

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

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Table of contents

1	Introduction	1
1.1	Background	1
1.2	Project objectives	2
1.3	Scope of work	2
1.4	Purpose of this report	2
1.5	Stakeholders	3
1.6	Report structure	3
2	Existing condition	4
2.1	Study area	4
2.2	Speed restrictions	5
2.3	Land use	6
2.4	Transport infrastructure	7
2.4.1	Road network	7
2.4.2	Public transport	8
3	Input data	11
3.1	Traffic survey	11
3.2	Traffic profile	11
3.3	Queue lengths	12
3.4	Traffic signals	12
3.5	Assumptions	13
3.5.1	Software package	13
3.5.2	Calibration and Validation criteria	13
3.5.3	Performance criteria	13
3.6	Demand development	14
3.6.1	Existing demand	14
3.6.2	Future demand	15
3.7	Assessment years and time periods	15
4	Base model calibration and validation	16
4.1	Calibration and Validation results	16
5	Operational performance assessment.....	19
5.1	Base model results.....	19
5.2	Future Base model results	21
5.3	Project Case results	23
6	Results comparison.....	27
6.1	2027 comparison.....	27
6.2	2037 comparison.....	30
6.3	Travel time comparison.....	32
7	Conclusion.....	36

List of Tables

Table 2-1: Study intersection types
Table 2-2: Main Roads within the study area
Table 2-3: Bus service information summary
Table 2-4: Train service information summary
Table 3-1: Signalised intersection within the study area
Table 3-2: Level of service criteria for intersections
Table 3-3: Modelled scenarios and year
Table 5-1: Intersection performance results - 2025 Base model



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

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

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

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

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

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

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

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

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

Table 6-5: Travel time routes

Table 6-6: AM travel times

Table 6-7: PM travel times

List of Figures

Figure 1-1: Site location

Figure 2-1: Study intersections

Figure 2-2: Speed limit restrictions

Figure 2-3: Land use

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

Figure 2-5: Public transport facilities

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

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

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

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

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

Figure 5-5: Project Case layout of Cornelia Road/ Portico Parade

Figure 6-1: OD locations

List of Appendices

Appendix A SIDRA summaries



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**.

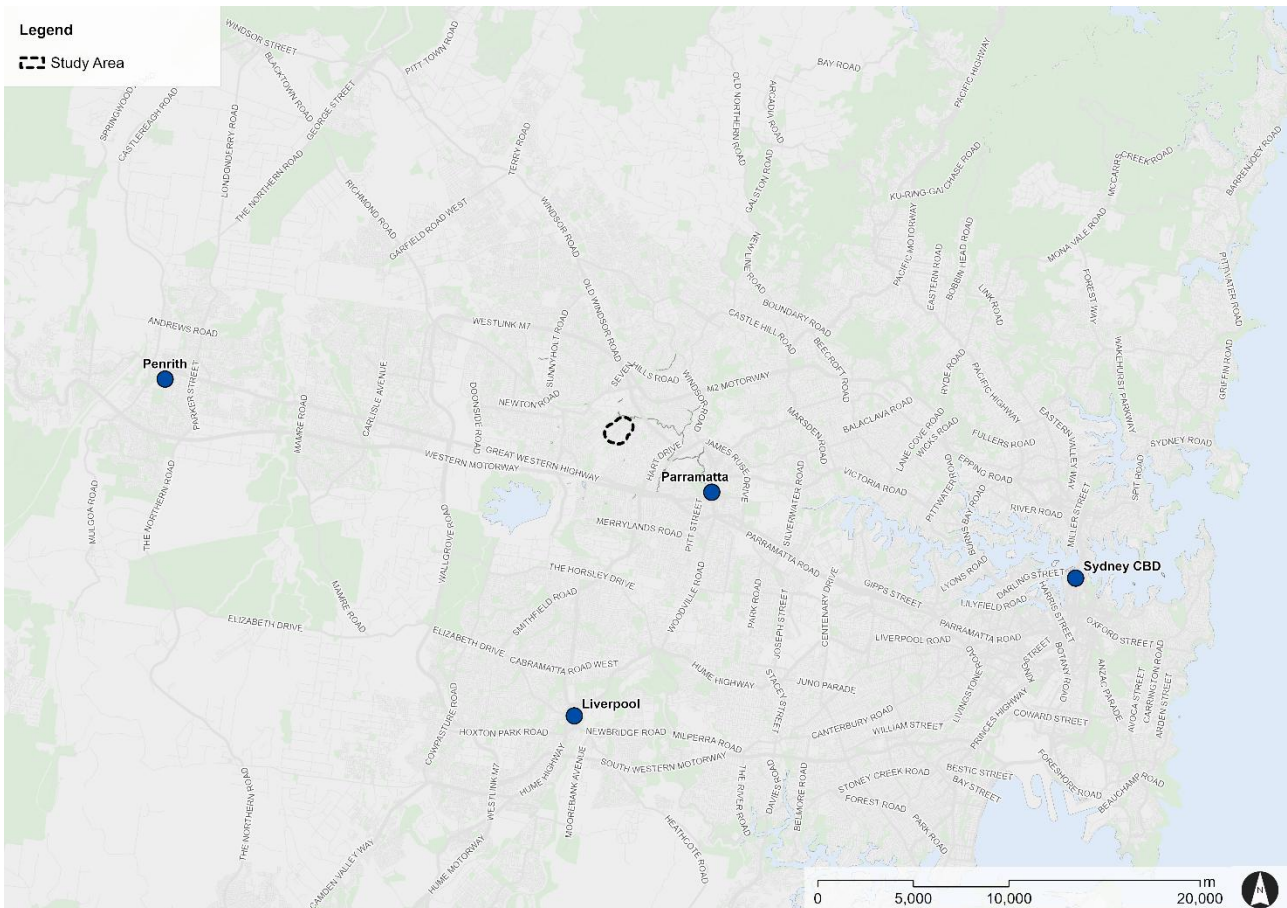


Figure 1-1: Site location



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
 - » Cornelia Road / Junia Avenue
 - » Cornelia Road / 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 / Wentworth Avenue	Roundabout
3	Wentworth Avenue / Cornelia Road	Signalised
4	Cornelia Road / Junia Avenue	Roundabout
5	Cornelia Rd / 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



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

Existing condition

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, 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.

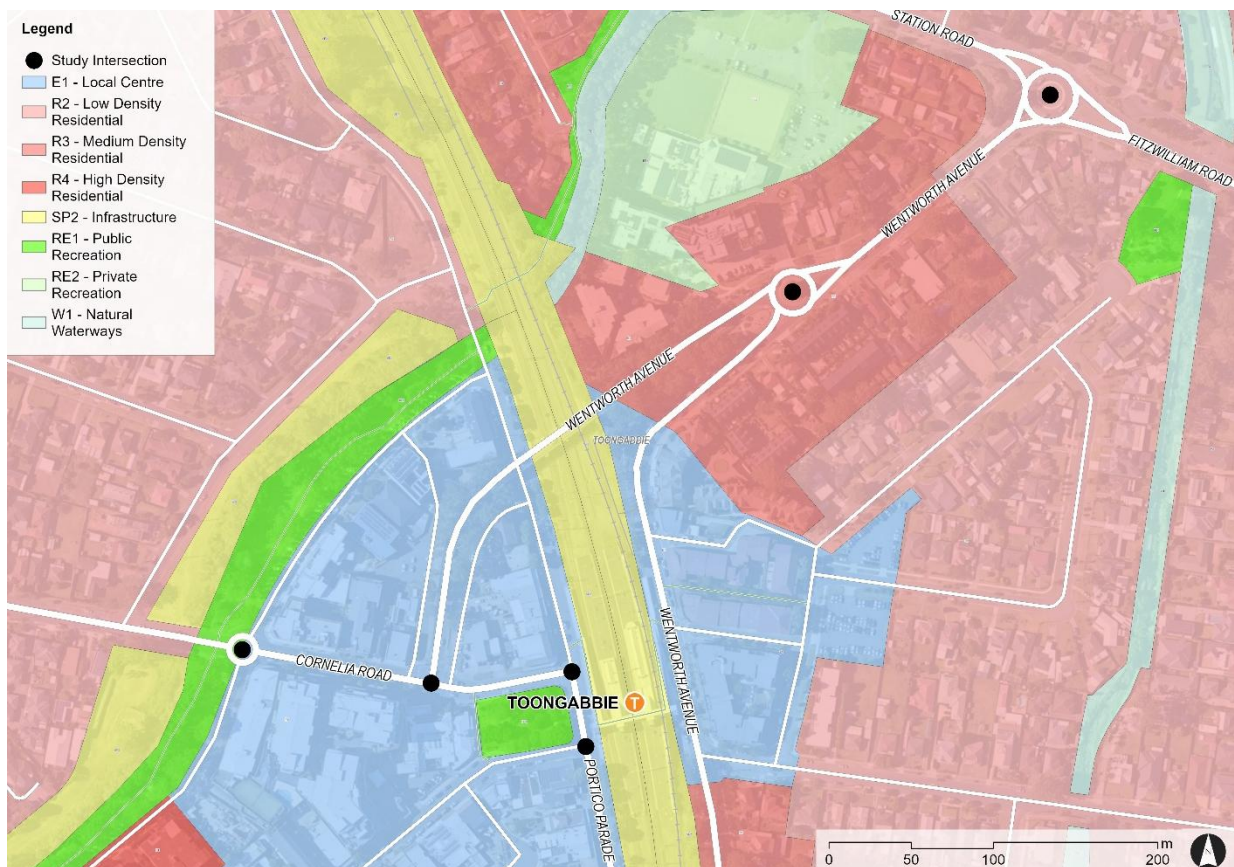


Figure 2-3: Land use



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	<p>Wentworth Avenue is approximately 600 metres in length and is bound by Cornelia Road and Station Road / Fitzwilliam Road.</p> <p>Wentworth Avenue is one lane in each direction with both divided and undivided segments. The speed limit is 60 kilometres per hour.</p>
Station Road	Regional	<p>Station Road is approximately 2.2 kilometres in length and is bound by Prospect Highway / Seven Hills Road and Wentworth Avenue.</p> <p>Station Road is one lane in each direction with both divided and undivided segments. The speed limit is 60 kilometres per hour.</p>
Fitzwilliam Road	Regional	<p>Fitzwilliam Road is approximately 1.8 kilometres in length and is bound by Old Windsor Road and Wentworth Avenue.</p> <p>Fitzwilliam Road is one lane in each direction with both divided and undivided segments. The speed limit is 60 kilometres per hour.</p>
Cornelia Road	Regional	<p>Cornelia Road is approximately 2.5 kilometres in length and is bound by Wentworth Avenue and Elam Drive.</p> <p>Cornelia Road is one lane in each direction with both divided and undivided segments. The speed limit is 60 kilometres per hour.</p>
Portico Parade	Local	<p>Portico Parade is approximately 1 kilometre in length and is bound by McCoy Street and Targo Road.</p> <p>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.</p>
Aurelia Street	Local	<p>Aurelia Street is approximately 470 metres in length and is bound by Octavia Street Portico Parade.</p> <p>Aurelia Street is an undivided road with one lane in each direction with a speed limit is 50 kilometres per hour.</p>

¹NSW 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



Toongabbie Intersection Upgrade

2 Existing condition

Bus Route	Direction	Day of Week	First Service	Last Service	Number of Services	Average Frequency ¹
		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**



Toongabbie Intersection Upgrade 2 Existing condition

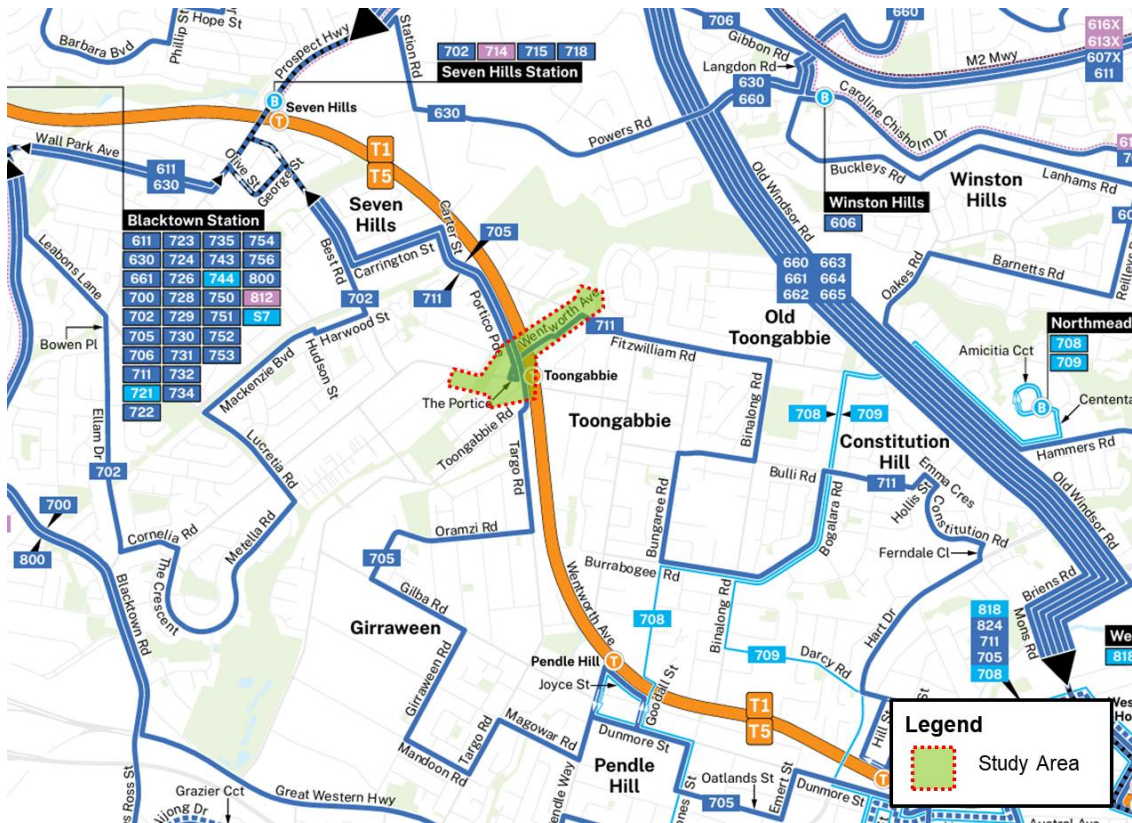


Figure 2-4: Bus Route Network in Toongabbie (Snippet)

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**.

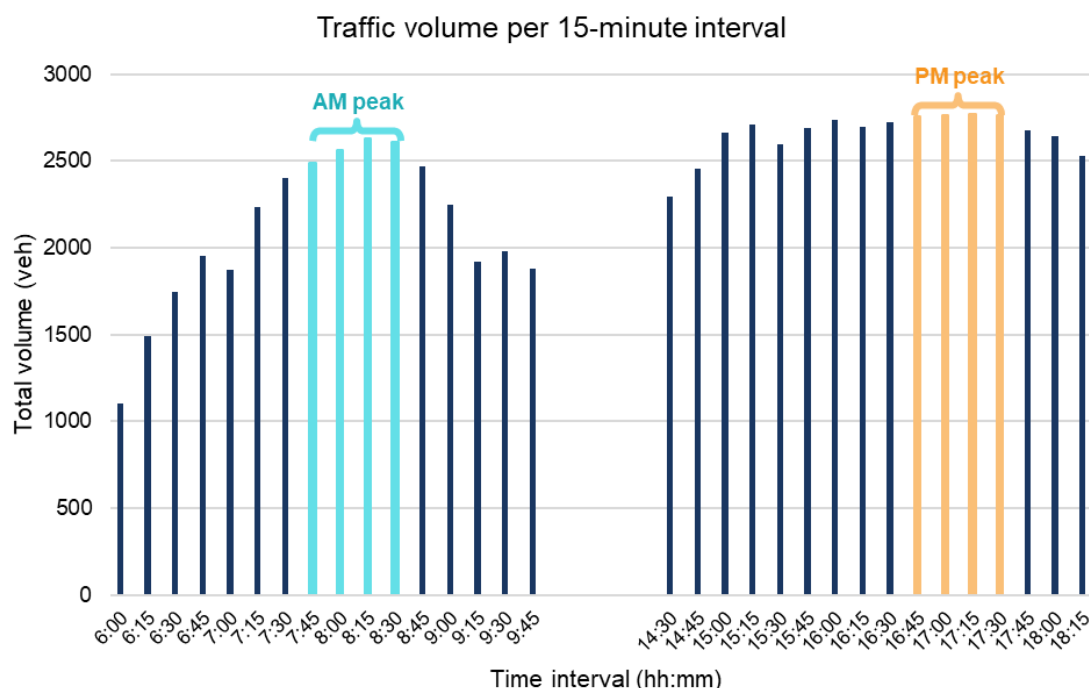


Figure 3-1: Traffic profile in 15-minute intervals



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.

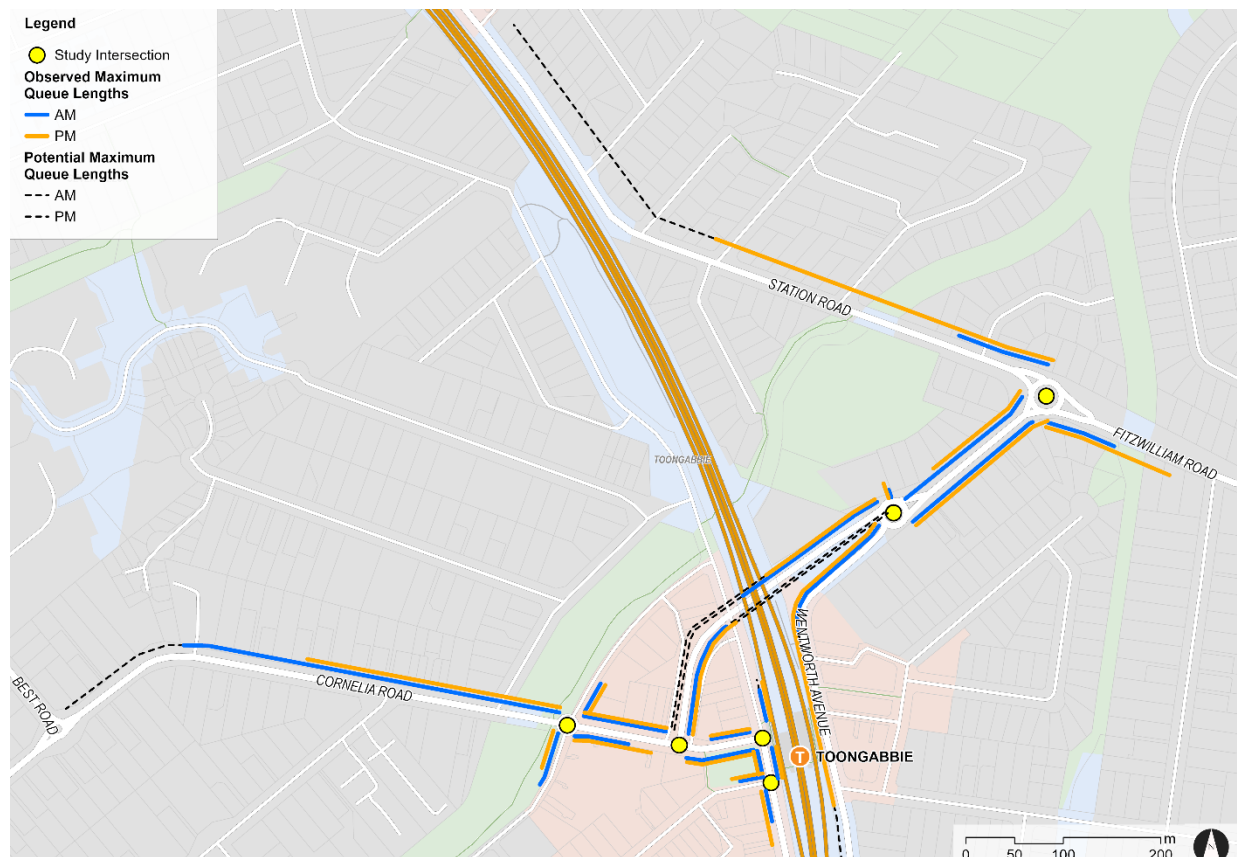


Figure 3-2: Observed and potential maximum queue lengths in the AM and PM peak hours

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	2334
5	Cornelia Road / 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 9.1.6.228).

3.5.2 Calibration and 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.

3.5.2.1 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, Stantec 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).

3.5.3 Performance criteria

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



Toongabbie Intersection Upgrade
3 Input data

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 and an additional pedestrian crossing at the southern leg of Cornelia Rd/ Portico Parade intersection. 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 and 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.



Toongabbie Intersection Upgrade
 4 Base model calibration and validation

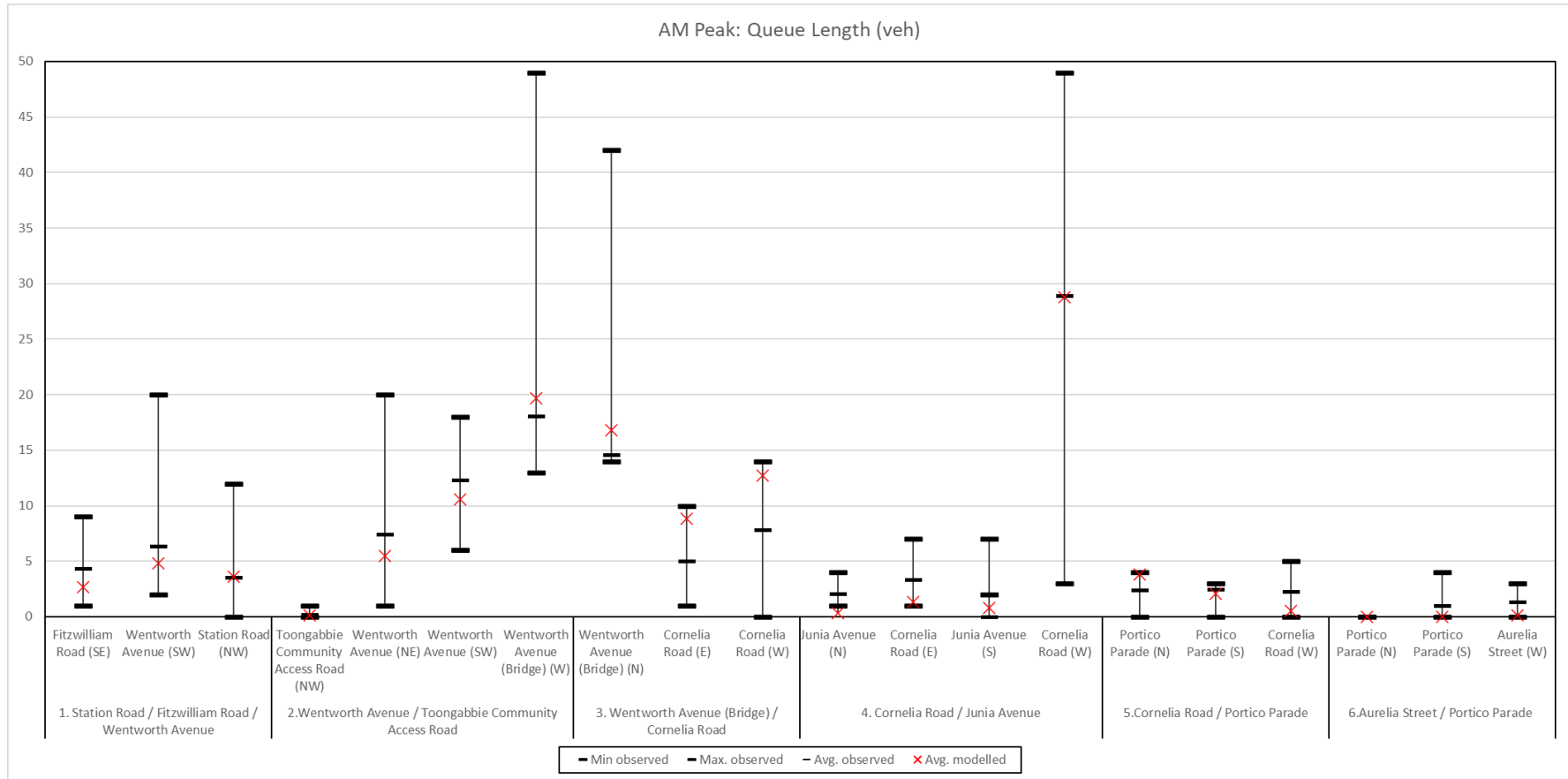


Figure 4-1: Queue length traffic surveys compared with average modelled queue length in the AM peak



Toongabbie Intersection Upgrade
 4 Base model calibration and validation

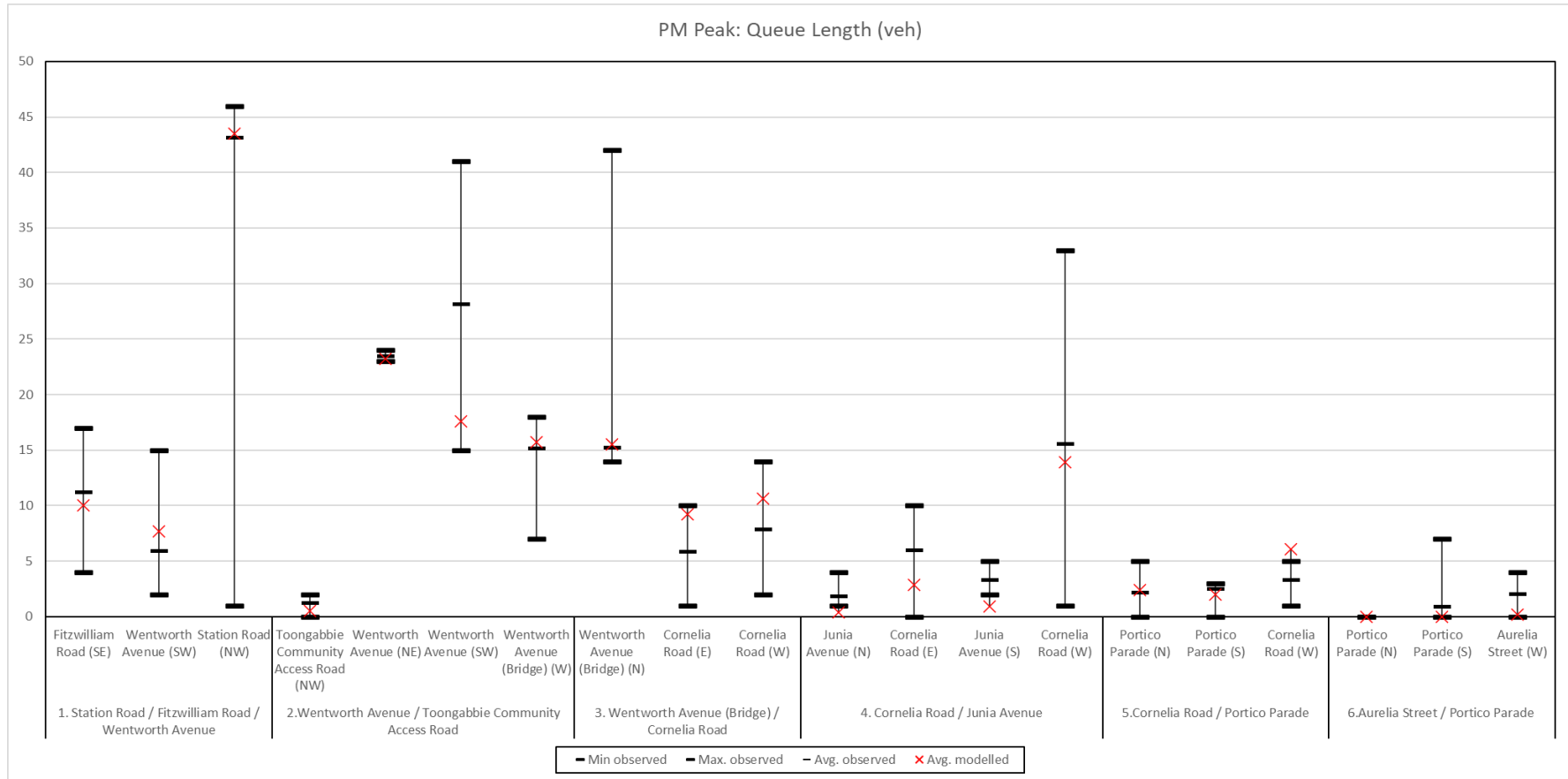


Figure 4-2: Queue length traffic surveys compared with average modelled queue length in the PM peak



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**.

The intersection performance in the 2025 Base Model indicates that:

AM Peak

- The intersections of Station Road / Fitzwilliam Road / Wentworth Avenue, Wentworth Avenue (Bridge) / Cornelia Road, Cornelia Road / Portico Parade and Aurelia Street / Portico Parade operate satisfactorily at LoS B or better.
- The intersections of Wentworth Avenue / Wentworth Avenue 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. This traffic on west approach is unable to enter the roundabout affecting the performance of the intersection and resulting in significant delays and LOS F.
 - » The Cornelia Road / Junia Avenue has recorded long queues on the Cornelia Road West approach, with average queue lengths of 28 vehicles and maximum of 49 vehicles. These observed conditions confirm that the intersection is oversaturated and operating beyond capacity, resulting in DoS greater than 1 and LOS F.

PM Peak

- The intersections of Wentworth Avenue (Bridge) / Cornelia Road, Cornelia Road / Portico Parade and Aurelia Street / Portico Parade operate satisfactorily at LoS B or better.
- The intersection of Cornelia Road / Junia Avenue operates near capacity with LOS D
 - » This intersection is impacted by queueing from the western approach to the intersection of Wentworth Avenue / Cornelia Road due to the close proximity of both intersections.
- The intersections of Station Road / Fitzwilliam Road / Wentworth Avenue and Wentworth Avenue / Wentworth Avenue operate at LOS F.
 - » Long queues were observed on the Station Road approach at the Station Road / Fitzwilliam Road / Wentworth Avenue intersection, with average queue lengths of 43 vehicles and maximum queues of up to 46 vehicles, indicating the intersection is oversaturated and operating beyond capacity (DoS > 1.0) resulting in LOS F.
 - » The Wentworth Ave/ Wentworth Ave roundabout operates under oversaturated conditions with a degree of saturation of 1.16 due to long queues observed on the Wentworth Avenue south-west approach, where average and maximum queue lengths of approximately 28 and 41 vehicles respectively. This indicates that the intersection is oversaturated and operates at LOS F.



Toongabbie Intersection Upgrade
5 Operational performance assessment

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 (veh/h)	DoS	Avg. Delay (sec)	LoS	Avg. QL (veh)	Volume (veh/h)	DoS	Avg. Delay (sec)	LoS	Avg. QL (veh)
		Station Road / Fitzwilliam Road / Wentworth Avenue	RB	3128	0.778	20.0	B	5	3164	1.448	421.7
Wentworth Avenue / Wentworth Avenue	RB	2522	1.041	70.4	F	20	2521	1.162	171.4	F	24
Wentworth Avenue / Cornelia Road	S	1940	0.797	27.7	B	17	2192	0.683	26.2	B	16
Cornelia Road / Junia Avenue	RB	1456	1.211	209.1	F	29	1804	1.010	46.9	D	14
Cornelia Road / Portico Parade	S	918	0.417	13.9	A	4	979	0.456	15.8	B	7
Aurelia Street / Portico Parade	P	954	0.244	9.8	A	1	1074	0.277	9.2	A	1

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, Wentworth Avenue (Bridge) / Cornelia Road, Cornelia Road / Portico Parade and Aurelia Street / Portico Parade operate satisfactorily at LoS C or better in 2027 and 2037.
- The intersections of Wentworth Avenue / Wentworth Avenue, and Cornelia Road / Junia Avenue operate at LoS F in 2027 and 2037.
 - » The west and southwest approaches of Wentworth Avenue / Wentworth Avenue roundabout is exceeding capacity with insufficient opportunities for vehicles to enter the roundabout.
 - » This Cornelia Road/ Junia Avenue intersection is impacted by queueing from the western approach to the intersection of Wentworth Avenue / Cornelia Road due to the close proximity of both intersections.

PM Peak

- Wentworth Avenue (Bridge) / Cornelia Road, Cornelia Road / 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, and Cornelia Road / Junia Avenue operate unsatisfactorily at LOS D or worse in both 2027 and 2037.
 - » The southbound traffic for the bridge approach to the Wentworth Avenue / Cornelia Road intersection is exceeding the capacity resulting in significant queueing that spills back beyond the Station Road / Fitzwilliam Road / Wentworth Avenue intersection.
 - » This Cornelia Road / Junia Avenue intersection is impacted by queueing from the western approach to the intersection of Wentworth Avenue / Cornelia Road due to the close proximity of both intersections.



Toongabbie Intersection Upgrade
5 Operational performance assessment

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

Intersection	Type	2027 Future Base					2037 Future Base				
		AM peak (7:45am – 8:45am)					AM peak (7:45am – 8:45am)				
		Volume (veh/h)	DoS	Avg. Delay (sec)	LoS	Avg. QL (veh)	Volume (veh/h)	DoS	Avg. Delay (sec)	LoS	Avg. QL (veh)
Station Road / Fitzwilliam Road / Wentworth Avenue	RB	3158	0.782	20.2	B	5	3315	0.809	21.5	B	6
Wentworth Avenue / Wentworth Avenue	RB	2546	1.050	78.4	F	21	2672	1.154	178.5	F	25
Wentworth Avenue / Cornelia Road	S	1959	0.883	34.5	C	19	2055	0.870	33.9	C	20
Cornelia Road / Junia Avenue	RB	1469	1.227	223.1	F	31	1541	1.301	289.2	F	38
Cornelia Road / Portico Parade	S	926	0.420	15.6	B	4	971	0.441	15.7	B	4
Aurelia Street / Portico Parade	P	963	0.247	9.6	A	1	1011	0.258	10.0	A	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					2037 Future Base				
		PM peak (4:45pm – 5:45pm)					PM peak (4:45pm – 5:45pm)				
		Volume (veh/h)	DoS	Avg. Delay (sec)	LoS	Avg. QL (veh)	Volume (veh/h)	DoS	Avg. Delay (sec)	LoS	Avg. QL (veh)
Station Road / Fitzwilliam Road / Wentworth Avenue	RB	3196	1.450	423.6	F	45	3353	1.524	490.0	F	51
Wentworth Avenue / Wentworth Avenue	RB	2545	1.167	175.1	F	24	2668	1.219	233.6	F	26
Wentworth Avenue / Cornelia Road	S	2214	0.662	26.4	B	16	2320	0.683	27.3	B	17
Cornelia Road / Junia Avenue	RB	1821	1.018	51.1	D	15	1913	1.133	140.5	F	30
Cornelia Rd / Portico Parade	S	988	0.461	16.1	B	6	1037	0.483	16.1	B	6
Aurelia Street / Portico Parade	P	1084	0.280	9.3	A	1	1138	0.294	9.7	A	1

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**.

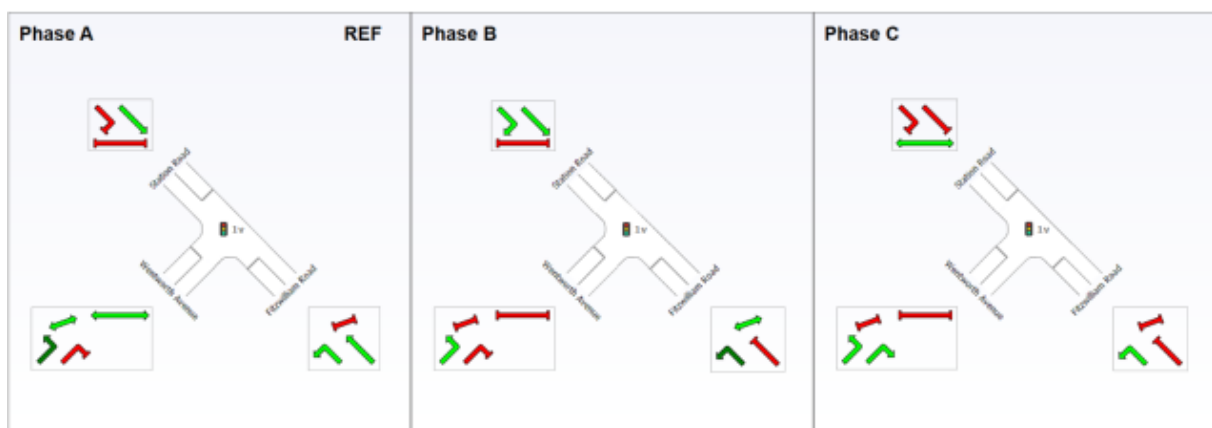


Figure 5-1 Proposed signal phasing arrangement - Station Road / Fitzwilliam Road / Wentworth Avenue signalised intersection

Toongabbie Intersection Upgrade
 5 Operational performance assessment

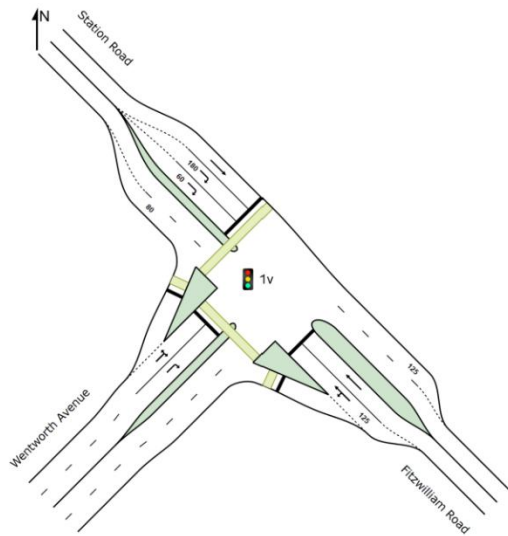


Figure 5-2: Project Case layout of Station Road / Fitzwilliam Road / Wentworth Avenue.

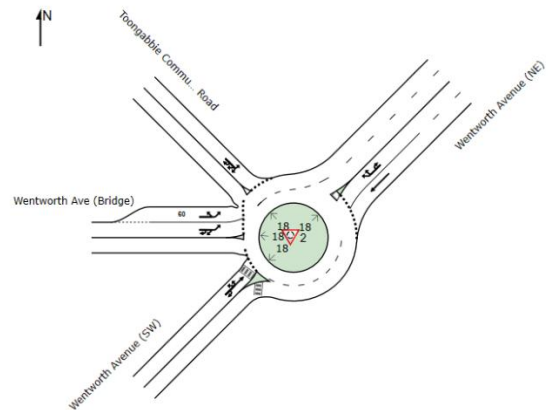


Figure 5-3: Project Case layout of Wentworth Avenue Roundabout

CCC is proposing to upgrade the existing signalised intersection at Wentworth Avenue / Cornelia Road by adding an auxiliary lane to the northern approach to the intersection. Also, an additional pedestrian crossing is provided at the southern leg of Cornelia Road/ Portico Parade intersection. Error! Reference source not found. and **Figure 5-5** shows the layout of the modified intersection.

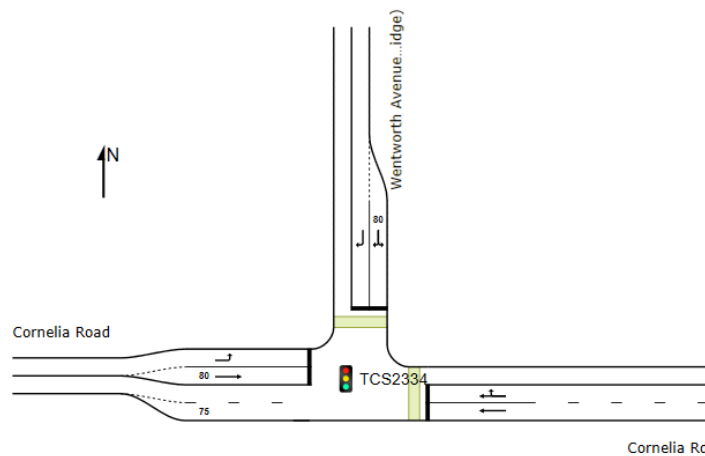


Figure 5-4: Project Case layout of Wentworth Avenue / Cornelia Road.

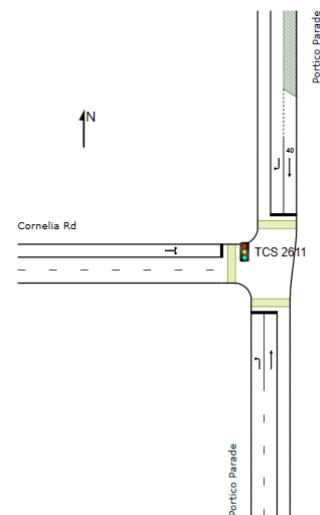


Figure 5-5: Project Case layout of Cornelia Road/ Portico Parade



Toongabbie Intersection Upgrade

5 Operational performance assessment

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 intersection of Wentworth Avenue / Wentworth Avenue operates at LOS F in 2027 and 2037
 - » With additional northbound lane on the west (bridge) approach, the critical movement has changed to the southwest approach to the Wentworth Avenue / Wentworth Avenue roundabout. The southwest approach is exceeding capacity with insufficient opportunities for vehicles to enter the roundabout.
- The intersections of Wentworth Avenue / Cornelia Road, Cornelia Road / Portico Parade and Aurelia Street / Portico Parade operate satisfactorily at LOS C or better in 2027 and 2037.
- The intersection of Cornelia Road / Junia Avenue operates at LOS F in 2027 and 2037.
 - » This intersection is impacted by queueing from the western approach to the intersection of Wentworth Avenue / Cornelia Road due to the close proximity of both intersections.

PM 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 intersection of Wentworth Avenue / Wentworth Avenue operates at LOS F in 2027 and 2037.
 - » The southwest approach to the Wentworth Avenue / Wentworth Avenue roundabout is exceeding capacity with insufficient opportunities for vehicles to enter the roundabout.
- The intersections of Wentworth Avenue / Cornelia Road, Cornelia Road / Portico Parade and Aurelia Street / Portico Parade operate satisfactorily at LOS C or better in 2027 and 2037.
- The intersection of Cornelia Road / Junia Avenue operates at LOS F in 2027 and 2037.
 - » This intersection is impacted by queueing from the western approach to the intersection of Wentworth Avenue / Cornelia Road due to the close proximity of both intersections.



Toongabbie Intersection Upgrade
5 Operational performance assessment

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)				
		Volume (veh/h)	DoS	Avg. Delay (sec)	LoS	Avg. QL (veh)	Volume (veh/h)	DoS	Avg. Delay (sec)	LoS	Avg. QL (veh)
Station Road / Fitzwilliam Road / Wentworth Avenue	S	3141	0.975	35	C	20	3298	0.771	35.1	C	20
Wentworth Avenue / Wentworth Avenue	RB	2546	1.065	114.1	F	17	2672	1.27	278.6	F	35
Wentworth Avenue / Cornelia Road	S	1952	0.609	30.9	C	17	2047	0.616	31.7	C	18
Cornelia Road / Junia Avenue	RB	1469	1.227	222.7	F	31	1541	1.301	288.5	F	38
Cornelia Road / Portico Parade	S	926	0.415	18.5	B	5	971	0.435	18.6	B	5
Aurelia Street / Portico Parade	P	963	0.311	9.7	A	1	1011	0.35	10.1	A	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)					2037 Project Case PM peak (4:45pm – 5:45pm)				
		Volume (veh/h)	DoS	Avg. Delay (sec)	LoS	Avg. QL (veh)	Volume (veh/h)	DoS	Avg. Delay (sec)	LoS	Avg. QL (veh)
Station Road / Fitzwilliam Road / Wentworth Avenue	S	3176	0.786	35.3	C	20	3332	0.834	38.1	C	23
Wentworth Avenue / Wentworth Avenue	RB	2545	1.441	433.6	F	38	2668	1.672	638.7	F	49
Wentworth Avenue / Cornelia Road	S	2197	0.629	29.3	C	17	2302	0.656	29.5	C	17
Cornelia Road / Junia Avenue	RB	1821	1.183	183.2	F	34	1913	1.261	252.4	F	44
Cornelia Road / Portico Parade	S	988	0.488	18.2	B	5	1037	0.49	17.7	B	6
Aurelia Street / Portico Parade	P	1084	0.47	10.4	A	1	1138	0.495	10.9	A	1

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 red arrow. Additionally, an equal sign has been used to indicate 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 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 / Wentworth Avenue roundabout increases in delay from 78 seconds to 114 seconds in the Project Case scenario. With the additional northbound lane on the west (bridge) approach and pedestrian crossing on south-west approach, the critical movement has changed to the southwest approach to the Wentworth Avenue / Wentworth Avenue roundabout. The southwest approach is exceeding capacity with insufficient opportunities for vehicles to enter the roundabout. The addition of pedestrian crossing on the south-west approach further worsens the performance. It should be noted that some traffic from this approach have alternatives such as Lamonerie Street and Ballandella Road to access Fitzwilliam Road and Station Road. However, these alternatives will not be available for traffic utilising the Kiss and Ride north of the pedestrian crossing at Toongabbie Station.
- The intersections of Wentworth Avenue / Cornelia Road, Cornelia Road / Junia Avenue, Cornelia Road / Portico Parade and Aurelia Street / Portico Parade operate similarly overall between the Project Case and the Future Base scenario

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 175 seconds to 434 seconds. This is due to the northeast approach interrupting the southwest approach in the



Toongabbie Intersection Upgrade

6 Results comparison

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 addition of pedestrian crossing on the south-west approach further worsens the performance. It should be noted that some traffic from the southwest approach have alternatives such as Lamonerie Street and Ballandella Road to access Fitzwilliam Road and Station Road. However, these alternatives will not be available for traffic utilising the Kiss and Ride north of the pedestrian crossing at Toongabbie Station.

- The intersections of Wentworth Avenue / Cornelia Road, Cornelia Road / Junia Avenue, Cornelia Road / Portico Parade and Aurelia Street / Portico Parade operate similarly overall between the Project Case and the Future Base scenario.

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)					
	Volume (veh/h)	DoS	Avg. Delay (sec)	LoS	Avg. QL (veh)	Volume (veh/h)	DoS	Avg. Delay (sec)	LoS	Avg. QL (veh)
Station Road / Fitzwilliam Road / Wentworth Avenue ¹	3141	0.975	35	C	20	-17 (-0.5%)	0.193 (+24.7%)	+15 (+73.3%)	▼	+15 (+300%)
Wentworth Avenue / Wentworth Avenue	2546	1.065	114.1	F	17	0 (+0%)	0.015 (+1.4%)	+36 (+45.5%)	=	-4 (-19%)
Wentworth Avenue / Cornelia Road	1952	0.609	30.9	C	17	-7 (-0.4%)	-0.274 (-31%)	-4 (-10.4%)	=	-2 (-10.5%)
Cornelia Road / Junia Avenue	1469	1.227	222.7	F	31	0 (+0%)	0 (+0%)	0 (-0.2%)	=	0 (+0%)
Cornelia Road / Portico Parade	926	0.415	18.5	B	5	0 (+0%)	-0.005 (-1.2%)	+3 (+18.6%)	=	+1 (+25%)
Aurelia Street / Portico Parade	963	0.311	9.7	A	1	0 (+0%)	0.064 (+25.9%)	0 (+1%)	=	0 (+0%)

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



Toongabbie Intersection Upgrade

6 Results comparison

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 AM peak (7:45am – 8:45am)				Compared to 2027 Future Base AM peak (7:45am – 8:45am)					
	Volume (veh/h)	DoS	Avg. Delay (sec)	LoS	Avg. QL (veh)	Volume (veh/h)	DoS	Avg. Delay (sec)	LoS	Avg. QL (veh)
Station Road / Fitzwilliam Road / Wentworth Avenue ¹	3176	0.786	35.3	C	20	-20 (-0.6%)	-0.664 (-45.8%)	-388 (-91.7%)	▲	-25 (-55.6%)
Wentworth Avenue / Wentworth Avenue	2545	1.441	433.6	F	38	0 (+0%)	0.274 (+23.5%)	+259 (+147.6%)	=	+14 (+58.3%)
Wentworth Avenue / Cornelia Road	2197	0.629	29.3	C	17	-17 (-0.8%)	-0.033 (-5%)	+3 (+11%)	=	+1 (+6.3%)
Cornelia Road / Junia Avenue	1821	1.183	183.2	F	34	0 (+0%)	0.165 (+16.2%)	+132 (+258.5%)	=	+19 (+126.7%)
Cornelia Road / Portico Parade	988	0.488	18.2	B	5	0 (+0%)	0.027 (+5.9%)	+2 (+13%)	=	-1 (-16.7%)
Aurelia Street / Portico Parade	1084	0.47	10.4	A	1	0 (+0%)	0.19 (+67.9%)	+1 (+11.8%)	=	0 (+0%)

¹In 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 red arrow. Additionally, an equal sign has been used to indicate 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 C 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

- The Station Road / Fitzwilliam Road / Wentworth Avenue intersection decreased to LOS C from LOS B with the average delay increasing by approximately 14 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 / Wentworth Avenue roundabout increases in delay significantly from 178 seconds to 279 seconds in the Project Case scenario. With the additional northbound lane on the west (bridge) approach, the critical movement has changed to the southwest approach to the Wentworth Avenue / Wentworth Avenue roundabout. The southwest approach is exceeding capacity with insufficient opportunities for vehicles to enter the roundabout. The addition of pedestrian crossing on the south-west approach further worsens the performance. It should be noted that some traffic from this approach have alternatives such as Lamonerie Street and Ballandella Road to access Fitzwilliam Road and Station Road. However, these alternatives will not be available for traffic utilising the Kiss and Ride north of the pedestrian crossing at Toongabbie Station.
- The intersections of Wentworth Avenue / Cornelia Road, Cornelia Road / Junia Avenue, Cornelia Road / Portico Parade and Aurelia Street / Portico Parade operate similarly overall between the Project Case and the Future Base scenario

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 with a significant decrease in delay by 450 seconds. The additional southbound lane on Wentworth Avenue reduces the queues that spill back into the Station Road / Fitzwilliam Road / Wentworth Avenue intersection.



Toongabbie Intersection Upgrade

6 Results comparison

- The Wentworth Avenue roundabout increases in delay significantly from 234 seconds to 639 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 addition of pedestrian crossing on the south-west approach further worsens the performance. It should be noted that some traffic from the southwest approach have alternatives such as Lamonerie Street and Ballandella Road to access Fitzwilliam Road and Station Road. However, these alternatives will not be available for traffic utilising the Kiss and Ride north of the pedestrian crossing at Toongabbie Station.
- The intersections of Wentworth Avenue / Cornelia Road, Cornelia Road / Junia Avenue, Cornelia Road / Portico Parade and Aurelia Street / Portico Parade operate similarly overall between the Project Case and the Future Base scenario.

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)					
	Volume (veh/h)	DoS	Avg. Delay (sec)	LoS	Avg. QL (veh)	Volume (veh/h)	DoS	Avg. Delay (sec)	LoS	Avg. QL (veh)
Station Road / Fitzwilliam Road / Wentworth Avenue ¹	3298	0.771	35.1	C	20	-17 (-0.5%)	-0.038 (-4.7%)	+14 (+63.3%)	▼	+14 (+233.3%)
Wentworth Avenue / Wentworth Avenue	2672	1.27	278.6	F	35	0 (+0%)	+0.116 (+10.1%)	+100 (+56.1%)	=	+10 (+40%)
Wentworth Avenue / Cornelia Road	2047	0.616	31.7	C	18	-8 (-0.4%)	-0.254 (-29.2%)	-2 (-6.5%)	=	-2 (-10%)
Cornelia Road / Junia Avenue	1541	1.301	288.5	F	38	0 (+0%)	0 (+0%)	-1 (-0.2%)	=	0 (+0%)
Cornelia Road / Portico Parade	971	0.435	18.6	B	5	0 (+0%)	-0.006 (-1.4%)	+3 (+18.5%)	=	+1 (+25%)
Aurelia Street / Portico Parade	1011	0.35	10.1	A	1	0 (+0%)	+0.092 (+35.7%)	0 (+1%)	=	0 (+0%)

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



Toongabbie Intersection Upgrade

6 Results comparison

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 AM peak (7:45am – 8:45am)					Compared to 2037 Future Base AM peak (7:45am – 8:45am)				
	Volume (veh/h)	DoS	Avg. Delay (sec)	LoS	Avg. QL (veh)	Volume (veh/h)	DoS	Avg. Delay (sec)	LoS	Avg. QL (veh)
Station Road / Fitzwilliam Road / Wentworth Avenue ¹	3332	0.834	38.1	C	23	-21 (-0.6%)	-0.69 (-45.3%)	-452 (-92.2%)	▲	-28 (-54.9%)
Wentworth Avenue / Wentworth Avenue	2668	1.672	638.7	F	49	0 (+0%)	0.453 (+37.2%)	+405 (+173.4%)	=	+23 (+88.5%)
Wentworth Avenue / Cornelia Road	2302	0.656	29.5	C	17	-18 (-0.8%)	-0.027 (-4%)	+2 (+8.1%)	=	0 (+0%)
Cornelia Road / Junia Avenue	1913	1.261	252.4	F	44	0 (+0%)	0.128 (+11.3%)	+112 (+79.6%)	=	+14 (+46.7%)
Cornelia Road / Portico Parade	1037	0.49	17.7	B	6	0 (+0%)	0.007 (+1.4%)	+2 (+9.9%)	=	0 (+0%)
Aurelia Street / Portico Parade	1138	0.495	10.9	A	1	0 (+0%)	0.201 (+68.4%)	+1 (+12.4%)	=	0 (+0%)

¹In 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 Cornelia Rd (E)
2 – 3	Fitzwilliam Rd to Wentworth Ave
2 – 4	Fitzwilliam Rd to Cornelia Rd
2 – 5	Fitzwilliam Rd to Cornelia Rd (E)
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 Cornelia Rd (E)
4 – 1	Cornelia Rd to Station Rd
4 – 2	Cornelia Rd to Fitzwilliam Rd
4 – 3	Cornelia Rd to Wentworth Ave



Toongabbie Intersection Upgrade

6 Results comparison

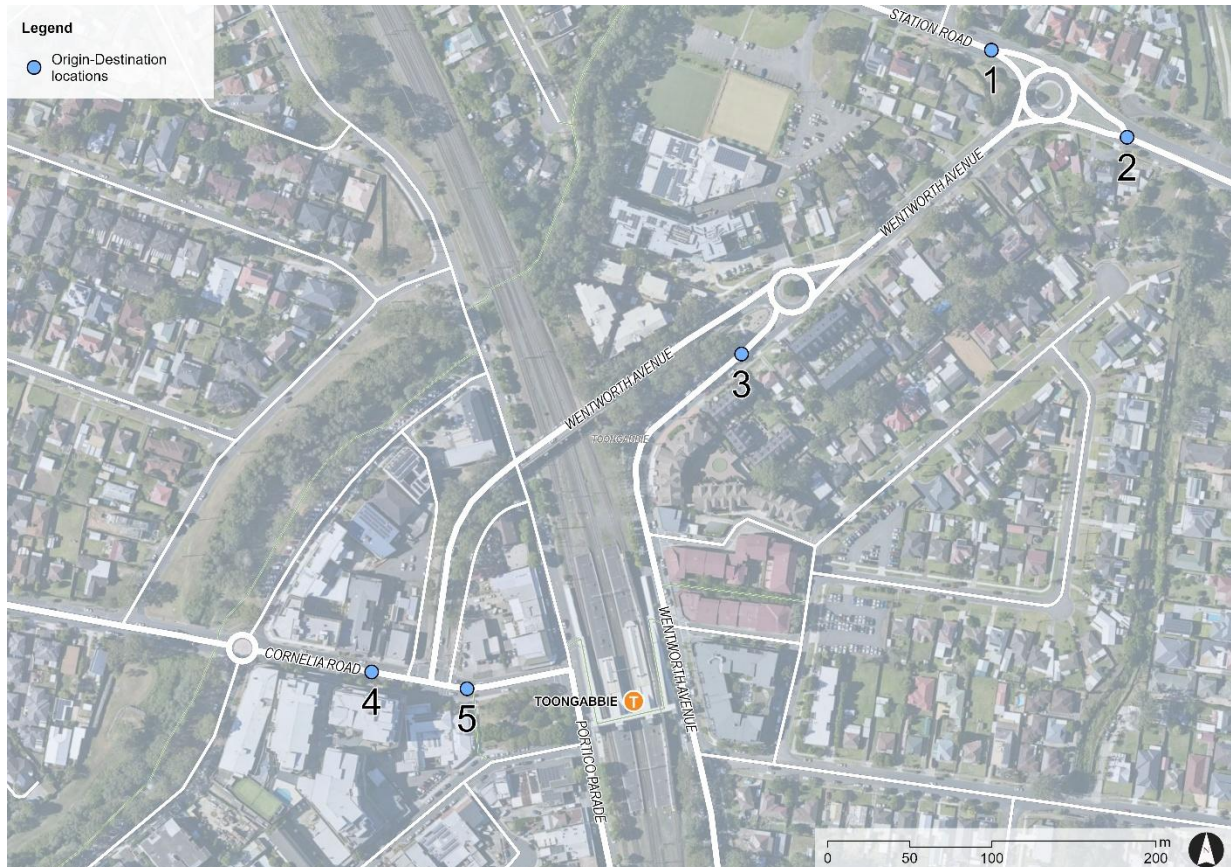


Figure 6-1: OD locations

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 an increase in delay at the Wentworth Avenue / Wentworth Avenue roundabout for the northbound traffic from the southwest approach. This is evidenced by the significant increase in travel times for trips originating at Wentworth Road of up to 120 seconds in 2027 and 145 seconds in 2037.
- The travel times from Cornelia Road have significantly reduced by up to 82 seconds in 2027 and 73 seconds in 2037 with the introduction of the additional northbound lane on the west approach (bridge) to Wentworth Avenue / Wentworth Avenue.
- The difference in travel times for routes originating from Station Road and Fitzwilliam 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.



Toongabbie Intersection Upgrade

6 Results comparison

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 and up to 190 seconds for trips originating from Fitzwilliam 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 290 seconds in 2027 and 430 seconds in 2037.
- The difference in travel times for routes originating from Cornelia Road 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.

Table 6-6: AM travel times

Route \ Travel Time (sec)	2027			2037		
	Base	Project Case	Difference	Base	Project Case	Difference
Station Rd to Wentworth Ave	119.1	154.8	+35.7	121.0	166.2	+45.2
Station Rd to Cornelia Rd	143.5	200.6	+57.1	145.6	213.2	+67.6
Station Rd to Cornelia Rd (E)	143.5	177.9	+34.4	145.6	190.1	+44.5
Fitzwilliam Rd to Wentworth Ave	73.2	67.8	-5.4	75.5	70.4	-5.1
Fitzwilliam Rd to Cornelia Rd	97.5	113.7	+16.2	100.1	117.4	+17.3
Fitzwilliam Rd to Cornelia Rd (E)	97.5	91.0	-6.5	100.1	94.4	-5.7
Wentworth Ave to Station Rd	175.2	214.7	+39.5	277.2	383.1	+105.9
Wentworth Ave to Fitzwilliam Rd	140.2	258.6	+118.4	241.0	384.5	+143.5
Wentworth Ave to Cornelia Rd	136.1	189.8	+53.7	236.6	355.6	+119.0
Wentworth Ave to Cornelia Rd (E)	136.1	167.2	+31.1	236.6	332.5	+95.9
Cornelia Rd to Station Rd	226.3	144.3	-82.0	215.2	147.8	-67.4
Cornelia Rd to Fitzwilliam Rd	191.3	188.1	-3.2	179.0	149.2	-29.8
Cornelia Rd to Wentworth Ave	163.9	79.9	-84.0	151.0	78.2	-72.8



Toongabbie Intersection Upgrade
6 Results comparison

Table 6-7: PM travel times

Route \ Travel Time (sec)	2027			2037		
	Base	Project Case	Difference	Base	Project Case	Difference
Station Rd to Wentworth Ave	683.7	166.9	-516.8	776.1	171.3	-604.8
Station Rd to Cornelia Rd	707.8	205.8	-502	801.8	213.1	-588.7
Station Rd to Cornelia Rd (E)	707.8	199.2	-508.6	801.8	206.2	-595.6
Fitzwilliam Rd to Wentworth Ave	235.3	71.6	-163.7	262.1	74.4	-187.7
Fitzwilliam Rd to Cornelia Rd	259.4	110.5	-148.9	287.7	116.1	-171.6
Fitzwilliam Rd to Cornelia Rd (E)	259.4	103.9	-155.5	287.7	109.3	-178.4
Wentworth Ave to Station Rd	280.1	532.6	+252.5	355.6	739.9	+384.3
Wentworth Ave to Fitzwilliam Rd	238.6	529.5	+290.9	308.7	738.9	+430.2
Wentworth Ave to Cornelia Rd	224.1	497.3	+273.2	292.6	702.9	+410.3
Wentworth Ave to Cornelia Rd (E)	224.1	490.8	+266.7	292.6	696	+403.4
Cornelia Rd to Station Rd	170.9	135.1	-35.8	194.3	137.1	-57.2
Cornelia Rd to Fitzwilliam Rd	129.3	132.0	+2.7	147.4	136.2	-11.2
Cornelia Rd to Wentworth Ave	91.7	72.8	-18.9	106.7	72.8	-33.9



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. The City of Parramatta is also proposing to provide an additional northbound lane to the west (bridge) approach to the Wentworth Avenue / Wentworth Avenue.

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 2037. There was significant queueing observed in the Base scenario from the Wentworth Avenue roundabout that spilled back beyond the Station Road / Fitzwilliam Road / Wentworth Avenue which no longer occurs in the Project Case. The AM peak has resulted in a worsening of performance from LOS B to C in 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 addition of a northbound lane to the west (bridge) approach to Wentworth Avenue / Wentworth Avenue has significantly reduced the queues on the west approach in the AM peak period. However, the critical movement has shifted to the southwest approach.
 - » In both peak periods the southwest approach has insufficient opportunities to enter the roundabout. It should be noted that some traffic from this approach have alternatives such as Lamonerie Street and Ballandella Road to access Fitzwilliam Road and Station Road. However, these alternatives will not be available for traffic utilising the Kiss and Ride north of the pedestrian crossing at Toongabbie Station.

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

- 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 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.
- Further upgrades are required at the Wentworth Avenue / Wentworth Avenue roundabout to address performance deficiencies, with additional scenario testing needed to determine the most appropriate mitigation measures.



Appendices



Appendix A SIDRA summaries

2025 Base

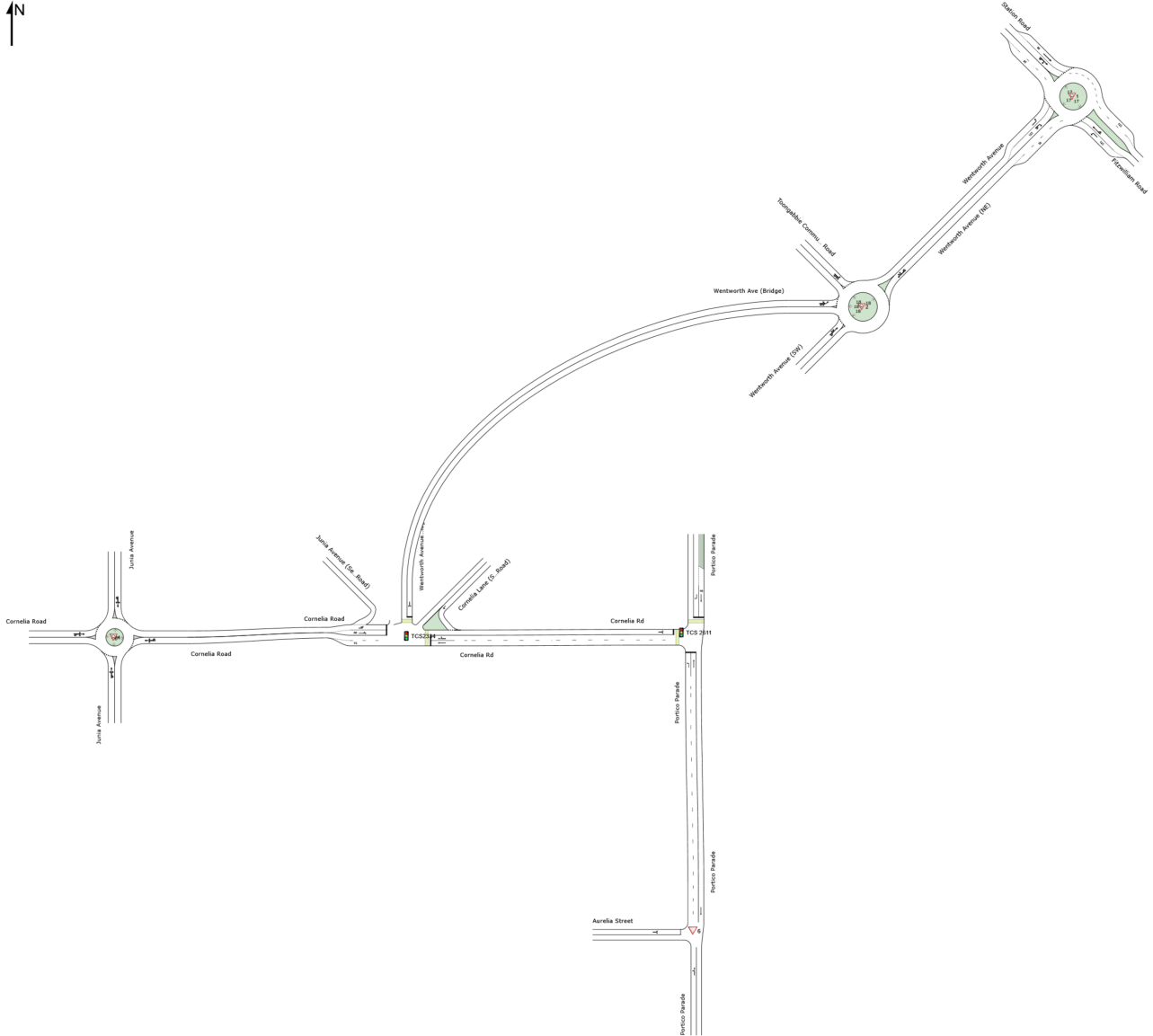
NETWORK LAYOUT

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
▽4	NA	4. Cornelia Rd / Junia Ave
TCS 2611	NA	5. Cornelia Rd / Portico Pde
▽6	NA	6. Aurelia St / Portico Pde

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Project: C:\Users\imathew\OneDrive - Stantec\Projects\Toongabbie\Toongabbie\Des_in\Modelling\Toongabbie SIDRA\toongabbie.sip9

MOVEMENT SUMMARY

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

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

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Existing 2025 AM
Site Category: (None)
Roundabout

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand Flows		Arrival Flows		Deg. Satn	Aver. Delay	Level of Service	Aver. Back Of Queue	Prop. Que		Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed
			[Total HV]	%	[Total HV]	%					[Veh. veh	Dist]			
SouthEast: Fitzwilliam Road															
21	L2	All MCs	522	1.2	522	1.2	0.631	12.4	LOS A	2.7	19.1	0.92	0.82	1.10	39.1
22	T1	All MCs	528	3.8	528	3.8	0.562	8.6	LOS A	2.2	16.0	0.88	0.74	0.97	52.7
23u	U	All MCs	2	0.0	2	0.0	0.562	14.6	LOS B	2.2	16.0	0.88	0.74	0.97	46.5
Approach			1053	2.5	1053	2.5	0.631	10.5	LOS A	2.7	19.1	0.90	0.78	1.03	49.2
NorthWest: Station Road															
28	T1	All MCs	378	2.8	378	2.8	0.736	10.5	LOS A	3.6	26.4	0.79	0.72	0.89	52.4
29	R2	All MCs	496	5.3	496	5.3	0.736	17.9	LOS B	3.6	26.4	0.94	0.88	1.24	46.0
29u	U	All MCs	13	8.3	13	8.3	0.736	20.0	LOS B	3.6	26.4	0.94	0.88	1.24	50.8
Approach			886	4.3	886	4.3	0.736	14.8	LOS B	3.6	26.4	0.88	0.81	1.09	49.0
SouthWest: Wentworth Avenue															
30	L2	All MCs	787	3.5	724	3.6	0.778	14.0	LOS A	4.8	34.3	1.00	0.97	1.42	48.2
32	R2	All MCs	400	0.8	368	0.8	0.507	13.8	LOS A	1.7	12.0	0.85	0.79	0.94	39.5
32u	U	All MCs	2	50.0	2	50.6	0.507	18.5	LOS B	1.7	12.0	0.85	0.79	0.94	28.5
Approach			1189	2.7	1093	2.7	0.778	14.0	LOS A	4.8	34.3	0.95	0.91	1.26	46.2
All Vehicles			3128	3.1	3032	3.2	0.778	13.0	LOS A	4.8	34.3	0.91	0.84	1.13	48.1

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.

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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: 9.1.6.228

Existing 2025 AM
Site Category: (None)
Roundabout

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand Flows		Arrival Flows		Deg. Satn	Aver. Delay	Level of Service	Aver. Back Of Queue	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed	
			[Total HV]	[Total HV]	[Total HV]	[Total HV]	v/c	sec		[Veh. veh	[Dist] m			km/h	
NorthEast: Wentworth Avenue (NE)															
25	T1	All MCs	301	5.2	301	5.2	0.822	7.0	LOS A	5.5	39.6	0.90	0.60	0.93	42.9
26a	R1	All MCs	717	2.5	717	2.5	0.822	10.3	LOS A	5.5	39.6	0.90	0.60	0.93	32.0
26	R2	All MCs	2	0.0	2	0.0	0.822	11.2	LOS A	5.5	39.6	0.90	0.60	0.93	27.8
26u	U	All MCs	7	0.0	7	0.0	0.822	13.2	LOS A	5.5	39.6	0.90	0.60	0.93	32.0
Approach			1027	3.3	1027	3.3	0.822	9.4	LOS A	5.5	39.6	0.90	0.60	0.93	36.8
NorthWest: Toongabbie Community Access Road															
27	L2	All MCs	2	0.0	2	0.0	0.027	15.8	LOS B	0.1	0.6	0.97	0.79	0.97	12.6
29	R2	All MCs	1	0.0	1	0.0	0.027	20.3	LOS B	0.1	0.6	0.97	0.79	0.97	30.4
29b	R3	All MCs	3	33.3	3	33.3	0.027	24.0	LOS B	0.1	0.6	0.97	0.79	0.97	12.6
29u	U	All MCs	1	0.0	1	0.0	0.027	22.3	LOS B	0.1	0.6	0.97	0.79	0.97	14.0
Approach			7	14.3	7	14.3	0.027	20.9	LOS B	0.1	0.6	0.97	0.79	0.97	16.7
West: Wentworth Ave (Bridge)															
10b	L3	All MCs	4	0.0	4	0.0	1.041	64.0	LOS E	19.7	140.3	1.00	2.09	3.67	15.0
10a	L1	All MCs	806	2.2	740	2.3	1.041	63.8	LOS E	19.7	140.3	1.00	2.09	3.67	14.6
12b	R3	All MCs	166	0.0	152	0.0	1.041	69.4	LOS E	19.7	140.3	1.00	2.09	3.67	22.1
12u	U	All MCs	1	0.0	1	0.0	1.041	70.4	LOS E	19.7	140.3	1.00	2.09	3.67	14.6
Approach			978	1.8	897	1.9	1.041	64.7	LOS E	19.7	140.3	1.00	2.09	3.67	16.2
SouthWest: Wentworth Avenue (SW)															
30b	L3	All MCs	137	1.5	137	1.5	0.986	60.9	LOS E	10.6	75.8	1.00	1.87	3.29	14.7
30	L2	All MCs	1	0.0	1	0.0	0.986	60.5	LOS E	10.6	75.8	1.00	1.87	3.29	15.1
31	T1	All MCs	371	3.1	371	3.1	0.986	61.0	LOS E	10.6	75.8	1.00	1.87	3.29	14.7
32u	U	All MCs	1	0.0	1	0.0	0.986	67.1	LOS E	10.6	75.8	1.00	1.87	3.29	22.5
Approach			509	2.7	509	2.7	0.986	61.0	LOS E	10.6	75.8	1.00	1.87	3.29	14.7
All Vehicles			2522	2.6	2441	2.7	1.041	40.5	LOS C	19.7	140.3	0.96	1.41	2.43	19.8

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.

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MOVEMENT SUMMARY

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

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

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Existing 2025 AM

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		Arrival Flows		Deg. Satn	Aver. Delay	Level of Service	Aver. Back Of Queue	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed	
			[Total HV]	[Total HV]	[Total HV]	[Total HV]	v/c	sec		[Veh. veh	[Dist] m			km/h	
East: Cornelia Rd															
5	T1	All MCs	61	0.0	61	0.0	0.077	24.1	LOS B	1.2	8.3	0.69	0.53	0.69	10.2
6	R2	All MCs	307	3.1	307	3.1	*0.735	43.8	LOS D	8.8	63.0	0.97	0.86	1.02	5.5
Approach			368	2.6	368	2.6	0.735	40.5	LOS C	8.8	63.0	0.93	0.80	0.97	6.0
NorthEast: Cornelia Lane (Service Road)															
24b	L3	All MCs	1	0.0	1	0.0	0.001	5.8	LOS A	0.0	0.0	0.21	0.56	0.21	24.9
Approach			1	0.0	1	0.0	0.001	5.8	LOS A	0.0	0.0	0.21	0.56	0.21	24.9
North: Wentworth Avenue (Bridge)															
7	L2	All MCs	289	3.6	289	3.6	0.607	9.4	LOS A	16.8	119.9	0.72	0.82	0.72	29.3
9	R2	All MCs	567	1.9	567	1.9	0.607	27.0	LOS B	16.8	119.9	0.72	0.82	0.72	29.3
Approach			857	2.5	857	2.5	0.607	21.0	LOS B	16.8	119.9	0.72	0.82	0.72	29.3
West: Cornelia Road															
10b	L3	All MCs	1	0.0	1	0.0	0.797	10.1	LOS A	12.7	90.0	0.86	0.88	0.91	14.4
10	L2	All MCs	669	1.3	588	1.2	*0.797	27.8	LOS B	12.7	90.0	0.86	0.88	0.91	12.5
10a	L1	All MCs	5	20.0	5	19.7	0.357	55.9	LOS D	1.2	8.3	0.99	0.73	0.99	7.9
11	T1	All MCs	38	0.0	33	0.0	*0.357	52.6	LOS D	1.2	8.3	0.99	0.73	0.99	6.4
Approach			714	1.3	627	1.3	0.797	29.3	LOS C	12.7	90.0	0.87	0.88	0.92	11.9
All Vehicles			1940	2.1	1853	2.2	0.797	27.7	LOS B	16.8	119.9	0.81	0.83	0.84	18.7

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	Aver. Delay	Level of Service	AVERAGE BACK OF QUEUE		Prop. Que	Eff. Stop Rate	Travel Time	Travel Dist.	Aver. Speed
		ped/h	sec		[Ped ped	[Dist] m			sec	m	m/sec
East: Cornelia Rd											
P2	Full	6	44.2	LOS E	0.0	0.0	0.94	0.94	210.9	200.0	0.95
North: Wentworth Avenue (Bridge)											
P3	Full	29	44.2	LOS E	0.1	0.1	0.94	0.94	210.9	200.0	0.95
All Pedestrians		36	44.2	LOS E	0.1	0.1	0.94	0.94	210.9	200.0	0.95

MOVEMENT SUMMARY

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

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

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Existing 2025 AM
Site Category: (None)
Roundabout

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand Flows		Arrival Flows		Deg. Satn	Aver. Delay	Level of Service	Aver. Back Of Queue		Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed
			[Total HV] veh/h	%	[Total HV] veh/h	%				[Veh. veh	[Dist] m				
South: Junia Avenue															
1	L2	All MCs	35	3.0	35	3.0	0.338	7.5	LOS A	0.8	5.4	0.79	0.61	0.79	39.3
2	T1	All MCs	22	0.0	22	0.0	0.338	7.3	LOS A	0.8	5.4	0.79	0.61	0.79	39.7
3	R2	All MCs	160	1.3	160	1.3	0.338	10.7	LOS A	0.8	5.4	0.79	0.61	0.79	36.6
3u	U	All MCs	1	0.0	1	0.0	0.338	12.2	LOS A	0.8	5.4	0.79	0.61	0.79	40.7
Approach			218	1.4	218	1.4	0.338	9.9	LOS A	0.8	5.4	0.79	0.61	0.79	37.6
East: Cornelia Road															
4	L2	All MCs	65	0.0	65	0.0	0.461	5.0	LOS A	1.3	9.4	0.25	0.49	0.25	42.3
5	T1	All MCs	527	2.0	527	2.0	0.461	5.0	LOS A	1.3	9.4	0.25	0.49	0.25	40.8
6	R2	All MCs	3	0.0	3	0.0	0.461	8.5	LOS A	1.3	9.4	0.25	0.49	0.25	39.0
6u	U	All MCs	14	0.0	14	0.0	0.461	10.2	LOS A	1.3	9.4	0.25	0.49	0.25	32.0
Approach			609	1.7	609	1.7	0.461	5.1	LOS A	1.3	9.4	0.25	0.49	0.25	40.9
North: Junia Avenue															
7	L2	All MCs	42	0.0	42	0.0	0.214	8.3	LOS A	0.3	2.5	0.76	0.73	0.76	31.8
8	T1	All MCs	16	6.7	16	6.7	0.214	8.6	LOS A	0.3	2.5	0.76	0.73	0.76	39.8
9	R2	All MCs	23	0.0	23	0.0	0.214	11.6	LOS A	0.3	2.5	0.76	0.73	0.76	36.7
9u	U	All MCs	3	0.0	3	0.0	0.214	13.1	LOS A	0.3	2.5	0.76	0.73	0.76	36.7
Approach			84	1.3	84	1.3	0.214	9.4	LOS A	0.3	2.5	0.76	0.73	0.76	35.7
West: Cornelia Road															
10	L2	All MCs	9	0.0	9	0.0	1.211	203.9	LOS F	28.8	204.0	1.00	3.87	6.55	6.2
11	T1	All MCs	500	1.5	500	1.5	1.211	204.1	LOS F	28.8	204.0	1.00	3.87	6.55	3.1
12	R2	All MCs	27	3.8	27	3.8	1.211	207.6	LOS F	28.8	204.0	1.00	3.87	6.55	8.0
12u	U	All MCs	7	0.0	7	0.0	1.211	209.1	LOS F	28.8	204.0	1.00	3.87	6.55	5.5
Approach			544	1.5	544	1.5	1.211	204.3	LOS F	28.8	204.0	1.00	3.87	6.55	3.5
All Vehicles			1456	1.6	1456	1.6	1.211	80.6	LOS F	28.8	204.0	0.64	1.78	2.71	10.2

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

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

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Existing 2025 AM

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		Arrival Flows		Deg. Satn	Aver. Delay	Level of Service	Aver. Back Of Queue	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed	
			[Total HV]	%	[Total HV]	%	v/c	sec		[Veh. veh	Dist] m				km/h
South: Portico Parade															
1	L2	All MCs	347	1.8	347	1.8	*0.395	3.7	LOS A	1.1	7.9	0.21	0.58	0.21	23.5
2	T1	All MCs	81	5.2	81	5.2	0.243	38.5	LOS C	2.1	15.5	0.90	0.70	0.90	13.8
Approach			428	2.5	428	2.5	0.395	10.3	LOS A	2.1	15.5	0.34	0.60	0.34	17.3
North: Portico Parade															
8	T1	All MCs	140	4.5	140	4.5	*0.417	40.0	LOS C	3.8	27.6	0.93	0.75	0.93	11.9
9	R2	All MCs	21	15.0	21	15.0	0.232	48.8	LOS D	0.6	4.8	0.92	0.73	0.92	10.1
Approach			161	5.9	161	5.9	0.417	41.2	LOS C	3.8	27.6	0.93	0.75	0.93	11.6
West: Cornelia Rd															
10	L2	All MCs	33	3.2	32	3.3	0.264	5.3	LOS A	0.5	3.6	0.06	0.55	0.06	35.5
12	R2	All MCs	296	3.6	292	3.6	0.264	5.2	LOS A	0.5	3.6	0.06	0.55	0.06	26.4
Approach			328	3.5	324	3.6	0.264	5.2	LOS A	0.5	3.6	0.06	0.55	0.06	28.2
All Vehicles			918	3.4	913	3.5	0.417	13.9	LOS A	3.8	27.6	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	Aver. Delay	Level of Service	AVERAGE BACK OF QUEUE		Prop. Que	Eff. Stop Rate	Travel Time	Travel Dist.	Aver. Speed
		ped/h	sec		[Ped ped	Dist] m			sec	m	m/sec
North: Portico Parade											
P3	Full	51	44.3	LOS E	0.1	0.1	0.94	0.94	210.9	200.0	0.95
West: Cornelia Rd											
P4	Full	11	44.2	LOS E	0.0	0.0	0.94	0.94	210.9	200.0	0.95
All Pedestrians		61	44.3	LOS E	0.1	0.1	0.94	0.94	210.9	200.0	0.95

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)]

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

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

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

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand Flows		Arrival Flows		Deg. Satn	Aver. Delay	Level of Service	Aver. Back Of Queue [Veh. veh]	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h	
			[Total HV] veh/h	%	[Total HV] veh/h	%									
South: Portico Parade															
1	L2	All MCs	62	1.7	62	1.7	0.244	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	0.244	0.0	LOS A	0.0	0.0	0.00	0.07	0.00	47.5
Approach			461	2.5	461	2.5	0.244	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	432	3.9	0.230	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	49.9
Approach			436	3.9	432	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	0.077	5.7	LOS A	0.1	0.8	0.50	0.67	0.50	41.0
12	R2	All MCs	27	3.8	27	3.8	0.077	9.8	LOS A	0.1	0.8	0.50	0.67	0.50	41.2
Approach			57	1.9	57	1.9	0.077	7.6	LOS A	0.1	0.8	0.50	0.67	0.50	41.1
All Vehicles			954	3.1	949	3.1	0.244	0.8	NA	0.1	0.8	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.

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Project: C:\Users\imathew\OneDrive - Stantec\Projects\Toongabbie\Toongabbie\Des_in\Modelling\Toongabbie SIDRA\toongabbie.sip9

MOVEMENT SUMMARY

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

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

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Existing 2025 PM
Site Category: (None)
Roundabout

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand Flows		Arrival Flows		Deg. Satn	Aver. Delay	Level of Service	Aver. Back Of Queue		Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed
			[Total HV] veh/h	%	[Total HV] veh/h	%				[Veh. veh	[Dist] m				
SouthEast: Fitzwilliam Road															
21	L2	All MCs	483	1.5	483	1.5	0.687	12.9	LOS A	10.0	70.8	0.90	0.84	1.11	37.5
22	T1	All MCs	531	0.8	531	0.8	0.824	18.0	LOS B	5.0	35.1	1.00	1.01	1.50	47.9
23u	U	All MCs	6	0.0	6	0.0	0.824	24.1	LOS B	5.0	35.1	1.00	1.01	1.50	39.6
Approach			1020	1.1	1020	1.1	0.824	15.6	LOS B	10.0	70.8	0.95	0.93	1.32	45.4
NorthWest: Station Road															
28	T1	All MCs	484	1.5	484	1.5	0.697	15.2	LOS B	3.2	22.6	0.97	0.90	1.27	50.3
29	R2	All MCs	516	1.8	516	1.8	1.448	419.9	LOS F	43.5	309.3	1.00	6.80	14.83	7.4
29u	U	All MCs	12	0.0	12	0.0	1.448	421.7	LOS F	43.5	309.3	1.00	6.80	14.83	12.8
Approach			1012	1.7	1012	1.7	1.448	226.2	LOS F	43.5	309.3	0.98	3.97	8.34	13.9
SouthWest: Wentworth Avenue															
30	L2	All MCs	593	2.8	570	2.8	0.921	32.2	LOS C	7.7	55.0	1.00	1.42	2.22	39.6
32	R2	All MCs	538	1.4	518	1.4	0.822	24.4	LOS B	4.8	34.3	1.00	1.11	1.63	32.4
32u	U	All MCs	2	0.0	2	0.0	0.822	26.2	LOS B	4.8	34.3	1.00	1.11	1.63	20.3
Approach			1133	2.1	1090	2.1	0.921	28.5	LOS B	7.7	55.0	1.00	1.27	1.94	37.1
All Vehicles			3164	1.7	3121	1.7	1.448	88.4	LOS F	43.5	309.3	0.98	2.04	3.81	23.1

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.

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Project: C:\Users\imathew\OneDrive - Stantec\Projects\Toongabbie\Toongabbie\Des_in\Modelling\Toongabbie SIDRA\toongabbie.sip9

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: 9.1.6.228

Existing 2025 PM
Site Category: (None)
Roundabout

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand Flows		Arrival Flows		Deg. Satn	Aver. Delay	Level of Service	Aver. Back Of Queue	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed	
			[Total HV]	%	[Total HV]	%	v/c	sec		[Veh. veh	Dist] m			km/h	
NorthEast: Wentworth Avenue (NE)															
25	T1	All MCs	238	3.5	200	3.4	1.162	165.1	LOS F	23.2	165.0	1.00	3.28	5.82	9.1
26a	R1	All MCs	762	1.1	642	1.1	1.162	168.4	LOS F	23.2	165.0	1.00	3.28	5.82	4.0
26	R2	All MCs	1	0.0	1	0.0	1.162	169.4	LOS F	23.2	165.0	1.00	3.28	5.82	4.8
26u	U	All MCs	6	0.0	5	0.0	1.162	171.4	LOS F	23.2	165.0	1.00	3.28	5.82	4.0
Approach			1007	1.7	848	1.6	1.162	167.7	LOS F	23.2	165.0	1.00	3.28	5.82	5.3
NorthWest: Toongabbie Community Access Road															
27	L2	All MCs	18	0.0	18	0.0	0.178	17.9	LOS B	0.5	3.8	1.00	0.86	1.00	12.0
29	R2	All MCs	8	0.0	8	0.0	0.178	22.3	LOS B	0.5	3.8	1.00	0.86	1.00	30.0
29b	R3	All MCs	21	0.0	21	0.0	0.178	23.3	LOS B	0.5	3.8	1.00	0.86	1.00	12.0
29u	U	All MCs	1	0.0	1	0.0	0.178	24.3	LOS B	0.5	3.8	1.00	0.86	1.00	13.6
Approach			48	0.0	48	0.0	0.178	21.1	LOS B	0.5	3.8	1.00	0.86	1.00	16.9
West: Wentworth Ave (Bridge)															
10b	L3	All MCs	16	0.0	16	0.0	0.992	32.0	LOS C	15.7	111.4	1.00	1.48	2.16	22.4
10a	L1	All MCs	824	1.5	813	1.5	0.992	31.6	LOS C	15.7	111.4	1.00	1.48	2.16	23.4
12b	R3	All MCs	197	1.1	194	1.1	0.992	37.4	LOS C	15.7	111.4	1.00	1.48	2.16	31.6
12u	U	All MCs	1	0.0	1	0.0	0.992	38.3	LOS C	15.7	111.4	1.00	1.48	2.16	23.4
Approach			1038	1.4	1024	1.4	0.992	32.7	LOS C	15.7	111.4	1.00	1.48	2.16	25.4
SouthWest: Wentworth Avenue (SW)															
30b	L3	All MCs	133	2.4	133	2.4	1.121	148.4	LOS F	17.6	126.9	1.00	2.67	5.66	7.0
30	L2	All MCs	8	0.0	8	0.0	1.121	148.0	LOS F	17.6	126.9	1.00	2.67	5.66	7.7
31	T1	All MCs	282	4.1	282	4.1	1.121	148.5	LOS F	17.6	126.9	1.00	2.67	5.66	7.0
32u	U	All MCs	4	0.0	4	0.0	1.121	154.6	LOS F	17.6	126.9	1.00	2.67	5.66	12.1
Approach			427	3.4	427	3.4	1.121	148.5	LOS F	17.6	126.9	1.00	2.67	5.66	7.1
All Vehicles			2521	1.8	2347	2.0	1.162	102.3	LOS F	23.2	165.0	1.00	2.34	4.10	9.9

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.

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Project: C:\Users\imathew\OneDrive - Stantec\Projects\Toongabbie\Toongabbie\Des_in\Modelling\Toongabbie SIDRA\toongabbie.sip9

MOVEMENT SUMMARY

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

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

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Existing 2025 PM

Site Category: (None)

Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 110 seconds (Network Site User-Given Phase Times)

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand Flows		Arrival Flows		Deg. Satn	Aver. Delay	Level of Service	Aver. Back Of Queue	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed	
			[Total HV]	[Total HV]	[Total HV]	[Total HV]	v/c	sec		[Veh. veh	[Dist] m			km/h	
East: Cornelia Rd															
5	T1	All MCs	113	0.9	113	0.9	0.133	28.0	LOS B	2.5	17.9	0.73	0.58	0.73	8.9
6	R2	All MCs	321	1.3	321	1.3	*0.683	49.6	LOS D	9.2	65.0	0.99	0.84	0.99	4.9
Approach			434	1.2	434	1.2	0.683	44.0	LOS D	9.2	65.0	0.92	0.77	0.92	5.6
NorthEast: Cornelia Lane (Service Road)															
24b	L3	All MCs	11	0.0	11	0.0	0.010	6.0	LOS A	0.0	0.3	0.23	0.58	0.23	24.5
Approach			11	0.0	11	0.0	0.010	6.0	LOS A	0.0	0.3	0.23	0.58	0.23	24.5
North: Wentworth Avenue (Bridge)															
7	L2	All MCs	243	1.3	184	1.4	0.649	9.7	LOS A	15.5	109.5	0.74	0.83	0.74	27.9
9	R2	All MCs	673	1.3	508	1.3	*0.649	27.9	LOS B	15.5	109.5	0.74	0.83	0.74	27.9
Approach			916	1.3	692	1.3	0.649	23.1	LOS B	15.5	109.5	0.74	0.83	0.74	27.9
West: Cornelia Road															
10b	L3	All MCs	2	0.0	2	0.0	0.513	6.7	LOS A	10.6	75.3	0.51	0.72	0.51	21.6
10	L2	All MCs	716	1.5	701	1.5	0.513	13.7	LOS A	10.6	75.3	0.51	0.72	0.51	20.9
10a	L1	All MCs	4	0.0	4	0.0	0.656	59.8	LOS E	3.8	26.6	1.00	0.83	1.07	7.5
11	T1	All MCs	109	1.0	107	1.0	*0.656	56.5	LOS D	3.8	26.6	1.00	0.83	1.07	6.1
Approach			832	1.4	815	1.4	0.656	19.5	LOS B	10.6	75.3	0.57	0.74	0.58	16.1
All Vehicles			2192	1.3	1951	1.5	0.683	26.2	LOS B	15.5	109.5	0.71	0.78	0.71	17.9

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	Aver. Delay	Level of Service	AVERAGE BACK OF QUEUE		Prop. Que	Eff. Stop Rate	Travel Time	Travel Dist.	Aver. Speed
		ped/h	sec		[Ped ped	[Dist] m			sec	m	m/sec
East: Cornelia Rd											
P2	Full	16	49.2	LOS E	0.0	0.0	0.95	0.95	215.9	200.0	0.93
North: Wentworth Avenue (Bridge)											
P3	Full	41	49.2	LOS E	0.1	0.1	0.95	0.95	215.9	200.0	0.93
All Pedestrians		57	49.2	LOS E	0.1	0.1	0.95	0.95	215.9	200.0	0.93

MOVEMENT SUMMARY

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

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

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Existing 2025 PM
Site Category: (None)
Roundabout

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand Flows		Arrival Flows		Deg. Satn	Aver. Delay	Level of Service	Aver. Back Of Queue		Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed
			[Total HV] veh/h	%	[Total HV] veh/h	%				[Veh. veh	[Dist] m				
South: Junia Avenue															
1	L2	All MCs	58	0.0	58	0.0	0.366	8.1	LOS A	0.9	6.4	0.82	0.67	0.82	39.2
2	T1	All MCs	16	0.0	16	0.0	0.366	8.0	LOS A	0.9	6.4	0.82	0.67	0.82	39.3
3	R2	All MCs	149	0.0	149	0.0	0.366	11.4	LOS A	0.9	6.4	0.82	0.67	0.82	36.2
3u	U	All MCs	1	0.0	1	0.0	0.366	12.9	LOS A	0.9	6.4	0.82	0.67	0.82	40.4
Approach			224	0.0	224	0.0	0.366	10.3	LOS A	0.9	6.4	0.82	0.67	0.82	37.4
East: Cornelia Road															
4	L2	All MCs	84	0.0	67	0.0	0.707	6.4	LOS A	2.9	20.6	0.52	0.57	0.52	40.7
5	T1	All MCs	664	1.4	529	1.4	0.707	6.5	LOS A	2.9	20.6	0.52	0.57	0.52	38.5
6	R2	All MCs	13	0.0	10	0.0	0.707	10.0	LOS A	2.9	20.6	0.52	0.57	0.52	37.1
6u	U	All MCs	48	0.0	39	0.0	0.707	11.6	LOS A	2.9	20.6	0.52	0.57	0.52	28.7
Approach			809	1.2	645	1.2	0.707	6.8	LOS A	2.9	20.6	0.52	0.57	0.52	38.5
North: Junia Avenue															
7	L2	All MCs	38	0.0	38	0.0	0.187	10.2	LOS A	0.4	2.8	0.88	0.77	0.88	30.1
8	T1	All MCs	19	0.0	19	0.0	0.187	10.1	LOS A	0.4	2.8	0.88	0.77	0.88	38.8
9	R2	All MCs	15	0.0	15	0.0	0.187	13.5	LOS A	0.4	2.8	0.88	0.77	0.88	35.3
9u	U	All MCs	1	0.0	1	0.0	0.187	15.0	LOS B	0.4	2.8	0.88	0.77	0.88	35.5
Approach			73	0.0	73	0.0	0.187	10.9	LOS A	0.4	2.8	0.88	0.77	0.88	34.6
West: Cornelia Road															
10	L2	All MCs	15	0.0	15	0.0	1.010	41.8	LOS C	13.9	98.5	1.00	1.68	2.34	20.3
11	T1	All MCs	615	1.9	615	1.9	1.010	42.0	LOS C	13.9	98.5	1.00	1.68	2.34	12.6
12	R2	All MCs	61	0.0	61	0.0	1.010	45.3	LOS D	13.9	98.5	1.00	1.68	2.34	23.9
12u	U	All MCs	7	0.0	7	0.0	1.010	46.9	LOS D	13.9	98.5	1.00	1.68	2.34	19.1
Approach			698	1.7	698	1.7	1.010	42.3	LOS C	13.9	98.5	1.00	1.68	2.34	14.3
All Vehicles			1804	1.2	1639	1.3	1.010	22.6	LOS B	13.9	98.5	0.78	1.07	1.35	24.3

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

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

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Existing 2025 PM

Site Category: (None)

Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 110 seconds (Network Site User-Given Phase Times)

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand Flows		Arrival Flows		Deg. Satn	Aver. Delay	Level of Service	Aver. Back Of Queue		Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed
			[Total HV]	%	[Total HV]	%	v/c	sec		[Veh. veh	Dist] m				km/h
South: Portico Parade															
1	L2	All MCs	411	0.8	411	0.8	*0.456	4.1	LOS A	1.9	13.2	0.26	0.60	0.26	22.4
2	T1	All MCs	88	3.6	88	3.6	0.143	27.9	LOS B	2.0	14.7	0.74	0.59	0.74	17.2
Approach			499	1.3	499	1.3	0.456	8.3	LOS A	2.0	14.7	0.34	0.60	0.34	19.5
North: Portico Parade															
8	T1	All MCs	104	2.0	104	2.0	0.167	28.1	LOS B	2.4	17.2	0.75	0.60	0.75	15.4
9	R2	All MCs	23	9.1	23	9.1	*0.196	41.8	LOS C	0.6	4.8	0.82	0.73	0.82	11.4
Approach			127	3.3	127	3.3	0.196	30.6	LOS C	2.4	17.2	0.76	0.62	0.76	14.4
West: Cornelia Rd															
10	L2	All MCs	51	4.2	42	4.3	0.267	25.4	LOS B	6.1	43.2	0.69	0.70	0.69	20.9
12	R2	All MCs	302	0.7	251	0.7	0.267	21.7	LOS B	6.1	43.2	0.69	0.70	0.69	10.4
Approach			353	1.2	293	1.2	0.267	22.2	LOS B	6.1	43.2	0.69	0.70	0.69	12.4
All Vehicles			979	1.5	919	1.6	0.456	15.8	LOS B	6.1	43.2	0.51	0.63	0.51	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	Aver. Delay	Level of Service	AVERAGE BACK OF QUEUE		Prop. Que	Eff. Stop Rate	Travel Time	Travel Dist.	Aver. Speed
		ped/h	sec		[Ped ped	Dist] m			sec	m	m/sec
North: Portico Parade											
P3	Full	231	49.6	LOS E	0.7	0.7	0.95	0.95	216.3	200.0	0.92
West: Cornelia Rd											
P4	Full	252	49.7	LOS E	0.8	0.8	0.96	0.96	216.4	200.0	0.92
All Pedestrians		482	49.7	LOS E	0.8	0.8	0.96	0.96	216.3	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: 6 [6. Aurelia St / Portico Pde (Site Folder: 2025 Base - PM)]

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

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

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

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand Flows		Arrival Flows		Deg. Satn	Aver. Delay	Level of Service	Aver. Back Of Queue [Veh. veh]	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h	
			[Total HV] veh/h	%	[Total HV] veh/h	%									
South: Portico Parade															
1	L2	All MCs	120	0.0	120	0.0	0.277	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	0.277	0.0	LOS A	0.0	0.0	0.00	0.12	0.00	46.0
Approach			529	1.0	529	1.0	0.277	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	355	1.1	0.184	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	49.9
Approach			406	1.0	355	1.1	0.184	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	0.157	5.8	LOS A	0.2	1.7	0.48	0.67	0.48	41.6
12	R2	All MCs	48	0.0	48	0.0	0.157	9.2	LOS A	0.2	1.7	0.48	0.67	0.48	41.7
Approach			138	0.8	138	0.8	0.157	7.0	LOS A	0.2	1.7	0.48	0.67	0.48	41.7
All Vehicles			1074	1.0	1022	1.0	0.277	1.5	NA	0.2	1.7	0.06	0.15	0.06	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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2027 Future Base

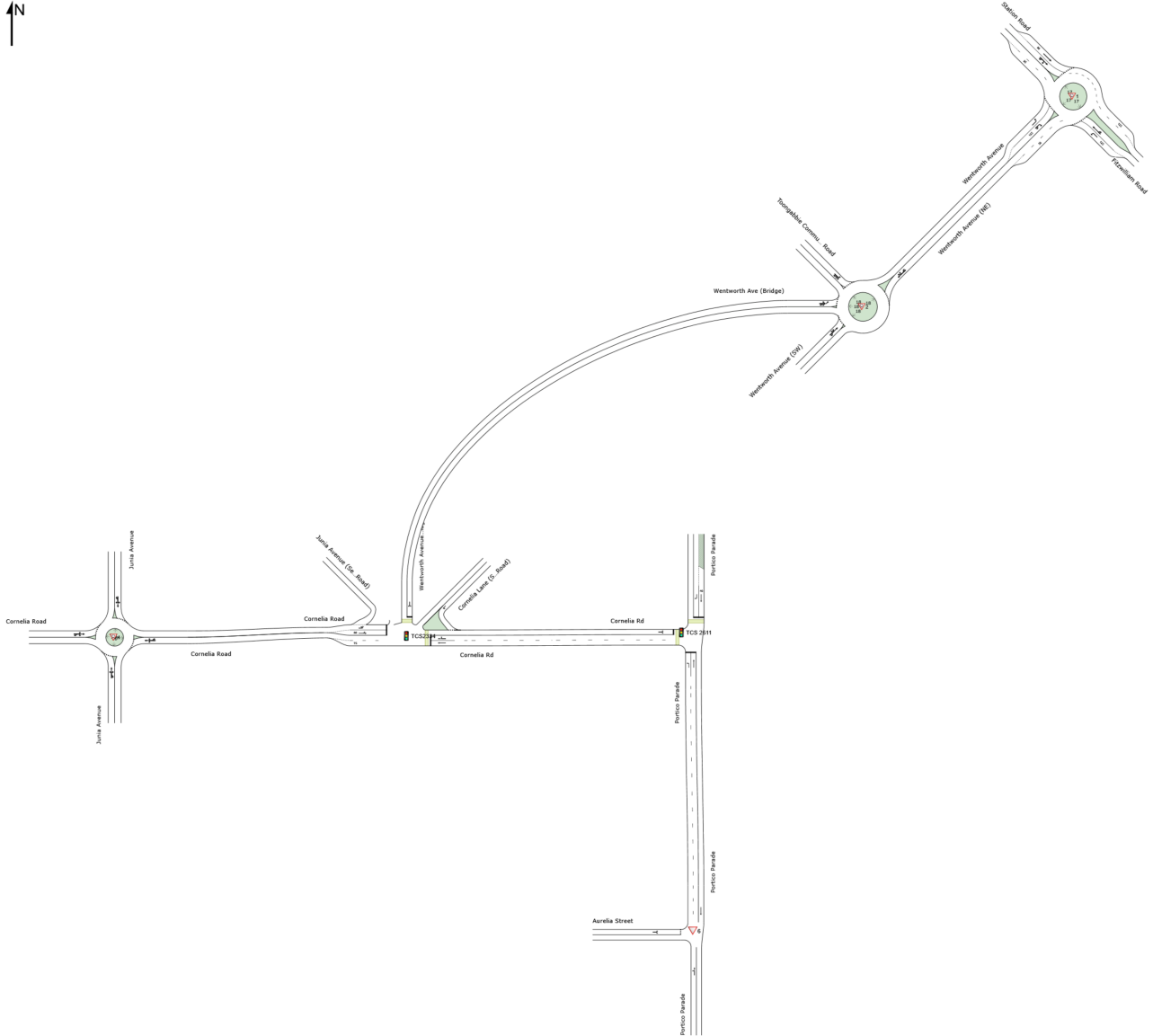
NETWORK LAYOUT

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
▽4	NA	4. Cornelia Rd / Junia Ave
TCS 2611	NA	5. Cornelia Rd / Portico Pde
▽6	NA	6. Aurelia St / Portico Pde

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MOVEMENT SUMMARY

Site: 1 [1. Station Rd / Fitzwilliam Rd / Wentworth Ave (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		Arrival Flows		Deg. Satn	Aver. Delay	Level of Service	Aver. Back Of Queue		Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed
			[Total HV]	%	[Total HV]	%				[Veh. veh	[Dist] m				
SouthEast: Fitzwilliam Road															
21	L2	All MCs	527	1.2	527	1.2	0.641	12.7	LOS A	2.8	19.8	0.93	0.83	1.13	38.8
22	T1	All MCs	534	3.7	534	3.7	0.570	8.8	LOS A	2.3	16.5	0.88	0.75	0.98	52.7
23u	U	All MCs	2	0.0	2	0.0	0.570	14.7	LOS B	2.3	16.5	0.88	0.75	0.98	46.5
Approach			1063	2.5	1063	2.5	0.641	10.7	LOS A	2.8	19.8	0.90	0.79	1.05	49.1
NorthWest: Station Road															
28	T1	All MCs	381	2.8	381	2.8	0.742	10.5	LOS A	3.7	27.0	0.80	0.73	0.89	52.4
29	R2	All MCs	500	5.3	500	5.3	0.742	18.1	LOS B	3.7	27.0	0.94	0.89	1.25	45.9
29u	U	All MCs	13	8.3	13	8.3	0.742	20.2	LOS B	3.7	27.0	0.94	0.89	1.25	50.7
Approach			894	4.2	894	4.2	0.742	14.9	LOS B	3.7	27.0	0.88	0.82	1.10	49.0
SouthWest: Wentworth Avenue															
30	L2	All MCs	795	3.4	723	3.5	0.782	14.3	LOS A	4.8	34.8	1.00	0.98	1.43	48.1
32	R2	All MCs	404	0.8	367	0.8	0.510	13.9	LOS A	1.7	12.2	0.86	0.80	0.95	39.4
32u	U	All MCs	2	50.0	2	50.6	0.510	18.6	LOS B	1.7	12.2	0.86	0.80	0.95	28.3
Approach			1201	2.6	1092	2.7	0.782	14.2	LOS A	4.8	34.8	0.95	0.92	1.27	46.1
All Vehicles			3158	3.0	3049	3.1	0.782	13.2	LOS A	4.8	34.8	0.91	0.84	1.14	48.0

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.

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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		Arrival Flows		Deg. Satn	Aver. Delay	Level of Service	Aver. Back Of Queue	Prop. Que		Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed
			[Total HV]	[Total HV]	[Total HV]	[Total HV]					[Veh. veh	[Dist] m			
			veh/h	%	veh/h	%	v/c	sec							km/h
NorthEast: Wentworth Avenue (NE)															
25	T1	All MCs	304	5.2	304	5.2	0.830	7.2	LOS A	5.7	41.2	0.92	0.61	0.95	42.9
26a	R1	All MCs	724	2.5	724	2.5	0.830	10.5	LOS A	5.7	41.2	0.92	0.61	0.95	31.9
26	R2	All MCs	2	0.0	2	0.0	0.830	11.4	LOS A	5.7	41.2	0.92	0.61	0.95	27.7
26u	U	All MCs	7	0.0	7	0.0	0.830	13.4	LOS A	5.7	41.2	0.92	0.61	0.95	31.9
Approach			1038	3.2	1038	3.2	0.830	9.5	LOS A	5.7	41.2	0.92	0.61	0.95	36.7
NorthWest: Toongabbie Community Access Road															
27	L2	All MCs	2	0.0	2	0.0	0.027	15.8	LOS B	0.1	0.6	0.97	0.79	0.97	12.6
29	R2	All MCs	1	0.0	1	0.0	0.027	20.2	LOS B	0.1	0.6	0.97	0.79	0.97	30.4
29b	R3	All MCs	3	33.3	3	33.3	0.027	24.0	LOS B	0.1	0.6	0.97	0.79	0.97	12.6
29u	U	All MCs	1	0.0	1	0.0	0.027	22.2	LOS B	0.1	0.6	0.97	0.79	0.97	14.0
Approach			7	14.3	7	14.3	0.027	20.8	LOS B	0.1	0.6	0.97	0.79	0.97	16.8
West: Wentworth Ave (Bridge)															
10b	L3	All MCs	4	0.0	4	0.0	1.050	69.5	LOS E	20.9	148.3	1.00	2.19	3.89	14.1
10a	L1	All MCs	814	2.2	743	2.2	1.050	69.2	LOS E	20.9	148.3	1.00	2.19	3.89	13.8
12b	R3	All MCs	168	0.0	154	0.0	1.050	74.8	LOS F	20.9	148.3	1.00	2.19	3.89	21.0
12u	U	All MCs	1	0.0	1	0.0	1.050	75.8	LOS F	20.9	148.3	1.00	2.19	3.89	13.8
Approach			987	1.8	902	1.9	1.050	70.1	LOS E	20.9	148.3	1.00	2.19	3.89	15.2
SouthWest: Wentworth Avenue (SW)															
30b	L3	All MCs	138	1.5	138	1.5	1.010	72.2	LOS F	12.1	87.0	1.00	2.03	3.70	12.9
30	L2	All MCs	1	0.0	1	0.0	1.010	71.8	LOS F	12.1	87.0	1.00	2.03	3.70	13.4
31	T1	All MCs	374	3.1	374	3.1	1.010	72.3	LOS F	12.1	87.0	1.00	2.03	3.70	12.9
32u	U	All MCs	1	0.0	1	0.0	1.010	78.4	LOS F	12.1	87.0	1.00	2.03	3.70	20.3
Approach			514	2.7	514	2.7	1.010	72.3	LOS F	12.1	87.0	1.00	2.03	3.70	12.9
All Vehicles			2546	2.6	2461	2.7	1.050	44.9	LOS D	20.9	148.3	0.97	1.48	2.61	18.5

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 (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)

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		Arrival Flows		Deg. Satn	Aver. Delay	Level of Service	Aver. Back Of Queue		Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed
			[Total HV]	%	[Total HV]	%				[Veh. veh	Dist]				
			veh/h	%	veh/h	%	v/c	sec		m					km/h
East: Cornelia Rd															
5	T1	All MCs	62	0.0	62	0.0	0.072	21.5	LOS B	1.1	7.8	0.64	0.49	0.64	11.2
6	R2	All MCs	311	3.1	311	3.1	*0.692	44.2	LOS D	8.8	63.0	0.98	0.85	1.00	5.5
Approach			373	2.5	373	2.5	0.692	40.4	LOS C	8.8	63.0	0.92	0.79	0.94	6.0
NorthEast: Cornelia Lane (Service Road)															
24b	L3	All MCs	1	0.0	1	0.0	0.001	5.9	LOS A	0.0	0.0	0.21	0.56	0.21	24.8
Approach			1	0.0	1	0.0	0.001	5.9	LOS A	0.0	0.0	0.21	0.56	0.21	24.8
North: Wentworth Avenue (Bridge)															
7	L2	All MCs	292	3.6	291	3.6	0.659	9.9	LOS A	18.6	132.6	0.79	0.84	0.79	27.3
9	R2	All MCs	574	1.8	573	1.8	0.659	31.3	LOS C	18.6	132.6	0.79	0.84	0.79	27.3
Approach			865	2.4	864	2.4	0.659	24.1	LOS B	18.6	132.6	0.79	0.84	0.79	27.3
West: Cornelia Road															
10b	L3	All MCs	1	0.0	1	0.0	0.883	22.8	LOS B	12.7	90.0	0.96	0.99	1.15	10.8
10	L2	All MCs	676	1.2	590	1.2	*0.883	44.8	LOS D	12.7	90.0	0.96	0.99	1.15	8.8
10a	L1	All MCs	5	20.0	5	19.7	0.310	56.7	LOS E	1.1	8.1	0.98	0.73	0.98	8.1
11	T1	All MCs	38	0.0	33	0.0	*0.310	53.4	LOS D	1.1	8.1	0.98	0.73	0.98	6.6
Approach			720	1.3	628	1.3	0.883	45.3	LOS D	12.7	90.0	0.96	0.98	1.14	8.3
All Vehicles			1959	2.0	1866	2.1	0.883	34.5	LOS C	18.6	132.6	0.87	0.88	0.94	16.0

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	Aver. Delay	Level of Service	AVERAGE BACK OF QUEUE		Prop. Que	Eff. Stop Rate	Travel Time	Travel Dist.	Aver. Speed
					[Ped ped	Dist]					
			ped/h	sec		m		sec	m	m/sec	
East: Cornelia Rd											
P2	Full	6	44.2	LOS E	0.0	0.0	0.94	0.94	210.9	200.0	0.95
North: Wentworth Avenue (Bridge)											
P3	Full	29	44.2	LOS E	0.1	0.1	0.94	0.94	210.9	200.0	0.95
All Pedestrians		36	44.2	LOS E	0.1	0.1	0.94	0.94	210.9	200.0	0.95

MOVEMENT SUMMARY

Site: 4 [4. Cornelia Rd / Junia Ave (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		Arrival Flows		Deg. Satn	Aver. Delay	Level of Service	Aver. Back Of Queue	Prop. Que		Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed
			[Total HV]	%	[Total HV]	%					[Veh. veh	Dist]			
South: Junia Avenue															
1	L2	All MCs	35	3.0	35	3.0	0.341	7.7	LOS A	0.8	5.7	0.81	0.60	0.81	39.2
2	T1	All MCs	22	0.0	22	0.0	0.341	7.5	LOS A	0.8	5.7	0.81	0.60	0.81	39.5
3	R2	All MCs	162	1.3	162	1.3	0.341	11.0	LOS A	0.8	5.7	0.81	0.60	0.81	36.4
3u	U	All MCs	1	0.0	1	0.0	0.341	12.4	LOS A	0.8	5.7	0.81	0.60	0.81	40.6
Approach			220	1.4	220	1.4	0.341	10.1	LOS A	0.8	5.7	0.81	0.60	0.81	37.4
East: Cornelia Road															
4	L2	All MCs	66	0.0	66	0.0	0.465	5.0	LOS A	1.3	9.5	0.24	0.49	0.24	42.3
5	T1	All MCs	533	2.0	532	2.0	0.465	5.0	LOS A	1.3	9.5	0.24	0.49	0.24	40.8
6	R2	All MCs	3	0.0	3	0.0	0.465	8.5	LOS A	1.3	9.5	0.24	0.49	0.24	39.0
6u	U	All MCs	14	0.0	14	0.0	0.465	10.2	LOS A	1.3	9.5	0.24	0.49	0.24	32.1
Approach			616	1.7	615	1.7	0.465	5.1	LOS A	1.3	9.5	0.24	0.49	0.24	41.0
North: Junia Avenue															
7	L2	All MCs	42	0.0	42	0.0	0.214	8.3	LOS A	0.3	2.5	0.76	0.73	0.76	31.8
8	T1	All MCs	16	6.7	16	6.7	0.214	8.6	LOS A	0.3	2.5	0.76	0.73	0.76	39.8
9	R2	All MCs	23	0.0	23	0.0	0.214	11.6	LOS A	0.3	2.5	0.76	0.73	0.76	36.7
9u	U	All MCs	3	0.0	3	0.0	0.214	13.1	LOS A	0.3	2.5	0.76	0.73	0.76	36.7
Approach			84	1.3	84	1.3	0.214	9.5	LOS A	0.3	2.5	0.76	0.73	0.76	35.7
West: Cornelia Road															
10	L2	All MCs	9	0.0	9	0.0	1.227	217.9	LOS F	30.4	215.4	1.00	4.05	6.89	5.8
11	T1	All MCs	505	1.5	505	1.5	1.227	218.1	LOS F	30.4	215.4	1.00	4.05	6.89	2.9
12	R2	All MCs	27	3.8	27	3.8	1.227	221.6	LOS F	30.4	215.4	1.00	4.05	6.89	7.5
12u	U	All MCs	7	0.0	7	0.0	1.227	223.1	LOS F	30.4	215.4	1.00	4.05	6.89	5.2
Approach			549	1.5	549	1.5	1.227	218.3	LOS F	30.4	215.4	1.00	4.05	6.89	3.3
All Vehicles			1469	1.6	1468	1.6	1.227	85.9	LOS F	30.4	215.4	0.64	1.85	2.84	9.7

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.

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. Cornelia Rd / Portico Pde (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)

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		Arrival Flows		Deg. Satn	Aver. Delay	Level of Service	Aver. Back Of Queue		Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed
			[Total HV]	[Total HV]	[Total HV]	[Total HV]				[Veh. veh]	[Dist] m				
			veh/h	%	veh/h	%	v/c	sec							km/h
South: Portico Parade															
1	L2	All MCs	351	1.8	351	1.8	*0.398	3.7	LOS A	1.1	8.0	0.21	0.58	0.21	23.5
2	T1	All MCs	82	5.1	82	5.1	0.246	38.6	LOS C	2.1	15.7	0.90	0.70	0.90	13.8
Approach			433	2.4	433	2.4	0.398	10.3	LOS A	2.1	15.7	0.34	0.60	0.34	17.3
North: Portico Parade															
8	T1	All MCs	141	4.5	141	4.5	*0.420	40.0	LOS C	3.8	27.8	0.93	0.75	0.93	11.9
9	R2	All MCs	21	15.0	21	15.0	0.233	48.9	LOS D	0.6	4.8	0.92	0.73	0.92	10.1
Approach			162	5.8	162	5.8	0.420	41.2	LOS C	3.8	27.8	0.93	0.75	0.93	11.6
West: Cornelia Rd															
10	L2	All MCs	33	3.2	32	3.3	0.266	10.8	LOS A	3.2	23.2	0.36	0.65	0.36	29.8
12	R2	All MCs	299	3.5	294	3.6	0.266	9.7	LOS A	3.2	23.2	0.36	0.65	0.36	18.5
Approach			332	3.5	326	3.5	0.266	9.8	LOS A	3.2	23.2	0.36	0.65	0.36	20.4
All Vehicles			926	3.4	921	3.4	0.420	15.6	LOS B	3.8	27.8	0.45	0.65	0.45	15.8

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	Aver. Delay	Level of Service	AVERAGE BACK OF QUEUE		Prop. Que	Eff. Stop Rate	Travel Time	Travel Dist.	Aver. Speed
					[Ped ped]	[Dist] m					
		ped/h	sec					sec	m	m/sec	
North: Portico Parade											
P3	Full	51	44.3	LOS E	0.1	0.1	0.94	0.94	210.9	200.0	0.95
West: Cornelia Rd											
P4	Full	11	44.2	LOS E	0.0	0.0	0.94	0.94	210.9	200.0	0.95
All Pedestrians		61	44.3	LOS E	0.1	0.1	0.94	0.94	210.9	200.0	0.95

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)]

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

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

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

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand Flows		Arrival Flows		Deg. Satn	Aver. Delay	Level of Service	Aver. Back Of Queue [Veh. veh]	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h	
			[Total HV] veh/h	%	[Total HV] veh/h	%									
South: Portico Parade															
1	L2	All MCs	63	1.7	63	1.7	0.247	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	0.247	0.0	LOS A	0.0	0.0	0.00	0.07	0.00	47.5
Approach			466	2.5	466	2.5	0.247	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	435	3.9	0.232	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	49.9
Approach			440	3.8	435	3.9	0.232	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	0.1	0.8	0.50	0.67	0.50	41.1
12	R2	All MCs	27	3.8	27	3.8	0.076	9.6	LOS A	0.1	0.8	0.50	0.67	0.50	41.2
Approach			57	1.9	57	1.9	0.076	7.6	LOS A	0.1	0.8	0.50	0.67	0.50	41.2
All Vehicles			963	3.1	958	3.1	0.247	0.8	NA	0.1	0.8	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.

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MOVEMENT SUMMARY

Site: 1 [1. Station Rd / Fitzwilliam Rd / Wentworth Ave (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		Arrival Flows		Deg. Satn	Aver. Delay	Level of Service	Aver. Back Of Queue		Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed
			[Total HV] veh/h	%	[Total HV] veh/h	%				[Veh. veh	[Dist] m				
SouthEast: Fitzwilliam Road															
21	L2	All MCs	488	1.5	488	1.5	0.697	13.2	LOS A	11.0	77.7	0.91	0.85	1.14	37.2
22	T1	All MCs	536	0.8	536	0.8	0.835	18.8	LOS B	5.2	36.8	1.00	1.04	1.54	47.5
23u	U	All MCs	6	0.0	6	0.0	0.835	24.9	LOS B	5.2	36.8	1.00	1.04	1.54	39.1
Approach			1031	1.1	1031	1.1	0.835	16.2	LOS B	11.0	77.7	0.96	0.95	1.35	45.1
NorthWest: Station Road															
28	T1	All MCs	489	1.5	489	1.5	0.698	15.0	LOS B	3.2	22.7	0.96	0.90	1.27	50.4
29	R2	All MCs	521	1.8	521	1.8	1.450	421.8	LOS F	44.1	313.3	1.00	6.82	14.89	7.3
29u	U	All MCs	12	0.0	12	0.0	1.450	423.6	LOS F	44.1	313.3	1.00	6.82	14.89	12.8
Approach			1022	1.6	1022	1.6	1.450	227.0	LOS F	44.1	313.3	0.98	3.98	8.36	13.8
SouthWest: Wentworth Avenue															
30	L2	All MCs	598	2.8	562	2.7	0.913	31.1	LOS C	7.3	52.6	1.00	1.39	2.16	40.0
32	R2	All MCs	543	1.4	511	1.4	0.816	24.1	LOS B	4.7	33.4	1.00	1.10	1.61	32.5
32u	U	All MCs	2	0.0	2	0.0	0.816	26.0	LOS B	4.7	33.4	1.00	1.10	1.61	20.4
Approach			1143	2.1	1075	2.1	0.913	27.8	LOS B	7.3	52.6	1.00	1.25	1.90	37.4
All Vehicles			3196	1.6	3127	1.7	1.450	89.1	LOS F	44.1	313.3	0.98	2.04	3.83	23.0

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.

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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		Arrival Flows		Deg. Satn	Aver. Delay	Level of Service	Aver. Back Of Queue	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed	
			[Total HV]	[Total HV]	[Total HV]	[Total HV]	v/c	sec		[Veh. veh	Dist]			km/h	
			veh/h	%	veh/h	%				m					
NorthEast: Wentworth Avenue (NE)															
25	T1	All MCs	240	3.5	202	3.3	1.167	168.8	LOS F	23.2	165.0	1.00	3.32	5.90	9.0
26a	R1	All MCs	769	1.1	647	1.1	1.167	172.1	LOS F	23.2	165.0	1.00	3.32	5.90	3.9
26	R2	All MCs	1	0.0	1	0.0	1.167	173.1	LOS F	23.2	165.0	1.00	3.32	5.90	4.7
26u	U	All MCs	6	0.0	5	0.0	1.167	175.1	LOS F	23.2	165.0	1.00	3.32	5.90	3.9
Approach			1017	1.7	855	1.6	1.167	171.4	LOS F	23.2	165.0	1.00	3.32	5.90	5.2
NorthWest: Toongabbie Community Access Road															
27	L2	All MCs	18	0.0	18	0.0	0.174	17.4	LOS B	0.5	3.7	1.00	0.86	1.00	12.2
29	R2	All MCs	8	0.0	8	0.0	0.174	21.8	LOS B	0.5	3.7	1.00	0.86	1.00	30.3
29b	R3	All MCs	21	0.0	21	0.0	0.174	22.8	LOS B	0.5	3.7	1.00	0.86	1.00	12.2
29u	U	All MCs	1	0.0	1	0.0	0.174	23.8	LOS B	0.5	3.7	1.00	0.86	1.00	13.8
Approach			48	0.0	48	0.0	0.174	20.7	LOS B	0.5	3.7	1.00	0.86	1.00	17.2
West: Wentworth Ave (Bridge)															
10b	L3	All MCs	16	0.0	15	0.0	0.982	27.9	LOS B	14.2	100.8	1.00	1.37	1.98	24.0
10a	L1	All MCs	833	1.5	805	1.5	0.982	27.5	LOS B	14.2	100.8	1.00	1.37	1.98	25.3
12b	R3	All MCs	199	1.1	192	1.0	0.982	33.3	LOS C	14.2	100.8	1.00	1.37	1.98	33.4
12u	U	All MCs	1	0.0	1	0.0	0.982	34.2	LOS C	14.2	100.8	1.00	1.37	1.98	25.3
Approach			1048	1.4	1013	1.4	0.982	28.6	LOS C	14.2	100.8	1.00	1.37	1.98	27.3
SouthWest: Wentworth Avenue (SW)															
30b	L3	All MCs	134	2.4	134	2.4	1.137	160.4	LOS F	18.8	135.4	1.00	2.78	5.99	6.6
30	L2	All MCs	8	0.0	8	0.0	1.137	160.0	LOS F	18.8	135.4	1.00	2.78	5.99	7.2
31	T1	All MCs	285	4.1	285	4.1	1.137	160.4	LOS F	18.8	135.4	1.00	2.78	5.99	6.6
32u	U	All MCs	4	0.0	4	0.0	1.137	166.6	LOS F	18.8	135.4	1.00	2.78	5.99	11.4
Approach			432	3.4	432	3.4	1.137	160.5	LOS F	18.8	135.4	1.00	2.78	5.99	6.6
All Vehicles			2545	1.8	2348	2.0	1.167	104.7	LOS F	23.2	165.0	1.00	2.33	4.13	9.7

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.

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 (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)

Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 110 seconds (Network User-Given Cycle Time)

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand Flows		Arrival Flows		Deg. Satn	Aver. Delay	Level of Service	Aver. Back Of Queue		Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed
			[Total HV] veh/h	%	[Total HV] veh/h	%				[Veh. veh	[Dist] m				
East: Cornelia Rd															
5	T1	All MCs	114	0.9	114	0.9	0.131	27.1	LOS B	2.5	17.7	0.72	0.57	0.72	9.2
6	R2	All MCs	324	1.3	324	1.3	*0.651	48.5	LOS D	9.2	65.0	0.98	0.84	0.98	5.0
Approach			438	1.2	438	1.2	0.651	42.9	LOS D	9.2	65.0	0.91	0.77	0.91	5.7
NorthEast: Cornelia Lane (Service Road)															
24b	L3	All MCs	11	0.0	11	0.0	0.009	6.0	LOS A	0.0	0.3	0.23	0.58	0.23	24.5
Approach			11	0.0	11	0.0	0.009	6.0	LOS A	0.0	0.3	0.23	0.58	0.23	24.5
North: Wentworth Avenue (Bridge)															
7	L2	All MCs	245	1.3	184	1.4	0.662	9.7	LOS A	15.9	112.5	0.76	0.83	0.76	27.4
9	R2	All MCs	680	1.2	510	1.2	*0.662	29.0	LOS C	15.9	112.5	0.76	0.83	0.76	27.4
Approach			925	1.3	695	1.3	0.662	23.9	LOS B	15.9	112.5	0.76	0.83	0.76	27.4
West: Cornelia Road															
10b	L3	All MCs	2	0.0	2	0.0	0.506	6.7	LOS A	10.6	75.5	0.51	0.72	0.51	21.3
10	L2	All MCs	723	1.5	692	1.5	0.506	14.1	LOS A	10.6	75.5	0.51	0.72	0.51	20.5
10a	L1	All MCs	4	0.0	4	0.0	0.632	60.0	LOS E	3.7	26.1	1.00	0.81	1.05	7.5
11	T1	All MCs	111	1.0	106	1.0	*0.632	56.7	LOS E	3.7	26.1	1.00	0.81	1.05	6.0
Approach			840	1.4	804	1.4	0.632	19.9	LOS B	10.6	75.5	0.58	0.74	0.59	15.9
All Vehicles			2214	1.3	1947	1.5	0.662	26.4	LOS B	15.9	112.5	0.72	0.78	0.72	17.8

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	Aver. Delay	Level of Service	AVERAGE BACK OF QUEUE		Prop. Que	Eff. Stop Rate	Travel Time	Travel Dist.	Aver. Speed
					[Ped ped	[Dist] m					
East: Cornelia Rd											
P2	Full	16	49.2	LOS E	0.0	0.0	0.95	0.95	215.9	200.0	0.93
North: Wentworth Avenue (Bridge)											
P3	Full	41	49.2	LOS E	0.1	0.1	0.95	0.95	215.9	200.0	0.93
All Pedestrians		57	49.2	LOS E	0.1	0.1	0.95	0.95	215.9	200.0	0.93

MOVEMENT SUMMARY

Site: 4 [4. Cornelia Rd / Junia Ave (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		Arrival Flows		Deg. Satn	Aver. Delay	Level of Service	Aver. Back Of Queue		Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed
			[Total HV] veh/h	%	[Total HV] veh/h	%				[Veh. veh	[Dist] m				
South: Junia Avenue															
1	L2	All MCs	59	0.0	59	0.0	0.368	8.1	LOS A	0.9	6.5	0.82	0.67	0.82	39.2
2	T1	All MCs	16	0.0	16	0.0	0.368	8.1	LOS A	0.9	6.5	0.82	0.67	0.82	39.3
3	R2	All MCs	151	0.0	151	0.0	0.368	11.4	LOS A	0.9	6.5	0.82	0.67	0.82	36.2
3u	U	All MCs	1	0.0	1	0.0	0.368	13.0	LOS A	0.9	6.5	0.82	0.67	0.82	40.4
Approach			226	0.0	226	0.0	0.368	10.3	LOS A	0.9	6.5	0.82	0.67	0.82	37.4
East: Cornelia Road															
4	L2	All MCs	85	0.0	68	0.0	0.710	6.4	LOS A	2.9	20.8	0.52	0.57	0.52	40.7
5	T1	All MCs	671	1.4	531	1.4	0.710	6.5	LOS A	2.9	20.8	0.52	0.57	0.52	38.5
6	R2	All MCs	13	0.0	10	0.0	0.710	10.0	LOS A	2.9	20.8	0.52	0.57	0.52	37.1
6u	U	All MCs	48	0.0	38	0.0	0.710	11.7	LOS A	2.9	20.8	0.52	0.57	0.52	28.7
Approach			817	1.2	647	1.1	0.710	6.8	LOS A	2.9	20.8	0.52	0.57	0.52	38.5
North: Junia Avenue															
7	L2	All MCs	38	0.0	38	0.0	0.187	10.2	LOS A	0.4	2.9	0.88	0.77	0.88	30.0
8	T1	All MCs	19	0.0	19	0.0	0.187	10.1	LOS A	0.4	2.9	0.88	0.77	0.88	38.8
9	R2	All MCs	15	0.0	15	0.0	0.187	13.5	LOS A	0.4	2.9	0.88	0.77	0.88	35.3
9u	U	All MCs	1	0.0	1	0.0	0.187	15.0	LOS B	0.4	2.9	0.88	0.77	0.88	35.4
Approach			73	0.0	73	0.0	0.187	10.9	LOS A	0.4	2.9	0.88	0.77	0.88	34.6
West: Cornelia Road															
10	L2	All MCs	15	0.0	15	0.0	1.018	45.9	LOS D	14.7	104.3	1.00	1.76	2.48	19.2
11	T1	All MCs	621	1.9	621	1.9	1.018	46.1	LOS D	14.7	104.3	1.00	1.76	2.48	11.7
12	R2	All MCs	62	0.0	62	0.0	1.018	49.4	LOS D	14.7	104.3	1.00	1.76	2.48	22.8
12u	U	All MCs	7	0.0	7	0.0	1.018	51.1	LOS D	14.7	104.3	1.00	1.76	2.48	18.0
Approach			705	1.6	705	1.6	1.018	46.5	LOS D	14.7	104.3	1.00	1.76	2.48	13.3
All Vehicles			1821	1.2	1651	1.3	1.018	24.4	LOS B	14.7	104.3	0.78	1.10	1.41	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: TCS 2611 [5. Cornelia Rd / Portico Pde (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)

Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 110 seconds (Network User-Given Cycle Time)

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand Flows		Arrival Flows		Deg. Satn	Aver. Delay	Level of Service	Aver. Back Of Queue		Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed
			[Total HV] veh/h	%	[Total HV] veh/h	%				[Veh. veh	[Dist] m				
South: Portico Parade															
1	L2	All MCs	415	0.8	415	0.8	*0.461	4.1	LOS A	1.9	13.7	0.26	0.60	0.26	22.3
2	T1	All MCs	89	3.5	89	3.5	0.194	35.5	LOS C	2.3	16.8	0.83	0.66	0.83	14.6
Approach			504	1.3	504	1.3	0.461	9.6	LOS A	2.3	16.8	0.36	0.61	0.36	17.7
North: Portico Parade															
8	T1	All MCs	105	2.0	105	2.0	0.224	35.8	LOS C	2.8	19.7	0.84	0.67	0.84	12.9
9	R2	All MCs	23	9.1	23	9.1	*0.268	51.3	LOS D	0.7	5.5	0.90	0.74	0.90	9.7
Approach			128	3.3	128	3.3	0.268	38.6	LOS C	2.8	19.7	0.85	0.68	0.85	12.2
West: Cornelia Rd															
10	L2	All MCs	51	4.2	42	4.3	0.231	20.1	LOS B	5.4	38.1	0.61	0.64	0.61	23.7
12	R2	All MCs	305	0.7	250	0.7	0.231	16.9	LOS B	5.4	38.1	0.61	0.64	0.61	12.5
Approach			356	1.2	292	1.2	0.231	17.3	LOS B	5.4	38.1	0.61	0.64	0.61	14.9
All Vehicles			988	1.5	925	1.6	0.461	16.1	LOS B	5.4	38.1	0.51	0.63	0.51	15.1

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	Aver. Delay	Level of Service	AVERAGE BACK OF QUEUE		Prop. Que	Eff. Stop Rate	Travel Time	Travel Dist.	Aver. Speed
					[Ped ped	[Dist] m					
North: Portico Parade											
P3	Full	231	49.6	LOS E	0.7	0.7	0.95	0.95	216.3	200.0	0.92
West: Cornelia Rd											
P4	Full	252	49.7	LOS E	0.8	0.8	0.96	0.96	216.4	200.0	0.92
All Pedestrians		482	49.7	LOS E	0.8	0.8	0.96	0.96	216.3	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: 6 [6. Aurelia St / Portico Pde (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)
 Give-Way (Two-Way)

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand Flows		Arrival Flows		Deg. Satn	Aver. Delay	Level of Service	Aver. Back Of Queue	Prop. Que		Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed
			[Total HV]	%	[Total HV]	%					[Veh. veh	Dist]			
South: Portico Parade															
1	L2	All MCs	121	0.0	121	0.0	0.280	4.6	LOS A	0.0	0.0	0.00	0.12	0.00	46.9
2	T1	All MCs	414	1.3	414	1.3	0.280	0.0	LOS A	0.0	0.0	0.00	0.12	0.00	46.0
Approach			535	1.0	535	1.0	0.280	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	356	1.1	0.184	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	49.9
Approach			411	1.0	356	1.1	0.184	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	0.2	1.7	0.48	0.67	0.48	41.6
12	R2	All MCs	48	0.0	48	0.0	0.159	9.3	LOS A	0.2	1.7	0.48	0.67	0.48	41.7
Approach			139	0.8	139	0.8	0.159	7.0	LOS A	0.2	1.7	0.48	0.67	0.48	41.6
All Vehicles			1084	1.0	1029	1.0	0.280	1.5	NA	0.2	1.7	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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Project: C:\Users\imathew\OneDrive - Stantec\Projects\Toongabbie\Toongabbie\Des_in\Modelling\Toongabbie SIDRA\toongabbie.sip9

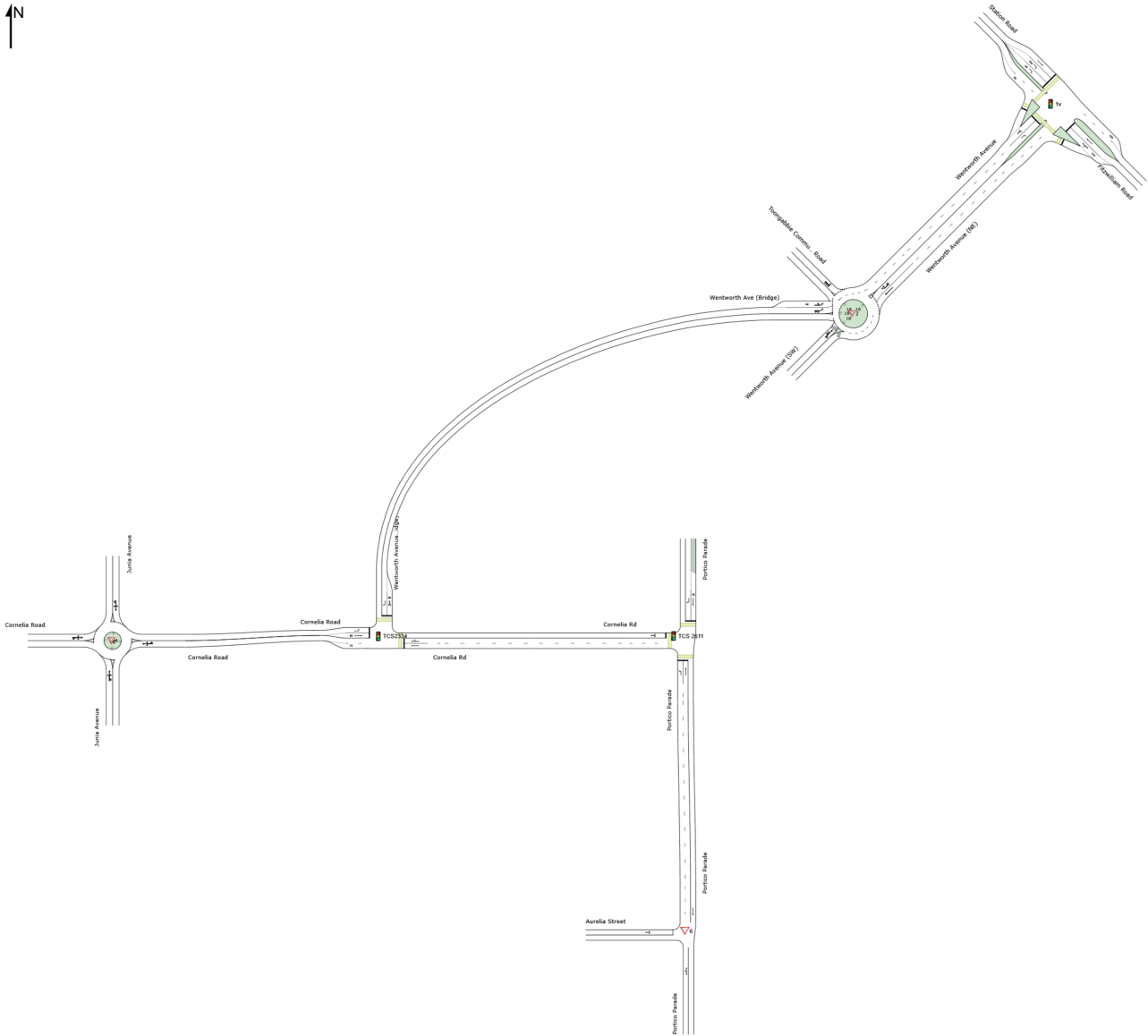
2027 Project Case

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
4	NA	4. Cornelia Rd / Junia Ave
TCS 2611	NA	5. Cornelia Rd / 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		Arrival Flows		Deg. Satn	Aver. Delay	Level of Service	Aver. Back Of Queue	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed
			[Total HV]	%	[Total HV]	%	v/c	sec		[Veh. veh	Dist]			km/h
			veh/h		veh/h					veh	m			
SouthEast: Fitzwilliam Road														
21	L2	All MCs	527	1.2	527	1.2	0.391	9.3	LOS A	6.0	42.8	0.36	0.67	41.2
22	T1	All MCs	534	3.7	534	3.7	0.629	32.6	LOS C	17.1	123.7	0.84	0.75	42.1
Approach			1061	2.5	1061	2.5	0.629	21.0	LOS B	17.1	123.7	0.60	0.71	41.9
NorthWest: Station Road														
28	T1	All MCs	381	2.8	381	2.8	0.271	8.3	LOS A	5.5	39.4	0.38	0.34	54.7
29	R2	All MCs	500	5.3	500	5.3	0.615	59.6	LOS E	9.4	68.7	0.95	0.83	30.0
Approach			881	4.2	881	4.2	0.615	37.4	LOS C	9.4	68.7	0.70	0.62	38.4
SouthWest: Wentworth Avenue														
30	L2	All MCs	795	3.4	731	3.5	*0.757	20.1	LOS B	18.2	131.3	0.73	0.81	46.5
32	R2	All MCs	404	0.8	372	0.8	*0.975	98.2	LOS F	19.9	140.3	1.00	1.10	14.0
Approach			1199	2.5	1103	2.6	0.975	46.4	LOS D	19.9	140.3	0.82	0.91	32.4
All Vehicles			3141	3.0	3045	3.1	0.975	35.0	LOS C	19.9	140.3	0.71	0.76	36.9

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	Aver. Delay	Level of Service	AVERAGE BACK OF QUEUE		Prop. Que	Eff. Stop Rate	Travel Time	Travel Dist.	Aver. Speed
		ped/h	sec		[Ped ped	Dist]			sec	m	m/sec
					ped	m					
SouthEast: Fitzwilliam Road											
P5B	Slip/ Bypass	53	64.3	LOS F	0.2	0.2	0.96	0.96	230.9	200.0	0.87
NorthWest: Station Road											
P7	Full	53	64.3	LOS F	0.2	0.2	0.96	0.96	230.9	200.0	0.87
SouthWest: Wentworth Avenue											
P8	Full	53	64.3	LOS F	0.2	0.2	0.96	0.96	230.9	200.0	0.87
P8B	Slip/ Bypass	53	64.3	LOS F	0.2	0.2	0.96	0.96	230.9	200.0	0.87
All Pedestrians		211	64.3	LOS F	0.2	0.2	0.96	0.96	230.9	200.0	0.87

MOVEMENT SUMMARY

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

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

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Project Case 2027 AM
Site Category: (None)
Roundabout

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand Flows		Arrival Flows		Deg. Satn	Aver. Delay	Level of Service	Aver. Back Of Queue	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed	
			[Total HV] veh/h	%	[Total HV] veh/h	%									v/c
NorthEast: Wentworth Avenue (NE)															
25	T1	All MCs	304	5.2	304	5.2	0.289	5.4	LOS A	0.7	4.9	0.36	0.49	0.36	47.6
26a	R1	All MCs	724	2.5	724	2.5	0.516	8.6	LOS A	1.8	12.5	0.41	0.62	0.41	33.9
26	R2	All MCs	2	0.0	2	0.0	0.516	9.5	LOS A	1.8	12.5	0.41	0.62	0.41	29.0
26u	U	All MCs	7	0.0	7	0.0	0.516	11.5	LOS A	1.8	12.5	0.41	0.62	0.41	33.9
Approach			1038	3.2	1038	3.2	0.516	7.7	LOS A	1.8	12.5	0.40	0.58	0.40	39.6
NorthWest: Toongabbie Community Access Road															
27	L2	All MCs	2	0.0	2	0.0	0.018	6.9	LOS A	0.0	0.2	0.70	0.78	0.70	19.8
29	R2	All MCs	1	0.0	1	0.0	0.018	11.3	LOS A	0.0	0.2	0.70	0.78	0.70	38.2
29b	R3	All MCs	3	33.3	3	33.3	0.018	13.8	LOS A	0.0	0.2	0.70	0.78	0.70	19.8
29u	U	All MCs	1	0.0	1	0.0	0.018	13.3	LOS A	0.0	0.2	0.70	0.78	0.70	19.0
Approach			7	14.3	7	14.3	0.018	11.4	LOS A	0.0	0.2	0.70	0.78	0.70	24.3
West: Wentworth Ave (Bridge)															
10b	L3	All MCs	4	0.0	4	0.0	0.648	8.5	LOS A	1.8	13.1	0.73	0.77	0.84	36.3
10a	L1	All MCs	814	2.2	743	2.2	0.648	8.1	LOS A	1.9	13.2	0.73	0.78	0.84	42.1
12b	R3	All MCs	168	0.0	154	0.0	0.648	14.0	LOS A	1.9	13.2	0.73	0.81	0.85	45.3
12u	U	All MCs	1	0.0	1	0.0	0.648	15.0	LOS B	1.9	13.2	0.73	0.81	0.85	40.3
Approach			987	1.8	902	1.9	0.648	9.1	LOS A	1.9	13.2	0.73	0.79	0.84	42.9
SouthWest: Wentworth Avenue (SW)															
30b	L3	All MCs	138	1.5	138	1.5	1.065	107.9	LOS F	16.9	121.3	1.00	2.61	4.74	9.3
30	L2	All MCs	1	0.0	1	0.0	1.065	107.5	LOS F	16.9	121.3	1.00	2.61	4.74	9.9
31	T1	All MCs	374	3.1	374	3.1	1.065	107.9	LOS F	16.9	121.3	1.00	2.61	4.74	9.3
32u	U	All MCs	1	0.0	1	0.0	1.065	114.1	LOS F	16.9	121.3	1.00	2.61	4.74	15.4
Approach			514	2.7	514	2.7	1.065	107.9	LOS F	16.9	121.3	1.00	2.61	4.74	9.3
All Vehicles			2546	2.6	2461	2.7	1.065	29.1	LOS C	16.9	121.3	0.65	1.08	1.47	24.3

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: TCS2334 [3. Wentworth Ave (Bridge) / Cornelia 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)

Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 140 seconds (Network User-Given Cycle Time)

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand Flows		Arrival Flows		Deg. Satn	Aver. Delay	Level of Service	Aver. Back Of Queue		Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed
			[Total HV] veh/h	%	[Total HV] veh/h	%				[Veh. veh	[Dist] m				
East: Cornelia Rd															
5	T1	All MCs	62	0.0	62	0.0	0.058	22.6	LOS B	1.4	9.5	0.56	0.44	0.56	10.5
6	R2	All MCs	311	3.1	311	3.1	*0.458	38.5	LOS C	9.0	65.0	0.80	0.91	0.80	6.4
Approach			373	2.5	373	2.5	0.458	35.8	LOS C	9.0	65.0	0.76	0.84	0.76	6.8
North: Wentworth Avenue (Bridge)															
7	L2	All MCs	292	3.6	289	3.6	0.162	19.2	LOS B	3.7	26.9	0.34	0.67	0.34	37.7
9	R2	All MCs	574	1.8	568	1.8	*0.572	42.3	LOS C	17.0	120.5	0.79	0.82	0.79	21.9
Approach			865	2.4	857	2.4	0.572	34.5	LOS C	17.0	120.5	0.64	0.77	0.64	22.1
West: Cornelia Road															
10	L2	All MCs	676	1.2	590	1.2	0.609	21.2	LOS B	12.7	90.0	0.61	0.78	0.61	14.7
11	T1	All MCs	38	0.0	33	0.0	*0.129	56.9	LOS E	1.2	8.3	0.89	0.69	0.89	6.0
Approach			714	1.2	623	1.2	0.609	23.1	LOS B	12.7	90.0	0.63	0.78	0.63	12.9
All Vehicles			1952	2.0	1852	2.1	0.609	30.9	LOS C	17.0	120.5	0.66	0.79	0.66	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	Aver. Delay	Level of Service	AVERAGE BACK OF QUEUE		Prop. Que	Eff. Stop Rate	Travel Time	Travel Dist.	Aver. Speed
					[Ped ped	[Dist] m					
East: Cornelia Rd											
P2	Full	6	64.1	LOS F	0.0	0.0	0.96	0.96	230.8	200.0	0.87
North: Wentworth Avenue (Bridge)											
P3	Full	29	64.2	LOS F	0.1	0.1	0.96	0.96	230.9	200.0	0.87
All Pedestrians		36	64.2	LOS F	0.1	0.1	0.96	0.96	230.9	200.0	0.87

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)]

Project Case 2027 AM
Site Category: (None)
Roundabout

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand Flows		Arrival Flows		Deg. Satn	Aver. Delay	Level of Service	Aver. Back Of Queue		Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed
			[Total HV] veh/h	%	[Total HV] veh/h	%				[Veh. veh	[Dist] m				
South: Junia Avenue															
1	L2	All MCs	35	3.0	35	3.0	0.341	7.6	LOS A	0.8	5.7	0.80	0.60	0.80	39.2
2	T1	All MCs	22	0.0	22	0.0	0.341	7.5	LOS A	0.8	5.7	0.80	0.60	0.80	39.6
3	R2	All MCs	162	1.3	162	1.3	0.341	10.9	LOS A	0.8	5.7	0.80	0.60	0.80	36.5
3u	U	All MCs	1	0.0	1	0.0	0.341	12.4	LOS A	0.8	5.7	0.80	0.60	0.80	40.6
Approach			220	1.4	220	1.4	0.341	10.0	LOS A	0.8	5.7	0.80	0.60	0.80	37.5
East: Cornelia Road															
4	L2	All MCs	66	0.0	66	0.0	0.462	5.0	LOS A	1.3	9.4	0.24	0.49	0.24	42.3
5	T1	All MCs	533	2.0	528	2.0	0.462	5.0	LOS A	1.3	9.4	0.24	0.49	0.24	40.8
6	R2	All MCs	3	0.0	3	0.0	0.462	8.5	LOS A	1.3	9.4	0.24	0.49	0.24	39.0
6u	U	All MCs	14	0.0	14	0.0	0.462	10.2	LOS A	1.3	9.4	0.24	0.49	0.24	32.1
Approach			616	1.7	610	1.7	0.462	5.1	LOS A	1.3	9.4	0.24	0.49	0.24	41.0
North: Junia Avenue															
7	L2	All MCs	42	0.0	42	0.0	0.214	8.3	LOS A	0.3	2.5	0.76	0.73	0.76	31.8
8	T1	All MCs	16	6.7	16	6.7	0.214	8.6	LOS A	0.3	2.5	0.76	0.73	0.76	39.8
9	R2	All MCs	23	0.0	23	0.0	0.214	11.6	LOS A	0.3	2.5	0.76	0.73	0.76	36.7
9u	U	All MCs	3	0.0	3	0.0	0.214	13.1	LOS A	0.3	2.5	0.76	0.73	0.76	36.7
Approach			84	1.3	84	1.3	0.214	9.5	LOS A	0.3	2.5	0.76	0.73	0.76	35.7
West: Cornelia Road															
10	L2	All MCs	9	0.0	9	0.0	1.227	217.5	LOS F	30.3	215.1	1.00	4.04	6.88	5.8
11	T1	All MCs	505	1.5	505	1.5	1.227	217.7	LOS F	30.3	215.1	1.00	4.04	6.88	2.9
12	R2	All MCs	27	3.8	27	3.8	1.227	221.2	LOS F	30.3	215.1	1.00	4.04	6.88	7.5
12u	U	All MCs	7	0.0	7	0.0	1.227	222.7	LOS F	30.3	215.1	1.00	4.04	6.88	5.2
Approach			549	1.5	549	1.5	1.227	217.9	LOS F	30.3	215.1	1.00	4.04	6.88	3.3
All Vehicles			1469	1.6	1464	1.6	1.227	86.0	LOS F	30.3	215.1	0.64	1.85	2.85	9.7

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.

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. Cornelia Rd / 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)]

Project Case 2027 AM

Site Category: (None)

Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 140 seconds (Network User-Given Cycle Time)

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand Flows		Arrival Flows		Deg. Satn	Aver. Delay	Level of Service	Aver. Back Of Queue	Prop. Que		Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
			[Total HV] veh/h	%	[Total HV] veh/h	%					[Veh. veh	[Dist] m			
South: Portico Parade															
1	L2	All MCs	351	1.8	351	1.8	0.415	5.3	LOS A	3.2	22.8	0.24	0.60	0.24	19.1
2	T1	All MCs	82	5.1	82	5.1	*0.230	51.5	LOS D	2.9	21.3	0.89	0.70	0.89	11.1
Approach			433	2.4	433	2.4	0.415	14.1	LOS A	3.2	22.8	0.36	0.62	0.36	13.9
North: Portico Parade															
8	T1	All MCs	141	4.5	141	4.5	0.265	41.3	LOS C	4.5	32.9	0.82	0.67	0.82	11.6
9	R2	All MCs	21	15.0	21	15.0	*0.176	52.5	LOS D	0.7	5.9	0.87	0.73	0.87	9.5
Approach			162	5.8	162	5.8	0.265	42.7	LOS D	4.5	32.9	0.82	0.68	0.82	11.3
West: Cornelia Rd															
10	L2	All MCs	33	3.2	32	3.3	0.294	8.9	LOS A	4.1	29.4	0.33	0.64	0.33	27.6
12	R2	All MCs	299	3.5	292	3.6	*0.294	12.5	LOS A	4.1	29.4	0.33	0.64	0.33	16.2
Approach			332	3.5	324	3.6	0.294	12.1	LOS A	4.1	29.4	0.33	0.64	0.33	18.0
All Vehicles			926	3.4	919	3.4	0.415	18.5	LOS B	4.5	32.9	0.43	0.64	0.43	14.0

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	Aver. Delay	Level of Service	AVERAGE BACK OF QUEUE		Prop. Que	Eff. Stop Rate	Travel Time	Travel Dist.	Aver. Speed
					[Ped ped	[Dist] m					
South: Portico Parade											
P1	Full	25	64.2	LOS F	0.1	0.1	0.96	0.96	230.9	200.0	0.87
North: Portico Parade											
P3	Full	25	64.2	LOS F	0.1	0.1	0.96	0.96	230.9	200.0	0.87
West: Cornelia Rd											
P4	Full	11	64.2	LOS F	0.0	0.0	0.96	0.96	230.8	200.0	0.87
All Pedestrians		61	64.2	LOS F	0.1	0.1	0.96	0.96	230.9	200.0	0.87

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)]

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

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand Flows		Arrival Flows		Deg. Satn	Aver. Delay	Level of Service	Aver. Back Of Queue	Prop. Que		Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
			[Total HV] veh/h	%	[Total HV] veh/h	%					[Veh. veh	Dist] m			
South: Portico Parade															
1	L2	All MCs	63	1.7	63	1.7	0.311	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	0.311	0.0	LOS A	0.0	0.0	0.00	0.07	0.00	47.4
Approach			466	2.5	466	2.5	0.311	0.7	NA	0.0	0.0	0.00	0.07	0.00	47.4
North: Portico Parade															
8	T1	All MCs	440	3.8	433	3.9	0.231	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	49.9
Approach			440	3.8	433	3.9	0.231	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	0.087	5.7	LOS A	0.1	0.8	0.50	0.68	0.50	41.0
12	R2	All MCs	27	3.8	27	3.8	0.087	9.7	LOS A	0.1	0.8	0.50	0.68	0.50	41.2
Approach			57	1.9	57	1.9	0.087	7.6	LOS A	0.1	0.8	0.50	0.68	0.50	41.1
All Vehicles			963	3.1	956	3.1	0.311	0.8	NA	0.1	0.8	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.

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Project: C:\Users\imathew\OneDrive - Stantec\Projects\Toongabbie\Toongabbie\Des_in\Modelling\Toongabbie SIDRA\toongabbie.sip9

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		Arrival Flows		Deg. Satn	Aver. Delay	Level of Service	Aver. Back Of Queue	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed	
			[Total HV]	%	[Total HV]	%	v/c	sec		[Veh. veh	Dist]			km/h	
			veh/h		veh/h					veh	m				
SouthEast: Fitzwilliam Road															
21	L2	All MCs	488	1.5	488	1.5	0.379	11.0	LOS A	6.2	43.7	0.37	0.67	0.37	40.0
22	T1	All MCs	536	0.8	536	0.8	0.786	45.4	LOS D	19.9	140.5	0.96	0.86	0.97	38.1
Approach			1024	1.1	1024	1.1	0.786	29.0	LOS C	19.9	140.5	0.68	0.77	0.68	37.9
NorthWest: Station Road															
28	T1	All MCs	489	1.5	489	1.5	0.405	16.5	LOS B	10.4	73.9	0.56	0.50	0.56	50.1
29	R2	All MCs	521	1.8	521	1.8	0.781	69.9	LOS E	11.4	81.0	0.98	0.86	1.02	28.8
Approach			1011	1.7	1011	1.7	0.781	44.1	LOS D	11.4	81.0	0.78	0.69	0.80	36.4
SouthWest: Wentworth Avenue															
30	L2	All MCs	598	2.8	517	2.5	*0.535	15.1	LOS B	10.3	73.3	0.57	0.75	0.57	47.4
32	R2	All MCs	543	1.4	471	1.3	*0.744	52.2	LOS D	16.2	115.0	0.93	0.86	0.93	22.3
Approach			1141	2.1	988	2.0	0.744	32.8	LOS C	16.2	115.0	0.74	0.80	0.74	35.6
All Vehicles			3176	1.7	3022	1.7	0.786	35.3	LOS C	19.9	140.5	0.73	0.75	0.74	36.6

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	Aver. Delay	Level of Service	AVERAGE BACK OF QUEUE		Prop. Que	Eff. Stop Rate	Travel Time	Travel Dist.	Aver. Speed
		ped/h	sec		[Ped ped	Dist]			sec	m	m/sec
					ped	m					
SouthEast: Fitzwilliam Road											
P5B	Slip/ Bypass	53	64.3	LOS F	0.2	0.2	0.96	0.96	230.9	200.0	0.87
NorthWest: Station Road											
P7	Full	53	64.3	LOS F	0.2	0.2	0.96	0.96	230.9	200.0	0.87
SouthWest: Wentworth Avenue											
P8	Full	53	64.3	LOS F	0.2	0.2	0.96	0.96	230.9	200.0	0.87
P8B	Slip/ Bypass	53	64.3	LOS F	0.2	0.2	0.96	0.96	230.9	200.0	0.87
All Pedestrians		211	64.3	LOS F	0.2	0.2	0.96	0.96	230.9	200.0	0.87

MOVEMENT SUMMARY

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

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

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Project Case 2027 PM
Site Category: (None)
Roundabout

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand Flows		Arrival Flows		Deg. Satn	Aver. Delay	Level of Service	Aver. Back Of Queue		Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed
			[Total HV] veh/h	%	[Total HV] veh/h	%				[Veh. veh	[Dist] m				
NorthEast: Wentworth Avenue (NE)															
25	T1	All MCs	240	3.5	240	3.5	0.449	8.2	LOS A	0.9	6.4	0.47	0.63	0.47	45.4
26a	R1	All MCs	769	1.1	769	1.1	0.858	16.2	LOS B	6.1	42.8	0.80	0.84	1.03	25.7
26	R2	All MCs	1	0.0	1	0.0	0.858	17.2	LOS B	6.1	42.8	0.80	0.84	1.03	23.7
26u	U	All MCs	6	0.0	6	0.0	0.858	19.2	LOS B	6.1	42.8	0.80	0.84	1.03	25.7
Approach			1017	1.7	1017	1.7	0.858	14.3	LOS A	6.1	42.8	0.73	0.79	0.90	31.6
NorthWest: Toongabbie Community Access Road															
27	L2	All MCs	18	0.0	18	0.0	0.079	6.2	LOS A	0.1	1.0	0.65	0.81	0.65	21.5
29	R2	All MCs	8	0.0	8	0.0	0.079	10.7	LOS A	0.1	1.0	0.65	0.81	0.65	39.8
29b	R3	All MCs	21	0.0	21	0.0	0.079	11.7	LOS A	0.1	1.0	0.65	0.81	0.65	21.5
29u	U	All MCs	1	0.0	1	0.0	0.079	12.6	LOS A	0.1	1.0	0.65	0.81	0.65	19.9
Approach			48	0.0	48	0.0	0.079	9.5	LOS A	0.1	1.0	0.65	0.81	0.65	27.5
West: Wentworth Ave (Bridge)															
10b	L3	All MCs	16	0.0	15	0.0	0.437	5.7	LOS A	1.3	9.0	0.49	0.55	0.49	37.9
10a	L1	All MCs	833	1.5	766	1.5	0.437	5.2	LOS A	1.3	9.0	0.50	0.58	0.50	45.0
12b	R3	All MCs	199	1.1	183	1.0	0.437	11.1	LOS A	1.1	7.8	0.51	0.64	0.51	46.9
12u	U	All MCs	1	0.0	1	0.0	0.437	12.1	LOS A	1.1	7.8	0.51	0.64	0.51	43.1
Approach			1048	1.4	965	1.4	0.437	6.3	LOS A	1.3	9.0	0.50	0.59	0.50	45.4
SouthWest: Wentworth Avenue (SW)															
30b	L3	All MCs	134	2.4	134	2.4	1.441	427.5	LOS F	37.1	267.6	1.00	4.15	10.09	2.6
30	L2	All MCs	8	0.0	8	0.0	1.441	427.0	LOS F	37.1	267.6	1.00	4.15	10.09	3.0
31	T1	All MCs	285	4.1	285	4.1	1.441	427.5	LOS F	37.1	267.6	1.00	4.15	10.09	2.6
32u	U	All MCs	4	0.0	4	0.0	1.441	433.6	LOS F	37.1	267.6	1.00	4.15	10.09	4.9
Approach			432	3.4	432	3.4	1.441	427.6	LOS F	37.1	267.6	1.00	4.15	10.09	2.7
All Vehicles			2545	1.8	2462	1.9	1.441	83.5	LOS F	37.1	267.6	0.68	1.30	2.35	11.5

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 (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 = 140 seconds (Network User-Given Cycle Time)

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand Flows		Arrival Flows		Deg. Satn	Aver. Delay	Level of Service	Aver. Back Of Queue	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed	
			[Total HV]	[Total HV]			v/c	sec		[Veh. veh]	[Dist]			km/h	
			veh/h	%	veh/h	%				veh	m				
East: Cornelia Rd															
5	T1	All MCs	114	0.9	114	0.9	0.113	25.0	LOS B	2.5	17.8	0.58	0.46	0.58	9.6
6	R2	All MCs	324	1.3	324	1.3	*0.519	50.3	LOS D	9.2	65.0	0.89	1.01	0.89	5.0
Approach			438	1.2	438	1.2	0.519	43.7	LOS D	9.2	65.0	0.81	0.87	0.81	5.7
North: Wentworth Avenue (Bridge)															
7	L2	All MCs	245	1.3	235	1.3	0.265	13.8	LOS A	7.4	52.2	0.57	0.74	0.57	27.7
9	R2	All MCs	680	1.2	650	1.2	*0.629	33.7	LOS C	16.1	113.6	0.74	0.81	0.74	24.0
Approach			925	1.3	884	1.2	0.629	28.4	LOS B	16.1	113.6	0.70	0.80	0.70	24.9
West: Cornelia Road															
10	L2	All MCs	723	1.5	640	1.4	0.459	15.7	LOS B	11.7	83.2	0.49	0.74	0.49	17.3
11	T1	All MCs	111	1.0	98	0.9	*0.339	60.6	LOS E	3.7	26.4	0.95	0.76	0.95	5.6
Approach			834	1.4	738	1.3	0.459	21.7	LOS B	11.7	83.2	0.55	0.74	0.55	13.6
All Vehicles			2197	1.3	2060	1.4	0.629	29.3	LOS C	16.1	113.6	0.67	0.79	0.67	17.3

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	Aver. Delay	Level of Service	AVERAGE BACK OF QUEUE		Prop. Que	Eff. Stop Rate	Travel Time	Travel Dist.	Aver. Speed
		ped/h	sec		[Ped ped]	[Dist]			sec	m	m/sec
East: Cornelia Rd											
P2	Full	16	64.2	LOS F	0.1	0.1	0.96	0.96	230.8	200.0	0.87
North: Wentworth Avenue (Bridge)											
P3	Full	41	64.2	LOS F	0.2	0.2	0.96	0.96	230.9	200.0	0.87
All Pedestrians		57	64.2	LOS F	0.2	0.2	0.96	0.96	230.9	200.0	0.87

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		Arrival Flows		Deg. Satn	Aver. Delay	Level of Service	Aver. Back Of Queue	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed	
			[Total HV]	%	[Total HV]	%	v/c	sec		[Veh. veh	Dist]			km/h	
			veh/h		veh/h					veh	m				
South: Junia Avenue															
1	L2	All MCs	59	0.0	59	0.0	0.491	11.2	LOS A	1.3	9.2	0.96	0.80	1.10	36.9
2	T1	All MCs	16	0.0	16	0.0	0.491	11.2	LOS A	1.3	9.2	0.96	0.80	1.10	37.2
3	R2	All MCs	151	0.0	151	0.0	0.491	14.5	LOS B	1.3	9.2	0.96	0.80	1.10	33.4
3u	U	All MCs	1	0.0	1	0.0	0.491	16.1	LOS B	1.3	9.2	0.96	0.80	1.10	38.6
Approach			226	0.0	226	0.0	0.491	13.4	LOS A	1.3	9.2	0.96	0.80	1.10	34.8
East: Cornelia Road															
4	L2	All MCs	85	0.0	82	0.0	0.836	7.1	LOS A	5.0	35.6	0.68	0.58	0.69	40.0
5	T1	All MCs	671	1.4	646	1.3	0.836	7.1	LOS A	5.0	35.6	0.68	0.58	0.69	37.4
6	R2	All MCs	13	0.0	12	0.0	0.836	10.7	LOS A	5.0	35.6	0.68	0.58	0.69	36.2
6u	U	All MCs	48	0.0	47	0.0	0.836	12.3	LOS A	5.0	35.6	0.68	0.58	0.69	27.2
Approach			817	1.2	787	1.1	0.836	7.5	LOS A	5.0	35.6	0.68	0.58	0.69	37.4
North: Junia Avenue															
7	L2	All MCs	38	0.0	38	0.0	0.181	9.1	LOS A	0.3	2.4	0.83	0.75	0.83	31.3
8	T1	All MCs	19	0.0	19	0.0	0.181	9.0	LOS A	0.3	2.4	0.83	0.75	0.83	39.6
9	R2	All MCs	15	0.0	15	0.0	0.181	12.4	LOS A	0.3	2.4	0.83	0.75	0.83	36.3
9u	U	All MCs	1	0.0	1	0.0	0.181	13.9	LOS A	0.3	2.4	0.83	0.75	0.83	36.3
Approach			73	0.0	73	0.0	0.181	9.8	LOS A	0.3	2.4	0.83	0.75	0.83	35.6
West: Cornelia Road															
10	L2	All MCs	15	0.0	15	0.0	1.183	178.0	LOS F	33.5	237.8	1.00	3.78	6.44	6.9
11	T1	All MCs	621	1.9	621	1.9	1.183	178.3	LOS F	33.5	237.8	1.00	3.78	6.44	3.5
12	R2	All MCs	62	0.0	62	0.0	1.183	181.6	LOS F	33.5	237.8	1.00	3.78	6.44	8.9
12u	U	All MCs	7	0.0	7	0.0	1.183	183.2	LOS F	33.5	237.8	1.00	3.78	6.44	6.3
Approach			705	1.6	705	1.6	1.183	178.6	LOS F	33.5	237.8	1.00	3.78	6.44	4.2
All Vehicles			1821	1.2	1791	1.2	1.183	75.7	LOS F	33.5	237.8	0.85	1.87	3.01	10.7

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.

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. Cornelia Rd / 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 = 140 seconds (Network User-Given Cycle Time)

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand Flows		Arrival Flows		Deg. Satn	Aver. Delay	Level of Service	Aver. Back Of Queue	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed	
			[Total HV]	[Total HV]			v/c	sec		[Veh. veh]	[Dist]			km/h	
			veh/h	%	veh/h	%				veh	m				
South: Portico Parade															
1	L2	All MCs	415	0.8	415	0.8	0.488	7.6	LOS A	4.3	30.0	0.34	0.64	0.34	15.2
2	T1	All MCs	89	3.5	89	3.5	*0.266	53.6	LOS D	3.2	23.4	0.90	0.71	0.90	10.7
Approach			504	1.3	504	1.3	0.488	15.7	LOS B	4.3	30.0	0.44	0.65	0.44	12.6
North: Portico Parade															
8	T1	All MCs	105	2.0	105	2.0	0.175	37.0	LOS C	3.2	22.5	0.76	0.62	0.76	12.6
9	R2	All MCs	23	9.1	23	9.1	*0.162	49.8	LOS D	0.8	6.1	0.84	0.73	0.84	9.9
Approach			128	3.3	128	3.3	0.175	39.3	LOS C	3.2	22.5	0.78	0.64	0.78	12.0
West: Cornelia Rd															
10	L2	All MCs	51	4.2	47	4.4	0.287	8.6	LOS A	4.6	32.5	0.36	0.65	0.36	26.2
12	R2	All MCs	305	0.7	285	0.6	*0.287	14.8	LOS B	4.6	32.5	0.36	0.65	0.36	14.7
Approach			356	1.2	332	1.2	0.287	13.9	LOS A	4.6	32.5	0.36	0.65	0.36	17.2
All Vehicles			988	1.5	965	1.5	0.488	18.2	LOS B	4.6	32.5	0.46	0.65	0.46	13.8

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	Aver. Delay	Level of Service	AVERAGE BACK OF QUEUE		Prop. Que	Eff. Stop Rate	Travel Time	Travel Dist.	Aver. Speed
		ped/h	sec		[Ped ped]	[Dist]			sec	m	m/sec
South: Portico Parade											
P1	Full	115	64.4	LOS F	0.4	0.4	0.96	0.96	231.1	200.0	0.87
North: Portico Parade											
P3	Full	116	64.4	LOS F	0.4	0.4	0.96	0.96	231.1	200.0	0.87
West: Cornelia Rd											
P4	Full	252	64.8	LOS F	1.0	1.0	0.97	0.97	231.5	200.0	0.86
All Pedestrians		482	64.6	LOS F	1.0	1.0	0.96	0.96	231.3	200.0	0.86

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		Arrival Flows		Deg. Satn	Aver. Delay	Level of Service	Aver. Back Of Queue	Prop. Que		Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed
			[Total HV] veh/h	%	[Total HV] veh/h	%					v/c	sec			
South: Portico Parade															
1	L2	All MCs	121	0.0	121	0.0	0.470	4.6	LOS A	0.0	0.0	0.00	0.12	0.00	46.7
2	T1	All MCs	414	1.3	414	1.3	0.470	0.1	LOS A	0.0	0.0	0.00	0.12	0.00	45.7
Approach			535	1.0	535	1.0	0.470	1.1	NA	0.0	0.0	0.00	0.12	0.00	46.2
North: Portico Parade															
8	T1	All MCs	411	1.0	390	1.0	0.202	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	49.9
Approach			411	1.0	390	1.0	0.202	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	0.271	6.1	LOS A	0.3	2.0	0.53	0.70	0.58	41.1
12	R2	All MCs	48	0.0	48	0.0	0.271	10.4	LOS A	0.3	2.0	0.53	0.70	0.58	41.3
Approach			139	0.8	139	0.8	0.271	7.6	LOS A	0.3	2.0	0.53	0.70	0.58	41.2
All Vehicles			1084	1.0	1064	1.0	0.470	1.6	NA	0.3	2.0	0.07	0.15	0.08	45.7

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.

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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Project: C:\Users\imathew\OneDrive - Stantec\Projects\Toongabbie\Toongabbie\Des_in\Modelling\Toongabbie SIDRA\toongabbie.sip9

2037 Future Base

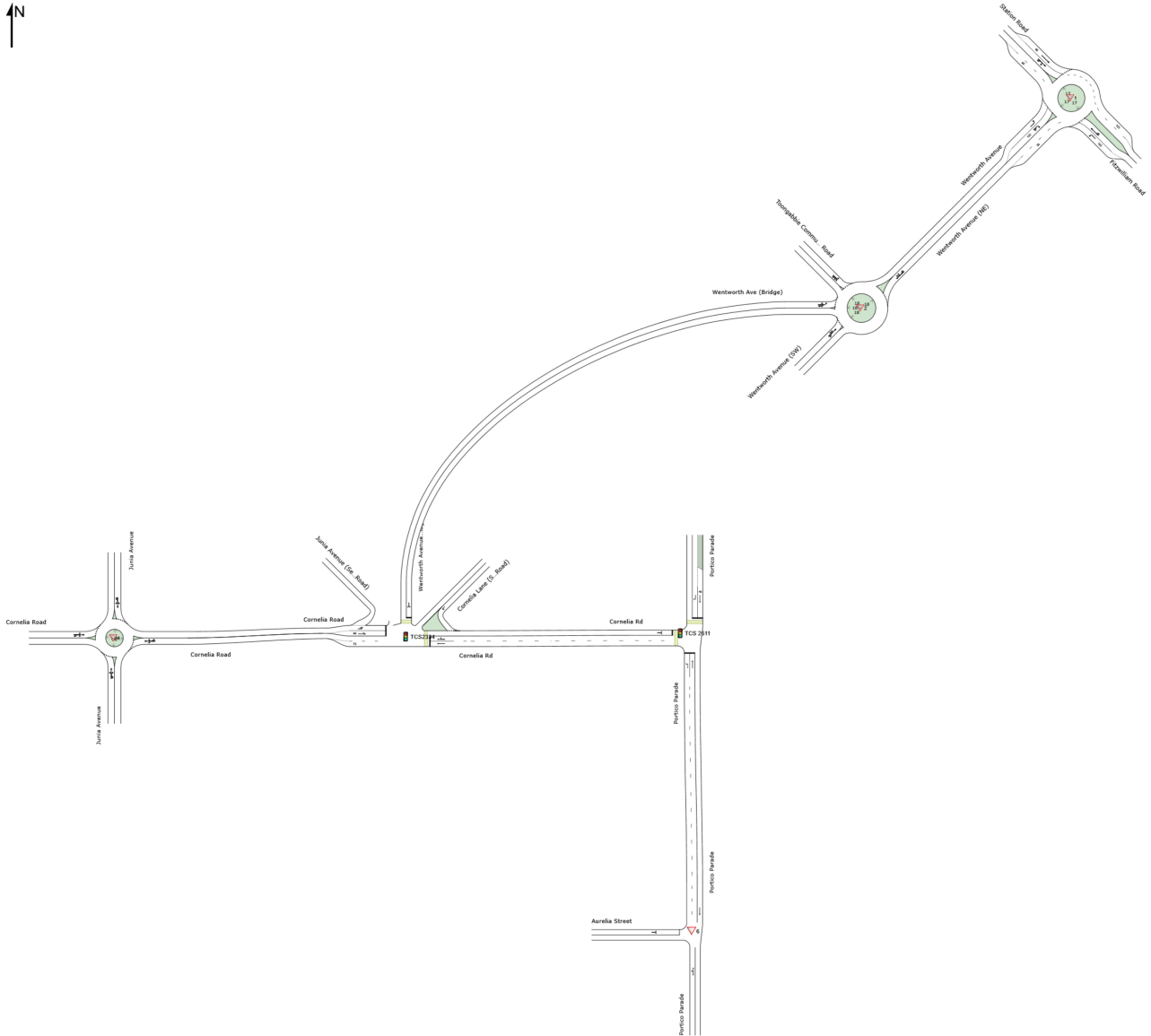
NETWORK LAYOUT

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
▽4	NA	4. Cornelia Rd / Junia Ave
TCS 2611	NA	5. Cornelia Rd / Portico Pde
▽6	NA	6. Aurelia St / Portico Pde

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Project: C:\Users\imathew\OneDrive - Stantec\Projects\Toongabbie\Toongabbie\Des_in\Modelling\Toongabbie SIDRA\toongabbie.sip9

MOVEMENT SUMMARY

Site: 1 [1. Station Rd / Fitzwilliam Rd / Wentworth Ave (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		Arrival Flows		Deg. Satn	Aver. Delay	Level of Service	Aver. Back Of Queue	Prop. Que		Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed
			[Total HV]	%	[Total HV]	%					[Veh. veh	Dist]			
SouthEast: Fitzwilliam Road															
21	L2	All MCs	553	1.1	553	1.1	0.698	14.7	LOS B	3.4	23.9	0.98	0.89	1.27	36.7
22	T1	All MCs	560	3.8	560	3.8	0.618	9.8	LOS A	2.7	19.6	0.93	0.80	1.09	52.3
23u	U	All MCs	2	0.0	2	0.0	0.618	15.8	LOS B	2.7	19.6	0.93	0.80	1.09	45.9
Approach			1115	2.5	1115	2.5	0.698	12.3	LOS A	3.4	23.9	0.95	0.84	1.18	48.2
NorthWest: Station Road															
28	T1	All MCs	401	2.9	401	2.9	0.779	11.1	LOS A	4.3	31.2	0.82	0.75	0.94	52.1
29	R2	All MCs	525	5.2	525	5.2	0.779	19.4	LOS B	4.3	31.2	0.98	0.92	1.36	45.1
29u	U	All MCs	13	8.3	13	8.3	0.779	21.5	LOS B	4.3	31.2	0.98	0.92	1.36	50.2
Approach			939	4.3	939	4.3	0.779	15.9	LOS B	4.3	31.2	0.91	0.85	1.18	48.4
SouthWest: Wentworth Avenue															
30	L2	All MCs	835	3.5	721	3.6	0.809	16.2	LOS B	5.4	38.8	1.00	1.06	1.53	47.0
32	R2	All MCs	424	0.7	366	0.8	0.530	14.6	LOS B	1.9	13.1	0.88	0.82	1.01	38.9
32u	U	All MCs	2	50.0	2	50.5	0.530	19.3	LOS B	1.9	13.1	0.88	0.82	1.01	27.7
Approach			1261	2.7	1089	2.7	0.809	15.6	LOS B	5.4	38.8	0.96	0.98	1.35	45.2
All Vehicles			3315	3.0	3143	3.2	0.809	14.5	LOS B	5.4	38.8	0.94	0.89	1.24	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.

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.

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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		Arrival Flows		Deg. Satn	Aver. Delay	Level of Service	Aver. Back Of Queue	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed	
			[Total HV]	[Total HV]	[Total HV]	[Total HV]	v/c	sec		[Veh. veh	Dist]			km/h	
			veh/h	%	veh/h	%				m					
NorthEast: Wentworth Avenue (NE)															
25	T1	All MCs	319	5.3	319	5.3	0.870	8.4	LOS A	7.2	51.5	1.00	0.65	1.08	42.3
26a	R1	All MCs	760	2.5	760	2.5	0.870	11.7	LOS A	7.2	51.5	1.00	0.65	1.08	31.0
26	R2	All MCs	2	0.0	2	0.0	0.870	12.6	LOS A	7.2	51.5	1.00	0.65	1.08	27.2
26u	U	All MCs	7	0.0	7	0.0	0.870	14.6	LOS B	7.2	51.5	1.00	0.65	1.08	31.0
Approach			1088	3.3	1088	3.3	0.870	10.7	LOS A	7.2	51.5	1.00	0.65	1.08	35.9
NorthWest: Toongabbie Community Access Road															
27	L2	All MCs	2	0.0	2	0.0	0.027	15.6	LOS B	0.1	0.6	0.97	0.79	0.97	12.7
29	R2	All MCs	1	0.0	1	0.0	0.027	20.0	LOS B	0.1	0.6	0.97	0.79	0.97	30.6
29b	R3	All MCs	3	33.3	3	33.3	0.027	23.7	LOS B	0.1	0.6	0.97	0.79	0.97	12.7
29u	U	All MCs	1	0.0	1	0.0	0.027	22.0	LOS B	0.1	0.6	0.97	0.79	0.97	14.1
Approach			7	14.3	7	14.3	0.027	20.6	LOS B	0.1	0.6	0.97	0.79	0.97	16.9
West: Wentworth Ave (Bridge)															
10b	L3	All MCs	4	0.0	4	0.0	1.037	58.9	LOS E	19.3	137.3	1.00	1.98	3.41	15.8
10a	L1	All MCs	855	2.2	762	2.3	1.037	58.6	LOS E	19.3	137.3	1.00	1.98	3.41	15.6
12b	R3	All MCs	176	0.0	157	0.0	1.037	64.2	LOS E	19.3	137.3	1.00	1.98	3.41	23.2
12u	U	All MCs	1	0.0	1	0.0	1.037	65.2	LOS E	19.3	137.3	1.00	1.98	3.41	15.6
Approach			1036	1.8	923	1.9	1.037	59.5	LOS E	19.3	137.3	1.00	1.98	3.41	17.1
SouthWest: Wentworth Avenue (SW)															
30b	L3	All MCs	145	1.4	145	1.4	1.154	172.3	LOS F	24.4	175.1	1.00	3.18	6.77	6.2
30	L2	All MCs	1	0.0	1	0.0	1.154	171.9	LOS F	24.4	175.1	1.00	3.18	6.77	6.8
31	T1	All MCs	393	3.2	393	3.2	1.154	172.4	LOS F	24.4	175.1	1.00	3.18	6.77	6.2
32u	U	All MCs	1	0.0	1	0.0	1.154	178.5	LOS F	24.4	175.1	1.00	3.18	6.77	10.7
Approach			540	2.7	540	2.7	1.154	172.4	LOS F	24.4	175.1	1.00	3.18	6.77	6.2
All Vehicles			2672	2.6	2559	2.8	1.154	62.5	LOS E	24.4	175.1	1.00	1.66	3.12	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.

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MOVEMENT SUMMARY

Site: TCS2334 [3. Wentworth Ave (Bridge) / Cornelia 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)

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		Arrival Flows		Deg. Satn	Aver. Delay	Level of Service	Aver. Back Of Queue		Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed
			[Total HV]	%	[Total HV]	%				[Veh. veh	Dist]				
			veh/h	%	veh/h	%	v/c	sec		m					km/h
East: Cornelia Rd															
5	T1	All MCs	64	0.0	64	0.0	0.074	21.5	LOS B	1.2	8.1	0.64	0.49	0.64	11.2
6	R2	All MCs	325	2.9	325	2.9	*0.705	44.5	LOS D	9.1	65.0	0.98	0.86	1.01	5.4
Approach			389	2.4	389	2.4	0.705	40.7	LOS C	9.1	65.0	0.93	0.80	0.95	6.0
NorthEast: Cornelia Lane (Service Road)															
24b	L3	All MCs	1	0.0	1	0.0	0.001	6.0	LOS A	0.0	0.0	0.22	0.56	0.22	24.6
Approach			1	0.0	1	0.0	0.001	6.0	LOS A	0.0	0.0	0.22	0.56	0.22	24.6
North: Wentworth Avenue (Bridge)															
7	L2	All MCs	306	3.4	300	3.5	0.678	10.0	LOS A	19.4	138.7	0.80	0.84	0.80	27.1
9	R2	All MCs	602	1.9	589	1.9	0.678	31.8	LOS C	19.4	138.7	0.80	0.84	0.80	27.1
Approach			908	2.4	889	2.4	0.678	24.4	LOS B	19.4	138.7	0.80	0.84	0.80	27.1
West: Cornelia Road															
10b	L3	All MCs	1	0.0	1	0.0	0.870	20.8	LOS B	12.7	90.0	0.95	0.97	1.11	11.3
10	L2	All MCs	709	1.2	596	1.2	*0.870	42.5	LOS C	12.7	90.0	0.95	0.97	1.11	9.3
10a	L1	All MCs	5	20.0	4	19.7	0.313	57.1	LOS E	1.1	8.2	0.98	0.73	0.98	8.1
11	T1	All MCs	40	0.0	34	0.0	*0.313	53.8	LOS D	1.1	8.2	0.98	0.73	0.98	6.6
Approach			756	1.3	635	1.2	0.870	43.1	LOS D	12.7	90.0	0.95	0.96	1.10	8.6
All Vehicles			2055	2.0	1914	2.1	0.870	33.9	LOS C	19.4	138.7	0.88	0.87	0.93	16.2

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	Aver. Delay	Level of Service	AVERAGE BACK OF QUEUE		Prop. Que	Eff. Stop Rate	Travel Time	Travel Dist.	Aver. Speed
					[Ped ped	Dist]					
			ped/h	sec		m		sec	m	m/sec	
East: Cornelia Rd											
P2	Full	6	44.2	LOS E	0.0	0.0	0.94	0.94	210.9	200.0	0.95
North: Wentworth Avenue (Bridge)											
P3	Full	29	44.2	LOS E	0.1	0.1	0.94	0.94	210.9	200.0	0.95
All Pedestrians		36	44.2	LOS E	0.1	0.1	0.94	0.94	210.9	200.0	0.95

MOVEMENT SUMMARY

Site: 4 [4. Cornelia Rd / Junia Ave (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		Arrival Flows		Deg. Satn	Aver. Delay	Level of Service	Aver. Back Of Queue		Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed
			[Total HV] veh/h	%	[Total HV] veh/h	%				[Veh. veh	[Dist] m				
South: Junia Avenue															
1	L2	All MCs	37	2.9	37	2.9	0.362	8.0	LOS A	0.9	6.3	0.84	0.60	0.84	39.0
2	T1	All MCs	23	0.0	23	0.0	0.362	7.8	LOS A	0.9	6.3	0.84	0.60	0.84	39.3
3	R2	All MCs	169	1.2	169	1.2	0.362	11.3	LOS A	0.9	6.3	0.84	0.60	0.84	36.2
3u	U	All MCs	1	0.0	1	0.0	0.362	12.7	LOS A	0.9	6.3	0.84	0.60	0.84	40.4
Approach			231	1.4	231	1.4	0.362	10.4	LOS A	0.9	6.3	0.84	0.60	0.84	37.1
East: Cornelia Road															
4	L2	All MCs	69	0.0	68	0.0	0.480	5.0	LOS A	1.4	10.1	0.25	0.49	0.25	42.3
5	T1	All MCs	558	1.9	547	1.9	0.480	5.0	LOS A	1.4	10.1	0.25	0.49	0.25	40.8
6	R2	All MCs	3	0.0	3	0.0	0.480	8.6	LOS A	1.4	10.1	0.25	0.49	0.25	39.0
6u	U	All MCs	15	0.0	14	0.0	0.480	10.2	LOS A	1.4	10.1	0.25	0.49	0.25	32.0
Approach			645	1.6	633	1.6	0.480	5.2	LOS A	1.4	10.1	0.25	0.49	0.25	40.9
North: Junia Avenue															
7	L2	All MCs	44	0.0	44	0.0	0.226	8.4	LOS A	0.4	2.6	0.76	0.73	0.76	31.7
8	T1	All MCs	17	6.3	17	6.3	0.226	8.7	LOS A	0.4	2.6	0.76	0.73	0.76	39.8
9	R2	All MCs	24	0.0	24	0.0	0.226	11.7	LOS A	0.4	2.6	0.76	0.73	0.76	36.6
9u	U	All MCs	3	0.0	3	0.0	0.226	13.2	LOS A	0.4	2.6	0.76	0.73	0.76	36.6
Approach			88	1.2	88	1.2	0.226	9.5	LOS A	0.4	2.6	0.76	0.73	0.76	35.7
West: Cornelia Road															
10	L2	All MCs	11	0.0	11	0.0	1.301	284.0	LOS F	38.0	269.6	1.00	4.85	8.46	4.6
11	T1	All MCs	529	1.4	529	1.4	1.301	284.2	LOS F	38.0	269.6	1.00	4.85	8.46	2.3
12	R2	All MCs	29	3.6	29	3.6	1.301	287.8	LOS F	38.0	269.6	1.00	4.85	8.46	6.0
12u	U	All MCs	7	0.0	7	0.0	1.301	289.2	LOS F	38.0	269.6	1.00	4.85	8.46	4.1
Approach			577	1.5	577	1.5	1.301	284.5	LOS F	38.0	269.6	1.00	4.85	8.46	2.5
All Vehicles			1541	1.5	1528	1.5	1.301	111.6	LOS F	38.0	269.6	0.65	2.16	3.47	7.8

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: TCS 2611 [5. Cornelia Rd / Portico Pde (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)

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		Arrival Flows		Deg. Satn	Aver. Delay	Level of Service	Aver. Back Of Queue		Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed
			[Total HV] veh/h	%	[Total HV] veh/h	%				[Veh. veh	[Dist] m				
South: Portico Parade															
1	L2	All MCs	367	1.7	367	1.7	*0.428	3.7	LOS A	1.2	8.8	0.22	0.59	0.22	23.4
2	T1	All MCs	85	4.9	85	4.9	0.255	38.6	LOS C	2.2	16.3	0.90	0.70	0.90	13.7
Approach			453	2.3	453	2.3	0.428	10.3	LOS A	2.2	16.3	0.35	0.61	0.35	17.2
North: Portico Parade															
8	T1	All MCs	148	4.3	148	4.3	*0.441	40.2	LOS C	4.0	29.3	0.94	0.76	0.94	11.8
9	R2	All MCs	22	14.3	22	14.3	0.259	49.3	LOS D	0.6	5.1	0.92	0.74	0.92	10.0
Approach			171	5.6	171	5.6	0.441	41.4	LOS C	4.0	29.3	0.94	0.76	0.94	11.6
West: Cornelia Rd															
10	L2	All MCs	35	3.0	33	3.1	0.272	10.8	LOS A	3.3	23.9	0.36	0.65	0.36	29.8
12	R2	All MCs	313	3.4	301	3.4	0.272	9.7	LOS A	3.3	23.9	0.36	0.65	0.36	18.5
Approach			347	3.3	334	3.4	0.272	9.8	LOS A	3.3	23.9	0.36	0.65	0.36	20.5
All Vehicles			971	3.3	958	3.3	0.441	15.7	LOS B	4.0	29.3	0.46	0.65	0.46	15.7

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	Aver. Delay	Level of Service	AVERAGE BACK OF QUEUE		Prop. Que	Eff. Stop Rate	Travel Time	Travel Dist.	Aver. Speed
					[Ped ped	[Dist] m					
North: Portico Parade											
P3	Full	51	44.3	LOS E	0.1	0.1	0.94	0.94	210.9	200.0	0.95
West: Cornelia Rd											
P4	Full	11	44.2	LOS E	0.0	0.0	0.94	0.94	210.9	200.0	0.95
All Pedestrians		61	44.3	LOS E	0.1	0.1	0.94	0.94	210.9	200.0	0.95

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)]

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

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

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

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand Flows		Arrival Flows		Deg. Satn	Aver. Delay	Level of Service	Aver. Back Of Queue [Veh. veh]	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h	
			[Total HV] veh/h	%	[Total HV] veh/h	%									
South: Portico Parade															
1	L2	All MCs	65	1.6	65	1.6	0.258	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	0.258	0.0	LOS A	0.0	0.0	0.00	0.07	0.00	47.5
Approach			487	2.4	487	2.4	0.258	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	0.240	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	49.9
Approach			462	3.9	450	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	0.085	5.7	LOS A	0.1	0.8	0.51	0.68	0.51	40.9
12	R2	All MCs	29	3.6	29	3.6	0.085	10.0	LOS A	0.1	0.8	0.51	0.68	0.51	41.1
Approach			61	1.7	61	1.7	0.085	7.8	LOS A	0.1	0.8	0.51	0.68	0.51	41.0
All Vehicles			1011	3.0	999	3.1	0.258	0.8	NA	0.1	0.8	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.

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MOVEMENT SUMMARY

Site: 1 [1. Station Rd / Fitzwilliam Rd / Wentworth Ave (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		Arrival Flows		Deg. Satn	Aver. Delay	Level of Service	Aver. Back Of Queue		Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed
			[Total HV] veh/h	%	[Total HV] veh/h	%				[Veh. veh	[Dist] m				
SouthEast: Fitzwilliam Road															
21	L2	All MCs	512	1.4	512	1.4	0.728	14.1	LOS A	3.6	25.9	0.93	0.87	1.20	36.2
22	T1	All MCs	562	0.7	562	0.7	0.869	21.5	LOS B	6.1	43.1	1.00	1.13	1.67	46.2
23u	U	All MCs	6	0.0	6	0.0	0.869	27.6	LOS B	6.1	43.1	1.00	1.13	1.67	37.5
Approach			1080	1.1	1080	1.1	0.869	18.0	LOS B	6.1	43.1	0.97	1.00	1.45	43.9
NorthWest: Station Road															
28	T1	All MCs	513	1.4	513	1.4	0.731	16.1	LOS B	3.6	25.4	0.99	0.93	1.34	49.8
29	R2	All MCs	547	1.9	547	1.9	1.524	488.2	LOS F	50.9	361.7	1.00	7.44	16.35	6.4
29u	U	All MCs	13	0.0	13	0.0	1.524	490.0	LOS F	50.9	361.7	1.00	7.44	16.35	11.4
Approach			1073	1.7	1073	1.7	1.524	262.6	LOS F	50.9	361.7	0.99	4.33	9.18	12.4
SouthWest: Wentworth Avenue															
30	L2	All MCs	628	2.8	563	2.7	0.947	39.6	LOS C	8.8	62.9	1.00	1.57	2.54	36.9
32	R2	All MCs	569	1.3	510	1.3	0.846	27.3	LOS B	5.3	37.2	1.00	1.18	1.75	30.9
32u	U	All MCs	2	0.0	2	0.0	0.846	29.1	LOS C	5.3	37.2	1.00	1.18	1.75	18.8
Approach			1200	2.1	1075	2.0	0.947	33.7	LOS C	8.8	62.9	1.00	1.38	2.16	34.8
All Vehicles			3353	1.6	3228	1.7	1.524	104.5	LOS F	50.9	361.7	0.99	2.23	4.26	20.8

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.

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Project: C:\Users\imathew\OneDrive - Stantec\Projects\Toongabbie\Toongabbie\Des_in\Modelling\Toongabbie SIDRA\toongabbie.sip9

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		Arrival Flows		Deg. Satn	Aver. Delay	Level of Service	Aver. Back Of Queue	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed	
			[Total HV]	%	[Total HV]	%	v/c	sec		[Veh. veh	Dist]			km/h	
			veh/h		veh/h					m					
NorthEast: Wentworth Avenue (NE)															
25	T1	All MCs	252	3.3	207	3.1	1.197	194.8	LOS F	23.3	165.0	1.00	3.63	6.56	7.9
26a	R1	All MCs	807	1.0	665	1.0	1.197	198.1	LOS F	23.3	165.0	1.00	3.63	6.56	3.4
26	R2	All MCs	1	0.0	1	0.0	1.197	199.1	LOS F	23.3	165.0	1.00	3.63	6.56	4.1
26u	U	All MCs	6	0.0	5	0.0	1.197	201.1	LOS F	23.3	165.0	1.00	3.63	6.56	3.4
Approach			1066	1.6	878	1.5	1.197	197.4	LOS F	23.3	165.0	1.00	3.63	6.56	4.6
NorthWest: Toongabbie Community Access Road															
27	L2	All MCs	19	0.0	19	0.0	0.184	17.3	LOS B	0.5	3.8	1.00	0.86	1.00	12.3
29	R2	All MCs	8	0.0	8	0.0	0.184	21.7	LOS B	0.5	3.8	1.00	0.86	1.00	30.3
29b	R3	All MCs	22	0.0	22	0.0	0.184	22.7	LOS B	0.5	3.8	1.00	0.86	1.00	12.3
29u	U	All MCs	1	0.0	1	0.0	0.184	23.7	LOS B	0.5	3.8	1.00	0.86	1.00	13.8
Approach			51	0.0	51	0.0	0.184	20.6	LOS B	0.5	3.8	1.00	0.86	1.00	17.1
West: Wentworth Ave (Bridge)															
10b	L3	All MCs	17	0.0	16	0.0	1.014	41.6	LOS C	18.4	130.7	1.00	1.66	2.52	19.5
10a	L1	All MCs	874	1.6	816	1.6	1.014	41.3	LOS C	18.4	130.7	1.00	1.66	2.52	19.8
12b	R3	All MCs	208	1.0	195	1.0	1.014	47.0	LOS D	18.4	130.7	1.00	1.66	2.52	28.0
12u	U	All MCs	1	0.0	1	0.0	1.014	47.9	LOS D	18.4	130.7	1.00	1.66	2.52	19.8
Approach			1100	1.4	1028	1.4	1.014	42.4	LOS C	18.4	130.7	1.00	1.66	2.52	21.8
SouthWest: Wentworth Avenue (SW)															
30b	L3	All MCs	140	2.3	140	2.3	1.219	227.4	LOS F	25.2	181.9	1.00	3.40	7.71	4.8
30	L2	All MCs	8	0.0	8	0.0	1.219	227.0	LOS F	25.2	181.9	1.00	3.40	7.71	5.3
31	T1	All MCs	299	4.2	299	4.2	1.219	227.5	LOS F	25.2	181.9	1.00	3.40	7.71	4.8
32u	U	All MCs	4	0.0	4	0.0	1.219	233.6	LOS F	25.2	181.9	1.00	3.40	7.71	8.5
Approach			452	3.5	452	3.5	1.219	227.5	LOS F	25.2	181.9	1.00	3.40	7.71	4.8
All Vehicles			2668	1.8	2408	2.0	1.219	133.1	LOS F	25.2	181.9	1.00	2.69	4.93	7.9

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: TCS2334 [3. Wentworth Ave (Bridge) / Cornelia 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)

Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 110 seconds (Network User-Given Cycle Time)

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand Flows		Arrival Flows		Deg. Satn	Aver. Delay	Level of Service	Aver. Back Of Queue	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed	
			[Total HV]	[Total HV]			v/c	sec		[Veh. veh]	[Dist] m			km/h	
			veh/h	%	veh/h	%									
East: Cornelia Rd															
5	T1	All MCs	119	0.9	119	0.9	0.130	25.7	LOS B	2.6	18.0	0.70	0.56	0.70	9.6
6	R2	All MCs	340	1.2	340	1.2	*0.664	47.3	LOS D	9.2	65.0	0.97	0.84	0.97	5.1
Approach			459	1.1	459	1.1	0.664	41.7	LOS C	9.2	65.0	0.90	0.77	0.90	5.9
NorthEast: Cornelia Lane (Service Road)															
24b	L3	All MCs	12	0.0	12	0.0	0.010	6.0	LOS A	0.0	0.3	0.23	0.58	0.23	24.5
Approach			12	0.0	12	0.0	0.010	6.0	LOS A	0.0	0.3	0.23	0.58	0.23	24.5
North: Wentworth Avenue (Bridge)															
7	L2	All MCs	257	1.2	184	1.4	0.683	9.7	LOS A	16.5	116.7	0.79	0.84	0.79	26.5
9	R2	All MCs	713	1.2	509	1.2	*0.683	31.1	LOS C	16.5	116.7	0.79	0.84	0.79	26.5
Approach			969	1.2	693	1.2	0.683	25.4	LOS B	16.5	116.7	0.79	0.84	0.79	26.5
West: Cornelia Road															
10b	L3	All MCs	2	0.0	2	0.0	0.544	6.7	LOS A	11.5	81.2	0.56	0.74	0.56	20.4
10	L2	All MCs	758	1.4	685	1.4	0.544	15.4	LOS B	11.5	81.2	0.56	0.74	0.56	19.3
10a	L1	All MCs	4	0.0	4	0.0	0.630	60.0	LOS E	3.7	25.7	1.00	0.81	1.05	7.5
11	T1	All MCs	116	0.9	105	0.9	*0.630	56.7	LOS E	3.7	25.7	1.00	0.81	1.05	6.0
Approach			880	1.3	796	1.3	0.630	21.0	LOS B	11.5	81.2	0.62	0.75	0.63	15.3
All Vehicles			2320	1.2	1959	1.5	0.683	27.3	LOS B	16.5	116.7	0.74	0.79	0.75	17.3

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	Aver. Delay	Level of Service	AVERAGE BACK OF QUEUE		Prop. Que	Eff. Stop Rate	Travel Time	Travel Dist.	Aver. Speed
		ped/h	sec		[Ped ped]	[Dist] m			sec	m	m/sec
East: Cornelia Rd											
P2	Full	16	49.2	LOS E	0.0	0.0	0.95	0.95	215.9	200.0	0.93
North: Wentworth Avenue (Bridge)											
P3	Full	41	49.2	LOS E	0.1	0.1	0.95	0.95	215.9	200.0	0.93
All Pedestrians		57	49.2	LOS E	0.1	0.1	0.95	0.95	215.9	200.0	0.93

MOVEMENT SUMMARY

Site: 4 [4. Cornelia Rd / Junia Ave (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		Arrival Flows		Deg. Satn	Aver. Delay	Level of Service	Aver. Back Of Queue		Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed
			[Total HV]	%	[Total HV]	%				[Veh. veh	Dist]				
			veh/h	%	veh/h	%	v/c	sec		m					km/h
South: Junia Avenue															
1	L2	All MCs	61	0.0	61	0.0	0.405	8.5	LOS A	1.0	7.2	0.85	0.69	0.87	38.9
2	T1	All MCs	17	0.0	17	0.0	0.405	8.4	LOS A	1.0	7.2	0.85	0.69	0.87	39.0
3	R2	All MCs	159	0.0	159	0.0	0.405	11.8	LOS A	1.0	7.2	0.85	0.69	0.87	35.8
3u	U	All MCs	1	0.0	1	0.0	0.405	13.3	LOS A	1.0	7.2	0.85	0.69	0.87	40.2
Approach			238	0.0	238	0.0	0.405	10.7	LOS A	1.0	7.2	0.85	0.69	0.87	37.1
East: Cornelia Road															
4	L2	All MCs	89	0.0	68	0.0	0.717	6.4	LOS A	3.0	21.3	0.52	0.56	0.52	40.7
5	T1	All MCs	704	1.5	537	1.5	0.717	6.5	LOS A	3.0	21.3	0.52	0.56	0.52	38.5
6	R2	All MCs	14	0.0	10	0.0	0.717	10.0	LOS A	3.0	21.3	0.52	0.56	0.52	37.1
6u	U	All MCs	52	0.0	39	0.0	0.717	11.6	LOS A	3.0	21.3	0.52	0.56	0.52	28.7
Approach			859	1.2	655	1.2	0.717	6.8	LOS A	3.0	21.3	0.52	0.56	0.52	38.5
North: Junia Avenue															
7	L2	All MCs	40	0.0	40	0.0	0.194	9.8	LOS A	0.4	2.9	0.87	0.77	0.87	30.4
8	T1	All MCs	20	0.0	20	0.0	0.194	9.8	LOS A	0.4	2.9	0.87	0.77	0.87	39.0
9	R2	All MCs	16	0.0	16	0.0	0.194	13.1	LOS A	0.4	2.9	0.87	0.77	0.87	35.6
9u	U	All MCs	1	0.0	1	0.0	0.194	14.7	LOS B	0.4	2.9	0.87	0.77	0.87	35.7
Approach			77	0.0	77	0.0	0.194	10.6	LOS A	0.4	2.9	0.87	0.77	0.87	34.9
West: Cornelia Road															
10	L2	All MCs	16	0.0	16	0.0	1.133	135.3	LOS F	29.1	206.7	1.00	3.18	5.26	8.7
11	T1	All MCs	652	1.9	652	1.9	1.133	135.6	LOS F	29.1	206.7	1.00	3.18	5.26	4.6
12	R2	All MCs	64	0.0	64	0.0	1.133	138.9	LOS F	29.1	206.7	1.00	3.18	5.26	11.1
12u	U	All MCs	7	0.0	7	0.0	1.133	140.5	LOS F	29.1	206.7	1.00	3.18	5.26	7.9
Approach			739	1.7	739	1.7	1.133	135.9	LOS F	29.1	206.7	1.00	3.18	5.26	5.4
All Vehicles			1913	1.2	1709	1.4	1.133	63.3	LOS E	29.1	206.7	0.79	1.72	2.63	12.3

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: TCS 2611 [5. Cornelia Rd / Portico Pde (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)

Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 110 seconds (Network User-Given Cycle Time)

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand Flows		Arrival Flows		Deg. Satn	Aver. Delay	Level of Service	Aver. Back Of Queue		Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed
			[Total HV] veh/h	%	[Total HV] veh/h	%				[Veh. veh	[Dist] m				
South: Portico Parade															
1	L2	All MCs	435	0.7	435	0.7	*0.483	4.1	LOS A	2.1	14.8	0.27	0.60	0.27	22.2
2	T1	All MCs	94	3.4	94	3.4	0.202	35.5	LOS C	2.5	17.7	0.83	0.66	0.83	14.6
Approach			528	1.2	528	1.2	0.483	9.7	LOS A	2.5	17.7	0.37	0.61	0.37	17.7
North: Portico Parade															
8	T1	All MCs	111	1.9	111	1.9	0.235	35.9	LOS C	2.9	20.8	0.84	0.67	0.84	12.9
9	R2	All MCs	24	8.7	24	8.7	*0.291	52.5	LOS D	0.8	5.8	0.91	0.75	0.91	9.5
Approach			135	3.1	135	3.1	0.291	38.9	LOS C	2.9	20.8	0.86	0.69	0.86	12.1
West: Cornelia Rd															
10	L2	All MCs	54	3.9	42	4.2	0.231	20.2	LOS B	5.4	38.1	0.61	0.64	0.61	23.7
12	R2	All MCs	320	0.7	250	0.7	0.231	16.9	LOS B	5.4	38.1	0.61	0.64	0.61	12.5
Approach			374	1.1	292	1.2	0.231	17.3	LOS B	5.4	38.1	0.61	0.64	0.61	14.9
All Vehicles			1037	1.4	955	1.5	0.483	16.1	LOS B	5.4	38.1	0.51	0.63	0.51	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	Aver. Delay	Level of Service	AVERAGE BACK OF QUEUE		Prop. Que	Eff. Stop Rate	Travel Time	Travel Dist.	Aver. Speed
					[Ped ped	[Dist] m					
North: Portico Parade											
P3	Full	231	49.6	LOS E	0.7	0.7	0.95	0.95	216.3	200.0	0.92
West: Cornelia Rd											
P4	Full	252	49.7	LOS E	0.8	0.8	0.96	0.96	216.4	200.0	0.92
All Pedestrians		482	49.7	LOS E	0.8	0.8	0.96	0.96	216.3	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: 6 [6. Aurelia St / Portico Pde (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)
 Give-Way (Two-Way)

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand Flows		Arrival Flows		Deg. Satn	Aver. Delay	Level of Service	Aver. Back of Queue [Veh. veh]	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h	
			[Total HV] veh/h	%	[Total HV] veh/h	%									
South: Portico Parade															
1	L2	All MCs	127	0.0	127	0.0	0.294	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	0.294	0.0	LOS A	0.0	0.0	0.00	0.12	0.00	46.0
Approach			561	0.9	561	0.9	0.294	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	360	1.0	0.187	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	49.9
Approach			431	1.0	360	1.0	0.187	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	0.3	1.9	0.50	0.68	0.50	41.4
12	R2	All MCs	52	0.0	52	0.0	0.173	9.7	LOS A	0.3	1.9	0.50	0.68	0.50	41.6
Approach			146	0.7	146	0.7	0.173	7.2	LOS A	0.3	1.9	0.50	0.68	0.50	41.5
All Vehicles			1138	0.9	1068	1.0	0.294	1.6	NA	0.3	1.9	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.

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Project: C:\Users\imathew\OneDrive - Stantec\Projects\Toongabbie\Toongabbie\Des_in\Modelling\Toongabbie SIDRA\toongabbie.sip9

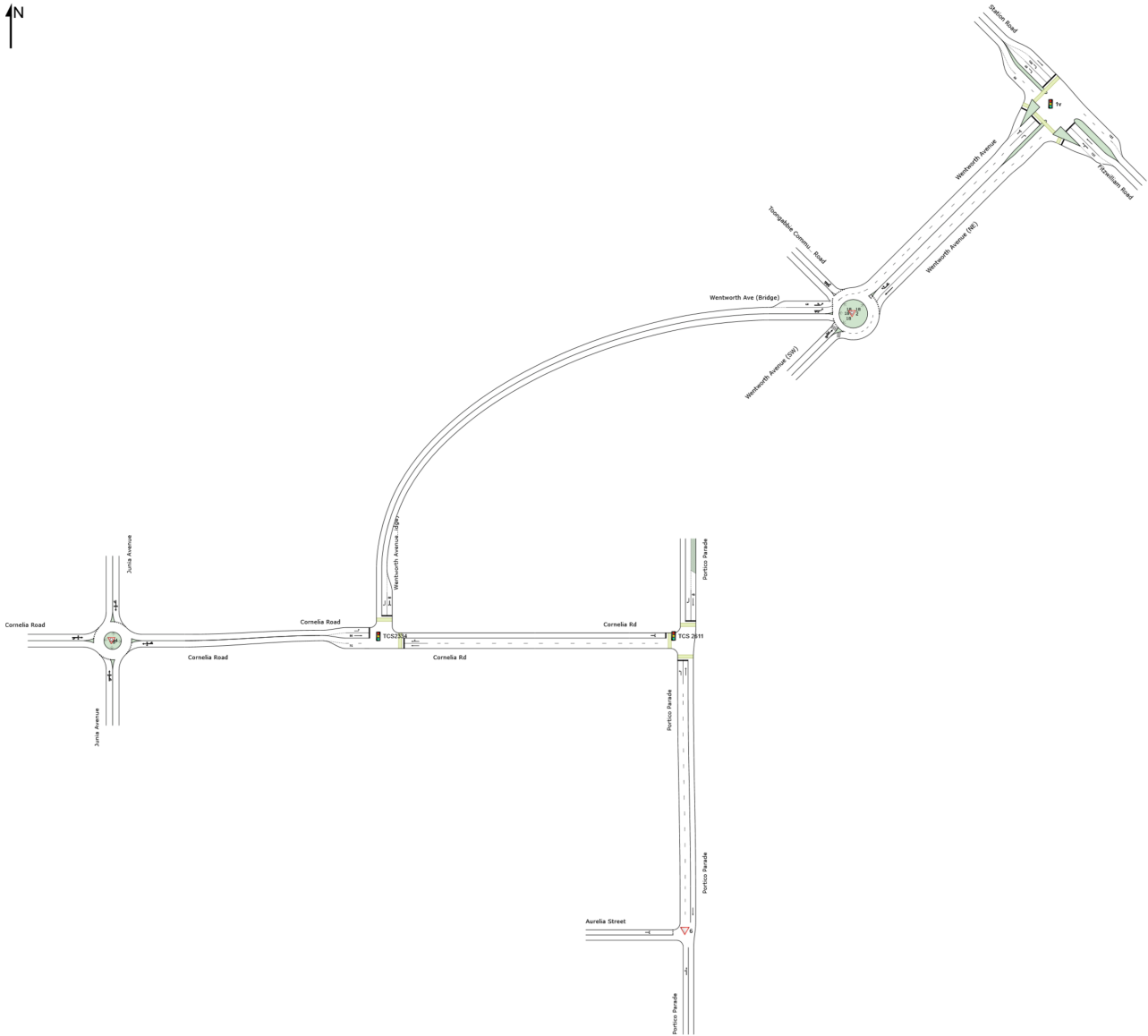
2037 Project Case

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
4	NA	4. Cornelia Rd / Junia Ave
TCS 2611	NA	5. Cornelia Rd / 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)]

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

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

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		Arrival Flows		Deg. Satn	Aver. Delay	Level of Service	Aver. Back Of Queue	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed	
			[Total HV]	%	[Total HV]	%	v/c	sec		[Veh. veh	Dist]			km/h	
			veh/h		veh/h					veh	m				
SouthEast: Fitzwilliam Road															
21	L2	All MCs	553	1.1	553	1.1	0.418	11.9	LOS A	7.2	50.7	0.40	0.69	0.40	39.9
22	T1	All MCs	560	3.8	560	3.8	0.757	39.5	LOS C	19.8	143.4	0.92	0.83	0.92	40.2
Approach			1113	2.5	1113	2.5	0.757	25.8	LOS B	19.8	143.4	0.66	0.76	0.66	39.2
NorthWest: Station Road															
28	T1	All MCs	401	2.9	401	2.9	0.307	11.3	LOS A	6.9	49.5	0.45	0.40	0.45	52.8
29	R2	All MCs	525	5.2	525	5.2	0.771	71.1	LOS F	10.8	79.0	1.00	0.88	1.07	28.2
Approach			926	4.2	926	4.2	0.771	45.2	LOS D	10.8	79.0	0.76	0.67	0.81	35.7
SouthWest: Wentworth Avenue															
30	L2	All MCs	835	3.5	715	3.5	* 0.766	24.0	LOS B	19.9	143.4	0.80	0.84	0.80	44.5
32	R2	All MCs	424	0.7	364	0.9	* 0.763	59.4	LOS E	14.4	101.7	0.99	0.87	1.02	19.9
Approach			1259	2.6	1079	2.6	0.766	36.0	LOS C	19.9	143.4	0.86	0.85	0.87	36.1
All Vehicles			3298	3.0	3118	3.2	0.771	35.1	LOS C	19.9	143.4	0.76	0.76	0.78	36.9

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	Aver. Delay	Level of Service	AVERAGE BACK OF QUEUE		Prop. Que	Eff. Stop Rate	Travel Time	Travel Dist.	Aver. Speed
		ped/h	sec		[Ped ped	Dist]			sec	m	m/sec
					ped	m					
SouthEast: Fitzwilliam Road											
P5B	Slip/Bypass	53	64.3	LOS F	0.2	0.2	0.96	0.96	230.9	200.0	0.87
NorthWest: Station Road											
P7	Full	53	64.3	LOS F	0.2	0.2	0.96	0.96	230.9	200.0	0.87
SouthWest: Wentworth Avenue											
P8	Full	53	64.3	LOS F	0.2	0.2	0.96	0.96	230.9	200.0	0.87
P8B	Slip/Bypass	53	64.3	LOS F	0.2	0.2	0.96	0.96	230.9	200.0	0.87
All Pedestrians		211	64.3	LOS F	0.2	0.2	0.96	0.96	230.9	200.0	0.87

MOVEMENT SUMMARY

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

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

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Project Case 2037 AM
Site Category: (None)
Roundabout

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand Flows		Arrival Flows		Deg. Satn	Aver. Delay	Level of Service	Aver. Back Of Queue		Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed
			[Total HV] veh/h	%	[Total HV] veh/h	%				[Veh. veh	[Dist] m				
NorthEast: Wentworth Avenue (NE)															
25	T1	All MCs	319	5.3	319	5.3	0.302	5.4	LOS A	0.7	5.2	0.36	0.49	0.36	47.7
26a	R1	All MCs	760	2.5	760	2.5	0.537	8.6	LOS A	1.9	13.5	0.41	0.62	0.41	33.9
26	R2	All MCs	2	0.0	2	0.0	0.537	9.6	LOS A	1.9	13.5	0.41	0.62	0.41	29.0
26u	U	All MCs	7	0.0	7	0.0	0.537	11.6	LOS A	1.9	13.5	0.41	0.62	0.41	33.9
Approach			1088	3.3	1088	3.3	0.537	7.7	LOS A	1.9	13.5	0.39	0.58	0.39	39.7
NorthWest: Toongabbie Community Access Road															
27	L2	All MCs	2	0.0	2	0.0	0.019	7.5	LOS A	0.0	0.2	0.73	0.77	0.73	19.0
29	R2	All MCs	1	0.0	1	0.0	0.019	12.0	LOS A	0.0	0.2	0.73	0.77	0.73	37.5
29b	R3	All MCs	3	33.3	3	33.3	0.019	14.4	LOS A	0.0	0.2	0.73	0.77	0.73	19.0
29u	U	All MCs	1	0.0	1	0.0	0.019	14.0	LOS A	0.0	0.2	0.73	0.77	0.73	18.5
Approach			7	14.3	7	14.3	0.019	12.0	LOS A	0.0	0.2	0.73	0.77	0.73	23.6
West: Wentworth Ave (Bridge)															
10b	L3	All MCs	4	0.0	4	0.0	0.593	8.5	LOS A	1.3	9.2	0.68	0.74	0.77	36.3
10a	L1	All MCs	855	2.2	762	2.3	0.593	7.2	LOS A	2.0	14.1	0.66	0.72	0.72	43.0
12b	R3	All MCs	176	0.0	157	0.0	0.593	12.3	LOS A	2.0	14.1	0.65	0.71	0.68	47.0
12u	U	All MCs	1	0.0	1	0.0	0.593	13.3	LOS A	2.0	14.1	0.65	0.71	0.68	42.8
Approach			1036	1.8	923	1.9	0.593	8.1	LOS A	2.0	14.1	0.66	0.72	0.71	44.0
SouthWest: Wentworth Avenue (SW)															
30b	L3	All MCs	145	1.4	145	1.4	1.270	272.5	LOS F	34.3	245.8	1.00	4.41	8.84	4.1
30	L2	All MCs	1	0.0	1	0.0	1.270	272.1	LOS F	34.3	245.8	1.00	4.41	8.84	4.5
31	T1	All MCs	393	3.2	393	3.2	1.270	272.5	LOS F	34.3	245.8	1.00	4.41	8.84	4.1
32u	U	All MCs	1	0.0	1	0.0	1.270	278.6	LOS F	34.3	245.8	1.00	4.41	8.84	7.3
Approach			540	2.7	540	2.7	1.270	272.5	LOS F	34.3	245.8	1.00	4.41	8.84	4.1
All Vehicles			2672	2.6	2559	2.8	1.270	63.7	LOS E	34.3	245.8	0.62	1.44	2.29	14.3

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: TCS2334 [3. Wentworth Ave (Bridge) / Cornelia 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)

Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 140 seconds (Network User-Given Cycle Time)

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand Flows		Arrival Flows		Deg. Satn	Aver. Delay	Level of Service	Aver. Back Of Queue	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed	
			[Total HV]	[Total HV]			v/c	sec		[Veh. veh]	[Dist]			km/h	
			veh/h	%	veh/h	%				veh	m				
East: Cornelia Rd															
5	T1	All MCs	64	0.0	64	0.0	0.060	22.6	LOS B	1.4	9.8	0.57	0.44	0.57	10.5
6	R2	All MCs	325	2.9	325	2.9	*0.480	39.1	LOS C	9.1	65.0	0.81	0.93	0.81	6.3
Approach			389	2.4	389	2.4	0.480	36.4	LOS C	9.1	65.0	0.77	0.85	0.77	6.7
North: Wentworth Avenue (Bridge)															
7	L2	All MCs	306	3.4	296	3.5	0.166	19.9	LOS B	3.8	27.6	0.34	0.67	0.34	37.6
9	R2	All MCs	602	1.9	582	1.9	*0.592	43.4	LOS D	17.6	125.1	0.80	0.83	0.80	21.8
Approach			908	2.4	877	2.5	0.592	35.5	LOS C	17.6	125.1	0.64	0.78	0.64	21.7
West: Cornelia Road															
10	L2	All MCs	709	1.2	596	1.2	0.616	21.5	LOS B	12.7	90.0	0.62	0.79	0.62	14.6
11	T1	All MCs	40	0.0	34	0.0	*0.131	57.1	LOS E	1.2	8.5	0.89	0.69	0.89	6.0
Approach			749	1.1	630	1.1	0.616	23.4	LOS B	12.7	90.0	0.63	0.78	0.63	12.8
All Vehicles			2047	2.0	1897	2.1	0.616	31.7	LOS C	17.6	125.1	0.66	0.79	0.66	16.8

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	Aver. Delay	Level of Service	AVERAGE BACK OF QUEUE		Prop. Que	Eff. Stop Rate	Travel Time	Travel Dist.	Aver. Speed
		ped/h	sec		[Ped ped]	[Dist]			sec	m	m/sec
East: Cornelia Rd											
P2	Full	6	64.1	LOS F	0.0	0.0	0.96	0.96	230.8	200.0	0.87
North: Wentworth Avenue (Bridge)											
P3	Full	29	64.2	LOS F	0.1	0.1	0.96	0.96	230.9	200.0	0.87
All Pedestrians		36	64.2	LOS F	0.1	0.1	0.96	0.96	230.9	200.0	0.87

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		Arrival Flows		Deg. Satn	Aver. Delay	Level of Service	Aver. Back Of Queue		Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed
			[Total HV] veh/h	%	[Total HV] veh/h	%				[Veh. veh	[Dist] m				
South: Junia Avenue															
1	L2	All MCs	37	2.9	37	2.9	0.360	7.9	LOS A	0.9	6.2	0.83	0.60	0.83	39.1
2	T1	All MCs	23	0.0	23	0.0	0.360	7.7	LOS A	0.9	6.2	0.83	0.60	0.83	39.4
3	R2	All MCs	169	1.2	169	1.2	0.360	11.1	LOS A	0.9	6.2	0.83	0.60	0.83	36.3
3u	U	All MCs	1	0.0	1	0.0	0.360	12.6	LOS A	0.9	6.2	0.83	0.60	0.83	40.5
Approach			231	1.4	231	1.4	0.360	10.3	LOS A	0.9	6.2	0.83	0.60	0.83	37.3
East: Cornelia Road															
4	L2	All MCs	69	0.0	67	0.0	0.475	5.0	LOS A	1.4	9.9	0.25	0.49	0.25	42.3
5	T1	All MCs	558	1.9	541	1.9	0.475	5.0	LOS A	1.4	9.9	0.25	0.49	0.25	40.8
6	R2	All MCs	3	0.0	3	0.0	0.475	8.5	LOS A	1.4	9.9	0.25	0.49	0.25	39.0
6u	U	All MCs	15	0.0	14	0.0	0.475	10.2	LOS A	1.4	9.9	0.25	0.49	0.25	32.0
Approach			645	1.6	625	1.6	0.475	5.2	LOS A	1.4	9.9	0.25	0.49	0.25	40.9
North: Junia Avenue															
7	L2	All MCs	44	0.0	44	0.0	0.226	8.4	LOS A	0.4	2.6	0.76	0.73	0.76	31.7
8	T1	All MCs	17	6.3	17	6.3	0.226	8.7	LOS A	0.4	2.6	0.76	0.73	0.76	39.8
9	R2	All MCs	24	0.0	24	0.0	0.226	11.7	LOS A	0.4	2.6	0.76	0.73	0.76	36.6
9u	U	All MCs	3	0.0	3	0.0	0.226	13.2	LOS A	0.4	2.6	0.76	0.73	0.76	36.6
Approach			88	1.2	88	1.2	0.226	9.5	LOS A	0.4	2.6	0.76	0.73	0.76	35.7
West: Cornelia Road															
10	L2	All MCs	11	0.0	11	0.0	1.301	283.4	LOS F	38.0	269.2	1.00	4.84	8.45	4.6
11	T1	All MCs	529	1.4	529	1.4	1.301	283.5	LOS F	38.0	269.2	1.00	4.84	8.45	2.3
12	R2	All MCs	29	3.6	29	3.6	1.301	287.1	LOS F	38.0	269.2	1.00	4.84	8.45	6.0
12u	U	All MCs	7	0.0	7	0.0	1.301	288.5	LOS F	38.0	269.2	1.00	4.84	8.45	4.1
Approach			577	1.5	577	1.5	1.301	283.8	LOS F	38.0	269.2	1.00	4.84	8.45	2.6
All Vehicles			1541	1.5	1521	1.5	1.301	111.9	LOS F	38.0	269.2	0.65	2.17	3.48	7.8

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: TCS 2611 [5. Cornelia Rd / 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 = 140 seconds (Network User-Given Cycle Time)

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand Flows		Arrival Flows		Deg. Satn	Aver. Delay	Level of Service	Aver. Back Of Queue	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed	
			[Total HV] veh/h	%	[Total HV] veh/h	%									v/c
South: Portico Parade															
1	L2	All MCs	367	1.7	367	1.7	0.435	5.4	LOS A	3.5	24.6	0.25	0.60	0.25	18.9
2	T1	All MCs	85	4.9	85	4.9	*0.238	51.6	LOS D	3.0	22.1	0.89	0.70	0.89	11.1
Approach			453	2.3	453	2.3	0.435	14.1	LOS A	3.5	24.6	0.37	0.62	0.37	13.9
North: Portico Parade															
8	T1	All MCs	148	4.3	148	4.3	0.278	41.4	LOS C	4.8	34.7	0.82	0.67	0.82	11.6
9	R2	All MCs	22	14.3	22	14.3	*0.187	52.7	LOS D	0.8	6.2	0.87	0.73	0.87	9.5
Approach			171	5.6	171	5.6	0.278	42.9	LOS D	4.8	34.7	0.83	0.68	0.83	11.2
West: Cornelia Rd															
10	L2	All MCs	35	3.0	33	3.2	0.300	8.9	LOS A	4.2	30.0	0.33	0.64	0.33	27.6
12	R2	All MCs	313	3.4	298	3.5	*0.300	12.5	LOS A	4.2	30.0	0.33	0.64	0.33	16.2
Approach			347	3.3	331	3.4	0.300	12.1	LOS A	4.2	30.0	0.33	0.64	0.33	18.0
All Vehicles			971	3.3	954	3.3	0.435	18.6	LOS B	4.8	34.7	0.44	0.64	0.44	14.0

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	Aver. Delay	Level of Service	AVERAGE BACK OF QUEUE		Prop. Que	Eff. Stop Rate	Travel Time	Travel Dist.	Aver. Speed
					[Ped ped	Dist] m					
South: Portico Parade											
P1	Full	25	64.2	LOS F	0.1	0.1	0.96	0.96	230.9	200.0	0.87
North: Portico Parade											
P3	Full	25	64.2	LOS F	0.1	0.1	0.96	0.96	230.9	200.0	0.87
West: Cornelia Rd											
P4	Full	11	64.2	LOS F	0.0	0.0	0.96	0.96	230.8	200.0	0.87
All Pedestrians		61	64.2	LOS F	0.1	0.1	0.96	0.96	230.9	200.0	0.87

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		Arrival Flows		Deg. Satn	Aver. Delay	Level of Service	Aver. Back Of Queue	Prop. Que		Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
			[Total HV] veh/h	%	[Total HV] veh/h	%					[Veh. veh	Dist] m			
South: Portico Parade															
1	L2	All MCs	65	1.6	65	1.6	0.350	4.6	LOS A	0.0	0.0	0.00	0.07	0.00	47.2
2	T1	All MCs	422	2.5	422	2.5	0.350	0.1	LOS A	0.0	0.0	0.00	0.07	0.00	47.4
Approach			487	2.4	487	2.4	0.350	0.7	NA	0.0	0.0	0.00	0.07	0.00	47.3
North: Portico Parade															
8	T1	All MCs	462	3.9	447	4.0	0.238	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	49.9
Approach			462	3.9	447	4.0	0.238	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	0.101	5.8	LOS A	0.1	0.8	0.52	0.69	0.52	40.8
12	R2	All MCs	29	3.6	29	3.6	0.101	10.1	LOS A	0.1	0.8	0.52	0.69	0.52	41.0
Approach			61	1.7	61	1.7	0.101	7.8	LOS A	0.1	0.8	0.52	0.69	0.52	40.9
All Vehicles			1011	3.0	995	3.1	0.350	0.8	NA	0.1	0.8	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.

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 Project: C:\Users\imathew\OneDrive - Stantec\Projects\Toongabbie\Toongabbie\Des_in\Modelling\Toongabbie SIDRA\toongabbie.sip9

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		Arrival Flows		Deg. Satn	Aver. Delay	Level of Service	Aver. Back Of Queue	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed	
			[Total HV]	%	[Total HV]	%	v/c	sec		[Veh. veh	Dist]			km/h	
			veh/h		veh/h					veh	m				
SouthEast: Fitzwilliam Road															
21	L2	All MCs	512	1.4	512	1.4	0.402	13.4	LOS A	7.1	50.5	0.41	0.68	0.41	39.0
22	T1	All MCs	562	0.7	562	0.7	0.834	49.9	LOS D	22.1	156.0	0.98	0.92	1.03	37.3
Approach			1074	1.1	1074	1.1	0.834	32.5	LOS C	22.1	156.0	0.70	0.80	0.73	36.3
NorthWest: Station Road															
28	T1	All MCs	513	1.4	513	1.4	0.409	15.1	LOS B	10.5	74.2	0.54	0.48	0.54	50.9
29	R2	All MCs	547	1.9	547	1.9	0.832	74.1	LOS F	12.6	89.4	0.99	0.88	1.06	28.4
Approach			1060	1.7	1060	1.7	0.832	45.6	LOS D	12.6	89.4	0.77	0.69	0.81	35.9
SouthWest: Wentworth Avenue															
30	L2	All MCs	628	2.8	515	2.5	*0.568	17.1	LOS B	11.3	80.7	0.64	0.77	0.64	46.2
32	R2	All MCs	569	1.3	469	1.2	*0.789	56.9	LOS E	17.0	120.0	0.96	0.88	0.99	21.2
Approach			1198	2.1	984	1.9	0.789	36.1	LOS C	17.0	120.0	0.79	0.82	0.81	34.4
All Vehicles			3332	1.6	3118	1.8	0.834	38.1	LOS C	22.1	156.0	0.75	0.77	0.78	35.6

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	Aver. Delay	Level of Service	AVERAGE BACK OF QUEUE		Prop. Que	Eff. Stop Rate	Travel Time	Travel Dist.	Aver. Speed
		ped/h	sec		[Ped ped	Dist]			sec	m	m/sec
					ped	m					
SouthEast: Fitzwilliam Road											
P5B	Slip/Bypass	53	64.3	LOS F	0.2	0.2	0.96	0.96	230.9	200.0	0.87
NorthWest: Station Road											
P7	Full	53	64.3	LOS F	0.2	0.2	0.96	0.96	230.9	200.0	0.87
SouthWest: Wentworth Avenue											
P8	Full	53	64.3	LOS F	0.2	0.2	0.96	0.96	230.9	200.0	0.87
P8B	Slip/Bypass	53	64.3	LOS F	0.2	0.2	0.96	0.96	230.9	200.0	0.87
All Pedestrians		211	64.3	LOS F	0.2	0.2	0.96	0.96	230.9	200.0	0.87

MOVEMENT SUMMARY

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

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

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Project Case 2037 PM
Site Category: (None)
Roundabout

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand Flows		Arrival Flows		Deg. Satn	Aver. Delay	Level of Service	Aver. Back Of Queue		Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
			[Total HV] veh/h	%	[Total HV] veh/h	%				[Veh. veh	Dist] m				
NorthEast: Wentworth Avenue (NE)															
25	T1	All MCs	252	3.3	252	3.3	0.472	8.4	LOS A	1.0	7.1	0.48	0.64	0.49	45.1
26a	R1	All MCs	807	1.0	807	1.0	0.900	19.0	LOS B	7.7	54.2	0.87	0.90	1.19	23.4
26	R2	All MCs	1	0.0	1	0.0	0.900	19.9	LOS B	7.7	54.2	0.87	0.90	1.19	22.2
26u	U	All MCs	6	0.0	6	0.0	0.900	21.9	LOS B	7.7	54.2	0.87	0.90	1.19	23.4
Approach			1066	1.6	1066	1.6	0.900	16.5	LOS B	7.7	54.2	0.78	0.84	1.03	29.5
NorthWest: Toongabbie Community Access Road															
27	L2	All MCs	19	0.0	19	0.0	0.082	6.1	LOS A	0.1	1.0	0.65	0.81	0.65	21.6
29	R2	All MCs	8	0.0	8	0.0	0.082	10.6	LOS A	0.1	1.0	0.65	0.81	0.65	39.9
29b	R3	All MCs	22	0.0	22	0.0	0.082	11.6	LOS A	0.1	1.0	0.65	0.81	0.65	21.6
29u	U	All MCs	1	0.0	1	0.0	0.082	12.6	LOS A	0.1	1.0	0.65	0.81	0.65	20.0
Approach			51	0.0	51	0.0	0.082	9.4	LOS A	0.1	1.0	0.65	0.81	0.65	27.5
West: Wentworth Ave (Bridge)															
10b	L3	All MCs	17	0.0	15	0.0	0.439	5.6	LOS A	1.3	9.2	0.47	0.53	0.47	38.0
10a	L1	All MCs	874	1.6	780	1.5	0.439	5.0	LOS A	1.3	9.2	0.48	0.56	0.48	45.2
12b	R3	All MCs	208	1.0	186	0.9	0.439	11.0	LOS A	1.1	7.7	0.49	0.63	0.49	47.0
12u	U	All MCs	1	0.0	1	0.0	0.439	11.9	LOS A	1.1	7.7	0.49	0.63	0.49	43.2
Approach			1100	1.4	983	1.4	0.439	6.2	LOS A	1.3	9.2	0.48	0.57	0.48	45.6
SouthWest: Wentworth Avenue (SW)															
30b	L3	All MCs	140	2.3	140	2.3	1.672	632.6	LOS F	49.0	353.1	1.00	4.78	12.11	1.8
30	L2	All MCs	8	0.0	8	0.0	1.672	632.1	LOS F	49.0	353.1	1.00	4.78	12.11	2.1
31	T1	All MCs	299	4.2	299	4.2	1.672	632.7	LOS F	49.0	353.1	1.00	4.78	12.11	1.8
32u	U	All MCs	4	0.0	4	0.0	1.672	638.7	LOS F	49.0	353.1	1.00	4.78	12.11	3.4
Approach			452	3.5	452	3.5	1.672	632.7	LOS F	49.0	353.1	1.00	4.78	12.11	1.8
All Vehicles			2668	1.8	2551	1.9	1.672	121.5	LOS F	49.0	353.1	0.70	1.43	2.77	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.

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.

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Project: C:\Users\imathew\OneDrive - Stantec\Projects\Toongabbie\Toongabbie\Des_in\Modelling\Toongabbie SIDRA\toongabbie.sip9

MOVEMENT SUMMARY

Site: TCS2334 [3. Wentworth Ave (Bridge) / Cornelia 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)

Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 140 seconds (Network User-Given Cycle Time)

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand Flows		Arrival Flows		Deg. Satn	Aver. Delay	Level of Service	Aver. Back Of Queue	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed	
			[Total HV]	[Total HV]			v/c	sec		[Veh. veh]	[Dist]			km/h	
			veh/h	%	veh/h	%				veh	m				
East: Cornelia Rd															
5	T1	All MCs	119	0.9	119	0.9	0.118	24.7	LOS B	2.6	18.5	0.57	0.46	0.57	9.7
6	R2	All MCs	340	1.2	340	1.2	*0.544	50.1	LOS D	9.2	65.0	0.89	1.02	0.89	5.1
Approach			459	1.1	459	1.1	0.544	43.5	LOS D	9.2	65.0	0.80	0.88	0.80	5.8
North: Wentworth Avenue (Bridge)															
7	L2	All MCs	257	1.2	242	1.2	0.276	13.7	LOS A	7.7	54.8	0.58	0.75	0.58	27.6
9	R2	All MCs	713	1.2	671	1.1	*0.656	34.3	LOS C	16.9	119.1	0.75	0.82	0.75	23.8
Approach			969	1.2	913	1.1	0.656	28.8	LOS C	16.9	119.1	0.71	0.80	0.71	24.7
West: Cornelia Road															
10	L2	All MCs	758	1.4	641	1.3	0.459	15.7	LOS B	11.8	83.3	0.49	0.74	0.49	17.3
11	T1	All MCs	116	0.9	98	0.8	*0.339	60.6	LOS E	3.8	26.5	0.95	0.76	0.95	5.6
Approach			874	1.3	739	1.2	0.459	21.7	LOS B	11.8	83.3	0.55	0.74	0.55	13.6
All Vehicles			2302	1.2	2111	1.3	0.656	29.5	LOS C	16.9	119.1	0.67	0.80	0.67	17.2

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	Aver. Delay	Level of Service	AVERAGE BACK OF QUEUE		Prop. Que	Eff. Stop Rate	Travel Time	Travel Dist.	Aver. Speed
		ped/h	sec		[Ped ped]	[Dist]			sec	m	m/sec
East: Cornelia Rd											
P2	Full	16	64.2	LOS F	0.1	0.1	0.96	0.96	230.8	200.0	0.87
North: Wentworth Avenue (Bridge)											
P3	Full	41	64.2	LOS F	0.2	0.2	0.96	0.96	230.9	200.0	0.87
All Pedestrians		57	64.2	LOS F	0.2	0.2	0.96	0.96	230.9	200.0	0.87

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		Arrival Flows		Deg. Satn	Aver. Delay	Level of Service	Aver. Back Of Queue	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed	
			[Total HV]	%	[Total HV]	%	v/c	sec		[Veh. veh	Dist]			km/h	
			veh/h		veh/h					veh	m				
South: Junia Avenue															
1	L2	All MCs	61	0.0	61	0.0	0.547	12.5	LOS A	1.5	10.8	1.00	0.84	1.19	36.0
2	T1	All MCs	17	0.0	17	0.0	0.547	12.5	LOS A	1.5	10.8	1.00	0.84	1.19	36.3
3	R2	All MCs	159	0.0	159	0.0	0.547	15.8	LOS B	1.5	10.8	1.00	0.84	1.19	32.3
3u	U	All MCs	1	0.0	1	0.0	0.547	17.4	LOS B	1.5	10.8	1.00	0.84	1.19	37.8
Approach			238	0.0	238	0.0	0.547	14.8	LOS B	1.5	10.8	1.00	0.84	1.19	33.8
East: Cornelia Road															
4	L2	All MCs	89	0.0	85	0.0	0.866	7.8	LOS A	6.0	42.4	0.74	0.59	0.76	39.6
5	T1	All MCs	704	1.5	670	1.4	0.866	7.9	LOS A	6.0	42.4	0.74	0.59	0.76	36.8
6	R2	All MCs	14	0.0	13	0.0	0.866	11.4	LOS A	6.0	42.4	0.74	0.59	0.76	35.8
6u	U	All MCs	52	0.0	49	0.0	0.866	13.1	LOS A	6.0	42.4	0.74	0.59	0.76	26.5
Approach			859	1.2	817	1.1	0.866	8.2	LOS A	6.0	42.4	0.74	0.59	0.76	36.9
North: Junia Avenue															
7	L2	All MCs	40	0.0	40	0.0	0.191	9.1	LOS A	0.4	2.6	0.83	0.75	0.83	31.2
8	T1	All MCs	20	0.0	20	0.0	0.191	9.1	LOS A	0.4	2.6	0.83	0.75	0.83	39.6
9	R2	All MCs	16	0.0	16	0.0	0.191	12.5	LOS A	0.4	2.6	0.83	0.75	0.83	36.2
9u	U	All MCs	1	0.0	1	0.0	0.191	14.0	LOS A	0.4	2.6	0.83	0.75	0.83	36.3
Approach			77	0.0	77	0.0	0.191	9.9	LOS A	0.4	2.6	0.83	0.75	0.83	35.6
West: Cornelia Road															
10	L2	All MCs	16	0.0	16	0.0	1.261	247.3	LOS F	43.9	311.8	1.00	4.78	8.39	5.2
11	T1	All MCs	652	1.9	652	1.9	1.261	247.5	LOS F	43.9	311.8	1.00	4.78	8.39	2.6
12	R2	All MCs	64	0.0	64	0.0	1.261	250.8	LOS F	43.9	311.8	1.00	4.78	8.39	6.8
12u	U	All MCs	7	0.0	7	0.0	1.261	252.4	LOS F	43.9	311.8	1.00	4.78	8.39	4.7
Approach			739	1.7	739	1.7	1.261	247.8	LOS F	43.9	311.8	1.00	4.78	8.39	3.1
All Vehicles			1913	1.2	1871	1.2	1.261	103.8	LOS F	43.9	311.8	0.88	2.28	3.83	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.

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. Cornelia Rd / 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 = 140 seconds (Network User-Given Cycle Time)

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand Flows		Arrival Flows		Deg. Satn	Aver. Delay	Level of Service	Aver. Back Of Queue	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed	
			[Total HV]	[Total HV]			v/c	sec		[Veh. veh]	[Dist]			km/h	
			veh/h	%	veh/h	%				veh	m				
South: Portico Parade															
1	L2	All MCs	435	0.7	435	0.7	0.490	6.1	LOS A	4.3	30.0	0.29	0.62	0.29	17.5
2	T1	All MCs	94	3.4	94	3.4	*0.232	48.9	LOS D	3.2	23.3	0.87	0.69	0.87	11.5
Approach			528	1.2	528	1.2	0.490	13.7	LOS A	4.3	30.0	0.39	0.63	0.39	14.0
North: Portico Parade															
8	T1	All MCs	111	1.9	111	1.9	0.184	37.1	LOS C	3.3	23.6	0.77	0.62	0.77	12.6
9	R2	All MCs	24	8.7	24	8.7	*0.193	49.7	LOS D	0.8	6.3	0.85	0.74	0.85	9.9
Approach			135	3.1	135	3.1	0.193	39.4	LOS C	3.3	23.6	0.78	0.64	0.78	12.0
West: Cornelia Rd															
10	L2	All MCs	54	3.9	49	4.3	0.295	10.4	LOS A	5.3	37.3	0.41	0.67	0.41	25.1
12	R2	All MCs	320	0.7	292	0.6	*0.295	16.1	LOS B	5.3	37.3	0.41	0.67	0.41	13.8
Approach			374	1.1	341	1.1	0.295	15.2	LOS B	5.3	37.3	0.41	0.67	0.41	16.2
All Vehicles			1037	1.4	1004	1.5	0.490	17.7	LOS B	5.3	37.3	0.45	0.65	0.45	14.1

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	Aver. Delay	Level of Service	AVERAGE BACK OF QUEUE		Prop. Que	Eff. Stop Rate	Travel Time	Travel Dist.	Aver. Speed
		ped/h	sec		[Ped ped]	[Dist]			sec	m	m/sec
South: Portico Parade											
P1	Full	115	64.4	LOS F	0.4	0.4	0.96	0.96	231.1	200.0	0.87
North: Portico Parade											
P3	Full	116	64.4	LOS F	0.4	0.4	0.96	0.96	231.1	200.0	0.87
West: Cornelia Rd											
P4	Full	252	64.8	LOS F	1.0	1.0	0.97	0.97	231.5	200.0	0.86
All Pedestrians		482	64.6	LOS F	1.0	1.0	0.96	0.96	231.3	200.0	0.86

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		Arrival Flows		Deg. Satn	Aver. Delay	Level of Service	Aver. Back Of Queue	Prop. Que		Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
			[Total HV] veh/h	%	[Total HV] veh/h	%					v/c	sec			
South: Portico Parade															
1	L2	All MCs	127	0.0	127	0.0	0.495	4.6	LOS A	0.0	0.0	0.00	0.12	0.00	46.6
2	T1	All MCs	434	1.2	434	1.2	0.495	0.1	LOS A	0.0	0.0	0.00	0.12	0.00	45.7
Approach			561	0.9	561	0.9	0.495	1.2	NA	0.0	0.0	0.00	0.12	0.00	46.2
North: Portico Parade															
8	T1	All MCs	431	1.0	402	1.0	0.208	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	49.9
Approach			431	1.0	402	1.0	0.208	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	0.295	6.3	LOS A	0.3	2.3	0.56	0.73	0.63	40.7
12	R2	All MCs	52	0.0	52	0.0	0.295	10.9	LOS A	0.3	2.3	0.56	0.73	0.63	41.0
Approach			146	0.7	146	0.7	0.295	7.9	LOS A	0.3	2.3	0.56	0.73	0.63	40.9
All Vehicles			1138	0.9	1110	0.9	0.495	1.6	NA	0.3	2.3	0.07	0.16	0.08	45.6

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.

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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