Toongabbie Fitzwilliam Road and Wentworth Avenue Intersection Upgrade – Traffic Impact Assessment

Prepared for:
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Revision Schedule

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1 Introduction

1.1 Background

The City of Parramatta (COP) engaged Stantec Australia Pty Ltd (Stantec) to undertake the detailed design and documentation for the Toongabbie Local Road Network Enhancement (LRNE) project.

In February 2019, the NSW Government allocated $2 million to investigate transport improvements around the Wentworth Avenue Bridge and Toongabbie Station precinct. This initiative was driven by growing concerns over traffic congestion, particularly during peak periods, as well as safety risks and limited access for pedestrians and cyclists. A Strategic Business Case confirmed the severity of these issues and projected significant network deterioration by 2031 if left unaddressed. The transport study identified the intersections on either side of the Wentworth Avenue Bridge as key congestion points and recommended a series of localised upgrades to improve traffic flow, safety, and active transport connectivity in the area. The location of Toongabbie Local Road Network Enhancement project in the context of the wider Sydney network is shown in **Figure 1-1**.

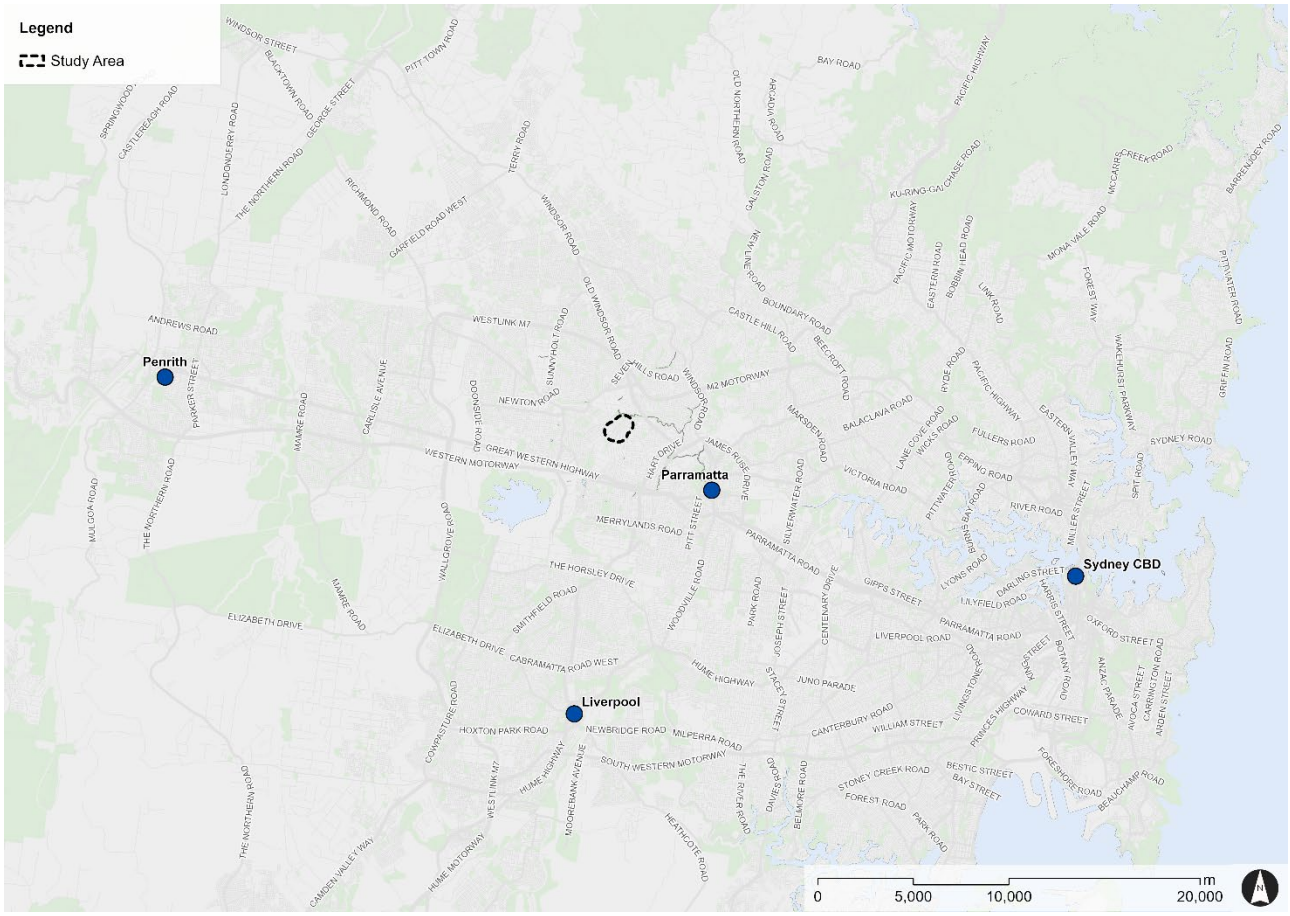


Figure 1-1: Site location

1.2 Project objectives

The objectives of this project are:

- Prepare detailed design and documentation of the proposed modifications for submission to City of Parramatta so that the project can proceed to the construction phase
- Coordinate with TfNSW to achieve warrant approval for signals at the intersection of Station Road / Fitzwilliam Road / Wentworth Avenue

1.3 Scope of work

The scope of work of the traffic impact assessment includes the following:

- Collect traffic survey data for one typical weekday during AM and PM peak periods for the following intersections:
    - » Station Road / Fitzwilliam Road / Wentworth Avenue
    - » Wentworth Avenue / Wentworth Avenue
    - » Wentworth Avenue / Cornelia Road / The Portico
    - » Cornelia Road / Junia Avenue
    - » The Portico / Portico Parade
    - » Aurelia Street / Portico Parade
- Develop, calibrate and validate existing base models in accordance with Traffic Modelling Guidelines (Roads and Maritime Services, 2013), SIDRA intersection 9.1 User Guide and traffic survey data
- Prepare future traffic demand for the opening year and 10 years post opening for AM and PM peak hours
- Undertake traffic modelling to determine the intersection performance for the existing and future traffic volumes with and without project.
- Report the impacts of the proposed design on the traffic and transport network

1.4 Purpose of this report

The purpose of this traffic impact assessment is to summarise the model development including calibration and validation outcomes, demand development and impacts of the proposed design on the traffic and transport network.

1.5 Stakeholders

The key stakeholders for this study include:

- City of Parramatta Council
- Cumberland City Council (CCC)
- Transport for NSW.

1.6 Report structure

The report includes the following sections:

- **Section 1: Introduction** provides an overview of the project including the background, project objectives, scope of work and the key stakeholders.
- **Section 2: Existing condition** provides a detailed analysis of the existing characteristics and features of the study area including land use, public transport and traffic behaviours.
- **Section 3: Input data** provides an overview of the components, processes and data used to inform the traffic modelling.
- **Section 4: Base Model Calibration and Validation** outlines the development, calibration and validation of the base model to ensure it reflects observed existing conditions.
- **Section 5: Operational Performance Assessment** presents the assessment of existing and future traffic conditions, including the modelling of project case.
- **Section 6: Results comparison** presents the comparison between the Future Base and Project Case scenarios for the future years 2027 and 2037.
- **Section 7: Conclusion** summarises the key findings of the results and proposed recommendation for COP's consideration.

2 Existing condition

2.1 Study area

The study area is located in Toongabbie which is within the LGA boundary of COP and CCC. The study corridor consists of 6 intersections along Wentworth Avenue from Station Road and Fitzwilliam Road, and further south-west along Wentworth Avenue to Cornelia Road and Portico Parade at the Toongabbie town centre. The study intersections are summarised in **Table 2-1**.

Table 2-1: Study intersection types

ID	Intersection	Type
1	Station Road / Fitzwilliam Road / Wentworth Avenue	Roundabout
2	Wentworth Avenue roundabout	Roundabout
3	Wentworth Avenue / Cornelia Road / The Portico	Signalised
4	Cornelia Road / Junia Avenue	Roundabout
5	The Portico / Portico Parade	Signalised
6	Aurelia Street / Portico Parade	Priority

Wentworth Avenue, Station Road, Fitzwilliam Road and Cornelia Road are classified as regional roads. All other roads within the study corridor are classified as local roads. The study intersections are shown in **Figure 2-1**.

Figure 2-1: Study intersections

2.2 Speed restrictions

At the study intersections, a speed limit of 60 km/h applies to Wentworth Avenue, Station Road, Fitzwilliam Road and Cornelia Road, while a speed limit of 50 km/h applies to Junia Avenue, The Portico, Portico Parade and Aurelia Street. **Figure 2-2** indicates the extent of speed limits on the roads at the study intersections and the surrounding area.

Figure 2-2: Speed limit restrictions

2.3 Land use

The area surrounding the study intersections comprises a mix of commercial, residential and recreational land uses. North-east of the rail line, low- and medium-density residential areas are situated along Wentworth Avenue, and low-density residential areas and the Toongabbie Sports Club are located along Station Road. Commercial land use is centred around the Toongabbie town centre which spans both sides of Toongabbie Station, whereby a higher concentration and broader distribution of retail and commercial businesses are located west of the station – including Portico Plaza Shopping Centre. Immediately west of the station is Portico Park which sits within the town centre. **Figure 2-3** shows the land uses surrounding the study intersections.

Figure 2-3: Land use

2.4 Transport infrastructure

Table 2-2 lists the main roads within the study area, their classification and describes their route and function.

2.4.1 Road network

Table 2-2: Main Roads within the study area

Road	TfNSW Classification[1]	Description
Wentworth Avenue	Regional	Wentworth Avenue is approximately 600 metres in length and is bound by Cornelia Road / The Portico and Station Road / Fitzwilliam Road. Wentworth Avenue is one lane in each direction with both divided and undivided segments. The speed limit is 60 kilometres per hour.
Station Road	Regional	Station Road is approximately 2.2 kilometres in length and is bound by Prospect Highway / Seven Hills Road and Wentworth Avenue. Station Road is one lane in each direction with both divided and undivided segments. The speed limit is 60 kilometres per hour.
Fitzwilliam Road	Regional	Fitzwilliam Road is approximately 1.8 kilometres in length and is bound by Old Windsor Road and Wentworth Avenue. Fitzwilliam Road is one lane in each direction with both divided and undivided segments. The speed limit is 60 kilometres per hour.
Cornelia Road	Regional	Cornelia Road is approximately 2.5 kilometres in length and is bound by Wentworth Avenue and Elam Drive. Cornelia Road is one lane in each direction with both divided and undivided segments. The speed limit is 60 kilometres per hour.
The Portico	Local	The Portico is approximately 70 metres in length and is bound by Wentworth Avenue and Portico Parade. The Portico is one lane in both direction with both divided and undivided segments. The speed limit is 50 kilometres per hour.
Portico Parade	Local	Portico Parade is approximately 1 kilometre in length and is bound by McCoy Street and Targo Road. Portico Parade is one lane in the eastbound direction and two lanes in the westbound direction with both divided and undivided segments. The speed limit is 50 kilometres per hour.

Road	TfNSW Classification[1]	Description
Aurelia Street	Local	Aurelia Street is approximately 470 metres in length and is bound by Octavia Street Portico Parade. Aurelia Street is an undivided road with one lane in each direction with a speed limit is 50 kilometres per hour.

[1]NSW Road Network Classifications Map (TfNSW, 2024)

2.4.2 Public transport

A number of public bus routes service the Toongabbie town centre, which are as follows:

- 705 – Parramatta to/ from Blacktown via Pendle Hill
- 711 – Parramatta to/ from Blacktown via Constitution Hill
- N70 - Penrith to/ from City Town Hall via Parramatta (Night Service)
- N71 – Richmond to/ from City Town Hall via Parramatta (Night Service)

The bus timetables for daytime regular bus routes 705 and 711 indicate an average frequency of 30 to 35 minutes on weekdays and Saturdays, and 55 minutes on Sundays and public holidays. Meanwhile, the night bus routes N70 and N71 operate at a frequency of 60 minutes on all days. A summary of the service information is provided in **Table 2-3.**

Table 2-3: Bus service information summary

Bus Route	Direction	Day of Week	First Service	Last Service	Number of Services	Average Frequency[1]
705	To Blacktown	Weekday	6:00 AM	10:48 PM	33	30
		Saturday	7:00 AM	10:00 PM	26	35
		Sunday & Public Holidays	7:41 AM	8:00 PM	14	55
	To Parramatta	Weekday	5:04 AM	9:33 PM	33	30
		Saturday	6:07 AM	8:49 PM	26	35
		Sunday & Public Holidays	7:05 AM	7:49 PM	14	55
711	To Blacktown	Weekday	4:53 AM	11:48 PM	41	30
		Saturday	7:12 AM	11:30 PM	31	30
		Sunday & Public Holidays	8:12 AM	10:30 PM	28	30
	To Parramatta	Weekday	4:36 AM	11:08 PM	40	30
		Saturday	5:45 AM	10:48 PM	32	30
		Sunday & Public Holidays	6:45 AM	9:50 PM	28	30
N70	To City Town Hall	Weekday	12:15 AM	3:15 AM	4	60
		Saturday	12:15 AM	3:15 AM	4	60
		Sunday & Public Holidays	12:15 AM	3:15 AM	4	60

	To Penrith	Weekday	12:59 AM	3:59 AM	4	60
		Saturday	12:59 AM	3:59 AM	4	60
		Sunday & Public Holidays	12:59 AM	3:59 AM	4	60
N71	To City Town Hall	Weekday	11:41 PM	3:41 AM	5	60
		Saturday	11:41 PM	3:41 AM	5	60
		Sunday & Public Holidays	11:41 PM	3:41 AM	5	60
	To Richmond	Weekday	12:29 AM	4:29 AM	5	60
		Saturday	12:29 AM	4:29 AM	5	60
		Sunday & Public Holidays	12:29 AM	4:29 AM	5	60

[1] Average frequency determined by calculating the average of the time difference between the first service and the last services. Values rounded to the nearest 5 minutes.
Source: Transport for NSW, accessed 10 July 2025

Toongabbie train station is located within the town centre, with access points via Portico Parade (west) and Wentworth Avenue (east). There are four operational platforms where commuters can catch two train lines. These are:

- **T1 Western Line** that operate between Emu Plains/ Richmond and Central Station.
- **T5 Cumberland Line** that operate between Richmond and Leppington.

The service information for T1 Western Line and T5 Cumberland Line are outlined in **Table 2-4**.

Table 2-4: Train service information summary

Train Line	Direction	Day of Week	First Service	Last Service	Number of Services	Average Frequency[1]
T1 Western Line	To Central	Weekday	3:09 AM	12:22 AM[2]	226	5
		Saturday	3:45 AM	12:18 AM[2]	202	5
	To Emu Plains or Richmond	Weekday	4:01 AM	12:51 AM[2]	206	5
		Saturday	4:24 AM	12:43 AM[2]	197	5
T5 Cumberland Line	To Leppington	Weekday	5:34 AM	11:22 PM	38	30
		Saturday	4:05 AM	11:35 PM	40	30
		Sunday & Public Holidays	4:05 AM	11:35 PM	41	30
	To Richmond	Weekday	6:13 AM	11:59 PM	39	25
		Saturday	4:23 AM	11:53 PM	40	30
		Sunday & Public Holidays	4:23 AM	11:23 PM	39	30

[1] Average frequency determined by calculating the average of the time difference between the first service and the last services. Values rounded to the nearest 5 minutes.
[2] The next day
Source: Transport for NSW, accessed 10 July 2025

Public transport facilities surrounding the study intersections are summarised in and **Figure 2-4** and **Figure 2-5**

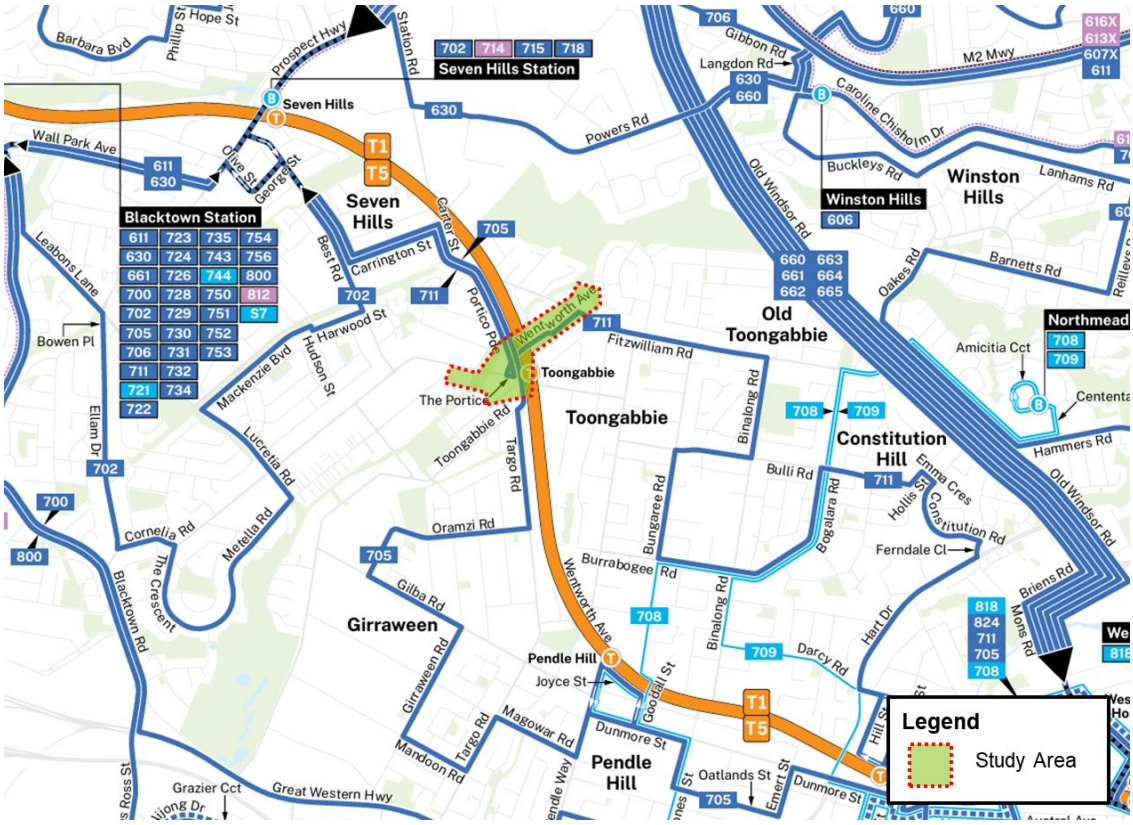


Figure 2-4: Bus Route Network in Toongabbie (Snippet)

Source: TfNSW, 2025

Figure 2-5: Public transport facilities

3 Input data

3.1 Traffic survey

Classified intersection counts (CICs) were conducted on Wednesday 28 May 2025 for the six study intersections. It was recorded that the weather was fine. The surveys were conducted for the AM peak and PM peak periods, which are as follows:

- AM peak period – 6:00am to 10:00am
- PM peak period – 2:30pm to 6:30pm

The surveys captured the number of light vehicles, heavy vehicles and buses performing each manoeuvre at the intersections at 15-minute intervals.

3.2 Traffic profile

The AM peak and PM peak hours were determined based on the highest hourly traffic volumes across all intersections along the corridor. The total traffic volume ranged between approximately 6,294 vehicles to approximately 10,295 vehicles across the AM surveyed period, and between approximately 10,122 vehicles to approximately 11,055 vehicles across the PM surveyed period. Based on the traffic profile, the peak hours are:

- AM peak hour – total of 10,295 vehicles between 7:45am and 8:45am.
- PM peak hour – total of 11,055 vehicles between 4:45pm and 5:45pm.

The traffic profile is shown in **Figure 3-1**.

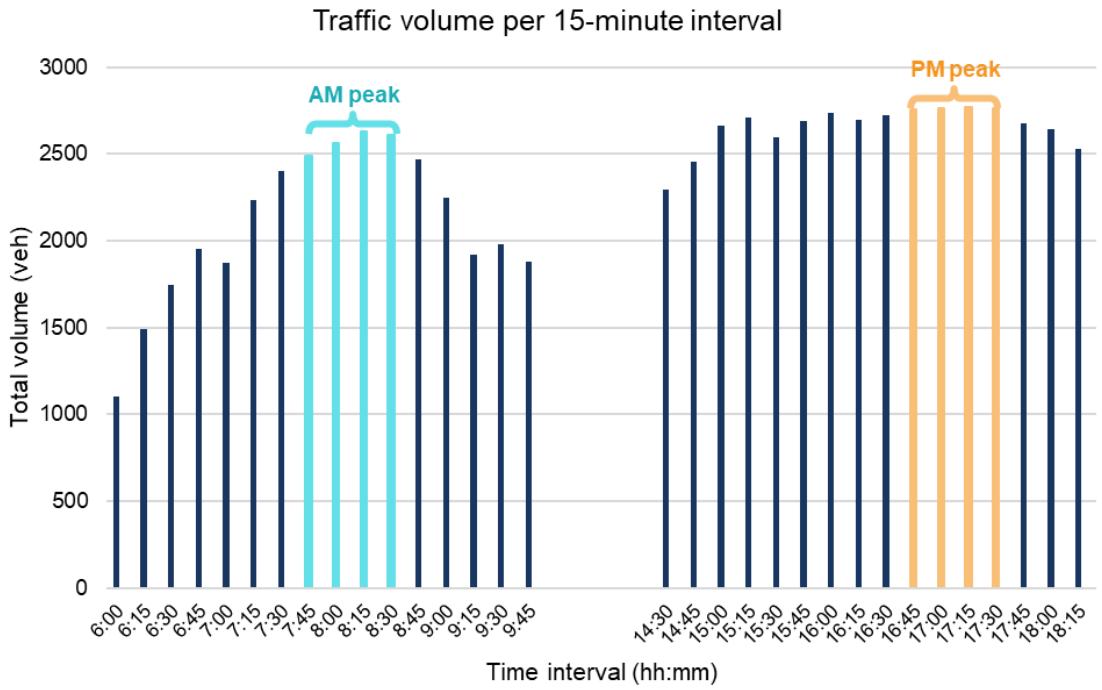


Figure 3-1: Traffic profile in 15-minute intervals

3.3 Queue lengths

Queue lengths were determined based on survey video footage that was undertaken on 28 May 2025. Longest queues were observed at the Wentworth Avenue roundabout and Cornelia Road / Junia Avenue in the AM peak, and at Station Road / Fitzwilliam Road / Wentworth Avenue and the Wentworth Avenue roundabout in the PM peak. In the AM peak, the longest queue (approximately 49+ vehicles) was observed on Cornelia Road, on the western approach of Cornelia Road / Junia Avenue. In the PM peak, the longest queue (approximately 46+ vehicles) was observed on Station Road, on the north-western approach of Station Road / Fitzwilliam Road / Wentworth Avenue. It should be noted the observed queue lengths may not fully reflect the maximum extents of queues due to limitation with survey camera's field of view. **Figure 3-2** shows the observed and potential maximum extents of queue lengths.

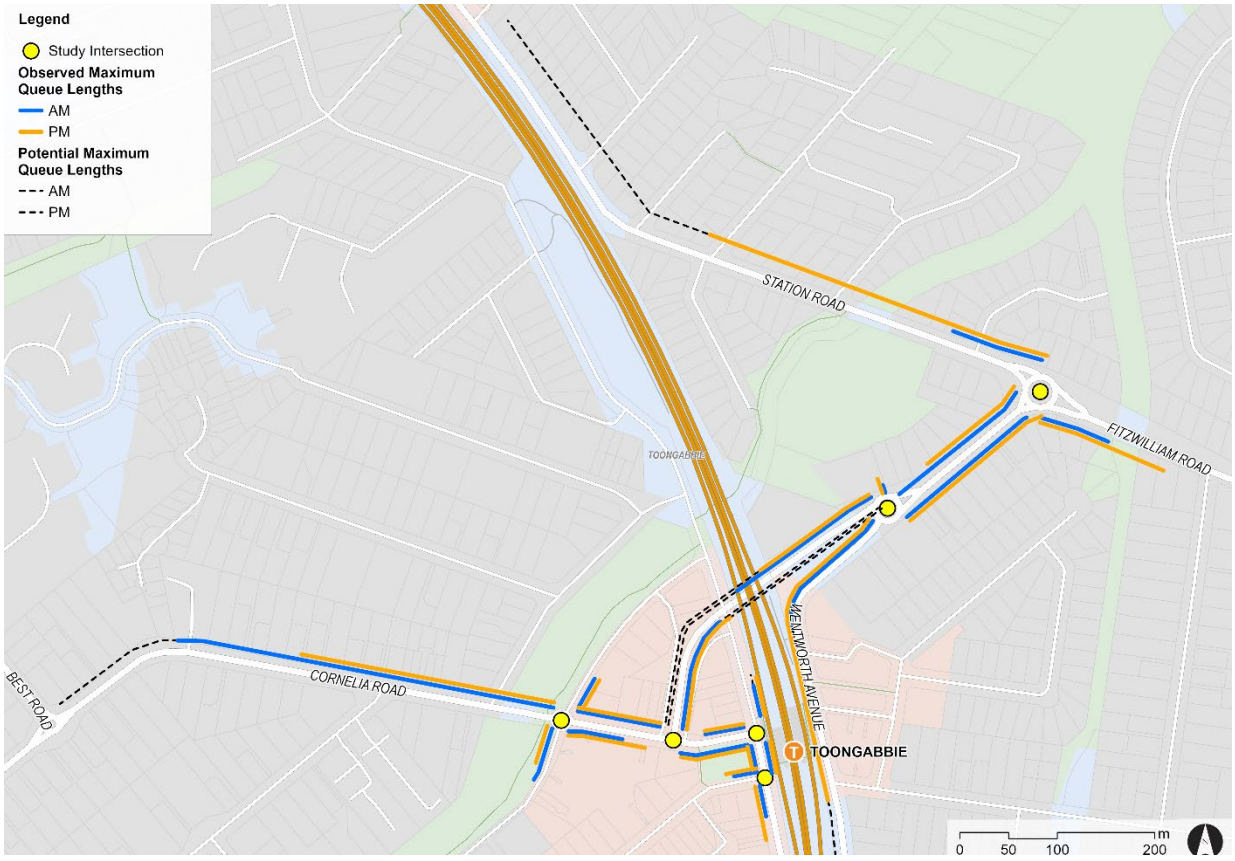


Figure 3-2: Observed and potential maximum queue lengths in the AM and PM peak hours

3.4 Traffic signals

Traffic signal data was used in modelling to ensure that realistic traffic signal operation was modelled. The following forms of signal data for all signalised intersections in the study area to code the base year models:

- TCS graphic plots
- Region LX files
- SCATS history files

Table 3-1 lists the signalised intersection within the study area used in the traffic modelling.

Table 3-1: Signalised intersection within the study area

ID	Intersection	TCS Number
3	Wentworth Avenue / Cornelia Road / The Portico	2334
5	The Portico / Portico Parade	2611

3.5 Assumptions

3.5.1 Software package

The traffic modelling for this project was conducted using SIDRA Intersection 9.1 (Version 9.1.1.200).

3.5.2 Calibration criteria

The 2025 base models were calibrated in accordance with the criteria outlined in *Traffic Modelling Guidelines* (Roads and Maritime Services, 2013) to ensure that they reflect the observed traffic conditions to a statistically high level of accuracy.

The recommended method of calibration if the modified Chi-Square empirical formula developed by Geoffrey E. Harves in the 1970s, known as the GEH-statistic. The GEH-statistic measures the degree of divergence of the modelled value from the observed value while accounting for the relative scale of each movement, that is, movements with higher volumes are more important to match than those with lower volumes. SIDRA Network is capable of modelling congestion caused by network bottlenecks, queue spillback and capacity shortages. The intersection throughput may be reduced by queueing at the end of the simulation period which is captured in the GEH comparison.

The GEH-statistic is given by **Equation 1**:

$$GEH = \sqrt{\frac{(V_o - V_m)^2}{0.5(V_o + V_m)}} \qquad \text{Equation 1}$$

where:

V_o = the observed traffic flow
V_m = the modelled traffic flow.

The GEH-statistic is used for individual flows, and the R-squared (R^2) statistical measure is used for correlation of the entire data set.

The following criteria were used during the turning count calibration process for the network:

- 85 per cent of individual turn volumes to have a GEH of less than or equal to five
- All individual turn volumes to have a GEH less than or equal to 10
- R-squared value to be greater than 0.95.

The GEH-statistic calibration process described above is critical for network models with route-choice available. Under those circumstances, turn flows can fluctuate substantially based on adjustments added to the model, especially for models with dynamic assignment. While that is not the case in the SIDRA models developed for this study, the GEH-statistic calibration analysis was still undertaken to ensure that the arrival flow at each intersection is not significantly different to the demand added (due to congestion elsewhere in the network). This analysis provides additional confidence that the demands at each intersection are close to the survey demands and thus the performance metrics are an accurate representation of real-life conditions.

3.5.3 Validation criteria

Validation ensures that factors that influence traffic (other than traffic volumes) such as road capacity, driver behaviour and responsiveness are adequately captured in the models. One validation criterion was established for the Base Models, i.e. Queue length validation.

3.5.3.1 Queue length validation criteria

Traffic Modelling Guidelines (Roads and Maritime Services, 2013) does not establish mandatory guideline criteria for queue length validation for a number of reasons, including:

- It is not always clear what constitutes a queue
- Queue length data is not always measured consistently (as the back of a queue can be subjective or prone to measurement errors)
- Software packages each calculate queue lengths differently using different criteria and methodologies.

In this study, traffic data was sourced from a number of different surveys from different dates, and queue length surveys were not necessarily undertaken on the same day as the traffic data was collected. Furthermore, in some instances no queue length data was available. In these cases, Cardno has used Google Traffic and local knowledge to provide an estimate of likely queue lengths.

The disparate data sources introduce a high level of uncertainty into the queue lengths. Furthermore, queues do not always follow the same patterns of formation and dissipation – the same traffic volumes on two separate days may have vastly different queue patterns due to factors such as driver behaviour, vehicle arrival rate and platooning, weather conditions and other factors. As a result, in this study queues were generally considered to be accurately replicated where they were within 20 per cent or 20 metres of the observed value (whichever is greater).

3.5.4 Performance criteria

Intersection performance is primarily assessed based on the Degree of Saturation (DoS), Average Delay in seconds, Level of Service (LoS) and 95% Back of Queue distance in metres.

Level of Service (LoS) is the standard measure used to assess the operational performance of the network and intersections. Level of Service is ranked from LoS A to LoS F, with LoS A representing the best performance and LoS F the worst. The assessment of intersection operation is based on criteria defined by Roads and Maritime Services, now known as Transport for NSW, as outlined in **Table 3-2**.

Table 3-2: Level of service criteria for intersections

Level of service	Average delay per vehicle (sec/veh)	Traffic signals, roundabouts	Give way & stop signs
A	< 14	Good operation	Good operation
B	15 to 28	Good with acceptable delays and spare capacity	Acceptable delays and spare capacity
C	29 to 42	Satisfactory	Satisfactory, but accident study required
D	43 to 56	Operating near capacity	Near capacity & accident study required
E	57 to 70	At capacity, at signals incidents will cause excessive delays Roundabouts require other control mode	At capacity, requires other control mode
F	> 70	Unsatisfactory and requires additional capacity.	Unsatisfactory and requires additional capacity.

Source: Guide to Traffic Generating Developments (RMS, 2002)

Average Delay (Delay) provides a measure of the operational performance of an intersection and determines the LoS when applying the RMS method. It should be noted that the delay should be taken as a guide only as longer delays could be tolerated in some locations (i.e. inner-city conditions) and on some roads (i.e. minor side street intersecting with a major arterial route). For traffic signals, the weighted average delay over all movements is used. For roundabouts and priority control intersections (sign control) the critical movement for assessing LoS should be the movement with the highest average delay.

Degree of Saturation (DoS) is another measure of the operational performance of individual intersections. It is ideal to operate with a DoS of less than 0.9, with DoS of up 0.8 considered satisfactory. Intersections are considered to be close to capacity as the DoS approaches 1.0, with queue lengths increasing.

3.6 Demand development

SIDRA Intersection requires the traffic volumes for each movement at the intersection. Surveys that were conducted have been used as the existing traffic demand. These volumes are grown to 2027 and 2037, the future year scenarios, based on a traffic background growth.

3.6.1 Existing demand

The existing demand was based on the traffic survey data conducted on Wednesday 25 July 2025. A stick diagram was created for the study area where the traffic volumes were adjusted based on the midblock volumes, to ensure the volumes were balanced between intersections.

3.6.2 Future demand

In lieu of strategic model (STFM) outputs, COP provided the *Toongabbie Transport Study* (SCT Consulting, 2020) which outlines a background growth rate ranging from 0.33% to 0.5% per annum for the study area. The growth rate of 0.5% per annum was chosen as a conservative approach for this

study. The demand for the future years was determined by applying a linear growth rate of 0.5% to the existing demand (2025).

3.7 Assessment years and time periods

This section outlines the scenarios assessed and the assessment years and time periods modelled. Each scenario was assessed for the short-term (year of opening – 2027) and long-term (year of opening plus ten years – 2037). The modelled peak hours were consistent with those used for the Base Model. A summary of the assessment years and time periods tested as part of this traffic modelling assessment is provided in **Table 3-3**.

The scenarios tested are outlined below:

- Without Project Case: This scenario represents the future network conditions with existing road network layout which will be used to assess the impact of the proposed road upgrade on the traffic network performance.
- With Project Case: This scenario represents the future network conditions with the Project Case which includes the intersection upgrade of Station Road / Fitzwilliam Road / Wentworth Avenue roundabout to a signalised intersection and the addition of southbound lane between the Wentworth Avenue roundabout and Station Road / Fitzwilliam Road / Wentworth Avenue intersection. Furthermore, this scenario includes an additional auxiliary lane for the northern approach to Wentworth Avenue / Cornelia Road / The Portico and the closure of Junia Avenue Service Road. The network changes outlined for this scenario will be used to assess the impact of the project case on the traffic network performance.

Table 3-3: Modelled scenarios and year

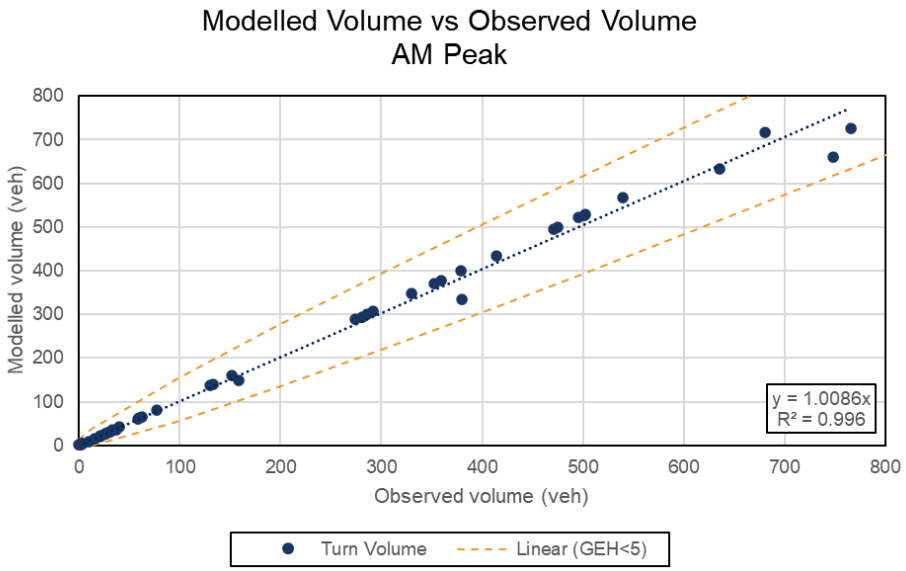
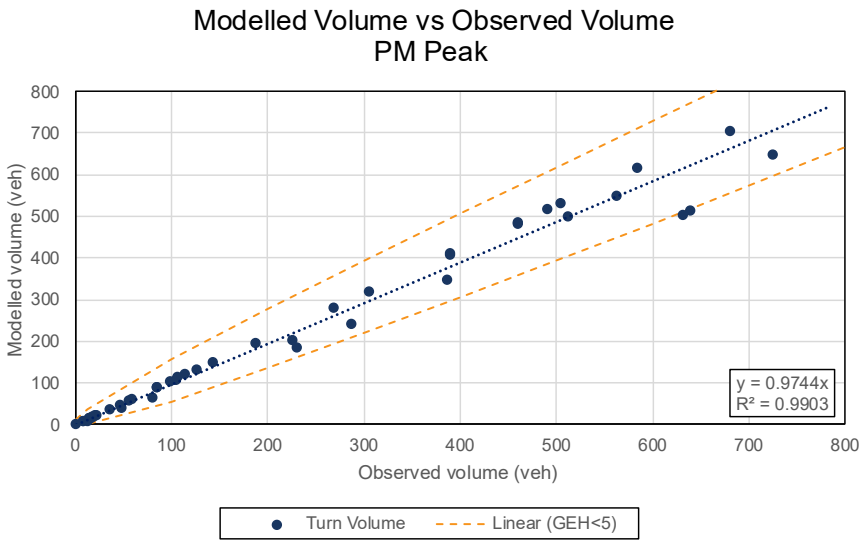
Scenario	Modelled years and peaks					
	Base (2025)		2027		2037	
	AM	PM	AM	PM	AM	PM
Base	✓	✓	-	-	-	-
Without Project Case	-	-	✓	✓	✓	✓
With Project Case	-	-	✓	✓	✓	✓

4 Base model calibration and validation

4.1 Calibration results

The 2025 base models were calibrated in accordance with *RMS Traffic Modelling Guidelines* (2013). A comparison between the surveyed turning counts and the modelled survey counts are shown in **Table 4-1**.

Table 4-1: Calibration results

Peak	Calibration plots
AM	
PM	

4.2 Validation results

The 2025 base models were validated in accordance with *RMS Traffic Modelling Guidelines* (2013). A comparison between the observed queues and the modelled queues are shown in **Figure 4-1** in the AM peak and **Figure 4-2** in the PM peak.

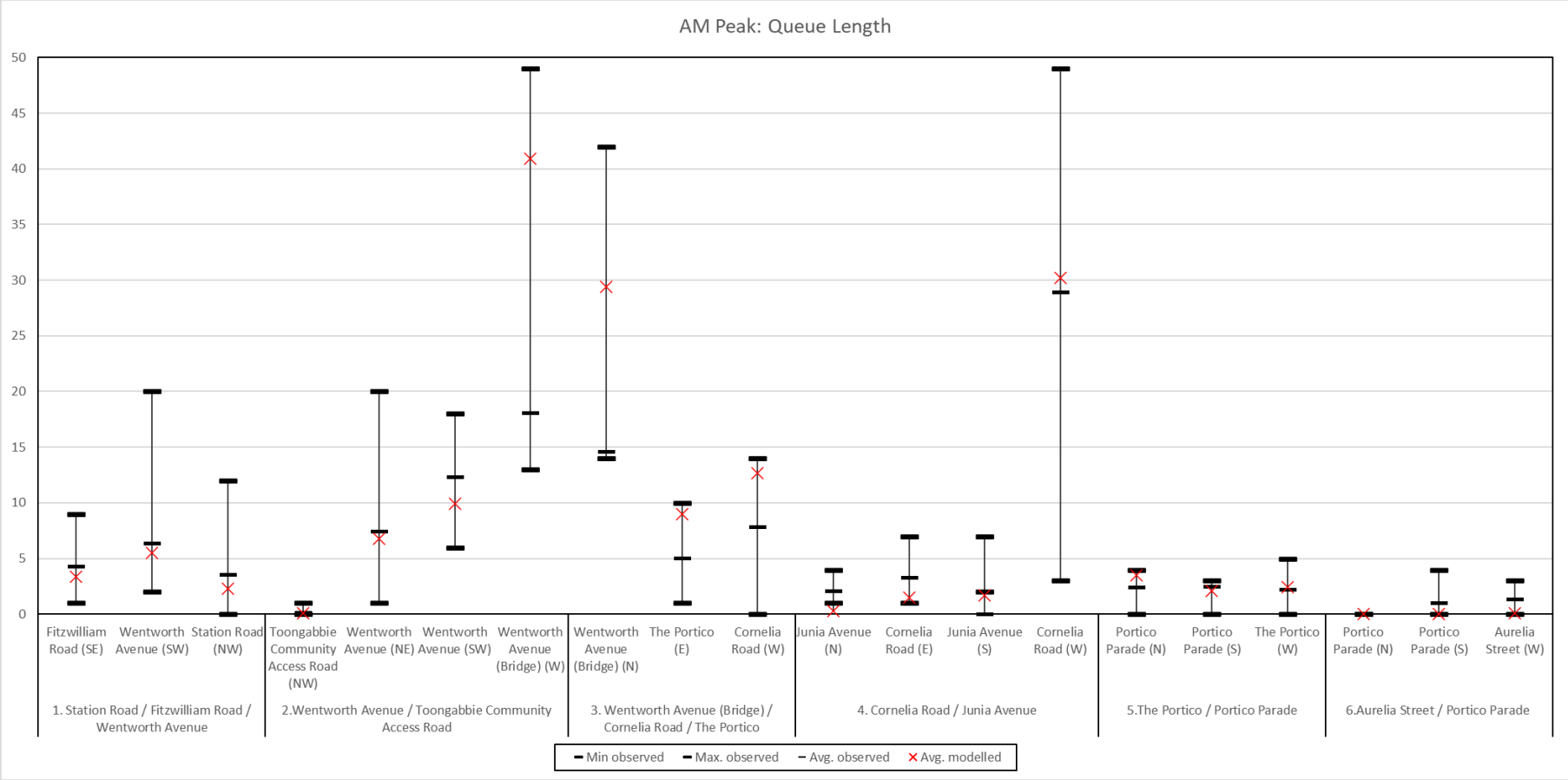


Figure 4-1: Queue length traffic surveys compared with average modelled queue length in the AM peak

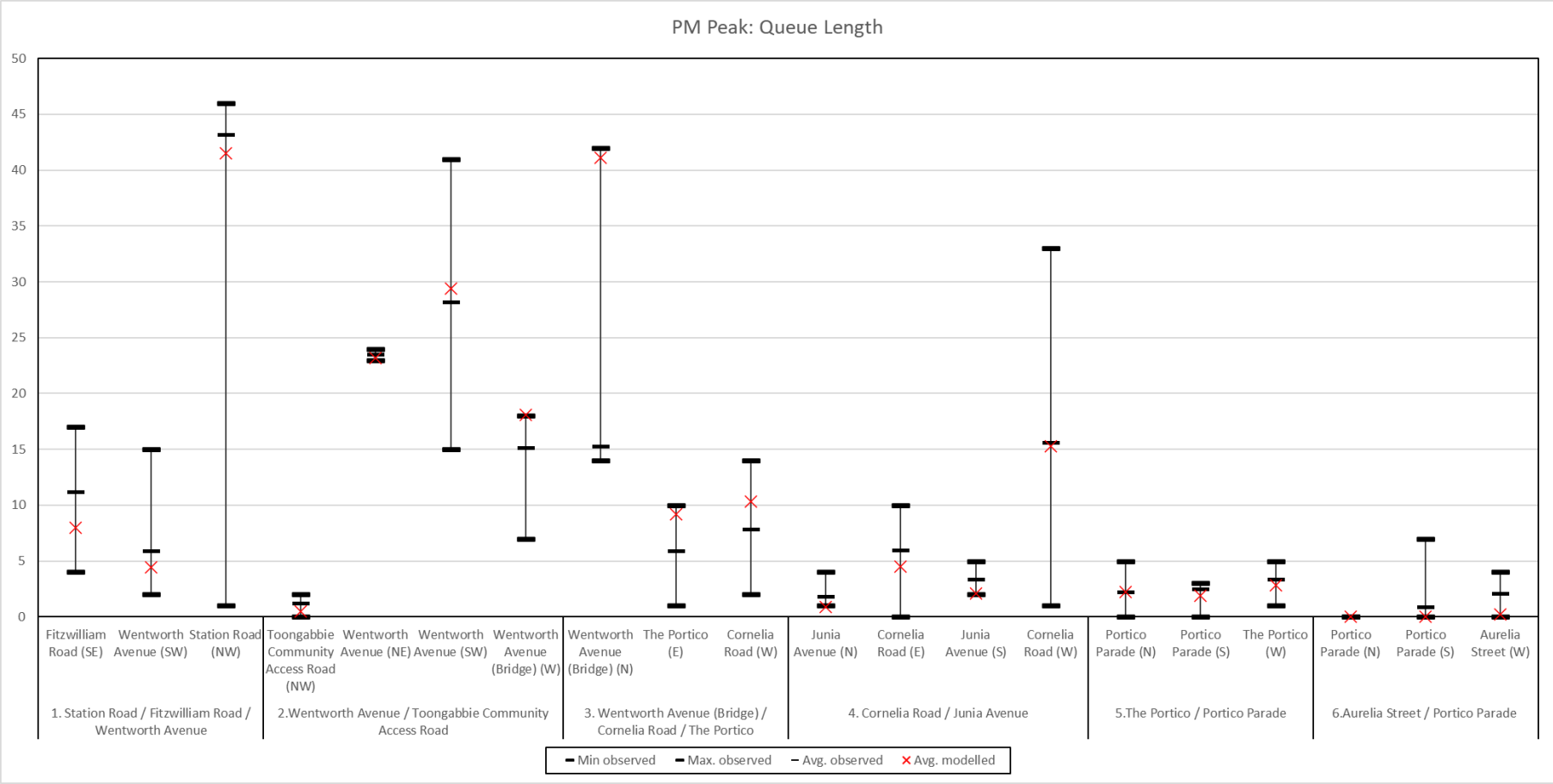


Figure 4-2: Queue length traffic surveys compared with average modelled queue length in the PM peak

5 Operational performance assessment

5.1 Base model results

This section outlines the intersection performance for the existing Base Model. **Table 5-1** summarises the DoS, average delay, LoS and queue lengths. SIDRA summaries are provided in **Appendix A**.

During the AM and PM peak, congestion leads to queues of over 120 vehicles that impact the performance of other intersections. This shows that the operation of the intersection is oversaturated. Optimising the intersection to include a DOS of less than 1.0 will lead to severely shortened queues that are not representative of the conditions during the survey date.

The intersection performance in the 2025 Base Model indicates that:

AM Peak

- The intersections of Station Road / Fitzwilliam Road / Wentworth Avenue, The Portico / Portico Parade and Aurelia Street / Portico Parade operate satisfactorily at LoS B or better.
- The intersections of Wentworth Avenue / Wentworth Avenue, Wentworth Avenue / Cornelia Road / The Portico and Cornelia Road / Junia Avenue operate at LoS F.
    - » The northbound traffic from the bridge approach to the Wentworth Avenue / Wentworth Avenue roundabout is exceeding capacity resulting in significant queueing that spills back beyond the Cornelia Road / Junia Avenue intersection.

PM Peak

- The Portico Parade / Portico Parade and Aurelia Street / Portico Parade operate satisfactorily at LoS A.
- The intersection of Cornelia Road / Junia Avenue operates near capacity with LOS D
    - » The northbound traffic from the bridge approach to the Wentworth Avenue / Wentworth Avenue roundabout is exceeding capacity resulting in queues that spill back beyond the Cornelia Road / Junia Avenue intersection.
- The intersections of Station Road / Fitzwilliam Road / Wentworth Avenue, Wentworth Avenue / Wentworth Avenue and Wentworth Avenue / Cornelia Road / The Portico operate unsatisfactorily at LOS E or worse.
    - » The southbound traffic from the bridge approach to the Wentworth Avenue / Cornelia Road / The Portico intersection is exceeding the capacity resulting in significant queueing that spills back beyond the Station Road / Fitzwilliam Road / Wentworth Avenue intersection.

Table 5-1: Intersection performance results - 2025 Base model

Intersection	Type	2025 Base AM peak (7:45am – 8:45am)					2025 Base PM peak (4:45pm – 5:45pm)				
		Volume	DoS	Avg. Delay	LoS	95% QL	Volume	DoS	Avg Delay	LoS	95% QL
Station Road / Fitzwilliam Road / Wentworth Avenue	RB	2935	0.827	20.2	B	98.4	3083	1.414	391.8	F	732.3
Wentworth Avenue roundabout	RB	2425	1.184	188.7	F	722.8	2360	1.316	314.2	F	525.7
Wentworth Avenue / Cornelia Road / The Portico	S	1902	1.469	143.3	F	343.3	1965	1.084	68.3	E	474.1
Cornelia Road / Junia Avenue	RB	1456	1.228	223.7	F	533.0	1606	1.022	54.8	D	270.8
The Portico / Portico Parade	S	916	0.509	14.9	B	42.7	908	0.463	12.7	A	37.3
Aurelia Street / Portico Parade	P	952	0.242	9.7	A	1.9	1013	0.276	9.3	A	4.2

Type: P = Priority intersection, RB = Roundabout intersection, S = Signalised intersection

5.2 Future Base model results

This section outlines the intersection performance for the Future Base Model. The DoS, average delay, LoS and queue lengths is summarised for the AM peak in **Table 5-2** and **Table 5-3** for the PM peak. SIDRA summaries are provided in **Appendix A**.

The Future Base scenario results indicate the following:

AM Peak

- The intersections of Station Road / Fitzwilliam Road / Wentworth Avenue, The Portico / Portico Parade and Aurelia Street / Portico Parade operate satisfactorily at LoS B and C in 2027 and 2037 respectively.
- The intersections of Wentworth Avenue / Wentworth Avenue, Wentworth Avenue / Cornelia Road / The Portico and Cornelia Road / Junia Avenue operate at LoS F in 2027 and 2037.
    - » The northbound traffic for the bridge approach to the Wentworth Avenue / Wentworth Avenue roundabout is exceeding capacity resulting in significant queueing that spills back beyond the Cornelia Road / Junia Avenue intersection.

PM Peak

- The Portico Parade / Portico Parade and Aurelia Street / Portico Parade operate satisfactorily at LoS B or better in 2027 and 2037
- The intersections of Station Road / Fitzwilliam Road / Wentworth Avenue, Wentworth Avenue / Wentworth Avenue, Wentworth Avenue / Cornelia Road / The Portico and Cornelia Road / Junia Avenue operate unsatisfactorily at LOS E or worse in both 2027 and 2037.
    - » The southbound traffic for the bridge approach to the Wentworth Avenue / Cornelia Road / The Portico intersection is exceeding the capacity resulting in significant queueing that spills back beyond the Station Road / Fitzwilliam Road / Wentworth Avenue intersection.
    - » The northbound traffic for the bridge approach to the Wentworth Avenue / Wentworth Avenue roundabout is exceeding capacity resulting in queues that spill back beyond the Cornelia Road / Junia Avenue intersection.

Table 5-2: Intersection performance results – 2027 Future Base and 2037 Future Base scenario in the AM peak

Intersection	Type	2027 Future Base AM peak (7:45am – 8:45am)					2037 Future Base AM peak (7:45am – 8:45am)				
		Vol (veh)	DoS	Avg. Delay	LoS	95% QL (m)	Vol (veh)	DoS	Avg Delay	LoS	95% QL (m)
Station Road / Fitzwilliam Road / Wentworth Avenue	RB	2952	0.832	20.3	B	100.4	3035	0.968	33.4	C	130.9
Wentworth Avenue roundabout	RB	2437	1.185	189.5	F	723	2510	1.153	161.6	F	639.8
Wentworth Avenue / Cornelia Road / The Portico	S	1912	1.484	144.8	F	355	1943	1.308	94	F	384.3
Cornelia Road / Junia Avenue	RB	1469	1.244	238	F	561.2	1523	1.319	305.2	F	696.1

Intersection	Type	2027 Future Base AM peak (7:45am – 8:45am)					2037 Future Base AM peak (7:45am – 8:45am)				
		Vol (veh)	DoS	Avg. Delay	LoS	95% QL (m)	Vol (veh)	DoS	Avg Delay	LoS	95% QL (m)
The Portico / Portico Parade	S	923	0.512	13.8	A	43	957	0.541	13.9	A	45.4
Aurelia Street / Portico Parade	P	961	0.245	9.9	A	1.9	998	0.256	10.2	A	2.1

Type: P = Priority intersection, RB = Roundabout intersection, S = Signalised intersection

Table 5-3: Intersection performance results – 2027 Future Base and 2037 Future Base scenario in the PM peak

Intersection	Type	2027 Future Base PM peak (4:45pm – 5:45pm)					2037 Future Base PM peak (4:45pm – 5:45pm)				
		Vol (veh)	DoS	Avg. Delay	LoS	95% QL (m)	Vol (veh)	DoS	Avg Delay	LoS	95% QL (m)
Station Road / Fitzwilliam Road / Wentworth Avenue	RB	3112	1.435	410.3	F	762.5	3201	1.502	469.8	F	875.7
Wentworth Avenue roundabout	RB	2377	1.337	333.1	F	552.4	2413	1.404	391.3	F	644.2
Wentworth Avenue / Cornelia Road / The Portico	S	1969	1.081	68.5	E	469.9	1973	1.081	69.3	E	469
Cornelia Road / Junia Avenue	RB	1616	1.065	84.8	F	354.6	1675	1.078	95.5	F	398.2
The Portico / Portico Parade	S	915	0.468	14.1	B	51.8	944	0.49	14.1	B	50.9
Aurelia Street / Portico Parade	P	1021	0.279	9.3	A	4.2	1058	0.293	9.6	A	4.6

Type: P = Priority intersection, RB = Roundabout intersection, S = Signalised intersection

5.3 Project Case results

This section outlines the intersection performance for the Project Case scenarios. The DoS, average delay, LoS and queue lengths is summarised for the AM peak in **Table 5-4** and **Table 5-5** for the PM peak. SIDRA summaries are provided in **Appendix A**.

COP is proposing to upgrade the existing roundabout at the intersection of Fitzwilliam Road / Station Road / Wentworth Avenue to a signalised intersection. **Figure 5-1** illustrates the signal phasing arrangement for the intersection, with an adopted cycle time of 140 seconds as recommended for new signals in Section 2.2 of *Technical Direction TTD 2018/002 - Traffic Signals in Microsimulation Modelling* (Roads and Maritime Services, 2018). The proposed upgrade works also involve the provision of an additional southbound lane on Wentworth Avenue. The new intersection layouts are presented in **Figure 5-2** and **Figure 5-3**.

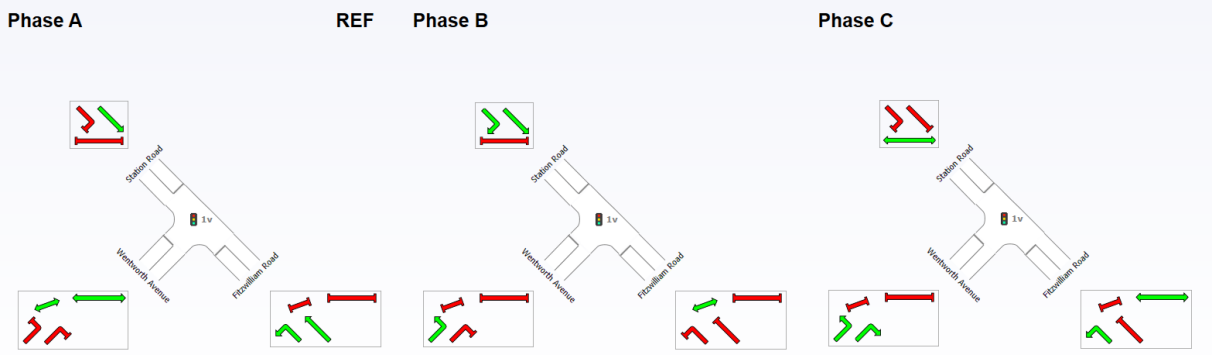


Figure 5-1 Proposed signal phasing arrangement - Station Road / Fitzwilliam Road / Wentworth Avenue signalised intersection

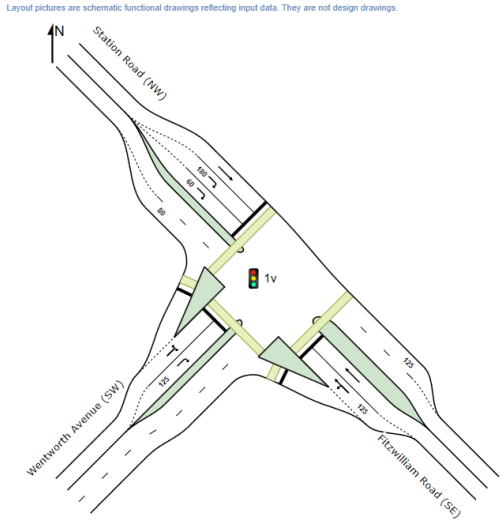


Figure 5-2: Project Case layout of Station Road / Fitzwilliam Road / Wentworth Avenue.

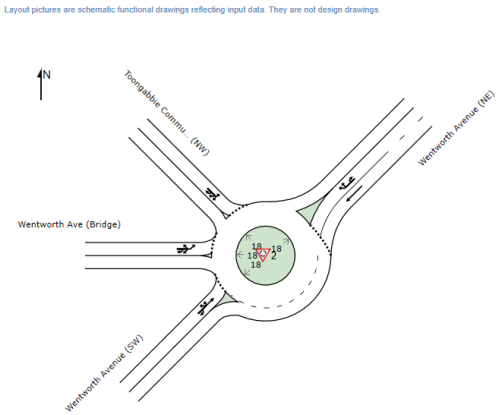


Figure 5-3: Project Case layout of Wentworth Avenue Roundabout

CCC is proposing to upgrade the existing signalised intersection at Wentworth Avenue / Cornelia Road / The Portico by adding an auxiliary lane to the northern approach to the intersection as well as the closure of Junia Avenue Service Road at Cornelia Road. **Figure 5-4** shows the layout of the modified intersection.

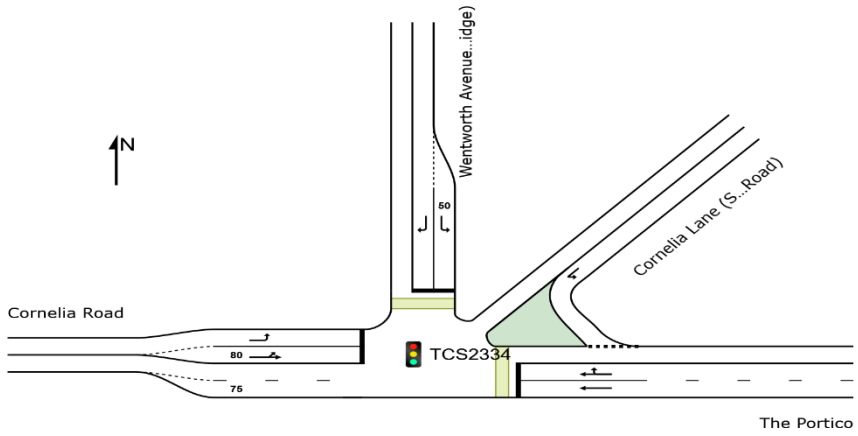


Figure 5-4: Project Case layout of Wentworth Avenue / Cornelia Road / The Portico.

The Future Project Case scenario results indicate the following:

AM Peak

- The intersection of Station Road / Fitzwilliam Road / Wentworth Avenue is performing satisfactorily at LOS C with the signalised upgrade in both 2027 and 2037
- The intersections of The Portico / Portico Parade and Aurelia Street / Portico Parade operate satisfactorily at LOS B or better in 2027 and 2037.
- The intersections of Wentworth Avenue / Wentworth Avenue, Wentworth Avenue / Cornelia Road / The Portico and Cornelia Road / Junia Avenue operate at LoS F in 2027 and 2037.
    - » The northbound traffic for the bridge approach to the Wentworth Avenue / Wentworth Avenue roundabout is exceeding capacity resulting in significant queueing that spills back beyond the Cornelia Road / Junia Avenue intersection

PM Peak

- The intersection of Station Road / Fitzwilliam Road / Wentworth Avenue is performing satisfactorily at LOS C with the signalised upgrade in 2027 and operates near capacity at LOS D in 2037.
- The Portico Parade / Portico Parade and Aurelia Street / Portico Parade operate satisfactorily at LoS B or better in 2027 and 2037
- The intersections of Station Road / Fitzwilliam Road / Wentworth Avenue, Wentworth Avenue / Wentworth Avenue, Wentworth Avenue / Cornelia Road / The Portico operate unsatisfactorily at LOS F in both 2027 and 2037.
    - » The southbound traffic for the bridge approach to the Wentworth Avenue / Cornelia Road / The Portico intersection is exceeding the capacity resulting in significant queueing that spills back to the Station Road / Fitzwilliam Road / Wentworth Avenue intersection

- The intersection of Cornelia Road / Junia Avenue operates at LOS D in 2027 and LOS F in 2037
    - » The northbound traffic for the bridge approach to the Wentworth Avenue / Wentworth Avenue roundabout is exceeding capacity resulting in queues that spill back beyond the Cornelia Road / Junia Avenue intersection

Table 5-4: Intersection performance results – 2027 Project Case and 2037 Project Case in the AM peak

Intersection	Type	2027 Project Case AM peak (7:45am – 8:45am)					2037 Project Case AM peak (7:45am – 8:45am)				
		Vol (veh)	DoS	Avg. Delay	LoS	95% QL (m)	Vol (veh)	DoS	Avg. Delay	LoS	95% QL (m)
Station Road / Fitzwilliam Road / Wentworth Avenue	S	2817	0.672	35.3	C	211.4	2906	0.725	36.7	C	226
Wentworth Avenue roundabout	RB	2452	1.503	471.4	F	795.3	2529	1.548	511.5	F	795.3
Wentworth Avenue / Cornelia Road / The Portico	S	1906	1.177	130.5	F	261.4	1963	1.190	147.3	F	329.6
Cornelia Road / Junia Avenue	RB	1469	1.244	238.0	F	561.2	1533	1.320	305.7	F	696.9
The Portico / Portico Parade	S	923	0.512	16.8	B	58.0	964	0.541	16.9	B	60.8
Aurelia Street / Portico Parade	P	961	0.245	9.5	A	1.9	1011	0.256	9.9	A	2.1

Type: P = Priority intersection, RB = Roundabout intersection, S = Signalised intersection

Table 5-5: Intersection performance results – 2027 Project Case and 2037 Project Case in the PM peak

Intersection	Type	2027 Project Case PM peak (4:45pm – 5:45pm)					2027 Project Case PM peak (4:45pm – 5:45pm)				
		Vol (veh)	DoS	Avg. Delay	LoS	95% QL (m)	Vol (veh)	DoS	Avg. Delay	LoS	95% QL (m)
Station Road / Fitzwilliam Road / Wentworth Avenue	S	2970	0.811	39.0	C	237.9	3064	0.973	55.2	D	349.8
Wentworth Avenue roundabout	RB	2483	1.983	911.7	F	1001.5	2553	2.255	1155.9	F	1165.7
Wentworth Avenue / Cornelia Road / The Portico	S	2076	1.163	84.0	F	499.3	2100	1.167	86.4	F	503.6
Cornelia Road / Junia Avenue	RB	1676	1.015	50.9	D	260.5	1735	1.082	98.6	F	404.7
The Portico / Portico Parade	S	961	0.468	15.9	B	49.5	994	0.490	15.9	B	78.8
Aurelia Street / Portico Parade	P	1061	0.279	9.5	A	4.2	1101	0.293	9.9	A	4.7

Type: P = Priority intersection, RB = Roundabout intersection, S = Signalised intersection

6 Results comparison

This section compares the results between the Future Base and the Project Case scenario in 2027 and 2037.

6.1 2027 comparison

The summary for the 2027 Project Case scenarios results and comparison with the 2027 Future Base in the AM peak is presented in **Table 6-1** and PM peak is presented in **Table 6-2**. An improvement in LOS is indicated by a green arrow while a reduction in LOS is indicated by a green arrow. Additionally, an equal sign has been used to indicated where the LOS or intersection delay has stayed the same.

A comparison of the intersection performance between the 2027 Future Base and 2027 Project Case indicated that:

AM Peak

- The majority of intersections either maintained or improved their performance in the 2027 Project Case scenario compared to the 2027 Future Base scenario, except for the following intersections:
    - The Station Road / Fitzwilliam Road / Wentworth Avenue intersection decreased to LOS C from LOS B with the average delay increasing by approximately 15 seconds. This change is attributed to the signalised upgrade which has some inherent delay. While the performance of the intersection has decreased, the signalised upgrade offers other benefits such as improved safety and the inclusion of dedicated pedestrian crossing facilities.
    - The Wentworth Avenue roundabout increases in delay significantly from 184 seconds to 471 seconds in the Project Case scenario. This is due to the southwest approach interrupting the west approach traffic more in the Project Case scenario as there is more opportunities for the southwest approach to enter the roundabout as Station Road / Fitzwilliam Road / Wentworth Avenue is signalised which provides intermittent gaps.

PM Peak

- The signalisation of the Station Road / Fitzwilliam Road / Wentworth Avenue intersection along with the introduction of an additional lane for the southbound direction on Wentworth Avenue has improved the LOS from F to C. The additional southbound lane on Wentworth Avenue reduces the queues that spill back into the Station Road / Fitzwilliam Road / Wentworth Avenue intersection.
- The Wentworth Avenue roundabout increases in delay significantly from 333 seconds to 912 seconds. This is due to the northeast approach interrupting the southwest approach in the Project Case scenario as the signalised upgrade of Station Road / Fitzwilliam Road / Wentworth Avenue and the additional southbound lane has increased the traffic flow for the northeast approach reducing opportunities for the southwest approach to enter the roundabout.

- The Wentworth Avenue / Cornelia Road / The Portico intersection worsens from LoS E to LoS F in the 2027 Future Project Case. This is primarily due to improved upstream traffic flow resulting from the project upgrades allowing a greater volume of vehicles to the reach the Wentworth Avenue / Cornelia Road / The Portico intersection.
- At the Cornelia Road / Junia Avenue intersection, the average delay times decreased by 34 seconds with the level of service improving from F to D when comparing the 2027 Future Base and 2027 Project Case scenarios. This improvement is primarily attributed to reduced queueing and delays at downstream intersection which has allowed traffic to flow more freely through this location.
- The Portico / Portico Parade and Aurelia Street / Portico Parade maintain their performance in the Project Case.

Table 6-1: Summary of intersection performance of 2027 Future Base and compared with the 2027 Project Case in the AM peak

Intersection	2027 Project Case AM peak (7:45am – 8:45am)					Compared to 2027 Future Base AM peak (7:45am – 8:45am)				
	Vol (veh)	DoS	Avg. Delay	LoS	95% QL (m)	Vol (veh)	DoS	Avg Delay	LoS	95% QL (m)
Station Road / Fitzwilliam Road / Wentworth Avenue[1]	2817	0.672	35.3	C	211.4	-135 (-4.6%)	-0.16 (-19.2%)	+15 (+73.9%)	▼	+111 (+110.6%)
Wentworth Avenue roundabout	2452	1.503	471.4	F	795.3	+15 (+0.6%)	0.318 (+26.8%)	+282 (+148.8%)	=	+72 (+10%)
Wentworth Avenue / Cornelia Road / The Portico	1906	1.177	130.5	F	261.4	-6 (-0.3%)	-0.307 (-20.7%)	-14 (-9.9%)	=	-94 (-26.4%)
Cornelia Road / Junia Avenue	1469	1.244	238	F	561.2	0 (+0%)	0 (+0%)	0 (+0%)	=	0 (+0%)
The Portico / Portico Parade	923	0.512	16.8	B	58	0 (+0%)	0 (+0%)	+3 (+21.7%)	▼	+15 (+34.9%)
Aurelia Street / Portico Parade	961	0.245	9.5	A	1.9	0 (+0%)	0 (+0%)	0 (-4%)	=	0 (+0%)

[1]*In the Future Base it is a roundabout but in the Project Case this intersection is upgraded to a signalised intersection*

Table 6-2: Summary of intersection performance of 2027 Future Base and compared with the 2027 Project Case in the PM peak

Intersection	2027 Project Case PM peak (4:45pm – 5:45pm)					Compared to 2027 Future Base PM peak (4:45pm – 5:45pm)				
	Vol (veh)	DoS	Avg. Delay	LoS	95% QL (m)	Vol (veh)	DoS	Avg Delay	LoS	95% QL (m)
Station Road / Fitzwilliam Road / Wentworth Avenue[1]	2970	0.811	39	C	237.9	-142 (-4.6%)	-0.624 (-43.5%)	-371 (-90.5%)	▲	-525 (-68.8%)
Wentworth Avenue roundabout	2483	1.983	911.7	F	1001.5	+106 (+4.5%)	+0.646 (+48.3%)	+579 (+173.7%)	=	+449 (+81.3%)
Wentworth Avenue / Cornelia Road / The Portico	2076	1.163	84	F	499.3	+107 (+5.4%)	0.082 (+7.6%)	+16 (+22.6%)	▼	+29 (+6.3%)
Cornelia Road / Junia Avenue	1676	1.015	50.9	D	260.5	+60 (+3.7%)	-0.05 (-4.7%)	-34 (-40%)	▲	-94 (-26.5%)

Intersection	2027 Project Case PM peak (4:45pm – 5:45pm)					Compared to 2027 Future Base PM peak (4:45pm – 5:45pm)				
	Vol (veh)	DoS	Avg. Delay	LoS	95% QL (m)	Vol (veh)	DoS	Avg Delay	LoS	95% QL (m)
The Portico / Portico Parade	961	0.468	15.9	B	49.5	+46 (+5%)	0 (+0%)	+2 (+12.8%)	=	-2 (-4.4%)
Aurelia Street / Portico Parade	1061	0.279	9.5	A	4.2	+40 (+3.9%)	0 (+0%)	0 (+2.2%)	=	0 (+0%)

[1]In the Future Base it is a roundabout but in the Project Case this intersection is upgraded to a signalised intersection

6.2 2037 comparison

The summary for the 2037 Project Case scenarios results and comparison with the 2037 Future Base in the AM peak is presented in **Table 6-3** and PM peak is presented in **Table 6-4**. An improvement in LOS is indicated by a green arrow while a reduction in LOS is indicated by a green arrow. Additionally, an equal sign has been used to indicated where the LOS or intersection delay has stayed the same.

A comparison of the intersection performance between the 2037 Future Base and 2037 Project Case indicated that:

The Project Case brings significant benefits in the PM peak period as the level of service at the Station Road / Fitzwilliam Road / Wentworth Avenue improves from F to D when comparing between the 2037 Future Base and 2037 Project Case which is due to the signalisation of this intersection. Although in the AM peak, the intersection performance of Station Road / Fitzwilliam Road / Wentworth Avenue declined in level of service from B to C. However, the signalisation of intersection provides other benefits beyond performance metrics. It introduces dedicated pedestrian crossing facilities, significantly improving safety and accessibility for vulnerable road users such as school students, the elderly and people with mobility challenges.

AM Peak

- Most intersections performed at the same or improved levels in the 2037 Project Case scenario compared to the 2037 Future Base scenario, except for the following locations:
    - The Wentworth Avenue roundabout increases in delay significantly from 162 seconds to 512 seconds in the Project Case scenario. This is due to the southwest approach interrupting the west approach traffic more in the Project Case scenario as there is more opportunities for the southwest approach to enter the roundabout as Station Road / Fitzwilliam Road / Wentworth Avenue is signalised which provides intermittent gaps.
    - The overall intersection average delay at the Wentworth Avenue / Cornelia Road / The Portico intersection increased from 94 to 147 seconds in the Project Case. The increase in delay is attributed to the west approach to the Wentworth Avenue roundabout being interrupted as mentioned above which results in longer queues spilling back into and beyond the Wentworth Avenue / Cornelia Road / The Portico intersection.

PM Peak

- The signalisation of the Station Road / Fitzwilliam Road / Wentworth Avenue intersection along with the introduction of an additional lane for the southbound direction on Wentworth Avenue has improved the LOS from F to D. The additional southbound lane on Wentworth Avenue reduces the queues that spill back into the Station Road / Fitzwilliam Road / Wentworth Avenue intersection.
- The Wentworth Avenue roundabout increases in delay significantly from 391 seconds to 1156 seconds. This is due to the northeast approach interrupting the southwest approach in the Project Case scenario as the signalised upgrade of Station Road / Fitzwilliam Road / Wentworth Avenue and the additional southbound lane has increased the traffic flow for the northeast approach reducing opportunities for the southwest approach to enter the roundabout.
- The Wentworth Avenue / Cornelia Road / The Portico intersection worsens from LoS E to LoS F in the 2037 Future Project Case. This is due to improved upstream traffic flow resulting from the project upgrades allowing a greater volume of vehicles to the reach the Wentworth Avenue / Cornelia Road / The Portico intersection as well as queueing from the Wentworth Avenue roundabout impacting the performance.
- At the Cornelia Road / Junia Avenue intersection, The Portico / Portico Parade and Aurelia Street / Portico Parade maintain their performance in the Project Case.

Table 6-3: Summary of intersection performance of 2037 Future Base and compared with the 2037 Project Case in the AM peak

Intersection	2037 Project Case AM peak (7:45am – 8:45am)					Compared to 2037 Future Base AM peak (7:45am – 8:45am)				
	Vol (veh)	DoS	Avg. Delay	LoS	95% QL (m)	Vol (veh)	DoS	Avg Delay	LoS	95% QL (m)
Station Road / Fitzwilliam Road / Wentworth Avenue[1]	2906	0.725	36.7	C	226	-129 (-4.3%)	-0.243 (-25.1%)	+3 (+9.9%)	=	+95 (+72.7%)
Wentworth Avenue roundabout	2529	1.548	511.5	F	795.3	+19 (+0.8%)	+0.395 (+34.3%)	+350 (+216.5%)	=	+156 (+24.3%)
Wentworth Avenue / Cornelia Road / The Portico	1963	1.19	147.3	F	329.6	+20 (+1%)	-0.118 (-9%)	+53 (+56.7%)	=	-55 (-14.2%)
Cornelia Road / Junia Avenue	1533	1.32	305.7	F	696.9	+10 (+0.7%)	+0.001 (+0.1%)	+1 (+0.2%)	=	+1 (+0.1%)
The Portico / Portico Parade	964	0.541	16.9	B	60.8	+7 (+0.7%)	0 (+0%)	+3 (+21.6%)	▼	+15 (+33.9%)
Aurelia Street / Portico Parade	1011	0.256	9.9	A	2.1	+13 (+1.3%)	0 (+0%)	0 (-2.9%)	=	0 (+0%)

[1]In the Future Base it is a roundabout but in the Project Case this intersection is upgraded to a signalised intersection

Table 6-4: Summary of intersection performance of 2037 Future Base and compared with the 2037 Project Case in the PM peak

Intersection	2037 Project Case PM peak (4:45pm – 5:45pm)					Compared to 2037 Future Base PM peak (4:45pm – 5:45pm)				
	Vol (veh)	DoS	Avg. Delay	LoS	95% QL (m)	Vol (veh)	DoS	Avg Delay	LoS	95% QL (m)
Station Road / Fitzwilliam Road / Wentworth Avenue[1]	3064	0.973	55.2	D	349.8	-137 (-4.3%)	-0.529 (-35.2%)	-415 (-88.3%)	▲	-526 (-60.1%)
Wentworth Avenue roundabout	2553	2.255	1155.9	F	1165.7	+140 (+5.8%)	+0.851 (+60.6%)	+765 (+195.4%)	=	+522 (+81%)
Wentworth Avenue / Cornelia Road / The Portico	2100	1.167	86.4	F	503.6	+127 (+6.4%)	0.086 (+8%)	+17 (+24.7%)	▼	+35 (+7.4%)
Cornelia Road / Junia Avenue	1735	1.082	98.6	F	404.7	+60 (+3.6%)	0.004 (+0.4%)	+3 (+3.2%)	=	+7 (+1.6%)
The Portico / Portico Parade	994	0.49	15.9	B	78.8	+50 (+5.3%)	0 (+0%)	+2 (+12.8%)	=	+28 (+54.8%)
Aurelia Street / Portico Parade	1101	0.293	9.9	A	4.7	+43 (+4.1%)	0 (+0%)	0 (+3.1%)	=	0 (+2.2%)

[1]*In the Future Base it is a roundabout but in the Project Case this intersection is upgraded to a signalised intersection*

6.3 Travel time comparison

Travel times were extracted from the SIDRA models for the 2027 and 2037 Future Base and Project Case scenarios. The travel times are suggested to be used for comparative purposes only between these scenarios as SIDRA may provide less accuracy for travel times compared to a microsimulation model. **Table 6-5** summarises the origin and destination (OD) points, which were endorsed by COP, where travel times were measured between and **Figure 6-1** illustrates the OD locations.

Table 6-5: Travel time routes

OD ID	Route description
1 – 3	Station Rd to Wentworth Ave
1 – 4	Station Rd to Cornelia Rd
1 – 5	Station Rd to The Portico
2 – 3	Fitzwilliam Rd to Wentworth Ave
2 – 4	Fitzwilliam Rd to Cornelia Rd
2 – 5	Fitzwilliam Rd to The Portico
3 – 1	Wentworth Ave to Station Rd
3 – 2	Wentworth Ave to Fitzwilliam Rd
3 – 4	Wentworth Ave to Cornelia Rd
3 – 5	Wentworth Ave to The Portico
4 – 1	Cornelia Rd to Station Rd
4 – 2	Cornelia Rd to Fitzwilliam Rd
4 – 3	Cornelia Rd to Wentworth Ave

Figure 6-1: OD locations

Table 6-6 and **Table 6-7** compares the travel times in the 2027 and 2037 Base and Project Case scenarios for the AM and PM peak respectively.

A comparison of the travel times reinforces the following key findings from the intersection performance:

AM Peak

- The Project Case for the AM peak results in a significant increase in delay at the Wentworth Avenue / Wentworth Avenue roundabout for the northbound traffic. This is evidenced by the significant increase in travel times for trips originating at Cornelia Road of up to 400 seconds in 2027 and 600 seconds in 2037. The signalisation of Station Road / Fitzwilliam Road / Wentworth Avenue provides intermittent gaps for vehicles from Wentworth Avenue southwest approach to enter the roundabout, reducing the available gaps for Wentworth Avenue west (bridge) approach to enter the roundabout.

- The difference in travel times for routes originating from Station Road, Fitzwilliam Road and Wentworth Avenue are within one minute between the Project Case and Base scenario. This fluctuation in travel time is due to the change in arrival patterns because of the network changes/upgrades in the Project Case.

PM Peak

- The Project Case for the PM peak results in improvements in travel times for the southbound traffic along Wentworth Avenue due to the provision of the additional southbound lane between

the Wentworth Avenue / Wentworth Avenue and Station Road / Fitzwilliam Road / Wentworth Avenue intersections and the signalisation of Station Road / Fitzwilliam Road / Wentworth Avenue. These changes in the network result in travel times improving by up to 600 seconds for trips originating from Station Road in both 2027 and 2037.

- However, the improvement for the southbound traffic has resulted in insufficient gaps for the southwest approach to the Wentworth Avenue / Wentworth Avenue roundabout which has increased the travel times originating from Wentworth Avenue by up to 660 seconds in 2027 and 850 seconds in 2037.
- The difference in travel times for routes originating from Cornelia Road are within 70 seconds between the Project Case and Base scenario. This fluctuation in travel time is due to the change in arrival patterns because of the network changes/upgrades in the Project Case.

Table 6-6: AM travel times

Route \ Travel Time (s)	2027			2037		
	Base	Project Case	Difference	Base	Project Case	Difference
Station Rd to Wentworth Ave	114.4	157.2	+ 42.8	158.2	161.9	+ 3.7
Station Rd to Cornelia Rd	162.1	236.2	+ 74.1	211.4	271.3	+ 59.9
Station Rd to The Portico	162.1	182.5	+ 20.4	211.4	189.4	- 22
Fitzwilliam Rd to Wentworth Ave	77.1	73.2	- 3.9	106.2	74.0	- 32.2
Fitzwilliam Rd to Cornelia Rd	124.8	152.2	+ 27.4	159.3	183.3	+ 24
Fitzwilliam Rd to The Portico	124.8	98.5	- 26.3	159.3	101.4	- 57.9
Wentworth Ave to Station Rd	175.4	166.2	- 9.2	260.8	220.6	- 40.2
Wentworth Ave to Fitzwilliam Rd	137.5	156.2	+ 18.7	221.1	211.5	- 9.6
Wentworth Ave to Cornelia Rd	155.5	159.8	+ 4.3	243.9	243.1	- 0.8
Wentworth Ave to The Portico	155.5	106.2	- 49.3	243.9	161.2	- 82.7
Cornelia Rd to Station Rd	426.4	796.9	+ 370.5	312.8	858.2	+ 545.4
Cornelia Rd to Fitzwilliam Rd	388.4	786.9	+ 398.5	273.0	849.0	+ 576.0
Cornelia Rd to Wentworth Ave	315.5	716.1	+ 400.6	243.7	776.0	+ 532.3

Table 6-7: PM travel times

Route \ Travel Time (s)	2027			2037		
	Base	Project Case	Difference	Base	Project Case	Difference
Station Rd to Wentworth Ave	629.1	160.7	- 468.4	717.5	183.8	- 533.7
Station Rd to Cornelia Rd	766.0	407.7	- 358.3	854.1	462.2	- 391.9
Station Rd to The Portico	766.0	212.6	- 553.4	854.1	264.4	- 589.7
Fitzwilliam Rd to Wentworth Ave	196.3	75.5	- 120.8	226.5	82.3	- 144.2
Fitzwilliam Rd to Cornelia Rd	333.2	322.5	- 10.7	363.1	360.7	- 2.4
Fitzwilliam Rd to The Portico	333.2	127.4	- 205.8	363.1	162.9	- 200.2
Wentworth Ave to Station Rd	433.3	1026.9	+ 593.6	493.1	1278.8	+ 785.7
Wentworth Ave to Fitzwilliam Rd	401.0	1015.7	+ 614.7	460.5	1283.3	+ 822.8
Wentworth Ave to Cornelia Rd	503.5	1159.7	+ 656.2	561.2	1406.7	+ 845.5
Wentworth Ave to The Portico	503.5	964.6	+ 461.1	561.2	1208.9	+ 647.7
Cornelia Rd to Station Rd	166.0	159.6	- 6.4	162.5	193.0	+ 30.5
Cornelia Rd to Fitzwilliam Rd	133.7	148.4	+ 14.7	129.9	197.5	+ 67.6
Cornelia Rd to Wentworth Ave	100.3	79.0	- 21.3	95.2	104.7	+ 9.5

7 Conclusion

The City of Parramatta is proposing to undertake localised upgrades such as signalisation of Station Road / Fitzwilliam Road / Wentworth Avenue and two southbound lanes on Wentworth Avenue between Station Road / Fitzwilliam Road / Wentworth Avenue and Wentworth Avenue / Wentworth Avenue to improve traffic flow, safety and active transport connectivity in the Wentworth Avenue Bridge and Toongabbie Station precinct. These upgrades were recommended by a planning study undertaken by the NSW government.

Traffic modelling was undertaken to determine the intersection performance for existing and future traffic volumes to understand the impacts of the proposed upgrades. A networked traffic model was developed in SIDRA Intersection 9.1 and calibrated and validated to existing conditions in accordance with the *Traffic Modelling Guidelines* (Roads and Maritime Services, 2013).

The modelling results can be summarised as:

- The signalisation of Station Road / Fitzwilliam Road / Wentworth Avenue combined with the two southbound lanes on Wentworth Avenue have improved the performance of Station Road / Fitzwilliam Road / Wentworth Avenue in the PM peak from LOS F to C in 2027 and LOS F to D in 2037 where there was significant queueing observed from the Wentworth Avenue roundabout that spilled back beyond the Station Road / Fitzwilliam Road / Wentworth Avenue. The AM peak has resulted in a worsening of performance from LOS B to C in both 2027 and 2037 due to the inherent delays from traffic signals. However, the intersection still operates satisfactorily with added benefits such as increased safety and pedestrian crossing facilities.
- The upgrades result in a worse critical movement delay for the intersection of Wentworth Avenue roundabout.
    - » In the AM peak the southwest approach has more opportunities to enter the roundabout due to the signalisation of Station Road / Fitzwilliam Road / Wentworth Avenue providing gaps periodically from signal phase changes. Therefore, the western approach has increased delay, and the queueing worsens as the intersection is already exceeding capacity and further impacts upstream intersections.
    - » In the PM peak the upgrades improve the performance of Station Road / Fitzwilliam Road / Wentworth Avenue from LOS F to C in 2027 and LOS F to D in 2037 which results in more traffic reaching the Wentworth Avenue roundabout from the northeast and significantly increasing the delay for the southwestern approach. The higher traffic flow from the northeast results in more pressure on the intersection of Wentworth Avenue / Cornelia Road / The Portico which already exceeds capacity and increases the average delay of the intersection.

The following recommendations could mitigate the issues with the Project Case and improve the network performance:

- Further investigation and improvements to the Wentworth Avenue / Wentworth Avenue roundabout will be required to improve capacity such as:
    - » Providing an additional lane from the western (bridge) approach through the roundabout which connects up with the two existing lanes prior to the Station Road / Fitzwilliam Road / Wentworth Avenue intersection; or
    - » Signalisation of the intersection

- The northern approach to Wentworth Avenue / Cornelia Road / The Portico in the Project Case scenario could be changed to a dual right turn to improve efficiency of the traffic signals as the dominant movement for the northern approach is the right turn.
    - » It is noted that in the *Toongabbie Transport Study* (SCT, 2020) an option to signalise the Cornelia Road / Junia Avenue roundabout was considered which allows for Cornelia Road to have two lanes westbound between Wentworth Avenue / Cornelia Road / The Portico and Cornelia Road / Junia Avenue. This would remove the need for the vehicles from the northern approach turning right to merge shortly after the turn should a dual right turn be provided.

Appendices

Appendix A SIDRA summaries

2025 Base

NETWORK LAYOUT

Network: N101 [2025 Base - AM (Network Folder: General)]

New Network
Network Category: (None)

Layout pictures are schematic functional drawings reflecting input data. They are not design drawings.

SITES IN NETWORK		
Site ID	**CCG ID**	**Site Name**
1	NA	1. Station Rd / Fitzwilliam Rd / Wentworth Ave
2	NA	2. Wentworth Ave (NE) / Wentworth Ave (SW) / Wentworth Ave (Bridge) / Toongabbie Community Access Rd
TCS2334	NA	3. Wentworth Ave (Bridge) / Cornelia Rd / The Portico
4	NA	4. Cornelia Rd / Junia Ave
TCS 2611	NA	5. The Portico / Portico Pde
6	NA	6. Aurelia St / Portico Pde

MOVEMENT SUMMARY

Site: 1 [1. Station Rd / Fitzwilliam Rd / Wentworth Ave (Site Folder: 2025 Base - AM)]

Output produced by SIDRA INTERSECTION Version: 9.1.1.200

Network: N101 [2025 Base - AM (Network Folder: General)]

Existing 2025 AM
Site Category: (None)
Roundabout

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
SouthEast: Fitzwilliam Road															
21	L2	All MCs	522	1.2	522	1.2	0.705	15.3	LOS B	8.2	58.1	0.95	0.91	1.27	35.8
22	T1	All MCs	528	3.8	528	3.8	0.717	13.8	LOS A	8.6	61.9	0.96	0.92	1.30	50.0
23u	U	All MCs	2	0.0	2	0.0	0.717	19.7	LOS B	8.6	61.9	0.96	0.92	1.30	42.6
Approach			1053	2.5	1053	2.5	0.717	14.6	LOS B	8.6	61.9	0.95	0.91	1.29	46.3
NorthWest: Station Road															
28	T1	All MCs	378	2.8	378	2.8	0.596	8.1	LOS A	5.7	41.5	0.71	0.63	0.71	53.2
29	R2	All MCs	496	5.3	496	5.3	0.596	12.5	LOS A	5.7	41.5	0.79	0.73	0.87	49.6
29u	U	All MCs	13	8.3	13	8.3	0.596	14.6	LOS B	5.7	41.5	0.79	0.73	0.87	52.9
Approach			886	4.3	886	4.3	0.596	10.7	LOS A	5.7	41.5	0.76	0.68	0.80	51.4
SouthWest: Wentworth Avenue															
30	L2	All MCs	787	3.5	660	3.6	0.827	18.0	LOS B	13.6	98.4	1.00	1.10	1.60	46.0
32	R2	All MCs	400	0.8	334	0.6	0.528	15.0	LOS B	4.4	31.2	0.87	0.83	1.00	38.6
32u	U	All MCs	2	50.0	2	50.8	0.528	20.2	LOS B	4.4	31.2	0.87	0.83	1.00	27.2
Approach			1189	2.7	996	2.7	0.827	17.0	LOS B	13.6	98.4	0.96	1.01	1.40	44.4
All Vehicles			3128	3.1	2935	3.3	0.827	14.2	LOS A	13.6	98.4	0.90	0.88	1.18	47.3

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Override Site Data tab).

Vehicle movement LOS values are based on average delay per movement.

Intersection and Approach LOS values are based on average delay for all vehicle movements.

Roundabout Capacity Model: SIDRA Standard.

Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).

Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.

Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

MOVEMENT SUMMARY

Site: 2 [2. Wentworth Ave (NE) / Wentworth Ave (SW) / Wentworth Ave (Bridge) / Toongabbie Community Access Rd (Site Folder: 2025 Base - AM)]

Network: N101 [2025 Base - AM (Network Folder: General)]

Output produced by SIDRA INTERSECTION Version: 9.1.1.200

Existing 2025 AM
Site Category: (None)
Roundabout

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
NorthEast: Wentworth Avenue (NE)															
25	T1	All MCs	301	5.2	301	5.2	0.871	7.7	LOS A	17.0	122.1	1.00	0.60	1.05	42.5
26a	R1	All MCs	717	2.5	717	2.5	0.871	11.0	LOS A	17.0	122.1	1.00	0.60	1.05	31.4
26	R2	All MCs	2	0.0	2	0.0	0.871	11.9	LOS A	17.0	122.1	1.00	0.60	1.05	27.4
26u	U	All MCs	7	0.0	7	0.0	0.871	13.9	LOS A	17.0	122.1	1.00	0.60	1.05	31.4
Approach			1027	3.3	1027	3.3	0.871	10.0	LOS A	17.0	122.1	1.00	0.60	1.05	36.2
NorthWest: Toongabbie Community Access Road															
27	L2	All MCs	2	0.0	2	0.0	0.023	12.4	LOS A	0.1	1.1	0.92	0.76	0.92	14.7
29	R2	All MCs	1	0.0	1	0.0	0.023	16.8	LOS B	0.1	1.1	0.92	0.76	0.92	33.0
29b	R3	All MCs	3	33.3	3	33.3	0.023	20.0	LOS B	0.1	1.1	0.92	0.76	0.92	14.7
29u	U	All MCs	1	0.0	1	0.0	0.023	18.8	LOS B	0.1	1.1	0.92	0.76	0.92	15.6
Approach			7	14.3	7	14.3	0.023	17.2	LOS B	0.1	1.1	0.92	0.76	0.92	19.0
West: Wentworth Ave (Bridge)															
10b	L3	All MCs	4	0.0	4	0.0	1.184	182.4	LOS F	101.7	722.8	1.00	3.85	7.73	6.7
10a	L1	All MCs	806	2.2	726	2.1	1.184	182.2	LOS F	101.7	722.8	1.00	3.85	7.73	6.1
12b	R3	All MCs	166	0.0	150	0.0	1.184	187.8	LOS F	101.7	722.8	1.00	3.85	7.73	10.5
12u	U	All MCs	1	0.0	1	0.0	1.184	188.7	LOS F	101.7	722.8	1.00	3.85	7.73	6.1
Approach			978	1.8	881	1.7	1.184	183.1	LOS F	101.7	722.8	1.00	3.85	7.73	6.9
SouthWest: Wentworth Avenue (SW)															
30b	L3	All MCs	137	1.5	137	1.5	0.978	55.2	LOS D	24.5	175.4	1.00	1.79	3.07	15.8
30	L2	All MCs	1	0.0	1	0.0	0.978	54.8	LOS D	24.5	175.4	1.00	1.79	3.07	16.1
31	T1	All MCs	371	3.1	371	3.1	0.978	55.2	LOS D	24.5	175.4	1.00	1.79	3.07	15.8
32u	U	All MCs	1	0.0	1	0.0	0.978	61.3	LOS E	24.5	175.4	1.00	1.79	3.07	23.9
Approach			509	2.7	509	2.7	0.978	55.2	LOS D	24.5	175.4	1.00	1.79	3.07	15.8
All Vehicles			2522	2.6	2425	2.7	1.184	82.4	LOS F	101.7	722.8	1.00	2.03	3.90	11.8

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Override Site Data tab).
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Roundabout Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

MOVEMENT SUMMARY

Site: TCS2334 [3. Wentworth Ave (Bridge) / Cornelia Rd / The Portico (Site Folder: 2025 Base - AM)]

Output produced by SIDRA INTERSECTION Version: 9.1.1.200

Network: N101 [2025 Base - AM (Network Folder: General)]

Existing 2025 AM
Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 100 seconds (Network User-Given Cycle Time)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
East: The Portico															
5	T1	All MCs	61	0.0	61	0.0	0.082	23.1	LOS B	1.9	13.6	0.69	0.54	0.69	10.6
6	R2	All MCs	307	3.1	307	3.1	* 1.469	482.5	LOS F	14.8	106.1	1.00	2.15	4.01	0.6
Approach			368	2.6	368	2.6	1.469	406.4	LOS F	14.8	106.1	0.95	1.88	3.46	0.7
NorthEast: Cornelia Lane (Service Road)															
24b	L3	All MCs	1	0.0	1	0.0	0.001	6.9	LOS A	0.0	0.1	0.28	0.56	0.28	22.7
Approach			1	0.0	1	0.0	0.001	6.9	LOS A	0.0	0.1	0.28	0.56	0.28	22.7
North: Wentworth Avenue (Bridge)															
7	L2	All MCs	289	3.6	289	3.6	0.920	27.5	LOS B	48.0	343.3	1.00	1.00	1.20	18.4
9	R2	All MCs	567	1.9	567	1.9	0.920	54.5	LOS D	48.0	343.3	1.00	1.00	1.20	18.4
Approach			857	2.5	856	2.5	0.920	45.4	LOS D	48.0	343.3	1.00	1.00	1.20	18.4
West: Cornelia Road															
10b	L3	All MCs	1	0.0	1	0.0	1.070	111.8	LOS F	20.8	146.9	1.00	1.49	1.97	4.3
10	L2	All MCs	669	1.3	634	1.2	* 1.070	129.2	LOS F	20.8	146.9	1.00	1.49	1.97	3.2
10a	L1	All MCs	5	20.0	5	19.9	0.238	52.0	LOS D	1.9	13.9	0.97	0.72	0.97	8.4
11	T1	All MCs	38	0.0	36	0.0	0.238	48.6	LOS D	1.9	13.9	0.97	0.72	0.97	6.9
Approach			714	1.3	676	1.3	1.070	124.3	LOS F	20.8	146.9	1.00	1.45	1.91	3.3
All Vehicles			1940	2.1	1902	2.1	1.469	143.3	LOS F	48.0	343.3	0.99	1.33	1.89	4.8

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Override Site Data tab).
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Green.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

* Critical Movement (Signal Timing)

Pedestrian Movement Performance

Mov ID	Crossing	Dem. Flow ped/h	Aver. Delay sec	Level of Service	AVERAGE BACK OF QUEUE [Ped ped	Dist] m	Prop. Que	Eff. Stop Rate	Travel Time sec	Travel Dist. m	Aver. Speed m/sec
East: The Portico											
P2	Full	6	44.2	LOS E	0.0	0.0	0.94	0.94	198.0	200.0	1.01
North: Wentworth Avenue (Bridge)											
P3	Full	29	44.2	LOS E	0.1	0.1	0.94	0.94	198.1	200.0	1.01
All Pedestrians		36	44.2	LOS E	0.1	0.1	0.94	0.94	198.1	200.0	1.01

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)
Pedestrian movement LOS values are based on average delay per pedestrian movement.
Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

MOVEMENT SUMMARY

Site: 4 [4. Cornelia Rd / Junia Ave (Site Folder: 2025 Base - AM)]

Output produced by SIDRA INTERSECTION Version: 9.1.1.200

Network: N101 [2025 Base - AM (Network Folder: General)]

Existing 2025 AM
Site Category: (None)
Roundabout

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Junia Avenue															
1	L2	All MCs	35	3.0	35	3.0	0.569	14.6	LOS B	4.2	29.6	0.96	0.74	1.14	34.4
2	T1	All MCs	22	0.0	22	0.0	0.569	14.4	LOS A	4.2	29.6	0.96	0.74	1.14	35.0
3	R2	All MCs	160	1.3	160	1.3	0.569	17.9	LOS B	4.2	29.6	0.96	0.74	1.14	30.7
3u	U	All MCs	1	0.0	1	0.0	0.569	19.3	LOS B	4.2	29.6	0.96	0.74	1.14	36.7
Approach			218	1.4	218	1.4	0.569	17.0	LOS B	4.2	29.6	0.96	0.74	1.14	32.0
East: Cornelia Road															
4	L2	All MCs	65	0.0	65	0.0	0.499	5.1	LOS A	3.7	26.4	0.24	0.49	0.24	42.3
5	T1	All MCs	527	2.0	527	2.0	0.499	5.1	LOS A	3.7	26.4	0.24	0.49	0.24	40.9
6	R2	All MCs	3	0.0	3	0.0	0.499	8.6	LOS A	3.7	26.4	0.24	0.49	0.24	39.1
6u	U	All MCs	14	0.0	14	0.0	0.499	10.3	LOS A	3.7	26.4	0.24	0.49	0.24	32.2
Approach			609	1.7	609	1.7	0.499	5.3	LOS A	3.7	26.4	0.24	0.49	0.24	41.0
North: Junia Avenue															
7	L2	All MCs	42	0.0	42	0.0	0.213	8.2	LOS A	0.9	6.1	0.75	0.73	0.75	31.9
8	T1	All MCs	16	6.7	16	6.7	0.213	8.5	LOS A	0.9	6.1	0.75	0.73	0.75	39.9
9	R2	All MCs	23	0.0	23	0.0	0.213	11.5	LOS A	0.9	6.1	0.75	0.73	0.75	36.7
9u	U	All MCs	3	0.0	3	0.0	0.213	13.1	LOS A	0.9	6.1	0.75	0.73	0.75	36.7
Approach			84	1.3	84	1.3	0.213	9.4	LOS A	0.9	6.1	0.75	0.73	0.75	35.8
West: Cornelia Road															
10	L2	All MCs	9	0.0	9	0.0	1.228	218.5	LOS F	75.1	533.0	1.00	4.00	6.79	5.8
11	T1	All MCs	500	1.5	500	1.5	1.228	218.7	LOS F	75.1	533.0	1.00	4.00	6.79	2.9
12	R2	All MCs	27	3.8	27	3.8	1.228	222.2	LOS F	75.1	533.0	1.00	4.00	6.79	7.5
12u	U	All MCs	7	0.0	7	0.0	1.228	223.7	LOS F	75.1	533.0	1.00	4.00	6.79	5.2
Approach			544	1.5	544	1.5	1.228	218.9	LOS F	75.1	533.0	1.00	4.00	6.79	3.3
All Vehicles			1456	1.6	1456	1.6	1.228	87.1	LOS F	75.1	533.0	0.66	1.85	2.85	9.6

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Override Site Data tab).
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Roundabout Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

MOVEMENT SUMMARY

Site: TCS 2611 [5. The Portico / Portico Pde (Site Folder: 2025 Base - AM)]

Output produced by SIDRA INTERSECTION Version: 9.1.1.200

Network: N101 [2025 Base - AM (Network Folder: General)]

Existing 2025 AM
Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 100 seconds (Network User-Given Cycle Time)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Portico Parade															
1	L2	All MCs	347	1.8	347	1.8	*0.403	3.7	LOS A	1.8	13.1	0.21	0.58	0.21	23.5
2	T1	All MCs	81	5.2	81	5.2	0.239	38.5	LOS C	3.4	25.2	0.90	0.70	0.90	13.8
Approach			428	2.5	428	2.5	0.403	10.3	LOS A	3.4	25.2	0.34	0.60	0.34	17.3
North: Portico Parade															
8	T1	All MCs	140	4.5	140	4.5	*0.509	40.0	LOS C	5.8	42.7	0.93	0.74	0.93	11.7
9	R2	All MCs	21	15.0	21	15.0	0.509	48.7	LOS D	5.8	42.7	0.95	0.77	0.95	11.4
Approach			161	5.9	161	5.9	0.509	41.2	LOS C	5.8	42.7	0.93	0.75	0.93	11.6
West: The Portico															
10	L2	All MCs	33	3.2	32	3.2	0.262	8.5	LOS A	3.7	26.4	0.25	0.61	0.25	31.9
12	R2	All MCs	296	3.6	294	3.6	0.262	7.9	LOS A	3.7	26.4	0.25	0.61	0.25	21.1
Approach			328	3.5	326	3.5	0.262	7.9	LOS A	3.7	26.4	0.25	0.61	0.25	23.0
All Vehicles			918	3.4	916	3.4	0.509	14.9	LOS B	5.8	42.7	0.41	0.63	0.41	16.3

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Override Site Data tab).
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Green.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

* Critical Movement (Signal Timing)

Pedestrian Movement Performance

Mov ID	Crossing	Dem. Flow ped/h	Aver. Delay sec	Level of Service	AVERAGE BACK OF QUEUE [Ped ped	Dist] m	Prop. Que	Eff. Stop Rate	Travel Time sec	Travel Dist. m	Aver. Speed m/sec
North: Portico Parade											
P3	Full	51	44.3	LOS E	0.1	0.1	0.94	0.94	198.1	200.0	1.01
West: The Portico											
P4	Full	11	44.2	LOS E	0.0	0.0	0.94	0.94	198.0	200.0	1.01
All Pedestrians		61	44.3	LOS E	0.1	0.1	0.94	0.94	198.1	200.0	1.01

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)
Pedestrian movement LOS values are based on average delay per pedestrian movement.
Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

MOVEMENT SUMMARY

Site: 6 [6. Aurelia St / Portico Pde (Site Folder: 2025 Base - AM)]

Output produced by SIDRA INTERSECTION Version: 9.1.1.200

Network: N101 [2025 Base - AM (Network Folder: General)]

Existing 2025 AM
Site Category: (None)
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Portico Parade															
1	L2	All MCs	62	1.7	62	1.7	0.242	4.6	LOS A	0.0	0.0	0.00	0.07	0.00	47.3
2	T1	All MCs	399	2.6	399	2.6	0.242	0.0	LOS A	0.0	0.0	0.00	0.07	0.00	47.5
Approach			461	2.5	461	2.5	0.242	0.6	NA	0.0	0.0	0.00	0.07	0.00	47.4
North: Portico Parade															
8	T1	All MCs	436	3.9	434	3.9	0.228	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	49.9
Approach			436	3.9	434	3.9	0.228	0.0	NA	0.0	0.0	0.00	0.00	0.00	49.9
West: Aurelia Street															
10	L2	All MCs	29	0.0	29	0.0	0.077	5.7	LOS A	0.3	1.9	0.49	0.67	0.49	41.1
12	R2	All MCs	27	3.8	27	3.8	0.077	9.7	LOS A	0.3	1.9	0.49	0.67	0.49	41.2
Approach			57	1.9	57	1.9	0.077	7.6	LOS A	0.3	1.9	0.49	0.67	0.49	41.2
All Vehicles			954	3.1	952	3.1	0.242	0.8	NA	0.3	1.9	0.03	0.08	0.03	47.3

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Override Site Data tab).

Vehicle movement LOS values are based on average delay per movement.

Minor Road Approach LOS values are based on average delay for all vehicle movements.

NA (TWSC): Level of Service is not defined for major road approaches or the intersection as a whole for Two-Way Sign Control (HCM LOS rule).

Two-Way Sign Control Capacity Model: SIDRA Standard.

Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).

Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.

Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

MOVEMENT SUMMARY

Site: 1 [1. Station Rd / Fitzwilliam Rd / Wentworth Ave (Site Folder: 2025 Base - PM)]

Output produced by SIDRA INTERSECTION Version: 9.1.1.200

Network: N101 [2025 Base - PM (Network Folder: General)]

Existing 2025 PM
Site Category: (None)
Roundabout

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
SouthEast: Fitzwilliam Road															
21	L2	All MCs	483	1.5	483	1.5	0.742	15.4	LOS B	9.5	67.2	0.94	0.91	1.25	34.8
22	T1	All MCs	531	0.8	531	0.8	0.930	32.7	LOS C	19.9	140.4	1.00	1.38	2.12	41.5
23u	U	All MCs	6	0.0	6	0.0	0.930	38.9	LOS C	19.9	140.4	1.00	1.38	2.12	31.9
Approach			1020	1.1	1020	1.1	0.930	24.6	LOS B	19.9	140.4	0.97	1.15	1.71	40.0
NorthWest: Station Road															
28	T1	All MCs	484	1.5	484	1.5	0.680	14.3	LOS A	7.5	53.4	0.95	0.87	1.22	50.8
29	R2	All MCs	516	1.8	516	1.8	1.414	390.0	LOS F	103.0	732.3	1.00	6.51	14.14	7.8
29u	U	All MCs	12	0.0	12	0.0	1.414	391.8	LOS F	103.0	732.3	1.00	6.51	14.14	13.6
Approach			1012	1.7	1012	1.7	1.414	210.2	LOS F	103.0	732.3	0.98	3.81	7.95	14.7
SouthWest: Wentworth Avenue															
30	L2	All MCs	593	2.8	550	2.7	0.787	17.0	LOS B	10.9	78.1	1.00	1.03	1.49	46.6
32	R2	All MCs	538	1.4	500	1.3	0.742	19.4	LOS B	9.1	64.7	1.00	0.96	1.40	35.4
32u	U	All MCs	2	0.0	2	0.0	0.742	21.3	LOS B	9.1	64.7	1.00	0.96	1.40	23.5
Approach			1133	2.1	1051	2.0	0.787	18.1	LOS B	10.9	78.1	1.00	0.99	1.45	42.5
All Vehicles			3164	1.7	3083	1.7	1.414	83.3	LOS F	103.0	732.3	0.98	1.97	3.67	23.9

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Override Site Data tab).
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Roundabout Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

MOVEMENT SUMMARY

Site: 2 [2. Wentworth Ave (NE) / Wentworth Ave (SW) / Wentworth Ave (Bridge) / Toongabbie Community Access Rd (Site Folder: 2025 Base - PM)]

Network: N101 [2025 Base - PM (Network Folder: General)]

Output produced by SIDRA INTERSECTION Version: 9.1.1.200

Existing 2025 PM
Site Category: (None)
Roundabout

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
NorthEast: Wentworth Avenue (NE)															
25	T1	All MCs	238	3.5	202	3.4	1.119	121.3	LOS F	57.8	410.1	1.00	2.93	5.07	11.7
26a	R1	All MCs	762	1.1	648	1.1	1.119	124.6	LOS F	57.8	410.1	1.00	2.93	5.07	5.3
26	R2	All MCs	1	0.0	1	0.0	1.119	125.5	LOS F	57.8	410.1	1.00	2.93	5.07	6.2
26u	U	All MCs	6	0.0	5	0.0	1.119	127.5	LOS F	57.8	410.1	1.00	2.93	5.07	5.3
Approach			1007	1.7	856	1.6	1.119	123.8	LOS F	57.8	410.1	1.00	2.93	5.07	7.0
NorthWest: Toongabbie Community Access Road															
27	L2	All MCs	18	0.0	18	0.0	0.215	16.2	LOS B	1.3	8.8	1.00	0.86	1.00	12.8
29	R2	All MCs	8	0.0	8	0.0	0.215	20.6	LOS B	1.3	8.8	1.00	0.86	1.00	31.1
29b	R3	All MCs	21	0.0	21	0.0	0.215	21.6	LOS B	1.3	8.8	1.00	0.86	1.00	12.8
29u	U	All MCs	1	0.0	1	0.0	0.215	22.6	LOS B	1.3	8.8	1.00	0.86	1.00	14.2
Approach			48	0.0	48	0.0	0.215	19.5	LOS B	1.3	8.8	1.00	0.86	1.00	17.9
West: Wentworth Ave (Bridge)															
10b	L3	All MCs	16	0.0	16	0.0	1.008	38.0	LOS C	44.9	318.5	1.00	1.55	2.28	20.5
10a	L1	All MCs	824	1.5	816	1.5	1.008	37.7	LOS C	44.9	318.5	1.00	1.55	2.28	21.0
12b	R3	All MCs	197	1.1	195	1.1	1.008	43.4	LOS D	44.9	318.5	1.00	1.55	2.28	29.2
12u	U	All MCs	1	0.0	1	0.0	1.008	44.3	LOS D	44.9	318.5	1.00	1.55	2.28	21.0
Approach			1038	1.4	1028	1.4	1.008	38.8	LOS C	44.9	318.5	1.00	1.55	2.28	23.0
SouthWest: Wentworth Avenue (SW)															
30b	L3	All MCs	133	2.4	133	2.4	1.316	308.1	LOS F	72.9	525.7	1.00	4.10	9.65	3.6
30	L2	All MCs	8	0.0	8	0.0	1.316	307.6	LOS F	72.9	525.7	1.00	4.10	9.65	4.0
31	T1	All MCs	282	4.1	282	4.1	1.316	308.2	LOS F	72.9	525.7	1.00	4.10	9.65	3.6
32u	U	All MCs	4	0.0	4	0.0	1.316	314.2	LOS F	72.9	525.7	1.00	4.10	9.65	6.5
Approach			427	3.4	427	3.4	1.316	308.2	LOS F	72.9	525.7	1.00	4.10	9.65	3.6
All Vehicles			2521	1.8	2360	2.0	1.316	118.0	LOS F	72.9	525.7	1.00	2.50	4.60	8.8

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Override Site Data tab).
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Roundabout Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

MOVEMENT SUMMARY

Site: TCS2334 [3. Wentworth Ave (Bridge) / Cornelia Rd / The Portico (Site Folder: 2025 Base - PM)]

Output produced by SIDRA INTERSECTION Version: 9.1.1.200

Network: N101 [2025 Base - PM (Network Folder: General)]

Existing 2025 PM
Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 100 seconds (Network Site User-Given Phase Times)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
East: The Portico															
5	T1	All MCs	113	0.9	113	0.9	0.171	25.6	LOS B	3.8	26.9	0.74	0.59	0.74	9.6
6	R2	All MCs	321	1.3	321	1.3	* 0.921	58.7	LOS E	15.0	106.1	1.00	1.01	1.32	4.2
Approach			434	1.2	434	1.2	0.921	50.1	LOS D	15.0	106.1	0.93	0.90	1.17	5.0
NorthEast: Cornelia Lane (Service Road)															
24b	L3	All MCs	11	0.0	11	0.0	0.010	7.2	LOS A	0.1	0.7	0.31	0.59	0.31	22.3
Approach			11	0.0	11	0.0	0.010	7.2	LOS A	0.1	0.7	0.31	0.59	0.31	22.3
North: Wentworth Avenue (Bridge)															
7	L2	All MCs	243	1.3	186	1.4	1.084	120.8	LOS F	67.0	474.1	1.00	1.39	2.02	7.6
9	R2	All MCs	673	1.3	515	1.2	* 1.084	145.3	LOS F	67.0	474.1	1.00	1.39	2.02	7.6
Approach			916	1.3	701	1.3	1.084	138.8	LOS F	67.0	474.1	1.00	1.39	2.02	7.6
West: Cornelia Road															
10b	L3	All MCs	2	0.0	2	0.0	0.560	6.7	LOS A	16.8	119.2	0.53	0.73	0.53	21.8
10	L2	All MCs	716	1.5	706	1.5	0.560	13.4	LOS A	16.8	119.2	0.53	0.73	0.53	21.2
10a	L1	All MCs	4	0.0	4	0.0	0.579	53.0	LOS D	5.5	38.8	1.00	0.79	1.01	8.3
11	T1	All MCs	109	1.0	108	1.0	* 0.579	49.7	LOS D	5.5	38.8	1.00	0.79	1.01	6.8
Approach			832	1.4	820	1.4	0.579	18.4	LOS B	16.8	119.2	0.60	0.74	0.60	16.8
All Vehicles			2192	1.3	1965	1.4	1.084	68.3	LOS E	67.0	474.1	0.81	1.01	1.23	8.4

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Override Site Data tab).
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Green.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

* Critical Movement (Signal Timing)

Pedestrian Movement Performance

Mov ID	Crossing	Dem. Flow ped/h	Aver. Delay sec	Level of Service	AVERAGE BACK OF QUEUE [Ped ped	Dist] m	Prop. Que	Eff. Stop Rate	Travel Time sec	Travel Dist. m	Aver. Speed m/sec
East: The Portico											
P2	Full	16	44.2	LOS E	0.0	0.0	0.94	0.94	198.1	200.0	1.01
North: Wentworth Avenue (Bridge)											
P3	Full	41	44.3	LOS E	0.1	0.1	0.94	0.94	198.1	200.0	1.01
All Pedestrians		57	44.2	LOS E	0.1	0.1	0.94	0.94	198.1	200.0	1.01

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)
Pedestrian movement LOS values are based on average delay per pedestrian movement.
Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

MOVEMENT SUMMARY

Site: 4 [4. Cornelia Rd / Junia Ave (Site Folder: 2025 Base - PM)]

Output produced by SIDRA INTERSECTION Version: 9.1.1.200

Network: N101 [2025 Base - PM (Network Folder: General)]

Existing 2025 PM
Site Category: (None)
Roundabout

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Junia Avenue															
1	L2	All MCs	58	0.0	58	0.0	0.677	19.9	LOS B	5.3	37.3	0.96	0.96	1.33	31.7
2	T1	All MCs	16	0.0	16	0.0	0.677	19.9	LOS B	5.3	37.3	0.96	0.96	1.33	32.2
3	R2	All MCs	149	0.0	149	0.0	0.677	23.2	LOS B	5.3	37.3	0.96	0.96	1.33	27.5
3u	U	All MCs	1	0.0	1	0.0	0.677	24.8	LOS B	5.3	37.3	0.96	0.96	1.33	34.2
Approach			224	0.0	224	0.0	0.677	22.2	LOS B	5.3	37.3	0.96	0.96	1.33	29.2
East: Cornelia Road															
4	L2	All MCs	84	0.0	64	0.0	0.810	9.1	LOS A	11.2	78.8	0.61	0.63	0.65	38.6
5	T1	All MCs	664	1.4	502	1.4	0.810	9.1	LOS A	11.2	78.8	0.61	0.63	0.65	35.5
6	R2	All MCs	13	0.0	10	0.0	0.810	12.7	LOS A	11.2	78.8	0.61	0.63	0.65	34.7
6u	U	All MCs	48	0.0	37	0.0	0.810	14.3	LOS A	11.2	78.8	0.61	0.63	0.65	24.8
Approach			809	1.2	611	1.1	0.810	9.5	LOS A	11.2	78.8	0.61	0.63	0.65	35.6
North: Junia Avenue															
7	L2	All MCs	38	0.0	38	0.0	0.468	26.2	LOS B	2.2	15.3	0.89	1.00	1.10	18.9
8	T1	All MCs	19	0.0	19	0.0	0.468	26.2	LOS B	2.2	15.3	0.89	1.00	1.10	29.9
9	R2	All MCs	15	0.0	15	0.0	0.468	29.5	LOS C	2.2	15.3	0.89	1.00	1.10	25.2
9u	U	All MCs	1	0.0	1	0.0	0.468	31.1	LOS C	2.2	15.3	0.89	1.00	1.10	26.0
Approach			73	0.0	73	0.0	0.468	26.9	LOS B	2.2	15.3	0.89	1.00	1.10	24.1
West: Cornelia Road															
10	L2	All MCs	15	0.0	15	0.0	1.022	49.6	LOS D	38.1	270.8	1.00	1.80	2.55	18.3
11	T1	All MCs	615	1.9	615	1.9	1.022	49.8	LOS D	38.1	270.8	1.00	1.80	2.55	11.0
12	R2	All MCs	61	0.0	61	0.0	1.022	53.1	LOS D	38.1	270.8	1.00	1.80	2.55	21.8
12u	U	All MCs	7	0.0	7	0.0	1.022	54.8	LOS D	38.1	270.8	1.00	1.80	2.55	17.1
Approach			698	1.7	698	1.7	1.022	50.2	LOS D	38.1	270.8	1.00	1.80	2.55	12.5
All Vehicles			1804	1.2	1606	1.3	1.022	29.7	LOS C	38.1	270.8	0.84	1.20	1.59	20.9

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Override Site Data tab).
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Roundabout Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

MOVEMENT SUMMARY

Site: TCS 2611 [5. The Portico / Portico Pde (Site Folder: 2025 Base - PM)]

Output produced by SIDRA INTERSECTION Version: 9.1.1.200

Network: N101 [2025 Base - PM (Network Folder: General)]

Existing 2025 PM
Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 100 seconds (Network Site User-Given Phase Times)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Portico Parade															
1	L2	All MCs	411	0.8	411	0.8	* 0.463	4.2	LOS A	3.1	21.7	0.28	0.61	0.28	22.1
2	T1	All MCs	88	3.6	88	3.6	0.145	26.0	LOS B	3.1	22.1	0.75	0.59	0.75	18.0
Approach			499	1.3	499	1.3	0.463	8.0	LOS A	3.1	22.1	0.36	0.61	0.36	19.9
North: Portico Parade															
8	T1	All MCs	104	2.0	104	2.0	0.274	27.3	LOS B	3.6	26.0	0.78	0.64	0.78	14.9
9	R2	All MCs	23	9.1	23	9.1	0.274	40.1	LOS C	3.6	26.0	0.81	0.68	0.81	14.2
Approach			127	3.3	127	3.3	0.274	29.6	LOS C	3.6	26.0	0.79	0.64	0.79	14.8
West: The Portico															
10	L2	All MCs	51	4.2	40	4.3	0.259	15.0	LOS B	5.3	37.3	0.42	0.66	0.42	26.7
12	R2	All MCs	302	0.7	242	0.7	0.259	13.0	LOS A	5.3	37.3	0.42	0.66	0.42	15.2
Approach			353	1.2	282	1.2	0.259	13.3	LOS A	5.3	37.3	0.42	0.66	0.42	17.8
All Vehicles			979	1.5	908	1.6	0.463	12.7	LOS A	5.3	37.3	0.44	0.63	0.44	17.7

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Override Site Data tab).
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Green.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

* Critical Movement (Signal Timing)

Pedestrian Movement Performance

Mov ID	Crossing	Dem. Flow ped/h	Aver. Delay sec	Level of Service	AVERAGE BACK OF QUEUE [Ped ped	Dist] m	Prop. Que	Eff. Stop Rate	Travel Time sec	Travel Dist. m	Aver. Speed m/sec
North: Portico Parade											
P3	Full	231	44.6	LOS E	0.6	0.6	0.95	0.95	198.5	200.0	1.01
West: The Portico											
P4	Full	252	44.6	LOS E	0.7	0.7	0.95	0.95	198.5	200.0	1.01
All Pedestrians		482	44.6	LOS E	0.7	0.7	0.95	0.95	198.5	200.0	1.01

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)
Pedestrian movement LOS values are based on average delay per pedestrian movement.
Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

MOVEMENT SUMMARY

Site: 6 [6. Aurelia St / Portico Pde (Site Folder: 2025 Base - PM)]

Output produced by SIDRA INTERSECTION Version: 9.1.1.200

Network: N101 [2025 Base - PM (Network Folder: General)]

Existing 2025 PM
Site Category: (None)
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Portico Parade															
1	L2	All MCs	120	0.0	120	0.0	0.276	4.6	LOS A	0.0	0.0	0.00	0.12	0.00	47.0
2	T1	All MCs	409	1.3	409	1.3	0.276	0.0	LOS A	0.0	0.0	0.00	0.12	0.00	46.0
Approach			529	1.0	529	1.0	0.276	1.1	NA	0.0	0.0	0.00	0.12	0.00	46.5
North: Portico Parade															
8	T1	All MCs	406	1.0	346	1.1	0.179	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	49.9
Approach			406	1.0	346	1.1	0.179	0.0	NA	0.0	0.0	0.00	0.00	0.00	49.9
West: Aurelia Street															
10	L2	All MCs	89	1.2	89	1.2	0.158	5.8	LOS A	0.6	4.2	0.48	0.67	0.48	41.6
12	R2	All MCs	48	0.0	48	0.0	0.158	9.3	LOS A	0.6	4.2	0.48	0.67	0.48	41.7
Approach			138	0.8	138	0.8	0.158	7.0	LOS A	0.6	4.2	0.48	0.67	0.48	41.6
All Vehicles			1074	1.0	1013	1.0	0.276	1.5	NA	0.6	4.2	0.07	0.16	0.07	45.9

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Override Site Data tab).

Vehicle movement LOS values are based on average delay per movement.

Minor Road Approach LOS values are based on average delay for all vehicle movements.

NA (TWSC): Level of Service is not defined for major road approaches or the intersection as a whole for Two-Way Sign Control (HCM LOS rule).

Two-Way Sign Control Capacity Model: SIDRA Standard.

Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).

Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.

Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

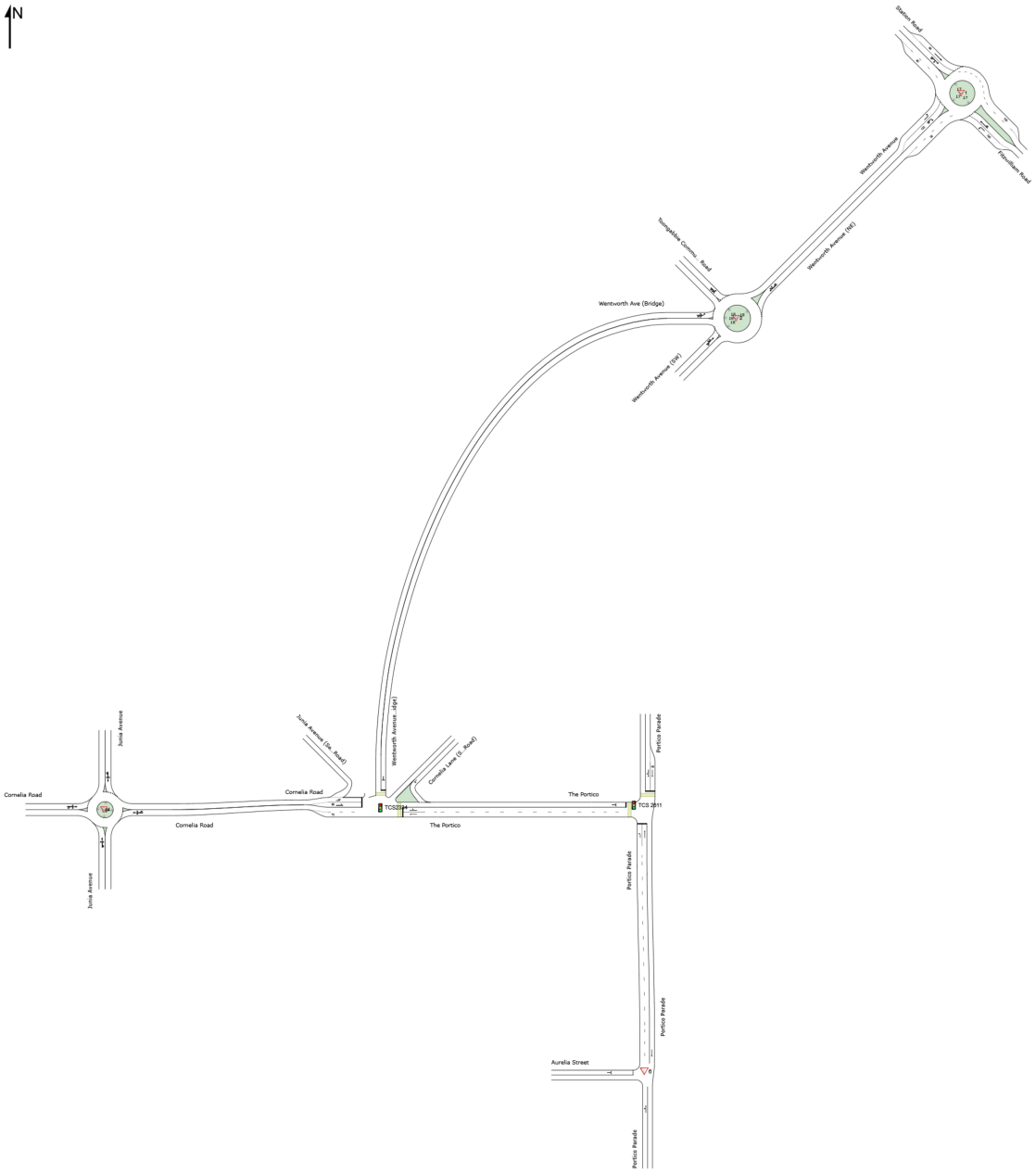
2027 Future Base

NETWORK LAYOUT

Network: N101 [2027 Base - AM (Network Folder: General)]

New Network
Network Category: (None)

Layout pictures are schematic functional drawings reflecting input data. They are not design drawings.



SITES IN NETWORK		
Site ID	**CCG ID**	**Site Name**
1	NA	1. Station Rd / Fitzwilliam Rd / Wentworth Ave
2	NA	2. Wentworth Ave (NE) / Wentworth Ave (SW) / Wentworth Ave (Bridge) / Toongabbie Community Access Rd
TCS2334	NA	3. Wentworth Ave (Bridge) / Cornelia Rd / The Portico
4	NA	4. Cornelia Rd / Junia Ave
TCS 2611	NA	5. The Portico / Portico Pde
6	NA	6. Aurelia St / Portico Pde

MOVEMENT SUMMARY

Site: 1 [1. Station Rd / Fitzwilliam Rd / Wentworth Ave (Site Folder: 2027 Base - AM)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Network: N101 [2027 Base - AM (Network Folder: General)]

Existing 2027 AM
Site Category: (None)
Roundabout

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
SouthEast: Fitzwilliam Road															
21	L2	All MCs	527	1.2	527	1.2	0.716	15.7	LOS B	8.5	60.3	0.96	0.92	1.30	35.4
22	T1	All MCs	534	3.7	534	3.7	0.728	14.3	LOS A	8.9	64.3	0.97	0.93	1.33	49.8
23u	U	All MCs	2	0.0	2	0.0	0.728	20.1	LOS B	8.9	64.3	0.97	0.93	1.33	42.3
Approach			1063	2.5	1063	2.5	0.728	15.0	LOS B	8.9	64.3	0.96	0.92	1.32	46.0
NorthWest: Station Road															
28	T1	All MCs	381	2.8	381	2.8	0.601	8.1	LOS A	5.8	42.2	0.71	0.63	0.72	53.2
29	R2	All MCs	500	5.3	500	5.3	0.601	12.6	LOS A	5.8	42.2	0.80	0.73	0.88	49.5
29u	U	All MCs	13	8.3	13	8.3	0.601	14.7	LOS B	5.8	42.2	0.80	0.73	0.88	52.9
Approach			894	4.2	894	4.2	0.601	10.7	LOS A	5.8	42.2	0.76	0.69	0.81	51.3
SouthWest: Wentworth Avenue															
30	L2	All MCs	795	3.4	659	3.6	0.832	18.5	LOS B	13.9	100.4	1.00	1.11	1.62	45.8
32	R2	All MCs	404	0.8	334	0.6	0.532	15.1	LOS B	4.5	31.6	0.88	0.83	1.01	38.5
32u	U	All MCs	2	50.0	2	50.9	0.532	20.3	LOS B	4.5	31.6	0.88	0.83	1.01	27.1
Approach			1201	2.6	995	2.6	0.832	17.3	LOS B	13.9	100.4	0.96	1.02	1.42	44.2
All Vehicles			3158	3.0	2952	3.2	0.832	14.5	LOS A	13.9	100.4	0.90	0.88	1.20	47.1

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Override Site Data tab).

Vehicle movement LOS values are based on average delay per movement.

Intersection and Approach LOS values are based on average delay for all vehicle movements.

Roundabout Capacity Model: SIDRA Standard.

Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).

Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.

Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

MOVEMENT SUMMARY

Site: 2 [2. Wentworth Ave (NE) / Wentworth Ave (SW) / Wentworth Ave (Bridge) / Toongabbie Community Access Rd (Site Folder: 2027 Base - AM)]

Network: N101 [2027 Base - AM (Network Folder: General)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Existing 2027 AM
Site Category: (None)
Roundabout

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
NorthEast: Wentworth Avenue (NE)															
25	T1	All MCs	304	5.2	304	5.2	0.902	8.9	LOS A	20.4	146.8	1.00	0.68	1.09	41.9
26a	R1	All MCs	724	2.5	724	2.5	0.902	12.2	LOS A	20.4	146.8	1.00	0.68	1.09	30.5
26	R2	All MCs	2	0.0	2	0.0	0.902	13.1	LOS A	20.4	146.8	1.00	0.68	1.09	26.9
26u	U	All MCs	7	0.0	7	0.0	0.902	15.1	LOS B	20.4	146.8	1.00	0.68	1.09	30.5
Approach			1038	3.2	1038	3.2	0.902	11.3	LOS A	20.4	146.8	1.00	0.68	1.09	35.4
NorthWest: Toongabbie Community Access Road															
27	L2	All MCs	2	0.0	2	0.0	0.023	12.3	LOS A	0.1	1.1	0.92	0.76	0.92	14.7
29	R2	All MCs	1	0.0	1	0.0	0.023	16.7	LOS B	0.1	1.1	0.92	0.76	0.92	33.1
29b	R3	All MCs	3	33.3	3	33.3	0.023	19.9	LOS B	0.1	1.1	0.92	0.76	0.92	14.7
29u	U	All MCs	1	0.0	1	0.0	0.023	18.7	LOS B	0.1	1.1	0.92	0.76	0.92	15.6
Approach			7	14.3	7	14.3	0.023	17.1	LOS B	0.1	1.1	0.92	0.76	0.92	19.1
West: Wentworth Ave (Bridge)															
10b	L3	All MCs	4	0.0	4	0.0	1.185	183.2	LOS F	101.8	723.0	1.00	3.86	7.76	6.7
10a	L1	All MCs	814	2.2	724	2.1	1.185	182.9	LOS F	101.8	723.0	1.00	3.86	7.76	6.1
12b	R3	All MCs	168	0.0	150	0.0	1.185	188.5	LOS F	101.8	723.0	1.00	3.86	7.76	10.4
12u	U	All MCs	1	0.0	1	0.0	1.185	189.5	LOS F	101.8	723.0	1.00	3.86	7.76	6.1
Approach			987	1.8	879	1.7	1.185	183.9	LOS F	101.8	723.0	1.00	3.86	7.76	6.9
SouthWest: Wentworth Avenue (SW)															
30b	L3	All MCs	138	1.5	138	1.5	1.007	68.2	LOS E	29.0	207.7	1.00	2.00	3.58	13.5
30	L2	All MCs	1	0.0	1	0.0	1.007	67.8	LOS E	29.0	207.7	1.00	2.00	3.58	13.9
31	T1	All MCs	374	3.1	374	3.1	1.007	68.3	LOS E	29.0	207.7	1.00	2.00	3.58	13.5
32u	U	All MCs	1	0.0	1	0.0	1.007	74.4	LOS F	29.0	207.7	1.00	2.00	3.58	21.0
Approach			514	2.7	514	2.7	1.007	68.3	LOS E	29.0	207.7	1.00	2.00	3.58	13.5
All Vehicles			2546	2.6	2437	2.7	1.185	85.6	LOS F	101.8	723.0	1.00	2.11	4.02	11.4

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Override Site Data tab).
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Roundabout Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

MOVEMENT SUMMARY

Site: TCS2334 [3. Wentworth Ave (Bridge) / Cornelia Rd / The Portico (Site Folder: 2027 Base - AM)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Network: N101 [2027 Base - AM (Network Folder: General)]

Existing 2027 AM
Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 100 seconds (Network User-Given Cycle Time)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
East: The Portico															
5	T1	All MCs	62	0.0	62	0.0	0.084	21.6	LOS B	1.9	13.0	0.65	0.51	0.65	11.1
6	R2	All MCs	311	3.1	311	3.1	* 1.484	489.4	LOS F	14.8	106.1	1.00	2.16	4.03	0.5
Approach			373	2.5	373	2.5	1.484	411.4	LOS F	14.8	106.1	0.94	1.88	3.47	0.7
NorthEast: Cornelia Lane (Service Road)															
24b	L3	All MCs	1	0.0	1	0.0	0.001	7.1	LOS A	0.0	0.1	0.29	0.56	0.29	22.4
Approach			1	0.0	1	0.0	0.001	7.1	LOS A	0.0	0.1	0.29	0.56	0.29	22.4
North: Wentworth Avenue (Bridge)															
7	L2	All MCs	292	3.6	291	3.6	0.928	29.4	LOS C	49.7	355.0	1.00	1.01	1.22	17.8
9	R2	All MCs	574	1.8	573	1.8	0.928	56.6	LOS E	49.7	355.0	1.00	1.01	1.22	17.8
Approach			865	2.4	864	2.4	0.928	47.4	LOS D	49.7	355.0	1.00	1.01	1.22	17.8
West: Cornelia Road															
10b	L3	All MCs	1	0.0	1	0.0	1.067	109.6	LOS F	20.8	146.9	1.00	1.48	1.95	4.3
10	L2	All MCs	676	1.2	633	1.2	* 1.067	127.0	LOS F	20.8	146.9	1.00	1.48	1.95	3.3
10a	L1	All MCs	5	20.0	5	19.9	0.235	51.9	LOS D	1.9	13.7	0.96	0.72	0.96	8.4
11	T1	All MCs	38	0.0	35	0.0	0.235	48.6	LOS D	1.9	13.7	0.96	0.72	0.96	6.9
Approach			720	1.3	674	1.3	1.067	122.3	LOS F	20.8	146.9	1.00	1.44	1.89	3.4
All Vehicles			1959	2.0	1912	2.1	1.484	144.8	LOS F	49.7	355.0	0.99	1.33	1.90	4.8

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Override Site Data tab).
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Green.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

* Critical Movement (Signal Timing)

Pedestrian Movement Performance

Mov ID	Crossing	Dem. Flow ped/h	Aver. Delay sec	Level of Service	AVERAGE BACK OF QUEUE [Ped ped	Dist] m	Prop. Que	Eff. Stop Rate	Travel Time sec	Travel Dist. m	Aver. Speed m/sec
East: The Portico											
P2	Full	6	44.2	LOS E	0.0	0.0	0.94	0.94	198.0	200.0	1.01
North: Wentworth Avenue (Bridge)											
P3	Full	29	44.2	LOS E	0.1	0.1	0.94	0.94	198.1	200.0	1.01
All Pedestrians		36	44.2	LOS E	0.1	0.1	0.94	0.94	198.1	200.0	1.01

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)
Pedestrian movement LOS values are based on average delay per pedestrian movement.
Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

MOVEMENT SUMMARY

Site: 4 [4. Cornelia Rd / Junia Ave (Site Folder: 2027 Base - AM)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Network: N101 [2027 Base - AM (Network Folder: General)]

Existing 2027 AM
Site Category: (None)
Roundabout

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Junia Avenue															
1	L2	All MCs	35	3.0	35	3.0	0.577	15.0	LOS B	4.3	30.5	0.97	0.74	1.16	34.2
2	T1	All MCs	22	0.0	22	0.0	0.577	14.8	LOS B	4.3	30.5	0.97	0.74	1.16	34.8
3	R2	All MCs	162	1.3	162	1.3	0.577	18.2	LOS B	4.3	30.5	0.97	0.74	1.16	30.5
3u	U	All MCs	1	0.0	1	0.0	0.577	19.7	LOS B	4.3	30.5	0.97	0.74	1.16	36.5
Approach			220	1.4	220	1.4	0.577	17.4	LOS B	4.3	30.5	0.97	0.74	1.16	31.8
East: Cornelia Road															
4	L2	All MCs	66	0.0	66	0.0	0.503	5.1	LOS A	3.8	26.8	0.24	0.49	0.24	42.3
5	T1	All MCs	533	2.0	532	2.0	0.503	5.1	LOS A	3.8	26.8	0.24	0.49	0.24	40.9
6	R2	All MCs	3	0.0	3	0.0	0.503	8.6	LOS A	3.8	26.8	0.24	0.49	0.24	39.1
6u	U	All MCs	14	0.0	14	0.0	0.503	10.3	LOS A	3.8	26.8	0.24	0.49	0.24	32.1
Approach			616	1.7	615	1.7	0.503	5.3	LOS A	3.8	26.8	0.24	0.49	0.24	41.0
North: Junia Avenue															
7	L2	All MCs	42	0.0	42	0.0	0.213	8.2	LOS A	0.9	6.1	0.75	0.73	0.75	31.9
8	T1	All MCs	16	6.7	16	6.7	0.213	8.5	LOS A	0.9	6.1	0.75	0.73	0.75	39.9
9	R2	All MCs	23	0.0	23	0.0	0.213	11.5	LOS A	0.9	6.1	0.75	0.73	0.75	36.7
9u	U	All MCs	3	0.0	3	0.0	0.213	13.1	LOS A	0.9	6.1	0.75	0.73	0.75	36.7
Approach			84	1.3	84	1.3	0.213	9.4	LOS A	0.9	6.1	0.75	0.73	0.75	35.8
West: Cornelia Road															
10	L2	All MCs	9	0.0	9	0.0	1.244	232.8	LOS F	79.1	561.2	1.00	4.17	7.13	5.5
11	T1	All MCs	505	1.5	505	1.5	1.244	233.0	LOS F	79.1	561.2	1.00	4.17	7.13	2.8
12	R2	All MCs	27	3.8	27	3.8	1.244	236.5	LOS F	79.1	561.2	1.00	4.17	7.13	7.1
12u	U	All MCs	7	0.0	7	0.0	1.244	238.0	LOS F	79.1	561.2	1.00	4.17	7.13	4.9
Approach			549	1.5	549	1.5	1.244	233.2	LOS F	79.1	561.2	1.00	4.17	7.13	3.1
All Vehicles			1469	1.6	1469	1.6	1.244	92.6	LOS F	79.1	561.2	0.66	1.92	2.99	9.1

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Override Site Data tab).
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Roundabout Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

MOVEMENT SUMMARY

Site: TCS 2611 [5. The Portico / Portico Pde (Site Folder: 2027 Base - AM)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Network: N101 [2027 Base - AM (Network Folder: General)]

Existing 2027 AM
Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 100 seconds (Network User-Given Cycle Time)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Portico Parade															
1	L2	All MCs	351	1.8	351	1.8	* 0.407	3.7	LOS A	1.9	13.2	0.22	0.58	0.22	23.5
2	T1	All MCs	82	5.1	82	5.1	0.242	38.5	LOS C	3.5	25.5	0.90	0.70	0.90	13.8
Approach			433	2.4	433	2.4	0.407	10.3	LOS A	3.5	25.5	0.34	0.60	0.34	17.3
North: Portico Parade															
8	T1	All MCs	141	4.5	141	4.5	0.512	40.0	LOS C	5.8	43.0	0.93	0.74	0.93	11.7
9	R2	All MCs	21	15.0	21	15.0	* 0.512	48.7	LOS D	5.8	43.0	0.95	0.78	0.95	11.4
Approach			162	5.8	162	5.8	0.512	41.2	LOS C	5.8	43.0	0.93	0.75	0.93	11.6
West: The Portico															
10	L2	All MCs	33	3.2	32	3.3	0.264	4.9	LOS A	0.4	3.1	0.03	0.54	0.03	36.0
12	R2	All MCs	299	3.5	296	3.5	0.264	4.8	LOS A	0.4	3.1	0.03	0.54	0.03	27.2
Approach			332	3.5	329	3.5	0.264	4.8	LOS A	0.4	3.1	0.03	0.54	0.03	29.0
All Vehicles			926	3.4	923	3.4	0.512	13.8	LOS A	5.8	43.0	0.34	0.61	0.34	17.1

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Override Site Data tab).
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Green.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

* Critical Movement (Signal Timing)

Pedestrian Movement Performance

Mov ID	Crossing	Dem. Flow ped/h	Aver. Delay sec	Level of Service	AVERAGE BACK OF QUEUE [Ped ped	Dist] m	Prop. Que	Eff. Stop Rate	Travel Time sec	Travel Dist. m	Aver. Speed m/sec
North: Portico Parade											
P3	Full	51	44.3	LOS E	0.1	0.1	0.94	0.94	198.1	200.0	1.01
West: The Portico											
P4	Full	11	44.2	LOS E	0.0	0.0	0.94	0.94	198.0	200.0	1.01
All Pedestrians		61	44.3	LOS E	0.1	0.1	0.94	0.94	198.1	200.0	1.01

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)
Pedestrian movement LOS values are based on average delay per pedestrian movement.
Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

MOVEMENT SUMMARY

Site: 6 [6. Aurelia St / Portico Pde (Site Folder: 2027 Base - AM)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Network: N101 [2027 Base - AM (Network Folder: General)]

Existing 2027 AM
Site Category: (None)
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Portico Parade															
1	L2	All MCs	63	1.7	63	1.7	0.245	4.6	LOS A	0.0	0.0	0.00	0.07	0.00	47.3
2	T1	All MCs	403	2.6	403	2.6	0.245	0.0	LOS A	0.0	0.0	0.00	0.07	0.00	47.5
Approach			466	2.5	466	2.5	0.245	0.6	NA	0.0	0.0	0.00	0.07	0.00	47.4
North: Portico Parade															
8	T1	All MCs	440	3.8	437	3.8	0.230	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	49.9
Approach			440	3.8	437	3.8	0.230	0.0	NA	0.0	0.0	0.00	0.00	0.00	49.9
West: Aurelia Street															
10	L2	All MCs	29	0.0	29	0.0	0.078	5.7	LOS A	0.3	1.9	0.50	0.67	0.50	41.0
12	R2	All MCs	27	3.8	27	3.8	0.078	9.9	LOS A	0.3	1.9	0.50	0.67	0.50	41.1
Approach			57	1.9	57	1.9	0.078	7.7	LOS A	0.3	1.9	0.50	0.67	0.50	41.0
All Vehicles			963	3.1	961	3.1	0.245	0.8	NA	0.3	1.9	0.03	0.08	0.03	47.3

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Override Site Data tab).

Vehicle movement LOS values are based on average delay per movement.

Minor Road Approach LOS values are based on average delay for all vehicle movements.

NA (TWSC): Level of Service is not defined for major road approaches or the intersection as a whole for Two-Way Sign Control (HCM LOS rule).

Two-Way Sign Control Capacity Model: SIDRA Standard.

Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).

Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.

Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

MOVEMENT SUMMARY

Site: 1 [1. Station Rd / Fitzwilliam Rd / Wentworth Ave (Site Folder: 2027 Base - PM)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Network: N101 [2027 Base - PM (Network Folder: General)]

Existing 2037 PM
Site Category: (None)
Roundabout

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
SouthEast: Fitzwilliam Road															
21	L2	All MCs	488	1.5	488	1.5	0.747	15.5	LOS B	9.7	68.6	0.95	0.91	1.26	34.7
22	T1	All MCs	536	0.8	536	0.8	0.936	33.8	LOS C	20.7	145.5	1.00	1.40	2.17	41.1
23u	U	All MCs	6	0.0	6	0.0	0.936	40.0	LOS C	20.7	145.5	1.00	1.40	2.17	31.4
Approach			1031	1.1	1031	1.1	0.936	25.2	LOS B	20.7	145.5	0.98	1.17	1.74	39.7
NorthWest: Station Road															
28	T1	All MCs	489	1.5	489	1.5	0.691	14.7	LOS B	7.8	55.3	0.96	0.89	1.24	50.6
29	R2	All MCs	521	1.8	521	1.8	1.435	408.5	LOS F	107.3	762.5	1.00	6.69	14.58	7.5
29u	U	All MCs	12	0.0	12	0.0	1.435	410.3	LOS F	107.3	762.5	1.00	6.69	14.58	13.1
Approach			1022	1.6	1022	1.6	1.435	219.9	LOS F	107.3	762.5	0.98	3.91	8.19	14.2
SouthWest: Wentworth Avenue															
30	L2	All MCs	598	2.8	553	2.6	0.796	17.6	LOS B	11.3	81.0	1.00	1.05	1.53	46.3
32	R2	All MCs	543	1.4	504	1.3	0.752	19.9	LOS B	9.5	67.0	1.00	0.98	1.42	35.0
32u	U	All MCs	2	0.0	2	0.0	0.752	21.8	LOS B	9.5	67.0	1.00	0.98	1.42	23.1
Approach			1143	2.1	1059	2.0	0.796	18.7	LOS B	11.3	81.0	1.00	1.01	1.48	42.2
All Vehicles			3196	1.6	3112	1.7	1.435	87.0	LOS F	107.3	762.5	0.99	2.02	3.77	23.3

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Override Site Data tab).

Vehicle movement LOS values are based on average delay per movement.

Intersection and Approach LOS values are based on average delay for all vehicle movements.

Roundabout Capacity Model: SIDRA Standard.

Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).

Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.

Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

MOVEMENT SUMMARY

Site: 2 [2. Wentworth Ave (NE) / Wentworth Ave (SW) / Wentworth Ave (Bridge) / Toongabbie Community Access Rd (Site Folder: 2027 Base - PM)]

Network: N101 [2027 Base - PM (Network Folder: General)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Existing 2027 PM
Site Category: (None)
Roundabout

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
NorthEast: Wentworth Avenue (NE)															
25	T1	All MCs	240	3.5	202	3.3	1.127	127.6	LOS F	57.8	410.1	1.00	3.03	5.29	11.2
26a	R1	All MCs	769	1.1	650	1.1	1.127	130.8	LOS F	57.8	410.1	1.00	3.03	5.29	5.1
26	R2	All MCs	1	0.0	1	0.0	1.127	131.7	LOS F	57.8	410.1	1.00	3.03	5.29	5.9
26u	U	All MCs	6	0.0	5	0.0	1.127	133.7	LOS F	57.8	410.1	1.00	3.03	5.29	5.1
Approach			1017	1.7	859	1.6	1.127	130.1	LOS F	57.8	410.1	1.00	3.03	5.29	6.7
NorthWest: Toongabbie Community Access Road															
27	L2	All MCs	18	0.0	18	0.0	0.218	16.7	LOS B	1.3	9.1	1.00	0.86	1.00	12.6
29	R2	All MCs	8	0.0	8	0.0	0.218	21.1	LOS B	1.3	9.1	1.00	0.86	1.00	30.7
29b	R3	All MCs	21	0.0	21	0.0	0.218	22.1	LOS B	1.3	9.1	1.00	0.86	1.00	12.6
29u	U	All MCs	1	0.0	1	0.0	0.218	23.1	LOS B	1.3	9.1	1.00	0.86	1.00	14.0
Approach			48	0.0	48	0.0	0.218	20.0	LOS B	1.3	9.1	1.00	0.86	1.00	17.6
West: Wentworth Ave (Bridge)															
10b	L3	All MCs	16	0.0	16	0.0	1.006	37.0	LOS C	44.9	318.1	1.00	1.52	2.23	20.8
10a	L1	All MCs	833	1.5	825	1.5	1.006	36.7	LOS C	44.9	318.1	1.00	1.52	2.23	21.4
12b	R3	All MCs	199	1.1	197	1.1	1.006	42.4	LOS C	44.9	318.1	1.00	1.52	2.23	29.6
12u	U	All MCs	1	0.0	1	0.0	1.006	43.3	LOS D	44.9	318.1	1.00	1.52	2.23	21.4
Approach			1048	1.4	1038	1.4	1.006	37.8	LOS C	44.9	318.1	1.00	1.52	2.23	23.4
SouthWest: Wentworth Avenue (SW)															
30b	L3	All MCs	134	2.4	134	2.4	1.337	327.0	LOS F	76.7	552.4	1.00	4.25	10.06	3.4
30	L2	All MCs	8	0.0	8	0.0	1.337	326.5	LOS F	76.7	552.4	1.00	4.25	10.06	3.8
31	T1	All MCs	285	4.1	285	4.1	1.337	327.0	LOS F	76.7	552.4	1.00	4.25	10.06	3.4
32u	U	All MCs	4	0.0	4	0.0	1.337	333.1	LOS F	76.7	552.4	1.00	4.25	10.06	6.2
Approach			432	3.4	432	3.4	1.337	327.1	LOS F	76.7	552.4	1.00	4.25	10.06	3.4
All Vehicles			2545	1.8	2377	1.9	1.337	123.3	LOS F	76.7	552.4	1.00	2.55	4.73	8.5

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Override Site Data tab).
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Roundabout Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

MOVEMENT SUMMARY

Site: TCS2334 [3. Wentworth Ave (Bridge) / Cornelia Rd / The Portico (Site Folder: 2027 Base - PM)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Network: N101 [2027 Base - PM (Network Folder: General)]

Existing 2027 PM
Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 100 seconds (Network Site User-Given Phase Times)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
East: The Portico															
5	T1	All MCs	114	0.9	114	0.9	0.173	25.6	LOS B	3.9	27.2	0.74	0.59	0.74	9.6
6	R2	All MCs	324	1.3	324	1.3	* 0.954	65.1	LOS E	15.0	106.1	1.00	1.06	1.42	3.8
Approach			438	1.2	438	1.2	0.954	54.9	LOS D	15.0	106.1	0.93	0.94	1.25	4.6
NorthEast: Cornelia Lane (Service Road)															
24b	L3	All MCs	11	0.0	11	0.0	0.010	7.2	LOS A	0.1	0.7	0.31	0.59	0.31	22.3
Approach			11	0.0	11	0.0	0.010	7.2	LOS A	0.1	0.7	0.31	0.59	0.31	22.3
North: Wentworth Avenue (Bridge)															
7	L2	All MCs	245	1.3	186	1.4	1.081	118.7	LOS F	66.4	469.9	1.00	1.39	2.00	7.7
9	R2	All MCs	680	1.2	514	1.2	* 1.081	143.2	LOS F	66.4	469.9	1.00	1.39	2.00	7.7
Approach			925	1.3	699	1.3	1.081	136.7	LOS F	66.4	469.9	1.00	1.39	2.00	7.7
West: Cornelia Road															
10b	L3	All MCs	2	0.0	2	0.0	0.576	6.7	LOS A	17.2	121.7	0.54	0.74	0.54	21.7
10	L2	All MCs	723	1.5	707	1.5	0.576	13.5	LOS A	17.2	121.7	0.54	0.74	0.54	21.0
10a	L1	All MCs	4	0.0	4	0.0	0.579	53.1	LOS D	5.5	38.8	1.00	0.79	1.01	8.3
11	T1	All MCs	111	1.0	108	1.0	* 0.579	49.7	LOS D	5.5	38.8	1.00	0.79	1.01	6.8
Approach			840	1.4	822	1.4	0.579	18.5	LOS B	17.2	121.7	0.61	0.75	0.61	16.8
All Vehicles			2214	1.3	1969	1.4	1.081	68.5	LOS E	66.4	469.9	0.82	1.02	1.24	8.4

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Override Site Data tab).
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Green.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

* Critical Movement (Signal Timing)

Pedestrian Movement Performance

Mov ID	Crossing	Dem. Flow ped/h	Aver. Delay sec	Level of Service	AVERAGE BACK OF QUEUE [Ped ped	Dist] m	Prop. Que	Eff. Stop Rate	Travel Time sec	Travel Dist. m	Aver. Speed m/sec
East: The Portico											
P2	Full	16	44.2	LOS E	0.0	0.0	0.94	0.94	198.1	200.0	1.01
North: Wentworth Avenue (Bridge)											
P3	Full	41	44.3	LOS E	0.1	0.1	0.94	0.94	198.1	200.0	1.01
All Pedestrians		57	44.2	LOS E	0.1	0.1	0.94	0.94	198.1	200.0	1.01

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)
Pedestrian movement LOS values are based on average delay per pedestrian movement.
Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

MOVEMENT SUMMARY

Site: 4 [4. Cornelia Rd / Junia Ave (Site Folder: 2027 Base - PM)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Network: N101 [2027 Base - PM (Network Folder: General)]

Existing 2027 PM
Site Category: (None)
Roundabout

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Junia Avenue															
1	L2	All MCs	59	0.0	59	0.0	0.699	20.7	LOS B	5.6	38.9	0.98	0.98	1.37	31.3
2	T1	All MCs	16	0.0	16	0.0	0.699	20.6	LOS B	5.6	38.9	0.98	0.98	1.37	31.8
3	R2	All MCs	151	0.0	151	0.0	0.699	24.0	LOS B	5.6	38.9	0.98	0.98	1.37	27.0
3u	U	All MCs	1	0.0	1	0.0	0.699	25.6	LOS B	5.6	38.9	0.98	0.98	1.37	33.8
Approach			226	0.0	226	0.0	0.699	22.9	LOS B	5.6	38.9	0.98	0.98	1.37	28.7
East: Cornelia Road															
4	L2	All MCs	85	0.0	64	0.0	0.809	8.9	LOS A	11.0	78.0	0.61	0.62	0.64	38.8
5	T1	All MCs	671	1.4	502	1.3	0.809	9.0	LOS A	11.0	78.0	0.61	0.62	0.64	35.7
6	R2	All MCs	13	0.0	9	0.0	0.809	12.5	LOS A	11.0	78.0	0.61	0.62	0.64	34.9
6u	U	All MCs	48	0.0	36	0.0	0.809	14.2	LOS A	11.0	78.0	0.61	0.62	0.64	25.0
Approach			817	1.2	612	1.1	0.809	9.3	LOS A	11.0	78.0	0.61	0.62	0.64	35.8
North: Junia Avenue															
7	L2	All MCs	38	0.0	38	0.0	0.462	25.2	LOS B	2.1	14.7	0.88	0.99	1.09	19.4
8	T1	All MCs	19	0.0	19	0.0	0.462	25.1	LOS B	2.1	14.7	0.88	0.99	1.09	30.3
9	R2	All MCs	15	0.0	15	0.0	0.462	28.5	LOS B	2.1	14.7	0.88	0.99	1.09	25.7
9u	U	All MCs	1	0.0	1	0.0	0.462	30.0	LOS C	2.1	14.7	0.88	0.99	1.09	26.5
Approach			73	0.0	73	0.0	0.462	25.9	LOS B	2.1	14.7	0.88	0.99	1.09	24.6
West: Cornelia Road															
10	L2	All MCs	15	0.0	15	0.0	1.065	79.6	LOS F	49.9	354.6	1.00	2.26	3.47	13.2
11	T1	All MCs	621	1.9	621	1.9	1.065	79.9	LOS F	49.9	354.6	1.00	2.26	3.47	7.4
12	R2	All MCs	62	0.0	62	0.0	1.065	83.1	LOS F	49.9	354.6	1.00	2.26	3.47	16.3
12u	U	All MCs	7	0.0	7	0.0	1.065	84.8	LOS F	49.9	354.6	1.00	2.26	3.47	12.2
Approach			705	1.6	705	1.6	1.065	80.2	LOS F	49.9	354.6	1.00	2.26	3.47	8.6
All Vehicles			1821	1.2	1616	1.3	1.065	42.9	LOS D	49.9	354.6	0.84	1.41	2.00	16.4

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Override Site Data tab).
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Roundabout Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

MOVEMENT SUMMARY

Site: TCS 2611 [5. The Portico / Portico Pde (Site Folder: 2027 Base - PM)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Network: N101 [2027 Base - PM (Network Folder: General)]

Existing 2027 PM
Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 100 seconds (Network Site User-Given Phase Times)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Portico Parade															
1	L2	All MCs	415	0.8	415	0.8	* 0.468	4.2	LOS A	3.1	22.1	0.28	0.61	0.28	22.0
2	T1	All MCs	89	3.5	89	3.5	0.147	26.0	LOS B	3.1	22.4	0.75	0.59	0.75	18.0
Approach			504	1.3	504	1.3	0.468	8.0	LOS A	3.1	22.4	0.37	0.61	0.37	19.9
North: Portico Parade															
8	T1	All MCs	105	2.0	105	2.0	0.276	27.3	LOS B	3.6	26.3	0.78	0.64	0.78	14.9
9	R2	All MCs	23	9.1	23	9.1	* 0.276	40.1	LOS C	3.6	26.3	0.81	0.68	0.81	14.2
Approach			128	3.3	128	3.3	0.276	29.6	LOS C	3.6	26.3	0.79	0.65	0.79	14.8
West: The Portico															
10	L2	All MCs	51	4.2	40	4.3	0.259	20.3	LOS B	7.3	51.8	0.58	0.72	0.58	23.4
12	R2	All MCs	305	0.7	242	0.7	0.259	17.3	LOS B	7.3	51.8	0.58	0.72	0.58	12.3
Approach			356	1.2	282	1.2	0.259	17.7	LOS B	7.3	51.8	0.58	0.72	0.58	14.6
All Vehicles			988	1.5	915	1.6	0.468	14.1	LOS A	7.3	51.8	0.49	0.65	0.49	16.5

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Override Site Data tab).
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Green.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

* Critical Movement (Signal Timing)

Pedestrian Movement Performance

Mov ID	Crossing	Dem. Flow ped/h	Aver. Delay sec	Level of Service	AVERAGE BACK OF QUEUE [Ped ped	Dist] m	Prop. Que	Eff. Stop Rate	Travel Time sec	Travel Dist. m	Aver. Speed m/sec
North: Portico Parade											
P3	Full	231	44.6	LOS E	0.6	0.6	0.95	0.95	198.5	200.0	1.01
West: The Portico											
P4	Full	252	44.6	LOS E	0.7	0.7	0.95	0.95	198.5	200.0	1.01
All Pedestrians		482	44.6	LOS E	0.7	0.7	0.95	0.95	198.5	200.0	1.01

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)
Pedestrian movement LOS values are based on average delay per pedestrian movement.
Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

MOVEMENT SUMMARY

Site: 6 [6. Aurelia St / Portico Pde (Site Folder: 2027 Base - PM)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Network: N101 [2027 Base - PM (Network Folder: General)]

Existing 2027 PM
Site Category: (None)
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Portico Parade															
1	L2	All MCs	121	0.0	121	0.0	0.279	4.6	LOS A	0.0	0.0	0.00	0.12	0.00	47.0
2	T1	All MCs	414	1.3	414	1.3	0.279	0.0	LOS A	0.0	0.0	0.00	0.12	0.00	46.0
Approach			535	1.0	535	1.0	0.279	1.1	NA	0.0	0.0	0.00	0.12	0.00	46.5
North: Portico Parade															
8	T1	All MCs	411	1.0	347	1.1	0.179	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	49.9
Approach			411	1.0	347	1.1	0.179	0.0	NA	0.0	0.0	0.00	0.00	0.00	49.9
West: Aurelia Street															
10	L2	All MCs	91	1.2	91	1.2	0.159	5.8	LOS A	0.6	4.2	0.48	0.67	0.48	41.6
12	R2	All MCs	48	0.0	48	0.0	0.159	9.3	LOS A	0.6	4.2	0.48	0.67	0.48	41.7
Approach			139	0.8	139	0.8	0.159	7.0	LOS A	0.6	4.2	0.48	0.67	0.48	41.6
All Vehicles			1084	1.0	1021	1.0	0.279	1.5	NA	0.6	4.2	0.07	0.16	0.07	45.9

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Override Site Data tab).

Vehicle movement LOS values are based on average delay per movement.

Minor Road Approach LOS values are based on average delay for all vehicle movements.

NA (TWSC): Level of Service is not defined for major road approaches or the intersection as a whole for Two-Way Sign Control (HCM LOS rule).

Two-Way Sign Control Capacity Model: SIDRA Standard.

Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).

Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.

Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

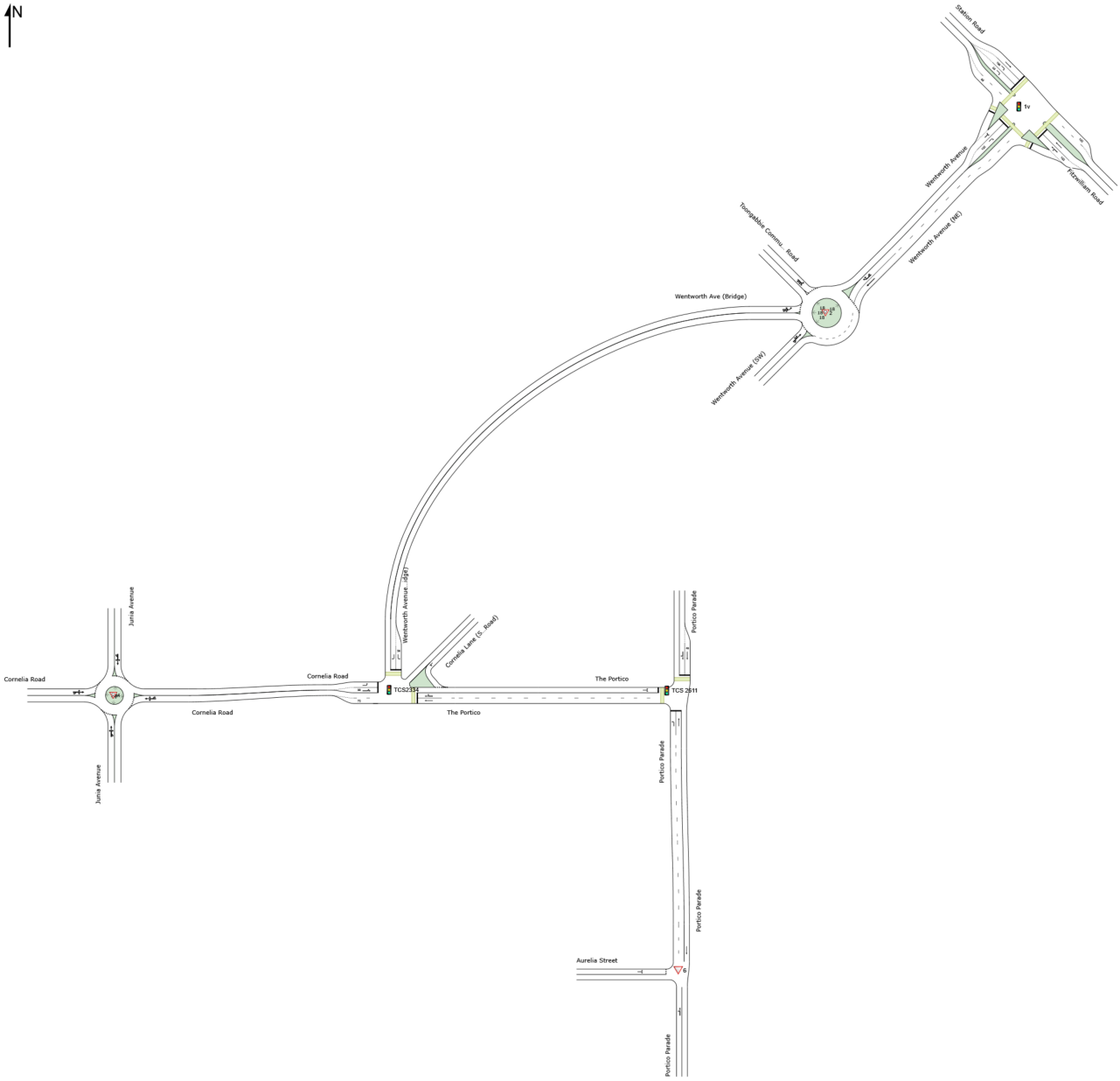
2027 Project Case

NETWORK LAYOUT

Network: N101 [2027 Project Case - AM (Network Folder: General)]

New Network
Network Category: (None)

Layout pictures are schematic functional drawings reflecting input data. They are not design drawings.



SITES IN NETWORK		
Site ID	**CCG ID**	**Site Name**
1v	NA	1. Station Rd / Fitzwilliam Rd / Wentworth Ave
2	NA	2. Wentworth Ave (NE) / Wentworth Ave (SW) / Wentworth Ave (Bridge) / Toongabbie Community Access Rd
TCS2334	NA	3. Wentworth Ave (Bridge) / Cornelia Rd / The Portico
4	NA	4. Cornelia Rd / Junia Ave
TCS 2611	NA	5. The Portico / Portico Pde
6	NA	6. Aurelia St / Portico Pde

MOVEMENT SUMMARY

Site: 1v [1. Station Rd / Fitzwilliam Rd / Wentworth Ave (Site Folder: 2027 Project Case - AM)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Network: N101 [2027 Project Case - AM (Network Folder: General)]

Project Case 2027 AM
Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 140 seconds (Site User-Given Cycle Time)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
SouthEast: Fitzwilliam Road															
21	L2	All MCs	527	1.2	527	1.2	0.399	15.2	LOS B	14.9	105.4	0.46	0.71	0.46	34.6
22	T1	All MCs	534	3.7	534	3.7	* 0.664	35.8	LOS C	29.3	211.4	0.87	0.78	0.87	40.9
Approach			1061	2.5	1061	2.5	0.664	25.6	LOS B	29.3	211.4	0.67	0.75	0.67	39.4
NorthWest: Station Road															
28	T1	All MCs	381	2.8	381	2.8	0.286	10.5	LOS A	10.3	73.8	0.44	0.39	0.44	53.2
29	R2	All MCs	500	5.3	500	5.3	* 0.653	62.4	LOS E	15.6	114.3	0.97	0.83	0.97	29.5
Approach			881	4.2	881	4.2	0.653	40.0	LOS C	15.6	114.3	0.74	0.64	0.74	37.4
SouthWest: Wentworth Avenue															
30	L2	All MCs	795	3.4	581	3.7	0.611	34.0	LOS C	27.9	201.2	0.77	0.82	0.77	39.8
32	R2	All MCs	404	0.8	294	0.7	* 0.672	58.8	LOS E	18.4	129.5	0.97	0.84	0.97	20.0
Approach			1199	2.5	875	2.7	0.672	42.4	LOS C	27.9	201.2	0.84	0.83	0.84	33.6
All Vehicles			3141	3.0	2817	3.3	0.672	35.3	LOS C	29.3	211.4	0.74	0.74	0.74	36.7

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Override Site Data tab).
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Green.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

* Critical Movement (Signal Timing)

Pedestrian Movement Performance

Mov ID	Crossing	Dem. Flow ped/h	Aver. Delay sec	Level of Service	AVERAGE BACK OF QUEUE [Ped ped	Dist] m	Prop. Que	Eff. Stop Rate	Travel Time sec	Travel Dist. m	Aver. Speed m/sec
SouthEast: Fitzwilliam Road											
P5	Full	53	64.3	LOS F	0.2	0.2	0.96	0.96	218.1	200.0	0.92
P5B	Slip/ Bypass	53	64.3	LOS F	0.2	0.2	0.96	0.96	218.1	200.0	0.92
NorthWest: Station Road											
P7	Full	53	64.3	LOS F	0.2	0.2	0.96	0.96	218.1	200.0	0.92
SouthWest: Wentworth Avenue											
P8	Full	53	64.3	LOS F	0.2	0.2	0.96	0.96	218.1	200.0	0.92
P8B	Slip/ Bypass	53	64.3	LOS F	0.2	0.2	0.96	0.96	218.1	200.0	0.92

All Pedestrians	263	64.3	LOS F	0.2	0.2	0.96	0.96	218.1	200.0	0.92

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)
Pedestrian movement LOS values are based on average delay per pedestrian movement.
Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

MOVEMENT SUMMARY

Site: 2 [2. Wentworth Ave (NE) / Wentworth Ave (SW) / Wentworth Ave (Bridge) / Toongabbie Community Access Rd (Site Folder: 2027 Project Case - AM)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Network: N101 [2027 Project Case - AM (Network Folder: General)]

Project Case 2027 AM
Site Category: (None)
Roundabout

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
NorthEast: Wentworth Avenue (NE)															
25	T1	All MCs	304	5.2	304	5.2	0.273	5.0	LOS A	1.6	11.9	0.30	0.46	0.30	48.1
26a	R1	All MCs	724	2.5	724	2.5	0.492	8.2	LOS A	4.3	30.4	0.34	0.60	0.34	34.3
26	R2	All MCs	2	0.0	2	0.0	0.492	9.2	LOS A	4.3	30.4	0.34	0.60	0.34	29.2
26u	U	All MCs	7	0.0	7	0.0	0.492	11.2	LOS A	4.3	30.4	0.34	0.60	0.34	34.3
Approach			1038	3.2	1038	3.2	0.492	7.3	LOS A	4.3	30.4	0.33	0.55	0.33	40.1
NorthWest: Toongabbie Community Access Road															
27	L2	All MCs	2	0.0	2	0.0	0.018	9.5	LOS A	0.1	0.8	0.85	0.73	0.85	17.0
29	R2	All MCs	1	0.0	1	0.0	0.018	14.0	LOS A	0.1	0.8	0.85	0.73	0.85	35.5
29b	R3	All MCs	3	33.3	3	33.3	0.018	16.7	LOS B	0.1	0.8	0.85	0.73	0.85	17.0
29u	U	All MCs	1	0.0	1	0.0	0.018	16.0	LOS B	0.1	0.8	0.85	0.73	0.85	17.2
Approach			7	14.3	7	14.3	0.018	14.1	LOS A	0.1	0.8	0.85	0.73	0.85	21.5
West: Wentworth Ave (Bridge)															
10b	L3	All MCs	4	0.0	4	0.0	1.503	465.0	LOS F	111.9	795.3	1.00	6.97	14.84	2.9
10a	L1	All MCs	814	2.2	736	2.2	1.503	464.8	LOS F	111.9	795.3	1.00	6.97	14.84	2.6
12b	R3	All MCs	168	0.0	152	0.0	1.503	470.4	LOS F	111.9	795.3	1.00	6.97	14.84	4.6
12u	U	All MCs	1	0.0	1	0.0	1.503	471.4	LOS F	111.9	795.3	1.00	6.97	14.84	2.6
Approach			987	1.8	893	1.8	1.503	465.7	LOS F	111.9	795.3	1.00	6.97	14.84	2.9
SouthWest: Wentworth Avenue (SW)															
30b	L3	All MCs	138	1.5	138	1.5	0.910	44.8	LOS D	22.6	161.6	1.00	1.58	2.43	18.4
30	L2	All MCs	1	0.0	1	0.0	0.910	44.4	LOS D	22.6	161.6	1.00	1.58	2.43	18.3
31	T1	All MCs	374	3.1	374	3.1	0.910	44.9	LOS D	22.6	161.6	1.00	1.58	2.43	18.4
32u	U	All MCs	1	0.0	1	0.0	0.910	51.0	LOS D	22.6	161.6	1.00	1.58	2.43	26.7
Approach			514	2.7	514	2.7	0.910	44.9	LOS D	22.6	161.6	1.00	1.58	2.43	18.4
All Vehicles			2546	2.6	2452	2.7	1.503	182.1	LOS F	111.9	795.3	0.72	3.10	6.06	6.0

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Override Site Data tab).
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Roundabout Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

MOVEMENT SUMMARY

Site: TCS2334 [3. Wentworth Ave (Bridge) / Cornelia Rd / The Portico (Site Folder: 2027 Project Case - AM)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Network: N101 [2027 Project Case - AM (Network Folder: General)]

Project Case 2027 AM
Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 100 seconds (Network User-Given Cycle Time)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
East: The Portico															
5	T1	All MCs	62	0.0	62	0.0	0.071	17.2	LOS B	1.6	11.5	0.58	0.45	0.58	13.5
6	R2	All MCs	311	3.1	311	3.1	* 1.177	223.2	LOS F	14.8	106.1	1.00	1.67	2.66	1.2
Approach			373	2.5	373	2.5	1.177	188.9	LOS F	14.8	106.1	0.93	1.47	2.31	1.5
NorthEast: Cornelia Lane (Service Road)															
24b	L3	All MCs	1	0.0	1	0.0	0.001	5.4	LOS A	0.0	0.0	0.17	0.56	0.17	25.9
Approach			1	0.0	1	0.0	0.001	5.4	LOS A	0.0	0.0	0.17	0.56	0.17	25.9
North: Wentworth Avenue (Bridge)															
7	L2	All MCs	292	3.6	291	3.6	0.206	21.4	LOS B	3.6	26.3	0.28	0.66	0.28	42.1
9	R2	All MCs	574	1.8	573	1.8	0.946	75.2	LOS F	36.8	261.4	1.00	1.07	1.37	14.6
Approach			865	2.4	865	2.4	0.946	57.1	LOS E	36.8	261.4	0.76	0.93	1.00	15.6
West: Cornelia Road															
10	L2	All MCs	676	1.2	627	1.2	* 1.163	202.4	LOS F	20.8	146.9	1.00	1.61	2.50	1.8
10a	L1	All MCs	5	20.0	5	19.9	0.210	50.6	LOS D	1.9	13.3	0.95	0.72	0.95	8.6
11	T1	All MCs	38	0.0	35	0.0	0.210	47.3	LOS D	1.9	13.3	0.95	0.72	0.95	7.1
Approach			719	1.3	668	1.3	1.163	193.1	LOS F	20.8	146.9	1.00	1.55	2.40	1.9
All Vehicles			1958	2.0	1906	2.1	1.177	130.5	LOS F	36.8	261.4	0.87	1.25	1.75	5.1

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Override Site Data tab).
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Green.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

* Critical Movement (Signal Timing)

Pedestrian Movement Performance

Mov ID	Crossing	Dem. Flow ped/h	Aver. Delay sec	Level of Service	AVERAGE BACK OF QUEUE [Ped ped	Dist] m	Prop. Que	Eff. Stop Rate	Travel Time sec	Travel Dist. m	Aver. Speed m/sec
East: The Portico											
P2	Full	6	44.2	LOS E	0.0	0.0	0.94	0.94	198.0	200.0	1.01
North: Wentworth Avenue (Bridge)											
P3	Full	29	44.2	LOS E	0.1	0.1	0.94	0.94	198.1	200.0	1.01
All Pedestrians		36	44.2	LOS E	0.1	0.1	0.94	0.94	198.1	200.0	1.01

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)
Pedestrian movement LOS values are based on average delay per pedestrian movement.
Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

MOVEMENT SUMMARY

Site: 4 [4. Cornelia Rd / Junia Ave (Site Folder: 2027 Project Case - AM)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Network: N101 [2027 Project Case - AM (Network Folder: General)]

Existing 2027 AM
Site Category: (None)
Roundabout

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Junia Avenue															
1	L2	All MCs	35	3.0	35	3.0	0.578	15.0	LOS B	4.3	30.4	0.97	0.75	1.16	34.2
2	T1	All MCs	22	0.0	22	0.0	0.578	14.8	LOS B	4.3	30.4	0.97	0.75	1.16	34.8
3	R2	All MCs	162	1.3	162	1.3	0.578	18.2	LOS B	4.3	30.4	0.97	0.75	1.16	30.5
3u	U	All MCs	1	0.0	1	0.0	0.578	19.7	LOS B	4.3	30.4	0.97	0.75	1.16	36.5
Approach			220	1.4	220	1.4	0.578	17.4	LOS B	4.3	30.4	0.97	0.75	1.16	31.8
East: Cornelia Road															
4	L2	All MCs	66	0.0	66	0.0	0.503	5.1	LOS A	3.8	26.9	0.24	0.49	0.24	42.3
5	T1	All MCs	533	2.0	532	2.0	0.503	5.1	LOS A	3.8	26.9	0.24	0.49	0.24	40.8
6	R2	All MCs	3	0.0	3	0.0	0.503	8.6	LOS A	3.8	26.9	0.24	0.49	0.24	39.0
6u	U	All MCs	14	0.0	14	0.0	0.503	10.3	LOS A	3.8	26.9	0.24	0.49	0.24	32.1
Approach			616	1.7	616	1.7	0.503	5.3	LOS A	3.8	26.9	0.24	0.49	0.24	41.0
North: Junia Avenue															
7	L2	All MCs	42	0.0	42	0.0	0.213	8.2	LOS A	0.9	6.1	0.75	0.73	0.75	31.9
8	T1	All MCs	16	6.7	16	6.7	0.213	8.5	LOS A	0.9	6.1	0.75	0.73	0.75	39.9
9	R2	All MCs	23	0.0	23	0.0	0.213	11.5	LOS A	0.9	6.1	0.75	0.73	0.75	36.7
9u	U	All MCs	3	0.0	3	0.0	0.213	13.1	LOS A	0.9	6.1	0.75	0.73	0.75	36.7
Approach			84	1.3	84	1.3	0.213	9.4	LOS A	0.9	6.1	0.75	0.73	0.75	35.8
West: Cornelia Road															
10	L2	All MCs	9	0.0	9	0.0	1.244	232.8	LOS F	79.1	561.2	1.00	4.17	7.14	5.5
11	T1	All MCs	505	1.5	505	1.5	1.244	233.0	LOS F	79.1	561.2	1.00	4.17	7.14	2.8
12	R2	All MCs	27	3.8	27	3.8	1.244	236.5	LOS F	79.1	561.2	1.00	4.17	7.14	7.1
12u	U	All MCs	7	0.0	7	0.0	1.244	238.0	LOS F	79.1	561.2	1.00	4.17	7.14	4.9
Approach			549	1.5	549	1.5	1.244	233.2	LOS F	79.1	561.2	1.00	4.17	7.14	3.1
All Vehicles			1469	1.6	1469	1.6	1.244	92.6	LOS F	79.1	561.2	0.66	1.92	2.99	9.1

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Override Site Data tab).
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Roundabout Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

MOVEMENT SUMMARY

Site: TCS 2611 [5. The Portico / Portico Pde (Site Folder: 2027 Project Case - AM)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Network: N101 [2027 Project Case - AM (Network Folder: General)]

Existing 2027 AM
Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 100 seconds (Network User-Given Cycle Time)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Portico Parade															
1	L2	All MCs	351	1.8	351	1.8	*0.407	3.7	LOS A	1.9	13.2	0.22	0.58	0.22	23.5
2	T1	All MCs	82	5.1	82	5.1	0.242	38.5	LOS C	3.5	25.5	0.90	0.70	0.90	13.8
Approach			433	2.4	433	2.4	0.407	10.3	LOS A	3.5	25.5	0.34	0.60	0.34	17.3
North: Portico Parade															
8	T1	All MCs	141	4.5	141	4.5	0.512	40.0	LOS C	5.8	43.0	0.93	0.74	0.93	11.7
9	R2	All MCs	21	15.0	21	15.0	*0.512	48.7	LOS D	5.8	43.0	0.95	0.78	0.95	11.4
Approach			162	5.8	162	5.8	0.512	41.2	LOS C	5.8	43.0	0.93	0.75	0.93	11.6
West: The Portico															
10	L2	All MCs	33	3.2	32	3.3	0.264	14.8	LOS B	8.0	58.0	0.55	0.62	0.55	26.7
12	R2	All MCs	299	3.5	296	3.6	0.264	13.1	LOS A	8.0	58.0	0.55	0.62	0.55	15.2
Approach			332	3.5	329	3.5	0.264	13.2	LOS A	8.0	58.0	0.55	0.62	0.55	17.0
All Vehicles			926	3.4	923	3.4	0.512	16.8	LOS B	8.0	58.0	0.52	0.63	0.52	15.0

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Override Site Data tab).
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Green.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

* Critical Movement (Signal Timing)

Pedestrian Movement Performance

Mov ID	Crossing	Dem. Flow ped/h	Aver. Delay sec	Level of Service	AVERAGE BACK OF QUEUE [Ped ped	Dist] m	Prop. Que	Eff. Stop Rate	Travel Time sec	Travel Dist. m	Aver. Speed m/sec
North: Portico Parade											
P3	Full	51	44.3	LOS E	0.1	0.1	0.94	0.94	198.1	200.0	1.01
West: The Portico											
P4	Full	11	44.2	LOS E	0.0	0.0	0.94	0.94	198.0	200.0	1.01
All Pedestrians		61	44.3	LOS E	0.1	0.1	0.94	0.94	198.1	200.0	1.01

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)
Pedestrian movement LOS values are based on average delay per pedestrian movement.
Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

MOVEMENT SUMMARY

Site: 6 [6. Aurelia St / Portico Pde (Site Folder: 2027 Project Case - AM)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Network: N101 [2027 Project Case - AM (Network Folder: General)]

Existing 2027 AM
Site Category: (None)
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Portico Parade															
1	L2	All MCs	63	1.7	63	1.7	0.245	4.6	LOS A	0.0	0.0	0.00	0.07	0.00	47.3
2	T1	All MCs	403	2.6	403	2.6	0.245	0.0	LOS A	0.0	0.0	0.00	0.07	0.00	47.5
Approach			466	2.5	466	2.5	0.245	0.6	NA	0.0	0.0	0.00	0.07	0.00	47.4
North: Portico Parade															
8	T1	All MCs	440	3.8	437	3.9	0.230	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	49.9
Approach			440	3.8	437	3.9	0.230	0.0	NA	0.0	0.0	0.00	0.00	0.00	49.9
West: Aurelia Street															
10	L2	All MCs	29	0.0	29	0.0	0.076	5.7	LOS A	0.3	1.9	0.49	0.67	0.49	41.1
12	R2	All MCs	27	3.8	27	3.8	0.076	9.5	LOS A	0.3	1.9	0.49	0.67	0.49	41.3
Approach			57	1.9	57	1.9	0.076	7.5	LOS A	0.3	1.9	0.49	0.67	0.49	41.2
All Vehicles			963	3.1	961	3.1	0.245	0.8	NA	0.3	1.9	0.03	0.08	0.03	47.3

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Override Site Data tab).
Vehicle movement LOS values are based on average delay per movement.
Minor Road Approach LOS values are based on average delay for all vehicle movements.
NA (TWSC): Level of Service is not defined for major road approaches or the intersection as a whole for Two-Way Sign Control (HCM LOS rule).
Two-Way Sign Control Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

MOVEMENT SUMMARY

Site: 1v [1. Station Rd / Fitzwilliam Rd / Wentworth Ave (Site Folder: 2027 Project Case - PM)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Network: N101 [2027 Project Case - PM (Network Folder: General)]

Project Case 2027 PM
Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 140 seconds (Site User-Given Cycle Time)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
SouthEast: Fitzwilliam Road															
21	L2	All MCs	488	1.5	488	1.5	0.451	16.9	LOS B	14.9	105.5	0.49	0.72	0.49	33.6
22	T1	All MCs	536	0.8	536	0.8	* 0.811	45.8	LOS D	33.8	237.9	0.97	0.89	1.00	37.8
Approach			1024	1.1	1024	1.1	0.811	32.0	LOS C	33.8	237.9	0.74	0.81	0.76	36.6
NorthWest: Station Road															
28	T1	All MCs	489	1.5	489	1.5	0.385	14.2	LOS A	15.7	111.5	0.52	0.46	0.52	51.3
29	R2	All MCs	521	1.8	521	1.8	* 0.807	65.3	LOS E	18.3	129.9	0.98	0.87	1.04	28.8
Approach			1011	1.7	1011	1.7	0.807	40.5	LOS C	18.3	129.9	0.76	0.68	0.79	37.5
SouthWest: Wentworth Avenue															
30	L2	All MCs	598	2.8	489	2.4	0.576	29.8	LOS C	25.6	182.5	0.76	0.81	0.76	39.9
32	R2	All MCs	543	1.4	446	1.3	* 0.801	61.7	LOS E	26.1	184.9	0.97	0.89	1.02	20.3
Approach			1141	2.1	935	1.8	0.801	45.0	LOS D	26.1	184.9	0.86	0.85	0.88	31.1
All Vehicles			3176	1.7	2970	1.8	0.811	39.0	LOS C	33.8	237.9	0.78	0.78	0.81	35.2

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Override Site Data tab).
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Green.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

* Critical Movement (Signal Timing)

Pedestrian Movement Performance

Mov ID	Crossing	Dem. Flow ped/h	Aver. Delay sec	Level of Service	AVERAGE BACK OF QUEUE [Ped ped	Dist] m	Prop. Que	Eff. Stop Rate	Travel Time sec	Travel Dist. m	Aver. Speed m/sec
SouthEast: Fitzwilliam Road											
P5	Full	53	64.3	LOS F	0.2	0.2	0.96	0.96	218.1	200.0	0.92
P5B	Slip/ Bypass	53	64.3	LOS F	0.2	0.2	0.96	0.96	218.1	200.0	0.92
NorthWest: Station Road											
P7	Full	53	64.3	LOS F	0.2	0.2	0.96	0.96	218.1	200.0	0.92
SouthWest: Wentworth Avenue											
P8	Full	53	64.3	LOS F	0.2	0.2	0.96	0.96	218.1	200.0	0.92
P8B	Slip/ Bypass	53	64.3	LOS F	0.2	0.2	0.96	0.96	218.1	200.0	0.92

All Pedestrians	263	64.3	LOS F	0.2	0.2	0.96	0.96	218.1	200.0	0.92

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)
Pedestrian movement LOS values are based on average delay per pedestrian movement.
Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

MOVEMENT SUMMARY

Site: 2 [2. Wentworth Ave (NE) / Wentworth Ave (SW) / Wentworth Ave (Bridge) / Toongabbie Community Access Rd (Site Folder: 2027 Project Case - PM)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Network: N101 [2027 Project Case - PM (Network Folder: General)]

Project Case 2027 PM
Site Category: (None)
Roundabout

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
NorthEast: Wentworth Avenue (NE)															
25	T1	All MCs	240	3.5	240	3.5	0.268	5.9	LOS A	1.4	10.4	0.41	0.54	0.41	47.3
26a	R1	All MCs	769	1.1	769	1.1	1.016	38.6	LOS C	31.3	221.0	1.00	1.41	2.22	14.3
26	R2	All MCs	1	0.0	1	0.0	1.016	39.5	LOS C	31.3	221.0	1.00	1.41	2.22	15.0
26u	U	All MCs	6	0.0	6	0.0	1.016	41.5	LOS C	31.3	221.0	1.00	1.41	2.22	14.3
Approach			1017	1.7	1017	1.7	1.016	30.9	LOS C	31.3	221.0	0.86	1.21	1.79	20.5
NorthWest: Toongabbie Community Access Road															
27	L2	All MCs	18	0.0	18	0.0	0.198	13.2	LOS A	1.1	7.5	1.00	0.83	1.00	14.6
29	R2	All MCs	8	0.0	8	0.0	0.198	17.6	LOS B	1.1	7.5	1.00	0.83	1.00	33.3
29b	R3	All MCs	21	0.0	21	0.0	0.198	18.6	LOS B	1.1	7.5	1.00	0.83	1.00	14.6
29u	U	All MCs	1	0.0	1	0.0	0.198	19.6	LOS B	1.1	7.5	1.00	0.83	1.00	15.6
Approach			48	0.0	48	0.0	0.198	16.5	LOS B	1.1	7.5	1.00	0.83	1.00	20.0
West: Wentworth Ave (Bridge)															
10b	L3	All MCs	16	0.0	15	0.0	0.960	16.6	LOS B	29.2	207.2	1.00	0.96	1.36	29.6
10a	L1	All MCs	833	1.5	783	1.5	0.960	16.2	LOS B	29.2	207.2	1.00	0.96	1.36	32.8
12b	R3	All MCs	199	1.1	187	1.0	0.960	22.0	LOS B	29.2	207.2	1.00	0.96	1.36	39.8
12u	U	All MCs	1	0.0	1	0.0	0.960	22.9	LOS B	29.2	207.2	1.00	0.96	1.36	32.8
Approach			1048	1.4	986	1.4	0.960	17.3	LOS B	29.2	207.2	1.00	0.96	1.36	34.6
SouthWest: Wentworth Avenue (SW)															
30b	L3	All MCs	134	2.4	134	2.4	1.983	905.6	LOS F	139.0	1001.5	1.00	5.95	15.60	1.3
30	L2	All MCs	8	0.0	8	0.0	1.983	905.1	LOS F	139.0	1001.5	1.00	5.95	15.60	1.5
31	T1	All MCs	285	4.1	285	4.1	1.983	905.7	LOS F	139.0	1001.5	1.00	5.95	15.60	1.3
32u	U	All MCs	4	0.0	4	0.0	1.983	911.7	LOS F	139.0	1001.5	1.00	5.95	15.60	2.4
Approach			432	3.4	432	3.4	1.983	905.7	LOS F	139.0	1001.5	1.00	5.95	15.60	1.3
All Vehicles			2545	1.8	2483	1.9	1.983	177.3	LOS F	139.0	1001.5	0.94	1.93	4.00	6.1

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Override Site Data tab).
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Roundabout Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

MOVEMENT SUMMARY

Site: TCS2334 [3. Wentworth Ave (Bridge) / Cornelia Rd / The Portico (Site Folder: 2027 Project Case - PM)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Network: N101 [2027 Project Case - PM (Network Folder: General)]

Project Case 2027 PM
Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 100 seconds (Network Site User-Given Phase Times)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
East: The Portico															
5	T1	All MCs	114	0.9	114	0.9	0.173	25.8	LOS B	3.9	27.2	0.74	0.59	0.74	9.7
6	R2	All MCs	324	1.3	324	1.3	* 0.927	58.7	LOS E	15.0	106.1	1.00	1.03	1.34	4.4
Approach			438	1.2	438	1.2	0.927	50.2	LOS D	15.0	106.1	0.93	0.92	1.18	5.1
NorthEast: Cornelia Lane (Service Road)															
24b	L3	All MCs	11	0.0	11	0.0	0.012	6.0	LOS A	0.1	0.5	0.23	0.58	0.23	24.6
Approach			11	0.0	11	0.0	0.012	6.0	LOS A	0.1	0.5	0.23	0.58	0.23	24.6
North: Wentworth Avenue (Bridge)															
7	L2	All MCs	245	1.3	225	1.3	0.244	19.0	LOS B	2.8	20.0	0.28	0.66	0.28	42.3
9	R2	All MCs	680	1.2	622	1.1	* 1.163	214.3	LOS F	70.7	499.3	1.00	1.57	2.50	5.4
Approach			925	1.3	847	1.2	1.163	162.5	LOS F	70.7	499.3	0.81	1.33	1.91	6.6
West: Cornelia Road															
10	L2	All MCs	723	1.5	674	1.4	0.531	13.6	LOS A	15.9	112.4	0.53	0.75	0.53	19.1
10a	L1	All MCs	4	0.0	4	0.0	0.691	55.6	LOS D	5.5	38.7	1.00	0.85	1.13	8.1
11	T1	All MCs	111	1.0	103	0.9	* 0.691	52.3	LOS D	5.5	38.7	1.00	0.85	1.13	6.6
Approach			838	1.4	781	1.4	0.691	18.9	LOS B	15.9	112.4	0.59	0.77	0.61	15.1
All Vehicles			2212	1.3	2076	1.4	1.163	84.0	LOS F	70.7	499.3	0.75	1.03	1.26	7.3

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Override Site Data tab).
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Green.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

* Critical Movement (Signal Timing)

Pedestrian Movement Performance

Mov ID	Crossing	Dem. Flow ped/h	Aver. Delay sec	Level of Service	AVERAGE BACK OF QUEUE [Ped ped	Dist] m	Prop. Que	Eff. Stop Rate	Travel Time sec	Travel Dist. m	Aver. Speed m/sec
East: The Portico											
P2	Full	16	44.2	LOS E	0.0	0.0	0.94	0.94	198.1	200.0	1.01
North: Wentworth Avenue (Bridge)											
P3	Full	41	44.3	LOS E	0.1	0.1	0.94	0.94	198.1	200.0	1.01
All Pedestrians		57	44.2	LOS E	0.1	0.1	0.94	0.94	198.1	200.0	1.01

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)
Pedestrian movement LOS values are based on average delay per pedestrian movement.
Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

MOVEMENT SUMMARY

Site: 4 [4. Cornelia Rd / Junia Ave (Site Folder: 2027 Project Case - PM)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Network: N101 [2027 Project Case - PM (Network Folder: General)]

Project Case 2027 PM
Site Category: (None)
Roundabout

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Junia Avenue															
1	L2	All MCs	59	0.0	59	0.0	0.752	25.1	LOS B	6.3	44.3	1.00	1.07	1.52	29.2
2	T1	All MCs	16	0.0	16	0.0	0.752	25.1	LOS B	6.3	44.3	1.00	1.07	1.52	29.8
3	R2	All MCs	151	0.0	151	0.0	0.752	28.4	LOS B	6.3	44.3	1.00	1.07	1.52	24.8
3u	U	All MCs	1	0.0	1	0.0	0.752	30.0	LOS C	6.3	44.3	1.00	1.07	1.52	32.0
Approach			226	0.0	226	0.0	0.752	27.3	LOS B	6.3	44.3	1.00	1.07	1.52	26.6
East: Cornelia Road															
4	L2	All MCs	85	0.0	70	0.0	0.880	11.7	LOS A	16.3	115.3	0.73	0.68	0.83	36.5
5	T1	All MCs	671	1.4	551	1.3	0.880	11.7	LOS A	16.3	115.3	0.73	0.68	0.83	32.5
6	R2	All MCs	13	0.0	10	0.0	0.880	15.2	LOS B	16.3	115.3	0.73	0.68	0.83	32.2
6u	U	All MCs	48	0.0	40	0.0	0.880	16.9	LOS B	16.3	115.3	0.73	0.68	0.83	21.4
Approach			817	1.2	671	1.0	0.880	12.1	LOS A	16.3	115.3	0.73	0.68	0.83	32.7
North: Junia Avenue															
7	L2	All MCs	38	0.0	38	0.0	0.475	27.2	LOS B	2.2	15.7	0.89	1.01	1.11	18.5
8	T1	All MCs	19	0.0	19	0.0	0.475	27.1	LOS B	2.2	15.7	0.89	1.01	1.11	29.5
9	R2	All MCs	15	0.0	15	0.0	0.475	30.5	LOS C	2.2	15.7	0.89	1.01	1.11	24.8
9u	U	All MCs	1	0.0	1	0.0	0.475	32.0	LOS C	2.2	15.7	0.89	1.01	1.11	25.6
Approach			73	0.0	73	0.0	0.475	27.9	LOS B	2.2	15.7	0.89	1.01	1.11	23.7
West: Cornelia Road															
10	L2	All MCs	15	0.0	15	0.0	1.015	45.7	LOS D	36.7	260.5	1.00	1.75	2.46	19.3
11	T1	All MCs	621	1.9	621	1.9	1.015	45.9	LOS D	36.7	260.5	1.00	1.75	2.46	11.7
12	R2	All MCs	62	0.0	62	0.0	1.015	49.2	LOS D	36.7	260.5	1.00	1.75	2.46	22.8
12u	U	All MCs	7	0.0	7	0.0	1.015	50.9	LOS D	36.7	260.5	1.00	1.75	2.46	18.0
Approach			705	1.6	705	1.6	1.015	46.3	LOS D	36.7	260.5	1.00	1.75	2.46	13.4
All Vehicles			1821	1.2	1676	1.3	1.015	29.2	LOS C	36.7	260.5	0.89	1.20	1.62	21.1

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Override Site Data tab).
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Roundabout Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

MOVEMENT SUMMARY

Site: TCS 2611 [5. The Portico / Portico Pde (Site Folder: 2027 Project Case - PM)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Network: N101 [2027 Project Case - PM (Network Folder: General)]

Project Case 2027 PM
Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 100 seconds (Network Site User-Given Phase Times)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Portico Parade															
1	L2	All MCs	415	0.8	415	0.8	*0.468	4.2	LOS A	3.1	22.1	0.28	0.61	0.28	22.0
2	T1	All MCs	89	3.5	89	3.5	0.147	26.0	LOS B	3.1	22.4	0.75	0.59	0.75	18.0
Approach			504	1.3	504	1.3	0.468	8.0	LOS A	3.1	22.4	0.37	0.61	0.37	19.9
North: Portico Parade															
8	T1	All MCs	105	2.0	105	2.0	0.276	27.3	LOS B	3.6	26.3	0.78	0.64	0.78	14.9
9	R2	All MCs	23	9.1	23	9.1	*0.276	40.1	LOS C	3.6	26.3	0.81	0.68	0.81	14.2
Approach			128	3.3	128	3.3	0.276	29.6	LOS C	3.6	26.3	0.79	0.65	0.79	14.8
West: The Portico															
10	L2	All MCs	51	4.2	47	4.4	0.301	26.1	LOS B	11.1	78.2	0.75	0.68	0.75	20.7
12	R2	All MCs	305	0.7	282	0.7	0.301	22.0	LOS B	11.1	78.2	0.75	0.68	0.75	10.2
Approach			356	1.2	328	1.2	0.301	22.6	LOS B	11.1	78.2	0.75	0.68	0.75	12.3
All Vehicles			988	1.5	961	1.5	0.468	15.9	LOS B	11.1	78.2	0.55	0.64	0.55	15.2

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Override Site Data tab).
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Green.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

* Critical Movement (Signal Timing)

Pedestrian Movement Performance

Mov ID	Crossing	Dem. Flow ped/h	Aver. Delay sec	Level of Service	AVERAGE BACK OF QUEUE [Ped ped	Dist] m	Prop. Que	Eff. Stop Rate	Travel Time sec	Travel Dist. m	Aver. Speed m/sec
North: Portico Parade											
P3	Full	231	44.6	LOS E	0.6	0.6	0.95	0.95	198.5	200.0	1.01
West: The Portico											
P4	Full	252	44.6	LOS E	0.7	0.7	0.95	0.95	198.5	200.0	1.01
All Pedestrians		482	44.6	LOS E	0.7	0.7	0.95	0.95	198.5	200.0	1.01

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)
Pedestrian movement LOS values are based on average delay per pedestrian movement.
Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

MOVEMENT SUMMARY

Site: 6 [6. Aurelia St / Portico Pde (Site Folder: 2027 Project Case - PM)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Network: N101 [2027 Project Case - PM (Network Folder: General)]

Project Case 2027 PM
Site Category: (None)
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Portico Parade															
1	L2	All MCs	121	0.0	121	0.0	0.279	4.6	LOS A	0.0	0.0	0.00	0.12	0.00	47.0
2	T1	All MCs	414	1.3	414	1.3	0.279	0.0	LOS A	0.0	0.0	0.00	0.12	0.00	46.0
Approach			535	1.0	535	1.0	0.279	1.1	NA	0.0	0.0	0.00	0.12	0.00	46.5
North: Portico Parade															
8	T1	All MCs	411	1.0	387	1.0	0.200	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	49.9
Approach			411	1.0	387	1.0	0.200	0.0	NA	0.0	0.0	0.00	0.00	0.00	49.9
West: Aurelia Street															
10	L2	All MCs	91	1.2	91	1.2	0.161	5.8	LOS A	0.6	4.3	0.49	0.67	0.49	41.5
12	R2	All MCs	48	0.0	48	0.0	0.161	9.5	LOS A	0.6	4.3	0.49	0.67	0.49	41.6
Approach			139	0.8	139	0.8	0.161	7.1	LOS A	0.6	4.3	0.49	0.67	0.49	41.6
All Vehicles			1084	1.0	1061	1.0	0.279	1.5	NA	0.6	4.3	0.06	0.15	0.06	46.0

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Override Site Data tab).
Vehicle movement LOS values are based on average delay per movement.
Minor Road Approach LOS values are based on average delay for all vehicle movements.
NA (TWSC): Level of Service is not defined for major road approaches or the intersection as a whole for Two-Way Sign Control (HCM LOS rule).
Two-Way Sign Control Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

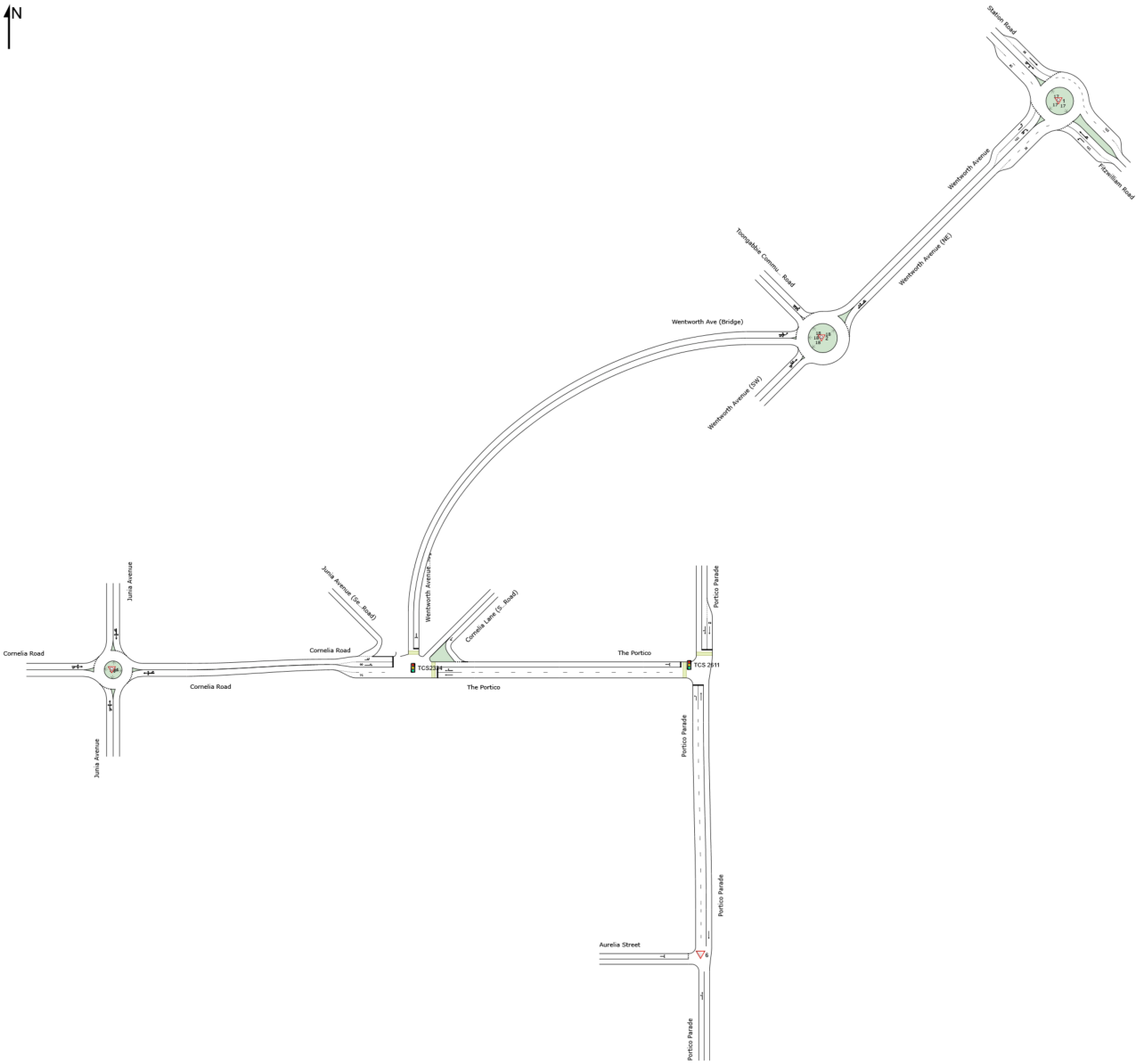
2037 Future Base

NETWORK LAYOUT

Network: N101 [2037 Base - AM (Network Folder: General)]

New Network
Network Category: (None)

Layout pictures are schematic functional drawings reflecting input data. They are not design drawings.



SITES IN NETWORK		
Site ID	**CCG ID**	**Site Name**
1	NA	1. Station Rd / Fitzwilliam Rd / Wentworth Ave
2	NA	2. Wentworth Ave (NE) / Wentworth Ave (SW) / Wentworth Ave (Bridge) / Toongabbie Community Access Rd
TCS2334	NA	3. Wentworth Ave (Bridge) / Cornelia Rd / The Portico
4	NA	4. Cornelia Rd / Junia Ave
TCS 2611	NA	5. The Portico / Portico Pde
6	NA	6. Aurelia St / Portico Pde

MOVEMENT SUMMARY

Site: 1 [1. Station Rd / Fitzwilliam Rd / Wentworth Ave (Site Folder: 2037 Base - AM)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Network: N101 [2037 Base - AM (Network Folder: General)]

Existing 2037 AM
Site Category: (None)
Roundabout

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
SouthEast: Fitzwilliam Road															
21	L2	All MCs	553	1.1	553	1.1	0.803	20.1	LOS B	11.6	82.0	1.00	1.06	1.55	31.4
22	T1	All MCs	560	3.8	560	3.8	0.816	18.8	LOS B	12.2	88.2	1.00	1.09	1.59	47.5
23u	U	All MCs	2	0.0	2	0.0	0.816	24.7	LOS B	12.2	88.2	1.00	1.09	1.59	39.2
Approach			1115	2.5	1115	2.5	0.816	19.5	LOS B	12.2	88.2	1.00	1.08	1.57	43.0
NorthWest: Station Road															
28	T1	All MCs	401	2.9	401	2.9	0.482	8.0	LOS A	3.6	25.9	0.72	0.63	0.72	53.3
29	R2	All MCs	525	5.2	525	5.2	0.968	31.3	LOS C	17.9	130.9	1.00	1.38	2.05	39.1
29u	U	All MCs	13	8.3	13	8.3	0.968	33.4	LOS C	17.9	130.9	1.00	1.38	2.05	46.2
Approach			939	4.3	939	4.3	0.968	21.4	LOS B	17.9	130.9	0.88	1.06	1.49	45.2
SouthWest: Wentworth Avenue															
30	L2	All MCs	835	3.5	650	3.6	0.855	20.9	LOS B	15.2	109.7	1.00	1.19	1.74	44.5
32	R2	All MCs	424	0.7	329	0.6	0.549	15.8	LOS B	4.7	33.4	0.90	0.85	1.06	37.9
32u	U	All MCs	2	50.0	2	50.7	0.549	21.1	LOS B	4.7	33.4	0.90	0.85	1.06	26.4
Approach			1261	2.7	981	2.7	0.855	19.2	LOS B	15.2	109.7	0.97	1.08	1.51	43.1
All Vehicles			3315	3.0	3035	3.3	0.968	20.0	LOS B	17.9	130.9	0.95	1.07	1.52	43.8

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Override Site Data tab).

Vehicle movement LOS values are based on average delay per movement.

Intersection and Approach LOS values are based on average delay for all vehicle movements.

Roundabout Capacity Model: SIDRA Standard.

Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).

Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.

Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

MOVEMENT SUMMARY

Site: 2 [2. Wentworth Ave (NE) / Wentworth Ave (SW) / Wentworth Ave (Bridge) / Toongabbie Community Access Rd (Site Folder: 2037 Base - AM)]

Network: N101 [2037 Base - AM (Network Folder: General)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Existing 2037 AM
Site Category: (None)
Roundabout

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
NorthEast: Wentworth Avenue (NE)															
25	T1	All MCs	319	5.3	319	5.2	1.014	34.1	LOS C	52.4	376.7	1.00	1.38	1.80	26.6
26a	R1	All MCs	760	2.5	760	2.5	1.014	37.4	LOS C	52.4	376.7	1.00	1.38	1.80	14.9
26	R2	All MCs	2	0.0	2	0.0	1.014	38.2	LOS C	52.4	376.7	1.00	1.38	1.80	15.4
26u	U	All MCs	7	0.0	7	0.0	1.014	40.2	LOS C	52.4	376.7	1.00	1.38	1.80	14.9
Approach			1088	3.3	1088	3.3	1.014	36.5	LOS C	52.4	376.7	1.00	1.38	1.80	19.2
NorthWest: Toongabbie Community Access Road															
27	L2	All MCs	2	0.0	2	0.0	0.024	12.0	LOS A	0.1	1.1	0.92	0.77	0.92	14.9
29	R2	All MCs	1	0.0	1	0.0	0.024	16.5	LOS B	0.1	1.1	0.92	0.77	0.92	33.3
29b	R3	All MCs	3	33.3	3	33.3	0.024	19.6	LOS B	0.1	1.1	0.92	0.77	0.92	14.9
29u	U	All MCs	1	0.0	1	0.0	0.024	18.5	LOS B	0.1	1.1	0.92	0.77	0.92	15.8
Approach			7	14.3	7	14.3	0.024	16.8	LOS B	0.1	1.1	0.92	0.77	0.92	19.3
West: Wentworth Ave (Bridge)															
10b	L3	All MCs	4	0.0	4	0.0	1.153	155.3	LOS F	90.0	639.8	1.00	3.46	6.78	7.7
10a	L1	All MCs	855	2.2	722	2.1	1.153	155.1	LOS F	90.0	639.8	1.00	3.46	6.78	7.1
12b	R3	All MCs	176	0.0	149	0.0	1.153	160.6	LOS F	90.0	639.8	1.00	3.46	6.78	11.9
12u	U	All MCs	1	0.0	1	0.0	1.153	161.6	LOS F	90.0	639.8	1.00	3.46	6.78	7.1
Approach			1036	1.8	875	1.8	1.153	156.0	LOS F	90.0	639.8	1.00	3.46	6.78	8.0
SouthWest: Wentworth Avenue (SW)															
30b	L3	All MCs	145	1.4	145	1.4	1.131	151.2	LOS F	54.9	393.3	1.00	3.07	6.37	6.9
30	L2	All MCs	1	0.0	1	0.0	1.131	150.7	LOS F	54.9	393.3	1.00	3.07	6.37	7.6
31	T1	All MCs	393	3.2	393	3.2	1.131	151.2	LOS F	54.9	393.3	1.00	3.07	6.37	6.9
32u	U	All MCs	1	0.0	1	0.0	1.131	157.3	LOS F	54.9	393.3	1.00	3.07	6.37	11.9
Approach			540	2.7	540	2.7	1.131	151.2	LOS F	54.9	393.3	1.00	3.07	6.37	7.0
All Vehicles			2672	2.6	2510	2.8	1.153	102.8	LOS F	90.0	639.8	1.00	2.47	4.52	9.8

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Override Site Data tab).
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Roundabout Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

MOVEMENT SUMMARY

Site: TCS2334 [3. Wentworth Ave (Bridge) / Cornelia Rd / The Portico (Site Folder: 2037 Base - AM)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Network: N101 [2037 Base - AM (Network Folder: General)]

Existing 2037 AM
Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 100 seconds (Network User-Given Cycle Time)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
East: The Portico															
5	T1	All MCs	64	0.0	64	0.0	0.087	21.7	LOS B	1.9	13.5	0.65	0.51	0.65	11.1
6	R2	All MCs	325	2.9	325	2.9	* 1.308	332.3	LOS F	14.8	106.1	1.00	1.84	3.27	0.8
Approach			389	2.4	389	2.4	1.308	281.1	LOS F	14.8	106.1	0.94	1.62	2.83	1.0
NorthEast: Cornelia Lane (Service Road)															
24b	L3	All MCs	1	0.0	1	0.0	0.001	7.1	LOS A	0.0	0.1	0.29	0.56	0.29	22.4
Approach			1	0.0	1	0.0	0.001	7.1	LOS A	0.0	0.1	0.29	0.56	0.29	22.4
North: Wentworth Avenue (Bridge)															
7	L2	All MCs	306	3.4	297	3.5	0.946	34.6	LOS C	53.8	384.3	1.00	1.05	1.27	16.5
9	R2	All MCs	602	1.9	584	1.9	* 0.946	62.3	LOS E	53.8	384.3	1.00	1.05	1.27	16.5
Approach			908	2.4	881	2.4	0.946	52.9	LOS D	53.8	384.3	1.00	1.05	1.27	16.5
West: Cornelia Road															
10b	L3	All MCs	1	0.0	1	0.0	0.893	24.7	LOS B	20.8	146.9	0.90	0.99	1.11	11.5
10	L2	All MCs	709	1.2	630	1.2	0.893	38.8	LOS C	20.8	146.9	0.90	0.99	1.11	9.5
10a	L1	All MCs	5	20.0	5	19.8	0.233	51.9	LOS D	1.9	13.6	0.96	0.72	0.96	8.4
11	T1	All MCs	40	0.0	36	0.0	* 0.233	48.6	LOS D	1.9	13.6	0.96	0.72	0.96	6.9
Approach			756	1.3	672	1.2	0.893	39.4	LOS C	20.8	146.9	0.90	0.97	1.10	9.3
All Vehicles			2055	2.0	1943	2.1	1.308	94.0	LOS F	53.8	384.3	0.95	1.14	1.53	7.0

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Override Site Data tab).
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Green.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

* Critical Movement (Signal Timing)

Pedestrian Movement Performance

Mov ID	Crossing	Dem. Flow ped/h	Aver. Delay sec	Level of Service	AVERAGE BACK OF QUEUE [Ped ped	Dist] m	Prop. Que	Eff. Stop Rate	Travel Time sec	Travel Dist. m	Aver. Speed m/sec
East: The Portico											
P2	Full	6	44.2	LOS E	0.0	0.0	0.94	0.94	198.0	200.0	1.01
North: Wentworth Avenue (Bridge)											
P3	Full	29	44.2	LOS E	0.1	0.1	0.94	0.94	198.1	200.0	1.01
All Pedestrians		36	44.2	LOS E	0.1	0.1	0.94	0.94	198.1	200.0	1.01

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)
Pedestrian movement LOS values are based on average delay per pedestrian movement.
Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

MOVEMENT SUMMARY

Site: 4 [4. Cornelia Rd / Junia Ave (Site Folder: 2037 Base - AM)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Network: N101 [2037 Base - AM (Network Folder: General)]

Existing 2037 AM
Site Category: (None)
Roundabout

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Junia Avenue															
1	L2	All MCs	37	2.9	37	2.9	0.611	16.3	LOS B	4.9	34.4	1.00	0.77	1.23	33.5
2	T1	All MCs	23	0.0	23	0.0	0.611	16.1	LOS B	4.9	34.4	1.00	0.77	1.23	34.1
3	R2	All MCs	169	1.2	169	1.2	0.611	19.5	LOS B	4.9	34.4	1.00	0.77	1.23	29.6
3u	U	All MCs	1	0.0	1	0.0	0.611	21.0	LOS B	4.9	34.4	1.00	0.77	1.23	35.8
Approach			231	1.4	231	1.4	0.611	18.7	LOS B	4.9	34.4	1.00	0.77	1.23	31.0
East: Cornelia Road															
4	L2	All MCs	69	0.0	68	0.0	0.515	5.1	LOS A	3.9	28.0	0.25	0.49	0.25	42.3
5	T1	All MCs	558	1.9	542	1.9	0.515	5.2	LOS A	3.9	28.0	0.25	0.49	0.25	40.8
6	R2	All MCs	3	0.0	3	0.0	0.515	8.7	LOS A	3.9	28.0	0.25	0.49	0.25	39.0
6u	U	All MCs	15	0.0	14	0.0	0.515	10.3	LOS A	3.9	28.0	0.25	0.49	0.25	32.0
Approach			645	1.6	627	1.6	0.515	5.3	LOS A	3.9	28.0	0.25	0.49	0.25	40.9
North: Junia Avenue															
7	L2	All MCs	44	0.0	44	0.0	0.224	8.3	LOS A	0.9	6.4	0.76	0.73	0.76	31.8
8	T1	All MCs	17	6.3	17	6.3	0.224	8.6	LOS A	0.9	6.4	0.76	0.73	0.76	39.8
9	R2	All MCs	24	0.0	24	0.0	0.224	11.6	LOS A	0.9	6.4	0.76	0.73	0.76	36.7
9u	U	All MCs	3	0.0	3	0.0	0.224	13.1	LOS A	0.9	6.4	0.76	0.73	0.76	36.7
Approach			88	1.2	88	1.2	0.224	9.4	LOS A	0.9	6.4	0.76	0.73	0.76	35.8
West: Cornelia Road															
10	L2	All MCs	11	0.0	11	0.0	1.319	300.0	LOS F	98.2	696.1	1.00	4.96	8.68	4.4
11	T1	All MCs	529	1.4	529	1.4	1.319	300.2	LOS F	98.2	696.1	1.00	4.96	8.68	2.2
12	R2	All MCs	29	3.6	29	3.6	1.319	303.7	LOS F	98.2	696.1	1.00	4.96	8.68	5.7
12u	U	All MCs	7	0.0	7	0.0	1.319	305.2	LOS F	98.2	696.1	1.00	4.96	8.68	3.9
Approach			577	1.5	577	1.5	1.319	300.4	LOS F	98.2	696.1	1.00	4.96	8.68	2.4
All Vehicles			1541	1.5	1523	1.5	1.319	119.3	LOS F	98.2	696.1	0.68	2.24	3.62	7.4

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Override Site Data tab).
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Roundabout Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

MOVEMENT SUMMARY

Site: TCS 2611 [5. The Portico / Portico Pde (Site Folder: 2037 Base - AM)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Network: N101 [2037 Base - AM (Network Folder: General)]

Existing 2037 AM
Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 100 seconds (Network User-Given Cycle Time)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Portico Parade															
1	L2	All MCs	367	1.7	367	1.7	* 0.426	3.7	LOS A	2.0	14.2	0.22	0.59	0.22	23.4
2	T1	All MCs	85	4.9	85	4.9	0.251	38.6	LOS C	3.6	26.5	0.90	0.70	0.90	13.8
Approach			453	2.3	453	2.3	0.426	10.3	LOS A	3.6	26.5	0.35	0.61	0.35	17.3
North: Portico Parade															
8	T1	All MCs	148	4.3	148	4.3	0.541	40.3	LOS C	6.2	45.4	0.94	0.75	0.94	11.6
9	R2	All MCs	22	14.3	22	14.3	* 0.541	49.0	LOS D	6.2	45.4	0.96	0.78	0.96	11.3
Approach			171	5.6	171	5.6	0.541	41.4	LOS C	6.2	45.4	0.94	0.75	0.94	11.6
West: The Portico															
10	L2	All MCs	35	3.0	33	3.1	0.268	4.9	LOS A	0.4	3.1	0.03	0.54	0.03	36.0
12	R2	All MCs	313	3.4	300	3.4	0.268	4.8	LOS A	0.4	3.1	0.03	0.54	0.03	27.2
Approach			347	3.3	334	3.4	0.268	4.8	LOS A	0.4	3.1	0.03	0.54	0.03	29.0
All Vehicles			971	3.3	957	3.3	0.541	13.9	LOS A	6.2	45.4	0.34	0.61	0.34	17.0

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Override Site Data tab).
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Green.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

* Critical Movement (Signal Timing)

Pedestrian Movement Performance

Mov ID	Crossing	Dem. Flow ped/h	Aver. Delay sec	Level of Service	AVERAGE BACK OF QUEUE [Ped ped	Dist] m	Prop. Que	Eff. Stop Rate	Travel Time sec	Travel Dist. m	Aver. Speed m/sec
North: Portico Parade											
P3	Full	51	44.3	LOS E	0.1	0.1	0.94	0.94	198.1	200.0	1.01
West: The Portico											
P4	Full	11	44.2	LOS E	0.0	0.0	0.94	0.94	198.0	200.0	1.01
All Pedestrians		61	44.3	LOS E	0.1	0.1	0.94	0.94	198.1	200.0	1.01

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)
Pedestrian movement LOS values are based on average delay per pedestrian movement.
Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

MOVEMENT SUMMARY

Site: 6 [6. Aurelia St / Portico Pde (Site Folder: 2037 Base - AM)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Network: N101 [2037 Base - AM (Network Folder: General)]

Existing 2025 AM
Site Category: (None)
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Portico Parade															
1	L2	All MCs	65	1.6	65	1.6	0.256	4.6	LOS A	0.0	0.0	0.00	0.07	0.00	47.3
2	T1	All MCs	422	2.5	422	2.5	0.256	0.0	LOS A	0.0	0.0	0.00	0.07	0.00	47.5
Approach			487	2.4	487	2.4	0.256	0.6	NA	0.0	0.0	0.00	0.07	0.00	47.5
North: Portico Parade															
8	T1	All MCs	462	3.9	450	3.9	0.236	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	49.9
Approach			462	3.9	450	3.9	0.236	0.0	NA	0.0	0.0	0.00	0.00	0.00	49.9
West: Aurelia Street															
10	L2	All MCs	32	0.0	32	0.0	0.087	5.7	LOS A	0.3	2.1	0.52	0.69	0.52	40.7
12	R2	All MCs	29	3.6	29	3.6	0.087	10.2	LOS A	0.3	2.1	0.52	0.69	0.52	41.0
Approach			61	1.7	61	1.7	0.087	7.9	LOS A	0.3	2.1	0.52	0.69	0.52	40.9
All Vehicles			1011	3.0	998	3.1	0.256	0.8	NA	0.3	2.1	0.03	0.08	0.03	47.2

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Override Site Data tab).
Vehicle movement LOS values are based on average delay per movement.
Minor Road Approach LOS values are based on average delay for all vehicle movements.
NA (TWSC): Level of Service is not defined for major road approaches or the intersection as a whole for Two-Way Sign Control (HCM LOS rule).
Two-Way Sign Control Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

MOVEMENT SUMMARY

Site: 1 [1. Station Rd / Fitzwilliam Rd / Wentworth Ave (Site Folder: 2037 Base - PM)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Network: N101 [2037 Base - PM (Network Folder: General)]

Existing 2037 PM
Site Category: (None)
Roundabout

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
SouthEast: Fitzwilliam Road															
21	L2	All MCs	512	1.4	512	1.4	0.780	17.0	LOS B	10.9	77.4	0.98	0.95	1.35	33.4
22	T1	All MCs	562	0.7	562	0.7	0.975	44.9	LOS D	26.6	187.6	1.00	1.64	2.63	37.4
23u	U	All MCs	6	0.0	6	0.0	0.975	51.0	LOS D	26.6	187.6	1.00	1.64	2.63	27.4
Approach			1080	1.1	1080	1.1	0.975	31.7	LOS C	26.6	187.6	0.99	1.31	2.02	36.5
NorthWest: Station Road															
28	T1	All MCs	513	1.4	513	1.4	0.719	15.4	LOS B	8.6	60.8	0.97	0.91	1.30	50.2
29	R2	All MCs	547	1.9	547	1.9	1.502	468.1	LOS F	123.1	875.7	1.00	7.26	15.93	6.7
29u	U	All MCs	13	0.0	13	0.0	1.502	469.8	LOS F	123.1	875.7	1.00	7.26	15.93	11.8
Approach			1073	1.7	1073	1.7	1.502	251.7	LOS F	123.1	875.7	0.99	4.22	8.94	12.8
SouthWest: Wentworth Avenue															
30	L2	All MCs	628	2.8	549	2.6	0.813	19.3	LOS B	12.0	86.0	1.00	1.10	1.60	45.4
32	R2	All MCs	569	1.3	498	1.3	0.768	21.3	LOS B	10.0	70.4	1.00	1.02	1.48	34.2
32u	U	All MCs	2	0.0	2	0.0	0.768	23.1	LOS B	10.0	70.4	1.00	1.02	1.48	22.2
Approach			1200	2.1	1049	2.0	0.813	20.2	LOS B	12.0	86.0	1.00	1.06	1.54	41.3
All Vehicles			3353	1.6	3201	1.7	1.502	101.7	LOS F	123.1	875.7	0.99	2.20	4.18	21.2

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Override Site Data tab).

Vehicle movement LOS values are based on average delay per movement.

Intersection and Approach LOS values are based on average delay for all vehicle movements.

Roundabout Capacity Model: SIDRA Standard.

Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).

Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.

Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

MOVEMENT SUMMARY

Site: 2 [2. Wentworth Ave (NE) / Wentworth Ave (SW) / Wentworth Ave (Bridge) / Toongabbie Community Access Rd (Site Folder: 2037 Base - PM)]

Network: N101 [2037 Base - PM (Network Folder: General)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Existing 2037 PM
Site Category: (None)
Roundabout

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
NorthEast: Wentworth Avenue (NE)															
25	T1	All MCs	252	3.3	208	3.1	1.160	156.5	LOS F	57.8	410.1	1.00	3.44	6.16	9.5
26a	R1	All MCs	807	1.0	669	1.0	1.160	159.7	LOS F	57.8	410.1	1.00	3.44	6.16	4.2
26	R2	All MCs	1	0.0	1	0.0	1.160	160.7	LOS F	57.8	410.1	1.00	3.44	6.16	5.0
26u	U	All MCs	6	0.0	5	0.0	1.160	162.7	LOS F	57.8	410.1	1.00	3.44	6.16	4.2
Approach			1066	1.6	883	1.5	1.160	159.0	LOS F	57.8	410.1	1.00	3.44	6.16	5.6
NorthWest: Toongabbie Community Access Road															
27	L2	All MCs	19	0.0	19	0.0	0.227	16.6	LOS B	1.3	9.4	1.00	0.86	1.00	12.6
29	R2	All MCs	8	0.0	8	0.0	0.227	21.0	LOS B	1.3	9.4	1.00	0.86	1.00	30.8
29b	R3	All MCs	22	0.0	22	0.0	0.227	22.0	LOS B	1.3	9.4	1.00	0.86	1.00	12.6
29u	U	All MCs	1	0.0	1	0.0	0.227	23.0	LOS B	1.3	9.4	1.00	0.86	1.00	14.1
Approach			51	0.0	51	0.0	0.227	19.8	LOS B	1.3	9.4	1.00	0.86	1.00	17.5
West: Wentworth Ave (Bridge)															
10b	L3	All MCs	17	0.0	16	0.0	0.996	32.2	LOS C	41.2	291.6	1.00	1.44	2.05	22.4
10a	L1	All MCs	874	1.6	816	1.6	0.996	31.9	LOS C	41.2	291.6	1.00	1.44	2.05	23.3
12b	R3	All MCs	208	1.0	195	1.0	0.996	37.6	LOS C	41.2	291.6	1.00	1.44	2.05	31.5
12u	U	All MCs	1	0.0	1	0.0	0.996	38.5	LOS C	41.2	291.6	1.00	1.44	2.05	23.3
Approach			1100	1.4	1027	1.4	0.996	33.0	LOS C	41.2	291.6	1.00	1.44	2.05	25.3
SouthWest: Wentworth Avenue (SW)															
30b	L3	All MCs	140	2.3	140	2.3	1.404	385.1	LOS F	89.3	644.2	1.00	4.67	11.22	2.9
30	L2	All MCs	8	0.0	8	0.0	1.404	384.7	LOS F	89.3	644.2	1.00	4.67	11.22	3.3
31	T1	All MCs	299	4.2	299	4.2	1.404	385.2	LOS F	89.3	644.2	1.00	4.67	11.22	2.9
32u	U	All MCs	4	0.0	4	0.0	1.404	391.3	LOS F	89.3	644.2	1.00	4.67	11.22	5.4
Approach			452	3.5	452	3.5	1.404	385.2	LOS F	89.3	644.2	1.00	4.67	11.22	3.0
All Vehicles			2668	1.8	2413	2.0	1.404	144.7	LOS F	89.3	644.2	1.00	2.77	5.25	7.4

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Override Site Data tab).
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Roundabout Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

MOVEMENT SUMMARY

Site: TCS2334 [3. Wentworth Ave (Bridge) / Cornelia Rd / The Portico (Site Folder: 2037 Base - PM)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Network: N101 [2037 Base - PM (Network Folder: General)]

Existing 2037 PM
Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 100 seconds (Network Site User-Given Phase Times)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
East: The Portico															
5	T1	All MCs	119	0.9	119	0.9	0.180	25.7	LOS B	4.0	28.5	0.74	0.60	0.74	9.6
6	R2	All MCs	340	1.2	340	1.2	* 0.972	69.8	LOS E	15.0	106.1	1.00	1.09	1.48	3.6
Approach			459	1.1	459	1.1	0.972	58.4	LOS E	15.0	106.1	0.93	0.96	1.29	4.3
NorthEast: Cornelia Lane (Service Road)															
24b	L3	All MCs	12	0.0	12	0.0	0.011	7.2	LOS A	0.1	0.7	0.31	0.59	0.31	22.3
Approach			12	0.0	12	0.0	0.011	7.2	LOS A	0.1	0.7	0.31	0.59	0.31	22.3
North: Wentworth Avenue (Bridge)															
7	L2	All MCs	257	1.2	185	1.4	1.081	118.3	LOS F	66.3	469.0	1.00	1.39	2.00	7.7
9	R2	All MCs	713	1.2	514	1.1	* 1.081	142.8	LOS F	66.3	469.0	1.00	1.39	2.00	7.7
Approach			969	1.2	699	1.2	1.081	136.3	LOS F	66.3	469.0	1.00	1.39	2.00	7.7
West: Cornelia Road															
10b	L3	All MCs	2	0.0	2	0.0	0.547	6.7	LOS A	16.2	114.8	0.53	0.73	0.53	21.9
10	L2	All MCs	758	1.4	692	1.4	0.547	13.3	LOS A	16.2	114.8	0.53	0.73	0.53	21.3
10a	L1	All MCs	4	0.0	4	0.0	0.565	52.9	LOS D	5.4	37.7	1.00	0.78	1.00	8.3
11	T1	All MCs	116	0.9	106	0.9	* 0.565	49.6	LOS D	5.4	37.7	1.00	0.78	1.00	6.8
Approach			880	1.3	803	1.3	0.565	18.2	LOS B	16.2	114.8	0.59	0.74	0.59	16.9
All Vehicles			2320	1.2	1973	1.4	1.081	69.3	LOS E	66.3	469.0	0.81	1.02	1.25	8.3

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Override Site Data tab).
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Green.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

* Critical Movement (Signal Timing)

Pedestrian Movement Performance

Mov ID	Crossing	Dem. Flow ped/h	Aver. Delay sec	Level of Service	AVERAGE BACK OF QUEUE [Ped ped	Dist] m	Prop. Que	Eff. Stop Rate	Travel Time sec	Travel Dist. m	Aver. Speed m/sec
East: The Portico											
P2	Full	16	44.2	LOS E	0.0	0.0	0.94	0.94	198.1	200.0	1.01
North: Wentworth Avenue (Bridge)											
P3	Full	41	44.3	LOS E	0.1	0.1	0.94	0.94	198.1	200.0	1.01
All Pedestrians		57	44.2	LOS E	0.1	0.1	0.94	0.94	198.1	200.0	1.01

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)
Pedestrian movement LOS values are based on average delay per pedestrian movement.
Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

MOVEMENT SUMMARY

Site: 4 [4. Cornelia Rd / Junia Ave (Site Folder: 2037 Base - PM)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Network: N101 [2037 Base - PM (Network Folder: General)]

Existing 2037 PM
Site Category: (None)
Roundabout

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Junia Avenue															
1	L2	All MCs	61	0.0	61	0.0	0.724	22.3	LOS B	6.2	43.1	0.99	1.02	1.44	30.5
2	T1	All MCs	17	0.0	17	0.0	0.724	22.3	LOS B	6.2	43.1	0.99	1.02	1.44	31.1
3	R2	All MCs	159	0.0	159	0.0	0.724	25.6	LOS B	6.2	43.1	0.99	1.02	1.44	26.2
3u	U	All MCs	1	0.0	1	0.0	0.724	27.2	LOS B	6.2	43.1	0.99	1.02	1.44	33.1
Approach			238	0.0	238	0.0	0.724	24.6	LOS B	6.2	43.1	0.99	1.02	1.44	27.9
East: Cornelia Road															
4	L2	All MCs	89	0.0	65	0.0	0.824	9.6	LOS A	12.0	84.8	0.64	0.64	0.69	38.2
5	T1	All MCs	704	1.5	510	1.5	0.824	9.7	LOS A	12.0	84.8	0.64	0.64	0.69	34.8
6	R2	All MCs	14	0.0	10	0.0	0.824	13.2	LOS A	12.0	84.8	0.64	0.64	0.69	34.2
6u	U	All MCs	52	0.0	37	0.0	0.824	14.9	LOS B	12.0	84.8	0.64	0.64	0.69	24.0
Approach			859	1.2	622	1.2	0.824	10.0	LOS A	12.0	84.8	0.64	0.64	0.69	35.0
North: Junia Avenue															
7	L2	All MCs	40	0.0	40	0.0	0.501	27.9	LOS B	2.4	16.8	0.89	1.02	1.14	18.2
8	T1	All MCs	20	0.0	20	0.0	0.501	27.8	LOS B	2.4	16.8	0.89	1.02	1.14	29.2
9	R2	All MCs	16	0.0	16	0.0	0.501	31.2	LOS C	2.4	16.8	0.89	1.02	1.14	24.5
9u	U	All MCs	1	0.0	1	0.0	0.501	32.7	LOS C	2.4	16.8	0.89	1.02	1.14	25.3
Approach			77	0.0	77	0.0	0.501	28.6	LOS C	2.4	16.8	0.89	1.02	1.14	23.4
West: Cornelia Road															
10	L2	All MCs	16	0.0	16	0.0	1.078	90.3	LOS F	56.1	398.2	1.00	2.47	3.87	12.0
11	T1	All MCs	652	1.9	652	1.9	1.078	90.5	LOS F	56.1	398.2	1.00	2.47	3.87	6.6
12	R2	All MCs	64	0.0	64	0.0	1.078	93.8	LOS F	56.1	398.2	1.00	2.47	3.87	15.0
12u	U	All MCs	7	0.0	7	0.0	1.078	95.5	LOS F	56.1	398.2	1.00	2.47	3.87	11.0
Approach			739	1.7	739	1.7	1.078	90.8	LOS F	56.1	398.2	1.00	2.47	3.87	7.7
All Vehicles			1913	1.2	1675	1.4	1.078	48.6	LOS D	56.1	398.2	0.86	1.52	2.22	15.0

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Override Site Data tab).
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Roundabout Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

MOVEMENT SUMMARY

Site: TCS 2611 [5. The Portico / Portico Pde (Site Folder: 2037 Base - PM)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Network: N101 [2037 Base - PM (Network Folder: General)]

Existing 2037 PM
Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 100 seconds (Network Site User-Given Phase Times)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Portico Parade															
1	L2	All MCs	435	0.7	435	0.7	* 0.490	4.2	LOS A	3.4	23.9	0.29	0.62	0.29	21.9
2	T1	All MCs	94	3.4	94	3.4	0.153	26.1	LOS B	3.3	23.4	0.75	0.60	0.75	18.0
Approach			528	1.2	528	1.2	0.490	8.1	LOS A	3.4	23.9	0.37	0.61	0.37	19.8
North: Portico Parade															
8	T1	All MCs	111	1.9	111	1.9	0.295	27.8	LOS B	3.9	27.8	0.79	0.64	0.79	14.7
9	R2	All MCs	24	8.7	24	8.7	* 0.295	42.0	LOS C	3.9	27.8	0.83	0.69	0.83	13.9
Approach			135	3.1	135	3.1	0.295	30.3	LOS C	3.9	27.8	0.80	0.65	0.80	14.6
West: The Portico															
10	L2	All MCs	54	3.9	40	4.2	0.258	20.0	LOS B	7.2	50.9	0.57	0.71	0.57	23.6
12	R2	All MCs	320	0.7	241	0.7	0.258	17.1	LOS B	7.2	50.9	0.57	0.71	0.57	12.4
Approach			374	1.1	281	1.2	0.258	17.5	LOS B	7.2	50.9	0.57	0.71	0.57	14.8
All Vehicles			1037	1.4	944	1.6	0.490	14.1	LOS A	7.2	50.9	0.49	0.65	0.49	16.5

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Override Site Data tab).
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Green.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

* Critical Movement (Signal Timing)

Pedestrian Movement Performance

Mov ID	Crossing	Dem. Flow ped/h	Aver. Delay sec	Level of Service	AVERAGE BACK OF QUEUE [Ped ped	Dist] m	Prop. Que	Eff. Stop Rate	Travel Time sec	Travel Dist. m	Aver. Speed m/sec
North: Portico Parade											
P3	Full	231	44.6	LOS E	0.6	0.6	0.95	0.95	198.5	200.0	1.01
West: The Portico											
P4	Full	252	44.6	LOS E	0.7	0.7	0.95	0.95	198.5	200.0	1.01
All Pedestrians		482	44.6	LOS E	0.7	0.7	0.95	0.95	198.5	200.0	1.01

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)
Pedestrian movement LOS values are based on average delay per pedestrian movement.
Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

MOVEMENT SUMMARY

Site: 6 [6. Aurelia St / Portico Pde (Site Folder: 2037 Base - PM)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Network: N101 [2037 Base - PM (Network Folder: General)]

Existing 2037 PM
Site Category: (None)
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Portico Parade															
1	L2	All MCs	127	0.0	127	0.0	0.293	4.6	LOS A	0.0	0.0	0.00	0.12	0.00	46.9
2	T1	All MCs	434	1.2	434	1.2	0.293	0.0	LOS A	0.0	0.0	0.00	0.12	0.00	46.0
Approach			561	0.9	561	0.9	0.293	1.1	NA	0.0	0.0	0.00	0.12	0.00	46.5
North: Portico Parade															
8	T1	All MCs	431	1.0	351	1.1	0.181	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	49.9
Approach			431	1.0	351	1.1	0.181	0.0	NA	0.0	0.0	0.00	0.00	0.00	49.9
West: Aurelia Street															
10	L2	All MCs	95	1.1	95	1.1	0.173	5.9	LOS A	0.7	4.6	0.50	0.68	0.50	41.4
12	R2	All MCs	52	0.0	52	0.0	0.173	9.6	LOS A	0.7	4.6	0.50	0.68	0.50	41.6
Approach			146	0.7	146	0.7	0.173	7.2	LOS A	0.7	4.6	0.50	0.68	0.50	41.5
All Vehicles			1138	0.9	1058	1.0	0.293	1.6	NA	0.7	4.6	0.07	0.16	0.07	45.8

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Override Site Data tab).

Vehicle movement LOS values are based on average delay per movement.

Minor Road Approach LOS values are based on average delay for all vehicle movements.

NA (TWSC): Level of Service is not defined for major road approaches or the intersection as a whole for Two-Way Sign Control (HCM LOS rule).

Two-Way Sign Control Capacity Model: SIDRA Standard.

Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).

Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.

Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

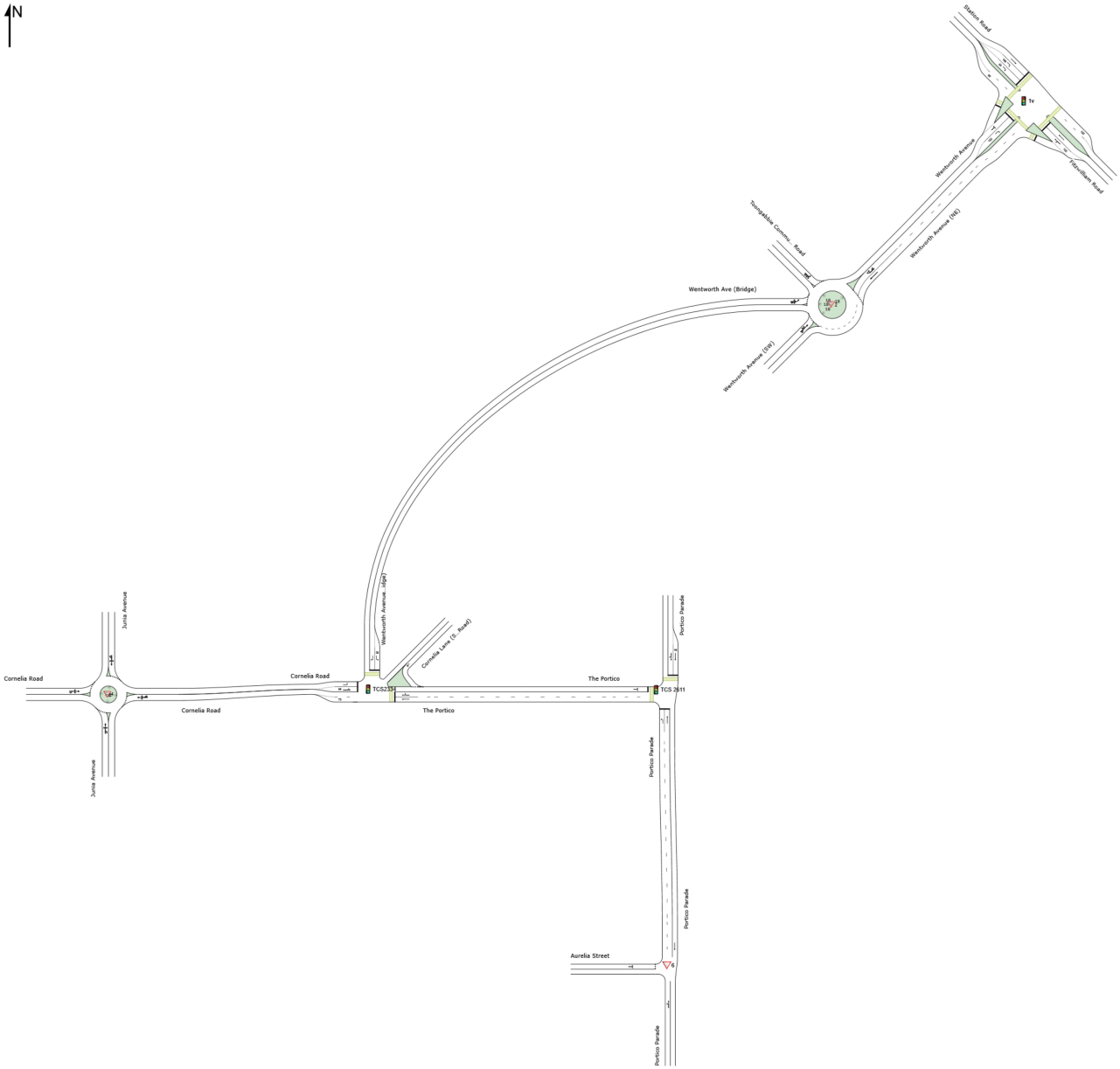
2037 Project Case

NETWORK LAYOUT

Network: N101 [2037 Project Case - AM (Network Folder: General)]

New Network
Network Category: (None)

Layout pictures are schematic functional drawings reflecting input data. They are not design drawings.



SITES IN NETWORK		
Site ID	**CCG ID**	**Site Name**
1v	NA	1. Station Rd / Fitzwilliam Rd / Wentworth Ave
2	NA	2. Wentworth Ave (NE) / Wentworth Ave (SW) / Wentworth Ave (Bridge) / Toongabbie Community Access Rd
TCS2334	NA	3. Wentworth Ave (Bridge) / Cornelia Rd / The Portico
4	NA	4. Cornelia Rd / Junia Ave
TCS 2611	NA	5. The Portico / Portico Pde
6	NA	6. Aurelia St / Portico Pde

MOVEMENT SUMMARY

Site: 1v [1. Station Rd / Fitzwilliam Rd / Wentworth Ave (Site Folder: 2037 Project Case - AM)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Network: N101 [2037 Project Case - AM (Network Folder: General)]

Project Case 2037 AM
Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 140 seconds (Site User-Given Cycle Time)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
SouthEast: Fitzwilliam Road															
21	L2	All MCs	553	1.1	553	1.1	0.418	15.9	LOS B	15.9	112.4	0.47	0.71	0.47	34.4
22	T1	All MCs	560	3.8	560	3.8	* 0.716	36.2	LOS C	31.3	226.0	0.89	0.80	0.89	40.9
Approach			1113	2.5	1113	2.5	0.716	26.1	LOS B	31.3	226.0	0.68	0.76	0.68	39.1
NorthWest: Station Road															
28	T1	All MCs	401	2.9	401	2.9	0.295	9.8	LOS A	10.5	75.3	0.42	0.38	0.42	53.6
29	R2	All MCs	525	5.2	525	5.2	* 0.725	67.2	LOS E	17.0	124.1	0.99	0.86	1.02	29.0
Approach			926	4.2	926	4.2	0.725	42.3	LOS C	17.0	124.1	0.74	0.65	0.76	36.6
SouthWest: Wentworth Avenue															
30	L2	All MCs	835	3.5	576	3.9	0.624	35.7	LOS C	28.4	205.0	0.79	0.83	0.79	39.3
32	R2	All MCs	424	0.7	291	0.6	* 0.709	61.1	LOS E	18.6	131.1	0.99	0.85	0.99	19.5
Approach			1259	2.6	867	2.8	0.709	44.2	LOS D	28.4	205.0	0.86	0.83	0.86	33.0
All Vehicles			3298	3.0	2906	3.4	0.725	36.7	LOS C	31.3	226.0	0.75	0.75	0.76	36.2

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Override Site Data tab).
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Green.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

* Critical Movement (Signal Timing)

Pedestrian Movement Performance

Mov ID	Crossing	Dem. Flow ped/h	Aver. Delay sec	Level of Service	AVERAGE BACK OF QUEUE [Ped ped	Dist] m	Prop. Que	Eff. Stop Rate	Travel Time sec	Travel Dist. m	Aver. Speed m/sec
SouthEast: Fitzwilliam Road											
P5	Full	53	64.3	LOS F	0.2	0.2	0.96	0.96	218.1	200.0	0.92
P5B	Slip/ Bypass	53	64.3	LOS F	0.2	0.2	0.96	0.96	218.1	200.0	0.92
NorthWest: Station Road											
P7	Full	53	64.3	LOS F	0.2	0.2	0.96	0.96	218.1	200.0	0.92
SouthWest: Wentworth Avenue											
P8	Full	53	64.3	LOS F	0.2	0.2	0.96	0.96	218.1	200.0	0.92
P8B	Slip/ Bypass	53	64.3	LOS F	0.2	0.2	0.96	0.96	218.1	200.0	0.92

All Pedestrians	263	64.3	LOS F	0.2	0.2	0.96	0.96	218.1	200.0	0.92

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)
Pedestrian movement LOS values are based on average delay per pedestrian movement.
Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

MOVEMENT SUMMARY

Site: 2 [2. Wentworth Ave (NE) / Wentworth Ave (SW) / Wentworth Ave (Bridge) / Toongabbie Community Access Rd (Site Folder: 2037 Project Case - AM)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Network: N101 [2037 Project Case - AM (Network Folder: General)]

Project Case 2037 AM
Site Category: (None)
Roundabout

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
NorthEast: Wentworth Avenue (NE)															
25	T1	All MCs	319	5.3	319	5.3	0.285	5.0	LOS A	1.7	12.6	0.30	0.45	0.30	48.1
26a	R1	All MCs	760	2.5	760	2.5	0.560	8.3	LOS A	5.0	35.7	0.37	0.59	0.37	34.2
26	R2	All MCs	2	0.0	2	0.0	0.560	9.2	LOS A	5.0	35.7	0.37	0.59	0.37	29.1
26u	U	All MCs	7	0.0	7	0.0	0.560	11.2	LOS A	5.0	35.7	0.37	0.59	0.37	34.2
Approach			1088	3.3	1088	3.3	0.560	7.3	LOS A	5.0	35.7	0.35	0.55	0.35	40.0
NorthWest: Toongabbie Community Access Road															
27	L2	All MCs	2	0.0	2	0.0	0.019	9.3	LOS A	0.1	0.8	0.85	0.73	0.85	17.1
29	R2	All MCs	1	0.0	1	0.0	0.019	13.8	LOS A	0.1	0.8	0.85	0.73	0.85	35.7
29b	R3	All MCs	3	33.3	3	33.3	0.019	16.5	LOS B	0.1	0.8	0.85	0.73	0.85	17.1
29u	U	All MCs	1	0.0	1	0.0	0.019	15.8	LOS B	0.1	0.8	0.85	0.73	0.85	17.3
Approach			7	14.3	7	14.3	0.019	13.9	LOS A	0.1	0.8	0.85	0.73	0.85	21.7
West: Wentworth Ave (Bridge)															
10b	L3	All MCs	4	0.0	4	0.0	1.548	505.2	LOS F	111.8	795.3	1.00	7.30	15.66	2.7
10a	L1	All MCs	855	2.2	738	2.3	1.548	504.9	LOS F	111.8	795.3	1.00	7.30	15.66	2.4
12b	R3	All MCs	176	0.0	152	0.0	1.548	510.5	LOS F	111.8	795.3	1.00	7.30	15.66	4.3
12u	U	All MCs	1	0.0	1	0.0	1.548	511.5	LOS F	111.8	795.3	1.00	7.30	15.66	2.4
Approach			1036	1.8	894	1.9	1.548	505.9	LOS F	111.8	795.3	1.00	7.30	15.66	2.7
SouthWest: Wentworth Avenue (SW)															
30b	L3	All MCs	145	1.4	145	1.4	1.038	97.8	LOS F	42.4	303.6	1.00	2.44	4.17	10.1
30	L2	All MCs	1	0.0	1	0.0	1.038	97.4	LOS F	42.4	303.6	1.00	2.44	4.17	10.7
31	T1	All MCs	393	3.2	393	3.2	1.038	97.9	LOS F	42.4	303.6	1.00	2.44	4.17	10.1
32u	U	All MCs	1	0.0	1	0.0	1.038	104.0	LOS F	42.4	303.6	1.00	2.44	4.17	16.5
Approach			540	2.7	540	2.7	1.038	97.9	LOS F	42.4	303.6	1.00	2.44	4.17	10.1
All Vehicles			2672	2.6	2529	2.8	1.548	202.8	LOS F	111.8	795.3	0.72	3.34	6.58	5.4

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Override Site Data tab).
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Roundabout Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

MOVEMENT SUMMARY

Site: TCS2334 [3. Wentworth Ave (Bridge) / Cornelia Rd / The Portico (Site Folder: 2037 Project Case - AM)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Network: N101 [2037 Project Case - AM (Network Folder: General)]

Project Case 2037 AM
Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 100 seconds (Network User-Given Cycle Time)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
East: The Portico															
5	T1	All MCs	64	0.0	64	0.0	0.072	16.7	LOS B	1.7	11.7	0.57	0.44	0.57	13.9
6	R2	All MCs	325	2.9	325	2.9	* 1.190	234.1	LOS F	14.8	106.1	1.00	1.70	2.73	1.2
Approach			389	2.4	389	2.4	1.190	198.3	LOS F	14.8	106.1	0.93	1.49	2.37	1.4
NorthEast: Cornelia Lane (Service Road)															
24b	L3	All MCs	1	0.0	1	0.0	0.001	5.4	LOS A	0.0	0.0	0.17	0.56	0.17	25.9
Approach			1	0.0	1	0.0	0.001	5.4	LOS A	0.0	0.0	0.17	0.56	0.17	25.9
North: Wentworth Avenue (Bridge)															
7	L2	All MCs	306	3.4	304	3.4	0.215	23.4	LOS B	3.8	27.7	0.28	0.66	0.28	42.0
9	R2	All MCs	602	1.9	598	1.9	1.007	105.5	LOS F	46.3	329.6	1.00	1.22	1.62	10.8
Approach			908	2.4	903	2.4	1.007	77.8	LOS F	46.3	329.6	0.76	1.03	1.17	12.3
West: Cornelia Road															
10	L2	All MCs	709	1.2	630	1.2	* 1.186	222.0	LOS F	20.8	146.9	1.00	1.66	2.63	1.7
10a	L1	All MCs	5	20.0	5	19.8	0.210	50.6	LOS D	1.9	13.4	0.95	0.72	0.95	8.6
11	T1	All MCs	40	0.0	36	0.0	0.210	47.3	LOS D	1.9	13.4	0.95	0.72	0.95	7.1
Approach			755	1.3	670	1.2	1.186	211.6	LOS F	20.8	146.9	1.00	1.60	2.53	1.8
All Vehicles			2054	2.0	1963	2.1	1.190	147.3	LOS F	46.3	329.6	0.87	1.32	1.87	4.6

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Override Site Data tab).
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Green.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

* Critical Movement (Signal Timing)

Pedestrian Movement Performance

Mov ID	Crossing	Dem. Flow ped/h	Aver. Delay sec	Level of Service	AVERAGE BACK OF QUEUE [Ped ped	Dist] m	Prop. Que	Eff. Stop Rate	Travel Time sec	Travel Dist. m	Aver. Speed m/sec
East: The Portico											
P2	Full	6	44.2	LOS E	0.0	0.0	0.94	0.94	198.0	200.0	1.01
North: Wentworth Avenue (Bridge)											
P3	Full	29	44.2	LOS E	0.1	0.1	0.94	0.94	198.1	200.0	1.01
All Pedestrians		36	44.2	LOS E	0.1	0.1	0.94	0.94	198.1	200.0	1.01

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)
Pedestrian movement LOS values are based on average delay per pedestrian movement.
Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

MOVEMENT SUMMARY

Site: 4 [4. Cornelia Rd / Junia Ave (Site Folder: 2037 Project Case - AM)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Network: N101 [2037 Project Case - AM (Network Folder: General)]

Project Case 2037 AM
Site Category: (None)
Roundabout

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Junia Avenue															
1	L2	All MCs	37	2.9	37	2.9	0.616	16.7	LOS B	4.9	35.0	1.00	0.78	1.24	33.2
2	T1	All MCs	23	0.0	23	0.0	0.616	16.5	LOS B	4.9	35.0	1.00	0.78	1.24	33.8
3	R2	All MCs	169	1.2	169	1.2	0.616	19.9	LOS B	4.9	35.0	1.00	0.78	1.24	29.4
3u	U	All MCs	1	0.0	1	0.0	0.616	21.4	LOS B	4.9	35.0	1.00	0.78	1.24	35.6
Approach			231	1.4	231	1.4	0.616	19.1	LOS B	4.9	35.0	1.00	0.78	1.24	30.7
East: Cornelia Road															
4	L2	All MCs	69	0.0	69	0.0	0.522	5.1	LOS A	4.1	28.8	0.25	0.49	0.25	42.3
5	T1	All MCs	558	1.9	551	1.9	0.522	5.2	LOS A	4.1	28.8	0.25	0.49	0.25	40.8
6	R2	All MCs	3	0.0	3	0.0	0.522	8.7	LOS A	4.1	28.8	0.25	0.49	0.25	39.0
6u	U	All MCs	15	0.0	15	0.0	0.522	10.4	LOS A	4.1	28.8	0.25	0.49	0.25	32.0
Approach			645	1.6	637	1.6	0.522	5.3	LOS A	4.1	28.8	0.25	0.49	0.25	40.9
North: Junia Avenue															
7	L2	All MCs	44	0.0	44	0.0	0.224	8.3	LOS A	0.9	6.4	0.76	0.73	0.76	31.8
8	T1	All MCs	17	6.3	17	6.3	0.224	8.6	LOS A	0.9	6.4	0.76	0.73	0.76	39.8
9	R2	All MCs	24	0.0	24	0.0	0.224	11.6	LOS A	0.9	6.4	0.76	0.73	0.76	36.7
9u	U	All MCs	3	0.0	3	0.0	0.224	13.1	LOS A	0.9	6.4	0.76	0.73	0.76	36.7
Approach			88	1.2	88	1.2	0.224	9.4	LOS A	0.9	6.4	0.76	0.73	0.76	35.8
West: Cornelia Road															
10	L2	All MCs	11	0.0	11	0.0	1.320	300.5	LOS F	98.3	696.9	1.00	4.97	8.69	4.3
11	T1	All MCs	529	1.4	529	1.4	1.320	300.7	LOS F	98.3	696.9	1.00	4.97	8.69	2.2
12	R2	All MCs	29	3.6	29	3.6	1.320	304.3	LOS F	98.3	696.9	1.00	4.97	8.69	5.7
12u	U	All MCs	7	0.0	7	0.0	1.320	305.7	LOS F	98.3	696.9	1.00	4.97	8.69	3.9
Approach			577	1.5	577	1.5	1.320	301.0	LOS F	98.3	696.9	1.00	4.97	8.69	2.4
All Vehicles			1541	1.5	1533	1.5	1.320	118.8	LOS F	98.3	696.9	0.67	2.23	3.60	7.4

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Override Site Data tab).
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Roundabout Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

MOVEMENT SUMMARY

Site: TCS 2611 [5. The Portico / Portico Pde (Site Folder: 2037 Project Case - AM)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Network: N101 [2037 Project Case - AM (Network Folder: General)]

Project Case 2037 AM
Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 100 seconds (Network User-Given Cycle Time)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Portico Parade															
1	L2	All MCs	367	1.7	367	1.7	* 0.426	3.7	LOS A	2.0	14.2	0.22	0.59	0.22	23.4
2	T1	All MCs	85	4.9	85	4.9	0.251	38.6	LOS C	3.6	26.5	0.90	0.70	0.90	13.8
Approach			453	2.3	453	2.3	0.426	10.3	LOS A	3.6	26.5	0.35	0.61	0.35	17.3
North: Portico Parade															
8	T1	All MCs	148	4.3	148	4.3	0.541	40.3	LOS C	6.2	45.4	0.94	0.75	0.94	11.6
9	R2	All MCs	22	14.3	22	14.3	* 0.541	49.0	LOS D	6.2	45.4	0.96	0.78	0.96	11.3
Approach			171	5.6	171	5.6	0.541	41.4	LOS C	6.2	45.4	0.94	0.75	0.94	11.6
West: The Portico															
10	L2	All MCs	35	3.0	34	3.1	0.274	14.9	LOS B	8.4	60.8	0.55	0.62	0.55	26.6
12	R2	All MCs	313	3.4	307	3.4	0.274	13.2	LOS A	8.4	60.8	0.55	0.62	0.55	15.2
Approach			347	3.3	341	3.4	0.274	13.3	LOS A	8.4	60.8	0.55	0.62	0.55	17.0
All Vehicles			971	3.3	964	3.3	0.541	16.9	LOS B	8.4	60.8	0.53	0.64	0.53	14.9

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Override Site Data tab).
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Green.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

* Critical Movement (Signal Timing)

Pedestrian Movement Performance

Mov ID	Crossing	Dem. Flow ped/h	Aver. Delay sec	Level of Service	AVERAGE BACK OF QUEUE [Ped ped	Dist] m	Prop. Que	Eff. Stop Rate	Travel Time sec	Travel Dist. m	Aver. Speed m/sec
North: Portico Parade											
P3	Full	51	44.3	LOS E	0.1	0.1	0.94	0.94	198.1	200.0	1.01
West: The Portico											
P4	Full	11	44.2	LOS E	0.0	0.0	0.94	0.94	198.0	200.0	1.01
All Pedestrians		61	44.3	LOS E	0.1	0.1	0.94	0.94	198.1	200.0	1.01

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)
Pedestrian movement LOS values are based on average delay per pedestrian movement.
Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

MOVEMENT SUMMARY

Site: 6 [6. Aurelia St / Portico Pde (Site Folder: 2037 Project Case - AM)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Network: N101 [2037 Project Case - AM (Network Folder: General)]

Project Case 2037 AM
Site Category: (None)
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Portico Parade															
1	L2	All MCs	65	1.6	65	1.6	0.256	4.6	LOS A	0.0	0.0	0.00	0.07	0.00	47.3
2	T1	All MCs	422	2.5	422	2.5	0.256	0.0	LOS A	0.0	0.0	0.00	0.07	0.00	47.5
Approach			487	2.4	487	2.4	0.256	0.6	NA	0.0	0.0	0.00	0.07	0.00	47.5
North: Portico Parade															
8	T1	All MCs	462	3.9	456	3.9	0.240	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	49.9
Approach			462	3.9	456	3.9	0.240	0.0	NA	0.0	0.0	0.00	0.00	0.00	49.9
West: Aurelia Street															
10	L2	All MCs	32	0.0	32	0.0	0.084	5.7	LOS A	0.3	2.1	0.51	0.68	0.51	40.9
12	R2	All MCs	29	3.6	29	3.6	0.084	9.9	LOS A	0.3	2.1	0.51	0.68	0.51	41.1
Approach			61	1.7	61	1.7	0.084	7.8	LOS A	0.3	2.1	0.51	0.68	0.51	41.0
All Vehicles			1011	3.0	1005	3.0	0.256	0.8	NA	0.3	2.1	0.03	0.08	0.03	47.3

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Override Site Data tab).
Vehicle movement LOS values are based on average delay per movement.
Minor Road Approach LOS values are based on average delay for all vehicle movements.
NA (TWSC): Level of Service is not defined for major road approaches or the intersection as a whole for Two-Way Sign Control (HCM LOS rule).
Two-Way Sign Control Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

MOVEMENT SUMMARY

Site: 1v [1. Station Rd / Fitzwilliam Rd / Wentworth Ave (Site Folder: 2037 Project Case - PM)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Network: N101 [2037 Project Case - PM (Network Folder: General)]

Project Case 2037 PM
Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 140 seconds (Site User-Given Cycle Time)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
SouthEast: Fitzwilliam Road															
21	L2	All MCs	512	1.4	512	1.4	0.695	23.7	LOS B	21.9	155.2	0.68	0.80	0.68	29.2
22	T1	All MCs	562	0.7	562	0.7	* 0.973	83.6	LOS F	49.7	349.8	1.00	1.21	1.33	29.0
Approach			1074	1.1	1074	1.1	0.973	55.0	LOS D	49.7	349.8	0.85	1.02	1.02	28.5
NorthWest: Station Road															
28	T1	All MCs	513	1.4	513	1.4	0.373	11.0	LOS A	14.4	102.0	0.46	0.41	0.46	53.2
29	R2	All MCs	547	1.9	547	1.9	* 0.972	88.4	LOS F	23.7	168.8	0.99	1.00	1.26	24.9
Approach			1060	1.7	1060	1.7	0.972	51.0	LOS D	23.7	168.8	0.73	0.71	0.87	34.2
SouthWest: Wentworth Avenue															
30	L2	All MCs	628	2.8	487	2.4	0.683	35.3	LOS C	30.1	214.5	0.87	0.85	0.87	37.1
32	R2	All MCs	569	1.3	443	1.2	* 0.949	87.9	LOS F	31.0	219.4	0.98	1.03	1.26	16.1
Approach			1198	2.1	930	1.8	0.949	60.3	LOS E	31.0	219.4	0.92	0.93	1.05	26.9
All Vehicles			3332	1.6	3064	1.8	0.973	55.2	LOS D	49.7	349.8	0.83	0.89	0.98	30.1

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Override Site Data tab).
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Green.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

* Critical Movement (Signal Timing)

Pedestrian Movement Performance

Mov ID	Crossing	Dem. Flow ped/h	Aver. Delay sec	Level of Service	AVERAGE BACK OF QUEUE [Ped ped	Dist] m	Prop. Que	Eff. Stop Rate	Travel Time sec	Travel Dist. m	Aver. Speed m/sec
SouthEast: Fitzwilliam Road											
P5	Full	53	64.3	LOS F	0.2	0.2	0.96	0.96	218.1	200.0	0.92
P5B	Slip/ Bypass	53	64.3	LOS F	0.2	0.2	0.96	0.96	218.1	200.0	0.92
NorthWest: Station Road											
P7	Full	53	64.3	LOS F	0.2	0.2	0.96	0.96	218.1	200.0	0.92
SouthWest: Wentworth Avenue											
P8	Full	53	64.3	LOS F	0.2	0.2	0.96	0.96	218.1	200.0	0.92
P8B	Slip/ Bypass	53	64.3	LOS F	0.2	0.2	0.96	0.96	218.1	200.0	0.92

All Pedestrians	263	64.3	LOS F	0.2	0.2	0.96	0.96	218.1	200.0	0.92

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)
Pedestrian movement LOS values are based on average delay per pedestrian movement.
Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

MOVEMENT SUMMARY

Site: 2 [2. Wentworth Ave (NE) / Wentworth Ave (SW) / Wentworth Ave (Bridge) / Toongabbie Community Access Rd (Site Folder: 2037 Project Case - PM)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Network: N101 [2037 Project Case - PM (Network Folder: General)]

Project Case 2037 PM
Site Category: (None)
Roundabout

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
NorthEast: Wentworth Avenue (NE)															
25	T1	All MCs	252	3.3	252	3.3	0.279	5.9	LOS A	1.5	11.0	0.41	0.54	0.41	47.4
26a	R1	All MCs	807	1.0	807	1.0	1.056	67.2	LOS E	46.0	324.9	1.00	1.82	3.19	9.2
26	R2	All MCs	1	0.0	1	0.0	1.056	68.1	LOS E	46.0	324.9	1.00	1.82	3.19	10.2
26u	U	All MCs	6	0.0	6	0.0	1.056	70.1	LOS E	46.0	324.9	1.00	1.82	3.19	9.2
Approach			1066	1.6	1066	1.6	1.056	52.8	LOS D	46.0	324.9	0.86	1.52	2.54	14.1
NorthWest: Toongabbie Community Access Road															
27	L2	All MCs	19	0.0	19	0.0	0.199	12.3	LOS A	1.0	7.3	0.99	0.82	0.99	15.2
29	R2	All MCs	8	0.0	8	0.0	0.199	16.7	LOS B	1.0	7.3	0.99	0.82	0.99	34.0
29b	R3	All MCs	22	0.0	22	0.0	0.199	17.7	LOS B	1.0	7.3	0.99	0.82	0.99	15.2
29u	U	All MCs	1	0.0	1	0.0	0.199	18.7	LOS B	1.0	7.3	0.99	0.82	0.99	16.0
Approach			51	0.0	51	0.0	0.199	15.6	LOS B	1.0	7.3	0.99	0.82	0.99	20.5
West: Wentworth Ave (Bridge)															
10b	L3	All MCs	17	0.0	15	0.0	1.025	42.3	LOS C	50.3	356.0	1.00	1.50	2.06	19.3
10a	L1	All MCs	874	1.6	782	1.5	1.025	41.9	LOS C	50.3	356.0	1.00	1.50	2.06	19.6
12b	R3	All MCs	208	1.0	187	1.0	1.025	47.6	LOS D	50.3	356.0	1.00	1.50	2.06	27.8
12u	U	All MCs	1	0.0	1	0.0	1.025	48.6	LOS D	50.3	356.0	1.00	1.50	2.06	19.6
Approach			1100	1.4	985	1.4	1.025	43.0	LOS D	50.3	356.0	1.00	1.50	2.06	21.5
SouthWest: Wentworth Avenue (SW)															
30b	L3	All MCs	140	2.3	140	2.3	2.255	1149.8	LOS F	161.7	1165.7	1.00	6.48	17.19	1.0
30	L2	All MCs	8	0.0	8	0.0	2.255	1149.3	LOS F	161.7	1165.7	1.00	6.48	17.19	1.2
31	T1	All MCs	299	4.2	299	4.2	2.255	1149.9	LOS F	161.7	1165.7	1.00	6.48	17.19	1.0
32u	U	All MCs	4	0.0	4	0.0	2.255	1155.9	LOS F	161.7	1165.7	1.00	6.48	17.19	1.9
Approach			452	3.5	452	3.5	2.255	1150.0	LOS F	161.7	1165.7	1.00	6.48	17.19	1.0
All Vehicles			2668	1.8	2553	1.9	2.255	242.3	LOS F	161.7	1165.7	0.94	2.38	4.91	4.6

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Override Site Data tab).
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Roundabout Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

MOVEMENT SUMMARY

Site: TCS2334 [3. Wentworth Ave (Bridge) / Cornelia Rd / The Portico (Site Folder: 2037 Project Case - PM)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Network: N101 [2037 Project Case - PM (Network Folder: General)]

Project Case 2037 PM
Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 100 seconds (Network Site User-Given Phase Times)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
East: The Portico															
5	T1	All MCs	119	0.9	119	0.9	0.180	25.9	LOS B	4.0	28.5	0.74	0.60	0.74	9.7
6	R2	All MCs	340	1.2	340	1.2	* 0.972	69.8	LOS E	15.0	106.1	1.00	1.11	1.48	3.7
Approach			459	1.1	459	1.1	0.972	58.4	LOS E	15.0	106.1	0.93	0.98	1.29	4.5
NorthEast: Cornelia Lane (Service Road)															
24b	L3	All MCs	12	0.0	12	0.0	0.014	6.0	LOS A	0.1	0.5	0.23	0.58	0.23	24.6
Approach			12	0.0	12	0.0	0.014	6.0	LOS A	0.1	0.5	0.23	0.58	0.23	24.6
North: Wentworth Avenue (Bridge)															
7	L2	All MCs	257	1.2	225	1.2	0.245	19.2	LOS B	2.8	20.1	0.28	0.66	0.28	42.3
9	R2	All MCs	713	1.2	624	1.1	* 1.167	217.1	LOS F	71.3	503.6	1.00	1.58	2.52	5.3
Approach			969	1.2	849	1.1	1.167	164.6	LOS F	71.3	503.6	0.81	1.33	1.92	6.5
West: Cornelia Road															
10	L2	All MCs	758	1.4	674	1.3	0.531	13.6	LOS A	15.9	112.3	0.53	0.75	0.53	19.1
10a	L1	All MCs	4	0.0	4	0.0	0.691	55.6	LOS D	5.5	38.7	1.00	0.86	1.13	8.1
11	T1	All MCs	116	0.9	103	0.9	* 0.691	52.3	LOS D	5.5	38.7	1.00	0.86	1.13	6.6
Approach			878	1.3	781	1.3	0.691	18.9	LOS B	15.9	112.3	0.59	0.77	0.61	15.1
All Vehicles			2318	1.2	2100	1.4	1.167	86.4	LOS F	71.3	503.6	0.75	1.04	1.29	7.1

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Override Site Data tab).
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Green.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

* Critical Movement (Signal Timing)

Pedestrian Movement Performance

Mov ID	Crossing	Dem. Flow ped/h	Aver. Delay sec	Level of Service	AVERAGE BACK OF QUEUE [Ped ped	Dist] m	Prop. Que	Eff. Stop Rate	Travel Time sec	Travel Dist. m	Aver. Speed m/sec
East: The Portico											
P2	Full	16	44.2	LOS E	0.0	0.0	0.94	0.94	198.1	200.0	1.01
North: Wentworth Avenue (Bridge)											
P3	Full	41	44.3	LOS E	0.1	0.1	0.94	0.94	198.1	200.0	1.01
All Pedestrians		57	44.2	LOS E	0.1	0.1	0.94	0.94	198.1	200.0	1.01

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)
Pedestrian movement LOS values are based on average delay per pedestrian movement.
Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

MOVEMENT SUMMARY

Site: 4 [4. Cornelia Rd / Junia Ave (Site Folder: 2037 Project Case - PM)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Network: N101 [2037 Project Case - PM (Network Folder: General)]

Project Case 2037 PM
Site Category: (None)
Roundabout

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Junia Avenue															
1	L2	All MCs	61	0.0	61	0.0	0.815	30.1	LOS C	7.6	53.0	1.00	1.18	1.70	27.2
2	T1	All MCs	17	0.0	17	0.0	0.815	30.0	LOS C	7.6	53.0	1.00	1.18	1.70	27.9
3	R2	All MCs	159	0.0	159	0.0	0.815	33.4	LOS C	7.6	53.0	1.00	1.18	1.70	22.8
3u	U	All MCs	1	0.0	1	0.0	0.815	34.9	LOS C	7.6	53.0	1.00	1.18	1.70	30.2
Approach			238	0.0	238	0.0	0.815	32.3	LOS C	7.6	53.0	1.00	1.18	1.70	24.5
East: Cornelia Road															
4	L2	All MCs	89	0.0	71	0.0	0.891	12.3	LOS A	17.4	123.1	0.76	0.69	0.87	36.0
5	T1	All MCs	704	1.5	558	1.4	0.891	12.3	LOS A	17.4	123.1	0.76	0.69	0.87	31.9
6	R2	All MCs	14	0.0	11	0.0	0.891	15.8	LOS B	17.4	123.1	0.76	0.69	0.87	31.7
6u	U	All MCs	52	0.0	41	0.0	0.891	17.5	LOS B	17.4	123.1	0.76	0.69	0.87	20.7
Approach			859	1.2	681	1.1	0.891	12.7	LOS A	17.4	123.1	0.76	0.69	0.87	32.1
North: Junia Avenue															
7	L2	All MCs	40	0.0	40	0.0	0.501	28.0	LOS B	2.4	16.8	0.89	1.02	1.14	18.2
8	T1	All MCs	20	0.0	20	0.0	0.501	27.9	LOS B	2.4	16.8	0.89	1.02	1.14	29.1
9	R2	All MCs	16	0.0	16	0.0	0.501	31.3	LOS C	2.4	16.8	0.89	1.02	1.14	24.4
9u	U	All MCs	1	0.0	1	0.0	0.501	32.8	LOS C	2.4	16.8	0.89	1.02	1.14	25.3
Approach			77	0.0	77	0.0	0.501	28.7	LOS C	2.4	16.8	0.89	1.02	1.14	23.4
West: Cornelia Road															
10	L2	All MCs	16	0.0	16	0.0	1.082	93.4	LOS F	57.0	404.7	1.00	2.54	4.01	11.7
11	T1	All MCs	652	1.9	652	1.9	1.082	93.6	LOS F	57.0	404.7	1.00	2.54	4.01	6.4
12	R2	All MCs	64	0.0	64	0.0	1.082	96.9	LOS F	57.0	404.7	1.00	2.54	4.01	14.6
12u	U	All MCs	7	0.0	7	0.0	1.082	98.6	LOS F	57.0	404.7	1.00	2.54	4.01	10.8
Approach			739	1.7	739	1.7	1.082	93.9	LOS F	57.0	404.7	1.00	2.54	4.01	7.5
All Vehicles			1913	1.2	1735	1.3	1.082	50.7	LOS D	57.0	404.7	0.90	1.56	2.33	14.6

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Override Site Data tab).
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Roundabout Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

MOVEMENT SUMMARY

Site: TCS 2611 [5. The Portico / Portico Pde (Site Folder: 2037 Project Case - PM)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Network: N101 [2037 Project Case - PM (Network Folder: General)]

Project Case 2037 PM
Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 100 seconds (Network Site User-Given Phase Times)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Portico Parade															
1	L2	All MCs	435	0.7	435	0.7	* 0.490	4.2	LOS A	3.4	23.9	0.29	0.62	0.29	21.9
2	T1	All MCs	94	3.4	94	3.4	0.153	26.1	LOS B	3.3	23.4	0.75	0.60	0.75	18.0
Approach			528	1.2	528	1.2	0.490	8.1	LOS A	3.4	23.9	0.37	0.61	0.37	19.8
North: Portico Parade															
8	T1	All MCs	111	1.9	111	1.9	0.295	27.8	LOS B	3.9	27.8	0.79	0.64	0.79	14.7
9	R2	All MCs	24	8.7	24	8.7	* 0.295	42.0	LOS C	3.9	27.8	0.83	0.69	0.83	13.9
Approach			135	3.1	135	3.1	0.295	30.3	LOS C	3.9	27.8	0.80	0.65	0.80	14.6
West: The Portico															
10	L2	All MCs	54	3.9	48	4.2	0.303	26.1	LOS B	11.1	78.7	0.75	0.68	0.75	20.7
12	R2	All MCs	320	0.7	283	0.6	0.303	22.0	LOS B	11.1	78.7	0.75	0.68	0.75	10.2
Approach			374	1.1	330	1.1	0.303	22.6	LOS B	11.1	78.7	0.75	0.68	0.75	12.3
All Vehicles			1037	1.4	994	1.5	0.490	15.9	LOS B	11.1	78.7	0.56	0.64	0.56	15.2

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Override Site Data tab).
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Green.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

* Critical Movement (Signal Timing)

Pedestrian Movement Performance

Mov ID	Crossing	Dem. Flow ped/h	Aver. Delay sec	Level of Service	AVERAGE BACK OF QUEUE [Ped ped	Dist] m	Prop. Que	Eff. Stop Rate	Travel Time sec	Travel Dist. m	Aver. Speed m/sec
North: Portico Parade											
P3	Full	231	44.6	LOS E	0.6	0.6	0.95	0.95	198.5	200.0	1.01
West: The Portico											
P4	Full	252	44.6	LOS E	0.7	0.7	0.95	0.95	198.5	200.0	1.01
All Pedestrians		482	44.6	LOS E	0.7	0.7	0.95	0.95	198.5	200.0	1.01

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)
Pedestrian movement LOS values are based on average delay per pedestrian movement.
Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

MOVEMENT SUMMARY

Site: 6 [6. Aurelia St / Portico Pde (Site Folder: 2037 Project Case - PM)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Network: N101 [2037 Project Case - PM (Network Folder: General)]

Project Case 2037 PM
Site Category: (None)
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Portico Parade															
1	L2	All MCs	127	0.0	127	0.0	0.293	4.6	LOS A	0.0	0.0	0.00	0.12	0.00	46.9
2	T1	All MCs	434	1.2	434	1.2	0.293	0.0	LOS A	0.0	0.0	0.00	0.12	0.00	46.0
Approach			561	0.9	561	0.9	0.293	1.1	NA	0.0	0.0	0.00	0.12	0.00	46.5
North: Portico Parade															
8	T1	All MCs	431	1.0	393	1.0	0.203	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	49.9
Approach			431	1.0	393	1.0	0.203	0.0	NA	0.0	0.0	0.00	0.00	0.00	49.9
West: Aurelia Street															
10	L2	All MCs	95	1.1	95	1.1	0.175	5.9	LOS A	0.7	4.7	0.51	0.68	0.51	41.3
12	R2	All MCs	52	0.0	52	0.0	0.175	9.9	LOS A	0.7	4.7	0.51	0.68	0.51	41.5
Approach			146	0.7	146	0.7	0.175	7.3	LOS A	0.7	4.7	0.51	0.68	0.51	41.4
All Vehicles			1138	0.9	1101	1.0	0.293	1.5	NA	0.7	4.7	0.07	0.15	0.07	45.9

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Override Site Data tab).
Vehicle movement LOS values are based on average delay per movement.
Minor Road Approach LOS values are based on average delay for all vehicle movements.
NA (TWSC): Level of Service is not defined for major road approaches or the intersection as a whole for Two-Way Sign Control (HCM LOS rule).
Two-Way Sign Control Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

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