

Proposed Large Scale Residential
Development at Rathgowan, Mullingar,
Co. Westmeath
Applicant: Marina Quarter Ltd.

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CHAPTER 12 Material Assets: Traffic and Transport
Appendix 12.1 Traffic and Transport Assessment

Volume III

Appendices



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Appendix 12.1 Traffic and Transport Assessment

**MARINA QUARTER LTD.
PROPOSED RESIDENTIAL DEVELOPMENT
RATHGOWAN, MULLINGAR
CO. WESTMEATH
TRAFFIC AND TRANSPORTATION ASSESSMENT**



PROPOSED RESIDENTIAL DEVELOPMENT, RATHGOWAN, MULLINGAR, CO. WESTMEATH

TRAFFIC AND TRANSPORTATION ASSESSMENT

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Document Control Sheet	
Document Reference	P01
Report Status	FINAL
Report Date	April 2023
Current Revision	1
Client:	Marina Quarter Ltd.
Client Address:	Block B, Maynooth Business Campus, Maynooth, County Kildare, Ireland
Project Number	10906

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Revision	Description	Author:	Date	Reviewed By:	Date	Authorised by:	Date
D01	Pre-Planning Issue	GI	18/04/2023	MR	25/04/23	JOF	25/04/23
0	Pre-Planning Issue	GI	28/04/2023	MR	28/04/23	JOF	28/04/23
1	Pre-Planning Issue	GI	09/08/2023	MR	09/08/23	JOF	09/08/23

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1.0 NON-TECHNICAL SUMMARY

The Non-Technical Summary is a synopsis of the traffic and transportation assessment for the proposed residential development at Rathgowan, Mullingar in Co. Westmeath. The proposed development is located on a green field site on the suburban area of Mullingar town.

Marina Quarter Ltd. intends to submit to pre-planning for the following updated proposed residential development comprising of the construction of 181 no. residential units and all associated ancillary development works including access, footpaths, parking, drainage, landscaping and amenity areas at Mullingar (townland), Mullingar, Co. Westmeath. Access will be via the existing entrance on the R394 to the east of the site.

The overall proposed development is part of a larger three-phase development (Phases 1&2&3). Phase 3 of the development (ref 22515) consists of 213 dwellings and a creche. It is also noted that Phase 1 of the development (Planning Ref. 21/97) and Phase 2 (Planning Ref. 21/139) were granted permitted with condition by Westmeath County Council and it is currently in the Appealed Stage. The proposed development in this report is an updated design of the already granted permitted Phases 1&2.

A seasonal adjustment check was undertaken on the traffic count data to determine if the traffic on the date of the traffic count survey is representative of the annual average traffic for the year. It was determined that the date of the survey was above average compared to the annual average daily traffic (AADT) and hence no seasonal adjustment was applied to the data.

In accordance with the TII Traffic and Transportation Assessment Guidelines the following assessments were undertaken:

- the operating year 2025;
- the design years 2030 (+ 5 years); and
- the design year 2040 (+ 15 years).

The traffic count data was forecasted using the TII Project Appraisal Guidelines Unit 5.3: Travel Demand Projections for high growth.

The junction assessments indicate Junctions 1 and 2 are currently exceeding desirable capacity of 0.85. Junction 1, R394/Midland Hospital (Irishtown Roundabout) is currently over capacity. The maximum RFC reaching 3.6 in the PM peak without the development in 2040, and a maximum RFC of 3.75 in the PM peak with Phase 3 in 2040. The RFC increases by 0.22 in the PM peak with the full development (Phases 1&2&3) scenario to 3.82.

Junction 2, R394/Proposed Access Roundabout is currently over capacity in the AM peak only. The maximum RFC reaching 1.51 in the PM peak without the development in 2040, and a maximum RFC of 1.61 in the AM peak with Phase 3 in 2040. The RFC increases by 0.14 in the PM peak with the full development (Phases 1&2&3) scenario to 1.65 which results in further 22 seconds in delay.

2.0 INTRODUCTION

2.1 INTRODUCTION

TOBIN Consulting Engineers Ltd have been appointed by Marina Quarter Ltd, to prepare a Traffic and Transportation Assessment Report for proposed development including Phase 3 traffic impacts of proposed residential development in Mullingar, Co. Westmeath with connection to existing roundabout on the R394 regional road. The existing site comprises of a green field site.

In preparing this report, TOBIN Consulting Engineers has referred to

- The Westmeath County Development Plan 2021 – 2027;
- TII PE-PDV-02045 Traffic and Transport Assessment Guidelines (May 2014); and
- TII PE-PAG-02017 Project Appraisal Guidelines for National Roads Unit 5.3: Travel Demand Projections (October 2021).

2.2 OBJECTIVES

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

- Junction 1: R394/Midland Hospital (Irishtown Roundabout); and
- Junction 2: R394/Proposed Access Roundabout.

2.3 PLANNING HISTORY

Phase 1 of the development (Planning Ref. 21/97) and Phase 2 (Planning Ref. 21/139) were granted permission with condition by Westmeath County Council and it is currently in Appealed Stage. The proposed development is an updated design of the already granted permitted Phases 1&2. Previous Phase 1&2 comprised a total of 181 no. residential units, same as the proposed development.

The overall proposed development is part of a larger three-phase development (Phases 1&2&3). Phase 3 of the development (ref 22515) consists of 213 dwellings and a creche and was granted permitted with conditions by Westmeath County Council.

2.4 STRUCTURE OF THE REPORT

This report is divided into eight chapters:

- Chapter 1 is a Non-Technical Summary.
- Chapter 2 includes this introduction.
- Chapter 3 describes the proposed development, and its location.
- Chapter 4 provides an overview of the existing and proposed traffic conditions, explaining how this information was obtained.
- Chapter 5 outlines the assumptions that have been made in the calculation of traffic generated by the development and the factors used to forecast the future road network traffic.

- Chapter 6 explains the methodology used and the results of the analysis performed on the nominated junctions. An investigation into link capacity is also dealt with in this chapter.
- Chapter 7 summarises car and bicycle parking provision.
- Chapter 8 concludes the report.

3.0 PROPOSED DEVELOPMENT

3.1 SITE LOCATION

The proposed development site is located west of Mullingar town. The site location is shown in Figure 3-1, with the indicative site layout prepared by the architect (Appendix 1).

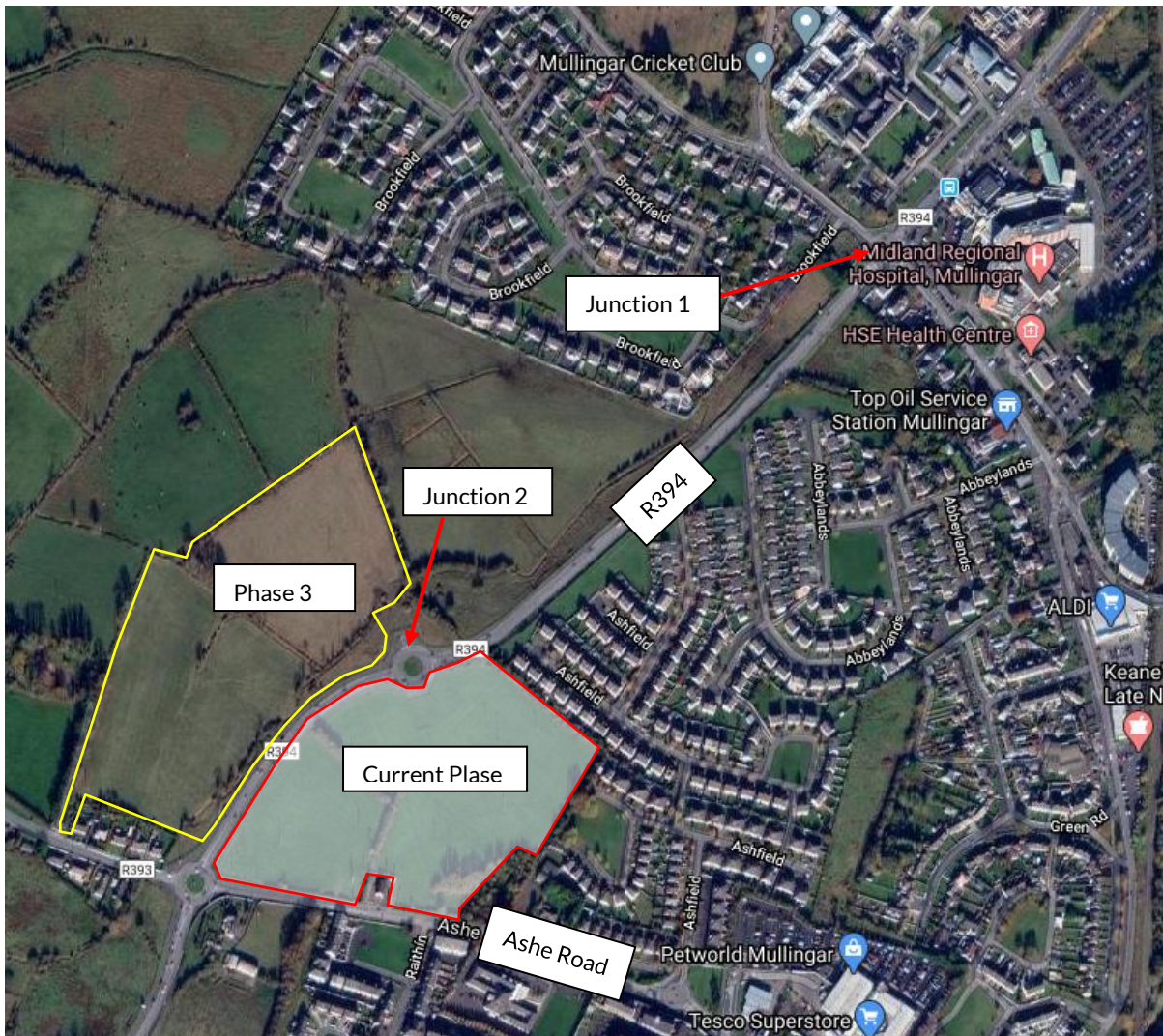


Figure 3-1: Site Location

3.2 DESCRIPTION OF PROPOSED DEVELOPMENT

Planning permission is being sought by Marina Quarter Ltd. for development of a greenfield site on lands to the east of the R394 Regional Road in Mullingar.

The proposed development will consist of the following:

- 1) Construction of 181 no. residential units comprising of:

- 16 no. maisonettes
 - 2 no. 1 bed apartment units
 - 2 no. 2 bed apartment units
 - 73 no. 2 bed units
 - 80 no. 3 bed units and
 - 8 no.4 bed units.
- 2) Provision of shared communal and private open space, car and bicycle parking, site landscaping and public lighting, services, access onto the R394 and associated site development works

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3.3 CUMULATIVE IMPACTS

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

Committed developments granted in the immediate vicinity of the proposed development include PL Ref 19-6121. PL Ref 19-6121 is for the construction of 18 apartments units in 2 blocks (Block A&B). Block A consists of 1 no. 1bedroom unit, 3no.3bedroom duplex apartments in 2 and 3 high building with private balconies and patios. Block B consists of 3 no.1-bedroom units and 6no. 2 bedrooms duplex apartments units in 3 storey high building with private balconies and patios. The proposed development will also consist of new site entrance, shared access road, footpaths, car parking spaces, boundary wall and fence, covered cycle track, recycling bin storage area, public and private open spaces, particle removal and trimming of existing hedgerows to accommodate proposed site entrance, landscaping and all associated site works and services at Ashe Road, Mullingar, Co. Westmeath.

The traffic volumes associated with the above development was reviewed to determine where the distribution of the traffic will overlap with the proposed project. The traffic volumes associated with the committed development was deemed negligible at the junctions assessed. As such, it has been assumed that any increase in traffic will be accounted for in the high sensitivity growth rates.

It is also noted the proposed development assessed in this TTA will form part of a larger three-phase development. Phase 3 of the development (ref 22515) consists of 213 dwellings and a creche. This TTA has considered these applications as background traffic as both were granted.

3.4 TRAFFIC SURVEY

It is noted no traffic counts were possible due to COVID-19 Government restrictions. However previous count data was obtained to determine the magnitude of the existing traffic flows. The results of a manual classified junction turning count was carried out by IDASO on Thursday the 26th of September 2019 between the hours 07:00 and 19:00. The count information was obtained for the following junction:

- R394/Midland Hospital (Irishtown Roundabout)

This survey distinguished between light good vehicles and heavy good vehicles. The results of this survey indicated that the peak traffic levels through these junctions occurred between the hours of AM Peak (08:15 and 09:15) and PM peak (17:00 and 18:00).

Link-based growth rates (high sensitivity growth rates) were applied to the 2019 traffic flows to determine background traffic flows for the future assessment years.

3.5 EXISTING ROAD NETWORK

The proposed development is to be accessed via an access from the R394. The proposed site access is situated within an 50km/h default urban speed zone. R394 regional road has a carriageway width of approximately 5.6m in the vicinity of the site access junction.

3.6 PROPOSED NETWORK IMPROVEMENTS

The provision of the shared, and combined cycle facilities proposed throughout the development was developed through a collaborative approach with Westmeath County Council. Throughout this consultation the needs of all road users were considered to ensure a safe, enjoyable environment for cyclists, pedestrians, and motorists.

A raised cycle lane is also proposed along Ashe Road boundary which will connect to the existing cycle path located outside the south-east corner of the site as shown Appendix 1. For commuter journeys, cycling can be considered as a feasible means of transport for those working within the vicinity of the development. Cycle parking facilities are provided within the proposed development.

3.7 PROPOSED SITE ACCESS JUNCTION

The proposed development is to be accessed via an access onto the existing roundabout on the R394. The proposed access roads width is 5.5m with 2m wide footpaths on both sides of the proposed internal road and a combined cycle footpath integrated for a section off both the R394 and non-vehicular Ashe Road entrances as shown on the drawing.

4.0 TRIP GENERATION AND DISTRIBUTION

4.1 SEASONAL ADJUSTMENT

In order to undertake an analysis of the key junctions, it is sometimes necessary to apply a correction factor to convert the traffic count data into seasonally adjusted traffic flows to take account of the seasonal variation that is experienced with traffic volumes. A comparison was undertaken between the TII traffic count information for the day of the survey in September against the annual average daily traffic (AADT) for the previous year. The traffic count on the day of the survey was higher than the average of the year, hence the traffic count data is more robust than the average annual values and no seasonal adjustment is required.

4.2 OPENING AND FUTURE YEAR FLOWS AND ENVIRONMENT

The proposed development will be constructed in one phase. Therefore, the opening year of 2025 was utilised for the purpose of the traffic assessment. In addition to the opening years and in accordance with TII guidelines, the capacity assessment was also based on traffic conditions forecast for the design years 2030 (+5 years) and 2040 (+ 15 years).

The link-based annual growth rates were updated in 2021 by the TII, growth forecasts shown for the county in Table 4.1. The derived growth factors were applied to 2019 traffic flows to determine background traffic flows for the assessment years. The assessment is split into light vehicles and heavy vehicles.

Table 4.1: Growth Factors for light vehicle (LV) and heavy vehicles (HV)

	2025	2030	2040
LV	1.122	1.235	1.392
HV	1.231	1.463	1.816

4.3 TRIP GENERATION

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

4.3.1 Trip Generation of Committed Development

Trip Rates for the various uses within the development have been determined for weekdays, Monday to Friday, to coincide with the maximum levels of existing traffic on the adjacent road network. The volume of traffic expected to be generated by committed development (Phase 3) for the AM and PM peak hours are shown below in Table 4.2 and Table 4.3. The TRICS database outputs are contained in Appendix 2 of this report.

Table 4.2: Expected Trip Generation for Committed Development (Phase 3) for AM Peak Hour

EXPECTED TRIP GENERATION FOR COMMITTED DEVELOPMENT PHASE 3 (AM PEAK HOUR)			
Development Type	No of House/Area	Arrivals	Departures
Houses	213 dwellings	29	89
Creche	429sqm	28	23
Total		57	111

Table 4.3: Expected Trip Generation for Proposed Committed (Phase 3) for PM Peak Hour

EXPECTED TRIP GENERATION FOR COMMITTED DEVELOPMENT (PHASE 3) (PM PEAK HOUR)			
Development Type	No of House/Area	Arrivals	Departures
Houses	213 dwellings	87	50
Creche	429sqm	17	22
Total		104	72

4.3.2 Trip Generation of Proposed Development

Trip Rates for the various uses within the development have been determined for weekdays, Monday to Friday, to coincide with the maximum levels of existing traffic on the adjacent road network. The volume of traffic expected to be generated by the proposed development for the AM and PM peak hours are shown below in Table 4.4 and Table 4.5. The TRICS database outputs are contained in Appendix 2 of this report.

Table 4.4: Expected Trip Generation for Proposed Development for AM Peak Hour

EXPECTED TRIP GENERATION FOR PROPOSED DEVELOPMENT (AM PEAK HOUR)			
Development Type	No of House/Area	Arrivals	Departures
Houses	181 dwellings	25	75
Total		25	75

Table 4.5: Expected Trip Generation for Proposed Development for PM Peak Hour

EXPECTED TRIP GENERATION FOR PROPOSED DEVELOPMENT (PM PEAK HOUR)			
--	--	--	--

Development Type	No of House/Area	Arrivals	Departures
Houses	181 dwellings	74	42
Total		74	42

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4.4 TRIP DISTRIBUTION

4.4.1 Trip Distribution of Proposed Development

It was envisaged the proposed traffic distribution matches the existing traffic distribution at Junction 1. The passing traffic shall be utilised for the proposed traffic distribution at Junction 2 as the junction are not constructed and therefore not in use / occupied by a development generating traffic. The existing development trip distribution applied to the per peak hour are shown below.

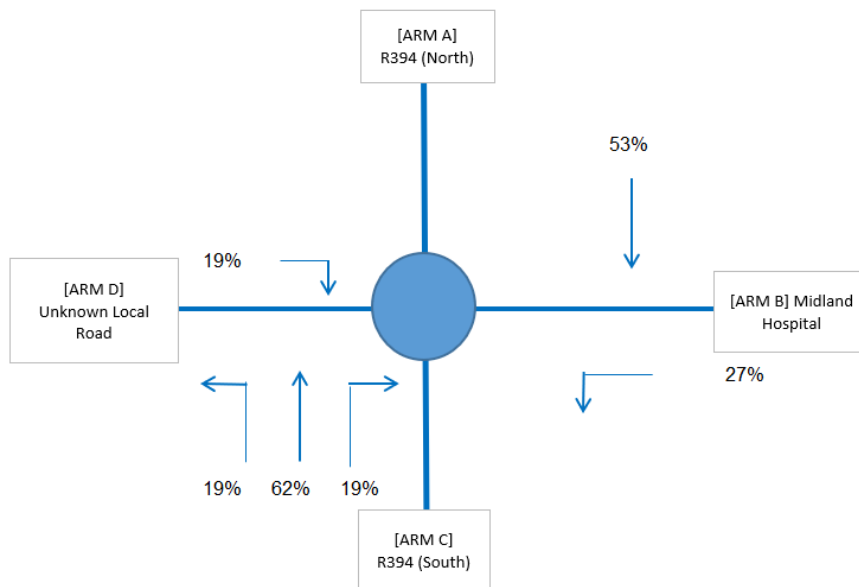


Figure 4-1: Traffic Distribution for AM Peak Hour at Junction 1

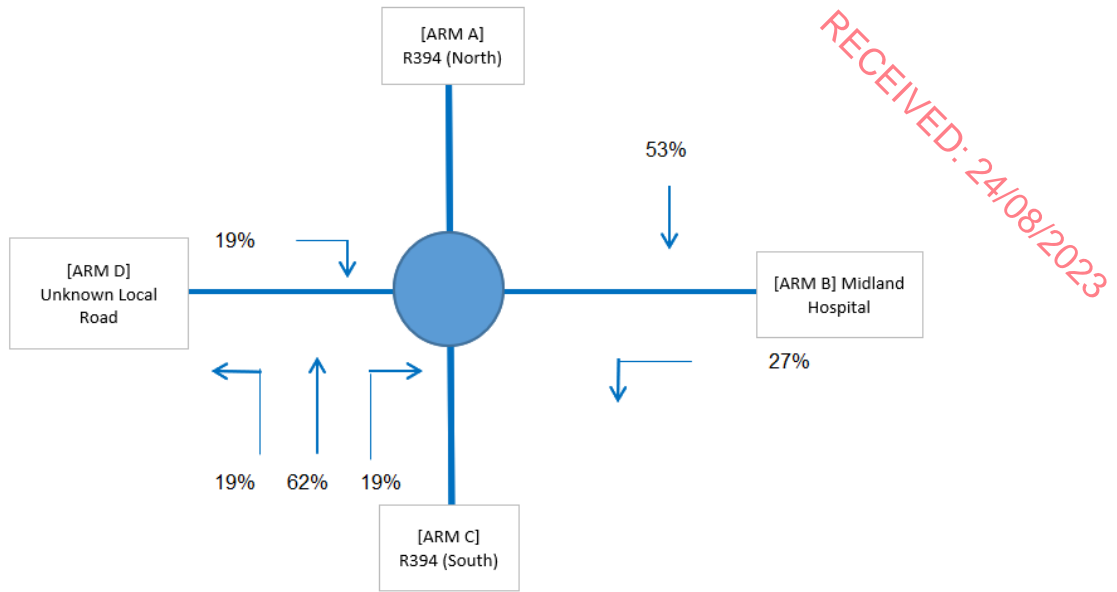


Figure 4-2: Traffic Distribution for PM Peak Hour at Junction 1

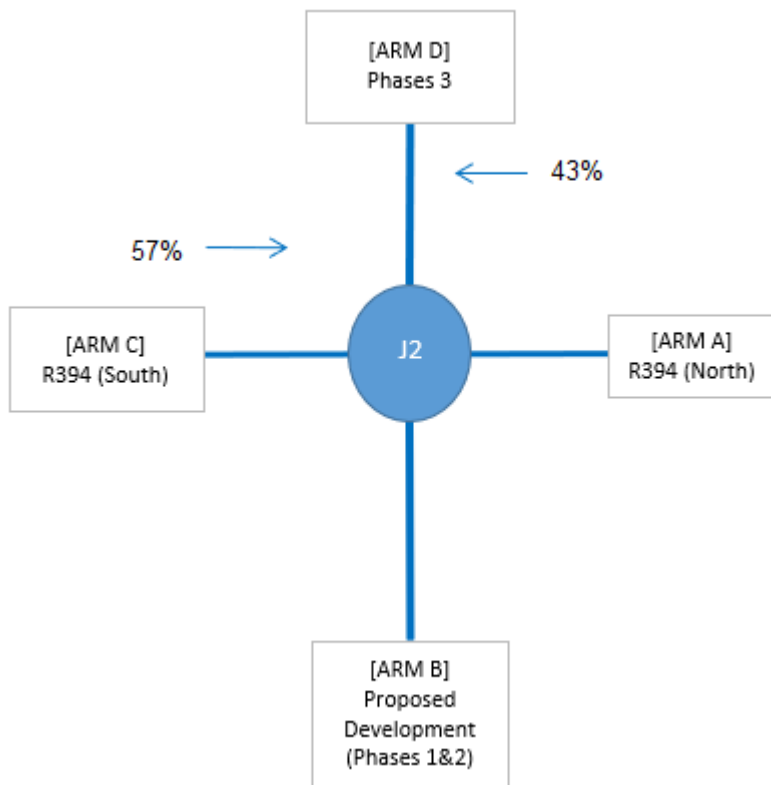
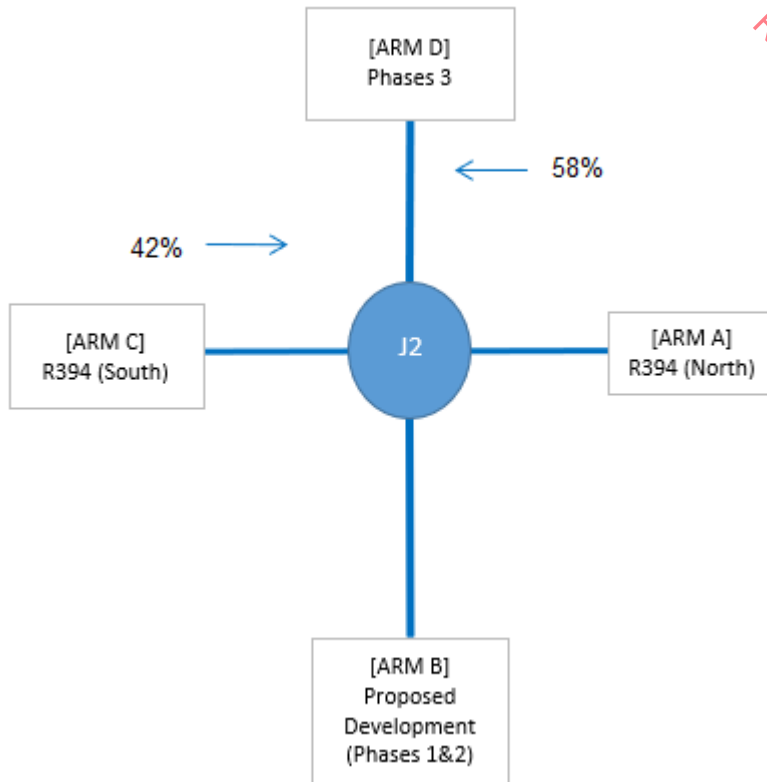


Figure 4-3: Traffic Distribution for AM Peak Hour at Junction 2



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

4.4.2 Trip Distribution of Baseflow Plus Generated Traffic

The baseline plus generated traffic for overall proposed development including committed development (Phase 1&2&3) for the year of opening 2025 and the design years 2030 and 2040 for both the AM and PM peak hours are shown in the Figures below.

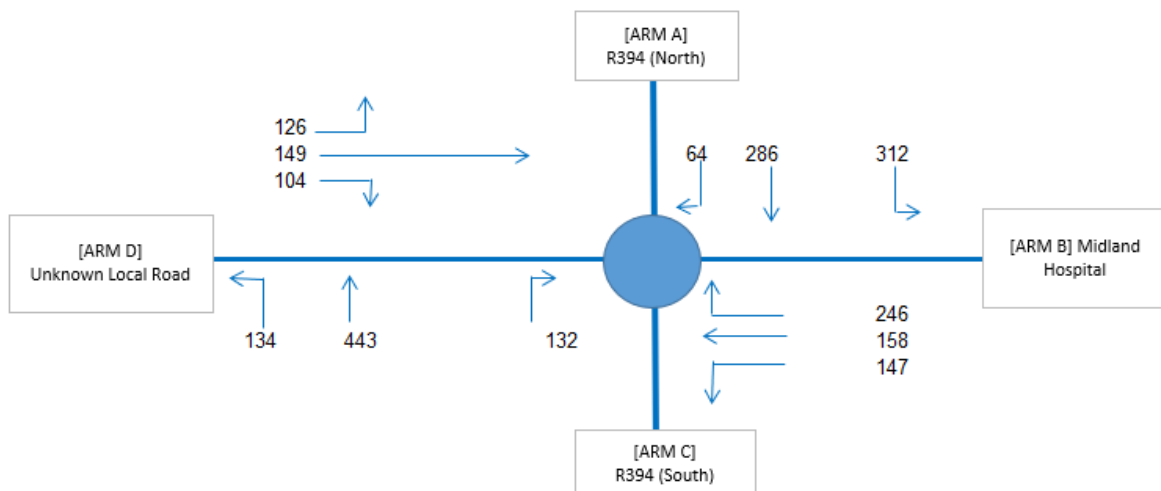


Figure 4-5: Baseflow Traffic 2019 AM Peak - Junction 1

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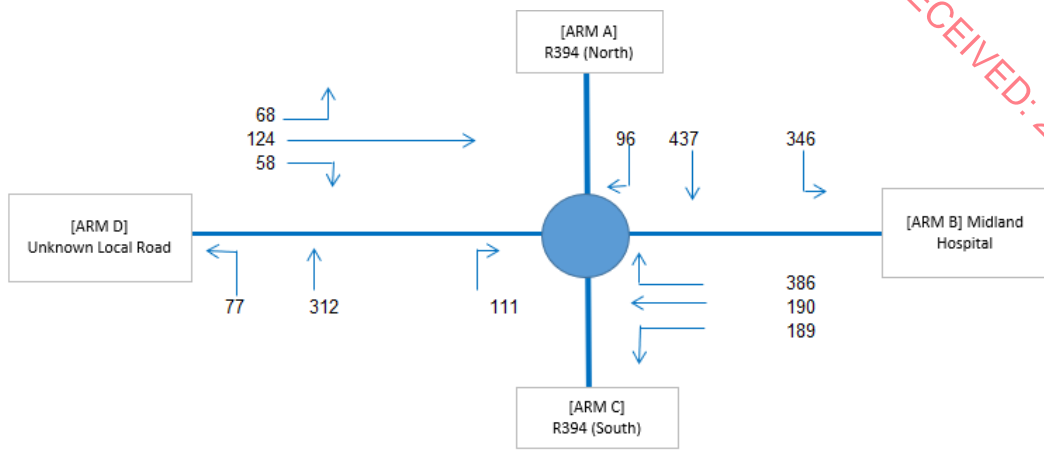


Figure 4-6: Baseflow Traffic 2019 PM Peak - Junction 1

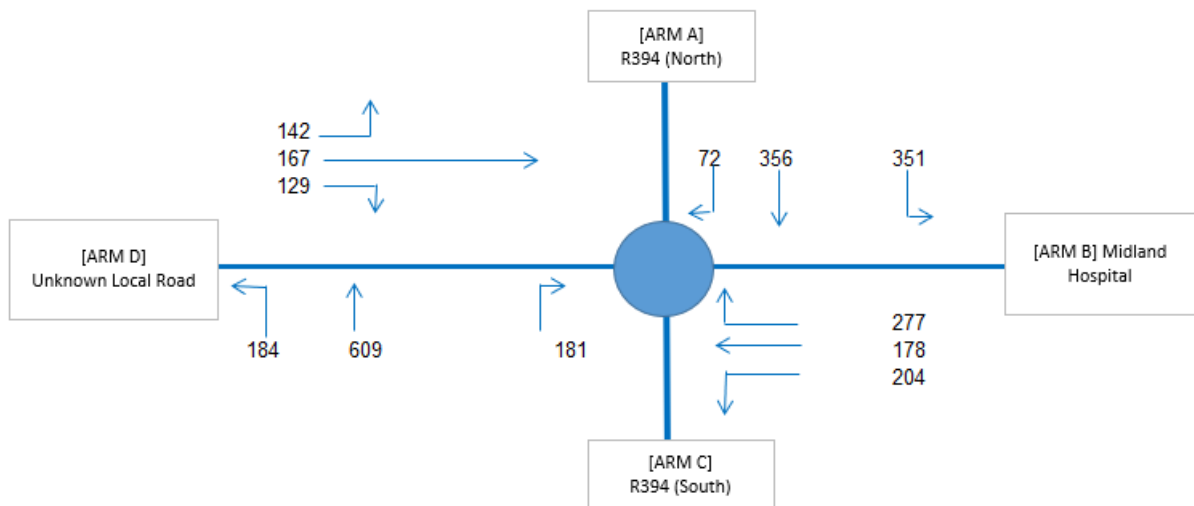


Figure 4-7: Baseflow Plus Generated Traffic 2025 AM Peak - Junction 1

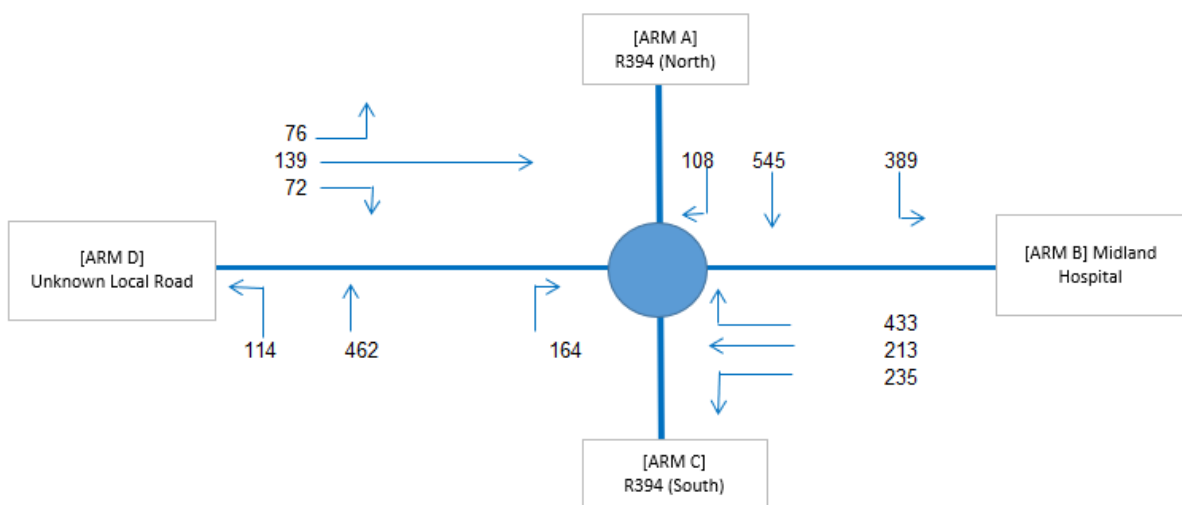


Figure 4-8: Baseflow Plus Generated Traffic 2025 PM Peak - Junction 1

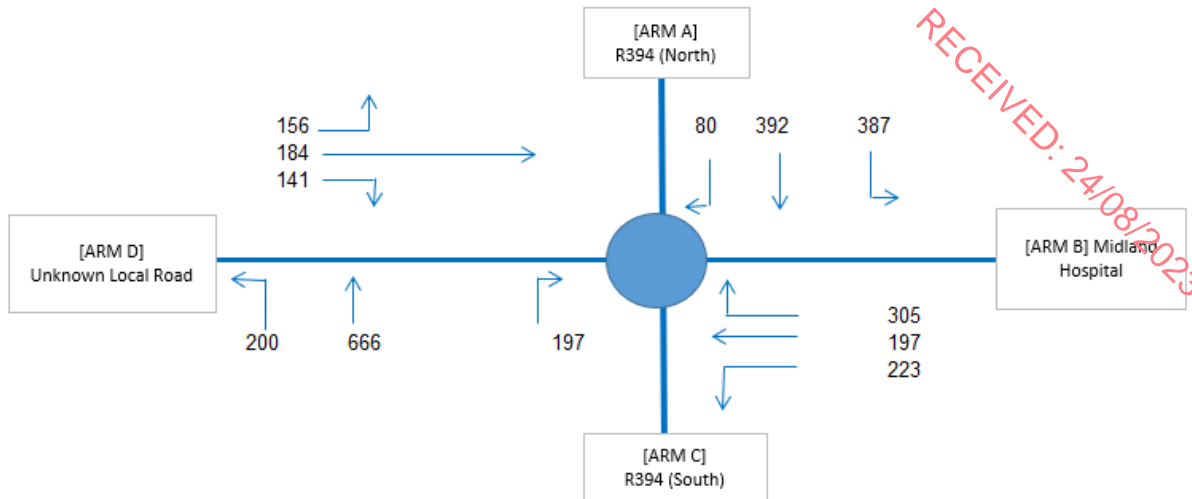


Figure 4-9: Baseflow Plus Generated Traffic 2030 AM Peak - Junction 1

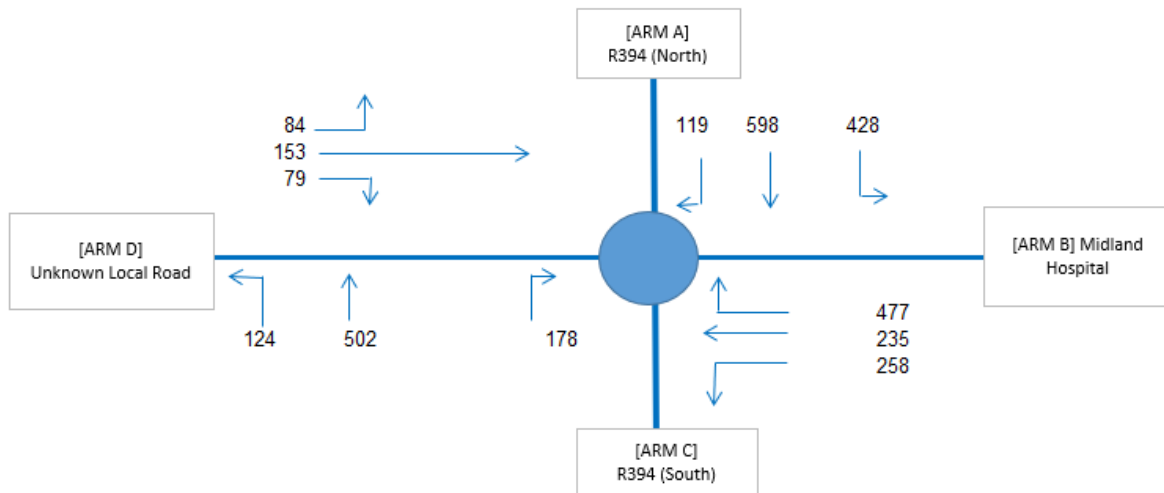


Figure 4-10: Baseflow Plus Generated Traffic 2030 PM Peak - Junction 1

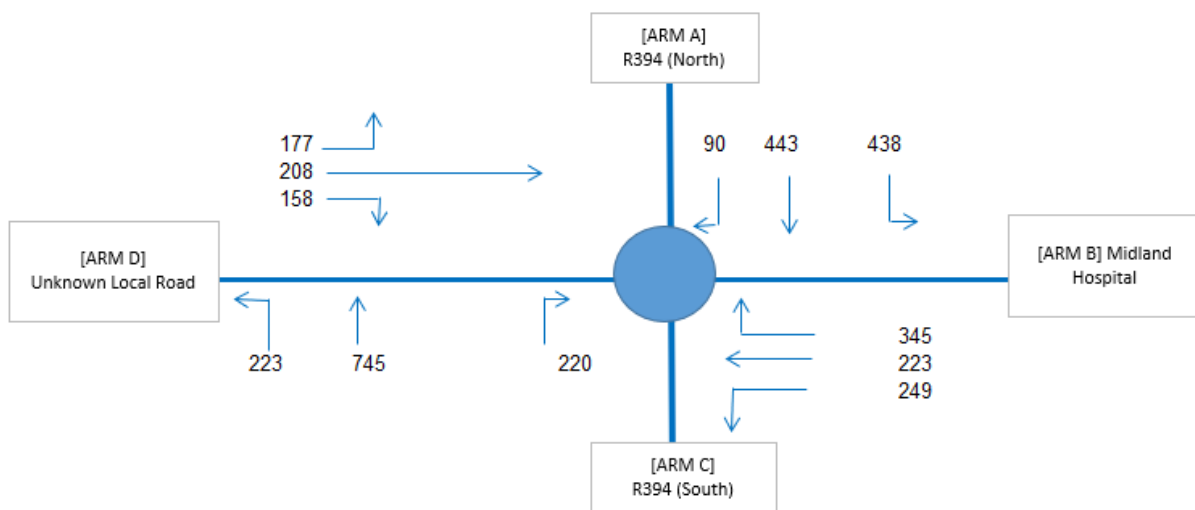


Figure 4-11: Baseflow Plus Generated Traffic 2040 AM Peak - Junction 1

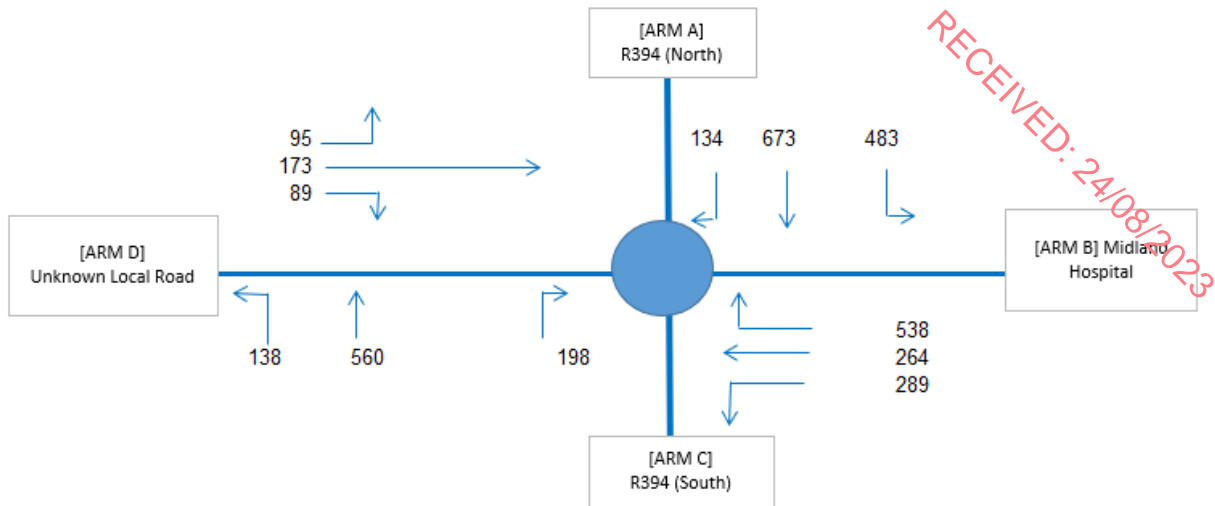


Figure 4-12: Baseflow Plus Generated Traffic 2040 PM Peak - Junction 1

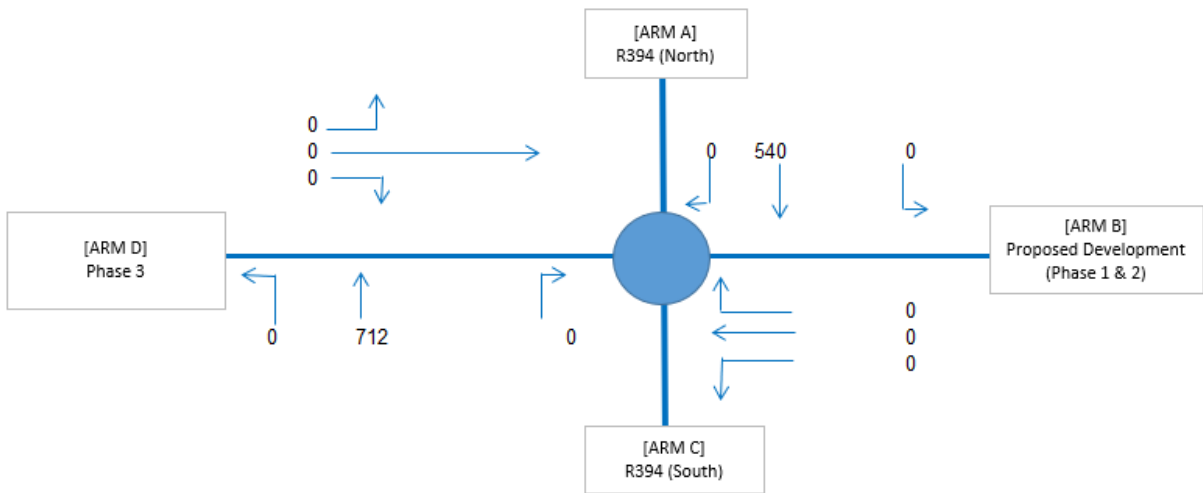


Figure 4-13: Baseflow Traffic 2019 AM Peak - Junction 2

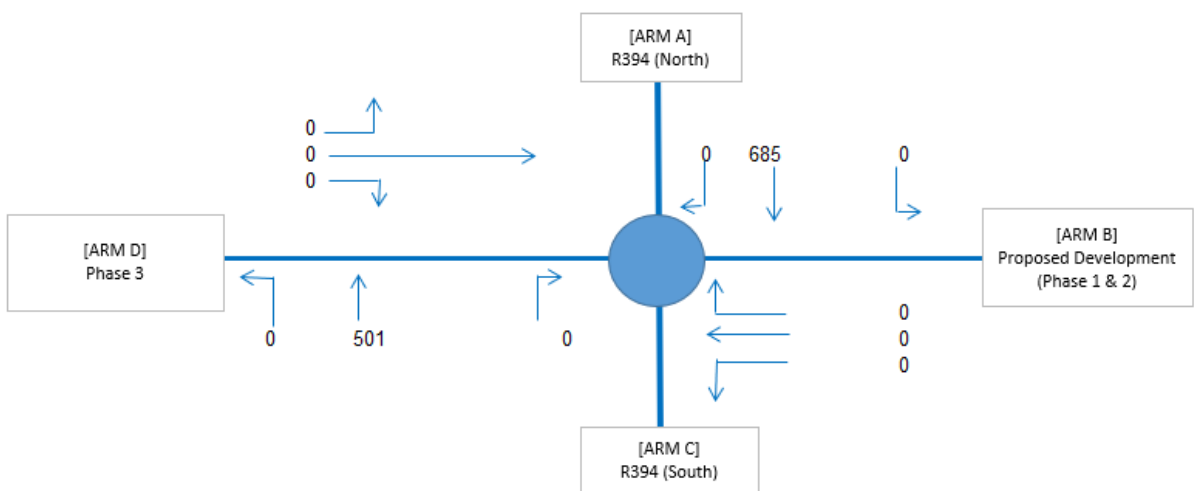


Figure 4-14: Baseflow Traffic 2019 PM Peak - Junction 2

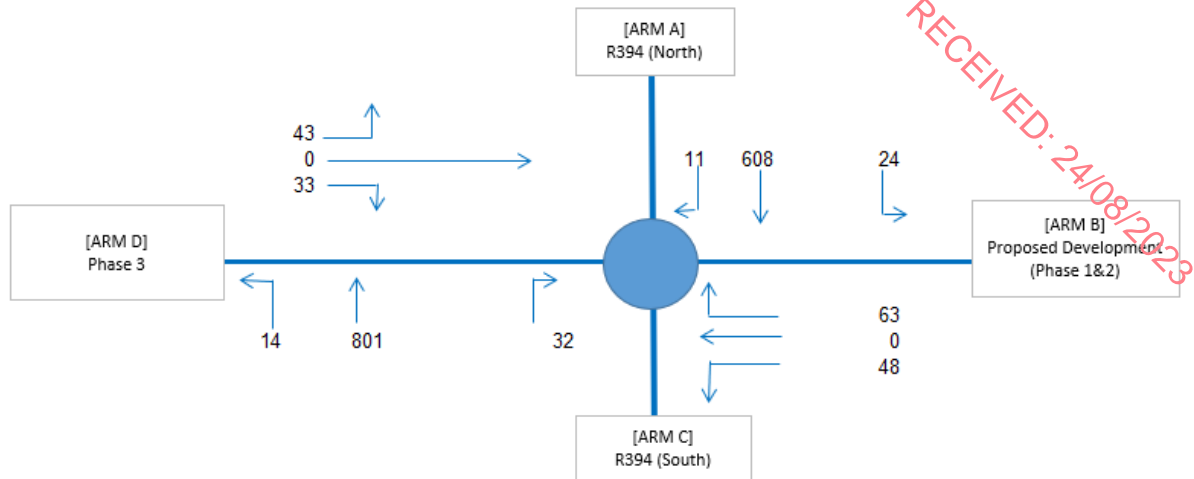


Figure 4-15: Baseflow Plus Generated Traffic 2025 AM Peak - Junction 2

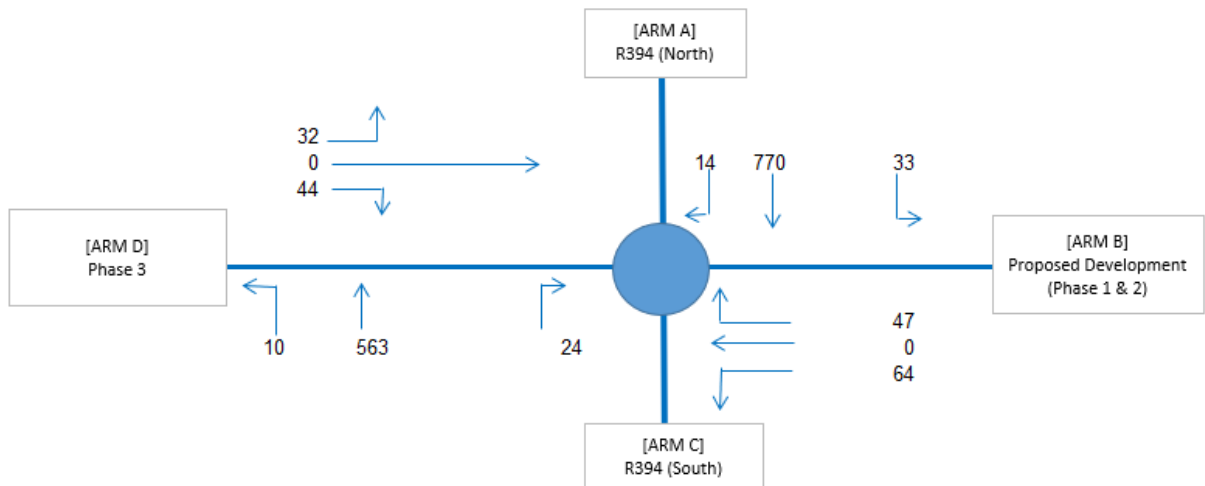


Figure 4-16: Baseflow Plus Generated Traffic 2025 PM Peak - Junction 2

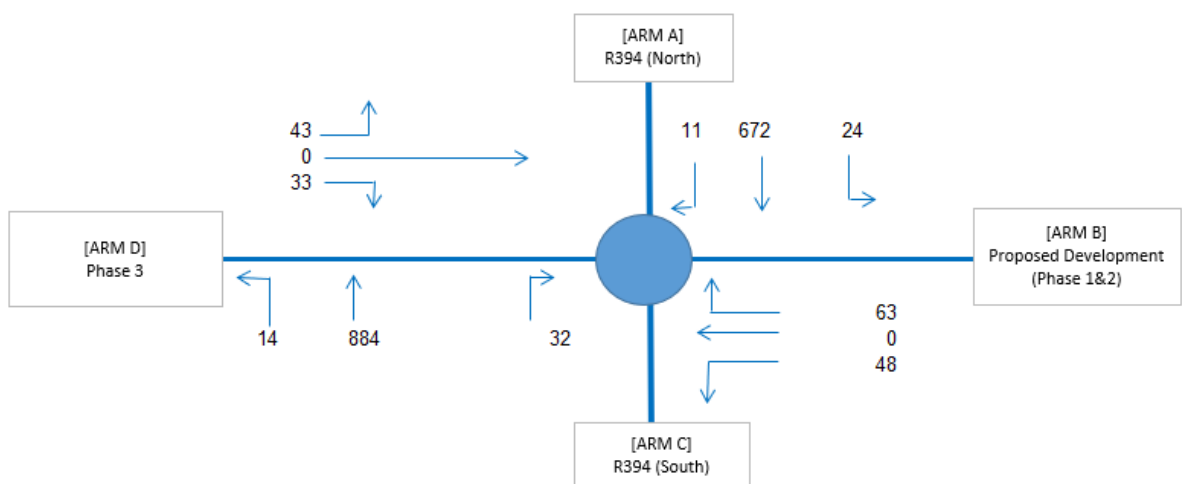


Figure 4-17: Baseflow Plus Generated Traffic 2030 AM Peak - Junction 2

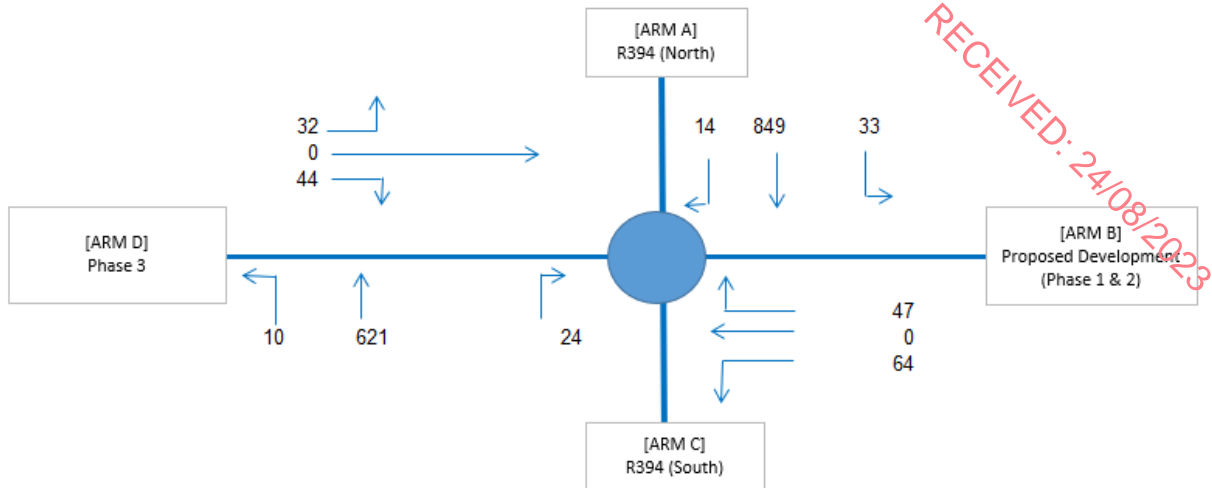


Figure 4-18: Baseflow Plus Generated Traffic 2030 PM Peak - Junction 2

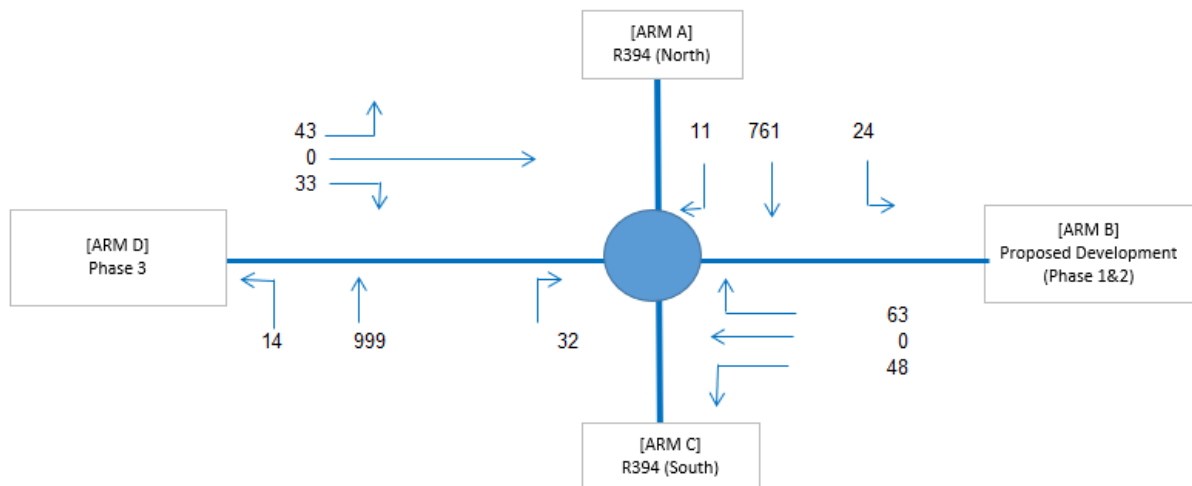


Figure 4-19: Baseflow Plus Generated Traffic 2040 AM Peak - Junction 2

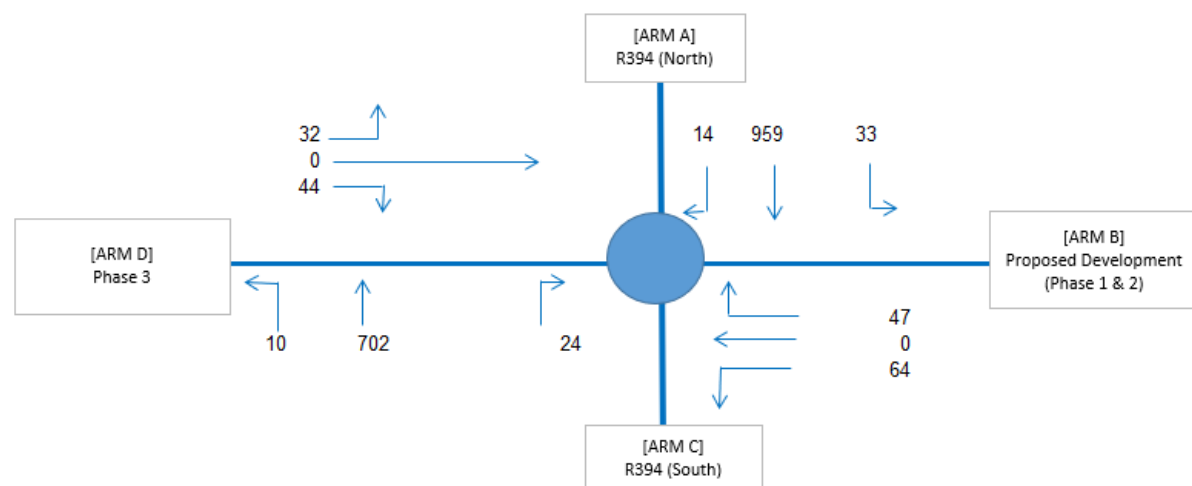


Figure 4-20: Baseflow Plus Generated Traffic 2040 PM Peak - Junction 2

5.0 TRAFFIC IMPACT

5.1 JUNCTION ANALYSIS

5.1.1 *Introduction and Methodology*

The proposed roundabout access (Junction 2) and the roundabout junction to the north of Junction 2 (Junction 1) have been analysed using the Transport Research Laboratory (TRL) computer program JUNCTION 10 ARCADY, widely accepted tools used for the analysis of priority junctions and roundabouts.

The key parameters examined in the results of the analysis are the Ratio of Flow to Capacity Value (RFC value – desirable value for ARCADY should be no greater than 0.85 – values over 1.00 indicate the approach arm is over capacity), the maximum queue length on any approach to the junctions and the average delay for each vehicle passing through the junction during the modelled period.

ARCADY requires the following input data:

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

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

The results of the ARCADY analysis are presented in Section 5.1.3. The origin/destination traffic demand tables for all the different scenarios tested for the analysed junctions are provided in Appendix 3.

5.1.2 *Assessment Time and Years*

The performance of the junction has been analysed for the critical AM peak hour (08:15 – 09:15) and PM peak hour (17:00 – 18:00). This analysis was carried out for the current year, year of opening of the development, expected to be 2025, and the design years of the development in 2030 and 2040, 5 years and 15 years beyond the expected full completion of the development.

5.1.3 *Analysis Results*

5.1.3.1 *Junction 1 – Site 1 – R394/Midland Hospital (Irishtown Roundabout)*

A summary of the analysis results for the R394/Midland Hospital (Irishtown Roundabout) for the AM and PM peak hours are provided below in Table 5-1. Full outputs from JUNCTION 10 ARCADY are included in Appendix 4.

Table 5.1: Junction 1 Results: Site 1 - R394/Midland Hospital (Irishtown Roundabout) AM & PM Peak Hours

	AM					PM				
	Queue (Veh)	Delay (s)	RFC	LOS	Junction LOS	Queue (Veh)	Delay (s)	RFC	LOS	Junction LOS
2019 Baseflows										
R394 (N)	0.6	3	0.38	A	F	1	3.48	0.5	A	F
Midland Hospital	62.5	380.17	1.21	F		324.9	2123.84	1.89	F	
R394 (S)	244.5	1595.69	1.55	F		48.7	315.43	1.14	F	
Unknown Local Road	7.7	70.65	0.92	F		1.6	20.72	0.62	C	
2025 No Development										
R394 (N)	0.8	3.31	0.44	A	F	1.3	4.06	0.56	A	F
Midland Hospital	144.5	958.95	1.46	F		495.4	3324.54	2.31	F	
R394 (S)	374.5	2395.18	1.74	F		100.6	657	1.27	F	
Unknown Local Road	18.5	142.1	1.02	F		2.1	25.01	0.69	D	
2025 With Phase 3										
R394 (N)	0.8	3.36	0.45	A	F	1.4	4.18	0.58	A	F
Midland Hospital	166.8	1098.27	1.52	F		521.2	3541.99	2.39	F	
R394 (S)	454.4	2859.96	1.84	F		158.4	1050.04	1.39	F	
Unknown Local Road	19.9	149.93	1.03	F		2.2	25.43	0.69	D	
2025 With Proposed development plus Phase 3										
R394 (N)	0.8	3.39	0.45	A	F	1.4	4.24	0.58	A	F
Midland Hospital	175.9	1157.36	1.54	F		532.2	3636.77	2.43	F	
R394 (S)	508.8	3180.47	1.92	F		207.4	1371.76	1.47	F	
Unknown Local Road	20.5	153.08	1.03	F		2.2	25.5	0.69	D	
2030 No Development										
R394 (N)	0.9	3.67	0.49	A	F	1.7	4.79	0.63	A	F
Midland Hospital	237.3	1620.31	1.69	F		658.6	4581.77	2.77	F	
R394 (S)	497.4	3131.57	1.91	F		162.2	1082.09	1.4	F	
Unknown Local Road	38.2	286.18	1.12	F		2.8	30.77	0.75	D	
2030 With Phase 3										
R394 (N)	1	3.74	0.5	A	F	1.8	4.96	0.64	A	F
Midland Hospital	265	1814.01	1.76	F		684.5	4830.31	2.88	F	
R394 (S)	575.6	3579.96	2.01	F		232.8	1524.99	1.51	F	
Unknown Local Road	40.3	303.45	1.13	F		2.9	31.39	0.76	D	
2030 With Proposed development plus Phase 3										
R394 (N)	1	3.73	0.5	A	F	1.8	5.04	0.65	A	F
Midland Hospital	275.4	1883.48	1.78	F		695.7	4938.5	2.92	F	
R394 (S)	632.2	3911.84	2.09	F		287	1853.31	1.59	F	
Unknown Local Road	41.2	311.24	1.13	F		2.9	31.49	0.76	D	
2040 No Development										

	AM					PM				
	Queue (Veh)	Delay (s)	RFC	LOS	Junction LOS	Queue (Veh)	Delay (s)	RFC	LOS	Junction LOS
R394 (N)	1.2	4.25	0.56	A	F	2.6	6.53	0.72	A	F
Midland Hospital	399.9	2781.2	2.07	F		888.9	6603.02	3.6	F	
R394 (S)	669.5	4193.57	2.15	F		273.6	1786.15	1.57	F	
Unknown Local Road	81	624.64	1.26	F		4.5	44.79	0.84	E	
2040 With Phase 3										
R394 (N)	1.3	4.29	0.56	A	F	2.7	6.85	0.74	A	F
Midland Hospital	427.6	2986.61	2.13	F		914.5	6898.29	3.75	F	
R394 (S)	750.2	4654.96	2.26	F		347.9	2219.75	1.67	F	
Unknown Local Road	84.6	647.87	1.27	F		4.6	45.2	0.84	E	
2040 With Proposed development plus Phase 3										
R394 (N)	1.3	4.34	0.56	A	F	2.8	7.02	0.74	A	F
Midland Hospital	441.1	3091.66	2.17	F		926.3	7039.42	3.82	F	
R394 (S)	801.3	4919.81	2.32	F		405	2562.3	1.75	F	
Unknown Local Road	85.7	654.64	1.27	F		4.7	45.95	0.84	E	

The above results indicate that the R394/Midland Hospital (Irishtown Roundabout) is currently over capacity, exceeding the maximum desirable of 0.85 RFC in the AM and PM peak. The maximum RFC reaching 3.6 in the PM peak without the development in 2040. The RFC increases by 0.22 in the PM peak with the full development (proposed development plus Phase 3) scenario to 3.82.

5.1.3.2 Junction 2 – R394/Proposed Access Roundabout

A summary of the analysis results for the R394/Proposed Access Roundabout for the AM peak and PM peak hours are provided below in Table 5-2. Full outputs from JUNCTION 10 ARCADY are included in Appendix 4.

Table 5.2: Junction 2 Results – R394/Proposed Access Roundabout AM & PM Peak Hours

	AM					PM				
	Queue (Veh)	Delay (s)	RFC	LOS	Junction LOS	Queue (Veh)	Delay (s)	RFC	LOS	Junction LOS
2019 Baseflows										
1 - R394 (N)	0.4	2.15	0.26	A	F	0.5	2.31	0.33	A	A
2 - Committed Development	0	0	0	A		0	0	0	A	
3 - R394 (S)	38.7	168.57	1.07	F		2.9	19.27	0.75	C	
4 - Proposed Development	0	0	0	A		0	0	0	A	
2025 No Development										
1 - R394 (N)	0.4	2.25	0.29	A	F	0.6	2.45	0.37	A	B
2 - Committed Development	0	0	0	A		0	0	0	A	
3 - R394 (S)	89.7	446.51	1.21	F		5.1	31.31	0.85	D	

	AM					PM				
	Queue (Veh)	Delay (s)	RFC	LOS	Junction LOS	Queue (Veh)	Delay (s)	RFC	LOS	Junction LOS
4 - Proposed Development	0	0	0	A		0	0	0	A	
2025 With Phase 3										
1 - R394 (N)	0.4	2.31	0.31	A	F	0.6	2.55	0.39	A	C
2 - Committed Development	0.4	10.42	0.26	B		0.4	13.01	0.31	B	
3 - R394 (S)	138.7	685.75	1.3	F		8	47.6	0.91	E	
4 - Proposed Development	0	0	0	A		0	0	0	A	
2025 With Proposed development plus Phase 3										
1 - R394 (N)	0.5	2.37	0.32	A	F	0.7	2.65	0.4	A	C
2 - Committed Development	0.4	11.05	0.27	B		0.5	14.36	0.33	B	
3 - R394 (S)	156.1	767.16	1.33	F		9.7	56.94	0.93	F	
4 - Proposed Development	0.2	10.24	0.19	B		0.2	9.52	0.18	A	
2030 No Development										
1 - R394 (N)	0.5	2.39	0.33	A	F	0.7	2.61	0.4	A	D
2 - Committed Development	0	0	0	A		0	0	0	A	
3 - R394 (S)	165.1	782.61	1.33	F		10.1	57.08	0.94	F	
4 - Proposed Development	0	0	0	A		0	0	0	A	
2030 With Phase 3										
1 - R394 (N)	0.5	2.45	0.34	A	F	0.7	2.72	0.42	A	E
2 - Committed Development	0.4	11.52	0.28	B		0.5	14.96	0.34	B	
3 - R394 (S)	222.4	1118	1.43	F		18.8	96.98	1	F	
4 - Proposed Development	0	0	0	A		0	0	0	A	
2030 With Proposed development plus Phase 3										
1 - R394 (N)	0.5	2.52	0.35	A	F	0.8	2.83	0.44	A	E
2 - Committed Development	0.4	12.29	0.29	B		0.6	16.78	0.36	C	
3 - R394 (S)	241.5	1228.32	1.47	F		23.8	117.6	1.02	F	
4 - Proposed Development	0.2	10.26	0.19	B		0.2	9.95	0.19	A	
2040 No Development										
1 - R394 (N)	0.6	2.55	0.37	A	F	0.9	2.91	0.46	A	F
2 - Committed Development	0	0	0	A		0	0	0	A	
3 - R394 (S)	291.8	1431.57	1.51	F		34	151.53	1.06	F	
4 - Proposed Development	0	0	0	A		0	0	0	A	
2040 With Phase 3										
1 - R394 (N)	0.6	2.63	0.39	A	F	0.9	3.04	0.48	A	F
2 - Committed Development	0.4	13.3	0.31	B		0.6	19.36	0.4	C	
3 - R394 (S)	365.4	1813.73	1.61	F		55.1	253.36	1.13	F	

	AM					PM				
	Queue (Veh)	Delay (s)	RFC	LOS	Junction LOS	Queue (Veh)	Delay (s)	RFC	LOS	Junction LOS
4 - Proposed Development	0	0	0	A		0	0	0	A	
2040 With Proposed development plus Phase 3										
1 - R394 (N)	0.7	2.7	0.4	A	F	1	3.18	0.49	A	F
2 - Committed Development	0.5	14.35	0.33	B		0.7	22.51	0.43	C	
3 - R394 (S)	389.4	1934.99	1.65	F		63.7	305.88	1.15	F	
4 - Proposed Development	0.2	10.27	0.19	B		0.2	10.11	0.19	B	

The above results indicate that the R394/Proposed Access Roundabout is currently over capacity, exceeding the maximum desirable of 0.85 RFC in the AM peak only. The maximum RFC reaching 1.51 in the PM peak without the development in 2040. The RFC increases by 0.14 in the PM peak with the full development (proposed development plus Phase 3) scenario to 1.65 which results in further 22 seconds in delay.

6.0 PARKING PROVISION

The car parking provisions at the site have been proposed as follows;

- 265 Car parking Spaces for Residential Units, which:
- 2 no. car parking spaces for 3 bed units, and 1 no. space for 1-2 bed units.

The bicycle parking provisions at the site have been proposed as follows;

- 300 no. Bicycle Spaces for Residential Units (1 per room)

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7.0 MOBILITY MANAGEMENT

7.1 PEDESTRIANS & CYCLISTS

7.1.1 Walking

Pedestrian facilities are provided on the public roads along R394 with a 1.8m wide footways to the proposed development's roadside. The proposed development shall incorporate drop kerbs and tactile paving at the site accesses and within the development at all crossing points. Connectivity for pedestrians by means of a footway shall be provided at the entrance to the proposed development and within the proposed development.

A network of footpaths throughout the proposed development will provide a high rate of accessibility to the local facilities within the area. The inclusion of these attractive, well designed walking routes will encourage pedestrians to access the local facilities on foot as opposed to taking their personal vehicles.

The development is within walking distance to the bus stop which is located on Ashe Road east of the pedestrian access and 1.1km to Mullingar Train Station as shown in Figure 7-1 below.

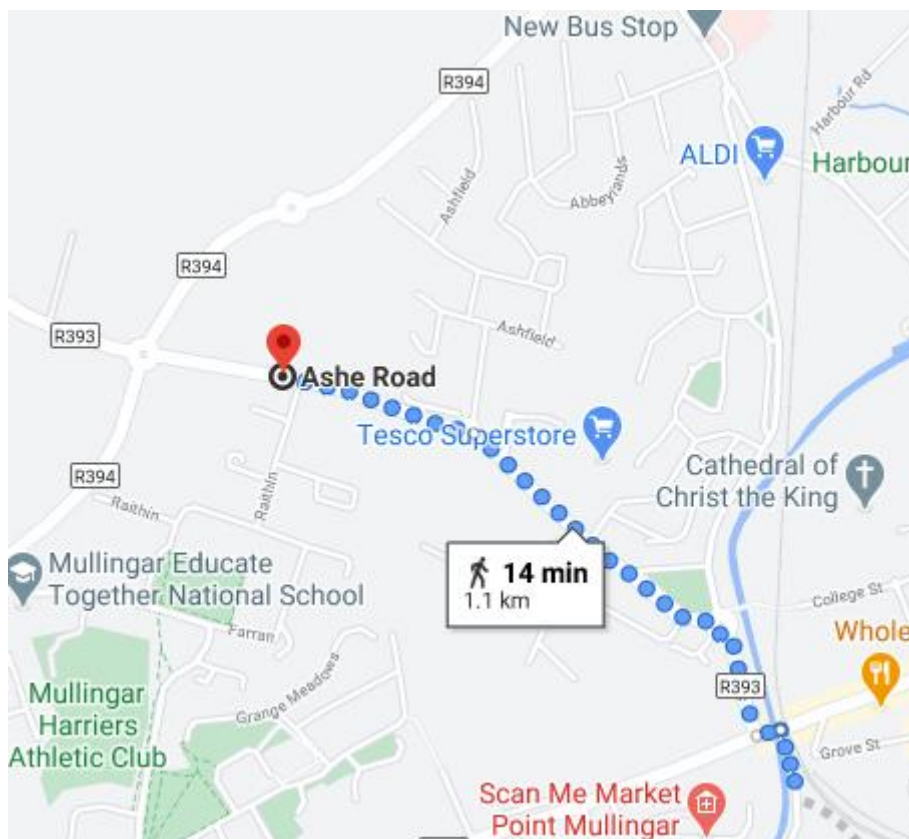


Figure 7-1: Walking distance to Train Station

It is proposed to provide a network of footpaths that will permeate through the residential area and provide a high degree of accessibility to the local facilities including bus and train transport.

7.1.2 Cycling

The proposed development includes the provision of the shared cycle/footpath along the R394 and Ashe Road in accordance with the National Cycle Manual. In addition, the shared footway/

cycle way continues into the development from the Junction 2 and terminates at the northern junction internally. Similarly, an off-road provision for cyclists is proposed from Ashe Road to the southern junction within the development as shown on drawing 10906-2104.

Cyclists are then directed to join the proposed internal mixed/shared road network as per section 4.3.1 of the National Cycle Manual as per Figure 7-2 below.

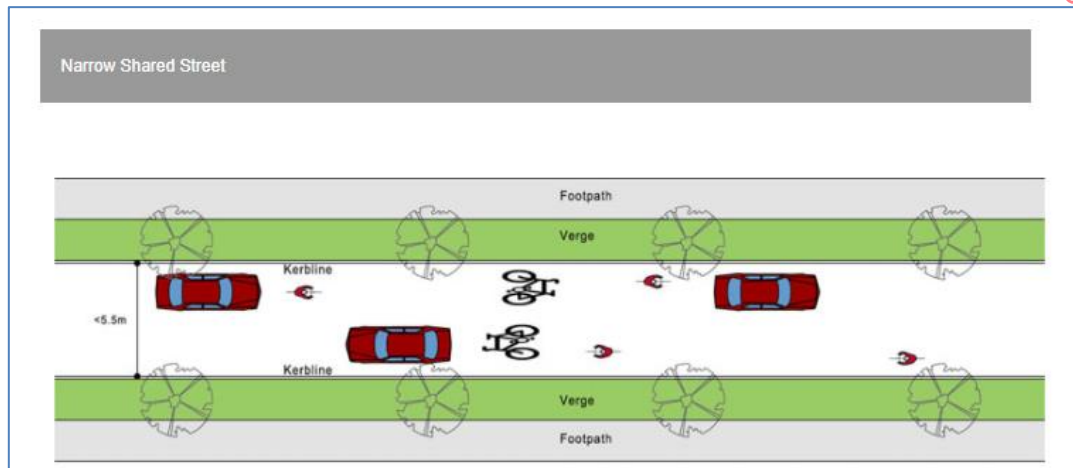


Figure 7-2: Mixed/ Shared Street – Section 4.3.1 – National Cycle Manual

The provision of the shared, and combined cycle facilities proposed throughout the development was developed through a collaborative approach with Westmeath County Council. Throughout this consultation the needs of all road users were considered to ensure a safe, enjoyable environment for cyclists, pedestrians, and motorists.

A raised cycle lane is also proposed along Ashe road boundary which will connect to the existing cycle path located outside the south-east corner of the site as shown Appendix 1. For commuter journeys, cycling can be considered as a feasible means of transport for those working within the vicinity of the development. Cycle parking facilities are provided within the proposed development.

7.2 PUBLIC TRANSPORT

There are currently a local bus service operating in proximity to the development located east of the pedestrian access on Ashe Road. The routes include the 448 into Mullingar town. The site is also located within 16mins walking distance to the train station which provides regular train times for the Dublin to Sligo route.

7.3 ACCESS FOR PEOPLE WITH DISABILITIES

As recommended dropped kerbing and tactile paving slabs will be installed at all crossing points, in accordance with "Guidance on the Use of Tactile Paving Slabs".

It is further recommended that disabled parking spaces, in accordance with the National Disability Authorities "Building for Everyone". 5% of the proposed parking provisions have been designated for disabled parking as per Building for Everyone.

Buff ladder paving is provided at the extents of all proposed shared surfaces to warn visually impaired pedestrians they are now exiting the shared surface areas.

8.0 CONCLUSIONS AND RECOMMENDATIONS

8.1 CONCLUSIONS

The junction assessments indicate Junctions 1 and 2 are currently exceeding desirable capacity of 0.85. Junction 1, R394/Midland Hospital (Irishtown Roundabout) is currently over capacity. The maximum RFC reaching 3.6 in the PM peak without the development in 2040, and a maximum RFC of 3.75 in the PM peak with Phase 3 in 2040. The RFC increases by 0.22 in the PM peak with the full development (proposed development plus Phase 3) scenario to 3.82.

Junction 2, R394/Proposed Access Roundabout is currently over capacity in the AM peak only. The maximum RFC reaching 1.51 in the PM peak without the development in 2040, and a maximum RFC of 1.61 in the AM peak with Phase 3 in 2040. The RFC increases by 0.14 in the PM peak with the full development (proposed development plus Phase 3) scenario to 1.65 which results in further 22 seconds in delay.

The development is located in close proximity (within 20min walk) to public transport links (i.e. bus and train) with continuous pedestrian access to these services and the town centre of Mullingar.

8.2 RECOMMENDATIONS

This report recommends that:

- Site access junction visibility splays should be kept free of all restrictions including signage.
- Pedestrian footway links with associated dropped kerbing and tactile paving to be provided at all pedestrian crossing points internally as shown on the proposed drawing.

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Appendix 1 – Drawing (Indicative Site Layout and Road Layout)

Indicative Site Layout



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Appendix 2 – Origin / Destination Matrices

Traffic Calculations for Mullingar
Site 1 - R394/Midland Hospital (Irishtown Roundabout)
At Present AM Peak (08:15 - 09:15)

Seasonally Adjusted 2019

2025 Year of Opening Phase 1&2

2030 (5 Years after Opening)

2032 (7 Years after Opening)

2040 (15 Years after Opening)

Westmeath
 2016 - 2030 index 1.0194 1.0352
 Years 6
Growth Factor 1.122 1.231

Westmeath
 2013-2030 index 1.0194 1.0352
 Years 11
Growth Factor 1.235 1.463

Westmeath
 2013-2030 index 1.0194 1.0352
 Years 13
Growth Factor 1.284 1.568

Westmeath
 2031 - 2050 index 1.0101 1.0185
 Years 8
Growth Factor 1.084 1.158
Cumulative Factors 1.392 1.816

Route	A	HGV	B	HGV	C	HGV	D	HGV
A	6	0	304	8	279	20	61	3
B	239	7	1	1	161	1	150	8
C	464	18	143	1	3	0	146	0
D	123	3	147	2	109	0	0	0

Route	A	HGV	B	HGV	C	HGV	D	HGV
A	7	0	341	10	313	25	68	4
B	268	9	1	1	181	1	168	10
C	521	22	160	1	3	0	164	0
D	138	4	165	2	122	0	0	0

Route	A	HGV	B	HGV	C	HGV	D	HGV
A	7	0	375	12	344	29	75	4
B	295	10	1	1	199	1	185	12
C	574	26	176	1	4	0	180	0
D	152	4	182	3	134	0	0	0

Route	A	HGV	B	HGV	C	HGV	D	HGV
A	8	0	423	15	388	36	85	5
B	333	13	2	2	225	2	209	15
C	646	33	193	2	4	0	203	0
D	171	5	205	4	151	0	0	0

AM PEAK GENERATED TRAFFIC
Site 1 - R394/Midland Hospital (Irishtown Roundabout)
WITH PHASE 3

Development Traffic

Year of Opening Phase 1&2

(5 Years after Opening)

(15 Years after Opening)

Route	A	HGV	B	HGV	C	HGV	D	HGV
A	0	0	0	0	13	0	0	0
B	0	0	0	0	15	0	0	0
C	39	0	12	0	0	0	12	0
D	0	0	0	0	5	0	0	0

Route	A	HGV	B	HGV	C	HGV	D	HGV
A	7	0	341	10	328	25	68	4
B	268	9	1	1	196	1	168	10
C	560	22	172	1	3	0	176	0
D	138	4	165	2	127	0	0	0

Route	A	HGV	B	HGV	C	HGV	D	HGV
A	7	0	375	12	357	29	75	4
B	295	10	1	1	215	1	185	12
C	613	26	188	1	4	0	192	0
D	152	4	182	3	139	0	0	0

Route	A	HGV	B	HGV	C	HGV	D	HGV
A	8	0	423	15	401	36	85	5
B	333	13	2	2	240	2	209	15
C	686	33	210	2	4	0	215	0
D	171	5	205	4	156	0	0	0

AM PEAK GENERATED TRAFFIC
Site 1 - R394/Midland Hospital (Irishtown Roundabout)
WITH PHASE 1&2&3

Generated Traffic

Year of Opening Phase 1&2

(5 Years after Opening)

(15 Years after Opening)

Route	A	HGV	B	HGV	C	HGV	D	HGV
A	0	0	0	0	6	0	0	0
B	0	0	0	0	7	0	0	0
C	27	0	8	0	0	0	8	0
D	0	0	0	0	2	0	0	0

Route	A	HGV	B	HGV	C	HGV	D	HGV
A	7	0	341	10	331	25	68	4
B	268	9	1	1	203	1	168	10
C	587	22	180	1	3	0	184	0
D	138	4	165	2	129	0	0	0

Route	A	HGV	B	HGV	C	HGV	D	HGV
A	7	0	375	12	363	29	75	4
B	295	10	1	1	221	1	185	12
C	640	26	196	1	4	0	200	0
D	152	4	182	3	141	0	0	0

Route	A	HGV	B	HGV	C	HGV	D	HGV
A	8	0	423	15	407	36	85	5
B	333	13	2	2	247	2	209	15
C	712	33	218	2	4	0	223	0
D	171	5	205	4	158	0	0	0

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Traffic Calculations for Mullingar
Site 1 - R394/Midland Hospital (Irishtown Roundabout)
At Present PM Peak (17:00 - 18:00)

Seasonally Adjusted 2019

2025 Year of Opening Phase 1&2

2030 (5 Years after Opening)

2032 (7 Years after Opening)

2040 (15 Years after Opening)

Westmeath	LGV	HGV
2016 - 2030 index	1.0194	1.0352
Years	6	
Growth Factor	1.122	1.231

Westmeath	LGV	HGV
2013-2030 index	1.0194	1.0352
Years	11	
Growth Factor	1.235	1.463

Westmeath	LGV	HGV
2013-2030 index	1.0194	1.0352
Years	13	
Growth Factor	1.284	1.568

Westmeath	LGV	HGV
2031 - 2050 index	1.0101	1.0185
Years	8	
Growth Factor	1.084	1.158

Cumulative Factors 1.392 1.816

Route	A	HGV	B	HGV	C	HGV	D	HGV
A	30	0	343	3	445	13	96	0
B	384	2	2	0	197	1	190	0
C	341	10	125	0	1	0	85	2
D	87	1	124	0	81	0	1	0

Route	A	HGV	B	HGV	C	HGV	D	HGV
A	34	0	385	4	499	16	108	0
B	431	2	2	0	221	1	213	0
C	383	12	140	0	1	0	95	2
D	75	1	139	0	68	0	1	0

Route	A	HGV	B	HGV	C	HGV	D	HGV
A	37	0	424	4	549	19	119	0
B	474	3	2	0	243	1	235	0
C	422	15	154	0	1	0	105	3
D	83	1	153	0	75	0	1	0

Route	A	HGV	B	HGV	C	HGV	D	HGV
A	42	0	477	5	619	24	134	0
B	534	4	3	0	274	2	264	0
C	475	18	174	0	1	0	118	4
D	93	2	173	0	85	0	1	0

AM PEAK GENERATED TRAFFIC

Site 1 - R394/Midland Hospital (Irishtown Roundabout)
 WITH PHASE 3

Development Traffic

Year of Opening Phase 1&2

(5 Years after Opening)

(15 Years after Opening)

Route	A	HGV	B	HGV	C	HGV	D	HGV
A	0	0	0	0	21	0	0	0
B	0	0	0	0	9	0	0	0
C	39	0	14	0	0	0	10	0
D	0	0	0	0	3	0	0	0

Route	A	HGV	B	HGV	C	HGV	D	HGV
A	34	0	385	4	520	16	108	0
B	431	2	2	0	230	1	213	0
C	423	12	154	0	1	0	105	2
D	75	1	139	0	71	0	1	0

Route	A	HGV	B	HGV	C	HGV	D	HGV
A	37	0	424	4	570	19	119	0
B	474	3	2	0	252	1	235	0
C	451	15	168	0	1	0	114	3
D	83	1	153	0	78	0	1	0

Route	A	HGV	B	HGV	C	HGV	D	HGV
A	42	0	477	5	640	24	134	0
B	534	4	3	0	283	2	264	0
C	515	18	188	0	1	0	128	4
D	93	2	173	0	87	0	1	0

AM PEAK GENERATED TRAFFIC

Site 1 - R394/Midland Hospital (Irishtown Roundabout)
 WITH PHASE 1&2&3

Generated Traffic

Year of Opening Phase 1&2

(5 Years after Opening)

(15 Years after Opening)

Route	A	HGV	B	HGV	C	HGV	D	HGV
A	0	0	0	0	9	0	0	0
B	0	0	0	0	4	0	0	0
C	27	0	10	0	0	0	7	0
D	0	0	0	0	1	0	0	0

Route	A	HGV	B	HGV	C	HGV	D	HGV
A	34	0	385	4	529	16	108	0
B	431	2	2	0	234	1	213	0
C	449	12	164	0	1	0	111	2
D	75	1	139	0	72	0	1	0

Route	A	HGV	B	HGV	C	HGV	D	HGV
A	37	0	424	4	579	19	119	0
B	474	3	2	0	256	1	235	0
C	488	15	178	0	1	0	121	3
D	83	1	153	0	79	0	1	0

Route	A	HGV	B	HGV	C	HGV	D	HGV
A	42	0	477	5	649	24	134	0
B	534	4	3	0	287	2	264	0
C	541	18	198	0	1	0	134	4
D	93	2	173	0	89	0	1	0

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Traffic Calculations for Mullingar
Site 2 - R394/Proposed Access Roundabout
At Present AM Peak (08:15 - 09:15)

Seasonally Adjusted **2019**

2025 Year of Opening Phase 1&2

2030 (5 Years after Opening)

2032 (7 Years after Opening)

2040 (15 Years after Opening)

Westmeath LGV HGV
 2016 - 2030 index 1.0194 1.0352
 Years 6 6
Growth Factor 1.122 1.231

Westmeath LGV HGV
 2013-2030 index 1.0194 1.0352
 Years 11 11
Growth Factor 1.235 1.463

Westmeath LGV HGV
 2013-2030 index 1.0194 1.0352
 Years 13 13
Growth Factor 1.284 1.568

Westmeath LGV HGV
 2031 - 2050 index 1.0101 1.0185
 Years 8 8
Growth Factor 1.084 1.158

Combined Factors 1.392 1.816

Route	A	HGV	B	HGV	C	HGV	D	HGV
A	0	0	0	0	519	21	0	0
B	0	0	0	0	0	0	0	0
C	693	19	0	0	0	0	0	0
D	0	0	0	0	0	0	0	0

Route	A	HGV	B	HGV	C	HGV	D	HGV
A	0	0	0	0	582	26	0	0
B	0	0	0	0	0	0	0	0
C	778	23	0	0	0	0	0	0
D	0	0	0	0	0	0	0	0

Route	A	HGV	B	HGV	C	HGV	D	HGV
A	0	0	0	0	641	31	0	0
B	0	0	0	0	0	0	0	0
C	856	28	0	0	0	0	0	0
D	0	0	0	0	0	0	0	0

Route	A	HGV	B	HGV	C	HGV	D	HGV
A	0	0	0	0	722	38	0	0
B	0	0	0	0	0	0	0	0
C	965	34	0	0	0	0	0	0
D	0	0	0	0	0	0	0	0

AM PEAK GENERATED TRAFFIC
Site 2 - R394/Proposed Access Roundabout
WITH PHASE 3

Development Traffic

Year of Opening Phase 1&2

(5 Years after Opening)

(15 Years after Opening)

Route	A	HGV	B	HGV	C	HGV	D	HGV
A	0	0	24	0	0	0	0	0
B	63	0	0	0	48	0	0	0
C	0	0	32	0	0	0	0	0
D	0	0	0	0	0	0	0	0

Route	A	HGV	B	HGV	C	HGV	D	HGV
A	0	0	24	0	582	26	0	0
B	63	0	0	0	48	0	0	0
C	778	23	32	0	0	0	0	0
D	0	0	0	0	0	0	0	0

Route	A	HGV	B	HGV	C	HGV	D	HGV
A	0	0	24	0	641	31	0	0
B	63	0	0	0	48	0	0	0
C	856	28	32	0	0	0	0	0
D	0	0	0	0	0	0	0	0

Route	A	HGV	B	HGV	C	HGV	D	HGV
A	0	0	24	0	722	38	0	0
B	63	0	0	0	48	0	0	0
C	965	34	32	0	0	0	0	0
D	0	0	0	0	0	0	0	0

AM PEAK GENERATED TRAFFIC
Site 2 - R394/Proposed Access Roundabout
WITH PHASE 1&2&3

Generated Traffic

Year of Opening Phase 1&2

(5 Years after Opening)

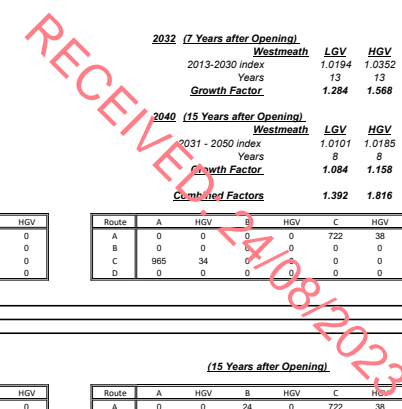
(15 Years after Opening)

Route	A	HGV	B	HGV	C	HGV	D	HGV
A	0	0	0	0	0	11	0	0
B	0	0	0	0	0	0	0	0
C	0	0	0	0	0	14	0	0
D	43	0	0	0	33	0	0	0

Route	A	HGV	B	HGV	C	HGV	D	HGV
A	0	0	24	0	582	26	11	0
B	63	0	0	0	48	0	0	0
C	778	23	32	0	0	14	0	0
D	43	0	0	0	33	0	0	0

Route	A	HGV	B	HGV	C	HGV	D	HGV
A	0	0	24	0	641	31	11	0
B	63	0	0	0	48	0	0	0
C	856	28	32	0	0	14	0	0
D	43	0	0	0	33	0	0	0

Route	A	HGV	B	HGV	C	HGV	D	HGV
A	0	0	24	0	722	38	11	0
B	63	0	0	0	48	0	0	0
C	965	34	32	0	0	14	0	0
D	43	0	0	0	33	0	0	0



Traffic Calculations for Mullingar
Site 2 - R394/Proposed Access Roundabout
At Present PM Peak (17:00 - 18:00)

Seasonally Adjusted **2019**

2025 Year of Opening Phase 1&2

2030 (5 Years after Opening)

2032 (7 Years after Opening)

2040 (15 Years after Opening)

Westmeath LGV HGV
 2016 - 2030 index 1.0194 1.0352
 Years 5 6
Growth Factor 1.122 1.231

Westmeath LGV HGV
 2013-2030 index 1.0194 1.0352
 Years 11 11
Growth Factor 1.235 1.463

Westmeath LGV HGV
 2013-2030 index 1.0194 1.0352
 Years 13 13
Growth Factor 1.284 1.568

Westmeath LGV HGV
 2031 - 2050 index 1.0101 1.0185
 Years 8 8
Growth Factor 1.084 1.158

Cumulative Factors 1.392 1.816

Route	A	HGV	B	HGV	C	HGV	D	HGV
A	0	0	0	0	671	14	0	0
B	0	0	0	0	0	0	0	0
C	489	12	0	0	0	0	0	0
D	0	0	0	0	0	0	0	0

Route	A	HGV	B	HGV	C	HGV	D	HGV
A	0	0	0	0	753	17	0	0
B	0	0	0	0	0	0	0	0
C	549	15	0	0	0	0	0	0
D	0	0	0	0	0	0	0	0

Route	A	HGV	B	HGV	C	HGV	D	HGV
A	0	0	0	0	829	20	0	0
B	0	0	0	0	0	0	0	0
C	604	18	0	0	0	0	0	0
D	0	0	0	0	0	0	0	0

Route	A	HGV	B	HGV	C	HGV	D	HGV
A	0	0	0	0	934	25	0	0
B	0	0	0	0	0	0	0	0
C	681	22	0	0	0	0	0	0
D	0	0	0	0	0	0	0	0

AM PEAK GENERATED TRAFFIC
Site 2 - R394/Proposed Access Roundabout
WITH PHASE 3

Development Traffic

Year of Opening Phase 1&2

(5 Years after Opening)

(15 Years after Opening)

Route	A	HGV	B	HGV	C	HGV	D	HGV
A	0	0	33	0	0	0	0	0
B	47	0	0	0	64	0	0	0
C	0	0	24	0	0	0	0	0
D	0	0	0	0	0	0	0	0

Route	A	HGV	B	HGV	C	HGV	D	HGV
A	0	0	33	0	753	17	0	0
B	47	0	0	0	64	0	0	0
C	549	15	24	0	0	0	0	0
D	0	0	0	0	0	0	0	0

Route	A	HGV	B	HGV	C	HGV	D	HGV
A	0	0	33	0	829	20	0	0
B	47	0	0	0	64	0	0	0
C	604	18	24	0	0	0	0	0
D	0	0	0	0	0	0	0	0

Route	A	HGV	B	HGV	C	HGV	D	HGV
A	0	0	33	0	934	25	0	0
B	47	0	0	0	64	0	0	0
C	681	22	24	0	0	0	0	0
D	0	0	0	0	0	0	0	0

AM PEAK GENERATED TRAFFIC
Site 2 - R394/Proposed Access Roundabout
WITH PHASE 1&2&3

Generated Traffic

Year of Opening Phase 1&2

(5 Years after Opening)

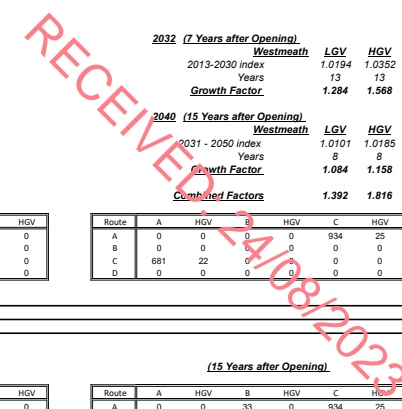
(15 Years after Opening)

Route	A	HGV	B	HGV	C	HGV	D	HGV
A	0	0	0	0	0	14	0	0
B	0	0	0	0	0	0	0	0
C	0	0	0	0	0	10	0	0
D	32	0	0	0	44	0	0	0

Route	A	HGV	B	HGV	C	HGV	D	HGV
A	0	0	33	0	753	17	14	0
B	47	0	0	0	64	0	0	0
C	549	15	24	0	0	0	10	0
D	32	0	0	0	44	0	0	0

Route	A	HGV	B	HGV	C	HGV	D	HGV
A	0	0	33	0	829	20	14	0
B	47	0	0	0	64	0	0	0
C	604	18	24	0	0	0	10	0
D	32	0	0	0	44	0	0	0

Route	A	HGV	B	HGV	C	HGV	D	HGV
A	0	0	33	0	934	25	14	0
B	47	0	0	0	64	0	0	0
C	681	22	24	0	0	0	10	0
D	32	0	0	0	44	0	0	0



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Appendix 3 – TRICS

Calculation Reference: AUDIT-700101-201208-1233

TRIP RATE CALCULATION SELECTION PARAMETERS:

Land Use : 03 - RESIDENTIAL
 Category : A - HOUSES PRIVATELY OWNED
 TOTAL VEHICLES

Selected regions and areas:

02	SOUTH EAST	
	ES EAST SUSSEX	1 days
	HC HAMPSHIRE	1 days
03	SOUTH WEST	
	DV DEVON	2 days
04	EAST ANGLIA	
	NF NORFOLK	2 days
06	WEST MIDLANDS	
	SH SHROPSHIRE	1 days
12	CONNAUGHT	
	LT LEITRIM	1 days
14	LEINSTER	
	WC WICKLOW	1 days
15	GREATER DUBLIN	
	DL DUBLIN	1 days
16	ULSTER (REPUBLIC OF IRELAND)	
	CV CAVAN	1 days
	DN DONEGAL	3 days
17	ULSTER (NORTHERN IRELAND)	
	TY TYRONE	1 days

This section displays the number of survey days per TRICS® sub-region in the selected set

Primary Filtering selection:

This data displays the chosen trip rate parameter and its selected range. Only sites that fall within the parameter range are included in the trip rate calculation.

Parameter: No of Dwellings
 Actual Range: 50 to 146 (units:)
 Range Selected by User: 50 to 150 (units:)

Parking Spaces Range: All Surveys Included

Parking Spaces per Dwelling Range: All Surveys Included

Bedrooms per Dwelling Range: All Surveys Included

Percentage of dwellings privately owned: All Surveys Included

Public Transport Provision:

Selection by: Include all surveys

Date Range: 01/01/12 to 19/11/19

This data displays the range of survey dates selected. Only surveys that were conducted within this date range are included in the trip rate calculation.

Selected survey days:

Monday	4 days
Tuesday	2 days
Wednesday	3 days
Thursday	2 days
Friday	4 days

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

Selected survey types:

Manual count	14 days
Directional ATC Count	1 days

This data displays the number of manual classified surveys and the number of unclassified ATC surveys, the total adding up to the overall number of surveys in the selected set. Manual surveys are undertaken using staff, whilst ATC surveys are undertaken using machines.

Selected Locations:

Suburban Area (PPS6 Out of Centre)	5
Edge of Town	10

This data displays the number of surveys per main location category within the selected set. The main location categories consist of Free Standing, Edge of Town, Suburban Area, Neighbourhood Centre, Edge of Town Centre, Town Centre and Not Known.

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This data displays the number of surveys per location sub-category within the selected set. The location sub-categories consist of Commercial Zone, Industrial Zone, Development Zone, Residential Zone, Retail Zone, Built-Up Zone, Village, Out of Town, High Street and No Sub Category.

Secondary Filtering selection:

Use Class:

C3 15 days

This data displays the number of surveys per Use Class classification within the selected set. The Use Classes Order 2005 has been used for this purpose, which can be found within the Library module of TRICS®.

Population within 500m Range:

All Surveys Included

Population within 1 mile:

1,000 or Less	2 days
1,001 to 5,000	3 days
5,001 to 10,000	4 days
10,001 to 15,000	6 days

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

Population within 5 miles:

5,001 to 25,000	9 days
25,001 to 50,000	6 days

This data displays the number of selected surveys within stated 5-mile radii of population.

Car ownership within 5 miles:

0.6 to 1.0	2 days
1.1 to 1.5	12 days
1.6 to 2.0	1 days

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

Travel Plan:

Yes	3 days
No	12 days

This data displays the number of surveys within the selected set that were undertaken at sites with Travel Plans in place, and the number of surveys that were undertaken at sites without Travel Plans.

PTAL Rating:

No PTAL Present	15 days
-----------------	---------

This data displays the number of selected surveys with PTAL Ratings.

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LIST OF SITES relevant to selection parameters

1	CV-03-A-02 R212 DUBLIN ROAD CAVAN KILLYNEBBER Edge of Town No Sub Category Total No of Dwellings: 80 <i>Survey date: MONDAY 22/05/17</i>	CAVAN	<i>Survey Type: MANUAL</i>
2	DL-03-A-10 R124 MALAHIDE SAINT HELENS Edge of Town Residential Zone Total No of Dwellings: 65 <i>Survey date: WEDNESDAY 20/06/18</i>	DUBLIN	<i>Survey Type: MANUAL</i>
3	DN-03-A-03 THE GRANGE LETTERKENNY GLENCAR IRISH Edge of Town Residential Zone Total No of Dwellings: 50 <i>Survey date: MONDAY 01/09/14</i>	DONEGAL	<i>Survey Type: MANUAL</i>
4	DN-03-A-04 GORTLEE ROAD LETTERKENNY GORTLEE Edge of Town Residential Zone Total No of Dwellings: 83 <i>Survey date: FRIDAY 26/09/14</i>	DONEGAL	<i>Survey Type: MANUAL</i>
5	DN-03-A-05 GORTLEE ROAD LETTERKENNY GORTLEE Suburban Area (PPS6 Out of Centre) Residential Zone Total No of Dwellings: 146 <i>Survey date: WEDNESDAY 03/09/14</i>	DONEGAL	<i>Survey Type: MANUAL</i>
6	DV-03-A-02 MILLHEAD ROAD HONITON Suburban Area (PPS6 Out of Centre) Residential Zone Total No of Dwellings: 116 <i>Survey date: FRIDAY 25/09/15</i>	DEVON	<i>Survey Type: MANUAL</i>
7	DV-03-A-03 LOWER BRAND LANE HONITON Suburban Area (PPS6 Out of Centre) Residential Zone Total No of Dwellings: 70 <i>Survey date: MONDAY 28/09/15</i>	DEVON	<i>Survey Type: MANUAL</i>
8	ES-03-A-04 NEW LYDD ROAD CAMBER Edge of Town Residential Zone Total No of Dwellings: 134 <i>Survey date: FRIDAY 15/07/16</i>	EAST SUSSEX	<i>Survey Type: MANUAL</i>

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LIST OF SITES relevant to selection parameters (Cont.)

9	HC-03-A-23 CANADA WAY LIPHOOK	HOUSES & FLATS	HAMPSHIRE
	Suburban Area (PPS6 Out of Centre) Residential Zone Total No of Dwellings: 62 <i>Survey date: TUESDAY 19/11/19</i>		<i>Survey Type: MANUAL</i>
10	LT-03-A-01 ARD NA SI CARRICK-ON-SHANNON ATTIRORY	SEMI-DETACHED & DETACHED	LEITRIM
	Suburban Area (PPS6 Out of Centre) Residential Zone Total No of Dwellings: 90 <i>Survey date: FRIDAY 24/04/15</i>		<i>Survey Type: MANUAL</i>
11	NF-03-A-04 NORTH WALSHAM ROAD NORTH WALSHAM	MIXED HOUSES	NORFOLK
	Edge of Town Residential Zone Total No of Dwellings: 70 <i>Survey date: WEDNESDAY 18/09/19</i>		<i>Survey Type: MANUAL</i>
12	NF-03-A-16 NORWICH COMMON WYMONDHAM	MIXED HOUSES & FLATS	NORFOLK
	Edge of Town Residential Zone Total No of Dwellings: 138 <i>Survey date: TUESDAY 20/10/15</i>		<i>Survey Type: DIRECTIONAL ATC COUNT</i>
13	SH-03-A-05 SANDCROFT TELFORD SUTTON HILL	SEMI-DETACHED/TERRACED	SHROPSHIRE
	Edge of Town Residential Zone Total No of Dwellings: 54 <i>Survey date: THURSDAY 24/10/13</i>		<i>Survey Type: MANUAL</i>
14	TY-03-A-02 SANDHOLES ROAD COOKSTOWN DERRYLORAN	SEMI DETACHED & BUNGALOWS	TYRONE
	Edge of Town Industrial Zone Total No of Dwellings: 101 <i>Survey date: THURSDAY 14/03/19</i>		<i>Survey Type: MANUAL</i>
15	WC-03-A-01 STATION ROAD WICKLOW CORPORATION MURRAGH	DETACHED HOUSES	WICKLOW
	Edge of Town No Sub Category Total No of Dwellings: 50 <i>Survey date: MONDAY 28/05/18</i>		<i>Survey Type: MANUAL</i>

This section provides a list of all survey sites and days in the selected set. For each individual survey site, it displays a unique site reference code and site address, the selected trip rate calculation parameter and its value, the day of the week and date of each survey, and whether the survey was a manual classified count or an ATC count.

TRIP RATE for Land Use 03 - RESIDENTIAL/A - HOUSES PRIVATELY OWNED

TOTAL VEHICLES

Calculation factor: 1 DWELLS

BOLD print indicates peak (busiest) period

Time Range	ARRIVALS			DEPARTURES			TOTALS		
	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate
00:00 - 01:00									
01:00 - 02:00									
02:00 - 03:00									
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00									
06:00 - 07:00									
07:00 - 08:00	15	87	0.070	15	87	0.257	15	87	0.327
08:00 - 09:00	15	87	0.136	15	87	0.417	15	87	0.553
09:00 - 10:00	15	87	0.211	15	87	0.225	15	87	0.436
10:00 - 11:00	15	87	0.159	15	87	0.183	15	87	0.342
11:00 - 12:00	15	87	0.151	15	87	0.192	15	87	0.343
12:00 - 13:00	15	87	0.204	15	87	0.204	15	87	0.408
13:00 - 14:00	15	87	0.212	15	87	0.195	15	87	0.407
14:00 - 15:00	15	87	0.213	15	87	0.237	15	87	0.450
15:00 - 16:00	15	87	0.305	15	87	0.213	15	87	0.518
16:00 - 17:00	15	87	0.322	15	87	0.211	15	87	0.533
17:00 - 18:00	15	87	0.408	15	87	0.234	15	87	0.642
18:00 - 19:00	15	87	0.340	15	87	0.236	15	87	0.576
19:00 - 20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			2.731			2.804			5.535

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

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

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Parameter summary

Trip rate parameter range selected:	50 - 146 (units:)
Survey date range:	01/01/12 - 19/11/19
Number of weekdays (Monday-Friday):	15
Number of Saturdays:	0
Number of Sundays:	0
Surveys automatically removed from selection:	3
Surveys manually removed from selection:	0

This section displays a quick summary of some of the data filtering selections made by the TRICS® user. The trip rate calculation parameter range of all selected surveys is displayed first, followed by the range of minimum and maximum survey dates selected by the user. Then, the total number of selected weekdays and weekend days in the selected set of surveys are shown. Finally, the number of survey days that have been manually removed from the selected set outside of the standard filtering procedure are displayed.

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**Appendix 4 – JUNCTION 10 ARCADY DETAILED OUTPUT – JUNCTION
1&2**

<h1>Junctions 10</h1>
<h2>ARCADY 10 - Roundabout Module</h2>
Version: 10.0.4.1693 © Copyright TRL Software Limited, 2021
For sales and distribution information, program advice and maintenance, contact TRL Software: +44 (0)1344 379777 software@trl.co.uk trlsoftware.com
The users of this computer program for the solution of an engineering problem are in no way relieved of their responsibility for the correctness of the solution

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Filename: Import of Junction 1.j10
Path: \\fserver3-gal\Tobin\Projects\10906 – Glenveagh – Rathgowan Residential Development\05-Design\01-Calculations\Traffic\Phase 1 and 2
Report generation date: 21/04/2023 11:41:46

- »2019 Baseflows , AM
- »2019 Baseflows , PM
- »2025 No Development, AM
- »2025 No Development, PM
- »2025 With Phase 3 , AM
- »2025 With Phase 3, PM
- »2025 With Phase1&2&3, AM
- »2025 With Phase1&2&3, PM
- »2030 No Development, AM
- »2030 No Development, PM
- »2030 With Phase 3, AM
- »2030 With Phase 3, PM
- »2030 With Phase1&2&3, AM
- »2030 With Phase1&2&3, PM
- »2040 No Development, AM
- »2040 No Development, PM
- »2040 With Phase 3, AM
- »2040 With Phase 3, PM
- »2040 With Phase1&2&3, AM
- »2040 With Phase1&2&3, PM

Summary of junction performance

	AM									PM							
	Set ID	Queue (Veh)	95% Queue (Veh)	Delay (s)	RFC	LOS	Junction Delay (s)	Junction LOS	Network Residual Capacity	Set ID	Queue (Veh)	95% Queue (Veh)	Delay (s)	RFC	LOS	Junction Delay (s)	Jun L
2019 Baseflows																	
R394 (N)	D1	0.6	2.7	3.00	0.38	A	613.44	F	-41 %	[Arm 3]	D2	1.0	1.5	3.48	0.50	A	722.99
Midland Hospital		62.5	103.5	380.17	1.21	F						324.9	198.5	2123.84	1.89	F	
R394 (S)		244.5	194.8	1595.69	1.55	F						48.7	91.2	315.43	1.14	F	
Unknown Local Road		7.7	37.9	70.65	0.92	F						1.6	6.2	20.72	0.62	C	
2025 No Development																	
R394 (N)	D3	0.8	2.2	3.31	0.44	A	1015.25	F	-48 %	[Arm 3]	D4	1.3	1.7	4.06	0.56	A	1165.37
Midland Hospital		144.5	200.0	958.95	1.46	F						495.4	198.5	3324.54	2.31	F	
R394 (S)		374.5	194.8	2395.18	1.74	F						100.6	168.3	657.00	1.27	F	
Unknown Local Road		18.5	55.4	142.10	1.02	F						2.1	10.3	25.01	0.69	D	
2025 With Phase 3																	
R394 (N)		0.8	2.1	3.36	0.45	A						1.4	1.8	4.18	0.58	A	

Midland Hospital	D5	166.8	200.0	1098.27	1.52	F	1227.99	F	-50 % [Arm 3]	D6	521.2	198.5	3541.99	2.39	F	1310.54
R394 (S)		454.4	194.8	2859.96	1.84	F					158.4	200.0	1050.04	1.39	F	
Unknown Local Road		19.9	57.0	149.93	1.03	F					2.2	10.7	25.43	0.69	D	
2025 With Phase1&2&3																
R394 (N)	D7	0.8	2.0	3.39	0.45	A	1371.08	F	-52 % [Arm 3]	D8	1.4	1.9	4.24	0.58	A	1413.39
Midland Hospital		175.9	200.0	1157.36	1.54	F					532.2	198.5	3636.77	2.43	F	
R394 (S)		508.8	194.8	3180.47	1.92	F					207.4	195.7	1371.76	1.47	F	
Unknown Local Road		20.5	57.6	153.08	1.03	F					2.2	10.8	25.50	0.69	D	
2030 No Development																
R394 (N)	D9	0.9	1.5	3.67	0.49	A	1427.57	F	-53 % [Arm 3]	D10	1.7	2.7	4.79	0.63	A	1645.77
Midland Hospital		237.3	193.3	1620.31	1.69	F					658.6	198.5	4581.77	2.77	F	
R394 (S)		497.4	194.8	3131.57	1.91	F					162.2	200.0	1082.09	1.40	F	
Unknown Local Road		38.2	76.4	286.18	1.12	F					2.8	14.3	30.77	0.75	D	
2030 With Phase 3																
R394 (N)	D11	1.0	1.5	3.74	0.50	A	1649.97	F	-55 % [Arm 3]	D12	1.8	2.9	4.96	0.64	A	1810.57
Midland Hospital		265.0	193.4	1814.01	1.76	F					684.5	198.5	4830.31	2.88	F	
R394 (S)		575.6	194.8	3579.96	2.01	F					232.8	195.7	1524.99	1.51	F	
Unknown Local Road		40.3	78.8	303.45	1.13	F					2.9	14.7	31.39	0.76	D	
2030 With Phase1&2&3																
R394 (N)	D13	1.0	1.5	3.73	0.50	A	1804.23	F	-56 % [Arm 3]	D14	1.8	3.1	5.04	0.65	A	1918.03
Midland Hospital		275.4	193.4	1883.48	1.78	F					695.7	198.5	4938.50	2.92	F	
R394 (S)		632.2	194.8	3911.84	2.09	F					287.0	195.7	1853.31	1.59	F	
Unknown Local Road		41.2	80.4	311.24	1.13	F					2.9	14.7	31.49	0.76	D	
2040 No Development																
R394 (N)	D15	1.2	1.6	4.25	0.56	A	2093.38	F	-58 % [Arm 3]	D16	2.6	5.1	6.53	0.72	A	2414.13
Midland Hospital		399.9	192.0	2781.20	2.07	F					888.9	198.5	6603.02	3.60	F	
R394 (S)		669.5	193.6	4193.57	2.15	F					273.6	194.3	1786.15	1.57	F	
Unknown Local Road		81.0	140.9	624.64	1.26	F					4.5	24.7	44.79	0.84	E	
2040 With Phase 3																
R394 (N)	D17	1.3	1.6	4.29	0.56	A	2330.64	F	-60 % [Arm 3]	D18	2.7	5.5	6.85	0.74	A	2589.71
Midland Hospital		427.6	192.1	2986.61	2.13	F					914.5	198.5	6898.29	3.75	F	
R394 (S)		750.2	193.6	4654.96	2.26	F					347.9	195.4	2219.75	1.67	F	
Unknown Local Road		84.6	146.4	647.87	1.27	F					4.6	25.1	45.20	0.84	E	
2040 With Phase1&2&3																
R394 (N)	D19	1.3	1.7	4.34	0.56	A	2464.35	F	-61 % [Arm 3]	D20	2.8	5.7	7.02	0.74	A	2707.77
Midland Hospital		441.1	192.1	3091.66	2.17	F					926.3	198.5	7039.42	3.82	F	
R394 (S)		801.3	194.8	4919.81	2.32	F					405.0	195.4	2562.30	1.75	F	
Unknown Local Road		85.7	148.0	654.64	1.27	F					4.7	25.7	45.95	0.84	E	

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

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

File summary

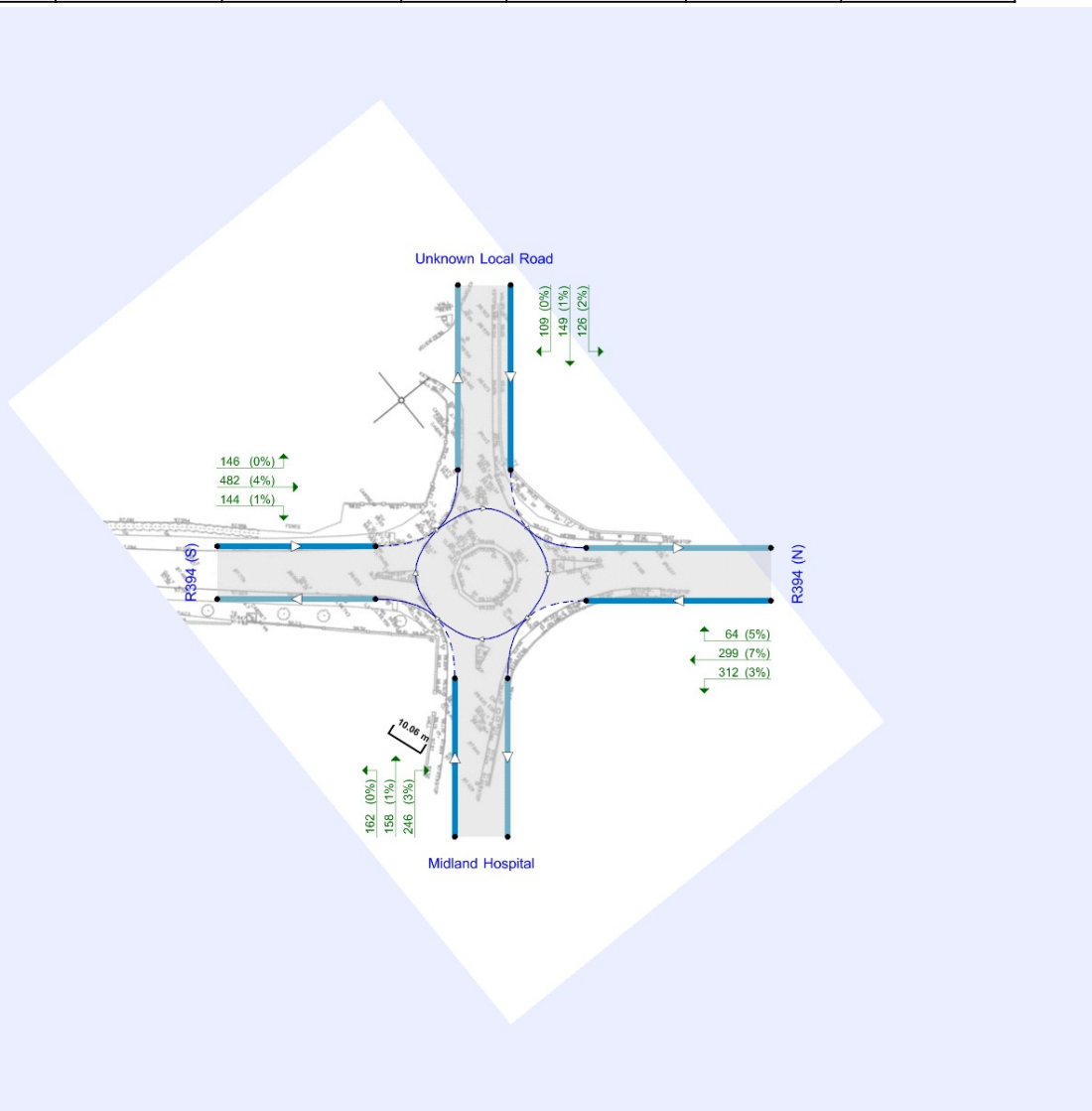
File Description

Title	Junction 1
Location	Mullinagr
Site number	1
Date	12/06/2020
Version	
Status	(new file)
Identifier	
Client	
Jobnumber	10906
Enumerator	TOBIN/Maria Rooney
Description	

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Units

Distance units	Speed units	Traffic units input	Traffic units results	Flow units	Average delay units	Total delay units	Rate of delay units
m	kph	Veh	Veh	perHour	s	-Min	perMin



Analysis Options

Vehicle length (m)	Calculate Queue Percentiles	Calculate detailed queuing delay	Show lane queues in feet / metres	Show all PICADY stream intercepts	Calculate residual capacity	Residual capacity criteria type	RFC Threshold	Average Delay threshold (s)	Queue threshold (PCU)	Use iterations with HCM roundabouts	Max number of iterations for roundabouts
5.75	✓				✓	Delay	0.85	36.00	20.00		500

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	2019 Baseflows	AM	ONE HOUR	08:00	09:30	15	
D2	2019 Baseflows	PM	ONE HOUR	16:45	18:15	15	✓
D3	2025 No Development	AM	ONE HOUR	08:00	09:30	15	✓
D4	2025 No Development	PM	ONE HOUR	16:45	18:15	15	✓
D5	2025 With Phase 3	AM	ONE HOUR	08:00	09:30	15	✓
D6	2025 With Phase 3	PM	ONE HOUR	16:45	18:15	15	✓
D7	2025 With Phase1&2&3	AM	ONE HOUR	08:00	09:30	15	✓
D8	2025 With Phase1&2&3	PM	ONE HOUR	16:45	18:15	15	✓
D9	2030 No Development	AM	ONE HOUR	08:00	09:30	15	✓
D10	2030 No Development	PM	ONE HOUR	16:45	18:15	15	✓
D11	2030 With Phase 3	AM	ONE HOUR	08:00	09:30	15	✓
D12	2030 With Phase 3	PM	ONE HOUR	16:45	18:15	15	✓
D13	2030 With Phase1&2&3	AM	ONE HOUR	08:00	09:30	15	✓
D14	2030 With Phase1&2&3	PM	ONE HOUR	16:45	18:15	15	✓
D15	2040 No Development	AM	ONE HOUR	08:00	09:30	15	✓
D16	2040 No Development	PM	ONE HOUR	16:45	18:15	15	✓
D17	2040 With Phase 3	AM	ONE HOUR	08:00	09:30	15	✓
D18	2040 With Phase 3	PM	ONE HOUR	16:45	18:15	15	✓
D19	2040 With Phase1&2&3	AM	ONE HOUR	08:00	09:30	15	✓
D20	2040 With Phase1&2&3	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

2019 Baseflows , AM

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Data Errors and Warnings

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

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	untitled	Standard Roundabout		1, 2, 3, 4	613.44	F

Junction Network

Driving side	Lighting	Network residual capacity (%)	First arm reaching threshold	Network delay (s)	Network LOS
Left	Normal/unknown	-41	Arm 3	613.44	F

Arms

Arms

Arm	Name	Description	No give-way line
1	R394 (N)		
2	Midland Hospital		
3	R394 (S)		
4	Unknown Local Road		

Roundabout Geometry

Arm	V - Approach road half-width (m)	E - Entry width (m)	I' - Effective flare length (m)	R - Entry radius (m)	D - Inscribed circle diameter (m)	PHI - Conflict (entry) angle (deg)	Entry only	Exit only
R394 (N)	6.30	7.50	28.5	18.6	33.0	12.0		
Midland Hospital	3.00	3.00	0.0	3.0	33.0	0.0		
R394 (S)	3.00	3.00	0.0	3.0	33.0	0.0		
Unknown Local Road	3.00	3.00	0.0	3.0	33.0	0.0		

Slope / Intercept / Capacity

Roundabout Slope and Intercept used in model

Arm	Final slope	Final intercept (PCU/hr)
R394 (N)	0.807	2360
Midland Hospital	0.408	752
R394 (S)	0.408	752
Unknown Local Road	0.408	752

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	2019 Baseflows	AM	ONE HOUR	08:00	09:30	15	✓

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

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Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
R394 (N)		ONE HOUR	✓	681	100.000
Midland Hospital		ONE HOUR	✓	568	100.000
R394 (S)		ONE HOUR	✓	775	100.000
Unknown Local Road		ONE HOUR	✓	384	100.000

Origin-Destination Data

Demand (Veh/hr)

		To			
		R394 (N)	Midland Hospital	R394 (S)	Unknown Local Road
From	R394 (N)	6	312	299	64
	Midland Hospital	246	2	162	158
	R394 (S)	482	144	3	146
	Unknown Local Road	126	149	109	0

Vehicle Mix

Heavy Vehicle Percentages

		To			
		R394 (N)	Midland Hospital	R394 (S)	Unknown Local Road
From	R394 (N)	0	3	7	5
	Midland Hospital	3	50	0	1
	R394 (S)	4	1	0	0
	Unknown Local Road	2	1	0	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (Veh)	Max 95th percentile Queue (Veh)	Max LOS	Average Demand (Veh/hr)	Total Junction Arrivals (Veh)
R394 (N)	0.38	3.00	0.6	2.7	A	625	937
Midland Hospital	1.21	380.17	62.5	103.5	F	521	782
R394 (S)	1.55	1595.69	244.5	194.8	F	711	1067
Unknown Local Road	0.92	70.65	7.7	37.9	F	352	529

Main Results for each time segment

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
R394 (N)	513	128	294	2021	0.254	511	614	0.0	0.3	2.382	A
Midland Hospital	428	107	360	587	0.728	418	446	0.0	2.5	20.216	C
R394 (S)	583	146	351	589	0.991	540	426	0.0	11.0	53.509	F
Unknown Local Road	289	72	625	483	0.598	283	266	0.0	1.4	17.555	C

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
R394 (N)	612	153	336	1989	0.308	612	678	0.3	0.4	2.615	A
Midland Hospital	511	128	430	558	0.916	493	518	2.5	6.8	46.705	E
R394 (S)	697	174	416	562	1.239	559	508	11.0	45.5	399.448	F
Unknown Local Road	345	86	674	463	0.746	340	300	1.4	2.6	26.298	D

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
R394 (N)	750	187	380	1955	0.384	749	705	0.4	0.6	2.984	A
Midland Hospital	625	156	524	518	1.207	512	605	6.8	35.1	166.006	F
R394 (S)	853	213	443	551	1.548	551	593	45.5	121.1	555.898	F
Unknown Local Road	423	106	677	461	0.916	407	317	2.6	6.5	54.753	F

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
R394 (N)	750	187	387	1949	0.385	750	709	0.6	0.6	3.000	A
Midland Hospital	625	156	527	517	1.210	516	610	35.1	62.5	348.671	F
R394 (S)	853	213	446	550	1.551	550	597	121.1	196.9	1053.506	F
Unknown Local Road	423	106	678	461	0.917	418	318	6.5	7.7	70.649	F

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
R394 (N)	612	153	349	1979	0.309	613	701	0.6	0.4	2.638	A
Midland Hospital	511	128	437	555	0.920	546	525	62.5	53.7	380.169	F
R394 (S)	697	174	453	547	1.274	547	530	196.9	234.3	1431.413	F
Unknown Local Road	345	86	688	457	0.755	362	313	7.7	3.5	42.281	E

09:15 - 09:30

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
R394 (N)	513	128	304	2014	0.255	513	688	0.4	0.3	2.401	A
Midland Hospital	428	107	364	586	0.730	575	453	53.7	16.9	226.984	F
R394 (S)	583	146	464	543	1.075	543	475	234.3	244.5	1595.687	F
Unknown Local Road	289	72	696	454	0.637	296	310	3.5	1.9	23.615	C

Queue Variation Results for each time segment
08:00 - 08:15

Arm	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
R394 (N)	0.34	0.00	0.00	0.34	0.34			N/A	N/A
Midland Hospital	2.46	0.10	1.50	5.62	7.70			N/A	N/A
R394 (S)	10.97	>199	>199	>199	>199			N/A	N/A
Unknown Local Road	1.42	0.58	1.30	1.74	1.88			N/A	N/A

08:15 - 08:30

Arm	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
R394 (N)	0.44	0.00	0.00	0.44	0.44			N/A	N/A
Midland Hospital	6.76	0.21	3.63	16.19	21.91			N/A	N/A
R394 (S)	45.46	>199	>199	>199	>199			N/A	N/A
Unknown Local Road	2.64	0.12	1.24	5.84	7.88			N/A	N/A

08:30 - 08:45

Arm	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
R394 (N)	0.62	0.03	0.25	0.62	0.62			N/A	N/A
Midland Hospital	35.12	13.47	32.36	55.49	63.57			N/A	N/A
R394 (S)	121.06	>199	>199	>199	>199			N/A	N/A
Unknown Local Road	6.47	0.09	1.77	17.81	26.54			N/A	N/A

08:45 - 09:00

Arm	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
R394 (N)	0.62	0.03	0.29	1.15	2.75			N/A	N/A
Midland Hospital	62.54	29.93	59.32	92.35	103.51			N/A	N/A
R394 (S)	196.89	>199	>199	>199	>199			N/A	N/A
Unknown Local Road	7.71	0.06	0.96	22.39	37.88			N/A	N/A

09:00 - 09:15

Arm	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
R394 (N)	0.45	0.00	0.00	0.45	0.45			N/A	N/A
Midland Hospital	53.67	21.36	49.84	84.37	96.37			N/A	N/A
R394 (S)	234.31	>199	>199	>199	>199			N/A	N/A
Unknown Local Road	3.48	0.04	0.44	9.73	17.51			N/A	N/A

09:15 - 09:30

Arm	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
R394 (N)	0.34	0.00	0.00	0.34	0.34			N/A	N/A
Midland Hospital	16.88	1.17	12.49	35.53	44.96			N/A	N/A
R394 (S)	244.47	>199	>199	>199	>199			N/A	N/A
Unknown Local Road	1.86	0.03	0.35	4.42	9.73			N/A	N/A

2019 Baseflows , PM

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Data Errors and Warnings

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

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	untitled	Standard Roundabout		1, 2, 3, 4	722.99	F

Junction Network

Driving side	Lighting	Network residual capacity (%)	First arm reaching threshold	Network delay (s)	Network LOS
Left	Normal/unknown	-44	Arm 2	722.99	F

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D2	2019 Baseflows	PM	ONE HOUR	16:45	18:15	15	✓

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 (%)
R394 (N)		ONE HOUR	✓	930	100.000
Midland Hospital		ONE HOUR	✓	776	100.000
R394 (S)		ONE HOUR	✓	564	100.000
Unknown Local Road		ONE HOUR	✓	254	100.000

Origin-Destination Data

Demand (Veh/hr)

		To			
		R394 (N)	Midland Hospital	R394 (S)	Unknown Local Road
From	R394 (N)	30	346	458	96
	Midland Hospital	386	2	198	190
	R394 (S)	351	125	1	87
	Unknown Local Road	68	124	61	1

Vehicle Mix

Heavy Vehicle Percentages

		To			
		R394 (N)	Midland Hospital	R394 (S)	Unknown Local Road
From	R394 (N)	0	1	3	0
	Midland Hospital	1	0	1	0
	R394 (S)	3	0	0	2
	Unknown Local Road	1	0	0	0

Results

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Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (Veh)	Max 95th percentile Queue (Veh)	Max LOS	Average Demand (Veh/hr)	Total Junction Arrivals (Veh)
R394 (N)	0.50	3.48	1.0	1.5	A	853	1280
Midland Hospital	1.89	2123.84	324.9	198.5	F	712	1068
R394 (S)	1.14	315.43	48.7	91.2	F	518	776
Unknown Local Road	0.62	20.72	1.6	6.2	C	233	350

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
R394 (N)	700	175	232	2134	0.328	698	586	0.0	0.5	2.504	A
Midland Hospital	584	146	485	545	1.071	515	445	0.0	17.2	77.662	F
R394 (S)	425	106	479	543	0.782	412	521	0.0	3.1	25.455	D
Unknown Local Road	191	48	629	490	0.391	189	263	0.0	0.6	11.868	B

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
R394 (N)	836	209	277	2098	0.398	835	642	0.5	0.7	2.849	A
Midland Hospital	698	174	581	506	1.379	505	531	17.2	65.4	321.338	F
R394 (S)	507	127	490	539	0.941	488	596	3.1	7.9	55.264	F
Unknown Local Road	228	57	692	463	0.493	227	286	0.6	0.9	15.145	C

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
R394 (N)	1024	256	324	2061	0.497	1023	666	0.7	1.0	3.463	A
Midland Hospital	854	214	711	452	1.890	452	636	65.4	166.0	928.037	F
R394 (S)	621	155	476	545	1.140	536	687	7.9	29.1	143.048	F
Unknown Local Road	280	70	713	455	0.615	277	300	0.9	1.5	20.023	C

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
R394 (N)	1024	256	327	2058	0.497	1024	670	1.0	1.0	3.479	A
Midland Hospital	854	214	712	452	1.892	452	639	166.0	266.8	1735.174	F
R394 (S)	621	155	476	545	1.140	543	688	29.1	48.7	273.411	F
Unknown Local Road	280	70	718	453	0.618	279	301	1.5	1.6	20.725	C

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
R394 (N)	836	209	288	2089	0.400	837	668	1.0	0.7	2.879	A
Midland Hospital	698	174	583	505	1.381	505	542	266.8	314.9	1996.604	F
R394 (S)	507	127	490	539	0.941	528	597	48.7	43.5	315.432	F
Unknown Local Road	228	57	726	449	0.508	230	292	1.6	1.1	16.598	C

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
R394 (N)	700	175	259	2112	0.331	701	670	0.7	0.5	2.551	A
Midland Hospital	584	146	488	544	1.073	544	472	314.9	324.9	2123.838	F
R394 (S)	425	106	501	535	0.794	523	531	43.5	19.0	220.602	F
Unknown Local Road	191	48	737	445	0.430	192	287	1.1	0.8	14.326	B

Queue Variation Results for each time segment

16:45 - 17:00

Arm	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
R394 (N)	0.49	0.00	0.00	0.49	0.49			N/A	N/A
Midland Hospital	17.19	>199	>199	>199	>199			N/A	N/A
R394 (S)	3.14	0.15	1.63	6.92	9.26			N/A	N/A
Unknown Local Road	0.63	0.55	1.00	1.40	1.45			N/A	N/A

17:00 - 17:15

Arm	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
R394 (N)	0.66	0.08	0.79	1.36	1.44			N/A	N/A
Midland Hospital	65.45	>199	>199	>199	>199			N/A	N/A
R394 (S)	7.95	0.35	4.87	18.13	23.92			N/A	N/A
Unknown Local Road	0.94	0.20	0.98	1.50	1.51			N/A	N/A

17:15 - 17:30

Arm	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
R394 (N)	0.98	0.03	0.25	0.98	0.98			N/A	N/A
Midland Hospital	166.04	>199	>199	>199	>199			N/A	N/A
R394 (S)	29.09	8.38	25.83	49.61	58.22			N/A	N/A
Unknown Local Road	1.52	0.03	0.29	1.52	6.24			N/A	N/A

17:30 - 17:45

Arm	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
R394 (N)	0.99	0.03	0.27	0.99	1.43			N/A	N/A
Midland Hospital	266.75	>199	>199	>199	>199			N/A	N/A
R394 (S)	48.70	17.63	44.70	78.79	90.81			N/A	N/A
Unknown Local Road	1.57	0.03	0.28	1.57	5.37			N/A	N/A

17:45 - 18:00

Arm	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
R394 (N)	0.67	0.55	1.00	1.40	1.45			N/A	N/A
Midland Hospital	314.90	>199	>199	>199	>199			N/A	N/A
R394 (S)	43.46	11.16	38.16	76.90	91.18			N/A	N/A
Unknown Local Road	1.07	0.06	0.77	2.08	2.92			N/A	N/A

18:00 - 18:15

Arm	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
R394 (N)	0.50	0.00	0.00	0.50	0.50			N/A	N/A
Midland Hospital	324.90	>199	>199	>199	>199			N/A	N/A
R394 (S)	18.98	1.06	13.69	41.03	52.42			N/A	N/A
Unknown Local Road	0.77	0.05	0.48	1.56	2.15			N/A	N/A

RECEIVED: 24/08/2023

2025 No Development, AM

RECEIVED: 24/06/2023

Data Errors and Warnings

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

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	untitled	Standard Roundabout		1, 2, 3, 4	1015.25	F

Junction Network

Driving side	Lighting	Network residual capacity (%)	First arm reaching threshold	Network delay (s)	Network LOS
Left	Normal/unknown	-48	Arm 3	1015.25	F

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D3	2025 No Development	AM	ONE HOUR	08:00	09:30	15	✓

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 (%)
R394 (N)		ONE HOUR	✓	768	100.000
Midland Hospital		ONE HOUR	✓	639	100.000
R394 (S)		ONE HOUR	✓	871	100.000
Unknown Local Road		ONE HOUR	✓	431	100.000

Origin-Destination Data

Demand (Veh/hr)

		To			
		R394 (N)	Midland Hospital	R394 (S)	Unknown Local Road
From	R394 (N)	7	351	338	72
	Midland Hospital	277	2	182	178
	R394 (S)	543	161	3	164
	Unknown Local Road	142	167	122	0

Vehicle Mix

Heavy Vehicle Percentages

		To			
		R394 (N)	Midland Hospital	R394 (S)	Unknown Local Road
From	R394 (N)	0	3	7	5
	Midland Hospital	3	52	1	6
	R394 (S)	4	1	0	0
	Unknown Local Road	3	1	0	0

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Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (Veh)	Max 95th percentile Queue (Veh)	Max LOS	Average Demand (Veh/hr)	Total Junction Arrivals (Veh)
R394 (N)	0.44	3.31	0.8	2.2	A	705	1057
Midland Hospital	1.46	958.95	144.5	200.0	F	586	830
R394 (S)	1.74	2395.18	374.5	194.8	F	799	1199
Unknown Local Road	1.02	142.10	18.5	55.4	F	395	593

Main Results for each time segment

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
R394 (N)	578	145	317	2004	0.289	577	652	0.0	0.4	2.521	A
Midland Hospital	481	120	404	559	0.860	462	489	0.0	4.8	32.549	D
R394 (S)	656	164	390	570	1.150	550	477	0.0	26.5	102.075	F
Unknown Local Road	324	81	653	470	0.690	316	286	0.0	2.1	22.379	C

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
R394 (N)	690	173	359	1971	0.350	690	696	0.4	0.5	2.808	A
Midland Hospital	574	144	484	526	1.091	511	565	4.8	20.6	109.815	F
R394 (S)	783	196	437	551	1.421	550	558	26.5	84.7	376.680	F
Unknown Local Road	387	97	676	460	0.842	379	311	2.1	4.2	40.169	E

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
R394 (N)	846	211	401	1939	0.436	845	707	0.5	0.8	3.286	A
Midland Hospital	704	176	585	484	1.453	483	660	20.6	75.6	373.703	F
R394 (S)	959	240	433	553	1.735	553	636	84.7	186.3	892.526	F
Unknown Local Road	475	119	667	464	1.022	440	318	4.2	12.8	89.529	F

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
R394 (N)	846	211	409	1933	0.438	846	710	0.8	0.8	3.310	A
Midland Hospital	704	176	589	483	1.458	483	665	75.6	130.9	755.033	F
R394 (S)	959	240	432	553	1.735	553	639	186.3	287.8	1552.208	F
Unknown Local Road	475	119	667	464	1.022	452	318	12.8	18.5	142.097	F

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
R394 (N)	690	173	394	1944	0.355	691	716	0.8	0.6	2.878	A
Midland Hospital	574	144	499	520	1.104	520	586	130.9	144.5	958.949	F
R394 (S)	783	196	443	548	1.428	548	576	287.8	346.5	2100.604	F
Unknown Local Road	387	97	678	460	0.843	431	313	18.5	7.5	113.459	F

09:15 - 09:30

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
R394 (N)	578	145	334	1990	0.291	579	697	0.6	0.4	2.551	A
Midland Hospital	481	120	413	556	0.866	552	500	144.5	126.8	885.641	F
R394 (S)	656	164	454	544	1.206	544	511	346.5	374.5	2395.184	F
Unknown Local Road	324	81	688	456	0.712	344	310	7.5	2.7	36.103	E

Queue Variation Results for each time segment

08:00 - 08:15

Arm	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
R394 (N)	0.40	0.00	0.00	0.40	0.40			N/A	N/A
Midland Hospital	4.76	0.03	0.30	4.76	21.25			N/A	N/A
R394 (S)	26.51	>199	>199	>199	>199			N/A	N/A
Unknown Local Road	2.06	0.62	1.45	2.91	3.53			N/A	N/A

08:15 - 08:30

Arm	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
R394 (N)	0.54	0.07	0.69	1.34	1.42			N/A	N/A
Midland Hospital	20.59	0.23	9.53	54.24	76.31			N/A	N/A
R394 (S)	84.69	>199	>199	>199	>199			N/A	N/A
Unknown Local Road	4.22	0.19	2.32	9.49	12.64			N/A	N/A

08:30 - 08:45

Arm	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
R394 (N)	0.77	0.03	0.25	0.77	0.77			N/A	N/A
Midland Hospital	75.63	31.02	70.63	118.26	134.79			N/A	N/A
R394 (S)	186.30	>199	>199	>199	>199			N/A	N/A
Unknown Local Road	12.84	0.92	8.91	28.03	36.07			N/A	N/A

08:45 - 09:00

Arm	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
R394 (N)	0.77	0.03	0.28	0.77	2.25			N/A	N/A
Midland Hospital	130.89	>199	>199	>199	>199			N/A	N/A
R394 (S)	287.85	>199	>199	>199	>199			N/A	N/A
Unknown Local Road	18.52	0.92	12.26	42.36	55.39			N/A	N/A

09:00 - 09:15

Arm	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
R394 (N)	0.55	0.55	1.00	1.40	1.45			N/A	N/A
Midland Hospital	144.52	>199	>199	>199	>199			N/A	N/A
R394 (S)	346.52	>199	>199	>199	>199			N/A	N/A
Unknown Local Road	7.51	0.07	1.24	21.53	33.78			N/A	N/A

09:15 - 09:30

Arm	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
R394 (N)	0.41	0.00	0.00	0.41	0.41			N/A	N/A
Midland Hospital	126.82	>199	>199	>199	>199			N/A	N/A
R394 (S)	374.54	>199	>199	>199	>199			N/A	N/A
Unknown Local Road	2.72	0.03	0.35	6.32	14.54			N/A	N/A

RECEIVED: 24/08/2023

2025 No Development, PM

RECEIVED: 24/06/2023

Data Errors and Warnings

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

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	untitled	Standard Roundabout		1, 2, 3, 4	1165.37	F

Junction Network

Driving side	Lighting	Network residual capacity (%)	First arm reaching threshold	Network delay (s)	Network LOS
Left	Normal/unknown	-50	Arm 2	1165.37	F

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D4	2025 No Development	PM	ONE HOUR	16:45	18:15	15	✓

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 (%)
R394 (N)		ONE HOUR	✓	1046	100.000
Midland Hospital		ONE HOUR	✓	870	100.000
R394 (S)		ONE HOUR	✓	634	100.000
Unknown Local Road		ONE HOUR	✓	284	100.000

Origin-Destination Data

Demand (Veh/hr)

		To			
		R394 (N)	Midland Hospital	R394 (S)	Unknown Local Road
From	R394 (N)	34	389	515	108
	Midland Hospital	433	2	222	213
	R394 (S)	395	140	1	98
	Unknown Local Road	76	139	68	1

Vehicle Mix

Heavy Vehicle Percentages

		To			
		R394 (N)	Midland Hospital	R394 (S)	Unknown Local Road
From	R394 (N)	0	1	3	0
	Midland Hospital	1	0	1	0
	R394 (S)	3	0	0	3
	Unknown Local Road	2	0	0	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (Veh)	Max 95th percentile Queue (Veh)	Max LOS	Average Demand (Veh/hr)	Total Junction Arrivals (Veh)
R394 (N)	0.56	4.06	1.3	1.7	A	960	1440
Midland Hospital	2.31	3324.54	495.4	198.5	F	798	1197
R394 (S)	1.27	657.00	100.6	168.3	F	582	873
Unknown Local Road	0.69	25.01	2.1	10.3	D	261	391

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
R394 (N)	787	197	257	2114	0.373	785	618	0.0	0.6	2.704	A
Midland Hospital	655	164	545	521	1.258	507	497	0.0	37.0	147.250	F
R394 (S)	477	119	485	540	0.884	456	567	0.0	5.4	36.472	E
Unknown Local Road	214	53	664	474	0.451	211	276	0.0	0.8	13.530	B

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
R394 (N)	940	235	303	2077	0.453	939	661	0.6	0.8	3.160	A
Midland Hospital	782	196	652	476	1.642	476	590	37.0	113.5	619.140	F
R394 (S)	570	142	483	541	1.053	522	646	5.4	17.4	97.212	F
Unknown Local Road	255	64	710	455	0.562	254	295	0.8	1.2	17.745	C

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
R394 (N)	1152	288	349	2041	0.564	1150	667	0.8	1.3	4.031	A
Midland Hospital	958	239	798	416	2.303	416	701	113.5	249.0	1579.040	F
R394 (S)	698	175	467	548	1.275	546	747	17.4	55.5	255.903	F
Unknown Local Road	313	78	707	456	0.686	310	306	1.2	2.0	24.035	C

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
R394 (N)	1152	288	351	2039	0.565	1152	669	1.3	1.3	4.056	A
Midland Hospital	958	239	800	415	2.307	415	703	249.0	384.7	2461.948	F
R394 (S)	698	175	467	548	1.275	547	749	55.5	93.2	502.609	F
Unknown Local Road	313	78	708	456	0.686	312	306	2.0	2.1	25.011	D

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
R394 (N)	940	235	310	2072	0.454	942	673	1.3	0.9	3.194	A
Midland Hospital	782	196	655	475	1.646	475	597	384.7	461.5	3017.639	F
R394 (S)	570	142	483	541	1.053	540	648	93.2	100.6	657.003	F
Unknown Local Road	255	64	725	448	0.569	258	298	2.1	1.4	19.206	C

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
R394 (N)	787	197	277	2098	0.375	788	673	0.8	0.6	2.750	A
Midland Hospital	655	164	548	519	1.261	519	517	461.5	495.4	3324.542	F
R394 (S)	477	119	495	536	0.890	531	573	100.6	87.1	636.794	F
Unknown Local Road	214	53	734	445	0.481	216	291	1.4	1.0	15.830	C

Queue Variation Results for each time segment

16:45 - 17:00

Arm	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
R394 (N)	0.59	0.55	1.00	1.40	1.45			N/A	N/A
Midland Hospital	37.00	>199	>199	>199	>199			N/A	N/A
R394 (S)	5.39	0.03	0.35	11.42	29.36			N/A	N/A
Unknown Local Road	0.80	0.55	1.00	1.40	1.45			N/A	N/A

17:00 - 17:15

Arm	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
R394 (N)	0.82	0.07	0.79	1.20	1.68			N/A	N/A
Midland Hospital	113.53	>199	>199	>199	>199			N/A	N/A
R394 (S)	17.36	0.19	7.60	46.18	65.50			N/A	N/A
Unknown Local Road	1.23	0.16	1.13	1.87	2.38			N/A	N/A

17:15 - 17:30

Arm	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
R394 (N)	1.28	0.03	0.26	1.28	1.28			N/A	N/A
Midland Hospital	249.03	>199	>199	>199	>199			N/A	N/A
R394 (S)	55.46	17.30	50.02	93.84	109.63			N/A	N/A
Unknown Local Road	2.02	0.03	0.31	3.30	10.34			N/A	N/A

17:30 - 17:45

Arm	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
R394 (N)	1.29	0.03	0.26	1.29	1.29			N/A	N/A
Midland Hospital	384.70	>199	>199	>199	>199			N/A	N/A
R394 (S)	93.16	45.25	88.69	137.30	153.67			N/A	N/A
Unknown Local Road	2.10	0.03	0.29	2.10	8.09			N/A	N/A

17:45 - 18:00

Arm	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
R394 (N)	0.84	0.53	0.99	1.40	1.45			N/A	N/A
Midland Hospital	461.47	>199	>199	>199	>199			N/A	N/A
R394 (S)	100.55	47.44	95.47	149.89	168.31			N/A	N/A
Unknown Local Road	1.38	0.05	0.56	3.37	5.04			N/A	N/A

18:00 - 18:15

Arm	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
R394 (N)	0.60	0.08	0.78	1.36	1.43			N/A	N/A
Midland Hospital	495.39	>199	>199	>199	>199			N/A	N/A
R394 (S)	87.11	32.48	80.50	140.61	161.76			N/A	N/A
Unknown Local Road	0.96	0.04	0.42	2.27	3.62			N/A	N/A

RECEIVED: 24/08/2023

2025 With Phase 3 , AM

RECEIVED: 24/06/2023

Data Errors and Warnings

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

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	untitled	Standard Roundabout		1, 2, 3, 4	1227.99	F

Junction Network

Driving side	Lighting	Network residual capacity (%)	First arm reaching threshold	Network delay (s)	Network LOS
Left	Normal/unknown	-50	Arm 3	1227.99	F

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D5	2025 With Phase 3	AM	ONE HOUR	08:00	09:30	15	✓

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 (%)
R394 (N)		ONE HOUR	✓	780	100.000
Midland Hospital		ONE HOUR	✓	655	100.000
R394 (S)		ONE HOUR	✓	935	100.000
Unknown Local Road		ONE HOUR	✓	436	100.000

Origin-Destination Data

Demand (Veh/hr)

		To			
		R394 (N)	Midland Hospital	R394 (S)	Unknown Local Road
From	R394 (N)	7	351	350	72
	Midland Hospital	277	2	198	178
	R394 (S)	583	173	3	176
	Unknown Local Road	142	167	127	0

Vehicle Mix

Heavy Vehicle Percentages

		To			
		R394 (N)	Midland Hospital	R394 (S)	Unknown Local Road
From	R394 (N)	0	3	7	5
	Midland Hospital	3	52	1	6
	R394 (S)	4	1	0	0
	Unknown Local Road	3	1	0	0

Results

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Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (Veh)	Max 95th percentile Queue (Veh)	Max LOS	Average Demand (Veh/hr)	Total Junction Arrivals (Veh)
R394 (N)	0.45	3.36	0.8	2.1	A	716	1074
Midland Hospital	1.52	1098.27	166.8	200.0	F	601	902
R394 (S)	1.84	2859.96	454.4	194.8	F	858	1287
Unknown Local Road	1.03	149.93	19.9	57.0	F	400	600

Main Results for each time segment

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
R394 (N)	587	147	322	1999	0.294	586	655	0.0	0.4	2.544	A
Midland Hospital	493	123	417	554	0.890	471	490	0.0	5.6	36.607	E
R394 (S)	704	176	388	571	1.232	556	500	0.0	36.9	132.961	F
Unknown Local Road	328	82	657	468	0.701	320	287	0.0	2.1	23.060	C

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
R394 (N)	701	175	364	1966	0.357	701	692	0.4	0.6	2.842	A
Midland Hospital	589	147	499	520	1.131	510	566	5.6	25.4	130.644	F
R394 (S)	841	210	427	555	1.514	555	582	36.9	108.4	482.410	F
Unknown Local Road	392	98	674	462	0.849	383	308	2.1	4.4	41.443	E

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
R394 (N)	859	215	405	1935	0.444	858	702	0.6	0.8	3.340	A
Midland Hospital	721	180	603	477	1.511	477	661	25.4	86.5	437.548	F
R394 (S)	1029	257	419	558	1.845	558	660	108.4	226.2	1088.778	F
Unknown Local Road	480	120	664	466	1.031	443	314	4.4	13.6	93.026	F

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
R394 (N)	859	215	413	1929	0.445	859	705	0.8	0.8	3.364	A
Midland Hospital	721	180	607	476	1.516	476	665	86.5	148.0	863.419	F
R394 (S)	1029	257	419	558	1.844	558	663	226.2	344.0	1846.322	F
Unknown Local Road	480	120	663	466	1.031	455	314	13.6	19.9	149.928	F

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
R394 (N)	701	175	401	1938	0.362	702	712	0.8	0.6	2.915	A
Midland Hospital	589	147	516	514	1.146	514	588	148.0	166.8	1098.268	F
R394 (S)	841	210	429	554	1.517	554	600	344.0	415.7	2490.264	F
Unknown Local Road	392	98	675	461	0.850	438	309	19.9	8.3	124.021	F

09:15 - 09:30

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
R394 (N)	587	147	341	1984	0.296	588	693	0.6	0.4	2.580	A
Midland Hospital	493	123	427	550	0.896	547	502	166.8	153.3	1053.367	F
R394 (S)	704	176	441	549	1.282	549	533	415.7	454.4	2859.961	F
Unknown Local Road	328	82	684	457	0.718	350	306	8.3	2.8	38.414	E

Queue Variation Results for each time segment

08:00 - 08:15

Arm	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
R394 (N)	0.41	0.00	0.00	0.41	0.41			N/A	N/A
Midland Hospital	5.62	0.03	0.29	5.62	17.20			N/A	N/A
R394 (S)	36.93	>199	>199	>199	>199			N/A	N/A
Unknown Local Road	2.15	0.63	1.52	3.08	3.74			N/A	N/A

08:15 - 08:30

Arm	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
R394 (N)	0.55	0.07	0.73	1.35	1.42			N/A	N/A
Midland Hospital	25.39	0.18	9.60	70.06	101.83			N/A	N/A
R394 (S)	108.38	>199	>199	>199	>199			N/A	N/A
Unknown Local Road	4.40	0.20	2.47	9.88	13.14			N/A	N/A

08:30 - 08:45

Arm	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
R394 (N)	0.79	0.03	0.25	0.79	0.79			N/A	N/A
Midland Hospital	86.54	30.51	79.43	142.04	164.25			N/A	N/A
R394 (S)	226.24	>199	>199	>199	>199			N/A	N/A
Unknown Local Road	13.59	1.16	9.75	29.04	37.04			N/A	N/A

08:45 - 09:00

Arm	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
R394 (N)	0.80	0.03	0.27	0.80	2.08			N/A	N/A
Midland Hospital	147.95	>199	>199	>199	>199			N/A	N/A
R394 (S)	344.01	>199	>199	>199	>199			N/A	N/A
Unknown Local Road	19.89	1.32	13.87	44.16	57.00			N/A	N/A

09:00 - 09:15

Arm	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
R394 (N)	0.57	0.55	1.00	1.40	1.45			N/A	N/A
Midland Hospital	166.76	>199	>199	>199	>199			N/A	N/A
R394 (S)	415.67	>199	>199	>199	>199			N/A	N/A
Unknown Local Road	8.29	0.08	1.83	23.52	36.03			N/A	N/A

09:15 - 09:30

Arm	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
R394 (N)	0.42	0.00	0.00	0.42	0.42			N/A	N/A
Midland Hospital	153.27	>199	>199	>199	>199			N/A	N/A
R394 (S)	454.39	>199	>199	>199	>199			N/A	N/A
Unknown Local Road	2.82	0.04	0.35	6.57	15.06			N/A	N/A

RECEIVED: 24/08/2023

2025 With Phase 3, PM

RECEIVED: 24/06/2023

Data Errors and Warnings

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

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	untitled	Standard Roundabout		1, 2, 3, 4	1310.54	F

Junction Network

Driving side	Lighting	Network residual capacity (%)	First arm reaching threshold	Network delay (s)	Network LOS
Left	Normal/unknown	-51	Arm 2	1310.54	F

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D6	2025 With Phase 3	PM	ONE HOUR	16:45	18:15	15	✓

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 (%)
R394 (N)		ONE HOUR	✓	1067	100.000
Midland Hospital		ONE HOUR	✓	879	100.000
R394 (S)		ONE HOUR	✓	697	100.000
Unknown Local Road		ONE HOUR	✓	287	100.000

Origin-Destination Data

Demand (Veh/hr)

		To			
		R394 (N)	Midland Hospital	R394 (S)	Unknown Local Road
From	R394 (N)	34	389	536	108
	Midland Hospital	433	2	231	213
	R394 (S)	435	154	1	107
	Unknown Local Road	76	139	71	1

Vehicle Mix

Heavy Vehicle Percentages

		To			
		R394 (N)	Midland Hospital	R394 (S)	Unknown Local Road
From	R394 (N)	0	1	3	0
	Midland Hospital	1	0	1	0
	R394 (S)	3	0	0	2
	Unknown Local Road	2	0	0	0

Results

RECEIVED: 24/09/2023

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (Veh)	Max 95th percentile Queue (Veh)	Max LOS	Average Demand (Veh/hr)	Total Junction Arrivals (Veh)
R394 (N)	0.58	4.18	1.4	1.8	A	979	1469
Midland Hospital	2.39	3541.99	521.2	198.5	F	807	1210
R394 (S)	1.39	1050.04	158.4	200.0	F	640	959
Unknown Local Road	0.69	25.43	2.2	10.7	D	263	395

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
R394 (N)	803	201	266	2106	0.381	801	634	0.0	0.6	2.754	A
Midland Hospital	662	165	563	513	1.289	501	504	0.0	40.2	160.734	F
R394 (S)	525	131	476	544	0.964	489	587	0.0	8.9	49.930	E
Unknown Local Road	216	54	688	464	0.466	213	278	0.0	0.8	14.144	B

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
R394 (N)	959	240	309	2072	0.463	958	665	0.6	0.9	3.229	A
Midland Hospital	790	198	674	467	1.691	467	594	40.2	121.0	679.063	F
R394 (S)	627	157	473	546	1.148	539	668	8.9	30.8	150.838	F
Unknown Local Road	258	65	718	451	0.572	256	294	0.8	1.3	18.277	C

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
R394 (N)	1175	294	354	2037	0.577	1173	664	0.9	1.3	4.157	A
Midland Hospital	968	242	824	405	2.389	405	702	121.0	261.7	1709.203	F
R394 (S)	767	192	456	553	1.388	552	774	30.8	84.6	389.241	F
Unknown Local Road	316	79	705	456	0.692	313	303	1.3	2.1	24.472	C

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
R394 (N)	1175	294	356	2035	0.577	1175	665	1.3	1.4	4.184	A
Midland Hospital	968	242	826	404	2.394	404	704	261.7	402.6	2614.368	F
R394 (S)	767	192	455	553	1.388	553	775	84.6	138.2	739.854	F
Unknown Local Road	316	79	705	456	0.692	316	303	2.1	2.2	25.431	D

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
R394 (N)	959	240	314	2068	0.464	961	670	1.4	0.9	3.257	A
Midland Hospital	790	198	677	466	1.696	466	599	402.6	483.7	3205.578	F
R394 (S)	627	157	472	546	1.147	546	671	138.2	158.4	987.954	F
Unknown Local Road	258	65	723	449	0.575	261	295	2.2	1.4	19.438	C

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
R394 (N)	803	201	281	2095	0.384	804	671	0.9	0.6	2.793	A
Midland Hospital	662	165	566	512	1.293	512	519	483.7	521.2	3541.988	F
R394 (S)	525	131	485	541	0.970	538	593	158.4	155.2	1050.042	F
Unknown Local Road	216	54	734	445	0.486	218	289	1.4	1.0	15.985	C

Queue Variation Results for each time segment

16:45 - 17:00

Arm	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
R394 (N)	0.61	0.55	1.00	1.40	1.45			N/A	N/A
Midland Hospital	40.24	>199	>199	>199	>199			N/A	N/A
R394 (S)	8.87	0.03	0.27	8.87	8.87			N/A	N/A
Unknown Local Road	0.85	0.55	1.00	1.40	1.45			N/A	N/A

17:00 - 17:15

Arm	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
R394 (N)	0.86	0.07	0.79	1.40	1.81			N/A	N/A
Midland Hospital	121.02	>199	>199	>199	>199			N/A	N/A
R394 (S)	30.82	0.05	0.50	85.01	169.77			N/A	N/A
Unknown Local Road	1.28	0.16	1.16	1.94	2.55			N/A	N/A

17:15 - 17:30

Arm	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
R394 (N)	1.35	0.03	0.26	1.35	1.35			N/A	N/A
Midland Hospital	261.72	>199	>199	>199	>199			N/A	N/A
R394 (S)	84.61	>199	>199	>199	>199			N/A	N/A
Unknown Local Road	2.08	0.03	0.32	3.57	10.74			N/A	N/A

17:30 - 17:45

Arm	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
R394 (N)	1.36	0.03	0.26	1.36	1.36			N/A	N/A
Midland Hospital	402.62	>199	>199	>199	>199			N/A	N/A
R394 (S)	138.24	>199	>199	>199	>199			N/A	N/A
Unknown Local Road	2.16	0.03	0.29	2.16	8.39			N/A	N/A

17:45 - 18:00

Arm	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
R394 (N)	0.87	0.52	0.99	1.41	1.46			N/A	N/A
Midland Hospital	483.66	>199	>199	>199	>199			N/A	N/A
R394 (S)	158.40	>199	>199	>199	>199			N/A	N/A
Unknown Local Road	1.41	0.05	0.50	3.51	5.34			N/A	N/A

18:00 - 18:15

Arm	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
R394 (N)	0.63	0.08	0.78	1.36	1.43			N/A	N/A
Midland Hospital	521.15	>199	>199	>199	>199			N/A	N/A
R394 (S)	155.18	>199	>199	>199	>199			N/A	N/A
Unknown Local Road	0.97	0.04	0.42	2.36	3.79			N/A	N/A

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2025 With Phase1&2&3, AM

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Data Errors and Warnings

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

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	untitled	Standard Roundabout		1, 2, 3, 4	1371.08	F

Junction Network

Driving side	Lighting	Network residual capacity (%)	First arm reaching threshold	Network delay (s)	Network LOS
Left	Normal/unknown	-52	Arm 3	1371.08	F

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D7	2025 With Phase1&2&3	AM	ONE HOUR	08:00	09:30	15	✓

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 (%)
R394 (N)		ONE HOUR	✓	786	100.000
Midland Hospital		ONE HOUR	✓	661	100.000
R394 (S)		ONE HOUR	✓	977	100.000
Unknown Local Road		ONE HOUR	✓	438	100.000

Origin-Destination Data

Demand (Veh/hr)

		To			
		R394 (N)	Midland Hospital	R394 (S)	Unknown Local Road
From	R394 (N)	7	351	356	72
	Midland Hospital	277	2	204	178
	R394 (S)	609	181	3	184
	Unknown Local Road	142	167	129	0

Vehicle Mix

Heavy Vehicle Percentages

		To			
		R394 (N)	Midland Hospital	R394 (S)	Unknown Local Road
From	R394 (N)	0	3	7	5
	Midland Hospital	3	52	1	6
	R394 (S)	4	1	0	0
	Unknown Local Road	3	1	0	0

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Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (Veh)	Max 95th percentile Queue (Veh)	Max LOS	Average Demand (Veh/hr)	Total Junction Arrivals (Veh)
R394 (N)	0.45	3.39	0.8	2.0	A	721	1082
Midland Hospital	1.54	1157.36	175.9	200.0	F	607	910
R394 (S)	1.92	3180.47	508.8	194.8	F	897	1345
Unknown Local Road	1.03	153.08	20.5	57.6	F	402	603

Main Results for each time segment

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
R394 (N)	592	148	324	1998	0.296	590	656	0.0	0.4	2.554	A
Midland Hospital	498	124	423	552	0.901	474	491	0.0	6.0	38.465	E
R394 (S)	736	184	387	572	1.287	559	510	0.0	44.1	154.615	F
Unknown Local Road	330	82	659	468	0.705	321	287	0.0	2.2	23.343	C

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
R394 (N)	707	177	366	1965	0.360	706	691	0.4	0.6	2.858	A
Midland Hospital	594	149	506	518	1.148	508	567	6.0	27.5	140.029	F
R394 (S)	878	220	422	557	1.577	557	592	44.1	124.6	555.344	F
Unknown Local Road	394	98	673	462	0.852	385	306	2.2	4.5	41.953	E

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
R394 (N)	865	216	407	1933	0.448	864	699	0.6	0.8	3.366	A
Midland Hospital	728	182	611	474	1.536	473	661	27.5	91.1	465.690	F
R394 (S)	1076	269	414	560	1.920	560	670	124.6	253.4	1223.936	F
Unknown Local Road	482	121	662	466	1.034	445	312	4.5	13.9	94.420	F

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
R394 (N)	865	216	415	1927	0.449	865	703	0.8	0.8	3.391	A
Midland Hospital	728	182	615	472	1.541	472	666	91.1	155.0	909.657	F
R394 (S)	1076	269	413	561	1.919	561	674	253.4	382.2	2048.796	F
Unknown Local Road	482	121	662	466	1.034	456	312	13.9	20.5	153.075	F

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
R394 (N)	707	177	404	1935	0.365	708	710	0.8	0.6	2.934	A
Midland Hospital	594	149	523	511	1.163	511	589	155.0	175.9	1157.360	F
R394 (S)	878	220	424	556	1.579	556	610	382.2	462.7	2758.920	F
Unknown Local Road	394	98	673	462	0.853	441	307	20.5	8.7	126.376	F

09:15 - 09:30

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
R394 (N)	592	148	344	1982	0.299	592	692	0.6	0.4	2.593	A
Midland Hospital	498	124	433	548	0.908	545	503	175.9	164.2	1124.109	F
R394 (S)	736	184	436	551	1.335	551	542	462.7	508.8	3180.466	F
Unknown Local Road	330	82	683	458	0.720	353	305	8.7	2.9	39.520	E

Queue Variation Results for each time segment

08:00 - 08:15

Arm	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
R394 (N)	0.42	0.00	0.00	0.42	0.42			N/A	N/A
Midland Hospital	6.03	0.03	0.28	6.03	14.26			N/A	N/A
R394 (S)	44.13	>199	>199	>199	>199			N/A	N/A
Unknown Local Road	2.19	0.63	1.55	3.20	3.81			N/A	N/A

08:15 - 08:30

Arm	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
R394 (N)	0.56	0.07	0.75	1.35	1.43			N/A	N/A
Midland Hospital	27.49	0.15	9.01	77.53	114.95			N/A	N/A
R394 (S)	124.56	>199	>199	>199	>199			N/A	N/A
Unknown Local Road	4.48	0.21	2.53	10.03	13.35			N/A	N/A

08:30 - 08:45

Arm	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
R394 (N)	0.81	0.03	0.25	0.81	0.81			N/A	N/A
Midland Hospital	91.11	29.11	82.63	153.93	179.59			N/A	N/A
R394 (S)	253.42	>199	>199	>199	>199			N/A	N/A
Unknown Local Road	13.89	1.27	10.08	29.45	37.42			N/A	N/A

08:45 - 09:00

Arm	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
R394 (N)	0.81	0.03	0.27	0.81	1.99			N/A	N/A
Midland Hospital	155.02	>199	>199	>199	>199			N/A	N/A
R394 (S)	382.20	>199	>199	>199	>199			N/A	N/A
Unknown Local Road	20.46	1.01	14.53	44.87	57.63			N/A	N/A

09:00 - 09:15

Arm	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
R394 (N)	0.58	0.55	1.00	1.40	1.45			N/A	N/A
Midland Hospital	175.92	>199	>199	>199	>199			N/A	N/A
R394 (S)	462.75	>199	>199	>199	>199			N/A	N/A
Unknown Local Road	8.65	0.09	2.12	24.36	36.88			N/A	N/A

09:15 - 09:30

Arm	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
R394 (N)	0.43	0.00	0.00	0.43	0.43			N/A	N/A
Midland Hospital	164.16	>199	>199	>199	>199			N/A	N/A
R394 (S)	508.84	>199	>199	>199	>199			N/A	N/A
Unknown Local Road	2.86	0.04	0.35	6.68	15.28			N/A	N/A

RECEIVED: 24/08/2023

2025 With Phase1&2&3, PM

RECEIVED: 24/06/2023

Data Errors and Warnings

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

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	untitled	Standard Roundabout		1, 2, 3, 4	1413.39	F

Junction Network

Driving side	Lighting	Network residual capacity (%)	First arm reaching threshold	Network delay (s)	Network LOS
Left	Normal/unknown	-51	Arm 2	1413.39	F

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D8	2025 With Phase1&2&3	PM	ONE HOUR	16:45	18:15	15	✓

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 (%)
R394 (N)		ONE HOUR	✓	1076	100.000
Midland Hospital		ONE HOUR	✓	883	100.000
R394 (S)		ONE HOUR	✓	741	100.000
Unknown Local Road		ONE HOUR	✓	288	100.000

Origin-Destination Data

Demand (Veh/hr)

		To			
		R394 (N)	Midland Hospital	R394 (S)	Unknown Local Road
From	R394 (N)	34	389	545	108
	Midland Hospital	433	2	235	213
	R394 (S)	462	164	1	114
	Unknown Local Road	76	139	72	1

Vehicle Mix

Heavy Vehicle Percentages

		To			
		R394 (N)	Midland Hospital	R394 (S)	Unknown Local Road
From	R394 (N)	0	1	3	0
	Midland Hospital	1	0	1	0
	R394 (S)	3	0	0	2
	Unknown Local Road	2	0	0	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (Veh)	Max 95th percentile Queue (Veh)	Max LOS	Average Demand (Veh/hr)	Total Junction Arrivals (Veh)
R394 (N)	0.58	4.24	1.4	1.9	A	987	1481
Midland Hospital	2.43	3636.77	532.2	198.5	F	810	1215
R394 (S)	1.47	1371.76	207.4	195.7	F	680	1020
Unknown Local Road	0.69	25.50	2.2	10.8	D	264	396

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
R394 (N)	810	203	271	2102	0.385	808	642	0.0	0.6	2.776	A
Midland Hospital	665	166	570	510	1.303	498	508	0.0	41.7	166.711	F
R394 (S)	558	139	473	546	1.022	506	596	0.0	12.8	63.317	F
Unknown Local Road	217	54	699	459	0.472	213	280	0.0	0.9	14.461	B

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
R394 (N)	967	242	312	2070	0.467	966	665	0.6	0.9	3.258	A
Midland Hospital	794	198	683	464	1.712	463	595	41.7	124.3	705.736	F
R394 (S)	666	167	468	548	1.216	544	678	12.8	43.3	202.373	F
Unknown Local Road	259	65	719	451	0.574	257	293	0.9	1.3	18.419	C

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
R394 (N)	1185	296	355	2035	0.582	1183	662	0.9	1.4	4.212	A
Midland Hospital	972	243	835	400	2.428	400	703	124.3	267.2	1766.523	F
R394 (S)	816	204	451	555	1.471	554	785	43.3	108.7	505.137	F
Unknown Local Road	317	79	704	457	0.694	314	302	1.3	2.1	24.555	C

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
R394 (N)	1185	296	358	2034	0.583	1185	663	1.4	1.4	4.240	A
Midland Hospital	972	243	837	400	2.433	400	705	267.2	410.3	2680.713	F
R394 (S)	816	204	451	555	1.470	555	786	108.7	173.9	932.776	F
Unknown Local Road	317	79	704	457	0.694	317	302	2.1	2.2	25.503	D

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
R394 (N)	967	242	316	2067	0.468	969	668	1.4	0.9	3.285	A
Midland Hospital	794	198	686	462	1.717	462	599	410.3	493.2	3287.459	F
R394 (S)	666	167	468	548	1.216	548	680	173.9	203.5	1252.343	F
Unknown Local Road	259	65	722	450	0.576	262	294	2.2	1.4	19.472	C

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
R394 (N)	810	203	283	2093	0.387	811	671	0.9	0.6	2.810	A
Midland Hospital	665	166	574	509	1.307	509	520	493.2	532.2	3636.769	F
R394 (S)	558	139	481	543	1.028	542	602	203.5	207.4	1371.761	F
Unknown Local Road	217	54	735	444	0.488	219	288	1.4	1.0	16.072	C

Queue Variation Results for each time segment

16:45 - 17:00

Arm	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
R394 (N)	0.62	0.55	1.00	1.40	1.45			N/A	N/A
Midland Hospital	41.65	>199	>199	>199	>199			N/A	N/A
R394 (S)	12.85	>199	>199	>199	>199			N/A	N/A
Unknown Local Road	0.87	0.55	1.00	1.40	1.45			N/A	N/A

17:00 - 17:15

Arm	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
R394 (N)	0.87	0.07	0.79	1.47	1.87			N/A	N/A
Midland Hospital	124.25	>199	>199	>199	>199			N/A	N/A
R394 (S)	43.33	>199	>199	>199	>199			N/A	N/A
Unknown Local Road	1.29	0.16	1.17	1.96	2.59			N/A	N/A

17:15 - 17:30

Arm	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
R394 (N)	1.38	0.03	0.26	1.38	1.38			N/A	N/A
Midland Hospital	267.19	>199	>199	>199	>199			N/A	N/A
R394 (S)	108.68	>199	>199	>199	>199			N/A	N/A
Unknown Local Road	2.09	0.03	0.32	3.63	10.83			N/A	N/A

17:30 - 17:45

Arm	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
R394 (N)	1.39	0.03	0.26	1.39	1.39			N/A	N/A
Midland Hospital	410.33	>199	>199	>199	>199			N/A	N/A
R394 (S)	173.93	>199	>199	>199	>199			N/A	N/A
Unknown Local Road	2.17	0.03	0.29	2.17	8.44			N/A	N/A

17:45 - 18:00

Arm	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
R394 (N)	0.89	0.51	0.99	1.41	1.46			N/A	N/A
Midland Hospital	493.20	>199	>199	>199	>199			N/A	N/A
R394 (S)	203.52	>199	>199	>199	>199			N/A	N/A
Unknown Local Road	1.42	0.05	0.50	3.55	5.43			N/A	N/A

18:00 - 18:15

Arm	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
R394 (N)	0.63	0.08	0.78	1.36	1.43			N/A	N/A
Midland Hospital	532.23	>199	>199	>199	>199			N/A	N/A
R394 (S)	207.42	>199	>199	>199	>199			N/A	N/A
Unknown Local Road	0.98	0.04	0.41	2.40	3.84			N/A	N/A

RECEIVED: 24/08/2023

2030 No Development, AM

RECEIVED: 24/06/2023

Data Errors and Warnings

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

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	untitled	Standard Roundabout		1, 2, 3, 4	1427.57	F

Junction Network

Driving side	Lighting	Network residual capacity (%)	First arm reaching threshold	Network delay (s)	Network LOS
Left	Normal/unknown	-53	Arm 3	1427.57	F

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D9	2030 No Development	AM	ONE HOUR	08:00	09:30	15	✓

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 (%)
R394 (N)		ONE HOUR	✓	848	100.000
Midland Hospital		ONE HOUR	✓	706	100.000
R394 (S)		ONE HOUR	✓	962	100.000
Unknown Local Road		ONE HOUR	✓	474	100.000

Origin-Destination Data

Demand (Veh/hr)

		To			
		R394 (N)	Midland Hospital	R394 (S)	Unknown Local Road
From	R394 (N)	7	387	374	80
	Midland Hospital	305	3	201	197
	R394 (S)	600	178	4	180
	Unknown Local Road	156	184	134	0

Vehicle Mix

Heavy Vehicle Percentages

		To			
		R394 (N)	Midland Hospital	R394 (S)	Unknown Local Road
From	R394 (N)	0	3	8	6
	Midland Hospital	3	54	1	6
	R394 (S)	4	1	0	0
	Unknown Local Road	3	2	0	0

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Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (Veh)	Max 95th percentile Queue (Veh)	Max LOS	Average Demand (Veh/hr)	Total Junction Arrivals (Veh)
R394 (N)	0.49	3.67	0.9	1.5	A	778	1167
Midland Hospital	1.69	1620.31	237.3	193.3	F	648	972
R394 (S)	1.91	3131.57	497.4	194.8	F	883	1324
Unknown Local Road	1.12	286.18	38.2	76.4	F	435	652

Main Results for each time segment

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
R394 (N)	638	160	337	1976	0.323	637	672	0.0	0.5	2.683	A
Midland Hospital	532	133	446	540	0.984	491	528	0.0	10.0	54.416	F
R394 (S)	724	181	417	559	1.296	547	520	0.0	44.4	158.539	F
Unknown Local Road	357	89	664	464	0.770	345	299	0.0	2.9	28.169	D

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
R394 (N)	762	191	381	1942	0.393	762	701	0.5	0.6	3.048	A
Midland Hospital	635	159	532	504	1.259	501	611	10.0	43.5	215.004	F
R394 (S)	865	216	436	551	1.571	550	597	44.4	123.0	556.984	F
Unknown Local Road	426	107	672	460	0.926	410	315	2.9	6.9	57.986	F

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
R394 (N)	934	233	413	1918	0.487	932	703	0.6	0.9	3.648	A
Midland Hospital	777	194	638	460	1.691	460	707	43.5	123.0	665.235	F
R394 (S)	1059	265	424	556	1.907	555	673	123.0	249.0	1215.253	F
Unknown Local Road	522	130	660	465	1.121	456	320	6.9	23.4	140.473	F

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
R394 (N)	934	233	417	1914	0.488	934	705	0.9	0.9	3.669	A
Midland Hospital	777	194	641	459	1.694	459	710	123.0	202.6	1288.021	F
R394 (S)	1059	265	424	556	1.906	556	675	249.0	374.8	2028.361	F
Unknown Local Road	522	130	660	465	1.121	463	320	23.4	38.2	257.395	F

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
R394 (N)	762	191	407	1922	0.397	763	713	0.9	0.7	3.109	A
Midland Hospital	635	159	544	500	1.271	499	627	202.6	236.4	1552.909	F
R394 (S)	865	216	436	551	1.570	551	608	374.8	453.3	2723.697	F
Unknown Local Road	426	107	672	460	0.926	449	314	38.2	32.6	286.180	F

09:15 - 09:30

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
R394 (N)	638	160	403	1925	0.332	639	721	0.7	0.5	2.799	A
Midland Hospital	532	133	475	529	1.005	528	567	236.4	237.3	1620.306	F
R394 (S)	724	181	443	548	1.322	548	560	453.3	497.4	3131.572	F
Unknown Local Road	357	89	681	457	0.782	443	310	32.6	11.1	186.060	F

Queue Variation Results for each time segment

08:00 - 08:15

Arm	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
R394 (N)	0.48	0.00	0.00	0.48	0.48			N/A	N/A
Midland Hospital	10.04	>199	>199	>199	>199			N/A	N/A
R394 (S)	44.43	>199	>199	>199	>199			N/A	N/A
Unknown Local Road	2.91	0.26	1.78	5.74	7.36			N/A	N/A

08:15 - 08:30

Arm	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
R394 (N)	0.64	0.09	0.81	1.36	1.43			N/A	N/A
Midland Hospital	43.52	>199	>199	>199	>199			N/A	N/A
R394 (S)	123.04	>199	>199	>199	>199			N/A	N/A
Unknown Local Road	6.89	0.37	4.33	15.36	20.11			N/A	N/A

08:30 - 08:45

Arm	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
R394 (N)	0.94	0.03	0.25	0.94	0.94			N/A	N/A
Midland Hospital	122.96	>199	>199	>199	>199			N/A	N/A
R394 (S)	248.96	>199	>199	>199	>199			N/A	N/A
Unknown Local Road	23.40	5.61	20.26	41.46	49.31			N/A	N/A

08:45 - 09:00

Arm	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
R394 (N)	0.95	0.03	0.27	0.95	1.14			N/A	N/A
Midland Hospital	202.62	>199	>199	>199	>199			N/A	N/A
R394 (S)	374.83	>199	>199	>199	>199			N/A	N/A
Unknown Local Road	38.24	11.31	34.17	65.19	76.42			N/A	N/A

09:00 - 09:15

Arm	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
R394 (N)	0.66	0.55	1.00	1.40	1.45			N/A	N/A
Midland Hospital	236.41	>199	>199	>199	>199			N/A	N/A
R394 (S)	453.30	>199	>199	>199	>199			N/A	N/A
Unknown Local Road	32.64	6.08	27.41	61.51	74.56			N/A	N/A

09:15 - 09:30

Arm	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
R394 (N)	0.50	0.00	0.00	0.50	0.50			N/A	N/A
Midland Hospital	237.26	>199	>199	>199	>199			N/A	N/A
R394 (S)	497.42	>199	>199	>199	>199			N/A	N/A
Unknown Local Road	11.11	0.29	6.19	27.02	36.56			N/A	N/A

RECEIVED: 24/08/2023

2030 No Development, PM

RECEIVED: 24/06/2023

Data Errors and Warnings

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

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	untitled	Standard Roundabout		1, 2, 3, 4	1645.77	F

Junction Network

Driving side	Lighting	Network residual capacity (%)	First arm reaching threshold	Network delay (s)	Network LOS
Left	Normal/unknown	-55	Arm 2	1645.77	F

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D10	2030 No Development	PM	ONE HOUR	16:45	18:15	15	✓

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 (%)
R394 (N)		ONE HOUR	✓	1152	100.000
Midland Hospital		ONE HOUR	✓	959	100.000
R394 (S)		ONE HOUR	✓	699	100.000
Unknown Local Road		ONE HOUR	✓	313	100.000

Origin-Destination Data

Demand (Veh/hr)

		To			
		R394 (N)	Midland Hospital	R394 (S)	Unknown Local Road
From	R394 (N)	37	428	568	119
	Midland Hospital	477	2	245	235
	R394 (S)	436	154	1	108
	Unknown Local Road	84	153	75	1

Vehicle Mix

Heavy Vehicle Percentages

		To			
		R394 (N)	Midland Hospital	R394 (S)	Unknown Local Road
From	R394 (N)	0	1	3	0
	Midland Hospital	1	0	1	0
	R394 (S)	3	0	0	3
	Unknown Local Road	2	0	0	0

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Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (Veh)	Max 95th percentile Queue (Veh)	Max LOS	Average Demand (Veh/hr)	Total Junction Arrivals (Veh)
R394 (N)	0.63	4.79	1.7	2.7	A	1057	1586
Midland Hospital	2.77	4581.77	658.6	198.5	F	880	1320
R394 (S)	1.40	1082.09	162.2	200.0	F	641	962
Unknown Local Road	0.75	30.77	2.8	14.3	D	287	431

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
R394 (N)	867	217	279	2096	0.414	864	638	0.0	0.7	2.916	A
Midland Hospital	722	180	600	498	1.450	489	543	0.0	58.1	231.817	F
R394 (S)	526	132	482	541	0.972	489	607	0.0	9.3	51.832	F
Unknown Local Road	236	59	686	465	0.507	232	286	0.0	1.0	15.203	C

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
R394 (N)	1036	259	324	2060	0.503	1034	667	0.7	1.0	3.503	A
Midland Hospital	862	216	719	449	1.921	449	640	58.1	161.5	978.248	F
R394 (S)	628	157	475	544	1.155	538	692	9.3	32.0	156.522	F
Unknown Local Road	281	70	712	454	0.620	279	301	1.0	1.5	20.336	C

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
R394 (N)	1268	317	372	2023	0.627	1266	666	1.0	1.7	4.738	A
Midland Hospital	1056	264	879	383	2.760	383	759	161.5	329.8	2299.491	F
R394 (S)	770	192	457	551	1.396	551	804	32.0	86.7	400.799	F
Unknown Local Road	345	86	697	460	0.750	340	311	1.5	2.7	28.970	D

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
R394 (N)	1268	317	375	2020	0.628	1268	667	1.7	1.7	4.785	A
Midland Hospital	1056	264	881	382	2.767	382	762	329.8	498.4	3309.546	F
R394 (S)	770	192	457	552	1.395	551	806	86.7	141.2	758.560	F
Unknown Local Road	345	86	698	460	0.750	344	311	2.7	2.8	30.770	D

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
R394 (N)	1036	259	331	2055	0.504	1038	672	1.7	1.0	3.549	A
Midland Hospital	862	216	723	447	1.928	447	646	498.4	602.1	4089.419	F
R394 (S)	628	157	474	545	1.154	544	695	141.2	162.2	1013.737	F
Unknown Local Road	281	70	717	452	0.623	286	302	2.8	1.7	22.214	C

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
R394 (N)	867	217	294	2085	0.416	869	673	1.0	0.7	2.962	A
Midland Hospital	722	180	604	496	1.455	496	558	602.1	658.6	4581.774	F
R394 (S)	526	132	488	539	0.976	536	613	162.2	159.8	1082.091	F
Unknown Local Road	236	59	729	447	0.527	238	295	1.7	1.2	17.427	C

Queue Variation Results for each time segment

16:45 - 17:00

Arm	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
R394 (N)	0.70	0.55	1.00	1.40	1.45			N/A	N/A
Midland Hospital	58.14	>199	>199	>199	>199			N/A	N/A
R394 (S)	9.33	0.03	0.27	9.33	9.33			N/A	N/A
Unknown Local Road	0.99	0.55	1.00	1.40	1.45			N/A	N/A

17:00 - 17:15

Arm	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
R394 (N)	1.00	0.06	0.74	1.92	2.72			N/A	N/A
Midland Hospital	161.48	>199	>199	>199	>199			N/A	N/A
R394 (S)	32.01	0.05	0.80	89.91	175.05			N/A	N/A
Unknown Local Road	1.55	0.14	1.28	2.77	3.58			N/A	N/A

17:15 - 17:30

Arm	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
R394 (N)	1.66	0.03	0.26	1.66	1.66			N/A	N/A
Midland Hospital	329.80	>199	>199	>199	>199			N/A	N/A
R394 (S)	86.70	>199	>199	>199	>199			N/A	N/A
Unknown Local Road	2.68	0.03	0.35	6.24	14.29			N/A	N/A

17:30 - 17:45

Arm	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
R394 (N)	1.67	0.03	0.26	1.67	1.67			N/A	N/A
Midland Hospital	498.39	>199	>199	>199	>199			N/A	N/A
R394 (S)	141.23	>199	>199	>199	>199			N/A	N/A
Unknown Local Road	2.82	0.03	0.30	2.93	12.93			N/A	N/A

17:45 - 18:00

Arm	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
R394 (N)	1.02	0.28	1.03	1.29	1.66			N/A	N/A
Midland Hospital	602.11	>199	>199	>199	>199			N/A	N/A
R394 (S)	162.24	>199	>199	>199	>199			N/A	N/A
Unknown Local Road	1.74	0.05	0.46	4.65	7.57			N/A	N/A

18:00 - 18:15

Arm	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
R394 (N)	0.72	0.07	0.76	1.41	1.50			N/A	N/A
Midland Hospital	658.57	>199	>199	>199	>199			N/A	N/A
R394 (S)	159.85	>199	>199	>199	>199			N/A	N/A
Unknown Local Road	1.16	0.04	0.39	2.93	5.14			N/A	N/A

RECEIVED: 24/08/2023

2030 With Phase 3, AM

RECEIVED: 24/06/2023

Data Errors and Warnings

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

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	untitled	Standard Roundabout		1, 2, 3, 4	1649.97	F

Junction Network

Driving side	Lighting	Network residual capacity (%)	First arm reaching threshold	Network delay (s)	Network LOS
Left	Normal/unknown	-55	Arm 3	1649.97	F

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D11	2030 With Phase 3	AM	ONE HOUR	08:00	09:30	15	✓

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 (%)
R394 (N)		ONE HOUR	✓	861	100.000
Midland Hospital		ONE HOUR	✓	721	100.000
R394 (S)		ONE HOUR	✓	1024	100.000
Unknown Local Road		ONE HOUR	✓	479	100.000

Origin-Destination Data

Demand (Veh/hr)

		To			
		R394 (N)	Midland Hospital	R394 (S)	Unknown Local Road
From	R394 (N)	7	387	387	80
	Midland Hospital	305	3	216	197
	R394 (S)	639	189	4	192
	Unknown Local Road	156	184	139	0

Vehicle Mix

Heavy Vehicle Percentages

		To			
		R394 (N)	Midland Hospital	R394 (S)	Unknown Local Road
From	R394 (N)	0	3	8	6
	Midland Hospital	3	54	1	6
	R394 (S)	4	1	0	0
	Unknown Local Road	3	2	0	0

Results

RECEIVED: 24/08/2023

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (Veh)	Max 95th percentile Queue (Veh)	Max LOS	Average Demand (Veh/hr)	Total Junction Arrivals (Veh)
R394 (N)	0.50	3.74	1.0	1.5	A	790	1185
Midland Hospital	1.76	1814.01	265.0	193.4	F	662	992
R394 (S)	2.01	3579.96	575.6	194.8	F	940	1409
Unknown Local Road	1.13	303.45	40.3	78.8	F	440	659

Main Results for each time segment

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
R394 (N)	648	162	341	1973	0.329	646	672	0.0	0.5	2.710	A
Midland Hospital	543	136	459	535	1.014	494	528	0.0	12.1	62.306	F
R394 (S)	771	193	412	561	1.374	551	542	0.0	55.0	190.541	F
Unknown Local Road	361	90	664	464	0.778	349	298	0.0	3.0	28.846	D

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
R394 (N)	774	194	386	1938	0.399	773	697	0.5	0.7	3.089	A
Midland Hospital	648	162	548	498	1.302	495	611	12.1	50.3	250.136	F
R394 (S)	921	230	425	555	1.658	555	618	55.0	146.4	660.568	F
Unknown Local Road	431	108	669	462	0.933	414	311	3.0	7.2	59.837	F

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
R394 (N)	948	237	416	1914	0.495	947	698	0.7	1.0	3.715	A
Midland Hospital	794	198	656	452	1.755	452	707	50.3	135.7	752.435	F
R394 (S)	1127	282	412	560	2.012	560	696	146.4	288.1	1403.664	F
Unknown Local Road	527	132	656	467	1.130	458	317	7.2	24.5	145.458	F

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
R394 (N)	948	237	421	1911	0.496	948	700	1.0	1.0	3.736	A
Midland Hospital	794	198	659	451	1.759	451	710	135.7	221.3	1434.285	F
R394 (S)	1127	282	412	561	2.011	561	698	288.1	429.8	2327.782	F
Unknown Local Road	527	132	656	467	1.129	464	317	24.5	40.3	268.568	F

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
R394 (N)	774	194	411	1919	0.403	775	709	1.0	0.7	3.150	A
Midland Hospital	648	162	560	493	1.314	493	626	221.3	260.1	1715.966	F
R394 (S)	921	230	424	556	1.656	556	629	429.8	521.0	3099.596	F
Unknown Local Road	431	108	669	462	0.933	451	311	40.3	35.3	303.451	F

09:15 - 09:30

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
R394 (N)	648	162	407	1922	0.337	649	716	0.7	0.5	2.830	A
Midland Hospital	543	136	489	523	1.037	523	567	260.1	265.0	1814.010	F
R394 (S)	771	193	432	552	1.395	552	580	521.0	575.6	3579.963	F
Unknown Local Road	361	90	678	458	0.787	445	307	35.3	14.1	206.715	F

Queue Variation Results for each time segment

08:00 - 08:15

Arm	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
R394 (N)	0.49	0.00	0.00	0.49	0.49			N/A	N/A
Midland Hospital	12.12	>199	>199	>199	>199			N/A	N/A
R394 (S)	54.99	>199	>199	>199	>199			N/A	N/A
Unknown Local Road	3.03	0.21	1.76	6.24	8.11			N/A	N/A

08:15 - 08:30

Arm	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
R394 (N)	0.66	0.09	0.81	1.37	1.44			N/A	N/A
Midland Hospital	50.29	>199	>199	>199	>199			N/A	N/A
R394 (S)	146.35	>199	>199	>199	>199			N/A	N/A
Unknown Local Road	7.21	0.37	4.50	16.16	21.19			N/A	N/A

08:30 - 08:45

Arm	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
R394 (N)	0.97	0.03	0.25	0.97	0.97			N/A	N/A
Midland Hospital	135.70	>199	>199	>199	>199			N/A	N/A
R394 (S)	288.09	>199	>199	>199	>199			N/A	N/A
Unknown Local Road	24.53	6.21	21.40	43.02	51.01			N/A	N/A

08:45 - 09:00

Arm	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
R394 (N)	0.98	0.03	0.27	0.98	1.47			N/A	N/A
Midland Hospital	221.33	>199	>199	>199	>199			N/A	N/A
R394 (S)	429.78	>199	>199	>199	>199			N/A	N/A
Unknown Local Road	40.28	12.71	36.30	67.59	78.83			N/A	N/A

09:00 - 09:15

Arm	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
R394 (N)	0.68	0.55	1.00	1.40	1.45			N/A	N/A
Midland Hospital	260.06	>199	>199	>199	>199			N/A	N/A
R394 (S)	520.96	>199	>199	>199	>199			N/A	N/A
Unknown Local Road	35.29	7.25	30.04	65.30	78.61			N/A	N/A

09:15 - 09:30

Arm	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
R394 (N)	0.51	0.51	1.00	1.40	1.45			N/A	N/A
Midland Hospital	264.95	>199	>199	>199	>199			N/A	N/A
R394 (S)	575.58	>199	>199	>199	>199			N/A	N/A
Unknown Local Road	14.10	0.56	8.89	32.79	43.29			N/A	N/A

RECEIVED: 24/08/2023

2030 With Phase 3, PM

RECEIVED: 24/06/2023

Data Errors and Warnings

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

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	untitled	Standard Roundabout		1, 2, 3, 4	1810.57	F

Junction Network

Driving side	Lighting	Network residual capacity (%)	First arm reaching threshold	Network delay (s)	Network LOS
Left	Normal/unknown	-55	Arm 2	1810.57	F

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D12	2030 With Phase 3	PM	ONE HOUR	16:45	18:15	15	✓

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 (%)
R394 (N)		ONE HOUR	✓	1173	100.000
Midland Hospital		ONE HOUR	✓	968	100.000
R394 (S)		ONE HOUR	✓	762	100.000
Unknown Local Road		ONE HOUR	✓	316	100.000

Origin-Destination Data

Demand (Veh/hr)

		To			
		R394 (N)	Midland Hospital	R394 (S)	Unknown Local Road
From	R394 (N)	37	428	589	119
	Midland Hospital	477	2	254	235
	R394 (S)	476	168	1	117
	Unknown Local Road	84	153	78	1

Vehicle Mix

Heavy Vehicle Percentages

		To			
		R394 (N)	Midland Hospital	R394 (S)	Unknown Local Road
From	R394 (N)	0	1	3	0
	Midland Hospital	1	0	1	0
	R394 (S)	3	0	0	2
	Unknown Local Road	2	0	0	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (Veh)	Max 95th percentile Queue (Veh)	Max LOS	Average Demand (Veh/hr)	Total Junction Arrivals (Veh)
R394 (N)	0.64	4.96	1.8	2.9	A	1076	1615
Midland Hospital	2.88	4830.31	684.5	198.5	F	888	1332
R394 (S)	1.51	1524.99	232.8	195.7	F	699	1049
Unknown Local Road	0.76	31.39	2.9	14.7	D	290	435

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
R394 (N)	883	221	286	2090	0.422	880	648	0.0	0.7	2.967	A
Midland Hospital	729	182	618	490	1.486	483	548	0.0	61.6	248.701	F
R394 (S)	574	143	474	546	1.052	512	627	0.0	15.4	71.348	F
Unknown Local Road	238	59	700	459	0.519	234	286	0.0	1.0	15.730	C

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
R394 (N)	1055	264	329	2056	0.513	1053	666	0.7	1.0	3.584	A
Midland Hospital	870	218	740	440	1.978	440	642	61.6	169.1	1056.397	F
R394 (S)	685	171	465	549	1.248	546	715	15.4	50.0	230.851	F
Unknown Local Road	284	71	713	453	0.627	282	298	1.0	1.6	20.733	C

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
R394 (N)	1292	323	376	2019	0.640	1289	663	1.0	1.7	4.911	A
Midland Hospital	1066	266	905	372	2.867	372	760	169.1	342.7	2457.866	F
R394 (S)	839	210	447	557	1.507	556	830	50.0	120.7	563.261	F
Unknown Local Road	348	87	696	460	0.756	343	307	1.6	2.8	29.500	D

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
R394 (N)	1292	323	379	2017	0.640	1291	663	1.7	1.8	4.964	A
Midland Hospital	1066	266	908	371	2.876	371	763	342.7	516.5	3483.597	F
R394 (S)	839	210	446	557	1.507	557	832	120.7	191.2	1025.889	F
Unknown Local Road	348	87	695	461	0.755	347	308	2.8	2.9	31.385	D

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
R394 (N)	1055	264	335	2052	0.514	1057	669	1.8	1.1	3.631	A
Midland Hospital	870	218	744	438	1.986	438	647	516.5	624.5	4304.189	F
R394 (S)	685	171	465	549	1.247	549	718	191.2	225.2	1378.288	F
Unknown Local Road	284	71	715	452	0.628	289	299	2.9	1.8	22.519	C

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
R394 (N)	883	221	298	2081	0.424	884	672	1.1	0.7	3.013	A
Midland Hospital	729	182	622	489	1.492	489	560	624.5	684.5	4830.312	F
R394 (S)	574	143	479	544	1.055	543	632	225.2	232.8	1524.993	F
Unknown Local Road	238	59	730	447	0.533	240	293	1.8	1.2	17.658	C

Queue Variation Results for each time segment

16:45 - 17:00

Arm	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
R394 (N)	0.73	0.55	1.00	1.40	1.45			N/A	N/A
Midland Hospital	61.55	>199	>199	>199	>199			N/A	N/A
R394 (S)	15.36	>199	>199	>199	>199			N/A	N/A
Unknown Local Road	1.04	0.55	1.00	1.40	1.45			N/A	N/A

17:00 - 17:15

Arm	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
R394 (N)	1.04	0.06	0.72	2.07	2.94			N/A	N/A
Midland Hospital	169.14	>199	>199	>199	>199			N/A	N/A
R394 (S)	50.00	>199	>199	>199	>199			N/A	N/A
Unknown Local Road	1.59	0.14	1.30	2.86	3.72			N/A	N/A

17:15 - 17:30

Arm	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
R394 (N)	1.75	0.03	0.26	1.75	1.75			N/A	N/A
Midland Hospital	342.66	>199	>199	>199	>199			N/A	N/A
R394 (S)	120.66	>199	>199	>199	>199			N/A	N/A
Unknown Local Road	2.76	0.04	0.35	6.54	14.65			N/A	N/A

17:30 - 17:45

Arm	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
R394 (N)	1.77	0.03	0.26	1.77	1.77			N/A	N/A
Midland Hospital	516.47	>199	>199	>199	>199			N/A	N/A
R394 (S)	191.23	>199	>199	>199	>199			N/A	N/A
Unknown Local Road	2.90	0.03	0.30	3.18	13.48			N/A	N/A

17:45 - 18:00

Arm	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
R394 (N)	1.07	0.23	1.05	1.49	1.78			N/A	N/A
Midland Hospital	624.48	>199	>199	>199	>199			N/A	N/A
R394 (S)	225.19	>199	>199	>199	>199			N/A	N/A
Unknown Local Road	1.78	0.05	0.45	4.77	7.83			N/A	N/A

18:00 - 18:15

Arm	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
R394 (N)	0.74	0.07	0.75	1.34	1.34			N/A	N/A
Midland Hospital	684.52	>199	>199	>199	>199			N/A	N/A
R394 (S)	232.76	>199	>199	>199	>199			N/A	N/A
Unknown Local Road	1.18	0.04	0.38	2.99	5.33			N/A	N/A

RECEIVED: 24/08/2023

2030 With Phase1&2&3, AM

RECEIVED: 24/06/2023

Data Errors and Warnings

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

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	untitled	Standard Roundabout		1, 2, 3, 4	1804.23	F

Junction Network

Driving side	Lighting	Network residual capacity (%)	First arm reaching threshold	Network delay (s)	Network LOS
Left	Normal/unknown	-56	Arm 3	1804.23	F

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D13	2030 With Phase1&2&3	AM	ONE HOUR	08:00	09:30	15	✓

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 (%)
R394 (N)		ONE HOUR	✓	866	100.000
Midland Hospital		ONE HOUR	✓	728	100.000
R394 (S)		ONE HOUR	✓	1067	100.000
Unknown Local Road		ONE HOUR	✓	481	100.000

Origin-Destination Data

Demand (Veh/hr)

		To			
		R394 (N)	Midland Hospital	R394 (S)	Unknown Local Road
From	R394 (N)	7	387	392	80
	Midland Hospital	305	3	223	197
	R394 (S)	666	197	4	200
	Unknown Local Road	156	184	141	0

Vehicle Mix

Heavy Vehicle Percentages

		To			
		R394 (N)	Midland Hospital	R394 (S)	Unknown Local Road
From	R394 (N)	0	3	7	6
	Midland Hospital	3	54	1	6
	R394 (S)	4	1	0	0
	Unknown Local Road	3	2	0	0

Results

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Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (Veh)	Max 95th percentile Queue (Veh)	Max LOS	Average Demand (Veh/hr)	Total Junction Arrivals (Veh)
R394 (N)	0.50	3.73	1.0	1.5	A	795	1192
Midland Hospital	1.78	1883.48	275.4	193.4	F	668	1002
R394 (S)	2.09	3911.84	632.2	194.8	F	979	1469
Unknown Local Road	1.13	311.24	41.2	80.4	F	441	662

Main Results for each time segment

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
R394 (N)	652	163	343	1980	0.329	650	672	0.0	0.5	2.704	A
Midland Hospital	548	137	464	534	1.026	496	528	0.0	13.0	65.346	F
R394 (S)	803	201	409	562	1.430	553	551	0.0	62.6	213.866	F
Unknown Local Road	362	91	664	463	0.781	350	298	0.0	3.1	29.171	D

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
R394 (N)	779	195	388	1945	0.400	778	696	0.5	0.7	3.083	A
Midland Hospital	654	164	554	497	1.317	495	611	13.0	52.9	263.553	F
R394 (S)	959	240	421	557	1.723	557	627	62.6	163.2	736.654	F
Unknown Local Road	432	108	668	462	0.936	415	310	3.1	7.4	60.677	F

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
R394 (N)	953	238	418	1921	0.496	952	696	0.7	1.0	3.709	A
Midland Hospital	802	200	663	451	1.776	451	707	52.9	140.5	783.512	F
R394 (S)	1175	294	409	562	2.090	562	706	163.2	316.4	1544.085	F
Unknown Local Road	530	132	655	467	1.133	459	315	7.4	25.0	147.734	F

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
R394 (N)	953	238	422	1918	0.497	953	698	1.0	1.0	3.730	A
Midland Hospital	802	200	666	450	1.780	450	710	140.5	228.4	1485.253	F
R394 (S)	1175	294	408	562	2.089	562	708	316.4	469.5	2541.633	F
Unknown Local Road	530	132	655	467	1.133	465	315	25.0	41.2	273.648	F

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
R394 (N)	779	195	412	1926	0.404	780	707	1.0	0.7	3.145	A
Midland Hospital	654	164	566	492	1.329	492	626	228.4	268.9	1773.826	F
R394 (S)	959	240	420	557	1.721	557	638	469.5	569.9	3378.085	F
Unknown Local Road	432	108	668	462	0.935	451	310	41.2	36.5	31.242	F

09:15 - 09:30

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
R394 (N)	652	163	408	1929	0.338	653	715	0.7	0.5	2.823	A
Midland Hospital	548	137	494	522	1.049	522	567	268.9	275.4	1883.484	F
R394 (S)	803	201	428	554	1.450	554	588	569.9	632.2	3911.838	F
Unknown Local Road	362	91	677	458	0.790	446	306	36.5	15.4	216.044	F

Queue Variation Results for each time segment

08:00 - 08:15

Arm	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
R394 (N)	0.49	0.00	0.00	0.49	0.49			N/A	N/A
Midland Hospital	13.00	>199	>199	>199	>199			N/A	N/A
R394 (S)	62.57	>199	>199	>199	>199			N/A	N/A
Unknown Local Road	3.08	0.19	1.74	6.48	8.49			N/A	N/A

08:15 - 08:30

Arm	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
R394 (N)	0.66	0.09	0.81	1.37	1.44			N/A	N/A
Midland Hospital	52.92	>199	>199	>199	>199			N/A	N/A
R394 (S)	163.19	>199	>199	>199	>199			N/A	N/A
Unknown Local Road	7.36	0.37	4.58	16.55	21.73			N/A	N/A

08:30 - 08:45

Arm	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
R394 (N)	0.98	0.03	0.25	0.98	0.98			N/A	N/A
Midland Hospital	140.54	>199	>199	>199	>199			N/A	N/A
R394 (S)	316.37	>199	>199	>199	>199			N/A	N/A
Unknown Local Road	25.04	6.47	21.90	43.70	51.73			N/A	N/A

08:45 - 09:00

Arm	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
R394 (N)	0.98	0.03	0.27	0.98	1.46			N/A	N/A
Midland Hospital	228.37	>199	>199	>199	>199			N/A	N/A
R394 (S)	469.50	>199	>199	>199	>199			N/A	N/A
Unknown Local Road	41.19	13.34	37.25	68.64	79.88			N/A	N/A

09:00 - 09:15

Arm	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
R394 (N)	0.68	0.55	1.00	1.40	1.45			N/A	N/A
Midland Hospital	268.92	>199	>199	>199	>199			N/A	N/A
R394 (S)	569.93	>199	>199	>199	>199			N/A	N/A
Unknown Local Road	36.48	7.83	31.24	66.93	80.36			N/A	N/A

09:15 - 09:30

Arm	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
R394 (N)	0.51	0.51	1.00	1.40	1.45			N/A	N/A
Midland Hospital	275.35	>199	>199	>199	>199			N/A	N/A
R394 (S)	632.21	>199	>199	>199	>199			N/A	N/A
Unknown Local Road	15.45	0.70	9.97	35.55	46.68			N/A	N/A

RECEIVED: 24/08/2023

2030 With Phase1&2&3, PM

RECEIVED: 24/06/2023

Data Errors and Warnings

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

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	untitled	Standard Roundabout		1, 2, 3, 4	1918.03	F

Junction Network

Driving side	Lighting	Network residual capacity (%)	First arm reaching threshold	Network delay (s)	Network LOS
Left	Normal/unknown	-56	Arm 2	1918.03	F

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D14	2030 With Phase1&2&3	PM	ONE HOUR	16:45	18:15	15	✓

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 (%)
R394 (N)		ONE HOUR	✓	1182	100.000
Midland Hospital		ONE HOUR	✓	972	100.000
R394 (S)		ONE HOUR	✓	805	100.000
Unknown Local Road		ONE HOUR	✓	317	100.000

Origin-Destination Data

Demand (Veh/hr)

		To			
		R394 (N)	Midland Hospital	R394 (S)	Unknown Local Road
From	R394 (N)	37	428	598	119
	Midland Hospital	477	2	258	235
	R394 (S)	502	178	1	124
	Unknown Local Road	84	153	79	1

Vehicle Mix

Heavy Vehicle Percentages

		To			
		R394 (N)	Midland Hospital	R394 (S)	Unknown Local Road
From	R394 (N)	0	1	3	0
	Midland Hospital	1	0	1	0
	R394 (S)	3	0	0	2
	Unknown Local Road	2	0	0	0

Results

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Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (Veh)	Max 95th percentile Queue (Veh)	Max LOS	Average Demand (Veh/hr)	Total Junction Arrivals (Veh)
R394 (N)	0.65	5.04	1.8	3.1	A	1085	1627
Midland Hospital	2.92	4938.50	695.7	198.5	F	892	1338
R394 (S)	1.59	1853.31	287.0	195.7	F	739	1108
Unknown Local Road	0.76	31.49	2.9	14.7	D	291	436

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
R394 (N)	890	222	289	2088	0.426	887	651	0.0	0.7	2.990	A
Midland Hospital	732	183	626	487	1.502	480	551	0.0	63.0	256.131	F
R394 (S)	606	152	470	547	1.108	522	635	0.0	21.0	88.513	F
Unknown Local Road	239	60	706	456	0.523	234	286	0.0	1.1	15.939	C

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
R394 (N)	1063	266	331	2055	0.517	1061	665	0.7	1.1	3.619	A
Midland Hospital	874	218	749	436	2.003	436	643	63.0	172.4	1091.110	F
R394 (S)	724	181	461	551	1.314	549	724	21.0	64.6	293.992	F
Unknown Local Road	285	71	713	453	0.629	283	298	1.1	1.6	20.816	C

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
R394 (N)	1301	325	378	2017	0.645	1298	660	1.1	1.8	4.988	A
Midland Hospital	1070	268	916	367	2.915	367	761	172.4	348.2	2527.498	F
R394 (S)	886	222	442	558	1.587	558	841	64.6	146.6	691.145	F
Unknown Local Road	349	87	694	461	0.757	344	307	1.6	2.8	29.589	D

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
R394 (N)	1301	325	381	2015	0.646	1301	661	1.8	1.8	5.044	A
Midland Hospital	1070	268	919	366	2.924	366	764	348.2	524.2	3559.241	F
R394 (S)	886	222	442	559	1.587	559	843	146.6	228.5	1217.607	F
Unknown Local Road	349	87	694	461	0.757	348	307	2.8	2.9	31.486	D

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
R394 (N)	1063	266	336	2051	0.518	1065	667	1.8	1.1	3.664	A
Midland Hospital	874	218	753	434	2.011	434	648	524.2	634.1	4397.622	F
R394 (S)	724	181	461	551	1.314	551	727	228.5	271.7	1850.839	F
Unknown Local Road	285	71	713	453	0.629	289	298	2.9	1.8	22.564	C

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
R394 (N)	890	222	299	2080	0.428	891	670	1.1	0.8	3.034	A
Midland Hospital	732	183	630	485	1.507	485	561	634.1	695.7	4938.497	F
R394 (S)	606	152	475	545	1.112	545	640	271.7	287.0	1853.307	F
Unknown Local Road	239	60	728	447	0.534	241	292	1.8	1.2	17.677	C

Queue Variation Results for each time segment

16:45 - 17:00

Arm	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
R394 (N)	0.74	0.55	1.00	1.40	1.45			N/A	N/A
Midland Hospital	63.02	>199	>199	>199	>199			N/A	N/A
R394 (S)	20.98	>199	>199	>199	>199			N/A	N/A
Unknown Local Road	1.06	0.55	1.00	1.40	1.45			N/A	N/A

17:00 - 17:15

Arm	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
R394 (N)	1.06	0.06	0.71	2.18	3.05			N/A	N/A
Midland Hospital	172.44	>199	>199	>199	>199			N/A	N/A
R394 (S)	64.58	>199	>199	>199	>199			N/A	N/A
Unknown Local Road	1.60	0.14	1.30	2.88	3.75			N/A	N/A

17:15 - 17:30

Arm	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
R394 (N)	1.79	0.03	0.26	1.79	1.79			N/A	N/A
Midland Hospital	348.20	>199	>199	>199	>199			N/A	N/A
R394 (S)	146.60	>199	>199	>199	>199			N/A	N/A
Unknown Local Road	2.77	0.04	0.36	6.61	14.74			N/A	N/A

17:30 - 17:45

Arm	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
R394 (N)	1.81	0.03	0.26	1.81	1.81			N/A	N/A
Midland Hospital	524.24	>199	>199	>199	>199			N/A	N/A
R394 (S)	228.54	>199	>199	>199	>199			N/A	N/A
Unknown Local Road	2.92	0.03	0.30	3.24	13.60			N/A	N/A

17:45 - 18:00

Arm	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
R394 (N)	1.08	0.21	1.06	1.55	1.83			N/A	N/A
Midland Hospital	634.09	>199	>199	>199	>199			N/A	N/A
R394 (S)	271.74	>199	>199	>199	>199			N/A	N/A
Unknown Local Road	1.79	0.04	0.45	4.79	7.88			N/A	N/A

18:00 - 18:15

Arm	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
R394 (N)	0.75	0.07	0.74	1.44	1.44			N/A	N/A
Midland Hospital	695.67	>199	>199	>199	>199			N/A	N/A
R394 (S)	287.00	>199	>199	>199	>199			N/A	N/A
Unknown Local Road	1.19	0.04	0.38	3.00	5.37			N/A	N/A

RECEIVED: 24/08/2023

2040 No Development, AM

RECEIVED: 24/06/2023

Data Errors and Warnings

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

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	untitled	Standard Roundabout		1, 2, 3, 4	2093.38	F

Junction Network

Driving side	Lighting	Network residual capacity (%)	First arm reaching threshold	Network delay (s)	Network LOS
Left	Normal/unknown	-58	Arm 3	2093.38	F

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D15	2040 No Development	AM	ONE HOUR	08:00	09:30	15	✓

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 (%)
R394 (N)		ONE HOUR	✓	961	100.000
Midland Hospital		ONE HOUR	✓	797	100.000
R394 (S)		ONE HOUR	✓	1086	100.000
Unknown Local Road		ONE HOUR	✓	536	100.000

Origin-Destination Data

Demand (Veh/hr)

		To			
		R394 (N)	Midland Hospital	R394 (S)	Unknown Local Road
From	R394 (N)	8	438	425	90
	Midland Hospital	345	3	226	223
	R394 (S)	679	200	4	203
	Unknown Local Road	177	208	151	0

Vehicle Mix

Heavy Vehicle Percentages

		To			
		R394 (N)	Midland Hospital	R394 (S)	Unknown Local Road
From	R394 (N)	0	3	9	6
	Midland Hospital	4	57	1	7
	R394 (S)	5	1	0	0
	Unknown Local Road	3	2	0	0

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Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (Veh)	Max 95th percentile Queue (Veh)	Max LOS	Average Demand (Veh/hr)	Total Junction Arrivals (Veh)
R394 (N)	0.56	4.25	1.2	1.6	A	882	1323
Midland Hospital	2.07	2781.20	399.9	192.0	F	731	1097
R394 (S)	2.15	4193.57	669.5	193.6	F	997	1495
Unknown Local Road	1.26	624.64	81.0	140.9	F	492	738

Main Results for each time segment

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
R394 (N)	723	181	361	1950	0.371	721	685	0.0	0.6	2.925	A
Midland Hospital	600	150	503	512	1.172	493	579	0.0	26.7	114.078	F
R394 (S)	818	204	427	550	1.487	542	569	0.0	68.9	238.075	F
Unknown Local Road	404	101	662	462	0.873	384	307	0.0	4.9	39.475	E

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
R394 (N)	864	216	402	1918	0.450	863	702	0.6	0.8	3.408	A
Midland Hospital	716	179	597	473	1.516	472	668	26.7	87.8	469.576	F
R394 (S)	976	244	426	550	1.775	550	642	68.9	175.5	805.452	F
Unknown Local Road	482	120	661	463	1.041	443	316	4.9	14.6	99.437	F

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
R394 (N)	1058	265	418	1906	0.555	1056	694	0.8	1.2	4.230	A
Midland Hospital	878	219	708	425	2.063	425	766	87.8	200.9	1217.041	F
R394 (S)	1196	299	412	556	2.151	556	721	175.5	335.5	1663.017	F
Unknown Local Road	590	148	646	469	1.259	466	322	14.6	45.5	250.164	F

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
R394 (N)	1058	265	420	1905	0.556	1058	695	1.2	1.2	4.252	A
Midland Hospital	878	219	710	425	2.066	425	768	200.9	314.1	2192.481	F
R394 (S)	1196	299	412	556	2.151	556	722	335.5	495.4	2721.524	F
Unknown Local Road	590	148	646	469	1.259	468	322	45.5	76.0	482.912	F

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
R394 (N)	864	216	415	1909	0.453	866	707	1.2	0.9	3.456	A
Midland Hospital	716	179	603	470	1.525	470	677	314.1	375.7	2534.561	F
R394 (S)	976	244	425	551	1.773	551	648	495.4	601.8	3613.628	F
Unknown Local Road	482	120	660	463	1.041	462	315	76.0	81.0	624.636	F

09:15 - 09:30

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
R394 (N)	723	181	408	1913	0.378	724	715	0.8	0.6	3.029	A
Midland Hospital	600	150	524	503	1.192	503	609	375.7	399.9	2781.196	F
R394 (S)	818	204	435	547	1.496	547	593	601.8	669.5	4193.566	F
Unknown Local Road	404	101	670	459	0.880	453	311	81.0	68.6	595.275	F

Queue Variation Results for each time segment

08:00 - 08:15

Arm	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
R394 (N)	0.59	0.55	1.00	1.40	1.45			N/A	N/A
Midland Hospital	26.67	>199	>199	>199	>199			N/A	N/A
R394 (S)	68.92	>199	>199	>199	>199			N/A	N/A
Unknown Local Road	4.90	0.04	0.37	11.99	26.55			N/A	N/A

08:15 - 08:30

Arm	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
R394 (N)	0.81	0.08	0.82	1.02	1.56			N/A	N/A
Midland Hospital	87.78	>199	>199	>199	>199			N/A	N/A
R394 (S)	175.49	>199	>199	>199	>199			N/A	N/A
Unknown Local Road	14.61	0.19	6.54	38.49	54.32			N/A	N/A

08:30 - 08:45

Arm	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
R394 (N)	1.24	0.03	0.26	1.24	1.24			N/A	N/A
Midland Hospital	200.85	>199	>199	>199	>199			N/A	N/A
R394 (S)	335.45	>199	>199	>199	>199			N/A	N/A
Unknown Local Road	45.54	13.37	40.71	78.07	91.65			N/A	N/A

08:45 - 09:00

Arm	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
R394 (N)	1.24	0.03	0.26	1.24	1.24			N/A	N/A
Midland Hospital	314.06	>199	>199	>199	>199			N/A	N/A
R394 (S)	495.39	>199	>199	>199	>199			N/A	N/A
Unknown Local Road	76.00	34.88	71.86	114.25	128.68			N/A	N/A

09:00 - 09:15

Arm	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
R394 (N)	0.83	0.52	0.99	1.40	1.45			N/A	N/A
Midland Hospital	375.71	>199	>199	>199	>199			N/A	N/A
R394 (S)	601.80	>199	>199	>199	>199			N/A	N/A
Unknown Local Road	81.00	35.18	76.16	124.30	140.86			N/A	N/A

09:15 - 09:30

Arm	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
R394 (N)	0.61	0.09	0.80	1.36	1.43			N/A	N/A
Midland Hospital	399.86	>199	>199	>199	>199			N/A	N/A
R394 (S)	669.54	>199	>199	>199	>199			N/A	N/A
Unknown Local Road	68.60	21.95	62.14	115.54	134.73			N/A	N/A

RECEIVED: 24/08/2023

2040 No Development, PM

RECEIVED: 24/06/2023

Data Errors and Warnings

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

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	untitled	Standard Roundabout		1, 2, 3, 4	2414.13	F

Junction Network

Driving side	Lighting	Network residual capacity (%)	First arm reaching threshold	Network delay (s)	Network LOS
Left	Normal/unknown	-60	Arm 2	2414.13	F

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D16	2040 No Development	PM	ONE HOUR	16:45	18:15	15	✓

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 (%)
R394 (N)		ONE HOUR	✓	1302	100.000
Midland Hospital		ONE HOUR	✓	1081	100.000
R394 (S)		ONE HOUR	✓	790	100.000
Unknown Local Road		ONE HOUR	✓	354	100.000

Origin-Destination Data

Demand (Veh/hr)

		To			
		R394 (N)	Midland Hospital	R394 (S)	Unknown Local Road
From	R394 (N)	42	483	643	134
	Midland Hospital	538	3	276	264
	R394 (S)	493	174	1	122
	Unknown Local Road	95	173	85	1

Vehicle Mix

Heavy Vehicle Percentages

		To			
		R394 (N)	Midland Hospital	R394 (S)	Unknown Local Road
From	R394 (N)	0	1	4	0
	Midland Hospital	1	0	1	0
	R394 (S)	4	0	0	3
	Unknown Local Road	2	0	0	0

Results

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Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (Veh)	Max 95th percentile Queue (Veh)	Max LOS	Average Demand (Veh/hr)	Total Junction Arrivals (Veh)
R394 (N)	0.72	6.53	2.6	5.1	A	1195	1792
Midland Hospital	3.60	6603.02	888.9	198.5	F	992	1488
R394 (S)	1.57	1786.15	273.6	194.3	F	725	1087
Unknown Local Road	0.84	44.79	4.5	24.7	E	325	487

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
R394 (N)	980	245	307	2065	0.475	977	651	0.0	0.9	3.298	A
Midland Hospital	814	203	678	464	1.756	458	605	0.0	88.9	378.416	F
R394 (S)	595	149	474	541	1.099	515	663	0.0	19.8	85.820	F
Unknown Local Road	267	67	697	459	0.581	261	293	0.0	1.3	17.784	C

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
R394 (N)	1170	293	352	2029	0.577	1169	665	0.9	1.3	4.178	A
Midland Hospital	972	243	812	408	2.383	408	709	88.9	229.9	1622.067	F
R394 (S)	710	178	462	546	1.301	545	758	19.8	61.3	282.110	F
Unknown Local Road	318	80	702	456	0.697	315	305	1.3	2.1	24.865	C

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
R394 (N)	1434	358	403	1989	0.721	1429	660	1.3	2.5	6.378	A
Midland Hospital	1190	298	992	333	3.576	333	840	229.9	444.2	3657.692	F
R394 (S)	870	217	442	554	1.569	554	883	61.3	140.2	664.830	F
Unknown Local Road	390	97	681	465	0.838	382	315	2.1	4.2	39.544	E

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
R394 (N)	1434	358	408	1985	0.722	1433	661	2.5	2.6	6.525	A
Midland Hospital	1190	298	997	331	3.596	331	845	444.2	659.0	4678.340	F
R394 (S)	870	217	441	555	1.568	555	886	140.2	219.0	1174.845	F
Unknown Local Road	390	97	681	465	0.838	388	315	4.2	4.5	44.786	E

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
R394 (N)	1170	293	361	2022	0.579	1175	668	2.6	1.4	4.277	A
Midland Hospital	972	243	819	405	2.400	405	717	659.0	800.7	5815.640	F
R394 (S)	710	178	461	547	1.300	546	763	219.0	259.9	1393.970	F
Unknown Local Road	318	80	703	456	0.698	326	305	4.5	2.5	29.216	D

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
R394 (N)	980	245	319	2055	0.477	982	671	1.4	0.9	3.363	A
Midland Hospital	814	203	684	461	1.765	461	617	800.7	888.9	6603.024	F
R394 (S)	595	149	477	540	1.101	540	668	259.9	273.6	1786.151	F
Unknown Local Road	267	67	719	449	0.593	270	298	2.5	1.5	20.523	C

Queue Variation Results for each time segment

16:45 - 17:00

Arm	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
R394 (N)	0.90	0.55	1.00	1.40	1.45			N/A	N/A
Midland Hospital	88.86	>199	>199	>199	>199			N/A	N/A
R394 (S)	19.85	>199	>199	>199	>199			N/A	N/A
Unknown Local Road	1.32	0.55	1.00	1.40	1.45			N/A	N/A

17:00 - 17:15

Arm	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
R394 (N)	1.35	0.05	0.49	3.33	5.07			N/A	N/A
Midland Hospital	229.88	>199	>199	>199	>199			N/A	N/A
R394 (S)	61.26	>199	>199	>199	>199			N/A	N/A
Unknown Local Road	2.13	0.13	1.01	4.39	5.79			N/A	N/A

17:15 - 17:30

Arm	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
R394 (N)	2.52	0.03	0.27	2.52	3.49			N/A	N/A
Midland Hospital	444.22	>199	>199	>199	>199			N/A	N/A
R394 (S)	140.19	>199	>199	>199	>199			N/A	N/A
Unknown Local Road	4.16	0.05	0.47	11.79	20.61			N/A	N/A

17:30 - 17:45

Arm	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
R394 (N)	2.56	0.03	0.26	2.56	2.56			N/A	N/A
Midland Hospital	659.02	>199	>199	>199	>199			N/A	N/A
R394 (S)	219.01	>199	>199	>199	>199			N/A	N/A
Unknown Local Road	4.54	0.04	0.35	10.17	24.74			N/A	N/A

17:45 - 18:00

Arm	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
R394 (N)	1.39	0.10	1.12	2.64	3.47			N/A	N/A
Midland Hospital	800.74	>199	>199	>199	>199			N/A	N/A
R394 (S)	259.95	>199	>199	>199	>199			N/A	N/A
Unknown Local Road	2.50	0.04	0.42	6.86	12.23			N/A	N/A

18:00 - 18:15

Arm	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
R394 (N)	0.92	0.05	0.53	1.89	2.77			N/A	N/A
Midland Hospital	888.90	>199	>199	>199	>199			N/A	N/A
R394 (S)	273.61	>199	>199	>199	>199			N/A	N/A
Unknown Local Road	1.53	0.04	0.36	3.84	7.66			N/A	N/A

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2040 With Phase 3, AM

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Data Errors and Warnings

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

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	untitled	Standard Roundabout		1, 2, 3, 4	2330.64	F

Junction Network

Driving side	Lighting	Network residual capacity (%)	First arm reaching threshold	Network delay (s)	Network LOS
Left	Normal/unknown	-60	Arm 3	2330.64	F

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D17	2040 With Phase 3	AM	ONE HOUR	08:00	09:30	15	✓

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 (%)
R394 (N)		ONE HOUR	✓	973	100.000
Midland Hospital		ONE HOUR	✓	813	100.000
R394 (S)		ONE HOUR	✓	1149	100.000
Unknown Local Road		ONE HOUR	✓	541	100.000

Origin-Destination Data

Demand (Veh/hr)

		To			
		R394 (N)	Midland Hospital	R394 (S)	Unknown Local Road
From	R394 (N)	8	438	437	90
	Midland Hospital	345	3	242	223
	R394 (S)	718	212	4	215
	Unknown Local Road	177	208	156	0

Vehicle Mix

Heavy Vehicle Percentages

		To			
		R394 (N)	Midland Hospital	R394 (S)	Unknown Local Road
From	R394 (N)	0	3	8	6
	Midland Hospital	4	57	1	7
	R394 (S)	5	1	0	0
	Unknown Local Road	3	2	0	0

Results

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Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (Veh)	Max 95th percentile Queue (Veh)	Max LOS	Average Demand (Veh/hr)	Total Junction Arrivals (Veh)
R394 (N)	0.56	4.29	1.3	1.6	A	893	1339
Midland Hospital	2.13	2986.61	427.6	192.1	F	746	1319
R394 (S)	2.26	4654.96	750.2	193.6	F	1054	1582
Unknown Local Road	1.27	647.87	84.6	146.4	F	496	745

Main Results for each time segment

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
R394 (N)	733	183	365	1954	0.375	730	683	0.0	0.6	2.936	A
Midland Hospital	612	153	515	508	1.204	492	580	0.0	30.0	126.368	F
R394 (S)	865	216	419	553	1.564	546	588	0.0	79.7	270.908	F
Unknown Local Road	407	102	661	463	0.880	387	305	0.0	5.1	40.394	E

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
R394 (N)	875	219	406	1923	0.455	874	698	0.6	0.8	3.428	A
Midland Hospital	731	183	611	468	1.560	468	669	30.0	95.8	520.387	F
R394 (S)	1033	258	417	554	1.864	554	662	79.7	199.4	911.188	F
Unknown Local Road	486	122	658	464	1.048	445	313	5.1	15.3	102.724	F

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
R394 (N)	1071	268	422	1911	0.561	1070	690	0.8	1.3	4.271	A
Midland Hospital	895	224	725	420	2.129	420	766	95.8	214.4	1317.383	F
R394 (S)	1265	316	403	560	2.260	560	742	199.4	375.7	1858.183	F
Unknown Local Road	596	149	644	470	1.267	468	319	15.3	47.3	258.589	F

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
R394 (N)	1071	268	423	1910	0.561	1071	690	1.3	1.3	4.293	A
Midland Hospital	895	224	726	420	2.132	420	768	214.4	333.3	2358.059	F
R394 (S)	1265	316	403	560	2.260	560	743	375.7	552.0	3018.770	F
Unknown Local Road	596	149	644	470	1.267	470	319	47.3	78.8	498.976	F

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
R394 (N)	875	219	418	1914	0.457	876	703	1.3	0.9	3.478	A
Midland Hospital	731	183	617	466	1.569	466	677	333.3	399.5	2708.470	F
R394 (S)	1033	258	415	555	1.862	555	668	552.0	671.6	4000.777	F
Unknown Local Road	486	122	657	464	1.048	463	313	78.8	84.6	647.672	F

09:15 - 09:30

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
R394 (N)	733	183	411	1919	0.382	733	711	0.8	0.6	3.041	A
Midland Hospital	612	153	536	500	1.224	500	608	399.5	427.6	2986.606	F
R394 (S)	865	216	425	551	1.571	551	611	671.6	750.2	4654.965	F
Unknown Local Road	407	102	668	460	0.886	455	308	84.6	72.8	623.961	F

Queue Variation Results for each time segment

08:00 - 08:15

Arm	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
R394 (N)	0.60	0.55	1.00	1.40	1.45			N/A	N/A
Midland Hospital	30.04	>199	>199	>199	>199			N/A	N/A
R394 (S)	79.69	>199	>199	>199	>199			N/A	N/A
Unknown Local Road	5.09	0.04	0.36	11.73	27.81			N/A	N/A

08:15 - 08:30

Arm	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
R394 (N)	0.83	0.08	0.82	1.15	1.64			N/A	N/A
Midland Hospital	95.76	>199	>199	>199	>199			N/A	N/A
R394 (S)	199.42	>199	>199	>199	>199			N/A	N/A
Unknown Local Road	15.31	0.18	6.53	40.81	58.04			N/A	N/A

08:30 - 08:45

Arm	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
R394 (N)	1.26	0.03	0.26	1.26	1.26			N/A	N/A
Midland Hospital	214.44	>199	>199	>199	>199			N/A	N/A
R394 (S)	375.75	>199	>199	>199	>199			N/A	N/A
Unknown Local Road	47.27	13.49	42.12	81.66	96.07			N/A	N/A

08:45 - 09:00

Arm	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
R394 (N)	1.27	0.03	0.26	1.27	1.27			N/A	N/A
Midland Hospital	333.25	>199	>199	>199	>199			N/A	N/A
R394 (S)	552.05	>199	>199	>199	>199			N/A	N/A
Unknown Local Road	78.80	36.04	74.50	118.65	133.70			N/A	N/A

09:00 - 09:15

Arm	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
R394 (N)	0.85	0.52	0.99	1.40	1.45			N/A	N/A
Midland Hospital	399.53	>199	>199	>199	>199			N/A	N/A
R394 (S)	671.62	>199	>199	>199	>199			N/A	N/A
Unknown Local Road	84.58	37.14	79.64	129.31	146.36			N/A	N/A

09:15 - 09:30

Arm	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
R394 (N)	0.62	0.09	0.80	1.36	1.43			N/A	N/A
Midland Hospital	427.58	>199	>199	>199	>199			N/A	N/A
R394 (S)	750.22	>199	>199	>199	>199			N/A	N/A
Unknown Local Road	72.76	24.26	66.28	121.22	140.86			N/A	N/A

RECEIVED: 24/08/2023

2040 With Phase 3, PM

RECEIVED: 24/06/2023

Data Errors and Warnings

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

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	untitled	Standard Roundabout		1, 2, 3, 4	2589.71	F

Junction Network

Driving side	Lighting	Network residual capacity (%)	First arm reaching threshold	Network delay (s)	Network LOS
Left	Normal/unknown	-60	Arm 2	2589.71	F

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D18	2040 With Phase 3	PM	ONE HOUR	16:45	18:15	15	✓

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 (%)
R394 (N)		ONE HOUR	✓	1323	100.000
Midland Hospital		ONE HOUR	✓	1090	100.000
R394 (S)		ONE HOUR	✓	853	100.000
Unknown Local Road		ONE HOUR	✓	356	100.000

Origin-Destination Data

Demand (Veh/hr)

		To			
		R394 (N)	Midland Hospital	R394 (S)	Unknown Local Road
From	R394 (N)	42	483	664	134
	Midland Hospital	538	3	285	264
	R394 (S)	533	188	1	131
	Unknown Local Road	95	173	87	1

Vehicle Mix

Heavy Vehicle Percentages

		To			
		R394 (N)	Midland Hospital	R394 (S)	Unknown Local Road
From	R394 (N)	0	1	4	0
	Midland Hospital	1	0	1	0
	R394 (S)	3	0	0	3
	Unknown Local Road	2	0	0	0

Results

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Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (Veh)	Max 95th percentile Queue (Veh)	Max LOS	Average Demand (Veh/hr)	Total Junction Arrivals (Veh)
R394 (N)	0.74	6.85	2.7	5.5	A	1214	1821
Midland Hospital	3.75	6898.29	914.5	198.5	F	1000	1500
R394 (S)	1.67	2219.75	347.9	195.4	F	783	1174
Unknown Local Road	0.84	45.20	4.6	25.1	E	327	490

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
R394 (N)	996	249	311	2060	0.483	992	655	0.0	0.9	3.360	A
Midland Hospital	821	205	696	456	1.798	451	608	0.0	92.3	400.227	F
R394 (S)	642	161	466	548	1.172	529	681	0.0	28.3	110.621	F
Unknown Local Road	268	67	703	457	0.586	263	292	0.0	1.3	18.035	C

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
R394 (N)	1189	297	356	2025	0.587	1187	664	0.9	1.4	4.287	A
Midland Hospital	980	245	833	399	2.455	399	710	92.3	237.5	1725.136	F
R394 (S)	767	192	454	553	1.387	552	778	28.3	81.9	370.674	F
Unknown Local Road	320	80	703	457	0.700	317	303	1.3	2.2	25.013	D

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
R394 (N)	1457	364	407	1985	0.734	1452	658	1.4	2.7	6.683	A
Midland Hospital	1200	300	1017	322	3.723	322	841	237.5	456.9	3889.812	F
R394 (S)	939	235	432	562	1.672	562	907	81.9	176.3	837.639	F
Unknown Local Road	392	98	681	466	0.841	384	312	2.2	4.2	39.831	E

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
R394 (N)	1457	364	412	1981	0.735	1456	660	2.7	2.7	6.853	A
Midland Hospital	1200	300	1022	320	3.746	320	846	456.9	676.9	4884.292	F
R394 (S)	939	235	431	562	1.671	562	911	176.3	270.7	1440.329	F
Unknown Local Road	392	98	681	466	0.840	390	313	4.2	4.6	45.197	E

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
R394 (N)	1189	297	364	2018	0.589	1194	667	2.7	1.5	4.397	A
Midland Hospital	980	245	840	396	2.474	396	719	676.9	822.8	6070.489	F
R394 (S)	767	192	452	553	1.386	553	784	270.7	324.0	1954.837	F
Unknown Local Road	320	80	703	457	0.700	328	303	4.6	2.5	29.406	D

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
R394 (N)	996	249	322	2052	0.485	998	670	1.5	1.0	3.421	A
Midland Hospital	821	205	702	454	1.808	454	618	822.8	914.5	6898.285	F
R394 (S)	642	161	469	547	1.174	547	687	324.0	347.9	2219.754	F
Unknown Local Road	268	67	720	451	0.595	272	296	2.5	1.5	20.578	C

Queue Variation Results for each time segment

16:45 - 17:00

Arm	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
R394 (N)	0.93	0.55	1.00	1.40	1.45			N/A	N/A
Midland Hospital	92.29	>199	>199	>199	>199			N/A	N/A
R394 (S)	28.27	>199	>199	>199	>199			N/A	N/A
Unknown Local Road	1.35	0.55	1.00	1.40	1.45			N/A	N/A

17:00 - 17:15

Arm	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
R394 (N)	1.41	0.05	0.48	3.55	5.50			N/A	N/A
Midland Hospital	237.49	>199	>199	>199	>199			N/A	N/A
R394 (S)	81.93	>199	>199	>199	>199			N/A	N/A
Unknown Local Road	2.15	0.13	1.03	4.45	5.86			N/A	N/A

17:15 - 17:30

Arm	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
R394 (N)	2.68	0.03	0.27	2.68	4.71			N/A	N/A
Midland Hospital	456.93	>199	>199	>199	>199			N/A	N/A
R394 (S)	176.34	>199	>199	>199	>199			N/A	N/A
Unknown Local Road	4.21	0.05	0.47	11.95	20.79			N/A	N/A

17:30 - 17:45

Arm	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
R394 (N)	2.73	0.03	0.27	2.73	2.73			N/A	N/A
Midland Hospital	676.85	>199	>199	>199	>199			N/A	N/A
R394 (S)	270.67	>199	>199	>199	>199			N/A	N/A
Unknown Local Road	4.61	0.04	0.36	10.45	25.10			N/A	N/A

17:45 - 18:00

Arm	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
R394 (N)	1.45	0.09	1.11	2.86	3.84			N/A	N/A
Midland Hospital	822.80	>199	>199	>199	>199			N/A	N/A
R394 (S)	324.02	>199	>199	>199	>199			N/A	N/A
Unknown Local Road	2.52	0.04	0.42	6.93	12.39			N/A	N/A

18:00 - 18:15

Arm	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
R394 (N)	0.95	0.05	0.48	2.01	3.01			N/A	N/A
Midland Hospital	914.48	>199	>199	>199	>199			N/A	N/A
R394 (S)	347.88	>199	>199	>199	>199			N/A	N/A
Unknown Local Road	1.54	0.04	0.36	3.87	7.74			N/A	N/A

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2040 With Phase1&2&3, AM

RECEIVED: 24/06/2023

Data Errors and Warnings

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

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	untitled	Standard Roundabout		1, 2, 3, 4	2464.35	F

Junction Network

Driving side	Lighting	Network residual capacity (%)	First arm reaching threshold	Network delay (s)	Network LOS
Left	Normal/unknown	-61	Arm 3	2464.35	F

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D19	2040 With Phase1&2&3	AM	ONE HOUR	08:00	09:30	15	✓

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 (%)
R394 (N)		ONE HOUR	✓	979	100.000
Midland Hospital		ONE HOUR	✓	820	100.000
R394 (S)		ONE HOUR	✓	1192	100.000
Unknown Local Road		ONE HOUR	✓	543	100.000

Origin-Destination Data

Demand (Veh/hr)

		To			
		R394 (N)	Midland Hospital	R394 (S)	Unknown Local Road
From	R394 (N)	8	438	443	90
	Midland Hospital	345	3	249	223
	R394 (S)	745	220	4	223
	Unknown Local Road	177	208	158	0

Vehicle Mix

Heavy Vehicle Percentages

		To			
		R394 (N)	Midland Hospital	R394 (S)	Unknown Local Road
From	R394 (N)	0	3	8	6
	Midland Hospital	4	57	1	7
	R394 (S)	4	1	0	0
	Unknown Local Road	3	2	0	0

Results

RECEIVED: 24/09/2023

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (Veh)	Max 95th percentile Queue (Veh)	Max LOS	Average Demand (Veh/hr)	Total Junction Arrivals (Veh)
R394 (N)	0.56	4.34	1.3	1.7	A	898	1348
Midland Hospital	2.17	3091.66	441.1	192.1	F	752	1129
R394 (S)	2.32	4919.81	801.3	194.8	F	1094	1641
Unknown Local Road	1.27	654.64	85.7	148.0	F	498	747

Main Results for each time segment

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
R394 (N)	737	184	367	1952	0.378	735	684	0.0	0.6	2.949	A
Midland Hospital	617	154	521	506	1.220	491	581	0.0	31.7	132.690	F
R394 (S)	897	224	415	558	1.608	552	596	0.0	86.4	289.761	F
Unknown Local Road	409	102	663	463	0.882	388	304	0.0	5.2	40.676	E

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
R394 (N)	880	220	408	1921	0.458	879	698	0.6	0.8	3.452	A
Midland Hospital	737	184	618	466	1.583	465	669	31.7	99.7	546.798	F
R394 (S)	1072	268	412	559	1.916	559	671	86.4	214.5	971.791	F
Unknown Local Road	488	122	659	465	1.050	447	312	5.2	15.5	103.687	F

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
R394 (N)	1078	269	424	1909	0.565	1076	690	0.8	1.3	4.315	A
Midland Hospital	903	226	733	417	2.164	417	767	99.7	221.1	1369.645	F
R394 (S)	1312	328	398	565	2.322	565	752	214.5	401.3	1969.934	F
Unknown Local Road	598	149	645	471	1.270	469	318	15.5	47.8	261.042	F

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
R394 (N)	1078	269	425	1908	0.565	1078	691	1.3	1.3	4.336	A
Midland Hospital	903	226	734	417	2.167	417	768	221.1	342.6	2256.827	F
R394 (S)	1312	328	398	565	2.322	565	753	401.3	588.1	3189.056	F
Unknown Local Road	598	149	645	471	1.270	470	318	47.8	79.7	503.642	F

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
R394 (N)	880	220	420	1912	0.460	882	703	1.3	0.9	3.503	A
Midland Hospital	737	184	624	463	1.592	463	677	342.6	411.2	2797.897	F
R394 (S)	1072	268	411	560	1.914	560	677	588.1	716.0	4222.855	F
Unknown Local Road	488	122	659	465	1.050	464	312	79.7	85.7	654.638	F

09:15 - 09:30

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
R394 (N)	737	184	413	1917	0.385	738	711	0.9	0.6	3.055	A
Midland Hospital	617	154	542	498	1.241	498	609	411.2	441.1	3091.665	F
R394 (S)	897	224	420	556	1.614	556	619	716.0	801.3	4919.808	F
Unknown Local Road	409	102	669	461	0.887	455	307	85.7	74.1	632.345	F

Queue Variation Results for each time segment

08:00 - 08:15

Arm	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
R394 (N)	0.60	0.55	1.00	1.40	1.45			N/A	N/A
Midland Hospital	31.70	>199	>199	>199	>199			N/A	N/A
R394 (S)	86.42	>199	>199	>199	>199			N/A	N/A
Unknown Local Road	5.16	0.04	0.36	11.65	28.18			N/A	N/A

08:15 - 08:30

Arm	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
R394 (N)	0.84	0.08	0.82	1.23	1.69			N/A	N/A
Midland Hospital	99.67	>199	>199	>199	>199			N/A	N/A
R394 (S)	214.47	>199	>199	>199	>199			N/A	N/A
Unknown Local Road	15.53	0.17	6.52	41.55	59.24			N/A	N/A

08:30 - 08:45

Arm	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
R394 (N)	1.28	0.03	0.26	1.28	1.28			N/A	N/A
Midland Hospital	221.08	>199	>199	>199	>199			N/A	N/A
R394 (S)	401.28	>199	>199	>199	>199			N/A	N/A
Unknown Local Road	47.83	13.54	42.57	82.84	97.55			N/A	N/A

08:45 - 09:00

Arm	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
R394 (N)	1.29	0.03	0.26	1.29	1.29			N/A	N/A
Midland Hospital	342.63	>199	>199	>199	>199			N/A	N/A
R394 (S)	588.07	>199	>199	>199	>199			N/A	N/A
Unknown Local Road	79.70	36.39	75.33	120.04	135.26			N/A	N/A

09:00 - 09:15

Arm	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
R394 (N)	0.86	0.52	0.99	1.40	1.46			N/A	N/A
Midland Hospital	411.17	>199	>199	>199	>199			N/A	N/A
R394 (S)	715.97	>199	>199	>199	>199			N/A	N/A
Unknown Local Road	85.71	37.75	80.72	130.86	148.03			N/A	N/A

09:15 - 09:30

Arm	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
R394 (N)	0.63	0.09	0.80	1.36	1.43			N/A	N/A
Midland Hospital	441.12	>199	>199	>199	>199			N/A	N/A
R394 (S)	801.34	>199	>199	>199	>199			N/A	N/A
Unknown Local Road	74.05	24.98	67.56	123.02	142.85			N/A	N/A

RECEIVED: 24/08/2023

2040 With Phase1&2&3, PM

RECEIVED: 24/06/2023

Data Errors and Warnings

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

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	untitled	Standard Roundabout		1, 2, 3, 4	2707.77	F

Junction Network

Driving side	Lighting	Network residual capacity (%)	First arm reaching threshold	Network delay (s)	Network LOS
Left	Normal/unknown	-61	Arm 2	2707.77	F

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D20	2040 With Phase1&2&3	PM	ONE HOUR	16:45	18:15	15	✓

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 (%)
R394 (N)		ONE HOUR	✓	1332	100.000
Midland Hospital		ONE HOUR	✓	1094	100.000
R394 (S)		ONE HOUR	✓	897	100.000
Unknown Local Road		ONE HOUR	✓	358	100.000

Origin-Destination Data

Demand (Veh/hr)

		To			
		R394 (N)	Midland Hospital	R394 (S)	Unknown Local Road
From	R394 (N)	42	483	673	134
	Midland Hospital	538	3	289	264
	R394 (S)	560	198	1	138
	Unknown Local Road	95	173	89	1

Vehicle Mix

Heavy Vehicle Percentages

		To			
		R394 (N)	Midland Hospital	R394 (S)	Unknown Local Road
From	R394 (N)	0	1	4	0
	Midland Hospital	1	0	1	0
	R394 (S)	3	0	0	3
	Unknown Local Road	2	0	0	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (Veh)	Max 95th percentile Queue (Veh)	Max LOS	Average Demand (Veh/hr)	Total Junction Arrivals (Veh)
R394 (N)	0.74	7.02	2.8	5.7	A	1222	1833
Midland Hospital	3.82	7039.42	926.3	198.5	F	1004	1506
R394 (S)	1.75	2562.30	405.0	195.4	F	823	1235
Unknown Local Road	0.84	45.95	4.7	25.7	E	329	493

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
R394 (N)	1003	251	314	2058	0.487	999	655	0.0	0.9	3.386	A
Midland Hospital	824	206	704	453	1.819	448	609	0.0	93.9	410.703	F
R394 (S)	675	169	462	549	1.229	534	689	0.0	35.3	131.877	F
Unknown Local Road	270	67	705	457	0.590	264	292	0.0	1.4	18.220	C

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
R394 (N)	1197	299	358	2023	0.592	1195	662	0.9	1.4	4.338	A
Midland Hospital	983	246	843	395	2.490	395	711	93.9	241.0	1775.012	F
R394 (S)	806	202	450	555	1.454	554	788	35.3	98.4	443.896	F
Unknown Local Road	322	80	702	458	0.703	319	302	1.4	2.2	25.222	D

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
R394 (N)	1467	367	409	1983	0.740	1461	656	1.4	2.8	6.832	A
Midland Hospital	1205	301	1029	317	3.795	317	841	241.0	462.8	4003.568	F
R394 (S)	988	247	428	563	1.753	563	919	98.4	204.4	977.099	F
Unknown Local Road	394	99	680	467	0.844	386	311	2.2	4.3	40.350	E

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
R394 (N)	1467	367	414	1979	0.741	1466	657	2.8	2.8	7.017	A
Midland Hospital	1205	301	1034	315	3.820	315	847	462.8	685.1	4982.842	F
R394 (S)	988	247	427	564	1.752	564	922	204.4	310.4	1651.837	F
Unknown Local Road	394	99	679	467	0.844	393	311	4.3	4.7	45.952	E

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
R394 (N)	1197	299	367	2016	0.594	1203	665	2.8	1.5	4.454	A
Midland Hospital	983	246	850	392	2.510	392	719	685.1	833.0	6192.385	F
R394 (S)	806	202	448	555	1.453	555	794	310.4	373.2	2240.848	F
Unknown Local Road	322	80	701	458	0.703	330	302	4.7	2.6	29.779	D

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
R394 (N)	1003	251	324	2050	0.489	1005	668	1.5	1.0	3.449	A
Midland Hospital	824	206	710	450	1.829	450	619	833.0	926.3	7039.425	F
R394 (S)	675	169	465	548	1.232	548	695	373.2	405.0	2562.301	F
Unknown Local Road	270	67	718	451	0.597	274	295	2.6	1.6	20.708	C

Queue Variation Results for each time segment

16:45 - 17:00

Arm	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
R394 (N)	0.94	0.55	1.00	1.40	1.45			N/A	N/A
Midland Hospital	93.87	>199	>199	>199	>199			N/A	N/A
R394 (S)	35.29	>199	>199	>199	>199			N/A	N/A
Unknown Local Road	1.37	0.55	1.00	1.40	1.45			N/A	N/A

17:00 - 17:15

Arm	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
R394 (N)	1.43	0.05	0.48	3.64	5.66			N/A	N/A
Midland Hospital	240.99	>199	>199	>199	>199			N/A	N/A
R394 (S)	98.35	>199	>199	>199	>199			N/A	N/A
Unknown Local Road	2.18	0.13	1.05	4.53	5.95			N/A	N/A

17:15 - 17:30

Arm	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
R394 (N)	2.76	0.03	0.28	2.76	5.35			N/A	N/A
Midland Hospital	462.77	>199	>199	>199	>199			N/A	N/A
R394 (S)	204.42	>199	>199	>199	>199			N/A	N/A
Unknown Local Road	4.30	0.05	0.48	12.20	21.03			N/A	N/A

17:30 - 17:45

Arm	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
R394 (N)	2.82	0.03	0.27	2.82	2.82			N/A	N/A
Midland Hospital	685.06	>199	>199	>199	>199			N/A	N/A
R394 (S)	310.39	>199	>199	>199	>199			N/A	N/A
Unknown Local Road	4.71	0.04	0.36	10.88	25.65			N/A	N/A

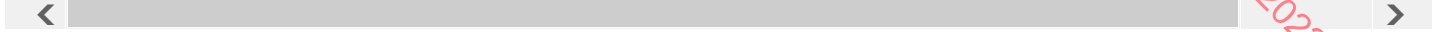
17:45 - 18:00

Arm	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
R394 (N)	1.48	0.09	1.10	2.95	3.99			N/A	N/A
Midland Hospital	832.96	>199	>199	>199	>199			N/A	N/A
R394 (S)	373.21	>199	>199	>199	>199			N/A	N/A
Unknown Local Road	2.56	0.04	0.42	7.04	12.62			N/A	N/A

18:00 - 18:15

Arm	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
R394 (N)	0.96	0.05	0.47	2.12	3.20			N/A	N/A
Midland Hospital	926.27	>199	>199	>199	>199			N/A	N/A
R394 (S)	404.97	>199	>199	>199	>199			N/A	N/A
Unknown Local Road	1.56	0.04	0.36	3.90	7.85			N/A	N/A

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Junctions 10
ARCADY 10 - Roundabout Module
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Filename: Junction 2.j10
Path: C:\Users\gabriela.iha\OneDrive - TOBIN Consulting Engineers\Documents
Report generation date: 21/04/2023 12:07:46

- »2019 Baseflows , AM
- »2019 Baseflows , PM
- »2025 No Development, AM
- »2025 No Development, PM
- »2025 With Phase 3, AM
- »2025 With Phase 3, PM
- »2025 With Phase1&2&3, AM
- »2025 With Phase1&2&3, PM
- »2030 No Development, AM
- »2030 No Development, PM
- »2030 With Phase 3, AM
- »2030 With Phase 3, PM
- »2030 With Phase1&2&3, AM
- »2030 With Phase1&2&3, PM
- »2040 No Development, AM
- »2040 No Development, PM
- »2040 With Phase 3, AM
- »2040 With Phase 3, PM
- »2040 With Phase1&2&3, AM
- »2040 With Phase1&2&3, PM

Summary of junction performance

	AM									PM						
	Set ID	Queue (Veh)	95% Queue (Veh)	Delay (s)	RFC	LOS	Junction Delay (s)	Junction LOS	Network Residual Capacity	Set ID	Queue (Veh)	95% Queue (Veh)	Delay (s)	RFC	LOS	Junction Delay (s)
2019 Baseflows																
1 - R394 (N)	D1	0.4	1.4	2.15	0.26	A	96.40	F	-19 % [3 - R394 (S)]	D2	0.5	2.0	2.31	0.33	A	9.47
2 - Committed Development		0.0	~1	0.00	0.00	A					0.0	~1	0.00	0.00	A	
3 - R394 (S)		38.7	86.2	168.57	1.07	F					2.9	14.1	19.27	0.75	C	
4 - Proposed Development		0.0	~1	0.00	0.00	A					0.0	~1	0.00	0.00	A	
2025 No Development																
1 - R394 (N)	D3	0.4	1.5	2.25	0.29	A	253.75	F	-28 % [3 - R394 (S)]	D4	0.6	2.7	2.45	0.37	A	14.71
2 - Committed Development		0.0	~1	0.00	0.00	A					0.0	~1	0.00	0.00	A	
3 - R394 (S)		89.7	152.1	446.51	1.21	F					5.1	27.0	31.31	0.85	D	
4 - Proposed Development		0.0	~1	0.00	0.00	A					0.0	~1	0.00	0.00	A	
2025 With Phase 3																

1 - R394 (N)	D5	0.4	1.8	2.31	0.31	A	363.46	F	-33 % [3 - R394 (S)]	D6	0.6	2.7	2.55	0.39	A	21.05
2 - Committed Development		0.4	1.1	10.42	0.26	B					0.4	1.8	13.01	0.31	B	
3 - R394 (S)		138.7	200.0	685.75	1.30	F					8.0	42.3	47.60	0.91	E	
4 - Proposed Development		0.0	-1	0.00	0.00	A					0.0	-1	0.00	0.00	A	
2025 With Phase1&2&3																
1 - R394 (N)	D7	0.5	1.9	2.37	0.32	A	389.37	F	-34 % [3 - R394 (S)]	D8	0.7	2.6	2.65	0.40	A	24.17
2 - Committed Development		0.4	1.3	11.05	0.27	B					0.5	2.0	14.36	0.33	B	
3 - R394 (S)		156.1	200.0	767.16	1.33	F					9.7	48.2	56.94	0.93	F	
4 - Proposed Development		0.2	1.1	10.24	0.19	B					0.2	0.9	9.52	0.18	A	
2030 No Development																
1 - R394 (N)	D9	0.5	2.1	2.39	0.33	A	441.96	F	-35 % [3 - R394 (S)]	D10	0.7	2.6	2.61	0.40	A	25.75
2 - Committed Development		0.0	-1	0.00	0.00	A					0.0	-1	0.00	0.00	A	
3 - R394 (S)		165.1	200.0	782.61	1.33	F					10.1	50.0	57.08	0.94	F	
4 - Proposed Development		0.0	-1	0.00	0.00	A					0.0	-1	0.00	0.00	A	
2030 With Phase 3																
1 - R394 (N)	D11	0.5	2.4	2.45	0.34	A	592.67	F	-39 % [3 - R394 (S)]	D12	0.7	2.3	2.72	0.42	A	40.91
2 - Committed Development		0.4	1.4	11.52	0.28	B					0.5	2.2	14.96	0.34	B	
3 - R394 (S)		222.4	222.4	1118.00	1.43	F					18.8	64.9	96.98	1.00	F	
4 - Proposed Development		0.0	-1	0.00	0.00	A					0.0	-1	0.00	0.00	A	
2030 With Phase1&2&3																
1 - R394 (N)	D13	0.5	2.5	2.52	0.35	A	625.71	F	-40 % [3 - R394 (S)]	D14	0.8	2.0	2.83	0.44	A	47.60
2 - Committed Development		0.4	1.6	12.29	0.29	B					0.6	2.6	16.78	0.36	C	
3 - R394 (S)		241.5	241.5	1228.32	1.47	F					23.8	70.3	117.60	1.02	F	
4 - Proposed Development		0.2	1.2	10.26	0.19	B					0.2	1.0	9.95	0.19	A	
2040 No Development																
1 - R394 (N)	D15	0.6	2.7	2.55	0.37	A	806.93	F	-43 % [3 - R394 (S)]	D16	0.9	1.5	2.91	0.46	A	65.72
2 - Committed Development		0.0	-1	0.00	0.00	A					0.0	-1	0.00	0.00	A	
3 - R394 (S)		291.8	194.2	1431.57	1.51	F					34.0	81.4	151.53	1.06	F	
4 - Proposed Development		0.0	-1	0.00	0.00	A					0.0	-1	0.00	0.00	A	
2040 With Phase 3																
1 - R394 (N)	D17	0.6	2.7	2.63	0.39	A	966.38	F	-46 % [3 - R394 (S)]	D18	0.9	1.5	3.04	0.48	A	103.54
2 - Committed Development		0.4	1.8	13.30	0.31	B					0.6	3.0	19.36	0.40	C	
3 - R394 (S)		365.4	194.4	1813.73	1.61	F					55.1	102.2	253.36	1.13	F	
4 - Proposed Development		0.0	-1	0.00	0.00	A					0.0	-1	0.00	0.00	A	
2040 With Phase1&2&3																
1 - R394 (N)	D19	0.7	2.6	2.70	0.40	A	994.59	F	-47 % [3 - R394 (S)]	D20	1.0	1.5	3.18	0.49	A	120.34
2 - Committed Development		0.5	2.0	14.35	0.33	B					0.7	3.6	22.51	0.43	C	
3 - R394 (S)		389.4	194.4	1934.99	1.65	F					63.7	111.6	305.88	1.15	F	
4 - Proposed Development		0.2	1.2	10.27	0.19	B					0.2	1.1	10.11	0.19	B	

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

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

File summary

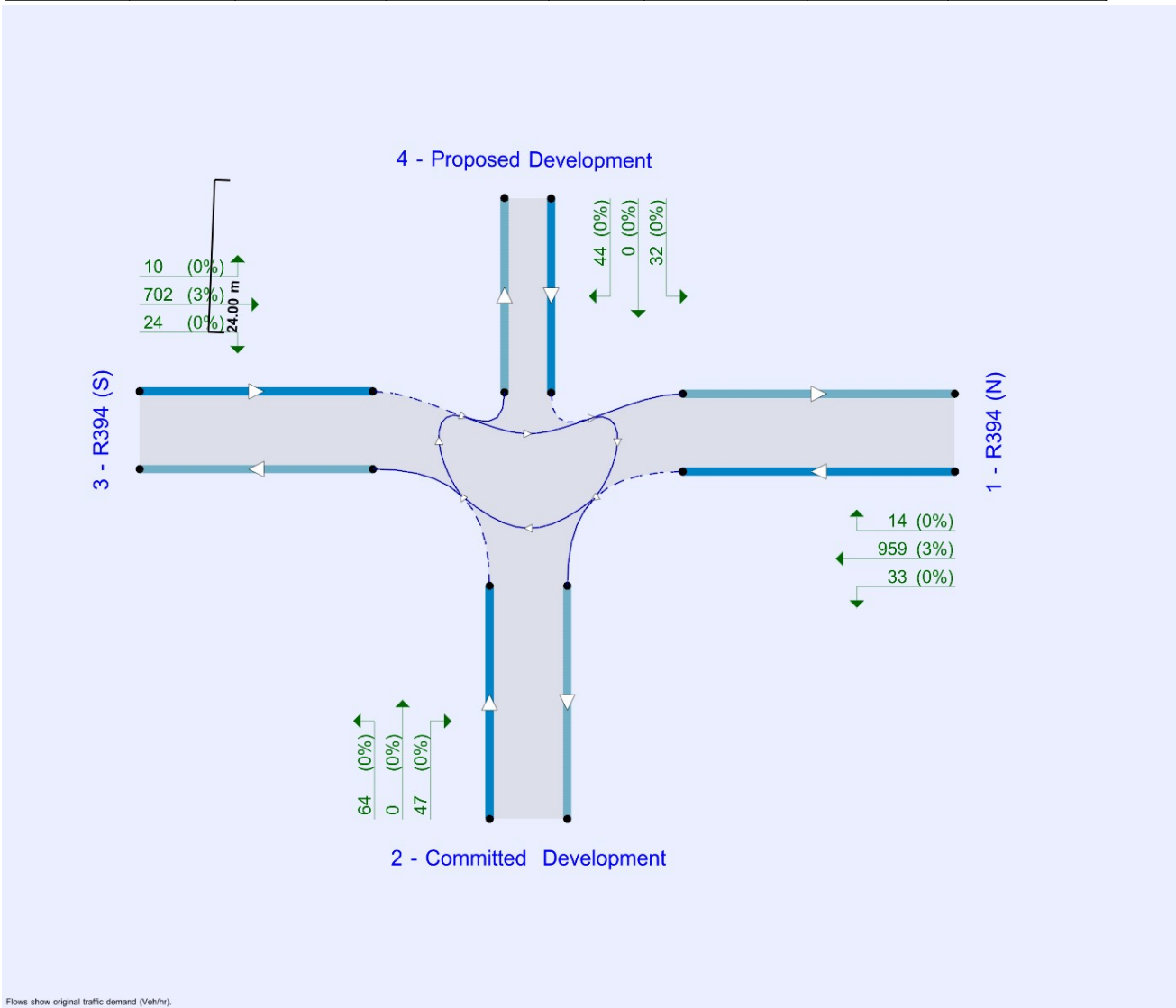
File Description

Title	Junction 2
Location	Mullinagr
Site number	1
Date	12/06/2020
Version	
Status	(new file)
Identifier	
Client	
Jobnumber	10906
Enumerator	TOBIN\Maria Rooney
Description	

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Units

Distance units	Speed units	Traffic units input	Traffic units results	Flow units	Average delay units	Total delay units	Rate of delay units
m	kph	Veh	Veh	perHour	s	-Min	perMin



Analysis Options

Vehicle length (m)	Calculate Queue Percentiles	Calculate detailed queuing delay	Show lane queues in feet / metres	Show all PICADY stream intercepts	Calculate residual capacity	Residual capacity criteria type	RFC Threshold	Average Delay threshold (s)	Queue threshold (PCU)	Use iterations with HCM roundabouts	Max number of iterations for roundabouts
5.75	✓				✓	Delay	0.85	36.00	20.00		500

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	2019 Baseflows	AM	ONE HOUR	08:00	09:30	15	
D2	2019 Baseflows	PM	ONE HOUR	16:45	18:15	15	✓
D3	2025 No Development	AM	ONE HOUR	08:00	09:30	15	✓
D4	2025 No Development	PM	ONE HOUR	16:45	18:15	15	✓
D5	2025 With Phase 3	AM	ONE HOUR	08:00	09:30	15	✓
D6	2025 With Phase 3	PM	ONE HOUR	16:45	18:15	15	✓
D7	2025 With Phase1&2&3	AM	ONE HOUR	08:00	09:30	15	✓
D8	2025 With Phase1&2&3	PM	ONE HOUR	16:45	18:15	15	✓
D9	2030 No Development	AM	ONE HOUR	08:00	09:30	15	✓
D10	2030 No Development	PM	ONE HOUR	16:45	18:15	15	✓
D11	2030 With Phase 3	AM	ONE HOUR	08:00	09:30	15	✓
D12	2030 With Phase 3	PM	ONE HOUR	16:45	18:15	15	✓
D13	2030 With Phase1&2&3	AM	ONE HOUR	08:00	09:30	15	✓
D14	2030 With Phase1&2&3	PM	ONE HOUR	16:45	18:15	15	✓
D15	2040 No Development	AM	ONE HOUR	08:00	09:30	15	✓
D16	2040 No Development	PM	ONE HOUR	16:45	18:15	15	✓
D17	2040 With Phase 3	AM	ONE HOUR	08:00	09:30	15	✓
D18	2040 With Phase 3	PM	ONE HOUR	16:45	18:15	15	✓
D19	2040 With Phase1&2&3	AM	ONE HOUR	08:00	09:30	15	✓
D20	2040 With Phase1&2&3	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

2019 Baseflows , AM

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Data Errors and Warnings

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

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	untitled	Standard Roundabout		1, 2, 3, 4	96.40	F

Junction Network

Driving side	Lighting	Network residual capacity (%)	First arm reaching threshold	Network delay (s)	Network LOS
Left	Normal/unknown	-19	3 - R394 (S)	96.40	F

Arms

Arms

Arm	Name	Description	No give-way line
1	R394 (N)		
2	Committed Development		
3	R394 (S)		
4	Proposed Development		

Roundabout Geometry

Arm	V - Approach road half-width (m)	E - Entry width (m)	I' - Effective flare length (m)	R - Entry radius (m)	D - Inscribed circle diameter (m)	PHI - Conflict (entry) angle (deg)	Entry only	Exit only
1 - R394 (N)	6.30	7.50	28.5	18.6	33.0	12.0		
2 - Committed Development	3.00	3.00	0.0	3.0	33.0	0.0		
3 - R394 (S)	3.00	3.00	0.0	3.0	33.0	0.0		
4 - Proposed Development	3.00	3.00	0.0	3.0	33.0	0.0		

Slope / Intercept / Capacity

Roundabout Slope and Intercept used in model

Arm	Final slope	Final intercept (PCU/hr)
1 - R394 (N)	0.807	2360
2 - Committed Development	0.408	752
3 - R394 (S)	0.408	752
4 - Proposed Development	0.408	752

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	2019 Baseflows	AM	ONE HOUR	08:00	09:30	15	✓

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

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Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
1 - R394 (N)		ONE HOUR	✓	540	100.000
2 - Committed Development		ONE HOUR	✓	0	100.000
3 - R394 (S)		ONE HOUR	✓	712	100.000
4 - Proposed Development		ONE HOUR	✓	0	100.000

Origin-Destination Data

Demand (Veh/hr)

		To			
		1 - R394 (N)	2 - Committed Development	3 - R394 (S)	4 - Proposed Development
From	1 - R394 (N)	0	0	540	0
	2 - Committed Development	0	0	0	0
	3 - R394 (S)	712	0	0	0
	4 - Proposed Development	0	0	0	0

Vehicle Mix

Heavy Vehicle Percentages

		To			
		1 - R394 (N)	2 - Committed Development	3 - R394 (S)	4 - Proposed Development
From	1 - R394 (N)	0	0	4	0
	2 - Committed Development	0	0	0	0
	3 - R394 (S)	3	0	0	0
	4 - Proposed Development	0	0	0	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (Veh)	Max 95th percentile Queue (Veh)	Max LOS	Average Demand (Veh/hr)	Total Junction Arrivals (Veh)
1 - R394 (N)	0.26	2.15	0.4	1.4	A	496	743
2 - Committed Development	0.00	0.00	0.0	-1	A	0	0
3 - R394 (S)	1.07	168.57	38.7	86.2	F	653	980
4 - Proposed Development	0.00	0.00	0.0	-1	A	0	0

Main Results for each time segment

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 - R394 (N)	407	102	0	2270	0.179	406	526	0.0	0.2	1.930	A
2 - Committed Development	0	0	406	580	0.000	0	0	0.0	0.0	0.000	A
3 - R394 (S)	536	134	0	730	0.734	526	406	0.0	2.6	16.885	C
4 - Proposed Development	0	0	526	531	0.000	0	0	0.0	0.0	0.000	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 - R394 (N)	485	121	0	2270	0.214	485	628	0.2	0.3	2.017	A
2 - Committed Development	0	0	485	546	0.000	0	0	0.0	0.0	0.000	A
3 - R394 (S)	640	160	0	730	0.877	628	485	2.6	5.6	31.890	D
4 - Proposed Development	0	0	628	488	0.000	0	0	0.0	0.0	0.000	A

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 - R394 (N)	595	149	0	2270	0.262	594	711	0.3	0.4	2.148	A
2 - Committed Development	0	0	594	500	0.000	0	0	0.0	0.0	0.000	A
3 - R394 (S)	784	196	0	730	1.074	711	594	5.6	23.7	90.491	F
4 - Proposed Development	0	0	711	453	0.000	0	0	0.0	0.0	0.000	A

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 - R394 (N)	595	149	0	2270	0.262	595	724	0.4	0.4	2.148	A
2 - Committed Development	0	0	595	499	0.000	0	0	0.0	0.0	0.000	A
3 - R394 (S)	784	196	0	730	1.074	724	595	23.7	38.7	168.571	F
4 - Proposed Development	0	0	724	447	0.000	0	0	0.0	0.0	0.000	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 - R394 (N)	485	121	0	2270	0.214	486	711	0.4	0.3	2.019	A
2 - Committed Development	0	0	486	546	0.000	0	0	0.0	0.0	0.000	A
3 - R394 (S)	640	160	0	730	0.877	711	486	38.7	20.9	154.825	F
4 - Proposed Development	0	0	711	453	0.000	0	0	0.0	0.0	0.000	A

09:15 - 09:30

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 - R394 (N)	407	102	0	2270	0.179	407	607	0.3	0.2	1.932	A
2 - Committed Development	0	0	407	579	0.000	0	0	0.0	0.0	0.000	A
3 - R394 (S)	536	134	0	730	0.734	607	407	20.9	3.1	41.626	E
4 - Proposed Development	0	0	607	497	0.000	0	0	0.0	0.0	0.000	A

Queue Variation Results for each time segment

08:00 - 08:15

Arm	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1 - R394 (N)	0.22	0.00	0.00	0.22	0.22			N/A	N/A
2 - Committed Development	0.00	0.00	0.00	0.00	0.00			N/A	N/A
3 - R394 (S)	2.58	0.57	1.77	4.28	5.19			N/A	N/A
4 - Proposed Development	0.00	0.00	0.00	0.00	0.00			N/A	N/A

08:15 - 08:30

Arm	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1 - R394 (N)	0.27	0.00	0.00	0.27	0.27			N/A	N/A
2 - Committed Development	0.00	0.00	0.00	0.00	0.00			N/A	N/A
3 - R394 (S)	5.61	0.18	2.89	13.42	18.23			N/A	N/A
4 - Proposed Development	0.00	0.00	0.00	0.00	0.00			N/A	N/A

08:30 - 08:45

Arm	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1 - R394 (N)	0.35	0.03	0.25	0.45	0.48			N/A	N/A
2 - Committed Development	0.00	0.00	0.00	0.00	0.00			N/A	N/A
3 - R394 (S)	23.75	4.05	19.66	45.08	54.86			N/A	N/A
4 - Proposed Development	0.00	0.00	0.00	0.00	0.00			N/A	N/A

08:45 - 09:00

Arm	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1 - R394 (N)	0.35	0.03	0.33	1.16	1.40			N/A	N/A
2 - Committed Development	0.00	0.00	0.00	0.00	0.00			N/A	N/A
3 - R394 (S)	38.70	8.05	33.02	71.61	86.19			N/A	N/A
4 - Proposed Development	0.00	0.00	0.00	0.00	0.00			N/A	N/A

09:00 - 09:15

Arm	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1 - R394 (N)	0.27	0.00	0.00	0.27	0.27			N/A	N/A
2 - Committed Development	0.00	0.00	0.00	0.00	0.00			N/A	N/A
3 - R394 (S)	20.86	1.72	15.73	43.58	54.91			N/A	N/A
4 - Proposed Development	0.00	0.00	0.00	0.00	0.00			N/A	N/A

09:15 - 09:30

Arm	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1 - R394 (N)	0.22	0.00	0.00	0.22	0.22			N/A	N/A
2 - Committed Development	0.00	0.00	0.00	0.00	0.00			N/A	N/A
3 - R394 (S)	3.05	0.03	0.33	5.74	16.17			N/A	N/A
4 - Proposed Development	0.00	0.00	0.00	0.00	0.00			N/A	N/A

2019 Baseflows , PM

RECEIVED: 24/06/2023

Data Errors and Warnings

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

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	untitled	Standard Roundabout		1, 2, 3, 4	9.47	A

Junction Network

Driving side	Lighting	Network residual capacity (%)	First arm reaching threshold	Network delay (s)	Network LOS
Left	Normal/unknown	16	3 - R394 (S)	9.47	A

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D2	2019 Baseflows	PM	ONE HOUR	16:45	18:15	15	✓

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 - R394 (N)		ONE HOUR	✓	685	100.000
2 - Committed Development		ONE HOUR	✓	0	100.000
3 - R394 (S)		ONE HOUR	✓	501	100.000
4 - Proposed Development		ONE HOUR	✓	0	100.000

Origin-Destination Data

Demand (Veh/hr)

		To			
		1 - R394 (N)	2 - Committed Development	3 - R394 (S)	4 - Proposed Development
From	1 - R394 (N)	0	0	685	0
	2 - Committed Development	0	0	0	0
	3 - R394 (S)	501	0	0	0
	4 - Proposed Development	0	0	0	0

Vehicle Mix

Heavy Vehicle Percentages

		To			
		1 - R394 (N)	2 - Committed Development	3 - R394 (S)	4 - Proposed Development
From	1 - R394 (N)	0	0	2	0
	2 - Committed Development	0	0	0	0
	3 - R394 (S)	2	0	0	0
	4 - Proposed Development	0	0	0	0

Results

RECEIVED: 24/08/2023

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (Veh)	Max 95th percentile Queue (Veh)	Max LOS	Average Demand (Veh/hr)	Total Junction Arrivals (Veh)
1 - R394 (N)	0.33	2.31	0.5	2.0	A	629	943
2 - Committed Development	0.00	0.00	0.0	-1	A	0	0
3 - R394 (S)	0.75	19.27	2.9	14.1	C	460	690
4 - Proposed Development	0.00	0.00	0.0	-1	A	0	0

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 - R394 (N)	516	129	0	2314	0.223	515	373	0.0	0.3	1.999	A
2 - Committed Development	0	0	515	538	0.000	0	0	0.0	0.0	0.000	A
3 - R394 (S)	377	94	0	737	0.512	373	515	0.0	1.0	9.787	A
4 - Proposed Development	0	0	373	596	0.000	0	0	0.0	0.0	0.000	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 - R394 (N)	616	154	0	2314	0.266	615	448	0.3	0.4	2.119	A
2 - Committed Development	0	0	615	496	0.000	0	0	0.0	0.0	0.000	A
3 - R394 (S)	450	113	0	737	0.611	448	615	1.0	1.5	12.385	B
4 - Proposed Development	0	0	448	565	0.000	0	0	0.0	0.0	0.000	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 - R394 (N)	754	189	0	2314	0.326	754	547	0.4	0.5	2.307	A
2 - Committed Development	0	0	754	438	0.000	0	0	0.0	0.0	0.000	A
3 - R394 (S)	552	138	0	737	0.748	547	754	1.5	2.8	18.424	C
4 - Proposed Development	0	0	547	524	0.000	0	0	0.0	0.0	0.000	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 - R394 (N)	754	189	0	2314	0.326	754	551	0.5	0.5	2.307	A
2 - Committed Development	0	0	754	438	0.000	0	0	0.0	0.0	0.000	A
3 - R394 (S)	552	138	0	737	0.748	551	754	2.8	2.9	19.268	C
4 - Proposed Development	0	0	551	522	0.000	0	0	0.0	0.0	0.000	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 - R394 (N)	616	154	0	2314	0.266	616	455	0.5	0.4	2.122	A
2 - Committed Development	0	0	616	495	0.000	0	0	0.0	0.0	0.000	A
3 - R394 (S)	450	113	0	737	0.611	455	616	2.9	1.6	12.994	B
4 - Proposed Development	0	0	455	562	0.000	0	0	0.0	0.0	0.000	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 - R394 (N)	516	129	0	2314	0.223	516	379	0.4	0.3	2.003	A
2 - Committed Development	0	0	516	537	0.000	0	0	0.0	0.0	0.000	A
3 - R394 (S)	377	94	0	737	0.512	379	516	1.6	1.1	10.130	B
4 - Proposed Development	0	0	379	594	0.000	0	0	0.0	0.0	0.000	A

Queue Variation Results for each time segment

16:45 - 17:00

Arm	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1 - R394 (N)	0.29	0.00	0.00	0.29	0.29			N/A	N/A
2 - Committed Development	0.00	0.00	0.00	0.00	0.00			N/A	N/A
3 - R394 (S)	1.03	0.55	1.00	1.40	1.45			N/A	N/A
4 - Proposed Development	0.00	0.00	0.00	0.00	0.00			N/A	N/A

17:00 - 17:15

Arm	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1 - R394 (N)	0.36	0.00	0.00	0.36	0.36			N/A	N/A
2 - Committed Development	0.00	0.00	0.00	0.00	0.00			N/A	N/A
3 - R394 (S)	1.52	0.09	1.13	3.04	4.13			N/A	N/A
4 - Proposed Development	0.00	0.00	0.00	0.00	0.00			N/A	N/A

17:15 - 17:30

Arm	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1 - R394 (N)	0.48	0.03	0.25	0.48	0.48			N/A	N/A
2 - Committed Development	0.00	0.00	0.00	0.00	0.00			N/A	N/A
3 - R394 (S)	2.76	0.03	0.32	4.43	14.12			N/A	N/A
4 - Proposed Development	0.00	0.00	0.00	0.00	0.00			N/A	N/A

17:30 - 17:45

Arm	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1 - R394 (N)	0.48	0.03	0.31	1.42	2.02			N/A	N/A
2 - Committed Development	0.00	0.00	0.00	0.00	0.00			N/A	N/A
3 - R394 (S)	2.86	0.03	0.29	2.86	9.66			N/A	N/A
4 - Proposed Development	0.00	0.00	0.00	0.00	0.00			N/A	N/A

17:45 - 18:00

Arm	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1 - R394 (N)	0.36	0.00	0.00	0.36	0.36			N/A	N/A
2 - Committed Development	0.00	0.00	0.00	0.00	0.00			N/A	N/A
3 - R394 (S)	1.62	0.05	0.51	4.15	6.45			N/A	N/A
4 - Proposed Development	0.00	0.00	0.00	0.00	0.00			N/A	N/A

18:00 - 18:15

Arm	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1 - R394 (N)	0.29	0.00	0.00	0.29	0.29			N/A	N/A
2 - Committed Development	0.00	0.00	0.00	0.00	0.00			N/A	N/A
3 - R394 (S)	1.07	0.04	0.39	2.70	4.64			N/A	N/A
4 - Proposed Development	0.00	0.00	0.00	0.00	0.00			N/A	N/A

RECEIVED: 24/08/2023

2025 No Development, AM

RECEIVED: 24/06/2023

Data Errors and Warnings

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

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	untitled	Standard Roundabout		1, 2, 3, 4	253.75	F

Junction Network

Driving side	Lighting	Network residual capacity (%)	First arm reaching threshold	Network delay (s)	Network LOS
Left	Normal/unknown	-28	3 - R394 (S)	253.75	F

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D3	2025 No Development	AM	ONE HOUR	08:00	09:30	15	✓

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 - R394 (N)		ONE HOUR	✓	608	100.000
2 - Committed Development		ONE HOUR	✓	0	100.000
3 - R394 (S)		ONE HOUR	✓	801	100.000
4 - Proposed Development		ONE HOUR	✓	0	100.000

Origin-Destination Data

Demand (Veh/hr)

		To			
		1 - R394 (N)	2 - Committed Development	3 - R394 (S)	4 - Proposed Development
From	1 - R394 (N)	0	0	608	0
	2 - Committed Development	0	0	0	0
	3 - R394 (S)	801	0	0	0
	4 - Proposed Development	0	0	0	0

Vehicle Mix

Heavy Vehicle Percentages

		To			
		1 - R394 (N)	2 - Committed Development	3 - R394 (S)	4 - Proposed Development
From	1 - R394 (N)	0	0	4	0
	2 - Committed Development	0	0	0	0
	3 - R394 (S)	3	0	0	0
	4 - Proposed Development	0	0	0	0

Results

RECEIVED: 24/08/2023

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (Veh)	Max 95th percentile Queue (Veh)	Max LOS	Average Demand (Veh/hr)	Total Junction Arrivals (Veh)
1 - R394 (N)	0.29	2.25	0.4	1.5	A	558	837
2 - Committed Development	0.00	0.00	0.0	~1	A	0	0
3 - R394 (S)	1.21	446.51	89.7	152.1	F	735	1103
4 - Proposed Development	0.00	0.00	0.0	~1	A	0	0

Main Results for each time segment

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 - R394 (N)	458	114	0	2270	0.202	457	587	0.0	0.3	1.985	A
2 - Committed Development	0	0	457	558	0.000	0	0	0.0	0.0	0.000	A
3 - R394 (S)	603	151	0	730	0.826	587	457	0.0	4.1	23.047	C
4 - Proposed Development	0	0	587	505	0.000	0	0	0.0	0.0	0.000	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 - R394 (N)	547	137	0	2270	0.241	546	687	0.3	0.3	2.089	A
2 - Committed Development	0	0	546	520	0.000	0	0	0.0	0.0	0.000	A
3 - R394 (S)	720	180	0	730	0.987	687	546	4.1	12.5	57.633	F
4 - Proposed Development	0	0	687	463	0.000	0	0	0.0	0.0	0.000	A

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 - R394 (N)	669	167	0	2270	0.295	669	726	0.3	0.4	2.249	A
2 - Committed Development	0	0	669	468	0.000	0	0	0.0	0.0	0.000	A
3 - R394 (S)	882	220	0	730	1.208	726	669	12.5	51.5	173.028	F
4 - Proposed Development	0	0	726	447	0.000	0	0	0.0	0.0	0.000	A

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 - R394 (N)	669	167	0	2270	0.295	669	729	0.4	0.4	2.249	A
2 - Committed Development	0	0	669	468	0.000	0	0	0.0	0.0	0.000	A
3 - R394 (S)	882	220	0	730	1.208	729	669	51.5	89.7	359.025	F
4 - Proposed Development	0	0	729	445	0.000	0	0	0.0	0.0	0.000	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 - R394 (N)	547	137	0	2270	0.241	547	721	0.4	0.3	2.091	A
2 - Committed Development	0	0	547	520	0.000	0	0	0.0	0.0	0.000	A
3 - R394 (S)	720	180	0	730	0.987	721	547	89.7	89.6	146.510	F
4 - Proposed Development	0	0	721	449	0.000	0	0	0.0	0.0	0.000	A

09:15 - 09:30

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 - R394 (N)	458	114	0	2270	0.202	458	722	0.3	0.3	1.988	A
2 - Committed Development	0	0	458	557	0.000	0	0	0.0	0.0	0.000	A
3 - R394 (S)	603	151	0	730	0.826	722	458	89.6	59.9	374.714	F
4 - Proposed Development	0	0	722	448	0.000	0	0	0.0	0.0	0.000	A

Queue Variation Results for each time segment

08:00 - 08:15

Arm	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1 - R394 (N)	0.25	0.00	0.00	0.25	0.25			N/A	N/A
2 - Committed Development	0.00	0.00	0.00	0.00	0.00			N/A	N/A
3 - R394 (S)	4.10	0.06	0.98	11.55	18.35			N/A	N/A
4 - Proposed Development	0.00	0.00	0.00	0.00	0.00			N/A	N/A

08:15 - 08:30

Arm	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1 - R394 (N)	0.32	0.00	0.00	0.32	0.32			N/A	N/A
2 - Committed Development	0.00	0.00	0.00	0.00	0.00			N/A	N/A
3 - R394 (S)	12.47	0.36	7.28	29.92	40.15			N/A	N/A
4 - Proposed Development	0.00	0.00	0.00	0.00	0.00			N/A	N/A

08:30 - 08:45

Arm	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1 - R394 (N)	0.42	0.03	0.25	0.45	0.48			N/A	N/A
2 - Committed Development	0.00	0.00	0.00	0.00	0.00			N/A	N/A
3 - R394 (S)	51.52	21.01	47.96	80.36	91.59			N/A	N/A
4 - Proposed Development	0.00	0.00	0.00	0.00	0.00			N/A	N/A

08:45 - 09:00

Arm	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1 - R394 (N)	0.42	0.03	0.33	1.33	1.50			N/A	N/A
2 - Committed Development	0.00	0.00	0.00	0.00	0.00			N/A	N/A
3 - R394 (S)	89.74	46.78	86.03	128.60	142.77			N/A	N/A
4 - Proposed Development	0.00	0.00	0.00	0.00	0.00			N/A	N/A

09:00 - 09:15

Arm	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1 - R394 (N)	0.32	0.00	0.00	0.32	0.32			N/A	N/A
2 - Committed Development	0.00	0.00	0.00	0.00	0.00			N/A	N/A
3 - R394 (S)	89.62	41.01	84.77	135.01	152.11			N/A	N/A
4 - Proposed Development	0.00	0.00	0.00	0.00	0.00			N/A	N/A

09:15 - 09:30

Arm	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1 - R394 (N)	0.25	0.00	0.00	0.25	0.25			N/A	N/A
2 - Committed Development	0.00	0.00	0.00	0.00	0.00			N/A	N/A
3 - R394 (S)	59.93	16.22	53.11	105.34	124.56			N/A	N/A
4 - Proposed Development	0.00	0.00	0.00	0.00	0.00			N/A	N/A

RECEIVED: 24/08/2023

2025 No Development, PM

RECEIVED: 24/06/2023

Data Errors and Warnings

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

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	untitled	Standard Roundabout		1, 2, 3, 4	14.71	B

Junction Network

Driving side	Lighting	Network residual capacity (%)	First arm reaching threshold	Network delay (s)	Network LOS
Left	Normal/unknown	2	3 - R394 (S)	14.71	B

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D4	2025 No Development	PM	ONE HOUR	16:45	18:15	15	✓

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 - R394 (N)		ONE HOUR	✓	770	100.000
2 - Committed Development		ONE HOUR	✓	0	100.000
3 - R394 (S)		ONE HOUR	✓	563	100.000
4 - Proposed Development		ONE HOUR	✓	0	100.000

Origin-Destination Data

Demand (Veh/hr)

		To			
		1 - R394 (N)	2 - Committed Development	3 - R394 (S)	4 - Proposed Development
From	1 - R394 (N)	0	0	770	0
	2 - Committed Development	0	0	0	0
	3 - R394 (S)	563	0	0	0
	4 - Proposed Development	0	0	0	0

Vehicle Mix

Heavy Vehicle Percentages

		To			
		1 - R394 (N)	2 - Committed Development	3 - R394 (S)	4 - Proposed Development
From	1 - R394 (N)	0	0	2	0
	2 - Committed Development	0	0	0	0
	3 - R394 (S)	3	0	0	0
	4 - Proposed Development	0	0	0	0

Results

RECEIVED: 24/08/2023

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (Veh)	Max 95th percentile Queue (Veh)	Max LOS	Average Demand (Veh/hr)	Total Junction Arrivals (Veh)
1 - R394 (N)	0.37	2.45	0.6	2.7	A	707	1060
2 - Committed Development	0.00	0.00	0.0	-1	A	0	0
3 - R394 (S)	0.85	31.31	5.1	27.0	D	517	775
4 - Proposed Development	0.00	0.00	0.0	-1	A	0	0

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 - R394 (N)	580	145	0	2314	0.251	578	418	0.0	0.3	2.073	A
2 - Committed Development	0	0	578	511	0.000	0	0	0.0	0.0	0.000	A
3 - R394 (S)	424	106	0	730	0.581	418	578	0.0	1.3	11.376	B
4 - Proposed Development	0	0	418	576	0.000	0	0	0.0	0.0	0.000	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 - R394 (N)	692	173	0	2314	0.299	692	503	0.3	0.4	2.219	A
2 - Committed Development	0	0	692	464	0.000	0	0	0.0	0.0	0.000	A
3 - R394 (S)	506	127	0	730	0.693	503	692	1.3	2.1	15.630	C
4 - Proposed Development	0	0	503	540	0.000	0	0	0.0	0.0	0.000	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 - R394 (N)	848	212	0	2314	0.366	847	610	0.4	0.6	2.452	A
2 - Committed Development	0	0	847	399	0.000	0	0	0.0	0.0	0.000	A
3 - R394 (S)	620	155	0	730	0.849	610	847	2.1	4.7	27.739	D
4 - Proposed Development	0	0	610	496	0.000	0	0	0.0	0.0	0.000	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 - R394 (N)	848	212	0	2314	0.366	848	618	0.6	0.6	2.454	A
2 - Committed Development	0	0	848	399	0.000	0	0	0.0	0.0	0.000	A
3 - R394 (S)	620	155	0	730	0.849	618	848	4.7	5.1	31.308	D
4 - Proposed Development	0	0	618	492	0.000	0	0	0.0	0.0	0.000	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 - R394 (N)	692	173	0	2314	0.299	693	517	0.6	0.4	2.220	A
2 - Committed Development	0	0	693	463	0.000	0	0	0.0	0.0	0.000	A
3 - R394 (S)	506	127	0	730	0.693	517	693	5.1	2.4	17.678	C
4 - Proposed Development	0	0	517	534	0.000	0	0	0.0	0.0	0.000	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 - R394 (N)	580	145	0	2314	0.251	580	428	0.4	0.3	2.076	A
2 - Committed Development	0	0	580	510	0.000	0	0	0.0	0.0	0.000	A
3 - R394 (S)	424	106	0	730	0.581	428	580	2.4	1.4	12.063	B
4 - Proposed Development	0	0	428	572	0.000	0	0	0.0	0.0	0.000	A

Queue Variation Results for each time segment

16:45 - 17:00

Arm	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1 - R394 (N)	0.33	0.00	0.00	0.33	0.33			N/A	N/A
2 - Committed Development	0.00	0.00	0.00	0.00	0.00			N/A	N/A
3 - R394 (S)	1.34	0.55	1.00	1.40	1.45			N/A	N/A
4 - Proposed Development	0.00	0.00	0.00	0.00	0.00			N/A	N/A

17:00 - 17:15

Arm	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1 - R394 (N)	0.43	0.00	0.00	0.43	0.43			N/A	N/A
2 - Committed Development	0.00	0.00	0.00	0.00	0.00			N/A	N/A
3 - R394 (S)	2.15	0.08	1.26	4.99	7.01			N/A	N/A
4 - Proposed Development	0.00	0.00	0.00	0.00	0.00			N/A	N/A

17:15 - 17:30

Arm	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1 - R394 (N)	0.58	0.03	0.25	0.58	0.58			N/A	N/A
2 - Committed Development	0.00	0.00	0.00	0.00	0.00			N/A	N/A
3 - R394 (S)	4.72	0.04	0.42	12.96	24.75			N/A	N/A
4 - Proposed Development	0.00	0.00	0.00	0.00	0.00			N/A	N/A

17:30 - 17:45

Arm	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1 - R394 (N)	0.58	0.03	0.29	1.29	2.68			N/A	N/A
2 - Committed Development	0.00	0.00	0.00	0.00	0.00			N/A	N/A
3 - R394 (S)	5.09	0.03	0.33	9.21	26.95			N/A	N/A
4 - Proposed Development	0.00	0.00	0.00	0.00	0.00			N/A	N/A

17:45 - 18:00

Arm	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1 - R394 (N)	0.43	0.00	0.00	0.43	0.43			N/A	N/A
2 - Committed Development	0.00	0.00	0.00	0.00	0.00			N/A	N/A
3 - R394 (S)	2.39	0.04	0.43	6.55	11.43			N/A	N/A
4 - Proposed Development	0.00	0.00	0.00	0.00	0.00			N/A	N/A

18:00 - 18:15

Arm	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1 - R394 (N)	0.34	0.00	0.00	0.34	0.34			N/A	N/A
2 - Committed Development	0.00	0.00	0.00	0.00	0.00			N/A	N/A
3 - R394 (S)	1.43	0.03	0.34	3.40	7.29			N/A	N/A
4 - Proposed Development	0.00	0.00	0.00	0.00	0.00			N/A	N/A

RECEIVED: 24/08/2023

2025 With Phase 3, AM

RECEIVED: 24/06/2023

Data Errors and Warnings

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

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	untitled	Standard Roundabout		1, 2, 3, 4	363.46	F

Junction Network

Driving side	Lighting	Network residual capacity (%)	First arm reaching threshold	Network delay (s)	Network LOS
Left	Normal/unknown	-33	3 - R394 (S)	363.46	F

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D5	2025 With Phase 3	AM	ONE HOUR	08:00	09:30	15	✓

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 - R394 (N)		ONE HOUR	✓	632	100.000
2 - Committed Development		ONE HOUR	✓	111	100.000
3 - R394 (S)		ONE HOUR	✓	833	100.000
4 - Proposed Development		ONE HOUR	✓	0	100.000

Origin-Destination Data

Demand (Veh/hr)

		To			
		1 - R394 (N)	2 - Committed Development	3 - R394 (S)	4 - Proposed Development
From	1 - R394 (N)	0	24	608	0
	2 - Committed Development	63	0	48	0
	3 - R394 (S)	801	32	0	0
	4 - Proposed Development	0	0	0	0

Vehicle Mix

Heavy Vehicle Percentages

		To			
		1 - R394 (N)	2 - Committed Development	3 - R394 (S)	4 - Proposed Development
From	1 - R394 (N)	0	0	4	0
	2 - Committed Development	0	0	0	0
	3 - R394 (S)	3	0	0	0
	4 - Proposed Development	0	0	0	0

RECEIVED: 24/08/2023

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (Veh)	Max 95th percentile Queue (Veh)	Max LOS	Average Demand (Veh/hr)	Total Junction Arrivals (Veh)
1 - R394 (N)	0.31	2.31	0.4	1.8	A	580	870
2 - Committed Development	0.26	10.42	0.4	1.1	B	102	353
3 - R394 (S)	1.30	685.75	138.7	200.0	F	764	1147
4 - Proposed Development	0.00	0.00	0.0	-1	A	0	0

Main Results for each time segment

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 - R394 (N)	476	119	23	2255	0.211	475	628	0.0	0.3	2.021	A
2 - Committed Development	84	21	457	558	0.150	83	41	0.0	0.2	7.567	A
3 - R394 (S)	627	157	47	712	0.881	605	493	0.0	5.6	29.235	D
4 - Proposed Development	0	0	652	479	0.000	0	0	0.0	0.0	0.000	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 - R394 (N)	568	142	26	2252	0.252	568	718	0.3	0.3	2.137	A
2 - Committed Development	100	25	546	520	0.192	100	48	0.2	0.2	8.557	A
3 - R394 (S)	749	187	56	708	1.057	687	589	5.6	21.0	86.116	F
4 - Proposed Development	0	0	744	440	0.000	0	0	0.0	0.0	0.000	A

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 - R394 (N)	696	174	27	2252	0.309	695	744	0.3	0.4	2.313	A
2 - Committed Development	122	31	669	468	0.261	122	53	0.2	0.3	10.389	B
3 - R394 (S)	917	229	69	703	1.304	702	722	21.0	74.8	258.325	F
4 - Proposed Development	0	0	771	429	0.000	0	0	0.0	0.0	0.000	A

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 - R394 (N)	696	174	27	2252	0.309	696	745	0.4	0.4	2.313	A
2 - Committed Development	122	31	669	468	0.261	122	53	0.3	0.4	10.420	B
3 - R394 (S)	917	229	69	703	1.304	703	722	74.8	128.4	528.247	F
4 - Proposed Development	0	0	772	428	0.000	0	0	0.0	0.0	0.000	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 - R394 (N)	568	142	27	2252	0.252	569	737	0.4	0.3	2.140	A
2 - Committed Development	100	25	547	520	0.192	100	49	0.4	0.2	8.594	A
3 - R394 (S)	749	187	57	708	1.058	708	590	128.4	138.7	685.745	F
4 - Proposed Development	0	0	764	431	0.000	0	0	0.0	0.0	0.000	A

09:15 - 09:30

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 - R394 (N)	476	119	27	2252	0.211	476	727	0.3	0.3	2.027	A
2 - Committed Development	84	21	458	557	0.150	84	45	0.2	0.2	7.605	A
3 - R394 (S)	627	157	48	712	0.881	707	494	138.7	118.8	656.670	F
4 - Proposed Development	0	0	754	436	0.000	0	0	0.0	0.0	0.000	A

Queue Variation Results for each time segment

08:00 - 08:15

Arm	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1 - R394 (N)	0.27	0.00	0.00	0.27	0.27			N/A	N/A
2 - Committed Development	0.17	0.00	0.00	0.17	0.17			N/A	N/A
3 - R394 (S)	5.63	0.03	0.34	11.23	30.41			N/A	N/A
4 - Proposed Development	0.00	0.00	0.00	0.00	0.00			N/A	N/A

08:15 - 08:30

Arm	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1 - R394 (N)	0.34	0.00	0.00	0.34	0.34			N/A	N/A
2 - Committed Development	0.23	0.00	0.00	0.23	0.23			N/A	N/A
3 - R394 (S)	20.98	0.30	10.72	53.83	74.47			N/A	N/A
4 - Proposed Development	0.00	0.00	0.00	0.00	0.00			N/A	N/A

08:30 - 08:45

Arm	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1 - R394 (N)	0.45	0.03	0.25	0.45	0.48			N/A	N/A
2 - Committed Development	0.35	0.03	0.26	0.46	0.49			N/A	N/A
3 - R394 (S)	74.84	29.99	69.69	117.84	134.57			N/A	N/A
4 - Proposed Development	0.00	0.00	0.00	0.00	0.00			N/A	N/A

08:45 - 09:00

Arm	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1 - R394 (N)	0.45	0.03	0.32	1.39	1.76			N/A	N/A
2 - Committed Development	0.35	0.03	0.32	1.08	1.08			N/A	N/A
3 - R394 (S)	128.41	>199	>199	>199	>199			N/A	N/A
4 - Proposed Development	0.00	0.00	0.00	0.00	0.00			N/A	N/A

09:00 - 09:15

Arm	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1 - R394 (N)	0.34	0.00	0.00	0.34	0.34			N/A	N/A
2 - Committed Development	0.24	0.00	0.00	0.24	0.24			N/A	N/A
3 - R394 (S)	138.74	>199	>199	>199	>199			N/A	N/A
4 - Proposed Development	0.00	0.00	0.00	0.00	0.00			N/A	N/A

09:15 - 09:30

Arm	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1 - R394 (N)	0.27	0.00	0.00	0.27	0.27			N/A	N/A
2 - Committed Development	0.18	0.00	0.00	0.18	0.18			N/A	N/A
3 - R394 (S)	118.84	>199	>199	>199	>199			N/A	N/A
4 - Proposed Development	0.00	0.00	0.00	0.00	0.00			N/A	N/A

RECEIVED: 24/08/2023

2025 With Phase 3, PM

RECEIVED: 24/06/2023

Data Errors and Warnings

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

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	untitled	Standard Roundabout		1, 2, 3, 4	21.05	C

Junction Network

Driving side	Lighting	Network residual capacity (%)	First arm reaching threshold	Network delay (s)	Network LOS
Left	Normal/unknown	-5	3 - R394 (S)	21.05	C

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D6	2025 With Phase 3	PM	ONE HOUR	16:45	18:15	15	✓

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 - R394 (N)		ONE HOUR	✓	803	100.000
2 - Committed Development		ONE HOUR	✓	111	100.000
3 - R394 (S)		ONE HOUR	✓	587	100.000
4 - Proposed Development		ONE HOUR	✓	0	100.000

Origin-Destination Data

Demand (Veh/hr)

		To			
		1 - R394 (N)	2 - Committed Development	3 - R394 (S)	4 - Proposed Development
From	1 - R394 (N)	0	33	770	0
	2 - Committed Development	47	0	64	0
	3 - R394 (S)	563	24	0	0
	4 - Proposed Development	0	0	0	0

Vehicle Mix

Heavy Vehicle Percentages

		To			
		1 - R394 (N)	2 - Committed Development	3 - R394 (S)	4 - Proposed Development
From	1 - R394 (N)	0	0	2	0
	2 - Committed Development	0	0	0	0
	3 - R394 (S)	3	0	0	0
	4 - Proposed Development	0	0	0	0

Results

RECEIVED: 24/08/2023

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (Veh)	Max 95th percentile Queue (Veh)	Max LOS	Average Demand (Veh/hr)	Total Junction Arrivals (Veh)
1 - R394 (N)	0.39	2.55	0.6	2.7	A	737	1105
2 - Committed Development	0.31	13.01	0.4	1.8	B	102	353
3 - R394 (S)	0.91	47.60	8.0	42.3	E	539	808
4 - Proposed Development	0.00	0.00	0.0	-1	A	0	0

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 - R394 (N)	605	151	18	2302	0.263	603	453	0.0	0.4	2.117	A
2 - Committed Development	84	21	578	511	0.164	83	43	0.0	0.2	8.391	A
3 - R394 (S)	442	110	35	717	0.617	436	626	0.0	1.6	12.551	B
4 - Proposed Development	0	0	471	555	0.000	0	0	0.0	0.0	0.000	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 - R394 (N)	722	180	21	2299	0.314	721	544	0.4	0.5	2.282	A
2 - Committed Development	100	25	692	464	0.215	99	51	0.2	0.3	9.874	A
3 - R394 (S)	528	132	42	714	0.739	523	749	1.6	2.6	18.444	C
4 - Proposed Development	0	0	565	515	0.000	0	0	0.0	0.0	0.000	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 - R394 (N)	884	221	26	2296	0.385	883	655	0.5	0.6	2.548	A
2 - Committed Development	122	31	847	399	0.306	122	62	0.3	0.4	12.937	B
3 - R394 (S)	646	162	51	710	0.910	629	917	2.6	6.9	37.966	E
4 - Proposed Development	0	0	681	467	0.000	0	0	0.0	0.0	0.000	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 - R394 (N)	884	221	26	2295	0.385	884	668	0.6	0.6	2.550	A
2 - Committed Development	122	31	848	399	0.306	122	63	0.4	0.4	13.008	B
3 - R394 (S)	646	162	52	710	0.910	642	918	6.9	8.0	47.603	E
4 - Proposed Development	0	0	694	461	0.000	0	0	0.0	0.0	0.000	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 - R394 (N)	722	180	22	2298	0.314	723	567	0.6	0.5	2.285	A
2 - Committed Development	100	25	693	463	0.215	100	52	0.4	0.3	9.937	A
3 - R394 (S)	528	132	43	714	0.739	547	751	8.0	3.1	23.681	C
4 - Proposed Development	0	0	590	505	0.000	0	0	0.0	0.0	0.000	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 - R394 (N)	605	151	18	2301	0.263	605	465	0.5	0.4	2.122	A
2 - Committed Development	84	21	580	510	0.164	84	43	0.3	0.2	8.450	A
3 - R394 (S)	442	110	36	717	0.617	447	628	3.1	1.7	13.637	B
4 - Proposed Development	0	0	483	549	0.000	0	0	0.0	0.0	0.000	A

Queue Variation Results for each time segment

16:45 - 17:00

Arm	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1 - R394 (N)	0.36	0.00	0.00	0.36	0.36			N/A	N/A
2 - Committed Development	0.19	0.00	0.00	0.19	0.19			N/A	N/A
3 - R394 (S)	1.55	0.60	1.04	1.83	1.93			N/A	N/A
4 - Proposed Development	0.00	0.00	0.00	0.00	0.00			N/A	N/A

17:00 - 17:15

Arm	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1 - R394 (N)	0.46	0.00	0.00	0.46	0.46			N/A	N/A
2 - Committed Development	0.27	0.00	0.00	0.27	0.27			N/A	N/A
3 - R394 (S)	2.64	0.08	1.40	6.42	9.06			N/A	N/A
4 - Proposed Development	0.00	0.00	0.00	0.00	0.00			N/A	N/A

17:15 - 17:30

Arm	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1 - R394 (N)	0.62	0.03	0.25	0.62	0.62			N/A	N/A
2 - Committed Development	0.43	0.03	0.26	0.46	0.49			N/A	N/A
3 - R394 (S)	6.92	0.07	1.45	19.91	31.62			N/A	N/A
4 - Proposed Development	0.00	0.00	0.00	0.00	0.00			N/A	N/A

17:30 - 17:45

Arm	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1 - R394 (N)	0.63	0.03	0.29	1.08	2.69			N/A	N/A
2 - Committed Development	0.44	0.03	0.32	1.37	1.78			N/A	N/A
3 - R394 (S)	7.96	0.05	0.45	22.22	42.33			N/A	N/A
4 - Proposed Development	0.00	0.00	0.00	0.00	0.00			N/A	N/A

17:45 - 18:00

Arm	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1 - R394 (N)	0.46	0.00	0.00	0.46	0.46			N/A	N/A
2 - Committed Development	0.28	0.00	0.00	0.28	0.28			N/A	N/A
3 - R394 (S)	3.06	0.04	0.42	8.43	15.43			N/A	N/A
4 - Proposed Development	0.00	0.00	0.00	0.00	0.00			N/A	N/A

18:00 - 18:15

Arm	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1 - R394 (N)	0.36	0.00	0.00	0.36	0.36			N/A	N/A
2 - Committed Development	0.20	0.00	0.00	0.20	0.20			N/A	N/A
3 - R394 (S)	1.67	0.03	0.33	3.49	8.73			N/A	N/A
4 - Proposed Development	0.00	0.00	0.00	0.00	0.00			N/A	N/A

RECEIVED: 24/08/2023

2025 With Phase1&2&3, AM

RECEIVED: 24/06/2023

Data Errors and Warnings

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

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	untitled	Standard Roundabout		1, 2, 3, 4	389.37	F

Junction Network

Driving side	Lighting	Network residual capacity (%)	First arm reaching threshold	Network delay (s)	Network LOS
Left	Normal/unknown	-34	3 - R394 (S)	389.37	F

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D7	2025 With Phase1&2&3	AM	ONE HOUR	08:00	09:30	15	✓

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 - R394 (N)		ONE HOUR	✓	643	100.000
2 - Committed Development		ONE HOUR	✓	111	100.000
3 - R394 (S)		ONE HOUR	✓	847	100.000
4 - Proposed Development		ONE HOUR	✓	76	100.000

Origin-Destination Data

Demand (Veh/hr)

		To			
		1 - R394 (N)	2 - Committed Development	3 - R394 (S)	4 - Proposed Development
From	1 - R394 (N)	0	24	608	11
	2 - Committed Development	63	0	48	0
	3 - R394 (S)	801	32	0	14
	4 - Proposed Development	43	0	33	0

Vehicle Mix

Heavy Vehicle Percentages

		To			
		1 - R394 (N)	2 - Committed Development	3 - R394 (S)	4 - Proposed Development
From	1 - R394 (N)	0	0	4	0
	2 - Committed Development	0	0	0	0
	3 - R394 (S)	3	0	0	0
	4 - Proposed Development	0	0	0	0

Results

RECEIVED: 24/08/2023

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (Veh)	Max 95th percentile Queue (Veh)	Max LOS	Average Demand (Veh/hr)	Total Junction Arrivals (Veh)
1 - R394 (N)	0.32	2.37	0.5	1.9	A	590	885
2 - Committed Development	0.27	11.05	0.4	1.3	B	102	353
3 - R394 (S)	1.33	767.16	156.1	200.0	F	777	1166
4 - Proposed Development	0.19	10.24	0.2	1.1	B	70	105

Main Results for each time segment

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 - R394 (N)	484	121	48	2237	0.216	483	658	0.0	0.3	2.051	A
2 - Committed Development	84	21	490	545	0.153	83	41	0.0	0.2	7.786	A
3 - R394 (S)	638	159	55	709	0.899	612	517	0.0	6.3	31.742	D
4 - Proposed Development	57	14	649	480	0.119	57	18	0.0	0.1	8.500	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 - R394 (N)	578	145	56	2231	0.259	578	746	0.3	0.3	2.177	A
2 - Committed Development	100	25	586	504	0.198	100	48	0.2	0.2	8.899	A
3 - R394 (S)	761	190	66	705	1.081	688	619	6.3	24.6	97.407	F
4 - Proposed Development	68	17	734	444	0.154	68	21	0.1	0.2	9.561	A

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 - R394 (N)	708	177	63	2226	0.318	707	776	0.3	0.5	2.371	A
2 - Committed Development	122	31	717	448	0.273	122	53	0.2	0.4	11.013	B
3 - R394 (S)	933	233	81	699	1.335	698	758	24.6	83.3	290.288	F
4 - Proposed Development	84	21	755	435	0.192	83	24	0.2	0.2	10.220	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 - R394 (N)	708	177	63	2226	0.318	708	777	0.5	0.5	2.371	A
2 - Committed Development	122	31	718	448	0.273	122	53	0.4	0.4	11.053	B
3 - R394 (S)	933	233	81	699	1.335	698	759	83.3	141.8	587.052	F
4 - Proposed Development	84	21	756	435	0.192	84	24	0.2	0.2	10.244	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 - R394 (N)	578	145	56	2231	0.259	579	762	0.5	0.4	2.181	A
2 - Committed Development	100	25	587	503	0.198	100	48	0.4	0.2	8.940	A
3 - R394 (S)	761	190	67	704	1.081	704	620	141.8	156.1	767.159	F
4 - Proposed Development	68	17	749	438	0.156	69	22	0.2	0.2	9.753	A

09:15 - 09:30

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 - R394 (N)	484	121	52	2234	0.217	484	746	0.4	0.3	2.058	A
2 - Committed Development	84	21	491	544	0.154	84	45	0.3	0.2	7.832	A
3 - R394 (S)	638	159	56	709	0.900	704	519	156.1	139.5	755.964	F
4 - Proposed Development	57	14	740	442	0.130	57	20	0.2	0.2	9.374	A

Queue Variation Results for each time segment

08:00 - 08:15

Arm	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1 - R394 (N)	0.28	0.00	0.00	0.28	0.28			N/A	N/A
2 - Committed Development	0.18	0.00	0.00	0.18	0.18			N/A	N/A
3 - R394 (S)	6.33	0.03	0.32	8.19	30.75			N/A	N/A
4 - Proposed Development	0.13	0.00	0.00	0.13	0.13			N/A	N/A

08:15 - 08:30

Arm	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1 - R394 (N)	0.35	0.00	0.00	0.35	0.35			N/A	N/A
2 - Committed Development	0.24	0.00	0.00	0.24	0.24			N/A	N/A
3 - R394 (S)	24.57	0.24	11.20	65.29	92.22			N/A	N/A
4 - Proposed Development	0.18	0.00	0.00	0.18	0.18			N/A	N/A

08:30 - 08:45

Arm	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1 - R394 (N)	0.46	0.03	0.25	0.46	0.48			N/A	N/A
2 - Committed Development	0.37	0.03	0.26	0.46	0.49			N/A	N/A
3 - R394 (S)	83.30	30.77	76.88	134.79	155.21			N/A	N/A
4 - Proposed Development	0.23	0.03	0.26	0.46	0.49			N/A	N/A

08:45 - 09:00

Arm	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1 - R394 (N)	0.47	0.03	0.32	1.41	1.91			N/A	N/A
2 - Committed Development	0.37	0.03	0.32	1.25	1.31			N/A	N/A
3 - R394 (S)	141.82	>199	>199	>199	>199			N/A	N/A
4 - Proposed Development	0.24	0.03	0.29	0.76	1.15			N/A	N/A

09:00 - 09:15

Arm	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1 - R394 (N)	0.35	0.00	0.00	0.35	0.35			N/A	N/A
2 - Committed Development	0.25	0.00	0.00	0.25	0.25			N/A	N/A
3 - R394 (S)	156.15	>199	>199	>199	>199			N/A	N/A
4 - Proposed Development	0.19	0.00	0.00	0.19	0.19			N/A	N/A

09:15 - 09:30

Arm	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1 - R394 (N)	0.28	0.00	0.00	0.28	0.28			N/A	N/A
2 - Committed Development	0.18	0.00	0.00	0.18	0.18			N/A	N/A
3 - R394 (S)	139.48	>199	>199	>199	>199			N/A	N/A
4 - Proposed Development	0.15	0.00	0.00	0.15	0.15			N/A	N/A

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2025 With Phase1&2&3, PM

RECEIVED: 24/06/2023

Data Errors and Warnings

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

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	untitled	Standard Roundabout		1, 2, 3, 4	24.17	C

Junction Network

Driving side	Lighting	Network residual capacity (%)	First arm reaching threshold	Network delay (s)	Network LOS
Left	Normal/unknown	-7	3 - R394 (S)	24.17	C

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D8	2025 With Phase1&2&3	PM	ONE HOUR	16:45	18:15	15	✓

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 - R394 (N)		ONE HOUR	✓	817	100.000
2 - Committed Development		ONE HOUR	✓	111	100.000
3 - R394 (S)		ONE HOUR	✓	597	100.000
4 - Proposed Development		ONE HOUR	✓	76	100.000

Origin-Destination Data

Demand (Veh/hr)

		To			
		1 - R394 (N)	2 - Committed Development	3 - R394 (S)	4 - Proposed Development
From	1 - R394 (N)	0	33	770	14
	2 - Committed Development	47	0	64	0
	3 - R394 (S)	563	24	0	10
	4 - Proposed Development	32	0	44	0

Vehicle Mix

Heavy Vehicle Percentages

		To			
		1 - R394 (N)	2 - Committed Development	3 - R394 (S)	4 - Proposed Development
From	1 - R394 (N)	0	0	2	0
	2 - Committed Development	0	0	0	0
	3 - R394 (S)	3	0	0	0
	4 - Proposed Development	0	0	0	0

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Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (Veh)	Max 95th percentile Queue (Veh)	Max LOS	Average Demand (Veh/hr)	Total Junction Arrivals (Veh)
1 - R394 (N)	0.40	2.65	0.7	2.6	A	750	1125
2 - Committed Development	0.33	14.36	0.5	2.0	B	102	353
3 - R394 (S)	0.93	56.94	9.7	48.2	F	548	822
4 - Proposed Development	0.18	9.52	0.2	0.9	A	70	105

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 - R394 (N)	615	154	51	2277	0.270	614	477	0.0	0.4	2.163	A
2 - Committed Development	84	21	622	493	0.169	83	43	0.0	0.2	8.752	A
3 - R394 (S)	449	112	46	713	0.630	443	659	0.0	1.6	13.035	B
4 - Proposed Development	57	14	471	555	0.103	57	18	0.0	0.1	7.225	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 - R394 (N)	734	184	61	2269	0.324	734	572	0.4	0.5	2.346	A
2 - Committed Development	100	25	744	443	0.225	99	51	0.2	0.3	10.481	B
3 - R394 (S)	537	134	55	709	0.757	532	789	1.6	2.9	19.712	C
4 - Proposed Development	68	17	565	515	0.133	68	21	0.1	0.2	8.053	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 - R394 (N)	900	225	74	2258	0.398	899	687	0.5	0.7	2.647	A
2 - Committed Development	122	31	911	373	0.328	121	62	0.3	0.5	14.260	B
3 - R394 (S)	657	164	67	705	0.933	636	965	2.9	8.1	43.032	E
4 - Proposed Development	84	21	677	468	0.179	83	26	0.2	0.2	9.352	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 - R394 (N)	900	225	75	2258	0.398	900	701	0.7	0.7	2.650	A
2 - Committed Development	122	31	912	373	0.328	122	63	0.5	0.5	14.361	B
3 - R394 (S)	657	164	67	704	0.933	651	967	8.1	9.7	56.942	F
4 - Proposed Development	84	21	692	462	0.181	84	26	0.2	0.2	9.517	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 - R394 (N)	734	184	62	2267	0.324	735	601	0.7	0.5	2.352	A
2 - Committed Development	100	25	745	442	0.226	101	52	0.5	0.3	10.566	B
3 - R394 (S)	537	134	55	709	0.757	562	791	9.7	3.4	27.624	D
4 - Proposed Development	68	17	595	502	0.136	69	22	0.2	0.2	8.301	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 - R394 (N)	615	154	52	2276	0.270	616	490	0.5	0.4	2.170	A
2 - Committed Development	84	21	624	492	0.170	84	43	0.3	0.2	8.821	A
3 - R394 (S)	449	112	46	713	0.631	456	662	3.4	1.8	14.350	B
4 - Proposed Development	57	14	484	549	0.104	57	18	0.2	0.1	7.326	A

Queue Variation Results for each time segment

16:45 - 17:00

Arm	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1 - R394 (N)	0.37	0.00	0.00	0.37	0.37			N/A	N/A
2 - Committed Development	0.20	0.00	0.00	0.20	0.20			N/A	N/A
3 - R394 (S)	1.64	0.62	1.16	1.90	2.00			N/A	N/A
4 - Proposed Development	0.11	0.00	0.00	0.11	0.11			N/A	N/A

17:00 - 17:15

Arm	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1 - R394 (N)	0.48	0.00	0.00	0.48	0.48			N/A	N/A
2 - Committed Development	0.29	0.00	0.00	0.29	0.29			N/A	N/A
3 - R394 (S)	2.87	0.09	1.48	7.01	9.95			N/A	N/A
4 - Proposed Development	0.15	0.00	0.00	0.15	0.15			N/A	N/A

17:15 - 17:30

Arm	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1 - R394 (N)	0.66	0.03	0.25	0.66	0.66			N/A	N/A
2 - Committed Development	0.48	0.03	0.26	0.48	0.49			N/A	N/A
3 - R394 (S)	8.13	0.09	2.11	22.73	34.19			N/A	N/A
4 - Proposed Development	0.22	0.03	0.26	0.46	0.49			N/A	N/A

17:30 - 17:45

Arm	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1 - R394 (N)	0.66	0.03	0.28	0.89	2.65			N/A	N/A
2 - Committed Development	0.48	0.03	0.31	1.43	2.00			N/A	N/A
3 - R394 (S)	9.71	0.06	1.10	28.30	48.16			N/A	N/A
4 - Proposed Development	0.22	0.03	0.27	0.49	0.88			N/A	N/A

17:45 - 18:00

Arm	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1 - R394 (N)	0.48	0.00	0.00	0.48	0.48			N/A	N/A
2 - Committed Development	0.30	0.00	0.00	0.30	0.30			N/A	N/A
3 - R394 (S)	3.40	0.04	0.42	9.39	17.30			N/A	N/A
4 - Proposed Development	0.16	0.00	0.00	0.16	0.16			N/A	N/A

18:00 - 18:15

Arm	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1 - R394 (N)	0.37	0.00	0.00	0.37	0.37			N/A	N/A
2 - Committed Development	0.21	0.00	0.00	0.21	0.21			N/A	N/A
3 - R394 (S)	1.77	0.03	0.32	3.51	9.30			N/A	N/A
4 - Proposed Development	0.12	0.00	0.00	0.12	0.12			N/A	N/A

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2030 No Development, AM

RECEIVED: 24/06/2023

Data Errors and Warnings

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

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	untitled	Standard Roundabout		1, 2, 3, 4	441.96	F

Junction Network

Driving side	Lighting	Network residual capacity (%)	First arm reaching threshold	Network delay (s)	Network LOS
Left	Normal/unknown	-35	3 - R394 (S)	441.96	F

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D9	2030 No Development	AM	ONE HOUR	08:00	09:30	15	✓

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 - R394 (N)		ONE HOUR	✓	672	100.000
2 - Committed Development		ONE HOUR	✓	0	100.000
3 - R394 (S)		ONE HOUR	✓	884	100.000
4 - Proposed Development		ONE HOUR	✓	0	100.000

Origin-Destination Data

Demand (Veh/hr)

		To			
		1 - R394 (N)	2 - Committed Development	3 - R394 (S)	4 - Proposed Development
From	1 - R394 (N)	0	0	672	0
	2 - Committed Development	0	0	0	0
	3 - R394 (S)	884	0	0	0
	4 - Proposed Development	0	0	0	0

Vehicle Mix

Heavy Vehicle Percentages

		To			
		1 - R394 (N)	2 - Committed Development	3 - R394 (S)	4 - Proposed Development
From	1 - R394 (N)	0	0	5	0
	2 - Committed Development	0	0	0	0
	3 - R394 (S)	3	0	0	0
	4 - Proposed Development	0	0	0	0

Results

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Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (Veh)	Max 95th percentile Queue (Veh)	Max LOS	Average Demand (Veh/hr)	Total Junction Arrivals (Veh)
1 - R394 (N)	0.33	2.39	0.5	2.1	A	617	925
2 - Committed Development	0.00	0.00	0.0	~1	A	0	0
3 - R394 (S)	1.33	782.61	165.1	200.0	F	811	1217
4 - Proposed Development	0.00	0.00	0.0	~1	A	0	0

Main Results for each time segment

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 - R394 (N)	506	126	0	2248	0.225	505	638	0.0	0.3	2.064	A
2 - Committed Development	0	0	505	535	0.000	0	0	0.0	0.0	0.000	A
3 - R394 (S)	666	166	0	730	0.912	638	505	0.0	6.9	32.848	D
4 - Proposed Development	0	0	638	484	0.000	0	0	0.0	0.0	0.000	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 - R394 (N)	604	151	0	2248	0.269	604	715	0.3	0.4	2.189	A
2 - Committed Development	0	0	604	493	0.000	0	0	0.0	0.0	0.000	A
3 - R394 (S)	795	199	0	730	1.089	715	604	6.9	26.8	101.061	F
4 - Proposed Development	0	0	715	451	0.000	0	0	0.0	0.0	0.000	A

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 - R394 (N)	740	185	0	2248	0.329	739	729	0.4	0.5	2.386	A
2 - Committed Development	0	0	739	435	0.000	0	0	0.0	0.0	0.000	A
3 - R394 (S)	973	243	0	730	1.334	729	739	26.8	87.9	294.759	F
4 - Proposed Development	0	0	729	445	0.000	0	0	0.0	0.0	0.000	A

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 - R394 (N)	740	185	0	2248	0.329	740	730	0.5	0.5	2.386	A
2 - Committed Development	0	0	740	435	0.000	0	0	0.0	0.0	0.000	A
3 - R394 (S)	973	243	0	730	1.334	730	740	87.9	148.8	592.463	F
4 - Proposed Development	0	0	730	445	0.000	0	0	0.0	0.0	0.000	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 - R394 (N)	604	151	0	2248	0.269	605	730	0.5	0.4	2.190	A
2 - Committed Development	0	0	605	493	0.000	0	0	0.0	0.0	0.000	A
3 - R394 (S)	795	199	0	730	1.089	730	605	148.8	165.1	781.902	F
4 - Proposed Development	0	0	730	445	0.000	0	0	0.0	0.0	0.000	A

09:15 - 09:30

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 - R394 (N)	506	126	0	2248	0.225	506	725	0.4	0.3	2.066	A
2 - Committed Development	0	0	506	535	0.000	0	0	0.0	0.0	0.000	A
3 - R394 (S)	666	166	0	730	0.912	725	506	165.1	150.1	782.611	F
4 - Proposed Development	0	0	725	447	0.000	0	0	0.0	0.0	0.000	A

Queue Variation Results for each time segment

08:00 - 08:15

Arm	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1 - R394 (N)	0.29	0.00	0.00	0.29	0.29			N/A	N/A
2 - Committed Development	0.00	0.00	0.00	0.00	0.00			N/A	N/A
3 - R394 (S)	6.93	0.03	0.31	7.02	31.54			N/A	N/A
4 - Proposed Development	0.00	0.00	0.00	0.00	0.00			N/A	N/A

08:15 - 08:30

Arm	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1 - R394 (N)	0.37	0.00	0.00	0.37	0.37			N/A	N/A
2 - Committed Development	0.00	0.00	0.00	0.00	0.00			N/A	N/A
3 - R394 (S)	26.80	0.21	11.14	72.76	104.33			N/A	N/A
4 - Proposed Development	0.00	0.00	0.00	0.00	0.00			N/A	N/A

08:30 - 08:45

Arm	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1 - R394 (N)	0.49	0.03	0.25	0.49	0.49			N/A	N/A
2 - Committed Development	0.00	0.00	0.00	0.00	0.00			N/A	N/A
3 - R394 (S)	87.92	30.01	80.39	145.78	169.11			N/A	N/A
4 - Proposed Development	0.00	0.00	0.00	0.00	0.00			N/A	N/A

08:45 - 09:00

Arm	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1 - R394 (N)	0.49	0.03	0.31	1.42	2.12			N/A	N/A
2 - Committed Development	0.00	0.00	0.00	0.00	0.00			N/A	N/A
3 - R394 (S)	148.84	>199	>199	>199	>199			N/A	N/A
4 - Proposed Development	0.00	0.00	0.00	0.00	0.00			N/A	N/A

09:00 - 09:15

Arm	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1 - R394 (N)	0.37	0.00	0.00	0.37	0.37			N/A	N/A
2 - Committed Development	0.00	0.00	0.00	0.00	0.00			N/A	N/A
3 - R394 (S)	165.13	>199	>199	>199	>199			N/A	N/A
4 - Proposed Development	0.00	0.00	0.00	0.00	0.00			N/A	N/A

09:15 - 09:30

Arm	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1 - R394 (N)	0.29	0.00	0.00	0.29	0.29			N/A	N/A
2 - Committed Development	0.00	0.00	0.00	0.00	0.00			N/A	N/A
3 - R394 (S)	150.15	>199	>199	>199	>199			N/A	N/A
4 - Proposed Development	0.00	0.00	0.00	0.00	0.00			N/A	N/A

RECEIVED: 24/08/2023

2030 No Development, PM

RECEIVED: 24/06/2023

Data Errors and Warnings

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

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	untitled	Standard Roundabout		1, 2, 3, 4	25.75	D

Junction Network

Driving side	Lighting	Network residual capacity (%)	First arm reaching threshold	Network delay (s)	Network LOS
Left	Normal/unknown	-7	3 - R394 (S)	25.75	D

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D10	2030 No Development	PM	ONE HOUR	16:45	18:15	15	✓

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 - R394 (N)		ONE HOUR	✓	849	100.000
2 - Committed Development		ONE HOUR	✓	0	100.000
3 - R394 (S)		ONE HOUR	✓	621	100.000
4 - Proposed Development		ONE HOUR	✓	0	100.000

Origin-Destination Data

Demand (Veh/hr)

		To			
		1 - R394 (N)	2 - Committed Development	3 - R394 (S)	4 - Proposed Development
From	1 - R394 (N)	0	0	849	0
	2 - Committed Development	0	0	0	0
	3 - R394 (S)	621	0	0	0
	4 - Proposed Development	0	0	0	0

Vehicle Mix

Heavy Vehicle Percentages

		To			
		1 - R394 (N)	2 - Committed Development	3 - R394 (S)	4 - Proposed Development
From	1 - R394 (N)	0	0	2	0
	2 - Committed Development	0	0	0	0
	3 - R394 (S)	3	0	0	0
	4 - Proposed Development	0	0	0	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (Veh)	Max 95th percentile Queue (Veh)	Max LOS	Average Demand (Veh/hr)	Total Junction Arrivals (Veh)
1 - R394 (N)	0.40	2.61	0.7	2.6	A	779	1169
2 - Committed Development	0.00	0.00	0.0	-1	A	0	0
3 - R394 (S)	0.94	57.08	10.1	50.0	F	570	855
4 - Proposed Development	0.00	0.00	0.0	-1	A	0	0

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 - R394 (N)	639	160	0	2314	0.276	638	461	0.0	0.4	2.145	A
2 - Committed Development	0	0	638	486	0.000	0	0	0.0	0.0	0.000	A
3 - R394 (S)	468	117	0	730	0.641	461	638	0.0	1.7	13.065	B
4 - Proposed Development	0	0	461	558	0.000	0	0	0.0	0.0	0.000	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 - R394 (N)	763	191	0	2314	0.330	763	553	0.4	0.5	2.320	A
2 - Committed Development	0	0	763	434	0.000	0	0	0.0	0.0	0.000	A
3 - R394 (S)	558	140	0	730	0.765	553	763	1.7	3.0	19.784	C
4 - Proposed Development	0	0	553	519	0.000	0	0	0.0	0.0	0.000	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
2 - Committed Development	0	0	934	363	0.000	0	0	0.0	0.0	0.000	A
3 - R394 (S)	684	171	0	730	0.937	662	934	3.0	8.5	42.948	E
4 - Proposed Development	0	0	662	474	0.000	0	0	0.0	0.0	0.000	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 - R394 (N)	935	234	0	2314	0.404	935	677	0.7	0.7	2.609	A
2 - Committed Development	0	0	935	363	0.000	0	0	0.0	0.0	0.000	A
3 - R394 (S)	684	171	0	730	0.937	677	935	8.5	10.1	57.082	F
4 - Proposed Development	0	0	677	467	0.000	0	0	0.0	0.0	0.000	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 - R394 (N)	763	191	0	2314	0.330	764	585	0.7	0.5	2.324	A
2 - Committed Development	0	0	764	434	0.000	0	0	0.0	0.0	0.000	A
3 - R394 (S)	558	140	0	730	0.765	585	764	10.1	3.6	28.109	D
4 - Proposed Development	0	0	585	506	0.000	0	0	0.0	0.0	0.000	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 - R394 (N)	639	160	0	2314	0.276	640	474	0.5	0.4	2.150	A
2 - Committed Development	0	0	640	486	0.000	0	0	0.0	0.0	0.000	A
3 - R394 (S)	468	117	0	730	0.641	474	640	3.6	1.9	14.444	B
4 - Proposed Development	0	0	474	552	0.000	0	0	0.0	0.0	0.000	A

Queue Variation Results for each time segment

16:45 - 17:00

Arm	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1 - R394 (N)	0.38	0.00	0.00	0.38	0.38			N/A	N/A
2 - Committed Development	0.00	0.00	0.00	0.00	0.00			N/A	N/A
3 - R394 (S)	1.71	0.63	1.23	1.95	2.34			N/A	N/A
4 - Proposed Development	0.00	0.00	0.00	0.00	0.00			N/A	N/A

17:00 - 17:15

Arm	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1 - R394 (N)	0.49	0.00	0.00	0.49	0.49			N/A	N/A
2 - Committed Development	0.00	0.00	0.00	0.00	0.00			N/A	N/A
3 - R394 (S)	2.99	0.09	1.03	7.38	10.45			N/A	N/A
4 - Proposed Development	0.00	0.00	0.00	0.00	0.00			N/A	N/A

17:15 - 17:30

Arm	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1 - R394 (N)	0.67	0.03	0.25	0.67	0.67			N/A	N/A
2 - Committed Development	0.00	0.00	0.00	0.00	0.00			N/A	N/A
3 - R394 (S)	8.45	0.09	2.32	23.58	35.31			N/A	N/A
4 - Proposed Development	0.00	0.00	0.00	0.00	0.00			N/A	N/A

17:30 - 17:45

Arm	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1 - R394 (N)	0.68	0.03	0.28	0.77	2.57			N/A	N/A
2 - Committed Development	0.00	0.00	0.00	0.00	0.00			N/A	N/A
3 - R394 (S)	10.14	0.06	1.23	29.64	49.99			N/A	N/A
4 - Proposed Development	0.00	0.00	0.00	0.00	0.00			N/A	N/A

17:45 - 18:00

Arm	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1 - R394 (N)	0.49	0.00	0.00	0.49	0.49			N/A	N/A
2 - Committed Development	0.00	0.00	0.00	0.00	0.00			N/A	N/A
3 - R394 (S)	3.57	0.04	0.43	9.87	18.17			N/A	N/A
4 - Proposed Development	0.00	0.00	0.00	0.00	0.00			N/A	N/A

18:00 - 18:15

Arm	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1 - R394 (N)	0.38	0.00	0.00	0.38	0.38			N/A	N/A
2 - Committed Development	0.00	0.00	0.00	0.00	0.00			N/A	N/A
3 - R394 (S)	1.85	0.03	0.33	3.73	9.75			N/A	N/A
4 - Proposed Development	0.00	0.00	0.00	0.00	0.00			N/A	N/A

RECEIVED: 24/08/2023

2030 With Phase 3, AM

RECEIVED: 24/06/2023

Data Errors and Warnings

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

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	untitled	Standard Roundabout		1, 2, 3, 4	592.67	F

Junction Network

Driving side	Lighting	Network residual capacity (%)	First arm reaching threshold	Network delay (s)	Network LOS
Left	Normal/unknown	-39	3 - R394 (S)	592.67	F

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D11	2030 With Phase 3	AM	ONE HOUR	08:00	09:30	15	✓

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 - R394 (N)		ONE HOUR	✓	696	100.000
2 - Committed Development		ONE HOUR	✓	111	100.000
3 - R394 (S)		ONE HOUR	✓	916	100.000
4 - Proposed Development		ONE HOUR	✓	0	100.000

Origin-Destination Data

Demand (Veh/hr)

		To			
		1 - R394 (N)	2 - Committed Development	3 - R394 (S)	4 - Proposed Development
From	1 - R394 (N)	0	24	672	0
	2 - Committed Development	63	0	48	0
	3 - R394 (S)	884	32	0	0
	4 - Proposed Development	0	0	0	0

Vehicle Mix

Heavy Vehicle Percentages

		To			
		1 - R394 (N)	2 - Committed Development	3 - R394 (S)	4 - Proposed Development
From	1 - R394 (N)	0	0	5	0
	2 - Committed Development	0	0	0	0
	3 - R394 (S)	3	0	0	0
	4 - Proposed Development	0	0	0	0

Results

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Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (Veh)	Max 95th percentile Queue (Veh)	Max LOS	Average Demand (Veh/hr)	Total Junction Arrivals (Veh)
1 - R394 (N)	0.34	2.45	0.5	2.4	A	639	958
2 - Committed Development	0.28	11.52	0.4	1.4	B	102	353
3 - R394 (S)	1.43	1118.00	222.4	222.4	F	841	1261
4 - Proposed Development	0.00	0.00	0.0	-1	A	0	0

Main Results for each time segment

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 - R394 (N)	524	131	23	2234	0.235	523	673	0.0	0.3	2.103	A
2 - Committed Development	84	21	505	535	0.156	83	41	0.0	0.2	7.940	A
3 - R394 (S)	690	172	47	712	0.969	649	541	0.0	10.2	43.387	E
4 - Proposed Development	0	0	696	460	0.000	0	0	0.0	0.0	0.000	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 - R394 (N)	626	156	25	2233	0.280	625	734	0.3	0.4	2.239	A
2 - Committed Development	100	25	604	493	0.202	100	46	0.2	0.3	9.141	A
3 - R394 (S)	823	206	56	708	1.163	702	647	10.2	40.7	146.235	F
4 - Proposed Development	0	0	758	434	0.000	0	0	0.0	0.0	0.000	A

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 - R394 (N)	766	192	25	2233	0.343	766	747	0.4	0.5	2.454	A
2 - Committed Development	122	31	739	435	0.281	122	51	0.3	0.4	11.472	B
3 - R394 (S)	1009	252	69	703	1.434	703	792	40.7	117.1	414.299	F
4 - Proposed Development	0	0	772	428	0.000	0	0	0.0	0.0	0.000	A

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 - R394 (N)	766	192	25	2233	0.343	766	748	0.5	0.5	2.454	A
2 - Committed Development	122	31	740	435	0.281	122	51	0.4	0.4	11.518	B
3 - R394 (S)	1009	252	69	703	1.434	703	793	117.1	193.5	800.436	F
4 - Proposed Development	0	0	772	428	0.000	0	0	0.0	0.0	0.000	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 - R394 (N)	626	156	25	2233	0.280	626	740	0.5	0.4	2.243	A
2 - Committed Development	100	25	605	493	0.203	100	46	0.4	0.3	9.186	A
3 - R394 (S)	823	206	57	708	1.163	708	648	193.5	222.4	1063.633	F
4 - Proposed Development	0	0	765	431	0.000	0	0	0.0	0.0	0.000	A

09:15 - 09:30

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 - R394 (N)	524	131	25	2233	0.235	524	731	0.4	0.3	2.109	A
2 - Committed Development	84	21	506	535	0.156	84	43	0.3	0.2	7.988	A
3 - R394 (S)	690	172	48	712	0.969	709	542	222.4	217.7	1118.004	F
4 - Proposed Development	0	0	756	435	0.000	0	0	0.0	0.0	0.000	A

Queue Variation Results for each time segment

08:00 - 08:15

Arm	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1 - R394 (N)	0.31	0.00	0.00	0.31	0.31			N/A	N/A
2 - Committed Development	0.18	0.00	0.00	0.18	0.18			N/A	N/A
3 - R394 (S)	10.24	0.03	0.27	10.24	10.24			N/A	N/A
4 - Proposed Development	0.00	0.00	0.00	0.00	0.00			N/A	N/A

08:15 - 08:30

Arm	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1 - R394 (N)	0.39	0.00	0.00	0.39	0.39			N/A	N/A
2 - Committed Development	0.25	0.00	0.00	0.25	0.25			N/A	N/A
3 - R394 (S)	40.67	>199	>199	>199	>199			N/A	N/A
4 - Proposed Development	0.00	0.00	0.00	0.00	0.00			N/A	N/A

08:30 - 08:45

Arm	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1 - R394 (N)	0.52	0.03	0.25	0.52	0.52			N/A	N/A
2 - Committed Development	0.38	0.03	0.26	0.46	0.49			N/A	N/A
3 - R394 (S)	117.11	>199	>199	>199	>199			N/A	N/A
4 - Proposed Development	0.00	0.00	0.00	0.00	0.00			N/A	N/A

08:45 - 09:00

Arm	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1 - R394 (N)	0.52	0.03	0.30	1.40	2.40			N/A	N/A
2 - Committed Development	0.39	0.03	0.32	1.28	1.45			N/A	N/A
3 - R394 (S)	193.50	>199	>199	>199	>199			N/A	N/A
4 - Proposed Development	0.00	0.00	0.00	0.00	0.00			N/A	N/A

09:00 - 09:15

Arm	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1 - R394 (N)	0.39	0.00	0.00	0.39	0.39			N/A	N/A
2 - Committed Development	0.26	0.00	0.00	0.26	0.26			N/A	N/A
3 - R394 (S)	222.39	>199	>199	>199	>199			N/A	N/A
4 - Proposed Development	0.00	0.00	0.00	0.00	0.00			N/A	N/A

09:15 - 09:30

Arm	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1 - R394 (N)	0.31	0.00	0.00	0.31	0.31			N/A	N/A
2 - Committed Development	0.19	0.00	0.00	0.19	0.19			N/A	N/A
3 - R394 (S)	217.66	>199	>199	>199	>199			N/A	N/A
4 - Proposed Development	0.00	0.00	0.00	0.00	0.00			N/A	N/A

RECEIVED: 24/08/2023

2030 With Phase 3, PM

RECEIVED: 24/06/2023

Data Errors and Warnings

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

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	untitled	Standard Roundabout		1, 2, 3, 4	40.91	E

Junction Network

Driving side	Lighting	Network residual capacity (%)	First arm reaching threshold	Network delay (s)	Network LOS
Left	Normal/unknown	-13	3 - R394 (S)	40.91	E

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	2030 With Phase 3	PM	ONE HOUR	16:45	18:15	15	✓

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 - R394 (N)		ONE HOUR	✓	882	100.000
2 - Committed Development		ONE HOUR	✓	111	100.000
3 - R394 (S)		ONE HOUR	✓	645	100.000
4 - Proposed Development		ONE HOUR	✓	0	100.000

Origin-Destination Data

Demand (Veh/hr)

		To			
		1 - R394 (N)	2 - Committed Development	3 - R394 (S)	4 - Proposed Development
From	1 - R394 (N)	0	33	849	0
	2 - Committed Development	47	0	64	0
	3 - R394 (S)	621	24	0	0
	4 - Proposed Development	0	0	0	0

Vehicle Mix

Heavy Vehicle Percentages

		To			
		1 - R394 (N)	2 - Committed Development	3 - R394 (S)	4 - Proposed Development
From	1 - R394 (N)	0	0	2	0
	2 - Committed Development	0	0	0	0
	3 - R394 (S)	3	0	0	0
	4 - Proposed Development	0	0	0	0

Results

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Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (Veh)	Max 95th percentile Queue (Veh)	Max LOS	Average Demand (Veh/hr)	Total Junction Arrivals (Veh)
1 - R394 (N)	0.42	2.72	0.7	2.3	A	809	1214
2 - Committed Development	0.34	14.96	0.5	2.2	B	102	353
3 - R394 (S)	1.00	96.98	18.8	64.9	F	592	888
4 - Proposed Development	0.00	0.00	0.0	-1	A	0	0

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 - R394 (N)	664	166	18	2302	0.288	662	495	0.0	0.4	2.194	A
2 - Committed Development	84	21	638	486	0.172	83	43	0.0	0.2	8.902	A
3 - R394 (S)	486	121	35	717	0.677	478	685	0.0	2.0	14.609	B
4 - Proposed Development	0	0	513	537	0.000	0	0	0.0	0.0	0.000	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 - R394 (N)	793	198	21	2299	0.345	792	593	0.4	0.5	2.389	A
2 - Committed Development	100	25	763	434	0.230	99	51	0.2	0.3	10.739	B
3 - R394 (S)	580	145	42	714	0.812	573	820	2.0	3.8	24.231	C
4 - Proposed Development	0	0	615	494	0.000	0	0	0.0	0.0	0.000	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 - R394 (N)	971	243	25	2296	0.423	970	698	0.5	0.7	2.714	A
2 - Committed Development	122	31	934	363	0.337	121	61	0.3	0.5	14.850	B
3 - R394 (S)	710	178	51	710	1.000	671	1004	3.8	13.5	61.460	F
4 - Proposed Development	0	0	723	449	0.000	0	0	0.0	0.0	0.000	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 - R394 (N)	971	243	26	2295	0.423	971	715	0.7	0.7	2.717	A
2 - Committed Development	122	31	935	363	0.337	122	62	0.5	0.5	14.962	B
3 - R394 (S)	710	178	52	710	1.000	689	1005	13.5	18.8	96.983	F
4 - Proposed Development	0	0	741	441	0.000	0	0	0.0	0.0	0.000	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 - R394 (N)	793	198	24	2297	0.345	794	654	0.7	0.5	2.395	A
2 - Committed Development	100	25	764	434	0.230	101	53	0.5	0.3	10.832	B
3 - R394 (S)	580	145	43	714	0.812	635	822	18.8	5.1	56.069	F
4 - Proposed Development	0	0	677	468	0.000	0	0	0.0	0.0	0.000	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 - R394 (N)	664	166	19	2301	0.289	665	514	0.5	0.4	2.199	A
2 - Committed Development	84	21	640	486	0.172	84	43	0.3	0.2	8.974	A
3 - R394 (S)	486	121	36	717	0.678	497	688	5.1	2.2	17.206	C
4 - Proposed Development	0	0	533	528	0.000	0	0	0.0	0.0	0.000	A

Queue Variation Results for each time segment

16:45 - 17:00

Arm	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1 - R394 (N)	0.40	0.00	0.00	0.40	0.40			N/A	N/A
2 - Committed Development	0.21	0.00	0.00	0.21	0.21			N/A	N/A
3 - R394 (S)	2.00	0.64	1.42	2.79	3.20			N/A	N/A
4 - Proposed Development	0.00	0.00	0.00	0.00	0.00			N/A	N/A

17:00 - 17:15

Arm	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1 - R394 (N)	0.52	0.06	0.64	1.33	1.41			N/A	N/A
2 - Committed Development	0.29	0.00	0.00	0.29	0.29			N/A	N/A
3 - R394 (S)	3.82	0.11	1.55	9.43	13.20			N/A	N/A
4 - Proposed Development	0.00	0.00	0.00	0.00	0.00			N/A	N/A

17:15 - 17:30

Arm	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1 - R394 (N)	0.73	0.03	0.25	0.73	0.73			N/A	N/A
2 - Committed Development	0.50	0.03	0.26	0.50	0.50			N/A	N/A
3 - R394 (S)	13.49	0.45	8.20	31.88	42.42			N/A	N/A
4 - Proposed Development	0.00	0.00	0.00	0.00	0.00			N/A	N/A

17:30 - 17:45

Arm	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1 - R394 (N)	0.73	0.03	0.28	0.73	2.29			N/A	N/A
2 - Committed Development	0.50	0.03	0.31	1.45	2.18			N/A	N/A
3 - R394 (S)	18.83	0.33	10.12	47.38	64.89			N/A	N/A
4 - Proposed Development	0.00	0.00	0.00	0.00	0.00			N/A	N/A

17:45 - 18:00

Arm	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1 - R394 (N)	0.53	0.53	1.00	1.40	1.45			N/A	N/A
2 - Committed Development	0.30	0.00	0.00	0.30	0.30			N/A	N/A
3 - R394 (S)	5.14	0.05	0.48	14.69	25.84			N/A	N/A
4 - Proposed Development	0.00	0.00	0.00	0.00	0.00			N/A	N/A

18:00 - 18:15

Arm	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1 - R394 (N)	0.41	0.00	0.00	0.41	0.41			N/A	N/A
2 - Committed Development	0.21	0.00	0.00	0.21	0.21			N/A	N/A
3 - R394 (S)	2.21	0.03	0.32	3.88	11.48			N/A	N/A
4 - Proposed Development	0.00	0.00	0.00	0.00	0.00			N/A	N/A

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2030 With Phase1&2&3, AM

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Data Errors and Warnings

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

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	untitled	Standard Roundabout		1, 2, 3, 4	625.71	F

Junction Network

Driving side	Lighting	Network residual capacity (%)	First arm reaching threshold	Network delay (s)	Network LOS
Left	Normal/unknown	-40	3 - R394 (S)	625.71	F

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D13	2030 With Phase1&2&3	AM	ONE HOUR	08:00	09:30	15	✓

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 - R394 (N)		ONE HOUR	✓	707	100.000
2 - Committed Development		ONE HOUR	✓	111	100.000
3 - R394 (S)		ONE HOUR	✓	930	100.000
4 - Proposed Development		ONE HOUR	✓	76	100.000

Origin-Destination Data

Demand (Veh/hr)

		To			
		1 - R394 (N)	2 - Committed Development	3 - R394 (S)	4 - Proposed Development
From	1 - R394 (N)	0	24	672	11
	2 - Committed Development	63	0	48	0
	3 - R394 (S)	884	32	0	14
	4 - Proposed Development	43	0	33	0

Vehicle Mix

Heavy Vehicle Percentages

		To			
		1 - R394 (N)	2 - Committed Development	3 - R394 (S)	4 - Proposed Development
From	1 - R394 (N)	0	0	5	0
	2 - Committed Development	0	0	0	0
	3 - R394 (S)	3	0	0	0
	4 - Proposed Development	0	0	0	0

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Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (Veh)	Max 95th percentile Queue (Veh)	Max LOS	Average Demand (Veh/hr)	Total Junction Arrivals (Veh)
1 - R394 (N)	0.35	2.52	0.5	2.5	A	649	973
2 - Committed Development	0.29	12.29	0.4	1.6	B	102	353
3 - R394 (S)	1.47	1228.32	241.5	241.5	F	853	1280
4 - Proposed Development	0.19	10.26	0.2	1.2	B	70	105

Main Results for each time segment

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 - R394 (N)	532	133	47	2217	0.240	531	700	0.0	0.3	2.134	A
2 - Committed Development	84	21	538	522	0.160	83	41	0.0	0.2	8.182	A
3 - R394 (S)	700	175	55	709	0.988	653	565	0.0	11.7	47.542	E
4 - Proposed Development	57	14	690	462	0.124	57	18	0.0	0.1	8.862	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 - R394 (N)	636	159	54	2212	0.287	635	760	0.3	0.4	2.283	A
2 - Committed Development	100	25	643	477	0.209	99	46	0.2	0.3	9.523	A
3 - R394 (S)	836	209	66	705	1.187	700	676	11.7	45.8	163.324	F
4 - Proposed Development	68	17	746	439	0.156	68	20	0.1	0.2	9.694	A

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 - R394 (N)	778	195	60	2207	0.353	778	780	0.4	0.5	2.517	A
2 - Committed Development	122	31	788	415	0.294	122	50	0.3	0.4	12.237	B
3 - R394 (S)	1024	256	81	699	1.465	698	828	45.8	127.2	455.841	F
4 - Proposed Development	84	21	757	435	0.192	83	23	0.2	0.2	10.241	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 - R394 (N)	778	195	60	2207	0.353	778	781	0.5	0.5	2.519	A
2 - Committed Development	122	31	788	415	0.295	122	50	0.4	0.4	12.294	B
3 - R394 (S)	1024	256	81	699	1.466	698	829	127.2	208.6	869.289	F
4 - Proposed Development	84	21	757	435	0.193	84	23	0.2	0.2	10.258	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 - R394 (N)	636	159	54	2212	0.287	636	765	0.5	0.4	2.287	A
2 - Committed Development	100	25	644	476	0.209	100	46	0.4	0.3	9.585	A
3 - R394 (S)	836	209	67	704	1.187	704	678	208.6	241.5	155.695	F
4 - Proposed Development	68	17	751	437	0.156	69	20	0.2	0.2	9.770	A

09:15 - 09:30

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 - R394 (N)	532	133	49	2215	0.240	533	751	0.4	0.3	2.141	A
2 - Committed Development	84	21	539	521	0.160	84	42	0.3	0.2	8.235	A
3 - R394 (S)	700	175	56	709	0.988	706	567	241.5	240.1	1228.318	F
4 - Proposed Development	57	14	743	440	0.130	57	19	0.2	0.2	9.402	A

Queue Variation Results for each time segment

08:00 - 08:15

Arm	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1 - R394 (N)	0.31	0.00	0.00	0.31	0.31			N/A	N/A
2 - Committed Development	0.19	0.00	0.00	0.19	0.19			N/A	N/A
3 - R394 (S)	11.72	0.03	0.27	11.72	11.72			N/A	N/A
4 - Proposed Development	0.14	0.00	0.00	0.14	0.14			N/A	N/A

08:15 - 08:30

Arm	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1 - R394 (N)	0.40	0.00	0.00	0.40	0.40			N/A	N/A
2 - Committed Development	0.26	0.00	0.00	0.26	0.26			N/A	N/A
3 - R394 (S)	45.82	>199	>199	>199	>199			N/A	N/A
4 - Proposed Development	0.18	0.00	0.00	0.18	0.18			N/A	N/A

08:30 - 08:45

Arm	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1 - R394 (N)	0.54	0.03	0.25	0.54	0.54			N/A	N/A
2 - Committed Development	0.41	0.03	0.26	0.46	0.49			N/A	N/A
3 - R394 (S)	127.22	>199	>199	>199	>199			N/A	N/A
4 - Proposed Development	0.24	0.03	0.26	0.46	0.49			N/A	N/A

08:45 - 09:00

Arm	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1 - R394 (N)	0.54	0.03	0.30	1.37	2.55			N/A	N/A
2 - Committed Development	0.41	0.03	0.32	1.32	1.63			N/A	N/A
3 - R394 (S)	208.58	>199	>199	>199	>199			N/A	N/A
4 - Proposed Development	0.24	0.03	0.29	0.77	1.15			N/A	N/A

09:00 - 09:15

Arm	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1 - R394 (N)	0.40	0.00	0.00	0.40	0.40			N/A	N/A
2 - Committed Development	0.27	0.00	0.00	0.27	0.27			N/A	N/A
3 - R394 (S)	241.52	>199	>199	>199	>199			N/A	N/A
4 - Proposed Development	0.19	0.00	0.00	0.19	0.19			N/A	N/A

09:15 - 09:30

Arm	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1 - R394 (N)	0.32	0.00	0.00	0.32	0.32			N/A	N/A
2 - Committed Development	0.19	0.00	0.00	0.19	0.19			N/A	N/A
3 - R394 (S)	240.11	>199	>199	>199	>199			N/A	N/A
4 - Proposed Development	0.15	0.00	0.00	0.15	0.15			N/A	N/A

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2030 With Phase1&2&3, PM

RECEIVED: 24/06/2023

Data Errors and Warnings

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

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	untitled	Standard Roundabout		1, 2, 3, 4	47.60	E

Junction Network

Driving side	Lighting	Network residual capacity (%)	First arm reaching threshold	Network delay (s)	Network LOS
Left	Normal/unknown	-15	3 - R394 (S)	47.60	E

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	2030 With Phase1&2&3	PM	ONE HOUR	16:45	18:15	15	✓

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 - R394 (N)		ONE HOUR	✓	896	100.000
2 - Committed Development		ONE HOUR	✓	111	100.000
3 - R394 (S)		ONE HOUR	✓	655	100.000
4 - Proposed Development		ONE HOUR	✓	76	100.000

Origin-Destination Data

Demand (Veh/hr)

		To			
		1 - R394 (N)	2 - Committed Development	3 - R394 (S)	4 - Proposed Development
From	1 - R394 (N)	0	33	849	14
	2 - Committed Development	47	0	64	0
	3 - R394 (S)	621	24	0	10
	4 - Proposed Development	32	0	44	0

Vehicle Mix

Heavy Vehicle Percentages

		To			
		1 - R394 (N)	2 - Committed Development	3 - R394 (S)	4 - Proposed Development
From	1 - R394 (N)	0	0	2	0
	2 - Committed Development	0	0	0	0
	3 - R394 (S)	3	0	0	0
	4 - Proposed Development	0	0	0	0

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Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (Veh)	Max 95th percentile Queue (Veh)	Max LOS	Average Demand (Veh/hr)	Total Junction Arrivals (Veh)
1 - R394 (N)	0.44	2.83	0.8	2.0	A	822	1233
2 - Committed Development	0.36	16.78	0.6	2.6	C	102	353
3 - R394 (S)	1.02	117.60	23.8	70.3	F	601	902
4 - Proposed Development	0.19	9.95	0.2	1.0	A	70	105

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 - R394 (N)	675	169	51	2276	0.296	673	518	0.0	0.4	2.243	A
2 - Committed Development	84	21	681	469	0.178	83	43	0.0	0.2	9.307	A
3 - R394 (S)	493	123	46	713	0.692	485	718	0.0	2.1	15.259	C
4 - Proposed Development	57	14	512	537	0.107	57	18	0.0	0.1	7.489	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 - R394 (N)	805	201	61	2268	0.355	805	621	0.4	0.5	2.460	A
2 - Committed Development	100	25	815	413	0.242	99	51	0.2	0.3	11.462	B
3 - R394 (S)	589	147	55	709	0.830	580	860	2.1	4.2	26.297	D
4 - Proposed Development	68	17	614	495	0.138	68	21	0.1	0.2	8.442	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 - R394 (N)	987	247	73	2259	0.437	986	725	0.5	0.8	2.827	A
2 - Committed Development	122	31	998	337	0.363	121	61	0.3	0.6	16.608	C
3 - R394 (S)	721	180	67	704	1.024	674	1052	4.2	16.1	70.109	F
4 - Proposed Development	84	21	715	452	0.185	83	26	0.2	0.2	9.753	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 - R394 (N)	987	247	74	2258	0.437	987	741	0.8	0.8	2.830	A
2 - Committed Development	122	31	999	337	0.363	122	62	0.6	0.6	16.782	C
3 - R394 (S)	721	180	67	704	1.024	690	1054	16.1	23.8	117.599	F
4 - Proposed Development	84	21	731	445	0.188	84	26	0.2	0.2	9.955	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 - R394 (N)	805	201	64	2266	0.355	806	696	0.8	0.6	2.469	A
2 - Committed Development	100	25	816	412	0.242	101	54	0.6	0.3	11.585	B
3 - R394 (S)	589	147	55	709	0.830	659	862	23.8	6.3	78.794	F
4 - Proposed Development	68	17	692	462	0.148	69	23	0.2	0.2	9.159	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 - R394 (N)	675	169	52	2275	0.296	675	542	0.6	0.4	2.249	A
2 - Committed Development	84	21	683	468	0.179	84	44	0.3	0.2	9.395	A
3 - R394 (S)	493	123	46	713	0.692	509	721	6.3	2.4	18.828	C
4 - Proposed Development	57	14	536	527	0.109	57	18	0.2	0.1	7.673	A

Queue Variation Results for each time segment

16:45 - 17:00

Arm	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1 - R394 (N)	0.42	0.00	0.00	0.42	0.42			N/A	N/A
2 - Committed Development	0.21	0.00	0.00	0.21	0.21			N/A	N/A
3 - R394 (S)	2.12	0.62	1.50	3.04	3.72			N/A	N/A
4 - Proposed Development	0.12	0.00	0.00	0.12	0.12			N/A	N/A

17:00 - 17:15

Arm	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1 - R394 (N)	0.55	0.07	0.72	1.34	1.42			N/A	N/A
2 - Committed Development	0.31	0.00	0.00	0.31	0.31			N/A	N/A
3 - R394 (S)	4.21	0.12	1.81	10.37	14.44			N/A	N/A
4 - Proposed Development	0.16	0.00	0.00	0.16	0.16			N/A	N/A

17:15 - 17:30

Arm	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1 - R394 (N)	0.77	0.03	0.25	0.77	0.77			N/A	N/A
2 - Committed Development	0.55	0.03	0.26	0.55	0.55			N/A	N/A
3 - R394 (S)	16.09	1.13	11.24	35.30	45.41			N/A	N/A
4 - Proposed Development	0.22	0.03	0.26	0.46	0.49			N/A	N/A

17:30 - 17:45

Arm	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1 - R394 (N)	0.77	0.03	0.27	0.77	2.00			N/A	N/A
2 - Committed Development	0.56	0.03	0.31	1.04	2.59			N/A	N/A
3 - R394 (S)	23.83	1.33	16.25	54.04	70.30			N/A	N/A
4 - Proposed Development	0.23	0.03	0.28	0.54	1.02			N/A	N/A

17:45 - 18:00

Arm	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1 - R394 (N)	0.55	0.55	1.00	1.40	1.45			N/A	N/A
2 - Committed Development	0.32	0.00	0.00	0.32	0.32			N/A	N/A
3 - R394 (S)	6.27	0.06	0.90	18.14	30.35			N/A	N/A
4 - Proposed Development	0.18	0.00	0.00	0.18	0.18			N/A	N/A

18:00 - 18:15

Arm	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1 - R394 (N)	0.42	0.00	0.00	0.42	0.42			N/A	N/A
2 - Committed Development	0.22	0.03	0.25	0.45	0.48			N/A	N/A
3 - R394 (S)	2.37	0.03	0.32	4.01	12.27			N/A	N/A
4 - Proposed Development	0.12	0.00	0.00	0.12	0.12			N/A	N/A

RECEIVED: 24/08/2023

2040 No Development, AM

RECEIVED: 24/06/2023

Data Errors and Warnings

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

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	untitled	Standard Roundabout		1, 2, 3, 4	806.93	F

Junction Network

Driving side	Lighting	Network residual capacity (%)	First arm reaching threshold	Network delay (s)	Network LOS
Left	Normal/unknown	-43	3 - R394 (S)	806.93	F

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D15	2040 No Development	AM	ONE HOUR	08:00	09:30	15	✓

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 - R394 (N)		ONE HOUR	✓	761	100.000
2 - Committed Development		ONE HOUR	✓	0	100.000
3 - R394 (S)		ONE HOUR	✓	999	100.000
4 - Proposed Development		ONE HOUR	✓	0	100.000

Origin-Destination Data

Demand (Veh/hr)

		To			
		1 - R394 (N)	2 - Committed Development	3 - R394 (S)	4 - Proposed Development
From	1 - R394 (N)	0	0	761	0
	2 - Committed Development	0	0	0	0
	3 - R394 (S)	999	0	0	0
	4 - Proposed Development	0	0	0	0

Vehicle Mix

Heavy Vehicle Percentages

		To			
		1 - R394 (N)	2 - Committed Development	3 - R394 (S)	4 - Proposed Development
From	1 - R394 (N)	0	0	5	0
	2 - Committed Development	0	0	0	0
	3 - R394 (S)	3	0	0	0
	4 - Proposed Development	0	0	0	0

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Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (Veh)	Max 95th percentile Queue (Veh)	Max LOS	Average Demand (Veh/hr)	Total Junction Arrivals (Veh)
1 - R394 (N)	0.37	2.55	0.6	2.7	A	698	1047
2 - Committed Development	0.00	0.00	0.0	~1	A	0	0
3 - R394 (S)	1.51	1431.57	291.8	194.2	F	917	1375
4 - Proposed Development	0.00	0.00	0.0	~1	A	0	0

Main Results for each time segment

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 - R394 (N)	573	143	0	2248	0.255	572	687	0.0	0.3	2.145	A
2 - Committed Development	0	0	572	507	0.000	0	0	0.0	0.0	0.000	A
3 - R394 (S)	752	188	0	730	1.030	687	572	0.0	16.2	57.355	F
4 - Proposed Development	0	0	687	463	0.000	0	0	0.0	0.0	0.000	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 - R394 (N)	684	171	0	2248	0.304	684	727	0.3	0.4	2.301	A
2 - Committed Development	0	0	684	459	0.000	0	0	0.0	0.0	0.000	A
3 - R394 (S)	898	225	0	730	1.231	727	684	16.2	59.0	199.598	F
4 - Proposed Development	0	0	727	446	0.000	0	0	0.0	0.0	0.000	A

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 - R394 (N)	838	209	0	2248	0.373	837	730	0.4	0.6	2.550	A
2 - Committed Development	0	0	837	393	0.000	0	0	0.0	0.0	0.000	A
3 - R394 (S)	1100	275	0	730	1.507	730	837	59.0	151.5	528.115	F
4 - Proposed Development	0	0	730	445	0.000	0	0	0.0	0.0	0.000	A

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 - R394 (N)	838	209	0	2248	0.373	838	730	0.6	0.6	2.552	A
2 - Committed Development	0	0	838	393	0.000	0	0	0.0	0.0	0.000	A
3 - R394 (S)	1100	275	0	730	1.507	730	838	151.5	244.1	982.796	F
4 - Proposed Development	0	0	730	445	0.000	0	0	0.0	0.0	0.000	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 - R394 (N)	684	171	0	2248	0.304	685	730	0.6	0.4	2.303	A
2 - Committed Development	0	0	685	458	0.000	0	0	0.0	0.0	0.000	A
3 - R394 (S)	898	225	0	730	1.231	730	685	244.1	286.1	1314.199	F
4 - Proposed Development	0	0	730	445	0.000	0	0	0.0	0.0	0.000	A

09:15 - 09:30

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 - R394 (N)	573	143	0	2248	0.255	573	730	0.4	0.3	2.149	A
2 - Committed Development	0	0	573	506	0.000	0	0	0.0	0.0	0.000	A
3 - R394 (S)	752	188	0	730	1.030	730	573	286.1	291.8	1431.573	F
4 - Proposed Development	0	0	730	445	0.000	0	0	0.0	0.0	0.000	A

Queue Variation Results for each time segment

08:00 - 08:15

Arm	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1 - R394 (N)	0.34	0.00	0.00	0.34	0.34			N/A	N/A
2 - Committed Development	0.00	0.00	0.00	0.00	0.00			N/A	N/A
3 - R394 (S)	16.18	>199	>199	>199	>199			N/A	N/A
4 - Proposed Development	0.00	0.00	0.00	0.00	0.00			N/A	N/A

08:15 - 08:30

Arm	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1 - R394 (N)	0.44	0.00	0.00	0.44	0.44			N/A	N/A
2 - Committed Development	0.00	0.00	0.00	0.00	0.00			N/A	N/A
3 - R394 (S)	58.96	>199	>199	>199	>199			N/A	N/A
4 - Proposed Development	0.00	0.00	0.00	0.00	0.00			N/A	N/A

08:30 - 08:45

Arm	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1 - R394 (N)	0.59	0.03	0.25	0.59	0.59			N/A	N/A
2 - Committed Development	0.00	0.00	0.00	0.00	0.00			N/A	N/A
3 - R394 (S)	151.53	>199	>199	>199	>199			N/A	N/A
4 - Proposed Development	0.00	0.00	0.00	0.00	0.00			N/A	N/A

08:45 - 09:00

Arm	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1 - R394 (N)	0.59	0.03	0.29	1.22	2.70			N/A	N/A
2 - Committed Development	0.00	0.00	0.00	0.00	0.00			N/A	N/A
3 - R394 (S)	244.06	>199	>199	>199	>199			N/A	N/A
4 - Proposed Development	0.00	0.00	0.00	0.00	0.00			N/A	N/A

09:00 - 09:15

Arm	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1 - R394 (N)	0.44	0.00	0.00	0.44	0.44			N/A	N/A
2 - Committed Development	0.00	0.00	0.00	0.00	0.00			N/A	N/A
3 - R394 (S)	286.13	>199	>199	>199	>199			N/A	N/A
4 - Proposed Development	0.00	0.00	0.00	0.00	0.00			N/A	N/A

09:15 - 09:30

Arm	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1 - R394 (N)	0.34	0.00	0.00	0.34	0.34			N/A	N/A
2 - Committed Development	0.00	0.00	0.00	0.00	0.00			N/A	N/A
3 - R394 (S)	291.76	>199	>199	>199	>199			N/A	N/A
4 - Proposed Development	0.00	0.00	0.00	0.00	0.00			N/A	N/A

RECEIVED: 24/08/2023

2040 No Development, PM

RECEIVED: 24/06/2023

Data Errors and Warnings

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

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	untitled	Standard Roundabout		1, 2, 3, 4	65.72	F

Junction Network

Driving side	Lighting	Network residual capacity (%)	First arm reaching threshold	Network delay (s)	Network LOS
Left	Normal/unknown	-18	3 - R394 (S)	65.72	F

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D16	2040 No Development	PM	ONE HOUR	16:45	18:15	15	✓

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 - R394 (N)		ONE HOUR	✓	959	100.000
2 - Committed Development		ONE HOUR	✓	0	100.000
3 - R394 (S)		ONE HOUR	✓	702	100.000
4 - Proposed Development		ONE HOUR	✓	0	100.000

Origin-Destination Data

Demand (Veh/hr)

		To			
		1 - R394 (N)	2 - Committed Development	3 - R394 (S)	4 - Proposed Development
From	1 - R394 (N)	0	0	959	0
	2 - Committed Development	0	0	0	0
	3 - R394 (S)	702	0	0	0
	4 - Proposed Development	0	0	0	0

Vehicle Mix

Heavy Vehicle Percentages

		To			
		1 - R394 (N)	2 - Committed Development	3 - R394 (S)	4 - Proposed Development
From	1 - R394 (N)	0	0	3	0
	2 - Committed Development	0	0	0	0
	3 - R394 (S)	3	0	0	0
	4 - Proposed Development	0	0	0	0

Results

RECEIVED: 24/08/2023

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (Veh)	Max 95th percentile Queue (Veh)	Max LOS	Average Demand (Veh/hr)	Total Junction Arrivals (Veh)
1 - R394 (N)	0.46	2.91	0.9	1.5	A	880	1320
2 - Committed Development	0.00	0.00	0.0	~1	A	0	0
3 - R394 (S)	1.06	151.53	34.0	81.4	F	644	966
4 - Proposed Development	0.00	0.00	0.0	~1	A	0	0

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 - R394 (N)	722	180	0	2292	0.315	720	519	0.0	0.5	2.289	A
2 - Committed Development	0	0	720	449	0.000	0	0	0.0	0.0	0.000	A
3 - R394 (S)	529	132	0	730	0.724	519	720	0.0	2.5	16.372	C
4 - Proposed Development	0	0	519	534	0.000	0	0	0.0	0.0	0.000	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 - R394 (N)	862	216	0	2292	0.376	862	620	0.5	0.6	2.515	A
2 - Committed Development	0	0	862	390	0.000	0	0	0.0	0.0	0.000	A
3 - R394 (S)	631	158	0	730	0.865	620	862	2.5	5.2	30.041	D
4 - Proposed Development	0	0	620	491	0.000	0	0	0.0	0.0	0.000	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 - R394 (N)	1056	264	0	2292	0.461	1055	708	0.6	0.8	2.908	A
2 - Committed Development	0	0	1055	308	0.000	0	0	0.0	0.0	0.000	A
3 - R394 (S)	773	193	0	730	1.059	708	1055	5.2	21.4	83.636	F
4 - Proposed Development	0	0	708	454	0.000	0	0	0.0	0.0	0.000	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 - R394 (N)	1056	264	0	2292	0.461	1056	722	0.8	0.9	2.912	A
2 - Committed Development	0	0	1056	308	0.000	0	0	0.0	0.0	0.000	A
3 - R394 (S)	773	193	0	730	1.059	722	1056	21.4	34.0	151.531	F
4 - Proposed Development	0	0	722	448	0.000	0	0	0.0	0.0	0.000	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 - R394 (N)	862	216	0	2292	0.376	863	709	0.9	0.6	2.521	A
2 - Committed Development	0	0	863	389	0.000	0	0	0.0	0.0	0.000	A
3 - R394 (S)	631	158	0	730	0.865	709	863	34.0	14.5	29.034	F
4 - Proposed Development	0	0	709	454	0.000	0	0	0.0	0.0	0.000	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 - R394 (N)	722	180	0	2292	0.315	723	575	0.6	0.5	2.296	A
2 - Committed Development	0	0	723	448	0.000	0	0	0.0	0.0	0.000	A
3 - R394 (S)	529	132	0	730	0.724	575	723	14.5	2.8	29.011	D
4 - Proposed Development	0	0	575	510	0.000	0	0	0.0	0.0	0.000	A

Queue Variation Results for each time segment

16:45 - 17:00

Arm	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1 - R394 (N)	0.46	0.00	0.00	0.46	0.46			N/A	N/A
2 - Committed Development	0.00	0.00	0.00	0.00	0.00			N/A	N/A
3 - R394 (S)	2.46	0.60	1.71	3.91	4.77			N/A	N/A
4 - Proposed Development	0.00	0.00	0.00	0.00	0.00			N/A	N/A

17:00 - 17:15

Arm	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1 - R394 (N)	0.60	0.08	0.78	1.36	1.43			N/A	N/A
2 - Committed Development	0.00	0.00	0.00	0.00	0.00			N/A	N/A
3 - R394 (S)	5.19	0.15	2.56	12.54	17.15			N/A	N/A
4 - Proposed Development	0.00	0.00	0.00	0.00	0.00			N/A	N/A

17:15 - 17:30

Arm	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1 - R394 (N)	0.85	0.03	0.25	0.85	0.85			N/A	N/A
2 - Committed Development	0.00	0.00	0.00	0.00	0.00			N/A	N/A
3 - R394 (S)	21.37	2.75	17.04	42.22	52.11			N/A	N/A
4 - Proposed Development	0.00	0.00	0.00	0.00	0.00			N/A	N/A

17:30 - 17:45

Arm	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1 - R394 (N)	0.85	0.03	0.27	0.85	1.43			N/A	N/A
2 - Committed Development	0.00	0.00	0.00	0.00	0.00			N/A	N/A
3 - R394 (S)	34.02	5.19	27.81	66.42	81.44			N/A	N/A
4 - Proposed Development	0.00	0.00	0.00	0.00	0.00			N/A	N/A

17:45 - 18:00

Arm	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1 - R394 (N)	0.61	0.55	1.00	1.40	1.45			N/A	N/A
2 - Committed Development	0.00	0.00	0.00	0.00	0.00			N/A	N/A
3 - R394 (S)	14.54	0.41	8.58	34.95	46.86			N/A	N/A
4 - Proposed Development	0.00	0.00	0.00	0.00	0.00			N/A	N/A

18:00 - 18:15

Arm	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1 - R394 (N)	0.46	0.00	0.00	0.46	0.46			N/A	N/A
2 - Committed Development	0.00	0.00	0.00	0.00	0.00			N/A	N/A
3 - R394 (S)	2.84	0.03	0.32	5.13	14.91			N/A	N/A
4 - Proposed Development	0.00	0.00	0.00	0.00	0.00			N/A	N/A

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2040 With Phase 3, AM

RECEIVED: 24/06/2023

Data Errors and Warnings

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

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	untitled	Standard Roundabout		1, 2, 3, 4	966.38	F

Junction Network

Driving side	Lighting	Network residual capacity (%)	First arm reaching threshold	Network delay (s)	Network LOS
Left	Normal/unknown	-46	3 - R394 (S)	966.38	F

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D17	2040 With Phase 3	AM	ONE HOUR	08:00	09:30	15	✓

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 - R394 (N)		ONE HOUR	✓	785	100.000
2 - Committed Development		ONE HOUR	✓	111	100.000
3 - R394 (S)		ONE HOUR	✓	1031	100.000
4 - Proposed Development		ONE HOUR	✓	0	100.000

Origin-Destination Data

Demand (Veh/hr)

		To			
		1 - R394 (N)	2 - Committed Development	3 - R394 (S)	4 - Proposed Development
From	1 - R394 (N)	0	24	761	0
	2 - Committed Development	63	0	48	0
	3 - R394 (S)	999	32	0	0
	4 - Proposed Development	0	0	0	0

Vehicle Mix

Heavy Vehicle Percentages

		To			
		1 - R394 (N)	2 - Committed Development	3 - R394 (S)	4 - Proposed Development
From	1 - R394 (N)	0	0	5	0
	2 - Committed Development	0	0	0	0
	3 - R394 (S)	3	0	0	0
	4 - Proposed Development	0	0	0	0

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Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (Veh)	Max 95th percentile Queue (Veh)	Max LOS	Average Demand (Veh/hr)	Total Junction Arrivals (Veh)
1 - R394 (N)	0.39	2.63	0.6	2.7	A	720	1080
2 - Committed Development	0.31	13.30	0.4	1.8	B	102	353
3 - R394 (S)	1.61	1813.73	365.4	194.4	F	946	1419
4 - Proposed Development	0.00	0.00	0.0	-1	A	0	0

Main Results for each time segment

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 - R394 (N)	591	148	21	2235	0.264	590	708	0.0	0.4	2.186	A
2 - Committed Development	84	21	572	507	0.165	83	39	0.0	0.2	8.474	A
3 - R394 (S)	776	194	47	712	1.090	683	607	0.0	23.4	75.793	F
4 - Proposed Development	0	0	730	446	0.000	0	0	0.0	0.0	0.000	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 - R394 (N)	706	176	22	2234	0.316	705	741	0.4	0.5	2.354	A
2 - Committed Development	100	25	684	459	0.218	99	44	0.2	0.3	10.009	B
3 - R394 (S)	927	232	56	708	1.309	707	727	23.4	78.4	271.869	F
4 - Proposed Development	0	0	763	432	0.000	0	0	0.0	0.0	0.000	A

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 - R394 (N)	864	216	22	2234	0.387	864	750	0.5	0.6	2.624	A
2 - Committed Development	122	31	837	393	0.311	122	48	0.3	0.4	13.227	B
3 - R394 (S)	1135	284	69	703	1.614	703	890	78.4	186.4	686.346	F
4 - Proposed Development	0	0	772	428	0.000	0	0	0.0	0.0	0.000	A

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 - R394 (N)	864	216	22	2234	0.387	864	751	0.6	0.6	2.626	A
2 - Committed Development	122	31	838	393	0.311	122	48	0.4	0.4	13.303	B
3 - R394 (S)	1135	284	69	703	1.615	703	891	186.4	294.5	1238.238	F
4 - Proposed Development	0	0	772	428	0.000	0	0	0.0	0.0	0.000	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 - R394 (N)	706	176	22	2234	0.316	706	743	0.6	0.5	2.356	A
2 - Committed Development	100	25	685	458	0.218	100	44	0.4	0.3	10.078	B
3 - R394 (S)	927	232	57	708	1.309	708	728	294.5	349.2	1639.261	F
4 - Proposed Development	0	0	765	431	0.000	0	0	0.0	0.0	0.000	A

09:15 - 09:30

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 - R394 (N)	591	148	22	2234	0.265	591	737	0.5	0.4	2.193	A
2 - Committed Development	84	21	573	506	0.165	84	40	0.3	0.2	8.534	A
3 - R394 (S)	776	194	48	712	1.091	712	610	349.2	365.4	1813.731	F
4 - Proposed Development	0	0	759	434	0.000	0	0	0.0	0.0	0.000	A

Queue Variation Results for each time segment
08:00 - 08:15

Arm	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1 - R394 (N)	0.36	0.00	0.00	0.36	0.36			N/A	N/A
2 - Committed Development	0.20	0.00	0.00	0.20	0.20			N/A	N/A
3 - R394 (S)	23.38	>199	>199	>199	>199			N/A	N/A
4 - Proposed Development	0.00	0.00	0.00	0.00	0.00			N/A	N/A

08:15 - 08:30

Arm	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1 - R394 (N)	0.46	0.00	0.00	0.46	0.46			N/A	N/A
2 - Committed Development	0.27	0.00	0.00	0.27	0.27			N/A	N/A
3 - R394 (S)	78.39	>199	>199	>199	>199			N/A	N/A
4 - Proposed Development	0.00	0.00	0.00	0.00	0.00			N/A	N/A

08:30 - 08:45

Arm	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1 - R394 (N)	0.63	0.03	0.25	0.63	0.63			N/A	N/A
2 - Committed Development	0.44	0.03	0.26	0.46	0.49			N/A	N/A
3 - R394 (S)	186.42	>199	>199	>199	>199			N/A	N/A
4 - Proposed Development	0.00	0.00	0.00	0.00	0.00			N/A	N/A

08:45 - 09:00

Arm	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1 - R394 (N)	0.63	0.03	0.29	1.04	2.67			N/A	N/A
2 - Committed Development	0.45	0.03	0.31	1.38	1.83			N/A	N/A
3 - R394 (S)	294.47	>199	>199	>199	>199			N/A	N/A
4 - Proposed Development	0.00	0.00	0.00	0.00	0.00			N/A	N/A

09:00 - 09:15

Arm	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1 - R394 (N)	0.46	0.00	0.00	0.46	0.46			N/A	N/A
2 - Committed Development	0.28	0.00	0.00	0.28	0.28			N/A	N/A
3 - R394 (S)	349.21	>199	>199	>199	>199			N/A	N/A
4 - Proposed Development	0.00	0.00	0.00	0.00	0.00			N/A	N/A

09:15 - 09:30

Arm	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1 - R394 (N)	0.36	0.00	0.00	0.36	0.36			N/A	N/A
2 - Committed Development	0.20	0.00	0.00	0.20	0.20			N/A	N/A
3 - R394 (S)	365.37	>199	>199	>199	>199			N/A	N/A
4 - Proposed Development	0.00	0.00	0.00	0.00	0.00			N/A	N/A

RECEIVED: 24/08/2023

2040 With Phase 3, PM

RECEIVED: 24/06/2023

Data Errors and Warnings

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

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	untitled	Standard Roundabout		1, 2, 3, 4	103.54	F

Junction Network

Driving side	Lighting	Network residual capacity (%)	First arm reaching threshold	Network delay (s)	Network LOS
Left	Normal/unknown	-23	3 - R394 (S)	103.54	F

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D18	2040 With Phase 3	PM	ONE HOUR	16:45	18:15	15	✓

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 - R394 (N)		ONE HOUR	✓	992	100.000
2 - Committed Development		ONE HOUR	✓	111	100.000
3 - R394 (S)		ONE HOUR	✓	726	100.000
4 - Proposed Development		ONE HOUR	✓	0	100.000

Origin-Destination Data

Demand (Veh/hr)

		To			
		1 - R394 (N)	2 - Committed Development	3 - R394 (S)	4 - Proposed Development
From	1 - R394 (N)	0	33	959	0
	2 - Committed Development	47	0	64	0
	3 - R394 (S)	702	24	0	0
	4 - Proposed Development	0	0	0	0

Vehicle Mix

Heavy Vehicle Percentages

		To			
		1 - R394 (N)	2 - Committed Development	3 - R394 (S)	4 - Proposed Development
From	1 - R394 (N)	0	0	3	0
	2 - Committed Development	0	0	0	0
	3 - R394 (S)	3	0	0	0
	4 - Proposed Development	3	0	0	0

Results

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Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (Veh)	Max 95th percentile Queue (Veh)	Max LOS	Average Demand (Veh/hr)	Total Junction Arrivals (Veh)
1 - R394 (N)	0.48	3.04	0.9	1.5	A	910	1365
2 - Committed Development	0.40	19.36	0.6	3.0	C	102	353
3 - R394 (S)	1.13	253.36	55.1	102.2	F	666	999
4 - Proposed Development	0.00	0.00	0.0	-1	A	0	0

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 - R394 (N)	747	187	18	2280	0.328	745	552	0.0	0.5	2.342	A
2 - Committed Development	84	21	720	449	0.186	83	42	0.0	0.2	9.802	A
3 - R394 (S)	547	137	35	717	0.763	535	768	0.0	2.9	18.753	C
4 - Proposed Development	0	0	570	509	0.000	0	0	0.0	0.0	0.000	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 - R394 (N)	892	223	21	2277	0.392	891	657	0.5	0.6	2.595	A
2 - Committed Development	100	25	862	390	0.256	99	51	0.2	0.3	12.380	B
3 - R394 (S)	653	163	42	714	0.914	636	919	2.9	7.2	39.191	E
4 - Proposed Development	0	0	678	464	0.000	0	0	0.0	0.0	0.000	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 - R394 (N)	1092	273	23	2276	0.480	1091	728	0.6	0.9	3.036	A
2 - Committed Development	122	31	1055	308	0.396	121	59	0.3	0.6	19.090	C
3 - R394 (S)	799	200	51	710	1.125	699	1125	7.2	32.1	117.334	F
4 - Proposed Development	0	0	751	434	0.000	0	0	0.0	0.0	0.000	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 - R394 (N)	1092	273	23	2276	0.480	1092	736	0.9	0.9	3.041	A
2 - Committed Development	122	31	1056	308	0.397	122	60	0.6	0.6	19.363	C
3 - R394 (S)	799	200	52	710	1.126	708	1126	32.1	55.1	234.151	F
4 - Proposed Development	0	0	759	430	0.000	0	0	0.0	0.0	0.000	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 - R394 (N)	892	223	23	2276	0.392	893	720	0.9	0.6	2.607	A
2 - Committed Development	100	25	863	389	0.257	101	53	0.6	0.4	12.552	B
3 - R394 (S)	653	163	43	714	0.915	701	921	55.1	43.0	253.365	F
4 - Proposed Development	0	0	744	437	0.000	0	0	0.0	0.0	0.000	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 - R394 (N)	747	187	23	2276	0.328	747	711	0.6	0.5	2.358	A
2 - Committed Development	84	21	723	448	0.187	84	48	0.4	0.2	9.904	A
3 - R394 (S)	547	137	36	716	0.763	699	771	43.0	5.0	131.732	F
4 - Proposed Development	0	0	734	441	0.000	0	0	0.0	0.0	0.000	A

Queue Variation Results for each time segment

16:45 - 17:00

Arm	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1 - R394 (N)	0.49	0.00	0.00	0.49	0.49			N/A	N/A
2 - Committed Development	0.23	0.00	0.00	0.23	0.23			N/A	N/A
3 - R394 (S)	2.94	0.39	1.90	5.50	6.87			N/A	N/A
4 - Proposed Development	0.00	0.00	0.00	0.00	0.00			N/A	N/A

17:00 - 17:15

Arm	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1 - R394 (N)	0.64	0.09	0.79	1.36	1.43			N/A	N/A
2 - Committed Development	0.34	0.00	0.00	0.34	0.34			N/A	N/A
3 - R394 (S)	7.17	0.30	4.26	16.50	21.88			N/A	N/A
4 - Proposed Development	0.00	0.00	0.00	0.00	0.00			N/A	N/A

17:15 - 17:30

Arm	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1 - R394 (N)	0.92	0.03	0.25	0.92	0.92			N/A	N/A
2 - Committed Development	0.63	0.03	0.26	0.63	0.63			N/A	N/A
3 - R394 (S)	32.14	9.55	28.69	54.52	63.84			N/A	N/A
4 - Proposed Development	0.00	0.00	0.00	0.00	0.00			N/A	N/A

17:30 - 17:45

Arm	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1 - R394 (N)	0.92	0.03	0.27	0.92	1.46			N/A	N/A
2 - Committed Development	0.65	0.03	0.31	1.22	3.03			N/A	N/A
3 - R394 (S)	55.09	20.30	50.71	88.80	102.20			N/A	N/A
4 - Proposed Development	0.00	0.00	0.00	0.00	0.00			N/A	N/A

17:45 - 18:00

Arm	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1 - R394 (N)	0.65	0.55	1.00	1.40	1.45			N/A	N/A
2 - Committed Development	0.35	0.03	0.27	0.48	0.62			N/A	N/A
3 - R394 (S)	43.03	14.09	38.97	71.55	83.19			N/A	N/A
4 - Proposed Development	0.00	0.00	0.00	0.00	0.00			N/A	N/A

18:00 - 18:15

Arm	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1 - R394 (N)	0.49	0.00	0.00	0.49	0.49			N/A	N/A
2 - Committed Development	0.23	0.03	0.25	0.45	0.48			N/A	N/A
3 - R394 (S)	4.99	0.04	0.42	13.58	26.52			N/A	N/A
4 - Proposed Development	0.00	0.00	0.00	0.00	0.00			N/A	N/A

RECEIVED: 24/08/2023

2040 With Phase1&2&3, AM

RECEIVED: 24/06/2023

Data Errors and Warnings

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

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	untitled	Standard Roundabout		1, 2, 3, 4	994.59	F

Junction Network

Driving side	Lighting	Network residual capacity (%)	First arm reaching threshold	Network delay (s)	Network LOS
Left	Normal/unknown	-47	3 - R394 (S)	994.59	F

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D19	2040 With Phase1&2&3	AM	ONE HOUR	08:00	09:30	15	✓

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 - R394 (N)		ONE HOUR	✓	796	100.000
2 - Committed Development		ONE HOUR	✓	111	100.000
3 - R394 (S)		ONE HOUR	✓	1045	100.000
4 - Proposed Development		ONE HOUR	✓	76	100.000

Origin-Destination Data

Demand (Veh/hr)

		To			
		1 - R394 (N)	2 - Committed Development	3 - R394 (S)	4 - Proposed Development
From	1 - R394 (N)	0	24	761	11
	2 - Committed Development	63	0	48	0
	3 - R394 (S)	999	32	0	14
	4 - Proposed Development	43	0	33	0

Vehicle Mix

Heavy Vehicle Percentages

		To			
		1 - R394 (N)	2 - Committed Development	3 - R394 (S)	4 - Proposed Development
From	1 - R394 (N)	0	0	5	0
	2 - Committed Development	0	0	0	0
	3 - R394 (S)	3	0	0	0
	4 - Proposed Development	0	0	0	0

Results

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Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (Veh)	Max 95th percentile Queue (Veh)	Max LOS	Average Demand (Veh/hr)	Total Junction Arrivals (Veh)
1 - R394 (N)	0.40	2.70	0.7	2.6	A	730	1096
2 - Committed Development	0.33	14.35	0.5	2.0	B	102	353
3 - R394 (S)	1.65	1934.99	389.4	194.4	F	959	1438
4 - Proposed Development	0.19	10.27	0.2	1.2	B	70	105

Main Results for each time segment

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 - R394 (N)	599	150	45	2218	0.270	598	732	0.0	0.4	2.220	A
2 - Committed Development	84	21	604	493	0.169	83	39	0.0	0.2	8.749	A
3 - R394 (S)	787	197	55	709	1.110	683	632	0.0	26.0	82.335	F
4 - Proposed Development	57	14	720	450	0.127	57	17	0.0	0.1	9.145	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 - R394 (N)	716	179	51	2213	0.323	715	767	0.4	0.5	2.403	A
2 - Committed Development	100	25	723	443	0.225	99	43	0.2	0.3	10.477	B
3 - R394 (S)	939	235	66	704	1.334	703	756	26.0	85.0	296.634	F
4 - Proposed Development	68	17	750	437	0.156	68	19	0.1	0.2	9.748	A

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 - R394 (N)	876	219	58	2208	0.397	876	784	0.5	0.7	2.700	A
2 - Committed Development	122	31	886	373	0.327	121	48	0.3	0.5	14.252	B
3 - R394 (S)	1151	288	81	699	1.647	699	926	85.0	198.0	737.560	F
4 - Proposed Development	84	21	758	434	0.193	83	21	0.2	0.2	10.257	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 - R394 (N)	876	219	58	2208	0.397	876	784	0.7	0.7	2.702	A
2 - Committed Development	122	31	886	373	0.328	122	48	0.5	0.5	14.352	B
3 - R394 (S)	1151	288	81	698	1.647	698	927	198.0	311.1	1318.876	F
4 - Proposed Development	84	21	758	434	0.193	84	21	0.2	0.2	10.273	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 - R394 (N)	716	179	51	2213	0.323	716	769	0.7	0.5	2.407	A
2 - Committed Development	100	25	724	442	0.226	101	43	0.5	0.3	10.562	B
3 - R394 (S)	939	235	67	704	1.334	704	758	311.1	369.9	1741.668	F
4 - Proposed Development	68	17	752	437	0.156	69	19	0.2	0.2	9.782	A

09:15 - 09:30

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 - R394 (N)	599	150	47	2217	0.270	600	757	0.5	0.4	2.228	A
2 - Committed Development	84	21	607	493	0.170	84	40	0.3	0.2	8.817	A
3 - R394 (S)	787	197	56	709	1.110	709	635	369.9	389.4	1934.994	F
4 - Proposed Development	57	14	747	439	0.130	57	18	0.2	0.2	9.444	A

Queue Variation Results for each time segment

08:00 - 08:15

Arm	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1 - R394 (N)	0.37	0.00	0.00	0.37	0.37			N/A	N/A
2 - Committed Development	0.20	0.00	0.00	0.20	0.20			N/A	N/A
3 - R394 (S)	26.02	>199	>199	>199	>199			N/A	N/A
4 - Proposed Development	0.14	0.00	0.00	0.14	0.14			N/A	N/A

08:15 - 08:30

Arm	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1 - R394 (N)	0.48	0.00	0.00	0.48	0.48			N/A	N/A
2 - Committed Development	0.29	0.00	0.00	0.29	0.29			N/A	N/A
3 - R394 (S)	85.03	>199	>199	>199	>199			N/A	N/A
4 - Proposed Development	0.18	0.00	0.00	0.18	0.18			N/A	N/A

08:30 - 08:45

Arm	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1 - R394 (N)	0.65	0.03	0.25	0.65	0.65			N/A	N/A
2 - Committed Development	0.48	0.03	0.26	0.48	0.49			N/A	N/A
3 - R394 (S)	198.03	>199	>199	>199	>199			N/A	N/A
4 - Proposed Development	0.24	0.03	0.26	0.46	0.49			N/A	N/A

08:45 - 09:00

Arm	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1 - R394 (N)	0.66	0.03	0.28	0.90	2.64			N/A	N/A
2 - Committed Development	0.48	0.03	0.31	1.42	2.00			N/A	N/A
3 - R394 (S)	311.07	>199	>199	>199	>199			N/A	N/A
4 - Proposed Development	0.24	0.03	0.29	0.78	1.16			N/A	N/A

09:00 - 09:15

Arm	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1 - R394 (N)	0.48	0.00	0.00	0.48	0.48			N/A	N/A
2 - Committed Development	0.30	0.00	0.00	0.30	0.30			N/A	N/A
3 - R394 (S)	369.87	>199	>199	>199	>199			N/A	N/A
4 - Proposed Development	0.19	0.00	0.00	0.19	0.19			N/A	N/A

09:15 - 09:30

Arm	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1 - R394 (N)	0.37	0.00	0.00	0.37	0.37			N/A	N/A
2 - Committed Development	0.21	0.00	0.00	0.21	0.21			N/A	N/A
3 - R394 (S)	389.42	>199	>199	>199	>199			N/A	N/A
4 - Proposed Development	0.15	0.00	0.00	0.15	0.15			N/A	N/A

RECEIVED: 24/08/2023

2040 With Phase1&2&3, PM

RECEIVED: 24/06/2023

Data Errors and Warnings

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

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	untitled	Standard Roundabout		1, 2, 3, 4	120.34	F

Junction Network

Driving side	Lighting	Network residual capacity (%)	First arm reaching threshold	Network delay (s)	Network LOS
Left	Normal/unknown	-24	3 - R394 (S)	120.34	F

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D20	2040 With Phase1&2&3	PM	ONE HOUR	16:45	18:15	15	✓

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 - R394 (N)		ONE HOUR	✓	1006	100.000
2 - Committed Development		ONE HOUR	✓	111	100.000
3 - R394 (S)		ONE HOUR	✓	736	100.000
4 - Proposed Development		ONE HOUR	✓	76	100.000

Origin-Destination Data

Demand (Veh/hr)

		To			
		1 - R394 (N)	2 - Committed Development	3 - R394 (S)	4 - Proposed Development
From	1 - R394 (N)	0	33	959	14
	2 - Committed Development	47	0	64	0
	3 - R394 (S)	702	24	0	10
	4 - Proposed Development	32	0	44	0

Vehicle Mix

Heavy Vehicle Percentages

		To			
		1 - R394 (N)	2 - Committed Development	3 - R394 (S)	4 - Proposed Development
From	1 - R394 (N)	0	0	3	0
	2 - Committed Development	0	0	0	0
	3 - R394 (S)	3	0	0	0
	4 - Proposed Development	0	0	0	0

Results

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Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (Veh)	Max 95th percentile Queue (Veh)	Max LOS	Average Demand (Veh/hr)	Total Junction Arrivals (Veh)
1 - R394 (N)	0.49	3.18	1.0	1.5	A	923	1385
2 - Committed Development	0.43	22.51	0.7	3.6	C	102	353
3 - R394 (S)	1.15	305.88	63.7	111.6	F	675	1013
4 - Proposed Development	0.19	10.11	0.2	1.1	B	70	105

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 - R394 (N)	757	189	50	2255	0.336	755	575	0.0	0.5	2.397	A
2 - Committed Development	84	21	763	431	0.194	83	42	0.0	0.2	10.294	B
3 - R394 (S)	554	139	45	713	0.777	541	801	0.0	3.2	19.779	C
4 - Proposed Development	57	14	569	513	0.111	57	18	0.0	0.1	7.877	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 - R394 (N)	904	226	60	2247	0.402	904	683	0.5	0.7	2.677	A
2 - Committed Development	100	25	914	368	0.271	99	51	0.2	0.4	13.350	B
3 - R394 (S)	662	165	55	709	0.933	642	958	3.2	8.2	43.492	E
4 - Proposed Development	68	17	675	469	0.146	68	21	0.1	0.2	8.980	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 - R394 (N)	1108	277	71	2239	0.495	1106	750	0.7	1.0	3.176	A
2 - Committed Development	122	31	1118	282	0.433	121	59	0.4	0.7	22.062	C
3 - R394 (S)	810	203	67	704	1.150	696	1173	8.2	36.7	132.024	F
4 - Proposed Development	84	21	738	443	0.189	83	25	0.2	0.2	10.017	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 - R394 (N)	1108	277	71	2239	0.495	1108	757	1.0	1.0	3.181	A
2 - Committed Development	122	31	1120	282	0.434	122	59	0.7	0.7	22.509	C
3 - R394 (S)	810	203	67	704	1.151	702	1175	36.7	63.7	268.901	F
4 - Proposed Development	84	21	745	440	0.190	84	25	0.2	0.2	10.111	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 - R394 (N)	904	226	62	2246	0.403	906	737	1.0	0.7	2.690	A
2 - Committed Development	100	25	916	368	0.271	101	52	0.7	0.4	13.588	B
3 - R394 (S)	662	165	55	709	0.933	698	961	63.7	54.6	305.880	F
4 - Proposed Development	68	17	731	445	0.153	69	22	0.2	0.2	9.562	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 - R394 (N)	757	189	56	2251	0.336	758	727	0.7	0.5	2.414	A
2 - Committed Development	84	21	766	430	0.194	84	48	0.4	0.2	10.418	B
3 - R394 (S)	554	139	46	713	0.778	700	804	54.6	18.2	192.884	F
4 - Proposed Development	57	14	726	447	0.128	57	20	0.2	0.1	9.232	A

Queue Variation Results for each time segment

16:45 - 17:00

Arm	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1 - R394 (N)	0.50	0.50	1.00	1.40	1.45			N/A	N/A
2 - Committed Development	0.24	0.00	0.00	0.24	0.24			N/A	N/A
3 - R394 (S)	3.16	0.17	1.73	6.80	8.97			N/A	N/A
4 - Proposed Development	0.12	0.00	0.00	0.12	0.12			N/A	N/A

17:00 - 17:15

Arm	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1 - R394 (N)	0.67	0.09	0.80	1.37	1.44			N/A	N/A
2 - Committed Development	0.36	0.00	0.00	0.36	0.36			N/A	N/A
3 - R394 (S)	8.19	0.31	4.85	19.03	25.34			N/A	N/A
4 - Proposed Development	0.17	0.00	0.00	0.17	0.17			N/A	N/A

17:15 - 17:30

Arm	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1 - R394 (N)	0.97	0.03	0.25	0.97	0.97			N/A	N/A
2 - Committed Development	0.73	0.03	0.26	0.73	0.93			N/A	N/A
3 - R394 (S)	36.73	12.58	33.41	60.11	69.60			N/A	N/A
4 - Proposed Development	0.23	0.03	0.26	0.46	0.49			N/A	N/A

17:30 - 17:45

Arm	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1 - R394 (N)	0.98	0.03	0.27	0.98	1.28			N/A	N/A
2 - Committed Development	0.75	0.03	0.31	1.42	3.64			N/A	N/A
3 - R394 (S)	63.70	27.04	59.66	98.26	111.57			N/A	N/A
4 - Proposed Development	0.23	0.03	0.28	0.68	1.10			N/A	N/A

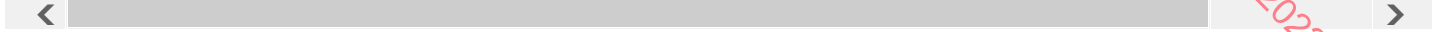
17:45 - 18:00

Arm	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1 - R394 (N)	0.68	0.55	1.00	1.40	1.45			N/A	N/A
2 - Committed Development	0.38	0.03	0.30	0.93	1.22			N/A	N/A
3 - R394 (S)	54.65	18.37	49.75	90.56	105.15			N/A	N/A
4 - Proposed Development	0.18	0.00	0.00	0.18	0.18			N/A	N/A

18:00 - 18:15

Arm	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1 - R394 (N)	0.51	0.51	1.00	1.40	1.45			N/A	N/A
2 - Committed Development	0.24	0.03	0.26	0.47	0.49			N/A	N/A
3 - R394 (S)	18.24	1.41	13.67	38.11	48.06			N/A	N/A
4 - Proposed Development	0.15	0.00	0.00	0.15	0.15			N/A	N/A

RECEIVED: 24/08/2023



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