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APPENDIX 15-1

TRAFFIC IMPACT ASSESSMENT

TOBIN

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Kingston Stables Ltd.

Residential Development at Kingston, Knocknacarra, Galway.

LRD West

Traffic and Transportation Assessment

BUILT ON KNOWLEDGE

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1.0 NON-TECHNICAL SUMMARY

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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 2.9 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, the recently granted high-density residential development 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 to the north form part of a future masterplan scheme which has granted planning for an aquatic facility to the north-east of the proposed development, and potential a commercial development to the north of the proposed development.

As part of the enabling works for the granted LRD East development, vehicular access to the proposed development will be gained from the Western Distributor Road, from an existing roundabout.

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 133 no. residential units in 2 no. development areas with a mix of duplex and house types on a site area of 2.9 ha. The buildings range between 2 no. and 3 no. storeys in height. The development will comprise the following:
    - 51 no. 3-bed townhouses;
    - 6 no. 4-bed townhouses;
    - 1 no. 1-bed duplex apartments;
    - 1 no. 2-bed duplex houses;
    - 37 no. 2-bed ground floor duplex apartments;
    - 37 no. 3-bed duplex houses.
2. Demolition of existing structures (388 sqm);
3. Vehicular access to the proposed development from a permitted road (Planning Reference 24/60370 refers);
4. Upgrades to the permitted road (Planning Reference 24/60370 refers);
5. Pedestrian and cycle access to the adjacent proposed Kingston Park (ACP Ref: 323873);
6. Conversion and upgrade of an existing structure to a cafe (65.6 sqm);
7. The provision of public open space;
8. The provision of 192 no. bicycle parking spaces;
9. The provision of 143 no. car parking spaces;

10. Public lighting, bin stores, signage, services, 2 no. ground mounted substation kiosks, site landscaping and all ancillary site development and enabling works.

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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 192 no. 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 2029 and the design year 2044. 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

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Junction Ref:	Junction Design	Traffic Design Years and Scenarios
Junction 1	Existing Roundabout Layout	2026 Existing
		2029 Base
		2029 Base + Committed Developments
		2029 Base + Committed & Proposed Developments
		2044 Base + Committed Developments
		2044 Base + Committed & Proposed Developments
		2044 Base + Committed & Masterplan
	Potential Future Active Travel Scheme Design	2029 Base
		2029 Base + Committed Developments
		2029 Base + Committed & Proposed Developments
		2044 Base + Committed Developments & Estimated Active Travel Scheme Reduction Factor
		2044 Base + Committed & Proposed Developments & Estimated Active Travel Scheme Reduction Factor
		2044 Base + Committed & Masterplan & Estimated Active Travel Scheme Reduction Factor
		2044 Base + Committed & Masterplan & Galway City Ring
Junction 2	Existing Roundabout Layout	2026 Existing
		2029 Base
		2029 Base + Committed Developments
		2029 Base + Committed & Proposed Developments
		2044 Base + Committed Developments
		2044 Base + Committed & Proposed Developments
		2044 Base + Committed & Masterplan

1.2.2 Junction 1 – Bothar Stiofáin / 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 2026 morning and evening peak periods. This will continue to be the case for the 2029 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 2044 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.

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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 2029 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 2044 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 2044 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) 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 2044 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 2026 peak periods. This will continue to be the case for the 2029 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 2044 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) 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, overall the junction is forecast to continue to operate within capacity.

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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 143 no. car parking spaces and 192 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

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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 (known as LRD West). Vehicular access to the proposed development will be gained via a priority T-junction off the Altan arm of the Western Distributor Road / Bothar Stiofáin / 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 as granted previously under Planning Reference 24/60370. The existing site area is 2.9ha, 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 – Bothar Stiofáin / 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 Stiofáin 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

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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 2.1 – Existing Road Network**
  - **Problem:** The Audit Team observed that the existing road network consists of a rapid build cycle lane on Altan Road. The Audit Team is concerned that this temporary traffic management measure may create uncertainty for cyclists crossing Altan Road to gain access to northbound lane. This may result in sudden manoeuvres by cyclists who may remain on the carriageway. This could lead to a collision between a cyclist and a vehicle.
  - **Recommendation:** The Design Team should provide a permanent cycle lane in accordance with the relevant design standards, ensuring a suitable transition between the existing and proposed cycle facilities.
  - **Response:** The design team accepts the problem and recommendation with the provision of permanent cycle lanes on the proposed upgraded road and throughout the site.
- **Problem 2.2 – STOP road marking**
  - **Problem:** The Audit Team observed that no STOP road markings have been provided at key junctions within the proposed development. This omission raises safety concerns, as the absence of clear priority control may lead to driver confusion and increase the risk of side on collisions.
  - **Recommendation:** The Design Team should incorporate appropriate STOP road markings in accordance the Traffic Signs Manual.
  - **Response:** The design team accepts the problem and recommendation and stop markings are provided where required at junctions.
- **Problem 2.3 – Missing Road Markings**
  - **Problem:** The Audit Team notes that no road markings have been provided on the raised junction. The Audit Team is concerned that approaching drivers may not be adequately warned of the upcoming traffic calming feature. This could result in vehicles failing to reduce speed, striking the ramp, and making a sudden manoeuvre onto the footpath, resulting in a collision with a vulnerable road user (VRU).

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- **Recommendation:** The Design Team should ensure road markings are provided at the raised junction and that they comply with the requirements of the Traffic Signs Manual (TSM).
- **Response:** The design team accepts the problem and recommendation and the required road markings are provided where required at the raised junction and that they comply with the requirements of the Traffic Signs Manual (TSM).

- **Problem 2.4 – Footpath Location**
  - **Problem:** The Audit Team observed that the proposed footpath is located to the rear of the parking spaces. The Audit Team is concerned that vulnerable road users, particularly children, may be obscured by parked vehicles while vehicles are manoeuvring into or reversing out of parking spaces. This may result in collisions between vehicles and vulnerable road users.
  - **Recommendation:** The Design Team should relocate the footpath to the front of the parking spaces to minimise conflicts between pedestrians and reversing vehicles.
  - **Response:** The area in question is a shared surface / Homezone area and has been designed to promote low vehicle speeds and a pedestrian-priority environment. Soft landscaping is proposed behind the carparking spaces. The previously proposed dropped kerb delineation in front of the parking has been omitted and the surface finish is now continuous across the full width of the space. This measure was accepted by the Auditors.

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.

3.0 PROPOSED DEVELOPMENT

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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 2.9 ha on lands located at Knocknacarra, Galway.

The proposed development will consist of the following:

11. Provision of 133 no. residential units in 2 no. development areas with a mix of duplex and house types on a site area of 2.9 ha. The buildings range between 2 no. and 3 no. storeys in height. The development will comprise the following:
    - 51 no. 3-bed townhouses;
    - 6 no. 4-bed townhouses;
    - 1 no. 1-bed duplex apartments;
    - 1 no. 2-bed duplex houses;
    - 37 no. 2-bed ground floor duplex apartments;
    - 37 no. 3-bed duplex houses.
12. Demolition of existing structures (388 sqm);
13. Vehicular access to the proposed development from a permitted road (Planning Reference 24/60370 refers);
14. Upgrades to the permitted road (Planning Reference 24/60370 refers);
15. Pedestrian and cycle access to the adjacent proposed Kingston Park (ACP Ref: 323873);
16. Conversion and upgrade of an existing structure to a cafe (65.8 sqm);
17. The provision of public open space;
18. The provision of 192 no. bicycle parking spaces;
19. The provision of 143 no. car parking spaces;
20. Public lighting, bin stores, signage, services, 2 no. ground mounted substation kiosks, 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

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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.

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			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

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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
2560320	Granted (Conditional) - Appealed	LRD East	Notice for a Large-Scale Residential Development Application to Galway City Council. Permission for development which consists of: We, Kingston Stables Limited, intend to apply for permission 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 Rahoon, Knocknacarra, Galway. The application is being made under the provisions of the Planning and Development (Amendment) (Large Scale Residential Development) Act 2021. The proposed development will consist of: 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-bedroon 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

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			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 Report (EIAR) and Natura Impact Statement (NIS) have been prepared in respect of the proposed development. All application documentation including the NIS and EIAR is available to view online at the following website set up by the applicant www.kingstonstableslrd.com

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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

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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 – Bothar Stiofáin / Western Distributor Road / Altan (TTS Survey 14th May 2026)
Traffic Survey B:	Roundabout Junction - Gort Na Bro / Western Distributor Road / An Logan (TTS Survey 14th May 2026)

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

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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 Rahoon 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).

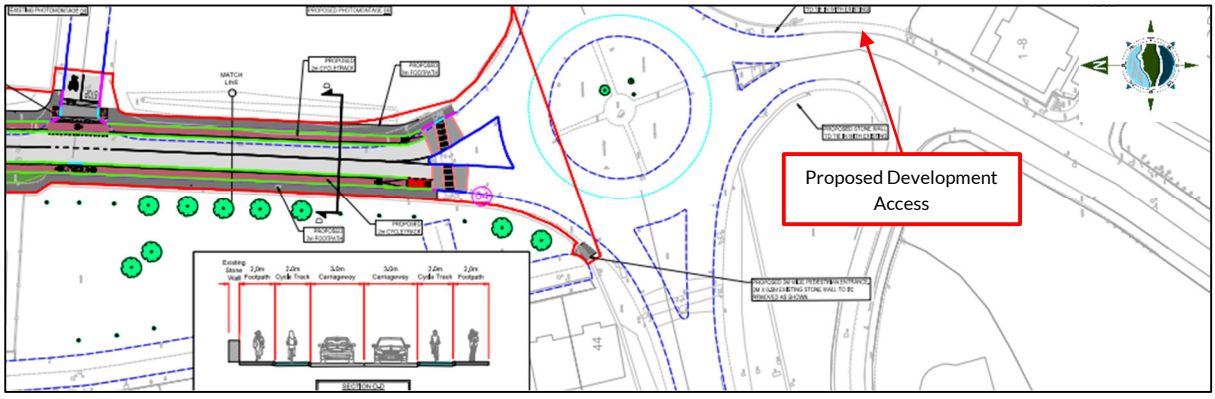


Figure 4-2: Proposed Bóthar Stiofáin Cycle Network tie-in with Western Distributor Road

4.3.3 WESTERN DISTRIBUTOR ROAD - ACTIVE TRAVEL SCHEME

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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 Stiofáin / 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.

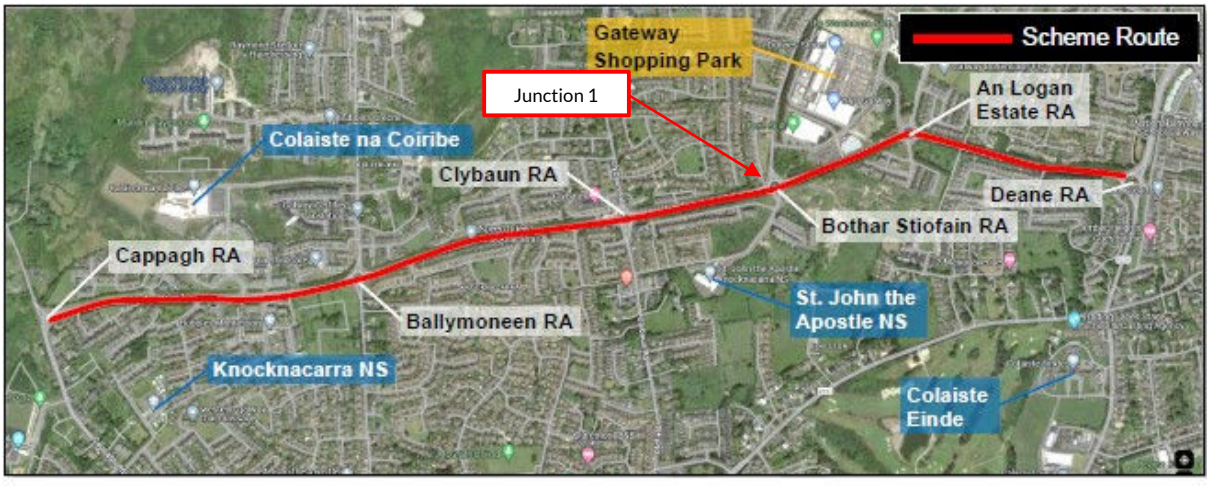


Figure 4-3: Extent of the proposed works on the Western Distributor Road

4.4 PROPOSED SITE ACCESS JUNCTION

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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 roundabout's southern arm services Altan and Gort Siar, existing residential developments, and the Knocknacarra National School. The granted Planning Permission reference 24/60370 and 25/60320 contain 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.

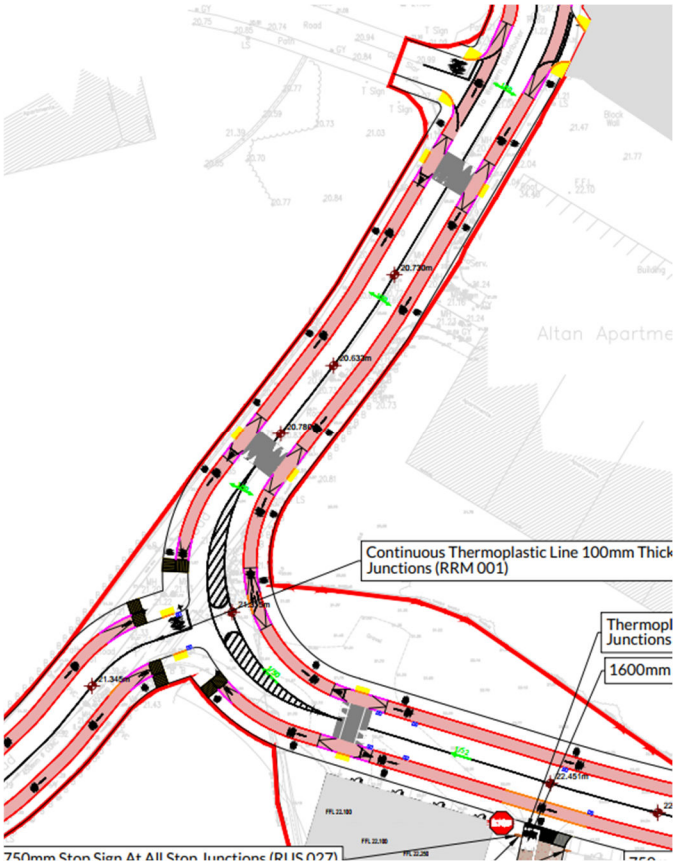


Figure 4-4: Proposed Altan Road Upgrade Works

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 Rahoon 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

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5.1 OPENING AND FUTURE YEAR FLOWS AND ENVIRONMENT

The proposed development is anticipated to be constructed in two phases. Therefore, the opening year of 2029 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 2044 (+ 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) - 2026

	2029	2031	2044
LV	1.047	1.096	1.185
HV	1.062	1.156	1.382

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
Proposed Altan Quarter - Residential	70	10	23
Previously Granted Altan Quarter - Residential	21	3	7
Previously Granted Miller's Quarter - Residential	40	6	13
Previously Granted Orchard Quarter	175	25	58
Total		**44**	**101**

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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
Proposed Altan Quarter - Residential	70	20	12
Previously Granted Altan Quarter - Residential	21	7	5
Previously Granted Miller's Quarter - Residential	40	12	7
Previously Granted Orchard Quarter	175	51	29
Total		**90**	**53**

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
Proposed Kingston Quarter - Residential	63	9	21
Previously Granted Threadneedle Quarter - Residential	126	18	41
Total		**27**	**62**

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
Proposed Kingston Quarter - Residential	63	18	11
Previously Granted Threadneedle Quarter - Residential	126	37	21
Total		**55**	**32**

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

Total Numbers of vehicles	Arrivals	Departures
AM	71	163
PM	145	85

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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). The LRD East residential development and Aquatic Centre are allocated trips as per the previously granted planning applications.

An allowance for the remaining retail development lands 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 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 / m2	Arrivals	Departures
Proposed Altan Quarter - Residential	70	10	23
Proposed Kingston Quarter - Residential	63	9	21
Previously Granted			
Altan Quarter - Residential	21	3	7
Threadneedle Quarter - Residential	126	18	41
Miller's Quarter - Residential	40	6	13
Orchard Quarter - Residential	175	25	58
Swimming Pool	5130 m^2	35	21
Remaining Area			
Retail	7313 m^2	177	112
Total		**283**	**296**

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 / m2	Arrivals	Departures
Proposed Altan Quarter - Residential	70	20	12
Proposed Kingston Quarter - Residential	63	18	11
Previously Granted			
Altan Quarter - Residential	21	6	4
Threadneedle Quarter - Residential	126	37	21

Miller's Quarter - Residential	40	12	7
Orchard Quarter - Residential	175	51	29
Swimming Pool	5130 m^2	48	57
Remaining Area			
Retail	7313 m^2	269	272
Total		**461**	**413**

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

Total Numbers of vehicles	Arrivals	Departures
AM	**283**	**296**
PM	**461**	**413**

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 2044 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

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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.

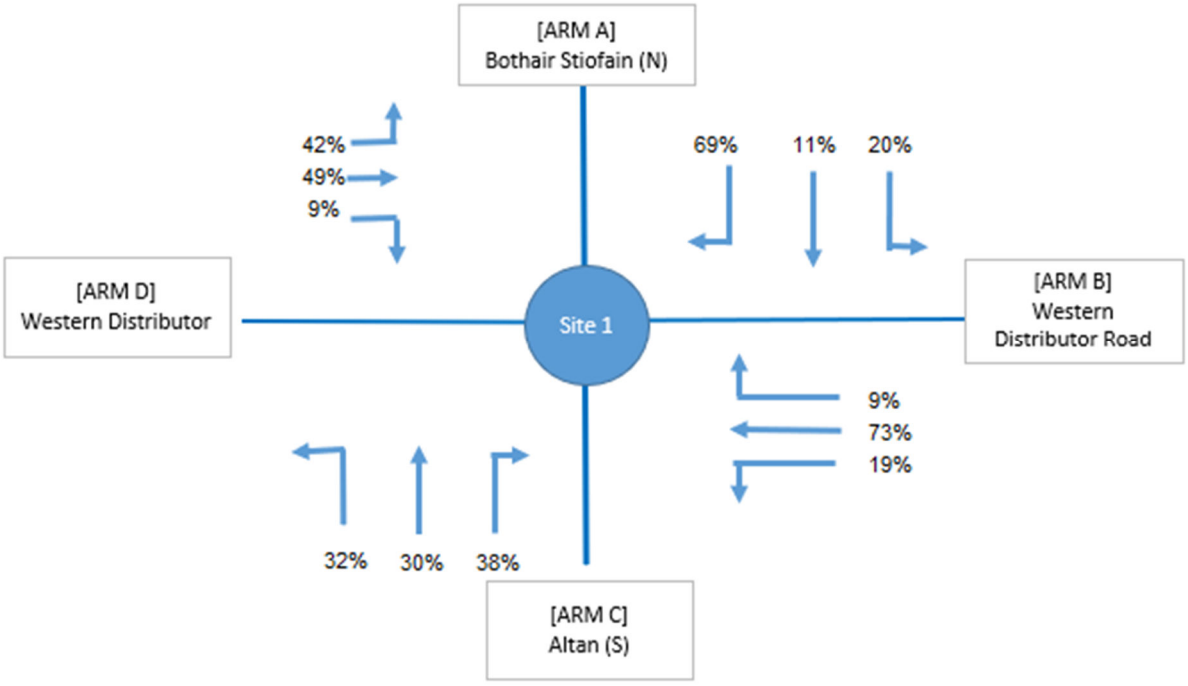


Figure 5-1: Traffic Distribution for AM Peak Hour at Junction 1

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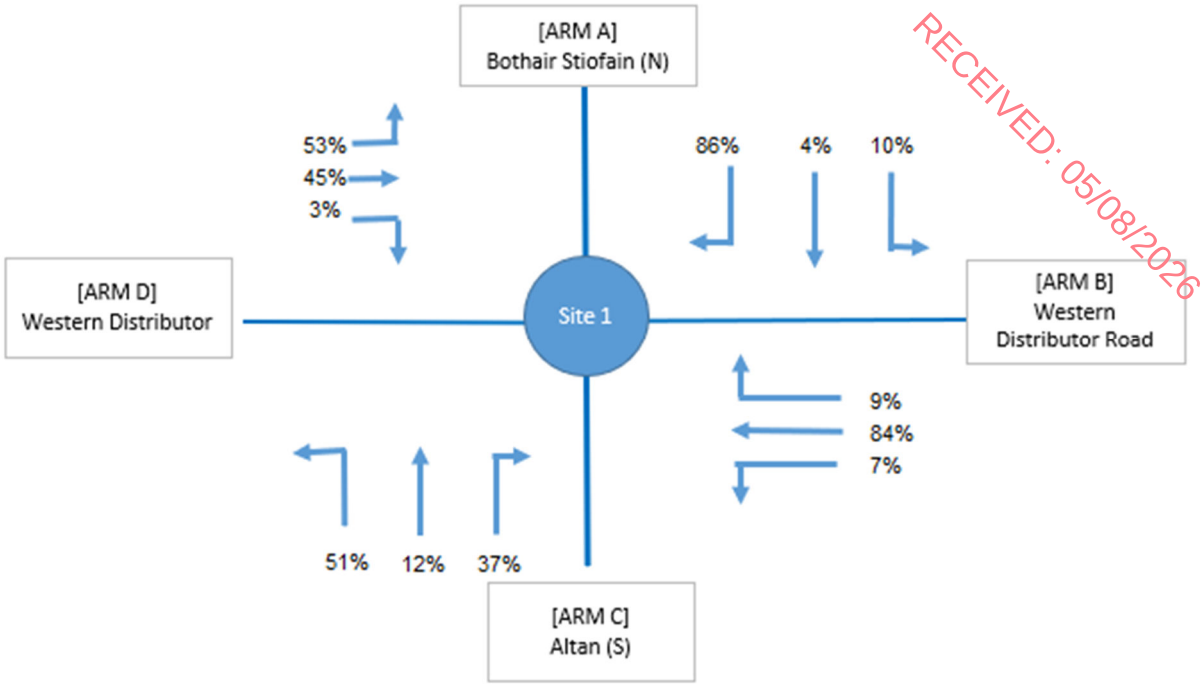


Figure 5-2: Traffic Distribution for PM Peak Hour at Junction 1

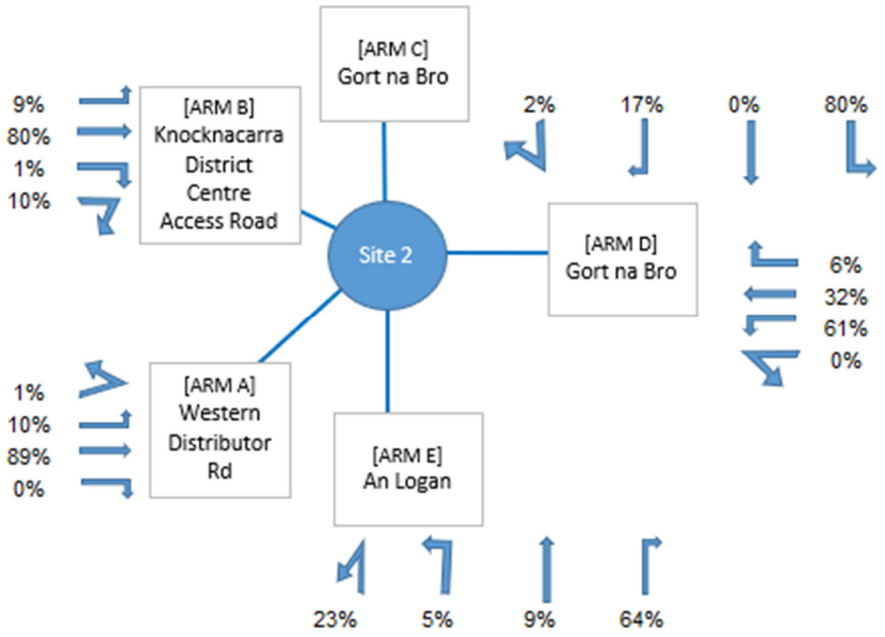
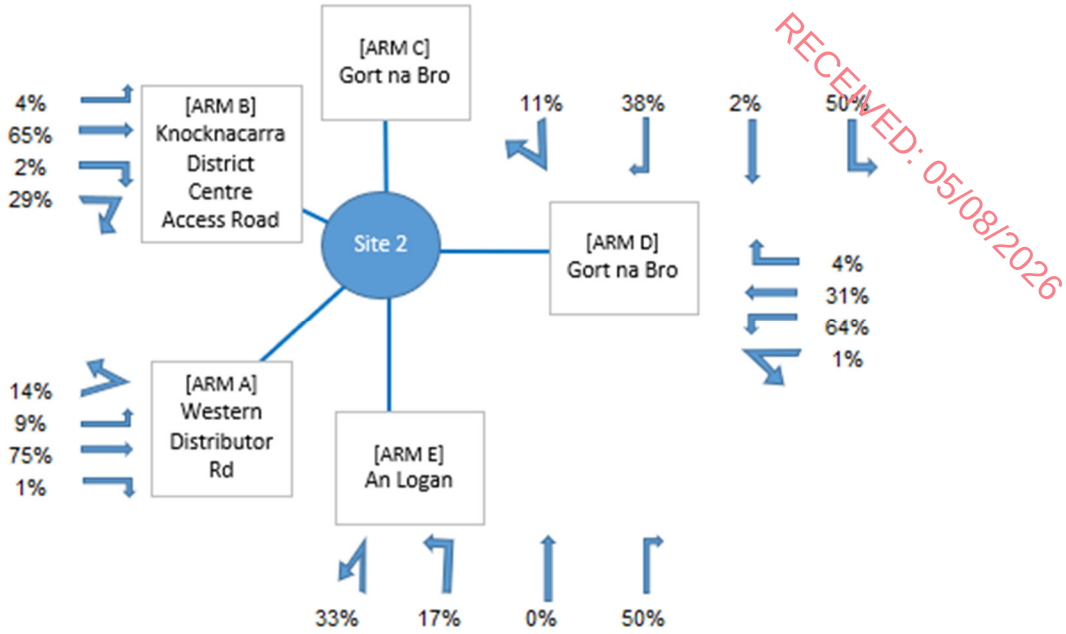


Figure 5-3: Traffic Distribution for AM Peak Hour at Junction 2



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

5.4 TRIP DISTRIBUTION OF BASEFLOW PLUS GENERATED TRAFFIC

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The baseline plus generated traffic (with both committed and proposed development) for the year of opening 2029 and the design year 2044 for both the AM and PM peak hours are shown in the Figures below. The baseline plus generated masterplan traffic for the design year 2044 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	2026 Existing
		2029 Base
		2029 Base + Committed Developments
		2029 Base + Committed & Proposed Developments
		2044 Base + Committed Developments
		2044 Base + Committed & Proposed Developments
		2044 Base + Committed & Masterplan
	Potential Future Active Travel Scheme Design	2029 Base
		2029 Base + Committed Developments
		2029 Base + Committed & Proposed Developments
		2044 Base + Committed Developments & Estimated Active Travel Scheme Reduction Factor
		2044 Base + Committed & Proposed Developments & Estimated Active Travel Scheme Reduction Factor
		2044 Base + Committed & Masterplan & Estimated Active Travel Scheme Reduction Factor
		2044 Base + Committed & Masterplan & Galway City Ring
Junction 2	Existing Roundabout Layout	2026 Existing
		2029 Base
		2029 Base + Committed Developments
		2029 Base + Committed & Proposed Developments
		2044 Base + Committed Developments
		2044 Base + Committed & Proposed Developments
		2044 Base + Committed & Masterplan

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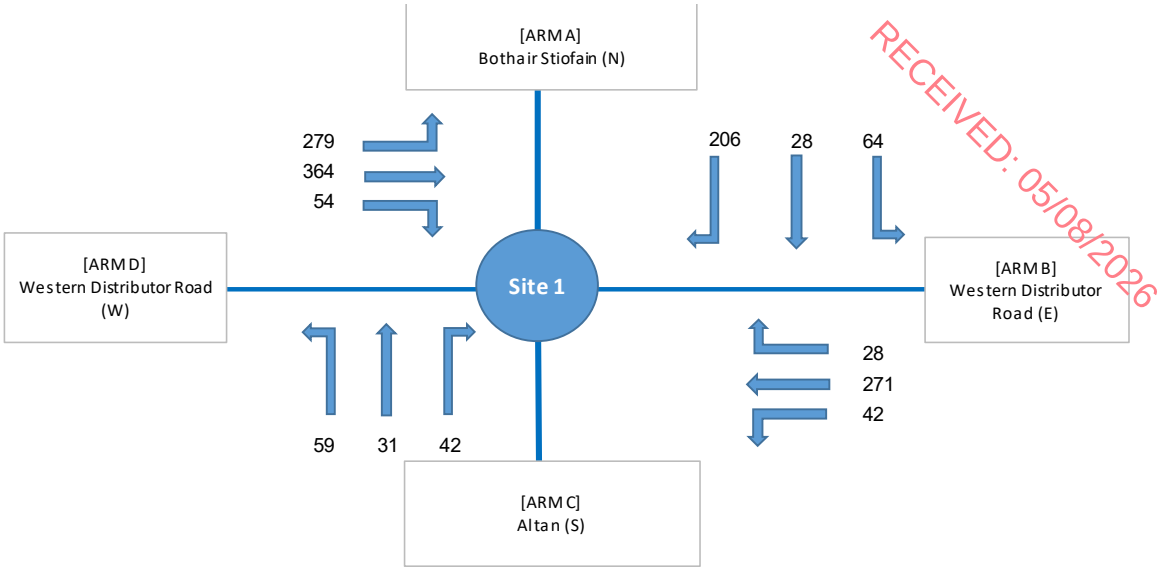


Figure 5-5: Baseflow Traffic 2026 AM Peak – Junction 1

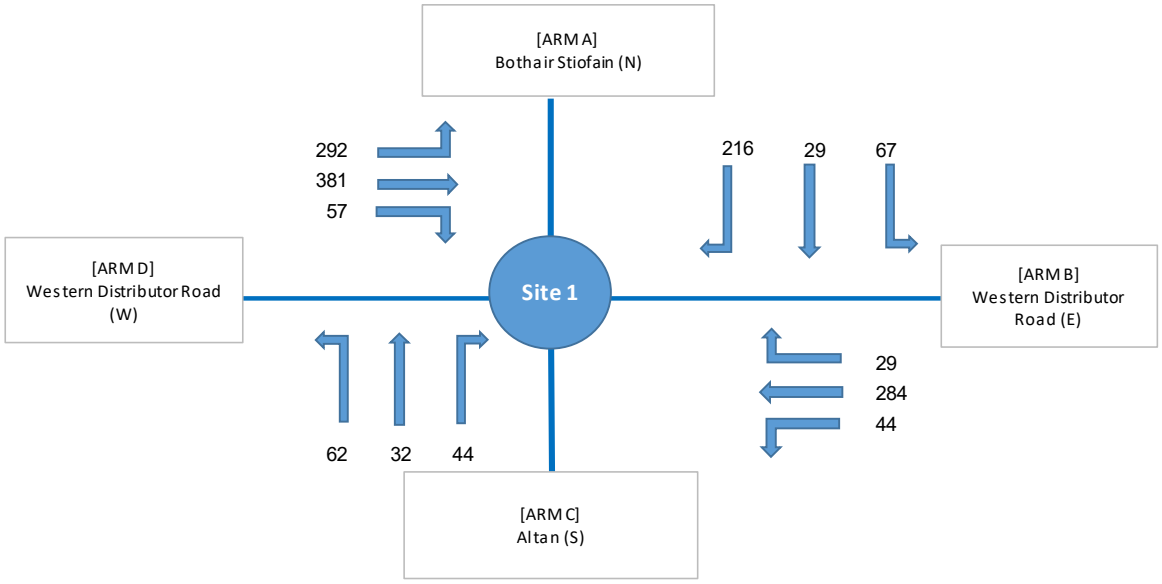
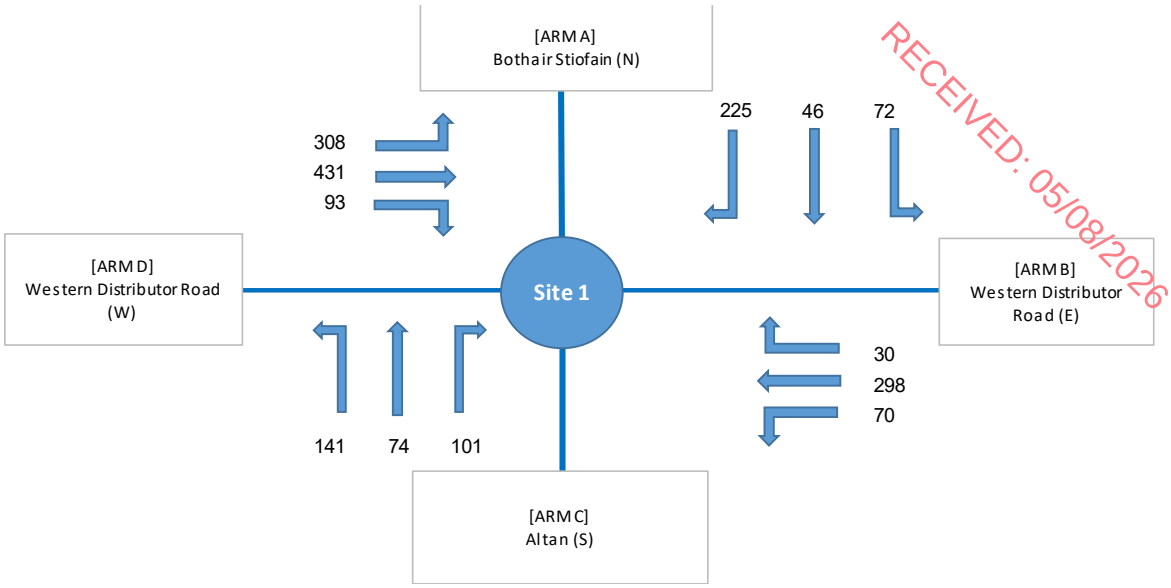


Figure 5-6: Baseflow Traffic 2029 AM Peak – Junction 1



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Figure 5-7: Baseflow + Comm. & Proposed Development Generated Traffic 2029 AM Peak – Junction 1

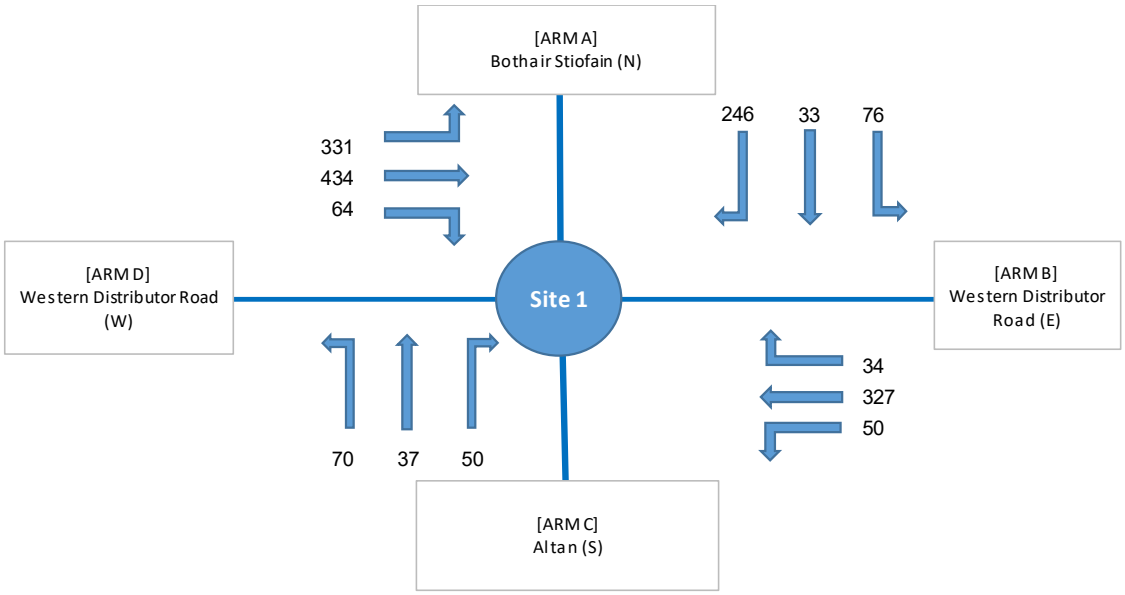


Figure 5-8: Baseflow Traffic 2044 AM Peak – Junction 1

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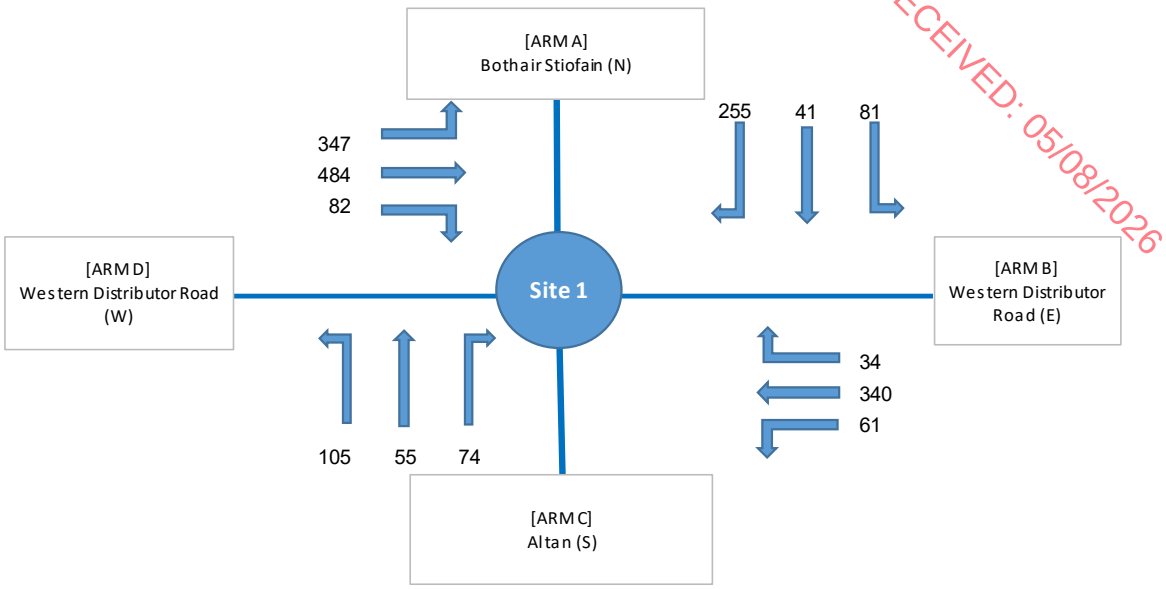


Figure 5-9: Baseflow + Comm. Development Generated Traffic 2044 AM Peak – Junction 1

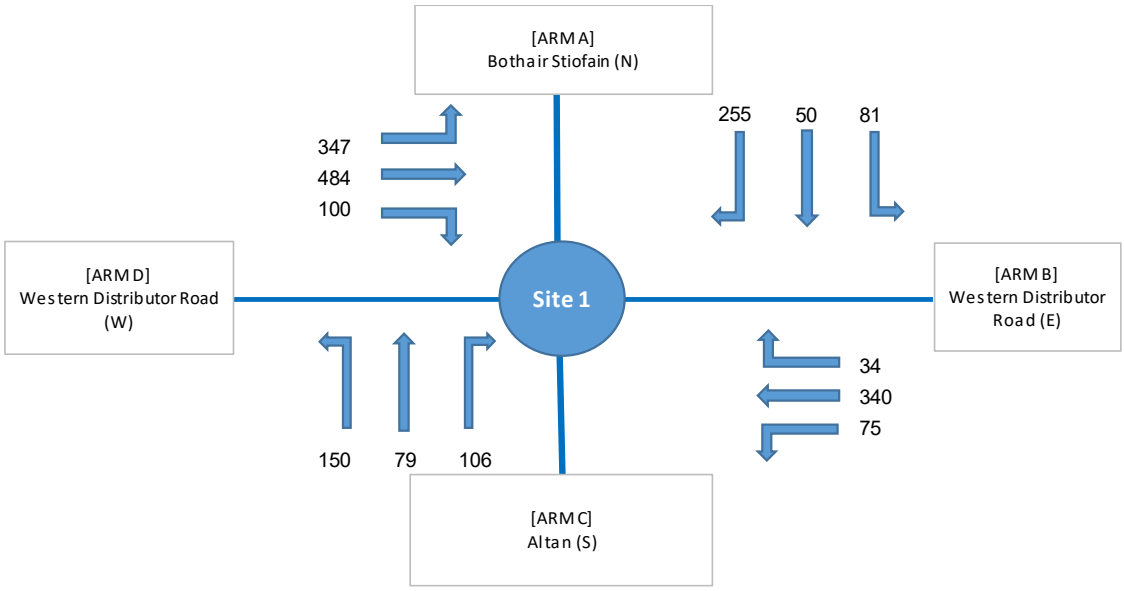


Figure 5-10: Baseflow + Comm. & Proposed Development Generated Traffic 2044 AM Peak – Junction 1

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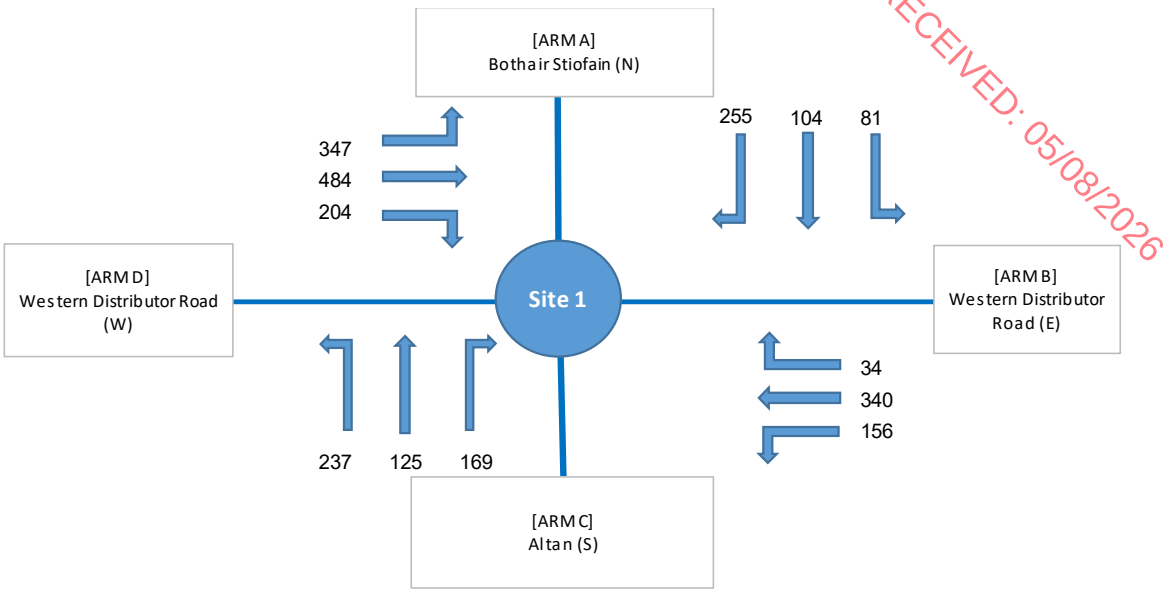


Figure 5-11: Baseflow + Comm. & Proposed Development Generated Traffic + Masterplan 2044 AM Peak – Junction 1

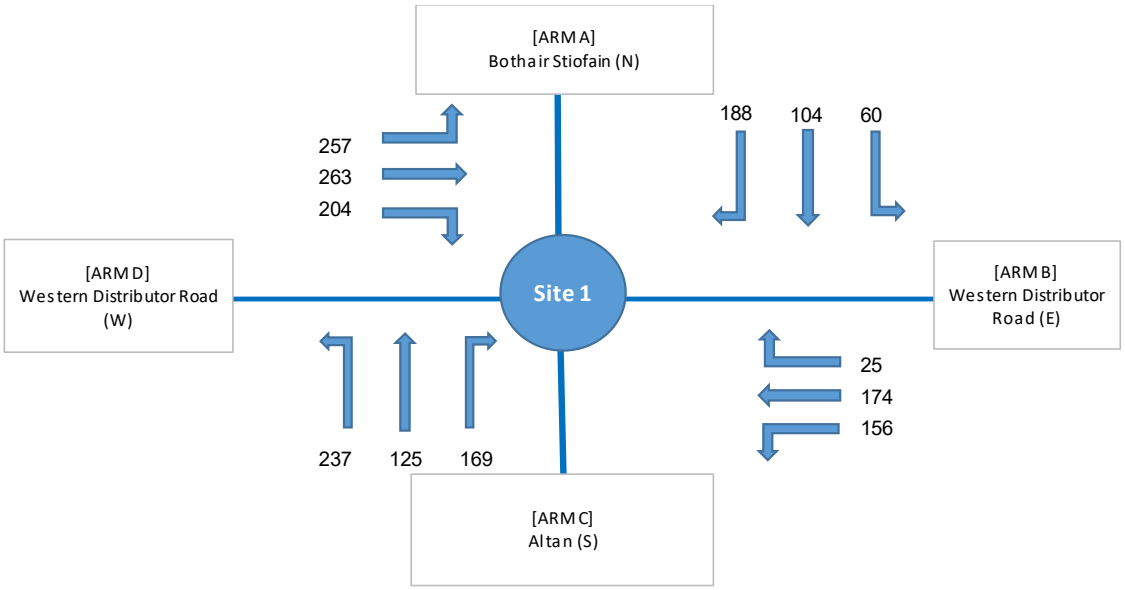
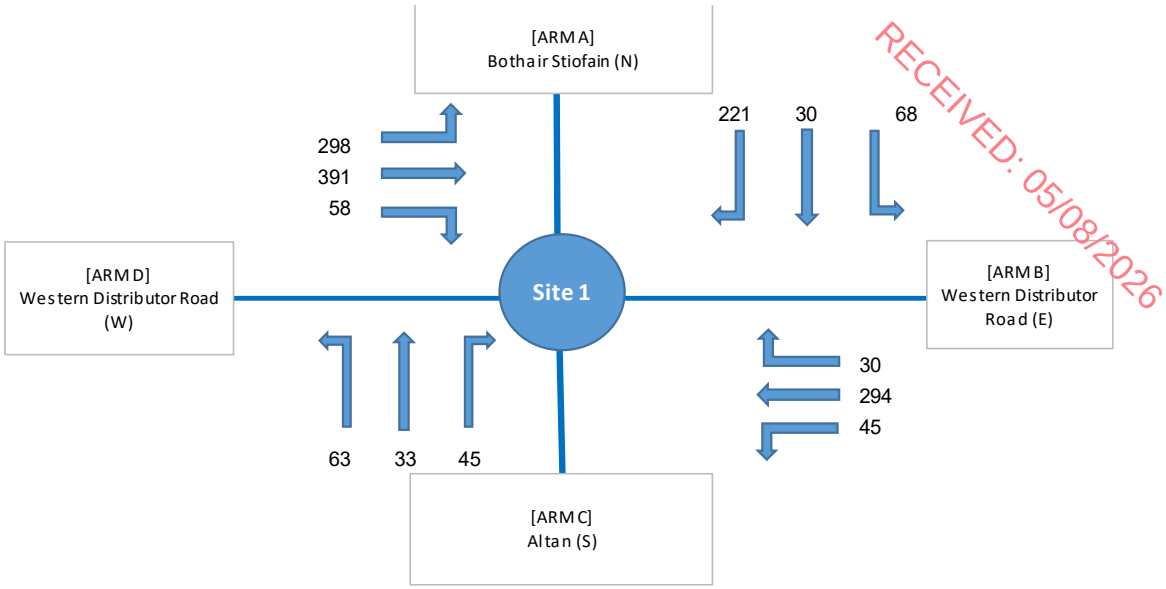


Figure 5-12: Baseflow + Comm. & Proposed Development Generated Traffic + Masterplan + Galway City Ring Road 2044 AM Peak – Junction 1



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Figure 5-13: Baseflow + WDR Active Travel Scheme 2044 AM Peak – Junction 1

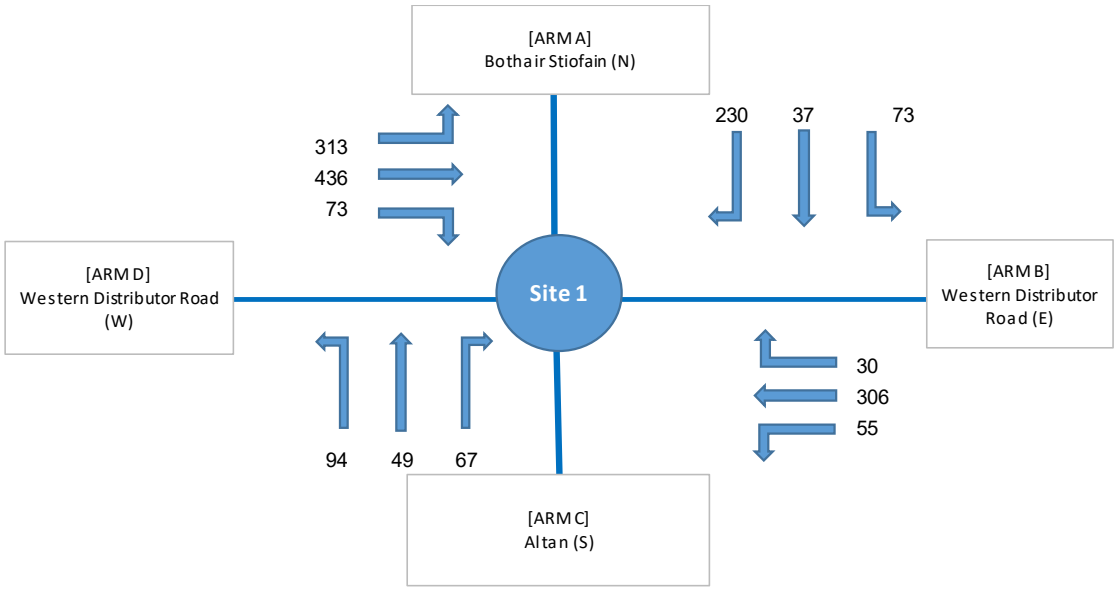


Figure 5-14: Baseflow + Comm. & Proposed Development Generated Traffic + WDR Active Travel Scheme 2044 AM Peak – Junction 1

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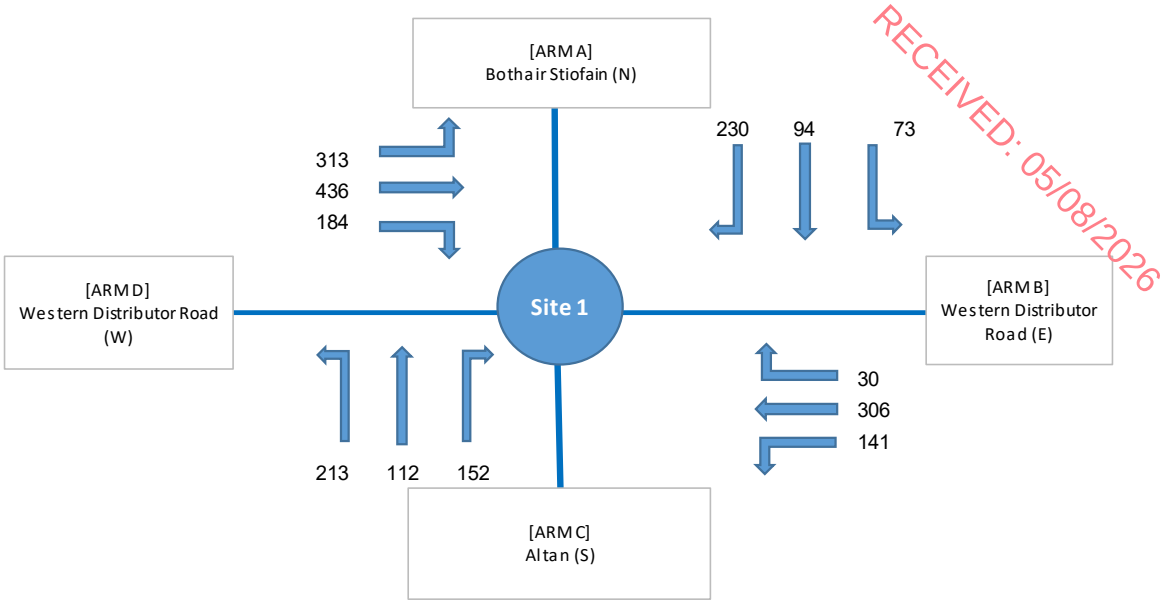


Figure 5-15: Baseflow + Comm. & Proposed Development Generated Traffic + Masterplan + WDR Active Travel Scheme 2044 AM Peak – Junction 1

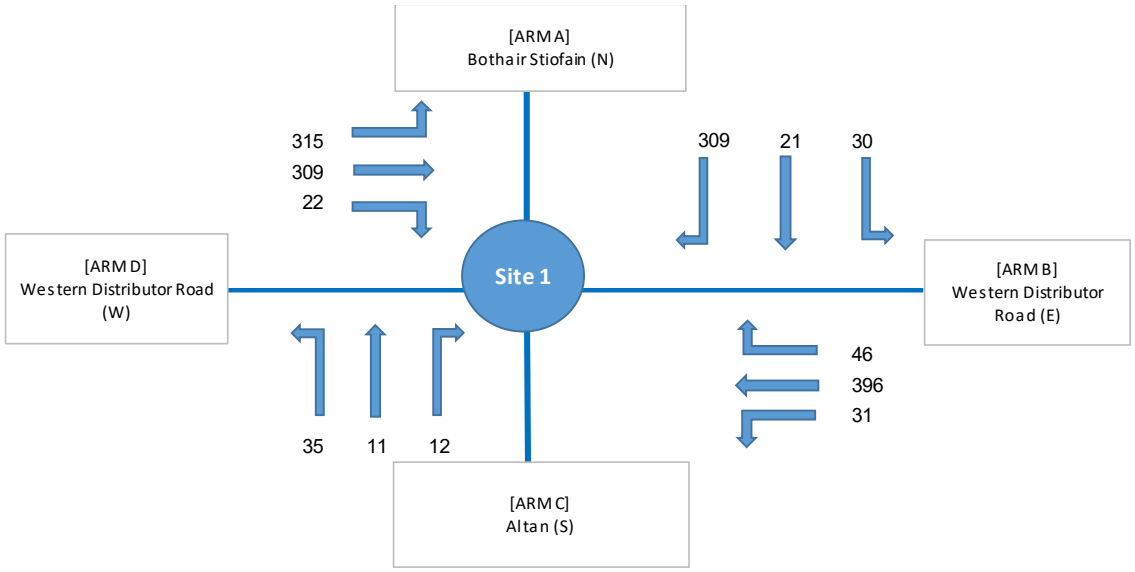


Figure 5-16: Baseflow Traffic 2026 PM Peak – Junction 1

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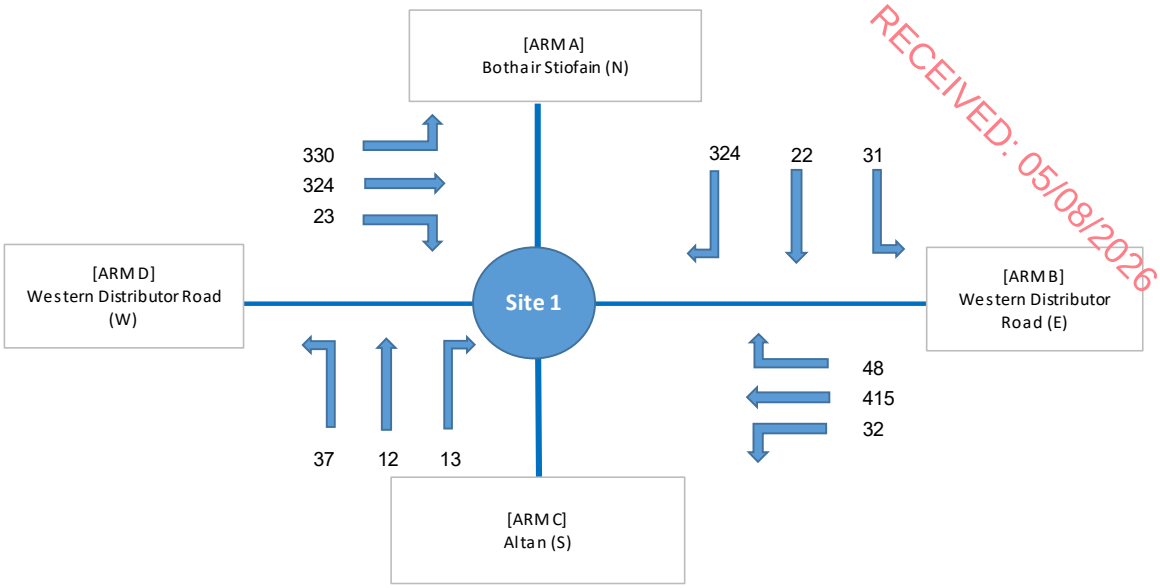


Figure 5-17: Baseflow Traffic 2029 PM Peak – Junction 1

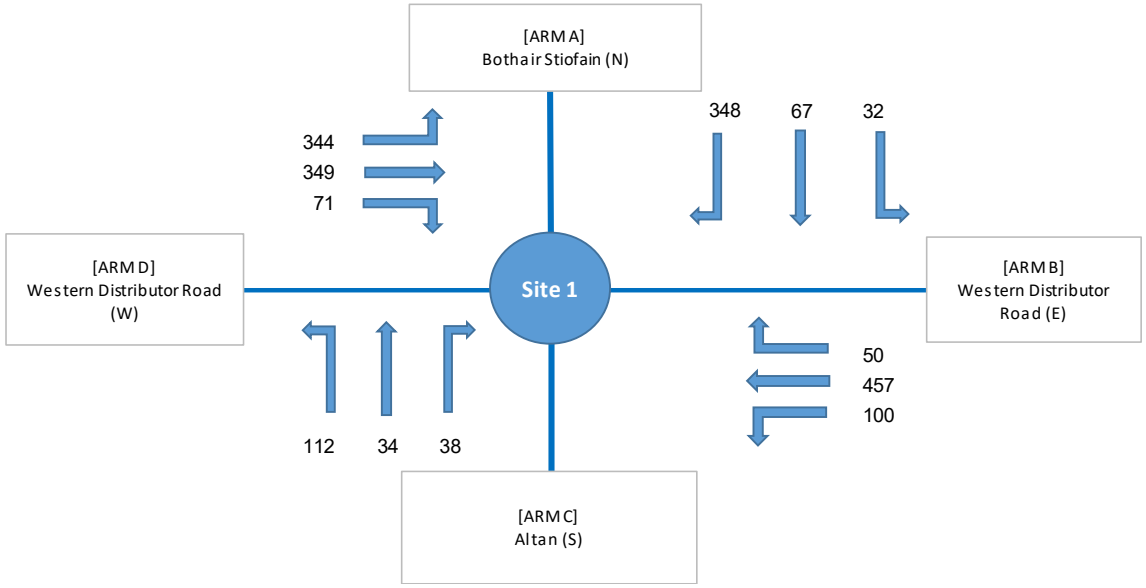
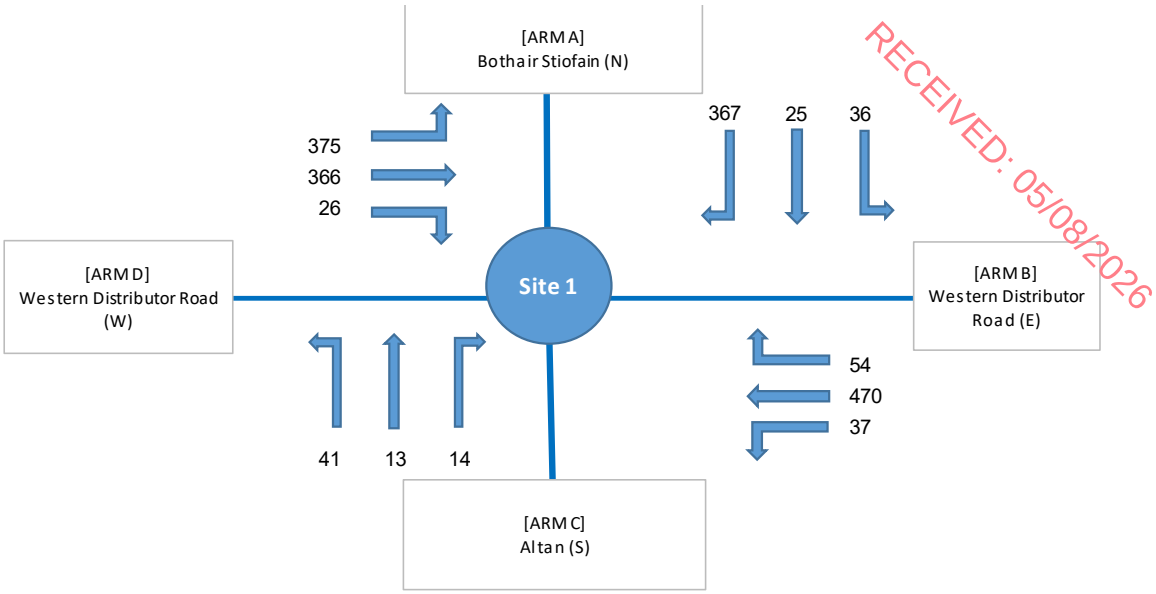


Figure 5-18: Baseflow + Comm. & Proposed Development Generated Traffic 2029 PM Peak – Junction 1



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Figure 5-19: Baseflow Traffic 2044 PM Peak – Junction 1

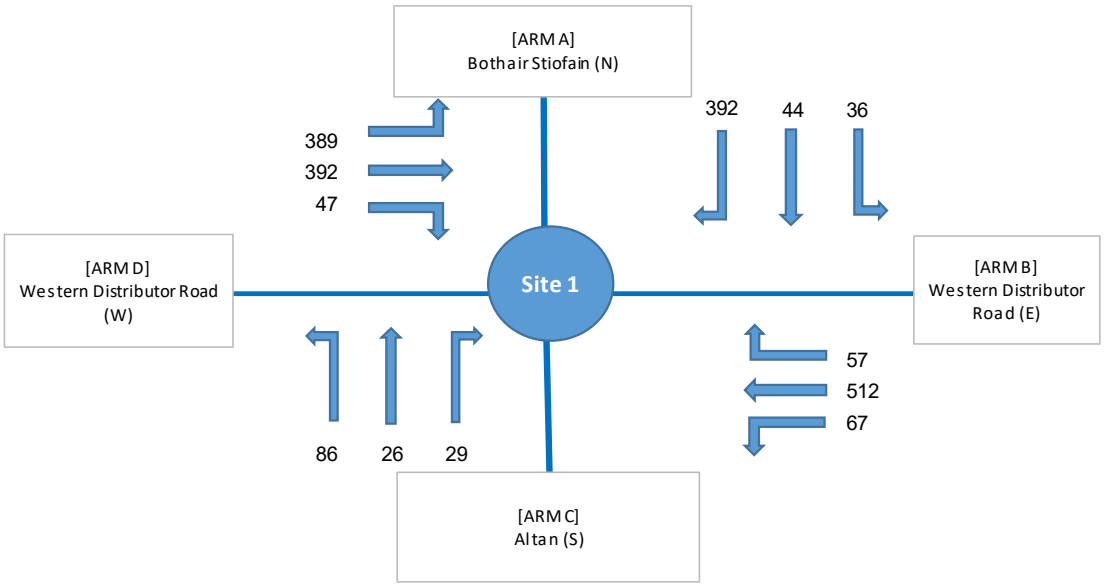


Figure 5-20: Baseflow + Comm. Development Generated Traffic 2044 PM Peak – Junction 1

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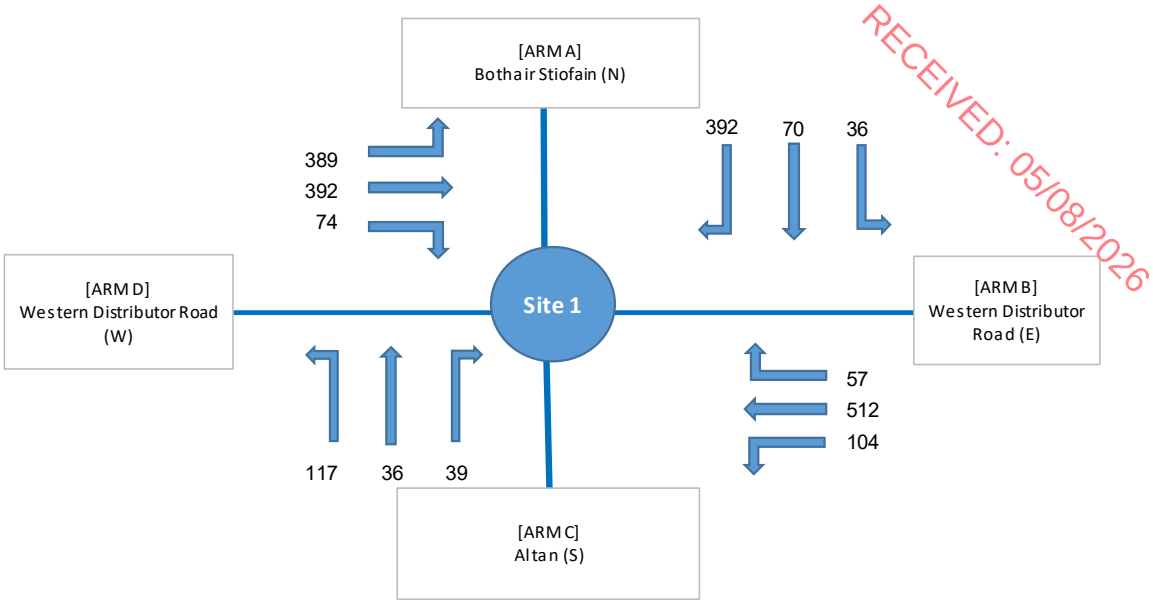


Figure 5-21: Baseflow + Comm. & Proposed Development Generated Traffic 2044 PM Peak – Junction 1

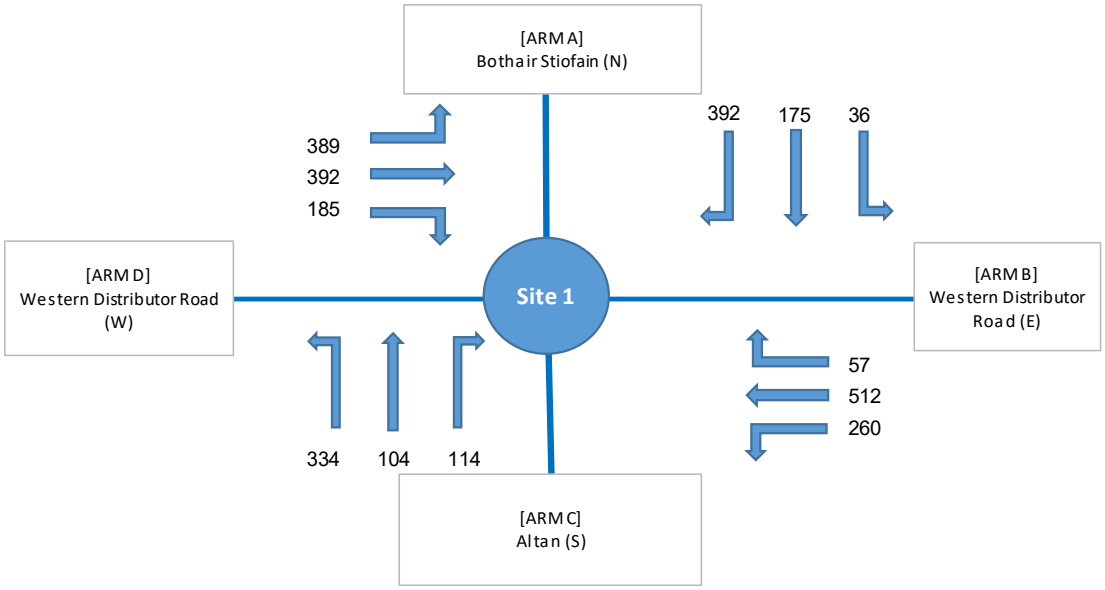


Figure 5-22: Baseflow + Comm. & Proposed Development Generated Traffic + Masterplan 2044 PM Peak – Junction 1

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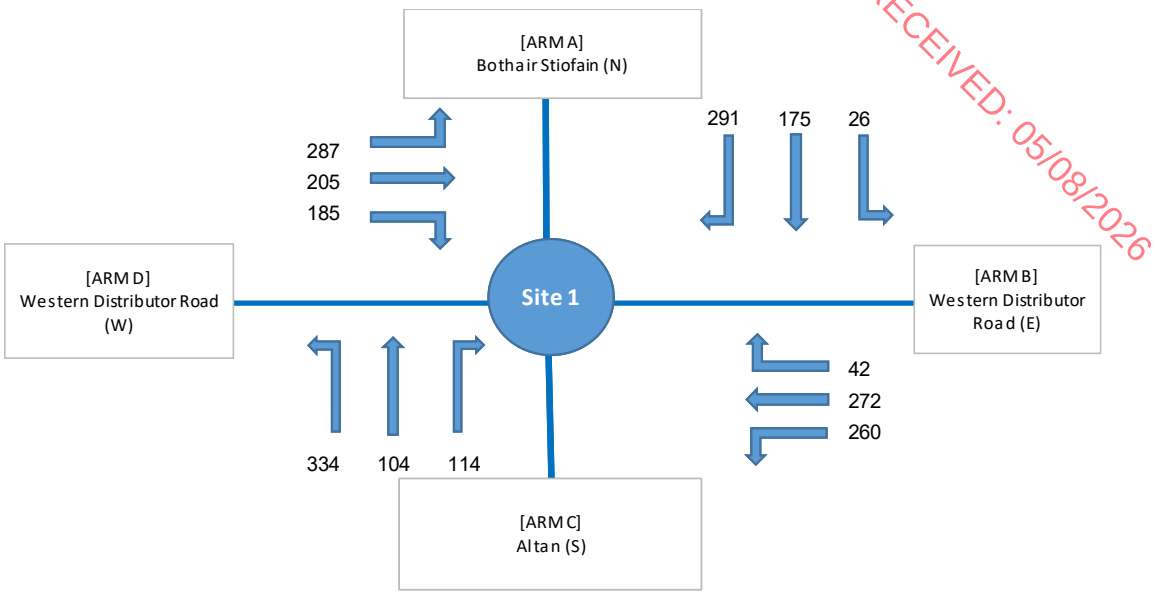


Figure 5-23: Baseflow + Comm. & Proposed Development Generated Traffic + Masterplan + Galway City Ring Road 2044 PM Peak – Junction 1

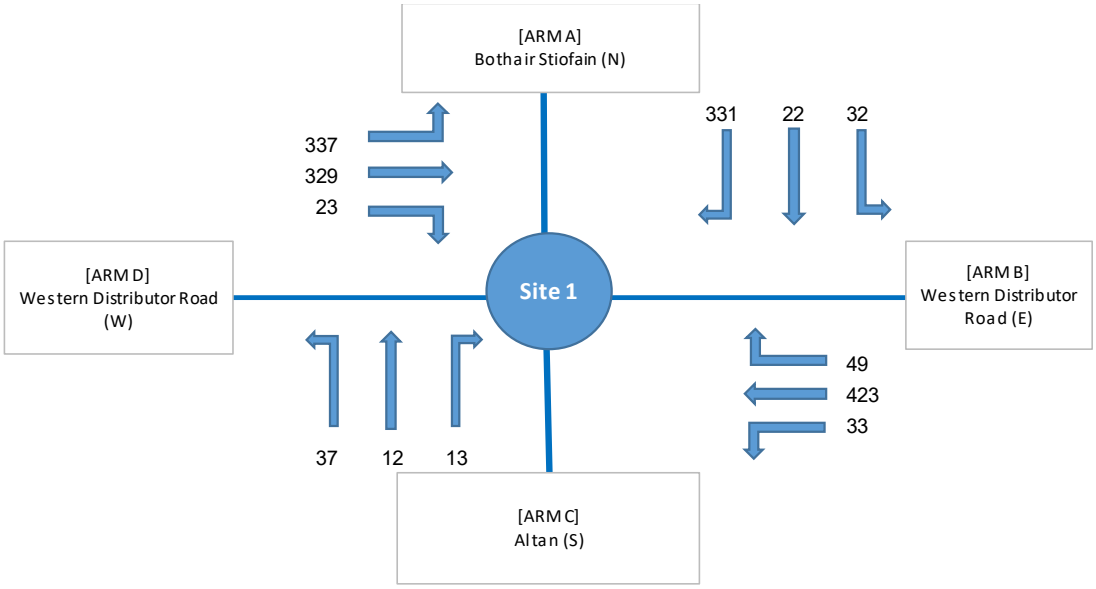
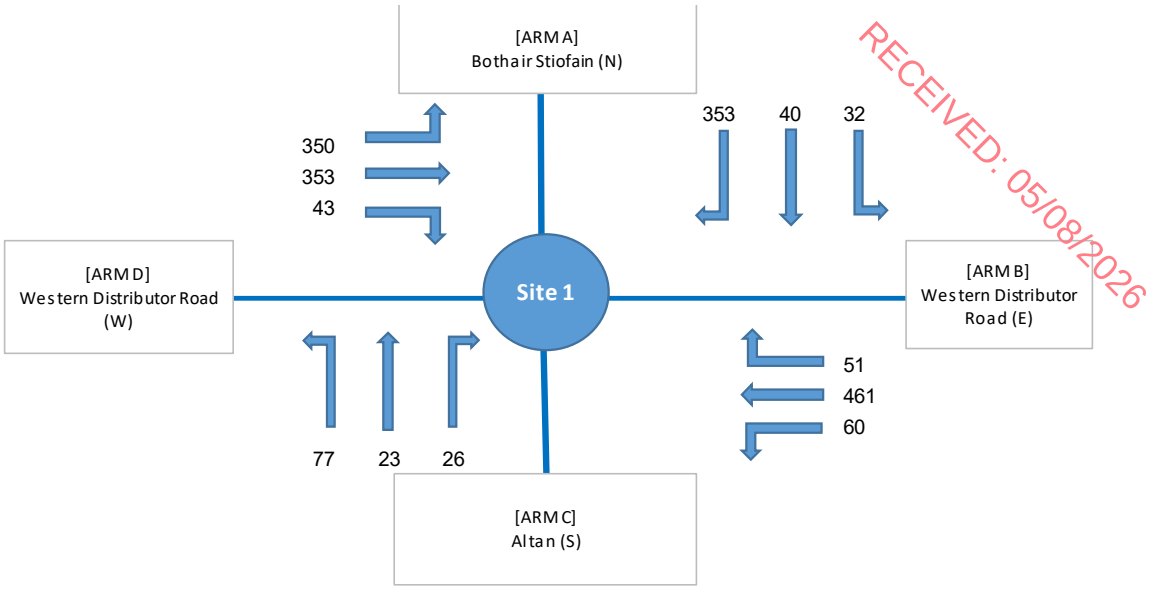


Figure 5-24: Baseflow + WDR Active Travel Scheme 2044 PM Peak – Junction 1



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Figure 5-25: Baseflow + Comm. & Proposed Development Generated Traffic + WDR Active Travel Scheme 2044 PM Peak – Junction 1

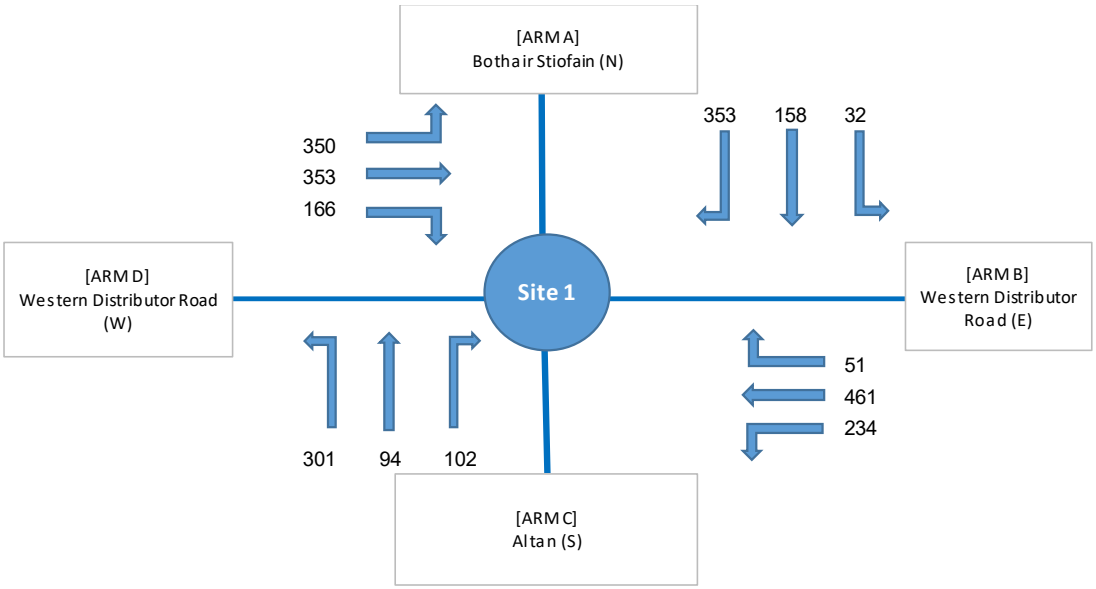


Figure 5-26: Baseflow + Comm. & Proposed Development Generated Traffic + Masterplan + WDR Active Travel Scheme 2044 PM Peak – Junction 1

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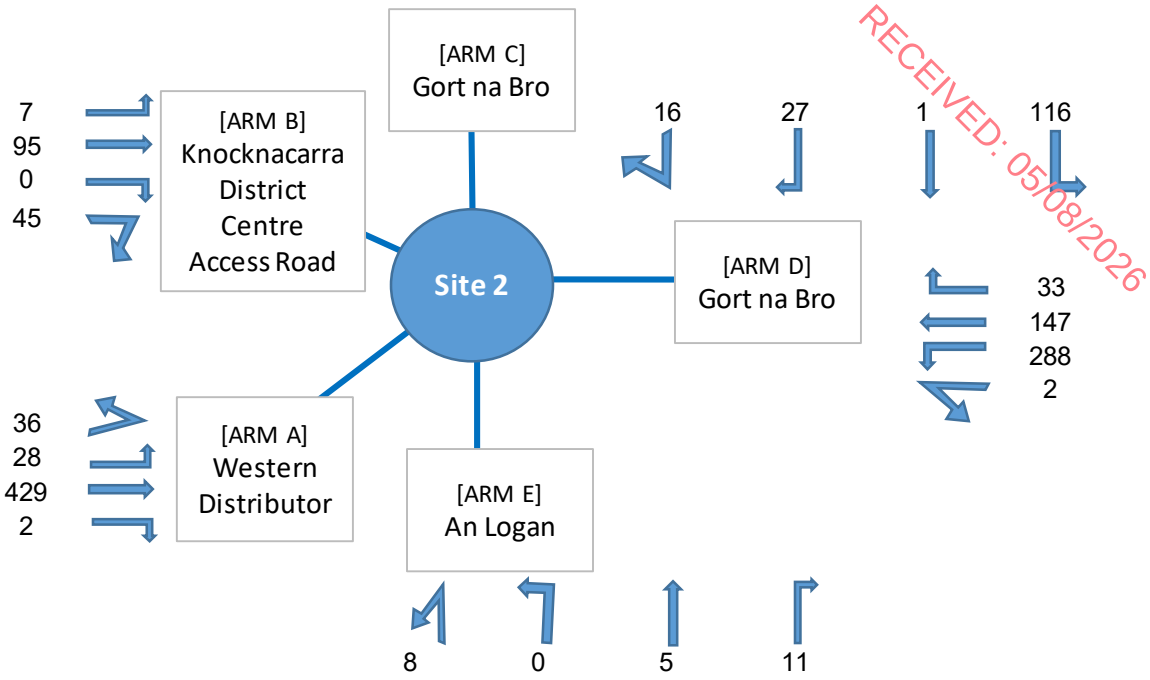


Figure 5-27: Baseflow Traffic 2026 AM Peak – Junction 2

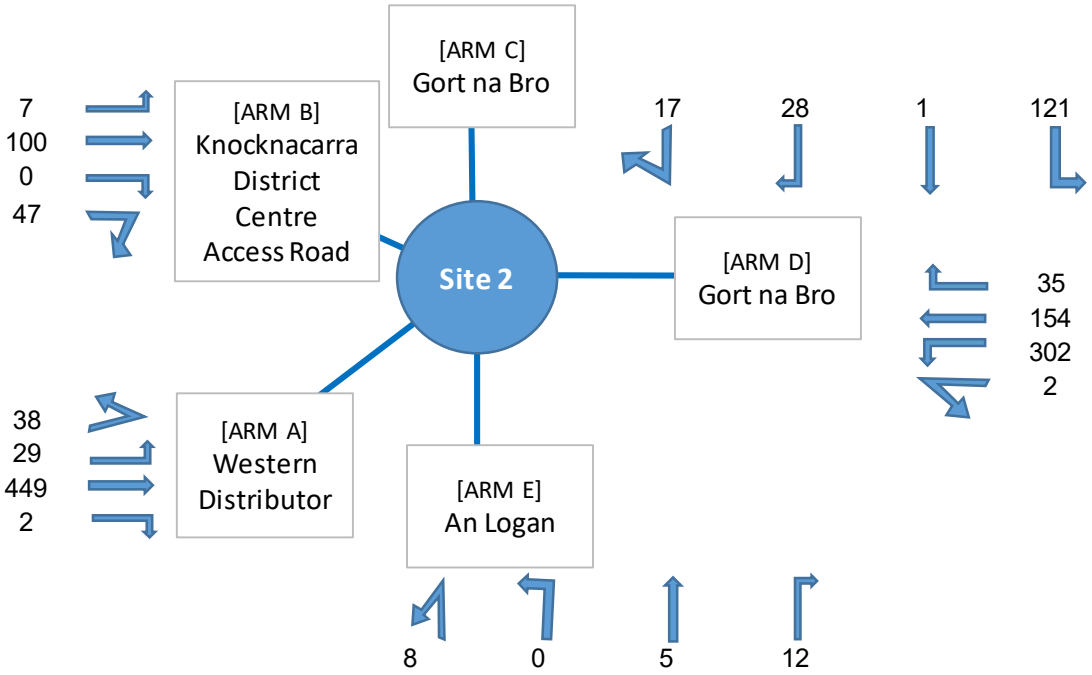


Figure 5-28: Baseflow Traffic 2029 AM Peak – Junction 2

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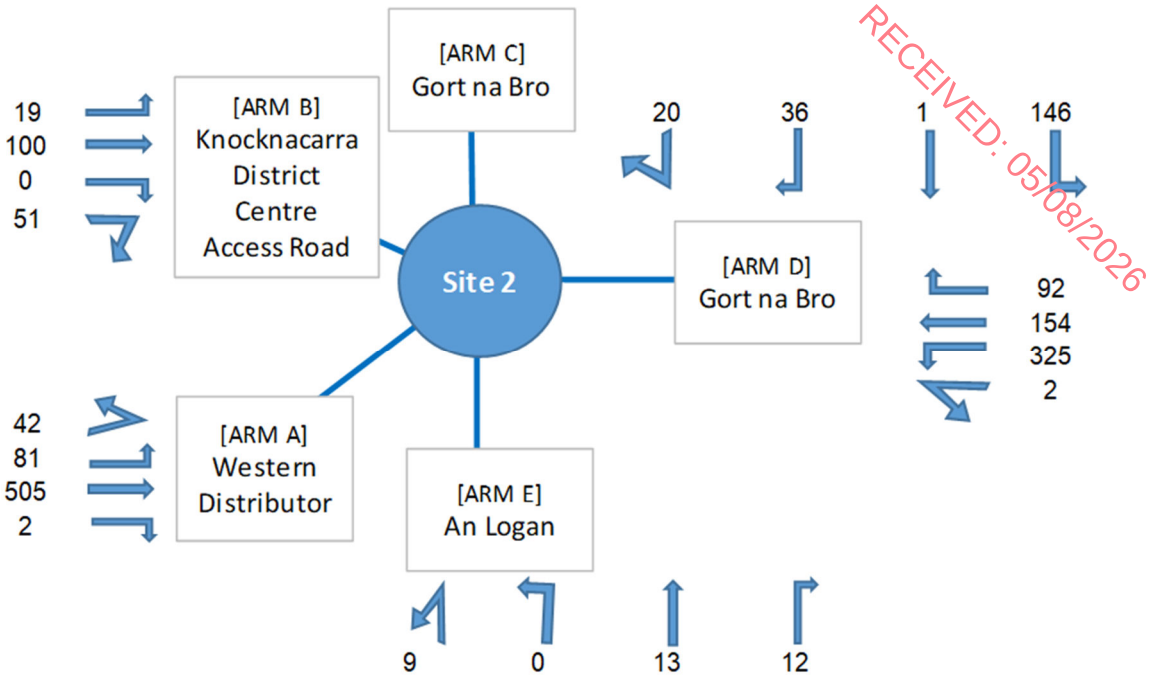


Figure 5-29: Baseflow + Comm. & Proposed Development Generated Traffic 2029 AM Peak – Junction 2

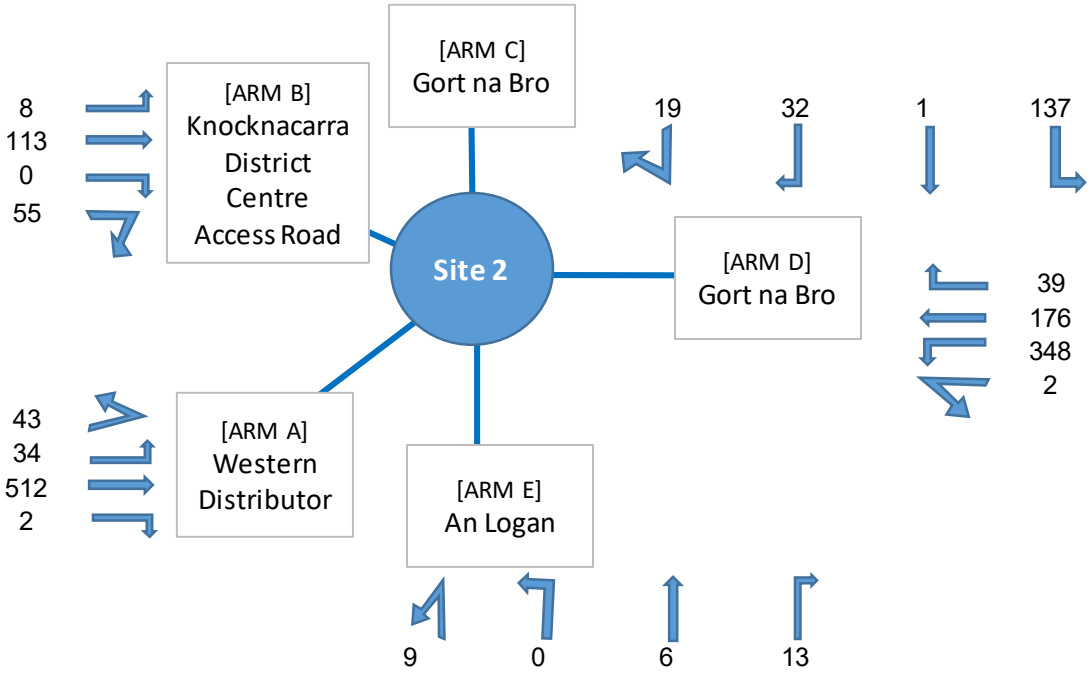


Figure 5-30: Baseflow Traffic 2044 AM Peak – Junction 2

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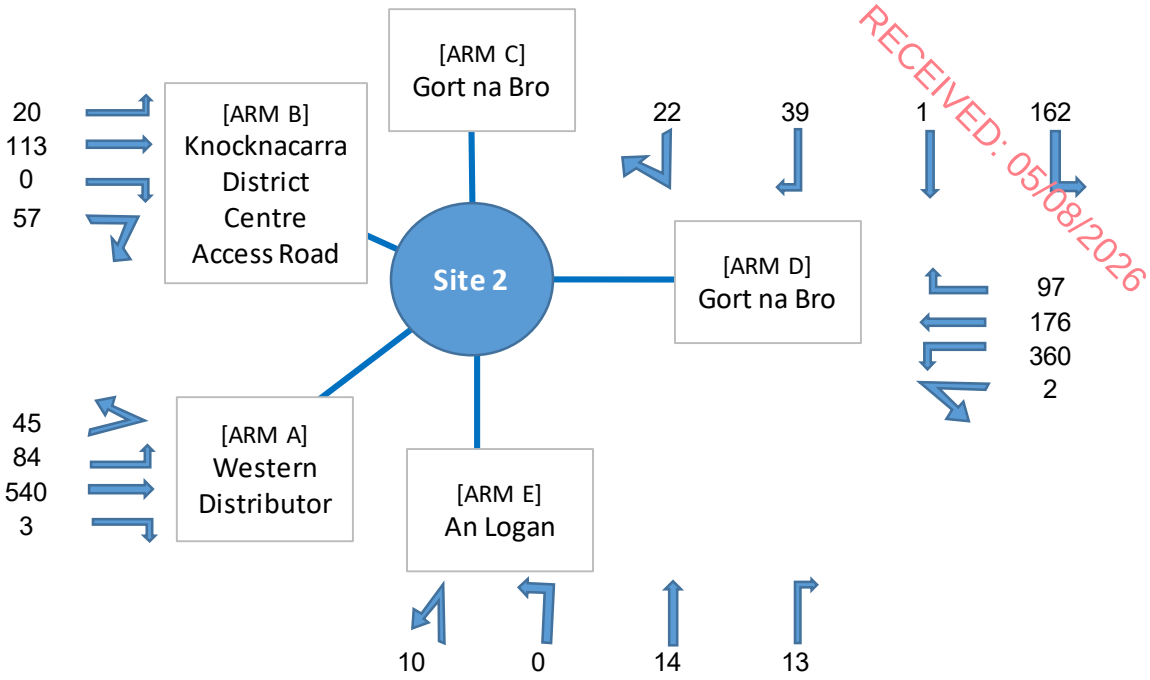


Figure 5-31: Baseflow + Comm. Development Generated Traffic 2044 AM Peak – Junction 2

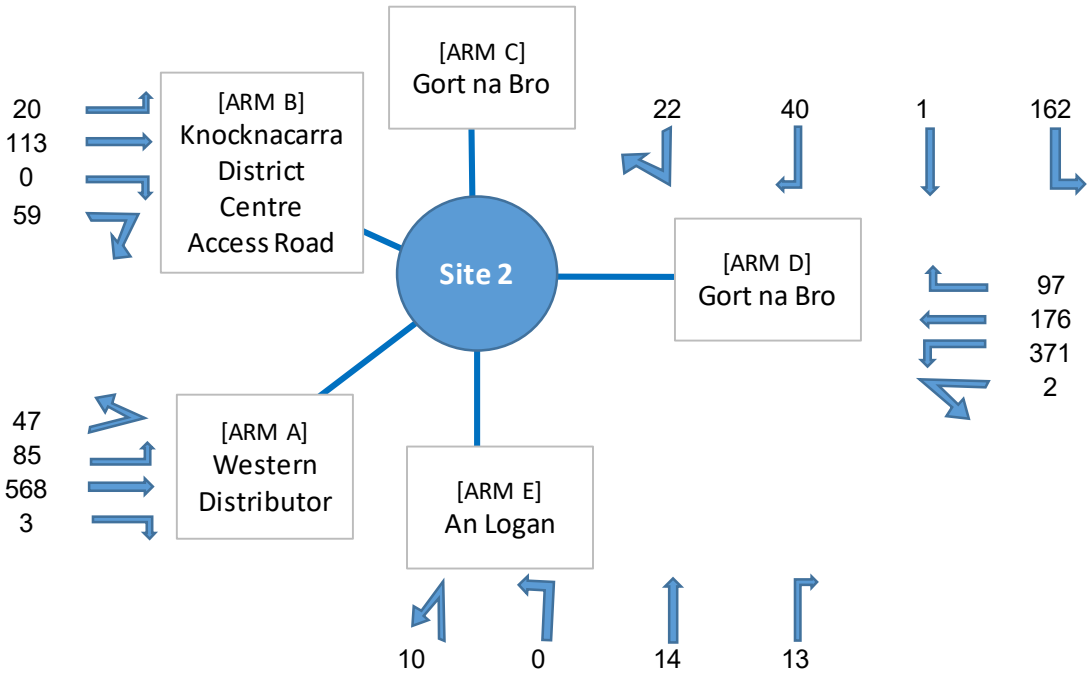


Figure 5-32: Baseflow + Comm. & Proposed Development Generated Traffic 2044 AM Peak – Junction 2

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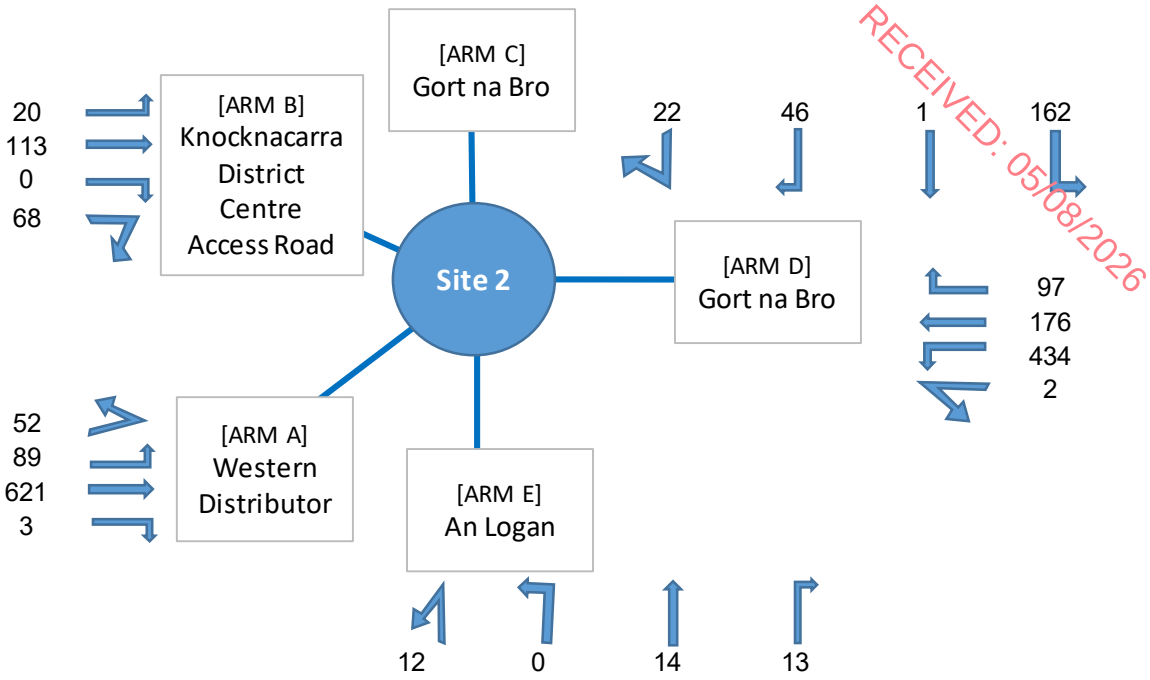


Figure 5-33: Baseflow + Comm. & Proposed Development Generated Traffic + Masterplan 2044 AM Peak – Junction 2

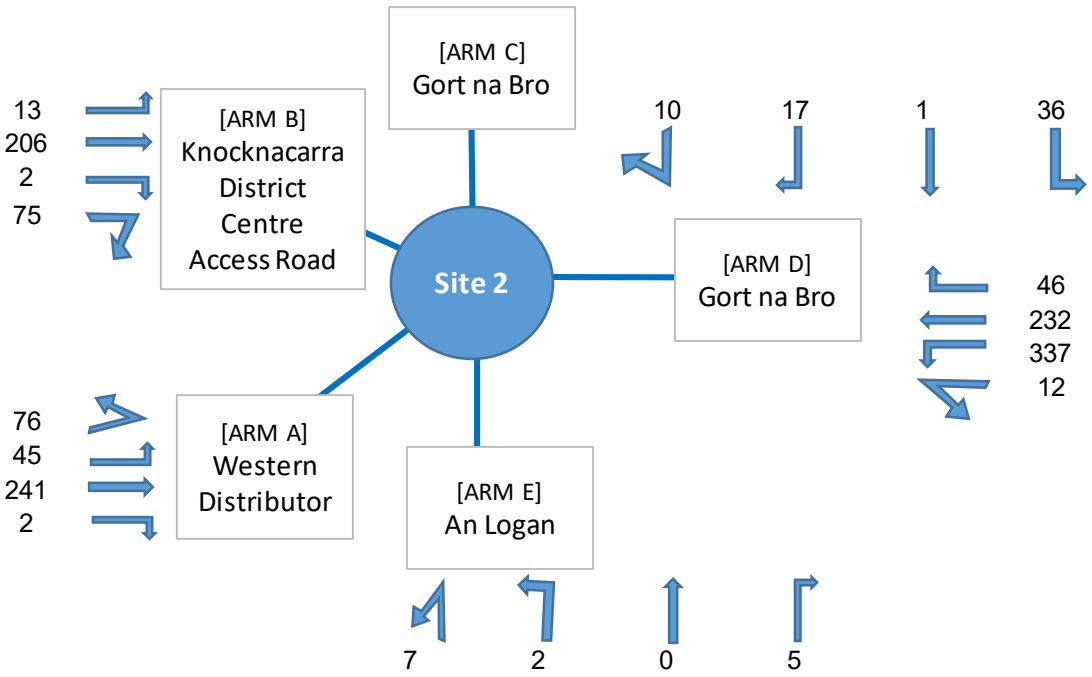


Figure 5-34: Baseflow Traffic 2026 PM Peak – Junction 2

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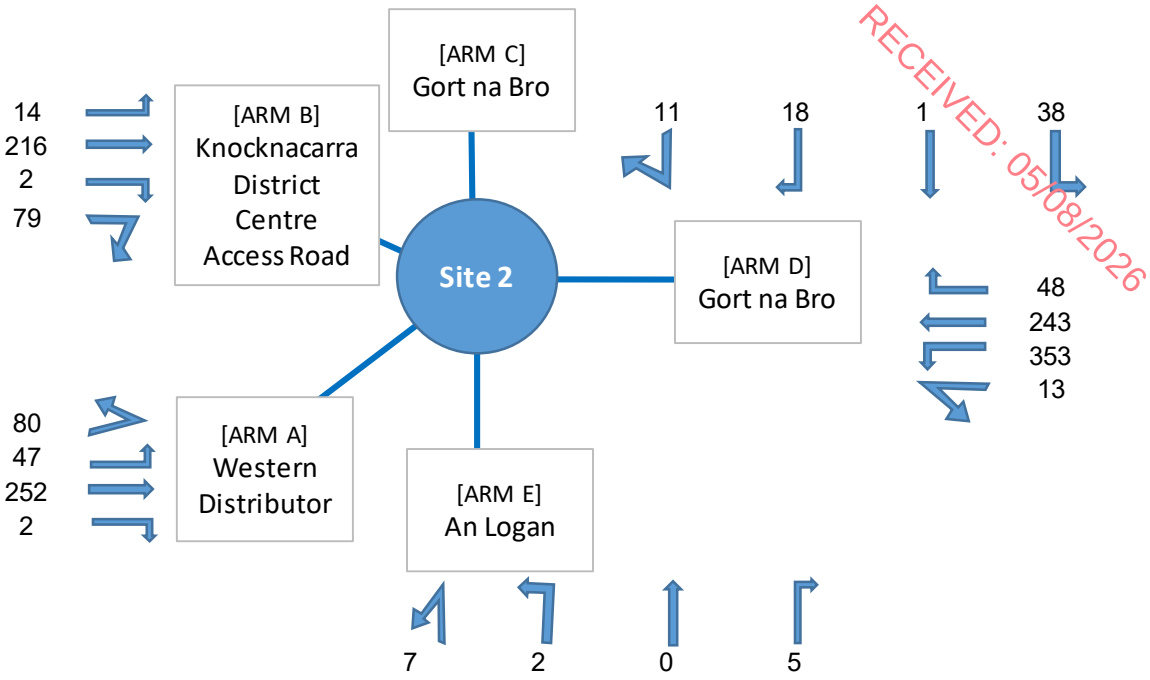


Figure 5-35: Baseflow Traffic 2029 PM Peak – Junction 2

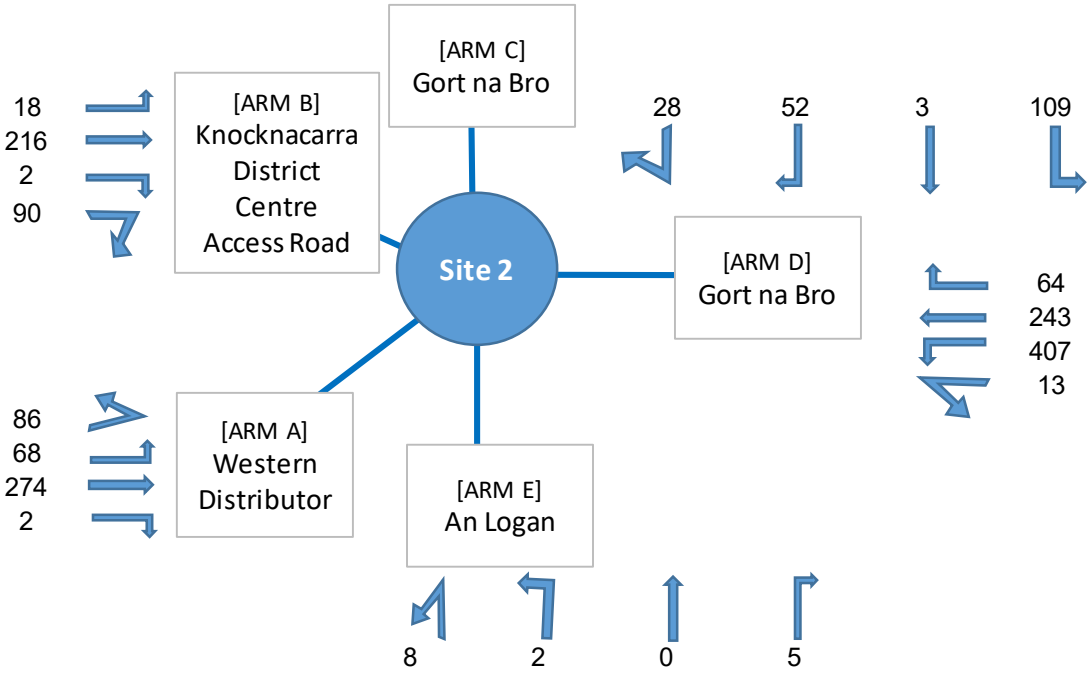


Figure 5-36: Baseflow + Comm. & Proposed Development Generated Traffic 2029 PM Peak – Junction 2

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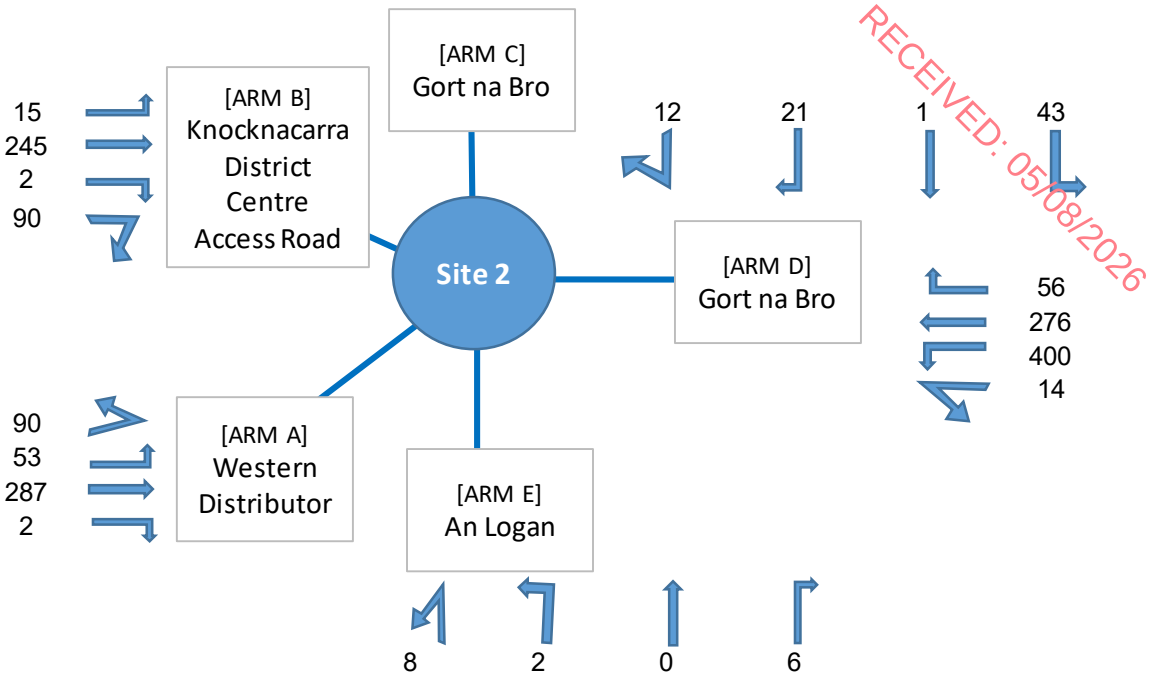


Figure 5-37: Baseflow Traffic 2044 PM Peak – Junction 2

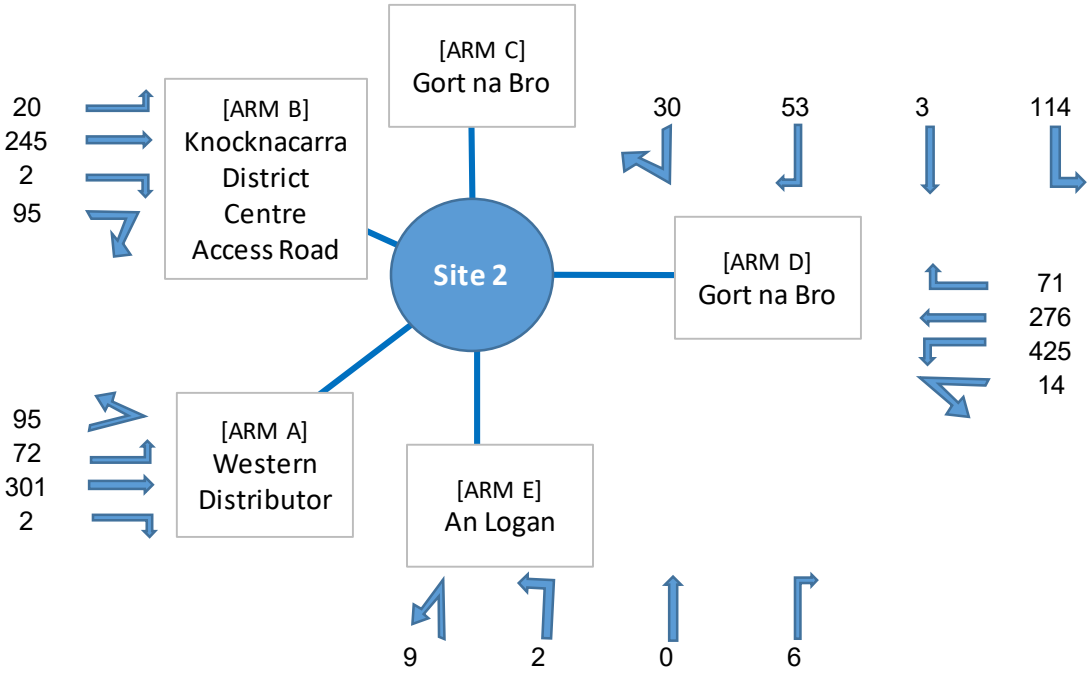


Figure 5-38; Baseflow + Comm. Development Generated Traffic 2044 PM Peak – Junction 2

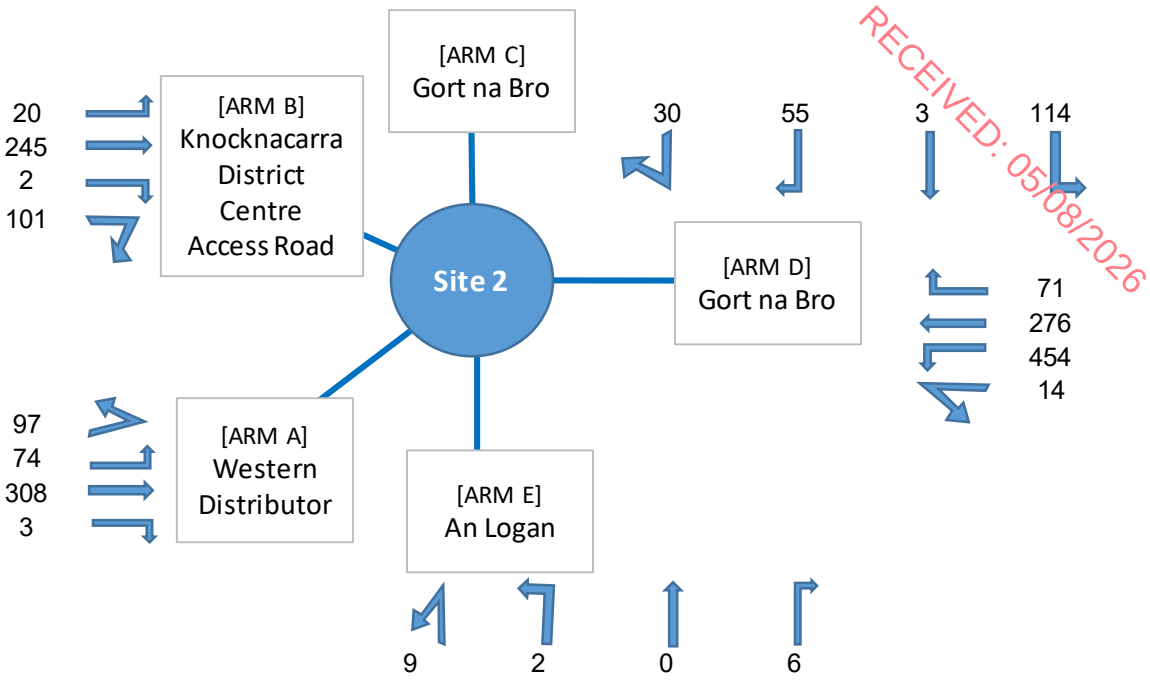


Figure 5-39: Baseflow + Comm. & Proposed Development Generated Traffic 2044 PM Peak – Junction 2

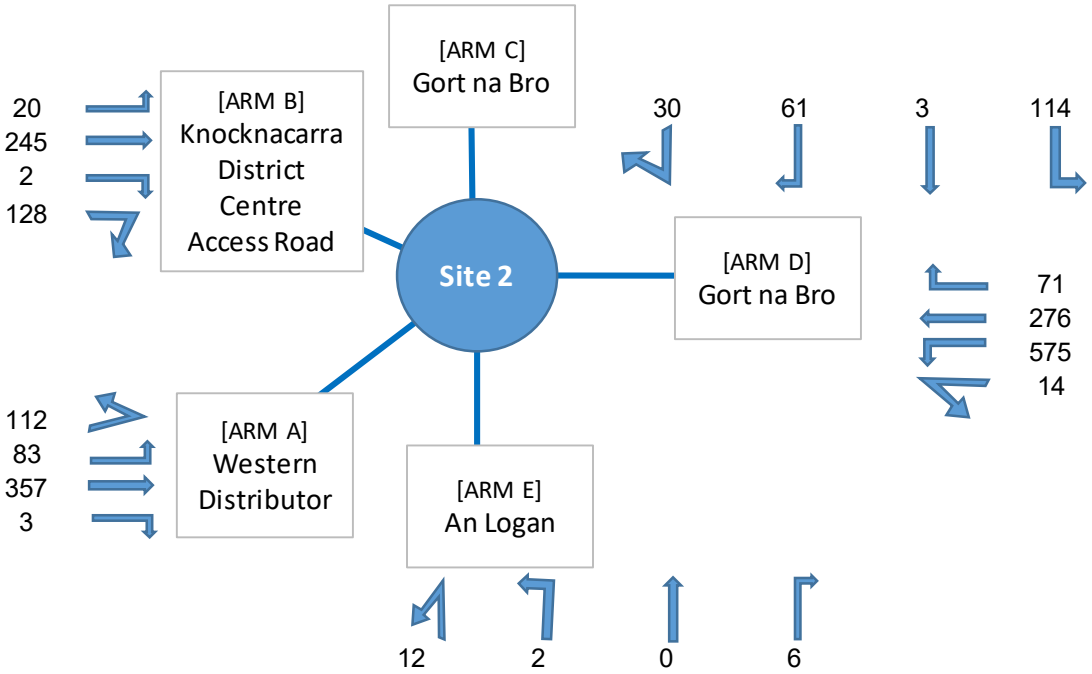


Figure 5-40: Baseflow + Comm. & Proposed Development Generated Traffic + Masterplan 2044 PM Peak – Junction 2

6.0 JUNCTION ANALYSIS

6.1 INTRODUCTION AND METHODOLOGY

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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

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

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 Stiofáin / 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
	2029 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
	2029 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
	2044 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
	2044 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
	2044 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
	2044 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 2026 morning and evening peak periods. This will continue to be the case for the 2029 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.

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For the design year 2044 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 JUCNTION (ACTIVE TRAVEL LAYOUT)

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A summary of the analysis results for the potential future active travel roundabout design on the Bothar Stiofáin / 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
	2029 - Base									
Arm 1	D1	0.5	5.34	0.34	A	D2	0.6	5.25	0.38	A
Arm 2		0.5	4.76	0.34	A		0.9	6.31	0.49	A
Arm 3		0.2	4.23	0.15	A		0.1	4.79	0.08	A
Arm 4		1.4	6.46	0.59	A		1.2	5.66	0.54	A
	2029 - Base + Comm									
Arm 1	D3	0.6	6.12	0.38	A	D4	0.8	6.02	0.44	A
Arm 2		0.6	5.09	0.37	A		1.4	8.03	0.58	A
Arm 3		0.3	4.83	0.24	A		0.2	5.92	0.19	A
Arm 4		2.0	8.30	0.67	A		1.5	6.57	0.60	A
	2029 - Base + Comm & Prop									
Arm 1	D5	0.7	6.61	0.41	A	D6	0.9	6.61	0.47	A
Arm 2		0.6	5.35	0.39	A		1.8	9.61	0.64	A
Arm 3		0.5	5.71	0.35	A		0.4	6.62	0.27	A
Arm 4		2.4	9.60	0.71	A		1.7	7.13	0.63	A
	2044 - Base incl. Est. Active Travel Reduction									
Arm 1	D7	0.5	5.44	0.35	A	D8	0.6	5.35	0.39	A
Arm 2		0.5	4.87	0.35	A		1.0	6.49	0.50	A
Arm 3		0.2	4.24	0.15	A		0.1	4.88	0.08	A
Arm 4		1.5	6.59	0.60	A		1.2	5.79	0.55	A
	2044 - Base + Comm incl. Est. Active Travel Reduction									
Arm 1	D9	0.6	6.14	0.39	A	D10	0.8	6.08	0.44	A
Arm 2		0.6	5.18	0.38	A		1.4	8.11	0.58	A
Arm 3		0.3	4.74	0.23	A		0.2	5.91	0.19	A
Arm 4		2.0	8.20	0.67	A		1.5	6.67	0.60	A
	2044 - Base + Comm & Prop incl. Est. Active Travel Reduction									
Arm 1	D11	0.7	6.65	0.41	A	D12	0.9	6.60	0.47	A
Arm 2		0.7	5.41	0.40	A		1.7	9.54	0.64	A
Arm 3		0.5	5.66	0.34	A		0.3	6.59	0.26	A
Arm 4		2.4	9.66	0.71	A		1.7	7.21	0.63	A
	2044 - Base + Comm & Masterplan incl. Est. Active Travel Reduction									
Arm 1	D13	1.1	9.27	0.53	A	D14 *	1.8	10.77	0.64	B
Arm 2		1.0	7.25	0.51	A		7.0	32.71	0.89	D

Arm 3		1.2	8.36	0.55	A		4.5	31.11	0.83	D
Arm 4		4.8	17.62	0.84	C		3.1	12.05	0.76	B
	2044 - Base + Comm & Masterplan & GCRR									
Arm 1	D17	0.7	6.80	0.42	A	D18	1.0	7.23	0.51	A
Arm 2		0.6	5.66	0.38	A		2.1	11.43	0.68	B
Arm 3		1.1	7.11	0.54	A		1.5	10.39	0.61	B
Arm 4		1.9	8.58	0.65	A		1.3	6.59	0.56	A

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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 2029 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 2044 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 2044 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) 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 2044 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

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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
	2026									
Arm 1	D1	1.3	8.69	0.57	A	D2	0.8	7.02	0.44	A
Arm 2		0.2	4.65	0.17	A		0.5	5.08	0.31	A
Arm 3		0.2	3.71	0.15	A		0.1	3.25	0.06	A
Arm 4		0.7	5.14	0.42	A		1.3	6.83	0.56	A
Arm 5		0.0	4.63	0.03	A		0.0	5.16	0.02	A
	2029 - Base									
Arm 1	D3	1.5	9.42	0.60	A	D4	0.9	7.40	0.46	A
Arm 2		0.2	4.79	0.18	A		0.5	5.26	0.33	A
Arm 3		0.2	3.82	0.16	A		0.1	3.31	0.06	A
Arm 4		0.8	5.36	0.44	A		1.5	7.33	0.59	A
Arm 5		0.0	4.73	0.04	A		0.0	5.31	0.02	A
	2029 - Base + Comm & Prop									
Arm 1	D5	3.0	16.11	0.76	C	D6	1.1	8.76	0.54	A
Arm 2		0.3	5.64	0.23	A		0.6	5.67	0.36	A
Arm 3		0.3	4.17	0.21	A		0.2	3.87	0.19	A
Arm 4		1.1	6.21	0.52	A		2.1	9.51	0.68	A
Arm 5		0.1	5.16	0.05	A		0.0	5.98	0.03	A
	2044 - Base									
Arm 1	D7	2.2	12.56	0.69	B	D8	1.2	8.85	0.54	A
Arm 2		0.3	5.24	0.22	A		0.6	5.89	0.38	A
Arm 3		0.2	4.17	0.20	A		0.1	3.50	0.08	A
Arm 4		1.1	6.13	0.51	A		2.1	9.32	0.68	A
Arm 5		0.0	5.07	0.04	A		0.0	5.83	0.03	A
	2044 - Base + Comm									
Arm 1	D9	4.4	22.21	0.82	C	D10	1.5	10.38	0.60	B
Arm 2		0.4	6.09	0.26	A		0.7	6.28	0.41	A
Arm 3		0.3	4.47	0.23	A		0.2	4.09	0.20	A
Arm 4		1.4	7.12	0.58	A		2.7	11.61	0.73	B
Arm 5		0.1	5.51	0.06	A		0.0	6.40	0.03	A
	2044 - Base + Comm & Prop									
Arm 1	D11	6.0	29.45	0.87	D	D12	1.6	10.78	0.61	B
Arm 2		0.4	6.30	0.27	A		0.7	6.41	0.42	A
Arm 3		0.3	4.60	0.24	A		0.3	4.14	0.20	A
Arm 4		1.4	7.31	0.59	A		3.2	13.15	0.76	B
Arm 5		0.1	5.74	0.09	A		0.0	6.65	0.04	A
	2044 - Base + Comm & Prop & Masterplan									
Arm 1	D13	10.7	48.83	0.94	E	D14 *	2.3	14.14	0.71	B

Arm 2		0.4	6.75	0.29	A		0.9	7.20	0.46	A
Arm 3		0.3	4.86	0.26	A		0.3	4.42	0.22	A
Arm 4		1.9	8.67	0.65	A		7.4	27.64	0.89	D
Arm 5		0.1	6.02	0.07	A		0.1	7.98	0.05	A

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

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The ARCADY analysis results indicate that the junction is currently operating within capacity for all traffic Streams in both the morning and evening 2026 peak periods. This will continue to be the case for the 2029 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 2044 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) 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, overall 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 OTHER ROAD ISSUES

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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 C** for details.

7.2 PARKING PROVISION

The proposed development's parking provision has been designed in full compliance with the Specific Planning Policy Requirement (SPPR) 3 – Car Parking, as outlined in the Sustainable Residential Development in Urban Areas (Cities, Towns & Villages) and Compact Settlements Guidelines for Planning Authorities.

SPPR 3 specifically states that, '(iii) In intermediate and peripheral locations, defined in Chapter 3 (Table 3.8) the maximum rate of car parking provision for residential development, where such provision is justified to the satisfaction of the planning authority, shall be 2 no. spaces per dwelling'. The detailed breakdown of the parking provided is shown in Table 7-1 below. A total of 143 no. car parking spaces will be provided onsite.

Table 7-1: Car Parking Requirements

Car Parking	Requirement	Units	Calculated Maximum	Parking Provided
Residential	(SPPR) 3 – Car Parking	133	266	143
Totals			**266**	**143**

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 development 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 11893-2113 to 11893-2118, which accompanies this planning application.

7.4 DEVELOPMENT CONSTRUCTION PHASE

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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.

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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

RECEIVED: 05/08/2026

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.

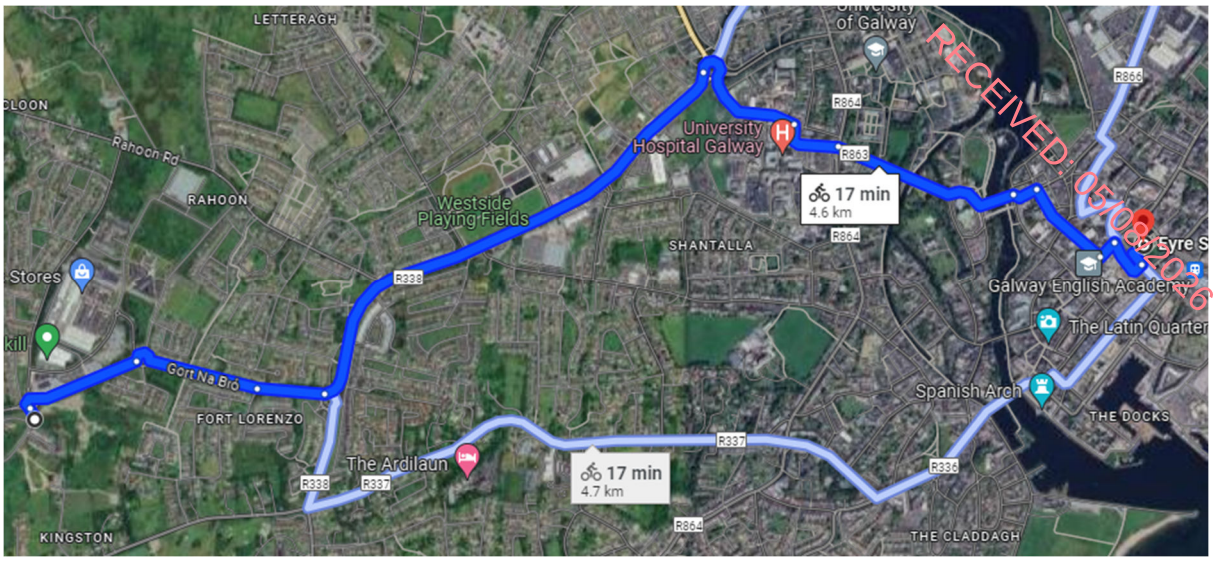


Figure 8-2: Cycle Times to City Centre

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 152 bicycle spaces are required for the development site. It is proposed to provide a total of 192 bicycle parking spaces for the proposed development. See the Table below for the bicycle parking calculation.

Table 8-1: Bicycle Parking Requirements

Knocknacarra District Centre South - Bike Parking Schedule							
QUARTER	No. UNITS	SEPARATE GARDEN ACCESS	SPACE TYPE				TOTAL
			RESIDENTIAL		VISITOR		
			Reqd.	Provided	Reqd.	Provided	
ALTAN	70	0	104	104	25	36	140
KINGSTON	63	57	9	9	14	43	52
TOTAL	133	57	113	113	39	79	192

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

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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

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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.

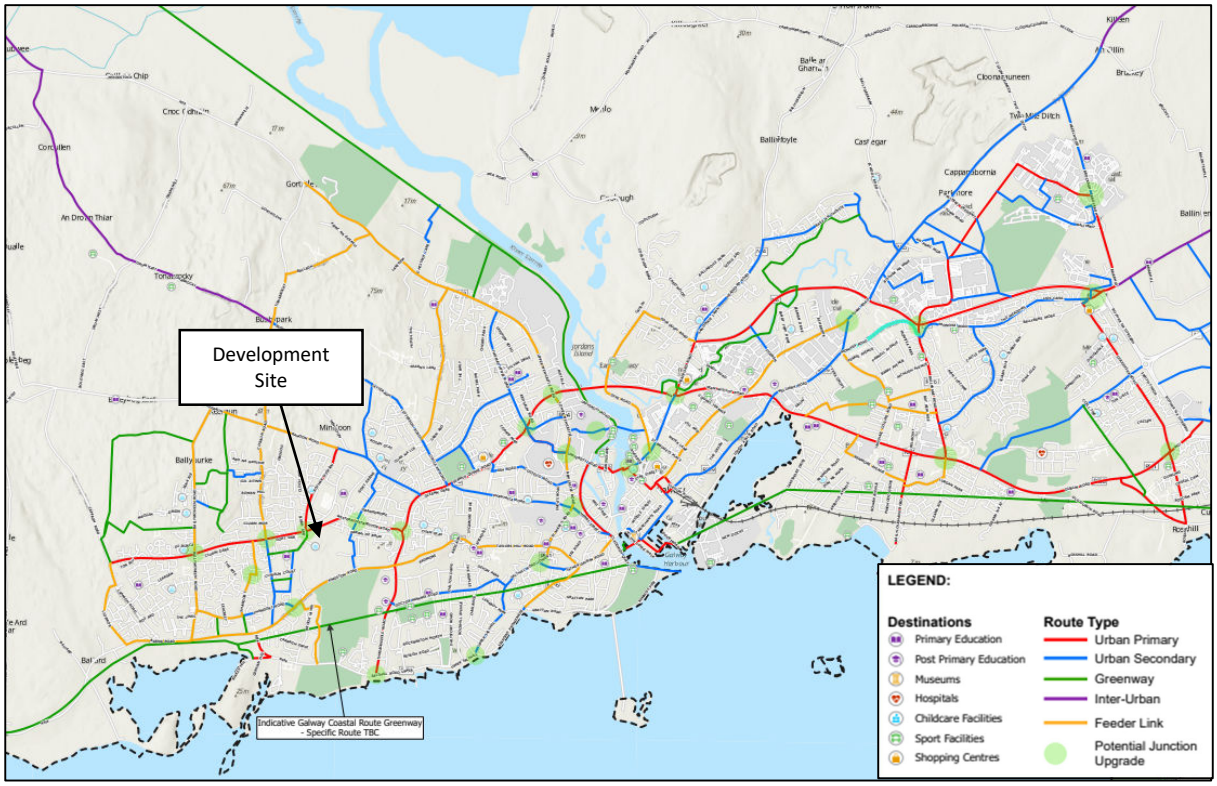


Figure 8-3: Cycle Connects Proposed Galway Urban Network

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.

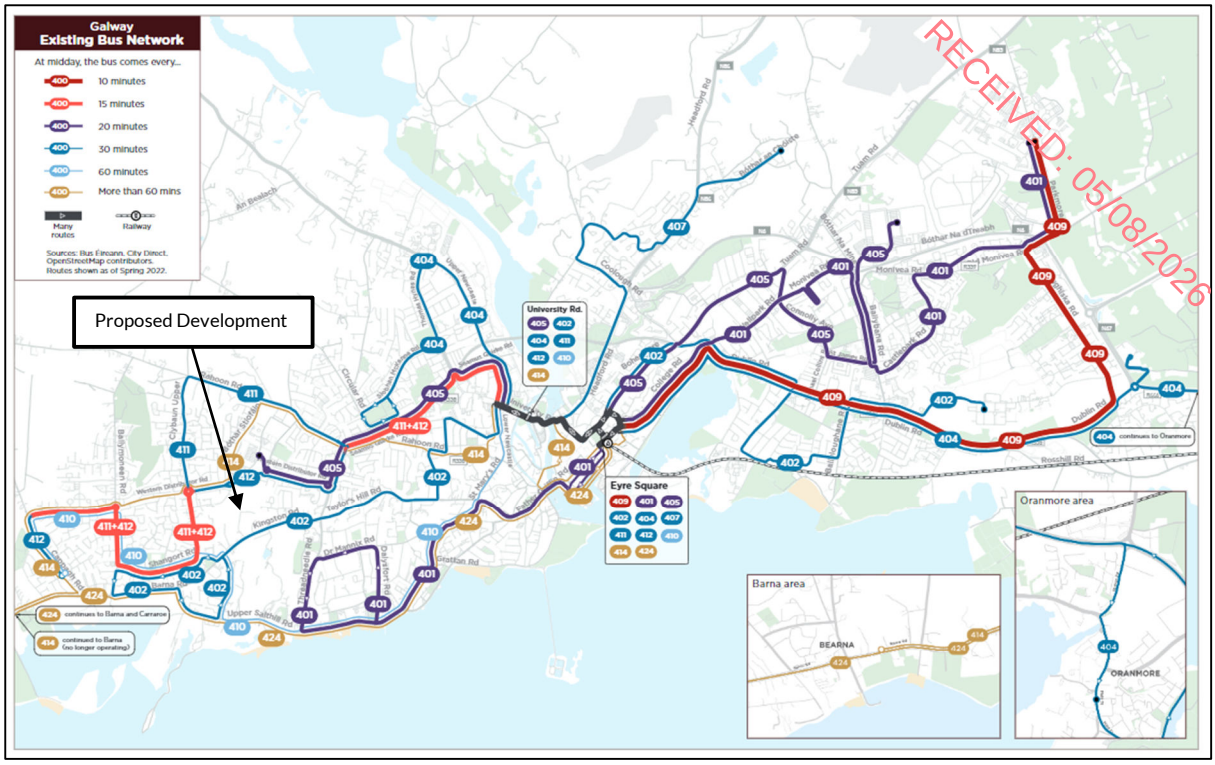


Figure 8-4: Existing Galway City Bus Route Map

8.2.1.1 Bus Eireann – 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 City Direct – 411

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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.

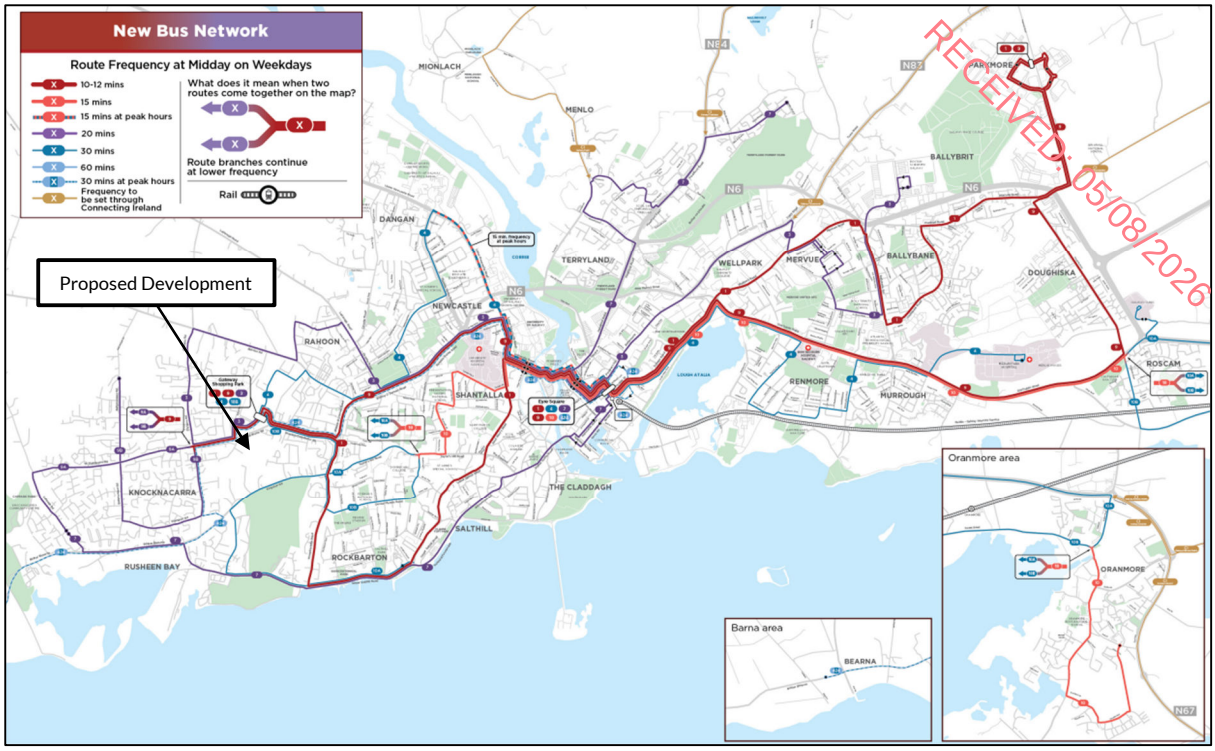


Figure 8-5: Galway City Proposed BusConnects Network Map

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

RECEIVED: 05/08/2026

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 2029 and the design year 2044. 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 Stiofáin / 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 Stiofáin / 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	2026 Existing
		2029 Base
		2029 Base + Committed Developments
		2029 Base + Committed & Proposed Developments

Junction Ref:	Junction Design	Traffic Design Years and Scenarios
		2044 Base + Committed Developments
		2044 Base + Committed & Proposed Developments
		2044 Base + Committed & Masterplan
	Potential Future Active Travel Scheme Design	2029 Base
		2029 Base + Committed Developments
		2029 Base + Committed & Proposed Developments
		2044 Base + Committed Developments & Estimated Active Travel Scheme Reduction Factor
		2044 Base + Committed & Proposed Developments & Estimated Active Travel Scheme Reduction Factor
		2044 Base + Committed & Masterplan & Estimated Active Travel Scheme Reduction Factor
		2044 Base + Committed & Masterplan & Galway City Ring
Junction 2	Existing Roundabout Layout	2026 Existing
		2029 Base
		2029 Base + Committed Developments
		2029 Base + Committed & Proposed Developments
		2044 Base + Committed Developments
		2044 Base + Committed & Proposed Developments
		2044 Base + Committed & Masterplan

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9.2.2 Junction 1 – Bothar Stiofáin / 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 2026 morning and evening peak periods. This will continue to be the case for the 2029 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 2044 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.

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9.2.3 Junction 1.1 – Bothar Stiofáin / 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 2029 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 2044 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 2044 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) 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 2044 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 2026 peak periods. This will continue to be the case for the 2029 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 2044 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) 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, overall the junction is forecast to continue to operate within capacity.

ARCADY analysis results indicate the junction is currently operating within capacity for all traffic Streams in both the 2029 morning and evening peak periods. This will continue to be the case for the 2029 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.

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For the design year 2044 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.

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

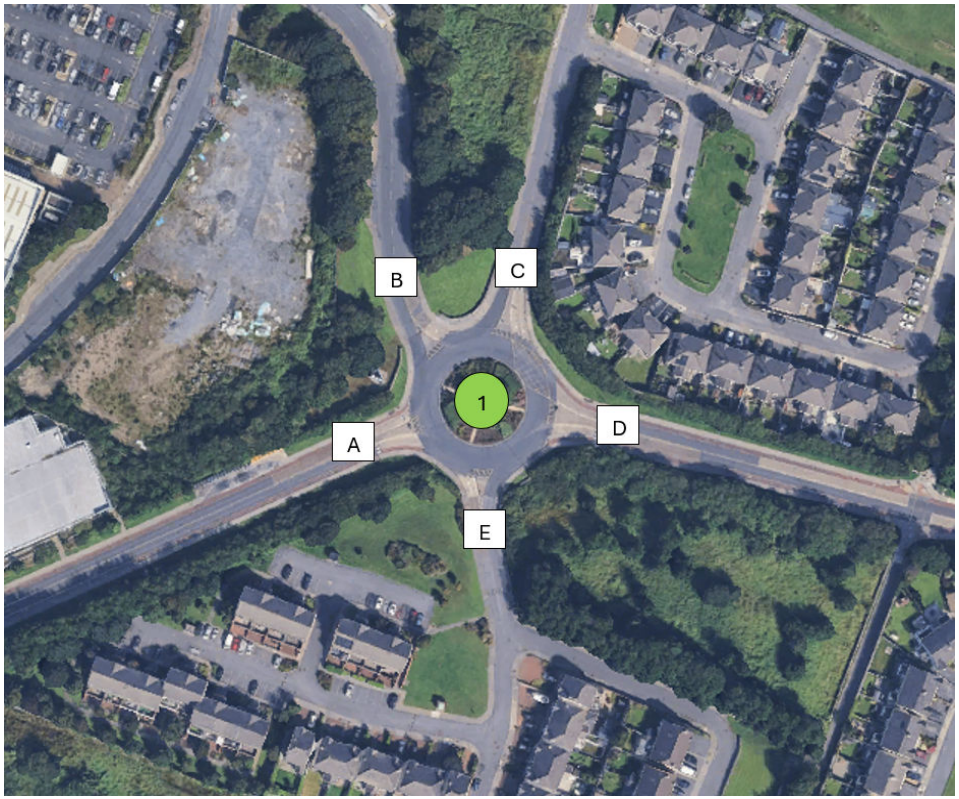
This Report recommends that:

- 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.

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Appendix A. TRAFFIC COUNT DATA

Junction 1 Location and Turning Movements



Project Ref: 26207

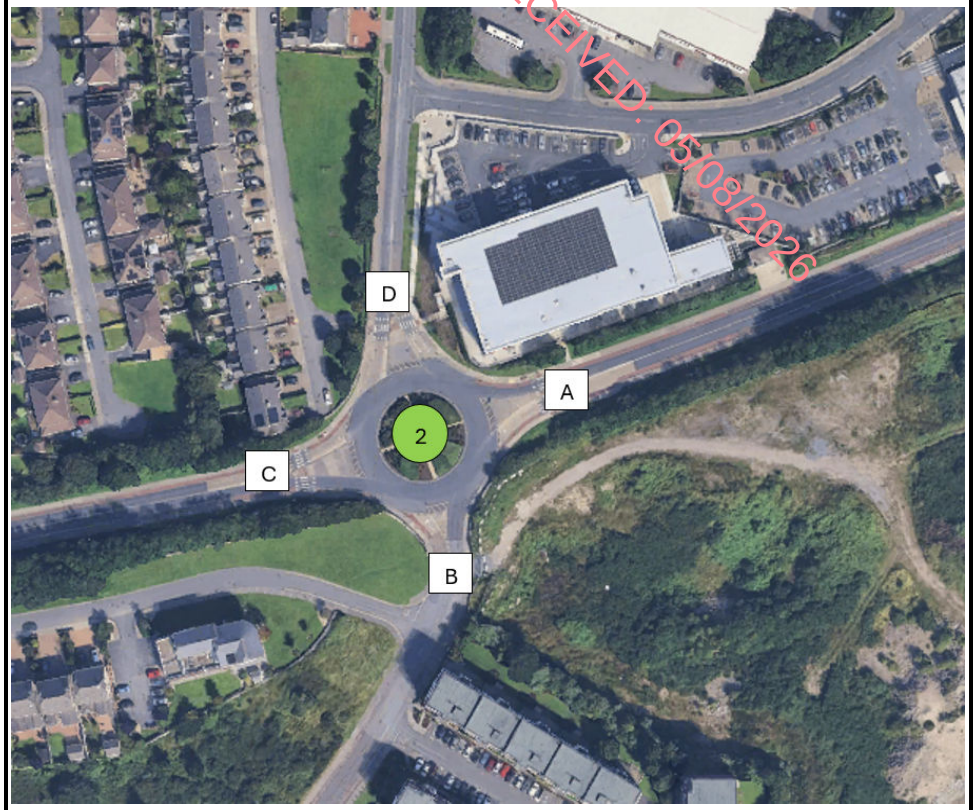
Location: Western Distributor Road, Galway

Date: 14th May 2026

Day: Thursday

Junction 2 Location and Turning Movements

RECEIVED: 05/08/2026



Project Ref: 26207

Location: Western Distributor Road, Galway

Date: 14th May 2026

Day: Thursday

Project Ref: 26207
Location: Western Distributor Road
Date: 14th May 2026
Day: Thursday

Site Ref: 1
Junction Name: Western Distributor Road / Gort Na Bro / An Logan / Galway West Retail Park

TIME	A-B						A-C						A-D						A-E					
	CAR	LGV	OGV1	OGV2	BUS	SUM	CAR	LGV	OGV1	OGV2	BUS	SUM	CAR	LGV	OGV1	OGV2	BUS	SUM	CAR	LGV	OGV1	OGV2	BUS	SUM
07:00	4	2	0	0	0	6	3	0	0	0	0	3	99	3	2	0	0	104	0	0	0	0	0	0
07:15	0	0	0	0	0	0	6	0	1	0	0	7	90	5	1	0	0	96	0	0	0	0	0	0
07:30	3	0	0	0	0	3	3	1	0	0	0	4	75	8	4	1	2	90	0	0	0	0	0	0
07:45	6	0	0	0	0	6	4	0	0	0	0	4	111	1	0	0	1	113	2	0	0	0	0	2
SUM	13	2	0	0	0	15	16	1	1	0	0	18	375	17	7	1	3	403	2	0	0	0	0	2
08:00	5	0	0	0	0	5	6	0	0	0	0	6	161	6	0	0	1	168	0	0	0	0	0	0
08:15	5	0	0	0	0	5	6	0	1	0	0	7	90	3	0	1	1	95	0	0	0	0	0	0
08:30	10	0	0	0	0	10	8	0	0	0	0	8	83	1	2	0	4	90	1	0	0	0	0	1
08:45	15	1	0	0	0	16	6	0	0	0	0	6	64	1	1	0	0	66	1	0	0	0	0	1
SUM	35	1	0	0	0	36	26	0	1	0	0	27	398	11	3	1	6	419	2	0	0	0	0	2
09:00	17	0	0	0	0	17	9	0	0	0	0	9	88	5	0	0	2	95	1	0	0	0	0	1
09:15	10	0	0	0	0	10	10	0	0	0	0	10	70	0	2	0	2	74	1	0	0	0	0	1
09:30	13	1	0	0	0	14	14	6	2	0	0	8	84	5	4	0	0	93	0	0	0	0	0	0
09:45	12	1	0	0	0	13	13	2	0	0	0	2	67	4	1	0	1	73	0	0	0	0	0	0
SUM	52	2	0	0	0	54	54	27	2	0	0	29	309	14	7	0	5	335	344	2	0	0	0	2
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10:15	13	3	0	0	0	16	16	6	1	0	0	7	52	5	0	0	0	57	57	1	0	0	0	1
10:30	24	1	1	0	0	26	27	11	0	0	0	11	63	1	2	0	1	67	69	0	0	0	0	0
10:45	14	1	1	0	0	16	17	6	0	0	0	6	76	4	1	0	0	81	82	1	0	1	0	2
SUM	67	5	2	0	0	74	75	26	1	0	0	27	255	18	5	0	2	280	285	2	0	1	0	3
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12:15	12	0	0	0	0	12	12	6	0	0	0	6	73	6	1	0	0	80	81	0	0	0	0	0
12:30	15	2	0	0	0	17	17	10	2	0	0	12	59	2	3	0	1	65	68	3	0	0	0	3
12:45	10	0	0	0	0	10	10	8	0	1	0	9	42	4	0	1	0	47	48	1	0	0	0	1
SUM	51	3	0	0	0	54	54	33	3	1	0	37	235	15	5	1	2	258	264	4	0	0	0	4

TIME	B-A						B-C						B-D						B-E					
	CAR	LGV	OGV1	OGV2	BUS	SUM	CAR	LGV	OGV1	OGV2	BUS	SUM	CAR	LGV	OGV1	OGV2	BUS	SUM	CAR	LGV	OGV1	OGV2	BUS	SUM
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07:45	4	2	0	0	1	7	8	1	1	0	0	2	2	2	1	0	0	3	3	0	0	0	0	0
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SUM	33	2	2	1	2	40	44	7	0	0	0	0	7	7	84	7	2	0	0	93	94	0	0	0	0	0
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09:15	8	0	1	1	1	11	14	0	0	0	0	0	0	0	28	2	1	0	0	31	32	0	0	0	0	0
09:30	12	1	1	0	1	15	17	1	1	0	0	0	2	2	26	2	1	0	0	29	30	1	0	0	0	1
09:45	11	2	0	0	0	13	13	1	0	0	0	0	1	1	31	1	0	0	0	32	32	1	0	0	0	1
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11:45	23	1	0	0	0	24	24	3	0	0	0	0	3	3	53	3	0	0	0	56	56	0	0	0	0	0
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SUM	78	5	1	1	3	88	93	4	1	0	0	0	5	5	182	9	1	0	1	193	195	2	0	0	0	2

TIME	C-A						C-B						C-D						
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07:45	2	2	0	0	0	4	4	1	0	0	0	0	2	2	12	3	0	0	15	15
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08:00	4	1	0	0	0	5	5	2	1	0	0	0	3	3	36	0	0	0	0	36
08:15	5	0	0	0	0	5	5	3	0	0	0	0	3	3	33	0	0	0	0	33
08:30	11	1	0	0	0	12	12	6	1	0	0	0	7	7	29	0	0	0	0	29
08:45	5	0	0	0	0	5	5	3	0	0	0	0	3	3	18	0	0	0	0	18
SUM	25	2	0	0	0	27	27	14	2	0	0	0	16	16	116	0	0	0	0	116
09:00	6	1	0	0	0	7	7	3	1	0	0	0	4	4	7	0	0	0	0	7
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09:45	7	0	0	0	0	7	7	4	0	0	0	0	4	4	8	0	0	0	0	8
SUM	22	1	0	0	0	23	23	12	1	0	0	0	13	13	30	0	1	0	0	31
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SUM	14	2	2	0	0	18	19	7	1	2	0	0	10	11	18	0	0	0	0	18
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12:45	5	0	1	0	0	6	7	3	0	1	0	0	4	5	12	0	0	0	0	12
SUM	16	2	1	0	0	19	20	9	1	1	0	0	11	12	26	0	0	0	0	26

RECEIVED: 15/08/2026

Project Ref: 26207
Location: Western Distributor Road
Date: 14th May 2026
Day: Thursday

Site Ref: 1
Junction Name: Western Distributor Road / Gort Na Bro / An Logan / Galway West Retail Park

TIME	A-B						A-C						A-D						A-E					
	CAR	LGV	OGV1	OGV2	BUS	SUM	CAR	LGV	OGV1	OGV2	BUS	SUM	CAR	LGV	OGV1	OGV2	BUS	SUM	CAR	LGV	OGV1	OGV2	BUS	SUM
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13:15	17	0	0	0	0	17	10	0	0	0	0	10	58	6	3	0	1	68	1	0	0	0	0	1
13:30	10	0	0	0	0	10	8	0	0	0	0	8	52	1	0	0	1	54	1	0	0	0	0	1
13:45	13	0	0	0	0	13	8	0	0	0	0	8	59	7	3	0	1	70	0	0	0	0	0	0
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14:15	20	0	0	0	0	20	20	2	0	0	0	22	92	4	2	0	1	99	101	0	0	0	0	0	0
14:30	10	1	0	0	0	11	11	5	0	0	0	5	64	4	0	0	1	69	70	0	0	1	0	0	1
14:45	19	0	0	0	0	19	19	6	2	0	0	8	58	6	4	0	0	69	71	0	0	0	0	0	0
SUM	63	2	1	0	0	66	67	50	3	0	0	53	53	290	18	7	0	3	318	325	3	0	1	0	4
15:00	19	1	0	0	0	20	20	10	1	0	0	0	11	11	62	2	0	0	1	65	66	2	0	0	0	2
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15:30	21	0	0	0	0	21	21	10	1	0	0	0	11	11	70	5	2	0	3	80	84	0	0	0	0	0
15:45	20	2	0	0	0	22	22	7	2	1	0	0	10	11	55	2	2	0	0	59	60	3	0	0	0	3
SUM	70	5	0	0	0	75	75	42	4	1	0	0	47	48	249	11	5	0	4	269	276	6	0	0	0	6
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16:15	17	2	0	0	0	19	19	4	0	1	0	0	5	6	61	3	0	0	0	64	64	2	0	0	0	2
16:30	19	0	0	0	0	19	19	12	0	0	0	0	12	12	52	4	0	0	0	56	56	0	0	0	0	0
16:45	19	0	0	0	0	19	19	13	0	0	0	0	13	13	49	2	0	0	1	52	53	1	0	0	0	1
SUM	79	3	0	0	0	82	82	40	0	1	0	0	41	42	219	12	0	0	2	233	235	4	1	1	0	0
17:00	17	3	0	0	0	20	20	10	2	0	0	0	12	12	63	2	0	1	1	67	69	0	0	0	0	0
17:15	17	1	0	0	0	18	18	8	0	0	0	0	8	8	61	2	0	0	0	63	63	1	0	0	0	1
17:30	10	1	0	0	0	11	11	8	1	0	0	0	9	9	74	2	1	0	1	78	80	2	0	0	0	2
17:45	21	0	0	0	0	21	21	7	0	0	0	0	7	7	72	2	0	0	0	74	74	0	0	0	0	0
SUM	65	5	0	0	0	70	70	33	3	0	0	0	36	36	270	8	1	1	2	282	286	3	0	0	0	3
18:00	20	0	0	0	0	20	20	7	1	0	0	0	8	8	59	8	0	0	0	67	67	3	0	0	0	3
18:15	25	0	0	0	0	25	25	12	0	0	0	0	12	12	57	2	1	0	0	60	61	1	0	0	0	1
18:30	18	1	0	0	0	19	19	6	0	0	0	0	6	6	68	0	0	0	1	69	70	1	0	0	0	1
18:45	18	0	0	0	0	18	18	5	0	0	0	0	5	5	81	6	1	0	0	88	89	0	0	0	0	0
SUM	81	1	0	0	0	82	82	30	1	0	0	0	31	31	265	16	2	0	1	284	286	5	0	0	0	5
TOTAL	702	33	3	0	0	738	740	383	18	5	0	0	406	409	3355	162	60	6	36	3619	3693	43	1	3	0	0

TIME	B-A						B-C						B-D						B-E					
	CAR	LGV	OGV1	OGV2	BUS	SUM	CAR	LGV	OGV1	OGV2	BUS	SUM	CAR	LGV	OGV1	OGV2	BUS	SUM	CAR	LGV	OGV1	OGV2	BUS	SUM
13:00	18	0	0	0	1	19	20	5	0	0	0	0	5	5	39	6	0	0	0	45	45	0	0	0	0	0
13:15	31	1	0	0	1	33	34	2	0	0	0	0	2	2	53	2	1	0	0	56	57	2	0	0	0	2
13:30	20	1	0	0	0	21	21	4	0	0	0	0	4	4	48	2	0	0	1	51	52	0	0	0	0	0
13:45	20	0	0	0	0	20	20	2	0	0	0	0	2	2	51	3	0	0	0	54	54	0	0	0	0	0
SUM	89	2	0	0	2	93	95	13	0	0	0	0	13	13	191	13	1	0	1	206	208	2	0	0	0	2
14:00	25	0	0	0	1	26	27	4	0	0	0	0	4	4	53	2	1	0	0	56	57	0	0	0	0	0
14:15	19	1	0	0	0	20	20	2	1	0	0	0	3	3	59	2	0	0	1	62	63	1	0	0	0	1
14:30	26	3	0	0	0	29	29	2	0	0	0	0	2	2	39	1	0	0	1	41	42	0	0	0	0	0
14:45	21	1	0	1	0	23	24	2	0	0	0	0	2	2	38	0	0	0	0	38	38	0	0	0	0	0
SUM	91	5	0	1	1	98	100	10	1	0	0	0	11	11	189	5	1	0	2	197	200	1	0	0	0	1
15:00	25	1	0	0	1	27	28	2	1	0	0	0	3	3	41	2	0	0	0	43	43	0	0	0	0	0
15:15	34	1	0	0	0	35	35	4	0	0	0	0	4	4	51	3	0	0	1	55	56	1	0	0	0	1
15:30	12	1	0	0	0	13	13	1	0	0	0	0	1	1	52	2	0	0	1	55	56	0	0	0	0	0
15:45	15	3	0	0	1	19	20	0	0	0	0	0	0	0	44	5	0	0	1	50	51	1	0	0	0	1
SUM	86	6	0	0	2	94	96	7	1	0	0	0	8	8	188	12	0	0	3	203	206	2	0	0	0	2
16:00	8	1	1	0	0	10	11	2	0	0	0	0	2	2	68	3	0	0	0	71	71	1	0	0	0	1
16:15	15	3	0	0	0	18	18	4	0	0	0	0	4	4	46	0	0	0	0	46	46	0	0	0	0	0
16:30	22	0	0	0	1	23	24	2	0	0	0	0	2	2	39	3	0	0	0	42	42	1	0	0	0	1
16:45	14	2	0	0	0	16	16	4	0	0	0	0	4	4	42	0	0	0	1	43	44	0	0	0	0	0
SUM	61	4	1	0	1	67	69	12	0	0	0	0	12	12	195	6	0	0	1	202	203	2	0	0	0	2
17:00	30	0	0	0	0	30	30	2	1	0	0	0	3	3	49

RECEIVED: 05/08/2026

Project Ref: 26207
Location: Western Distributor Road
Date: 14th May 2026
Day: Thursday

Site Ref: 1
Junction Name: Western Distributor Road / Gort Na Bro / An Logan / Galway West Retail Park

C-E						D-A							D-B							D-C							D-E						
OGV1	OGV2	BUS	SUM	PCU	TIME	CAR	LGV	OGV1	OGV2	BUS	SUM	PCU	CAR	LGV	OGV1	OGV2	BUS	SUM	PCU	CAR	LGV	OGV1	OGV2	BUS	SUM	PCU	CAR	LGV	OGV1	OGV2	BUS	SUM	PCU
0	0	0	0	0	07:00	28	2	2	0	0	32	33	4	1	1	0	0	6	7	0	0	1	0	0	1	2	0	0	0	0	0	0	0
0	0	0	0	0	07:15	30	1	0	0	0	31	31	11	1	0	0	2	14	16	1	0	0	0	0	1	1	2	0	0	0	0	2	2
0	0	0	0	0	07:30	32	2	1	0	0	35	36	14	1	2	0	0	17	18	2	0	1	0	0	3	4	0	0	0	0	0	0	0
0	0	0	0	0	07:45	28	5	0	1	0	34	35	25	1	0	0	1	27	28	4	2	0	0	0	6	6	0	0	0	0	0	0	0
0	0	0	0	0	**SUM**	118	10	3	1	0	132	135	54	4	3	0	3	64	69	7	2	2	0	0	11	12	2	0	0	0	0	2	2
0	0	0	0	0	08:00	56	10	4	1	0	71	74	22	1	0	0	1	24	25	5	3	0	0	0	8	8	0	0	0	0	0	0	0
0	0	0	0	0	08:15	56	12	3	0	3	74	79	29	1	1	0	1	32	34	4	1	1	0	0	6	7	2	0	0	0	0	2	2
0	0	0	0	0	08:30	54	14	1	0	2	71	74	33	5	0	0	0	38	38	7	1	0	0	0	8	8	0	0	0	0	0	0	0
0	0	0	1	1	08:45	45	7	2	0	1	55	57	45	1	2	0	0	48	49	9	1	0	0	0	10	10	0	0	0	0	0	0	0
0	0	0	1	1	**SUM**	211	43	10	1	6	271	283	129	8	3	0	2	142	146	25	6	1	0	0	32	33	2	0	0	0	0	2	2
0	0	0	0	0	09:00	46	1	1	0	0	48	49	57	4	1	0	2	64	67	8	2	1	0	1	12	14	1	0	0	0	0	1	1
0	0	0	0	0	09:15	30	5	0	0	1	36	37	43	1	1	0	1	46	48	4	1	0	0	0	5	5	0	0	0	0	0	0	0
0	0	0	0	0	09:30	29	6	3	0	0	38	40	55	3	1	0	0	59	60	8	1	1	0	0	10	11	0	0	0	0	0	0	0
0	0	0	0	0	09:45	41	1	0	0	0	42	42	44	2	1	0	1	48	50	3	0	0	0	0	3	3	1	0	0	0	0	1	1
0	0	0	0	0	**SUM**	146	13	4	0	1	164	167	199	10	4	0	4	217	223	23	4	2	0	1	30	32	2	0	0	0	0	2	2
0	0	0	0	0	10:00	40	4	1	0	0	45	46	51	3	0	0	1	55	56	3	1	0	0	0	4	4	0	0	0	0	0	0	0
0	0	0	0	0	10:15	27	1	1	0	1	30	32	48	3	1	0	0	52	53	1	0	1	0	0	2	3	1	0	0	0	0	1	1
0	0	0	0	0	10:30	41	5	1	0	0	47	48	37	2	1	0	2	42	45	7	0	1	0	0	8	9	0	0	0	0	0	0	0
0	0	0	0	0	10:45	54	2	2	0	1	59	61	57	3	3	0	0	63	65	9	2	2	0	0	13	14	3	0	0	0	0	3	3
0	0	0	0	0	**SUM**	162	12	5	0	2	181	186	193	11	5	0	3	212	218	20	3	4	0	0	27	29	4	0	0	0	0	4	4
0	0	0	1	1	11:00	46	4	4	0	1	55	58	64	2	0	0	1	67	68	5	1	0	0	0	6	6	0	0	0	0	0	0	0
0	0	0	1	1	11:15	42	0	0	0	1	43	44	68	10	0	0	1	79	80	6	1	0	0	0	7	7	2	1	0	0	0	3	3
0	0	0	0	0	11:30	51	5	1	0	0	57	58	62	3	1	1	1	68	71	7	0	1	1	0	9	11	3	0	0	0	0	3	3
0	0	0	0	0	11:45	58	3	1	0	1	63	65	49	4	0	0	0	53	53	5	0	0	0	0	5	5	1	0	0	0	0	1	1
0	0	0	2	2	**SUM**	197	12	6	0	3	218	224	243	19	1	1	3	267	272	23	2	1	1	0	27	29	6	1	0	0	0	7	7
0	0	0	0	0	12:00	43	4	1	0	0	48	49	52	3	0	1	1	57	59	6	1	1	0	0	8	9	1	0	0	0	0	1	1
0	0	0	0	0	12:15	46	4	2	1	1	54	57	37	2	0	0	1	40	41	10	1	0	0	0	11	11	0	0	0	0	0	0	0
0	0	0	0	0	12:30	66	5	3	0	0	74	76	58	4	0	1	1	64	66	6	1	0	1	0	8	9	0	0	0	0	0	0	0
0	0	0	0	0	12:45	60	4	2	0	0	66	67	69	3	1	0	0	73	74	11	1	0	0	0	12	12	3	0	0	0	0	3	3
0	0	0	0	0	**SUM**	215	17	8	1	1	242	248	216	12	1	2	3	234	240	33	4	1	1	0	39	41	4	0	0	0	0	4	4

E-A						E-B						E-C						E-D						
CAR	LGV	OGV1	OGV2	BUS	SUM	PCU	CAR	LGV	OGV1	OGV2	BUS	SUM	PCU	CAR	LGV	OGV1	OGV2	BUS	SUM	PCU	CAR	LGV	OGV1	OGV2	BUS	SUM	PCU
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	0	0	0	0	4	4
0	1	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	8	0	0	0	0	8	8
2	0	0	0	0	2	2	0	0	0	0	0	0	0	1	0	0	0	0	1	1	3	1	0	0	0	4	4
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0	0	0	0	3	3
2	1	0	0	0	3	3	0	0	0	0	0	0	0	1	0	0	0	0	1	1	18	1	0	0	0	19	19
2	0	0	0	0	2	2	0	0	0	0	0	0	0	1	0	0	0	0	1	1	3	0	0	0	0	3	3
2	0	0	0	0	2	2	0	0	0	0	0	0	0	2	0	0	0	0	2	2	2	0	0	0	0	2	2
2	0	0	0	0	2	2	0	0	0	0	0	0	0	2	0	0	0	0	2	2	2	0	0	0	0	2	2
1	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	2	2
8	1	0	0	0	9	9	0	0	0	0	0	0	0	5	0	0	0	0	5	5	9	0	0	0	0	9	9
2	0	0	0	0	2	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1	0	1	0	0	2	3	0	0	0	0	0	0	0	1	0	0	0	0	1	1	0	0	0	0	0	0	0
2	0	0	0	0	2	2	0	0	0	0	0	0	0	1	0	0	0	0	1	1	3	0	0	0	0	3	3
1	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	1
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	0
1	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	1
2	0	0	0	0	2	2	0	0	0	0	0	0	0	2	0	0	0	0	2	2	1	0	0	0	0	1	1
1	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Project Ref: 26207

Location: Western Distributor Road

Date: 14th May 2026

Day: Thursday

RECEIVED: 05/08/2026

Site Ref: 1

Junction Name: Western Distributor Road / Gort Na Bro / An Logan / Galway West Retail Park

A-B							A-C							A-D								B-A							B-C							B-D							C-A		
CAR	LGV	OGV1	OGV2	BUS	SUM	PCU	CAR	LGV	OGV1	OGV2	BUS	SUM	PCU	CAR	LGV	OGV1	OGV2	BUS	SUM	PCU	TIME	CAR	LGV	OGV1	OGV2	BUS	SUM	PCU	CAR	LGV	OGV1	OGV2	BUS	SUM	PCU	CAR	LGV	OGV1	OGV2	BUS	SUM	PCU	TIME	CAR	LGV	OGV1
2	0	1	0	0	3	4	22	4	1	0	0	27	28	2	0	0	0	0	2	2	07:00	4	0	0	0	0	4	4	0	0	0	0	0	0	0	0	0	1	0	0	1	2	07:00	96	5	0
1	0	0	0	0	1	1	36	4	0	0	0	40	40	1	0	0	0	0	1	1	07:15	10	0	1	0	0	11	12	0	0	0	0	0	0	0	0	0	0	0	0	0	0	07:15	73	6	2
4	0	0	0	0	4	4	30	3	1	0	0	34	35	2	0	0	0	0	2	2	07:30	8	0	0	0	0	8	8	3	0	0	0	0	3	3	1	0	0	0	0	1	1	07:30	68	10	2
2	0	0	0	0	2	2	32	11	0	0	0	43	43	4	0	0	0	0	4	4	07:45	5	0	0	0	0	5	5	3	0	1	0	0	4	5	1	0	1	0	0	2	3	07:45	101	3	0
9	0	1	0	0	10	11	120	22	2	0	0	144	145	9	0	0	0	0	9	9	SUM	27	0	1	0	0	28	29	6	0	1	0	0	7	8	2	0	2	0	0	4	5	SUM	338	24	4
18	0	0	0	0	18	18	32	11	3	1	0	47	50	8	1	0	0	0	9	9	08:00	11	1	0	0	0	12	12	12	0	0	0	0	12	12	9	0	0	0	0	9	9	08:00	133	8	0
12	2	0	0	0	14	14	51	11	3	0	2	67	71	3	0	1	0	0	4	5	08:15	18	0	0	0	0	18	18	24	1	0	0	0	25	25	14	0	0	0	0	14	14	08:15	79	2	0
4	1	0	0	0	5	5	61	14	0	1	2	78	81	9	0	0	0	0	9	9	08:30	6	2	0	0	0	8	8	12	0	0	0	0	12	12	6	0	0	0	0	6	6	08:30	53	1	0
5	0	0	0	0	5	5	52	11	2	0	0	65	66	5	0	0	0	0	5	5	08:45	4	0	0	0	0	4	4	10	0	0	0	0	10	10	2	0	0	0	0	2	2	08:45	71	3	1
39	3	0	0	0	42	42	196	47	8	2	4	257	268	25	1	1	0	0	27	28	SUM	39	3	0	0	0	42	42	58	1	0	0	0	59	59	31	0	0	0	0	31	31	SUM	336	14	1
3	0	0	0	0	3	3	53	4	1	0	0	58	59	7	0	0	0	0	7	7	09:00	9	0	0	0	0	9	9	3	0	0	0	0	3	3	0	0	0	0	0	0	0	09:00	85	8	0
3	0	0	0	0	3	3	35	7	1	0	1	44	46	2	0	0	0	0	2	2	09:15	5	0	0	0	0	5	5	2	0	0	0	0	2	2	3	0	0	0	0	3	3	09:15	77	1	2
0	0	0	0	0	0	0	47	6	1	0	0	54	55	4	1	0	0	0	5	5	09:30	1	0	0	0	0	1	1	0	0	0	0	0	0	0	1	0	0	0	0	1	1	09:30	92	8	2
2	0	0	0	0	2	2	54	4	0	0	0	58	58	2	0	0	0	0	2	2	09:45	3	0	0	0	0	3	3	1	0	0	0	0	1	1	1	0	0	0	0	1	1	09:45	66	6	1
8	0	0	0	0	8	8	189	21	3	0	1	214	217	15	1	0	0	0	16	16	SUM	18	0	0	0	0	18	18	6	0	0	0	0	6	6	5	0	0	0	0	5	5	SUM	320	23	5
0	0	0	0	0	0	0	41	9	0	0	0	50	50	5	1	0	0	0	6	6	10:00	6	0	0	0	0	6	6	0	0	0	0	0	0	0	1	0	0	0	0	1	1	10:00	64	8	1
3	0	0	0	0	3	3	36	1	2	0	1	40	42	1	0	0	0	0	1	1	10:15	4	0	0	0	0	4	4	2	0	0	0	0	2	2	0	0	0	0	0	0	0	10:15	69	9	0
2	0	0	0	0	2	2	51	6	0	0	0	57	57	4	0	0	0	0	4	4	10:30	2	0	0	0	0	2	2	2	0	0	0	0	2	2	0	1	0	0	0	1	1	10:30	85	1	3
2	0	0	0	0	2	2	57	5	2	0	1	65	67	5	0	0	0	0	5	5	10:45	3	0	1	0	0	4	5	3	0	0	0	0	3	3	1	0	1	0	0	2	3	10:45	69	6	2
7	0	0	0	0	7	7	185	21	4	0	2	212	216	15	1	0	0	0	16	16	SUM	15	0	1	0	0	16	17	7	0	0	0	0	7	7	2	1	1	0	0	4	5	SUM	287	24	6
2	0	0	0	0	2	2	51	4	3	0	0	58	60	5	0	0	0	0	5	5	11:00	2	0	0	0	0	2	2	1	0	0	0	0	1	1	1	0	0	0	0	1	1	11:00	82	4	2
0	0	0	0	0	0	0	59	1	0	0	0	60	60	8	1	0	0	1	10	11	11:15	1	0	0	0	0	1	1	1	0	0	0	0	1	1	2	0	0	0	0	2	2	11:15	66	6	3
3	0	0	0	0	3	3	55	5	0	2	0	62	65	5	1	0	0	0	6	6	11:30	6	0	0	0	0	6	6	5	0	0	0	0	5	5	4	0	0	0	0	4	4	11:30	74	6	0
3	0	0	0	0	3	3	75	3	3	0	0	81	83	9	1	0	0	0	10	10	11:45	1	0	0	0	0	1	1	0	0	0	0	0	0	0	1	0	0	0	0	1	1	11:45	70	4	2
8	0	0	0	0	8	8	240	13	6	2	0	261	267	27	3	0	0	1	31	32	SUM	10	0	0	0	0	10	10	7	0	0	0	0	7	7	8	0	0	0	0	8	8	SUM	292	20	7
2	0	0	0	0	2	2	54	4	1	0	0	59	60	5	1	0	0	0	6	6	12:00	2	2	0	0	0	4	4	2	0	0	0	0	2	2	1	0	0	0	0	1	1	12:00	65	5	1
0	0	0	0	0	0	0	59	4	0	1	1	65	67	10	0	0	0	0	10	10	12:15	3	1	0	0	0	4	4	5	1	0	0	0	6	6	2	0	0	0	0	2	2	12:15	70	7	0
5	2	0	0	0	7	7	78	6	2	0	0	86	87	6	1	0	0	0	7	7	12:30	6	0	0	0	0	6	6	0	0	0	0	0	0	0	1	0	0	0	0	1	1	12:30	73	5	2
8	1	0	0	0	9	9	70	6	2	0	0	78	79	5	0	0	0	0	5	5	12:45	3	1	0	0	0	4	4	0	2	0	0	0	2	2	3	0	0	0	0	3	3	12:45	50	4	1
15	3	0	0	0	18	18	261	20	5	1	1	288	293	26	2	0	0	0	28	28	SUM	14	4	0	0	0	18	18	7	3	0	0	0	10	10	7	0	0	0	0	7	7	SUM	258	21	4

Project Ref: 26207

Location: Western Distributor Road

Date: 14th May 2026

Day: Thursday

Site Ref: 1

Junction Name: Western Distributor Road / Gort Na Bro / An Logan / Galway West Retail Park

A-B							A-C							A-D						
CAR	LGV	OGV1	OGV2	BUS	SUM	PCU	CAR	LGV	OGV1	OGV2	BUS	SUM	PCU	CAR	LGV	OGV1	OGV2	BUS	SUM	PCU
2	1	0	0	0	3	3	46	5	0	0	1	52	53	10	0	0	0	0	10	10
6	0	0	0	0	6	6	80	4	2	0	0	86	87	8	2	0	0	0	10	10
5	1	0	0	0	6	6	73	5	1	0	0	79	80	10	0	1	0	0	11	12
5	0	1	0	0	6	7	59	5	1	0	0	65	66	4	0	0	0	0	4	4
18	2	1	0	0	21	22	258	19	4	0	1	282	285	32	2	1	0	0	35	36
9	0	0	0	0	9	9	76	4	0	0	0	80	80	8	0	0	0	0	8	8
4	0	0	0	0	4	4	79	6	0	0	1	86	87	10	0	0	0	0	10	10
4	0	0	0	0	4	4	73	9	0	0	0	82	82	4	1	0	0	0	5	5
1	0	0	0	0	1	1	55	8	1	0	4	68	73	16	0	0	0	0	16	16
18	0	0	0	0	18	18	283	27	1	0	5	316	322	38	1	0	0	0	39	39
4	0	0	0	0	4	4	73	6	1	0	2	82	85	7	0	0	0	1	8	9
2	0	0	0	0	2	2	103	4	1	0	1	109	111	7	0	0	0	0	7	7
7	0	0	0	0	7	7	84	3	1	0	0	88	89	7	0	0	0	0	7	7
3	0	0	0	0	3	3	85	5	1	0	1	92	94	7	1	0	0	0	8	8
16	0	0	0	0	16	16	345	18	4	0	4	371	377	28	1	0	0	1	30	31
8	0	0	0	0	8	8	90	7	0	0	0	97	97	17	1	0	0	0	18	18
6	1	0	0	0	7	7	91	5	0	0	1	97	98	10	0	0	0	0	10	10
7	1	0	0	0	8	8	97	3	0	0	0	100	100	9	0	0	0	0	9	9
4	0	0	0	0	4	4	99	6	0	0	0	105	105	7	0	0	0	0	7	7
25	2	0	0	0	27	27	377	21	0	0	1	399	400	43	1	0	0	0	44	44
8	0	0	0	0	8	8	101	5	0	0	1	107	108	14	1	0	0	0	15	15
11	0	0	0	0	11	11	80	3	0	0	0	83	83	14	1	0	0	0	15	15
5	0	0	0	0	5	5	92	7	0	0	0	99	99	15	0	0	0	0	15	15
2	0	0	0	0	2	2	105	11	0	0	1	117	118	7	0	0	0	0	7	7
26	0	0	0	0	26	26	378	26	0	0	2	406	408	50	2	0	0	0	52	52
2	0	0	0	0	2	2	84	3	0	0	1	88	89	7	0	1	0	0	8	9
4	0	0	0	0	4	4	83	1	0	0	0	84	84	10	0	1	0	1	12	14
6	0	0	0	0	6	6	93	2	1	0	0	96	97	7	0	0	0	0	7	7
3	0	0	0	0	3	3	105	5	0	0	0	110	110	13	0	1	0	0	14	15
15	0	0	0	0	15	15	365	11	1	0	1	378	380	37	0	3	0	1	41	44
204	10	2	0	0	216	217	3197	266	38	5	22	3528	3576	345	15	5	0	3	368	374

Site Ref: 1

Junction Name: Western Distributor Road / Gort Na Bro / An Logan / Galway West Retail Park

TIME	B-A							B-C							B-D						
	CAR	LGV	OGV1	OGV2	BUS	SUM	PCU	CAR	LGV	OGV1	OGV2	BUS	SUM	PCU	CAR	LGV	OGV1	OGV2	BUS	SUM	PCU
13:00	6	1	0	0	0	7	7	9	1	0	0	0	10	10	1	0	0	0	0	1	1
13:15	10	0	0	0	0	10	10	16	1	0	0	0	17	17	1	0	0	0	0	1	1
13:30	4	0	0	0	0	4	4	1	0	0	0	0	1	1	3	1	0	0	0	4	4
13:45	2	0	0	0	0	2	2	3	0	0	0	0	3	3	3	0	0	0	0	3	3
SUM	22	1	0	0	0	23	23	29	2	0	0	0	31	31	8	1	0	0	0	9	9
14:00	5	0	0	0	0	5	5	12	0	0	0	0	12	12	2	0	0	0	0	2	2
14:15	22	1	1	0	0	24	25	29	0	0	0	0	29	29	16	0	0	0	0	16	16
14:30	2	0	1	0	0	3	4	6	1	0	0	0	7	7	3	0	0	0	0	3	3
14:45	3	0	0	0	0	3	3	1	0	0	0	0	1	1	2	0	0	0	0	2	2
SUM	32	1	2	0	0	35	36	48	1	0	0	0	49	49	23	0	0	0	0	23	23
15:00	4	0	0	0	0	4	4	3	0	1	0	0	4	5	1	0	0	0	0	1	1
15:15	5	0	0	0	0	5	5	5	0	0	0	0	5	5	3	0	0	0	0	3	3
15:30	6	0	0	0	0	6	6	4	0	0	0	0	4	4	5	0	0	0	0	5	5
15:45	2	1	0	0	0	3	3	4	0	0	0	0	4	4	3	0	0	0	0	3	3
SUM	17	1	0	0	0	18	18	16	0	1	0	0	17	18	12	0	0	0	0	12	12
16:00	4	0	0	0	0	4	4	4	1	0	0	0	5	5	2	0	0	0	0	2	2
16:15	6	0	0	0	0	6	6	10	0	0	0	0	10	10	4	0	0	0	0	4	4
16:30	4	0	0	0	0	4	4	16	0	0	0	0	16	16	4	2	0	0	0	6	6
16:45	2	0	0	0	0	2	2	6	0	0	0	0	6	6	2	0	0	0	0	2	2
SUM	16	0	0	0	0	16	16	36	1	0	0	0	37	37	12	2	0	0	0	14	14
17:00	3	0	0	0	0	3	3	6	0	0	0	0	6	6	2	0	0	0	0	2	2
17:15	3	0	0	0	0	3	3	6	1	0	0	0	7	7	1	0	0	0	0	1	1
17:30	7	0	0	0	0	7	7	5	0	0	0	0	5	5	0	0	0	0	0	0	0
17:45	3	0	0	0	0	3	3	5	0	0	0	0	5	5	1	0	0	0	0	1	1
SUM	16	0	0	0	0	16	16	22	1	0	0	0	23	23	4	0	0	0	0	4	4
18:00	3	0	0	0	0	3	3	4	0	0	0	0	4	4	1	0	0	0	0	1	1
18:15	5	0	0	0	0	5	5	4	0	0	0	0	4	4	3	0	0	0	0	3	3
18:30	4	0	0	0	0	4	4	3	0	0	0	0	3	3	2	0	0	0	0	2	2
18:45	3	0	0	0	0	3	3	4	0	0	0	0	4	4	0	0	0	0	0	0	0
SUM	15	0	0	0	0	15	15	15	0	0	0	0	15	15	6	0	0	0	0	6	6
TOTAL	241	10	4	0	0	255	257	257	9	2	0	0	268	269	120	4	3	0	0	127	129

Site Ref: 1

Junction Name: Western Distributor Ro

TIME	C-A			
	CAR	LGV	OGV1	
13:00	76	3	2	
13:15	55	8	1	
13:30	54	5	0	
13:45	68	8	2	
SUM	253	24	5	
14:00	98	5	2	
14:15	87	5	2	
14:30	61	5	0	
14:45	72	8	2	
SUM	318	23	6	
15:00	72	6	0	
15:15	77	7	1	
15:30	69	8	2	
15:45	76	3	3	
SUM	294	24	6	
16:00	68	5	0	
16:15	65	6	1	
16:30	70	4	0	
16:45	71	3	0	
SUM	274	18	1	
17:00	83	6	0	
17:15	70	2	0	
17:30	77	5	0	
17:45	85	2	0	
SUM	315	15	0	
18:00	76	10	0	
18:15	83	2	0	
18:30	77	1	0	
18:45	96	5	0	
SUM	332	18	0	
TOTAL	3617	248	45	

RECEIVED: 05/08/2026

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ern Distributor Road

May 2026

day

Project Ref: 26207

Location: Western Distributor Road

Date: 14th May 2026

Day: Thursday

RECEIVED: 05/08/2026

Site Ref:

1

Junction Name:

oad / Gort Na Bro / An Logan / Galway West Retail Park

Western Distributor Road / Gort Na Bro / An Logan / Galway West Retail Park

				C-B							C-D								D-A								D-B								D-C						
OGV2	BUS	SUM	PCU	CAR	LGV	OGV1	OGV2	BUS	SUM	PCU	CAR	LGV	OGV1	OGV2	BUS	SUM	PCU	TIME	CAR	LGV	OGV1	OGV2	BUS	SUM	PCU	CAR	LGV	OGV1	OGV2	BUS	SUM	PCU	CAR	LGV	OGV1	OGV2	BUS	SUM	PCU
0	0	101	101	1	0	1	0	0	2	3	3	3	0	0	0	6	6	07:00	6	1	0	0	0	7	7	0	0	0	0	0	0	0	8	0	1	0	0	9	10
0	0	81	82	1	0	0	0	0	1	1	9	1	0	0	0	10	10	07:15	9	0	0	0	0	9	9	2	0	0	0	0	2	2	5	4	1	0	0	10	11
0	1	81	83	8	0	1	0	0	9	10	13	0	0	0	1	14	15	07:30	6	0	0	0	0	6	6	8	0	0	0	0	8	8	1	0	0	0	0	1	1
0	1	105	106	15	1	0	1	0	17	18	22	1	0	0	0	23	23	07:45	12	0	0	0	0	12	12	3	0	0	0	0	3	3	6	0	0	0	0	6	6
0	2	368	372	25	1	2	1	0	29	31	47	5	0	0	1	53	54	**SUM**	33	1	0	0	0	34	34	13	0	0	0	0	13	13	20	4	2	0	0	26	27
1	1	143	145	19	0	0	0	0	19	19	42	2	0	0	0	44	44	08:00	23	1	0	0	0	24	24	12	0	0	0	0	12	12	19	1	0	0	0	20	20
0	2	83	85	23	0	0	0	0	23	23	79	2	0	0	0	81	81	08:15	17	1	0	0	0	18	18	6	0	0	0	0	6	6	36	2	1	0	0	39	40
0	2	56	58	6	1	0	0	0	7	7	78	3	0	0	1	82	83	08:30	11	0	0	0	0	11	11	5	2	0	0	0	7	7	71	1	2	0	0	74	75
0	0	75	76	4	1	0	0	0	5	5	69	2	0	0	0	71	71	08:45	11	0	0	0	0	11	11	3	0	0	0	0	3	3	66	2	1	0	0	69	70
1	5	357	364	52	2	0	0	0	54	54	268	9	0	0	1	278	279	**SUM**	62	2	0	0	0	64	64	26	2	0	0	0	28	28	192	6	4	0	0	202	204
0	2	95	97	2	0	0	0	0	2	2	54	3	0	0	0	57	57	09:00	9	1	0	0	0	10	10	5	0	0	0	0	5	5	31	2	1	0	0	34	35
0	2	82	85	2	1	0	0	0	3	3	50	1	2	0	0	53	54	09:15	4	0	0	0	0	4	4	2	0	0	0	0	2	2	31	0	1	0	0	32	33
0	0	102	103	2	0	0	0	0	2	2	50	2	1	0	1	54	56	09:30	9	0	0	0	0	9	9	0	2	0	0	0	2	2	32	1	0	0	0	33	33
0	0	73	74	2	1	0	0	0	3	3	54	5	0	0	0	59	59	09:45	11	0	0	0	0	11	11	2	0	0	0	0	2	2	44	2	0	0	0	46	46
0	4	352	359	8	2	0	0	0	10	10	208	11	3	0	1	223	226	**SUM**	33	1	0	0	0	34	34	9	2	0	0	0	11	11	138	5	2	0	0	145	146
0	1	74	76	0	0	0	0	0	0	0	46	1	0	0	0	47	47	10:00	5	0	0	0	0	5	5	3	0	0	0	0	3	3	41	2	1	0	0	44	45
0	0	78	78	0	0	0	0	0	0	0	58	0	0	0	0	58	58	10:15	4	1	0	0	0	5	5	0	0	0	0	0	0	0	29	1	0	0	0	30	30
0	0	89	91	3	0	0	0	0	3	3	44	3	0	0	0	47	47	10:30	5	0	0	0	0	5	5	0	0	0	0	0	0	0	26	1	1	0	0	28	29
0	0	77	78	0	0	2	0	0	2	3	50	3	0	0	0	53	53	10:45	11	1	0	0	0	12	12	2	2	0	0	0	4	4	37	3	1	0	0	41	42
0	1	318	322	3	0	2	0	0	5	6	198	7	0	0	0	205	205	**SUM**	25	2	0	0	0	27	27	5	2	0	0	0	7	7	133	7	3	0	0	143	145
0	1	89	91	1	0	0	0	0	1	1	54	1	2	0	0	57	58	11:00	9	0	0	0	0	9	9	2	0	0	0	0	2	2	48	2	1	0	0	51	52
0	0	75	77	5	0	0	0	0	5	5	53	4	0	0	0	57	57	11:15	7	0	0	0	0	7	7	2	0	0	0	0	2	2	46	2	0	0	0	48	48
0	0	80	80	1	0	0	0	0	1	1	49	2	0	0	0	51	51	11:30	5	1	1	0	0	7	8	6	0	0	0	0	6	6	43	3	1	0	0	47	48
0	0	76	77	2	0	0	0	0	2	2	53	2	0	0	0	55	55	11:45	7	0	0	0	0	7	7	2	0	0	0	0	2	2	65	2	0	0	0	67	67
0	1	320	325	9	0	0	0	0	9	9	209	9	2	0	0	220	221	**SUM**	28	1	1	0	0	30	31	12	0	0	0	0	12	12	202	9	2	0	0	213	214
0	0	71	72	3	0	0	0	0	3	3	53	0	0	0	0	53	53	12:00	9	2	0	0	0	11	11	3	0	0	0	0	3	3	43	2	0	0	0	45	45
0	0	77	77	0	1	0	0	0	1	1	57	3	0	0	0	60	60	12:15	10	0	0	0	0	10	10	3	0	0	0	0	3	3	45	4	0	0	0	49	49
0	1	81	83	2	0	0	0	0	2	2	59	3	1	0	0	63	64	12:30	8	0	1	0	0	9	10	0	0	0	0	0	0	0	54	2	0	0	0	56	56
0	0	55	56	6	1	0	0	0	7	7	69	7	0	0	0	76	76	12:45	10	0	0	0	0	10	10	2	0	0	0	0	2	2	59	3	1	0	0	63	64
0	1	284	287	11	2	0	0	0	13	13	238	13	1	0	0	252	253	**SUM**	37	2	1	0	0	40	41	8	0	0	0	0	8	8	201	11	1	0	0	213	214

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ern Distributor Road

May 2026

day

Project Ref: 26207

Location: Western Distributor Road

Date: 14th May 2026

Day: Thursday

Site Ref:
1

Junction Name:
Western Distributor Road / Gort Na Bro / An Logan / Galway West Retail Park

RECEIVED: 05/08/2026

				C-B							C-D								D-A							D-B							D-C						
OGV2	BUS	SUM	PCU	CAR	LGV	OGV1	OGV2	BUS	SUM	PCU	CAR	LGV	OGV1	OGV2	BUS	SUM	PCU	TIME	CAR	LGV	OGV1	OGV2	BUS	SUM	PCU	CAR	LGV	OGV1	OGV2	BUS	SUM	PCU	CAR	LGV	OGV1	OGV2	BUS	SUM	PCU
0	1	82	84	12	0	0	0	0	12	12	75	3	0	0	0	78	78	13:00	13	0	0	0	0	13	13	5	2	0	0	0	7	7	52	2	0	0	0	54	54
0	0	64	65	3	0	1	0	0	4	5	60	2	1	0	0	63	64	13:15	9	0	0	0	0	9	9	0	0	0	0	0	0	0	74	3	0	0	0	77	77
0	0	59	59	9	0	0	0	0	9	9	67	3	1	0	0	71	72	13:30	10	0	0	0	0	10	10	2	0	0	0	0	2	2	50	3	0	0	0	53	53
0	0	78	79	13	0	0	0	0	13	13	53	2	1	0	0	56	57	13:45	6	0	0	0	0	6	6	6	0	0	0	0	6	6	64	3	1	0	1	69	71
0	1	283	287	37	0	1	0	0	38	39	255	10	3	0	0	268	270	**SUM**	38	0	0	0	0	38	38	13	2	0	0	0	15	15	240	11	1	0	1	253	255
0	1	106	108	12	0	0	0	0	12	12	78	5	2	0	0	85	86	14:00	10	0	0	0	0	10	10	3	0	0	0	0	3	3	42	2	0	0	0	44	44
0	1	95	97	1	1	0	0	0	2	2	74	1	0	0	0	75	75	14:15	11	0	0	0	0	11	11	2	0	0	0	0	2	2	77	1	0	0	0	78	78
0	1	67	68	1	0	1	0	0	2	3	54	1	0	0	0	55	55	14:30	11	0	0	0	0	11	11	2	0	0	0	0	2	2	77	1	1	0	0	79	80
0	0	82	83	1	0	0	0	0	1	1	70	1	1	0	0	72	73	14:45	9	0	0	0	0	9	9	0	0	0	0	0	0	0	69	5	1	0	0	75	76
0	3	350	356	15	1	1	0	0	17	18	276	8	3	0	0	287	289	**SUM**	41	0	0	0	0	41	41	7	0	0	0	0	7	7	265	9	2	0	0	276	277
0	1	79	80	1	0	0	0	0	1	1	78	1	0	0	0	79	79	15:00	9	0	0	0	0	9	9	2	0	0	0	0	2	2	64	0	1	0	0	65	66
0	0	85	86	11	0	0	0	0	11	11	53	0	1	0	0	54	55	15:15	9	0	0	0	0	9	9	2	0	0	0	0	2	2	68	2	0	0	0	70	70
0	2	81	84	3	0	0	0	0	3	3	62	2	1	0	0	65	66	15:30	11	0	0	0	1	12	13	9	0	0	0	0	9	9	70	0	0	0	0	70	70
0	0	82	84	5	0	0	0	0	5	5	65	3	0	0	0	68	68	15:45	9	1	0	0	0	10	10	3	0	0	0	0	3	3	72	0	3	0	0	75	77
0	3	327	333	20	0	0	0	0	20	20	258	6	2	0	0	266	267	**SUM**	38	1	0	0	1	40	41	16	0	0	0	0	16	16	274	2	4	0	0	280	282
0	1	74	75	9	0	0	0	0	9	9	90	3	1	0	0	94	95	16:00	16	0	0	0	0	16	16	5	0	0	0	0	5	5	74	2	0	0	0	76	76
0	0	72	73	17	0	0	0	0	17	17	76	2	1	0	0	79	80	16:15	9	0	0	0	0	9	9	6	0	0	0	0	6	6	65	1	0	0	0	66	66
0	0	74	74	3	0	0	0	0	3	3	75	3	0	0	0	78	78	16:30	6	1	0	0	0	7	7	6	0	0	0	0	6	6	66	1	2	0	0	69	70
0	0	74	74	7	0	0	0	0	7	7	83	0	2	0	1	86	88	16:45	9	0	0	0	0	9	9	6	2	0	0	0	8	8	68	3	0	0	0	71	71
0	1	294	296	36	0	0	0	0	36	36	324	8	4	0	1	337	340	**SUM**	40	1	0	0	0	41	41	23	2	0	0	0	25	25	273	7	2	0	0	282	283
0	0	89	89	3	0	0	0	0	3	3	75	1	1	0	0	77	78	17:00	4	0	0	0	0	4	4	5	0	0	0	0	5	5	84	0	0	0	0	84	84
0	0	72	72	8	1	0	0	0	9	9	67	3	0	0	0	70	70	17:15	10	0	0	0	0	10	10	2	0	0	0	0	2	2	81	0	1	0	0	82	83
0	0	82	82	5	0	0	0	0	5	5	67	1	0	0	0	68	68	17:30	7	0	0	0	0	7	7	0	0	0	0	0	0	0	87	3	2	0	0	92	93
0	0	87	87	3	0	0	0	0	3	3	80	1	0	0	0	81	81	17:45	15	0	0	0	0	15	15	0	0	0	0	0	0	0	62	1	0	0	0	63	63
0	0	330	330	19	1	0	0	0	20	20	289	6	1	0	0	296	297	**SUM**	36	0	0	0	0	36	36	7	0	0	0	0	7	7	314	4	3	0	0	321	323
0	0	86	86	7	0	0	0	0	7	7	58	5	0	0	0	63	63	18:00	4	0	0	0	0	4	4	2	0	0	0	0	2	2	56	3	0	0	0	59	59
0	0	85	85	3	0	0	0	0	3	3	64	1	0	0	0	65	65	18:15	7	0	1	0	0	8	9	6	0	0	0	0	6	6	62	2	0	0	1	65	66
0	1	79	80	3	0	0	0	0	3	3	58	0	0	0	0	58	58	18:30	9	0	0	0	0	9	9	5	0	0	0	0	5	5	56	2	0	0	0	58	58
0	0	101	101	8	1	0	0	0	9	9	48	1	0	0	1	50	51	18:45	6	1	0	0	0	7	7	2	0	0	0	0	2	2	65	0	0	0	0	65	65
0	1	351	352	21	1	0	0	0	22	22	228	7	0	0	1	236	237	**SUM**	26	1	1	0	0	28	29	15	0	0	0	0	15	15	239	7	0	0	1	247	248
1	23	3934	3981	256	10	6	1	0	273	277	2798	99	19	0	5	2921	2936	**TOTAL**	437	12	3	0	1	453	456	154	10	0	0	0	164	164	2491	82	26	0	2	2601	2616

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Appendix B. JUNCTION 10 ARCADY DETAILED OUTPUT

Junctions 11

ARCADY 11 - Roundabout Module

Version: 11.1.0.2307
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Filename: Import of Kingston Junction 1.1 - WDR Roundabout incl. Active Travel Roundabout.j11
Path: C:\Users\Micheal Geraghty\OneDrive - TOBIN Consulting Engineers\Junctions - Various\11893\Traffic
Report generation date: 09/07/2026 14:36:25

»D1 - 2029 | Base | AM
»D2 - 2029 | Base | PM
»D3 - 2029 | Base + Comm | AM
»D4 - 2029 | Base + Comm | PM
»D5 - 2029 | Base + Comm & Prop | AM
»D6 - 2029 | Base + Comm & Prop | PM
»D7 - 2044 | Base incl. Est. Active Travel Reduction | AM
»D8 - 2044 | Base incl. Est. Active Travel Reduction | PM
»D9 - 2044 | Base + Comm incl. Est. Active Travel Reduction | AM
»D10 - 2044 | Base + Comm incl. Est. Active Travel Reduction | PM
»D11 - 2044 | Base + Comm & Prop incl. Est. Active Travel Reduction | AM
»D12 - 2044 | Base + Comm & Prop incl. Est. Active Travel Reduction | PM
»D13 - 2044 | Base + Comm & Masterplan incl. Est. Active Travel Reduction | AM
»D14 - 2044 | Base + Comm & Masterplan incl. Est. Active Travel Reduction | PM
»D17 - 2044 | Base + Comm & Masterplan & GCRR | AM
»D18 - 2044 | Base + Comm & Masterplan & GCRR | PM

Summary of junction performance

	AM					PM				
	Set ID	Queue (PCU)	Delay (s)	RFC	LOS	Set ID	Queue (PCU)	Delay (s)	RFC	LOS
	2029 - Base									
Arm 1	D1	0.5	5.34	0.34	A	D2	0.6	5.25	0.38	A
Arm 2		0.5	4.76	0.34	A		0.9	6.31	0.49	A
Arm 3		0.2	4.23	0.15	A		0.1	4.79	0.08	A
Arm 4		1.4	6.46	0.59	A		1.2	5.66	0.54	A
	2029 - Base + Comm									
Arm 1	D3	0.6	6.12	0.38	A	D4	0.8	6.02	0.44	A
Arm 2		0.6	5.09	0.37	A		1.4	8.03	0.58	A
Arm 3		0.3	4.83	0.24	A		0.2	5.92	0.19	A
Arm 4		2.0	8.30	0.67	A		1.5	6.57	0.60	A
	2029 - Base + Comm & Prop									
Arm 1	D5	0.7	6.61	0.41	A	D6	0.9	6.61	0.47	A
Arm 2		0.6	5.35	0.39	A		1.8	9.61	0.64	A
Arm 3		0.5	5.71	0.35	A		0.4	6.62	0.27	A
Arm 4		2.4	9.60	0.71	A		1.7	7.13	0.63	A
	2044 - Base incl. Est. Active Travel Reduction									
Arm 1	D7	0.5	5.44	0.35	A	D8	0.6	5.35	0.39	A
Arm 2		0.5	4.87	0.35	A		1.0	6.49	0.50	A
Arm 3		0.2	4.24	0.15	A		0.1	4.88	0.08	A
Arm 4		1.5	6.59	0.60	A		1.2	5.79	0.55	A
	2044 - Base + Comm incl. Est. Active Travel Reduction									
Arm 1	D9	0.6	6.14	0.39	A	D10	0.8	6.08	0.44	A
Arm 2		0.6	5.18	0.38	A		1.4	8.11	0.58	A
Arm 3		0.3	4.74	0.23	A		0.2	5.91	0.19	A
Arm 4		2.0	8.20	0.67	A		1.5	6.67	0.60	A
	2044 - Base + Comm & Prop incl. Est. Active Travel Reduction									
Arm 1	D11	0.7	6.65	0.41	A	D12	0.9	6.60	0.47	A
Arm 2		0.7	5.41	0.40	A		1.7	9.54	0.64	A
Arm 3		0.5	5.66	0.34	A		0.3	6.59	0.26	A
Arm 4		2.4	9.66	0.71	A		1.7	7.21	0.63	A
	2044 - Base + Comm & Masterplan incl. Est. Active Travel Reduction									
Arm 1	D13	1.1	9.27	0.53	A	D14	1.8	10.77	0.64	B
Arm 2		1.0	7.25	0.51	A		7.0	32.71	0.89	D
Arm 3		1.2	8.36	0.55	A		4.5	31.11	0.83	D
Arm 4		4.8	17.62	0.84	C		3.1	12.05	0.76	B
	2044 - Base + Comm & Masterplan & GCRR									
Arm 1	D17	0.7	6.80	0.42	A	D18	1.0	7.23	0.51	A
Arm 2		0.6	5.66	0.38	A		2.1	11.43	0.68	B
Arm 3		1.1	7.11	0.54	A		1.5	10.39	0.61	B
Arm 4		1.9	8.58	0.65	A		1.3	6.59	0.56	A

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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

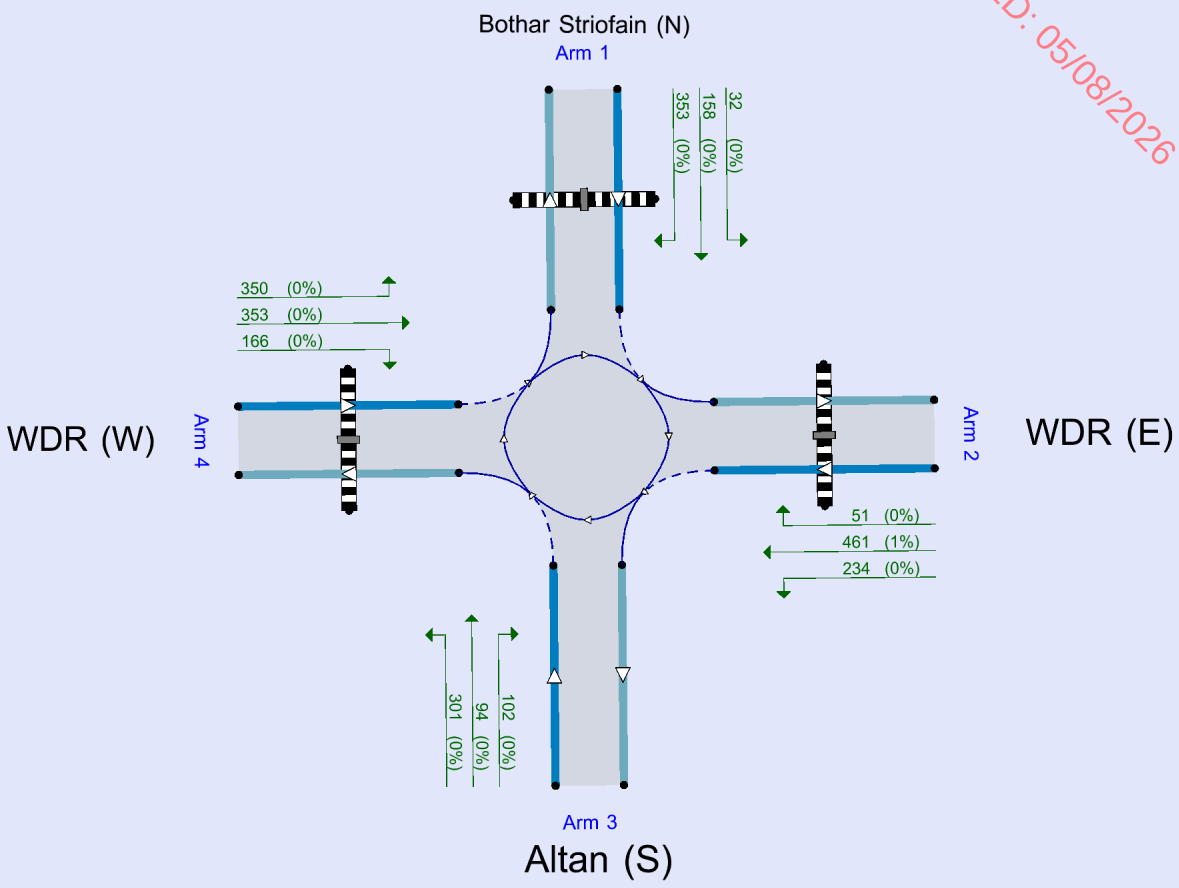
File Description

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

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

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Flows show original traffic demand (PCU/hr) with (HV %)

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	Year	Scenario	Time period	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)
D1	2029	Base	AM	ONE HOUR	07:45	09:15	15
D2	2029	Base	PM	ONE HOUR	16:45	18:15	15
D3	2029	Base + Comm	AM	ONE HOUR	07:45	09:15	15
D4	2029	Base + Comm	PM	ONE HOUR	16:45	18:15	15
D5	2029	Base + Comm & Prop	AM	ONE HOUR	07:45	09:15	15
D6	2029	Base + Comm & Prop	PM	ONE HOUR	16:45	18:15	15
D7	2044	Base incl. Est. Active Travel Reduction	AM	ONE HOUR	07:45	09:15	15
D8	2044	Base incl. Est. Active Travel Reduction	PM	ONE HOUR	16:45	18:15	15
D9	2044	Base + Comm incl. Est. Active Travel Reduction	AM	ONE HOUR	07:45	09:15	15
D10	2044	Base + Comm incl. Est. Active Travel Reduction	PM	ONE HOUR	16:45	18:15	15
D11	2044	Base + Comm & Prop incl. Est. Active Travel Reduction	AM	ONE HOUR	07:45	09:15	15
D12	2044	Base + Comm & Prop incl. Est. Active Travel Reduction	PM	ONE HOUR	16:45	18:15	15
D13	2044	Base + Comm & Masterplan incl. Est. Active Travel Reduction	AM	ONE HOUR	07:45	09:15	15
D14	2044	Base + Comm & Masterplan incl. Est. Active Travel Reduction	PM	ONE HOUR	16:45	18:15	15
D17	2044	Base + Comm & Masterplan & GCRR	AM	ONE HOUR	07:45	09:15	15
D18	2044	Base + Comm & Masterplan & GCRR	PM	ONE HOUR	16:45	18:15	15

Analysis Set Details

ID	Network flow scaling factor (%)
A1	100.000

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D1 - 2029 | 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	5.64	A

Junction Network

Driving side	Lighting	Network delay (s)	Network LOS
Left	Normal/unknown	5.64	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)	l' - 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.

Traffic Demand

Demand Set Details

ID	Year	Scenario	Time period	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)
D1	2029	Base	AM	ONE HOUR	07:45	09:15	15

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Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
1		✓	312	100.000
2		✓	357	100.000
3		✓	138	100.000
4		✓	730	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	67	29	216
	2	29	0	44	284
	3	32	44	0	62
	4	292	381	57	0

Vehicle Mix

Heavy Vehicle %

		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	235	235	15.06
	2	269	269	15.06
	3	104	104	
	4	550	550	18.82
08:00-08:15	1	280	280	17.98
	2	321	321	17.98
	3	124	124	
	4	656	656	22.47
08:15-08:30	1	344	344	22.02
	2	393	393	22.02
	3	152	152	
	4	804	804	27.53
08:30-08:45	1	344	344	22.02
	2	393	393	22.02
	3	152	152	
	4	804	804	27.53
08:45-09:00	1	280	280	17.98
	2	321	321	17.98
	3	124	124	
	4	656	656	22.47
09:00-09:15	1	235	235	15.06
	2	269	269	15.06
	3	104	104	
	4	550	550	18.82

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Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS
1	0.34	5.34	0.5	A
2	0.34	4.76	0.5	A
3	0.15	4.23	0.2	A
4	0.59	6.46	1.4	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	235	361	15.06	1121	0.210	234	0.3	4.064	A
2	269	226	15.06	1225	0.219	268	0.3	3.825	A
3	104	397		1123	0.093	103	0.1	3.540	A
4	550	79	18.82	1392	0.395	547	0.7	4.265	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	280	433	17.98	1079	0.260	280	0.4	4.519	A
2	321	271	17.98	1199	0.268	321	0.4	4.172	A
3	124	475		1074	0.115	124	0.1	3.798	A
4	656	94	22.47	1380	0.475	655	0.9	4.977	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	344	529	22.02	1021	0.337	343	0.5	5.322	A
2	393	332	22.02	1163	0.338	392	0.5	4.753	A
3	152	582		1006	0.151	152	0.2	4.225	A
4	804	115	27.53	1363	0.590	802	1.4	6.412	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	344	531	22.02	1020	0.337	344	0.5	5.337	A
2	393	332	22.02	1163	0.338	393	0.5	4.761	A
3	152	582		1006	0.151	152	0.2	4.229	A
4	804	116	27.53	1363	0.590	804	1.4	6.462	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	280	435	17.98	1077	0.260	281	0.4	4.538	A
2	321	272	17.98	1198	0.268	322	0.4	4.184	A
3	124	476		1074	0.116	124	0.1	3.806	A
4	656	95	22.47	1380	0.476	658	0.9	5.021	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	235	364	15.06	1119	0.210	235	0.3	4.084	A
2	269	228	15.06	1224	0.220	269	0.3	3.840	A
3	104	399		1122	0.093	104	0.1	3.548	A
4	550	79	18.82	1392	0.395	551	0.7	4.304	A

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D2 - 2029 | 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	5.73	A

Junction Network

Driving side	Lighting	Network delay (s)	Network LOS
Left	Normal/unknown	5.73	A

Traffic Demand

Demand Set Details

ID	Year	Scenario	Time period	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)
D2	2029	Base	PM	ONE HOUR	16:45	18:15	15

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
1		✓	377	100.000
2		✓	495	100.000
3		✓	62	100.000
4		✓	677	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	31	22	324
	2	48	0	32	415
	3	12	13	0	37
	4	330	324	23	0

Vehicle Mix

Heavy Vehicle %

		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	373	373	3.76
	3	47	47	
	4	510	510	3.76
17:00-17:15	1	339	339	4.49
	2	445	445	4.49
	3	56	56	
	4	609	609	4.49
17:15-17:30	1	415	415	5.51
	2	545	545	5.51
	3	68	68	
	4	745	745	5.51
17:30-17:45	1	415	415	5.51
	2	545	545	5.51
	3	68	68	
	4	745	745	5.51
17:45-18:00	1	339	339	4.49
	2	445	445	4.49
	3	56	56	
	4	609	609	4.49
18:00-18:15	1	284	284	3.76
	2	373	373	3.76
	3	47	47	
	4	510	510	3.76

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS
1	0.38	5.25	0.6	A
2	0.49	6.31	0.9	A
3	0.08	4.79	0.1	A
4	0.54	5.66	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	284	270	3.76	1174	0.242	283	0.3	4.031	A
2	373	277	3.76	1195	0.312	371	0.5	4.392	A
3	47	590		1005	0.046	46	0.0	3.755	A
4	510	55	3.76	1406	0.363	507	0.6	3.998	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	323	4.49	1143	0.296	339	0.4	4.472	A
2	445	331	4.49	1164	0.382	444	0.6	5.042	A
3	56	707		929	0.060	56	0.1	4.121	A
4	609	66	4.49	1396	0.436	608	0.8	4.560	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	396	5.51	1101	0.377	414	0.6	5.241	A
2	545	406	5.51	1120	0.486	544	0.9	6.280	A
3	68	865		820	0.083	68	0.1	4.786	A
4	745	80	5.51	1382	0.539	744	1.2	5.628	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	396	5.51	1100	0.377	415	0.6	5.254	A
2	545	406	5.51	1120	0.487	545	0.9	6.311	A
3	68	866		819	0.083	68	0.1	4.794	A
4	745	80	5.51	1382	0.539	745	1.2	5.656	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	324	4.49	1142	0.297	340	0.4	4.488	A
2	445	332	4.49	1163	0.383	446	0.6	5.073	A
3	56	709		927	0.060	56	0.1	4.132	A
4	609	66	4.49	1396	0.436	610	0.8	4.588	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	271	3.76	1173	0.242	284	0.3	4.050	A
2	373	278	3.76	1195	0.312	373	0.5	4.423	A
3	47	593		1003	0.047	47	0.0	3.768	A
4	510	55	3.76	1405	0.363	511	0.6	4.026	A

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D3 - 2029 | 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	6.75	A

Junction Network

Driving side	Lighting	Network delay (s)	Network LOS
Left	Normal/unknown	6.75	A

Traffic Demand

Demand Set Details

ID	Year	Scenario	Time period	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)
D3	2029	Base + Comm	AM	ONE HOUR	07:45	09:15	15

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
1		✓	334	100.000
2		✓	383	100.000
3		✓	216	100.000
4		✓	813	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	72	37	225
	2	30	0	55	298
	3	51	69	0	96
	4	308	431	74	0

Vehicle Mix

Heavy Vehicle %

	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	251	251	15.06
	2	288	288	15.06
	3	163	163	
	4	612	612	18.82
08:00-08:15	1	300	300	17.98
	2	344	344	17.98
	3	194	194	
	4	731	731	22.47
08:15-08:30	1	368	368	22.02
	2	422	422	22.02
	3	238	238	
	4	895	895	27.53
08:30-08:45	1	368	368	22.02
	2	422	422	22.02
	3	238	238	
	4	895	895	27.53
08:45-09:00	1	300	300	17.98
	2	344	344	17.98
	3	194	194	
	4	731	731	22.47
09:00-09:15	1	251	251	15.06
	2	288	288	15.06
	3	163	163	
	4	612	612	18.82

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS
1	0.38	6.12	0.6	A
2	0.37	5.09	0.6	A
3	0.24	4.83	0.3	A
4	0.67	8.30	2.0	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	251	430	15.06	1080	0.233	250	0.3	4.345	A
2	288	252	15.06	1210	0.238	287	0.3	3.968	A
3	163	414		1111	0.146	162	0.2	3.802	A
4	612	112	18.82	1371	0.447	609	0.8	4.724	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	300	515	17.98	1030	0.292	300	0.4	4.946	A
2	344	302	17.98	1181	0.292	344	0.4	4.378	A
3	194	497		1060	0.183	194	0.2	4.170	A
4	731	135	22.47	1354	0.540	729	1.2	5.770	A

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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	368	630	22.02	960	0.383	367	0.6	6.085	A
2	422	369	22.02	1142	0.369	421	0.6	5.081	A
3	238	608		986	0.241	237	0.3	4.823	A
4	895	165	27.53	1330	0.673	892	2.0	8.174	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	368	632	22.02	958	0.384	368	0.6	6.115	A
2	422	370	22.02	1141	0.370	422	0.6	5.094	A
3	238	609		985	0.241	238	0.3	4.832	A
4	895	165	27.53	1330	0.673	895	2.0	8.301	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	300	518	17.98	1028	0.292	301	0.4	4.978	A
2	344	303	17.98	1180	0.292	345	0.4	4.393	A
3	194	498		1059	0.183	195	0.2	4.183	A
4	731	135	22.47	1354	0.540	734	1.2	5.861	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	251	433	15.06	1078	0.233	252	0.3	4.373	A
2	288	253	15.06	1209	0.239	289	0.3	3.985	A
3	163	417		1110	0.147	163	0.2	3.813	A
4	612	113	18.82	1370	0.447	614	0.8	4.787	A

D4 - 2029 | 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	6.85	A

Junction Network

Driving side	Lighting	Network delay (s)	Network LOS
Left	Normal/unknown	6.85	A

Traffic Demand

Demand Set Details

ID	Year	Scenario	Time period	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)
D4	2029	Base + Comm	PM	ONE HOUR	16:45	18:15	15

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
1		✓	421	100.000
2		✓	570	100.000
3		✓	133	100.000
4		✓	737	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	32	41	348
	2	50	0	63	457
	3	25	27	0	81
	4	344	349	44	0

Vehicle Mix

Heavy Vehicle %

		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	317	317	3.76
	2	429	429	3.76
	3	100	100	
	4	555	555	3.76
17:00-17:15	1	378	378	4.49
	2	512	512	4.49
	3	120	120	
	4	663	663	4.49
17:15-17:30	1	464	464	5.51
	2	628	628	5.51
	3	146	146	
	4	811	811	5.51
17:30-17:45	1	464	464	5.51
	2	628	628	5.51
	3	146	146	
	4	811	811	5.51
17:45-18:00	1	378	378	4.49
	2	512	512	4.49
	3	120	120	
	4	663	663	4.49
18:00-18:15	1	317	317	3.76
	2	429	429	3.76
	3	100	100	
	4	555	555	3.76

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS
1	0.44	6.02	0.8	A
2	0.58	8.03	1.4	A
3	0.19	5.92	0.2	A
4	0.60	6.57	1.5	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	315	3.76	1148	0.276	315	0.4	4.315	A
2	429	324	3.76	1168	0.368	427	0.6	4.884	A
3	100	640		970	0.103	100	0.1	4.134	A
4	555	76	3.76	1392	0.399	552	0.7	4.275	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	377	4.49	1112	0.340	378	0.5	4.904	A
2	512	389	4.49	1130	0.453	511	0.8	5.854	A
3	120	767		884	0.135	119	0.2	4.708	A
4	663	92	4.49	1379	0.480	662	0.9	5.008	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	461	5.51	1062	0.436	463	0.8	5.996	A
2	628	476	5.51	1080	0.581	625	1.4	7.948	A
3	146	939		757	0.194	146	0.2	5.893	A
4	811	112	5.51	1360	0.597	809	1.5	6.510	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	462	5.51	1061	0.437	464	0.8	6.022	A
2	628	477	5.51	1079	0.582	628	1.4	8.032	A
3	146	941		755	0.194	146	0.2	5.918	A
4	811	112	5.51	1360	0.597	811	1.5	6.565	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	379	4.49	1111	0.341	379	0.5	4.932	A
2	512	390	4.49	1129	0.454	515	0.8	5.922	A
3	120	771		881	0.136	120	0.2	4.732	A
4	663	92	4.49	1379	0.481	665	0.9	5.055	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	317	3.76	1147	0.276	317	0.4	4.344	A
2	429	327	3.76	1166	0.368	430	0.6	4.935	A
3	100	645		967	0.104	100	0.1	4.153	A
4	555	77	3.76	1391	0.399	556	0.7	4.315	A

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D5 - 2029 | 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	7.51	A

Junction Network

Driving side	Lighting	Network delay (s)	Network LOS
Left	Normal/unknown	7.51	A

Traffic Demand

Demand Set Details

ID	Year	Scenario	Time period	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)
D5	2029	Base + Comm & Prop	AM	ONE HOUR	07:45	09:15	15

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
1		✓	343	100.000
2		✓	398	100.000
3		✓	316	100.000
4		✓	832	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			
		1	2	3	4
From	1	0	72	46	225
	2	30	0	70	298
	3	74	101	0	141
	4	308	431	93	0

Vehicle Mix

Heavy Vehicle %

		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**	258	258	15.06
	2	300	300	15.06
	3	238	238	
	4	626	626	15.06
08:00-08:15	**1**	308	308	17.98
	2	358	358	17.98
	3	284	284	
	4	748	748	17.98
08:15-08:30	**1**	378	378	22.02
	2	438	438	22.02
	3	348	348	
	4	916	916	22.02
08:30-08:45	**1**	378	378	22.02
	2	438	438	22.02
	3	348	348	
	4	916	916	22.02
08:45-09:00	**1**	308	308	17.98
	2	358	358	17.98
	3	284	284	
	4	748	748	17.98
09:00-09:15	**1**	258	258	15.06
	2	300	300	15.06
	3	238	238	
	4	626	626	15.06

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS
1	0.41	6.61	0.7	A
2	0.39	5.35	0.6	A
3	0.35	5.71	0.5	A
4	0.71	9.60	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	258	468	15.06	1058	0.244	257	0.3	4.505	A
2	300	273	15.06	1198	0.250	298	0.3	4.070	A
3	238	414		1110	0.214	237	0.3	4.129	A
4	626	154	15.06	1345	0.466	623	0.9	4.979	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	308	561	17.98	1002	0.308	308	0.4	5.200	A
2	358	327	17.98	1166	0.307	357	0.4	4.530	A
3	284	496		1057	0.269	284	0.4	4.665	A
4	748	184	17.98	1324	0.565	746	1.3	6.239	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	378	685	22.02	926	0.408	377	0.7	6.567	A
2	438	400	22.02	1124	0.390	437	0.6	5.335	A
3	348	608		981	0.355	347	0.5	5.691	A
4	916	225	22.02	1292	0.709	912	2.4	9.393	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	378	688	22.02	924	0.409	378	0.7	6.611	A
2	438	401	22.02	1123	0.390	438	0.6	5.351	A
3	348	609		980	0.355	348	0.5	5.710	A
4	916	226	22.02	1292	0.709	916	2.4	9.605	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	308	565	17.98	1000	0.308	309	0.5	5.242	A
2	358	328	17.98	1165	0.307	359	0.5	4.548	A
3	284	498		1056	0.269	285	0.4	4.685	A
4	748	185	17.98	1323	0.565	752	1.3	6.377	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	258	472	15.06	1056	0.245	259	0.3	4.539	A
2	300	275	15.06	1197	0.250	300	0.3	4.093	A
3	238	417		1109	0.215	238	0.3	4.152	A
4	626	155	15.06	1345	0.466	628	0.9	5.055	A

RECEIVED: 05/08/2026

D6 - 2029 | Base + Comm & Prop | PM

RECEIVED: 05/08/2026

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	7.72	A

Junction Network

Driving side	Lighting	Network delay (s)	Network LOS
Left	Normal/unknown	7.72	A

Traffic Demand

Demand Set Details

ID	Year	Scenario	Time period	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)
D6	2029	Base + Comm & Prop	PM	ONE HOUR	16:45	18:15	15

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
1		✓	447	100.000
2		✓	607	100.000
3		✓	184	100.000
4		✓	764	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	32	67	348
	2	50	0	100	457
	3	34	38	0	112
	4	344	349	71	0

Vehicle Mix

Heavy Vehicle %

		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	337	337	3.76
	2	457	457	3.76
	3	139	139	
	4	575	575	3.76
17:00-17:15	1	402	402	4.49
	2	546	546	4.49
	3	165	165	
	4	687	687	4.49
17:15-17:30	1	492	492	5.51
	2	668	668	5.51
	3	203	203	
	4	841	841	5.51
17:30-17:45	1	492	492	5.51
	2	668	668	5.51
	3	203	203	
	4	841	841	5.51
17:45-18:00	1	402	402	4.49
	2	546	546	4.49
	3	165	165	
	4	687	687	4.49
18:00-18:15	1	337	337	3.76
	2	457	457	3.76
	3	139	139	
	4	575	575	3.76

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS
1	0.47	6.61	0.9	A
2	0.64	9.61	1.8	A
3	0.27	6.62	0.4	A
4	0.63	7.13	1.7	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	337	343	3.76	1132	0.297	335	0.4	4.509	A
2	457	364	3.76	1145	0.399	454	0.7	5.234	A
3	139	640		968	0.143	138	0.2	4.330	A
4	575	91	3.76	1383	0.416	572	0.7	4.429	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	402	411	4.49	1092	0.368	401	0.6	5.209	A
2	546	436	4.49	1103	0.495	544	1.0	6.483	A
3	165	767		880	0.188	165	0.2	5.035	A
4	687	109	4.49	1368	0.502	686	1.0	5.267	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	492	503	5.51	1038	0.474	491	0.9	6.570	A
2	668	534	5.51	1046	0.639	665	1.7	9.450	A
3	203	938		749	0.270	202	0.4	6.571	A
4	841	134	5.51	1346	0.625	839	1.6	7.061	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	492	504	5.51	1037	0.475	492	0.9	6.609	A
2	668	535	5.51	1045	0.639	668	1.8	9.613	A
3	203	941		747	0.271	203	0.4	6.617	A
4	841	134	5.51	1346	0.625	841	1.7	7.134	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	402	413	4.49	1090	0.369	403	0.6	5.248	A
2	546	438	4.49	1101	0.495	549	1.0	6.596	A
3	165	772		876	0.189	166	0.2	5.072	A
4	687	110	4.49	1367	0.502	689	1.0	5.329	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	337	346	3.76	1130	0.298	337	0.4	4.544	A
2	457	367	3.76	1143	0.400	458	0.7	5.305	A
3	139	645		965	0.144	139	0.2	4.360	A
4	575	92	3.76	1382	0.416	576	0.7	4.475	A

RECEIVED: 05/08/2026

D7 - 2044 | Base incl. Est. Active Travel Reduction | AM

RECEIVED: 05/08/2026

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	5.75	A

Junction Network

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

Traffic Demand

Demand Set Details

ID	Year	Scenario	Time period	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)
D7	2044	Base incl. Est. Active Travel Reduction	AM	ONE HOUR	07:45	09:15	15

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
1		✓	319	100.000
2		✓	369	100.000
3		✓	141	100.000
4		✓	747	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	68	30	221
	2	30	0	45	294
	3	33	45	0	63
	4	298	391	58	0

Vehicle Mix

Heavy Vehicle %

		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**	240	240	0.00
	2	278	278	0.00
	3	106	106	
	4	562	562	0.00
08:00-08:15	**1**	287	287	0.00
	2	332	332	0.00
	3	127	127	
	4	672	672	0.00
08:15-08:30	**1**	351	351	0.00
	2	406	406	0.00
	3	155	155	
	4	822	822	0.00
08:30-08:45	**1**	351	351	0.00
	2	406	406	0.00
	3	155	155	
	4	822	822	0.00
08:45-09:00	**1**	287	287	0.00
	2	332	332	0.00
	3	127	127	
	4	672	672	0.00
09:00-09:15	**1**	240	240	0.00
	2	278	278	0.00
	3	106	106	
	4	562	562	0.00

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS
1	0.35	5.44	0.5	A
2	0.35	4.87	0.5	A
3	0.15	4.24	0.2	A
4	0.60	6.59	1.5	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	240	370	0.00	1116	0.215	239	0.3	4.111	A
2	278	232	0.00	1222	0.227	277	0.3	3.874	A
3	106	409		1118	0.095	106	0.1	3.564	A
4	562	81	0.00	1394	0.404	560	0.7	4.321	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	287	443	0.00	1073	0.267	286	0.4	4.585	A
2	332	277	0.00	1195	0.278	331	0.4	4.243	A
3	127	489		1071	0.118	127	0.1	3.823	A
4	672	97	0.00	1384	0.485	670	0.9	5.059	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	351	543	0.00	1016	0.346	351	0.5	5.421	A
2	406	340	0.00	1159	0.351	406	0.5	4.863	A
3	155	599		1007	0.154	155	0.2	4.237	A
4	822	119	0.00	1371	0.600	820	1.5	6.539	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	351	544	0.00	1015	0.346	351	0.5	5.438	A
2	406	340	0.00	1158	0.351	406	0.5	4.873	A
3	155	600		1006	0.154	155	0.2	4.242	A
4	822	119	0.00	1371	0.600	822	1.5	6.591	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	287	445	0.00	1072	0.267	287	0.4	4.604	A
2	332	278	0.00	1194	0.278	332	0.4	4.255	A
3	127	491		1070	0.118	127	0.1	3.828	A
4	672	97	0.00	1384	0.485	674	1.0	5.105	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	240	373	0.00	1115	0.215	241	0.3	4.131	A
2	278	233	0.00	1221	0.228	278	0.3	3.892	A
3	106	411		1117	0.095	106	0.1	3.575	A
4	562	81	0.00	1393	0.404	563	0.7	4.362	A

RECEIVED: 05/08/2026

D8 - 2044 | Base incl. Est. Active Travel Reduction | PM

RECEIVED: 05/08/2026

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	5.87	A

Junction Network

Driving side	Lighting	Network delay (s)	Network LOS
Left	Normal/unknown	5.87	A

Traffic Demand

Demand Set Details

ID	Year	Scenario	Time period	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)
D8	2044	Base incl. Est. Active Travel Reduction	PM	ONE HOUR	16:45	18:15	15

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
1		✓	385	100.000
2		✓	505	100.000
3		✓	62	100.000
4		✓	689	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	32	22	331
	2	49	0	33	423
	3	12	13	0	37
	4	337	329	23	0

Vehicle Mix

Heavy Vehicle %

		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	290	290	3.76
	2	380	380	3.76
	3	47	47	
	4	519	519	3.76
17:00-17:15	1	346	346	4.49
	2	454	454	4.49
	3	56	56	
	4	619	619	4.49
17:15-17:30	1	424	424	5.51
	2	556	556	5.51
	3	68	68	
	4	759	759	5.51
17:30-17:45	1	424	424	5.51
	2	556	556	5.51
	3	68	68	
	4	759	759	5.51
17:45-18:00	1	346	346	4.49
	2	454	454	4.49
	3	56	56	
	4	619	619	4.49
18:00-18:15	1	290	290	3.76
	2	380	380	3.76
	3	47	47	
	4	519	519	3.76

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS
1	0.39	5.35	0.6	A
2	0.50	6.49	1.0	A
3	0.08	4.88	0.1	A
4	0.55	5.79	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	290	274	3.76	1172	0.247	289	0.3	4.068	A
2	380	282	3.76	1192	0.319	378	0.5	4.449	A
3	47	602		997	0.047	46	0.0	3.785	A
4	519	55	3.76	1405	0.369	516	0.6	4.040	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	346	328	4.49	1140	0.303	346	0.4	4.528	A
2	454	338	4.49	1160	0.391	453	0.6	5.131	A
3	56	721		920	0.061	56	0.1	4.166	A
4	619	66	4.49	1395	0.444	619	0.8	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	424	401	5.51	1097	0.386	423	0.6	5.334	A
2	556	413	5.51	1116	0.498	555	1.0	6.450	A
3	68	882		808	0.084	68	0.1	4.866	A
4	759	81	5.51	1381	0.550	757	1.2	5.758	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	424	402	5.51	1097	0.386	424	0.6	5.349	A
2	556	414	5.51	1116	0.498	556	1.0	6.486	A
3	68	884		807	0.085	68	0.1	4.875	A
4	759	81	5.51	1380	0.550	759	1.2	5.789	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	346	329	4.49	1140	0.304	347	0.4	4.546	A
2	454	339	4.49	1159	0.392	455	0.7	5.165	A
3	56	724		918	0.061	56	0.1	4.176	A
4	619	67	4.49	1395	0.444	621	0.8	4.659	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	290	275	3.76	1171	0.247	290	0.3	4.088	A
2	380	283	3.76	1191	0.319	381	0.5	4.482	A
3	47	606		995	0.047	47	0.0	3.799	A
4	519	56	3.76	1405	0.369	520	0.6	4.070	A

RECEIVED: 05/08/2026

D9 - 2044 | Base + Comm incl. Est. Active Travel Reduction | AM

RECEIVED: 05/08/2026

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	6.72	A

Junction Network

Driving side	Lighting	Network delay (s)	Network LOS
Left	Normal/unknown	6.72	A

Traffic Demand

Demand Set Details

ID	Year	Scenario	Time period	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)
D9	2044	Base + Comm incl. Est. Active Travel Reduction	AM	ONE HOUR	07:45	09:15	15

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
1		✓	340	100.000
2		✓	391	100.000
3		✓	210	100.000
4		✓	822	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	73	37	230
	2	30	0	55	306
	3	49	67	0	94
	4	313	436	73	0

Vehicle Mix

Heavy Vehicle %

		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

RECEIVED: 05/08/2026

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**	256	256	0.00
	2	294	294	0.00
	3	158	158	
	4	619	619	0.00
08:00-08:15	**1**	306	306	0.00
	2	352	352	0.00
	3	189	189	
	4	739	739	0.00
08:15-08:30	**1**	374	374	0.00
	2	430	430	0.00
	3	231	231	
	4	905	905	0.00
08:30-08:45	**1**	374	374	0.00
	2	430	430	0.00
	3	231	231	
	4	905	905	0.00
08:45-09:00	**1**	306	306	0.00
	2	352	352	0.00
	3	189	189	
	4	739	739	0.00
09:00-09:15	**1**	256	256	0.00
	2	294	294	0.00
	3	158	158	
	4	619	619	0.00

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS
1	0.39	6.14	0.6	A
2	0.38	5.18	0.6	A
3	0.23	4.74	0.3	A
4	0.67	8.20	2.0	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	256	431	0.00	1080	0.237	255	0.3	4.368	A
2	294	255	0.00	1208	0.244	293	0.3	4.000	A
3	158	424		1109	0.143	157	0.2	3.792	A
4	619	109	0.00	1376	0.450	616	0.8	4.730	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	306	517	0.00	1031	0.297	305	0.4	4.974	A
2	352	305	0.00	1179	0.298	351	0.4	4.427	A
3	189	508		1060	0.178	189	0.2	4.142	A
4	739	131	0.00	1363	0.542	738	1.2	5.761	A

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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	374	632	0.00	964	0.388	374	0.6	6.111	A
2	430	373	0.00	1139	0.378	430	0.6	5.162	A
3	231	622		994	0.233	231	0.3	4.732	A
4	905	161	0.00	1346	0.673	902	2.0	8.077	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	374	634	0.00	962	0.389	374	0.6	6.140	A
2	430	374	0.00	1139	0.378	430	0.6	5.176	A
3	231	623		993	0.233	231	0.3	4.740	A
4	905	161	0.00	1346	0.673	905	2.0	8.196	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	306	520	0.00	1029	0.297	306	0.4	5.006	A
2	352	307	0.00	1178	0.298	352	0.4	4.445	A
3	189	510		1059	0.178	189	0.2	4.152	A
4	739	131	0.00	1363	0.542	742	1.2	5.852	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	256	435	0.00	1079	0.237	256	0.3	4.396	A
2	294	256	0.00	1207	0.244	295	0.3	4.020	A
3	158	427		1108	0.143	158	0.2	3.803	A
4	619	110	0.00	1376	0.450	620	0.8	4.793	A

D10 - 2044 | Base + Comm 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	6.93	A

Junction Network

Driving side	Lighting	Network delay (s)	Network LOS
Left	Normal/unknown	6.93	A

Traffic Demand

Demand Set Details

ID	Year	Scenario	Time period	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)
D10	2044	Base + Comm incl. Est. Active Travel Reduction	PM	ONE HOUR	16:45	18:15	15

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
1		✓	425	100.000
2		✓	572	100.000
3		✓	126	100.000
4		✓	746	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	32	40	353
	2	51	0	60	461
	3	23	26	0	77
	4	350	353	43	0

Vehicle Mix

Heavy Vehicle %

	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	320	320	3.76
	2	431	431	3.76
	3	95	95	
	4	562	562	3.76
17:00-17:15	1	382	382	4.49
	2	514	514	4.49
	3	113	113	
	4	671	671	4.49
17:15-17:30	1	468	468	5.51
	2	630	630	5.51
	3	139	139	
	4	821	821	5.51
17:30-17:45	1	468	468	5.51
	2	630	630	5.51
	3	139	139	
	4	821	821	5.51
17:45-18:00	1	382	382	4.49
	2	514	514	4.49
	3	113	113	
	4	671	671	4.49
18:00-18:15	1	320	320	3.76
	2	431	431	3.76
	3	95	95	
	4	562	562	3.76

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS
1	0.44	6.08	0.8	A
2	0.58	8.11	1.4	A
3	0.19	5.91	0.2	A
4	0.60	6.67	1.5	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	320	316	3.76	1147	0.279	318	0.4	4.335	A
2	431	327	3.76	1166	0.369	428	0.6	4.901	A
3	95	648		966	0.098	94	0.1	4.130	A
4	562	75	3.76	1393	0.403	559	0.7	4.305	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	382	379	4.49	1111	0.344	382	0.5	4.935	A
2	514	391	4.49	1129	0.456	513	0.8	5.886	A
3	113	776		878	0.129	113	0.1	4.704	A
4	671	90	4.49	1380	0.486	670	0.9	5.060	A

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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	468	463	5.51	1061	0.441	467	0.8	6.051	A
2	630	479	5.51	1078	0.584	628	1.4	8.020	A
3	139	950		750	0.185	138	0.2	5.888	A
4	821	110	5.51	1361	0.604	819	1.5	6.618	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	468	465	5.51	1060	0.441	468	0.8	6.080	A
2	630	480	5.51	1077	0.585	630	1.4	8.107	A
3	139	952		747	0.186	139	0.2	5.914	A
4	821	110	5.51	1360	0.604	821	1.5	6.674	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	382	381	4.49	1109	0.344	383	0.5	4.964	A
2	514	393	4.49	1128	0.456	516	0.9	5.958	A
3	113	780		875	0.129	114	0.1	4.730	A
4	671	90	4.49	1380	0.486	673	1.0	5.108	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	320	318	3.76	1146	0.279	321	0.4	4.365	A
2	431	329	3.76	1165	0.370	432	0.6	4.956	A
3	95	653		962	0.099	95	0.1	4.152	A
4	562	75	3.76	1392	0.403	563	0.7	4.347	A

D11 - 2044 | 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	7.56	A

Junction Network

Driving side	Lighting	Network delay (s)	Network LOS
Left	Normal/unknown	7.56	A

Traffic Demand

Demand Set Details

ID	Year	Scenario	Time period	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)
D11	2044	Base + Comm & Prop incl. Est. Active Travel Reduction	AM	ONE HOUR	07:45	09:15	15

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
1		✓	348	100.000
2		✓	404	100.000
3		✓	302	100.000
4		✓	839	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	73	45	230
	2	30	0	68	306
	3	71	96	0	135
	4	313	436	90	0

Vehicle Mix

Heavy Vehicle %

		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**	262	262	7.53
	2	304	304	7.53
	3	227	227	
	4	632	632	22.59
08:00-08:15	**1**	313	313	8.99
	2	363	363	8.99
	3	271	271	
	4	754	754	26.97
08:15-08:30	**1**	383	383	11.01
	2	445	445	11.01
	3	333	333	
	4	924	924	33.03
08:30-08:45	**1**	383	383	11.01
	2	445	445	11.01
	3	333	333	
	4	924	924	33.03
08:45-09:00	**1**	313	313	8.99
	2	363	363	8.99
	3	271	271	
	4	754	754	26.97
09:00-09:15	**1**	262	262	7.53
	2	304	304	7.53
	3	227	227	
	4	632	632	22.59

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS
1	0.41	6.65	0.7	A
2	0.40	5.41	0.7	A
3	0.34	5.66	0.5	A
4	0.71	9.66	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	262	466	7.53	1059	0.247	261	0.3	4.518	A
2	304	273	7.53	1197	0.254	303	0.3	4.093	A
3	227	424		1104	0.206	226	0.3	4.110	A
4	632	148	22.59	1349	0.468	628	0.9	4.990	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	313	558	8.99	1004	0.312	312	0.5	5.221	A
2	363	328	8.99	1166	0.312	363	0.5	4.564	A
3	271	508		1050	0.259	271	0.3	4.635	A
4	754	177	26.97	1328	0.568	753	1.3	6.260	A

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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	383	682	11.01	928	0.413	382	0.7	6.606	A
2	445	401	11.01	1123	0.396	444	0.7	5.390	A
3	333	622		971	0.342	332	0.5	5.643	A
4	924	216	33.03	1297	0.712	919	2.4	9.446	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	383	685	11.01	926	0.414	383	0.7	6.651	A
2	445	402	11.01	1123	0.396	445	0.7	5.408	A
3	333	623		970	0.343	332	0.5	5.663	A
4	924	217	33.03	1297	0.712	924	2.4	9.663	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	313	562	8.99	1002	0.312	314	0.5	5.263	A
2	363	329	8.99	1165	0.312	364	0.5	4.584	A
3	271	510		1049	0.259	272	0.4	4.656	A
4	754	178	26.97	1327	0.568	759	1.3	6.403	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	262	470	7.53	1057	0.248	262	0.3	4.552	A
2	304	275	7.53	1196	0.254	305	0.3	4.114	A
3	227	427		1103	0.206	228	0.3	4.129	A
4	632	149	22.59	1348	0.469	633	0.9	5.069	A

D12 - 2044 | 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	7.73	A

Junction Network

Driving side	Lighting	Network delay (s)	Network LOS
Left	Normal/unknown	7.73	A

Traffic Demand

Demand Set Details

ID	Year	Scenario	Time period	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)
D12	2044	Base + Comm & Prop incl. Est. Active Travel Reduction	PM	ONE HOUR	16:45	18:15	15

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
1		✓	448	100.000
2		✓	606	100.000
3		✓	172	100.000
4		✓	770	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	32	63	353
	2	51	0	94	461
	3	32	35	0	105
	4	350	353	67	0

Vehicle Mix

Heavy Vehicle %

		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	337	337	18.82
	2	456	456	15.06
	3	129	129	
	4	580	580	15.06
17:00-17:15	1	403	403	22.47
	2	545	545	17.98
	3	155	155	
	4	692	692	17.98
17:15-17:30	1	493	493	27.53
	2	667	667	22.02
	3	189	189	
	4	848	848	22.02
17:30-17:45	1	493	493	27.53
	2	667	667	22.02
	3	189	189	
	4	848	848	22.02
17:45-18:00	1	403	403	22.47
	2	545	545	17.98
	3	155	155	
	4	692	692	17.98
18:00-18:15	1	337	337	18.82
	2	456	456	15.06
	3	129	129	
	4	580	580	15.06

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS
1	0.47	6.60	0.9	A
2	0.64	9.54	1.7	A
3	0.26	6.59	0.3	A
4	0.63	7.21	1.7	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	337	341	18.82	1133	0.298	336	0.4	4.507	A
2	456	362	15.06	1146	0.398	454	0.7	5.219	A
3	129	648		963	0.134	129	0.2	4.312	A
4	580	88	15.06	1384	0.419	577	0.7	4.446	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	403	408	22.47	1093	0.368	402	0.6	5.204	A
2	545	434	17.98	1104	0.493	544	1.0	6.454	A
3	155	776		873	0.177	154	0.2	5.008	A
4	692	106	17.98	1369	0.505	691	1.0	5.296	A

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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	493	499	27.53	1039	0.475	492	0.9	6.562	A
2	667	530	22.02	1048	0.637	664	1.7	9.380	A
3	189	949		739	0.256	189	0.3	6.544	A
4	848	129	22.02	1347	0.629	845	1.7	7.138	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	493	501	27.53	1039	0.475	493	0.9	6.601	A
2	667	532	22.02	1047	0.637	667	1.7	9.537	A
3	189	952		736	0.257	189	0.3	6.588	A
4	848	130	22.02	1346	0.630	848	1.7	7.214	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	403	411	22.47	1092	0.369	404	0.6	5.243	A
2	545	436	17.98	1103	0.494	548	1.0	6.566	A
3	155	781		869	0.178	155	0.2	5.045	A
4	692	107	17.98	1369	0.506	695	1.0	5.362	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	337	343	18.82	1131	0.298	338	0.4	4.540	A
2	456	364	15.06	1144	0.399	458	0.7	5.291	A
3	129	653		960	0.135	130	0.2	4.339	A
4	580	89	15.06	1383	0.419	581	0.7	4.492	A

D13 - 2044 | 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	12.07	B

Junction Network

Driving side	Lighting	Network delay (s)	Network LOS
Left	Normal/unknown	12.07	B

Traffic Demand

Demand Set Details

ID	Year	Scenario	Time period	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)
D13	2044	Base + Comm & Masterplan incl. Est. Active Travel Reduction	AM	ONE HOUR	07:45	09:15	15

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
1		✓	397	100.000
2		✓	477	100.000
3		✓	477	100.000
4		✓	933	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	73	94	230
	2	30	0	141	306
	3	112	152	0	213
	4	313	436	184	0

Vehicle Mix

Heavy Vehicle %

		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**	299	299	7.53
	2	359	359	7.53
	3	359	359	
	4	702	702	22.59
08:00-08:15	**1**	357	357	8.99
	2	429	429	8.99
	3	429	429	
	4	839	839	26.97
08:15-08:30	**1**	437	437	11.01
	2	525	525	11.01
	3	525	525	
	4	1027	1027	33.03
08:30-08:45	**1**	437	437	11.01
	2	525	525	11.01
	3	525	525	
	4	1027	1027	33.03
08:45-09:00	**1**	357	357	8.99
	2	429	429	8.99
	3	429	429	
	4	839	839	26.97
09:00-09:15	**1**	299	299	7.53
	2	359	359	7.53
	3	359	359	
	4	702	702	22.59

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS
1	0.53	9.27	1.1	A
2	0.51	7.25	1.0	A
3	0.55	8.36	1.2	A
4	0.84	17.62	4.8	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	299	578	7.53	994	0.301	297	0.4	5.192	A
2	359	380	7.53	1135	0.316	357	0.5	4.702	A
3	359	424		1102	0.326	357	0.5	4.838	A
4	702	220	22.59	1304	0.539	698	1.2	5.915	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	357	692	8.99	925	0.386	356	0.6	6.361	A
2	429	455	8.99	1091	0.393	428	0.7	5.522	A
3	429	508		1044	0.411	428	0.7	5.850	A
4	839	264	26.97	1273	0.659	836	1.9	8.198	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	437	842	11.01	833	0.525	435	1.1	9.095	A
2	525	556	11.01	1033	0.508	524	1.0	7.175	A
3	525	621		959	0.548	523	1.2	8.252	A
4	1027	322	33.03	1230	0.835	1016	4.6	16.142	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	437	849	11.01	828	0.528	437	1.1	9.265	A
2	525	559	11.01	1031	0.509	525	1.0	7.245	A
3	525	623		957	0.549	525	1.2	8.358	A
4	1027	324	33.03	1229	0.836	1026	4.8	17.620	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	357	702	8.99	919	0.388	359	0.6	6.495	A
2	429	460	8.99	1089	0.394	430	0.7	5.585	A
3	429	511		1042	0.411	431	0.7	5.926	A
4	839	265	26.97	1272	0.659	850	2.0	8.780	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	299	584	7.53	990	0.302	300	0.4	5.259	A
2	359	384	7.53	1133	0.317	360	0.5	4.748	A
3	359	427		1099	0.327	360	0.5	4.889	A
4	702	222	22.59	1303	0.539	706	1.2	6.080	A

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D14 - 2044 | Base + Comm & Masterplan incl. Est. Active Travel Reduction | 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	21.16	C

Junction Network

Driving side	Lighting	Network delay (s)	Network LOS
Left	Normal/unknown	21.16	C

Traffic Demand

Demand Set Details

ID	Year	Scenario	Time period	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)
D14	2044	Base + Comm & Masterplan incl. Est. Active Travel Reduction	PM	ONE HOUR	16:45	18:15	15

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
1		✓	543	100.000
2		✓	746	100.000
3		✓	497	100.000
4		✓	869	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	32	158	353
	2	51	0	234	461
	3	94	102	0	301
	4	350	353	166	0

Vehicle Mix

Heavy Vehicle %

		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	409	409	18.82
	2	562	562	15.06
	3	374	374	
	4	654	654	15.06
17:00-17:15	1	488	488	22.47
	2	671	671	17.98
	3	447	447	
	4	781	781	17.98
17:15-17:30	1	598	598	27.53
	2	821	821	22.02
	3	547	547	
	4	957	957	22.02
17:30-17:45	1	598	598	27.53
	2	821	821	22.02
	3	547	547	
	4	957	957	22.02
17:45-18:00	1	488	488	22.47
	2	671	671	17.98
	3	447	447	
	4	781	781	17.98
18:00-18:15	1	409	409	18.82
	2	562	562	15.06
	3	374	374	
	4	654	654	15.06

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS
1	0.64	10.77	1.8	B
2	0.89	32.71	7.0	D
3	0.83	31.11	4.5	D
4	0.76	12.05	3.1	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	409	465	18.82	1061	0.385	406	0.6	5.481	A
2	562	507	15.06	1062	0.529	557	1.1	7.124	A
3	374	647		945	0.396	372	0.6	6.249	A
4	654	185	15.06	1324	0.494	650	1.0	5.318	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	488	557	22.47	1007	0.485	487	0.9	6.911	A
2	671	607	17.98	1003	0.668	667	2.0	10.666	B
3	447	774		836	0.534	445	1.1	9.149	A
4	781	221	17.98	1296	0.603	779	1.5	6.937	A

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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	598	678	27.53	935	0.640	595	1.7	10.493	B
2	821	741	22.02	925	0.888	804	6.3	26.765	D
3	547	939		670	0.817	536	3.9	25.138	D
4	957	266	22.02	1257	0.761	951	3.0	11.505	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	598	683	27.53	931	0.642	598	1.8	10.772	B
2	821	745	22.02	923	0.890	818	7.0	32.715	D
3	547	950		656	0.834	545	4.5	31.111	D
4	957	271	22.02	1254	0.763	956	3.1	12.051	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	488	565	22.47	1002	0.487	491	1.0	7.097	A
2	671	613	17.98	1000	0.671	690	2.1	12.370	B
3	447	793		819	0.546	460	1.2	10.368	B
4	781	228	17.98	1291	0.605	787	1.6	7.238	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	409	469	18.82	1058	0.386	410	0.6	5.568	A
2	562	511	15.06	1059	0.530	566	1.2	7.398	A
3	374	655		939	0.399	376	0.7	6.426	A
4	654	187	15.06	1322	0.495	657	1.0	5.427	A

D17 - 2044 | Base + Comm & Masterplan & GCRR | 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	7.33	A

Junction Network

Driving side	Lighting	Network delay (s)	Network LOS
Left	Normal/unknown	7.33	A

Traffic Demand

Demand Set Details

ID	Year	Scenario	Time period	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)
D17	2044	Base + Comm & Masterplan & GCRR	AM	ONE HOUR	07:45	09:15	15

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
1		✓	352	100.000
2		✓	355	100.000
3		✓	531	100.000
4		✓	724	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	60	104	188
	2	25	0	156	174
	3	125	169	0	237
	4	257	263	204	0

Vehicle Mix

Heavy Vehicle %

		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**	265	265	7.53
	2	267	267	7.53
	3	400	400	
	4	545	545	22.59
08:00-08:15	**1**	316	316	8.99
	2	319	319	8.99
	3	477	477	
	4	651	651	26.97
08:15-08:30	**1**	388	388	11.01
	2	391	391	11.01
	3	585	585	
	4	797	797	33.03
08:30-08:45	**1**	388	388	11.01
	2	391	391	11.01
	3	585	585	
	4	797	797	33.03
08:45-09:00	**1**	316	316	8.99
	2	319	319	8.99
	3	477	477	
	4	651	651	26.97
09:00-09:15	**1**	265	265	7.53
	2	267	267	7.53
	3	400	400	
	4	545	545	22.59

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS
1	0.42	6.80	0.7	A
2	0.38	5.66	0.6	A
3	0.54	7.11	1.1	A
4	0.65	8.58	1.9	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	265	476	7.53	1054	0.251	264	0.3	4.588	A
2	267	371	7.53	1140	0.234	266	0.3	4.188	A
3	400	290		1184	0.338	398	0.5	4.578	A
4	545	239	22.59	1294	0.421	542	0.7	4.785	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	316	571	8.99	998	0.317	316	0.5	5.318	A
2	319	445	8.99	1098	0.291	319	0.4	4.706	A
3	477	347		1147	0.416	477	0.7	5.377	A
4	651	286	26.97	1263	0.515	650	1.1	5.876	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	388	698	11.01	923	0.420	387	0.7	6.757	A
2	391	544	11.01	1040	0.376	390	0.6	5.636	A
3	585	425		1093	0.535	583	1.1	7.054	A
4	797	350	33.03	1219	0.654	794	1.8	8.441	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	388	700	11.01	921	0.421	388	0.7	6.800	A
2	391	546	11.01	1039	0.376	391	0.6	5.658	A
3	585	426		1092	0.535	585	1.1	7.111	A
4	797	351	33.03	1218	0.654	797	1.9	8.576	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	316	574	8.99	996	0.318	317	0.5	5.357	A
2	319	448	8.99	1096	0.291	320	0.4	4.730	A
3	477	349		1146	0.416	479	0.7	5.427	A
4	651	288	26.97	1262	0.516	654	1.1	5.974	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	265	480	7.53	1052	0.252	266	0.3	4.623	A
2	267	374	7.53	1139	0.235	268	0.3	4.211	A
3	400	292		1183	0.338	401	0.5	4.621	A
4	545	241	22.59	1293	0.421	546	0.7	4.848	A

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D18 - 2044 | 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	Year	Scenario	Time period	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)
D18	2044	Base + Comm & Masterplan & GCRR	PM	ONE HOUR	16:45	18:15	15

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

Vehicle Mix

Heavy Vehicle %

		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	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

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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 11

ARCADY 11 - Roundabout Module

Version: 11.1.0.2307
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Filename: Import of Kingston Junction 2 - WDR & Knocknacarra District Centre.j11
Path: C:\Users\Micheal Geraghty\OneDrive - TOBIN Consulting Engineers\Junctions - Various\11893\Traffic 2026
Report generation date: 09/07/2026 14:38:09

»D1 - 2026 | | AM
»D2 - 2026 | | PM
»D3 - 2029 | Base | AM
»D4 - 2029 | Base | PM
»D5 - 2029 | Base + Comm & Prop | AM
»D6 - 2029 | Base + Comm & Prop | PM
»D7 - 2044 | Base | AM
»D8 - 2044 | Base | PM
»D9 - 2044 | Base + Comm | AM
»D10 - 2044 | Base + Comm | PM
»D11 - 2044 | Base + Comm & Prop | AM
»D12 - 2044 | Base + Comm & Prop | PM
»D13 - 2044 | Base + Comm & Prop & Masterplan | AM
»D14 - 2044 | Base + Comm & Prop & Masterplan | PM

Summary of junction performance

	AM					PM				
	Set ID	Queue (PCU)	Delay (s)	RFC	LOS	Set ID	Queue (PCU)	Delay (s)	RFC	LOS
	2026									
Arm 1	D1	1.3	8.69	0.57	A	D2	0.8	7.02	0.44	A
Arm 2		0.2	4.65	0.17	A		0.5	5.08	0.31	A
Arm 3		0.2	3.71	0.15	A		0.1	3.25	0.06	A
Arm 4		0.7	5.14	0.42	A		1.3	6.83	0.56	A
Arm 5		0.0	4.63	0.03	A		0.0	5.16	0.02	A
	2029 - Base									
Arm 1	D3	1.5	9.42	0.60	A	D4	0.9	7.40	0.46	A
Arm 2		0.2	4.79	0.18	A		0.5	5.26	0.33	A
Arm 3		0.2	3.82	0.16	A		0.1	3.31	0.06	A
Arm 4		0.8	5.36	0.44	A		1.5	7.33	0.59	A
Arm 5		0.0	4.73	0.04	A		0.0	5.31	0.02	A
	2029 - Base + Comm & Prop									
Arm 1	D5	3.0	16.11	0.76	C	D6	1.1	8.76	0.54	A
Arm 2		0.3	5.64	0.23	A		0.6	5.67	0.36	A
Arm 3		0.3	4.17	0.21	A		0.2	3.87	0.19	A
Arm 4		1.1	6.21	0.52	A		2.1	9.51	0.68	A
Arm 5		0.1	5.16	0.05	A		0.0	5.98	0.03	A
	2044 - Base									
Arm 1	D7	2.2	12.56	0.69	B	D8	1.2	8.85	0.54	A
Arm 2		0.3	5.24	0.22	A		0.6	5.89	0.38	A
Arm 3		0.2	4.17	0.20	A		0.1	3.50	0.08	A
Arm 4		1.1	6.13	0.51	A		2.1	9.32	0.68	A
Arm 5		0.0	5.07	0.04	A		0.0	5.83	0.03	A
	2044 - Base + Comm									
Arm 1	D9	4.4	22.21	0.82	C	D10	1.5	10.38	0.60	B
Arm 2		0.4	6.09	0.26	A		0.7	6.28	0.41	A
Arm 3		0.3	4.47	0.23	A		0.2	4.09	0.20	A
Arm 4		1.4	7.12	0.58	A		2.7	11.61	0.73	B
Arm 5		0.1	5.51	0.06	A		0.0	6.40	0.03	A
	2044 - Base + Comm & Prop									
Arm 1	D11	6.0	29.45	0.87	D	D12	1.6	10.78	0.61	B
Arm 2		0.4	6.30	0.27	A		0.7	6.41	0.42	A
Arm 3		0.3	4.60	0.24	A		0.3	4.14	0.20	A
Arm 4		1.4	7.31	0.59	A		3.2	13.15	0.76	B
Arm 5		0.1	5.74	0.09	A		0.0	6.65	0.04	A
	2044 - Base + Comm & Prop & Masterplan									
Arm 1	D13	10.7	48.83	0.94	E	D14	2.3	14.14	0.71	B
Arm 2		0.4	6.75	0.29	A		0.9	7.20	0.46	A
Arm 3		0.3	4.86	0.26	A		0.3	4.42	0.22	A
Arm 4		1.9	8.67	0.65	A		7.4	27.64	0.89	D
Arm 5		0.1	6.02	0.07	A		0.1	7.98	0.05	A

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

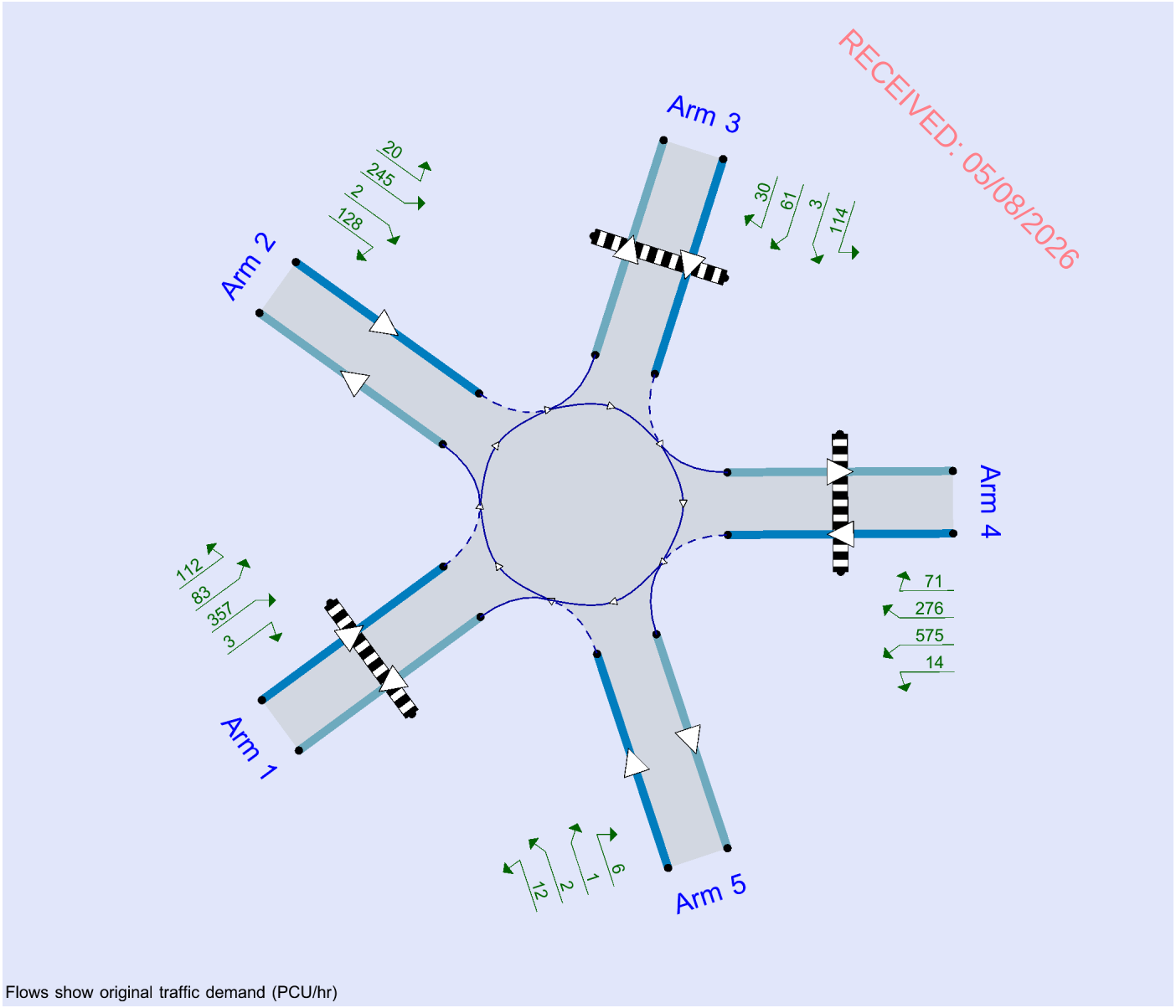
File summary

File Description

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

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	Year	Scenario	Time period	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)
D1	2026		AM	ONE HOUR	07:45	09:15	15
D2	2026		PM	ONE HOUR	16:45	18:15	15
D3	2029	Base	AM	ONE HOUR	07:45	09:15	15
D4	2029	Base	PM	ONE HOUR	16:45	18:15	15
D5	2029	Base + Comm & Prop	AM	ONE HOUR	07:45	09:15	15
D6	2029	Base + Comm & Prop	PM	ONE HOUR	16:45	18:15	15
D7	2044	Base	AM	ONE HOUR	07:45	09:15	15
D8	2044	Base	PM	ONE HOUR	16:45	18:15	15
D9	2044	Base + Comm	AM	ONE HOUR	07:45	09:15	15
D10	2044	Base + Comm	PM	ONE HOUR	16:45	18:15	15
D11	2044	Base + Comm & Prop	AM	ONE HOUR	07:45	09:15	15
D12	2044	Base + Comm & Prop	PM	ONE HOUR	16:45	18:15	15
D13	2044	Base + Comm & Prop & Masterplan	AM	ONE HOUR	07:45	09:15	15
D14	2044	Base + Comm & Prop & Masterplan	PM	ONE HOUR	16:45	18:15	15

Analysis Set Details

ID	Network flow scaling factor (%)
A1	100.000

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D1 - 2026 | | 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	6.26	A

Junction Network

Driving side	Lighting	Network delay (s)	Network LOS
Left	Normal/unknown	6.26	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)	l' - 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	27.0	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	3.00	2.14
3	16.00	5.00		Distance	3.00	2.14
4	16.00	6.00		Distance	3.00	2.14

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	0.532	1287
5	0.516	1121

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

Traffic Demand

Demand Set Details

ID	Year	Time period	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)
D1	2026	AM	ONE HOUR	07:45	09:15	15

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
1		✓	495	100.000
2		✓	149	100.000
3		✓	158	100.000
4		✓	470	100.000
5		✓	25	100.000

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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	36	28	429	2
	2	45	0	7	95	2
	3	27	16	0	114	1
	4	288	147	33	0	2
	5	8	1	5	11	0

Vehicle Mix

Heavy Vehicle %

		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

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	373	373	3.76
	2	112	112	
	3	119	119	3.76
	4	354	354	3.76
	5	19	19	
08:00-08:15	1	445	445	4.49
	2	134	134	
	3	142	142	4.49
	4	423	423	4.49
	5	22	22	
08:15-08:30	1	545	545	5.51
	2	164	164	
	3	174	174	5.51
	4	517	517	5.51
	5	28	28	
08:30-08:45	1	545	545	5.51
	2	164	164	
	3	174	174	5.51
	4	517	517	5.51
	5	28	28	
08:45-09:00	1	445	445	4.49
	2	134	134	
	3	142	142	4.49
	4	423	423	4.49
	5	22	22	
09:00-09:15	1	373	373	3.76
	2	112	112	
	3	119	119	3.76
	4	354	354	3.76
	5	19	19	

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Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS
1	0.57	8.69	1.3	A
2	0.17	4.65	0.2	A
3	0.15	3.71	0.2	A
4	0.42	5.14	0.7	A
5	0.03	4.63	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	373	160	3.76	996	0.374	370	0.6	5.728	A
2	112	380		1041	0.108	112	0.1	3.920	A
3	119	437	3.76	1263	0.094	119	0.1	3.145	A
4	354	70	3.76	1250	0.283	352	0.4	4.089	A
5	19	417		906	0.021	19	0.0	4.055	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	445	191	4.49	981	0.454	444	0.8	6.699	A
2	134	456		1002	0.134	134	0.2	4.200	A
3	142	524	4.49	1213	0.117	142	0.1	3.361	A
4	423	84	4.49	1242	0.340	422	0.5	4.478	A
5	22	499		864	0.026	22	0.0	4.278	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	545	234	5.51	959	0.568	543	1.3	8.612	A
2	164	558		949	0.173	164	0.2	4.643	A
3	174	641	5.51	1145	0.152	174	0.2	3.707	A
4	517	102	5.51	1233	0.420	517	0.7	5.129	A
5	28	611		806	0.034	27	0.0	4.623	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	545	235	5.51	959	0.568	545	1.3	8.690	A
2	164	559		948	0.173	164	0.2	4.650	A
3	174	643	5.51	1144	0.152	174	0.2	3.711	A
4	517	102	5.51	1232	0.420	517	0.7	5.142	A
5	28	612		806	0.034	28	0.0	4.626	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	445	192	4.49	980	0.454	447	0.8	6.770	A
2	134	458		1000	0.134	134	0.2	4.211	A
3	142	527	4.49	1211	0.117	142	0.1	3.367	A
4	423	84	4.49	1242	0.340	423	0.5	4.495	A
5	22	501		863	0.026	23	0.0	4.282	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	373	161	3.76	996	0.374	374	0.6	5.795	A
2	112	383		1039	0.108	112	0.1	3.933	A
3	119	441	3.76	1261	0.094	119	0.1	3.151	A
4	354	70	3.76	1250	0.283	354	0.4	4.110	A
5	19	419		905	0.021	19	0.0	4.061	A

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D2 - 2026 | | 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	6.31	A

Junction Network

Driving side	Lighting	Network delay (s)	Network LOS
Left	Normal/unknown	6.31	A

Traffic Demand

Demand Set Details

ID	Year	Time period	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)
D2	2026	PM	ONE HOUR	16:45	18:15	15

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
1		✓	364	100.000
2		✓	296	100.000
3		✓	64	100.000
4		✓	627	100.000
5		✓	15	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	76	45	241	2
	2	75	0	13	206	2
	3	17	10	0	36	1
	4	337	232	46	0	12
	5	7	2	1	5	0

Vehicle Mix

Heavy Vehicle %

		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

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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	274	274	3.76
	2	223	223	
	3	48	48	3.76
	4	472	472	3.76
	5	11	11	
17:00-17:15	1	327	327	4.49
	2	266	266	
	3	58	58	4.49
	4	564	564	4.49
	5	13	13	
17:15-17:30	1	401	401	5.51
	2	326	326	
	3	70	70	5.51
	4	690	690	5.51
	5	17	17	
17:30-17:45	1	401	401	5.51
	2	326	326	
	3	70	70	5.51
	4	690	690	5.51
	5	17	17	
17:45-18:00	1	327	327	4.49
	2	266	266	
	3	58	58	4.49
	4	564	564	4.49
	5	13	13	
18:00-18:15	1	274	274	3.76
	2	223	223	
	3	48	48	3.76
	4	472	472	3.76
	5	11	11	

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS
1	0.44	7.02	0.8	A
2	0.31	5.08	0.5	A
3	0.06	3.25	0.1	A
4	0.56	6.83	1.3	A
5	0.02	5.16	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	274	222	3.76	965	0.284	272	0.4	5.183	A
2	223	255		1107	0.201	222	0.3	4.121	A
3	48	398	3.76	1286	0.037	48	0.0	2.907	A
4	472	80	3.76	1244	0.379	470	0.6	4.691	A
5	11	537		844	0.013	11	0.0	4.321	A

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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	327	266	4.49	944	0.347	327	0.5	5.831	A
2	266	305		1080	0.246	266	0.3	4.481	A
3	58	477	4.49	1240	0.046	57	0.0	3.043	A
4	564	96	4.49	1236	0.456	563	0.8	5.410	A
5	13	644		789	0.017	13	0.0	4.639	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	401	325	5.51	914	0.439	400	0.8	6.990	A
2	326	373		1045	0.312	325	0.5	5.071	A
3	70	583	5.51	1178	0.060	70	0.1	3.248	A
4	690	118	5.51	1224	0.564	689	1.3	6.781	A
5	17	788		715	0.023	16	0.0	5.152	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	401	326	5.51	914	0.439	401	0.8	7.020	A
2	326	374		1044	0.312	326	0.5	5.080	A
3	70	585	5.51	1178	0.060	70	0.1	3.250	A
4	690	118	5.51	1224	0.564	690	1.3	6.827	A
5	17	789		714	0.023	17	0.0	5.160	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	327	267	4.49	943	0.347	328	0.5	5.867	A
2	266	307		1079	0.247	267	0.3	4.492	A
3	58	478	4.49	1239	0.046	58	0.0	3.048	A
4	564	96	4.49	1236	0.456	565	0.9	5.453	A
5	13	646		788	0.017	14	0.0	4.650	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	274	223	3.76	965	0.284	275	0.4	5.220	A
2	223	256		1106	0.202	223	0.3	4.138	A
3	48	400	3.76	1285	0.038	48	0.0	2.911	A
4	472	81	3.76	1244	0.379	473	0.6	4.735	A
5	11	541		842	0.013	11	0.0	4.331	A

D3 - 2029 | 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, 5	6.64	A

Junction Network

Driving side	Lighting	Network delay (s)	Network LOS
Left	Normal/unknown	6.64	A

Traffic Demand

Demand Set Details

ID	Year	Scenario	Time period	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)
D3	2029	Base	AM	ONE HOUR	07:45	09:15	15

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
1		✓	518	100.000
2		✓	156	100.000
3		✓	167	100.000
4		✓	493	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	38	29	449	2
	2	47	0	7	100	2
	3	28	17	0	121	1
	4	302	154	35	0	2
	5	8	1	5	12	0

Vehicle Mix

Heavy Vehicle %

		To				
		1	**2**	**3**	**4**	**5**
From	**1**	50	0	0	0.22	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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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	3.76
	2	117	117	
	3	126	126	3.76
	4	371	371	3.76
	5	20	20	
08:00-08:15	**1**	466	466	4.49
	2	140	140	
	3	150	150	4.49
	4	443	443	4.49
	5	23	23	
08:15-08:30	**1**	570	570	5.51
	2	172	172	
	3	184	184	5.51
	4	543	543	5.51
	5	29	29	
08:30-08:45	**1**	570	570	5.51
	2	172	172	
	3	184	184	5.51
	4	543	543	5.51
	5	29	29	
08:45-09:00	**1**	466	466	4.49
	2	140	140	
	3	150	150	4.49
	4	443	443	4.49
	5	23	23	
09:00-09:15	**1**	390	390	3.76
	2	117	117	
	3	126	126	3.76
	4	371	371	3.76
	5	20	20	

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS
1	0.60	9.42	1.5	A
2	0.18	4.79	0.2	A
3	0.16	3.82	0.2	A
4	0.44	5.36	0.8	A
5	0.04	4.73	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	390	168	3.76	992	0.393	387	0.6	5.938	A
2	117	398		1032	0.114	117	0.1	3.994	A
3	126	458	3.76	1251	0.100	125	0.1	3.195	A
4	371	73	3.76	1248	0.297	369	0.4	4.183	A
5	20	437		896	0.022	19	0.0	4.107	A

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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	201	4.49	976	0.477	465	0.9	7.043	A
2	140	477		991	0.142	140	0.2	4.298	A
3	150	549	4.49	1198	0.125	150	0.1	3.433	A
4	443	87	4.49	1241	0.357	443	0.6	4.611	A
5	23	523		851	0.027	23	0.0	4.347	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	570	246	5.51	953	0.598	568	1.5	9.311	A
2	172	584		935	0.184	172	0.2	4.786	A
3	184	672	5.51	1127	0.163	184	0.2	3.815	A
4	543	107	5.51	1230	0.441	542	0.8	5.341	A
5	29	641		791	0.036	29	0.0	4.723	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	570	247	5.51	953	0.598	570	1.5	9.418	A
2	172	586		934	0.184	172	0.2	4.794	A
3	184	674	5.51	1126	0.163	184	0.2	3.820	A
4	543	107	5.51	1230	0.441	543	0.8	5.356	A
5	29	642		790	0.036	29	0.0	4.726	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	466	202	4.49	975	0.477	468	0.9	7.138	A
2	140	480		989	0.142	140	0.2	4.310	A
3	150	552	4.49	1196	0.125	150	0.1	3.443	A
4	443	87	4.49	1240	0.357	444	0.6	4.630	A
5	23	525		850	0.027	23	0.0	4.352	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	390	169	3.76	992	0.393	391	0.7	6.016	A
2	117	402		1030	0.114	118	0.1	4.008	A
3	126	462	3.76	1249	0.101	126	0.1	3.205	A
4	371	73	3.76	1248	0.297	372	0.4	4.205	A
5	20	440		895	0.022	20	0.0	4.115	A

D4 - 2029 | 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	6.69	A

Junction Network

Driving side	Lighting	Network delay (s)	Network LOS
Left	Normal/unknown	6.69	A

Traffic Demand

Demand Set Details

ID	Year	Scenario	Time period	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)
D4	2029	Base	PM	ONE HOUR	16:45	18:15	15

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
1		✓	381	100.000
2		✓	311	100.000
3		✓	68	100.000
4		✓	657	100.000
5		✓	15	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	80	47	252	2
	2	79	0	14	216	2
	3	18	11	0	38	1
	4	353	243	48	0	13
	5	7	2	1	5	0

Vehicle Mix

Heavy Vehicle %

		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

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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**	287	287	3.76
	2	234	234	
	3	51	51	3.76
	4	495	495	3.76
	5	11	11	
17:00-17:15	**1**	343	343	4.49
	2	280	280	
	3	61	61	4.49
	4	591	591	4.49
	5	13	13	
17:15-17:30	**1**	419	419	5.51
	2	342	342	
	3	75	75	5.51
	4	723	723	5.51
	5	17	17	
17:30-17:45	**1**	419	419	5.51
	2	342	342	
	3	75	75	5.51
	4	723	723	5.51
	5	17	17	
17:45-18:00	**1**	343	343	4.49
	2	280	280	
	3	61	61	4.49
	4	591	591	4.49
	5	13	13	
18:00-18:15	**1**	287	287	3.76
	2	234	234	
	3	51	51	3.76
	4	495	495	3.76
	5	11	11	

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS
1	0.46	7.40	0.9	A
2	0.33	5.26	0.5	A
3	0.06	3.31	0.1	A
4	0.59	7.33	1.5	A
5	0.02	5.31	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	287	232	3.76	960	0.299	285	0.4	5.320	A
2	234	266		1101	0.213	233	0.3	4.201	A
3	51	416	3.76	1275	0.040	51	0.0	2.940	A
4	495	85	3.76	1242	0.398	492	0.7	4.846	A
5	11	563		831	0.014	11	0.0	4.392	A

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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	343	278	4.49	937	0.365	342	0.6	6.040	A
2	280	319		1073	0.261	279	0.4	4.594	A
3	61	499	4.49	1227	0.050	61	0.1	3.086	A
4	591	101	4.49	1233	0.479	590	0.9	5.657	A
5	13	675		773	0.017	13	0.0	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	419	340	5.51	906	0.463	418	0.8	7.362	A
2	342	390		1036	0.330	342	0.5	5.252	A
3	75	611	5.51	1162	0.064	75	0.1	3.309	A
4	723	124	5.51	1221	0.593	721	1.4	7.267	A
5	17	826		695	0.024	16	0.0	5.302	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	419	341	5.51	906	0.463	419	0.9	7.401	A
2	342	391		1036	0.331	342	0.5	5.264	A
3	75	612	5.51	1162	0.064	75	0.1	3.311	A
4	723	124	5.51	1221	0.593	723	1.5	7.326	A
5	17	828		694	0.024	17	0.0	5.311	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	343	280	4.49	937	0.366	344	0.6	6.084	A
2	280	320		1072	0.261	280	0.4	4.609	A
3	61	501	4.49	1226	0.050	61	0.1	3.089	A
4	591	102	4.49	1233	0.479	593	0.9	5.715	A
5	13	678		771	0.017	14	0.0	4.751	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	287	234	3.76	959	0.299	287	0.4	5.362	A
2	234	268		1100	0.213	234	0.3	4.219	A
3	51	419	3.76	1274	0.040	51	0.0	2.946	A
4	495	85	3.76	1242	0.398	496	0.7	4.894	A
5	11	567		829	0.014	11	0.0	4.405	A

D5 - 2029 | 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, 5	9.74	A

Junction Network

Driving side	Lighting	Network delay (s)	Network LOS
Left	Normal/unknown	9.74	A

Traffic Demand

Demand Set Details

ID	Year	Scenario	Time period	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)
D5	2029	Base + Comm & Prop	AM	ONE HOUR	07:45	09:15	15

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
1		✓	630	100.000
2		✓	172	100.000
3		✓	203	100.000
4		✓	573	100.000
5		✓	35	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	42	81	505	2
	2	51	0	19	100	2
	3	36	20	0	146	1
	4	325	154	92	0	2
	5	9	1	13	12	0

Vehicle Mix

Heavy Vehicle %

		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

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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**	474	474	3.76
	2	129	129	
	3	153	153	3.76
	4	431	431	3.76
	5	26	26	
08:00-08:15	**1**	566	566	4.49
	2	155	155	
	3	182	182	4.49
	4	515	515	4.49
	5	31	31	
08:15-08:30	**1**	694	694	5.51
	2	189	189	
	3	224	224	5.51
	4	631	631	5.51
	5	39	39	
08:30-08:45	**1**	694	694	5.51
	2	189	189	
	3	224	224	5.51
	4	631	631	5.51
	5	39	39	
08:45-09:00	**1**	566	566	4.49
	2	155	155	
	3	182	182	4.49
	4	515	515	4.49
	5	31	31	
09:00-09:15	**1**	474	474	3.76
	2	129	129	
	3	153	153	3.76
	4	431	431	3.76
	5	26	26	

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS
1	0.76	16.11	3.0	C
2	0.23	5.64	0.3	A
3	0.21	4.17	0.3	A
4	0.52	6.21	1.1	A
5	0.05	5.16	0.1	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	474	219	3.76	967	0.491	471	0.9	7.198	A
2	129	527		965	0.134	129	0.2	4.354	A
3	153	502	3.76	1225	0.125	152	0.1	3.352	A
4	431	84	3.76	1242	0.347	429	0.5	4.499	A
5	26	508		859	0.031	26	0.0	4.321	A

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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	566	262	4.49	945	0.599	564	1.5	9.397	A
2	155	632		910	0.170	154	0.2	4.817	A
3	182	602	4.49	1167	0.156	182	0.2	3.654	A
4	515	101	4.49	1233	0.418	514	0.7	5.095	A
5	31	609		807	0.039	31	0.0	4.639	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	694	321	5.51	916	0.757	688	2.9	15.383	C
2	189	770		838	0.226	189	0.3	5.610	A
3	224	735	5.51	1090	0.205	223	0.3	4.151	A
4	631	123	5.51	1221	0.517	629	1.1	6.180	A
5	39	745		737	0.052	38	0.1	5.153	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	694	321	5.51	916	0.758	693	3.0	16.110	C
2	189	776		835	0.227	189	0.3	5.639	A
3	224	740	5.51	1088	0.206	224	0.3	4.165	A
4	631	123	5.51	1221	0.517	631	1.1	6.210	A
5	39	746		736	0.052	39	0.1	5.159	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	566	263	4.49	945	0.599	572	1.5	9.811	A
2	155	640		906	0.171	155	0.2	4.850	A
3	182	609	4.49	1163	0.157	183	0.2	3.674	A
4	515	101	4.49	1233	0.418	516	0.7	5.126	A
5	31	611		806	0.039	32	0.0	4.649	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	474	220	3.76	966	0.491	477	1.0	7.386	A
2	129	533		962	0.135	130	0.2	4.378	A
3	153	508	3.76	1222	0.125	153	0.1	3.369	A
4	431	84	3.76	1242	0.347	432	0.5	4.534	A
5	26	511		858	0.031	26	0.0	4.330	A

D6 - 2029 | 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	7.91	A

Junction Network

Driving side	Lighting	Network delay (s)	Network LOS
Left	Normal/unknown	7.91	A

Traffic Demand

Demand Set Details

ID	Year	Scenario	Time period	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)
D6	2029	Base + Comm & Prop	PM	ONE HOUR	16:45	18:15	15

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
1		✓	433	100.000
2		✓	326	100.000
3		✓	192	100.000
4		✓	727	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	89	68	274	2
	2	90	0	18	216	2
	3	52	28	0	109	3
	4	407	243	64	0	13
	5	8	2	1	5	0

Vehicle Mix

Heavy Vehicle %

		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

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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**	326	326	3.76
	2	245	245	
	3	145	145	3.76
	4	547	547	3.76
	5	12	12	
17:00-17:15	**1**	389	389	4.49
	2	293	293	
	3	173	173	4.49
	4	654	654	4.49
	5	14	14	
17:15-17:30	**1**	477	477	5.51
	2	359	359	
	3	211	211	5.51
	4	800	800	5.51
	5	18	18	
17:30-17:45	**1**	477	477	5.51
	2	359	359	
	3	211	211	5.51
	4	800	800	5.51
	5	18	18	
17:45-18:00	**1**	389	389	4.49
	2	293	293	
	3	173	173	4.49
	4	654	654	4.49
	5	14	14	
18:00-18:15	**1**	326	326	3.76
	2	245	245	
	3	145	145	3.76
	4	547	547	3.76
	5	12	12	

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS
1	0.54	8.76	1.1	A
2	0.36	5.67	0.6	A
3	0.19	3.87	0.2	A
4	0.68	9.51	2.1	A
5	0.03	5.98	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	326	257	3.76	948	0.344	324	0.5	5.751	A
2	245	310		1078	0.228	244	0.3	4.369	A
3	145	441	3.76	1261	0.115	144	0.1	3.221	A
4	547	133	3.76	1216	0.450	544	0.8	5.395	A
5	12	662		780	0.015	12	0.0	4.687	A

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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	389	308	4.49	923	0.422	388	0.7	6.730	A
2	293	371		1046	0.280	293	0.4	4.841	A
3	173	529	4.49	1210	0.143	172	0.2	3.468	A
4	654	159	4.49	1202	0.544	652	1.2	6.605	A
5	14	793		712	0.020	14	0.0	5.158	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	477	376	5.51	888	0.537	475	1.1	8.673	A
2	359	454		1003	0.358	358	0.6	5.654	A
3	211	647	5.51	1142	0.185	211	0.2	3.868	A
4	800	195	5.51	1183	0.676	797	2.1	9.346	A
5	18	970		621	0.028	18	0.0	5.964	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	477	378	5.51	888	0.537	477	1.1	8.755	A
2	359	456		1002	0.358	359	0.6	5.673	A
3	211	648	5.51	1141	0.185	211	0.2	3.874	A
4	800	195	5.51	1183	0.676	800	2.1	9.508	A
5	18	973		619	0.028	18	0.0	5.982	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	389	310	4.49	921	0.422	391	0.7	6.807	A
2	293	374		1044	0.281	294	0.4	4.864	A
3	173	531	4.49	1209	0.143	173	0.2	3.478	A
4	654	159	4.49	1202	0.544	657	1.2	6.725	A
5	14	798		709	0.020	14	0.0	5.181	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	326	259	3.76	947	0.344	327	0.5	5.813	A
2	245	312		1076	0.228	246	0.3	4.393	A
3	145	444	3.76	1259	0.115	145	0.1	3.232	A
4	547	133	3.76	1216	0.450	549	0.8	5.475	A
5	12	667		777	0.016	12	0.0	4.706	A

D7 - 2044 | 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, 5	8.22	A

Junction Network

Driving side	Lighting	Network delay (s)	Network LOS
Left	Normal/unknown	8.22	A

Traffic Demand

Demand Set Details

ID	Year	Scenario	Time period	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)
D7	2044	Base	AM	ONE HOUR	07:45	09:15	15

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
1		✓	591	100.000
2		✓	178	100.000
3		✓	190	100.000
4		✓	565	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	43	34	512	2
	2	55	0	8	113	2
	3	32	19	0	137	2
	4	348	176	39	0	2
	5	9	1	6	13	0

Vehicle Mix

Heavy Vehicle %

		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

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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**	445	445	3.76
	2	134	134	
	3	143	143	3.76
	4	425	425	3.76
	5	22	22	
08:00-08:15	**1**	531	531	4.49
	2	160	160	
	3	171	171	4.49
	4	508	508	4.49
	5	26	26	
08:15-08:30	**1**	651	651	5.51
	2	196	196	
	3	209	209	5.51
	4	622	622	5.51
	5	32	32	
08:30-08:45	**1**	651	651	5.51
	2	196	196	
	3	209	209	5.51
	4	622	622	5.51
	5	32	32	
08:45-09:00	**1**	531	531	4.49
	2	160	160	
	3	171	171	4.49
	4	508	508	4.49
	5	26	26	
09:00-09:15	**1**	445	445	3.76
	2	134	134	
	3	143	143	3.76
	4	425	425	3.76
	5	22	22	

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS
1	0.69	12.56	2.2	B
2	0.22	5.24	0.3	A
3	0.20	4.17	0.2	A
4	0.51	6.13	1.1	A
5	0.04	5.07	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	445	190	3.76	981	0.454	442	0.8	6.634	A
2	134	453		1003	0.134	133	0.2	4.188	A
3	143	521	3.76	1214	0.118	143	0.1	3.356	A
4	425	84	3.76	1242	0.342	423	0.5	4.477	A
5	22	501		863	0.025	22	0.0	4.280	A

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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	531	228	4.49	962	0.552	530	1.2	8.292	A
2	160	543		956	0.167	160	0.2	4.576	A
3	171	625	4.49	1154	0.148	171	0.2	3.659	A
4	508	101	4.49	1233	0.412	507	0.7	5.057	A
5	26	601		812	0.032	26	0.0	4.582	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	651	279	5.51	937	0.695	647	2.2	12.246	B
2	196	663		894	0.219	196	0.3	5.220	A
3	209	764	5.51	1074	0.195	209	0.2	4.162	A
4	622	123	5.51	1221	0.509	621	1.0	6.107	A
5	32	735		742	0.043	32	0.0	5.068	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	651	280	5.51	937	0.695	651	2.2	12.563	B
2	196	667		892	0.220	196	0.3	5.238	A
3	209	767	5.51	1072	0.195	209	0.2	4.174	A
4	622	123	5.51	1221	0.509	622	1.1	6.135	A
5	32	737		741	0.043	32	0.0	5.073	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	531	229	4.49	962	0.552	535	1.3	8.513	A
2	160	548		953	0.168	160	0.2	4.597	A
3	171	630	4.49	1151	0.148	171	0.2	3.676	A
4	508	101	4.49	1233	0.412	509	0.7	5.089	A
5	26	603		810	0.032	26	0.0	4.590	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	445	192	3.76	980	0.454	447	0.8	6.763	A
2	134	458		1001	0.134	134	0.2	4.207	A
3	143	526	3.76	1211	0.118	143	0.1	3.372	A
4	425	84	3.76	1242	0.342	426	0.5	4.512	A
5	22	505		861	0.025	22	0.0	4.289	A

D8 - 2044 | 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	8.14	A

Junction Network

Driving side	Lighting	Network delay (s)	Network LOS
Left	Normal/unknown	8.14	A

Traffic Demand

Demand Set Details

ID	Year	Scenario	Time period	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)
D8	2044	Base	PM	ONE HOUR	16:45	18:15	15

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
1		✓	432	100.000
2		✓	352	100.000
3		✓	77	100.000
4		✓	746	100.000
5		✓	17	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	90	53	287	2
	2	90	0	15	245	2
	3	21	12	0	43	1
	4	400	276	56	0	14
	5	8	2	1	6	0

Vehicle Mix

Heavy Vehicle %

		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

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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**	325	325	3.76
	2	265	265	
	3	58	58	3.76
	4	562	562	3.76
	5	13	13	
17:00-17:15	**1**	388	388	4.49
	2	316	316	
	3	69	69	4.49
	4	671	671	4.49
	5	15	15	
17:15-17:30	**1**	476	476	5.51
	2	388	388	
	3	85	85	5.51
	4	821	821	5.51
	5	19	19	
17:30-17:45	**1**	476	476	5.51
	2	388	388	
	3	85	85	5.51
	4	821	821	5.51
	5	19	19	
17:45-18:00	**1**	388	388	4.49
	2	316	316	
	3	69	69	4.49
	4	671	671	4.49
	5	15	15	
18:00-18:15	**1**	325	325	3.76
	2	265	265	
	3	58	58	3.76
	4	562	562	3.76
	5	13	13	

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS
1	0.54	8.85	1.2	A
2	0.38	5.89	0.6	A
3	0.08	3.50	0.1	A
4	0.68	9.32	2.1	A
5	0.03	5.83	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	325	264	3.76	944	0.344	323	0.5	5.778	A
2	265	303		1081	0.245	264	0.3	4.456	A
3	58	473	3.76	1242	0.047	58	0.0	3.038	A
4	562	96	3.76	1236	0.454	558	0.8	5.355	A
5	13	640		791	0.016	13	0.0	4.624	A

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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	388	317	4.49	918	0.423	388	0.7	6.785	A
2	316	363		1050	0.301	316	0.4	4.969	A
3	69	567	4.49	1188	0.058	69	0.1	3.217	A
4	671	115	4.49	1226	0.547	669	1.2	6.533	A
5	15	767		726	0.021	15	0.0	5.067	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	476	387	5.51	883	0.539	474	1.1	8.764	A
2	388	444		1008	0.385	387	0.6	5.870	A
3	85	694	5.51	1114	0.076	85	0.1	3.496	A
4	821	141	5.51	1212	0.678	818	2.1	9.168	A
5	19	938		638	0.029	19	0.0	5.816	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	476	389	5.51	882	0.539	476	1.2	8.850	A
2	388	446		1007	0.385	388	0.6	5.892	A
3	85	696	5.51	1113	0.076	85	0.1	3.499	A
4	821	141	5.51	1212	0.678	821	2.1	9.323	A
5	19	941		636	0.029	19	0.0	5.833	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	388	319	4.49	917	0.424	390	0.7	6.854	A
2	316	366		1049	0.302	317	0.4	4.994	A
3	69	570	4.49	1186	0.058	69	0.1	3.222	A
4	671	115	4.49	1226	0.547	674	1.2	6.650	A
5	15	772		723	0.021	15	0.0	5.088	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	325	266	3.76	943	0.345	326	0.5	5.844	A
2	265	306		1080	0.245	265	0.3	4.484	A
3	58	477	3.76	1240	0.047	58	0.0	3.044	A
4	562	97	3.76	1236	0.455	563	0.9	5.434	A
5	13	645		788	0.016	13	0.0	4.641	A

D9 - 2044 | Base + Comm | AM

RECEIVED: 05/08/2026

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	12.40	B

Junction Network

Driving side	Lighting	Network delay (s)	Network LOS
Left	Normal/unknown	12.40	B

Traffic Demand

Demand Set Details

ID	Year	Scenario	Time period	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)
D9	2044	Base + Comm	AM	ONE HOUR	07:45	09:15	15

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
1		✓	672	100.000
2		✓	192	100.000
3		✓	224	100.000
4		✓	635	100.000
5		✓	38	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	45	84	540	3
	2	57	0	20	113	2
	3	39	22	0	162	1
	4	360	176	97	0	2
	5	10	1	14	13	0

Vehicle Mix

Heavy Vehicle %

		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

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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**	506	506	3.76
	2	145	145	
	3	169	169	3.76
	4	478	478	3.76
	5	29	29	
08:00-08:15	**1**	604	604	4.49
	2	173	173	
	3	201	201	4.49
	4	571	571	4.49
	5	34	34	
08:15-08:30	**1**	740	740	5.51
	2	211	211	
	3	247	247	5.51
	4	699	699	5.51
	5	42	42	
08:30-08:45	**1**	740	740	5.51
	2	211	211	
	3	247	247	5.51
	4	699	699	5.51
	5	42	42	
08:45-09:00	**1**	604	604	4.49
	2	173	173	
	3	201	201	4.49
	4	571	571	4.49
	5	34	34	
09:00-09:15	**1**	506	506	3.76
	2	145	145	
	3	169	169	3.76
	4	478	478	3.76
	5	29	29	

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS
1	0.82	22.21	4.4	C
2	0.26	6.09	0.4	A
3	0.23	4.47	0.3	A
4	0.58	7.12	1.4	A
5	0.06	5.51	0.1	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	506	242	3.76	955	0.530	501	1.1	7.857	A
2	145	561		947	0.153	144	0.2	4.530	A
3	169	544	3.76	1201	0.140	168	0.2	3.482	A
4	478	93	3.76	1237	0.386	476	0.6	4.800	A
5	29	562		831	0.034	28	0.0	4.485	A

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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	604	290	4.49	931	0.649	601	1.8	10.814	B
2	173	672		889	0.194	172	0.2	5.081	A
3	201	652	4.49	1139	0.177	201	0.2	3.839	A
4	571	111	4.49	1228	0.465	570	0.9	5.569	A
5	34	674		774	0.044	34	0.0	4.867	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	740	355	5.51	899	0.823	730	4.1	20.280	C
2	211	818		813	0.260	211	0.4	6.043	A
3	247	794	5.51	1056	0.234	246	0.3	4.443	A
4	699	136	5.51	1214	0.576	697	1.4	7.066	A
5	42	825		696	0.060	42	0.1	5.503	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	740	356	5.51	899	0.823	739	4.4	22.211	C
2	211	826		809	0.261	211	0.4	6.094	A
3	247	801	5.51	1052	0.234	247	0.3	4.470	A
4	699	137	5.51	1214	0.576	699	1.4	7.121	A
5	42	827		695	0.060	42	0.1	5.512	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	604	291	4.49	931	0.649	614	1.9	11.693	B
2	173	685		883	0.196	173	0.2	5.137	A
3	201	663	4.49	1132	0.178	202	0.2	3.871	A
4	571	112	4.49	1227	0.465	573	0.9	5.619	A
5	34	677		772	0.044	34	0.0	4.879	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	506	244	3.76	955	0.530	509	1.1	8.135	A
2	145	568		943	0.153	145	0.2	4.565	A
3	169	551	3.76	1197	0.141	169	0.2	3.500	A
4	478	94	3.76	1237	0.386	479	0.6	4.845	A
5	29	567		829	0.035	29	0.0	4.499	A

D10 - 2044 | 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, 5	9.37	A

Junction Network

Driving side	Lighting	Network delay (s)	Network LOS
Left	Normal/unknown	9.37	A

Traffic Demand

Demand Set Details

ID	Year	Scenario	Time period	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)
D10	2044	Base + Comm	PM	ONE HOUR	16:45	18:15	15

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
1		✓	470	100.000
2		✓	362	100.000
3		✓	200	100.000
4		✓	786	100.000
5		✓	18	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	95	72	301	2
	2	95	0	20	245	2
	3	53	30	0	114	3
	4	425	276	71	0	14
	5	9	2	1	6	0

Vehicle Mix

Heavy Vehicle %

		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

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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	354	354	3.76
	2	273	273	
	3	151	151	3.76
	4	592	592	3.76
	5	14	14	
17:00-17:15	1	423	423	4.49
	2	325	325	
	3	180	180	4.49
	4	707	707	4.49
	5	16	16	
17:15-17:30	1	517	517	5.51
	2	399	399	
	3	220	220	5.51
	4	865	865	5.51
	5	20	20	
17:30-17:45	1	517	517	5.51
	2	399	399	
	3	220	220	5.51
	4	865	865	5.51
	5	20	20	
17:45-18:00	1	423	423	4.49
	2	325	325	
	3	180	180	4.49
	4	707	707	4.49
	5	16	16	
18:00-18:15	1	354	354	3.76
	2	273	273	
	3	151	151	3.76
	4	592	592	3.76
	5	14	14	

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS
1	0.60	10.38	1.5	B
2	0.41	6.28	0.7	A
3	0.20	4.09	0.2	A
4	0.73	11.61	2.7	B
5	0.03	6.40	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	354	289	3.76	932	0.380	351	0.6	6.174	A
2	273	339		1063	0.256	271	0.3	4.602	A
3	151	487	3.76	1234	0.122	150	0.1	3.318	A
4	592	139	3.76	1213	0.488	588	1.0	5.795	A
5	14	711		755	0.018	13	0.0	4.857	A

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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	423	346	4.49	903	0.468	421	0.9	7.453	A
2	325	406		1028	0.317	325	0.5	5.189	A
3	180	584	4.49	1178	0.153	180	0.2	3.605	A
4	707	166	4.49	1199	0.590	705	1.4	7.352	A
5	16	852		682	0.024	16	0.0	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	517	423	5.51	865	0.598	515	1.4	10.214	B
2	399	496		981	0.406	398	0.7	6.250	A
3	220	714	5.51	1102	0.200	220	0.2	4.079	A
4	865	203	5.51	1179	0.734	860	2.7	11.272	B
5	20	1041		584	0.034	20	0.0	6.375	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	517	425	5.51	864	0.599	517	1.5	10.376	B
2	399	499		979	0.407	399	0.7	6.280	A
3	220	717	5.51	1101	0.200	220	0.2	4.086	A
4	865	204	5.51	1179	0.734	865	2.7	11.606	B
5	20	1046		582	0.034	20	0.0	6.404	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	423	349	4.49	902	0.469	425	0.9	7.581	A
2	325	410		1026	0.317	326	0.5	5.223	A
3	180	588	4.49	1176	0.153	180	0.2	3.617	A
4	707	167	4.49	1198	0.590	712	1.5	7.566	A
5	16	859		678	0.024	16	0.0	5.441	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	354	292	3.76	931	0.380	355	0.6	6.267	A
2	273	342		1061	0.257	273	0.4	4.634	A
3	151	491	3.76	1232	0.122	151	0.1	3.332	A
4	592	139	3.76	1213	0.488	594	1.0	5.907	A
5	14	717		751	0.018	14	0.0	4.879	A

D11 - 2044 | 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, 5	15.36	C

Junction Network

Driving side	Lighting	Network delay (s)	Network LOS
Left	Normal/unknown	15.36	C

Traffic Demand

Demand Set Details

ID	Year	Scenario	Time period	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)
D11	2044	Base + Comm & Prop	AM	ONE HOUR	07:45	09:15	15

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
1		✓	703	100.000
2		✓	194	100.000
3		✓	225	100.000
4		✓	646	100.000
5		✓	54	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	47	85	568	3
	2	59	0	20	113	2
	3	40	22	0	162	1
	4	371	176	97	0	2
	5	10	14	13	17	0

Vehicle Mix

Heavy Vehicle %

		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

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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**	529	529	3.76
	2	146	146	
	3	169	169	3.76
	4	486	486	3.76
	5	41	41	
08:00-08:15	**1**	632	632	4.49
	2	174	174	
	3	202	202	4.49
	4	581	581	4.49
	5	49	49	
08:15-08:30	**1**	774	774	5.51
	2	214	214	
	3	248	248	5.51
	4	711	711	5.51
	5	59	59	
08:30-08:45	**1**	774	774	5.51
	2	214	214	
	3	248	248	5.51
	4	711	711	5.51
	5	59	59	
08:45-09:00	**1**	632	632	4.49
	2	174	174	
	3	202	202	4.49
	4	581	581	4.49
	5	49	49	
09:00-09:15	**1**	529	529	3.76
	2	146	146	
	3	169	169	3.76
	4	486	486	3.76
	5	41	41	

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS
1	0.87	29.45	6.0	D
2	0.27	6.30	0.4	A
3	0.24	4.60	0.3	A
4	0.59	7.31	1.4	A
5	0.09	5.74	0.1	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	529	254	3.76	949	0.557	524	1.2	8.375	A
2	146	584		935	0.156	145	0.2	4.609	A
3	169	569	3.76	1187	0.143	169	0.2	3.534	A
4	486	95	3.76	1236	0.393	484	0.7	4.858	A
5	41	573		826	0.049	40	0.1	4.582	A

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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	632	304	4.49	924	0.684	629	2.1	12.033	B
2	174	701		874	0.199	174	0.3	5.200	A
3	202	682	4.49	1121	0.180	202	0.2	3.916	A
4	581	114	4.49	1226	0.474	580	0.9	5.664	A
5	49	687		767	0.063	48	0.1	5.009	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	774	372	5.51	890	0.869	760	5.5	25.365	D
2	214	849		797	0.268	213	0.4	6.231	A
3	248	827	5.51	1036	0.239	247	0.3	4.561	A
4	711	140	5.51	1213	0.587	709	1.4	7.255	A
5	59	840		688	0.086	59	0.1	5.726	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	774	373	5.51	890	0.870	772	6.0	29.449	D
2	214	860		791	0.270	214	0.4	6.305	A
3	248	837	5.51	1030	0.240	248	0.3	4.599	A
4	711	140	5.51	1213	0.587	711	1.4	7.314	A
5	59	842		687	0.087	59	0.1	5.737	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	632	306	4.49	924	0.684	647	2.3	13.647	B
2	174	718		865	0.202	175	0.3	5.278	A
3	202	698	4.49	1112	0.182	203	0.2	3.961	A
4	581	114	4.49	1226	0.474	583	0.9	5.722	A
5	49	690		765	0.063	49	0.1	5.024	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	529	256	3.76	948	0.558	533	1.3	8.747	A
2	146	593		930	0.157	146	0.2	4.648	A
3	169	577	3.76	1182	0.143	170	0.2	3.555	A
4	486	96	3.76	1236	0.393	487	0.7	4.906	A
5	41	577		824	0.049	41	0.1	4.598	A

D12 - 2044 | 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	10.20	B

Junction Network

Driving side	Lighting	Network delay (s)	Network LOS
Left	Normal/unknown	10.20	B

Traffic Demand

Demand Set Details

ID	Year	Scenario	Time period	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)
D12	2044	Base + Comm & Prop	PM	ONE HOUR	16:45	18:15	15

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
1		✓	482	100.000
2		✓	368	100.000
3		✓	202	100.000
4		✓	815	100.000
5		✓	18	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	97	74	308	3
	2	101	0	20	245	2
	3	55	30	0	114	3
	4	454	276	71	0	14
	5	9	2	1	6	0

Vehicle Mix

Heavy Vehicle %

		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

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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**	363	363	3.76
	2	277	277	
	3	152	152	3.76
	4	614	614	3.76
	5	14	14	
17:00-17:15	**1**	433	433	4.49
	2	331	331	
	3	182	182	4.49
	4	733	733	4.49
	5	16	16	
17:15-17:30	**1**	531	531	5.51
	2	405	405	
	3	222	222	5.51
	4	897	897	5.51
	5	20	20	
17:30-17:45	**1**	531	531	5.51
	2	405	405	
	3	222	222	5.51
	4	897	897	5.51
	5	20	20	
17:45-18:00	**1**	433	433	4.49
	2	331	331	
	3	182	182	4.49
	4	733	733	4.49
	5	16	16	
18:00-18:15	**1**	363	363	3.76
	2	277	277	
	3	152	152	3.76
	4	614	614	3.76
	5	14	14	

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS
1	0.61	10.78	1.6	B
2	0.42	6.41	0.7	A
3	0.20	4.14	0.3	A
4	0.76	13.15	3.2	B
5	0.04	6.65	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	363	289	3.76	932	0.389	360	0.6	6.270	A
2	277	346		1059	0.262	276	0.4	4.648	A
3	152	498	3.76	1228	0.124	152	0.1	3.342	A
4	614	145	3.76	1210	0.507	609	1.0	6.032	A
5	14	738		740	0.018	13	0.0	4.952	A

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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	433	346	4.49	903	0.480	432	0.9	7.620	A
2	331	415		1023	0.323	330	0.5	5.263	A
3	182	597	4.49	1171	0.155	181	0.2	3.638	A
4	733	174	4.49	1194	0.614	730	1.6	7.821	A
5	16	885		665	0.024	16	0.0	5.549	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	531	422	5.51	865	0.613	528	1.5	10.592	B
2	405	507		975	0.416	404	0.7	6.380	A
3	222	730	5.51	1093	0.203	222	0.3	4.130	A
4	897	213	5.51	1173	0.765	891	3.1	12.637	B
5	20	1080		564	0.035	20	0.0	6.615	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	531	425	5.51	864	0.614	531	1.6	10.784	B
2	405	510		974	0.416	405	0.7	6.415	A
3	222	732	5.51	1092	0.204	222	0.3	4.139	A
4	897	214	5.51	1173	0.765	897	3.2	13.147	B
5	20	1086		561	0.035	20	0.0	6.653	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	433	350	4.49	902	0.481	436	0.9	7.770	A
2	331	419		1021	0.324	332	0.5	5.300	A
3	182	600	4.49	1169	0.155	182	0.2	3.648	A
4	733	175	4.49	1194	0.614	739	1.6	8.115	A
5	16	894		660	0.025	16	0.0	5.589	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	363	292	3.76	931	0.390	364	0.6	6.369	A
2	277	350		1057	0.262	278	0.4	4.684	A
3	152	502	3.76	1226	0.124	152	0.1	3.356	A
4	614	146	3.76	1209	0.507	616	1.1	6.167	A
5	14	746		737	0.018	14	0.0	4.977	A

D13 - 2044 | Base + Comm & Prop & 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, 5	23.72	C

Junction Network

Driving side	Lighting	Network delay (s)	Network LOS
Left	Normal/unknown	23.72	C

Traffic Demand

Demand Set Details

ID	Year	Scenario	Time period	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)
D13	2044	Base + Comm & Prop & Masterplan	AM	ONE HOUR	07:45	09:15	15

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
1		✓	765	100.000
2		✓	203	100.000
3		✓	232	100.000
4		✓	709	100.000
5		✓	41	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	89	621	3
	2	68	0	20	113	2
	3	46	22	0	162	2
	4	434	176	97	0	2
	5	12	2	14	13	0

Vehicle Mix

Heavy Vehicle %

		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

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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**	576	576	3.76
	2	153	153	
	3	175	175	3.76
	4	534	534	3.76
	5	31	31	
08:00-08:15	**1**	688	688	4.49
	2	182	182	
	3	209	209	4.49
	4	637	637	4.49
	5	37	37	
08:15-08:30	**1**	842	842	5.51
	2	224	224	
	3	255	255	5.51
	4	781	781	5.51
	5	45	45	
08:30-08:45	**1**	842	842	5.51
	2	224	224	
	3	255	255	5.51
	4	781	781	5.51
	5	45	45	
08:45-09:00	**1**	688	688	4.49
	2	182	182	
	3	209	209	4.49
	4	637	637	4.49
	5	37	37	
09:00-09:15	**1**	576	576	3.76
	2	153	153	
	3	175	175	3.76
	4	534	534	3.76
	5	31	31	

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS
1	0.94	48.83	10.7	E
2	0.29	6.75	0.4	A
3	0.26	4.86	0.3	A
4	0.65	8.67	1.9	A
5	0.07	6.02	0.1	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	576	243	3.76	955	0.603	570	1.5	9.215	A
2	153	624		914	0.167	152	0.2	4.771	A
3	175	612	3.76	1162	0.150	174	0.2	3.642	A
4	534	107	3.76	1230	0.434	531	0.8	5.219	A
5	31	631		796	0.039	31	0.0	4.794	A

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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	688	291	4.49	931	0.739	683	2.7	14.233	B
2	182	748		850	0.215	182	0.3	5.450	A
3	209	733	4.49	1091	0.191	208	0.2	4.075	A
4	637	128	4.49	1219	0.523	636	1.1	6.278	A
5	37	756		731	0.050	37	0.1	5.184	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	842	356	5.51	899	0.937	817	8.9	36.215	E
2	224	898		772	0.290	223	0.4	6.626	A
3	255	882	5.51	1004	0.254	255	0.3	4.802	A
4	781	157	5.51	1203	0.649	778	1.8	8.552	A
5	45	925		644	0.070	45	0.1	6.009	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	842	357	5.51	898	0.938	835	10.7	48.829	E
2	224	915		763	0.293	223	0.4	6.751	A
3	255	897	5.51	995	0.257	255	0.3	4.865	A
4	781	157	5.51	1203	0.649	781	1.9	8.667	A
5	45	928		643	0.070	45	0.1	6.025	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	688	292	4.49	930	0.739	718	3.0	19.107	C
2	182	782		832	0.219	183	0.3	5.613	A
3	209	763	4.49	1074	0.194	209	0.2	4.162	A
4	637	129	4.49	1218	0.523	640	1.1	6.374	A
5	37	761		729	0.051	37	0.1	5.205	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	576	245	3.76	954	0.604	582	1.6	9.816	A
2	153	636		908	0.168	153	0.2	4.825	A
3	175	622	3.76	1156	0.151	175	0.2	3.673	A
4	534	108	3.76	1230	0.434	535	0.8	5.288	A
5	31	636		793	0.039	31	0.0	4.724	A

D14 - 2044 | Base + Comm & Prop & Masterplan | 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	17.80	C

Junction Network

Driving side	Lighting	Network delay (s)	Network LOS
Left	Normal/unknown	17.80	C

Traffic Demand

Demand Set Details

ID	Year	Scenario	Time period	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)
D14	2044	Base + Comm & Prop & Masterplan	PM	ONE HOUR	16:45	18:15	15

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
1		✓	555	100.000
2		✓	395	100.000
3		✓	208	100.000
4		✓	936	100.000
5		✓	21	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	112	83	357	3
	2	128	0	20	245	2
	3	61	30	0	114	3
	4	575	276	71	0	14
	5	12	2	1	6	0

Vehicle Mix

Heavy Vehicle %

		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

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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**	418	418	3.76
	2	297	297	
	3	157	157	3.76
	4	705	705	3.76
	5	16	16	
17:00-17:15	**1**	499	499	4.49
	2	355	355	
	3	187	187	4.49
	4	841	841	4.49
	5	19	19	
17:15-17:30	**1**	611	611	5.51
	2	435	435	
	3	229	229	5.51
	4	1031	1031	5.51
	5	23	23	
17:30-17:45	**1**	611	611	5.51
	2	435	435	
	3	229	229	5.51
	4	1031	1031	5.51
	5	23	23	
17:45-18:00	**1**	499	499	4.49
	2	355	355	
	3	187	187	4.49
	4	841	841	4.49
	5	19	19	
18:00-18:15	**1**	418	418	3.76
	2	297	297	
	3	157	157	3.76
	4	705	705	3.76
	5	16	16	

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS
1	0.71	14.14	2.3	B
2	0.46	7.20	0.9	A
3	0.22	4.42	0.3	A
4	0.89	27.64	7.4	D
5	0.05	7.98	0.1	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	418	288	3.76	932	0.448	415	0.8	6.913	A
2	297	389		1036	0.287	296	0.4	4.909	A
3	157	554	3.76	1195	0.131	156	0.2	3.462	A
4	705	170	3.76	1196	0.589	699	1.4	7.245	A
5	16	853		681	0.023	16	0.0	5.407	A

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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	499	345	4.49	904	0.552	497	1.2	8.821	A
2	355	467		996	0.357	354	0.6	5.676	A
3	187	665	4.49	1131	0.165	187	0.2	3.811	A
4	841	204	4.49	1178	0.714	837	2.4	10.553	B
5	19	1021		594	0.032	19	0.0	6.255	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	611	418	5.51	867	0.705	607	2.3	13.593	B
2	435	569		943	0.461	434	0.9	7.139	A
3	229	812	5.51	1046	0.219	229	0.3	4.404	A
4	1031	249	5.51	1154	0.893	1013	6.8	23.353	C
5	23	1239		482	0.048	23	0.0	7.843	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	611	424	5.51	865	0.707	611	2.3	14.144	B
2	435	573		941	0.462	435	0.9	7.205	A
3	229	816	5.51	1044	0.219	229	0.3	4.419	A
4	1031	250	5.51	1154	0.893	1028	7.4	27.642	D
5	23	1254		474	0.049	23	0.1	7.981	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	499	354	4.49	899	0.555	503	1.3	9.184	A
2	355	473		993	0.358	356	0.6	5.736	A
3	187	670	4.49	1128	0.166	187	0.2	3.826	A
4	841	205	4.49	1178	0.714	861	2.6	12.118	B
5	19	1045		582	0.032	19	0.0	6.396	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	418	292	3.76	930	0.449	420	0.8	7.076	A
2	297	394		1034	0.288	298	0.4	4.957	A
3	157	560	3.76	1192	0.131	157	0.2	3.476	A
4	705	171	3.76	1196	0.589	709	1.5	7.556	A
5	16	864		676	0.023	16	0.0	5.455	A

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Appendix C. ROAD SAFETY AUDIT

TOBIN

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11893- Kingston Stables Ltd.

Residential Development at Kingston, Knocknacarra, Galway.

Stage 1/2 RSA

BUILT ON KNOWLEDGE

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Document Control Sheet	
Document Reference	TR01 Road Safety Audit
Client:	Kingston Stables Ltd.
Project Reference	11893

Rev	Description	Author	Date	Reviewer	Date	Approval	Date
D01	Draft	JL	26/06/2026	MR	29/06/26	MR	29/06/26
A01	Final	JL	09/07/2026	MR	09/07/2026	MR	09/07/2026

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1 INTRODUCTION

This report presents the findings of a Stage 1/2 Road Safety Audit undertaken for the proposed Large Residential Development (LRD) at Kingston, Knocknacarra, Galway. The audit examined the proposed junction and associated road infrastructure providing access to the development via Altán Road, which connects to the Western Distributor Road.

The Design Manual for Urban Roads and Streets (DMURS) is subject to the guidance set out in Table 3.1 of DMURS. TOBIN was appointed by Kingston Stables Ltd. to undertake this Road Safety Audit in accordance with the Transport Infrastructure Ireland (TII) Road Safety Audit Guidelines. The location of the site is shown in Figure 1.1.



Figure 1-1 Site Location

1.1 EXISTING ENVIRONMENT

The proposed development is located at Kingston, Knocknacarra, Galway. Vehicular, pedestrian and cyclist access to the development will be provided via Altán Road, which connects to the Western Distributor Road. The surrounding area is predominantly residential and is served by footpaths, public lighting, and existing pedestrian and cyclist facilities.

The proposed access ties into the recently permitted road (Planning Reference 24/60370), which provides access from Altán Road to the proposed development.

1.2 THE PROPOSED DEVELOPMENT

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The proposed development comprises:

1. Construction of residential units.
2. Demolition of existing structures (409 m²).
3. Provision of vehicular access from the permitted road (Planning Reference 24/60370).
4. Upgrades to the permitted road (Planning Reference 24/60370).
5. Conversion and refurbishment of an existing structure to provide a local centre (65.8 m²).
6. Provision of public open space.
7. Provision of 192 bicycle parking spaces.
8. Provision of 142 car parking spaces.
9. Provision of public lighting, bin stores, signage, utility services, an ESB substation, landscaping, and all associated site development and ancillary works.

1.3 AUDIT DETAILS

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The initial Audit took place at the Galway office of TOBIN in May 2026. The Audit comprised of an examination of the documents provided by the Design Team, listed in Appendix A-I. In addition, a daytime site visit took place on Tuesday the 23rd of June 2026. Throughout the duration of the site visit, the weather was dry and sunny.

The following information was not made available to the Audit Team:

- Geometric Details i.e. visibility splays
- Boundary treatment.
- Drainage details
- Site clearance
- Sign Schedule
- Kerb Details
- Public Lighting
- Landscaping

The Audit Team members were as follows:

Audit Team Leader

- Maria Rooney - BEng (Hons) Civil Eng., CEng., MIEI, Associate Director for Roads & Transportation, TOBIN. – TII Reference MR3384505

Audit Team Member

- Jessica Lima – BEng Civil Eng. Project Engineer for Roads & Transportation TOBIN – TII Reference JL855809

The Stage 1 Road Safety Audit has been carried out in accordance with the relevant sections of Transport Infrastructure Ireland Publication (Standards) "Road Safety Audit" GE-STY-01024 (May 2025). The team have examined and reported only on the road safety implications of the design submitted and has not examined or verified the compliance of the design to any other criteria. However, to clearly explain a problem or a recommendation, it may be necessary to refer to another Standard or Advice Note, but such reference will not conflict with the requirements of the above Terms of Reference.

The Design Team and Employer (Client) is reminded that the Road Safety Audit Feedback Form, in Appendix A-III shall be completed and returned to the Road Safety Audit Team Leader for sign off.

1.4 COLLISION DATA

RECEIVED: 05/08/2026

Collision records indicate that two non-serious injury and one serious injury traffic collisions occurred on L1010 roundabout the vicinity of the site during the period 2016–2024.

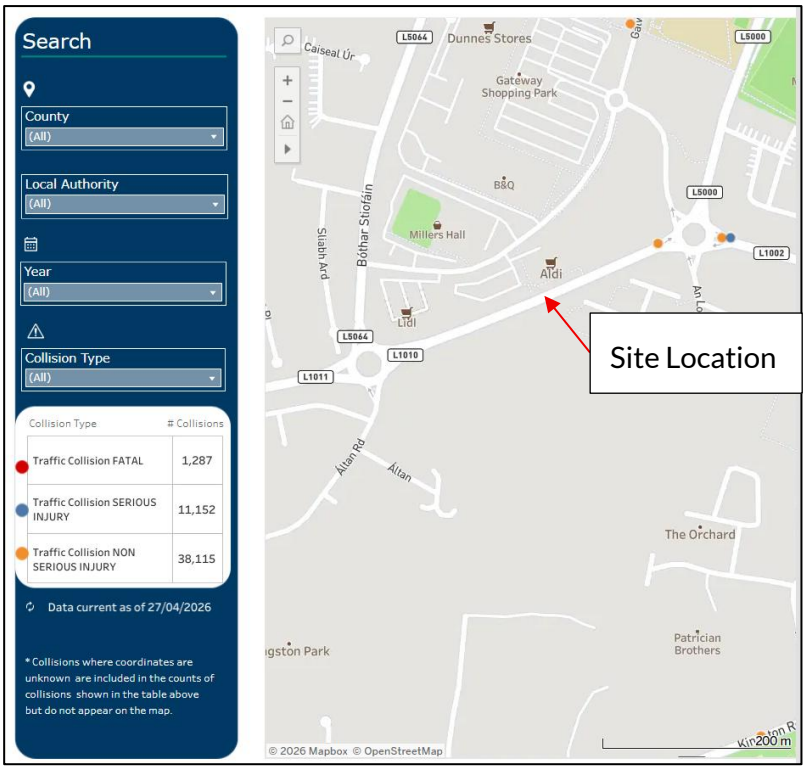


Figure 1-2 Collison Map

2 ITEMS RESULTING FROM THIS ROAD SAFETY AUDIT

RECEIVED: 05/09/2026

2.1 PROBLEM

Existing Road Network

The Audit Team observed that the existing road network consists of a rapid build cycle lane on Altan Road. The Audit Team is concerned that this temporary traffic management measure may create uncertainty for cyclists crossing Altan Road to gain access to northbound lane. This may result in sudden manoeuvres by cyclists who may remain on the carriageway. This could lead to a collision between a cyclist and a vehicle.

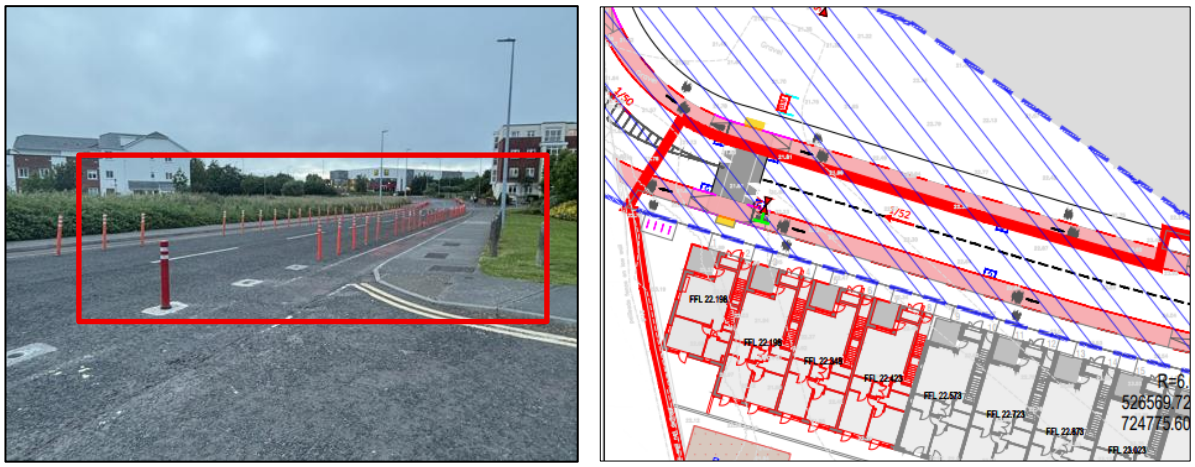


Figure 2-1: Tie into Existing Network

Recommendation:

The Design Team should provide a permanent cycle lane in accordance with the relevant design standards, ensuring a suitable transition between the existing and proposed cycle facilities.

RECEIVED: 05/08/2026

2.2 PROBLEM

STOP Road Marking

The Audit Team observed that no STOP road markings have been provided at key junctions within the proposed development. This omission raises safety concerns, as the absence of clear priority control may lead to driver confusion and increase the risk of side on collisions.

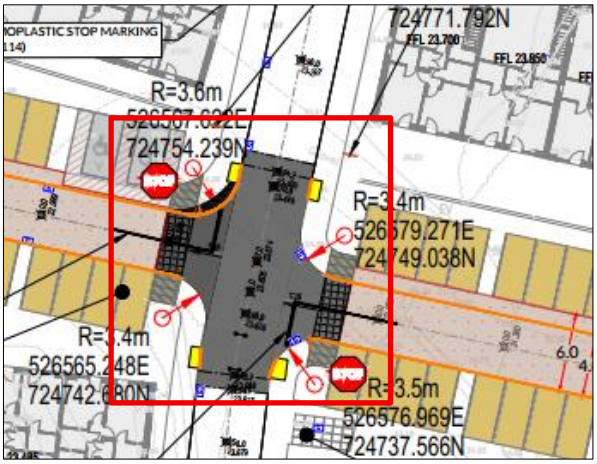


Figure 2-2: Example of missing road marking

Recommendation:

The Design Team should incorporate appropriate STOP road markings in accordance the Traffic Signs Manual.

2.3 PROBLEM

RECEIVED: 05/01/2026

Missing Road Marking

The Audit Team notes that no road markings have been provided on the raised junction. The Audit Team is concerned that approaching drivers may not be adequately warned of the upcoming traffic calming feature. This could result in vehicles failing to reduce speed, striking the ramp, and making a sudden manoeuvre onto the footpath, resulting in a collision with a vulnerable road user (VRU).

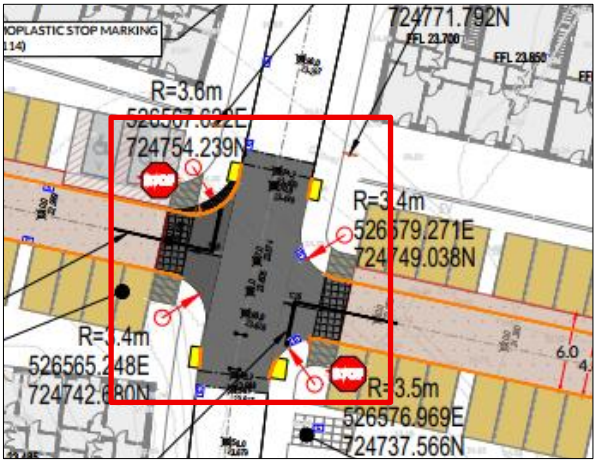


Figure 2-3: Proposed Raised Junction

Recommendation:

The Design Team should ensure road markings are provided at the raised junction and that they comply with the requirements of the Traffic Signs Manual (TSM).

2.4 PROBLEM

RECEIVED: 05/01/2026

Footpath Location

The Audit Team observed that the proposed footpath is located to the rear of the parking spaces. The Audit Team is concerned that vulnerable road users, particularly children, may be obscured by parked vehicles while vehicles are manoeuvring into or reversing out of parking spaces. This may result in collisions between vehicles and vulnerable road users

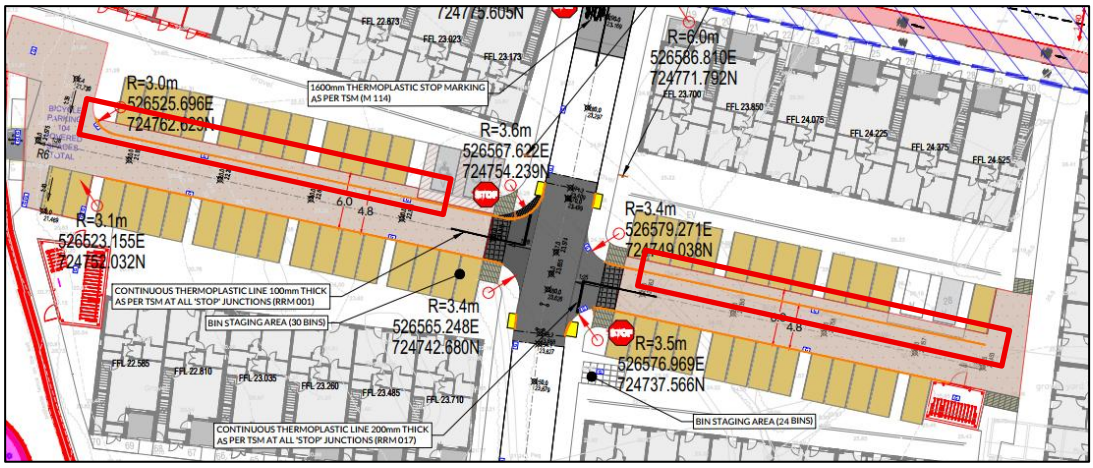


Figure 2-4: Proposed footpath

Recommendation

The Design Team should relocate the footpath to the front of the parking spaces to minimise conflicts between pedestrians and reversing vehicles.

3. RESPONDING TO THE ROAD SAFETY AUDIT

RECEIVED: 05/08/2026

2.5 3.1ROAD SAFETY AUDIT RESPONSE FROM THE DESIGNER(S)

The Designer(s) should prepare an Audit response for each of the recommendations using the Road Safety Audit Feedback Form Attached in Appendix A-III

When completed, this form should be signed by the Lead Designer and returned to the Audit Team for due consideration.



Figure 3-0-1: Road Safety Audit Process & Sign Off

2.6 3.2RETURNING THE COMPLETED FEEDBACK FORM

The Designer(s)should return the completed Road Safety Audit Feedback Form attached in Appendix A-III in this report to the following.

- Email address: Jessica.Lima@tobin.ie

The Audit Team will consider the Designer(s) response and reply indicating acceptance or otherwise of the Designer(s) response to each recommendation.

If agreeable the feedback form will be signed by the Client and returned to the Audit Team Lead for final review and signature. Final report to be issued.

3.2.1Exception Report

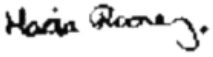
Where the Designer(s) and the Audit Team cannot agree on an acceptable means of addressing an underlying safety concern highlighted as part of the Audit process, an Exception Report must be prepared by the Designer on each contentious item listed in the Audit Report.

5 AUDIT TEAM STATEMENT

RECEIVED: 09/07/2026

We certify that we have examined the design drawings and other information listed in the Appendices to this report and have carried out a desktop study. This examination has been carried out with the sole purpose of identifying any features of the scheme that can be removed or modified in order to improve the safety of the scheme. The problems that we have identified have been noted in this report, together with suggestions for improvement, which we recommend should be studied for implementation. We have not been involved with the scheme design.

AUDIT TEAM LEADER

Name:	Maria Rooney	Signed:	
TII Reference:	MR3384505	Date:	09/07/2026
Position:	Associate Director		
Organisation:	TOBIN		
Address:	Fairgreen House, Fairgreen Road, Galway.		

AUDIT TEAM MEMBERS

Name:	Jessica Lima	Signed:	
TII Reference:	JL855809	Date:	09/07/2026
Position:	Project Engineer		
Organisation:	TOBIN		
Address:	Market Square, Castlebar, Co. Mayo		

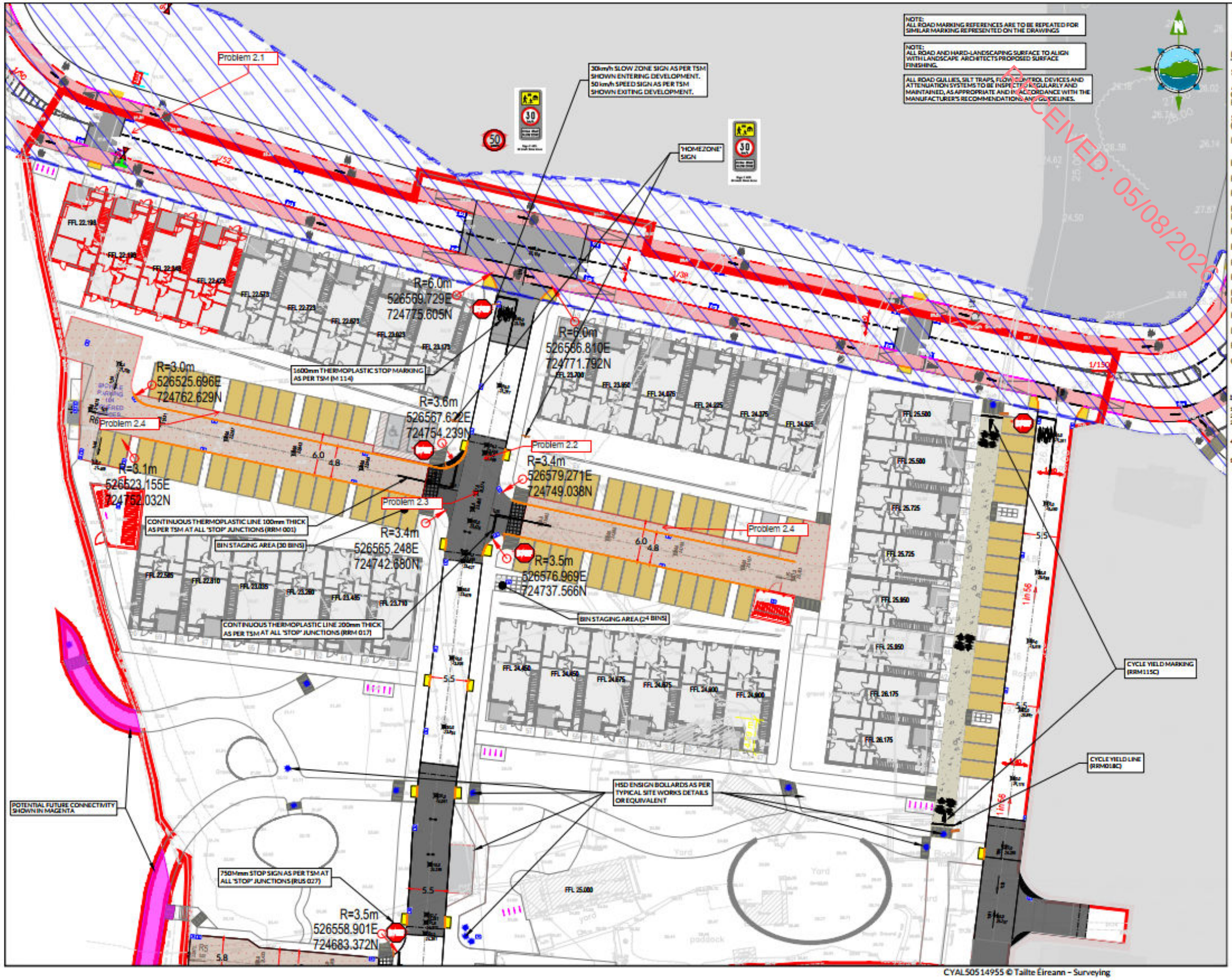
Appendix A-I LIST OF DOCUMENTS EXAMINED

RECEIVED: 05/08/2026

- 11893-2100 Key Plan
- 11893-2107 Proposed Roads Layout Sheet 1 of 3
- 11893-2108 Proposed Roads Layout Sheet 2 of 3
- 11893-2109 Proposed Roads Layout Sheet 3 of 3
- 11893-2113 Autotrack Analysis Large Car - Sheet 1 of 2
- 11893-2114 Autotrack Analysis Large Car - Sheet 2 of 2
- 11893-2117 Autotrack Analysis FireTruck - Sheet 1 of 2
- 11893-2118 Autotrack Analysis FireTruck - Sheet 2 of 2

Appendix A-II PROBLEM MAP

RECEIVED: 05/08/2026


Problem 2.1
30km/h SLOW ZONE SIGN AS PER TSM SHOWN ENTERING DEVELOPMENT. 50 km/h SPEED SIGN AS PER TSM SHOWN EXITING DEVELOPMENT.
"HOMEZONE" SIGN
R=6.0m
526569.729E
724775.605N
R=6.0m
526566.810E
724771.792N
1600mm THERMOPLASTIC STOP MARKING AS PER TSM (M 114)
R=3.0m
526525.696E
724762.629N
Problem 2.4
R=3.6m
526567.622E
724754.239N
Problem 2.2
R=3.4m
526579.271E
724749.038N
R=3.1m
526523.155E
724752.032N
Problem 2.3
CONTINUOUS THERMOPLASTIC LINE 100mm THICK AS PER TSM AT ALL 'STOP' JUNCTIONS (RRM 001)
BIN STAGING AREA (30 BINS)
R=3.4m
526565.248E
724742.680N
R=3.5m
526576.969E
724737.566N
CONTINUOUS THERMOPLASTIC LINE 200mm THICK AS PER TSM AT ALL 'STOP' JUNCTIONS (RRM 017)
BIN STAGING AREA (24 BINS)
CYCLE YIELD MARKING (RRM115C)
CYCLE YIELD LINE (RRM018C)
HSD ENSIGN BOLLARDS AS PER TYPICAL SITE WORKS DETAILS OR EQUIVALENT
POTENTIAL FUTURE CONNECTIVITY SHOWN IN MAGENTA
750Mmm STOP SIGN AS PER TSM AT ALL 'STOP' JUNCTIONS (RUS 027)
R=3.5m
526558.901E
724683.372N
NOTE:
ALL ROAD MARKING REFERENCES ARE TO BE REPEATED FOR SIMILAR MARKING REPRESENTED ON THE DRAWINGS
NOTE:
ALL ROAD AND HARD-LANDSCAPING SURFACE TO ALIGN WITH LANDSCAPE ARCHITECTS PROPOSED SURFACE FINISHING.
ALL ROAD GULLIES, SILT TRAPS, FLOW CONTROL DEVICES AND ATTENUATION SYSTEMS TO BE INSPECTED REGULARLY AND MAINTAINED, AS APPROPRIATE AND IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS AND GUIDELINES.
THE INFORMATION ON THIS DRAWING IS TO THE TAILTE ÉIREANN - SURVEYING ITM COORDINATE SYSTEM
LEGEND:
Site Boundary
Area Granted Planning By Galway City Council REF: 24/60370
Shared Surface with Delineation (Refer to Landscape for Finishes)
Raised Platform Junction
Blister Tactile Paving
Proposed Dropped Kerb
Proposed Road Sign
Proposed Road Gradient and Road Camber
Proposed Road Level
Proposed Road Gully
Proposed Active Travel Surface
Proposed Corduroy Tactile Paving
Permeable Paving (in-curtilage Parking)
HSD Ensign Bollards
Drainage Kerbs
Printed/Textured Asphalt Band
Cycle Lane
NOTES:
1. FIGURED DIMENSIONS ONLY TO BE TAKEN FROM THIS DRAWING.
2. ALL DRAWINGS TO BE CHECKED BY THE CONTRACTOR ON SITE.
3. ENGINEER/EMPLOYERS REPRESENTATIVE, AS APPROPRIATE, TO BE INFORMED BY THE CONTRACTOR OF ANY DISCREPANCIES BEFORE ANY WORK COMMENCES.
4. THE CONTRACTOR SHALL UNDERTAKE A THOROUGH CHECK FOR THE ACTUAL LOCATION OF ALL SERVICES/UTILITIES, ABOVE AND BELOW GROUND, BEFORE ANY WORK COMMENCES.
5. ALL LEVELS SHOWN RELATE TO ORDNANCE SURVEY DATUM AT MALIN HEAD.
P03 26.06.2026 Road Safety Issue CK MN
P02 07.04.2026 Revised Site Plan CK MN
P01 26.03.2026 Issued For Planning MN RB
Rev Date Description By Chkd.
Client: Kingston Stables Ltd.
Project: Residential Development @Knocknacarra District Centre South Knocknacarra, Galway
Title: Proposed Roads Layout Sheet 1 of 3
Scale @ A1: 1:250 / @A3 1:500
Prepared by: MN
Checked by: RB
Date: March 2026
Drawing Status: Planning
TOBIN
Drawing No.: 11893-2107
Revision: P03
RECEIVED: 05/08/2026
CYAL50514955 © Tailte Éireann – Surveying

Appendix A-III FEEDBACK FORM

RECEIVED: 05/08/2026

Road Safety Audit Feedback Form

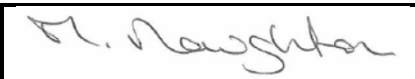
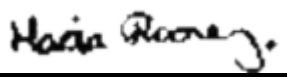
11893- Kingston Stables Ltd.

Residential Development at Kingston, Knocknacarra, Galway.

Audit Stage: Stage 1&2	Route: N/A	Date of Audit: 23/06/26

RECEIVED: 05/08/2026

To be Completed by Designer				To Be Completed by Audit Team Leader
Paragraph No. in Safety Audit Report	Problem accepted (yes/no)	Recommended Measures Accepted (yes /no)	Alternative Measures (describe). Give reason for not accepting recommended measure	Alternative Measures or reasons accepted by auditors (yes /no)
2.1	YES	YES		
2.2	YES	YES		
2.3	YES	YES		
2.4	YES	NO	The area in question is a shared surface/Homezone area and has been designed to promote low vehicle speeds and a pedestrian-priority environment. Soft landscaping is proposed behind the carparking spaces. The previously proposed dropped kerb delineation in front of the parking has been omitted and the surface finish is now continuous across the full width of the space.	Yes

Signed:		**Designer**	**Michael Naughton**	**Date:**	**03/07/2026**
Signed:		**Client**		**Date:**	*03/07/2026*
Signed:		**Audit Team Leader**	**Maria Rooney - TOBIN**	**Date:**	*09/07/2026*

RECEIVED: 05/08/2026

RECEIVED: 05/08/2026

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