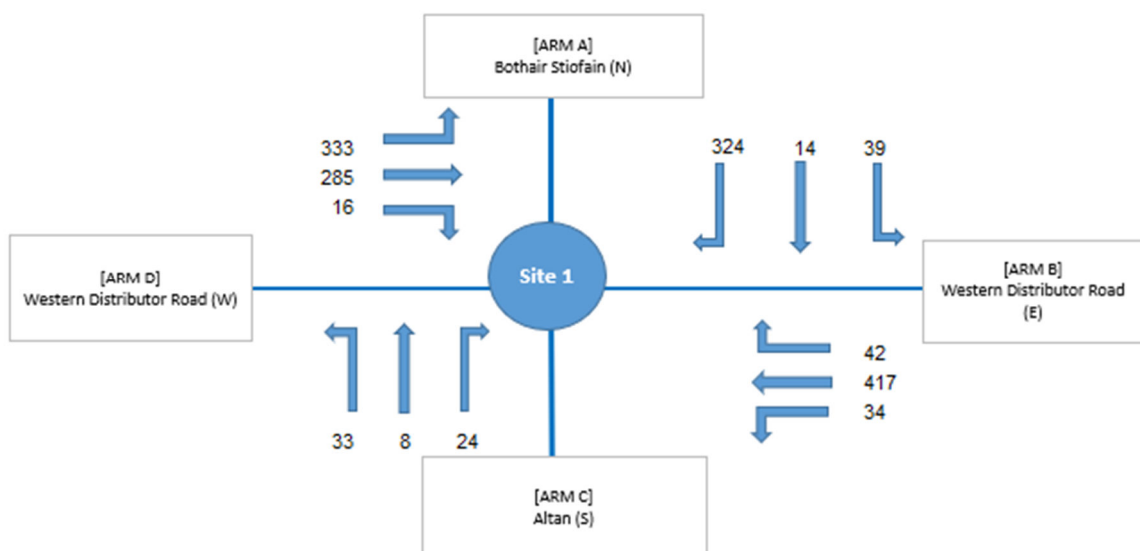


Figure 5-16: Baseflow Traffic 2023 PM Peak - Junction 1

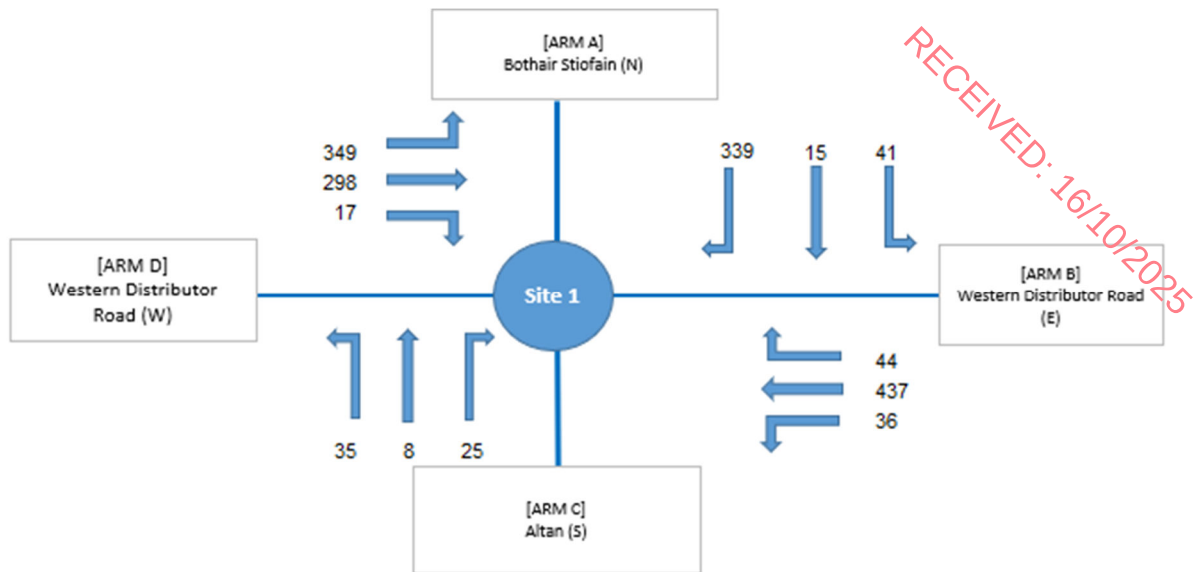


Figure 5-17: Baseflow Traffic 2026 PM Peak – Junction 1

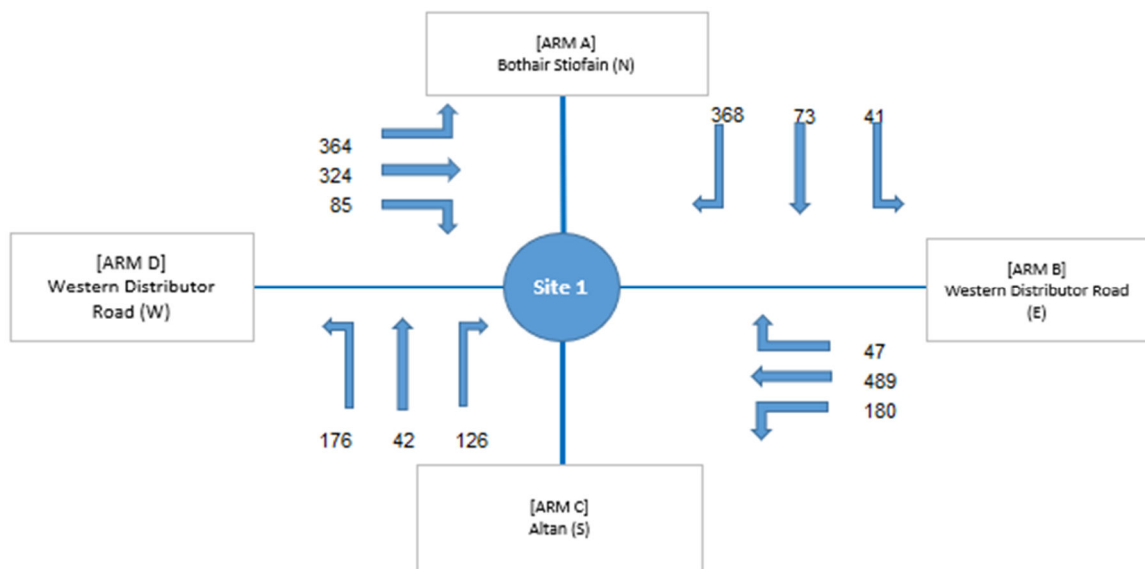


Figure 5-18: Baseflow + Comm. & Proposed Development Generated Traffic 2026 PM Peak – Junction 1

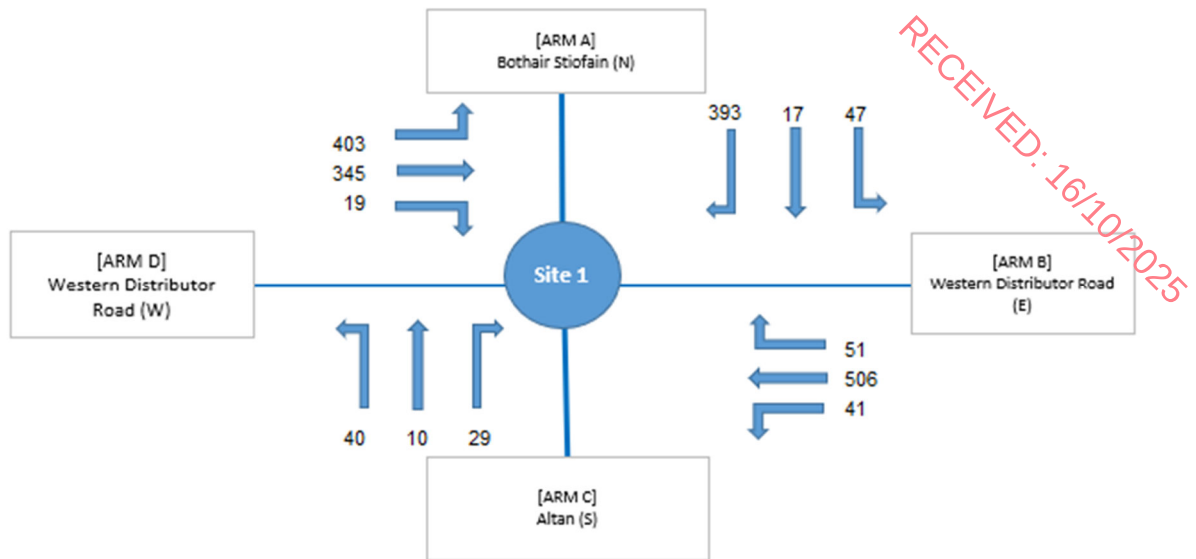


Figure 5-19: Baseflow Traffic 2041 PM Peak – Junction 1

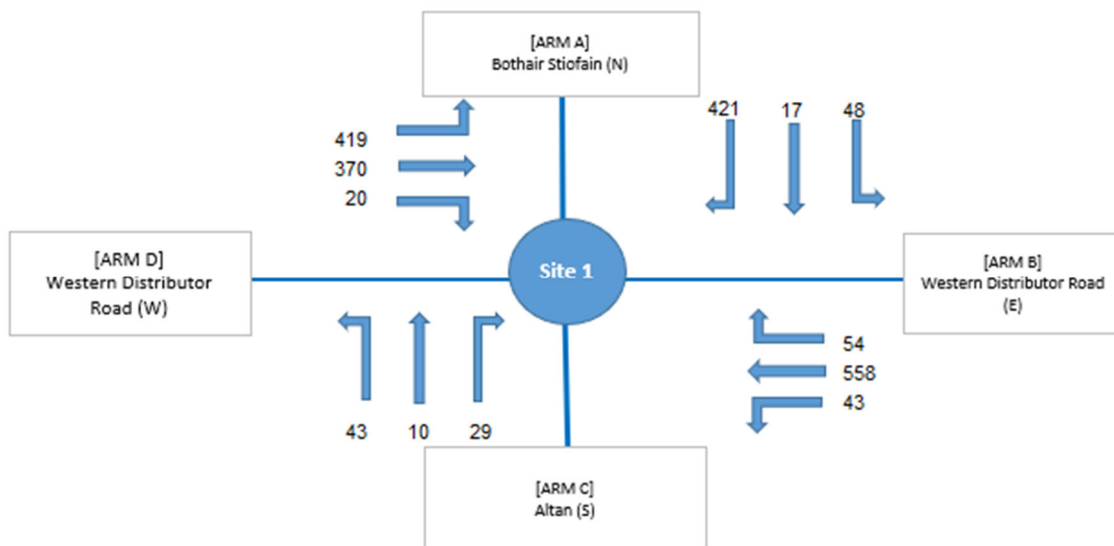


Figure 5-20: Baseflow + Comm. Development Generated Traffic 2041 PM Peak – Junction 1

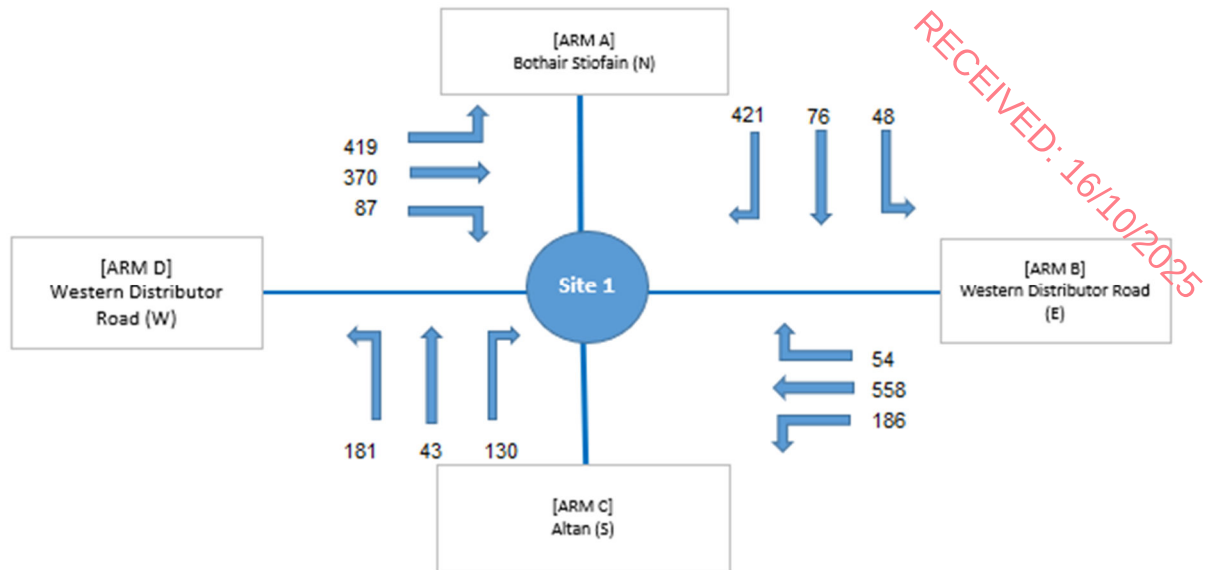


Figure 5-21: Baseflow + Comm. & Proposed Development Generated Traffic 2041 PM Peak – Junction 1

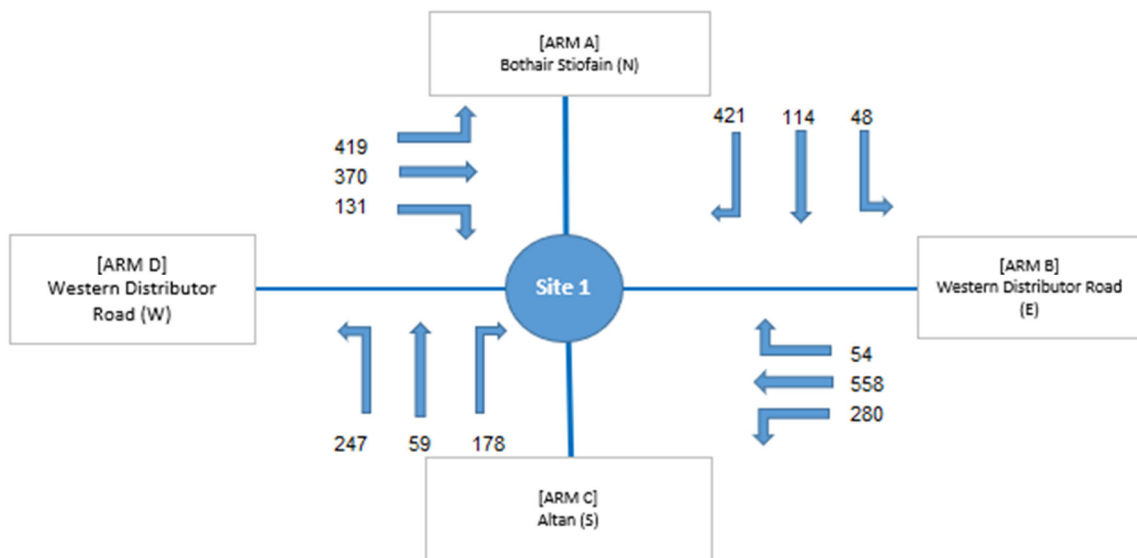
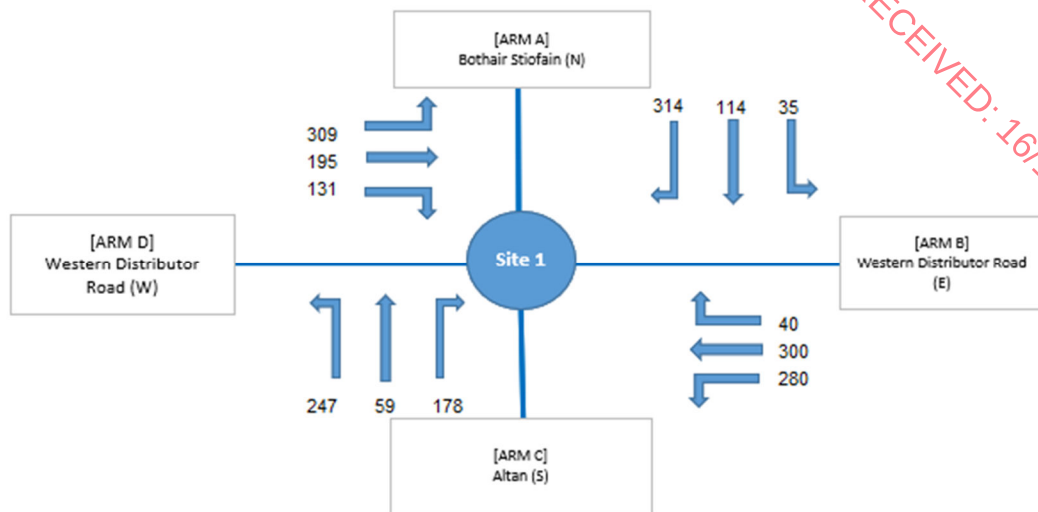


Figure 5-22: Baseflow + Comm. & Proposed Development Generated Traffic + Masterplan 2041 PM Peak – Junction 1



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Figure 5-23: Baseflow + Comm. & Proposed Development Generated Traffic + Masterplan + Galway City Ring Road 2041 PM Peak – Junction 1

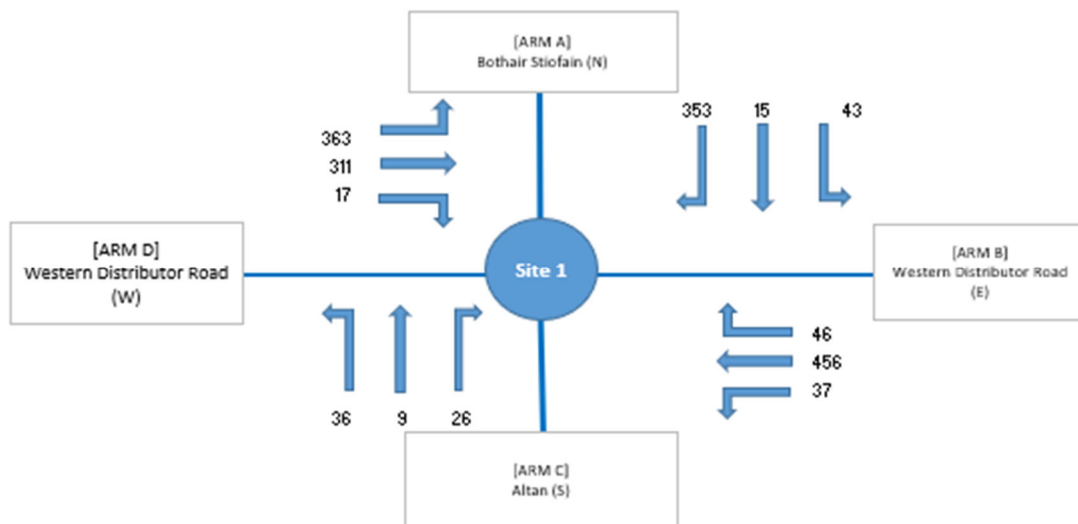


Figure 5-24: Baseflow + WDR Active Travel Scheme 2041 PM Peak – Junction 1

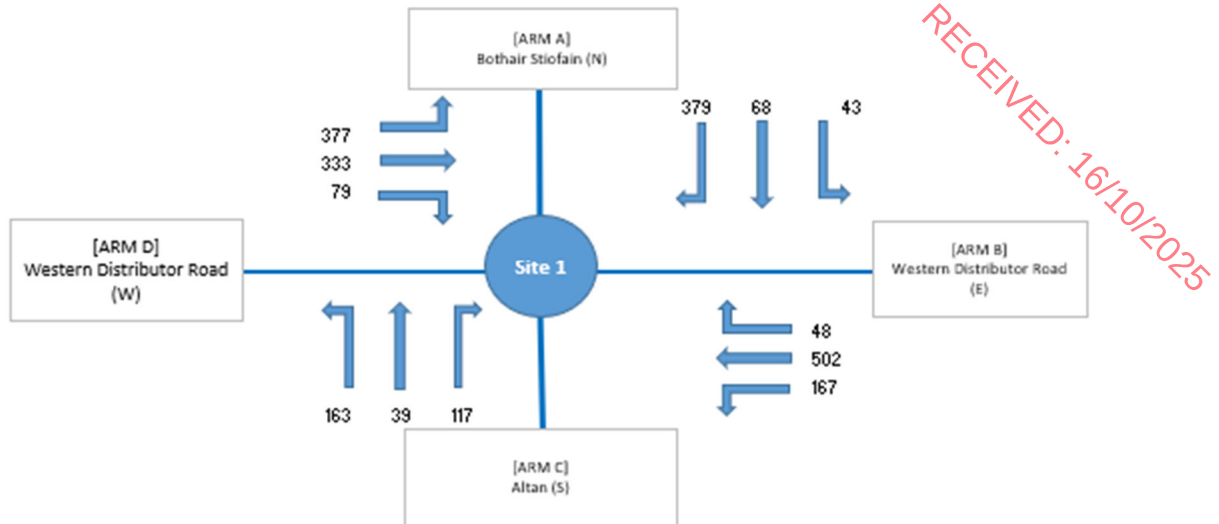


Figure 5-25: Baseflow + Comm. & Proposed Development Generated Traffic + WDR Active Travel Scheme 2041 PM Peak - Junction 1

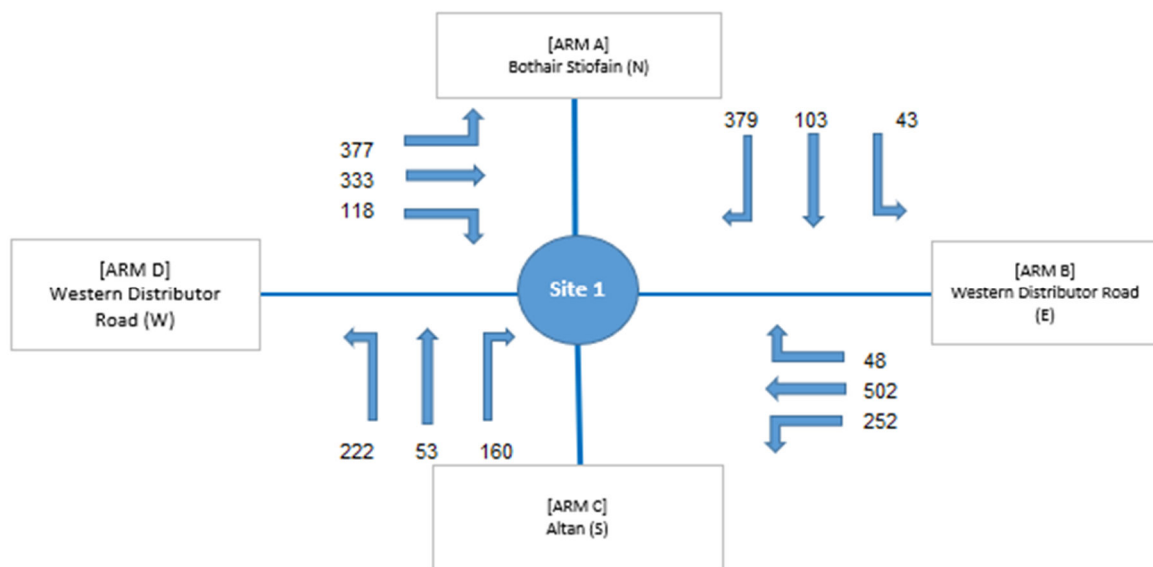


Figure 5-26: Baseflow + Comm. & Proposed Development Generated Traffic + Masterplan + WDR Active Travel Scheme 2041 PM Peak - Junction 1

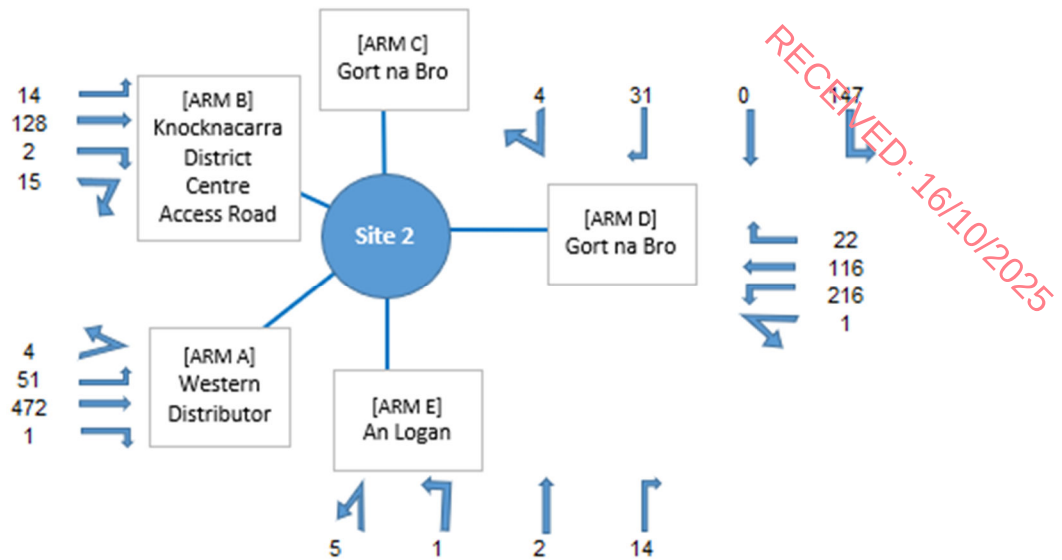


Figure 5-27: Baseflow Traffic 2023 AM Peak – Junction 2

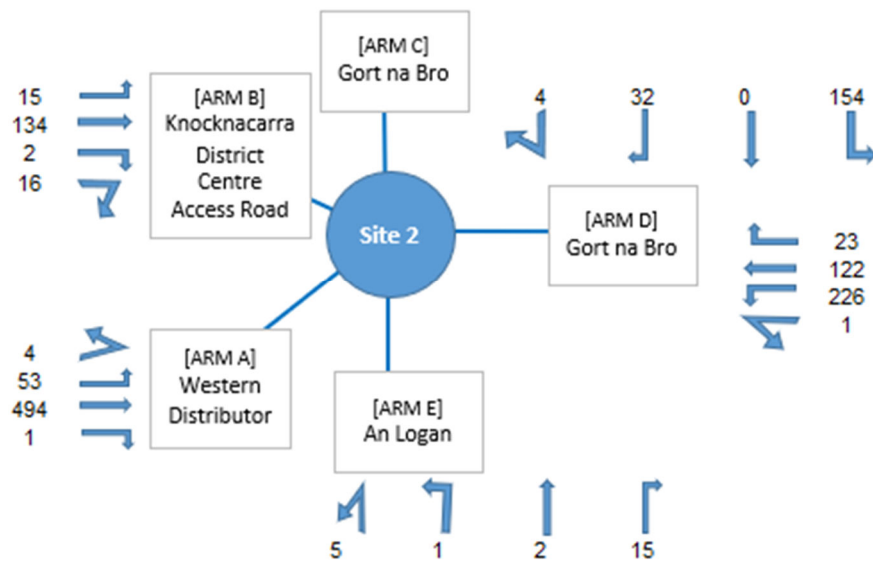


Figure 5-28: Baseflow Traffic 2026 AM Peak – Junction 2

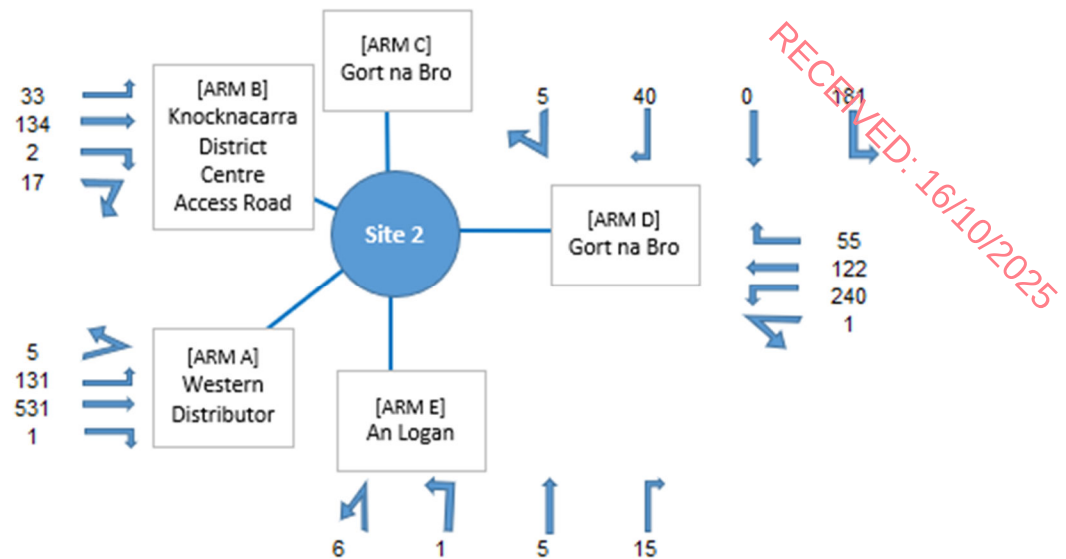


Figure 5-29: Baseflow + Comm. & Proposed Development Generated Traffic 2026 AM Peak - Junction 2

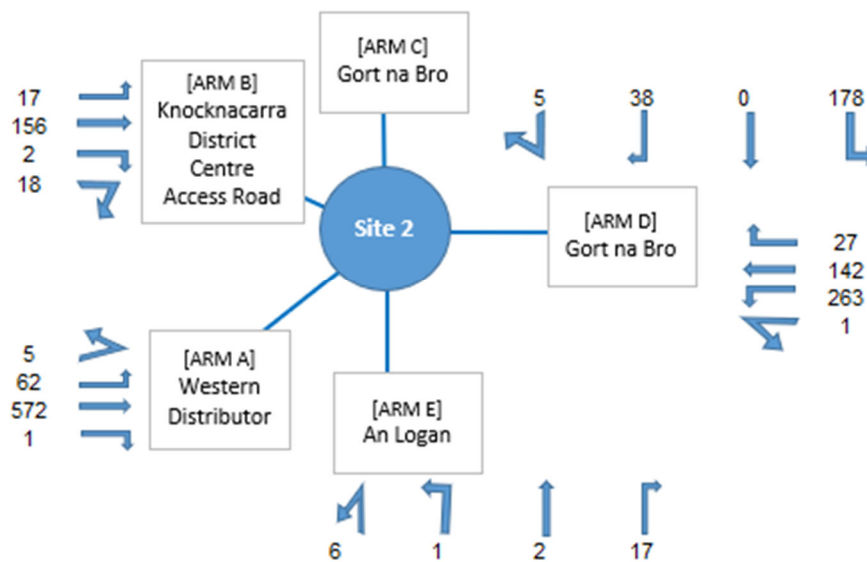


Figure 5-30: Baseflow Traffic 2041 AM Peak - Junction 2

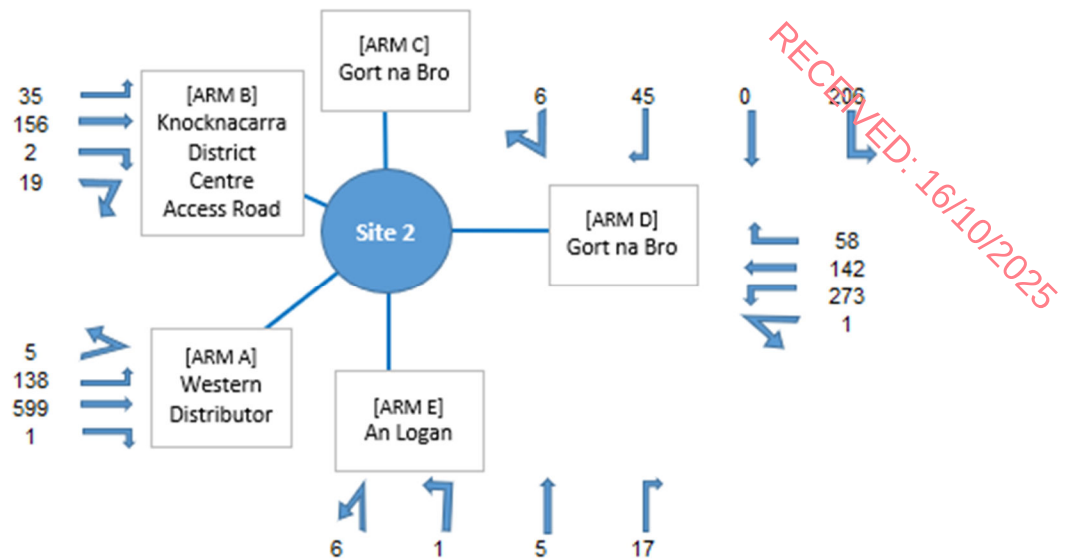


Figure 5-31: Baseflow + Comm. Development Generated Traffic 2041 AM Peak – Junction 2

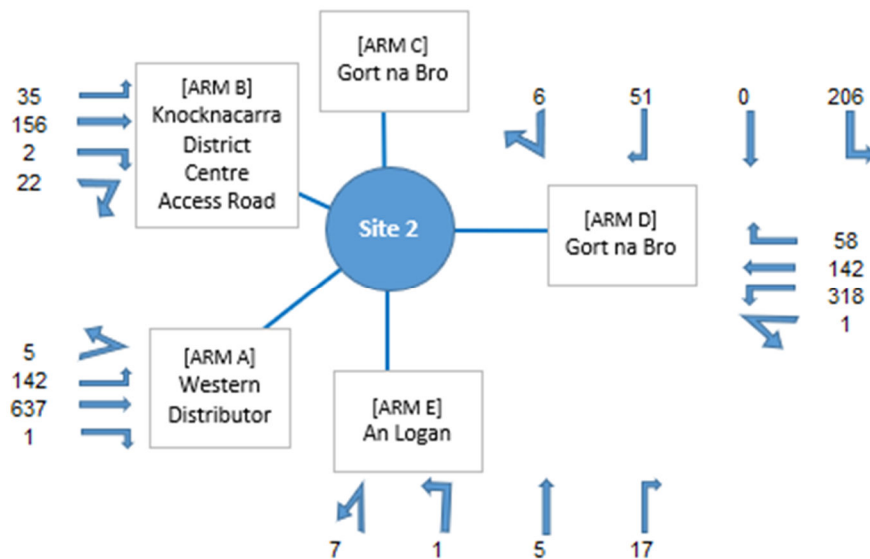


Figure 5-32: Baseflow + Comm. & Proposed Development Generated Traffic 2041 AM Peak – Junction 2

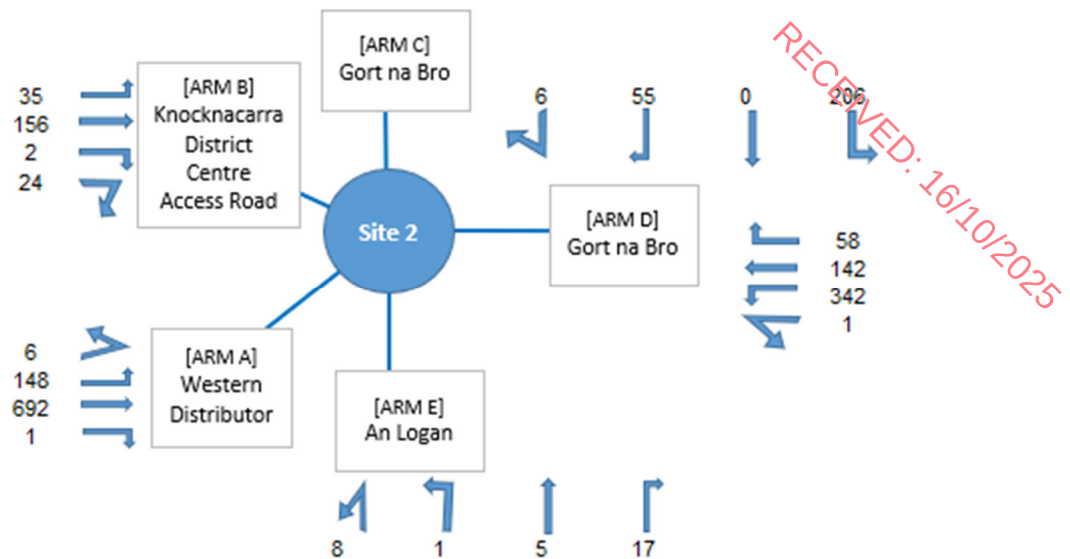


Figure 5-33: Baseflow + Comm. & Proposed Development Generated Traffic + Masterplan 2041 AM Peak - Junction 2

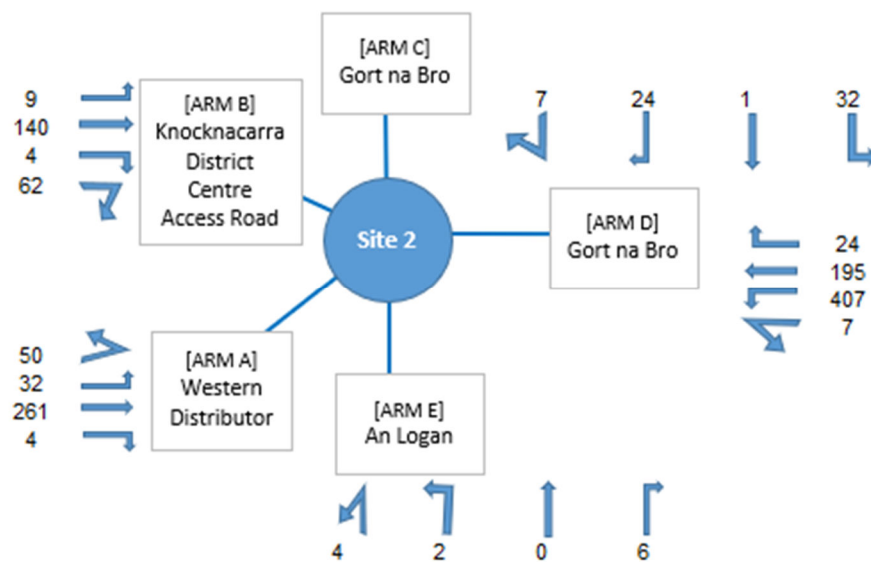


Figure 5-34: Baseflow Traffic 2023 PM Peak - Junction 2

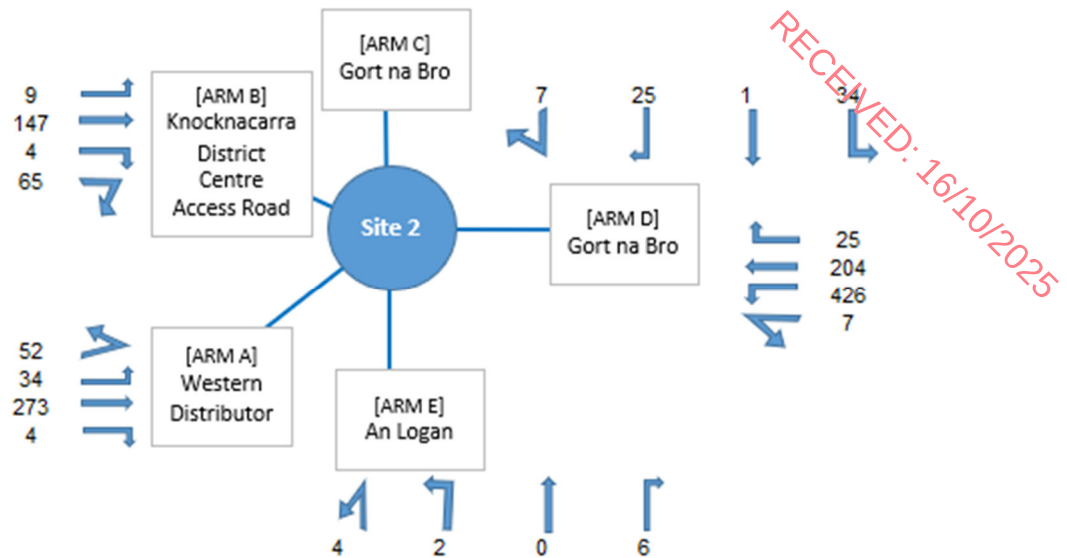


Figure 5-35: Baseflow Traffic 2026 PM Peak – Junction 2

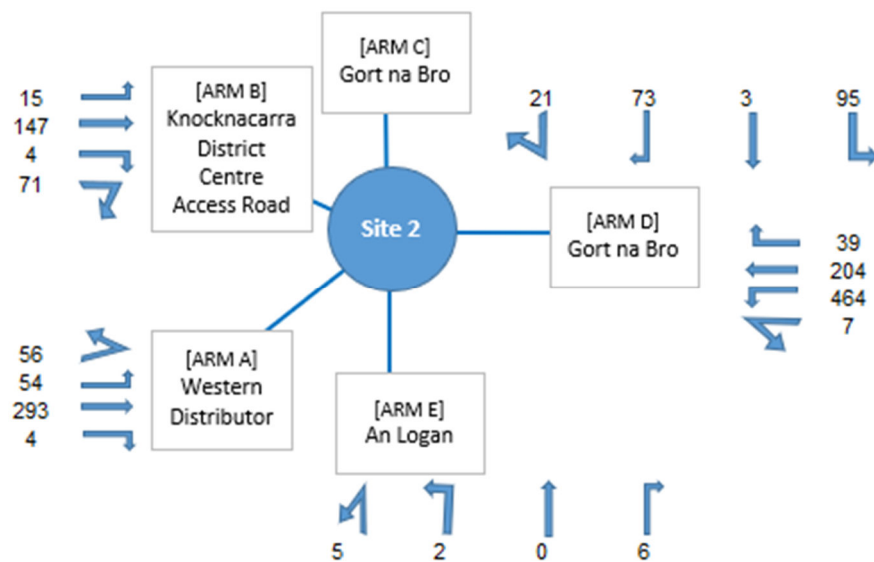


Figure 5-36: Baseflow + Comm. & Proposed Development Generated Traffic 2026 PM Peak – Junction 2

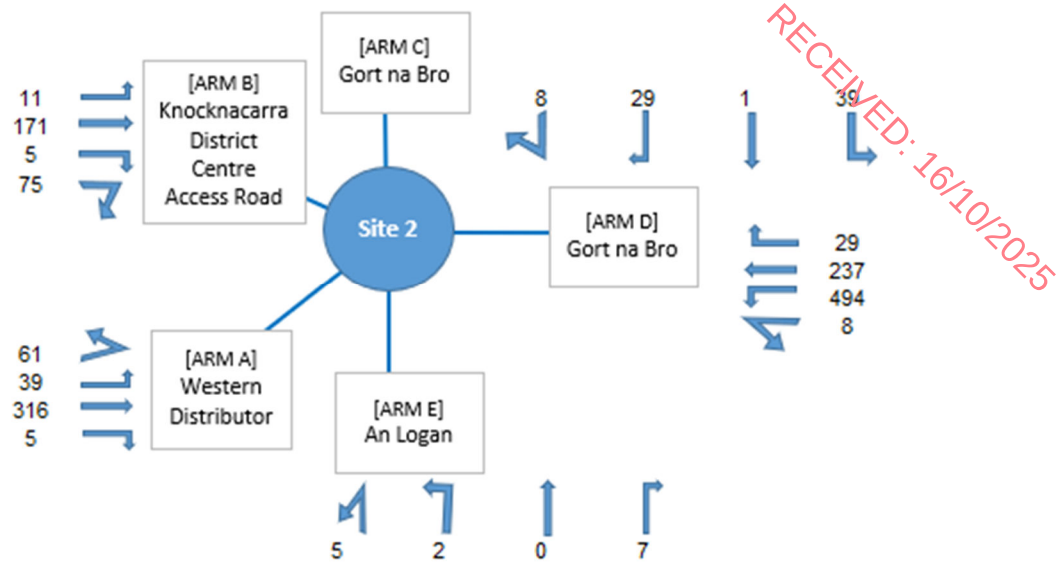


Figure 5-37: Baseflow Traffic 2041 PM Peak – Junction 2

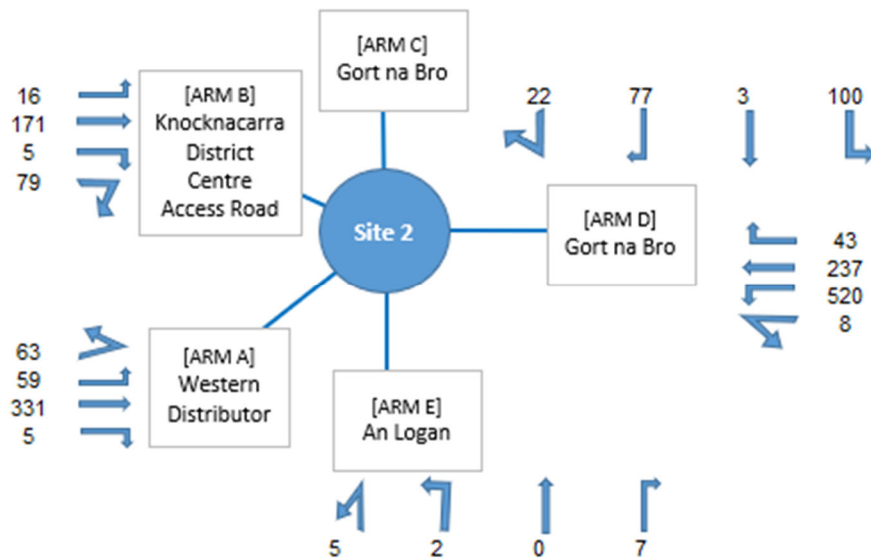


Figure 5-38; Baseflow + Comm. Development Generated Traffic 2041 PM Peak – Junction 2

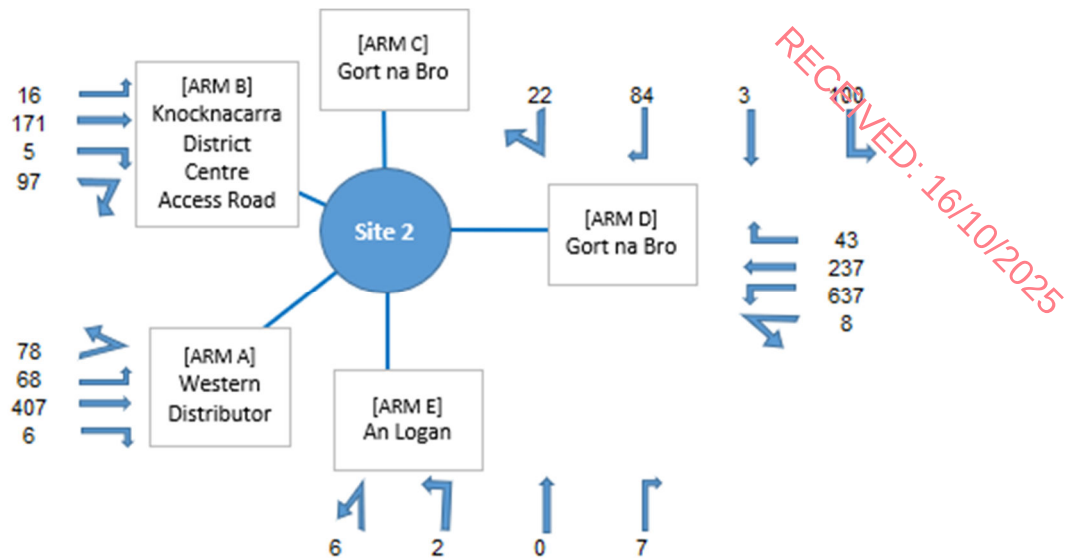


Figure 5-39: Baseflow + Comm. & Proposed Development Generated Traffic 2041 PM Peak – Junction 2

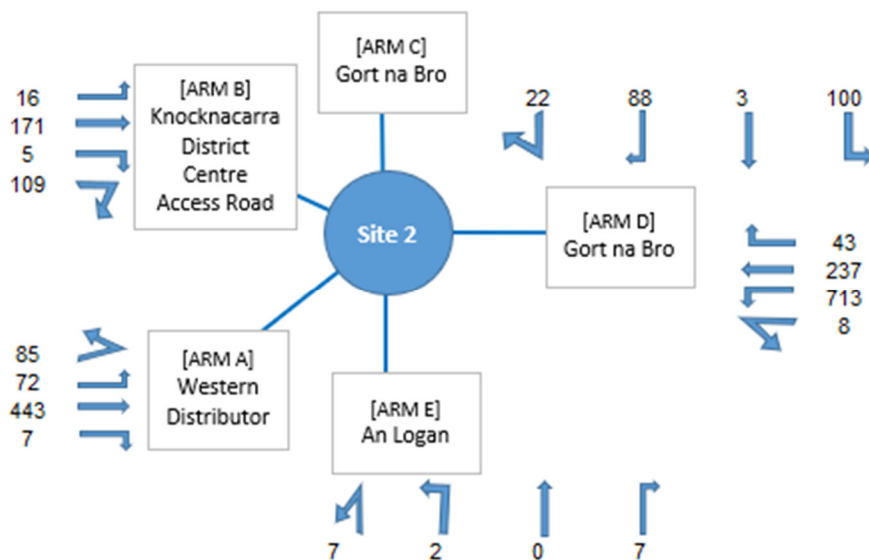


Figure 5-40: Baseflow + Comm. & Proposed Development Generated Traffic + Masterplan 2041 PM Peak – Junction 2

6.0 JUNCTION ANALYSIS

6.1 INTRODUCTION AND METHODOLOGY

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

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 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 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 PICADY analysis in **Appendix C**.

6.1.2 JUNCTION 1 - BOTHAR STIOFAIN / WESTERN DISTRIBUTOR ROAD / ALTAN ROUNDABOUT JUNCTION (EXISTING LAYOUT)

A summary of the analysis results for the existing roundabout on the Bothar Stiofain / Western Distributor Road / Altan 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
	2023 Existing									
Arm 1	D1	0.4	4.13	0.31	A	D2	0.4	3.64	0.30	A
Arm 2		0.3	3.91	0.24	A		0.8	5.19	0.44	A
Arm 3		0.2	3.91	0.18	A		0.1	4.35	0.08	A
Arm 4		1.8	7.56	0.64	A		1.0	5.18	0.50	A
	2026 Base									
Arm 1	D3	0.5	4.30	0.33	A	D4	0.5	3.75	0.31	A
Arm 2		0.3	4.01	0.26	A		0.9	5.48	0.46	A
Arm 3		0.2	4.02	0.19	A		0.1	4.54	0.09	A
Arm 4		2.1	8.39	0.68	A		1.1	5.47	0.53	A
	2026 Base + Comm & Prop									
Arm 1	D5	0.6	4.83	0.37	A	D6	0.5	4.02	0.35	A
Arm 2		0.4	4.17	0.28	A		1.2	6.52	0.54	A
Arm 3		0.3	4.31	0.23	A		0.1	5.14	0.12	A
Arm 4		3.2	11.59	0.76	B		1.3	6.04	0.57	A
	2041 Base									
Arm 1	D7	0.7	5.01	0.40	A	D8	0.6	4.21	0.37	A
Arm 2		0.5	4.45	0.31	A		1.2	6.79	0.55	A
Arm 3		0.3	4.38	0.23	A		0.1	5.38	0.12	A
Arm 4		3.5	12.46	0.78	B		1.6	6.80	0.61	A
	2041 Base + Comm									
Arm 1	D9	0.8	5.71	0.44	A	D10	0.7	4.48	0.40	A
Arm 2		0.5	4.58	0.32	A		1.6	8.00	0.61	A
Arm 3		0.3	4.64	0.25	A		0.2	6.18	0.13	A
Arm 4		6.4	21.33	0.87	C		1.8	7.55	0.65	A
	2041 Base + Comm & Prop									
Arm 1	D11	0.8	5.85	0.45	A	D12	0.7	4.56	0.41	A
Arm 2		0.5	4.64	0.33	A		1.7	8.45	0.63	A
Arm 3		0.4	4.86	0.28	A		0.2	6.41	0.16	A
Arm 4		7.2	24.03	0.89	C		1.9	7.76	0.66	A
	2041 Base + Comm & Masterplan									
Arm 1	D13	1.3	8.19	0.56	A	D14	1.2	6.93	0.55	A
Arm 2		0.8	6.17	0.44	A		11.9	46.50	0.94	E
Arm 3		1.2	7.87	0.55	A		9.2	65.79	0.94	F
Arm 4		60.2	154.48	1.08	F		4.3	15.84	0.82	C

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 the junction is currently operating within capacity for all traffic Streams in both the 2023 morning and evening peak periods. This will continue to be the case for the 2026 Year scenario (base scenario and base plus committed and proposed scenario), with slight increases projected in the RFC and queue lengths for both the morning and evening peak periods.

For the design year 2041 base scenario, the junction is forecast to operate within capacity. The addition of potential development traffic from the proposed development and nearby committed developments results in Arm 4 approaching capacity in the AM period as an RFC of 0.89 is recorded.

The inclusion of the masterplan development (commercial development and aquatic centre facility) is projected to increase RFC and queue lengths for both the morning and evening peak periods, with Arm 2 and 3 approaching capacity in the PM period. An RFC of 1.08 is recorded in the AM period for Arm 4, which indicates the approach arm is exceeding capacity. Although the Arm 4 marginally exceeds capacity, the analysis does not take account of any Mobility Management measures identified for the site.

It is also estimated that a proportion of the proposed and masterplan trip generation will be pass through trips of the existing Western Distributor Road. Although a reduction factor could be applied to the proposed trip rates, it has not been applied as part of a conservative analysis.

6.1.3 JUNCTION 1.1 - BOTHAR STIOFAIN / WESTERN DISTRIBUTOR ROAD / ALTAN ROUNDABOUT JUNCTION (ACTIVE TRAVEL LAYOUT)

A summary of the analysis results for the potential future active travel roundabout design on the Bothar Stiofain / Western Distributor Road / Altan 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 6-2: Active Travel Junction 1 – AM & PM Peak Hours

	AM					PM				
	Set ID	Queue (PCU)	Delay (s)	RFC	LOS	Set ID	Queue (PCU)	Delay (s)	RFC	LOS
	2026 Base									
Arm 1	D1	0.7	6.38	0.42	A	D2	0.6	5.31	0.39	A
Arm 2		0.4	4.57	0.28	A		1.0	6.60	0.51	A
Arm 3		0.3	4.40	0.20	A		0.1	5.02	0.09	A
Arm 4		2.1	8.65	0.68	A		1.1	5.56	0.53	A
	2026 Base + Comm									
Arm 1	D3	0.9	7.30	0.47	A	D4	0.7	5.72	0.43	A
Arm 2		0.4	4.71	0.30	A		1.3	7.75	0.57	A
Arm 3		0.3	4.56	0.22	A		0.1	5.57	0.11	A
Arm 4		3.1	11.32	0.76	B		1.3	6.02	0.56	A
	2026 Base + Comm & Prop									
Arm 1	D5	0.9	7.53	0.48	A	D6	0.8	5.85	0.43	A
Arm 2		0.4	4.78	0.30	A		1.5	8.15	0.59	A
Arm 3		0.3	4.75	0.25	A		0.2	5.75	0.13	A
Arm 4		3.3	12.10	0.77	B		1.3	6.16	0.57	A
	2041 Base incl. Est. Active Travel Reduction									
Arm 1	D7	0.8	6.70	0.44	A	D8	0.7	5.53	0.41	A
Arm 2		0.4	4.72	0.30	A		1.1	7.03	0.53	A
Arm 3		0.3	4.48	0.21	A		0.1	5.25	0.10	A
Arm 4		2.4	9.21	0.71	A		1.2	5.87	0.55	A
	2041 Base + Comm incl. Est. Active Travel Reduction									
Arm 1	D9	0.9	7.58	0.48	A	D10	0.8	5.92	0.44	A
Arm 2		0.5	4.85	0.31	A		1.5	8.17	0.59	A
Arm 3		0.3	4.61	0.23	A		0.1	5.80	0.12	A
Arm 4		3.3	11.79	0.77	B		1.4	6.33	0.58	A
	2041 Base + Comm & Prop incl. Est. Active Travel Reduction									
Arm 1	D11	1.0	7.94	0.50	A	D12	0.8	6.06	0.45	A
Arm 2		0.5	4.91	0.32	A		1.6	8.58	0.61	A
Arm 3		0.3	4.87	0.26	A		0.2	6.01	0.14	A
Arm 4		3.8	13.51	0.80	B		1.4	6.47	0.59	A
	2041 Base + Comm & Masterplan incl. Est. Active Travel Reduction									
Arm 1	D13	1.8	13.25	0.65	B	D14	1.6	10.03	0.62	B
Arm 2		0.8	6.51	0.43	A		8.2	35.89	0.91	E
Arm 3		1.0	7.42	0.51	A		3.0	23.46	0.76	C
Arm 4		15.3	50.66	0.96	F		2.7	10.69	0.73	B
	2041 Base + Comm & Masterplan & GCRR									

	AM					PM				
	Set ID	Queue (PCU)	Delay (s)	RFC	LOS	Set ID	Queue (PCU)	Delay (s)	RFC	LOS
Arm 1	D17	1.1	8.47	0.51	A	D18	1.0	7.23	0.51	A
Arm 2		0.5	5.46	0.33	A		2.1	11.43	0.68	B
Arm 3		1.0	6.65	0.51	A		1.5	10.39	0.61	B
Arm 4		3.1	12.61	0.76	B		1.3	6.59	0.56	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 the active travel junction is predicted to operate within capacity for all traffic Streams in both the 2026 morning and evening peak periods. This will continue to be the case for the 2026 Base plus committed and proposed scenarios, with slight increases projected in the RFC and queue lengths for both the morning and evening peak periods.

For all 2041 design scenarios, excluding the Galway City Ring Road scenario, a 10% reduction has been applied to the background traffic based on the projected modal split objectives and targets, refer to Chapter 5 for details. For the design year 2041 base scenario, the junction is forecast to operate within capacity. The addition of committed and proposed development traffic is projected to increase RFC and queue lengths for both the morning and evening peak periods, however the junction is predicted to operate within capacity. The inclusion of the masterplan development (commercial development and aquatic centre facility) is projected to increase RFC and queue lengths for both the morning and evening peak periods, with Arm 4 in the AM and Arm 2 in the PM approaching capacity, however, the junction is predicted to operate within capacity.

For the design year 2041 with the inclusion of the masterplan and the Galway City Ring Road impact, all Junctions and Streams are forecast to operate within capacity in both the morning and evening peak periods. This design scenario applied a reduction to the background traffic based on the projected impact of the proposed N6 Galway City Ring Road, refer to Chapter 5 for details.

It is estimated that a proportion of the proposed and masterplan trip generation will be pass through trips of the existing Western Distributor Road. Although a reduction factor could be applied to the proposed trip rates, it has not been applied as part of a conservative analysis.

6.1.4 JUNCTION 2 ROUNDABOUT JUNCTION - GORT NA BRO / WESTERN DISTRIBUTOR ROAD / AN LOGAN

A summary of the analysis results for the existing roundabout on the Gort na Bro / Western Distributor Road / An Logan 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 6-3: Junction 2 – AM & PM Peak Hours

	AM					PM				
	Set ID	Queue (PCU)	Delay (s)	RFC	LOS	Set ID	Queue (PCU)	Delay (s)	RFC	LOS
	2023									
Arm 1	D1	1.4	8.83	0.59	A	D2	0.7	6.36	0.40	A
Arm 2		0.2	4.93	0.19	A		0.3	4.47	0.23	A
Arm 3		0.2	3.94	0.18	A		0.1	3.15	0.06	A
Arm 4		0.4	4.16	0.31	A		1.3	6.63	0.56	A
Arm 5		0.0	4.15	0.03	A		0.0	5.14	0.02	A
	2026 Base									
Arm 1	D3	1.6	9.57	0.62	A	D4	0.7	6.64	0.42	A
Arm 2		0.3	5.11	0.20	A		0.3	4.58	0.24	A
Arm 3		0.2	4.07	0.19	A		0.1	3.20	0.06	A
Arm 4		0.5	4.26	0.32	A		1.4	7.07	0.59	A
Arm 5		0.0	4.21	0.03	A		0.0	5.29	0.02	A
	2026 Base + Comm & Prop									
Arm 1	D5	3.1	15.62	0.76	C	D6	0.9	7.52	0.48	A
Arm 2		0.3	5.97	0.25	A		0.4	4.85	0.26	A
Arm 3		0.3	4.39	0.23	A		0.2	3.71	0.18	A
Arm 4		0.6	4.54	0.36	A		1.9	8.73	0.65	A
Arm 5		0.0	4.39	0.04	A		0.0	5.88	0.02	A
	2041 Base									
Arm 1	D7	2.6	13.54	0.73	B	D8	1.0	7.87	0.50	A
Arm 2		0.3	5.75	0.25	A		0.4	5.04	0.29	A
Arm 3		0.3	4.60	0.24	A		0.1	3.39	0.07	A
Arm 4		0.6	4.64	0.38	A		2.2	9.36	0.68	A
Arm 5		0.0	4.43	0.03	A		0.0	5.89	0.02	A
	2041 Base + Comm									
Arm 1	D9	5.6	26.17	0.86	D	D10	1.2	8.97	0.56	A
Arm 2		0.4	6.79	0.30	A		0.4	5.32	0.30	A
Arm 3		0.4	4.96	0.28	A		0.2	3.94	0.20	A
Arm 4		0.7	4.95	0.41	A		2.9	11.92	0.74	B
Arm 5		0.0	4.61	0.04	A		0.0	6.54	0.03	A
	2041 Base + Comm & Prop									
Arm 1	D11	6.2	28.43	0.87	D	D12	1.3	9.12	0.56	A
Arm 2		0.4	6.87	0.31	A		0.4	5.35	0.31	A
Arm 3		0.4	5.01	0.28	A		0.2	3.96	0.20	A
Arm 4		0.7	4.97	0.42	A		3.0	12.46	0.76	B
Arm 5		0.0	4.62	0.04	A		0.0	6.63	0.03	A
	2041 Base + Comm & Prop & Masterplan									
Arm 1	D13	17.4	69.58	0.98	F	D14	2.7	15.04	0.74	C
Arm 2		0.5	7.59	0.33	A		0.6	6.27	0.36	A



	AM					PM				
	Set ID	Queue (PCU)	Delay (s)	RFC	LOS	Set ID	Queue (PCU)	Delay (s)	RFC	LOS
Arm 3		0.4	5.49	0.31	A		0.3	4.45	0.22	A
Arm 4		0.9	5.58	0.48	A		12.1	42.03	0.94	E
Arm 5		0.0	4.92	0.04	A		0.0	8.62	0.04	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 2023 peak periods. This will continue to be the case for the 2026 Year scenarios (base scenario and base plus committed and proposed scenario), with slight increases projected in the RFC and queue lengths for both the morning and evening peak periods.

For the design year 2041 base scenario, the junction is forecast to operate well within capacity. The addition of traffic from the proposed development and nearby committed developments results in Arm 1 approaching capacity in the AM period as an RFC of 0.87 is recorded. However, the junction is forecast to operate within capacity.

The inclusion of the masterplan development (commercial development and aquatic centre facility) results in a projected increase in RFC and queue lengths for both the morning and evening peak periods, with Arm 1 in the AM, and Arm 4 in the PM approaching capacity. However, the junction is forecast to continue to operate within capacity.

The preceding analysis does not take account of any Mobility Management measures identified for the site. It is also estimated that a proportion of the proposed and masterplan trip generation will be pass through trips of existing the Western Distributor Road. Although a reduction factor could be applied to the proposed trip rates, it has not been applied as part of a conservative analysis.

7.0

7.0 OTHER ROAD ISSUES

7.1 ROAD SAFETY

Junction intervisibility for the proposed arm onto the internal road network has been provided in accordance with the Design Manual for Urban Roads and Streets (DMURS). The internal visibility splays of 2.4 x 49.0 metres are required at the exit/entrance to the proposed development, with the proposed speed limit of 50km/h in accordance with DMURS 2019 Guidelines.

As noted previously, A Stage 1 Road Safety Audit was carried out on the proposed development layout, please refer to **Appendix D** for details.

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 City Council Development Plan (GCCDP) 2023 – 2029

The car parking requirements for the development are set out in Table 11.6 and Section 11.3.1 (g) of the Galway City Council Development Plan 2023-2029 (GCCDP). The plan states the maximum provision for residential developments within the outer suburbs is 1 on-site space per 3 dwellings and 1 grouped visitor space per 3 dwellings. As the proposed development has proposed 362 no. units along with the 440 m² creche development, the maximum provision in accordance with the GCCDP is 504 no. car parking spaces.

The detailed breakdown of the parking provided is shown in Table 7-1 below. A total of 313 no. car parking spaces will be provided onsite. The parking provision is below the maximum allowable parking for a development in Galway City.

Table 7-1: Car Parking Requirements

Car Parking	Requirement	Units	Calculated Maximum	Parking Provided
Residential	11.3.1 (g) – 1 on-site space per dwelling and 1 grouped visitor space per dwellings	362	362 / 120	313
Creche	Table 11.6 – Childcare Facilities – 1 space per 20m ² of operational space	440 m ²	22	
Totals			504	313

Due to the central location of the proposed development within the overall Galway City suburbs, the proximity to quality public transport and the good pedestrian and cyclist linkages, the proposed parking provision for the site is in line with the sustainability measures outlined in the Galway Transport Strategy and the Galway City Development Plan.

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, and fire tender. Details of this analysis on the final layout are shown on Drawing Numbers 11893-2017 to 11893-2028, which accompanies this planning application.

7.4 DEVELOPMENT CONSTRUCTION PHASE

The construction works associated with the proposed development are expected to be undertaken in three phases. It is estimated that the construction works will be completed within 36 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.

7.4.1 Construction Trip Generation

The construction phase for the proposed project will result in additional traffic on the roads in the vicinity of the proposed Development. The proposed HGVs will typically be rigid vehicles (i.e., concrete trucks, dump trucks, delivery vehicles) or maximum legal articulated vehicles within normal vehicle loading.

This additional construction traffic will include the following:

- Construction worker vehicles, e.g., cars or vans (light vehicles),
- HGVs carrying conventional earthworks equipment such as an excavator, a roller, stone crusher, forklifts, etc.
- Mobile Cranes,
- Delivery vehicles carrying:
 - conventional construction materials for the site, e.g., aggregate, concrete, rebar, etc.
 - drainage infrastructure i.e., pipes, tanks, etc.

A total of 20 HGV one-way (40 trips total) have been estimated at peak construction time (i.e. during foundation concrete pours, etc) and an average of 10 -12 HGV during off-peak. The peak HGV movements are anticipated to occur in the first year (from month 6 to 12) as the site clearance works, site infrastructure installation and building foundations may be occurring simultaneously.

It is estimated that for a development of this size, 40 – 50 site operatives will be employed at the height of the construction works. This would equate to an approx. parking requirement for 35-40 vehicles (car / van parking). Parking for construction workers and visitors will be located within the construction compound.

The HGV traffic generations are estimated based on the materials / deliveries / disposals required at the site and attributing these deliveries to the associated construction activity according to the construction programme.

As outlined within this Traffic and Transport Assessment, the worst-case construction trip generation scenario (i.e., peak construction activities) indicates that the proposed development will not exceed National or Local Road network capacity i.e. the peak construction traffic generated is less than the operational traffic which is forecast to operate within capacity for the junctions as assessed for the proposed development once operational.

Note that the above trip generation is based on the worst-case scenario of all materials being transported to site. The construction methodology of the development is to be considered and reductions in trips can be realised depending on the methodology used i.e. a batching plant onsite will save a large number of concrete / mortar deliveries; prefabricated elements will cut down on deliveries of blocks, etc.

7.4.2 Construction Site Access

Access to the proposed development site is envisaged to be through the new access which will be constructed off the internal access road currently granted planning permission – Plan ref 2460370). 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.

8.0 MOBILITY MANAGEMENT

8.1 PEDESTRIANS & CYCLISTS

8.1.1 PEDESTRIANS

The Western Distributor Road has footways and cycle lanes each side of the road leading to the proposed site. The Kingston Road has footways present in the vicinity of the proposed development access. The Figure below identifies the existing pedestrian and cyclist 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 raised crossing points and dedicated walking and cycling avenues will be provided within the site. The inclusion of these attractive, well-designed walking and cycling 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. The City Centre is located approximately 4.6 km to the east. This represents a 17-minute cycle time for the average cyclist from the proposed development. Cycling enthusiasts and regular cyclists will likely cycle rather than use vehicle transport.

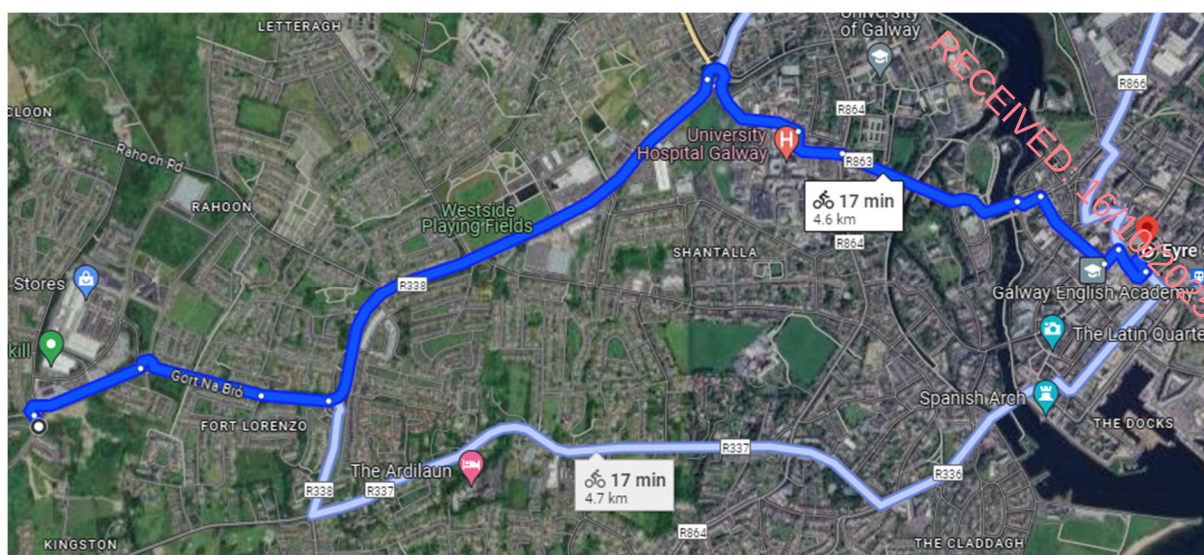


Figure 8-2: Cycle Times to City Centre

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 sites locality to commercial sites.

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

- Galway City Council Development Plan 2023-2029

A calculated total of 505 bicycle spaces are required for the development site. It is proposed to provide a total of 665 bicycle parking spaces for the proposed development. See the Table below for the bicycle parking calculation.

Table 8-1: Bicycle Parking Requirements

Elements	Requirements	Bedrooms / Units / Spaces	Spaces Required:	Provision
Residential Accommodation	Houses 1 – 2 beds: Short Stay – 1 space per 5 units Long Stay – 1 space per 1 unit (minimum of 2 spaces)	19 units	4/19	665
	Houses – 3 plus beds: Short Stay – 1 space per 5 units Long Stay – 1 space per 1 unit (minimum of 2 spaces)	107 units	21/107	
	Apartment Development: 1 cycle space per bedroom	348 Bedrooms	348	
Creche	For commercial developments, the number of cycle stands shall be equivalent to 25% of the number of car parking spaces.	22 spaces	6	
Totals			505	665

Given the existing walking and cycling linkages in Galway City 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 city centre and residential areas in the suburbs 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)
Gateway Shopping Park	0.60	2 min	0.55	8 min
Cappagh Park	1.90	6 min	1.90	24 min
Pearse Stadium	2.40	9 min	2.10	30 min
University Hospital Galway	3.00	11 min	2.90	39 min
University of Galway	3.50	12 min	3.30	46 min
Eyre Square	4.70	17 min	4.20	58 min
Galway Train Station	4.50	18 min	4.30	59 min
Galway Coach Station	5.00	20 min	4.50	61 min

A Mobility Management Plan (MMP) has been compiled by Transport Insights with the aim of guiding the delivery and management of coordinated initiatives by the scheme developer to be implemented upon occupation of the site.

8.1.3 FUTURE CYCLE NETWORK

The CycleConnects for Galway's Urban area was developed by AECOM on behalf of the National Transport Authority (NTA). The CycleConnects network identifies the potential future cycling network for Galway city and the potential connections between all major towns and cities. As shown in the Figure below there are cycle routes identified by CycleConnects to the north of the proposed site. This will ensure the future cycling network within the city will provide a viable alternative to other trip types. Please refer to Section 4.3.3 which details the proposed cycle scheme located along the Western Distributor Road.

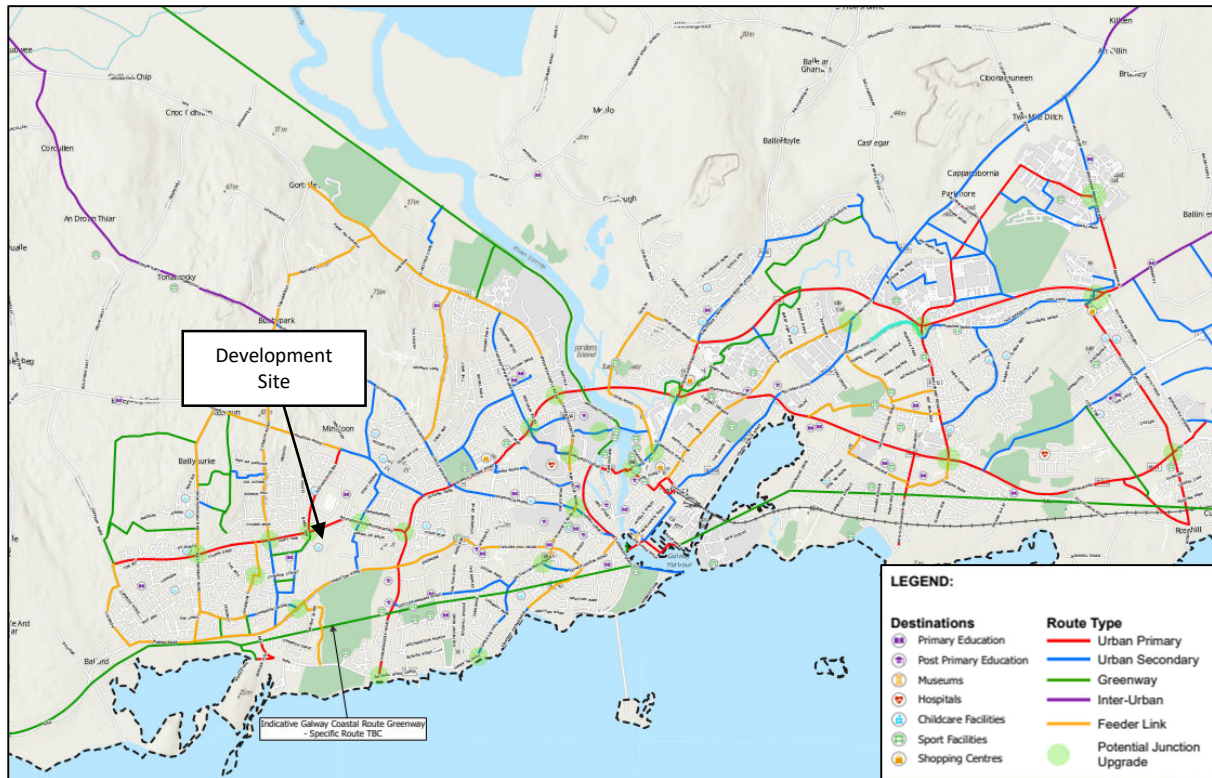


Figure 8-3: Cycle Connects Proposed Galway Urban Network

8.2 PUBLIC TRANSPORT

8.2.1 BUS ROUTES

There are currently five bus services operating in the proximity of the proposed residential development, the 402 and 405 Bus Eireann routes and the 410, 411, and 412 City Direct bus routes. The existing bus route map for Galway City is illustrated in the below figure.

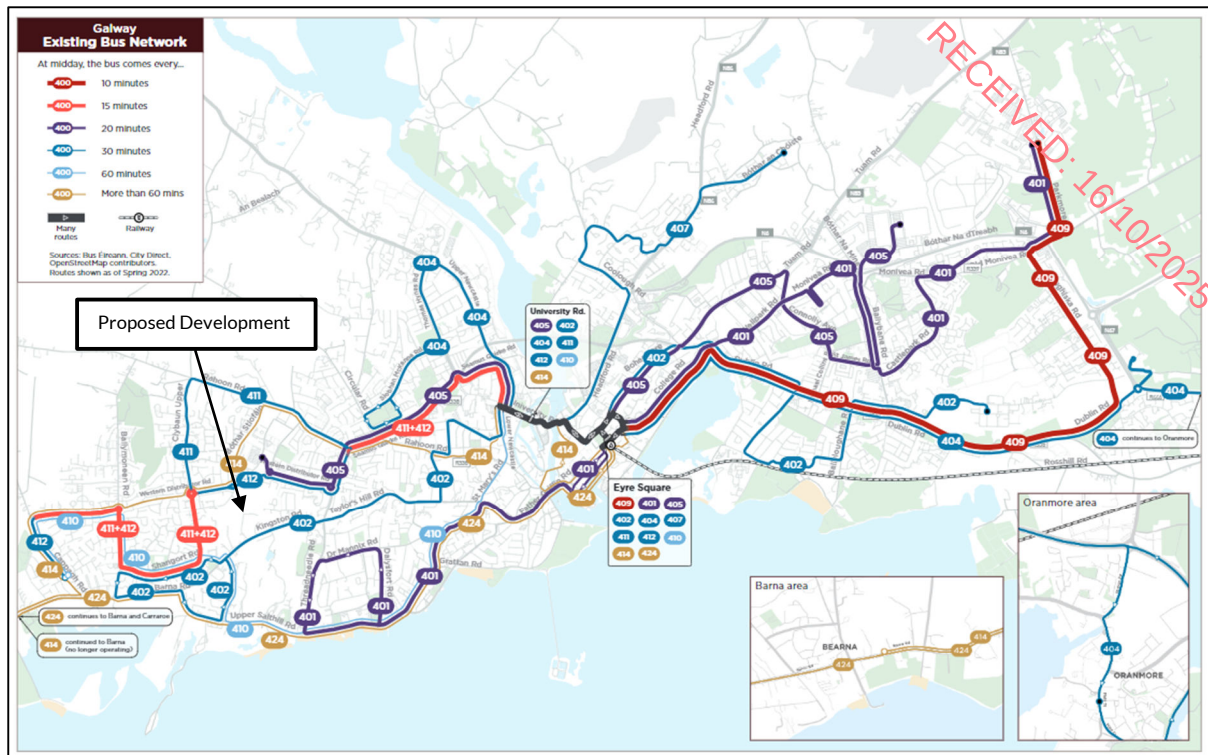


Figure 8-4: Existing Galway City Bus Route Map

8.2.1.1 Bus Éireann – 402

Bus route 402 stops at the Kingston Gardens bus stop, approximately 2-minute walk from the proposed Kingston Road site access. The 402-bus route provides a frequent service between Shangort Road and Merlin Park, via Eyre Square. This bus route travels from Shangort Road to Merlin Park on Monday to Friday from 06:30 to 23:00, on Saturdays from 07:00 to 23:00, and on Sundays from 08:00 to 23:00. This bus route travels from Merlin Park to Shangort Road on Mondays to Fridays from 06:30 to 23:00, on Saturdays from 07:00 to 23:00, and on Sundays from 08:00 to 23:00.

8.2.1.2 City Direct – 412

Bus route 412 stops at the Altan Apartments bus stop, approximately 2-minute walk from the proposed Western Distributor Road site access. The 412-bus route provides a frequent service between Mount Prospect and Eyre Square. This bus route travels from Mount Prospect to Eyre Square on Monday to Friday from 07:30 to 17:00. This bus route travels from Eyre Square to Woodfield on Mondays to Fridays from 07:30 to 17:30.

8.2.1.3 City Direct – 410

Bus route 410 stops at the Shangort Road bus stop, approximately 6-minute walk from the proposed Kingston Road site access. The 410-bus route provides a frequent service between Mount Prospect and Eyre Square. This bus route travels from Mount Prospect to Eyre Square on Monday to Friday from 08:20 to 17:20, and on Saturdays from 09:00 to 17:00. This bus route travels from Eyre Square to Woodfield on Mondays to Fridays from 08:50 to 17:50, and on Saturdays from 09:30 to 17:30.

8.2.1.4 CityDirect – 411

Bus route 411 stops at the Hawthorn Place bus stop, approximately 7-minute walk from the proposed Western Distributor Road site access. The 411-bus route provides a frequent service between Mount Prospect and Eyre Square via Gateway Retail Park. This bus route travels from Binn Bhán to Eyre Square on Monday to Friday from 07:00 to 22:48, on Saturdays from 07:48 to 20:48, and on Sundays from 11:18 to 20:48. This bus route travels from Eyre Square to Tór Buí on Mondays to Fridays from 07:45 to 23:15, on Saturdays from 08:15 to 21:15, and on Sundays from 11:45 to 21:15.

8.2.1.5 Bus Eireann – 405

Bus route 405 stops at the Gort Na Bró bus stop, approximately 8-minute walk from the proposed Western Distributor Road site access. The 405-bus route provides a frequent service between Knocknacarra and Ballybane, via Eyre Square. This bus route travels from Knocknacarra to Ballybane on Monday to Friday from 06:35 to 23:40, on Saturdays from 08:00 to 23:40, and on Sundays from 08:00 to 23:20. This bus route travels from Ballybane to Knocknacarra on Mondays to Fridays from 06:47 to 23:42, on Saturdays from 08:00 to 23:46, and on Sundays from 08:00 to 23:20.

8.3 FUTURE BUS NETWORK

BusConnects is a programme of public transport investment in Ireland's major urban centres. It is developed and managed by the National Transport Authority (NTA) and funded by Project Ireland 2040. BusConnects includes many elements:

- Redesigning the bus network
- Building new bus corridors and cycle lanes
- Implementing a state of the art ticketing system
- Implementing a cashless payment system
- Simpler fare structure
- New bus livery
- New bus stops and shelters
- New Park & Ride sites in key locations
- Transitioning to a new zero emissions bus fleet

Some of these elements are already underway in Galway. Bus priority corridors through the city centre and along the Dublin Road are being planned. Many older buses have been replaced by newer yellow-and-green TFI buses, and new battery-electric buses added to the local fleet in 2023. The bus network redesign is a review of where and how often the bus should come. This includes which roads buses run on, times and days of service, frequencies, stop locations, and how people will interchange between routes. The proposed routes of the BusConnect network redesign are illustrated in the Figure below.

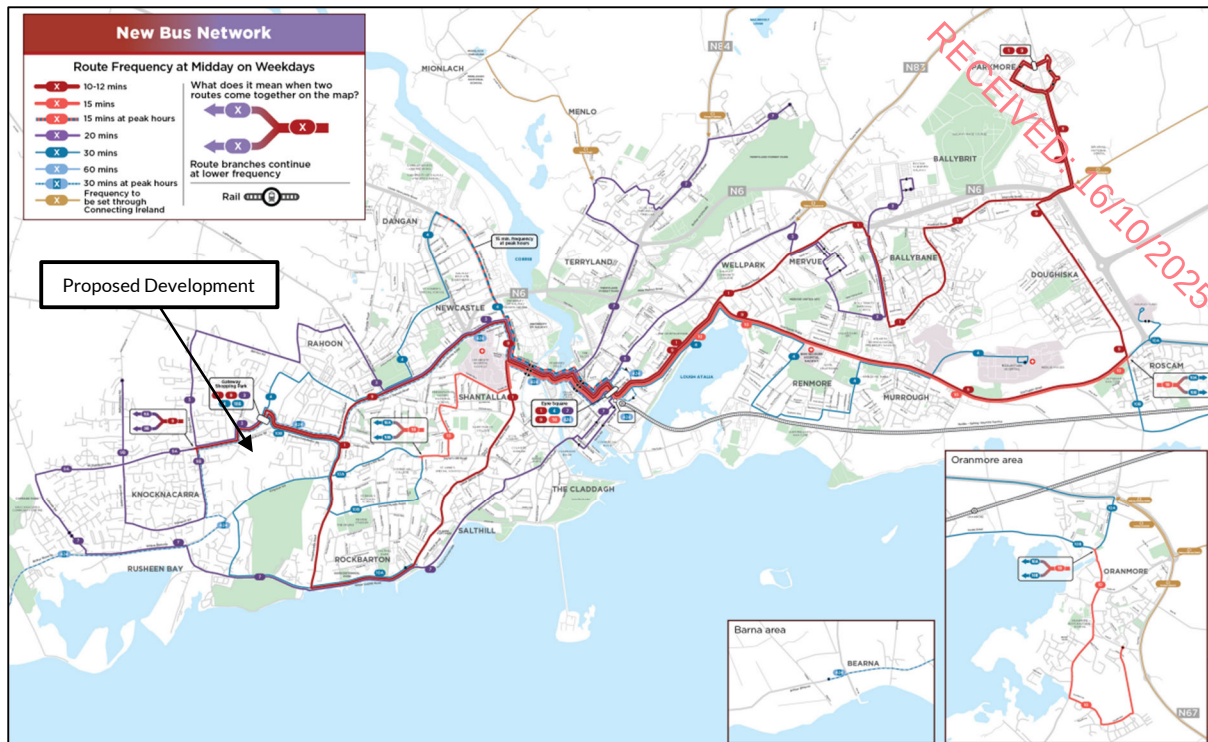


Figure 8-5: Galway City Proposed BusConnects Network Map

As demonstrated in the above figure, the proposed development site is located within close proximity of a number of proposed BusConnects routes, namely the 1, 3, 4, and 10B routes which all adjoin at the Gateway Shopping Park. It is envisaged that route 1 will have a 15-minute midday frequency, route 3 will have a 20-minute midday frequency, and route 4 and 10B a midday frequency of 30 minutes. These future routes will ensure that the proposed site will have excellent public transport connectivity to the Galway City and surrounding areas.

8.4 MOBILITY OBJECTIVES

The Mobility Management objectives for the proposed Development are:

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

Please refer to the Mobility Management Plan, which accompanies this application, for the actions aimed towards the residents of the proposed development to encourage use of the surrounding area's public transport, walking and cycling facilities.

9.0 CONCLUSIONS AND RECOMMENDATIONS

9.1 CONCLUSIONS

There are good pedestrian and cycling linkages to the proposed development site with footpath and cycle access points to the site. The site is accessible for pedestrians and cyclists with footpath and cycle infrastructure linking the site to its environs and a large residential catchment.

The proposed development site is well served by public transport with bus services operating adjacent to the site. Public transport links are within easy walking access with the closest approximately a 2-minute walk away from the proposed development site with access to further public transport links available from here. There are five bus stops within 450m of the proposed site, Altan Apartments bus-stop, Hawthorn Place bus stop, Gort Na Bró, Shangort Road and Kingston Gardens bus-stop. These bus-stops connects the proposed development with Galway City, Mayo, and other surrounding counties.

9.2 JUNCTION ANALYSIS

9.2.1 Analysis Approach

The summation of the proposed development has been assessed using ARCADY for the traffic generated volumes for the expected year of opening in 2026 and the design year 2041. A number of assumptions were made in this report, as outlined in Section 5, 'Trip Generation and Trip Distribution'. Following consultation with the Galway City Council (GCC) Transportation Department, the following existing junctions in the vicinity of the proposed development were analysed to ascertain the potential impact of the proposed development:

- i. Junction 1 – Bothar Stiofain / Western Distributor Road / Altan
- ii. Junction 2 – Gort Na Bro / Western Distributor Road / An Logan

The potential future Western Distributor Road (WDR) Active Travel scheme was also discussed with GCC's Transportation and Active Travel Departments. This proposed scheme aims to develop new and upgraded cycling infrastructure along the Western Distributor Road (WDR). During this consultation it was agreed that this TTA would review the potential future geometric changes to the Bothar Stiofain / Western Distributor Road / Altan Roundabout (Junction 1) and include it as part of this Traffic and Transport Assessment (TTA). For this reason a number of design scenarios have been considered, as part of a holistic and conservative analysis for the area. See summary table below which indicates the design scenarios conducted as part of this TTA.

Table 9-1: Junction Analysis Scenarios

Junction Ref:	Junction Design	Traffic Design Years and Scenarios
Junction 1	Existing Roundabout Layout	2023 Existing
		2026 Base
		2026 Base + Committed Developments
		2026 Base + Committed & Proposed Developments

Junction Ref:	Junction Design	Traffic Design Years and Scenarios
		2041 Base + Committed Developments
		2041 Base + Committed & Proposed Developments
		2041 Base + Committed & Masterplan
	Potential Future Active Travel Scheme Design	2026 Base
		2026 Base + Committed Developments
		2026 Base + Committed & Proposed Developments
		2041 Base + Committed Developments & Estimated Active Travel Scheme Reduction Factor
		2041 Base + Committed & Proposed Developments & Estimated Active Travel Scheme Reduction Factor
		2041 Base + Committed & Masterplan & Estimated Active Travel Scheme Reduction Factor
		2041 Base + Committed & Masterplan & Galway City Ring
Junction 2	Existing Roundabout Layout	2023 Existing
		2026 Base
		2026 Base + Committed Developments
		2026 Base + Committed & Proposed Developments
		2041 Base + Committed Developments
		2041 Base + Committed & Proposed Developments
		2041 Base + Committed & Masterplan

9.2.2 Junction 1 – Bothar Stiofain / Western Distributor Road / Altan (Existing Roundabout Layout)

The ARCADY analysis results indicate the junction is currently operating within capacity for all traffic Streams in both the 2023 morning and evening peak periods. This will continue to be the case for the 2026 Year scenario (base scenario and base plus committed and proposed scenario), with slight increases projected in the RFC and queue lengths for both the morning and evening peak periods.

For the design year 2041 base scenario, the junction is forecast to operate within capacity. The addition of potential development traffic from the proposed development and nearby committed developments results in Arm 4 approaching capacity in the AM period as an RFC of 0.89 is recorded.

The inclusion of the masterplan development (commercial development and aquatic centre facility) is projected to increase RFC and queue lengths for both the morning and evening peak periods, with Arm 2 and 3 approaching capacity in the PM period. An RFC of 1.08 is recorded in the AM period for Arm 4, which indicates the approach arm is exceeding capacity. Although Arm 4 marginally exceeds capacity, the analysis does not take account of any Mobility Management measures identified for the site. It is also estimated that a proportion of the proposed and masterplan trip generation will be pass through trips of the existing Western Distributor Road.

Although a reduction factor could be applied to the proposed trip rates, it has not been applied as part of a conservative analysis.

9.2.3 Junction 1.1 – Bothar Stiofain / Western Distributor Road / Altan (Active Travel Layout)

The ARCADY analysis results indicate the active travel junction is predicted to operate within capacity for all traffic Streams in both the 2026 morning and evening peak periods. This will continue to be the case for the 2026 Base plus committed and proposed scenarios, with slight increases projected in the RFC and queue lengths for both the morning and evening peak periods.

For all 2041 design scenarios, excluding the Galway City Ring Road scenario, a 10% reduction has been applied to the background traffic based on the projected modal split objectives and targets, refer to Chapter 5 for details. For the design year 2041 base scenario, the junction is forecast to operate within capacity. The addition of committed and proposed development traffic is projected to increase RFC and queue lengths for both the morning and evening peak periods, however the junction is predicted to operate within capacity. The inclusion of the masterplan development (commercial development and aquatic centre facility) is projected to increase RFC and queue lengths for both the morning and evening peak periods, with Arm 4 in the AM and Arm 2 in the PM approaching capacity, however, the junction is predicted to operate within capacity.

For the design year 2041 with the inclusion of the masterplan and the Galway City Ring Road impact, all Junctions and Streams are forecast to operate within capacity in both the morning and evening peak periods. This design scenario applied a reduction to the background traffic based on the projected impact of the proposed N6 Galway City Ring Road, refer to Chapter 5 for details.

It is estimated that a proportion of the proposed and masterplan trip generation will be pass through trips of the existing Western Distributor Road. Although a reduction factor could be applied to the proposed trip rates, it has not been applied as part of a conservative analysis.

9.2.4 Junction 2 – Gort Na Bro / Western Distributor Road / An Logan (Existing Roundabout Layout)

The ARCADY analysis results indicate that the junction is currently operating within capacity for all traffic Streams in both the morning and evening 2023 peak periods. This will continue to be the case for the 2026 Year scenarios (base scenario and base plus committed and proposed scenario), with slight increases projected in the RFC and queue lengths for both the morning and evening peak periods.

For the design year 2041 base scenario, the junction is forecast to operate well within capacity. The addition of traffic from the proposed development and nearby committed developments results in Arm 1 approaching capacity in the AM period as an RFC of 0.87 is recorded. However, the junction is forecast to operate within capacity.

The inclusion of the masterplan development (commercial development and aquatic centre facility) results in a projected increase in RFC and queue lengths for both the morning and evening peak periods, with Arm 1 in the AM, and Arm 4 in the PM approaching capacity. However, the junction is forecast to continue to operate within capacity.

Traffic Analysis

The preceding analysis does not take account of any Mobility Management measures identified for the site. It is also estimated that a proportion of the proposed and masterplan trip generation will be pass through trips of the existing Western Distributor Road. Although a reduction factor could be applied to the proposed trip rates, it has not been applied as part of a conservative analysis.

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:

- Junction visibility splays should be provided in accordance with the relevant guidance. Visibility splays should be kept free of all restrictions.
- Stop markings and a stop sign should be installed at the main entrance.
- Pedestrian footway links with associated dropped kerbing and tactile paving to be provided at all pedestrian crossing points.
- Mobility Management provisions should be implemented to aid in the reduction of car trips for the site and promote more sustainable transport modes.

RECEIVED: 16/10/2025

Appendix A. TRAFFIC COUNT DATA

Survey Company Client Reference Site No of Address

IDASO City of TR Site 115 Video Bothar Stiofain/Western Distributor Rd

Latitude Longitude Easting Northing From

53.27 -9.1 2E+05 1E+05 Nov 2023

Date Time From Time Interval Weather Section Type

07:00 19:00 ing to r Dry m Junction

Start Time	A										A										A									
	A TO A										A TO B										A TO C									
	A TO A										A TO D										A TO C									
	CAR	LGV	M/C	OGV1	OGV2	P/C	PSV	TAXI	TOT	CAR	LGV	M/C	OGV1	OGV2	P/C	PSV	TAXI	TOT	CAR	LGV	M/C	OGV1	OGV2	P/C	PSV	TAXI	TOT			
07:00	0	0	0	0	0	0	0	0	0	4	1	0	0	0	2	0	0	7	0	0	0	0	0	0	0	0	0			
07:15	0	0	0	0	0	0	0	0	0	1	1	0	1	0	0	0	0	3	2	0	0	0	0	0	0	1	3			
07:30	0	0	0	0	0	0	0	0	0	1	1	0	1	1	1	0	0	5	7	1	0	0	0	0	0	0	8			
07:45	0	0	0	0	0	0	0	0	0	10	2	0	4	0	0	0	0	16	2	0	0	0	0	0	0	0	2			
08:00	0	0	0	0	0	0	0	0	0	27	2	0	0	0	1	0	0	30	7	0	0	0	0	0	0	0	7			
08:15	1	0	0	0	0	0	0	0	1	37	3	0	0	0	2	0	0	42	17	0	0	0	1	0	0	0	18			
08:30	1	0	0	0	0	0	0	0	1	81	5	0	0	0	3	0	0	89	6	0	0	0	0	0	0	1	7			
08:45	0	0	0	0	0	0	0	0	0	74	5	0	2	0	5	0	1	87	6	0	0	0	0	0	0	0	6			
09:00	0	0	0	0	0	0	0	0	0	43	4	0	0	0	2	0	0	49	0	0	0	0	0	0	0	0	0			
09:15	0	0	0	0	0	0	0	0	0	38	2	0	0	0	0	0	2	42	3	0	0	0	0	0	0	0	3			
09:30	0	0	0	0	0	0	0	0	0	27	4	0	0	0	1	1	0	33	1	0	0	0	0	0	0	0	1			
09:45	0	0	0	0	1	0	0	0	1	23	5	0	1	0	2	0	1	32	4	0	0	0	0	0	0	0	4			
10:00	0	0	0	0	0	0	0	0	0	22	2	0	0	0	0	0	1	25	1	0	0	0	0	0	0	1	2			
10:15	1	0	0	0	0	0	0	0	1	28	3	0	0	0	0	0	1	32	0	0	0	0	0	0	0	0	0			
10:30	0	0	0	0	0	0	0	0	0	25	6	0	1	0	1	0	0	33	1	0	0	0	0	0	0	0	1			
10:45	0	0	0	0	0	0	0	0	0	28	4	0	2	0	0	0	0	34	1	1	0	0	0	1	0	0	3			
11:00	0	0	0	0	0	0	0	0	0	32	4	0	1	0	0	0	0	37	1	1	0	0	0	0	0	0	2			
11:15	1	0	0	0	0	0	0	0	1	37	3	0	0	0	0	0	0	40	0	0	0	0	0	0	0	0	0			
11:30	0	0	0	0	0	0	0	0	0	41	3	0	0	0	0	0	1	45	0	0	0	0	0	0	0	0	0			
11:45	0	0	0	0	0	0	0	0	0	35	5	1	2	0	1	0	1	45	0	0	0	0	0	0	0	0	0			
12:00	0	0	0	0	0	0	0	0	0	46	3	0	0	0	1	0	0	50	2	0	0	0	0	1	0	0	3			
12:15	0	0	0	1	0	0	0	0	1	45	2	0	1	0	1	0	2	51	3	1	0	0	0	0	0	0	4			
12:30	0	0	0	0	0	0	0	0	0	58	3	0	0	0	3	0	1	65	4	1	0	0	0	0	0	1	6			
12:45	0	0	0	0	0	0	0	0	0	46	4	0	1	0	2	0	1	54	5	0	0	0	0	0	0	0	5			
A TO A										A TO D										A TO C										
LV HV										LV HV										LV HV										
2 0										248 0										37 1										
13:0	0	0	0	0	0	0	0	0	0	62	3	0	1	0	0	0	2	68	6	0	0	0	0	0	0	0	6			
13:15	0	1	0	0	0	0	0	0	1	68	4	0	0	0	2	0	0	74	4	0	0	0	0	0	0	0	4			
13:30	0	1	0	0	0	0	0	0	1	42	2	0	0	0	1	0	0	45	8	0	0	0	0	0	0	1	9			
13:45	0	0	0	0	0	0	0	0	0	57	3	1	1	0	0	0	1	63	7	1	0	0	0	0	0	8				
14:00	0	0	0	0	0	0	0	0	0	34	4	0	0	0	5	0	1	44	13	1	0	0	0	0	0	14				
14:15	1	0	0	0	0	0	0	0	1	88	2	0	0	0	0	0	1	91	2	2	0	0	0	0	0	1	5			
14:30	0	0	0	0	0	0	0	0	0	76	2	0	1	0	8	0	3	90	0	0	0	0	0	1	0	1	1			
14:45	0	0	0	0	0	0	0	0	0	54	1	0	0	0	3	1	1	60	0	0	0	0	0	0	0	0	0			
15:00	1	0	0	0	0	0	0	0	1	71	1	0	0	0	1	0	0	73	2	0	0	0	0	0	0	0	2			
15:15	0	0	0	0	0	0	0	0	0	66	1	0	1	0	0	0	1	69	0	0	0	0	0	0	0	0	0			
15:30	0	0	0	0	0	0	0	0	0	66	5	0	1	0	1	0	0	73	4	0	0	0	0	0	0	0	4			
15:45	0	0	0	0	0	0	0	0	0	70	6	0	0	0	3	0	1	80	0	0	0	0	0	1	0	0	1			
16:00	0	0	0	0	0	0	0	0	0	65	6	1	0	0	2	0	1	75	6	1	0	0	0	0	0	0	7			
16:15	0	0	0	0	0	0	0	0	0	62	5	0	0	0	3	0	0	70	16	1	0	0	0	0	0	17				
16:30	0	0	0	0	0	0	0	0	0	72	4	0	0	0	1	0	0	77	4	0	0	0	0	1	0	0	5			
16:45	0	0	0	0	0	0	0	0	0	70	2	0	0	0	1	0	0	73	6	0	0	0	0	0	0	0	6			
17:00	1	0	0	0	0	0	0	0	1	79	4	0	0	0	0	0	0	83	2	0	0	0	0	1	0	0	3			
17:15	0	0	0	0	0	0	0	0	0	79	9	0	1	0	2	0	0	91	0	0	0	0	0	0	0	0	0			
17:30	0	0	0	0	0	0	0	0	0	85	4	0	0	0	5	0	0	94	5	0	0	0	0	0	0	0	5			
17:45	0	0	0	0	0	0	0	0	0	71	7	0	0	0	6	0	1	85	2	1	0	0	0	0	0	0	3			
18:00	0	0	0	0	0	0	0	0	0	57	7	0	0	0	4	0	2	70	4	0	0	0	0	0	0	0	4			
18:15	0	0	0	0	0	0	0	0	0	56	4	0	0	0	0	0	2	62	6	0	0	0	0	0	0	0	6			
18:30	0	0	0	0	0	0	0	0	0	59	2	0	1	0	1	0	2	65	7	0	0	0	0	0	0	0	7			
18:45	0	0	0	0	0	0	0	0	0	55	4	1	0	0	5	0	1	66	1	0	0	0	0	0	0	0	1			
A TO A										A TO D										A TO C										
LV HV										LV HV										LV HV										
1 0										324 0										14 0										

A TO D										B TO A										B TO B									
A TO B										D TO A										D TO D									
CAR	LGV	M/C	OGV1	OGV2	P/C	PSV	TAXI	TOT	CAR	LGV	M/C	OGV1	OGV2	P/C	PSV	TAXI	TOT	CAR	LGV	M/C	OGV1	OGV2	P/C	PSV	TAXI	TOT			
2	2	0	0	0	0	0	0	4	8	1	0	0	0	1	0	1	11	1	0	0	0	0	0	0	0	1			
5	1	0	1	0	0	0	0	7	7	2	0	0	0	0	1	0	10	0	0	0	0	0	0	0	0	0			
6	1	0	0	0	0	0	0	7	13	0	0	0	0	2	0	0	15	0	0	0	0	0	0	0	0	0			
17	1	0	0	0	1	0	0	19	28	1	0	0	0	2	0	0	31	3	0	0	0	0	0	0	0	3			
12	1	0	0	0	0	0	2	15	41	2	0	1	0	1	0	4	49	2	0	0	0	0	0	0	0	2			
13	0	0	0	0	0	0	0	13	98	4	0	0	0	17	1	0	120	0	0	0	0	0	0	0	0	0			
29	2	0	1	0	0	0	0	32	78	3	0	0	0	10	1	1	93	0	0	0	0	0	0	0	0	0			
9	1	0	0	0	0	0	0	10	60	3	0	1	0	4	0	1	69	2	0	0	0	0	0	0	0	2			
10	0	0	0	0	1	0	0	11	52	3	0	1	0	1	0	0	57	0	0	0	0	0	0	0	0	0			
11	0	0	0	0	0	0	0	11	48	5	0	0	0	0	0	0	53	0	0	0	0	0	0	0	0	0			
10	0	0	0	0	0	0	0	10	37	6	0	1	0	3	0	0	47	1	0	0	0	0	0	0	0	1			
9	3	0	0	1	0	0	0	13	39	2	0	1	0	1	0	2	45	0	0	0	0	0	0	0	0	0			
6	1	0	0	0	0	0	0	7	38	5	0	0	0	0	0	1	44	0	0	0	0	0	0	0	0	0			
5	0	0	0	0	0	0	0	5	44	6	0	0	0	1	0	0	51	0	0	0	0	0	0	0	0	0			
3	0	0	0	0	0	0	0	3	50	6	0	0	1	0	0	0	57	0	0	0	0	0	0	0	0	0			
5	2	0	0	0	0	0	0	7	32	6	0	0	0	2	0	0	40	0	0	0	0	0	0	0	0	0			
9	5	0	0	0	0	0	0	14	46	2	0	1	0	3	0	0	52	0	1	0	0	0	0	0	0	1			
12	1	0	0	0	0	0	0	13	43	4	0	0	0	0	0	1	48	0	0	0	0	0	0	0	0	0			
6	0	0	0	0	0	0	0	6	54	3	0	0	0	1	0	0	58	0	0	0	0	0	0	0	0	0			
12	0	0	1	0	0	0	0	13	49	1	0	0	0	0	0	2	52	0	0	0	0	0	0	0	0	0			
4	1	0	0	0	0	0	0	5	63	2	0	2	0	1	0	2	70	0	0	0	0	0	0	0	0	0			
6	0	0	0	0	0	0	0	6	43	5	0	0	0	1	0	0	49	0	0	0	0	0	0	0	0	0			
2	0	0	0	0	0	0	0	2	54	2	0	0	0	2	0	0	58	0	0	0	0	0	0	0	0	0			
6	0	0	0	0	0	0	0	6	58	3	0	1	0	3	0	0	65	1	0	0	0	0	0	0	0	1			
A TO B									D TO A									D TO D											
LV		HV							LV		HV							LV		HV									
70		0							329		2							4		0									

B TO C													B TO D													C TO A												
D TO C													D TO B													C TO A												
CAR	LGV	M/C	OGV1	OGV2	P/C	PSV	TAXI	TOT	CAR	LGV	M/C	OGV1	OGV2	P/C	PSV	TAXI	TOT	CAR	LGV	M/C	OGV1	OGV2	P/C	PSV	TAXI	TOT												
3	0	0	0	0	0	0	0	3	79	7	0	0	0	4	0	2	92	0	0	0	0	0	0	0	0	0												
0	0	0	1	0	0	0	0	1	78	7	0	2	1	3	0	4	95	1	0	0	0	0	0	0	0	1												
1	1	0	0	0	0	0	0	2	97	8	0	1	0	6	0	3	115	2	1	0	0	0	0	0	0	3												
17	0	0	1	0	0	0	0	18	120	9	0	1	0	6	1	2	139	2	0	0	0	0	1	0	0	3												
35	0	0	1	0	1	0	0	37	98	7	0	0	0	13	0	3	121	9	0	0	0	0	0	0	1	10												
19	1	0	0	0	1	0	0	21	48	4	1	0	0	12	1	2	68	23	0	0	0	0	0	0	1	24												
9	0	0	0	0	0	0	0	9	69	5	0	1	0	22	0	1	98	17	0	0	0	0	0	0	0	17												
2	1	0	0	0	0	0	0	3	70	7	2	1	0	9	0	5	94	4	0	0	0	0	0	0	0	4												
4	0	0	0	0	0	0	0	4	73	12	1	1	0	9	2	2	100	2	0	0	0	0	1	0	0	3												
2	0	0	0	0	0	0	1	3	78	3	0	3	0	6	0	5	95	2	0	0	0	0	0	0	0	2												
1	1	0	0	0	0	0	0	2	82	6	1	1	0	5	1	4	100	0	0	0	0	0	0	0	0	0												
0	0	0	0	0	0	0	0	0	60	9	1	1	0	7	1	4	83	0	0	0	0	0	0	0	1	1												
1	0	0	0	0	0	0	0	1	66	9	0	2	0	1	0	6	84	1	0	0	0	0	0	0	0	1												
2	0	0	0	0	0	0	0	2	48	5	0	3	0	3	1	1	61	2	0	0	0	0	0	0	0	2												
2	0	0	0	0	0	0	0	2	69	5	1	3	1	3	0	5	87	0	0	0	0	0	0	0	0	0												
0	0	0	0	0	0	0	2	2	47	5	1	2	1	1	0	3	60	2	0	0	0	0	0	0	0	2												
1	0	0	0	0	0	0	0	1	59	7	0	2	0	2	0	0	70	0	1	0	0	0	0	0	0	1												
1	0	0	0	0	0	0	0	1	60	15	0	1	0	0	0	4	80	1	0	0	0	0	0	0	0	1												
2	0	0	1	0	0	0	0	3	65	8	0	1	1	1	1	4	81	3	0	0	0	0	0	0	0	3												
0	0	0	0	0	0	0	0	0	64	11	0	3	0	4	0	3	85	1	0	0	0	0	0	0	0	1												
1	0	0	0	0	0	0	1	2	71	10	0	1	1	5	1	4	93	1	0	0	0	0	0	0	1	2												
2	0	0	1	0	0	0	0	3	56	9	0	1	0	4	0	1	71	1	0	0	0	0	0	0	0	1												
1	0	0	0	0	0	0	0	1	73	4	2	1	0	4	0	1	85	2	1	0	0	0	0	0	1	4												
4	0	0	0	0	0	0	0	4	48	6	0	3	0	1	1	3	62	0	1	0	0	0	0	0	0	1												
D TO C									D TO B									C TO A																				
LV		HV							LV		HV							LV		HV																		
70		0							380		1							55		0																		

CTO B									CTO C									CTO B									
CTO D									CTO C									CTO B									
CAR	LGV	M/C	OGV1	OGV2	P/C	PSV	TAXI	TOT	CAR	LGV	M/C	OGV1	OGV2	P/C	PSV	TAXI	TOT	CAR	LGV	M/C	OGV1	OGV2	P/C	PSV	TAXI	TOT	
1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	4	0	0	0	0	0	0	0	4
2	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	4	0	0	0	0	0	0	0	4
2	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	8	1	0	1	0	1	0	1	12
6	0	0	0	0	0	0	0	6	0	0	0	0	0	0	0	0	0	0	7	1	0	0	0	1	0	0	9
18	0	0	1	0	0	0	0	19	0	0	0	0	0	0	0	0	0	0	18	0	0	1	0	2	0	0	21
24	0	0	0	0	0	0	0	24	0	0	0	0	0	0	0	0	0	0	15	0	0	0	1	10	0	0	26
6	1	0	0	0	0	0	0	7	0	0	0	0	0	0	0	0	0	0	6	0	0	0	0	11	0	0	17
7	0	0	0	0	0	0	1	8	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	2	0	1	4
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5	1	0	0	0	1	0	0	7
1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	5	0	0	0	0	0	0	1	6
5	0	0	0	0	0	0	0	5	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	2
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	0	0	0	0	0	0	0	4
2	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	2	0	0	1	0	2	0	0	5
1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	3	1	0	0	0	1	0	0	5
1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	2
2	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	3	0	0	0	0	2	0	1	6
3	1	0	0	0	0	0	0	4	0	0	0	1	0	0	0	0	0	1	2	0	0	1	0	1	0	1	5
2	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	2
1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	6	1	0	3	1	2	0	0	13
1	1	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	1	3
1	1	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	2
2	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2	1	0	0	0	0	0	0	3	0	0	0	0	0	0	0	0	0	0	4	1	0	1	0	0	0	1	7
3	0	0	0	0	0	0	0	3	0	0	0	0	0	0	0	0	0	0	4	0	0	0	0	0	0	1	5
CTO D									CTO C									CTO B									
LV		HV							LV		HV							LV		HV							
58		0							0		0							67		1							
3	0	0	0	0	0	0	0	3	1	0	0	0	0	0	0	0	1	3	1	0	0	0	0	0	0	0	4
12	0	0	0	0	0	0	0	12	0	0	0	0	0	0	0	0	0	4	1	0	0	0	1	0	0	0	6
1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1
1	2	0	0	0	1	0	0	4	0	0	0	0	0	0	0	0	0	4	1	0	0	0	1	0	0	0	6
8	0	0	0	0	0	0	0	8	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	1
27	0	0	1	0	0	0	0	28	0	0	0	0	0	0	0	0	0	0	18	1	0	0	0	1	0	1	21
3	0	0	0	0	0	0	1	4	0	0	0	0	0	0	0	0	0	0	3	0	0	0	0	0	0	1	4
2	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	3	0	0	0	0	1	0	0	4
3	1	0	0	0	0	0	0	4	0	0	0	0	0	0	0	0	0	0	5	3	0	0	0	0	0	0	8
3	0	0	0	0	0	0	0	3	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	2
14	0	0	0	0	1	0	0	15	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	1	0	0	3
4	0	0	0	0	0	0	0	4	0	0	0	0	0	0	0	0	0	0	3	0	0	0	0	0	0	0	3
3	2	0	0	0	0	0	0	5	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	2
13	2	0	0	0	0	0	0	15	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	2	0	0	3
9	0	0	0	0	0	0	0	9	0	0	0	0	0	0	0	0	0	0	4	0	0	0	0	1	0	1	6
8	0	0	0	0	0	0	0	8	0	0	0	0	0	0	0	0	0	0	5	2	0	0	0	1	0	1	9
6	1	0	0	0	0	0	0	7	0	0	0	0	0	0	0	0	0	0	2	1	0	0	0	0	0	0	3
9	0	0	0	0	0	0	0	9	0	0	0	0	0	0	0	0	0	0	4	0	0	0	0	2	0	0	6
7	1	0	0	0	0	0	0	8	0	0	0	0	0	0	0	0	0	0	8	0	0	0	0	1	0	0	9
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1
2	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	2
2	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	3	0	0	5
3	0	0	0	0	0	0	0	3	0	0	0	0	0	0	0	0	0	0	4	0	0	0	0	0	0	0	4
1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	7	0	0	0	0	0	0	0	7
CTO D									CTO C									CTO B									
LV		HV							LV		HV							LV		HV							
33		0							0		0							24		0							

D TO A										D TO B										D TO C									
B TO A										B TO D										B TO C									
CAR	LGV	M/C	OGV1	OGV2	P/C	PSV	TAXI	TOT		CAR	LGV	M/C	OGV1	OGV2	P/C	PSV	TAXI	TOT		CAR	LGV	M/C	OGV1	OGV2	P/C	PSV	TAXI	TOT	
1	0	0	0	0	0	0	0	1		15	5	0	0	1	1	0	2	24		0	0	0	0	0	0	0	0	0	
0	0	0	0	0	0	0	0	1		23	4	0	1	0	0	0	1	29		1	0	0	0	0	0	0	0	1	
2	1	0	0	0	0	0	0	3		23	9	0	3	0	0	0	3	38		3	0	0	0	0	0	0	0	3	
1	0	0	0	0	0	0	0	1		28	4	0	1	0	0	0	2	35		6	1	0	1	0	0	0	0	8	
5	0	0	0	0	2	0	1	8		34	12	0	0	0	0	0	2	48		13	1	0	0	0	1	0	1	16	
5	0	0	0	0	0	0	0	5		24	6	0	0	0	1	1	2	34		16	1	0	0	1	0	0	0	20	
4	0	0	0	0	0	0	0	4		46	6	0	1	0	3	1	2	59		7	0	0	0	0	1	0	0	8	
6	0	0	0	0	0	0	0	6		43	8	0	0	0	3	1	1	56		5	0	0	0	0	0	0	1	6	
5	2	0	0	0	0	1	0	8		52	13	0	3	0	1	0	1	70		1	0	0	0	0	1	0	0	2	
1	0	0	0	0	0	0	2	3		55	9	0	5	0	1	1	1	72		2	1	0	0	0	0	0	0	3	
3	1	0	0	0	0	0	0	4		29	11	0	0	1	0	2	2	45		0	0	0	0	0	0	0	0	0	
2	1	0	0	0	0	0	0	3		39	9	0	0	0	0	0	6	54		3	0	0	0	0	0	0	1	4	
2	0	0	0	0	0	0	0	2		36	12	0	3	1	1	1	4	58		3	0	0	0	0	0	0	0	3	
6	4	0	0	0	0	0	0	10		30	11	0	3	1	1	1	2	49		2	0	0	0	0	1	0	0	3	
8	0	0	0	0	0	0	1	9		35	3	0	5	0	1	0	3	47		1	0	0	0	0	0	0	0	1	
3	1	0	1	0	0	0	0	5		56	7	0	3	0	0	0	3	69		4	0	0	0	0	0	0	0	4	
4	0	0	0	0	0	0	2	6		44	5	0	2	2	0	1	1	55		3	1	0	1	0	0	0	1	6	
2	2	0	1	0	0	0	0	5		49	4	0	0	0	1	1	1	56		1	0	0	1	0	0	0	0	2	
10	1	0	0	0	0	0	0	11		39	15	0	1	0	1	1	7	64		5	0	0	0	0	0	0	1	6	
7	1	0	0	0	0	2	0	10		57	9	1	2	0	1	0	1	71		1	2	0	0	0	0	0	0	3	
17	0	0	0	0	0	0	0	17		61	10	0	2	0	0	1	3	77		2	0	0	0	0	0	0	1	3	
5	1	0	0	0	0	0	1	7		62	6	0	2	0	3	0	1	74		1	0	0	0	0	0	0	0	1	
9	0	0	1	0	0	0	0	10		56	9	0	1	0	1	0	5	72		1	1	0	0	0	0	0	1	3	
4	1	0	0	0	0	0	0	5		45	7	0	0	0	0	0	1	53		3	1	0	0	0	0	0	1	5	
B TO A										B TO D										B TO C									
LV		HV								LV		HV								LV		HV							
23		0								194		3								49		1							
8	0	0	0	0	0	0	0	8		54	10	0	0	0	1	0	2	67		1	0	0	0	0	0	0	0	1	
10	3	0	0	0	1	0	0	14		75	4	0	0	0	2	0	3	84		1	2	0	0	0	1	0	0	4	
10	3	0	0	0	0	0	0	13		57	9	0	2	0	0	0	3	71		4	0	0	0	0	2	0	0	6	
11	3	0	0	0	0	0	0	14		48	1	0	0	0	4	1	0	54		7	0	0	0	0	1	0	0	8	
7	4	0	0	0	0	0	1	12		61	5	1	2	0	3	0	1	73		11	0	0	1	0	3	0	0	15	
9	3	0	1	0	0	0	1	14		68	6	1	1	0	2	1	1	80		3	0	0	0	0	1	0	0	4	
4	2	0	0	0	0	0	1	7		90	8	0	2	1	1	0	4	106		4	0	0	0	0	0	0	1	5	
7	5	0	1	1	2	0	0	16		73	6	1	0	0	2	2	6	90		2	1	0	0	0	1	0	0	4	
9	2	0	0	0	0	0	0	11		59	5	1	1	0	3	0	4	73		1	0	0	0	0	1	0	0	2	
5	0	0	0	1	0	0	1	7		62	9	1	2	2	3	1	2	82		5	0	0	0	0	0	0	0	5	
5	3	0	0	0	0	0	0	8		62	4	1	0	0	3	0	1	71		9	0	0	0	0	0	0	0	9	
14	0	0	0	0	1	0	2	17		77	5	0	1	0	4	1	3	91		3	0	0	0	0	0	0	0	3	
12	3	0	0	0	0	0	0	15		92	8	0	0	0	12	0	4	116		9	0	0	0	0	2	0	0	11	
9	0	0	0	0	0	0	0	9		79	7	1	0	0	8	0	4	99		6	0	0	0	0	4	0	0	10	
3	0	0	0	0	0	0	1	4		92	8	0	1	0	6	1	2	110		8	1	0	0	0	1	0	1	11	
6	1	0	1	0	0	0	2	10		87	9	0	3	0	6	1	1	107		4	0	0	0	0	1	0	1	6	
6	6	0	0	0	0	0	0	12		84	2	0	0	0	10	1	1	98		9	0	0	0	0	1	0	0	10	
12	0	1	0	0	3	0	0	16		86	6	0	0	0	6	0	1	99		5	0	0	0	0	2	0	0	7	
9	0	1	0	0	0	0	0	10		86	6	0	1	0	11	0	2	106		5	1	0	0	0	5	0	1	12	
8	0	0	0	0	0	0	0	8		81	5	0	0	0	6	0	3	95		3	1	0	0	0	1	0	0	5	
9	0	0	0	0	0	0	0	9		106	4	1	0	0	7	0	4	122		5	1	0	0	0	2	0	0	8	
8	0	0	0	0	0	0	0	8		82	3	0	0	0	4	1	4	94		4	0	0	0	0	2	0	0	6	
6	0	1	0	0	0	0	0	7		100	4	1	0	0	1	0	3	109		4	0	0	0	0	0	0	0	4	
8	0	0	0	0	0	0	1	9		83	4	0	0	0	2	0	3	92		5	0	0	0	0	1	0	0	6	
B TO A										B TO D										B TO C									
LV		HV								LV		HV								LV		HV							
42		0								411		3								34		0							

[illegible]

RECEIVED: 16/10/2025

	-A TO A									-A TO B									-A TO C								
	C TO C									C TO B									C TO A								
Start Time	CAR	LGV	M/C	OGV1	OGV2	P/C	PSV	TAXI	TOT	CAR	LGV	M/C	OGV1	OGV2	P/C	PSV	TAXI	TOT	CAR	LGV	M/C	OGV1	OGV2	P/C	PSV	TAXI	TOT
07:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1
07:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	1	0	0	0	0	0	0	3
07:45	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	2	0	0	0	0	0	0	0	2
08:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	1	0	0	0	0	0	0	5
08:15	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	3	0	0	0	0	0	0	0	3
08:30	1	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	1	16	0	0	0	0	3	0	0	19
08:45	1	0	0	0	0	0	0	0	1	2	0	0	0	0	0	0	0	2	4	0	0	0	0	0	0	0	4
09:00	1	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	1	5	1	0	0	0	0	0	0	6
09:15	2	0	0	0	0	0	0	0	2	3	0	0	0	0	0	0	0	3	5	0	0	0	0	0	0	0	5
09:30	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	1
09:45	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	2	1	0	0	0	0	0	0	0	1
10:00	0	0	0	0	0	0	0	0	0	4	0	0	0	0	0	0	0	4	1	0	0	0	0	0	0	0	1
10:15	0	0	0	0	0	0	0	0	0	4	0	0	0	0	0	0	0	4	2	0	0	0	0	0	0	0	2
10:30	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	1
10:45	0	0	0	0	0	0	0	0	0	3	0	0	0	0	0	0	0	3	2	1	0	0	0	0	0	0	3
11:00	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	2	4	0	0	0	0	0	0	0	1
11:15	0	0	0	0	0	0	0	0	0	3	0	0	0	0	0	0	0	3	3	1	0	0	0	0	0	0	4
11:30	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	5	1	0	0	0	0	0	0	6
11:45	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	2	5	1	0	0	0	1	0	0	7
12:00	0	0	0	0	0	0	0	0	0	7	0	0	0	0	0	0	0	7	5	0	0	0	0	0	0	0	5
12:15	0	0	0	0	0	0	0	0	0	3	0	0	0	0	0	0	0	1	2	0	0	0	0	0	0	0	2
12:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	0	0	0	0	0	0	0	4
12:45	0	0	0	0	0	0	0	0	0	4	0	0	0	0	0	0	0	4	2	0	0	0	0	0	0	0	2
	C TO C									C TO B									C TO A								
	LV		HV							LV		HV							LV		HV						
	2		0							4		0							31		0						
13:0	1	0	0	0	0	0	0	0	1	1	1	0	0	0	0	0	0	2	2	0	0	0	0	0	0	0	2
13:15	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	2	9	0	0	0	0	0	0	0	9
13:30	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	2	4	0	0	0	0	0	0	0	4
13:45	1	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	1	0	1	0	0	0	1	0	0	2
14:00	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	2	7	0	0	0	0	0	0	0	7
14:15	1	0	0	0	0	0	0	0	1	5	1	0	0	0	0	0	0	1	20	0	0	0	0	1	0	0	21
14:30	1	0	0	0	0	0	0	0	1	2	0	0	0	0	0	0	0	2	5	1	0	0	0	0	0	0	6
14:45	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	2	4	0	0	0	0	0	0	0	4
15:00	0	0	0	0	0	0	0	0	0	3	0	0	0	0	0	0	0	3	2	0	0	0	0	0	0	0	2
15:15	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	6	0	0	0	0	0	0	0	6
15:30	1	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	1	4	0	0	0	0	0	0	0	4
15:45	1	1	0	0	0	0	0	0	2	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0
16:00	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	2	5	1	0	0	0	1	0	0	7
16:15	0	0	0	0	0	0	0	0	0	5	0	0	0	0	0	0	0	5	5	0	1	0	0	2	0	1	9
16:30	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	2	4	1	0	0	0	0	0	0	5
16:45	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	2	4	0	0	0	0	1	0	0	5
17:00	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	2	4	0	0	0	0	2	0	0	6
17:15	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	4	1	0	0	0	3	0	0	8
17:30	0	0	0	0	0	0	0	0	0	3	0	0	0	0	0	0	0	3	4	0	0	0	0	3	0	1	8
17:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	1	0	0	3
18:00	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	2	3	0	0	0	0	1	0	0	4
18:15	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	6	0	0	0	0	1	0	0	7
18:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	7	0	0	0	0	0	0	0	7
18:45	0	0	0	0	0	0	0	0	0	3	0	0	0	0	0	0	0	3	4	1	0	0	0	1	0	0	6
	C TO C									C TO B									C TO A								
	LV		HV							LV		HV							LV		HV						
	0		0							7		0							24		0						

-A TO D										-A TO E										-B TO A									
C TO E										C TO D										B TO C									
CAR	LGV	M/C	OGV1	OGV2	P/C	PSV	TAXI	TOT		CAR	LGV	M/C	OGV1	OGV2	P/C	PSV	TAXI	TOT		CAR	LGV	M/C	OGV1	OGV2	P/C	PSV	TAXI	TOT	
0	0	0	0	0	0	0	0	0		2	0	0	0	0	0	0	0	2		0	0	0	0	0	0	0	0	0	
0	0	0	0	0	0	0	0	0		1	1	0	0	0	0	0	0	2		0	0	0	0	0	0	0	0	0	
0	0	0	0	0	0	0	0	0		5	0	0	0	0	0	0	0	5		0	0	0	0	0	0	0	0	0	
0	0	0	0	0	0	0	0	0		19	1	0	0	0	1	0	0	21		0	0	0	0	0	0	0	0	0	
0	0	0	0	0	0	0	0	0		29	2	0	0	0	1	0	0	32		1	0	0	0	0	0	0	0	1	
0	0	0	0	0	0	0	0	0		55	3	0	0	0	2	0	0	60		2	0	0	0	0	1	0	0	3	
0	0	0	0	0	0	0	0	0		34	2	0	1	0	3	0	1	41		7	0	0	0	0	0	0	0	7	
0	0	0	0	0	0	0	0	0		14	0	0	0	0	0	0	0	14		2	0	0	0	0	1	0	0	3	
1	0	0	0	0	0	0	0	1		15	2	0	1	0	0	0	0	18		2	0	0	0	0	0	0	0	2	
0	0	0	0	0	0	0	0	0		7	2	0	0	0	0	0	0	9		1	0	0	0	0	0	0	0	1	
0	0	0	0	0	0	0	0	0		10	1	0	0	0	0	0	0	11		1	0	0	0	0	0	0	0	1	
0	0	0	0	0	0	0	0	0		3	1	0	0	0	0	0	0	4		3	0	0	0	0	0	0	0	3	
0	0	0	0	0	0	0	0	0		4	0	0	0	0	0	0	0	4		1	0	0	0	0	0	0	0	1	
0	0	0	0	0	0	0	0	0		2	1	0	0	0	0	0	0	3		3	0	0	0	0	0	0	0	3	
0	0	0	0	0	0	0	0	0		4	0	0	0	0	0	0	0	4		1	0	0	0	0	0	0	0	1	
0	0	0	0	0	0	0	0	0		3	2	0	1	0	0	0	0	6		0	0	0	0	0	0	0	0	0	
0	0	0	0	0	0	0	0	0		5	1	0	0	0	0	0	0	6		1	0	0	0	0	0	0	0	1	
0	0	0	0	0	0	0	0	0		5	1	0	0	0	0	0	0	6		1	0	0	0	0	0	0	0	1	
0	0	0	0	0	0	0	0	0		5	0	0	1	0	0	0	0	6		1	1	0	0	0	0	0	0	2	
0	0	0	0	0	0	0	0	0		3	0	0	0	0	1	0	0	4		3	0	0	0	0	0	0	0	3	
0	0	0	0	0	0	0	0	0		2	2	0	0	0	0	0	0	4		1	0	0	0	0	0	0	0	1	
0	0	0	0	0	0	0	0	0		4	0	0	0	0	0	0	0	4		3	0	0	0	0	0	0	0	3	
0	0	0	0	0	0	0	0	0		7	0	0	0	0	0	0	0	7		1	0	0	0	0	0	0	0	1	
0	0	0	0	0	0	0	0	0		6	1	0	0	0	0	0	0	7		0	0	0	0	0	0	0	1	1	
C TO E										C TO D										B TO C									
LV		HV								LV		HV								LV		HV							
0		0								147		0								14		0							
0	0	0	0	0	0	0	0	0		4	0	0	1	0	0	0	0	5		2	1	0	0	0	0	0	0	3	
0	0	0	0	0	0	0	0	0		9	0	0	0	0	0	0	0	9		3	0	0	0	0	0	0	0	3	
0	0	0	0	0	0	0	0	0		7	0	0	0	0	0	0	0	7		3	1	0	0	0	0	0	0	4	
0	0	0	0	0	0	0	0	0		6	0	0	0	0	0	0	0	6		3	0	0	0	0	0	0	0	3	
0	0	0	0	0	0	0	0	0		5	1	0	0	0	0	0	0	6		5	1	0	0	0	0	0	0	6	
0	0	0	0	0	0	0	0	0		9	2	0	0	0	0	0	0	11		3	0	0	0	0	1	0	0	4	
2	1	0	0	0	1	0	0	4		2	0	0	0	0	1	0	0	3		0	0	0	0	0	0	0	0	0	
0	0	0	0	0	0	0	0	0		3	0	0	0	0	0	0	0	3		2	1	0	0	0	0	0	0	3	
0	0	0	0	0	0	0	0	0		9	1	0	0	0	0	0	0	10		2	0	0	0	0	0	0	0	2	
0	0	0	0	0	0	0	0	0		7	0	0	0	0	0	0	1	8		0	0	0	0	0	0	0	0	0	
0	0	0	0	0	0	0	0	0		11	1	0	0	0	1	0	0	13		2	0	0	0	0	0	0	0	2	
0	0	0	0	0	0	0	0	0		12	1	0	0	0	3	0	1	17		0	0	0	0	0	0	0	0	0	
0	0	0	0	0	0	0	0	0		8	0	0	0	0	0	0	0	8		5	0	0	0	0	0	0	0	5	
0	0	0	0	0	0	0	0	0		2	1	0	0	0	0	0	0	3		2	0	0	0	0	0	0	0	2	
0	0	0	0	0	0	0	0	0		8	0	0	0	0	0	0	0	8		5	0	0	0	0	0	0	0	5	
0	0	0	0	0	0	0	0	0		11	0	0	0	0	0	0	0	11		3	0	0	0	0	0	0	0	3	
0	0	0	0	0	0	0	0	0		9	0	0	0	0	0	0	0	9		0	0	0	0	0	0	0	0	0	
1	0	0	0	0	0	0	0	1		2	2	0	0	0	0	0	0	4		1	0	0	0	0	0	0	0	1	
0	0	0	0	0	0	0	0	0		3	2	0	0	0	0	0	0	5		1	0	0	0	0	0	0	0	1	
0	0	0	0	0	0	0	0	0		6	1	0	0	0	0	0	0	7		2	0	0	0	0	0	0	0	2	
1	0	0	0	0	0	0	0	1		6	0	0	0	0	0	0	0	6		1	0	0	0	0	0	0	0	1	
0	0	0	0	0	0	0	0	0		6	1	0	0	0	0	0	1	8		4	0	0	0	0	0	0	0	4	
0	0	0	0	0	0	0	0	0		6	0	0	0	0	0	0	1	7		2	0	0	0	0	0	0	0	2	
0	0	0	0	0	0	0	0	0		5	2	0	0	0	0	0	0	7		1	0	0	0	0	0	0	0	1	
C TO E										C TO D										B TO C									
LV		HV								LV		HV								LV		HV							
1		0								32		0								9		0							

-B TO B									-B TO C									-B TO D								
B TO B									B TO A									B TO E								
CAR	LGV	M/C	OGV1	OGV2	P/C	PSV	TAXI	TOT	CAR	LGV	M/C	OGV1	OGV2	P/C	PSV	TAXI	TOT	CAR	LGV	M/C	OGV1	OGV2	P/C	PSV	TAXI	TOT
0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	1
0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	1
0	0	0	0	0	0	0	0	0	4	0	0	0	0	0	0	0	4	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	8	0	0	0	0	1	0	0	9	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	6	1	0	0	0	0	0	0	7	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	4	0	0	0	0	0	0	0	4	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	2	1	0	0	0	0	1	0	4	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	2	2	0	0	0	0	0	0	4	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	7	0	0	0	0	0	0	0	7	1	0	0	0	0	0	0	0	1
0	0	0	0	0	0	0	0	0	5	1	0	0	0	0	0	0	6	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	5	0	0	0	0	0	0	0	5	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	7	0	0	0	0	0	0	0	7	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	6	3	0	0	0	0	0	0	9	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	6	0	0	0	0	0	0	1	7	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	9	0	0	0	0	0	0	0	9	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	7	0	0	0	0	0	0	0	7	1	0	0	0	0	0	0	0	1
0	0	0	0	0	0	0	0	0	14	0	0	0	0	0	0	0	14	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	8	1	0	0	0	0	0	0	9	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	12	1	0	0	0	0	0	1	14	1	0	0	0	0	0	0	0	1
0	0	0	0	0	0	0	0	0	16	0	0	0	0	0	0	0	16	1	1	0	0	0	0	0	0	2
B TO B									B TO A									B TO E								
LV		HV							LV		HV							LV		HV						
0		0							15		0							2		0						
0	0	0	0	0	0	0	0	0	10	1	0	0	0	0	0	0	11	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	16	1	0	0	0	0	0	0	17	1	0	0	0	0	0	0	0	1
0	0	0	0	0	0	0	0	0	12	1	0	0	0	0	0	0	13	2	0	0	0	0	0	0	0	2
0	0	0	0	0	0	0	0	0	14	0	0	0	0	0	0	0	14	0	0	0	0	0	0	0	0	0
0	0	0	1	0	0	0	0	1	11	0	0	0	0	0	0	0	11	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	18	1	0	0	0	0	0	0	19	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	16	2	0	0	0	1	0	1	20	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	9	1	0	0	0	0	0	1	11	1	0	0	0	0	0	0	1	
0	0	0	0	0	0	0	0	0	5	1	0	0	0	0	0	0	6	1	0	0	0	0	0	0	1	
0	0	0	0	0	0	0	0	0	11	1	1	0	0	0	0	0	13	1	0	0	0	0	0	0	1	2
0	0	0	0	0	0	0	0	0	7	0	0	0	0	0	0	0	7	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	13	1	0	0	0	0	0	0	14	1	0	0	0	0	0	0	1	1
1	0	0	0	0	0	0	0	1	16	1	0	0	0	0	0	0	17	1	0	0	0	0	0	0	1	1
0	0	0	0	0	0	0	0	0	15	1	0	0	0	0	0	0	16	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	13	0	0	0	0	0	0	0	13	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	13	1	0	0	0	0	0	0	14	2	0	0	0	0	0	0	0	2
0	0	0	0	0	0	0	0	0	15	0	0	0	0	0	0	0	15	2	0	0	0	0	0	0	0	2
0	0	0	0	0	0	0	0	0	20	0	0	0	0	0	0	0	20	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	15	1	0	0	0	0	0	0	16	1	0	0	0	0	0	0	0	1
0	0	0	0	0	0	0	0	0	7	0	0	0	0	0	0	0	7	1	0	0	0	0	0	0	0	1
1	0	0	0	0	0	0	0	1	16	0	0	0	0	0	0	0	17	2	0	0	0	0	0	0	0	2
0	0	0	0	0	0	0	0	0	11	0	0	0	0	0	0	0	11	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	6	0	0	0	0	0	0	0	6	1	0	0	0	0	0	0	0	1
0	0	0	0	0	0	0	0	0	11	0	0	0	0	0	0	0	11	2	0	0	0	0	0	0	0	2
B TO B									B TO A									B TO E								
LV		HV							LV		HV							LV		HV						
0		0							62		0							4		0						

B TO E										C TO A										C TO B									
B TO D										A TO C										A TO B									
CAR	LGV	M/C	OGV1	OGV2	P/C	PSV	TAXI	TOT		CAR	LGV	M/C	OGV1	OGV2	P/C	PSV	TAXI	TOT		CAR	LGV	M/C	OGV1	OGV2	P/C	PSV	TAXI	TOT	
5	0	0	0	0	0	0	0	0	5	1	0	0	0	0	2	0	0	3		1	0	0	0	0	0	0	0	0	1
1	1	0	0	0	0	1	1	0	3	1	0	0	0	0	2	0	0	3		1	0	0	0	0	0	0	0	0	1
5	0	0	0	0	1	1	1	0	7	3	0	0	0	0	2	0	0	5		2	0	0	0	0	0	0	0	0	2
8	1	0	4	1	0	1	1	0	15	1	0	0	0	0	5	0	0	6		3	0	0	0	0	0	0	0	0	3
22	1	0	0	0	0	0	0	2	25	1	0	0	0	0	3	0	0	4		0	0	0	0	0	0	0	0	0	0
35	1	0	1	0	0	2	0	0	39	6	2	0	0	0	7	0	0	15		0	0	0	0	0	0	0	0	0	0
28	2	0	1	0	1	1	1	0	33	7	0	0	1	0	10	0	0	18		1	0	0	0	0	0	0	0	0	1
26	2	0	0	0	0	0	0	0	28	8	1	0	0	0	5	0	0	14		3	0	0	0	0	0	0	0	0	3
16	1	0	0	0	2	2	1	0	22	7	1	0	0	0	2	0	0	10		2	0	0	0	0	0	1	0	0	3
11	1	0	2	1	0	1	1	0	16	7	1	0	0	0	2	0	0	10		5	0	0	0	0	0	0	0	0	5
17	1	0	0	0	0	2	0	0	20	3	0	0	0	0	1	0	0	4		6	1	0	0	0	0	0	0	0	7
19	3	0	0	0	0	0	0	0	22	6	0	1	0	0	0	0	0	7		4	0	0	0	0	0	0	0	0	4
24	1	0	0	0	0	2	1	0	28	5	1	0	0	0	0	0	0	1	7		7	1	0	0	0	2	0	0	10
35	3	0	0	0	1	1	1	0	41	7	3	0	0	0	0	0	0	10		7	1	0	0	0	0	0	0	0	8
23	5	0	0	0	0	2	0	0	30	4	0	0	0	0	0	0	0	4		5	1	0	1	0	0	0	0	0	7
23	6	0	1	0	1	0	1	0	32	2	1	0	1	0	0	0	0	4		5	0	0	0	0	0	0	0	0	5
22	3	0	1	0	1	2	1	0	30	2	1	0	0	0	1	0	0	4		7	0	0	0	0	0	0	0	0	7
37	3	0	2	0	0	1	1	0	44	5	2	0	0	0	0	0	0	7		12	2	0	0	0	0	0	0	0	14
32	3	0	0	1	0	0	1	0	37	5	1	0	1	0	0	0	0	7		9	0	0	0	0	0	0	0	0	9
34	6	0	0	0	0	1	0	0	41	8	0	0	0	0	1	0	0	9		15	1	0	0	0	0	0	0	0	16
41	3	0	1	0	0	1	0	0	46	6	0	0	0	0	2	0	0	8		9	0	0	0	0	0	0	0	0	9
33	1	0	1	0	0	1	1	0	37	5	0	0	0	0	3	0	0	8		11	1	0	0	0	0	0	0	0	12
42	5	0	3	1	0	1	0	0	52	8	1	0	2	0	1	0	0	12		4	0	0	0	0	0	0	0	0	4
40	0	0	1	0	0	0	0	0	41	5	1	0	1	0	1	0	0	8		6	1	0	0	0	0	0	0	0	7
B TO D										A TO C										A TO B									
LV		HV								LV		HV								LV		HV							
122		3								51		0								4		0							
45	3	0	1	0	0	1	1	0	51	7	2	0	0	0	0	0	0	9		5	1	0	0	0	0	0	0	0	6
53	5	0	1	0	0	1	3	0	63	7	2	0	0	0	1	0	0	10		9	0	0	0	0	0	0	0	0	9
46	2	0	0	0	1	2	0	0	51	2	0	0	0	1	0	0	0	3		5	0	0	0	0	0	0	0	0	5
37	1	0	0	0	0	0	1	0	39	7	0	0	0	0	0	0	0	7		5	0	0	0	0	0	0	0	0	5
36	1	0	1	0	1	2	1	0	42	16	1	0	0	0	0	0	0	17		11	0	0	0	0	0	0	0	0	11
46	3	1	0	0	0	1	0	0	51	24	1	0	1	0	0	0	0	26		7	0	0	0	0	0	0	0	0	7
39	5	0	2	0	1	1	1	0	49	2	1	0	0	0	0	0	0	3		7	0	0	0	0	0	0	0	0	7
38	3	0	0	0	0	0	0	0	41	9	0	0	0	0	1	0	0	10		8	0	0	0	0	0	0	0	0	8
48	3	0	1	0	0	1	1	0	54	6	0	0	0	0	0	0	0	6		11	0	0	0	0	0	0	0	0	11
36	5	0	0	0	0	1	0	0	42	4	2	0	0	0	1	0	0	7		11	0	0	0	0	0	0	0	0	11
38	6	0	0	1	1	1	1	0	48	8	1	0	0	0	2	0	0	11		11	0	0	0	0	0	0	0	0	11
49	5	0	0	0	0	0	0	0	55	2	3	0	0	0	0	0	0	5		9	0	0	1	0	0	0	0	0	10
35	2	0	1	1	0	2	1	0	42	7	0	0	0	0	1	0	0	8		7	1	0	0	0	0	0	0	1	9
41	4	0	0	0	0	1	3	0	49	7	0	0	0	0	1	0	0	8		8	0	0	0	0	2	0	0	0	10
34	2	0	0	0	0	0	0	0	36	8	0	0	1	0	0	0	0	9		12	0	0	0	0	0	0	0	0	12
27	2	0	0	0	0	1	3	0	33	5	3	0	0	0	1	0	0	9		18	1	0	0	0	0	0	0	1	20
30	3	0	0	0	3	1	0	0	37	10	0	0	0	0	0	0	0	10		7	1	0	0	0	0	0	0	0	8
28	2	0	0	1	0	0	0	0	31	3	0	0	0	0	0	0	0	1	4		9	0	0	0	0	1	0	0	10
40	1	0	0	0	0	0	2	0	43	1	0	0	0	0	0	0	0	2		7	0	0	0	0	0	0	0	0	7
39	0	0	0	0	0	0	1	0	40	9	0	0	0	0	1	0	2	12		10	1	0	0	0	0	0	0	0	11
33	0	0	0	0	0	1	1	0	35	5	1	0	0	0	0	0	0	6		11	0	0	0	0	0	0	0	0	11
27	2	0	0	1	0	2	2	0	34	8	0	0	0	0	2	0	0	10		5	0	0	0	0	0	0	0	1	6
31	2	0	1	0	0	2	1	0	37	4	0	0	0	0	2	0	1	7		8	0	0	0	0	0	0	0	0	8
22	0	0	1	0	0	0	1	0	24	10	1	0	0	0	0	0	0	11		7	0	0	0	0	0	0	0	1	8
B TO D										A TO C										A TO B									
LV		HV								LV		HV								LV		HV							
134		3								32		0								50		0							

[illegible]

[illegible]

E-TO-B									E-TO-C									E-TO-D								
D TO B									D TO A									D TO E								
CAR	LGV	M/C	OGV1	OGV2	P/C	PSV	TAXI	TOT	CAR	LGV	M/C	OGV1	OGV2	P/C	PSV	TAXI	TOT	CAR	LGV	M/C	OGV1	OGV2	P/C	PSV	TAXI	TOT
4	2	0	0	0	0	1	0	7	12	6	0	0	1	1	0	2	22	1	0	0	0	0	0	0	0	1
1	1	0	0	0	0	1	0	3	23	4	0	1	0	0	0	2	30	0	0	0	0	0	0	0	0	0
6	2	0	0	0	0	1	0	9	22	9	0	3	0	0	0	3	37	1	0	0	0	0	0	0	0	1
10	2	0	1	1	0	0	1	15	29	6	0	1	0	1	0	2	39	1	0	0	0	0	0	0	0	1
16	5	0	1	1	0	1	0	24	43	11	0	0	0	4	0	4	62	0	0	0	0	0	0	0	0	0
20	3	0	1	1	0	1	0	26	46	7	0	1	0	1	1	2	58	0	0	0	0	0	0	0	0	0
18	2	0	0	0	1	0	0	21	31	4	0	0	0	1	1	2	39	0	0	0	0	0	0	0	0	0
35	4	0	0	0	0	1	0	40	41	8	0	0	0	2	1	2	54	1	0	0	0	0	0	0	0	1
35	3	0	2	0	1	2	2	45	51	12	0	3	0	2	1	1	70	0	0	0	0	0	0	0	0	0
34	3	0	0	0	0	1	1	39	45	10	0	5	0	0	1	3	64	0	0	0	1	0	0	0	0	1
27	3	0	0	0	0	1	0	31	30	10	0	0	1	0	1	2	44	1	0	0	0	0	0	0	0	1
28	2	0	0	0	0	2	1	33	34	8	0	0	0	0	0	7	49	0	0	0	0	0	0	0	0	0
18	4	0	0	0	0	1	2	25	40	14	0	3	1	1	2	3	64	2	1	0	0	0	0	0	0	3
29	6	0	1	0	0	2	3	41	27	11	0	4	1	1	0	2	46	0	0	0	0	0	0	0	0	0
38	4	0	3	0	0	1	0	46	39	3	0	4	0	1	0	3	50	0	0	0	0	0	0	0	0	0
39	4	0	1	0	0	1	1	46	56	7	0	4	0	0	0	3	70	0	0	0	0	0	0	0	0	0
40	3	0	1	0	0	1	0	45	35	3	0	3	2	0	1	3	47	0	0	0	0	0	1	0	1	2
48	2	1	3	0	0	0	2	56	49	6	0	2	0	1	1	1	60	0	0	0	0	0	1	0	0	1
51	4	0	0	1	0	0	0	56	40	14	0	1	0	1	1	7	64	1	0	0	0	0	0	0	0	1
62	6	0	1	0	0	2	2	73	59	9	1	2	0	1	2	2	76	1	1	0	0	0	0	0	0	2
42	4	0	0	0	0	0	0	46	61	9	0	2	0	0	1	3	76	2	0	0	0	0	2	0	0	4
49	0	0	0	0	0	0	1	52	51	8	0	3	0	4	0	2	68	0	0	0	0	0	0	0	0	0
54	2	0	1	0	0	1	2	60	46	7	0	1	0	1	0	5	60	2	0	0	0	0	0	0	0	2
65	5	0	0	0	1	0	1	72	40	9	0	0	0	0	0	2	51	1	0	0	0	0	0	0	0	1
D TO B									D TO A									D TO E								
LV		HV							LV		HV							LV		HV						
106		5							210		3							1		0						
60	3	0	0	0	0	1	0	64	46	7	0	0	0	0	0	2	55	0	0	0	0	0	0	0	0	0
49	5	0	2	0	0	1	1	58	62	9	0	0	0	3	0	3	77	2	0	0	0	0	0	0	0	2
33	6	0	2	0	0	0	2	43	53	11	0	2	0	1	0	3	70	1	0	0	0	0	0	0	0	1
57	5	0	1	0	0	1	2	66	58	3	0	0	0	3	1	0	65	0	0	0	0	0	0	0	0	0
54	1	0	0	0	1	2	0	58	50	10	1	2	0	4	0	2	69	1	0	0	0	0	1	0	0	2
58	4	0	0	0	0	1	2	65	58	4	1	2	0	0	1	4	70	0	0	0	0	0	0	0	0	0
49	4	0	1	0	0	1	1	56	64	10	0	2	1	2	0	3	82	1	0	0	0	0	0	0	0	1
51	3	0	0	0	0	0	3	57	62	9	1	1	1	2	2	5	83	2	0	0	0	0	1	0	0	3
52	7	1	0	0	0	1	0	61	67	6	1	2	0	4	0	4	84	1	0	0	0	0	1	0	0	2
54	1	0	1	0	2	1	0	59	56	7	0	1	3	5	1	3	76	0	0	0	0	0	0	0	0	0
46	3	0	1	0	1	0	1	52	67	6	1	0	0	1	0	1	76	0	0	0	0	0	0	0	0	0
39	4	1	0	1	0	0	0	45	81	5	0	1	0	5	1	5	98	1	0	0	0	0	1	0	0	2
49	1	0	0	0	6	2	0	58	87	11	0	0	0	11	0	4	113	4	0	0	0	0	0	0	0	4
47	3	0	0	1	0	0	0	51	79	5	0	0	0	7	0	3	94	3	1	0	0	0	0	0	1	5
43	2	0	0	1	2	0	1	49	87	5	0	1	0	8	1	4	106	1	0	0	0	0	0	0	0	1
48	1	0	0	0	0	1	1	51	79	8	0	4	0	7	1	4	103	5	0	0	0	0	0	0	0	5
39	5	0	0	0	0	1	0	45	82	9	0	0	0	7	1	1	100	0	0	0	0	0	0	0	0	0
46	1	0	0	0	0	0	0	47	77	4	1	0	0	9	0	4	95	1	0	0	0	0	0	0	0	1
43	1	1	0	0	0	0	1	46	82	6	1	1	0	10	0	1	101	2	0	0	0	0	0	0	0	2
40	4	0	0	0	0	0	0	44	81	5	0	0	0	9	0	4	99	4	0	0	0	0	0	0	0	4
37	0	0	0	0	0	1	3	41	95	6	1	0	0	4	0	2	108	1	0	0	0	0	0	0	0	1
48	1	0	0	0	1	2	0	52	88	2	0	0	0	6	1	4	101	2	1	0	0	0	0	0	0	3
44	1	1	1	0	1	2	0	50	77	4	2	0	0	1	0	3	87	0	0	0	0	0	0	0	0	0
46	1	0	0	0	0	1	1	49	82	2	0	0	0	2	0	4	90	1	0	0	0	0	0	0	0	1
D TO B									D TO A									D TO E								
LV		HV							LV		HV							LV		HV						
189		3							401		3							7		0						

D TO D	
LV	HV
0	0

D TO D	
LV	HV
1	0

RECEIVED: 16/10/2025

TRAFFINOMICS LIMITED

**KINGSTON ROAD TRAFFIC COUNT
MANUAL CLASSIFIED JUNCTION TURNING COUNT**

**MAY 2019
TRA/19/131**

SITE: 3

DATE: 30th May 2019

LOCATION: Bishop O'Donnell Road/Kingston Road/Taylor's Hill

DAY: Thursday

RECEIVED: 16/10/2025

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		
07:00	3	1	0	0	0	4	4	3	2	0	0	0	5	5	17	8	3	1	0	29	32
07:15	4	1	0	0	0	5	5	13	5	0	2	0	20	23	29	15	0	0	0	44	44
07:30	21	1	0	0	0	22	22	13	5	0	0	0	18	18	26	11	2	0	2	41	44
07:45	23	1	0	0	0	24	24	37	1	0	0	1	39	40	32	9	0	2	2	45	50
H/TOT	51	4	0	0	0	55	55	66	13	0	2	1	82	86	104	43	5	3	4	159	169
08:00	21	4	1	0	0	26	27	56	3	1	0	0	60	61	35	10	2	0	0	47	48
08:15	14	0	0	0	0	14	14	93	5	1	0	1	100	102	31	8	3	1	0	43	46
08:30	23	3	0	0	0	26	26	68	4	1	0	1	74	76	29	1	2	2	0	34	38
08:45	18	2	0	0	0	20	20	63	2	0	0	0	65	65	31	10	6	0	0	47	50
H/TOT	76	9	1	0	0	86	87	280	14	3	0	2	299	303	126	29	13	3	0	171	181
09:00	19	0	1	0	0	20	21	45	6	1	0	2	54	57	31	4	2	1	1	39	42
09:15	40	2	0	0	0	42	42	52	1	0	0	1	54	55	43	12	3	0	1	59	62
09:30	16	1	0	0	0	17	17	32	5	0	0	0	37	37	21	5	1	1	3	31	36
09:45	16	2	0	0	0	18	18	50	3	0	0	3	56	59	26	12	1	1	0	40	42
H/TOT	91	5	1	0	0	97	98	179	15	1	0	6	201	208	121	33	7	3	5	169	181
10:00	21	2	2	0	0	25	26	42	3	1	0	1	47	49	31	11	2	4	1	49	56
10:15	16	1	1	0	0	18	19	44	3	0	0	1	48	49	23	4	2	1	0	30	32
10:30	16	1	0	0	0	17	17	38	7	0	0	1	46	47	42	7	3	1	0	53	56
10:45	14	2	0	0	0	16	16	60	2	1	0	0	63	64	33	7	2	2	1	45	50
H/TOT	67	6	3	0	0	76	78	184	15	2	0	3	204	208	129	29	9	8	2	177	194
11:00	8	1	0	0	0	9	9	41	2	1	0	1	45	47	53	7	2	1	0	63	65
11:15	9	3	0	0	0	12	12	34	1	2	0	1	38	40	41	9	4	2	0	56	61
11:30	15	1	0	0	0	16	16	39	1	0	0	0	40	40	45	13	1	0	2	61	64
11:45	17	1	0	0	0	18	18	44	2	1	0	0	47	48	37	8	0	0	0	45	45
H/TOT	49	6	0	0	0	55	55	158	6	4	0	2	170	174	176	37	7	3	2	225	234
12:00	14	1	0	0	0	15	15	55	10	0	2	0	67	70	37	9	4	2	1	53	59
12:15	17	0	0	0	0	17	17	34	2	0	0	2	38	40	32	3	1	0	1	37	39
12:30	10	4	1	0	0	15	16	66	4	1	0	0	71	72	46	10	0	0	1	57	58
12:45	17	1	0	0	0	18	18	59	8	2	0	0	69	70	50	7	4	1	0	62	65
H/TOT	58	6	1	0	0	65	66	214	24	3	2	2	245	251	165	29	9	3	3	209	220
	LV		HV					LV		HV					LV		HV				
	86		0					297		2					168		3				

TRAFFINOMICS LIMITED

**KINGSTON ROAD TRAFFIC COUNT
MANUAL CLASSIFIED JUNCTION TURNING COUNT**

**MAY 2019
TRA/19/131**

SITE: 3

DATE: 30th May 2019

LOCATION: Bishop O'Donnell Road/Kingston Road/Taylor's Hill

DAY: Thursday

RECEIVED: 16/10/2025

TIME	MOVEMENT 4					TOT	PCU	MOVEMENT 5					TOT	PCU	MOVEMENT 6					TOT	PCU
	CAR	LGV	OGV1	OGV2	BUS			CAR	LGV	OGV1	OGV2	BUS			CAR	LGV	OGV1	OGV2	BUS		
07:00	44	17	0	1	1	63	65	22	1	0	0	1	24	25	0	0	0	0	0	0	0
07:15	79	16	2	0	3	100	104	40	3	0	0	0	43	43	1	0	0	0	0	1	1
07:30	59	15	0	2	2	78	83	91	7	1	0	1	100	102	0	0	0	0	0	0	0
07:45	47	7	3	2	0	59	63	87	8	0	0	1	96	97	0	0	0	0	0	0	0
H/TOT	229	55	5	5	6	300	315	240	19	1	0	3	263	267	1	0	0	0	0	1	1
08:00	42	6	2	1	0	51	53	100	3	0	0	0	103	103	0	0	0	0	0	0	0
08:15	53	3	1	2	0	59	62	73	5	0	0	1	79	80	0	0	0	0	0	0	0
08:30	44	5	1	1	0	51	53	51	1	1	0	2	55	58	1	0	0	0	0	1	1
08:45	29	0	1	0	3	33	37	47	3	1	0	1	52	54	3	0	0	0	0	3	3
H/TOT	168	14	5	4	3	194	205	271	12	2	0	4	289	294	4	0	0	0	0	4	4
09:00	58	5	3	1	1	68	72	69	2	2	0	1	74	76	0	0	0	0	0	0	0
09:15	52	6	1	0	3	62	66	56	2	1	0	1	60	62	0	0	0	0	0	0	0
09:30	62	7	1	0	2	72	75	66	5	0	0	1	72	73	0	0	0	0	0	0	0
09:45	56	10	3	2	2	73	79	73	4	0	0	0	77	77	0	0	0	0	0	0	0
H/TOT	228	28	8	3	8	275	291	264	13	3	0	3	283	288	0	0	0	0	0	0	0
10:00	56	10	0	0	2	68	70	54	4	0	0	1	59	60	0	0	0	0	0	0	0
10:15	46	3	1	2	3	55	61	52	4	2	0	0	58	59	0	0	0	0	0	0	0
10:30	43	11	3	0	0	57	59	44	4	1	0	1	50	52	0	0	0	0	0	0	0
10:45	67	9	5	0	1	82	86	50	9	0	0	0	59	59	1	0	0	0	0	1	1
H/TOT	212	33	9	2	6	262	275	200	21	3	0	2	226	230	1	0	0	0	0	1	1
11:00	50	7	1	1	0	59	61	31	5	2	0	1	39	41	0	0	0	0	0	0	0
11:15	36	6	2	2	0	46	50	50	5	0	0	0	55	55	0	0	0	0	0	0	0
11:30	71	10	3	1	0	85	88	26	1	0	0	1	28	29	0	0	0	0	0	0	0
11:45	38	9	1	3	2	53	59	56	6	0	0	0	62	62	0	0	0	0	0	0	0
H/TOT	195	32	7	7	2	243	258	163	17	2	0	2	184	187	0	0	0	0	0	0	0
12:00	43	6	2	0	1	52	54	37	3	2	0	1	43	45	0	1	1	0	0	2	3
12:15	52	14	1	1	0	68	70	34	3	0	0	0	37	37	0	0	0	0	0	0	0
12:30	52	2	3	3	0	60	65	47	1	3	0	1	52	55	0	0	0	0	0	0	0
12:45	62	6	3	2	1	74	79	40	3	0	0	0	43	43	0	0	0	0	0	0	0
H/TOT	209	28	9	6	2	254	268	158	10	5	0	2	175	180	0	1	1	0	0	2	3
	LV		HV					LV		HV					LV		HV				
	187		7					285		4					4		0				

TRAFFINOMICS LIMITED

**KINGSTON ROAD TRAFFIC COUNT
MANUAL CLASSIFIED JUNCTION TURNING COUNT**

**MAY 2019
TRA/19/131**

SITE: 3

DATE: 30th May 2019

LOCATION: Bishop O'Donnell Road/Kingston Road/Taylor's Hill

DAY: Thursday

RECEIVED: 16/10/2025

TIME	MOVEMENT 7					TOT	PCU	MOVEMENT 8					TOT	PCU	MOVEMENT 9					TOT	PCU
	CAR	LGV	OGV1	OGV2	BUS			CAR	LGV	OGV1	OGV2	BUS			CAR	LGV	OGV1	OGV2	BUS		
07:00	1	0	0	0	0	1	1	3	0	0	0	0	3	3	2	0	0	0	0	2	2
07:15	0	0	0	0	0	0	0	14	3	0	0	0	17	17	0	0	0	0	0	0	0
07:30	4	0	0	0	0	4	4	6	0	1	0	1	8	10	1	0	1	0	0	2	3
07:45	9	1	0	0	0	10	10	12	1	0	0	0	13	13	1	0	0	0	0	1	1
H/TOT	14	1	0	0	0	15	15	35	4	1	0	1	41	43	4	0	1	0	0	5	6
08:00	11	0	0	0	1	12	13	36	1	1	0	0	38	39	6	0	1	0	0	7	8
08:15	8	1	0	0	0	9	9	40	2	1	0	5	48	54	2	0	0	0	0	2	2
08:30	14	0	0	0	0	14	14	53	4	0	0	2	59	61	2	0	0	0	0	2	2
08:45	17	1	0	0	0	18	18	56	3	1	0	0	60	61	3	0	0	0	0	3	3
H/TOT	50	2	0	0	1	53	54	185	10	3	0	7	205	214	13	0	1	0	0	14	15
09:00	5	0	0	0	0	5	5	35	1	1	0	1	38	40	3	0	0	0	0	3	3
09:15	8	0	0	0	0	8	8	20	3	0	0	2	25	27	2	0	0	0	0	2	2
09:30	2	1	0	0	0	3	3	31	3	1	1	1	37	40	1	0	0	0	0	1	1
09:45	6	0	0	0	0	6	6	22	5	0	0	1	28	29	2	0	0	0	0	2	2
H/TOT	21	1	0	0	0	22	22	108	12	2	1	5	128	135	8	0	0	0	0	8	8
10:00	6	0	0	0	0	6	6	26	3	3	0	1	33	36	1	0	0	0	0	1	1
10:15	9	0	0	0	0	9	9	24	3	1	0	0	28	29	2	0	0	0	0	2	2
10:30	10	0	0	0	0	10	10	37	3	0	0	0	40	40	0	1	0	0	0	1	1
10:45	5	0	0	0	0	5	5	36	2	1	0	0	39	40	3	0	0	0	0	3	3
H/TOT	30	0	0	0	0	30	30	123	11	5	0	1	140	144	6	1	0	0	0	7	7
11:00	8	0	0	0	0	8	8	38	4	1	0	2	45	48	2	1	0	0	0	3	3
11:15	9	0	0	0	0	9	9	48	0	3	0	0	51	53	3	0	1	0	0	4	5
11:30	9	1	0	0	0	10	10	38	3	2	0	1	44	46	4	0	0	0	0	4	4
11:45	9	0	0	0	0	9	9	47	2	2	0	0	51	52	1	0	0	0	0	1	1
H/TOT	35	1	0	0	0	36	36	171	9	8	0	3	191	198	10	1	1	0	0	12	13
12:00	8	2	0	1	0	11	12	51	2	1	0	0	54	55	2	0	0	0	0	2	2
12:15	16	1	1	0	0	18	19	65	3	0	1	2	71	74	2	0	0	0	0	2	2
12:30	13	0	1	0	0	14	15	56	5	1	0	0	62	63	3	0	0	0	0	3	3
12:45	10	2	0	0	0	12	12	50	2	1	0	0	53	54	1	0	1	0	0	2	3
H/TOT	47	5	2	1	0	55	57	222	12	3	1	2	240	245	8	0	1	0	0	9	10
	LV		HV					LV		HV					LV		HV				
	52		1					198		7					14		0				

TRAFFINOMICS LIMITED

**KINGSTON ROAD TRAFFIC COUNT
MANUAL CLASSIFIED JUNCTION TURNING COUNT**

**MAY 2019
TRA/19/131**

SITE: 3

DATE: 30th May 2019

LOCATION: Bishop O'Donnell Road/Kingston Road/Taylor's Hill

DAY: Thursday

C => A

TIME	MOVEMENT 10						PCU	MOVEMENT 11						TOT	PCU	MOVEMENT 12						TOT	PCU	PCU's Through Junction
	CAR	LGV	OGV1	OGV2	BUS	TOT		CAR	LGV	OGV1	OGV2	BUS	TOT			CAR	LGV	OGV1	OGV2	BUS	TOT			
07:00	0	1	0	0	0	1	1	5	0	0	0	1	6	7	1	0	0	0	0	0	1	1	1	146
07:15	2	0	0	0	0	2	2	2	2	0	0	0	4	4	0	0	0	0	0	0	0	0	0	243
07:30	2	0	0	0	1	3	4	9	0	1	0	1	11	13	0	0	0	0	0	0	0	0	0	301
07:45	5	0	0	0	0	5	5	13	0	0	0	0	13	13	0	0	0	0	0	0	0	0	0	316
H/TOT	9	1	0	0	1	11	12	29	2	1	0	2	34	37	1	0	0	0	0	0	1	1	1	1005
08:00	5	0	0	0	1	6	7	13	1	0	0	1	15	16	0	0	0	0	0	0	0	0	0	373
08:15	12	1	0	0	0	13	13	26	1	1	0	0	28	29	0	0	0	0	0	0	0	0	0	409
08:30	25	0	0	0	2	27	29	26	2	0	0	3	31	34	0	0	0	0	0	0	0	0	0	390
08:45	7	1	0	0	0	8	8	31	6	0	0	1	38	39	0	0	0	0	0	0	0	0	0	357
H/TOT	49	2	0	0	3	54	57	96	10	1	0	5	112	118	0	0	0	0	0	0	0	0	0	1530
09:00	13	2	0	0	0	15	15	19	4	0	0	0	23	23	0	0	0	0	0	0	0	0	0	353
09:15	3	1	0	0	0	4	4	19	2	0	0	1	22	23	0	0	0	0	0	0	0	0	0	350
09:30	2	0	1	0	0	3	4	21	3	0	0	0	24	24	1	0	0	0	0	0	1	1	1	310
09:45	3	0	0	0	1	4	5	23	3	0	0	1	27	28	0	0	0	0	0	0	0	0	0	345
H/TOT	21	3	1	0	1	26	28	82	12	0	0	2	96	98	1	0	0	0	0	0	1	1	1	1357
10:00	6	1	0	0	0	7	7	26	1	2	0	0	29	30	1	0	0	0	0	0	1	1	1	341
10:15	4	1	0	0	0	5	5	24	4	1	0	1	30	32	0	0	0	0	0	0	0	0	0	296
10:30	1	0	0	0	0	1	1	23	3	0	0	1	27	28	0	0	0	0	0	0	0	0	0	310
10:45	3	0	0	0	1	4	5	22	4	1	0	0	27	28	0	0	0	0	0	0	0	0	0	355
H/TOT	14	2	0	0	1	17	18	95	12	4	0	2	113	117	1	0	0	0	0	0	1	1	1	1302
11:00	3	1	0	0	0	4	4	16	3	1	0	1	21	23	0	0	0	0	0	0	0	0	0	308
11:15	6	2	0	0	0	8	8	10	3	1	0	0	14	15	0	0	0	0	0	0	0	0	0	306
11:30	7	1	0	0	0	8	8	36	3	1	0	0	40	41	0	0	0	0	0	0	0	0	0	345
11:45	8	2	0	0	0	10	10	35	7	1	0	1	44	46	0	0	0	0	0	0	0	0	0	349
H/TOT	24	6	0	0	0	30	30	97	16	4	0	2	119	123	0	0	0	0	0	0	0	0	0	1308
12:00	6	0	0	0	0	6	6	22	1	0	1	0	24	25	0	0	0	0	0	0	0	0	0	345
12:15	13	0	0	0	0	13	13	63	4	0	0	1	68	69	0	0	0	0	0	0	0	0	0	379
12:30	15	0	0	0	0	15	15	55	2	1	0	0	58	59	0	0	0	0	0	0	0	0	0	418
12:45	18	0	0	0	1	19	20	44	5	1	0	1	51	53	0	0	0	0	0	0	0	0	0	416
H/TOT	52	0	0	0	1	53	54	184	12	2	1	2	201	205	0	0	0	0	0	0	0	0	0	1558
	LV		HV					LV		HV						LV		HV						
	51		3					107		5						0		0						

TRAFFINOMICS LIMITED

**KINGSTON ROAD TRAFFIC COUNT
MANUAL CLASSIFIED JUNCTION TURNING COUNT**

**MAY 2019
TRA/19/131**

SITE: 3

DATE: 30th May 2019

LOCATION: Bishop O'Donnell Road/Kingston Road/Taylor's Hill

DAY: Thursday

RECEIVED: 16/10/2025

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	14	1	0	0	0	15	15	44	3	0	0	2	49	51	41	10	0	1	0	52	53
13:15	21	0	0	1	0	22	23	48	2	0	0	0	50	50	71	10	3	0	0	84	86
13:30	10	1	1	0	0	12	13	45	2	0	0	1	48	49	47	4	0	1	1	53	55
13:45	33	1	0	0	0	34	34	35	2	2	0	1	40	42	43	7	1	2	0	53	56
H/TOT	78	3	1	1	0	83	85	172	9	2	0	4	187	192	202	31	4	4	1	242	250
14:00	24	1	0	0	0	25	25	39	4	0	0	0	43	43	50	7	0	0	2	59	61
14:15	19	2	0	0	0	21	21	61	4	0	0	1	66	67	60	9	4	2	0	75	80
14:30	11	1	0	0	0	12	12	49	7	1	0	1	58	60	51	7	2	2	0	62	66
14:45	40	2	0	0	0	42	42	53	4	0	0	2	59	61	47	1	4	4	0	56	63
H/TOT	94	6	0	0	0	100	100	202	19	1	0	4	226	231	208	24	10	8	2	252	269
15:00	33	2	2	0	0	37	38	45	2	0	0	0	47	47	47	8	0	2	1	58	62
15:15	19	0	0	0	0	19	19	60	2	1	0	3	66	70	61	12	0	0	0	73	73
15:30	21	1	0	0	0	22	22	51	1	1	0	1	54	56	59	7	1	2	2	71	76
15:45	17	1	0	0	0	18	18	60	2	0	1	0	63	64	57	5	1	1	3	67	72
H/TOT	90	4	2	0	0	96	97	216	7	2	1	4	230	236	224	32	2	5	6	269	283
16:00	16	1	0	0	0	17	17	49	0	0	0	1	50	51	73	6	1	0	1	81	83
16:15	14	1	0	0	0	15	15	33	2	1	0	0	36	37	49	5	3	1	1	59	63
16:30	31	1	1	0	0	33	34	34	0	0	0	0	34	34	57	5	3	0	1	66	69
16:45	19	0	0	0	0	19	19	56	2	1	0	0	59	60	61	5	2	1	2	71	75
H/TOT	80	3	1	0	0	84	85	172	4	2	0	1	179	181	240	21	9	2	5	277	289
17:00	13	1	0	0	0	14	14	52	1	0	0	1	54	55	60	11	0	1	0	72	73
17:15	23	1	0	0	0	24	24	27	2	0	0	0	29	29	53	7	1	1	0	62	64
17:30	11	0	0	0	0	11	11	49	5	0	0	0	54	54	55	6	0	1	0	62	63
17:45	21	1	0	0	0	22	22	50	3	1	0	0	54	55	42	10	1	0	0	53	54
H/TOT	68	3	0	0	0	71	71	178	11	1	0	1	191	193	210	34	2	3	0	249	254
18:00	17	0	0	0	0	17	17	44	1	0	0	0	45	45	62	9	1	0	1	73	75
18:15	12	0	0	0	0	12	12	30	3	0	0	1	34	35	60	8	1	0	0	69	70
18:30	14	0	0	0	0	14	14	45	2	0	0	0	47	47	61	4	0	0	0	65	65
18:45	10	0	0	0	0	10	10	52	1	0	0	0	53	53	50	4	0	0	0	54	54
H/TOT	53	0	0	0	0	53	53	171	7	0	0	1	179	180	233	25	2	0	1	261	263
P/TOT	855	55	10	1	0	921	927	2192	144	21	5	31	2393	2441	2138	367	79	45	31	2660	2789

LV	HV
68	0

LV	HV
195	1

LV	HV
261	6

TRAFFINOMICS LIMITED

**KINGSTON ROAD TRAFFIC COUNT
MANUAL CLASSIFIED JUNCTION TURNING COUNT**

**MAY 2019
TRA/19/131**

SITE: 3

DATE: 30th May 2019

LOCATION: Bishop O'Donnell Road/Kingston Road/Taylor's Hill

DAY: Thursday

TIME	MOVEMENT 4					TOT	PCU	MOVEMENT 5					TOT	PCU	MOVEMENT 6					TOT	PCU
	CAR	LGV	OGV1	OGV2	BUS			CAR	LGV	OGV1	OGV2	BUS			CAR	LGV	OGV1	OGV2	BUS		
13:00	44	5	4	0	1	54	57	39	4	0	0	1	44	45	0	0	0	0	0	0	0
13:15	34	6	0	4	1	45	51	37	2	0	0	0	39	39	0	0	0	0	0	0	0
13:30	37	7	2	0	0	46	47	44	3	2	0	1	50	52	0	0	0	0	0	0	0
13:45	50	11	1	0	2	64	67	66	3	1	0	0	70	71	0	0	0	0	0	0	0
H/TOT	165	29	7	4	4	209	222	186	12	3	0	2	203	207	0	0	0	0	0	0	0
14:00	52	6	1	0	0	59	60	61	3	0	1	0	65	66	0	0	0	0	0	0	0
14:15	60	7	2	1	3	73	78	52	10	0	0	0	62	62	0	0	0	0	0	0	0
14:30	53	8	1	0	0	62	63	55	5	2	0	1	63	65	0	0	0	0	0	0	0
14:45	65	9	3	0	0	77	79	34	3	0	0	0	37	37	0	0	0	0	0	0	0
H/TOT	230	30	7	1	3	271	279	202	21	2	1	1	227	230	0	0	0	0	0	0	0
15:00	55	9	3	2	0	69	73	52	3	0	0	1	56	57	1	0	0	0	0	1	1
15:15	52	5	3	6	0	66	75	53	2	0	0	0	55	55	0	0	0	0	0	0	0
15:30	42	2	2	2	1	49	54	29	6	0	0	1	36	37	0	0	0	0	0	0	0
15:45	48	4	2	2	1	57	62	38	4	0	0	0	42	42	2	0	0	0	0	2	2
H/TOT	197	20	10	12	2	241	264	172	15	0	0	2	189	191	3	0	0	0	0	3	3
16:00	28	4	2	1	0	35	37	35	1	0	0	0	36	36	1	0	0	0	0	1	1
16:15	68	19	5	4	1	97	106	41	4	0	0	1	46	47	0	0	0	0	0	0	0
16:30	46	10	1	2	0	59	62	24	4	1	0	2	31	34	0	0	0	0	0	0	0
16:45	46	17	2	0	0	65	66	42	0	0	0	0	42	42	0	0	0	0	0	0	0
H/TOT	188	50	10	7	1	256	271	142	9	1	0	3	155	159	1	0	0	0	0	1	1
17:00	43	9	0	1	0	53	54	38	5	0	0	2	45	47	0	0	0	0	0	0	0
17:15	60	10	2	0	1	73	75	50	1	0	0	0	51	51	0	0	0	0	0	0	0
17:30	37	8	3	0	0	48	50	40	2	1	0	1	44	46	0	1	0	0	0	1	1
17:45	43	4	1	0	0	48	49	54	3	0	0	0	57	57	0	0	0	0	0	0	0
H/TOT	183	31	6	1	1	222	227	182	11	1	0	3	197	201	0	1	0	0	0	1	1
18:00	46	9	1	0	0	56	57	33	2	0	0	0	35	35	0	0	0	0	0	0	0
18:15	41	4	2	1	1	49	52	39	4	0	0	1	44	45	0	0	0	0	0	0	0
18:30	48	8	0	1	1	58	60	51	0	0	0	2	53	55	0	0	0	0	0	0	0
18:45	44	2	0	0	0	46	46	36	1	1	0	0	38	39	1	0	0	0	0	1	1
H/TOT	179	23	3	2	2	209	215	159	7	1	0	3	170	174	1	0	0	0	0	1	1
P/TOT	2383	373	86	54	40	2936	3089	2339	167	24	1	30	2561	2604	11	2	1	0	0	14	15

LV	HV
237	2

LV	HV
179	3

LV	HV
1	0

TRAFFINOMICS LIMITED

**KINGSTON ROAD TRAFFIC COUNT
MANUAL CLASSIFIED JUNCTION TURNING COUNT**

**MAY 2019
TRA/19/131**

SITE: 3

DATE: 30th May 2019

LOCATION: Bishop O'Donnell Road/Kingston Road/Taylor's Hill

DAY: Thursday

RECEIVED: 16/10/2025

TIME	MOVEMENT 7					TOT	PCU	MOVEMENT 8					TOT	PCU	MOVEMENT 9					TOT	PCU
	CAR	LGV	OGV1	OGV2	BUS			CAR	LGV	OGV1	OGV2	BUS			CAR	LGV	OGV1	OGV2	BUS		
13:00	9	1	0	0	0	10	10	83	3	0	0	1	87	88	3	1	0	0	0	4	4
13:15	11	0	0	0	0	11	11	71	1	2	0	0	74	75	2	0	0	0	0	2	2
13:30	12	0	0	0	0	12	12	54	2	1	0	1	58	60	4	0	0	0	0	4	4
13:45	8	0	0	0	0	8	8	47	2	0	0	1	50	51	2	0	0	0	0	2	2
H/TOT	40	1	0	0	0	41	41	255	8	3	0	3	269	274	11	1	0	0	0	12	12
14:00	8	2	0	0	0	10	10	60	5	2	0	1	68	70	4	0	0	0	0	4	4
14:15	7	1	0	0	0	8	8	52	1	0	0	1	54	55	0	0	0	0	0	0	0
14:30	11	0	0	0	0	11	11	71	3	0	0	0	74	74	3	0	0	0	0	3	3
14:45	17	1	0	0	0	18	18	57	5	1	0	2	65	68	1	0	1	0	0	2	3
H/TOT	43	4	0	0	0	47	47	240	14	3	0	4	261	267	8	0	1	0	0	9	10
15:00	6	1	0	0	0	7	7	57	4	2	0	0	63	64	2	0	0	0	0	2	2
15:15	14	1	0	0	0	15	15	34	0	2	0	0	36	37	2	0	0	0	0	2	2
15:30	20	0	0	0	0	20	20	58	5	0	0	0	63	63	2	1	0	0	0	3	3
15:45	13	0	0	0	0	13	13	38	2	0	0	0	40	40	4	0	0	0	0	4	4
H/TOT	53	2	0	0	0	55	55	187	11	4	0	0	202	204	10	1	0	0	0	11	11
16:00	9	0	0	0	0	9	9	67	4	0	0	1	72	73	5	0	0	0	0	5	5
16:15	13	2	0	0	0	15	15	35	4	2	0	1	42	44	2	0	0	0	6	8	14
16:30	9	0	0	0	1	10	11	49	1	1	0	3	54	58	6	0	0	0	0	6	6
16:45	14	0	0	0	0	14	14	40	3	1	0	0	44	45	2	0	0	0	0	2	2
H/TOT	45	2	0	0	1	48	49	191	12	4	0	5	212	219	15	0	0	0	6	21	27
17:00	16	2	0	0	0	18	18	41	4	0	0	0	45	45	7	0	0	0	0	7	7
17:15	14	1	0	0	0	15	15	52	5	0	0	1	58	59	4	0	0	0	0	4	4
17:30	14	0	0	0	0	14	14	51	4	0	0	0	55	55	2	0	0	0	0	2	2
17:45	10	0	0	0	0	10	10	54	2	0	0	0	56	56	5	0	0	0	0	5	5
H/TOT	54	3	0	0	0	57	57	198	15	0	0	1	214	215	18	0	0	0	0	18	18
18:00	14	0	0	0	0	14	14	59	4	0	0	0	63	63	7	0	0	0	0	7	7
18:15	11	0	0	0	0	11	11	42	4	1	0	0	47	48	4	0	0	0	0	4	4
18:30	14	0	0	0	0	14	14	49	2	0	0	0	51	51	1	0	0	0	0	1	1
18:45	20	1	0	0	0	21	21	49	1	0	0	0	50	50	0	0	0	0	0	0	0
H/TOT	59	1	0	0	0	60	60	199	11	1	0	0	211	212	12	0	0	0	0	12	12
P/TOT	491	23	2	1	2	519	523	2114	129	37	2	32	2314	2367	123	4	5	0	6	138	147

LV	HV
61	0

LV	HV
201	1

LV	HV
15	0

TRAFFINOMICS LIMITED

**KINGSTON ROAD TRAFFIC COUNT
MANUAL CLASSIFIED JUNCTION TURNING COUNT**

**MAY 2019
TRA/19/131**

SITE: 3

DATE: 30th May 2019

LOCATION: Bishop O'Donnell Road/Kingston Road/Taylor's Hill

DAY: Thursday

RECEIVED: 16/10/2025

TIME	MOVEMENT 10					TOT	PCU	MOVEMENT 11					TOT	PCU	MOVEMENT 12					TOT	PCU
	CAR	LGV	OGV1	OGV2	BUS			CAR	LGV	OGV1	OGV2	BUS			CAR	LGV	OGV1	OGV2	BUS		
13:00	8	0	0	0	0	8	8	46	2	0	0	0	48	48	0	0	0	0	0	0	0
13:15	1	1	0	0	0	2	2	42	4	0	0	1	47	48	0	0	0	0	0	0	0
13:30	6	0	1	0	0	7	8	42	3	2	0	1	48	50	0	0	0	0	0	0	0
13:45	7	0	0	0	0	7	7	52	6	1	0	1	60	62	0	0	0	0	0	0	0
H/TOT	22	1	1	0	0	24	25	182	15	3	0	3	203	208	0	0	0	0	0	0	0
14:00	4	0	0	0	0	4	4	43	3	0	0	0	46	46	0	0	0	0	0	0	0
14:15	4	1	1	0	0	6	7	44	1	0	0	1	46	47	0	0	0	0	0	0	0
14:30	7	0	0	0	0	7	7	45	2	1	0	0	48	49	0	0	0	0	0	0	0
14:45	7	0	0	0	0	7	7	47	3	0	0	3	53	56	0	0	0	0	0	0	0
H/TOT	22	1	1	0	0	24	25	179	9	1	0	4	193	198	0	0	0	0	0	0	0
15:00	4	0	1	0	0	5	6	56	5	0	0	1	62	63	0	0	0	0	0	0	0
15:15	7	1	0	0	1	9	10	47	1	0	0	1	49	50	0	0	0	0	0	0	0
15:30	10	0	0	0	0	10	10	49	3	0	0	0	52	52	0	0	0	0	0	0	0
15:45	5	0	0	0	0	5	5	71	1	1	0	2	75	78	0	0	0	0	0	0	0
H/TOT	26	1	1	0	1	29	31	223	10	1	0	4	238	243	0	0	0	0	0	0	0
16:00	11	0	1	0	0	12	13	66	2	0	0	0	68	68	0	0	0	0	0	0	0
16:15	8	1	1	0	0	10	11	89	4	0	0	3	96	99	0	0	0	0	0	0	0
16:30	7	1	0	0	0	8	8	71	4	0	0	0	75	75	1	0	0	0	0	1	1
16:45	8	0	0	0	0	8	8	85	5	1	0	1	92	94	0	0	0	0	0	0	0
H/TOT	34	2	2	0	0	38	39	311	15	1	0	4	331	336	1	0	0	0	0	1	1
17:00	6	0	0	0	0	6	6	89	8	1	0	0	98	99	0	0	0	0	0	0	0
17:15	4	0	0	0	0	4	4	83	2	0	0	2	87	89	2	0	0	0	0	2	2
17:30	11	0	0	0	0	11	11	104	6	0	0	0	110	110	0	0	0	0	0	0	0
17:45	5	0	0	0	0	5	5	93	4	0	0	0	97	97	1	0	0	0	0	1	1
H/TOT	26	0	0	0	0	26	26	369	20	1	0	2	392	395	3	0	0	0	0	3	3
18:00	7	0	0	0	0	7	7	81	2	0	0	0	83	83	0	0	0	0	0	0	0
18:15	4	0	0	0	1	5	6	63	4	0	0	1	68	69	0	0	0	0	0	0	0
18:30	8	1	0	0	0	9	9	90	6	0	0	1	97	98	0	0	0	0	0	0	0
18:45	5	0	0	0	0	5	5	58	3	0	0	3	64	67	0	0	0	0	0	0	0
H/TOT	24	1	0	0	1	26	27	292	15	0	0	5	312	317	0	0	0	0	0	0	0
P/TOT	323	20	6	0	9	358	370	2139	148	19	1	37	2344	2392	7	0	0	0	0	7	7

LV	HV
29	0

LV	HV
384	3

LV	HV
2	0

RECEIVED: 16/10/2025

Appendix B. JUNCTION 10 ARCADY DETAILED OUTPUT

Junctions 10		
ARCADY 10 - Roundabout 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: Kingston Junction 1 - WDR Roundabout.j10

Path: J:\Projects\11893 - King Kingston\05-Design\01-Calculations\Traffic

Report generation date: 28/01/2025 11:48:13

-
- »2023 Existing, AM
 - »2023 Existing, PM
 - »2026 Base, AM
 - »2026 Base, PM
 - »2026 Base + Comm & Prop, AM
 - »2026 Base + Comm & Prop, PM
 - »2041 Base, AM
 - »2041 Base, PM
 - »2041 Base + Comm, AM
 - »2041 Base + Comm, PM
 - »2041 Base + Comm & Prop, AM
 - »2041 Base + Comm & Prop, PM
 - »2041 Base + Comm & Masterplan, AM
 - »2041 Base + Comm & Masterplan, PM

Summary of junction performance

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	AM					PM				
	Set ID	Queue (PCU)	Delay (s)	RFC	LOS	Set ID	Queue (PCU)	Delay (s)	RFC	LOS
	2023 Existing									
Arm 1	D1	0.4	4.13	0.31	A	D2	0.4	3.64	0.30	A
Arm 2		0.3	3.91	0.24	A		0.8	5.19	0.44	A
Arm 3		0.2	3.91	0.18	A		0.1	4.35	0.08	A
Arm 4		1.8	7.56	0.64	A		1.0	5.18	0.50	A
	2026 Base									
Arm 1	D3	0.5	4.30	0.33	A	D4	0.5	3.75	0.31	A
Arm 2		0.3	4.01	0.26	A		0.9	5.48	0.46	A
Arm 3		0.2	4.02	0.19	A		0.1	4.54	0.09	A
Arm 4		2.1	8.39	0.68	A		1.1	5.47	0.53	A
	2026 Base + Comm & Prop									
Arm 1	D5	0.6	4.83	0.37	A	D6	0.5	4.02	0.35	A
Arm 2		0.4	4.17	0.28	A		1.2	6.52	0.54	A
Arm 3		0.3	4.31	0.23	A		0.1	5.14	0.12	A
Arm 4		3.2	11.59	0.76	B		1.3	6.04	0.57	A
	2041 Base									
Arm 1	D7	0.7	5.01	0.40	A	D8	0.6	4.21	0.37	A
Arm 2		0.5	4.45	0.31	A		1.2	6.79	0.55	A
Arm 3		0.3	4.38	0.23	A		0.1	5.38	0.12	A
Arm 4		3.5	12.46	0.78	B		1.6	6.80	0.61	A
	2041 Base + Comm									
Arm 1	D9	0.8	5.71	0.44	A	D10	0.7	4.48	0.40	A
Arm 2		0.5	4.58	0.32	A		1.6	8.00	0.61	A
Arm 3		0.3	4.64	0.25	A		0.2	6.18	0.13	A
Arm 4		6.4	21.33	0.87	C		1.8	7.55	0.65	A
	2041 Base + Comm & Prop									
Arm 1	D11	0.8	5.85	0.45	A	D12	0.7	4.56	0.41	A
Arm 2		0.5	4.64	0.33	A		1.7	8.45	0.63	A
Arm 3		0.4	4.86	0.28	A		0.2	6.41	0.16	A
Arm 4		7.2	24.03	0.89	C		1.9	7.76	0.66	A
	2041 Base + Comm & Masterplan									
Arm 1	D13	1.3	8.19	0.56	A	D14	1.2	6.93	0.55	A
Arm 2		0.8	6.17	0.44	A		11.9	46.50	0.94	E
Arm 3		1.2	7.87	0.55	A		9.2	65.79	0.94	F
Arm 4		60.2	154.48	1.08	F		4.3	15.84	0.82	C

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

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

File summary

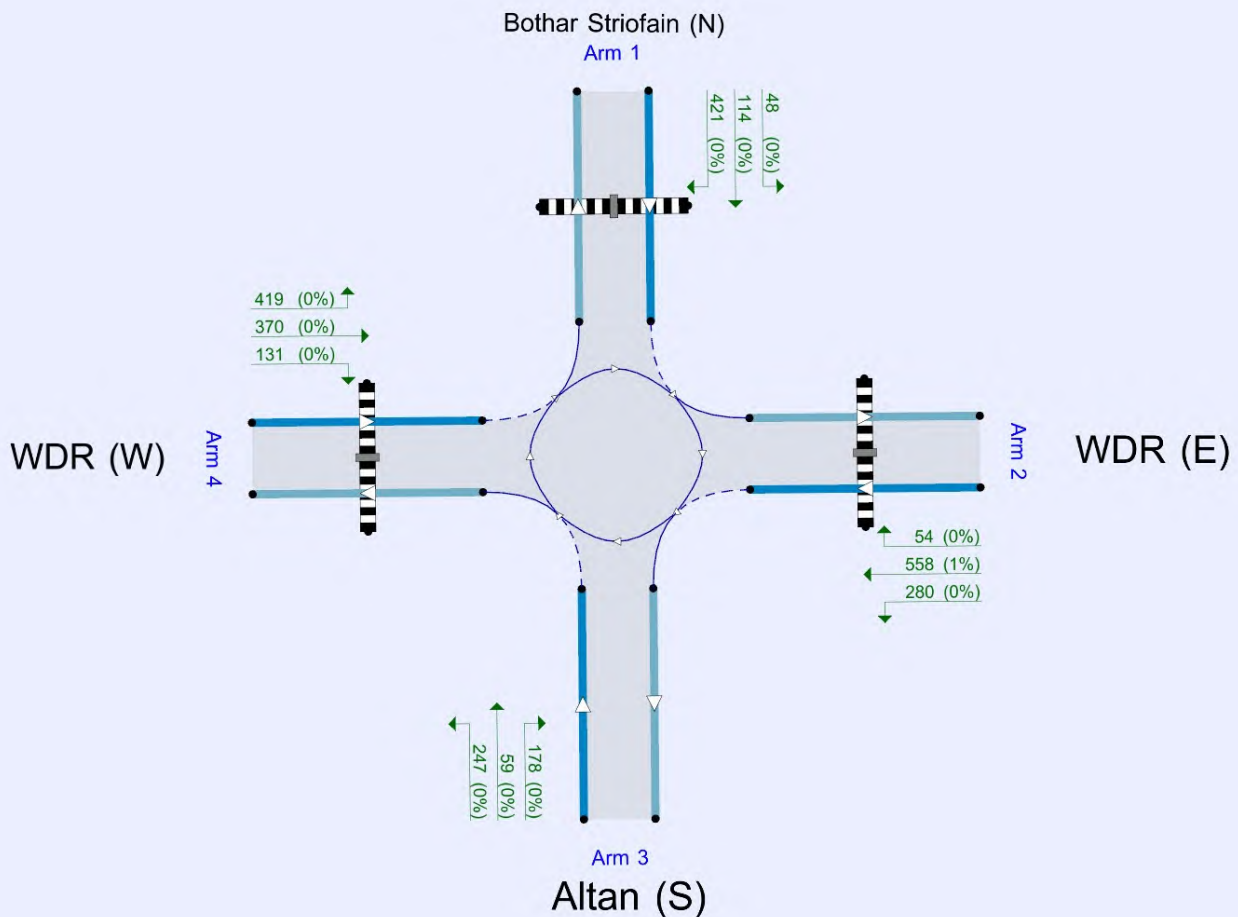
File Description

Title	
Location	
Site number	
Date	31/03/2023
Version	
Status	(new file)
Identifier	
Client	
Jobnumber	
Enumerator	TOBIN\Micheal Geraghty
Description	

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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).

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	2023 Existing	AM	ONE HOUR	07:45	09:15	15
D2	2023 Existing	PM	ONE HOUR	16:45	18:15	15
D3	2026 Base	AM	ONE HOUR	07:45	09:15	15
D4	2026 Base	PM	ONE HOUR	16:45	18:15	15
D5	2026 Base + Comm & Prop	AM	ONE HOUR	07:45	09:15	15
D6	2026 Base + Comm & Prop	PM	ONE HOUR	16:45	18:15	15
D7	2041 Base	AM	ONE HOUR	07:45	09:15	15
D8	2041 Base	PM	ONE HOUR	16:45	18:15	15
D9	2041 Base + Comm	AM	ONE HOUR	07:45	09:15	15
D10	2041 Base + Comm	PM	ONE HOUR	16:45	18:15	15
D11	2041 Base + Comm & Prop	AM	ONE HOUR	07:45	09:15	15
D12	2041 Base + Comm & Prop	PM	ONE HOUR	16:45	18:15	15
D13	2041 Base + Comm & Masterplan	AM	ONE HOUR	07:45	09:15	15
D14	2041 Base + Comm & Masterplan	PM	ONE HOUR	16:45	18:15	15

Analysis Set Details

ID	Network flow scaling factor (%)
A1	100.000

2023 Existing, AM

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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	5.75	A

Junction Network

Driving side	Lighting	Network delay (s)	Network LOS
Left	Normal/unknown	5.75	A

Arms

Arms

Arm	Name	Description	No give-way line
1	untitled		
2	untitled		
3	untitled		
4	untitled		

Capacity Options

Arm	Minimum capacity (PCU/hr)	Maximum capacity (PCU/hr)
1	0	99999
2	0	99999
3	1	99999
4	0	99999

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	5.50	20.0	31.0	50.0	15.0		
2	3.40	4.60	30.0	33.0	50.0	10.0		
3	3.10	4.70	20.0	36.0	50.0	12.5		
4	3.10	4.70	25.0	36.0	50.0	12.5		

Zebra Crossings

Arm	Space between crossing and junction entry (Zebra) (PCU)	Vehicles queueing on exit (Zebra) (PCU)	Central Refuge	Crossing data type	Crossing length (entry side) (m)	Crossing time (entry side) (s)	Crossing length (exit side) (m)	Crossing time (exit side) (s)
1	2.00	2.00	✓	Distance	4.50	3.21	4.50	3.21
2	3.00	3.00	✓	Distance	5.20	3.71	4.10	2.93
4	5.00	3.00	✓	Distance	5.01	3.58	5.00	3.57

Slope / Intercept / Capacity

Roundabout Slope and Intercept used in model

Arm	Final slope	Final intercept (PCU/hr)
1	0.614	1625
2	0.591	1472
3	0.582	1435
4	0.585	1452

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

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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	2023 Existing	AM	ONE HOUR	07:45	09:15	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		✓	357	100.000
2		✓	274	100.000
3		✓	182	100.000
4		✓	785	100.000

Demand overview (Pedestrians)

Arm	Average pedestrian flow (Ped/hr)
1	25.00
2	25.00
3	
4	20.00

Origin-Destination Data

Demand (PCU/hr)

	To				
		1	2	3	4
From	1	0	70	39	248
	2	23	0	51	200
	3	55	69	0	58
	4	333	382	70	0

Vehicle Mix

Heavy Vehicle Percentages

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

Detailed Demand Data

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Demand for each time segment

Time Segment	Arm	Demand (PCU/hr)	Demand in PCU (PCU/hr)	Pedestrian Demand (Ped/hr)
07:45-08:00	1	269	269	18.82
	2	206	206	18.82
	3	137	137	
	4	591	591	15.06
08:00-08:15	1	321	321	22.47
	2	246	246	22.47
	3	164	164	
	4	706	706	17.98
08:15-08:30	1	393	393	27.53
	2	302	302	27.53
	3	200	200	
	4	864	864	22.02
08:30-08:45	1	393	393	27.53
	2	302	302	27.53
	3	200	200	
	4	864	864	22.02
08:45-09:00	1	321	321	22.47
	2	246	246	22.47
	3	164	164	
	4	706	706	17.98
09:00-09:15	1	269	269	18.82
	2	206	206	18.82
	3	137	137	
	4	591	591	15.06

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS
1	0.31	4.13	0.4	A
2	0.24	3.91	0.3	A
3	0.18	3.91	0.2	A
4	0.64	7.56	1.8	A

Main Results for each time segment

07:45 - 08:00

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	269	390	18.82	1384	0.194	268	0.2	3.231	A
2	206	268	18.82	1314	0.157	206	0.2	3.305	A
3	137	353		1227	0.112	137	0.1	3.311	A
4	591	110	15.06	1383	0.427	588	0.7	4.532	A

08:00 - 08:15

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	321	468	22.47	1336	0.240	321	0.3	3.557	A
2	246	321	22.47	1283	0.192	246	0.2	3.535	A
3	164	423		1185	0.138	163	0.2	3.537	A
4	706	132	17.98	1367	0.516	704	1.1	5.449	A

08:15 - 08:30

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	393	572	27.53	1269	0.310	393	0.4	4.117	A
2	302	392	27.53	1241	0.243	301	0.3	3.902	A
3	200	518		1125	0.178	200	0.2	3.904	A
4	864	162	22.02	1342	0.644	861	1.8	7.474	A

08:30 - 08:45

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	393	574	27.53	1268	0.310	393	0.4	4.127	A
2	302	393	27.53	1240	0.243	302	0.3	3.905	A
3	200	519		1125	0.178	200	0.2	3.908	A
4	864	162	22.02	1342	0.644	864	1.8	7.563	A

08:45 - 09:00

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	321	470	22.47	1334	0.241	321	0.3	3.566	A
2	246	322	22.47	1282	0.192	247	0.2	3.539	A
3	164	424		1184	0.138	164	0.2	3.541	A
4	706	132	17.98	1366	0.516	709	1.1	5.518	A

09:00 - 09:15

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	269	393	18.82	1383	0.194	269	0.2	3.242	A
2	206	269	18.82	1313	0.157	206	0.2	3.314	A
3	137	355		1226	0.112	137	0.1	3.320	A
4	591	111	15.06	1383	0.427	592	0.8	4.582	A

2023 Existing, PM

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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	4.78	A

Junction Network

Driving side	Lighting	Network delay (s)	Network LOS
Left	Normal/unknown	4.78	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	2023 Existing	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		✓	377	100.000
2		✓	493	100.000
3		✓	65	100.000
4		✓	634	100.000

Demand overview (Pedestrians)

Arm	Average pedestrian flow (Ped/hr)
1	5.00
2	5.00
3	
4	5.00

Origin-Destination Data

Demand (PCU/hr)

	To				
From		1	2	3	4
	1	0	39	14	324
	2	42	0	34	417
	3	8	24	0	33
	4	333	285	16	0

Vehicle Mix

Heavy Vehicle Percentages

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

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Detailed Demand Data

Demand for each time segment

Time Segment	Arm	Demand (PCU/hr)	Demand in PCU (PCU/hr)	Pedestrian Demand (Ped/hr)
16:45-17:00	1	284	284	3.76
	2	371	371	3.76
	3	49	49	
	4	477	477	3.76
17:00-17:15	1	339	339	4.49
	2	443	443	4.49
	3	58	58	
	4	570	570	4.49
17:15-17:30	1	415	415	5.51
	2	543	543	5.51
	3	72	72	
	4	698	698	5.51
17:30-17:45	1	415	415	5.51
	2	543	543	5.51
	3	72	72	
	4	698	698	5.51
17:45-18:00	1	339	339	4.49
	2	443	443	4.49
	3	58	58	
	4	570	570	4.49
18:00-18:15	1	284	284	3.76
	2	371	371	3.76
	3	49	49	
	4	477	477	3.76

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS
1	0.30	3.64	0.4	A
2	0.44	5.19	0.8	A
3	0.08	4.35	0.1	A
4	0.50	5.18	1.0	A

Main Results for each time segment

16:45 - 17:00

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	284	244	3.76	1475	0.192	283	0.2	3.016	A
2	371	266	3.76	1316	0.282	370	0.4	3.832	A
3	49	587		1085	0.045	49	0.0	3.474	A
4	477	55	3.76	1416	0.337	475	0.5	3.817	A

17:00 - 17:15

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	339	292	4.49	1446	0.234	339	0.3	3.252	A
2	443	318	4.49	1285	0.345	443	0.5	4.309	A
3	58	703		1009	0.058	58	0.1	3.785	A
4	570	66	4.49	1407	0.405	569	0.7	4.291	A

17:15 - 17:30

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	415	357	5.51	1405	0.295	415	0.4	3.633	A
2	543	389	5.51	1242	0.437	542	0.8	5.174	A
3	72	861		899	0.080	71	0.1	4.350	A
4	698	81	5.51	1393	0.501	697	1.0	5.159	A

17:30 - 17:45

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	415	358	5.51	1405	0.296	415	0.4	3.637	A
2	543	390	5.51	1242	0.437	543	0.8	5.190	A
3	72	862		898	0.080	72	0.1	4.355	A
4	698	81	5.51	1393	0.501	698	1.0	5.178	A

17:45 - 18:00

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	339	293	4.49	1445	0.235	339	0.3	3.259	A
2	443	319	4.49	1284	0.345	444	0.5	4.326	A
3	58	705		1008	0.058	59	0.1	3.794	A
4	570	67	4.49	1407	0.405	571	0.7	4.314	A

18:00 - 18:15

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	284	245	3.76	1474	0.193	284	0.2	3.024	A
2	371	267	3.76	1315	0.282	372	0.4	3.851	A
3	49	590		1083	0.045	49	0.0	3.484	A
4	477	56	3.76	1416	0.337	478	0.5	3.841	A

2026 Base, AM

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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	6.23	A

Junction Network

Driving side	Lighting	Network delay (s)	Network LOS
Left	Normal/unknown	6.23	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	07:45	09:15	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		✓	374	100.000
2		✓	286	100.000
3		✓	191	100.000
4		✓	822	100.000

Demand overview (Pedestrians)

Arm	Average pedestrian flow (Ped/hr)
1	20.00
2	20.00
3	
4	25.00

Origin-Destination Data

Demand (PCU/hr)

	To				
From		1	2	3	4
	1	0	73	41	260
	2	24	0	53	209
	3	58	72	0	61
	4	349	400	73	0

Vehicle Mix

Heavy Vehicle Percentages

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

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Detailed Demand Data

Demand for each time segment

Time Segment	Arm	Demand (PCU/hr)	Demand in PCU (PCU/hr)	Pedestrian Demand (Ped/hr)
07:45-08:00	1	282	282	15.06
	2	215	215	15.06
	3	144	144	
	4	619	619	18.82
08:00-08:15	1	336	336	17.98
	2	257	257	17.98
	3	172	172	
	4	739	739	22.47
08:15-08:30	1	412	412	22.02
	2	315	315	22.02
	3	210	210	
	4	905	905	27.53
08:30-08:45	1	412	412	22.02
	2	315	315	22.02
	3	210	210	
	4	905	905	27.53
08:45-09:00	1	336	336	17.98
	2	257	257	17.98
	3	172	172	
	4	739	739	22.47
09:00-09:15	1	282	282	15.06
	2	215	215	15.06
	3	144	144	
	4	619	619	18.82

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS
1	0.33	4.30	0.5	A
2	0.26	4.01	0.3	A
3	0.19	4.02	0.2	A
4	0.68	8.39	2.1	A

Main Results for each time segment

07:45 - 08:00

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	282	408	15.06	1373	0.205	281	0.3	3.302	A
2	215	280	15.06	1307	0.165	215	0.2	3.355	A
3	144	370		1217	0.118	143	0.1	3.362	A
4	619	116	18.82	1379	0.449	616	0.8	4.715	A

08:00 - 08:15

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	336	489	17.98	1322	0.254	336	0.3	3.661	A
2	257	336	17.98	1274	0.202	257	0.3	3.603	A
3	172	443		1173	0.146	172	0.2	3.609	A
4	739	138	22.47	1362	0.543	737	1.2	5.775	A

08:15 - 08:30

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	412	598	22.02	1252	0.329	411	0.5	4.292	A
2	315	411	22.02	1230	0.256	315	0.3	4.004	A
3	210	542		1110	0.190	210	0.2	4.016	A
4	905	169	27.53	1336	0.678	902	2.1	8.259	A

08:30 - 08:45

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	412	600	22.02	1251	0.329	412	0.5	4.304	A
2	315	412	22.02	1229	0.256	315	0.3	4.009	A
3	210	543		1109	0.190	210	0.2	4.019	A
4	905	170	27.53	1335	0.678	905	2.1	8.391	A

08:45 - 09:00

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	336	492	17.98	1321	0.255	337	0.3	3.672	A
2	257	337	17.98	1273	0.202	257	0.3	3.611	A
3	172	444		1172	0.147	172	0.2	3.616	A
4	739	139	22.47	1362	0.543	742	1.2	5.871	A

09:00 - 09:15

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	282	411	15.06	1371	0.205	282	0.3	3.315	A
2	215	282	15.06	1306	0.165	216	0.2	3.364	A
3	144	372		1216	0.118	144	0.1	3.369	A
4	619	116	18.82	1379	0.449	620	0.8	4.778	A

2026 Base, PM

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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	5.02	A

Junction Network

Driving side	Lighting	Network delay (s)	Network LOS
Left	Normal/unknown	5.02	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)
D4	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		✓	395	100.000
2		✓	517	100.000
3		✓	68	100.000
4		✓	664	100.000

Demand overview (Pedestrians)

Arm	Average pedestrian flow (Ped/hr)
1	5.00
2	5.00
3	
4	5.00

Origin-Destination Data

Demand (PCU/hr)

	To				
From		1	2	3	4
	1	0	41	15	339
	2	44	0	36	437
	3	8	25	0	35
	4	349	298	17	0

Vehicle Mix

Heavy Vehicle Percentages

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

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Detailed Demand Data

Demand for each time segment

Time Segment	Arm	Demand (PCU/hr)	Demand in PCU (PCU/hr)	Pedestrian Demand (Ped/hr)
16:45-17:00	1	297	297	3.76
	2	389	389	3.76
	3	51	51	
	4	500	500	3.76
17:00-17:15	1	355	355	4.49
	2	465	465	4.49
	3	61	61	
	4	597	597	4.49
17:15-17:30	1	435	435	5.51
	2	569	569	5.51
	3	75	75	
	4	731	731	5.51
17:30-17:45	1	435	435	5.51
	2	569	569	5.51
	3	75	75	
	4	731	731	5.51
17:45-18:00	1	355	355	4.49
	2	465	465	4.49
	3	61	61	
	4	597	597	4.49
18:00-18:15	1	297	297	3.76
	2	389	389	3.76
	3	51	51	
	4	500	500	3.76

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS
1	0.31	3.75	0.5	A
2	0.46	5.48	0.9	A
3	0.09	4.54	0.1	A
4	0.53	5.47	1.1	A

Main Results for each time segment

16:45 - 17:00

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	297	255	3.76	1468	0.203	296	0.3	3.068	A
2	389	278	3.76	1308	0.298	388	0.4	3.937	A
3	51	615		1067	0.048	51	0.1	3.543	A
4	500	58	3.76	1415	0.353	498	0.5	3.914	A

17:00 - 17:15

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	355	305	4.49	1437	0.247	355	0.3	3.326	A
2	465	333	4.49	1276	0.364	464	0.6	4.472	A
3	61	736		987	0.062	61	0.1	3.889	A
4	597	69	4.49	1405	0.425	596	0.7	4.448	A

17:15 - 17:30

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	435	374	5.51	1395	0.312	434	0.5	3.746	A
2	569	408	5.51	1231	0.462	568	0.9	5.465	A
3	75	901		869	0.086	75	0.1	4.533	A
4	731	85	5.51	1390	0.526	730	1.1	5.442	A

17:30 - 17:45

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	435	374	5.51	1394	0.312	435	0.5	3.751	A
2	569	408	5.51	1231	0.462	569	0.9	5.484	A
3	75	903		868	0.086	75	0.1	4.539	A
4	731	85	5.51	1389	0.526	731	1.1	5.467	A

17:45 - 18:00

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	355	306	4.49	1437	0.247	356	0.3	3.333	A
2	465	334	4.49	1275	0.365	466	0.6	4.493	A
3	61	739		985	0.062	61	0.1	3.898	A
4	597	69	4.49	1405	0.425	598	0.7	4.474	A

18:00 - 18:15

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	297	256	3.76	1467	0.203	298	0.3	3.080	A
2	389	280	3.76	1307	0.298	390	0.4	3.961	A
3	51	618		1065	0.048	51	0.1	3.551	A
4	500	58	3.76	1414	0.353	501	0.6	3.943	A

2026 Base + Comm & Prop, AM

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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	8.00	A

Junction Network

Driving side	Lighting	Network delay (s)	Network LOS
Left	Normal/unknown	8.00	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	2026 Base + Comm & Prop	AM	ONE HOUR	07:45	09:15	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		✓	396	100.000
2		✓	303	100.000
3		✓	230	100.000
4		✓	912	100.000

Demand overview (Pedestrians)

Arm	Average pedestrian flow (Ped/hr)
1	20.00
2	20.00
3	
4	20.00

Origin-Destination Data

Demand (PCU/hr)

	To				
From		1	2	3	4
	1	0	80	44	272
	2	24	0	58	221
	3	67	90	0	73
	4	366	463	83	0

Vehicle Mix

Heavy Vehicle Percentages

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

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Detailed Demand Data

Demand for each time segment

Time Segment	Arm	Demand (PCU/hr)	Demand in PCU (PCU/hr)	Pedestrian Demand (Ped/hr)
07:45-08:00	1	298	298	15.06
	2	228	228	15.06
	3	173	173	
	4	687	687	15.06
08:00-08:15	1	356	356	17.98
	2	272	272	17.98
	3	207	207	
	4	820	820	17.98
08:15-08:30	1	436	436	22.02
	2	334	334	22.02
	3	253	253	
	4	1004	1004	22.02
08:30-08:45	1	436	436	22.02
	2	334	334	22.02
	3	253	253	
	4	1004	1004	22.02
08:45-09:00	1	356	356	17.98
	2	272	272	17.98
	3	207	207	
	4	820	820	17.98
09:00-09:15	1	298	298	15.06
	2	228	228	15.06
	3	173	173	
	4	687	687	15.06

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS
1	0.37	4.83	0.6	A
2	0.28	4.17	0.4	A
3	0.23	4.31	0.3	A
4	0.76	11.59	3.2	B

Main Results for each time segment

07:45 - 08:00

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	298	476	15.06	1331	0.224	297	0.3	3.491	A
2	228	299	15.06	1296	0.176	227	0.2	3.427	A
3	173	388		1206	0.144	172	0.2	3.494	A
4	687	136	15.06	1366	0.503	683	1.0	5.256	A

08:00 - 08:15

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	356	570	17.98	1270	0.280	356	0.4	3.946	A
2	272	358	17.98	1261	0.216	272	0.3	3.708	A
3	207	464		1159	0.178	207	0.2	3.794	A
4	820	163	17.98	1346	0.609	818	1.5	6.815	A

08:15 - 08:30

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	436	696	22.02	1186	0.367	435	0.6	4.802	A
2	334	438	22.02	1214	0.275	333	0.4	4.162	A
3	253	568		1092	0.232	253	0.3	4.305	A
4	1004	199	22.02	1315	0.763	998	3.1	11.174	B

08:30 - 08:45

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	436	700	22.02	1184	0.368	436	0.6	4.827	A
2	334	439	22.02	1213	0.275	334	0.4	4.169	A
3	253	569		1091	0.232	253	0.3	4.312	A
4	1004	199	22.02	1315	0.764	1004	3.2	11.590	B

08:45 - 09:00

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	356	576	17.98	1267	0.281	357	0.4	3.972	A
2	272	360	17.98	1260	0.216	273	0.3	3.717	A
3	207	466		1158	0.179	207	0.2	3.803	A
4	820	163	17.98	1345	0.609	826	1.6	7.043	A

09:00 - 09:15

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	298	480	15.06	1328	0.224	299	0.3	3.511	A
2	228	301	15.06	1295	0.176	228	0.2	3.438	A
3	173	390		1205	0.144	173	0.2	3.505	A
4	687	136	15.06	1366	0.503	689	1.0	5.358	A

2026 Base + Comm & Prop, PM

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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	5.67	A

Junction Network

Driving side	Lighting	Network delay (s)	Network LOS
Left	Normal/unknown	5.67	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	2026 Base + Comm & Prop	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		✓	429	100.000
2		✓	588	100.000
3		✓	86	100.000
4		✓	712	100.000

Demand overview (Pedestrians)

Arm	Average pedestrian flow (Ped/hr)
1	5.00
2	5.00
3	
4	5.00

Origin-Destination Data

Demand (PCU/hr)

	To				
From		1	2	3	4
	1	0	41	20	368
	2	47	0	52	489
	3	10	31	0	45
	4	364	324	24	0

Vehicle Mix

Heavy Vehicle Percentages

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

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Detailed Demand Data

Demand for each time segment

Time Segment	Arm	Demand (PCU/hr)	Demand in PCU (PCU/hr)	Pedestrian Demand (Ped/hr)
16:45-17:00	1	323	323	3.76
	2	443	443	3.76
	3	65	65	
	4	536	536	3.76
17:00-17:15	1	386	386	4.49
	2	529	529	4.49
	3	77	77	
	4	640	640	4.49
17:15-17:30	1	472	472	5.51
	2	647	647	5.51
	3	95	95	
	4	784	784	5.51
17:30-17:45	1	472	472	5.51
	2	647	647	5.51
	3	95	95	
	4	784	784	5.51
17:45-18:00	1	386	386	4.49
	2	529	529	4.49
	3	77	77	
	4	640	640	4.49
18:00-18:15	1	323	323	3.76
	2	443	443	3.76
	3	65	65	
	4	536	536	3.76

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS
1	0.35	4.02	0.5	A
2	0.54	6.52	1.2	A
3	0.12	5.14	0.1	A
4	0.57	6.04	1.3	A

Main Results for each time segment

16:45 - 17:00

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	323	284	3.76	1450	0.223	322	0.3	3.197	A
2	443	309	3.76	1290	0.343	441	0.5	4.264	A
3	65	678		1026	0.063	64	0.1	3.746	A
4	536	66	3.76	1409	0.380	534	0.6	4.100	A

17:00 - 17:15

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	386	340	4.49	1416	0.272	385	0.4	3.494	A
2	529	370	4.49	1254	0.422	528	0.7	4.995	A
3	77	812		933	0.083	77	0.1	4.205	A
4	640	79	4.49	1398	0.458	639	0.8	4.738	A

17:15 - 17:30

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	472	416	5.51	1368	0.345	472	0.5	4.013	A
2	647	453	5.51	1205	0.537	646	1.2	6.473	A
3	95	993		796	0.119	95	0.1	5.129	A
4	784	97	5.51	1380	0.568	782	1.3	5.998	A

17:30 - 17:45

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	472	417	5.51	1367	0.345	472	0.5	4.021	A
2	647	454	5.51	1204	0.538	647	1.2	6.515	A
3	95	995		794	0.119	95	0.1	5.143	A
4	784	97	5.51	1380	0.568	784	1.3	6.036	A

17:45 - 18:00

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	386	342	4.49	1415	0.273	386	0.4	3.501	A
2	529	371	4.49	1253	0.422	530	0.7	5.033	A
3	77	815		931	0.083	77	0.1	4.219	A
4	640	79	4.49	1398	0.458	642	0.9	4.775	A

18:00 - 18:15

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	323	286	3.76	1449	0.223	323	0.3	3.200	A
2	443	311	3.76	1289	0.343	444	0.5	4.299	A
3	65	682		1023	0.063	65	0.1	3.759	A
4	536	66	3.76	1409	0.380	537	0.6	4.135	A

2041 Base, AM

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Data Errors and Warnings

Severity	Area	Item	Description
Warning	Pedestrian Crossing	Arm 1 - Pedestrian crossing	Pedestrian crossing uses default flow of 0. Is this correct?
Warning	Pedestrian Crossing	Arm 2 - Pedestrian crossing	Pedestrian crossing uses default flow of 0. Is this correct?
Warning	Pedestrian Crossing	Arm 4 - Pedestrian crossing	Pedestrian crossing uses default flow of 0. Is this correct?

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	8.50	A

Junction Network

Driving side	Lighting	Network delay (s)	Network LOS
Left	Normal/unknown	8.50	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	2041 Base	AM	ONE HOUR	07:45	09:15	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		✓	433	100.000
2		✓	333	100.000
3		✓	221	100.000
4		✓	952	100.000

Demand overview (Pedestrians)

Arm	Average pedestrian flow (Ped/hr)
1	0.00
2	0.00
3	
4	0.00

Origin-Destination Data

Demand (PCU/hr)

	To				
		1	2	3	4
From	1	0	85	48	300
	2	28	0	62	243
	3	67	84	0	70
	4	404	463	85	0

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Vehicle Mix

Heavy Vehicle Percentages

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

Detailed Demand Data

Demand for each time segment

Time Segment	Arm	Demand (PCU/hr)	Demand in PCU (PCU/hr)	Pedestrian Demand (Ped/hr)
07:45-08:00	1	326	326	0.00
	2	251	251	0.00
	3	166	166	
	4	717	717	0.00
08:00-08:15	1	389	389	0.00
	2	299	299	0.00
	3	199	199	
	4	856	856	0.00
08:15-08:30	1	477	477	0.00
	2	367	367	0.00
	3	243	243	
	4	1048	1048	0.00
08:30-08:45	1	477	477	0.00
	2	367	367	0.00
	3	243	243	
	4	1048	1048	0.00
08:45-09:00	1	389	389	0.00
	2	299	299	0.00
	3	199	199	
	4	856	856	0.00
09:00-09:15	1	326	326	0.00
	2	251	251	0.00
	3	166	166	
	4	717	717	0.00

Results

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Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS
1	0.40	5.01	0.7	A
2	0.31	4.45	0.5	A
3	0.23	4.38	0.3	A
4	0.78	12.46	3.5	B

Main Results for each time segment

07:45 - 08:00

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	326	473	0.00	1334	0.244	325	0.3	3.571	A
2	251	325	0.00	1281	0.196	250	0.2	3.552	A
3	166	428		1185	0.140	166	0.2	3.542	A
4	717	134	0.00	1374	0.522	712	1.1	5.432	A

08:00 - 08:15

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	389	567	0.00	1277	0.305	389	0.4	4.065	A
2	299	389	0.00	1243	0.241	299	0.3	3.883	A
3	199	513		1136	0.175	198	0.2	3.852	A
4	856	161	0.00	1358	0.630	853	1.7	7.127	A

08:15 - 08:30

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	477	692	0.00	1200	0.397	476	0.7	4.980	A
2	367	475	0.00	1192	0.308	366	0.4	4.438	A
3	243	628		1069	0.228	243	0.3	4.371	A
4	1048	197	0.00	1337	0.784	1041	3.4	11.933	B

08:30 - 08:45

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	477	696	0.00	1198	0.398	477	0.7	5.008	A
2	367	477	0.00	1191	0.308	367	0.5	4.447	A
3	243	629		1069	0.228	243	0.3	4.377	A
4	1048	197	0.00	1337	0.784	1048	3.5	12.456	B

08:45 - 09:00

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	389	572	0.00	1273	0.306	390	0.4	4.092	A
2	299	391	0.00	1242	0.241	300	0.3	3.894	A
3	199	514		1135	0.175	199	0.2	3.860	A
4	856	161	0.00	1358	0.630	863	1.7	7.404	A

09:00 - 09:15

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	326	477	0.00	1332	0.245	326	0.3	3.595	A
2	251	327	0.00	1279	0.196	251	0.2	3.564	A
3	166	430		1184	0.141	167	0.2	3.554	A
4	717	135	0.00	1373	0.522	719	1.1	5.550	A

2041 Base, PM

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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	6.12	A

Junction Network

Driving side	Lighting	Network delay (s)	Network LOS
Left	Normal/unknown	6.12	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	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		✓	457	100.000
2		✓	598	100.000
3		✓	79	100.000
4		✓	767	100.000

Demand overview (Pedestrians)

Arm	Average pedestrian flow (Ped/hr)
1	5.00
2	5.00
3	
4	5.00

Origin-Destination Data

Demand (PCU/hr)

	To				
From		1	2	3	4
	1	0	47	17	393
	2	51	0	41	506
	3	10	29	0	40
	4	403	345	19	0

Vehicle Mix

Heavy Vehicle Percentages

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

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Detailed Demand Data

Demand for each time segment

Time Segment	Arm	Demand (PCU/hr)	Demand in PCU (PCU/hr)	Pedestrian Demand (Ped/hr)
16:45-17:00	1	344	344	3.76
	2	450	450	3.76
	3	59	59	
	4	577	577	3.76
17:00-17:15	1	411	411	4.49
	2	538	538	4.49
	3	71	71	
	4	690	690	4.49
17:15-17:30	1	503	503	5.51
	2	658	658	5.51
	3	87	87	
	4	844	844	5.51
17:30-17:45	1	503	503	5.51
	2	658	658	5.51
	3	87	87	
	4	844	844	5.51
17:45-18:00	1	411	411	4.49
	2	538	538	4.49
	3	71	71	
	4	690	690	4.49
18:00-18:15	1	344	344	3.76
	2	450	450	3.76
	3	59	59	
	4	577	577	3.76

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS
1	0.37	4.21	0.6	A
2	0.55	6.79	1.2	A
3	0.12	5.38	0.1	A
4	0.61	6.80	1.6	A

Main Results for each time segment

16:45 - 17:00

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	344	294	3.76	1444	0.238	343	0.3	3.267	A
2	450	322	3.76	1282	0.351	448	0.5	4.340	A
3	59	712		1003	0.059	59	0.1	3.813	A
4	577	67	3.76	1407	0.411	575	0.7	4.314	A

17:00 - 17:15

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	411	353	4.49	1408	0.292	410	0.4	3.607	A
2	538	385	4.49	1245	0.432	537	0.8	5.120	A
3	71	853		905	0.078	71	0.1	4.316	A
4	690	81	4.49	1394	0.495	688	1.0	5.093	A

17:15 - 17:30

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	503	432	5.51	1358	0.370	502	0.6	4.202	A
2	658	472	5.51	1194	0.552	657	1.2	6.735	A
3	87	1044		758	0.115	87	0.1	5.361	A
4	844	99	5.51	1374	0.615	842	1.6	6.740	A

17:30 - 17:45

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	503	433	5.51	1358	0.371	503	0.6	4.212	A
2	658	472	5.51	1193	0.552	658	1.2	6.785	A
3	87	1046		756	0.115	87	0.1	5.378	A
4	844	99	5.51	1373	0.615	844	1.6	6.802	A

17:45 - 18:00

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	411	354	4.49	1407	0.292	412	0.4	3.622	A
2	538	386	4.49	1244	0.432	539	0.8	5.166	A
3	71	856		902	0.079	71	0.1	4.331	A
4	690	81	4.49	1394	0.495	692	1.0	5.146	A

18:00 - 18:15

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	344	296	3.76	1443	0.238	344	0.3	3.281	A
2	450	323	3.76	1281	0.351	451	0.6	4.376	A
3	59	716		1000	0.059	60	0.1	3.826	A
4	577	68	3.76	1406	0.411	579	0.7	4.357	A

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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	13.23	B

Junction Network

Driving side	Lighting	Network delay (s)	Network LOS
Left	Normal/unknown	13.23	B

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 + Comm	AM	ONE HOUR	07:45	09:15	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		✓	453	100.000
2		✓	345	100.000
3		✓	231	100.000
4		✓	1035	100.000

Demand overview (Pedestrians)

Arm	Average pedestrian flow (Ped/hr)
1	10.00
2	10.00
3	
4	30.00

Origin-Destination Data

Demand (PCU/hr)

	To				
From		1	2	3	4
	1	0	92	48	313
	2	28	0	62	255
	3	67	91	0	73
	4	421	526	88	0

Vehicle Mix

Heavy Vehicle Percentages

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

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Detailed Demand Data

Demand for each time segment

Time Segment	Arm	Demand (PCU/hr)	Demand in PCU (PCU/hr)	Pedestrian Demand (Ped/hr)
07:45-08:00	1	341	341	7.53
	2	260	260	7.53
	3	174	174	
	4	779	779	22.59
08:00-08:15	1	407	407	8.99
	2	310	310	8.99
	3	208	208	
	4	930	930	26.97
08:15-08:30	1	499	499	11.01
	2	380	380	11.01
	3	254	254	
	4	1140	1140	33.03
08:30-08:45	1	499	499	11.01
	2	380	380	11.01
	3	254	254	
	4	1140	1140	33.03
08:45-09:00	1	407	407	8.99
	2	310	310	8.99
	3	208	208	
	4	930	930	26.97
09:00-09:15	1	341	341	7.53
	2	260	260	7.53
	3	174	174	
	4	779	779	22.59

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS
1	0.44	5.71	0.8	A
2	0.32	4.58	0.5	A
3	0.25	4.64	0.3	A
4	0.87	21.33	6.4	C

Main Results for each time segment

07:45 - 08:00

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	341	527	7.53	1298	0.263	340	0.4	3.763	A
2	260	336	7.53	1274	0.204	259	0.3	3.609	A
3	174	447		1170	0.149	173	0.2	3.624	A
4	779	139	22.59	1362	0.572	774	1.3	6.099	A

08:00 - 08:15

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	407	632	8.99	1230	0.331	407	0.5	4.382	A
2	310	403	8.99	1234	0.251	310	0.3	3.964	A
3	208	535		1114	0.186	207	0.2	3.985	A
4	930	167	26.97	1339	0.695	927	2.2	8.697	A

08:15 - 08:30

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	499	767	11.01	1137	0.439	498	0.8	5.635	A
2	380	492	11.01	1182	0.321	379	0.5	4.566	A
3	254	655		1033	0.246	254	0.3	4.635	A
4	1140	204	33.03	1304	0.874	1125	6.0	18.726	C

08:30 - 08:45

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	499	775	11.01	1132	0.441	499	0.8	5.705	A
2	380	494	11.01	1180	0.322	380	0.5	4.578	A
3	254	656		1033	0.246	254	0.3	4.643	A
4	1140	205	33.03	1303	0.875	1138	6.4	21.333	C

08:45 - 09:00

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	407	644	8.99	1222	0.333	408	0.5	4.442	A
2	310	406	8.99	1233	0.252	311	0.3	3.980	A
3	208	537		1113	0.187	208	0.2	3.997	A
4	930	168	26.97	1338	0.696	947	2.4	9.603	A

09:00 - 09:15

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	341	533	7.53	1294	0.264	342	0.4	3.791	A
2	260	339	7.53	1272	0.204	260	0.3	3.622	A
3	174	449		1169	0.149	174	0.2	3.634	A
4	779	140	22.59	1361	0.573	783	1.4	6.299	A

2041 Base + Comm, PM

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Data Errors and Warnings

Severity	Area	Item	Description
Last Run	Last Run	Arm 3 - Capacity	Pedestrian Crossing causes blocking on previous arm due to traffic queuing to leave the junction in 2 timesegment(s).

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	6.91	A

Junction Network

Driving side	Lighting	Network delay (s)	Network LOS
Left	Normal/unknown	6.91	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 + Comm	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		✓	486	100.000
2		✓	655	100.000
3		✓	82	100.000
4		✓	809	100.000

Demand overview (Pedestrians)

Arm	Average pedestrian flow (Ped/hr)
1	25.00
2	20.00
3	
4	20.00

Origin-Destination Data

Demand (PCU/hr)

	To				
From		1	2	3	4
	1	0	48	17	421
	2	54	0	43	558
	3	10	29	0	43
	4	419	370	20	0

Vehicle Mix

Heavy Vehicle Percentages

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

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Detailed Demand Data

Demand for each time segment

Time Segment	Arm	Demand (PCU/hr)	Demand in PCU (PCU/hr)	Pedestrian Demand (Ped/hr)
16:45-17:00	1	366	366	18.82
	2	493	493	15.06
	3	62	62	
	4	609	609	15.06
17:00-17:15	1	437	437	22.47
	2	589	589	17.98
	3	74	74	
	4	727	727	17.98
17:15-17:30	1	535	535	27.53
	2	721	721	22.02
	3	90	90	
	4	891	891	22.02
17:30-17:45	1	535	535	27.53
	2	721	721	22.02
	3	90	90	
	4	891	891	22.02
17:45-18:00	1	437	437	22.47
	2	589	589	17.98
	3	74	74	
	4	727	727	17.98
18:00-18:15	1	366	366	18.82
	2	493	493	15.06
	3	62	62	
	4	609	609	15.06

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS
1	0.40	4.48	0.7	A
2	0.61	8.00	1.6	A
3	0.13	6.18	0.2	A
4	0.65	7.55	1.8	A

Main Results for each time segment

16:45 - 17:00

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	366	314	18.82	1432	0.256	365	0.3	3.368	A
2	493	344	15.06	1269	0.388	491	0.6	4.646	A
3	62	774		960	0.064	61	0.1	4.007	A
4	609	70	15.06	1404	0.434	606	0.8	4.493	A

17:00 - 17:15

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	437	376	22.47	1393	0.314	436	0.5	3.760	A
2	589	411	17.98	1229	0.479	588	0.9	5.647	A
3	74	927		847	0.087	74	0.1	4.655	A
4	727	83	17.98	1390	0.523	726	1.1	5.407	A

17:15 - 17:30

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	535	460	27.53	1340	0.399	534	0.7	4.462	A
2	721	503	22.02	1175	0.614	719	1.6	7.909	A
3	90	1134		675	0.134	90	0.2	6.147	A
4	891	102	22.02	1368	0.651	888	1.8	7.456	A

17:30 - 17:45

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	535	461	27.53	1339	0.400	535	0.7	4.476	A
2	721	504	22.02	1174	0.614	721	1.6	8.003	A
3	90	1137		673	0.134	90	0.2	6.180	A
4	891	102	22.02	1367	0.652	891	1.8	7.552	A

17:45 - 18:00

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	437	378	22.47	1392	0.314	438	0.5	3.775	A
2	589	413	17.98	1229	0.479	591	0.9	5.719	A
3	74	932		843	0.087	74	0.1	4.679	A
4	727	84	17.98	1390	0.523	730	1.1	5.483	A

18:00 - 18:15

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	366	316	18.82	1430	0.256	366	0.3	3.383	A
2	493	345	15.06	1268	0.389	494	0.6	4.698	A
3	62	779		956	0.065	62	0.1	4.025	A
4	609	70	15.06	1404	0.434	610	0.8	4.545	A

2041 Base + Comm & Prop, AM

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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	14.50	B

Junction Network

Driving side	Lighting	Network delay (s)	Network LOS
Left	Normal/unknown	14.50	B

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)
D11	2041 Base + Comm & Prop	AM	ONE HOUR	07:45	09:15	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		✓	456	100.000
2		✓	350	100.000
3		✓	261	100.000
4		✓	1041	100.000

Demand overview (Pedestrians)

Arm	Average pedestrian flow (Ped/hr)
1	10.00
2	10.00
3	
4	30.00

Origin-Destination Data

Demand (PCU/hr)

	To				
From		1	2	3	4
	1	0	92	51	313
	2	28	0	67	255
	3	76	102	0	83
	4	421	526	94	0

Vehicle Mix

Heavy Vehicle Percentages

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

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Detailed Demand Data

Demand for each time segment

Time Segment	Arm	Demand (PCU/hr)	Demand in PCU (PCU/hr)	Pedestrian Demand (Ped/hr)
07:45-08:00	1	343	343	7.53
	2	263	263	7.53
	3	196	196	
	4	784	784	22.59
08:00-08:15	1	410	410	8.99
	2	315	315	8.99
	3	235	235	
	4	936	936	26.97
08:15-08:30	1	502	502	11.01
	2	385	385	11.01
	3	287	287	
	4	1146	1146	33.03
08:30-08:45	1	502	502	11.01
	2	385	385	11.01
	3	287	287	
	4	1146	1146	33.03
08:45-09:00	1	410	410	8.99
	2	315	315	8.99
	3	235	235	
	4	936	936	26.97
09:00-09:15	1	343	343	7.53
	2	263	263	7.53
	3	196	196	
	4	784	784	22.59

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS
1	0.45	5.85	0.8	A
2	0.33	4.64	0.5	A
3	0.28	4.86	0.4	A
4	0.89	24.03	7.2	C

Main Results for each time segment

07:45 - 08:00

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	343	540	7.53	1290	0.266	342	0.4	3.804	A
2	263	343	7.53	1270	0.208	262	0.3	3.636	A
3	196	447		1170	0.168	196	0.2	3.706	A
4	784	154	22.59	1352	0.580	778	1.4	6.239	A

08:00 - 08:15

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	410	647	8.99	1220	0.336	409	0.5	4.450	A
2	315	411	8.99	1230	0.256	314	0.3	4.004	A
3	235	535		1114	0.211	234	0.3	4.110	A
4	936	185	26.97	1328	0.705	932	2.3	9.048	A

08:15 - 08:30

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	502	784	11.01	1126	0.446	501	0.8	5.772	A
2	385	502	11.01	1176	0.328	385	0.5	4.631	A
3	287	655		1032	0.278	287	0.4	4.846	A
4	1146	226	33.03	1290	0.888	1129	6.6	20.519	C

08:30 - 08:45

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	502	794	11.01	1119	0.449	502	0.8	5.851	A
2	385	504	11.01	1175	0.328	385	0.5	4.644	A
3	287	656		1031	0.279	287	0.4	4.858	A
4	1146	227	33.03	1289	0.889	1144	7.2	24.029	C

08:45 - 09:00

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	410	661	8.99	1211	0.338	411	0.5	4.521	A
2	315	414	8.99	1228	0.256	315	0.4	4.020	A
3	235	537		1112	0.211	235	0.3	4.123	A
4	936	186	26.97	1326	0.706	955	2.5	10.196	B

09:00 - 09:15

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	343	546	7.53	1286	0.267	344	0.4	3.837	A
2	263	346	7.53	1268	0.208	264	0.3	3.650	A
3	196	449		1168	0.168	197	0.2	3.720	A
4	784	155	22.59	1352	0.580	788	1.4	6.462	A

2041 Base + Comm & Prop, PM

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Data Errors and Warnings

Severity	Area	Item	Description
Last Run	Last Run	Arm 3 - Capacity	Pedestrian Crossing causes blocking on previous arm due to traffic queing to leave the junction in 2 timesegment(s).

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	7.16	A

Junction Network

Driving side	Lighting	Network delay (s)	Network LOS
Left	Normal/unknown	7.16	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)
D12	2041 Base + Comm & Prop	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		✓	492	100.000
2		✓	669	100.000
3		✓	98	100.000
4		✓	816	100.000

Demand overview (Pedestrians)

Arm	Average pedestrian flow (Ped/hr)
1	25.00
2	20.00
3	
4	20.00

Origin-Destination Data

Demand (PCU/hr)

	To				
From		1	2	3	4
	1	0	48	23	421
	2	54	0	57	558
	3	12	35	0	51
	4	419	370	27	0

Vehicle Mix

Heavy Vehicle Percentages

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

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Detailed Demand Data

Demand for each time segment

Time Segment	Arm	Demand (PCU/hr)	Demand in PCU (PCU/hr)	Pedestrian Demand (Ped/hr)
16:45-17:00	1	370	370	18.82
	2	504	504	15.06
	3	74	74	
	4	614	614	15.06
17:00-17:15	1	442	442	22.47
	2	601	601	17.98
	3	88	88	
	4	734	734	17.98
17:15-17:30	1	542	542	27.53
	2	737	737	22.02
	3	108	108	
	4	898	898	22.02
17:30-17:45	1	542	542	27.53
	2	737	737	22.02
	3	108	108	
	4	898	898	22.02
17:45-18:00	1	442	442	22.47
	2	601	601	17.98
	3	88	88	
	4	734	734	17.98
18:00-18:15	1	370	370	18.82
	2	504	504	15.06
	3	74	74	
	4	614	614	15.06

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS
1	0.41	4.56	0.7	A
2	0.63	8.45	1.7	A
3	0.16	6.41	0.2	A
4	0.66	7.76	1.9	A

Main Results for each time segment

16:45 - 17:00

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	370	324	18.82	1426	0.260	369	0.3	3.402	A
2	504	353	15.06	1264	0.399	501	0.7	4.743	A
3	74	774		959	0.077	73	0.1	4.065	A
4	614	76	15.06	1401	0.439	611	0.8	4.544	A

17:00 - 17:15

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	442	388	22.47	1386	0.319	442	0.5	3.811	A
2	601	423	17.98	1223	0.492	600	1.0	5.820	A
3	88	927		845	0.104	88	0.1	4.753	A
4	734	91	17.98	1386	0.529	732	1.1	5.495	A

17:15 - 17:30

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	542	474	27.53	1331	0.407	541	0.7	4.549	A
2	737	518	22.02	1167	0.631	734	1.7	8.330	A
3	108	1134		672	0.161	108	0.2	6.373	A
4	898	111	22.02	1362	0.660	895	1.9	7.658	A

17:30 - 17:45

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	542	476	27.53	1330	0.407	542	0.7	4.564	A
2	737	519	22.02	1166	0.632	736	1.7	8.447	A
3	108	1137		669	0.161	108	0.2	6.411	A
4	898	111	22.02	1362	0.660	898	1.9	7.763	A

17:45 - 18:00

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	442	390	22.47	1384	0.319	443	0.5	3.826	A
2	601	424	17.98	1222	0.492	604	1.0	5.905	A
3	88	932		842	0.105	88	0.1	4.782	A
4	734	91	17.98	1385	0.529	737	1.1	5.576	A

18:00 - 18:15

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	370	326	18.82	1424	0.260	371	0.4	3.417	A
2	504	355	15.06	1263	0.399	505	0.7	4.800	A
3	74	779		955	0.077	74	0.1	4.085	A
4	614	76	15.06	1400	0.439	616	0.8	4.599	A

2041 Base + Comm & Masterplan, AM

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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	72.52	F

Junction Network

Driving side	Lighting	Network delay (s)	Network LOS
Left	Normal/unknown	72.52	F

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)
D13	2041 Base + Comm & Masterplan	AM	ONE HOUR	07:45	09:15	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		✓	518	100.000
2		✓	432	100.000
3		✓	508	100.000
4		✓	1157	100.000

Demand overview (Pedestrians)

Arm	Average pedestrian flow (Ped/hr)
1	10.00
2	10.00
3	
4	30.00

Origin-Destination Data

Demand (PCU/hr)

	To				
From		1	2	3	4
	1	0	92	113	313
	2	28	0	149	255
	3	151	195	0	162
	4	421	526	210	0

Vehicle Mix

Heavy Vehicle Percentages

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

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Detailed Demand Data

Demand for each time segment

Time Segment	Arm	Demand (PCU/hr)	Demand in PCU (PCU/hr)	Pedestrian Demand (Ped/hr)
07:45-08:00	1	390	390	7.53
	2	325	325	7.53
	3	382	382	
	4	871	871	22.59
08:00-08:15	1	466	466	8.99
	2	388	388	8.99
	3	457	457	
	4	1040	1040	26.97
08:15-08:30	1	570	570	11.01
	2	476	476	11.01
	3	559	559	
	4	1274	1274	33.03
08:30-08:45	1	570	570	11.01
	2	476	476	11.01
	3	559	559	
	4	1274	1274	33.03
08:45-09:00	1	466	466	8.99
	2	388	388	8.99
	3	457	457	
	4	1040	1040	26.97
09:00-09:15	1	390	390	7.53
	2	325	325	7.53
	3	382	382	
	4	871	871	22.59

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS
1	0.56	8.19	1.3	A
2	0.44	6.17	0.8	A
3	0.55	7.87	1.2	A
4	1.08	154.48	60.2	F

Main Results for each time segment

07:45 - 08:00

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	390	695	7.53	1193	0.327	388	0.5	4.491	A
2	325	476	7.53	1191	0.273	324	0.4	4.220	A
3	382	447		1167	0.328	381	0.5	4.582	A
4	871	280	22.59	1275	0.683	863	2.1	8.598	A

08:00 - 08:15

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	466	830	8.99	1104	0.422	465	0.7	5.663	A
2	388	569	8.99	1136	0.342	388	0.5	4.892	A
3	457	535		1108	0.412	456	0.7	5.534	A
4	1040	336	26.97	1233	0.844	1029	4.8	16.860	C

08:15 - 08:30

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	570	949	11.01	1020	0.559	568	1.3	7.988	A
2	476	677	11.01	1072	0.444	475	0.8	6.122	A
3	559	654		1020	0.549	557	1.2	7.781	A
4	1274	410	33.03	1178	1.082	1155	34.5	73.484	F

08:30 - 08:45

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	570	960	11.01	1012	0.564	570	1.3	8.194	A
2	476	681	11.01	1070	0.445	476	0.8	6.171	A
3	559	656		1018	0.549	559	1.2	7.872	A
4	1274	412	33.03	1176	1.084	1171	60.2	154.483	F

08:45 - 09:00

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	466	941	8.99	1029	0.453	467	0.8	6.473	A
2	388	603	8.99	1116	0.348	389	0.5	5.051	A
3	457	538		1106	0.413	459	0.7	5.600	A
4	1040	338	26.97	1222	0.851	1202	19.7	123.899	F

09:00 - 09:15

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	390	746	7.53	1160	0.336	391	0.5	4.720	A
2	325	493	7.53	1181	0.275	326	0.4	4.290	A
3	382	450		1165	0.328	383	0.5	4.627	A
4	871	282	22.59	1271	0.685	941	2.3	13.300	B

2041 Base + Comm & Masterplan, PM

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Data Errors and Warnings

Severity	Area	Item	Description
Last Run	Last Run	Arm 3 - Capacity	Pedestrian Crossing causes blocking on previous arm due to traffic queing to leave the junction in 4 timesegment(s).

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	31.93	D

Junction Network

Driving side	Lighting	Network delay (s)	Network LOS
Left	Normal/unknown	31.93	D

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)
D14	2041 Base + Comm & Masterplan	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		✓	583	100.000
2		✓	892	100.000
3		✓	484	100.000
4		✓	920	100.000

Demand overview (Pedestrians)

Arm	Average pedestrian flow (Ped/hr)
1	25.00
2	20.00
3	
4	20.00

Origin-Destination Data

Demand (PCU/hr)

	To				
From		1	2	3	4
	1	0	48	114	421
	2	54	0	280	558
	3	59	178	0	247
	4	419	370	131	0

Vehicle Mix

Heavy Vehicle Percentages

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

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Detailed Demand Data

Demand for each time segment

Time Segment	Arm	Demand (PCU/hr)	Demand in PCU (PCU/hr)	Pedestrian Demand (Ped/hr)
16:45-17:00	1	439	439	18.82
	2	672	672	15.06
	3	364	364	
	4	693	693	15.06
17:00-17:15	1	524	524	22.47
	2	802	802	17.98
	3	435	435	
	4	827	827	17.98
17:15-17:30	1	642	642	27.53
	2	982	982	22.02
	3	533	533	
	4	1013	1013	22.02
17:30-17:45	1	642	642	27.53
	2	982	982	22.02
	3	533	533	
	4	1013	1013	22.02
17:45-18:00	1	524	524	22.47
	2	802	802	17.98
	3	435	435	
	4	827	827	17.98
18:00-18:15	1	439	439	18.82
	2	672	672	15.06
	3	364	364	
	4	693	693	15.06

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS
1	0.55	6.93	1.2	A
2	0.94	46.50	11.9	E
3	0.94	65.79	9.2	F
4	0.82	15.84	4.3	C

Main Results for each time segment

16:45 - 17:00

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	439	508	18.82	1312	0.335	437	0.5	4.106	A
2	672	499	15.06	1178	0.570	666	1.3	7.014	A
3	364	773		933	0.391	362	0.6	6.276	A
4	693	218	15.06	1316	0.526	688	1.1	5.698	A

17:00 - 17:15

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	524	608	22.47	1248	0.420	523	0.7	4.958	A
2	802	598	17.98	1119	0.716	797	2.4	11.096	B
3	435	925		794	0.548	433	1.2	9.915	A
4	827	260	17.98	1284	0.644	824	1.8	7.792	A

17:15 - 17:30

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	642	735	27.53	1166	0.550	640	1.2	6.812	A
2	982	730	22.02	1041	0.943	953	9.8	33.376	D
3	533	1116		585	0.911	512	6.5	40.900	E
4	1013	308	22.02	1242	0.816	1004	4.1	14.568	B

17:30 - 17:45

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	642	743	27.53	1161	0.553	642	1.2	6.934	A
2	982	733	22.02	1039	0.945	974	11.9	46.500	E
3	533	1132		565	0.943	522	9.2	65.788	F
4	1013	315	22.02	1237	0.819	1012	4.3	15.837	C

17:45 - 18:00

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	524	627	22.47	1236	0.424	526	0.7	5.082	A
2	802	602	17.98	1117	0.718	839	2.7	14.613	B
3	435	955		759	0.573	467	1.4	13.571	B
4	827	279	17.98	1271	0.651	837	1.9	8.456	A

18:00 - 18:15

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	439	514	18.82	1308	0.336	440	0.5	4.153	A
2	672	503	15.06	1175	0.571	677	1.4	7.341	A
3	364	782		925	0.394	367	0.7	6.489	A
4	693	221	15.06	1313	0.527	696	1.1	5.856	A

Junctions 10		
ARCADY 10 - Roundabout Module		
Version: 10.0.3.1598		
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Filename: Kingston Junction 1.1 - WDR Roundabout incl. Active Travel Roundabout.j10

Path: J:\Projects\11893 - King Kingston\05-Design\01-Calculations\Traffic

Report generation date: 28/01/2025 12:04:47

-
- »2026 Base , AM
 - »2026 Base, PM
 - »2026 Base + Comm, AM
 - »2026 Base + Comm, PM
 - »2026 Base + Comm & Prop, AM
 - »2026 Base + Comm & Prop, PM
 - »2041 Base incl. Est. Active Travel Reduction, AM
 - »2041 Base incl. Est. Active Travel Reduction, PM
 - »2041 Base + Comm incl. Est. Active Travel Reduction, AM
 - »2041 Base + Comm incl. Est. Active Travel Reduction, PM
 - »2041 Base + Comm & Prop incl. Est. Active Travel Reduction, AM
 - »2041 Base + Comm & Prop incl. Est. Active Travel Reduction, PM
 - »2041 Base + Comm & Masterplan incl. Est. Active Travel Reduction, AM
 - »2041 Base + Comm & Masterplan incl. Est. Active Travel Reduction, PM
 - »2041 Base + Comm & Masterplan & GCRR, AM
 - »2041 Base + Comm & Masterplan & GCRR, PM

Summary of junction performance

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	AM					PM				
	Set ID	Queue (PCU)	Delay (s)	RFC	LOS	Set ID	Queue (PCU)	Delay (s)	RFC	LOS
	2026 Base									
Arm 1	D1	0.7	6.38	0.42	A	D2	0.6	5.31	0.39	A
Arm 2		0.4	4.57	0.28	A		1.0	6.60	0.51	A
Arm 3		0.3	4.40	0.20	A		0.1	5.02	0.09	A
Arm 4		2.1	8.65	0.68	A		1.1	5.56	0.53	A
	2026 Base + Comm									
Arm 1	D3	0.9	7.30	0.47	A	D4	0.7	5.72	0.43	A
Arm 2		0.4	4.71	0.30	A		1.3	7.75	0.57	A
Arm 3		0.3	4.56	0.22	A		0.1	5.57	0.11	A
Arm 4		3.1	11.32	0.76	B		1.3	6.02	0.56	A
	2026 Base + Comm & Prop									
Arm 1	D5	0.9	7.53	0.48	A	D6	0.8	5.85	0.43	A
Arm 2		0.4	4.78	0.30	A		1.5	8.15	0.59	A
Arm 3		0.3	4.75	0.25	A		0.2	5.75	0.13	A
Arm 4		3.3	12.10	0.77	B		1.3	6.16	0.57	A
	2041 Base incl. Est. Active Travel Reduction									
Arm 1	D7	0.8	6.70	0.44	A	D8	0.7	5.53	0.41	A
Arm 2		0.4	4.72	0.30	A		1.1	7.03	0.53	A
Arm 3		0.3	4.48	0.21	A		0.1	5.25	0.10	A
Arm 4		2.4	9.21	0.71	A		1.2	5.87	0.55	A
	2041 Base + Comm incl. Est. Active Travel Reduction									
Arm 1	D9	0.9	7.58	0.48	A	D10	0.8	5.92	0.44	A
Arm 2		0.5	4.85	0.31	A		1.5	8.17	0.59	A
Arm 3		0.3	4.61	0.23	A		0.1	5.80	0.12	A
Arm 4		3.3	11.79	0.77	B		1.4	6.33	0.58	A
	2041 Base + Comm & Prop incl. Est. Active Travel Reduction									
Arm 1	D11	1.0	7.94	0.50	A	D12	0.8	6.06	0.45	A
Arm 2		0.5	4.91	0.32	A		1.6	8.58	0.61	A
Arm 3		0.3	4.87	0.26	A		0.2	6.01	0.14	A
Arm 4		3.8	13.51	0.80	B		1.4	6.47	0.59	A
	2041 Base + Comm & Masterplan incl. Est. Active Travel Reduction									
Arm 1	D13	1.8	13.25	0.65	B	D14	1.6	10.03	0.62	B
Arm 2		0.8	6.51	0.43	A		8.2	35.89	0.91	E
Arm 3		1.0	7.42	0.51	A		3.0	23.46	0.76	C
Arm 4		15.3	50.66	0.96	F		2.7	10.69	0.73	B
	2041 Base + Comm & Masterplan & GCRR									
Arm 1	D17	1.1	8.47	0.51	A	D18	1.0	7.23	0.51	A
Arm 2		0.5	5.46	0.33	A		2.1	11.43	0.68	B
Arm 3		1.0	6.65	0.51	A		1.5	10.39	0.61	B
Arm 4		3.1	12.61	0.76	B		1.3	6.59	0.56	A

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

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

File summary

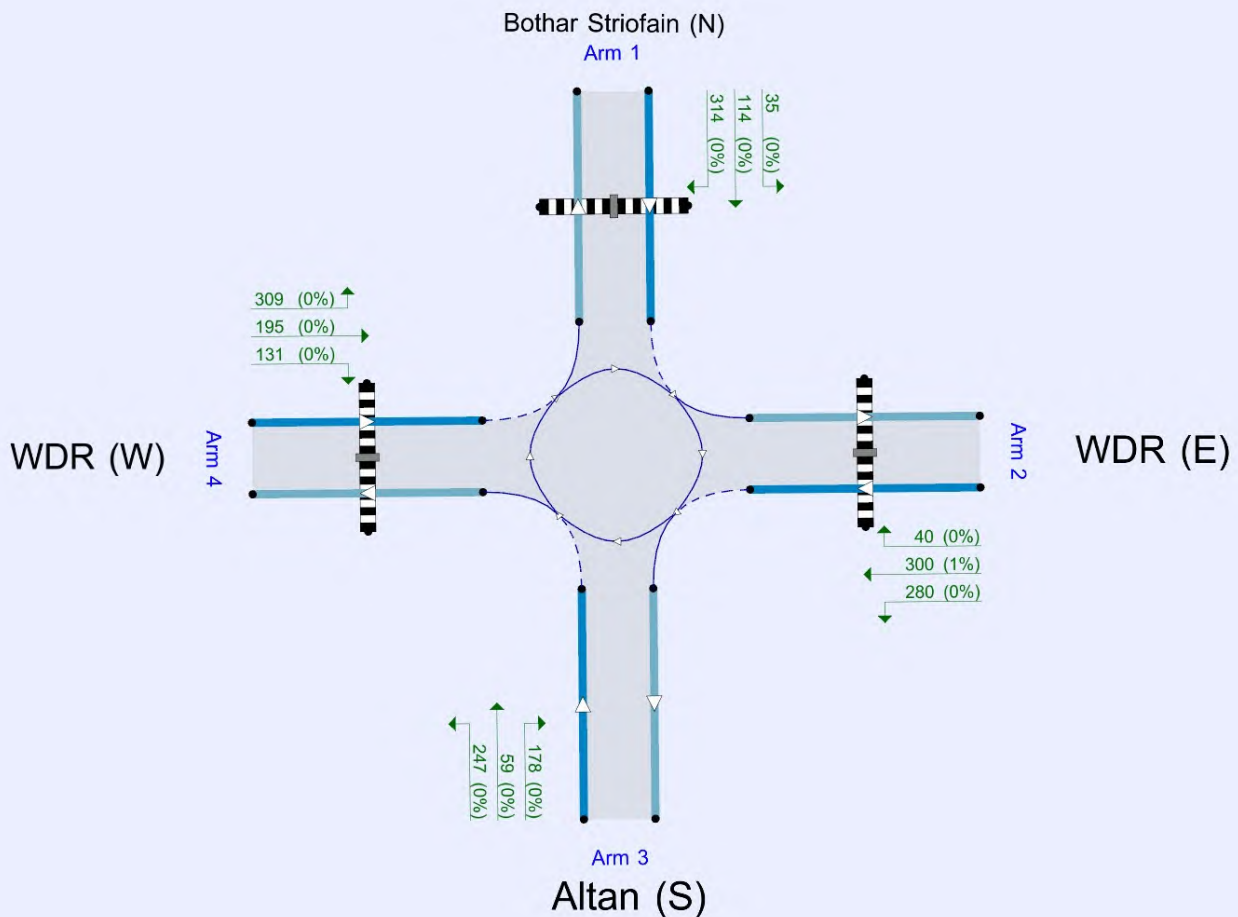
File Description

Title	
Location	
Site number	
Date	31/03/2023
Version	
Status	(new file)
Identifier	
Client	
Jobnumber	
Enumerator	TOBIN\Micheal Geraghty
Description	

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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).

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	2026 Base	AM	ONE HOUR	07:45	09:15	15
D2	2026 Base	PM	ONE HOUR	16:45	18:15	15
D3	2026 Base + Comm	AM	ONE HOUR	07:45	09:15	15
D4	2026 Base + Comm	PM	ONE HOUR	16:45	18:15	15
D5	2026 Base + Comm & Prop	AM	ONE HOUR	07:45	09:15	15
D6	2026 Base + Comm & Prop	PM	ONE HOUR	16:45	18:15	15
D7	2041 Base incl. Est. Active Travel Reduction	AM	ONE HOUR	07:45	09:15	15
D8	2041 Base incl. Est. Active Travel Reduction	PM	ONE HOUR	16:45	18:15	15
D9	2041 Base + Comm incl. Est. Active Travel Reduction	AM	ONE HOUR	07:45	09:15	15
D10	2041 Base + Comm incl. Est. Active Travel Reduction	PM	ONE HOUR	16:45	18:15	15
D11	2041 Base + Comm & Prop incl. Est. Active Travel Reduction	AM	ONE HOUR	07:45	09:15	15
D12	2041 Base + Comm & Prop incl. Est. Active Travel Reduction	PM	ONE HOUR	16:45	18:15	15
D13	2041 Base + Comm & Masterplan incl. Est. Active Travel Reduction	AM	ONE HOUR	07:45	09:15	15
D14	2041 Base + Comm & Masterplan incl. Est. Active Travel Reduction	PM	ONE HOUR	16:45	18:15	15
D17	2041 Base + Comm & Masterplan & GCRR	AM	ONE HOUR	07:45	09:15	15
D18	2041 Base + Comm & Masterplan & GCRR	PM	ONE HOUR	16:45	18:15	15

Analysis Set Details

ID	Network flow scaling factor (%)
A1	100.000

2026 Base , AM

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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	6.96	A

Junction Network

Driving side	Lighting	Network delay (s)	Network LOS
Left	Normal/unknown	6.96	A

Arms

Arms

Arm	Name	Description	No give-way line
1	untitled		
2	untitled		
3	untitled		
4	untitled		

Capacity Options

Arm	Minimum capacity (PCU/hr)	Maximum capacity (PCU/hr)
1	0	99999
2	0	99999
3	1	99999
4	0	99999

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	3.25	4.50	10.0	20.0	42.0	12.5		
2	3.50	4.57	10.0	20.0	42.0	18.0		
3	3.50	4.50	10.0	20.0	42.0	15.0		
4	3.25	5.00	15.0	20.0	42.0	15.0		

Zebra Crossings

Arm	Space between crossing and junction entry (Zebra) (PCU)	Vehicles queueing on exit (Zebra) (PCU)	Central Refuge	Crossing data type	Crossing length (entry side) (m)	Crossing time (entry side) (s)	Crossing length (exit side) (m)	Crossing time (exit side) (s)
1	2.00	2.00	✓	Distance	4.50	3.21	4.50	3.21
2	3.00	3.00	✓	Distance	5.20	3.71	4.10	2.93
4	5.00	3.00	✓	Distance	5.01	3.58	5.00	3.57

Slope / Intercept / Capacity

Roundabout Slope and Intercept used in model

Arm	Final slope	Final intercept (PCU/hr)
1	0.582	1332
2	0.581	1356
3	0.585	1357
4	0.601	1442

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

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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	2026 Base	AM	ONE HOUR	07:45	09:15	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		✓	374	100.000
2		✓	286	100.000
3		✓	191	100.000
4		✓	822	100.000

Demand overview (Pedestrians)

Arm	Average pedestrian flow (Ped/hr)
1	20.00
2	20.00
3	
4	25.00

Origin-Destination Data

Demand (PCU/hr)

	To				
		1	2	3	4
From	1	0	73	41	260
	2	24	0	53	209
	3	58	72	0	61
	4	349	400	73	0

Vehicle Mix

Heavy Vehicle Percentages

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

Detailed Demand Data

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Demand for each time segment

Time Segment	Arm	Demand (PCU/hr)	Demand in PCU (PCU/hr)	Pedestrian Demand (Ped/hr)
07:45-08:00	1	282	282	15.06
	2	215	215	15.06
	3	144	144	
	4	619	619	18.82
08:00-08:15	1	336	336	17.98
	2	257	257	17.98
	3	172	172	
	4	739	739	22.47
08:15-08:30	1	412	412	22.02
	2	315	315	22.02
	3	210	210	
	4	905	905	27.53
08:30-08:45	1	412	412	22.02
	2	315	315	22.02
	3	210	210	
	4	905	905	27.53
08:45-09:00	1	336	336	17.98
	2	257	257	17.98
	3	172	172	
	4	739	739	22.47
09:00-09:15	1	282	282	15.06
	2	215	215	15.06
	3	144	144	
	4	619	619	18.82

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS
1	0.42	6.38	0.7	A
2	0.28	4.57	0.4	A
3	0.20	4.40	0.3	A
4	0.68	8.65	2.1	A

Main Results for each time segment

07:45 - 08:00

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	282	408	15.06	1093	0.258	280	0.3	4.435	A
2	215	280	15.06	1193	0.180	214	0.2	3.741	A
3	144	369		1139	0.126	143	0.1	3.626	A
4	619	115	18.82	1367	0.453	616	0.8	4.788	A

08:00 - 08:15

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	336	489	17.98	1045	0.322	336	0.5	5.088	A
2	257	336	17.98	1161	0.221	257	0.3	4.053	A
3	172	443		1094	0.157	172	0.2	3.915	A
4	739	138	22.47	1350	0.548	737	1.2	5.891	A

08:15 - 08:30

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	412	598	22.02	979	0.421	411	0.7	6.344	A
2	315	411	22.02	1118	0.282	314	0.4	4.563	A
3	210	542		1032	0.204	210	0.3	4.396	A
4	905	169	27.53	1323	0.684	901	2.1	8.501	A

08:30 - 08:45

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	412	600	22.02	978	0.421	412	0.7	6.379	A
2	315	412	22.02	1117	0.282	315	0.4	4.570	A
3	210	543		1031	0.204	210	0.3	4.401	A
4	905	170	27.53	1323	0.684	905	2.1	8.648	A

08:45 - 09:00

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	336	492	17.98	1043	0.322	337	0.5	5.123	A
2	257	337	17.98	1160	0.222	258	0.3	4.064	A
3	172	444		1094	0.157	172	0.2	3.922	A
4	739	139	22.47	1349	0.548	743	1.2	5.996	A

09:00 - 09:15

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	282	411	15.06	1091	0.258	282	0.4	4.467	A
2	215	282	15.06	1192	0.181	216	0.2	3.756	A
3	144	372		1138	0.126	144	0.1	3.638	A
4	619	116	18.82	1367	0.453	620	0.8	4.853	A

2026 Base, PM

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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	5.81	A

Junction Network

Driving side	Lighting	Network delay (s)	Network LOS
Left	Normal/unknown	5.81	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	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		✓	395	100.000
2		✓	517	100.000
3		✓	68	100.000
4		✓	664	100.000

Demand overview (Pedestrians)

Arm	Average pedestrian flow (Ped/hr)
1	5.00
2	5.00
3	
4	5.00

Origin-Destination Data

Demand (PCU/hr)

	To				
From		1	2	3	4
	1	0	41	15	339
	2	44	0	36	437
	3	8	25	0	35
	4	349	298	17	0

Vehicle Mix

Heavy Vehicle Percentages

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

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Detailed Demand Data

Demand for each time segment

Time Segment	Arm	Demand (PCU/hr)	Demand in PCU (PCU/hr)	Pedestrian Demand (Ped/hr)
16:45-17:00	1	297	297	3.76
	2	389	389	3.76
	3	51	51	
	4	500	500	3.76
17:00-17:15	1	355	355	4.49
	2	465	465	4.49
	3	61	61	
	4	597	597	4.49
17:15-17:30	1	435	435	5.51
	2	569	569	5.51
	3	75	75	
	4	731	731	5.51
17:30-17:45	1	435	435	5.51
	2	569	569	5.51
	3	75	75	
	4	731	731	5.51
17:45-18:00	1	355	355	4.49
	2	465	465	4.49
	3	61	61	
	4	597	597	4.49
18:00-18:15	1	297	297	3.76
	2	389	389	3.76
	3	51	51	
	4	500	500	3.76

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS
1	0.39	5.31	0.6	A
2	0.51	6.60	1.0	A
3	0.09	5.02	0.1	A
4	0.53	5.56	1.1	A

Main Results for each time segment

16:45 - 17:00

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	297	255	3.76	1183	0.251	296	0.3	4.053	A
2	389	278	3.76	1195	0.326	387	0.5	4.486	A
3	51	614		989	0.052	51	0.1	3.837	A
4	500	58	3.76	1404	0.356	498	0.5	3.964	A

17:00 - 17:15

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	355	305	4.49	1154	0.308	355	0.4	4.504	A
2	465	333	4.49	1163	0.400	464	0.7	5.191	A
3	61	736		909	0.067	61	0.1	4.244	A
4	597	69	4.49	1394	0.428	596	0.7	4.508	A

17:15 - 17:30

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	435	374	5.51	1113	0.391	434	0.6	5.295	A
2	569	408	5.51	1119	0.509	568	1.0	6.566	A
3	75	901		794	0.094	75	0.1	5.007	A
4	731	85	5.51	1378	0.530	730	1.1	5.538	A

17:30 - 17:45

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	435	374	5.51	1113	0.391	435	0.6	5.308	A
2	569	408	5.51	1119	0.509	569	1.0	6.604	A
3	75	903		792	0.094	75	0.1	5.017	A
4	731	85	5.51	1378	0.531	731	1.1	5.563	A

17:45 - 18:00

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	355	306	4.49	1153	0.308	356	0.4	4.522	A
2	465	334	4.49	1162	0.400	466	0.7	5.228	A
3	61	739		907	0.067	61	0.1	4.257	A
4	597	69	4.49	1393	0.428	598	0.8	4.535	A

18:00 - 18:15

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	297	256	3.76	1182	0.252	298	0.3	4.072	A
2	389	280	3.76	1194	0.326	390	0.5	4.521	A
3	51	618		987	0.052	51	0.1	3.849	A
4	500	58	3.76	1403	0.356	501	0.6	3.991	A

2026 Base + Comm, AM

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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	8.59	A

Junction Network

Driving side	Lighting	Network delay (s)	Network LOS
Left	Normal/unknown	8.59	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 + Comm	AM	ONE HOUR	07:45	09:15	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		✓	393	100.000
2		✓	299	100.000
3		✓	201	100.000
4		✓	906	100.000

Demand overview (Pedestrians)

Arm	Average pedestrian flow (Ped/hr)
1	20.00
2	20.00
3	
4	25.00

Origin-Destination Data

Demand (PCU/hr)

	To				
From		1	2	3	4
	1	0	80	41	272
	2	24	0	54	221
	3	58	79	0	64
	4	366	463	77	0

Vehicle Mix

Heavy Vehicle Percentages

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

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Detailed Demand Data

Demand for each time segment

Time Segment	Arm	Demand (PCU/hr)	Demand in PCU (PCU/hr)	Pedestrian Demand (Ped/hr)
07:45-08:00	1	296	296	15.06
	2	225	225	15.06
	3	151	151	
	4	682	682	18.82
08:00-08:15	1	353	353	17.98
	2	269	269	17.98
	3	181	181	
	4	814	814	22.47
08:15-08:30	1	433	433	22.02
	2	329	329	22.02
	3	221	221	
	4	998	998	27.53
08:30-08:45	1	433	433	22.02
	2	329	329	22.02
	3	221	221	
	4	998	998	27.53
08:45-09:00	1	353	353	17.98
	2	269	269	17.98
	3	181	181	
	4	814	814	22.47
09:00-09:15	1	296	296	15.06
	2	225	225	15.06
	3	151	151	
	4	682	682	18.82

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS
1	0.47	7.30	0.9	A
2	0.30	4.71	0.4	A
3	0.22	4.56	0.3	A
4	0.76	11.32	3.1	B

Main Results for each time segment

07:45 - 08:00

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	296	463	15.06	1060	0.279	294	0.4	4.704	A
2	225	292	15.06	1186	0.190	224	0.2	3.806	A
3	151	387		1128	0.134	151	0.2	3.695	A
4	682	121	18.82	1364	0.500	678	1.0	5.243	A

08:00 - 08:15

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	353	555	17.98	1005	0.351	353	0.5	5.529	A
2	269	350	17.98	1153	0.233	269	0.3	4.145	A
3	181	464		1081	0.167	181	0.2	4.011	A
4	814	145	22.47	1345	0.606	812	1.5	6.762	A

08:15 - 08:30

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	433	678	22.02	929	0.466	431	0.9	7.234	A
2	329	428	22.02	1108	0.297	329	0.4	4.704	A
3	221	568		1015	0.218	221	0.3	4.550	A
4	998	177	27.53	1316	0.758	992	3.0	10.934	B

08:30 - 08:45

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	433	681	22.02	927	0.467	433	0.9	7.303	A
2	329	429	22.02	1107	0.297	329	0.4	4.715	A
3	221	569		1014	0.218	221	0.3	4.559	A
4	998	177	27.53	1316	0.758	997	3.1	11.317	B

08:45 - 09:00

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	353	560	17.98	1002	0.353	355	0.6	5.586	A
2	269	352	17.98	1152	0.233	269	0.3	4.157	A
3	181	466		1080	0.167	181	0.2	4.023	A
4	814	145	22.47	1344	0.606	820	1.6	6.979	A

09:00 - 09:15

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	296	467	15.06	1058	0.280	297	0.4	4.747	A
2	225	294	15.06	1185	0.190	225	0.2	3.822	A
3	151	390		1127	0.134	152	0.2	3.708	A
4	682	121	18.82	1363	0.500	684	1.0	5.344	A

2026 Base + Comm, PM

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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	6.49	A

Junction Network

Driving side	Lighting	Network delay (s)	Network LOS
Left	Normal/unknown	6.49	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 + Comm	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		✓	424	100.000
2		✓	574	100.000
3		✓	70	100.000
4		✓	705	100.000

Demand overview (Pedestrians)

Arm	Average pedestrian flow (Ped/hr)
1	5.00
2	5.00
3	
4	5.00

Origin-Destination Data

Demand (PCU/hr)

	To				
From		1	2	3	4
	1	0	41	15	368
	2	47	0	38	489
	3	8	25	0	37
	4	364	324	17	0

Vehicle Mix

Heavy Vehicle Percentages

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

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Detailed Demand Data

Demand for each time segment

Time Segment	Arm	Demand (PCU/hr)	Demand in PCU (PCU/hr)	Pedestrian Demand (Ped/hr)
16:45-17:00	1	319	319	3.76
	2	432	432	3.76
	3	53	53	
	4	531	531	3.76
17:00-17:15	1	381	381	4.49
	2	516	516	4.49
	3	63	63	
	4	634	634	4.49
17:15-17:30	1	467	467	5.51
	2	632	632	5.51
	3	77	77	
	4	776	776	5.51
17:30-17:45	1	467	467	5.51
	2	632	632	5.51
	3	77	77	
	4	776	776	5.51
17:45-18:00	1	381	381	4.49
	2	516	516	4.49
	3	63	63	
	4	634	634	4.49
18:00-18:15	1	319	319	3.76
	2	432	432	3.76
	3	53	53	
	4	531	531	3.76

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS
1	0.43	5.72	0.7	A
2	0.57	7.75	1.3	A
3	0.11	5.57	0.1	A
4	0.56	6.02	1.3	A

Main Results for each time segment

16:45 - 17:00

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	319	274	3.76	1172	0.272	318	0.4	4.209	A
2	432	300	3.76	1182	0.366	430	0.6	4.812	A
3	53	677		948	0.056	52	0.1	4.016	A
4	531	60	3.76	1402	0.379	528	0.6	4.110	A

17:00 - 17:15

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	381	329	4.49	1140	0.334	381	0.5	4.738	A
2	516	359	4.49	1147	0.450	515	0.8	5.733	A
3	63	811		858	0.073	63	0.1	4.528	A
4	634	72	4.49	1391	0.456	633	0.8	4.742	A

17:15 - 17:30

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	467	402	5.51	1097	0.426	466	0.7	5.700	A
2	632	440	5.51	1101	0.574	630	1.3	7.676	A
3	77	993		725	0.106	77	0.1	5.551	A
4	776	88	5.51	1374	0.565	774	1.3	5.982	A

17:30 - 17:45

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	467	403	5.51	1096	0.426	467	0.7	5.721	A
2	632	440	5.51	1100	0.574	632	1.3	7.750	A
3	77	995		723	0.107	77	0.1	5.571	A
4	776	88	5.51	1374	0.565	776	1.3	6.020	A

17:45 - 18:00

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	381	330	4.49	1139	0.335	382	0.5	4.762	A
2	516	360	4.49	1147	0.450	518	0.8	5.793	A
3	63	815		855	0.074	63	0.1	4.548	A
4	634	72	4.49	1391	0.456	636	0.8	4.779	A

18:00 - 18:15

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	319	276	3.76	1171	0.273	320	0.4	4.232	A
2	432	302	3.76	1181	0.366	433	0.6	4.861	A
3	53	682		945	0.056	53	0.1	4.035	A
4	531	60	3.76	1401	0.379	532	0.6	4.145	A

2026 Base + Comm & Prop, AM

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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	8.99	A

Junction Network

Driving side	Lighting	Network delay (s)	Network LOS
Left	Normal/unknown	8.99	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	2026 Base + Comm & Prop	AM	ONE HOUR	07:45	09:15	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		✓	396	100.000
2		✓	303	100.000
3		✓	230	100.000
4		✓	912	100.000

Demand overview (Pedestrians)

Arm	Average pedestrian flow (Ped/hr)
1	20.00
2	20.00
3	
4	20.00

Origin-Destination Data

Demand (PCU/hr)

	To				
From		1	2	3	4
	1	0	80	44	272
	2	24	0	58	221
	3	67	90	0	73
	4	366	463	83	0

Vehicle Mix

Heavy Vehicle Percentages

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

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Detailed Demand Data

Demand for each time segment

Time Segment	Arm	Demand (PCU/hr)	Demand in PCU (PCU/hr)	Pedestrian Demand (Ped/hr)
07:45-08:00	1	298	298	15.06
	2	228	228	15.06
	3	173	173	
	4	687	687	15.06
08:00-08:15	1	356	356	17.98
	2	272	272	17.98
	3	207	207	
	4	820	820	17.98
08:15-08:30	1	436	436	22.02
	2	334	334	22.02
	3	253	253	
	4	1004	1004	22.02
08:30-08:45	1	436	436	22.02
	2	334	334	22.02
	3	253	253	
	4	1004	1004	22.02
08:45-09:00	1	356	356	17.98
	2	272	272	17.98
	3	207	207	
	4	820	820	17.98
09:00-09:15	1	298	298	15.06
	2	228	228	15.06
	3	173	173	
	4	687	687	15.06

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS
1	0.48	7.53	0.9	A
2	0.30	4.78	0.4	A
3	0.25	4.75	0.3	A
4	0.77	12.10	3.3	B

Main Results for each time segment

07:45 - 08:00

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	298	476	15.06	1053	0.283	297	0.4	4.766	A
2	228	299	15.06	1183	0.193	227	0.2	3.833	A
3	173	387		1128	0.153	172	0.2	3.779	A
4	687	136	15.06	1354	0.507	683	1.0	5.350	A

08:00 - 08:15

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	356	570	17.98	996	0.357	355	0.6	5.630	A
2	272	358	17.98	1148	0.237	272	0.3	4.184	A
3	207	464		1081	0.191	207	0.2	4.132	A
4	820	163	17.98	1333	0.615	818	1.6	6.977	A

08:15 - 08:30

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	436	696	22.02	918	0.475	435	0.9	7.451	A
2	334	438	22.02	1102	0.303	333	0.4	4.766	A
3	253	568		1014	0.250	253	0.3	4.744	A
4	1004	199	22.02	1302	0.771	998	3.2	11.624	B

08:30 - 08:45

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	436	700	22.02	916	0.476	436	0.9	7.530	A
2	334	439	22.02	1101	0.303	334	0.4	4.777	A
3	253	569		1013	0.250	253	0.3	4.753	A
4	1004	199	22.02	1302	0.772	1004	3.3	12.100	B

08:45 - 09:00

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	356	576	17.98	993	0.359	357	0.6	5.697	A
2	272	360	17.98	1147	0.238	273	0.3	4.198	A
3	207	466		1080	0.192	207	0.2	4.143	A
4	820	163	17.98	1333	0.615	827	1.6	7.231	A

09:00 - 09:15

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	298	480	15.06	1050	0.284	299	0.4	4.809	A
2	228	301	15.06	1181	0.193	228	0.2	3.850	A
3	173	390		1127	0.154	173	0.2	3.793	A
4	687	136	15.06	1354	0.507	689	1.0	5.459	A

2026 Base + Comm & Prop, PM

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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	6.71	A

Junction Network

Driving side	Lighting	Network delay (s)	Network LOS
Left	Normal/unknown	6.71	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	2026 Base + Comm & Prop	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		✓	429	100.000
2		✓	588	100.000
3		✓	86	100.000
4		✓	712	100.000

Demand overview (Pedestrians)

Arm	Average pedestrian flow (Ped/hr)
1	5.00
2	5.00
3	
4	5.00

Origin-Destination Data

Demand (PCU/hr)

	To				
From		1	2	3	4
	1	0	41	20	368
	2	47	0	52	489
	3	10	31	0	45
	4	364	324	24	0

Vehicle Mix

Heavy Vehicle Percentages

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

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Detailed Demand Data

Demand for each time segment

Time Segment	Arm	Demand (PCU/hr)	Demand in PCU (PCU/hr)	Pedestrian Demand (Ped/hr)
16:45-17:00	1	323	323	3.76
	2	443	443	3.76
	3	65	65	
	4	536	536	3.76
17:00-17:15	1	386	386	4.49
	2	529	529	4.49
	3	77	77	
	4	640	640	4.49
17:15-17:30	1	472	472	5.51
	2	647	647	5.51
	3	95	95	
	4	784	784	5.51
17:30-17:45	1	472	472	5.51
	2	647	647	5.51
	3	95	95	
	4	784	784	5.51
17:45-18:00	1	386	386	4.49
	2	529	529	4.49
	3	77	77	
	4	640	640	4.49
18:00-18:15	1	323	323	3.76
	2	443	443	3.76
	3	65	65	
	4	536	536	3.76

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS
1	0.43	5.85	0.8	A
2	0.59	8.15	1.5	A
3	0.13	5.75	0.2	A
4	0.57	6.16	1.3	A

Main Results for each time segment

16:45 - 17:00

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	323	284	3.76	1166	0.277	321	0.4	4.254	A
2	443	309	3.76	1177	0.376	440	0.6	4.913	A
3	65	677		948	0.068	64	0.1	4.073	A
4	536	66	3.76	1398	0.383	534	0.6	4.153	A

17:00 - 17:15

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	386	340	4.49	1133	0.340	385	0.5	4.810	A
2	529	370	4.49	1141	0.463	528	0.9	5.905	A
3	77	811		857	0.090	77	0.1	4.617	A
4	640	79	4.49	1387	0.462	639	0.8	4.810	A

17:15 - 17:30

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	472	416	5.51	1088	0.434	471	0.8	5.826	A
2	647	453	5.51	1093	0.592	645	1.4	8.060	A
3	95	992		723	0.131	94	0.1	5.723	A
4	784	97	5.51	1369	0.573	782	1.3	6.114	A

17:30 - 17:45

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	472	417	5.51	1088	0.434	472	0.8	5.850	A
2	647	454	5.51	1093	0.593	647	1.5	8.150	A
3	95	995		721	0.131	95	0.2	5.745	A
4	784	97	5.51	1369	0.573	784	1.3	6.156	A

17:45 - 18:00

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	386	342	4.49	1132	0.341	387	0.5	4.834	A
2	529	371	4.49	1140	0.464	531	0.9	5.978	A
3	77	816		854	0.091	78	0.1	4.638	A
4	640	79	4.49	1386	0.462	642	0.9	4.847	A

18:00 - 18:15

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	323	286	3.76	1165	0.277	324	0.4	4.282	A
2	443	311	3.76	1176	0.377	444	0.6	4.966	A
3	65	682		945	0.069	65	0.1	4.091	A
4	536	66	3.76	1398	0.384	537	0.6	4.187	A

2041 Base incl. Est. Active Travel Reduction, AM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Pedestrian Crossing	Arm 1 - Pedestrian crossing	Pedestrian crossing uses default flow of 0. Is this correct?
Warning	Pedestrian Crossing	Arm 2 - Pedestrian crossing	Pedestrian crossing uses default flow of 0. Is this correct?
Warning	Pedestrian Crossing	Arm 4 - Pedestrian crossing	Pedestrian crossing uses default flow of 0. Is this correct?

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	7.34	A

Junction Network

Driving side	Lighting	Network delay (s)	Network LOS
Left	Normal/unknown	7.34	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	2041 Base incl. Est. Active Travel Reduction	AM	ONE HOUR	07:45	09:15	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		✓	389	100.000
2		✓	300	100.000
3		✓	199	100.000
4		✓	857	100.000

Demand overview (Pedestrians)

Arm	Average pedestrian flow (Ped/hr)
1	0.00
2	0.00
3	
4	0.00

Origin-Destination Data

Demand (PCU/hr)

	To				
		1	2	3	4
From	1	0	76	43	270
	2	25	0	56	219
	3	60	76	0	63
	4	364	417	76	0

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Vehicle Mix

Heavy Vehicle Percentages

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

Detailed Demand Data

Demand for each time segment

Time Segment	Arm	Demand (PCU/hr)	Demand in PCU (PCU/hr)	Pedestrian Demand (Ped/hr)
07:45-08:00	1	293	293	0.00
	2	226	226	0.00
	3	150	150	
	4	645	645	0.00
08:00-08:15	1	350	350	0.00
	2	270	270	0.00
	3	179	179	
	4	770	770	0.00
08:15-08:30	1	428	428	0.00
	2	330	330	0.00
	3	219	219	
	4	944	944	0.00
08:30-08:45	1	428	428	0.00
	2	330	330	0.00
	3	219	219	
	4	944	944	0.00
08:45-09:00	1	350	350	0.00
	2	270	270	0.00
	3	179	179	
	4	770	770	0.00
09:00-09:15	1	293	293	0.00
	2	226	226	0.00
	3	150	150	
	4	645	645	0.00

Results

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Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS
1	0.44	6.70	0.8	A
2	0.30	4.72	0.4	A
3	0.21	4.48	0.3	A
4	0.71	9.21	2.4	A

Main Results for each time segment

07:45 - 08:00

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	293	426	0.00	1083	0.270	291	0.4	4.551	A
2	226	291	0.00	1187	0.190	225	0.2	3.807	A
3	150	385		1132	0.132	149	0.2	3.675	A
4	645	121	0.00	1370	0.471	642	0.9	4.943	A

08:00 - 08:15

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	350	510	0.00	1034	0.338	349	0.5	5.266	A
2	270	349	0.00	1153	0.234	269	0.3	4.146	A
3	179	461		1087	0.165	179	0.2	3.975	A
4	770	145	0.00	1355	0.568	769	1.3	6.147	A

08:15 - 08:30

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	428	624	0.00	968	0.442	427	0.8	6.661	A
2	330	427	0.00	1108	0.298	330	0.4	4.707	A
3	219	565		1027	0.213	219	0.3	4.470	A
4	944	177	0.00	1336	0.706	939	2.3	9.027	A

08:30 - 08:45

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	428	626	0.00	967	0.443	428	0.8	6.704	A
2	330	428	0.00	1107	0.298	330	0.4	4.717	A
3	219	566		1026	0.213	219	0.3	4.475	A
4	944	177	0.00	1336	0.706	943	2.4	9.208	A

08:45 - 09:00

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	350	514	0.00	1032	0.339	351	0.5	5.307	A
2	270	351	0.00	1152	0.234	270	0.3	4.159	A
3	179	463		1086	0.165	179	0.2	3.985	A
4	770	145	0.00	1355	0.569	775	1.3	6.270	A

09:00 - 09:15

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	293	429	0.00	1082	0.271	293	0.4	4.587	A
2	226	293	0.00	1186	0.190	226	0.2	3.823	A
3	150	388		1131	0.133	150	0.2	3.687	A
4	645	121	0.00	1369	0.471	647	0.9	5.017	A

2041 Base incl. Est. Active Travel Reduction, 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	6.13	A

Junction Network

Driving side	Lighting	Network delay (s)	Network LOS
Left	Normal/unknown	6.13	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	2041 Base incl. Est. Active Travel Reduction	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		✓	411	100.000
2		✓	539	100.000
3		✓	71	100.000
4		✓	691	100.000

Demand overview (Pedestrians)

Arm	Average pedestrian flow (Ped/hr)
1	5.00
2	5.00
3	
4	5.00

Origin-Destination Data

Demand (PCU/hr)

	To				
From		1	2	3	4
	1	0	43	15	353
	2	46	0	37	456
	3	9	26	0	36
	4	363	311	17	0

Vehicle Mix

Heavy Vehicle Percentages

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

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Detailed Demand Data

Demand for each time segment

Time Segment	Arm	Demand (PCU/hr)	Demand in PCU (PCU/hr)	Pedestrian Demand (Ped/hr)
16:45-17:00	1	309	309	3.76
	2	406	406	3.76
	3	53	53	
	4	520	520	3.76
17:00-17:15	1	369	369	4.49
	2	485	485	4.49
	3	64	64	
	4	621	621	4.49
17:15-17:30	1	453	453	5.51
	2	593	593	5.51
	3	78	78	
	4	761	761	5.51
17:30-17:45	1	453	453	5.51
	2	593	593	5.51
	3	78	78	
	4	761	761	5.51
17:45-18:00	1	369	369	4.49
	2	485	485	4.49
	3	64	64	
	4	621	621	4.49
18:00-18:15	1	309	309	3.76
	2	406	406	3.76
	3	53	53	
	4	520	520	3.76

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS
1	0.41	5.53	0.7	A
2	0.53	7.03	1.1	A
3	0.10	5.25	0.1	A
4	0.55	5.87	1.2	A

Main Results for each time segment

16:45 - 17:00

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	309	265	3.76	1177	0.263	308	0.4	4.136	A
2	406	289	3.76	1189	0.341	404	0.5	4.614	A
3	53	641		972	0.055	53	0.1	3.916	A
4	520	61	3.76	1401	0.371	518	0.6	4.065	A

17:00 - 17:15

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	369	318	4.49	1146	0.322	369	0.5	4.629	A
2	485	346	4.49	1155	0.419	484	0.7	5.399	A
3	64	767		888	0.072	64	0.1	4.367	A
4	621	73	4.49	1391	0.447	620	0.8	4.669	A

17:15 - 17:30

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	453	389	5.51	1104	0.410	452	0.7	5.509	A
2	593	423	5.51	1110	0.534	592	1.1	6.979	A
3	78	939		766	0.102	78	0.1	5.233	A
4	761	89	5.51	1374	0.554	759	1.2	5.840	A

17:30 - 17:45

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	453	390	5.51	1104	0.410	453	0.7	5.526	A
2	593	424	5.51	1110	0.535	593	1.1	7.029	A
3	78	941		764	0.102	78	0.1	5.248	A
4	761	89	5.51	1374	0.554	761	1.2	5.874	A

17:45 - 18:00

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	369	319	4.49	1145	0.323	370	0.5	4.649	A
2	485	347	4.49	1155	0.420	486	0.7	5.446	A
3	64	771		886	0.072	64	0.1	4.381	A
4	621	73	4.49	1390	0.447	623	0.8	4.702	A

18:00 - 18:15

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	309	267	3.76	1176	0.263	310	0.4	4.158	A
2	406	290	3.76	1187	0.342	407	0.5	4.653	A
3	53	645		970	0.055	54	0.1	3.930	A
4	520	61	3.76	1401	0.371	521	0.6	4.097	A

2041 Base + Comm incl. Est. Active Travel Reduction, AM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Pedestrian Crossing	Arm 1 - Pedestrian crossing	Pedestrian crossing uses default flow of 0. Is this correct?
Warning	Pedestrian Crossing	Arm 2 - Pedestrian crossing	Pedestrian crossing uses default flow of 0. Is this correct?
Warning	Pedestrian Crossing	Arm 4 - Pedestrian crossing	Pedestrian crossing uses default flow of 0. Is this correct?

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	8.90	A

Junction Network

Driving side	Lighting	Network delay (s)	Network LOS
Left	Normal/unknown	8.90	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)
D9	2041 Base + Comm incl. Est. Active Travel Reduction	AM	ONE HOUR	07:45	09:15	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		✓	407	100.000
2		✓	311	100.000
3		✓	208	100.000
4		✓	932	100.000

Demand overview (Pedestrians)

Arm	Average pedestrian flow (Ped/hr)
1	0.00
2	0.00
3	
4	0.00

Origin-Destination Data

Demand (PCU/hr)

	To				
		1	2	3	4
From	1	0	83	43	281
	2	25	0	56	230
	3	60	82	0	66
	4	379	473	80	0

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Vehicle Mix

Heavy Vehicle Percentages

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

Detailed Demand Data

Demand for each time segment

Time Segment	Arm	Demand (PCU/hr)	Demand in PCU (PCU/hr)	Pedestrian Demand (Ped/hr)
07:45-08:00	1	306	306	0.00
	2	234	234	0.00
	3	157	157	
	4	702	702	0.00
08:00-08:15	1	366	366	0.00
	2	280	280	0.00
	3	187	187	
	4	838	838	0.00
08:15-08:30	1	448	448	0.00
	2	342	342	0.00
	3	229	229	
	4	1026	1026	0.00
08:30-08:45	1	448	448	0.00
	2	342	342	0.00
	3	229	229	
	4	1026	1026	0.00
08:45-09:00	1	366	366	0.00
	2	280	280	0.00
	3	187	187	
	4	838	838	0.00
09:00-09:15	1	306	306	0.00
	2	234	234	0.00
	3	157	157	
	4	702	702	0.00

Results

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Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS
1	0.48	7.58	0.9	A
2	0.31	4.85	0.5	A
3	0.23	4.61	0.3	A
4	0.77	11.79	3.3	B

Main Results for each time segment

07:45 - 08:00

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	306	475	0.00	1055	0.290	305	0.4	4.803	A
2	234	302	0.00	1180	0.198	233	0.3	3.866	A
3	157	402		1122	0.140	156	0.2	3.738	A
4	702	125	0.00	1367	0.513	697	1.0	5.367	A

08:00 - 08:15

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	366	569	0.00	1000	0.366	365	0.6	5.682	A
2	280	362	0.00	1146	0.244	279	0.3	4.231	A
3	187	481		1076	0.174	187	0.2	4.063	A
4	838	150	0.00	1352	0.620	836	1.6	6.968	A

08:15 - 08:30

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	448	695	0.00	927	0.484	447	0.9	7.498	A
2	342	443	0.00	1099	0.312	342	0.5	4.841	A
3	229	589		1013	0.226	229	0.3	4.605	A
4	1026	184	0.00	1332	0.771	1020	3.2	11.354	B

08:30 - 08:45

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	448	699	0.00	925	0.485	448	0.9	7.576	A
2	342	445	0.00	1098	0.312	342	0.5	4.853	A
3	229	590		1012	0.226	229	0.3	4.614	A
4	1026	184	0.00	1332	0.771	1026	3.3	11.785	B

08:45 - 09:00

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	366	575	0.00	997	0.367	367	0.6	5.749	A
2	280	365	0.00	1144	0.244	280	0.3	4.245	A
3	187	483		1075	0.174	187	0.2	4.075	A
4	838	150	0.00	1352	0.620	844	1.7	7.209	A

09:00 - 09:15

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	306	480	0.00	1052	0.291	307	0.4	4.849	A
2	234	305	0.00	1179	0.199	234	0.3	3.883	A
3	157	404		1121	0.140	157	0.2	3.743	A
4	702	126	0.00	1366	0.513	704	1.1	5.477	A

2041 Base + Comm incl. Est. Active Travel Reduction, 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	6.80	A

Junction Network

Driving side	Lighting	Network delay (s)	Network LOS
Left	Normal/unknown	6.80	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 + Comm incl. Est. Active Travel Reduction	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		✓	437	100.000
2		✓	589	100.000
3		✓	74	100.000
4		✓	728	100.000

Demand overview (Pedestrians)

Arm	Average pedestrian flow (Ped/hr)
1	5.00
2	5.00
3	
4	5.00

Origin-Destination Data

Demand (PCU/hr)

	To				
	1	2	3	4	
From	1	0	43	15	379
	2	48	0	39	502
	3	9	26	0	39
	4	377	333	18	0

Vehicle Mix

Heavy Vehicle Percentages

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

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Detailed Demand Data

Demand for each time segment

Time Segment	Arm	Demand (PCU/hr)	Demand in PCU (PCU/hr)	Pedestrian Demand (Ped/hr)
16:45-17:00	1	329	329	3.76
	2	443	443	3.76
	3	56	56	
	4	548	548	3.76
17:00-17:15	1	393	393	4.49
	2	529	529	4.49
	3	67	67	
	4	654	654	4.49
17:15-17:30	1	481	481	5.51
	2	649	649	5.51
	3	81	81	
	4	802	802	5.51
17:30-17:45	1	481	481	5.51
	2	649	649	5.51
	3	81	81	
	4	802	802	5.51
17:45-18:00	1	393	393	4.49
	2	529	529	4.49
	3	67	67	
	4	654	654	4.49
18:00-18:15	1	329	329	3.76
	2	443	443	3.76
	3	56	56	
	4	548	548	3.76

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS
1	0.44	5.92	0.8	A
2	0.59	8.17	1.5	A
3	0.12	5.80	0.1	A
4	0.58	6.33	1.4	A

Main Results for each time segment

16:45 - 17:00

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	329	283	3.76	1167	0.282	327	0.4	4.281	A
2	443	309	3.76	1177	0.377	441	0.6	4.919	A
3	56	696		936	0.060	55	0.1	4.087	A
4	548	62	3.76	1400	0.392	546	0.6	4.201	A

17:00 - 17:15

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	393	338	4.49	1134	0.346	392	0.5	4.850	A
2	529	370	4.49	1141	0.464	528	0.9	5.915	A
3	67	834		842	0.079	66	0.1	4.642	A
4	654	74	4.49	1389	0.471	653	0.9	4.892	A

17:15 - 17:30

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	481	414	5.51	1089	0.442	480	0.8	5.899	A
2	649	453	5.51	1093	0.593	646	1.4	8.080	A
3	81	1020		704	0.116	81	0.1	5.780	A
4	802	91	5.51	1371	0.585	800	1.4	6.280	A

17:30 - 17:45

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	481	415	5.51	1089	0.442	481	0.8	5.923	A
2	649	454	5.51	1093	0.594	648	1.5	8.172	A
3	81	1023		702	0.116	81	0.1	5.804	A
4	802	91	5.51	1370	0.585	801	1.4	6.328	A

17:45 - 18:00

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	393	340	4.49	1133	0.347	394	0.5	4.875	A
2	529	371	4.49	1140	0.464	532	0.9	5.989	A
3	67	838		839	0.079	67	0.1	4.665	A
4	654	75	4.49	1388	0.471	656	0.9	4.932	A

18:00 - 18:15

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	329	284	3.76	1166	0.282	330	0.4	4.307	A
2	443	311	3.76	1176	0.377	445	0.6	4.974	A
3	56	701		933	0.060	56	0.1	4.105	A
4	548	63	3.76	1399	0.392	549	0.6	4.238	A

2041 Base + Comm & Prop incl. Est. Active Travel Reduction, AM

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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	9.81	A

Junction Network

Driving side	Lighting	Network delay (s)	Network LOS
Left	Normal/unknown	9.81	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)
D11	2041 Base + Comm & Prop incl. Est. Active Travel Reduction	AM	ONE HOUR	07:45	09:15	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		✓	410	100.000
2		✓	315	100.000
3		✓	234	100.000
4		✓	937	100.000

Demand overview (Pedestrians)

Arm	Average pedestrian flow (Ped/hr)
1	10.00
2	10.00
3	
4	30.00

Origin-Destination Data

Demand (PCU/hr)

	To				
	1	2	3	4	
From	1	0	83	46	281
	2	25	0	60	230
	3	68	92	0	74
	4	379	473	85	0

Vehicle Mix

Heavy Vehicle Percentages

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

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Detailed Demand Data

Demand for each time segment

Time Segment	Arm	Demand (PCU/hr)	Demand in PCU (PCU/hr)	Pedestrian Demand (Ped/hr)
07:45-08:00	1	309	309	7.53
	2	237	237	7.53
	3	176	176	
	4	705	705	22.59
08:00-08:15	1	369	369	8.99
	2	283	283	8.99
	3	210	210	
	4	842	842	26.97
08:15-08:30	1	451	451	11.01
	2	347	347	11.01
	3	258	258	
	4	1032	1032	33.03
08:30-08:45	1	451	451	11.01
	2	347	347	11.01
	3	258	258	
	4	1032	1032	33.03
08:45-09:00	1	369	369	8.99
	2	283	283	8.99
	3	210	210	
	4	842	842	26.97
09:00-09:15	1	309	309	7.53
	2	237	237	7.53
	3	176	176	
	4	705	705	22.59

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS
1	0.50	7.94	1.0	A
2	0.32	4.91	0.5	A
3	0.26	4.87	0.3	A
4	0.80	13.51	3.8	B

Main Results for each time segment

07:45 - 08:00

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	309	486	7.53	1047	0.295	307	0.4	4.872	A
2	237	308	7.53	1177	0.202	236	0.3	3.893	A
3	176	402		1120	0.157	175	0.2	3.822	A
4	705	139	22.59	1352	0.522	701	1.1	5.518	A

08:00 - 08:15

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	369	583	8.99	989	0.373	368	0.6	5.812	A
2	283	370	8.99	1141	0.248	283	0.3	4.269	A
3	210	481		1070	0.197	210	0.2	4.201	A
4	842	166	26.97	1330	0.633	840	1.7	7.333	A

08:15 - 08:30

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	451	711	11.01	909	0.497	450	1.0	7.840	A
2	347	452	11.01	1094	0.317	346	0.5	4.902	A
3	258	589		1000	0.258	257	0.3	4.863	A
4	1032	203	33.03	1298	0.795	1024	3.6	12.829	B

08:30 - 08:45

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	451	715	11.01	906	0.498	451	1.0	7.941	A
2	347	454	11.01	1093	0.317	347	0.5	4.915	A
3	258	590		999	0.258	258	0.3	4.873	A
4	1032	204	33.03	1297	0.795	1031	3.8	13.509	B

08:45 - 09:00

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	369	589	8.99	985	0.374	370	0.6	5.890	A
2	283	372	8.99	1140	0.248	284	0.3	4.284	A
3	210	483		1069	0.197	211	0.2	4.214	A
4	842	167	26.97	1330	0.634	850	1.8	7.659	A

09:00 - 09:15

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	309	491	7.53	1044	0.296	309	0.4	4.923	A
2	237	311	7.53	1175	0.202	237	0.3	3.911	A
3	176	404		1118	0.158	176	0.2	3.841	A
4	705	139	22.59	1351	0.522	708	1.1	5.644	A

2041 Base + Comm & Prop incl. Est. Active Travel Reduction, PM

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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	7.03	A

Junction Network

Driving side	Lighting	Network delay (s)	Network LOS
Left	Normal/unknown	7.03	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)
D12	2041 Base + Comm & Prop incl. Est. Active Travel Reduction	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		✓	442	100.000
2		✓	602	100.000
3		✓	88	100.000
4		✓	734	100.000

Demand overview (Pedestrians)

Arm	Average pedestrian flow (Ped/hr)
1	25.00
2	20.00
3	
4	20.00

Origin-Destination Data

Demand (PCU/hr)

	To				
	1	2	3	4	
From	1	0	43	20	379
	2	48	0	52	502
	3	10	32	0	46
	4	377	333	24	0

Vehicle Mix

Heavy Vehicle Percentages

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

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Detailed Demand Data

Demand for each time segment

Time Segment	Arm	Demand (PCU/hr)	Demand in PCU (PCU/hr)	Pedestrian Demand (Ped/hr)
16:45-17:00	1	333	333	18.82
	2	453	453	15.06
	3	66	66	
	4	553	553	15.06
17:00-17:15	1	397	397	22.47
	2	541	541	17.98
	3	79	79	
	4	660	660	17.98
17:15-17:30	1	487	487	27.53
	2	663	663	22.02
	3	97	97	
	4	808	808	22.02
17:30-17:45	1	487	487	27.53
	2	663	663	22.02
	3	97	97	
	4	808	808	22.02
17:45-18:00	1	397	397	22.47
	2	541	541	17.98
	3	79	79	
	4	660	660	17.98
18:00-18:15	1	333	333	18.82
	2	453	453	15.06
	3	66	66	
	4	553	553	15.06

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS
1	0.45	6.06	0.8	A
2	0.61	8.58	1.6	A
3	0.14	6.01	0.2	A
4	0.59	6.47	1.4	A

Main Results for each time segment

16:45 - 17:00

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	333	291	18.82	1162	0.286	331	0.4	4.327	A
2	453	317	15.06	1172	0.387	451	0.6	5.016	A
3	66	696		935	0.071	66	0.1	4.141	A
4	553	67	15.06	1396	0.396	550	0.6	4.241	A

17:00 - 17:15

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	397	349	22.47	1128	0.352	397	0.5	4.925	A
2	541	380	17.98	1136	0.477	540	0.9	6.085	A
3	79	834		839	0.094	79	0.1	4.734	A
4	660	81	17.98	1384	0.477	659	0.9	4.955	A

17:15 - 17:30

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	487	427	27.53	1082	0.450	486	0.8	6.029	A
2	663	465	22.02	1086	0.610	660	1.5	8.472	A
3	97	1020		698	0.139	97	0.2	5.985	A
4	808	99	22.02	1365	0.592	806	1.4	6.417	A

17:30 - 17:45

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	487	428	27.53	1081	0.450	487	0.8	6.056	A
2	663	466	22.02	1086	0.611	663	1.6	8.581	A
3	97	1023		696	0.139	97	0.2	6.012	A
4	808	99	22.02	1365	0.592	808	1.4	6.469	A

17:45 - 18:00

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	397	351	22.47	1127	0.353	398	0.5	4.951	A
2	541	381	17.98	1135	0.477	544	0.9	6.168	A
3	79	838		836	0.095	79	0.1	4.760	A
4	660	81	17.98	1384	0.477	662	0.9	5.000	A

18:00 - 18:15

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	333	293	18.82	1160	0.287	333	0.4	4.356	A
2	453	319	15.06	1171	0.387	454	0.6	5.074	A
3	66	701		932	0.071	66	0.1	4.162	A
4	553	68	15.06	1396	0.396	554	0.7	4.280	A

2041 Base + Comm & Masterplan incl. Est. Active Travel Reduction, AM

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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	27.55	D

Junction Network

Driving side	Lighting	Network delay (s)	Network LOS
Left	Normal/unknown	27.55	D

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)
D13	2041 Base + Comm & Masterplan incl. Est. Active Travel Reduction	AM	ONE HOUR	07:45	09:15	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		✓	466	100.000
2		✓	389	100.000
3		✓	458	100.000
4		✓	1041	100.000

Demand overview (Pedestrians)

Arm	Average pedestrian flow (Ped/hr)
1	10.00
2	10.00
3	
4	30.00

Origin-Destination Data

Demand (PCU/hr)

	To				
	1	2	3	4	
From	1	0	83	102	281
	2	25	0	134	230
	3	136	176	0	146
	4	379	473	189	0

Vehicle Mix

Heavy Vehicle Percentages

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

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Detailed Demand Data

Demand for each time segment

Time Segment	Arm	Demand (PCU/hr)	Demand in PCU (PCU/hr)	Pedestrian Demand (Ped/hr)
07:45-08:00	1	351	351	7.53
	2	293	293	7.53
	3	345	345	
	4	784	784	22.59
08:00-08:15	1	419	419	8.99
	2	350	350	8.99
	3	412	412	
	4	936	936	26.97
08:15-08:30	1	513	513	11.01
	2	428	428	11.01
	3	504	504	
	4	1146	1146	33.03
08:30-08:45	1	513	513	11.01
	2	428	428	11.01
	3	504	504	
	4	1146	1146	33.03
08:45-09:00	1	419	419	8.99
	2	350	350	8.99
	3	412	412	
	4	936	936	26.97
09:00-09:15	1	351	351	7.53
	2	293	293	7.53
	3	345	345	
	4	784	784	22.59

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS
1	0.65	13.25	1.8	B
2	0.43	6.51	0.8	A
3	0.51	7.42	1.0	A
4	0.96	50.66	15.3	F

Main Results for each time segment

07:45 - 08:00

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	351	626	7.53	964	0.364	349	0.6	5.863	A
2	293	428	7.53	1108	0.264	291	0.4	4.484	A
3	345	401		1118	0.308	343	0.4	4.652	A
4	784	252	22.59	1281	0.612	778	1.6	7.097	A

08:00 - 08:15

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	419	750	8.99	889	0.471	418	0.9	7.661	A
2	350	512	8.99	1059	0.330	349	0.5	5.167	A
3	412	481		1067	0.386	411	0.6	5.505	A
4	936	302	26.97	1244	0.753	930	2.9	11.340	B

08:15 - 08:30

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	513	899	11.01	796	0.645	510	1.8	12.511	B
2	428	620	11.01	996	0.430	427	0.8	6.439	A
3	504	587		993	0.508	503	1.0	7.346	A
4	1146	370	33.03	1191	0.963	1109	12.1	34.542	D

08:30 - 08:45

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	513	914	11.01	786	0.653	513	1.8	13.245	B
2	428	627	11.01	992	0.432	428	0.8	6.508	A
3	504	590		991	0.509	504	1.0	7.420	A
4	1146	371	33.03	1189	0.964	1133	15.3	50.664	F

08:45 - 09:00

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	419	785	8.99	868	0.483	422	1.0	8.196	A
2	350	526	8.99	1051	0.333	351	0.5	5.249	A
3	412	485		1064	0.387	413	0.6	5.566	A
4	936	304	26.97	1240	0.755	984	3.3	16.488	C

09:00 - 09:15

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	351	635	7.53	959	0.366	352	0.6	5.987	A
2	293	433	7.53	1105	0.265	293	0.4	4.524	A
3	345	405		1116	0.309	346	0.5	4.697	A
4	784	254	22.59	1279	0.613	790	1.6	7.487	A

2041 Base + Comm & Masterplan incl. Est. Active Travel Reduction, PM

Data Errors and Warnings

Severity	Area	Item	Description
Last Run	Last Run	Arm 3 - Capacity	Pedestrian Crossing causes blocking on previous arm due to traffic queuing to leave the junction in 2 timesegment(s).

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	20.50	C

Junction Network

Driving side	Lighting	Network delay (s)	Network LOS
Left	Normal/unknown	20.50	C

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)
D14	2041 Base + Comm & Masterplan incl. Est. Active Travel Reduction	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		✓	525	100.000
2		✓	802	100.000
3		✓	435	100.000
4		✓	828	100.000

Demand overview (Pedestrians)

Arm	Average pedestrian flow (Ped/hr)
1	25.00
2	20.00
3	
4	20.00

Origin-Destination Data

Demand (PCU/hr)

	To				
	1	2	3	4	
From	1	0	43	103	379
	2	48	0	252	502
	3	53	160	0	222
	4	377	333	118	0

Vehicle Mix

Heavy Vehicle Percentages

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

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Detailed Demand Data

Demand for each time segment

Time Segment	Arm	Demand (PCU/hr)	Demand in PCU (PCU/hr)	Pedestrian Demand (Ped/hr)
16:45-17:00	1	395	395	18.82
	2	604	604	15.06
	3	327	327	
	4	623	623	15.06
17:00-17:15	1	472	472	22.47
	2	721	721	17.98
	3	391	391	
	4	744	744	17.98
17:15-17:30	1	578	578	27.53
	2	883	883	22.02
	3	479	479	
	4	912	912	22.02
17:30-17:45	1	578	578	27.53
	2	883	883	22.02
	3	479	479	
	4	912	912	22.02
17:45-18:00	1	472	472	22.47
	2	721	721	17.98
	3	391	391	
	4	744	744	17.98
18:00-18:15	1	395	395	18.82
	2	604	604	15.06
	3	327	327	
	4	623	623	15.06

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS
1	0.62	10.03	1.6	B
2	0.91	35.89	8.2	E
3	0.76	23.46	3.0	C
4	0.73	10.69	2.7	B

Main Results for each time segment

16:45 - 17:00

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	395	457	18.82	1065	0.371	393	0.6	5.341	A
2	604	449	15.06	1095	0.551	599	1.2	7.232	A
3	327	694		920	0.356	325	0.5	6.036	A
4	623	195	15.06	1318	0.473	620	0.9	5.130	A

17:00 - 17:15

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	472	548	22.47	1011	0.467	471	0.9	6.650	A
2	721	538	17.98	1043	0.691	717	2.2	10.971	B
3	391	832		808	0.484	390	0.9	8.564	A
4	744	234	17.98	1290	0.577	743	1.3	6.554	A

17:15 - 17:30

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	578	667	27.53	939	0.615	575	1.6	9.815	A
2	883	657	22.02	974	0.906	863	7.2	28.451	D
3	479	1007		642	0.746	472	2.7	20.332	C
4	912	283	22.02	1250	0.729	907	2.6	10.327	B

17:30 - 17:45

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	578	672	27.53	936	0.617	578	1.6	10.032	B
2	883	660	22.02	972	0.908	879	8.2	35.889	E
3	479	1020		629	0.761	478	3.0	23.465	C
4	912	287	22.02	1247	0.731	911	2.7	10.690	B

17:45 - 18:00

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	472	555	22.47	1007	0.469	475	0.9	6.799	A
2	721	543	17.98	1041	0.693	744	2.4	13.114	B
3	391	853		790	0.495	399	1.0	9.388	A
4	744	240	17.98	1286	0.579	749	1.4	6.775	A

18:00 - 18:15

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	395	462	18.82	1062	0.372	396	0.6	5.419	A
2	604	453	15.06	1093	0.552	608	1.3	7.541	A
3	327	703		913	0.359	329	0.6	6.185	A
4	623	198	15.06	1316	0.474	625	0.9	5.224	A

2041 Base + Comm & Masterplan & GCRR, 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	9.22	A

Junction Network

Driving side	Lighting	Network delay (s)	Network LOS
Left	Normal/unknown	9.22	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)
D17	2041 Base + Comm & Masterplan & GCRR	AM	ONE HOUR	07:45	09:15	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		✓	412	100.000
2		✓	300	100.000
3		✓	508	100.000
4		✓	811	100.000

Demand overview (Pedestrians)

Arm	Average pedestrian flow (Ped/hr)
1	10.00
2	10.00
3	
4	30.00

Origin-Destination Data

Demand (PCU/hr)

	To				
From		1	2	3	4
	1	0	69	113	230
	2	20	0	149	131
	3	151	195	0	162
	4	311	290	210	0

Vehicle Mix

Heavy Vehicle Percentages

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

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Detailed Demand Data

Demand for each time segment

Time Segment	Arm	Demand (PCU/hr)	Demand in PCU (PCU/hr)	Pedestrian Demand (Ped/hr)
07:45-08:00	1	310	310	7.53
	2	226	226	7.53
	3	382	382	
	4	611	611	22.59
08:00-08:15	1	370	370	8.99
	2	270	270	8.99
	3	457	457	
	4	729	729	26.97
08:15-08:30	1	454	454	11.01
	2	330	330	11.01
	3	559	559	
	4	893	893	33.03
08:30-08:45	1	454	454	11.01
	2	330	330	11.01
	3	559	559	
	4	893	893	33.03
08:45-09:00	1	370	370	8.99
	2	270	270	8.99
	3	457	457	
	4	729	729	26.97
09:00-09:15	1	310	310	7.53
	2	226	226	7.53
	3	382	382	
	4	611	611	22.59

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS
1	0.51	8.47	1.1	A
2	0.33	5.46	0.5	A
3	0.51	6.65	1.0	A
4	0.76	12.61	3.1	B

Main Results for each time segment

07:45 - 08:00

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	310	520	7.53	1028	0.302	308	0.4	5.032	A
2	226	414	7.53	1116	0.202	225	0.3	4.113	A
3	382	285		1188	0.322	381	0.5	4.463	A
4	611	274	22.59	1270	0.481	607	0.9	5.417	A

08:00 - 08:15

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	370	623	8.99	967	0.383	370	0.6	6.067	A
2	270	496	8.99	1068	0.253	269	0.3	4.590	A
3	457	342		1153	0.396	456	0.7	5.176	A
4	729	329	26.97	1233	0.591	727	1.4	7.114	A

08:15 - 08:30

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	454	761	11.01	885	0.513	452	1.0	8.355	A
2	330	606	11.01	1004	0.329	330	0.5	5.433	A
3	559	418		1104	0.507	558	1.0	6.601	A
4	893	402	33.03	1179	0.757	887	3.0	12.099	B

08:30 - 08:45

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	454	765	11.01	882	0.514	454	1.1	8.467	A
2	330	609	11.01	1002	0.330	330	0.5	5.455	A
3	559	419		1103	0.507	559	1.0	6.645	A
4	893	403	33.03	1178	0.758	893	3.1	12.606	B

08:45 - 09:00

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	370	629	8.99	963	0.384	372	0.6	6.155	A
2	270	500	8.99	1066	0.253	270	0.3	4.614	A
3	457	344		1152	0.396	458	0.7	5.218	A
4	729	330	26.97	1232	0.592	735	1.5	7.371	A

09:00 - 09:15

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	310	525	7.53	1025	0.303	311	0.4	5.086	A
2	226	418	7.53	1114	0.203	226	0.3	4.135	A
3	382	287		1187	0.322	383	0.5	4.498	A
4	611	276	22.59	1269	0.481	613	0.9	5.524	A

2041 Base + Comm & Masterplan & GCRR, PM

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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	8.92	A

Junction Network

Driving side	Lighting	Network delay (s)	Network LOS
Left	Normal/unknown	8.92	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)
D18	2041 Base + Comm & Masterplan & GCRR	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		✓	463	100.000
2		✓	620	100.000
3		✓	484	100.000
4		✓	635	100.000

Demand overview (Pedestrians)

Arm	Average pedestrian flow (Ped/hr)
1	25.00
2	20.00
3	
4	20.00

Origin-Destination Data

Demand (PCU/hr)

	To				
From		1	2	3	4
	1	0	35	114	314
	2	40	0	280	300
	3	59	178	0	247
	4	309	195	131	0

Vehicle Mix

Heavy Vehicle Percentages

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

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Detailed Demand Data

Demand for each time segment

Time Segment	Arm	Demand (PCU/hr)	Demand in PCU (PCU/hr)	Pedestrian Demand (Ped/hr)
16:45-17:00	1	349	349	18.82
	2	467	467	15.06
	3	364	364	
	4	478	478	15.06
17:00-17:15	1	416	416	22.47
	2	557	557	17.98
	3	435	435	
	4	571	571	17.98
17:15-17:30	1	510	510	27.53
	2	683	683	22.02
	3	533	533	
	4	699	699	22.02
17:30-17:45	1	510	510	27.53
	2	683	683	22.02
	3	533	533	
	4	699	699	22.02
17:45-18:00	1	416	416	22.47
	2	557	557	17.98
	3	435	435	
	4	571	571	17.98
18:00-18:15	1	349	349	18.82
	2	467	467	15.06
	3	364	364	
	4	478	478	15.06

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS
1	0.51	7.23	1.0	A
2	0.68	11.43	2.1	B
3	0.61	10.39	1.5	B
4	0.56	6.59	1.3	A

Main Results for each time segment

16:45 - 17:00

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	349	378	18.82	1112	0.314	347	0.5	4.693	A
2	467	419	15.06	1113	0.419	464	0.7	5.550	A
3	364	490		1058	0.344	362	0.5	5.156	A
4	478	207	15.06	1313	0.364	476	0.6	4.286	A

17:00 - 17:15

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	416	452	22.47	1068	0.390	416	0.6	5.513	A
2	557	502	17.98	1065	0.524	556	1.1	7.091	A
3	435	587		988	0.440	434	0.8	6.483	A
4	571	248	17.98	1286	0.444	570	0.8	5.023	A

17:15 - 17:30

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	510	553	27.53	1009	0.505	508	1.0	7.174	A
2	683	614	22.02	1000	0.683	679	2.1	11.134	B
3	533	717		882	0.604	530	1.5	10.155	B
4	699	303	22.02	1246	0.561	697	1.3	6.532	A

17:30 - 17:45

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	510	555	27.53	1007	0.506	510	1.0	7.233	A
2	683	615	22.02	999	0.684	682	2.1	11.428	B
3	533	720		879	0.606	533	1.5	10.394	B
4	699	305	22.02	1245	0.561	699	1.3	6.589	A

17:45 - 18:00

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	416	455	22.47	1066	0.390	418	0.6	5.566	A
2	557	504	17.98	1063	0.524	561	1.1	7.264	A
3	435	591		985	0.442	438	0.8	6.614	A
4	571	251	17.98	1284	0.445	573	0.8	5.071	A

18:00 - 18:15

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	349	380	18.82	1110	0.314	349	0.5	4.739	A
2	467	422	15.06	1111	0.420	468	0.7	5.640	A
3	364	494		1055	0.345	365	0.5	5.227	A
4	478	209	15.06	1312	0.364	479	0.6	4.324	A

Junctions 10	
ARCADY 10 - Roundabout Module	
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Filename: Kingston Junction 2 - WDR & Knocknacarra District Centre.j10
Path: J:\Projects\11893 - King Kingston\05-Design\01-Calculations\Traffic
Report generation date: 28/01/2025 12:38:13

- »2023, AM
- »2023, PM
- »2026 Base, AM
- »2026 Base, PM
- »2026 Base + Comm & Prop, AM
- »2026 Base + Comm & Prop, PM
- »2041 Base, AM
- »2041 Base, PM
- »2041 Base + Comm, AM
- »2041 Base + Comm, PM
- »2041 Base + Comm & Prop, AM
- »2041 Base + Comm & Prop, PM
- »2041 Base + Comm & Prop & Masterplan, AM
- »2041 Base + Comm & Prop & Masterplan, PM

Summary of junction performance

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	AM					PM				
	Set ID	Queue (PCU)	Delay (s)	RFC	LOS	Set ID	Queue (PCU)	Delay (s)	RFC	LOS
	2023									
Arm 1	D1	1.4	8.83	0.59	A	D2	0.7	6.36	0.40	A
Arm 2		0.2	4.93	0.19	A		0.3	4.47	0.23	A
Arm 3		0.2	3.94	0.18	A		0.1	3.15	0.06	A
Arm 4		0.4	4.16	0.31	A		1.3	6.63	0.56	A
Arm 5		0.0	4.15	0.03	A		0.0	5.14	0.02	A
	2026 Base									
Arm 1	D3	1.6	9.57	0.62	A	D4	0.7	6.64	0.42	A
Arm 2		0.3	5.11	0.20	A		0.3	4.58	0.24	A
Arm 3		0.2	4.07	0.19	A		0.1	3.20	0.06	A
Arm 4		0.5	4.26	0.32	A		1.4	7.07	0.59	A
Arm 5		0.0	4.21	0.03	A		0.0	5.29	0.02	A
	2026 Base + Comm & Prop									
Arm 1	D5	3.1	15.62	0.76	C	D6	0.9	7.52	0.48	A
Arm 2		0.3	5.97	0.25	A		0.4	4.85	0.26	A
Arm 3		0.3	4.39	0.23	A		0.2	3.71	0.18	A
Arm 4		0.6	4.54	0.36	A		1.9	8.73	0.65	A
Arm 5		0.0	4.39	0.04	A		0.0	5.88	0.02	A
	2041 Base									
Arm 1	D7	2.6	13.54	0.73	B	D8	1.0	7.87	0.50	A
Arm 2		0.3	5.75	0.25	A		0.4	5.04	0.29	A
Arm 3		0.3	4.60	0.24	A		0.1	3.39	0.07	A
Arm 4		0.6	4.64	0.38	A		2.2	9.36	0.68	A
Arm 5		0.0	4.43	0.03	A		0.0	5.89	0.02	A
	2041 Base + Comm									
Arm 1	D9	5.6	26.17	0.86	D	D10	1.2	8.97	0.56	A
Arm 2		0.4	6.79	0.30	A		0.4	5.32	0.30	A
Arm 3		0.4	4.96	0.28	A		0.2	3.94	0.20	A
Arm 4		0.7	4.95	0.41	A		2.9	11.92	0.74	B
Arm 5		0.0	4.61	0.04	A		0.0	6.54	0.03	A
	2041 Base + Comm & Prop									
Arm 1	D11	6.2	28.43	0.87	D	D12	1.3	9.12	0.56	A
Arm 2		0.4	6.87	0.31	A		0.4	5.35	0.31	A
Arm 3		0.4	5.01	0.28	A		0.2	3.96	0.20	A
Arm 4		0.7	4.97	0.42	A		3.0	12.46	0.76	B
Arm 5		0.0	4.62	0.04	A		0.0	6.63	0.03	A
	2041 Base + Comm & Prop & Masterplan									
Arm 1	D13	17.4	69.58	0.98	F	D14	2.7	15.04	0.74	C
Arm 2		0.5	7.59	0.33	A		0.6	6.27	0.36	A
Arm 3		0.4	5.49	0.31	A		0.3	4.45	0.22	A
Arm 4		0.9	5.58	0.48	A		12.1	42.03	0.94	E
Arm 5		0.0	4.92	0.04	A		0.0	8.62	0.04	A

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

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

File summary

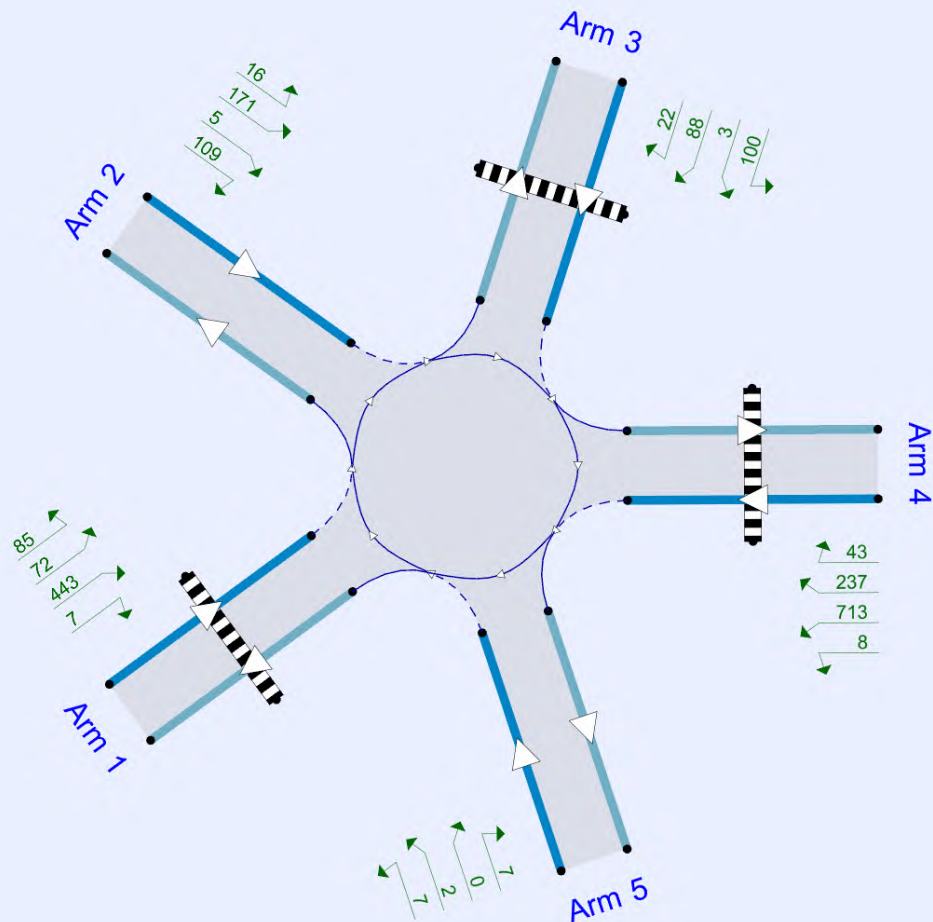
File Description

Title	
Location	
Site number	
Date	11/12/2023
Version	
Status	(new file)
Identifier	
Client	
Jobnumber	
Enumerator	TOBIN\James.Quinn
Description	

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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).

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	2023	AM	ONE HOUR	07:45	09:15	15
D2	2023	PM	ONE HOUR	16:45	18:15	15
D3	2026 Base	AM	ONE HOUR	07:45	09:15	15
D4	2026 Base	PM	ONE HOUR	16:45	18:15	15
D5	2026 Base + Comm & Prop	AM	ONE HOUR	07:45	09:15	15
D6	2026 Base + Comm & Prop	PM	ONE HOUR	16:45	18:15	15
D7	2041 Base	AM	ONE HOUR	07:45	09:15	15
D8	2041 Base	PM	ONE HOUR	16:45	18:15	15
D9	2041 Base + Comm	AM	ONE HOUR	07:45	09:15	15
D10	2041 Base + Comm	PM	ONE HOUR	16:45	18:15	15
D11	2041 Base + Comm & Prop	AM	ONE HOUR	07:45	09:15	15
D12	2041 Base + Comm & Prop	PM	ONE HOUR	16:45	18:15	15
D13	2041 Base + Comm & Prop & Masterplan	AM	ONE HOUR	07:45	09:15	15
D14	2041 Base + Comm & Prop & Masterplan	PM	ONE HOUR	16:45	18:15	15

Analysis Set Details

ID	Network flow scaling factor (%)
A1	100.000

2023, AM

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Data Errors and Warnings

Severity	Area	Item	Description
Warning	Geometry	Arm 4 - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.
Warning	Pedestrian Crossing	Arm 1 - Pedestrian crossing	Pedestrian crossing uses default settings only. Is this correct?
Warning	Pedestrian Crossing	Arm 3 - Pedestrian crossing	Pedestrian crossing uses default settings only. Is this correct?
Warning	Pedestrian Crossing	Arm 4 - Pedestrian crossing	Pedestrian crossing uses default settings only. Is this correct?

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	6.20	A

Junction Network

Driving side	Lighting	Network delay (s)	Network LOS
Left	Normal/unknown	6.20	A

Arms

Arms

Arm	Name	Description	No give-way line
1	untitled		
2	untitled		
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	3.40	3.57	2.0	9.5	48.0	13.0		
2	4.20	4.20	0.0	8.9	48.0	20.0		
3	3.50	5.50	21.0	11.0	48.0	20.0		
4	3.20	4.50	47.0	9.6	48.0	20.0		
5	3.00	4.50	3.0	20.0	48.0	20.0		

Zebra Crossings

Arm	Space between crossing and junction entry (Zebra) (PCU)	Vehicles queueing on exit (Zebra) (PCU)	Central Refuge	Crossing data type	Crossing length (m)	Crossing time (s)
1	16.00	5.00		Distance	0.00	0.00
3	16.00	5.00		Distance	0.00	0.00
4	16.00	6.00		Distance	0.00	0.00

Slope / Intercept / Capacity

Roundabout Slope and Intercept used in model

Arm	Final slope	Final intercept (PCU/hr)
1	0.499	1076
2	0.521	1239
3	0.580	1517
4	0.536	1307
5	0.516	1121

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

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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	2023	AM	ONE HOUR	07:45	09:15	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		✓	528	100.000
2		✓	159	100.000
3		✓	182	100.000
4		✓	355	100.000
5		✓	22	100.000

Demand overview (Pedestrians)

Arm	Average pedestrian flow (Ped/hr)
1	5.00
2	
3	5.00
4	5.00
5	

Origin-Destination Data

Demand (PCU/hr)

	To					
	1	2	3	4	5	
From	1	0	4	51	472	1
	2	15	0	14	128	2
	3	31	4	0	147	0
	4	216	116	22	0	1
	5	5	1	2	14	0

Vehicle Mix

Heavy Vehicle Percentages

	To					
From		1	2	3	4	5
	1	50	0	0	0	0
	2	0	0	0	2	0
	3	0	0	0	0	0
	4	1	5	0	0	0
	5	0	0	0	0	0

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Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS
1	0.59	8.83	1.4	A
2	0.19	4.93	0.2	A
3	0.18	3.94	0.2	A
4	0.31	4.16	0.4	A
5	0.03	4.15	0.0	A

Main Results for each time segment

07:45 - 08:00

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	398	119	3.76	1017	0.391	395	0.6	5.769	A
2	120	420		1020	0.117	119	0.1	4.057	A
3	137	473	3.76	1242	0.110	137	0.1	3.253	A
4	267	40	3.76	1286	0.208	266	0.3	3.605	A
5	17	303		965	0.017	16	0.0	3.794	A

08:00 - 08:15

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	475	143	4.49	1005	0.472	474	0.9	6.766	A
2	143	504		977	0.146	143	0.2	4.387	A
3	164	567	4.49	1188	0.138	163	0.2	3.514	A
4	319	48	4.49	1282	0.249	319	0.3	3.821	A
5	20	363		934	0.021	20	0.0	3.936	A

08:15 - 08:30

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	581	175	5.51	989	0.588	579	1.4	8.746	A
2	175	617		918	0.191	175	0.2	4.921	A
3	200	694	5.51	1114	0.180	200	0.2	3.937	A
4	391	58	5.51	1276	0.306	390	0.4	4.153	A
5	24	444		892	0.027	24	0.0	4.147	A

08:30 - 08:45

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	581	175	5.51	989	0.588	581	1.4	8.831	A
2	175	619		917	0.191	175	0.2	4.930	A
3	200	696	5.51	1113	0.180	200	0.2	3.944	A
4	391	58	5.51	1276	0.306	391	0.4	4.157	A
5	24	445		892	0.027	24	0.0	4.148	A

08:45 - 09:00

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	475	143	4.49	1005	0.472	477	0.9	6.843	A
2	143	507		975	0.147	143	0.2	4.398	A
3	164	570	4.49	1186	0.138	164	0.2	3.524	A
4	319	48	4.49	1282	0.249	320	0.3	3.828	A
5	20	364		934	0.021	20	0.0	3.938	A

09:00 - 09:15

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	398	120	3.76	1016	0.391	399	0.6	5.837	A
2	120	424		1018	0.118	120	0.1	4.071	A
3	137	477	3.76	1240	0.110	137	0.1	3.263	A
4	267	40	3.76	1286	0.208	268	0.3	3.616	A
5	17	304		964	0.017	17	0.0	3.800	A

2023, PM

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Data Errors and Warnings

Severity	Area	Item	Description
Warning	Geometry	Arm 4 - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.
Warning	Pedestrian Crossing	Arm 1 - Pedestrian crossing	Pedestrian crossing uses default settings only. Is this correct?
Warning	Pedestrian Crossing	Arm 3 - Pedestrian crossing	Pedestrian crossing uses default settings only. Is this correct?
Warning	Pedestrian Crossing	Arm 4 - Pedestrian crossing	Pedestrian crossing uses default settings only. Is this correct?

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	6.00	A

Junction Network

Driving side	Lighting	Network delay (s)	Network LOS
Left	Normal/unknown	6.00	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	2023	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		✓	347	100.000
2		✓	215	100.000
3		✓	64	100.000
4		✓	633	100.000
5		✓	12	100.000

Demand overview (Pedestrians)

Arm	Average pedestrian flow (Ped/hr)
1	5.00
2	
3	5.00
4	5.00
5	

Origin-Destination Data

Demand (PCU/hr)

	To					
		1	2	3	4	5
From	1	0	50	32	261	4
	2	62	0	9	140	4
	3	24	7	0	32	1
	4	407	195	24	0	7
	5	4	2	0	6	0

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Vehicle Mix

Heavy Vehicle Percentages

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

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS
1	0.40	6.36	0.7	A
2	0.23	4.47	0.3	A
3	0.06	3.15	0.1	A
4	0.56	6.63	1.3	A
5	0.02	5.14	0.0	A

Main Results for each time segment

16:45 - 17:00

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	261	175	3.76	989	0.264	260	0.4	4.931	A
2	162	245		1112	0.146	161	0.2	3.835	A
3	48	357	3.76	1310	0.037	48	0.0	2.853	A
4	477	76	3.76	1266	0.376	474	0.6	4.589	A
5	9	539		844	0.011	9	0.0	4.313	A

17:00 - 17:15

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	312	210	4.49	971	0.321	311	0.5	5.453	A
2	193	294		1086	0.178	193	0.2	4.081	A
3	58	428	4.49	1268	0.045	57	0.0	2.972	A
4	569	92	4.49	1258	0.452	568	0.8	5.277	A
5	11	645		788	0.014	11	0.0	4.629	A

17:15 - 17:30

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	382	257	5.51	948	0.403	381	0.7	6.344	A
2	237	359		1052	0.225	236	0.3	4.470	A
3	70	524	5.51	1213	0.058	70	0.1	3.151	A
4	697	112	5.51	1247	0.559	695	1.3	6.584	A
5	13	790		714	0.019	13	0.0	5.137	A

17:30 - 17:45

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	382	258	5.51	948	0.403	382	0.7	6.365	A
2	237	360		1052	0.225	237	0.3	4.474	A
3	70	525	5.51	1212	0.058	70	0.1	3.152	A
4	697	112	5.51	1247	0.559	697	1.3	6.627	A
5	13	792		713	0.019	13	0.0	5.144	A

17:45 - 18:00

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	312	211	4.49	971	0.321	313	0.5	5.476	A
2	193	295		1086	0.178	194	0.2	4.090	A
3	58	430	4.49	1268	0.045	58	0.0	2.977	A
4	569	92	4.49	1258	0.452	571	0.8	5.317	A
5	11	648		787	0.014	11	0.0	4.637	A

18:00 - 18:15

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	261	176	3.76	988	0.264	262	0.4	4.961	A
2	162	247		1111	0.146	162	0.2	3.844	A
3	48	360	3.76	1308	0.037	48	0.0	2.856	A
4	477	77	3.76	1266	0.376	477	0.6	4.630	A
5	9	542		842	0.011	9	0.0	4.325	A

2026 Base, AM

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Data Errors and Warnings

Severity	Area	Item	Description
Warning	Geometry	Arm 4 - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.
Warning	Pedestrian Crossing	Arm 1 - Pedestrian crossing	Pedestrian crossing uses default settings only. Is this correct?
Warning	Pedestrian Crossing	Arm 3 - Pedestrian crossing	Pedestrian crossing uses default settings only. Is this correct?
Warning	Pedestrian Crossing	Arm 4 - Pedestrian crossing	Pedestrian crossing uses default settings only. Is this correct?

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	6.59	A

Junction Network

Driving side	Lighting	Network delay (s)	Network LOS
Left	Normal/unknown	6.59	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	07:45	09:15	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		✓	552	100.000
2		✓	167	100.000
3		✓	190	100.000
4		✓	372	100.000
5		✓	23	100.000

Demand overview (Pedestrians)

Arm	Average pedestrian flow (Ped/hr)
1	5.00
2	
3	5.00
4	5.00
5	

Origin-Destination Data

Demand (PCU/hr)

	To					
		1	2	3	4	5
From	1	0	4	53	494	1
	2	16	0	15	134	2
	3	32	4	0	154	0
	4	226	122	23	0	1
	5	5	1	2	15	0

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Vehicle Mix

Heavy Vehicle Percentages

	To					
		1	2	3	4	5
From	1	50	0	0	0	0
	2	0	0	0	2	0
	3	0	0	0	0	0
	4	1	5	0	0	0
	5	0	0	0	0	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS
1	0.62	9.57	1.6	A
2	0.20	5.11	0.3	A
3	0.19	4.07	0.2	A
4	0.32	4.26	0.5	A
5	0.03	4.21	0.0	A

Main Results for each time segment

07:45 - 08:00

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	416	125	3.76	1014	0.410	413	0.7	5.977	A
2	126	440		1010	0.124	125	0.1	4.144	A
3	143	495	3.76	1229	0.116	143	0.1	3.310	A
4	280	41	3.76	1285	0.218	279	0.3	3.659	A
5	17	317		958	0.018	17	0.0	3.826	A

08:00 - 08:15

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	496	150	4.49	1001	0.496	495	1.0	7.111	A
2	150	527		964	0.156	150	0.2	4.504	A
3	171	594	4.49	1172	0.146	171	0.2	3.594	A
4	334	49	4.49	1281	0.261	334	0.4	3.891	A
5	21	380		925	0.022	21	0.0	3.978	A

08:15 - 08:30

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	608	184	5.51	984	0.617	605	1.6	9.454	A
2	184	645		903	0.204	184	0.3	5.096	A
3	209	726	5.51	1095	0.191	209	0.2	4.067	A
4	410	60	5.51	1275	0.321	409	0.5	4.255	A
5	25	465		881	0.029	25	0.0	4.204	A

08:30 - 08:45

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	608	184	5.51	984	0.617	608	1.6	9.571	A
2	184	647		902	0.204	184	0.3	5.109	A
3	209	729	5.51	1094	0.191	209	0.2	4.069	A
4	410	61	5.51	1275	0.321	410	0.5	4.258	A
5	25	466		881	0.029	25	0.0	4.206	A

08:45 - 09:00

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	496	150	4.49	1001	0.496	499	1.0	7.215	A
2	150	531		963	0.156	150	0.2	4.519	A
3	171	598	4.49	1170	0.146	171	0.2	3.606	A
4	334	50	4.49	1281	0.261	335	0.4	3.899	A
5	21	381		925	0.022	21	0.0	3.982	A

09:00 - 09:15

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	416	126	3.76	1013	0.410	417	0.7	6.058	A
2	126	444		1008	0.125	126	0.1	4.162	A
3	143	500	3.76	1227	0.117	143	0.1	3.324	A
4	280	41	3.76	1285	0.218	280	0.3	3.667	A
5	17	319		957	0.018	17	0.0	3.830	A

2026 Base, PM

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Data Errors and Warnings

Severity	Area	Item	Description
Warning	Geometry	Arm 4 - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.
Warning	Pedestrian Crossing	Arm 1 - Pedestrian crossing	Pedestrian crossing uses default settings only. Is this correct?
Warning	Pedestrian Crossing	Arm 3 - Pedestrian crossing	Pedestrian crossing uses default settings only. Is this correct?
Warning	Pedestrian Crossing	Arm 4 - Pedestrian crossing	Pedestrian crossing uses default settings only. Is this correct?

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	6.32	A

Junction Network

Driving side	Lighting	Network delay (s)	Network LOS
Left	Normal/unknown	6.32	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)
D4	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		✓	363	100.000
2		✓	225	100.000
3		✓	67	100.000
4		✓	662	100.000
5		✓	12	100.000

Demand overview (Pedestrians)

Arm	Average pedestrian flow (Ped/hr)
1	5.00
2	
3	5.00
4	5.00
5	

Origin-Destination Data

Demand (PCU/hr)

	To					
		1	2	3	4	5
From	1	0	52	34	273	4
	2	65	0	9	147	4
	3	25	7	0	34	1
	4	426	204	25	0	7
	5	4	2	0	6	0

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Vehicle Mix

Heavy Vehicle Percentages

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

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS
1	0.42	6.64	0.7	A
2	0.24	4.58	0.3	A
3	0.06	3.20	0.1	A
4	0.59	7.07	1.4	A
5	0.02	5.29	0.0	A

Main Results for each time segment

16:45 - 17:00

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	273	183	3.76	985	0.277	272	0.4	5.038	A
2	169	256		1106	0.153	169	0.2	3.891	A
3	50	374	3.76	1300	0.039	50	0.0	2.880	A
4	498	79	3.76	1265	0.394	496	0.7	4.725	A
5	9	563		831	0.011	9	0.0	4.380	A

17:00 - 17:15

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	326	219	4.49	967	0.338	326	0.5	5.608	A
2	202	307		1079	0.187	202	0.2	4.156	A
3	60	448	4.49	1257	0.048	60	0.1	3.007	A
4	595	95	4.49	1256	0.474	594	0.9	5.499	A
5	11	675		773	0.014	11	0.0	4.721	A

17:15 - 17:30

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	400	268	5.51	942	0.424	399	0.7	6.611	A
2	248	376		1043	0.237	247	0.3	4.578	A
3	74	548	5.51	1199	0.062	74	0.1	3.199	A
4	729	117	5.51	1245	0.586	727	1.4	7.011	A
5	13	826		695	0.019	13	0.0	5.277	A

17:30 - 17:45

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	400	269	5.51	942	0.424	400	0.7	6.636	A
2	248	377		1043	0.238	248	0.3	4.584	A
3	74	549	5.51	1198	0.062	74	0.1	3.201	A
4	729	117	5.51	1245	0.586	729	1.4	7.067	A
5	13	828		694	0.019	13	0.0	5.285	A

17:45 - 18:00

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	326	220	4.49	966	0.338	327	0.5	5.640	A
2	202	308		1079	0.188	203	0.2	4.164	A
3	60	450	4.49	1256	0.048	60	0.1	3.012	A
4	595	95	4.49	1256	0.474	597	0.9	5.548	A
5	11	678		772	0.014	11	0.0	4.732	A

18:00 - 18:15

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	273	184	3.76	984	0.278	274	0.4	5.070	A
2	169	258		1105	0.153	170	0.2	3.901	A
3	50	376	3.76	1299	0.039	50	0.0	2.883	A
4	498	80	3.76	1264	0.394	499	0.7	4.771	A
5	9	567		829	0.011	9	0.0	4.391	A

2026 Base + Comm & Prop, AM

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Data Errors and Warnings

Severity	Area	Item	Description
Warning	Geometry	Arm 4 - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.
Warning	Pedestrian Crossing	Arm 1 - Pedestrian crossing	Pedestrian crossing uses default settings only. Is this correct?
Warning	Pedestrian Crossing	Arm 3 - Pedestrian crossing	Pedestrian crossing uses default settings only. Is this correct?
Warning	Pedestrian Crossing	Arm 4 - Pedestrian crossing	Pedestrian crossing uses default settings only. Is this correct?

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	9.54	A

Junction Network

Driving side	Lighting	Network delay (s)	Network LOS
Left	Normal/unknown	9.54	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	2026 Base + Comm & Prop	AM	ONE HOUR	07:45	09:15	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		✓	668	100.000
2		✓	186	100.000
3		✓	226	100.000
4		✓	418	100.000
5		✓	27	100.000

Demand overview (Pedestrians)

Arm	Average pedestrian flow (Ped/hr)
1	5.00
2	
3	5.00
4	5.00
5	

Origin-Destination Data

Demand (PCU/hr)

	To					
		1	2	3	4	5
From	1	0	5	131	531	1
	2	17	0	33	134	2
	3	40	5	0	181	0
	4	240	122	55	0	1
	5	6	1	5	15	0

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Vehicle Mix

Heavy Vehicle Percentages

	To					
		1	2	3	4	5
From	1	50	0	0	0	0
	2	0	0	0	2	0
	3	0	0	0	0	0
	4	1	5	0	0	0
	5	0	0	0	0	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS
1	0.76	15.62	3.1	C
2	0.25	5.97	0.3	A
3	0.23	4.39	0.3	A
4	0.36	4.54	0.6	A
5	0.04	4.39	0.0	A

Main Results for each time segment

07:45 - 08:00

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	503	152	3.76	1000	0.503	499	1.0	7.129	A
2	140	551		952	0.147	139	0.2	4.490	A
3	170	523	3.76	1213	0.140	169	0.2	3.447	A
4	315	49	3.76	1281	0.246	313	0.3	3.790	A
5	20	359		936	0.022	20	0.0	3.930	A

08:00 - 08:15

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	601	182	4.49	985	0.610	598	1.5	9.258	A
2	167	661		895	0.187	167	0.2	5.016	A
3	203	627	4.49	1153	0.176	203	0.2	3.790	A
4	376	58	4.49	1276	0.295	375	0.4	4.076	A
5	24	430		899	0.027	24	0.0	4.113	A

08:15 - 08:30

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	735	223	5.51	965	0.762	730	3.0	14.935	B
2	205	807		819	0.250	204	0.3	5.936	A
3	249	766	5.51	1072	0.232	248	0.3	4.369	A
4	460	71	5.51	1269	0.363	460	0.6	4.535	A
5	30	527		850	0.035	30	0.0	4.390	A

08:30 - 08:45

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	735	224	5.51	965	0.763	735	3.1	15.618	C
2	205	812		816	0.251	205	0.3	5.972	A
3	249	770	5.51	1069	0.233	249	0.3	4.387	A
4	460	72	5.51	1269	0.363	460	0.6	4.541	A
5	30	527		849	0.035	30	0.0	4.392	A

08:45 - 09:00

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	601	183	4.49	985	0.610	607	1.6	9.661	A
2	167	670		890	0.188	168	0.2	5.056	A
3	203	634	4.49	1149	0.177	204	0.2	3.812	A
4	376	59	4.49	1276	0.295	376	0.4	4.086	A
5	24	431		899	0.027	24	0.0	4.116	A

09:00 - 09:15

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	503	153	3.76	1000	0.503	505	1.0	7.315	A
2	140	558		949	0.148	140	0.2	4.518	A
3	170	529	3.76	1210	0.141	170	0.2	3.465	A
4	315	49	3.76	1281	0.246	315	0.3	3.805	A
5	20	361		935	0.022	20	0.0	3.936	A

2026 Base + Comm & Prop, PM

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Data Errors and Warnings

Severity	Area	Item	Description
Warning	Geometry	Arm 4 - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.
Warning	Pedestrian Crossing	Arm 1 - Pedestrian crossing	Pedestrian crossing uses default settings only. Is this correct?
Warning	Pedestrian Crossing	Arm 3 - Pedestrian crossing	Pedestrian crossing uses default settings only. Is this correct?
Warning	Pedestrian Crossing	Arm 4 - Pedestrian crossing	Pedestrian crossing uses default settings only. Is this correct?

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	7.19	A

Junction Network

Driving side	Lighting	Network delay (s)	Network LOS
Left	Normal/unknown	7.19	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)
D6	2026 Base + Comm & Prop	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		✓	407	100.000
2		✓	237	100.000
3		✓	192	100.000
4		✓	714	100.000
5		✓	13	100.000

Demand overview (Pedestrians)

Arm	Average pedestrian flow (Ped/hr)
1	5.00
2	
3	5.00
4	5.00
5	

Origin-Destination Data

Demand (PCU/hr)

	To					
		1	2	3	4	5
From	1	0	56	54	293	4
	2	71	0	15	147	4
	3	73	21	0	95	3
	4	464	204	39	0	7
	5	5	2	0	6	0

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Vehicle Mix

Heavy Vehicle Percentages

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

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS
1	0.48	7.52	0.9	A
2	0.26	4.85	0.4	A
3	0.18	3.71	0.2	A
4	0.65	8.73	1.9	A
5	0.02	5.88	0.0	A

Main Results for each time segment

16:45 - 17:00

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	306	204	3.76	974	0.314	305	0.5	5.360	A
2	178	296		1085	0.164	178	0.2	4.014	A
3	145	393	3.76	1289	0.112	144	0.1	3.143	A
4	538	132	3.76	1236	0.435	534	0.8	5.168	A
5	10	653		785	0.012	10	0.0	4.646	A

17:00 - 17:15

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	366	244	4.49	954	0.383	365	0.6	6.105	A
2	213	355		1054	0.202	213	0.3	4.331	A
3	173	471	4.49	1243	0.139	172	0.2	3.361	A
4	642	158	4.49	1222	0.525	641	1.1	6.249	A
5	12	782		718	0.016	12	0.0	5.098	A

17:15 - 17:30

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	448	298	5.51	927	0.483	447	0.9	7.475	A
2	261	435		1013	0.258	261	0.3	4.843	A
3	211	577	5.51	1182	0.179	211	0.2	3.707	A
4	786	194	5.51	1203	0.653	783	1.9	8.608	A
5	14	957		628	0.023	14	0.0	5.869	A

17:30 - 17:45

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	448	299	5.51	927	0.484	448	0.9	7.521	A
2	261	436		1012	0.258	261	0.4	4.851	A
3	211	578	5.51	1181	0.179	211	0.2	3.710	A
4	786	194	5.51	1203	0.653	786	1.9	8.728	A
5	14	960		626	0.023	14	0.0	5.884	A

17:45 - 18:00

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	366	246	4.49	954	0.384	367	0.6	6.152	A
2	213	357		1053	0.202	213	0.3	4.343	A
3	173	473	4.49	1242	0.139	173	0.2	3.368	A
4	642	158	4.49	1222	0.525	645	1.1	6.343	A
5	12	787		715	0.016	12	0.0	5.116	A

18:00 - 18:15

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	306	205	3.76	974	0.315	307	0.5	5.405	A
2	178	299		1084	0.165	179	0.2	4.029	A
3	145	396	3.76	1287	0.112	145	0.1	3.153	A
4	538	133	3.76	1236	0.435	539	0.8	5.237	A
5	10	658		782	0.013	10	0.0	4.662	A

2041 Base, AM

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Data Errors and Warnings

Severity	Area	Item	Description
Warning	Geometry	Arm 4 - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.
Warning	Pedestrian Crossing	Arm 1 - Pedestrian crossing	Pedestrian crossing uses default settings only. Is this correct?
Warning	Pedestrian Crossing	Arm 3 - Pedestrian crossing	Pedestrian crossing uses default settings only. Is this correct?
Warning	Pedestrian Crossing	Arm 4 - Pedestrian crossing	Pedestrian crossing uses default settings only. Is this correct?

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	8.54	A

Junction Network

Driving side	Lighting	Network delay (s)	Network LOS
Left	Normal/unknown	8.54	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	2041 Base	AM	ONE HOUR	07:45	09:15	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		✓	640	100.000
2		✓	193	100.000
3		✓	221	100.000
4		✓	433	100.000
5		✓	26	100.000

Demand overview (Pedestrians)

Arm	Average pedestrian flow (Ped/hr)
1	5.00
2	
3	5.00
4	5.00
5	

Origin-Destination Data

Demand (PCU/hr)

	To					
		1	2	3	4	5
From	1	0	5	62	572	1
	2	18	0	17	156	2
	3	38	5	0	178	0
	4	263	142	27	0	1
	5	6	1	2	17	0

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Vehicle Mix

Heavy Vehicle Percentages

	To					
		1	2	3	4	5
From	1	50	0	0	0	0
	2	0	0	0	2	0
	3	0	0	0	0	0
	4	1	5	0	0	0
	5	0	0	0	0	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS
1	0.73	13.54	2.6	B
2	0.25	5.75	0.3	A
3	0.24	4.60	0.3	A
4	0.38	4.64	0.6	A
5	0.03	4.43	0.0	A

Main Results for each time segment

07:45 - 08:00

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	482	145	3.76	1003	0.480	478	0.9	6.808	A
2	145	509		974	0.149	145	0.2	4.406	A
3	166	573	3.76	1185	0.140	166	0.2	3.532	A
4	326	48	3.76	1281	0.254	325	0.3	3.840	A
5	20	370		931	0.021	19	0.0	3.950	A

08:00 - 08:15

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	575	174	4.49	989	0.582	574	1.4	8.623	A
2	174	610		921	0.188	173	0.2	4.889	A
3	199	687	4.49	1118	0.178	198	0.2	3.913	A
4	389	57	4.49	1276	0.305	389	0.4	4.144	A
5	23	443		893	0.026	23	0.0	4.139	A

08:15 - 08:30

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	705	213	5.51	970	0.727	700	2.5	13.120	B
2	212	745		851	0.250	212	0.3	5.720	A
3	243	839	5.51	1029	0.236	243	0.3	4.573	A
4	477	70	5.51	1269	0.376	476	0.6	4.634	A
5	29	542		842	0.034	29	0.0	4.427	A

08:30 - 08:45

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	705	214	5.51	969	0.727	704	2.6	13.544	B
2	212	750		849	0.250	212	0.3	5.748	A
3	243	843	5.51	1026	0.237	243	0.3	4.597	A
4	477	70	5.51	1269	0.376	477	0.6	4.641	A
5	29	543		841	0.034	29	0.0	4.429	A

08:45 - 09:00

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	575	175	4.49	989	0.582	580	1.4	8.902	A
2	174	617		918	0.189	174	0.2	4.919	A
3	199	693	4.49	1115	0.178	199	0.2	3.933	A
4	389	58	4.49	1276	0.305	390	0.5	4.154	A
5	23	444		892	0.026	23	0.0	4.144	A

09:00 - 09:15

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	482	146	3.76	1003	0.480	484	0.9	6.959	A
2	145	515		971	0.150	146	0.2	4.431	A
3	166	579	3.76	1181	0.141	167	0.2	3.548	A
4	326	48	3.76	1281	0.254	326	0.4	3.856	A
5	20	372		930	0.021	20	0.0	3.957	A

2041 Base, PM

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Data Errors and Warnings

Severity	Area	Item	Description
Warning	Geometry	Arm 4 - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.
Warning	Pedestrian Crossing	Arm 1 - Pedestrian crossing	Pedestrian crossing uses default settings only. Is this correct?
Warning	Pedestrian Crossing	Arm 3 - Pedestrian crossing	Pedestrian crossing uses default settings only. Is this correct?
Warning	Pedestrian Crossing	Arm 4 - Pedestrian crossing	Pedestrian crossing uses default settings only. Is this correct?

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	7.89	A

Junction Network

Driving side	Lighting	Network delay (s)	Network LOS
Left	Normal/unknown	7.89	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	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		✓	421	100.000
2		✓	262	100.000
3		✓	77	100.000
4		✓	768	100.000
5		✓	14	100.000

Demand overview (Pedestrians)

Arm	Average pedestrian flow (Ped/hr)
1	5.00
2	
3	5.00
4	5.00
5	

Origin-Destination Data

Demand (PCU/hr)

	To					
		1	2	3	4	5
From	1	0	61	39	316	5
	2	75	0	11	171	5
	3	29	8	0	39	1
	4	494	237	29	0	8
	5	5	2	0	7	0

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Vehicle Mix

Heavy Vehicle Percentages

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

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS
1	0.50	7.87	1.0	A
2	0.29	5.04	0.4	A
3	0.07	3.39	0.1	A
4	0.68	9.36	2.2	A
5	0.02	5.89	0.0	A

Main Results for each time segment

16:45 - 17:00

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	317	212	3.76	970	0.327	315	0.5	5.478	A
2	197	296		1085	0.182	196	0.2	4.100	A
3	58	434	3.76	1265	0.046	58	0.0	2.981	A
4	578	92	3.76	1258	0.460	575	0.9	5.311	A
5	11	653		785	0.013	10	0.0	4.650	A

17:00 - 17:15

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	378	254	4.49	949	0.399	378	0.7	6.289	A
2	236	355		1054	0.223	235	0.3	4.452	A
3	69	520	4.49	1215	0.057	69	0.1	3.140	A
4	690	110	4.49	1248	0.553	689	1.2	6.502	A
5	13	782		718	0.018	13	0.0	5.104	A

17:15 - 17:30

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	464	310	5.51	921	0.503	462	1.0	7.818	A
2	288	435		1013	0.285	288	0.4	5.028	A
3	85	636	5.51	1148	0.074	85	0.1	3.385	A
4	846	135	5.51	1235	0.685	842	2.1	9.199	A
5	15	956		628	0.025	15	0.0	5.876	A

17:30 - 17:45

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	464	312	5.51	921	0.503	463	1.0	7.873	A
2	288	436		1012	0.285	288	0.4	5.039	A
3	85	637	5.51	1147	0.074	85	0.1	3.388	A
4	846	135	5.51	1235	0.685	845	2.2	9.360	A
5	15	960		626	0.025	15	0.0	5.894	A

17:45 - 18:00

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	378	256	4.49	949	0.399	380	0.7	6.344	A
2	236	357		1053	0.224	236	0.3	4.466	A
3	69	522	4.49	1214	0.057	69	0.1	3.144	A
4	690	111	4.49	1248	0.553	694	1.3	6.626	A
5	13	788		715	0.018	13	0.0	5.124	A

18:00 - 18:15

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	317	214	3.76	969	0.327	318	0.5	5.528	A
2	197	299		1084	0.182	198	0.2	4.116	A
3	58	437	3.76	1263	0.046	58	0.0	2.988	A
4	578	93	3.76	1257	0.460	580	0.9	5.391	A
5	11	658		782	0.013	11	0.0	4.669	A

2041 Base + Comm, AM

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Data Errors and Warnings

Severity	Area	Item	Description
Warning	Geometry	Arm 4 - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.
Warning	Pedestrian Crossing	Arm 1 - Pedestrian crossing	Pedestrian crossing uses default settings only. Is this correct?
Warning	Pedestrian Crossing	Arm 3 - Pedestrian crossing	Pedestrian crossing uses default settings only. Is this correct?
Warning	Pedestrian Crossing	Arm 4 - Pedestrian crossing	Pedestrian crossing uses default settings only. Is this correct?

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	14.37	B

Junction Network

Driving side	Lighting	Network delay (s)	Network LOS
Left	Normal/unknown	14.37	B

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 + Comm	AM	ONE HOUR	07:45	09:15	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		✓	743	100.000
2		✓	212	100.000
3		✓	257	100.000
4		✓	474	100.000
5		✓	29	100.000

Demand overview (Pedestrians)

Arm	Average pedestrian flow (Ped/hr)
1	5.00
2	
3	5.00
4	5.00
5	

Origin-Destination Data

Demand (PCU/hr)

	To					
		1	2	3	4	5
From	1	0	5	138	599	1
	2	19	0	35	156	2
	3	45	6	0	206	0
	4	273	142	58	0	1
	5	6	1	5	17	0

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Vehicle Mix

Heavy Vehicle Percentages

	To					
		1	2	3	4	5
From	1	50	0	0	0	0
	2	0	0	0	2	0
	3	0	0	0	0	0
	4	1	5	0	0	0
	5	0	0	0	0	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS
1	0.86	26.17	5.6	D
2	0.30	6.79	0.4	A
3	0.28	4.96	0.4	A
4	0.41	4.95	0.7	A
5	0.04	4.61	0.0	A

Main Results for each time segment

07:45 - 08:00

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	559	172	3.76	990	0.565	554	1.3	8.164	A
2	160	611		921	0.173	159	0.2	4.786	A
3	193	593	3.76	1173	0.165	193	0.2	3.669	A
4	357	55	3.76	1278	0.279	355	0.4	3.975	A
5	22	407		911	0.024	22	0.0	4.046	A

08:00 - 08:15

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	668	206	4.49	973	0.686	665	2.1	11.529	B
2	191	732		858	0.222	190	0.3	5.468	A
3	231	711	4.49	1104	0.209	231	0.3	4.121	A
4	426	66	4.49	1272	0.335	426	0.5	4.338	A
5	26	488		870	0.030	26	0.0	4.266	A

08:15 - 08:30

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	818	252	5.51	950	0.861	806	5.2	23.040	C
2	233	888		777	0.301	233	0.4	6.710	A
3	283	864	5.51	1014	0.279	282	0.4	4.920	A
4	522	80	5.51	1264	0.413	521	0.7	4.938	A
5	32	597		813	0.039	32	0.0	4.606	A

08:30 - 08:45

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	818	252	5.51	950	0.861	816	5.6	26.168	D
2	233	899		771	0.303	233	0.4	6.795	A
3	283	873	5.51	1008	0.281	283	0.4	4.964	A
4	522	80	5.51	1264	0.413	522	0.7	4.949	A
5	32	598		813	0.039	32	0.0	4.608	A

08:45 - 09:00

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	668	206	4.49	973	0.686	681	2.3	12.858	B
2	191	749		849	0.224	191	0.3	5.555	A
3	231	725	4.49	1096	0.211	232	0.3	4.168	A
4	426	66	4.49	1272	0.335	427	0.5	4.351	A
5	26	489		869	0.030	26	0.0	4.270	A

09:00 - 09:15

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	559	173	3.76	990	0.565	563	1.3	8.510	A
2	160	620		916	0.174	160	0.2	4.830	A
3	193	601	3.76	1168	0.166	194	0.2	3.695	A
4	357	55	3.76	1278	0.279	357	0.4	3.994	A
5	22	409		910	0.024	22	0.0	4.052	A

2041 Base + Comm, PM

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Data Errors and Warnings

Severity	Area	Item	Description
Warning	Geometry	Arm 4 - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.
Warning	Pedestrian Crossing	Arm 1 - Pedestrian crossing	Pedestrian crossing uses default settings only. Is this correct?
Warning	Pedestrian Crossing	Arm 3 - Pedestrian crossing	Pedestrian crossing uses default settings only. Is this correct?
Warning	Pedestrian Crossing	Arm 4 - Pedestrian crossing	Pedestrian crossing uses default settings only. Is this correct?

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	9.17	A

Junction Network

Driving side	Lighting	Network delay (s)	Network LOS
Left	Normal/unknown	9.17	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 + Comm	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		✓	458	100.000
2		✓	271	100.000
3		✓	202	100.000
4		✓	808	100.000
5		✓	14	100.000

Demand overview (Pedestrians)

Arm	Average pedestrian flow (Ped/hr)
1	5.00
2	
3	5.00
4	5.00
5	

Origin-Destination Data

Demand (PCU/hr)

	To					
		1	2	3	4	5
From	1	0	63	59	331	5
	2	79	0	16	171	5
	3	77	22	0	100	3
	4	520	237	43	0	8
	5	5	2	0	7	0

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Vehicle Mix

Heavy Vehicle Percentages

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

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS
1	0.56	8.97	1.2	A
2	0.30	5.32	0.4	A
3	0.20	3.94	0.2	A
4	0.74	11.92	2.9	B
5	0.03	6.54	0.0	A

Main Results for each time segment

16:45 - 17:00

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	345	233	3.76	960	0.359	343	0.6	5.810	A
2	204	333		1066	0.191	203	0.2	4.221	A
3	152	448	3.76	1257	0.121	152	0.1	3.254	A
4	608	143	3.76	1230	0.494	604	1.0	5.786	A
5	11	732		744	0.014	10	0.0	4.909	A

17:00 - 17:15

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	412	279	4.49	937	0.439	411	0.8	6.832	A
2	244	399		1031	0.236	243	0.3	4.625	A
3	182	537	4.49	1205	0.151	181	0.2	3.515	A
4	726	172	4.49	1215	0.598	724	1.5	7.393	A
5	13	877		669	0.019	13	0.0	5.484	A

17:15 - 17:30

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	504	341	5.51	906	0.556	502	1.2	8.875	A
2	298	488		985	0.303	298	0.4	5.302	A
3	222	657	5.51	1136	0.196	222	0.2	3.939	A
4	890	210	5.51	1195	0.745	884	2.8	11.544	B
5	15	1071		569	0.027	15	0.0	6.507	A

17:30 - 17:45

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	504	342	5.51	905	0.557	504	1.2	8.972	A
2	298	490		984	0.303	298	0.4	5.315	A
3	222	658	5.51	1135	0.196	222	0.2	3.945	A
4	890	210	5.51	1194	0.745	889	2.9	11.919	B
5	15	1077		566	0.027	15	0.0	6.539	A

17:45 - 18:00

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	412	281	4.49	936	0.440	414	0.8	6.920	A
2	244	402		1030	0.237	244	0.3	4.641	A
3	182	539	4.49	1204	0.151	182	0.2	3.522	A
4	726	172	4.49	1215	0.598	732	1.5	7.623	A
5	13	885		665	0.019	13	0.0	5.519	A

18:00 - 18:15

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	345	235	3.76	959	0.360	346	0.6	5.881	A
2	204	336		1064	0.192	204	0.2	4.240	A
3	152	451	3.76	1255	0.121	152	0.1	3.266	A
4	608	144	3.76	1230	0.495	610	1.0	5.901	A
5	11	739		740	0.014	11	0.0	4.934	A

2041 Base + Comm & Prop, AM

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Data Errors and Warnings

Severity	Area	Item	Description
Warning	Geometry	Arm 4 - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.
Warning	Pedestrian Crossing	Arm 1 - Pedestrian crossing	Pedestrian crossing uses default settings only. Is this correct?
Warning	Pedestrian Crossing	Arm 3 - Pedestrian crossing	Pedestrian crossing uses default settings only. Is this correct?
Warning	Pedestrian Crossing	Arm 4 - Pedestrian crossing	Pedestrian crossing uses default settings only. Is this correct?

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	15.44	C

Junction Network

Driving side	Lighting	Network delay (s)	Network LOS
Left	Normal/unknown	15.44	C

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)
D11	2041 Base + Comm & Prop	AM	ONE HOUR	07:45	09:15	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		✓	754	100.000
2		✓	212	100.000
3		✓	257	100.000
4		✓	477	100.000
5		✓	29	100.000

Demand overview (Pedestrians)

Arm	Average pedestrian flow (Ped/hr)
1	5.00
2	
3	5.00
4	5.00
5	

Origin-Destination Data

Demand (PCU/hr)

	To					
		1	2	3	4	5
From	1	0	5	139	609	1
	2	19	0	35	156	2
	3	45	6	0	206	0
	4	276	142	58	0	1
	5	6	1	5	17	0

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Vehicle Mix

Heavy Vehicle Percentages

	To					
		1	2	3	4	5
From	1	50	0	0	0	0
	2	0	0	0	2	0
	3	0	0	0	0	0
	4	1	5	0	0	0
	5	0	0	0	0	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS
1	0.87	28.43	6.2	D
2	0.31	6.87	0.4	A
3	0.28	5.01	0.4	A
4	0.42	4.97	0.7	A
5	0.04	4.62	0.0	A

Main Results for each time segment

07:45 - 08:00

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	568	172	3.76	990	0.573	562	1.3	8.313	A
2	160	619		917	0.174	159	0.2	4.813	A
3	193	600	3.76	1169	0.166	193	0.2	3.685	A
4	359	55	3.76	1278	0.281	358	0.4	3.985	A
5	22	409		910	0.024	22	0.0	4.051	A

08:00 - 08:15

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	678	206	4.49	973	0.696	674	2.2	11.889	B
2	191	742		853	0.223	190	0.3	5.510	A
3	231	720	4.49	1099	0.210	231	0.3	4.145	A
4	429	66	4.49	1272	0.337	428	0.5	4.352	A
5	26	490		868	0.030	26	0.0	4.273	A

08:15 - 08:30

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	830	252	5.51	950	0.873	816	5.7	24.562	C
2	233	899		771	0.303	233	0.4	6.779	A
3	283	873	5.51	1008	0.281	282	0.4	4.960	A
4	525	80	5.51	1264	0.415	524	0.7	4.960	A
5	32	600		812	0.039	32	0.0	4.616	A

08:30 - 08:45

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	830	252	5.51	950	0.874	828	6.2	28.434	D
2	233	911		765	0.305	233	0.4	6.873	A
3	283	884	5.51	1002	0.283	283	0.4	5.009	A
4	525	80	5.51	1264	0.415	525	0.7	4.970	A
5	32	601		811	0.039	32	0.0	4.619	A

08:45 - 09:00

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	678	206	4.49	973	0.697	693	2.4	13.485	B
2	191	760		843	0.226	191	0.3	5.609	A
3	231	736	4.49	1090	0.212	232	0.3	4.198	A
4	429	66	4.49	1272	0.337	430	0.5	4.364	A
5	26	492		868	0.030	26	0.0	4.279	A

09:00 - 09:15

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	568	173	3.76	990	0.573	572	1.4	8.690	A
2	160	628		912	0.175	160	0.2	4.858	A
3	193	609	3.76	1164	0.166	194	0.2	3.712	A
4	359	55	3.76	1278	0.281	360	0.4	4.002	A
5	22	412		909	0.024	22	0.0	4.059	A

2041 Base + Comm & Prop, PM

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Data Errors and Warnings

Severity	Area	Item	Description
Warning	Geometry	Arm 4 - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.
Warning	Pedestrian Crossing	Arm 1 - Pedestrian crossing	Pedestrian crossing uses default settings only. Is this correct?
Warning	Pedestrian Crossing	Arm 3 - Pedestrian crossing	Pedestrian crossing uses default settings only. Is this correct?
Warning	Pedestrian Crossing	Arm 4 - Pedestrian crossing	Pedestrian crossing uses default settings only. Is this correct?

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	9.48	A

Junction Network

Driving side	Lighting	Network delay (s)	Network LOS
Left	Normal/unknown	9.48	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)
D12	2041 Base + Comm & Prop	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		✓	464	100.000
2		✓	273	100.000
3		✓	202	100.000
4		✓	819	100.000
5		✓	14	100.000

Demand overview (Pedestrians)

Arm	Average pedestrian flow (Ped/hr)
1	5.00
2	
3	5.00
4	5.00
5	

Origin-Destination Data

Demand (PCU/hr)

	To					
From		1	2	3	4	5
	1	0	64	59	336	5
	2	81	0	16	171	5
	3	77	22	0	100	3
	4	531	237	43	0	8
	5	5	2	0	7	0

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Vehicle Mix

Heavy Vehicle Percentages

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

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS
1	0.56	9.12	1.3	A
2	0.31	5.35	0.4	A
3	0.20	3.96	0.2	A
4	0.76	12.46	3.0	B
5	0.03	6.63	0.0	A

Main Results for each time segment

16:45 - 17:00

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	349	233	3.76	960	0.364	347	0.6	5.853	A
2	206	337		1064	0.193	205	0.2	4.237	A
3	152	453	3.76	1254	0.121	152	0.1	3.263	A
4	617	145	3.76	1230	0.501	613	1.0	5.869	A
5	11	742		739	0.014	10	0.0	4.942	A

17:00 - 17:15

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	417	279	4.49	937	0.445	416	0.8	6.900	A
2	245	404		1029	0.239	245	0.3	4.650	A
3	182	543	4.49	1202	0.151	181	0.2	3.527	A
4	736	173	4.49	1214	0.606	734	1.5	7.558	A
5	13	889		663	0.019	13	0.0	5.535	A

17:15 - 17:30

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	511	340	5.51	906	0.564	509	1.3	9.017	A
2	301	494		982	0.306	300	0.4	5.341	A
3	222	664	5.51	1131	0.197	222	0.2	3.953	A
4	902	212	5.51	1193	0.756	896	3.0	12.018	B
5	15	1085		561	0.027	15	0.0	6.593	A

17:30 - 17:45

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	511	342	5.51	905	0.564	511	1.3	9.121	A
2	301	495		981	0.306	301	0.4	5.354	A
3	222	666	5.51	1130	0.197	222	0.2	3.964	A
4	902	212	5.51	1193	0.756	901	3.0	12.459	B
5	15	1091		558	0.028	15	0.0	6.628	A

17:45 - 18:00

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	417	282	4.49	936	0.446	419	0.8	6.992	A
2	245	406		1027	0.239	246	0.3	4.666	A
3	182	546	4.49	1200	0.151	182	0.2	3.537	A
4	736	174	4.49	1214	0.607	742	1.6	7.816	A
5	13	897		659	0.019	13	0.0	5.572	A

18:00 - 18:15

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	349	235	3.76	959	0.364	350	0.6	5.926	A
2	206	340		1062	0.193	206	0.2	4.258	A
3	152	456	3.76	1252	0.121	152	0.1	3.275	A
4	617	145	3.76	1229	0.502	619	1.0	5.994	A
5	11	748		735	0.014	11	0.0	4.967	A

2041 Base + Comm & Prop & Masterplan, AM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Geometry	Arm 4 - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.
Warning	Pedestrian Crossing	Arm 1 - Pedestrian crossing	Pedestrian crossing uses default settings only. Is this correct?
Warning	Pedestrian Crossing	Arm 3 - Pedestrian crossing	Pedestrian crossing uses default settings only. Is this correct?
Warning	Pedestrian Crossing	Arm 4 - Pedestrian crossing	Pedestrian crossing uses default settings only. Is this correct?

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	34.24	D

Junction Network

Driving side	Lighting	Network delay (s)	Network LOS
Left	Normal/unknown	34.24	D

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)
D13	2041 Base + Comm & Prop & Masterplan	AM	ONE HOUR	07:45	09:15	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		✓	847	100.000
2		✓	217	100.000
3		✓	267	100.000
4		✓	543	100.000
5		✓	31	100.000

Demand overview (Pedestrians)

Arm	Average pedestrian flow (Ped/hr)
1	5.00
2	
3	5.00
4	5.00
5	

Origin-Destination Data

Demand (PCU/hr)

	To					
		1	2	3	4	5
From	1	0	6	148	692	1
	2	24	0	35	156	2
	3	55	6	0	206	0
	4	342	142	58	0	1
	5	8	1	5	17	0

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Vehicle Mix

Heavy Vehicle Percentages

	To					
		1	2	3	4	5
From	1	50	0	0	0	0
	2	0	0	0	2	0
	3	0	0	0	0	0
	4	1	5	0	0	0
	5	0	0	0	0	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS
1	0.98	69.58	17.4	F
2	0.33	7.59	0.5	A
3	0.31	5.49	0.4	A
4	0.48	5.58	0.9	A
5	0.04	4.92	0.0	A

Main Results for each time segment

07:45 - 08:00

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	638	172	3.76	990	0.644	631	1.8	9.825	A
2	163	686		882	0.185	162	0.2	5.070	A
3	201	665	3.76	1131	0.178	200	0.2	3.864	A
4	409	66	3.76	1272	0.321	407	0.5	4.232	A
5	23	470		879	0.027	23	0.0	4.206	A

08:00 - 08:15

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	761	206	4.49	973	0.782	755	3.3	15.970	C
2	195	822		811	0.240	195	0.3	5.918	A
3	240	796	4.49	1054	0.228	240	0.3	4.421	A
4	488	79	4.49	1265	0.386	488	0.6	4.715	A
5	28	563		831	0.034	28	0.0	4.482	A

08:15 - 08:30

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	933	252	5.51	951	0.981	893	13.1	45.430	E
2	239	975		731	0.327	238	0.5	7.393	A
3	294	949	5.51	961	0.306	293	0.4	5.384	A
4	598	97	5.51	1255	0.476	597	0.9	5.561	A
5	34	689		766	0.045	34	0.0	4.919	A

08:30 - 08:45

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	933	252	5.51	950	0.981	915	17.4	69.578	F
2	239	997		720	0.332	239	0.5	7.590	A
3	294	968	5.51	950	0.310	294	0.4	5.488	A
4	598	97	5.51	1255	0.476	598	0.9	5.580	A
5	34	690		765	0.045	34	0.0	4.923	A

08:45 - 09:00

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	761	206	4.49	973	0.782	815	3.9	28.576	D
2	195	882		780	0.250	196	0.3	6.256	A
3	240	847	4.49	1024	0.234	241	0.3	4.595	A
4	488	79	4.49	1265	0.386	489	0.6	4.737	A
5	28	565		830	0.034	28	0.0	4.488	A

09:00 - 09:15

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	638	173	3.76	990	0.644	646	1.9	10.709	B
2	163	702		874	0.187	164	0.2	5.146	A
3	201	679	3.76	1123	0.179	201	0.2	3.909	A
4	409	66	3.76	1272	0.322	409	0.5	4.258	A
5	23	473		877	0.027	23	0.0	4.214	A

2041 Base + Comm & Prop & Masterplan, PM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Geometry	Arm 4 - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.
Warning	Pedestrian Crossing	Arm 1 - Pedestrian crossing	Pedestrian crossing uses default settings only. Is this correct?
Warning	Pedestrian Crossing	Arm 3 - Pedestrian crossing	Pedestrian crossing uses default settings only. Is this correct?
Warning	Pedestrian Crossing	Arm 4 - Pedestrian crossing	Pedestrian crossing uses default settings only. Is this correct?

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	25.34	D

Junction Network

Driving side	Lighting	Network delay (s)	Network LOS
Left	Normal/unknown	25.34	D

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)
D14	2041 Base + Comm & Prop & Masterplan	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		✓	607	100.000
2		✓	301	100.000
3		✓	213	100.000
4		✓	1001	100.000
5		✓	16	100.000

Demand overview (Pedestrians)

Arm	Average pedestrian flow (Ped/hr)
1	5.00
2	
3	5.00
4	5.00
5	

Origin-Destination Data

Demand (PCU/hr)

	To					
		1	2	3	4	5
From	1	0	85	72	443	7
	2	109	0	16	171	5
	3	88	22	0	100	3
	4	713	237	43	0	8
	5	7	2	0	7	0

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Vehicle Mix

Heavy Vehicle Percentages

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

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS
1	0.74	15.04	2.7	C
2	0.36	6.27	0.6	A
3	0.22	4.45	0.3	A
4	0.94	42.03	12.1	E
5	0.04	8.62	0.0	A

Main Results for each time segment

16:45 - 17:00

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	457	232	3.76	960	0.476	453	0.9	7.055	A
2	227	427		1017	0.223	225	0.3	4.595	A
3	160	555	3.76	1195	0.134	160	0.2	3.476	A
4	754	175	3.76	1213	0.621	747	1.6	7.714	A
5	12	905		654	0.018	12	0.0	5.605	A

17:00 - 17:15

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	546	278	4.49	937	0.582	544	1.4	9.103	A
2	271	512		972	0.278	270	0.4	5.183	A
3	191	665	4.49	1131	0.169	191	0.2	3.831	A
4	900	210	4.49	1194	0.753	895	2.9	11.935	B
5	14	1084		562	0.026	14	0.0	6.576	A

17:15 - 17:30

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	668	334	5.51	909	0.735	663	2.6	14.338	B
2	331	624		914	0.363	331	0.6	6.232	A
3	235	813	5.51	1045	0.224	234	0.3	4.435	A
4	1102	257	5.51	1169	0.943	1073	10.2	31.222	D
5	18	1305		447	0.039	18	0.0	8.391	A

17:30 - 17:45

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	668	340	5.51	906	0.737	668	2.7	15.042	C
2	331	629		911	0.364	331	0.6	6.275	A
3	235	817	5.51	1043	0.225	235	0.3	4.452	A
4	1102	258	5.51	1169	0.943	1095	12.1	42.033	E
5	18	1327		435	0.040	18	0.0	8.620	A

17:45 - 18:00

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	546	289	4.49	932	0.586	551	1.4	9.572	A
2	271	520		968	0.279	271	0.4	5.230	A
3	191	672	4.49	1127	0.170	192	0.2	3.851	A
4	900	211	4.49	1194	0.754	935	3.3	15.742	C
5	14	1125		541	0.027	14	0.0	6.842	A

18:00 - 18:15

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Pedestrian demand (Ped/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1	457	236	3.76	958	0.477	459	0.9	7.242	A
2	227	433		1014	0.224	227	0.3	4.631	A
3	160	561	3.76	1192	0.135	161	0.2	3.491	A
4	754	176	3.76	1213	0.622	760	1.7	8.157	A
5	12	919		647	0.019	12	0.0	5.670	A

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Appendix C. ROAD SAFETY AUDIT



Stage 1 Road Safety Audit

**Proposed Residential Development,
Kingston Lands, Kingston Road, Galway**

On behalf of **Kingston Stables Ltd**

Prepared By:

CST GROUP

Chartered Consulting Engineers

1, O'Connell Street, Sligo, F91 W7YV

+353 (0)71 919 4500 info@cstgroup.ie www.cstgroup.ie

September 2025

**Civil
Structural
Traffic**

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DOCUMENT CONTROL

Revision	R0	R0	R1	R1								
Purpose of Issue: P=Preliminary C=Comment F=Final	C	F	C	F								
Date:	26 05 25	15 07 25	25 09 25	29 09 25								
Originator:	SS	SS	SS	SS								
Checked By:	PJG	PJG	PJG	PJG								
Approved By:	SS	SS	SS	SS								

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1. INTRODUCTION

- 1.1. This report describes a Stage 1 Road Safety Audit carried out on behalf of Kingston Stables Ltd on a proposed residential development at Kingston, Galway.
- 1.2. The audit was carried out between 20th June 2024 – 19th September 2025.
- 1.3. The audit team were as follows:

Team Leader:

Stuart Summerfield, HNC (Civil) FCIHT FSoRSA
Certificate of Competency in Road Safety Audits (SoRSA, 2015)
TII Auditor Ref. SS73290

Team Member:

PJ Gallagher, BEng M.Inst.A.E.A. MITAI
TII Auditor Ref. PG3425716

- 1.4. The audit comprised an examination of the drawings relating to the scheme supplied by the design office. A site visit was carried out by both Audit Team members together on 20th June 2024 between the hours of 12:00 – 13:00. Weather conditions during the inspection were overcast and the road surface was dry. Traffic conditions were considered light with cars, light goods and pedestrians. Photographs were taken during the inspection.
- 1.5. This Stage 1 audit has been carried out in accordance with the relevant sections of the Transport Infrastructure Ireland (TII) Publication (Standard) GE-STY-01024 (Dec 2017) 'Road Safety Audit'. The audit 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. **Appendix A** describes the documents examined by the Audit Team.
Appendix B contains the Audit Feed Back Form. The Designer shall consider the Audit Report and prepare a Designer Response to each of the recommendations, using the Feedback Form. The response shall state clearly whether each recommendation is accepted, rejected, or whether an alternative recommendation is proposed. Copies of the Designer Response shall be sent to the Employer and the Audit Team. The Audit Team shall then consider the Designer Response and indicate on the Feedback Form whether the Designer's response to each recommendation is accepted. The completed Report contains the completed Feedback Form with signatures of all three parties involved - Designer, Audit Team Leader and Employer.
- 1.7. All of the 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 collision occurrence.

2. ITEMS RESULTING FROM PREVIOUS STAGE 1 AUDIT

A Stage 1 RSA was undertaken on the proposed development in July 2025. The design drawings have since been updated and the extent of development subject to this RSA has been reduced. The audit team have reviewed the previous report. Where problems remain and a viable and proportionate remedial measure is available the problem has been carried forward to Section 3 of this revised report.

3. ITEMS RESULTING FROM THIS STAGE 1 AUDIT

3.1 Collision Data

Collision data has not been supplied with this scheme.

Road Collision Data is not currently available on the Road Safety Authority Database, therefore no collision trends in the immediate vicinity of the proposed site can be analysed.

3.2 General Problems / Problems at Multiple Locations

3.2.1 Long and Straight Roads

Problem: There are long and straight roads within the development. Long and straight roads have a poor historic record of undesirably high vehicle speeds.

Hazard: Vehicle loss of control or high-speed impact with crossing pedestrians may result.

Recommendation: The Design Team should provide suitable traffic calming throughout the development.

3.2.2 Internal junction Radii

Problem: The internal junctions appear to have large radii. This can result in motorists undertaking high-speed left turns.

Hazard: Impact with pedestrians crossing at the junctions may result.

Recommendation: The Design Team should ensure all junction radii are in compliance with the recommendations in the DMURS document.

3.2.3 Kerb Heights

Problem: The drawings indicate the kerb between the carriageway and cycle track, and also the cycle track and the footpath, are to be 25mm high. The 25mm height is likely to be difficult to identify by all users.

Hazard: Motorists may enter the cycle track, and pedestrians may trip / fall off the kerb.

Recommendation: The Design Team should amend the kerb heights to comply with the current Cycle Manual.

3.2.4 Footpath Transition onto Shared Surface

Problem: There is no guidance offered to sight-impaired pedestrians to advise they are transitioning from a segregated footpath into an area shared with motor vehicles.

Hazard: Sight-impaired pedestrians may be struck by vehicles.

Recommendation: The Design Team should provide suitable tactile surfaces and signage to advise of the change of environment.

3.2.5 Cyclists Junction Visibility – Kingston Road

Problem: Cyclists from the development have visibility onto Kingston Road restricted in both directions by boundary walls and vegetation.

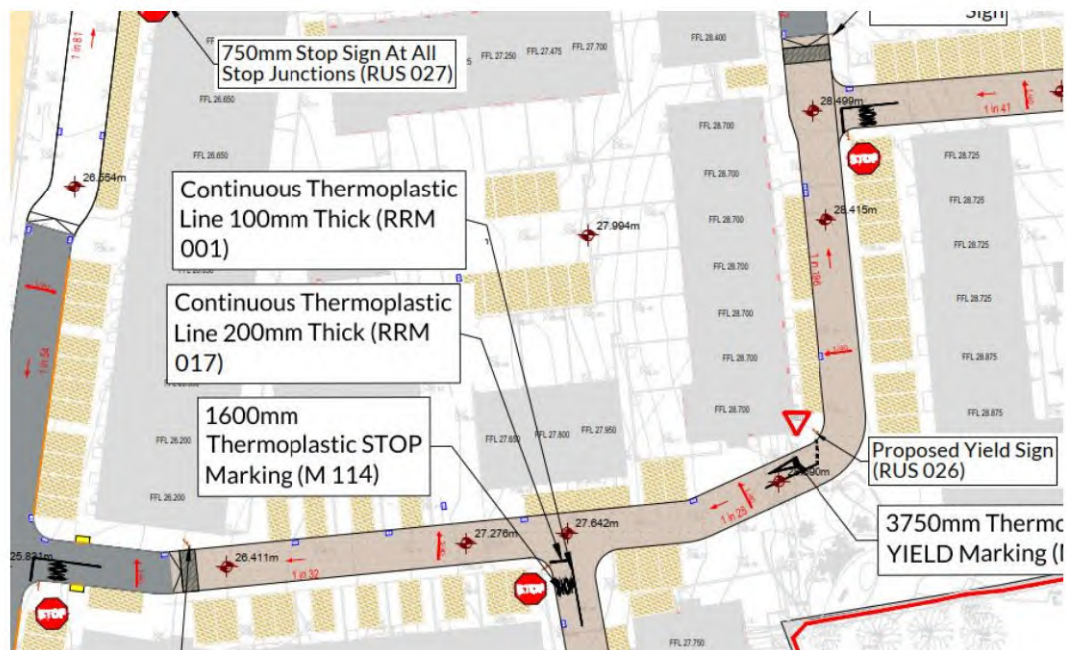


Hazard: Cyclists may exit the development junction into the path of oncoming vehicles, cyclists or pedestrians.

Recommendation: The Design Team should ensure cyclists visibility is achieved to both the carriageway and footpath.

3.2.6 Homezones

Problem: There are large sections of the development assigned as “homezones” Although the carriageway is a different colour the surface appears to remain a carriageway, being wide, uniform width, road markings and generally straight alignments. It is likely motorists will drive on these sections as if they were on a standard carriageway, even though there is no segregated footpath for pedestrians.



Hazard: Motorists may impact with pedestrians, possibly children playing in the home zone.

Recommendation: The Design Team should amend the design to reduce the vehicle dominance of these areas.

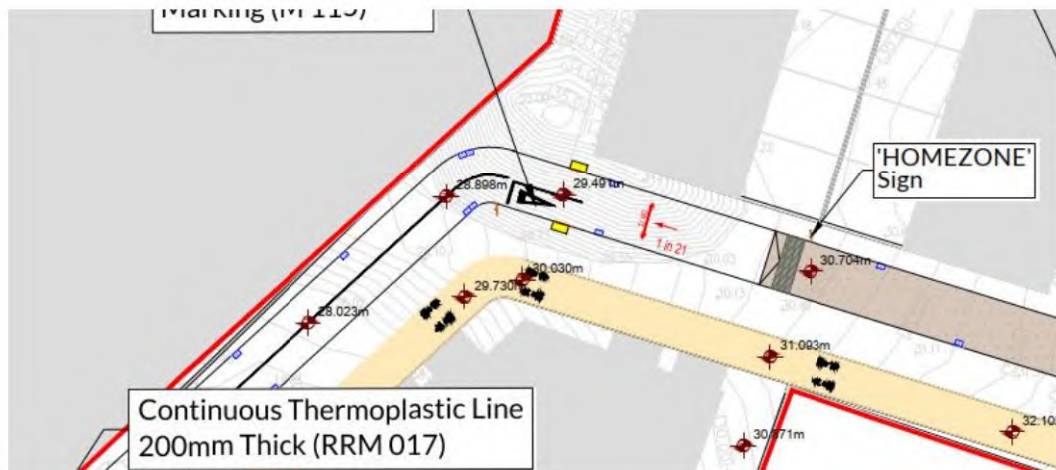
Reference to the DMURS publication should be made in this regard.

Hazard: Cycle loss of control may result in falling from the bike or impact with opposing pedestrians / cyclists.

Recommendation: The Design Team should redesign the area to achieve a path that is safe for cyclists and pedestrians to use.

3.2.9 Carriageway Horizontal Alignments

Problem: The development includes carriageways with tight horizontal bends. These bends are unlikely to be suitable for the passage of opposing vehicles. The Design Team has introduced yield road markings, assumed to be for this very reason. Users of the development are likely to become complacent and ignore these yield road markings. This is of particular concern for two-wheeled vehicles who may believe they will be able to squeeze past opposing vehicles.

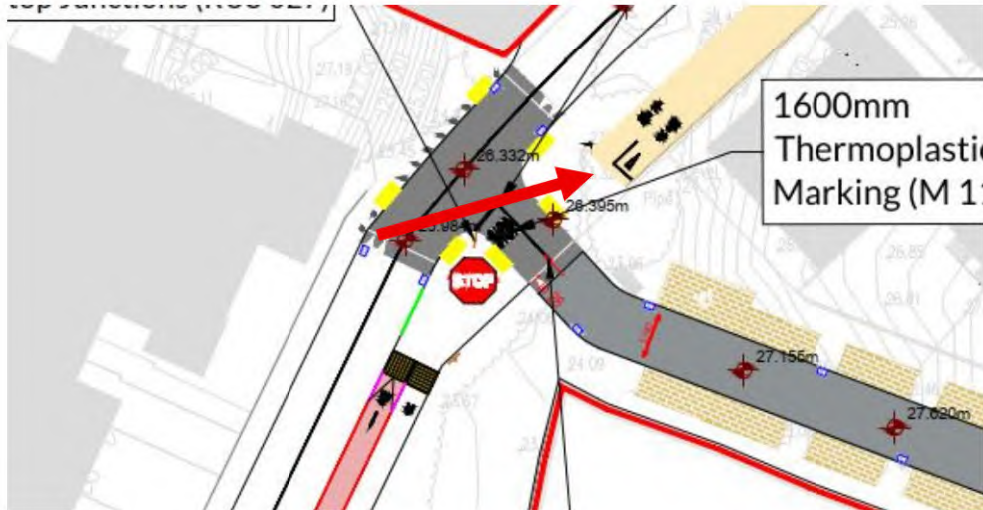


Hazard: Head-on impacts may result.

Recommendation: The Design Team should redesign the problem areas to ensure opposing vehicles can pass each other. If the design is intended to achieve traffic calming, chicanes should be located on straights where visibility of opposing traffic is enhanced.

3.2.10 Termination of Active Travel Path

Problem: It is not clear from the design what the cyclists is meant to do at the start and end of the active travel path.



Hazard: Cyclists may cut in front of motorists vehicles when leaving / rejoining the carriageway. Impact between users may result.

Recommendation: The Design Team should redesign the start and ends of the active travel path in order to accommodate a safe transition to/from the carriageway for cyclists.

3.2.11 Footpath Widths

Problem: The footpath space between parked vehicles and buildings appears to be very narrow. Wheelchair users may have difficulty in passing through this space and may attempt to walk.



Hazard: Trip / fall injuries may result.

Recommendation: The Design Team should ensure all accesses to the dwelling units can be comfortably achieved for wheelchair and mobility scooter users.

4. AUDIT TEAM STATEMENT

We certify that we have examined the drawings and other information listed in Appendix A. This examination has been carried out with the sole purpose of identifying any features of the design that could be removed or modified to improve the safety of the scheme. The problems that we have identified have been noted in the report, together with suggestions for improvement which we recommend should be studied for implementation. No one in the Audit Team has been involved with the scheme design as shown in Appendix A.

Signed 
Stuart Summerfield
Audit Team Leader

Date 19/09/2025

Signed 
PJ Gallagher
Audit Team Member

Date 19/09/2025

APPENDIX A LIST OF DOCUMENTS EXAMINED

The following drawings received from TOBIN on 18/09/2025: -

11893-2009 Proposed Roads Layout Sheet 1 of 4

11893-2010 Proposed Roads Layout Sheet 2 of 4

11893-2011 Proposed Roads Layout Sheet 3 of 4

11893-2012 Proposed Roads Layout Sheet 4 of 4

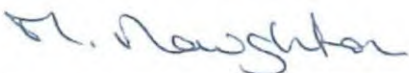
APPENDIX B RSA FEEDBACK FORM

ROAD SAFETY AUDIT FEEDBACK FORM

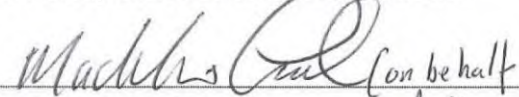
CST Group Chartered Consulting Engineers
1, O'Connell Street, Sligo, F91 W7YV, Ireland

Scheme: Proposed Residential Development, Kingston Lands, Kingston Road, Galway
Audit Stage: 1 Date Audit Completed: 19/09/2025 Route No. R337 Our Ref: 124166 | R1

TO BE COMPLETED BY DESIGNER				TO BE COMPLETED BY AUDIT TEAM LEADER
Paragraph No. in Safety Audit Report	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)
3.2.1	YES	YES		
3.2.2	YES	YES		
3.2.3	YES	YES		
3.2.4	YES	YES		
3.2.5	YES	YES		
3.2.6	YES	YES		
3.2.7	YES	YES		
3.2.8	YES	YES		
3.2.9	YES	YES		
3.2.10	YES	YES		
3.2.11	YES	YES		
3.3.1	YES	YES		

Signed:  Design Team Leader Date: 29.09.2025
Michael Naughton
TOBIN

Signed:  Audit Team Leader Date: 29-09-2025
Stuart Summerfield
CST Group Chartered Consulting Engineers

Signed:  Employer Date: 29/09/2025
For Kingston Stables Ltd on behalf of Kingston Stables Ltd

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