22006-01-001

PROPOSED REGIONAL SPORTING FACILITY AT CASTELCARA ROAD CARRICK-ON-SHANNON, Co. LEITRIM.

Traffic Impact Assessment

for

Leitrim County Council

February 2022

ROADPLAN CONSULTING

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1 INTRODUCTION

1 Introduction

1.1 INTRODUCTION

Roadplan Consulting was commissioned by Leitrim County Council to prepare a Traffic Impact Assessment for the proposed Regional Sporting Facility at Carrick-on-Shannon, Co. Leitrim.

In preparing this report, Roadplan Consulting has made reference to

- The *Leitrim County Development Plan 2015 – 2021*
- The Institute of Highways and Transportation *Guidelines on the Preparation of Traffic Impact Assessments*.
- The *TII Transport Assessment Guidelines.*
- The *TII National Traffic Model*.

1.2 OBJECTIVES

The objective of this report is to examine the traffic implications associated with the proposed development in terms of how it can integrate with existing traffic in the area. The report will determine and quantify the extent of additional trips generated by the development, and the impact of such trips on the operational performance of a proposed L3408 / Development Access priority junction and the existing N4 Attirory Roundabout.

1.3 STUDY METHODOLOGY

The methodology adopted for this report is summarised as follows:

- Historical traffic counts were obtained from Leitrim County Council. A 12-hour traffic was carried out at the existing N4 Attirory Roundabout in April 2018.
- Existing Traffic Assessment – A spreadsheet model was created which contains the base year DO-NOTHING traffic count data described above. The traffic count data was used to develop an ARCADY model of the roundabout junction and a PICADY model for the development access.
- Future Year Assessment – The estimated future year traffic volumes on the study area road network, as a result of the increase in background traffic and the additional development related traffic was used to assess the future operational performance of the junction both at the year of opening of the development, 5 and 15 years after opening.
- Parking Requirements – Car parking provision in the proposed development was assessed against the parking standards as set out in 'Leitrim County Development Plan 2015-2021'.

1.4 STRUCTURE OF REPORT

Following this introduction, the report is set out as follows:

- Chapter 2 provides details of the proposed development;
- Chapter 3 provides an overview of the existing traffic conditions and the local road network, identifying any existing issues related to traffic flow or road infrastructure;
- Chapters 4 and 5 outline the analysis as described in the Study Methodology above. The analysis examines trip distribution and resulting junction operational performance with the development in place;
- Chapter 6 addresses road safety, public transport, walking and cycling issues; and
- Chapter 7 presents the conclusions and a summary of the report.

2 PROPOSED DEVELOPMENT

2 Proposed Development

2.1 SITE LOCATION

The proposed site is located on an existing green field site to the northeast of Carrick-On-Shannon town. The proposed site is bounded by two existing GAA pitches (Páirc Séan Mac Diarmada & St. Mary's GAA) to the south, agricultural lands to the north and west and the L3408 Castlecara road to the east as shown on Figure 2.1 'Site Location Map'.

Figure 2.1: Site Location Map

2.2 DESCRIPTION OF PROPOSED DEVELOPMENT

The proposed development consists of a regional sporting facility consisting of one full-size all-weather pitch, 8 lane running track with an internal grass pitch & athletics field, indoor basketball courts, gym, changing rooms, function rooms, physiotherapy rooms, internal equipment storage, external equipment storage, hurling wall, stand & viewing area, canteen, boiler rooms, offices, site & pitch lighting, site parking & set down, landscaping & all associated site works.

Access to the regional sports facility will be via the existing access to St. Mary's GAA grounds onto the L3408 Castlecara Road.

A layout of the proposed development and its access point are shown on the Architect's drawing which is contained in Appendix A – Drawings.

3 EXISTING AND PROPOSED TRAFFIC CONDITIONS

3 Existing and Proposed Traffic Conditions

3.1 EXISTING TRAFFIC FLOWS

Historical traffic count data was obtained at the existing N4 Attirory Roundabout. The count data is provided in Appendix B – Traffic Counts.

The traffic flows during the AM and PM peak hours were abstracted from the surveyed data and are shown in the following tables.

N4 Attirory Roundabout

AM Peak – 2018 Base Flows

	N4 (west)	Castlecara Rd	N4 (east)	**Totals**
N4 (west)	0	144	338	**482**
Castlecara Rd	139	0	46	**185**
N4 (east)	534	82	0	**616**
Totals	**673**	**226**	**384**	**1283**

PM Peak – 2018 Base Flows

	N4 (west)	Castlecara Rd	N4 (east)	**Totals**
N4 (west)	0	229	550	**779**
Castlecara Rd	172	0	125	**297**
N4 (east)	447	65	0	**512**
Totals	**619**	**294**	**675**	**1588**

Traffic counts at the existing N4 Attirory Roundabout were carried out in April 2018. In order to robustly analysis junction capacity a growth factor for both the AM and PM peaks has been applied to the 2018 traffic flows. The TII National Traffic Model was assessed to determine the predicted traffic growth from 2019 to 2022 for this zone. It predicted a traffic growth of 4.20% between 2018 to 2022.

A summary of the count data for the AM and PM peak hour flows is contained in Appendix C – Traffic Flow Sheets.

3.2 EXISTING ROAD NETWORK

The L3408 Castlecara Road has the following characteristics at the location of the access to the Regional Sporting Facility:

- It is a single carriageway road that is approximately 6.5m wide which includes 1.5m on-road cycle lanes.
- There is a 2m wide footpath on the western side of the carriageway.
- There is a raised pedestrian zebra crossing located to the north of the existing access to At. Marys GAA grounds which provides access to the development.
- To the north of the access to the sports facility there is a off road cycle track provided on the eastern side of the L3408.
- The speed limit on the L3408 Castlecara Road is 50km/h.

3.3 ROAD COLLISIONS

Information on road collisions was taken from the Road Safety Authority website and is provided hereunder in Figure 3.3.

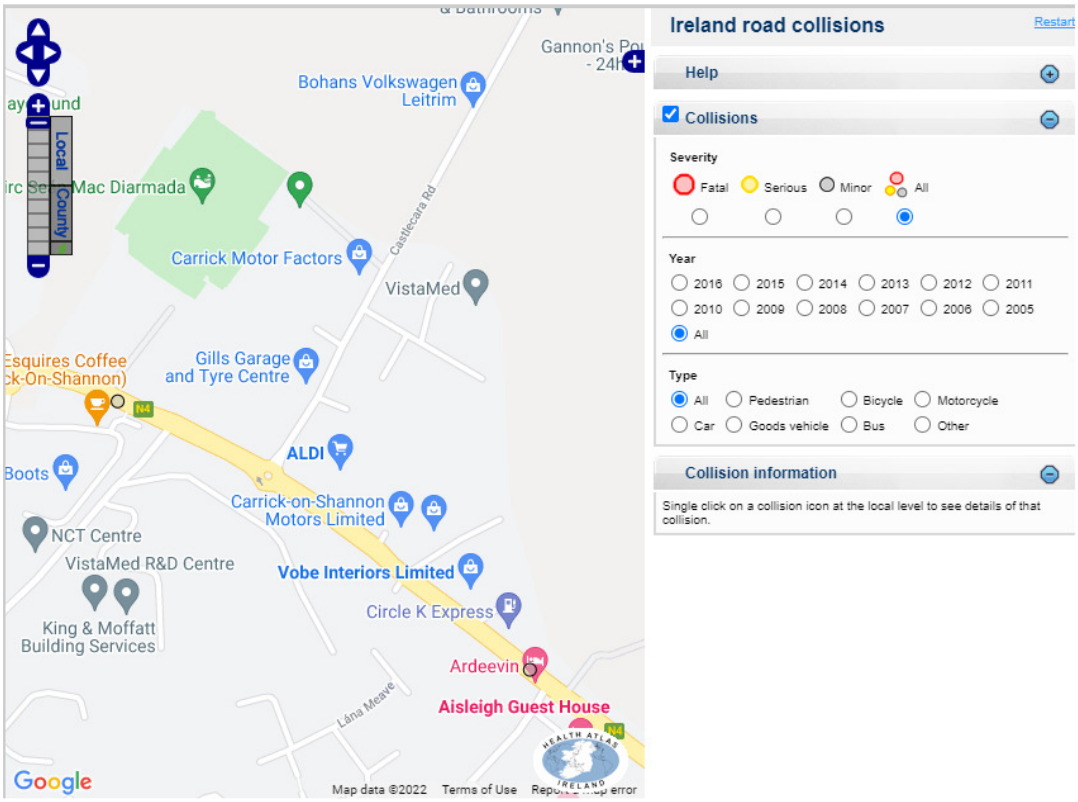


Fig 3.1: Road collisions

There are no collisions recorded at the N4 Attirory Roundabout, at the proposed access to the Regional Sports Facility or along the L3408 Castlecara Road in the period of twelve years (from 2005 to 2016).

3.4 PROPOSED ROAD NETWORK IMPROVEMENTS

The N4 Carrick-on-Shannon to Dromod Project has been prioritised for delivery under the National Development Plan 2018-2027 and is currently being progressed through pre-appraisal and early planning stages.

The section of the N4 under consideration passes through both rural and urban environments, is approximately 21km long and extends from Drumharlow townland north of Carrick-on-Shannon to Faulties townland south of Aghamore. However, there is no definite date for the commencement of construction.

4 TRAFFIC GENERATION & TRIP DISTRIBUTION

4 Traffic Generation and Trip Distribution

4.1 DEVELOPMENT TRIP GENERATION

Achieving an accurate estimate of the anticipated level of development trips for all modes of travel is best done in this instance by assessing individual usage of the proposed sports facility. Trips generated by the proposed development have therefore been predicted from first principles as follows:

Proposed Facilities

The proposed sports facility, as previously stated, will have one full-size all-weather pitch, 8 lane running track with an internal grass pitch & athletics field and indoor basketball courts. The full-size all-weather pitch will cater for GAA, rugby and soccer.

The sports facility will be used by the local GAA clubs, the rugby club, the local soccer clubs, the Carrick-on-Shannon athletic club and the local basketball club. It should be noted that these clubs already have exist facilities that caters for match day attendance. The sports facility will be used as a training facility with challenge matches being held occasionally at the facility. The attendance at these matches would be low.

Due to the nature of the development, training and matches will take place mainly in the afternoon / evening time with low usage during the AM peak. The usage level of the sports facility would therefore be low in the AM peak

The Carrick-on-Shannon athletics club will also be using the sports facility. Over the last number of years, they have on average 250 members which are mainly juvenile members. Roadplan Consulting have been informed by the club secretary that training usually occurs in the evening time in 1-hour time slots with approximately 60 athletics training during each time slot.

The critical assessment periods are as follows:

- The AM Peak: Although traffic generation from the sports facility will be low at this time traffic flows are high at the N4 Attirory roundabout and it is therefore necessary to consider the impact of the sports facility during this period.
- The PM Peak: The sports facility will be in high demand during the PM peak and it is therefore necessary to consider the impact on the N4 Attirory roundabout and the proposed development access during this period

The is a TII traffic counter (TMU N04 151.0E) located on the N4 to the north of Carrick-on-Shannon town. The Average Annual Daily Traffic flows indicates the traffic levels during the weekday are higher than the weekend traffic and therefore the critical time period for the assessment would be weekday traffic.

4.1.1 AM Peak Trip Generation

As noted above the Carrick-on-Shannon athletics club will not be using the sports facility during the AM peak. However, some local club teams will occasionally train during the AM peak hour. The predicted number of people that would use the sports facility during the AM peak hour is shown in the tables below.

	All-weather Pitch	**Soccer Pitch**
No. of Players	30 per panel	22 per panel
No. of Mentors	5 per panel	3 per panel
No of Observers	5	5
Total	40 persons	30 persons

Assuming that all attendees arrive by car at an occupancy rate of 1.5 persons per vehicle the number of car trips arriving to the sports facility is 70 persons / 1.5 = 47 car trips.

It is assumed that all arrivals will arrive and depart during the AM peak hour.

To summarise, the predicted trips to and from the proposed sports facility during the AM peak hour are:

Trip Generation – Total Development

	Trips to Development	**Trips from Development**
08:00 - 09:00	47	47

4.1.2 PM Peak Trip Generation

The daily usage of the facility will relate to training and it is considered that it could be fully operational during the PM peak hour.

The maximum number of people that can use the facility at any one time is shown in the table below:

	All-weather Pitch	**Soccer Pitch**	**Running Track**	**Basketball Court**
No. of Pitches/Courts	1	1	1	2
No. of Players	30 per panel	22 per panel	60 People	12 per panel
No. of Mentors	5 per panel	3 per panel	5	3
No of Observers	5	5	10	5
Total	40 persons	30 persons	75 persons	40 persons

Assuming all pitches and the track are in full simultaneous use at that time, the total number of people that will arrive to the proposed sports campus is 185 persons.

Assuming that all attendees arrive by car at an occupancy rate of 1.5 persons per vehicle the number of car trips arriving to the development is 185 persons / 1.5 = 123 car trips.

Assuming that some car trips would be for drop-off purposes (and would therefore depart) and that there would be some turnover in the use of pitches/courts (also entailing departure trips) the total number of departure trips from the development could also be taken to be 123.

To summarise, the predicted trips to and from the proposed sports facility during the PM peak hour are:

Trip Generation – Total Development

	Trips to Development	**Trips from Development**
17:00 - 18:00	123	123

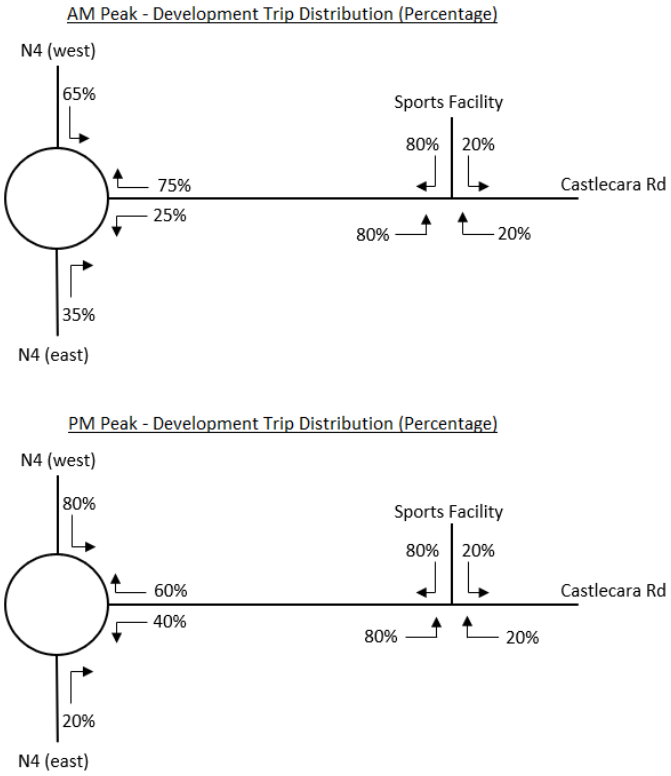
The proposed development will also have a sports building consisting a gym, changing rooms, function rooms, physiotherapy rooms and internal equipment storage.

The facilities within the sports building will be used by the local sports clubs in conjunction with the use of pitches and running track and therefore it is not expected to generate any additional traffic.

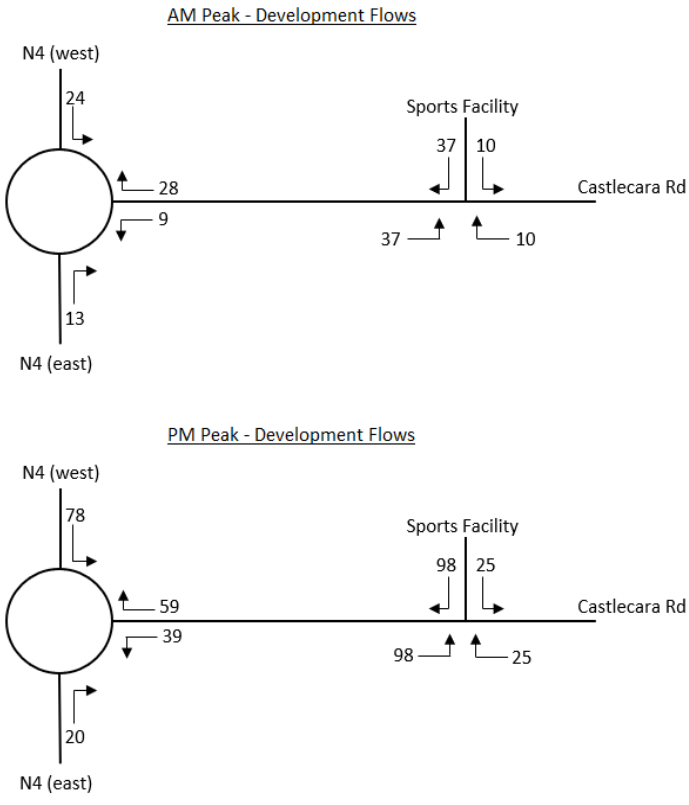
4.2 TRIP DISTRIBUTION

It is considered that the proposed sports facility development traffic will distribute to and from the Carrick-on-Shannon town direction primarily. On that basis the predicted distribution for the sports facility traffic is 80% to and from the Carrick-on-Shannon town direction (Castlecara Rd south) and 20% to and from the Castlecara Rd north direction.

The following diagrams show the existing and proposed traffic distribution percentage for the AM and PM peak at the proposed access to the sports facility and at the existing N4 Attirory roundabout.



Using the proposed directional splits shown above and the trips generated by the proposed development outlined in 4.1, the following diagrams show the turning movements of predicted development traffic at the proposed access to the sports facility and the existing N4 Attirory roundabout during the AM and PM peak hours:



4.3 FUTURE YEAR TRAFFIC GROWTH

The TII issues a range of forecasts: low growth, medium growth and high growth. The implementation of policies relating to Smarter Travel and to public transport will act as a deterrent to high growth in car-based travel. Low growth factors are however likely to be equally unrealistic at present in the Carrick-on-Shannon area, so we have used medium growth factors in our assessment.

The zone in which the site is located is numbered 102 in the TII National Traffic Model. The growth factors are as follows:

Zone	2020 Existing	2024 development completion	2029 5 years after dev. completion	2039 15 years after dev. completion
102	1	2.07%	7.47%	7.84%

These percentages have been used to predict the increase in background traffic that will occur in future years. Full summary tables and predicted future traffic flows for 2024, 2029 and 2039 future years are included in Appendix C – Traffic Flow Sheets.

5 OPERATIONAL ASSESSMENTS

5 Operational Assessments

5.1 INTRODUCTION

Traffic generated by the proposed development will have some effect on the local road network surrounding the site. The following junctions were assessed:

- the proposed Castlecara Rd / Sports Facility priority junction
- the existing N4 Attirory roundabout

5.2 CASTLECARA RD / SPORTS FACILITY PRIORITY JUNCTION

Capacity assessments have been undertaken using the computer program PICADY for the AM and PM peak hours.

The following table summarises the effects that the proposed development will have on this junction in 2024, 2029 and 2039 using the existing and predicted traffic flows shown in Appendix C – Traffic Flow Sheets. Full PICADY printouts are provided in Appendix D – PICADY Results.

The parameters shown in the table are defined as follows:

Ratio of Flow to Capacity (RFC) is a factor indicating the flow on a junction arm relative to its capacity. An RFC of 1.0 means the junction has reached its ultimate capacity and an RFC of 0.85 means that the junction has reached its reserve capacity.

Avg. Queue is the average number of vehicles queued over the time period on the junction approach.

Queue delay is the average number of seconds delay to each vehicle in the time period.

Castlecara Road / Sports Facility Priority Junction – Capacity Assessment

Year	Period	Approach	Predicted RFC value	Avg Queue (vehicles)	Queue delay (secs./veh.)
2024 With Development	AM Peak	Castlecara Rd (south)	-	-	-
		Sports Facility	0.13	0	11
		Castlecara Rd (north)	0.02	0	5
	PM Peak	Castlecara Rd (south)	-	-	-
		Sports Facility	0.40	1	17
		Castlecara Rd (north)	0.07	0	5
2029 With Development	AM Peak	Castlecara Rd (south)	-	-	-
		Sports Facility	0.13	0	11
		Castlecara Rd (north)	0.02	0	5
	PM Peak	Castlecara Rd (south)	-	-	-
		Sports Facility	0.40	1	18
		Castlecara Rd (north)	0.07	0	5
2039 With Development	AM Peak	Castlecara Rd (south)	-	-	-
		Sports Facility	0.13	0	11
		Castlecara Rd (north)	0.02	0	5
	PM Peak	Castlecara Rd (south)	-	-	-
		Sports Facility	0.40	1	18
		Castlecara Rd (north)	0.07	0	5

In 2024, 2029 and 2039 with the sports facility operational and an increase in background flows the proposed access will operate within capacity with minimal queues and delays during the AM and PM peak hours.

5.3 N4 ATTIRORY ROUNDABOUT

Capacity assessments have been undertaken using the computer program ARCADY for the AM and PM peak hours.

The following table summarise the existing situation and the effects that the proposed development will have on this junction in 2024, 2029 and 2039 using the existing and predicted traffic flows shown in Appendix C – Traffic Flow Sheets. Full ARCADY printouts are provided in Appendix E – ARCADY Results.

The parameters shown in the table are defined as follows:

Ratio of Flow to Capacity (RFC) is a factor indicating the flow on a junction arm relative to its capacity. An RFC of 1.0 means the junction has reached its ultimate capacity and an RFC of 0.85 means that the junction has reached its reserve capacity.

Avg. Queue is the average number of vehicles queued over the time period on the junction approach.

Queue delay is the average number of seconds delay to each vehicle in the time period.

N4 Attirory Roundabout – Capacity Assessment

Year	Period	Approach	Predicted RFC value	Avg Queue (vehicles)	Queue delay (secs./veh.)
2022 Base Flows	AM Peak	N4 (west)	0.51	1	7
		Castlecara Road	0.24	0	6
		N4 (east)	0.72	3	13
	PM Peak	N4 (west)	0.82	4	18
		Castlecara Road	0.47	1	9
		N4 (east)	0.62	2	10
2024 No Development	AM Peak	N4 (west)	0.52	1	7
		Castlecara Road	0.25	0	6
		N4 (east)	0.74	3	14
	PM Peak	N4 (west)	0.84	5	20
		Castlecara Road	0.48	1	10
		N4 (east)	0.63	2	10
2024 With Development	AM Peak	N4 (west)	0.55	1	8
		Castlecara Road	0.30	0	6
		N4 (east)	0.77	3	16
	PM Peak	N4 (west)	0.93	10	38
		Castlecara Road	0.63	2	13
		N4 (east)	0.68	2	12
2029 No Development	AM Peak	N4 (west)	0.55	1	8
		Castlecara Road	0.27	0	6
		N4 (east)	0.78	4	17
	PM Peak	N4 (west)	0.88	7	26
		Castlecara Road	0.52	1	11
		N4 (east)	0.67	2	11
2029 With Development	AM Peak	N4 (west)	0.58	1	8
		Castlecara Road	0.32	1	6
		N4 (east)	0.81	4	20
	PM Peak	N4 (west)	0.97	16	59
		Castlecara Road	0.67	2	15
		N4 (east)	0.72	3	14

Year	Period	Approach	Predicted RFC value	Avg Queue (vehicles)	Queue delay (secs./veh.)
2039 No Development	AM Peak	N4 (west)	0.55	1	8
		Castlecara Road	0.27	0	6
		N4 (east)	0.79	4	17
	PM Peak	N4 (west)	0.88	7	30
		Castlecara Road	0.52	1	11
		N4 (east)	0.67	2	12
2039 With Development	AM Peak	N4 (west)	0.58	1	8
		Castlecara Road	0.32	1	6
		N4 (east)	0.81	4	20
	PM Peak	N4 (west)	0.97	17	60
		Castlecara Road	0.67	2	15
		N4 (east)	0.72	3	14

The summary predictions shown in the table above indicate that currently the existing N4 Attirory roundabout operates within capacity with queues and delays during the AM and PM peak period.

In 2024, 2029 and 2039 with no sports facility in place and an increase in background flows only the N4 Attirory roundabout will operate within capacity with queues and delays with a maximum RFC value of 0.88 during the PM peak hour in 2039.

In 2024, 2029 and 2039 with the sports facility operational and an increase in background flows the N4 Attirory roundabout will operate within capacity with queues and delays with a maximum RFC value of 0.97 during the PM peak hour in 2039.

5.4 OPERATIONAL ASSESSMENTS CONCLUSIONS

Junction analyses to assess the effects of traffic generated by the proposed development have been undertaken for the proposed Castlecara Road / Sports Facility priority junction and the existing N4 Attirory roundabout. The analysis shows that:

- The proposed Castlecara Road / Sports Facility priority junction will operate within capacity with minimal queues and delays when the proposed sports facility is completed in 2024, year of opening, 2029, five years after opening and in 2039, fifteen years after opening.

- The existing N4 Attirory roundabout currently operates at within capacity with queues and delays during the AM and PM peak hours.

- The existing N4 Attirory roundabout will continue to operate within capacity with queues and delays when the proposed sports facility is completed in 2024, year of opening, 2029, five years after opening and in 2039, fifteen years after opening.

6 ROAD SAFETY, PEDESTRIANS AND INTERNAL LAYOUT

6 Road Safety, Pedestrians and Internal Layout

6.1 ROAD SAFETY

The Design Manual for Urban Roads and Streets indicates that for a 50km/h speed limit a sightline of 45m at a 2.4m set-back shall be achieved in both directions.

At the proposed access to the sports facility a 45m sightline at a 2.4m set-back can be achieved in both directions. The visibility splay to the north and south of the proposed access is measured from a 2.4m set-back to the nearside kerb of the road.

6.2 PEDESTRIANS

There is an existing footpath provided along either side of the Castlecara Road which will cater for pedestrian movement from Carrick-on-Shannon town to the sports facility.

It is proposed to provide footpaths within the proposed development which will connect to the existing footpaths on the Castlecara Road. The internal footpath will extend from the Castlecara Road to the main entrance to the sports building.
new housing development which will cater for pedestrian movement within the development.

6.3 INTERNAL LAYOUT

Within the development the spine road is 6m wide. Parking bays are 2.5m wide x 5m long.

A bus set-down area is provided within the car park adjacent to the sports building. Bus turning can be catered for within the proposed development.

HGV access to the site will be via the proposed access onto the Castlecara Road. The types of HGV's accessing the site would be emergency vehicles and a refuse vehicle. The internal layout can facilitate HGV movement within the site.

7 CONCLUSIONS

7 Conclusions

The main conclusions of this study are summarised as follows:

- The proposed Castlecara Road / Sports Facility priority junction will operate within capacity with minimal queues and delays when the proposed sports facility is completed in 2024, year of opening, 2029, five years after opening and in 2039, fifteen years after opening.
- The existing N4 Attirory roundabout currently operates at within capacity with queues and delays during the AM and PM peak hours.
- The existing N4 Attirory roundabout will continue to operate within capacity with queues and delays when the proposed sports facility is completed in 2024, year of opening, 2029, five years after opening and in 2039, fifteen years after opening.
- Sightlines at the proposed access onto Castlecara Road are in accordance with the Design Manual for Urban Roads and Street.
- The internal layout of the development caters for access and movement of vulnerable road users, car, buses and HGV's.
- This assessment indicates that the proposed development can be accommodated by the existing road network, as described in this Traffic Impact Assessment.

APPENDICES

APPENDIX A – DRAWINGS

Site Location Map

SCALE: 1 : 1000

Notes:

1. This drawing is the copyright of Collins Boyd Engineering Ltd. It is a confidential document and must not be copied, used or its contents divulged without prior written permission.
2. DO NOT SCALE, use figured dimensions only. If in doubt, ask. All dimensions to be checked by contractor on site, any errors or discrepancies to be reported to the Consultants.
3. All works to be carried out in accordance with the current building control act and building regulations.
4. Clients are obliged to forward a commencement notice to the building control office 14 days prior to the commencement of any works on site.
5. Consultants to be informed immediately of any discrepancies before work proceeds.

NOT FOR CONSTRUCTION

THIS DRAWING IS FOR PLANNING PURPOSES ONLY

Revisions A

Rev	Date	Description	Issued by
A	04/01/2022	Revised For Part 8	MM

Client:
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Job Title:
Shannonside Recreational Centre

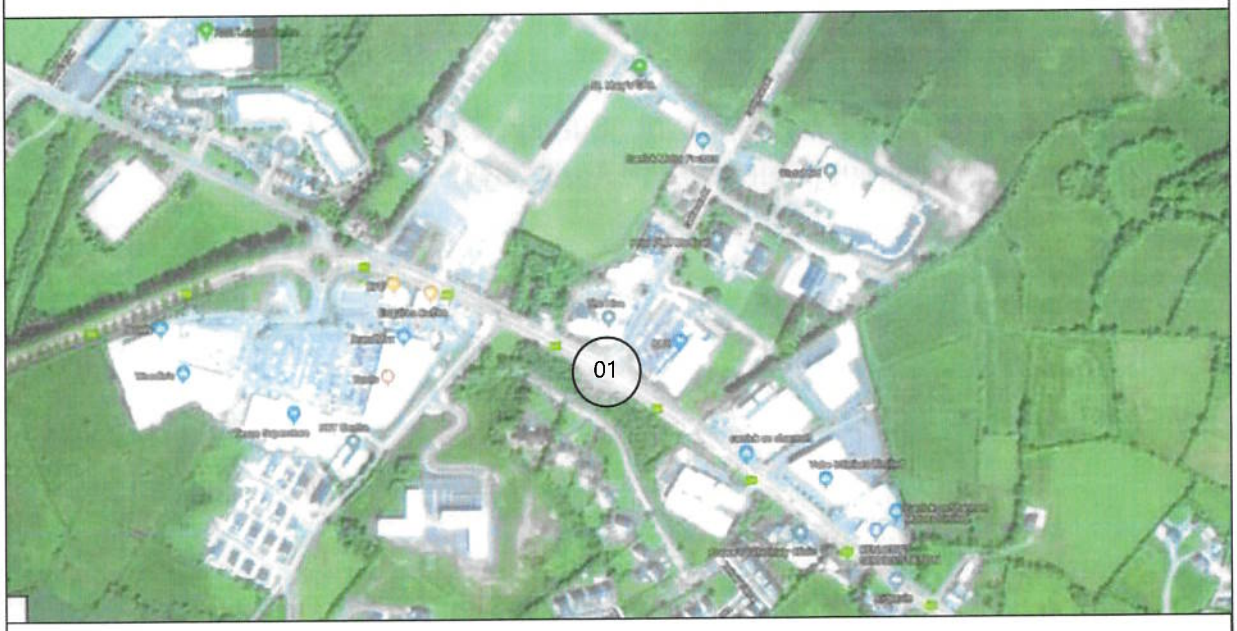
Drawing Title:
001 Site Location Map

Status: PLANNING
Date: 04.01.2022
Scale: 1 : 1000
Drawn by: SH

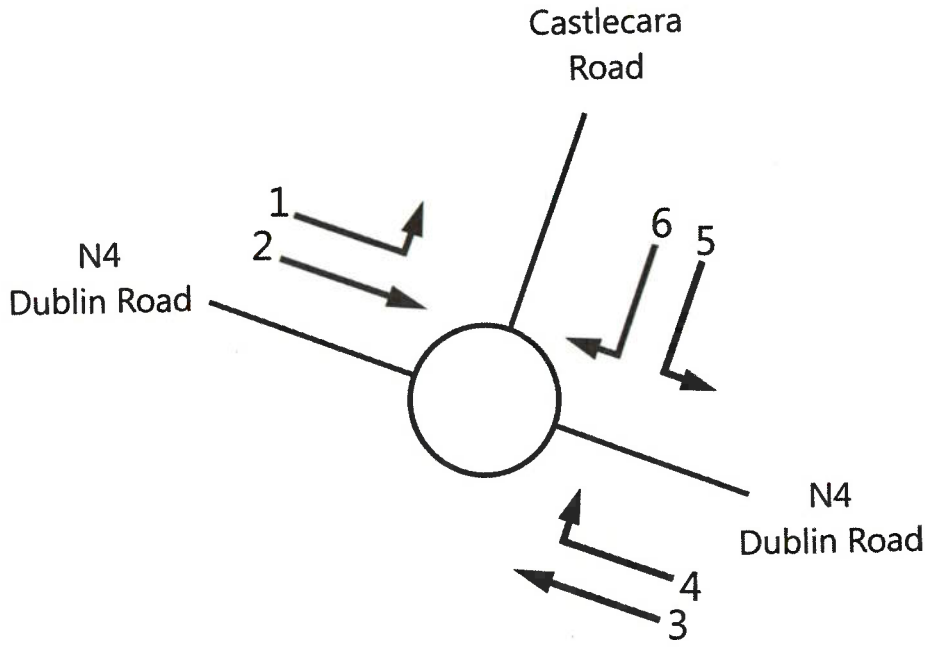
JOB No.	DRG No.	REV.
20.153	001	A

APPENDIX B – TRAFFIC COUNTS

Site Location



Movement Numbering



Job number: TRA/18/043	Job Date: 11th April 2018	Drawing No: TRA/18/043-01	traffinomics.ie
Client: Alan Lipscombe	Job Day: Wednesday	Author: SPW	

TRAFFINOMICS LIMITED

CARRICK ON SHANNON TRAFFIC COUNT
MANUAL CLASSIFIED JUNCTION TURNING COUNT

APRIL 2018
ATH/18/043

SITE: 01

DATE: 11th April 2018

LOCATION: N4 Dublin Road/Castlecara Road

DAY: Wednesday

	MOVEMENT 1							MOVEMENT 2							MOVEMENT 3						
TIME	CAR	LGV	OGV1	OGV2	BUS	TOT	PCU	CAR	LGV	OGV1	OGV2	BUS	TOT	PCU	CAR	LGV	OGV1	OGV2	BUS	TOT	PCU
7:00	7	2	1	0	0	10	11	21	15	1	3	0	40	44	15	9	0	4	0	28	33
7:15	10	5	0	0	0	15	15	39	7	0	4	1	51	57	32	10	2	2	0	46	50
7:30	15	8	0	0	0	23	23	47	13	0	5	1	66	74	35	7	1	6	0	49	57
7:45	22	8	0	0	0	30	30	37	19	6	3	0	65	72	64	9	3	4	1	81	89
8:00	11	0	2	0	0	13	14	52	11	2	0	1	66	68	67	10	1	2	0	80	83
8:15	30	3	0	1	2	36	39	67	13	1	2	2	85	90	66	10	2	6	1	85	95
8:30	34	6	0	1	2	43	46	70	11	0	3	3	87	94	99	11	1	3	1	115	120
8:45	40	4	0	0	2	46	48	72	13	2	5	2	94	104	138	15	2	4	1	160	167
9:00	24	5	0	0	0	29	29	57	9	0	2	1	69	73	106	12	5	4	3	130	141
9:15	23	2	0	1	0	26	27	72	13	0	3	0	88	92	108	19	1	0	1	129	131
9:30	26	3	0	0	0	29	29	51	10	2	3	2	68	75	80	16	2	5	2	105	115
9:45	24	3	0	1	0	28	29	63	7	0	4	1	75	81	105	12	2	4	1	124	131
P/TOT							151							362							559

	MOVEMENT 1							MOVEMENT 2							MOVEMENT 3						
TIME	CAR	LGV	OGV1	OGV2	BUS	TOT	PCU	CAR	LGV	OGV1	OGV2	BUS	TOT	PCU	CAR	LGV	OGV1	OGV2	BUS	TOT	PCU
16:00	66	6	0	0	1	73	74	116	13	2	4	2	137	145	73	13	1	0	0	87	88
16:15	40	3	0	0	0	43	43	91	12	1	3	1	108	113	77	12	1	2	1	93	97
16:30	36	4	1	0	0	41	42	94	14	3	1	1	113	117	72	14	1	2	0	89	92
16:45	29	9	0	0	0	38	38	73	14	3	4	0	94	101	98	13	4	4	0	119	126
17:00	58	7	0	0	0	65	65	116	16	1	3	0	136	140	75	21	2	1	2	101	105
17:15	47	4	0	0	0	51	51	116	10	1	0	0	127	128	107	18	3	1	3	132	138
17:30	43	2	0	0	0	45	45	98	14	2	4	1	119	126	89	15	0	2	0	106	109
17:45	51	7	0	0	0	58	58	122	16	0	4	2	144	151	95	7	2	1	1	106	109
18:00	72	2	0	0	1	75	76	144	13	1	2	0	160	163	85	12	2	4	0	103	109
18:15	36	3	0	0	0	39	39	96	10	2	0	0	108	109	94	21	5	3	0	123	129
18:30	25	4	0	0	0	29	29	68	9	2	3	0	82	87	61	11	2	2	0	76	80
18:45	44	5	0	0	0	49	49	73	7	0	0	0	80	80	89	7	1	3	0	100	104
P/TOT							230							568							465

TRAFFINOMICS LIMITED

CARRICK ON SHANNON TRAFFIC COUNT
MANUAL CLASSIFIED JUNCTION TURNING COUNT

APRIL 2018
ATH/18/043

SITE: 01

DATE: 11th April 2018

LOCATION: N4 Dublin Road/Castlecara Road

DAY: Wednesday

	MOVEMENT 4							MOVEMENT 5							MOVEMENT 6						
TIME	CAR	LGV	OGV1	OGV2	BUS	TOT	PCU	CAR	LGV	OGV1	OGV2	BUS	TOT	PCU	CAR	LGV	OGV1	OGV2	BUS	TOT	PCU
7:00	3	1	0	0	0	4	4	0	0	1	0	0	1	2	4	2	0	0	0	6	6
7:15	11	4	1	0	0	16	17	3	1	0	0	0	4	4	12	1	0	0	0	13	13
7:30	8	2	0	0	0	10	10	5	1	0	0	0	6	6	7	2	1	0	1	11	13
7:45	15	4	1	0	0	20	21	3	1	0	0	0	4	4	7	2	1	0	0	10	11
8:00	12	4	1	0	0	17	18	6	3	0	0	0	9	9	16	4	1	0	1	22	24
8:15	17	1	1	0	0	19	20	2	0	0	1	0	3	4	12	2	0	0	0	14	14
8:30	12	2	1	0	1	16	18	5	0	0	0	1	6	7	20	3	0	0	1	24	25
8:45	21	4	1	0	0	26	27	10	1	0	0	2	13	15	45	5	0	0	2	52	54
9:00	22	4	0	0	0	26	26	12	2	2	1	0	17	19	31	5	0	0	0	36	36
9:15	13	1	0	0	0	14	14	7	3	0	0	0	10	10	24	2	0	1	0	27	28
9:30	15	3	0	1	1	20	22	11	1	0	0	0	12	12	22	4	2	0	0	28	29
9:45	3	1	0	0	0	4	4	11	3	2	1	0	17	19	38	4	0	2	0	44	47
P/TOT							84							51							143

	MOVEMENT 4							MOVEMENT 5							MOVEMENT 6						
TIME	CAR	LGV	OGV1	OGV2	BUS	TOT	PCU	CAR	LGV	OGV1	OGV2	BUS	TOT	PCU	CAR	LGV	OGV1	OGV2	BUS	TOT	PCU
16:00	17	1	0	0	0	18	18	21	2	0	0	1	24	25	57	10	0	2	0	69	72
16:15	10	0	1	0	0	11	12	16	0	1	0	0	17	18	44	3	0	0	0	47	47
16:30	11	1	1	1	0	14	16	9	5	0	1	1	16	18	32	4	3	0	0	39	41
16:45	14	3	0	0	0	17	17	10	3	0	0	0	13	13	31	5	1	0	0	37	38
17:00	11	2	0	0	0	13	13	39	4	0	0	0	43	43	52	10	0	0	0	62	62
17:15	9	4	0	0	0	13	13	34	3	0	0	0	37	37	36	6	0	0	0	42	42
17:30	15	1	1	0	0	17	18	18	7	0	1	0	26	27	36	7	0	0	0	43	43
17:45	20	3	1	0	0	24	25	18	4	0	0	0	22	22	30	1	0	0	0	31	31
18:00	8	2	0	0	1	11	12	32	8	0	0	0	40	40	45	10	1	0	0	56	57
18:15	7	1	0	0	0	8	8	13	5	0	0	1	19	20	29	8	0	0	0	37	37
18:30	5	3	0	0	0	8	8	11	1	0	0	0	12	12	31	1	0	0	0	32	32
18:45	14	0	1	0	0	15	16	12	1	0	0	0	13	13	26	1	0	0	0	27	27
P/TOT							67							126							173

APPENDIX C – TRAFFIC FLOW SHEETS

N4 Attirory Roundabout - AM Peak Hour

2018 AM Peak - Existing Flows

	N4 (west)	Castlecara Rd	N4 (east)	**Totals**
N4 (west)	0	144	338	**482**
Castlecara Rd	139	0	46	**185**
N4 (east)	534	82	0	**616**
Totals	**673**	**226**	**384**	**1283**

2022 AM Peak - Base Flows + 4.20%

	N4 (west)	Castlecara Rd	N4 (east)	**Totals**
N4 (west)	0	150	352	**502**
Castlecara Rd	145	0	48	**193**
N4 (east)	556	85	0	**642**
Totals	**701**	**235**	**400**	**1337**

AM Peak - Development Flows

	N4 (west)	Castlecara Rd	N4 (east)	**Totals**
N4 (west)	0	24	0	**24**
Castlecara Rd	28	0	9	**37**
N4 (east)	0	13	0	**13**
Totals	**28**	**37**	**9**	**74**

2024 AM Peak - No Development (2022 Base Flows + 2.07%)

	N4 (west)	Castlecara Rd	N4 (east)	**Totals**
N4 (west)	0	153	359	**513**
Castlecara Rd	148	0	49	**197**
N4 (east)	568	87	0	**655**
Totals	**716**	**240**	**408**	**1365**

2024 AM Peak - With Development

	N4 (west)	Castlecara Rd	N4 (east)	**Totals**
N4 (west)	0	177	359	**537**
Castlecara Rd	176	0	58	**234**
N4 (east)	568	100	0	**668**
Totals	**744**	**277**	**417**	**1439**

2029 AM Peak - No Development (2022 Base Flows + 7.47%)

	N4 (west)	Castlecara Rd	N4 (east)	**Totals**
N4 (west)	0	161	379	**540**
Castlecara Rd	156	0	52	**207**
N4 (east)	598	92	0	**690**
Totals	**754**	**253**	**430**	**1437**

2029 AM Peak - With Development

	N4 (west)	Castlecara Rd	N4 (east)	**Totals**
N4 (west)	0	185	379	**564**
Castlecara Rd	184	0	61	**244**
N4 (east)	598	105	0	**703**
Totals	**782**	**290**	**439**	**1511**

2039 AM Peak - No Development (2022 Base Flows + 7.84%)

	N4 (west)	Castlecara Rd	N4 (east)	**Totals**
N4 (west)	0	162	380	**542**
Castlecara Rd	156	0	52	**208**
N4 (east)	600	92	0	**692**
Totals	**756**	**254**	**431**	**1442**

2039 AM Peak - With Development

	N4 (west)	Castlecara Rd	N4 (east)	**Totals**
N4 (west)	0	186	380	**566**
Castlecara Rd	184	0	61	**245**
N4 (east)	600	105	0	**705**
Totals	**784**	**291**	**440**	**1516**

Proposed Castlecara Rd / Sports Facility Priority Junction - AM Peak Hour

2018 AM Peak - Base Flows

	Castlecara Rd (south)	Sports Facility	Castlecara Rd (north)	**Totals**
Castlecara Rd (south)	0	0	226	**226**
Sports Facility	0	0	0	**0**
Castlecara Rd (north)	185	0	0	**185**
Totals	**185**	**0**	**226**	**411**

2022 AM Peak - Base Flows + 4.20%

	Castlecara Rd (south)	Sports Facility	Castlecara Rd (north)	**Totals**
Castlecara Rd (south)	0	0	235	**235**
Sports Facility	0	0	0	**0**
Castlecara Rd (north)	193	0	0	**193**
Totals	**193**	**0**	**235**	**428**

AM Peak - Development Flows

	Castlecara Rd (south)	Sports Facility	Castlecara Rd (north)	**Totals**
Castlecara Rd (south)	0	37	0	**37**
Sports Facility	37	0	10	**47**
Castlecara Rd (north)	0	10	0	**10**
Totals	**37**	**47**	**10**	**94**

2024 AM Peak - No Development (2022 Base Flows + 2.07%)

	Castlecara Rd (south)	Sports Facility	Castlecara Rd (north)	**Totals**
Castlecara Rd (south)	0	0	240	**240**
Sports Facility	0	0	0	**0**
Castlecara Rd (north)	197	0	0	**197**
Totals	**197**	**0**	**240**	**437**

2024 AM Peak - With Development

	Castlecara Rd (south)	Sports Facility	Castlecara Rd (north)	**Totals**
Castlecara Rd (south)	0	37	240	**277**
Sports Facility	37	0	10	**47**
Castlecara Rd (north)	197	10	0	**207**
Totals	**234**	**47**	**250**	**531**

2029 AM Peak - No Development (2022 Base Flows + 7.47%)

	Castlecara Rd (south)	Sports Facility	Castlecara Rd (north)	**Totals**
Castlecara Rd (south)	0	0	253	**253**
Sports Facility	0	0	0	**0**
Castlecara Rd (north)	207	0	0	**207**
Totals	**207**	**0**	**253**	**460**

2029 AM Peak - With Development

	Castlecara Rd (south)	Sports Facility	Castlecara Rd (north)	**Totals**
Castlecara Rd (south)	0	37	253	**290**
Sports Facility	37	0	10	**47**
Castlecara Rd (north)	207	10	0	**217**
Totals	**244**	**47**	**263**	**554**

2039 AM Peak - No Development (2022 Base Flows + 7.84%)

	Castlecara Rd (south)	Sports Facility	Castlecara Rd (north)	**Totals**
Castlecara Rd (south)	0	0	254	**254**
Sports Facility	0	0	0	**0**
Castlecara Rd (north)	208	0	0	**208**
Totals	**208**	**0**	**254**	**462**

2039 AM Peak - With Development

	Castlecara Rd (south)	Sports Facility	Castlecara Rd (north)	**Totals**
Castlecara Rd (south)	0	37	254	**291**
Sports Facility	37	0	10	**47**
Castlecara Rd (north)	208	10	0	**218**
Totals	**245**	**47**	**264**	**556**

Proposed Castlecara Rd / Sports Facility Priority Junction - PM Peak Hour

2018 PM Peak - Base Flows

	Castlecara Rd (south)	Sports Facility	Castlecara Rd (north)	**Totals**
Castlecara Rd (south)	0	0	294	**294**
Sports Facility	0	0	0	**0**
Castlecara Rd (north)	297	0	0	**297**
Totals	**297**	**0**	**294**	**591**

2022 AM Peak - Base Flows + 4.20%

	Castlecara Rd (south)	Sports Facility	Castlecara Rd (north)	**Totals**
Castlecara Rd (south)	0	0	306	**306**
Sports Facility	0	0	0	**0**
Castlecara Rd (north)	309	0	0	**309**
Totals	**309**	**0**	**306**	**616**

PM Peak - Development Flows

	Castlecara Rd (south)	Sports Facility	Castlecara Rd (north)	**Totals**
Castlecara Rd (south)	0	98	0	**98**
Sports Facility	98	0	25	**123**
Castlecara Rd (north)	0	25	0	**25**
Totals	**98**	**123**	**25**	**246**

2024 PM Peak - No Development (2022 Base Flows + 2.07%)

	Castlecara Rd (south)	Sports Facility	Castlecara Rd (north)	**Totals**
Castlecara Rd (south)	0	0	313	**313**
Sports Facility	0	0	0	**0**
Castlecara Rd (north)	316	0	0	**316**
Totals	**316**	**0**	**313**	**629**

2024 PM Peak - With Development

	Castlecara Rd (south)	Sports Facility	Castlecara Rd (north)	**Totals**
Castlecara Rd (south)	0	98	313	**411**
Sports Facility	98	0	25	**123**
Castlecara Rd (north)	316	25	0	**341**
Totals	**414**	**123**	**338**	**875**

2029 PM Peak - No Development (2022 Base Flows + 7.47%)

	Castlecara Rd (south)	Sports Facility	Castlecara Rd (north)	**Totals**
Castlecara Rd (south)	0	0	329	**329**
Sports Facility	0	0	0	**0**
Castlecara Rd (north)	333	0	0	**333**
Totals	**333**	**0**	**329**	**662**

2029 PM Peak - With Development

	Castlecara Rd (south)	Sports Facility	Castlecara Rd (north)	**Totals**
Castlecara Rd (south)	0	98	329	**427**
Sports Facility	98	0	25	**123**
Castlecara Rd (north)	333	25	0	**358**
Totals	**431**	**123**	**354**	**908**

2039 PM Peak - No Development (2022 Base Flows + 7.84%)

	Castlecara Rd (south)	Sports Facility	Castlecara Rd (north)	**Totals**
Castlecara Rd (south)	0	0	330	**330**
Sports Facility	0	0	0	**0**
Castlecara Rd (north)	334	0	0	**334**
Totals	**334**	**0**	**330**	**664**

2039 PM Peak - With Development

	Castlecara Rd (south)	Sports Facility	Castlecara Rd (north)	**Totals**
Castlecara Rd (south)	0	98	330	**428**
Sports Facility	98	0	25	**123**
Castlecara Rd (north)	334	25	0	**359**
Totals	**432**	**123**	**355**	**910**

N4 Attirory Roundabout - PM Peak Hour

2018 PM Peak - Base Flows

	N4 (west)	Castlecara Rd	N4 (east)	**Totals**
N4 (west)	0	229	550	**779**
Castlecara Rd	172	0	125	**297**
N4 (east)	447	65	0	**512**
Totals	**619**	**294**	**675**	**1588**

2022 PM Peak - Base Flows + 4.20%

	N4 (west)	Castlecara Rd	N4 (east)	**Totals**
N4 (west)	0	239	573	**812**
Castlecara Rd	179	0	130	**309**
N4 (east)	466	68	0	**534**
Totals	**645**	**306**	**703**	**1655**

PM Peak - Development Flows

	N4 (west)	Castlecara Rd	N4 (east)	**Totals**
N4 (west)	0	78	0	**78**
Castlecara Rd	59	0	39	**98**
N4 (east)	0	20	0	**20**
Totals	**59**	**98**	**39**	**196**

2024 PM Peak - No Development (2022 Base Flows + 2.07%)

	N4 (west)	Castlecara Rd	N4 (east)	**Totals**
N4 (west)	0	244	585	**829**
Castlecara Rd	183	0	133	**316**
N4 (east)	475	69	0	**545**
Totals	**658**	**313**	**718**	**1689**

2024 PM Peak - With Development

	N4 (west)	Castlecara Rd	N4 (east)	**Totals**
N4 (west)	0	322	585	**907**
Castlecara Rd	242	0	172	**414**
N4 (east)	475	89	0	**565**
Totals	**717**	**411**	**757**	**1885**

2029 PM Peak - No Development (2022 Base Flows + 7.47%)

	N4 (west)	Castlecara Rd	N4 (east)	**Totals**
N4 (west)	0	256	616	**872**
Castlecara Rd	193	0	140	**333**
N4 (east)	501	73	0	**573**
Totals	**693**	**329**	**756**	**1778**

2029 PM Peak - With Development

	N4 (west)	Castlecara Rd	N4 (east)	**Totals**
N4 (west)	0	334	616	**950**
Castlecara Rd	252	0	179	**431**
N4 (east)	501	93	0	**593**
Totals	**752**	**427**	**795**	**1974**

2039 PM Peak - No Development (2022 Base Flows + 7.84%)

	N4 (west)	Castlecara Rd	N4 (east)	**Totals**
N4 (west)	0	257	618	**875**
Castlecara Rd	193	0	140	**334**
N4 (east)	502	73	0	**575**
Totals	**696**	**330**	**758**	**1784**

2039 PM Peak - With Development

	N4 (west)	Castlecara Rd	N4 (east)	**Totals**
N4 (west)	0	335	618	**953**
Castlecara Rd	252	0	179	**432**
N4 (east)	502	93	0	**595**
Totals	**755**	**428**	**797**	**1980**

APPENDIX D – PICADY RESULTS

Junctions 9

PICADY 9 - Priority Intersection Module

Filename: Development Access.j9
Path: S:\Jobs\2022\22006 Shannon Recreation Campus TIA\22006-01\Reports\Working\PICADY
Report generation date: 20/01/2022 15:07:47

Summary of junction performance

	AM				PM			
	Queue (Veh)	Delay (s)	RFC	LOS	Queue (Veh)	Delay (s)	RFC	LOS
	2024 with dev							
Stream B-AC	0.2	10.53	0.13	B	0.6	17.36	0.40	C
Stream C-AB	0.0	5.29	0.02	A	0.1	5.18	0.07	A
	2029 with dev							
Stream B-AC	0.2	10.69	0.13	B	0.7	17.97	0.40	C
Stream C-AB	0.0	5.28	0.02	A	0.1	5.15	0.07	A
	2039 with dev							
Stream B-AC	0.2	10.70	0.13	B	0.7	17.99	0.40	C
Stream C-AB	0.0	5.28	0.02	A	0.1	5.15	0.07	A

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

File summary

File Description

Title	
Location	
Site number	
Date	20/01/2022
Version	
Status	(new file)
Identifier	
Client	
Jobnumber	
Enumerator	ROADPLAN01\jbyrne
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	Veh	Veh	perHour	s	-Min	perMin

Analysis Options

Vehicle length (m)	Calculate Queue Percentiles	Calculate detailed queueing delay	Calculate residual capacity	RFC Threshold	Average Delay threshold (s)	Queue threshold (PCU)
5.75				0.85	36.00	20.00

Demand Set Summary

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D1	2024 with dev	AM	ONE HOUR	07:45	09:15	15	✓
D2	2024 with dev	PM	ONE HOUR	16:45	18:15	15	✓
D3	2029 with dev	AM	ONE HOUR	07:45	09:15	15	✓
D4	2029 with dev	PM	ONE HOUR	16:45	18:15	15	✓
D5	2039 with dev	AM	ONE HOUR	07:45	09:15	15	✓
D6	2039 with dev	PM	ONE HOUR	16:45	18:15	15	✓

Analysis Set Details

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

2024 with dev, AM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	untitled	T-Junction	Two-way		1.07	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Arms

Arms

Arm	Name	Description	Arm type
A	Castlecara Rd (south)		Major
B	Sports Facility		Minor
C	Castlecara Rd (north)		Major

Major Arm Geometry

Arm	Width of carriageway (m)	Has kerbed central reserve	Has right turn bay	Visibility for right turn (m)	Blocks?	Blocking queue (PCU)
C	6.00			250.0	✓	0.00

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

Minor Arm Geometry

Arm	Minor arm type	Lane width (m)	Visibility to left (m)	Visibility to right (m)
B	One lane	3.50	25	15

Slope / Intercept / Capacity

Priority Intersection Slopes and Intercepts

Junction	Stream	Intercept (Veh/hr)	Slope for A-B	Slope for A-C	Slope for C-A	Slope for C-B
1	B-A	518	0.094	0.238	0.150	0.341
1	B-C	665	0.102	0.258	-	-
1	C-B	719	0.278	0.278	-	-

The slopes and intercepts shown above do NOT include any corrections or adjustments.

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

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

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D1	2024 with dev	AM	ONE HOUR	07:45	09:15	15	✓

Default vehicle mix	Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
A		ONE HOUR	✓	277	100.000
B		ONE HOUR	✓	47	100.000
C		ONE HOUR	✓	207	100.000

Origin-Destination Data

Demand (Veh/hr)

		To		
		A	B	C
From	A	0	37	240
	B	37	0	10
	C	197	10	0

Vehicle Mix

Heavy Vehicle Percentages

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

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/hr)	Total Junction Arrivals (Veh)
B-AC	0.13	10.53	0.2	B	43	65
C-AB	0.02	5.29	0.0	A	13	19
C-A					177	266
A-B					34	51
A-C					220	330

Main Results for each time segment

07:45 - 08:00

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-AC	35	9	425	0.083	35	0.0	0.1	9.212	A
C-AB	10	2	690	0.014	10	0.0	0.0	5.292	A
C-A	146	37			146				
A-B	28	7			28				
A-C	181	45			181				

08:00 - 08:15

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-AC	42	11	412	0.103	42	0.1	0.1	9.730	A
C-AB	12	3	698	0.017	12	0.0	0.0	5.248	A
C-A	174	44			174				
A-B	33	8			33				
A-C	216	54			216				

08:15 - 08:30

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-AC	52	13	393	0.132	52	0.1	0.1	10.525	B
C-AB	16	4	710	0.022	16	0.0	0.0	5.185	A
C-A	212	53			212				
A-B	41	10			41				
A-C	264	66			264				

08:30 - 08:45

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-AC	52	13	393	0.132	52	0.1	0.2	10.534	B
C-AB	16	4	710	0.022	16	0.0	0.0	5.185	A
C-A	212	53			212				
A-B	41	10			41				
A-C	264	66			264				

08:45 - 09:00

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-AC	42	11	412	0.103	42	0.2	0.1	9.741	A
C-AB	12	3	698	0.017	12	0.0	0.0	5.250	A
C-A	174	44			174				
A-B	33	8			33				
A-C	216	54			216				

09:00 - 09:15

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-AC	35	9	425	0.083	35	0.1	0.1	9.235	A
C-AB	10	2	690	0.014	10	0.0	0.0	5.293	A
C-A	146	37			146				
A-B	28	7			28				
A-C	181	45			181				

2024 with dev, PM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	untitled	T-Junction	Two-way		2.69	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

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

Default vehicle mix	Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
A		ONE HOUR	✓	411	100.000
B		ONE HOUR	✓	123	100.000
C		ONE HOUR	✓	341	100.000

Origin-Destination Data

Demand (Veh/hr)

		To		
		A	B	C
From	A	0	98	313
	B	98	0	25
	C	316	25	0

Vehicle Mix

Heavy Vehicle Percentages

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

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/hr)	Total Junction Arrivals (Veh)
B-AC	0.40	17.36	0.6	C	113	169
C-AB	0.07	5.18	0.1	A	39	58
C-A					274	412
A-B					90	135
A-C					287	431

Main Results for each time segment

16:45 - 17:00

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-AC	93	23	391	0.237	91	0.0	0.3	11.977	B
C-AB	28	7	723	0.039	28	0.0	0.1	5.180	A
C-A	229	57			229				
A-B	74	18			74				
A-C	236	59			236				

17:00 - 17:15

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-AC	111	28	371	0.298	110	0.3	0.4	13.791	B
C-AB	37	9	739	0.050	37	0.1	0.1	5.126	A
C-A	270	67			270				
A-B	88	22			88				
A-C	281	70			281				

17:15 - 17:30

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-AC	135	34	343	0.395	135	0.4	0.6	17.220	C
C-AB	51	13	763	0.066	51	0.1	0.1	5.054	A
C-A	325	81			325				
A-B	108	27			108				
A-C	345	86			345				

17:30 - 17:45

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-AC	135	34	343	0.395	135	0.6	0.6	17.358	C
C-AB	51	13	763	0.067	51	0.1	0.1	5.056	A
C-A	325	81			325				
A-B	108	27			108				
A-C	345	86			345				

17:45 - 18:00

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-AC	111	28	371	0.298	111	0.6	0.4	13.935	B
C-AB	37	9	739	0.050	37	0.1	0.1	5.127	A
C-A	270	67			270				
A-B	88	22			88				
A-C	281	70			281				

18:00 - 18:15

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-AC	93	23	391	0.237	93	0.4	0.3	12.113	B
C-AB	28	7	723	0.039	28	0.1	0.1	5.184	A
C-A	229	57			229				
A-B	74	18			74				
A-C	236	59			236				

2029 with dev , AM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	untitled	T-Junction	Two-way		1.04	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D3	2029 with dev	AM	ONE HOUR	07:45	09:15	15	✓

Default vehicle mix	Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
A		ONE HOUR	✓	290	100.000
B		ONE HOUR	✓	47	100.000
C		ONE HOUR	✓	217	100.000

Origin-Destination Data

Demand (Veh/hr)

		To		
		A	B	C
From	A	0	37	253
	B	37	0	10
	C	207	10	0

Vehicle Mix

Heavy Vehicle Percentages

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

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/hr)	Total Junction Arrivals (Veh)
B-AC	0.13	10.69	0.2	B	43	65
C-AB	0.02	5.28	0.0	A	13	19
C-A					186	280
A-B					34	51
A-C					232	348

Main Results for each time segment

07:45 - 08:00

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-AC	35	9	422	0.084	35	0.0	0.1	9.293	A
C-AB	10	2	692	0.014	10	0.0	0.0	5.275	A
C-A	154	38			154				
A-B	28	7			28				
A-C	190	48			190				

08:00 - 08:15

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-AC	42	11	408	0.104	42	0.1	0.1	9.838	A
C-AB	12	3	701	0.017	12	0.0	0.0	5.227	A
C-A	183	46			183				
A-B	33	8			33				
A-C	227	57			227				

08:15 - 08:30

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-AC	52	13	388	0.133	52	0.1	0.2	10.681	B
C-AB	16	4	714	0.023	16	0.0	0.0	5.160	A
C-A	223	56			223				
A-B	41	10			41				
A-C	279	70			279				

08:30 - 08:45

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-AC	52	13	388	0.133	52	0.2	0.2	10.690	B
C-AB	16	4	714	0.023	16	0.0	0.0	5.162	A
C-A	223	56			223				
A-B	41	10			41				
A-C	279	70			279				

08:45 - 09:00

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-AC	42	11	408	0.104	42	0.2	0.1	9.852	A
C-AB	12	3	701	0.018	12	0.0	0.0	5.228	A
C-A	183	46			183				
A-B	33	8			33				
A-C	227	57			227				

09:00 - 09:15

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-AC	35	9	422	0.084	35	0.1	0.1	9.314	A
C-AB	10	2	692	0.014	10	0.0	0.0	5.276	A
C-A	154	38			154				
A-B	28	7			28				
A-C	190	48			190				

2029 with dev , PM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	untitled	T-Junction	Two-way		2.68	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D4	2029 with dev	PM	ONE HOUR	16:45	18:15	15	✓

Default vehicle mix	Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
A		ONE HOUR	✓	427	100.000
B		ONE HOUR	✓	123	100.000
C		ONE HOUR	✓	358	100.000

Origin-Destination Data

Demand (Veh/hr)

		To		
		A	B	C
From	A	0	98	329
	B	98	0	25
	C	333	25	0

Vehicle Mix

Heavy Vehicle Percentages

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

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/hr)	Total Junction Arrivals (Veh)
B-AC	0.40	17.97	0.7	C	113	169
C-AB	0.07	5.15	0.1	A	40	60
C-A					289	433
A-B					90	135
A-C					302	453

Main Results for each time segment

16:45 - 17:00

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-AC	93	23	386	0.240	91	0.0	0.3	12.164	B
C-AB	29	7	728	0.039	28	0.0	0.1	5.144	A
C-A	241	60			241				
A-B	74	18			74				
A-C	248	62			248				

17:00 - 17:15

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-AC	111	28	365	0.303	110	0.3	0.4	14.095	B
C-AB	38	9	746	0.050	38	0.1	0.1	5.084	A
C-A	284	71			284				
A-B	88	22			88				
A-C	296	74			296				

17:15 - 17:30

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-AC	135	34	336	0.403	135	0.4	0.7	17.805	C
C-AB	53	13	772	0.068	52	0.1	0.1	5.002	A
C-A	342	85			342				
A-B	108	27			108				
A-C	362	91			362				

17:30 - 17:45

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-AC	135	34	336	0.403	135	0.7	0.7	17.969	C
C-AB	53	13	772	0.068	53	0.1	0.1	5.004	A
C-A	342	85			342				
A-B	108	27			108				
A-C	362	91			362				

17:45 - 18:00

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-AC	111	28	365	0.303	111	0.7	0.4	14.252	B
C-AB	38	9	746	0.051	38	0.1	0.1	5.087	A
C-A	284	71			284				
A-B	88	22			88				
A-C	296	74			296				

18:00 - 18:15

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-AC	93	23	386	0.240	93	0.4	0.3	12.310	B
C-AB	29	7	728	0.040	29	0.1	0.1	5.150	A
C-A	241	60			241				
A-B	74	18			74				
A-C	248	62			248				

2039 with dev , AM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	untitled	T-Junction	Two-way		1.04	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D5	2039 with dev	AM	ONE HOUR	07:45	09:15	15	✓

Default vehicle mix	Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
A		ONE HOUR	✓	291	100.000
B		ONE HOUR	✓	47	100.000
C		ONE HOUR	✓	218	100.000

Origin-Destination Data

Demand (Veh/hr)

		To		
		A	B	C
From	A	0	37	254
	B	37	0	10
	C	208	10	0

Vehicle Mix

Heavy Vehicle Percentages

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

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/hr)	Total Junction Arrivals (Veh)
B-AC	0.13	10.70	0.2	B	43	65
C-AB	0.02	5.28	0.0	A	13	19
C-A					187	281
A-B					34	51
A-C					233	350

Main Results for each time segment

07:45 - 08:00

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-AC	35	9	422	0.084	35	0.0	0.1	9.299	A
C-AB	10	2	692	0.014	10	0.0	0.0	5.273	A
C-A	154	39			154				
A-B	28	7			28				
A-C	191	48			191				

08:00 - 08:15

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-AC	42	11	408	0.104	42	0.1	0.1	9.847	A
C-AB	12	3	701	0.018	12	0.0	0.0	5.224	A
C-A	184	46			184				
A-B	33	8			33				
A-C	228	57			228				

08:15 - 08:30

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-AC	52	13	388	0.133	52	0.1	0.2	10.695	B
C-AB	16	4	714	0.023	16	0.0	0.0	5.157	A
C-A	224	56			224				
A-B	41	10			41				
A-C	280	70			280				

08:30 - 08:45

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-AC	52	13	388	0.133	52	0.2	0.2	10.703	B
C-AB	16	4	714	0.023	16	0.0	0.0	5.157	A
C-A	224	56			224				
A-B	41	10			41				
A-C	280	70			280				

08:45 - 09:00

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-AC	42	11	408	0.104	42	0.2	0.1	9.859	A
C-AB	12	3	701	0.018	12	0.0	0.0	5.225	A
C-A	184	46			184				
A-B	33	8			33				
A-C	228	57			228				

09:00 - 09:15

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-AC	35	9	422	0.084	35	0.1	0.1	9.323	A
C-AB	10	2	692	0.014	10	0.0	0.0	5.276	A
C-A	154	39			154				
A-B	28	7			28				
A-C	191	48			191				

2039 with dev , PM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	untitled	T-Junction	Two-way		2.68	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D6	2039 with dev	PM	ONE HOUR	16:45	18:15	15	✓

Default vehicle mix	Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
A		ONE HOUR	✓	428	100.000
B		ONE HOUR	✓	123	100.000
C		ONE HOUR	✓	359	100.000

Origin-Destination Data

Demand (Veh/hr)

		To		
		A	B	C
From	A	0	98	330
	B	98	0	25
	C	334	25	0

Vehicle Mix

Heavy Vehicle Percentages

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

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/hr)	Total Junction Arrivals (Veh)
B-AC	0.40	17.99	0.7	C	113	169
C-AB	0.07	5.15	0.1	A	40	60
C-A					290	435
A-B					90	135
A-C					303	454

Main Results for each time segment

16:45 - 17:00

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-AC	93	23	386	0.240	91	0.0	0.3	12.176	B
C-AB	29	7	729	0.039	29	0.0	0.1	5.142	A
C-A	242	60			242				
A-B	74	18			74				
A-C	248	62			248				

17:00 - 17:15

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-AC	111	28	365	0.303	110	0.3	0.4	14.114	B
C-AB	38	9	746	0.051	38	0.1	0.1	5.079	A
C-A	285	71			285				
A-B	88	22			88				
A-C	297	74			297				

17:15 - 17:30

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-AC	135	34	335	0.404	135	0.4	0.7	17.843	C
C-AB	53	13	773	0.068	53	0.1	0.1	5.000	A
C-A	343	86			343				
A-B	108	27			108				
A-C	363	91			363				

17:30 - 17:45

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-AC	135	34	335	0.404	135	0.7	0.7	17.993	C
C-AB	53	13	773	0.068	53	0.1	0.1	5.004	A
C-A	343	86			343				
A-B	108	27			108				
A-C	363	91			363				

17:45 - 18:00

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-AC	111	28	365	0.303	111	0.7	0.4	14.269	B
C-AB	38	9	746	0.051	38	0.1	0.1	5.083	A
C-A	285	71			285				
A-B	88	22			88				
A-C	297	74			297				

18:00 - 18:15

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-AC	93	23	386	0.240	93	0.4	0.3	12.322	B
C-AB	29	7	729	0.040	29	0.1	0.1	5.148	A
C-A	241	60			241				
A-B	74	18			74				
A-C	248	62			248				

APPENDIX E – ARCADY RESULTS

Junctions 9

ARCADY 9 - Roundabout Module

Version: 9.5.0.6896

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

Filename: N4 Attirory Roundabout.j9
Path: S:\Jobs\2022\22006 Shannon Recreation Campus TIA\22006-01\Reports\Working\ARCADY
Report generation date: 20/01/2022 15:53:10

Summary of junction performance

	AM				PM			
	Queue (Veh)	Delay (s)	RFC	LOS	Queue (Veh)	Delay (s)	RFC	LOS
	2022							
Arm 1	1.0	6.80	0.51	A	4.3	17.86	0.82	C
Arm 2	0.3	5.48	0.24	A	0.9	9.24	0.47	A
Arm 3	2.5	13.26	0.72	B	1.6	9.79	0.62	A
	2024 no dev							
Arm 1	1.1	6.96	0.52	A	4.8	19.68	0.84	C
Arm 2	0.3	5.56	0.25	A	0.9	9.61	0.48	A
Arm 3	2.8	14.15	0.74	B	1.7	10.16	0.63	B
	2024 with dev							
Arm 1	1.2	7.46	0.55	A	9.8	37.80	0.93	E
Arm 2	0.4	5.93	0.30	A	1.7	13.39	0.63	B
Arm 3	3.2	16.11	0.77	C	2.1	12.14	0.68	B
	2029 no dev							
Arm 1	1.2	7.45	0.55	A	6.6	26.37	0.88	D
Arm 2	0.4	5.78	0.27	A	1.1	10.68	0.52	B
Arm 3	3.5	17.00	0.78	C	2.0	11.41	0.67	B
	2029 with dev							
Arm 1	1.4	8.03	0.58	A	16.2	58.48	0.97	F
Arm 2	0.5	6.18	0.32	A	2.0	15.36	0.67	C
Arm 3	4.1	19.87	0.81	C	2.5	13.97	0.72	B
	2039 no dev							
Arm 1	1.2	7.49	0.55	A	6.8	26.95	0.88	D
Arm 2	0.4	5.79	0.27	A	1.1	10.72	0.52	B
Arm 3	3.5	17.17	0.79	C	2.0	11.45	0.67	B
	2039 with dev							
Arm 1	1.4	8.07	0.58	A	16.9	60.28	0.97	F
Arm 2	0.5	6.19	0.32	A	2.0	15.42	0.67	C
Arm 3	4.2	20.11	0.81	C	2.5	14.03	0.72	B

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	20/01/2022
Version	
Status	(new file)
Identifier	
Client	
Jobnumber	
Enumerator	ROADPLAN01\jbyrne
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	Veh	Veh	perHour	s	-Min	perMin

Analysis Options

Vehicle length (m)	Calculate Queue Percentiles	Calculate detailed queueing delay	Calculate residual capacity	RFC Threshold	Average Delay threshold (s)	Queue threshold (PCU)
5.75				0.85	36.00	20.00

Demand Set Summary

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D1	2022	AM	ONE HOUR	07:45	09:15	15	✓
D2	2022	PM	ONE HOUR	16:45	18:15	15	✓
D3	2024 no dev	AM	ONE HOUR	07:45	09:15	15	✓
D4	2024 no dev	PM	ONE HOUR	16:45	18:15	15	✓
D5	2024 with dev	AM	ONE HOUR	07:45	09:15	15	✓
D6	2024 with dev	PM	ONE HOUR	16:45	18:15	15	✓
D7	2029 no dev	AM	ONE HOUR	07:45	09:15	15	✓
D8	2029 no dev	PM	ONE HOUR	16:45	18:15	15	✓
D9	2029 with dev	AM	ONE HOUR	07:45	09:15	15	✓
D10	2029 with dev	PM	ONE HOUR	16:45	18:15	15	✓
D11	2039 no dev	AM	ONE HOUR	07:45	09:15	15	✓
D12	2039 no dev	PM	ONE HOUR	16:45	18:15	15	✓
D13	2039 with dev	AM	ONE HOUR	07:45	09:15	15	✓
D14	2039 with dev	PM	ONE HOUR	16:45	18:15	15	✓

Analysis Set Details

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

2022 , AM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	untitled	Standard Roundabout		1, 2, 3	9.71	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Arms

Arms

Arm	Name	Description
1	N4 (west)	
2	Castlecara Rd	
3	N4 (east)	

Roundabout Geometry

Arm	V - Approach road half-width (m)	E - Entry width (m)	l' - Effective flare length (m)	R - Entry radius (m)	D - Inscribed circle diameter (m)	PHI - Conflict (entry) angle (deg)	Exit only
1	3.50	4.00	5.0	18.0	30.0	10.0	
2	3.25	4.00	5.0	17.0	30.0	12.0	
3	3.25	4.00	5.0	12.0	30.0	12.0	

Slope / Intercept / Capacity

Roundabout Slope and Intercept used in model

Arm	Final slope	Final intercept (PCU/hr)
1	0.586	1250
2	0.572	1200
3	0.559	1172

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

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D1	2022	AM	ONE HOUR	07:45	09:15	15	✓

Default vehicle mix	Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
1		ONE HOUR	✓	502	100.000
2		ONE HOUR	✓	193	100.000
3		ONE HOUR	✓	641	100.000

Origin-Destination Data

Demand (Veh/hr)

		To		
		1	2	3
From	1	0	150	352
	2	145	0	48
	3	556	85	0

Vehicle Mix

Heavy Vehicle Percentages

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

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/hr)	Total Junction Arrivals (Veh)
1	0.51	6.80	1.0	A	461	691
2	0.24	5.48	0.3	A	177	266
3	0.72	13.26	2.5	B	588	882

Main Results for each time segment

07:45 - 08:00

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1	378	94	64	1100	0.344	376	524	0.0	0.5	4.960	A
2	145	36	264	940	0.155	145	176	0.0	0.2	4.524	A
3	483	121	109	1005	0.480	479	300	0.0	0.9	6.798	A

08:00 - 08:15

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1	451	113	76	1092	0.413	451	628	0.5	0.7	5.605	A
2	174	43	316	910	0.191	173	211	0.2	0.2	4.887	A
3	576	144	130	993	0.580	574	359	0.9	1.4	8.565	A

08:15 - 08:30

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1	553	138	93	1082	0.511	551	768	0.7	1.0	6.764	A
2	212	53	387	869	0.244	212	258	0.2	0.3	5.476	A
3	706	176	159	977	0.723	701	439	1.4	2.5	12.860	B

08:30 - 08:45

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1	553	138	94	1082	0.511	553	772	1.0	1.0	6.801	A
2	212	53	388	869	0.245	212	259	0.3	0.3	5.484	A
3	706	176	160	976	0.723	706	440	2.5	2.5	13.256	B

08:45 - 09:00

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1	451	113	77	1092	0.413	453	634	1.0	0.7	5.646	A
2	174	43	317	909	0.191	174	212	0.3	0.2	4.899	A
3	576	144	131	993	0.580	581	361	2.5	1.4	8.833	A

09:00 - 09:15

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1	378	94	64	1099	0.344	379	530	0.7	0.5	5.001	A
2	145	36	266	939	0.155	146	177	0.2	0.2	4.540	A
3	483	121	109	1005	0.480	484	302	1.4	0.9	6.946	A

2022, PM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	untitled	Standard Roundabout		1, 2, 3	13.64	B

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D2	2022	PM	ONE HOUR	16:45	18:15	15	✓

Default vehicle mix	Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
1		ONE HOUR	✓	812	100.000
2		ONE HOUR	✓	309	100.000
3		ONE HOUR	✓	534	100.000

Origin-Destination Data

Demand (Veh/hr)

		To		
		1	2	3
From	1	0	239	573
	2	179	0	130
	3	466	68	0

Vehicle Mix

Heavy Vehicle Percentages

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

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/hr)	Total Junction Arrivals (Veh)
1	0.82	17.86	4.3	C	745	1118
2	0.47	9.24	0.9	A	284	425
3	0.62	9.79	1.6	A	490	735

Main Results for each time segment

16:45 - 17:00

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1	611	153	51	1107	0.552	606	482	0.0	1.2	7.125	A
2	233	58	428	846	0.275	231	229	0.0	0.4	5.844	A
3	402	101	134	991	0.406	399	525	0.0	0.7	6.058	A

17:00 - 17:15

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1	730	182	61	1101	0.663	727	579	1.2	1.9	9.555	A
2	278	69	513	797	0.349	277	275	0.4	0.5	6.917	A
3	480	120	161	976	0.492	479	630	0.7	1.0	7.227	A

17:15 - 17:30

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1	894	224	75	1093	0.818	885	707	1.9	4.1	16.649	C
2	340	85	625	733	0.464	339	335	0.5	0.9	9.104	A
3	588	147	196	956	0.615	586	767	1.0	1.6	9.654	A

17:30 - 17:45

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1	894	224	75	1093	0.818	893	710	4.1	4.3	17.860	C
2	340	85	630	730	0.466	340	338	0.9	0.9	9.235	A
3	588	147	197	956	0.615	588	773	1.6	1.6	9.785	A

17:45 - 18:00

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1	730	182	61	1101	0.663	739	583	4.3	2.0	10.183	B
2	278	69	521	792	0.351	279	279	0.9	0.5	7.032	A
3	480	120	162	975	0.492	482	639	1.6	1.0	7.337	A

18:00 - 18:15

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1	611	153	51	1107	0.552	614	487	2.0	1.3	7.357	A
2	233	58	434	842	0.276	233	232	0.5	0.4	5.917	A
3	402	101	135	990	0.406	403	532	1.0	0.7	6.147	A

2024 no dev, AM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	untitled	Standard Roundabout		1, 2, 3	10.21	B

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D3	2024 no dev	AM	ONE HOUR	07:45	09:15	15	✓

Default vehicle mix	Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
1		ONE HOUR	✓	512	100.000
2		ONE HOUR	✓	197	100.000
3		ONE HOUR	✓	655	100.000

Origin-Destination Data

Demand (Veh/hr)

		To		
		1	2	3
From	1	0	153	359
	2	148	0	49
	3	568	87	0

Vehicle Mix

Heavy Vehicle Percentages

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

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/hr)	Total Junction Arrivals (Veh)
1	0.52	6.96	1.1	A	470	705
2	0.25	5.56	0.3	A	181	271
3	0.74	14.15	2.8	B	601	902

Main Results for each time segment

07:45 - 08:00

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1	385	96	65	1099	0.351	383	535	0.0	0.5	5.017	A
2	148	37	269	937	0.158	148	180	0.0	0.2	4.558	A
3	493	123	111	1004	0.491	489	305	0.0	1.0	6.947	A

08:00 - 08:15

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1	460	115	78	1091	0.422	460	642	0.5	0.7	5.692	A
2	177	44	322	906	0.195	177	215	0.2	0.2	4.935	A
3	589	147	133	991	0.594	587	366	1.0	1.4	8.856	A

08:15 - 08:30

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1	564	141	95	1081	0.521	562	784	0.7	1.1	6.918	A
2	217	54	394	865	0.251	217	263	0.2	0.3	5.550	A
3	721	180	163	975	0.740	716	448	1.4	2.7	13.652	B

08:30 - 08:45

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1	564	141	96	1081	0.522	564	788	1.1	1.1	6.962	A
2	217	54	395	864	0.251	217	264	0.3	0.3	5.559	A
3	721	180	163	975	0.740	721	449	2.7	2.8	14.145	B

08:45 - 09:00

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1	460	115	79	1091	0.422	462	648	1.1	0.7	5.738	A
2	177	44	324	905	0.196	177	217	0.3	0.2	4.948	A
3	589	147	133	991	0.594	594	368	2.8	1.5	9.175	A

09:00 - 09:15

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1	385	96	66	1098	0.351	386	541	0.7	0.5	5.063	A
2	148	37	271	936	0.159	149	181	0.2	0.2	4.575	A
3	493	123	112	1003	0.491	495	308	1.5	1.0	7.112	A

2024 no dev, PM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	untitled	Standard Roundabout		1, 2, 3	14.73	B

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D4	2024 no dev	PM	ONE HOUR	16:45	18:15	15	✓

Default vehicle mix	Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
1		ONE HOUR	✓	829	100.000
2		ONE HOUR	✓	316	100.000
3		ONE HOUR	✓	544	100.000

Origin-Destination Data

Demand (Veh/hr)

		To		
		1	2	3
From	1	0	244	585
	2	183	0	133
	3	475	69	0

Vehicle Mix

Heavy Vehicle Percentages

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

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/hr)	Total Junction Arrivals (Veh)
1	0.84	19.68	4.8	C	761	1141
2	0.48	9.61	0.9	A	290	435
3	0.63	10.16	1.7	B	499	749

Main Results for each time segment

16:45 - 17:00

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1	624	156	52	1107	0.564	619	492	0.0	1.3	7.312	A
2	238	59	437	841	0.283	236	234	0.0	0.4	5.942	A
3	410	102	137	989	0.414	407	536	0.0	0.7	6.151	A

17:00 - 17:15

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1	745	186	62	1101	0.677	742	590	1.3	2.0	9.960	A
2	284	71	524	791	0.359	283	280	0.4	0.6	7.086	A
3	489	122	164	974	0.502	488	643	0.7	1.0	7.388	A

17:15 - 17:30

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1	913	228	76	1092	0.835	903	721	2.0	4.5	18.062	C
2	348	87	637	726	0.479	347	341	0.6	0.9	9.451	A
3	599	150	201	954	0.628	596	783	1.0	1.6	10.006	B

17:30 - 17:45

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1	913	228	76	1092	0.836	912	724	4.5	4.8	19.677	C
2	348	87	643	722	0.482	348	344	0.9	0.9	9.610	A
3	599	150	201	953	0.628	599	790	1.6	1.7	10.155	B

17:45 - 18:00

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1	745	186	62	1100	0.677	756	595	4.8	2.2	10.747	B
2	284	71	533	785	0.362	285	285	0.9	0.6	7.222	A
3	489	122	165	973	0.502	492	653	1.7	1.0	7.512	A

18:00 - 18:15

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1	624	156	52	1106	0.564	628	497	2.2	1.3	7.574	A
2	238	59	443	837	0.284	239	237	0.6	0.4	6.020	A
3	410	102	138	988	0.414	411	543	1.0	0.7	6.247	A

2024 with dev, AM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	untitled	Standard Roundabout		1, 2, 3	11.23	B

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D5	2024 with dev	AM	ONE HOUR	07:45	09:15	15	✓

Default vehicle mix	Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
1		ONE HOUR	✓	536	100.000
2		ONE HOUR	✓	234	100.000
3		ONE HOUR	✓	668	100.000

Origin-Destination Data

Demand (Veh/hr)

		To		
		1	2	3
From	1	0	177	359
	2	176	0	58
	3	568	100	0

Vehicle Mix

Heavy Vehicle Percentages

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

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/hr)	Total Junction Arrivals (Veh)
1	0.55	7.46	1.2	A	492	738
2	0.30	5.93	0.4	A	215	322
3	0.77	16.11	3.2	C	613	919

Main Results for each time segment

07:45 - 08:00

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1	404	101	75	1093	0.369	401	556	0.0	0.6	5.188	A
2	176	44	269	937	0.188	175	207	0.0	0.2	4.721	A
3	503	126	132	992	0.507	499	312	0.0	1.0	7.241	A

08:00 - 08:15

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1	482	120	90	1084	0.444	481	667	0.6	0.8	5.958	A
2	210	53	322	906	0.232	210	248	0.2	0.3	5.169	A
3	601	150	158	977	0.614	598	374	1.0	1.6	9.442	A

08:15 - 08:30

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1	590	148	109	1073	0.550	589	814	0.8	1.2	7.407	A
2	258	64	394	865	0.298	257	304	0.3	0.4	5.917	A
3	735	184	193	958	0.768	729	458	1.6	3.1	15.363	C

08:30 - 08:45

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1	590	148	110	1072	0.550	590	819	1.2	1.2	7.465	A
2	258	64	395	864	0.298	258	305	0.4	0.4	5.932	A
3	735	184	194	957	0.768	735	459	3.1	3.2	16.113	C

08:45 - 09:00

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1	482	120	91	1084	0.445	483	674	1.2	0.8	6.014	A
2	210	53	324	905	0.232	211	250	0.4	0.3	5.187	A
3	601	150	159	977	0.615	607	376	3.2	1.6	9.880	A

09:00 - 09:15

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1	404	101	76	1092	0.369	404	562	0.8	0.6	5.238	A
2	176	44	271	936	0.188	176	209	0.3	0.2	4.745	A
3	503	126	133	992	0.507	505	315	1.6	1.0	7.441	A

2024 with dev, PM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	untitled	Standard Roundabout		1, 2, 3	24.76	C

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D6	2024 with dev	PM	ONE HOUR	16:45	18:15	15	✓

Default vehicle mix	Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
1		ONE HOUR	✓	907	100.000
2		ONE HOUR	✓	414	100.000
3		ONE HOUR	✓	564	100.000

Origin-Destination Data

Demand (Veh/hr)

		To		
		1	2	3
From	1	0	322	585
	2	242	0	172
	3	475	89	0

Vehicle Mix

Heavy Vehicle Percentages

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

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/hr)	Total Junction Arrivals (Veh)
1	0.93	37.80	9.8	E	832	1248
2	0.63	13.39	1.7	B	380	570
3	0.68	12.14	2.1	B	518	776

Main Results for each time segment

16:45 - 17:00

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1	683	171	67	1098	0.622	676	536	0.0	1.6	8.420	A
2	312	78	436	841	0.371	309	307	0.0	0.6	6.743	A
3	425	106	181	965	0.440	422	565	0.0	0.8	6.593	A

17:00 - 17:15

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1	815	204	80	1090	0.748	811	643	1.6	2.8	12.655	B
2	372	93	523	791	0.470	371	368	0.6	0.9	8.540	A
3	507	127	217	944	0.537	506	677	0.8	1.1	8.175	A

17:15 - 17:30

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1	999	250	97	1080	0.925	976	785	2.8	8.5	29.611	D
2	456	114	629	730	0.624	453	444	0.9	1.6	12.838	B
3	621	155	265	918	0.677	617	818	1.1	2.0	11.850	B

17:30 - 17:45

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1	999	250	98	1079	0.925	994	789	8.5	9.8	37.799	E
2	456	114	641	724	0.630	456	451	1.6	1.7	13.391	B
3	621	155	266	917	0.677	621	830	2.0	2.1	12.144	B

17:45 - 18:00

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1	815	204	81	1090	0.748	842	649	9.8	3.1	15.908	C
2	372	93	543	780	0.477	375	379	1.7	0.9	8.960	A
3	507	127	219	943	0.538	511	699	2.1	1.2	8.388	A

18:00 - 18:15

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1	683	171	67	1097	0.622	689	542	3.1	1.7	8.930	A
2	312	78	444	836	0.373	313	312	0.9	0.6	6.894	A
3	425	106	183	963	0.441	426	574	1.2	0.8	6.719	A

2029 no dev, AM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	untitled	Standard Roundabout		1, 2, 3	11.79	B

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D7	2029 no dev	AM	ONE HOUR	07:45	09:15	15	✓

Default vehicle mix	Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
1		ONE HOUR	✓	540	100.000
2		ONE HOUR	✓	208	100.000
3		ONE HOUR	✓	690	100.000

Origin-Destination Data

Demand (Veh/hr)

		To		
		1	2	3
From	1	0	161	379
	2	156	0	52
	3	598	92	0

Vehicle Mix

Heavy Vehicle Percentages

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

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/hr)	Total Junction Arrivals (Veh)
1	0.55	7.45	1.2	A	496	743
2	0.27	5.78	0.4	A	191	286
3	0.78	17.00	3.5	C	633	950

Main Results for each time segment

07:45 - 08:00

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1	407	102	69	1097	0.371	404	563	0.0	0.6	5.182	A
2	157	39	284	928	0.169	156	189	0.0	0.2	4.656	A
3	519	130	117	1000	0.519	515	323	0.0	1.1	7.359	A

08:00 - 08:15

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1	485	121	82	1089	0.446	485	676	0.6	0.8	5.952	A
2	187	47	340	896	0.209	187	227	0.2	0.3	5.075	A
3	620	155	140	987	0.628	618	387	1.1	1.6	9.681	A

08:15 - 08:30

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1	595	149	100	1078	0.552	593	824	0.8	1.2	7.396	A
2	229	57	416	852	0.269	229	277	0.3	0.4	5.767	A
3	760	190	171	970	0.783	753	473	1.6	3.3	16.095	C

08:30 - 08:45

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1	595	149	101	1077	0.552	595	830	1.2	1.2	7.453	A
2	229	57	417	852	0.269	229	278	0.4	0.4	5.780	A
3	760	190	172	970	0.783	759	475	3.3	3.5	16.997	C

08:45 - 09:00

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1	485	121	84	1088	0.446	487	684	1.2	0.8	6.010	A
2	187	47	342	895	0.209	187	229	0.4	0.3	5.092	A
3	620	155	141	987	0.628	627	389	3.5	1.7	10.188	B

09:00 - 09:15

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1	407	102	70	1096	0.371	407	570	0.8	0.6	5.234	A
2	157	39	286	927	0.169	157	191	0.3	0.2	4.677	A
3	519	130	118	1000	0.520	522	325	1.7	1.1	7.571	A

2029 no dev, PM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	untitled	Standard Roundabout		1, 2, 3	18.61	C

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D8	2029 no dev	PM	ONE HOUR	16:45	18:15	15	✓

Default vehicle mix	Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
1		ONE HOUR	✓	872	100.000
2		ONE HOUR	✓	333	100.000
3		ONE HOUR	✓	574	100.000

Origin-Destination Data

Demand (Veh/hr)

		To		
		1	2	3
From	1	0	256	616
	2	193	0	140
	3	501	73	0

Vehicle Mix

Heavy Vehicle Percentages

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

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/hr)	Total Junction Arrivals (Veh)
1	0.88	26.37	6.6	D	800	1200
2	0.52	10.68	1.1	B	306	458
3	0.67	11.41	2.0	B	527	790

Main Results for each time segment

16:45 - 17:00

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1	656	164	55	1105	0.594	651	519	0.0	1.4	7.833	A
2	251	63	460	827	0.303	249	246	0.0	0.4	6.204	A
3	432	108	144	985	0.439	429	564	0.0	0.8	6.441	A

17:00 - 17:15

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1	784	196	65	1098	0.714	780	622	1.4	2.4	11.170	B
2	299	75	551	775	0.386	299	294	0.4	0.6	7.540	A
3	516	129	173	969	0.533	515	677	0.8	1.1	7.899	A

17:15 - 17:30

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1	960	240	80	1090	0.881	945	760	2.4	6.1	22.796	C
2	367	92	668	708	0.518	365	357	0.6	1.0	10.426	B
3	632	158	212	947	0.667	629	821	1.1	1.9	11.179	B

17:30 - 17:45

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1	960	240	80	1090	0.881	958	764	6.1	6.6	26.368	D
2	367	92	677	703	0.521	367	362	1.0	1.1	10.684	B
3	632	158	212	947	0.667	632	831	1.9	2.0	11.412	B

17:45 - 18:00

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1	784	196	66	1098	0.714	800	628	6.6	2.6	12.675	B
2	299	75	565	767	0.390	301	301	1.1	0.6	7.753	A
3	516	129	174	968	0.533	519	692	2.0	1.2	8.077	A

18:00 - 18:15

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1	656	164	55	1104	0.594	661	524	2.6	1.5	8.194	A
2	251	63	467	823	0.304	252	249	0.6	0.4	6.306	A
3	432	108	146	984	0.439	434	573	1.2	0.8	6.555	A

2029 with dev, AM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	untitled	Standard Roundabout		1, 2, 3	13.24	B

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D9	2029 with dev	AM	ONE HOUR	07:45	09:15	15	✓

Default vehicle mix	Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
1		ONE HOUR	✓	564	100.000
2		ONE HOUR	✓	245	100.000
3		ONE HOUR	✓	703	100.000

Origin-Destination Data

Demand (Veh/hr)

		To		
		1	2	3
From	1	0	185	379
	2	184	0	61
	3	598	105	0

Vehicle Mix

Heavy Vehicle Percentages

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

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/hr)	Total Junction Arrivals (Veh)
1	0.58	8.03	1.4	A	518	776
2	0.32	6.18	0.5	A	225	337
3	0.81	19.87	4.1	C	645	968

Main Results for each time segment

07:45 - 08:00

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1	425	106	78	1091	0.389	422	584	0.0	0.6	5.362	A
2	184	46	284	928	0.199	183	217	0.0	0.2	4.828	A
3	529	132	138	989	0.535	525	329	0.0	1.1	7.687	A

08:00 - 08:15

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1	507	127	94	1082	0.469	506	701	0.6	0.9	6.243	A
2	220	55	340	896	0.246	220	260	0.2	0.3	5.323	A
3	632	158	165	973	0.649	629	395	1.1	1.8	10.382	B

08:15 - 08:30

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1	621	155	114	1070	0.580	619	853	0.9	1.4	7.951	A
2	270	67	416	853	0.316	269	317	0.3	0.5	6.167	A
3	774	194	202	953	0.812	766	483	1.8	3.9	18.433	C

08:30 - 08:45

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1	621	155	115	1069	0.581	621	860	1.4	1.4	8.029	A
2	270	67	417	852	0.317	270	319	0.5	0.5	6.184	A
3	774	194	203	952	0.813	773	484	3.9	4.1	19.875	C

08:45 - 09:00

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1	507	127	96	1081	0.469	509	711	1.4	0.9	6.316	A
2	220	55	342	895	0.246	221	263	0.5	0.3	5.344	A
3	632	158	166	973	0.650	641	397	4.1	1.9	11.106	B

09:00 - 09:15

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1	425	106	79	1090	0.389	426	591	0.9	0.6	5.426	A
2	184	46	286	927	0.199	185	219	0.3	0.3	4.854	A
3	529	132	139	988	0.536	532	332	1.9	1.2	7.948	A

2029 with dev, PM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	untitled	Standard Roundabout		1, 2, 3	35.68	E

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D10	2029 with dev	PM	ONE HOUR	16:45	18:15	15	✓

Default vehicle mix	Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
1		ONE HOUR	✓	950	100.000
2		ONE HOUR	✓	431	100.000
3		ONE HOUR	✓	594	100.000

Origin-Destination Data

Demand (Veh/hr)

		To		
		1	2	3
From	1	0	334	616
	2	252	0	179
	3	501	93	0

Vehicle Mix

Heavy Vehicle Percentages

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

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/hr)	Total Junction Arrivals (Veh)
1	0.97	58.48	16.2	F	872	1308
2	0.67	15.36	2.0	C	395	593
3	0.72	13.97	2.5	B	545	818

Main Results for each time segment

16:45 - 17:00

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1	715	179	69	1096	0.653	708	563	0.0	1.8	9.120	A
2	324	81	459	828	0.392	322	318	0.0	0.6	7.080	A
3	447	112	188	960	0.466	444	593	0.0	0.9	6.922	A

17:00 - 17:15

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1	854	214	83	1088	0.785	848	675	1.8	3.4	14.596	B
2	387	97	550	776	0.499	386	381	0.6	1.0	9.199	A
3	534	133	226	939	0.568	532	710	0.9	1.3	8.803	A

17:15 - 17:30

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1	1046	261	102	1077	0.971	1009	823	3.4	12.7	39.627	E
2	475	119	654	716	0.663	471	456	1.0	1.9	14.466	B
3	654	164	275	912	0.717	650	850	1.3	2.4	13.494	B

17:30 - 17:45

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1	1046	261	102	1077	0.971	1032	829	12.7	16.2	58.481	F
2	475	119	669	708	0.670	474	465	1.9	2.0	15.361	C
3	654	164	277	911	0.718	654	866	2.4	2.5	13.971	B

17:45 - 18:00

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1	854	214	84	1087	0.785	903	683	16.2	4.0	23.612	C
2	387	97	586	755	0.513	391	402	2.0	1.1	9.972	A
3	534	133	229	938	0.569	539	748	2.5	1.4	9.112	A

18:00 - 18:15

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1	715	179	70	1096	0.653	723	569	4.0	1.9	9.872	A
2	324	81	469	822	0.395	326	325	1.1	0.7	7.281	A
3	447	112	191	959	0.466	449	604	1.4	0.9	7.085	A

2039 no dev, AM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	untitled	Standard Roundabout		1, 2, 3	11.89	B

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D11	2039 no dev	AM	ONE HOUR	07:45	09:15	15	✓

Default vehicle mix	Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
1		ONE HOUR	✓	542	100.000
2		ONE HOUR	✓	208	100.000
3		ONE HOUR	✓	692	100.000

Origin-Destination Data

Demand (Veh/hr)

		To		
		1	2	3
From	1	0	162	380
	2	156	0	52
	3	600	92	0

Vehicle Mix

Heavy Vehicle Percentages

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

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/hr)	Total Junction Arrivals (Veh)
1	0.55	7.49	1.2	A	497	746
2	0.27	5.79	0.4	A	191	286
3	0.79	17.17	3.5	C	635	952

Main Results for each time segment

07:45 - 08:00

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1	408	102	69	1097	0.372	406	565	0.0	0.6	5.193	A
2	157	39	284	928	0.169	156	190	0.0	0.2	4.658	A
3	521	130	117	1000	0.521	517	323	0.0	1.1	7.379	A

08:00 - 08:15

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1	487	122	82	1089	0.448	486	677	0.6	0.8	5.970	A
2	187	47	341	895	0.209	187	228	0.2	0.3	5.079	A
3	622	156	140	987	0.630	620	388	1.1	1.7	9.727	A

08:15 - 08:30

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1	597	149	100	1078	0.554	595	826	0.8	1.2	7.430	A
2	229	57	417	852	0.269	229	278	0.3	0.4	5.773	A
3	762	190	171	970	0.786	755	474	1.7	3.4	16.240	C

08:30 - 08:45

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1	597	149	101	1077	0.554	597	832	1.2	1.2	7.487	A
2	229	57	418	851	0.269	229	280	0.4	0.4	5.785	A
3	762	190	172	970	0.786	761	476	3.4	3.5	17.170	C

08:45 - 09:00

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1	487	122	84	1088	0.448	489	686	1.2	0.8	6.026	A
2	187	47	343	894	0.209	187	230	0.4	0.3	5.096	A
3	622	156	141	987	0.630	629	390	3.5	1.8	10.246	B

09:00 - 09:15

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1	408	102	70	1096	0.372	409	572	0.8	0.6	5.246	A
2	157	39	287	926	0.169	157	192	0.3	0.2	4.678	A
3	521	130	118	1000	0.521	524	326	1.8	1.1	7.596	A

2039 no dev, PM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	untitled	Standard Roundabout		1, 2, 3	18.92	C

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D12	2039 no dev	PM	ONE HOUR	16:45	18:15	15	✓

Default vehicle mix	Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
1		ONE HOUR	✓	875	100.000
2		ONE HOUR	✓	333	100.000
3		ONE HOUR	✓	575	100.000

Origin-Destination Data

Demand (Veh/hr)

		To		
		1	2	3
From	1	0	257	618
	2	193	0	140
	3	502	73	0

Vehicle Mix

Heavy Vehicle Percentages

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

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/hr)	Total Junction Arrivals (Veh)
1	0.88	26.95	6.8	D	803	1204
2	0.52	10.72	1.1	B	306	458
3	0.67	11.45	2.0	B	528	791

Main Results for each time segment

16:45 - 17:00

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1	659	165	55	1105	0.596	653	520	0.0	1.4	7.871	A
2	251	63	461	827	0.303	249	246	0.0	0.4	6.213	A
3	433	108	144	985	0.439	430	566	0.0	0.8	6.448	A

17:00 - 17:15

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1	787	197	65	1098	0.716	783	623	1.4	2.4	11.259	B
2	299	75	553	774	0.387	299	295	0.4	0.6	7.556	A
3	517	129	173	969	0.533	516	678	0.8	1.1	7.913	A

17:15 - 17:30

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1	963	241	80	1090	0.884	948	761	2.4	6.2	23.177	C
2	367	92	670	707	0.518	365	358	0.6	1.1	10.459	B
3	633	158	212	947	0.668	630	823	1.1	1.9	11.216	B

17:30 - 17:45

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1	963	241	80	1090	0.884	961	765	6.2	6.8	26.952	D
2	367	92	679	702	0.522	367	363	1.1	1.1	10.723	B
3	633	158	212	947	0.669	633	833	1.9	2.0	11.452	B

17:45 - 18:00

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1	787	197	66	1098	0.716	803	629	6.8	2.6	12.838	B
2	299	75	567	766	0.391	301	302	1.1	0.7	7.774	A
3	517	129	174	968	0.534	520	694	2.0	1.2	8.094	A

18:00 - 18:15

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1	659	165	55	1104	0.596	663	525	2.6	1.5	8.241	A
2	251	63	468	822	0.305	252	250	0.7	0.4	6.313	A
3	433	108	146	984	0.440	434	574	1.2	0.8	6.567	A

2039 with dev, AM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	untitled	Standard Roundabout		1, 2, 3	13.37	B

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D13	2039 with dev	AM	ONE HOUR	07:45	09:15	15	✓

Default vehicle mix	Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
1		ONE HOUR	✓	566	100.000
2		ONE HOUR	✓	245	100.000
3		ONE HOUR	✓	705	100.000

Origin-Destination Data

Demand (Veh/hr)

		To		
		1	2	3
From	1	0	186	380
	2	184	0	61
	3	600	105	0

Vehicle Mix

Heavy Vehicle Percentages

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

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/hr)	Total Junction Arrivals (Veh)
1	0.58	8.07	1.4	A	519	779
2	0.32	6.19	0.5	A	225	337
3	0.81	20.11	4.2	C	647	970

Main Results for each time segment

07:45 - 08:00

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1	426	107	78	1091	0.391	424	586	0.0	0.6	5.374	A
2	184	46	284	928	0.199	183	218	0.0	0.2	4.831	A
3	531	133	138	989	0.537	526	330	0.0	1.1	7.711	A

08:00 - 08:15

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1	509	127	94	1082	0.470	508	702	0.6	0.9	6.263	A
2	220	55	341	895	0.246	220	261	0.2	0.3	5.327	A
3	634	158	165	973	0.651	631	396	1.1	1.8	10.433	B

08:15 - 08:30

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1	623	156	114	1070	0.583	621	855	0.9	1.4	7.989	A
2	270	67	417	852	0.317	269	318	0.3	0.5	6.173	A
3	776	194	202	953	0.815	768	484	1.8	4.0	18.615	C

08:30 - 08:45

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1	623	156	115	1069	0.583	623	863	1.4	1.4	8.069	A
2	270	67	418	851	0.317	270	320	0.5	0.5	6.191	A
3	776	194	203	952	0.815	775	486	4.0	4.2	20.111	C

08:45 - 09:00

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1	509	127	96	1081	0.471	511	713	1.4	0.9	6.339	A
2	220	55	343	894	0.246	221	264	0.5	0.3	5.350	A
3	634	158	166	973	0.651	643	398	4.2	1.9	11.179	B

09:00 - 09:15

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1	426	107	79	1090	0.391	427	593	0.9	0.6	5.439	A
2	184	46	287	926	0.199	185	220	0.3	0.3	4.855	A
3	531	133	139	988	0.537	534	333	1.9	1.2	7.975	A

2039 with dev, PM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	untitled	Standard Roundabout		1, 2, 3	36.60	E

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D14	2039 with dev	PM	ONE HOUR	16:45	18:15	15	✓

Default vehicle mix	Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
1		ONE HOUR	✓	953	100.000
2		ONE HOUR	✓	431	100.000
3		ONE HOUR	✓	595	100.000

Origin-Destination Data

Demand (Veh/hr)

		To		
		1	2	3
From	1	0	335	618
	2	252	0	179
	3	502	93	0

Vehicle Mix

Heavy Vehicle Percentages

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

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/hr)	Total Junction Arrivals (Veh)
1	0.97	60.28	16.9	F	874	1312
2	0.67	15.42	2.0	C	395	593
3	0.72	14.03	2.5	B	546	819

Main Results for each time segment

16:45 - 17:00

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1	717	179	69	1096	0.655	710	563	0.0	1.8	9.162	A
2	324	81	460	827	0.392	322	319	0.0	0.6	7.092	A
3	448	112	188	960	0.466	445	594	0.0	0.9	6.932	A

17:00 - 17:15

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1	857	214	83	1088	0.787	850	676	1.8	3.5	14.744	B
2	387	97	551	775	0.500	386	382	0.6	1.0	9.223	A
3	535	134	226	939	0.569	533	712	0.9	1.3	8.820	A

17:15 - 17:30

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1	1049	262	102	1077	0.974	1011	824	3.5	13.0	40.415	E
2	475	119	656	715	0.663	471	457	1.0	1.9	14.511	B
3	655	164	275	912	0.719	651	851	1.3	2.4	13.546	B

17:30 - 17:45

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1	1049	262	102	1077	0.974	1034	830	13.0	16.9	60.277	F
2	475	119	670	707	0.671	474	466	1.9	2.0	15.418	C
3	655	164	277	911	0.719	655	867	2.4	2.5	14.032	B

17:45 - 18:00

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1	857	214	84	1087	0.788	908	684	16.9	4.0	24.488	C
2	387	97	589	754	0.514	391	403	2.0	1.1	10.025	B
3	535	134	229	938	0.570	539	751	2.5	1.4	9.136	A

18:00 - 18:15

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1	717	179	70	1096	0.655	726	570	4.0	2.0	9.946	A
2	324	81	471	821	0.395	326	325	1.1	0.7	7.295	A
3	448	112	191	959	0.467	450	606	1.4	0.9	7.094	A