Riverstone East Stage 3 Precinct
Transport Assessment

Prepared for:

Department of Planning and Environment

15 September 2023

The Transport Planning Partnership

Riverstone East Stage 3 Precinct Transport Assessment

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1 Introduction

1.1 Overview

The Transport Planning Partnership (TTPP) has been commissioned to undertake a transport assessment for the proposed Riverstone East Stage 3 precinct (the Precinct) for the Department of Planning and Environment (DPE).

The Riverstone East Stage 3 precinct lies within the North West Growth Area and is the final stage of planning following Riversone East Stages 1 and 2.

Riverstone East Stage 3 will provide some 3147 additional dwellings of mostly low density but will also include schools, community facilities and playing fields. The precinct is located immediately west of Windsor Road and north of Tallawong Station (See Figure 1.1). A substantial portion of the Precinct includes the Rouse Hill Regional Park currently under the management of NSW National Parks and Wildlife Service.

1.2 Study Objectives

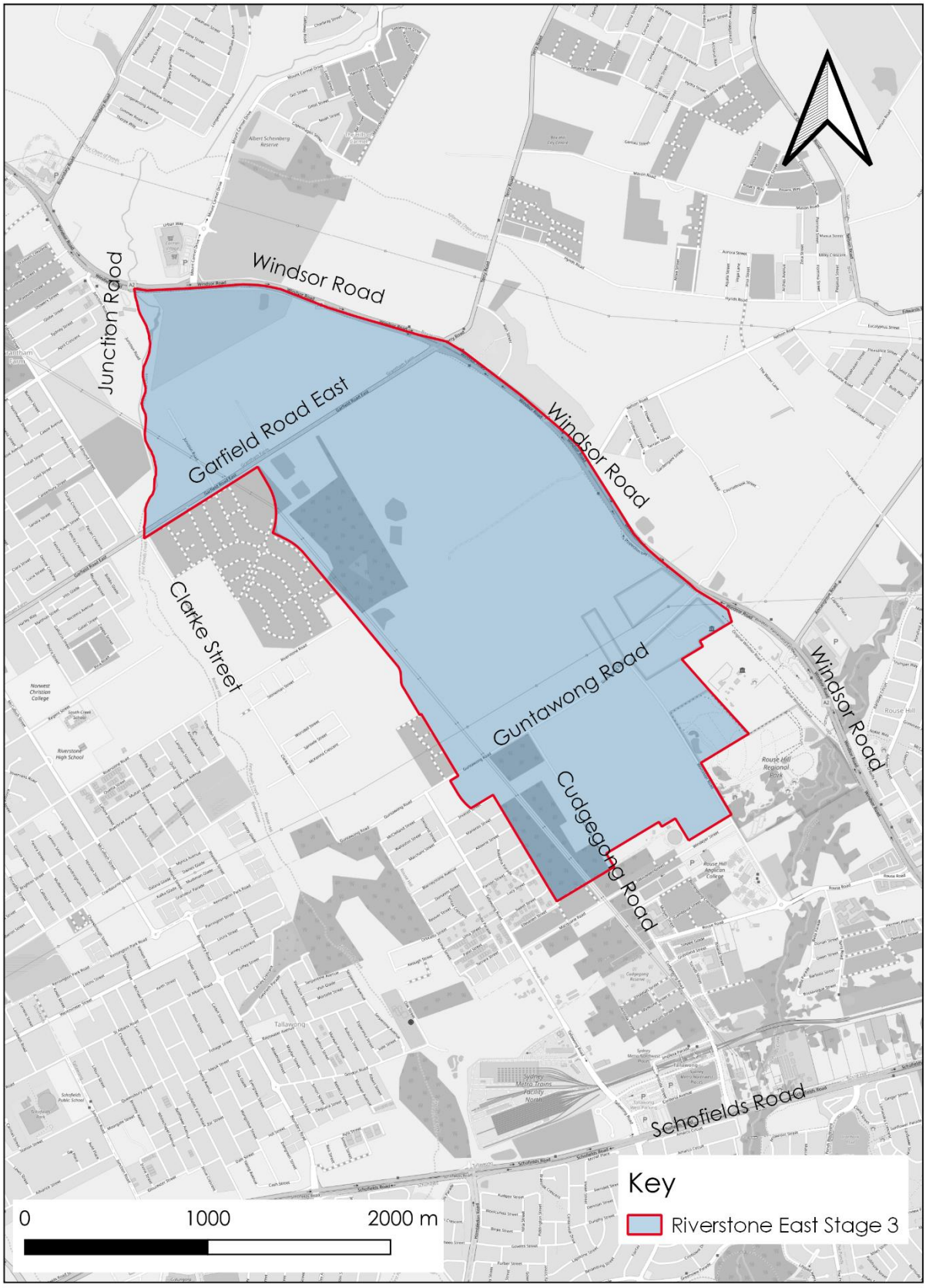
The objective of this study is to provide an assessment of the Riverstone East Stage 3 precinct by all modes of transport and identify suitable infrastructure to support a safe and efficient transport network.

The study is guided by the principles of the Movement and Place Framework, 15-minute neighbourhoods and the 30-minute city to provide a Precinct that has equitable access to transport and reduces the demand for private vehicle trips.

The specific objectives of the study to:

- Identify how the Precinct connects with the broader transport network for the North West Growth Area
- Test the impacts of the Indicative Layout Plan (ILP) on the road network
- Provide recommendations on road infrastructure and road hierarchy
- Provide equitable access to public transport
- Reduce the demand for private vehicles by providing safe and efficient alternatives.

Figure 1.1: Riverstone East Stage 3 Precinct



1.3 Report Structure

This report is structured as follows:

- Section 2 - Existing Conditions provides background information about the transport context for the Precinct
- Section 3 – Draft Indicative Layout Plan (ILP) outlines the proposed Precinct
- Section 4 – Transport Planning Objectives, outlines how the Precinct responds to the Movement and Place Framework, 30-minute city and 15-minute neighbourhood
- Section 5 - Traffic Modelling, outlines the modelling methodology and the modelling results
- Section 6 - Public Transport Strategy to support the development
- Section 7 - Active Transport Plan
- Section 8 – Conclusions

1.4 Assumptions and Limitations

This study has relied on information provided by others, including:

- Draft ILP and yields provided by Hatch Roberts Day and developed under consultation through the Enquiry by Design (EBD) process
- Transport for NSW, Strategic Transport Forecast Model (STFM) traffic models to provide forecast traffic volumes and forecast yields by travel zones
- Intersection layouts at selected intersections based on draft Traffic Control Site (TCS) plans and the Garfield Road upgrade project
- Traffic generation rates published by Transport for NSW in the Guide to Traffic Generating Developments Technical Direction, Trip Generation Surveys High-Density Residential (Car Based) Analysis Report.

2 Existing Conditions

The following section provides an overview of the planning context of the Precinct and the existing traffic and transport conditions including background studies provided for the project.

2.1 Planning Context

2.1.1 Overview

The key traffic and transport planning documents for Riverstone East include:

- Riverstone East Precinct Transport Study, Arup 2015
- North West Priority Growth Area Land Use and Infrastructure Implementation Plan, Planning and Environment (2017)
- Central City District Plan, Greater Sydney Commission (2018)
- Sydney Bus Future, Transport for NSW (2013)
- Active Transport Strategies, Transport for NSW (2022)
- Blacktown Local Strategic Planning Statement (2020)

2.1.2 Riverstone East Transport Study, Arup (2015)

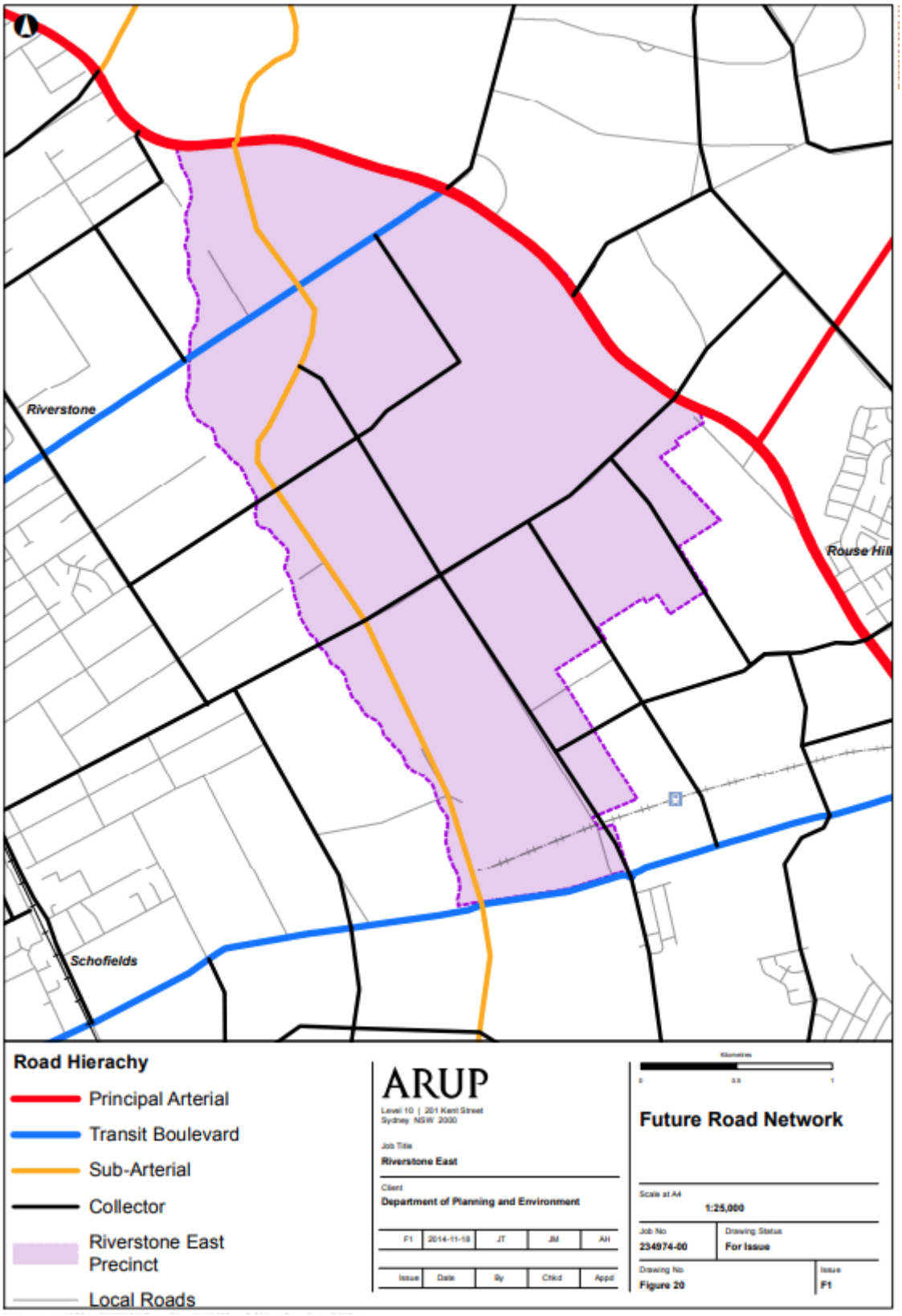
The Riverstone East Transport Study was prepared by Arup (2015) to identify the key infrastructure requirements that were required to support the development potential for Riverstone East. This is the key document that has been reviewed as part of the Gap Analysis. The study included an assessment of all modes and recommendations for infrastructure requirements. The study included traffic modelling using a strategic model and Sidra Intersection model.

Key recommendations from the study:

- New Arterial Road connecting Hambledon Road at Schofields Road to Mount Carmel Drive at Windsor Road. This infrastructure would significantly change travel behaviour providing a new access route through the precinct and drawing some traffic away from Windsor Road
- Upgrade of signalised intersections
- Provision of a cycleway network through the precinct
- Future bus routes
- Forecast Number of dwellings = 5,784 dwellings

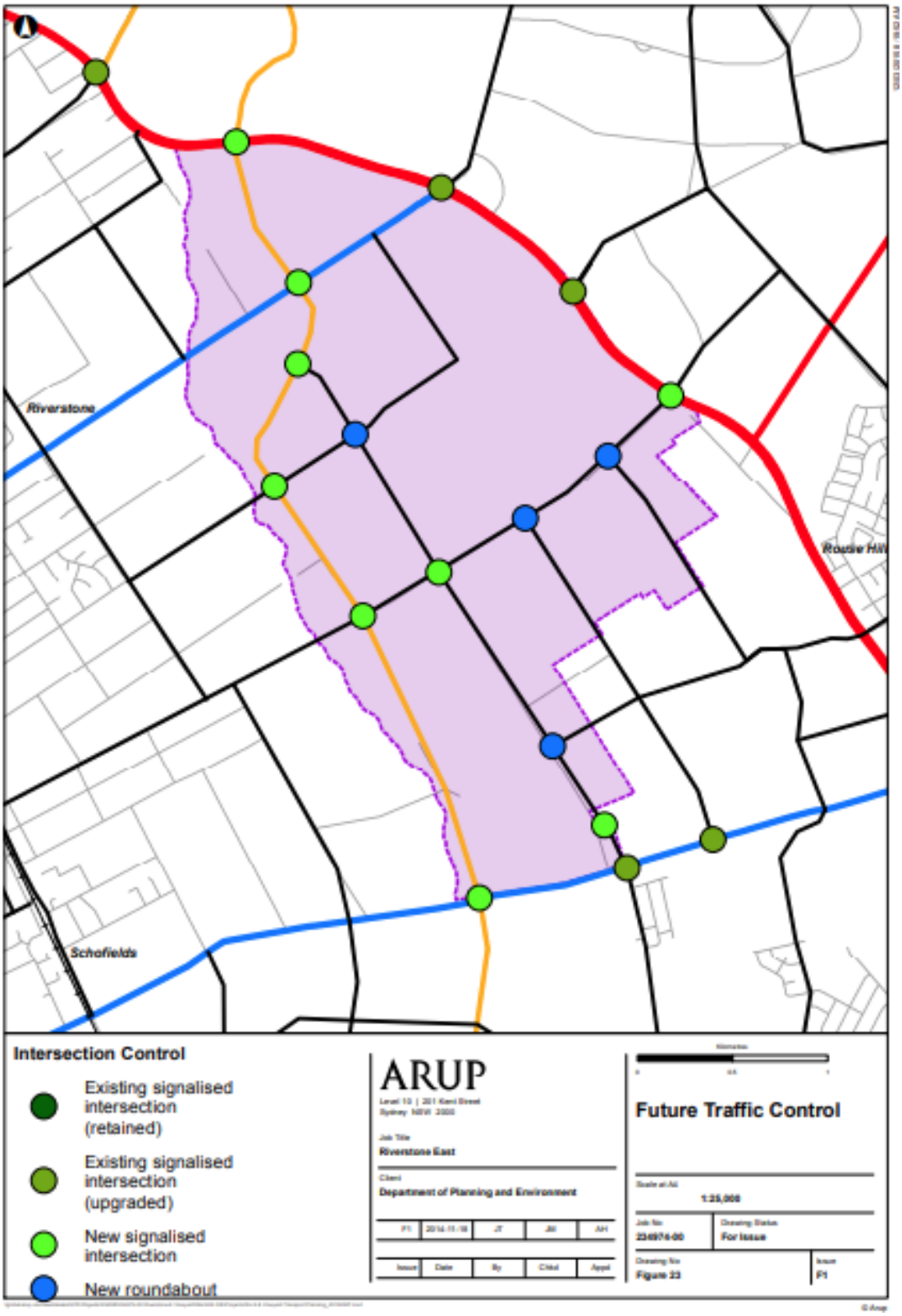
TTPP note that the report shows the old proposed alignment of the North West Rail Link alignment that continues along Windsor Road to Vineyard Station. Sydney Metro NorthWest now terminates on Schofields Road at Tallawong Station.

Figure 2.1: Future Road Network (Arup 2015)



Source: Arup 2015

Figure 2.2: Proposed Intersection Upgrades (Arup 2015)

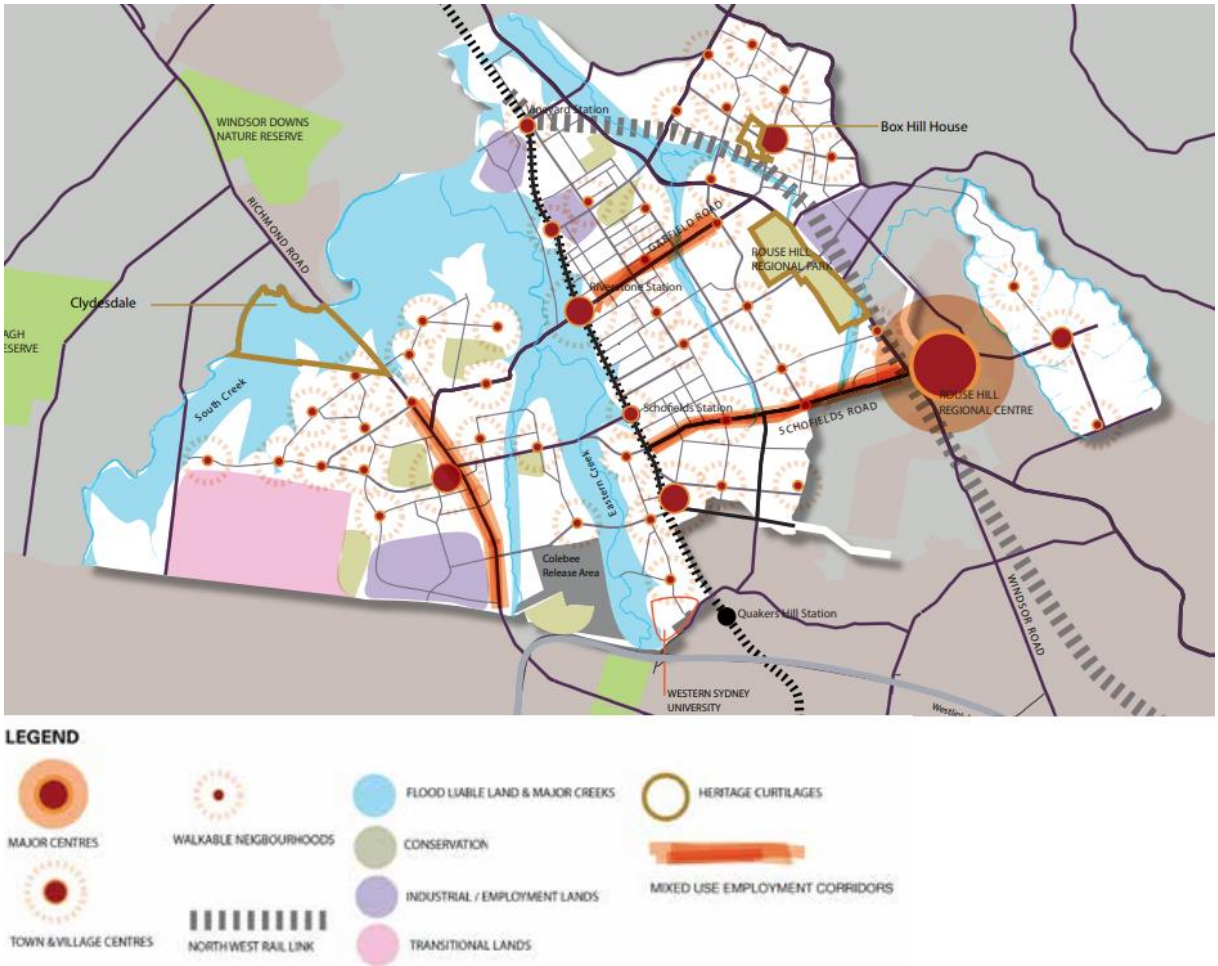


Source: Arup 2015

2.2 North West Priority Growth Area, Land Use and Infrastructure Implementation Plan, Planning and Environment (2017)

This document provides the overarching plan for the North West Growth Area. The key map from the infrastructure plan is shown in Figure 2.3. Note the alignment of the Sydney Metro NorthWest has changed.

Figure 2.3: North West Priority Growth Area (2017)



Source: Arup 2015

Key aspects of the plan are:

- North West Priority Growth Area rezoned to support 53,150 dwellings
- Riverstone East Stage 3 Precinct, 2,300 dwellings (Stages 1 and 2 3,500 dwellings)[1]

[1] Note the current estimates exceed these number of dwellings.

- Mixed-use employment corridors along Schofields Road and Garfield Road East
- Rouse Hill is identified as the nearest regional centre
- Shows the previously planned alignment for the North West Rail Link (Now Sydney Metro NorthWest). The built alignment is along Schofields Road terminating at Tallawong Stations.

2.3 Central City District Plan, Greater Sydney Commission (2018)

The Central City District plan covers the Blacktown, Cumberland, Parramatta and The Hills Local government areas. The district plan is to inform the local strategic planning statements as part of the NSW Governments Future Transport Strategy 2056

Key aspects of the plan include:

- Extension of the Sydney Metro NorthWest to St Mary's and connection to the Aerotropilis Metro
- Reinforces the concept of the 30-minute city
- Provision of employment in Rouse Hill and industrial on Schofields Road

Figure 2.4: Central City District Plan (2018)

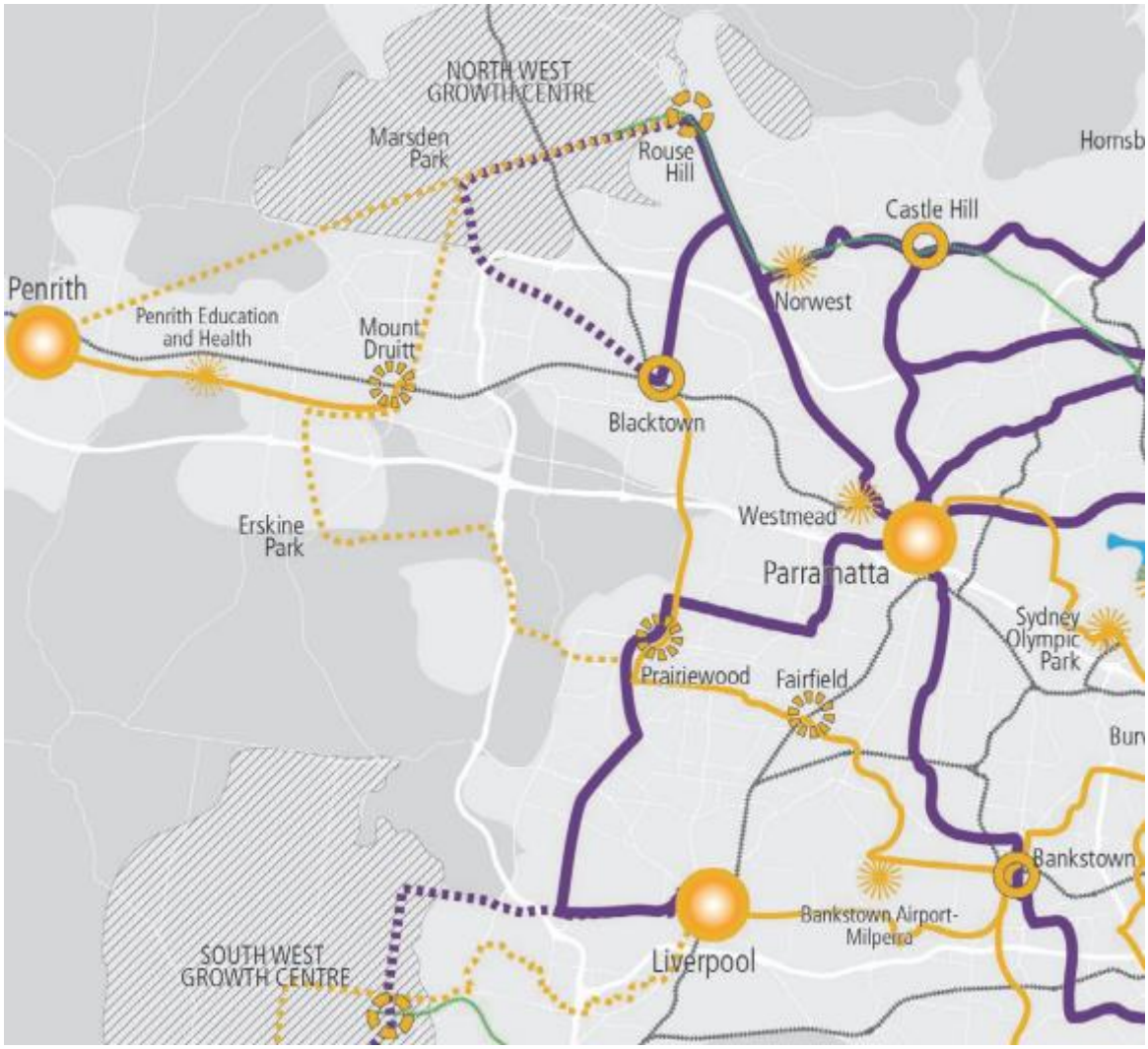
Source: Central City District Plan (2018)

2.4 Sydney's Bus Future, NSW Government (2013)

Sydney's Bus Future was the planning document for the future Sydney Bus network. The document includes aspects such as integrated bus services. Bus services are categorised into three levels, rapid bus, suburban (turn up and go) and local services. With regard to Riverstone East the key aspects from the document are:

- Rapid bus service between Blacktown and Rouse Hill via Marden Park
- Suburban bus connection between Rouse Hill and Penrith.

Figure 2.5: Sydney's Bus Future (2013)



Source: Sydney's Bus Future (2013)

2.5 Active Transport Strategy, Transport for NSW (2022)

The Active Transport Strategy sets out the NSW Government's plans and policy for active transport. The key priorities of the strategy are:

- 15 Minute Neighbourhoods
- Increasing the length of connected cycleways
- Reducing the number of fatalities
- Double the number of children participating in active transport modes of travel.

2.6 North West Priority Growth Area – Structure Plan Review, Jacobs (2016)

The structure plan review identified infrastructure upgrades related to the Riverstone Precinct. Key related upgrades include:

- Garfield Road East and Schofields Road are identified as bus-priority corridors providing physical priority and traffic signal priority for buses
- Providing cycling routes
- Land use provides more intensive mixed-use development around transport nodes
- Providing cycling facilities
- Upgrade of transport interchanges at Schofields Station and Marden Park.

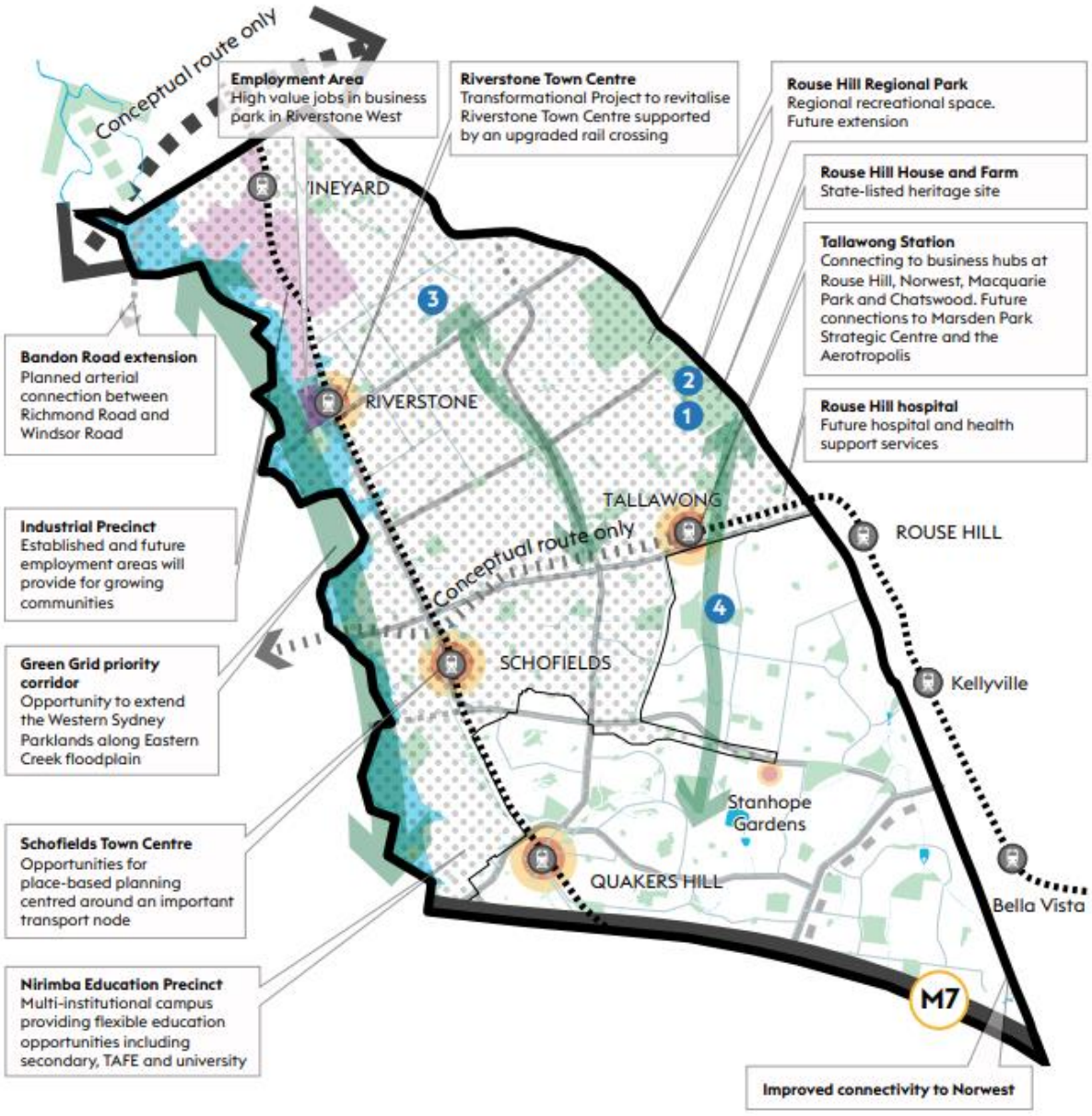
2.7 Blacktown City Council, Local Strategic Planning Statement 2020

The Local Strategic Planning Statement sets out Councils. Key recommendations for the Riverstone Precinct include:

- Extending the Sydney Metro from Tallawong Station to Schofields, Marsden Park and The Western Sydney Airport
- Richmond Train Line Duplication
- Upgrades to Garfield Road East.

A plan of the recommendations is shown in Figure 2.6.

Figure 2.6: Strategic Planning, Blacktown City Council



Source: Local Strategic Planning Statement 2020, Blacktown City Council (2020)

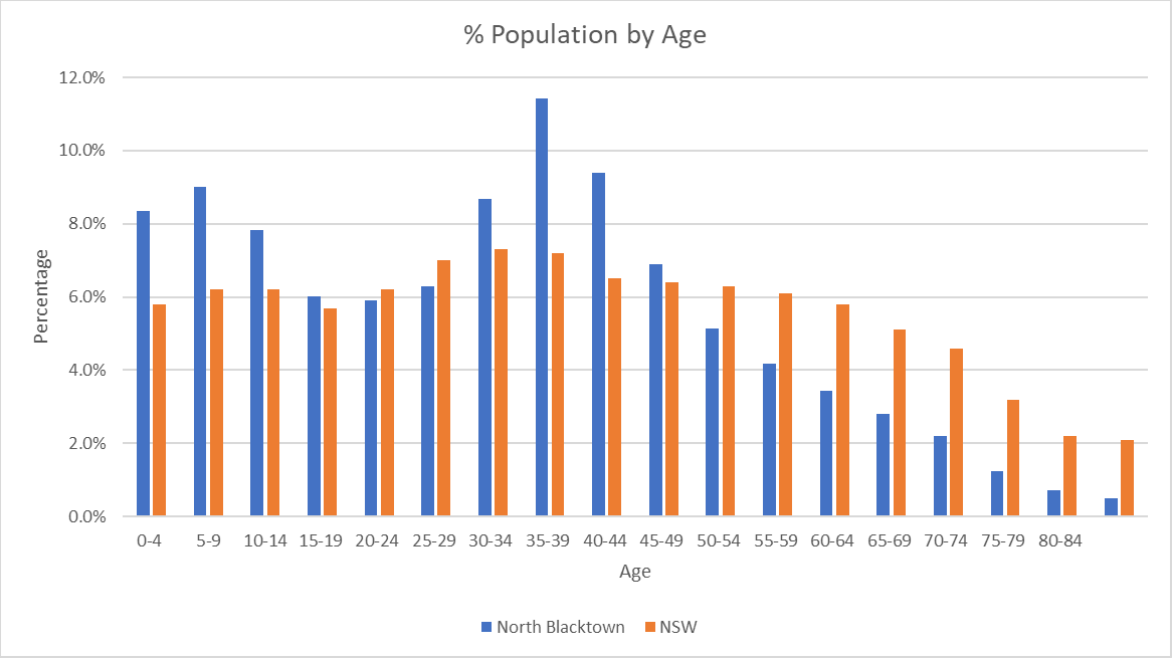
2.8 Demographics

To analyse the demographics of the study area, TTPP compared the census data of the North Blacktown Area, which comprises a significant part of the North West Growth Area, with the statistics of the rest of NSW. TTPP reviewed various demographic features that could impact transport planning such as age distribution, education, car ownership, and household size.

2.8.1 Age

The age demographic of North Blacktown is significantly younger than the rest of NSW with a higher proportion of 30 – 45 years of age and in the under-14 age group. This indicates that the area has a higher proportion of families with children than the NSW average.

Figure 2.7: Population by Age



Source: Census Data 2021

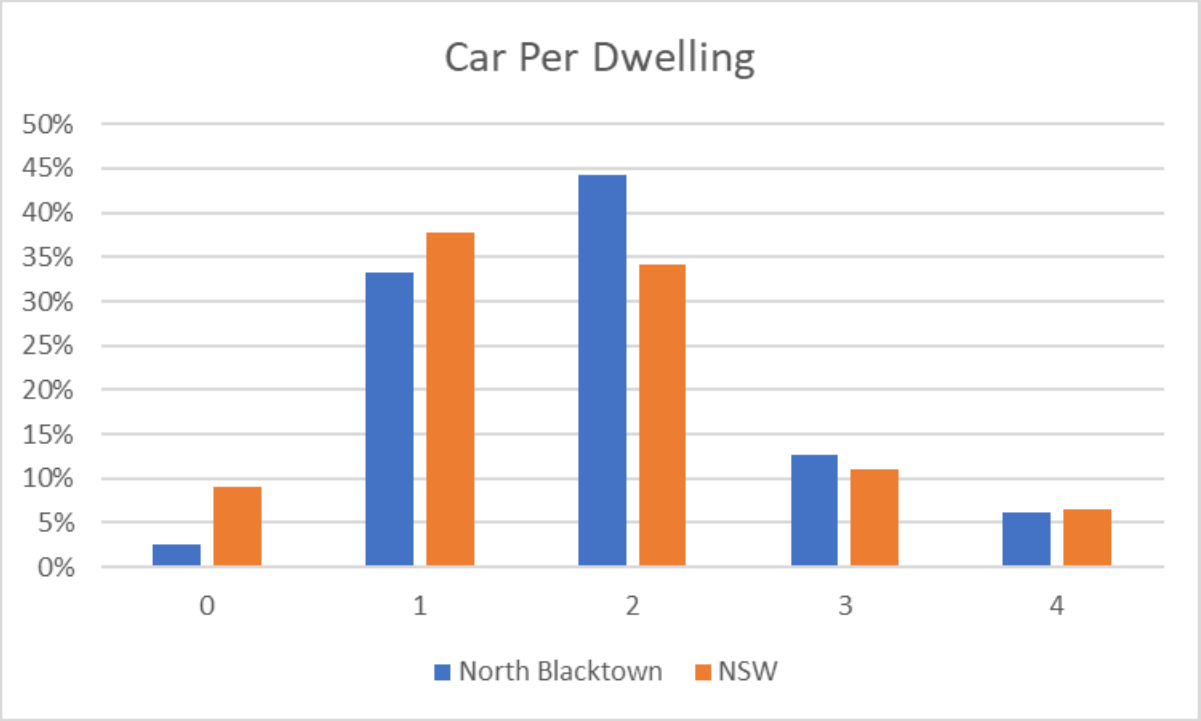
2.8.2 Education

The area has a higher proportion of people who have completed a tertiary education or higher with a percentage of 42% compared to the NSW average of 29%. Higher education could lend itself to more work from opportunities as well as flexible work hours. Futher, jobs for higher educated populations are more likely to be located in strategic centres with access to public transport.

2.8.3 Private Vehicle Ownership

In North Blacktown, the number of cars owned per dwelling is high when compared to the average in NSW. Specifically, there are 1.8 cars per dwelling in North Blacktown while the average in NSW is 1.65 cars per dwelling. Moreover, a significantly higher proportion of dwellings in North Blacktown have 2 vehicles compared to the average in NSW. Additionally, the percentage of dwellings with no cars is only 3% in North Blacktown, considerably lower than the 9% average in NSW.

Figure 2.8: Car Ownership



Census data 2021

2.8.4 People per Household

The number of people per household is also higher than the NSW average with 3.2 people per household in North Blacktown compared to 2.5 people per household in NSW.

2.8.5 Conclusions

The demographics for the North West Growth Area indicate that:

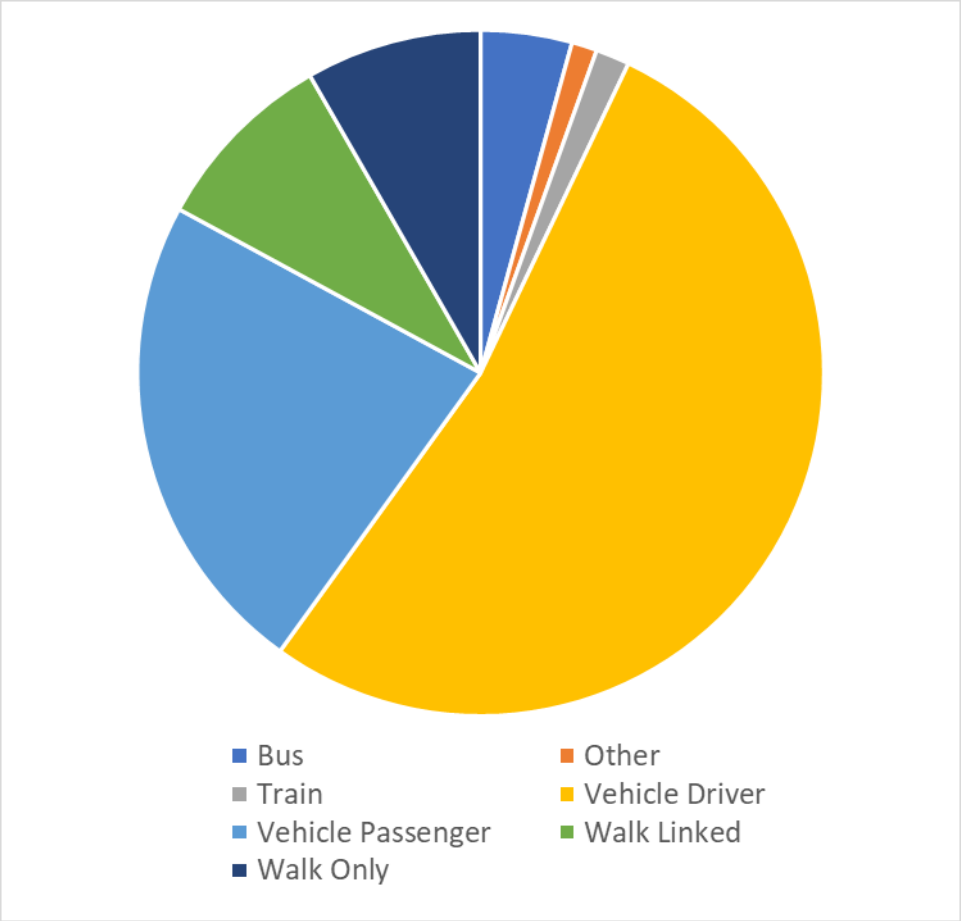
- The population has a higher proportion of working age people in the 30 – 50 age bracket. There are also people likely to have young children
- The education levels are generally higher than the rest of NSW indicating more white-collar type workers with opportunities to work from home
- Household sizes are higher than the majority of NSW
- Car ownership per household is also higher with more two car households.

Overall, the household sizes, working age people and car ownership is likely to increase the trip demand by private vehicle (car). However, the population's higher education could indicate more opportunities to support working from home, and public transport connections to strategic centres. and flexible working hours or working hubs could reduce trip demands.

2.9 Existing Mode Share

Mode share for the Blacktown North area is dominated by private vehicle use. The mode share pre-Covid is shown in Figure 2.9.

Figure 2.9: Blacktown North Mode Share



Source: Open Data, Household Travel Survey (HTS) 2019/20

Private vehicle trips as driver make up over 50% of the total trips, While bus and train journeys account for less than 10 % of the total trips.

2.10 Existing Road Network

The study area is shown in Figure 2.10. The key roads in the study area include Windsor Road, Garfield Road East and Schofields Road.

A description of the key roads in the network is provided below.

Windsor Road – Windsor Road is an arterial road that connects Windsor to Parramatta. Windsor Road is a State Road that is managed by Transport for NSW. The road is two lanes in each direction on a divided carriageway.

Schofields Road – Schofields Road is also a State Road that connects Windsor Road the Richmond Road in an east-west direction. It is a four-lane road on a divided carriageway with two lanes in each direction.

Garfield Road East - Garfield Road East is a State Road that connects Windsor Road to Richmond Road. The road is currently configured as a two-lane two-way road with edge lines, shoulders and swale drains. The speed limit is 60km/h. This road is planned to be upgraded to 4 lanes on a divided carriageway.

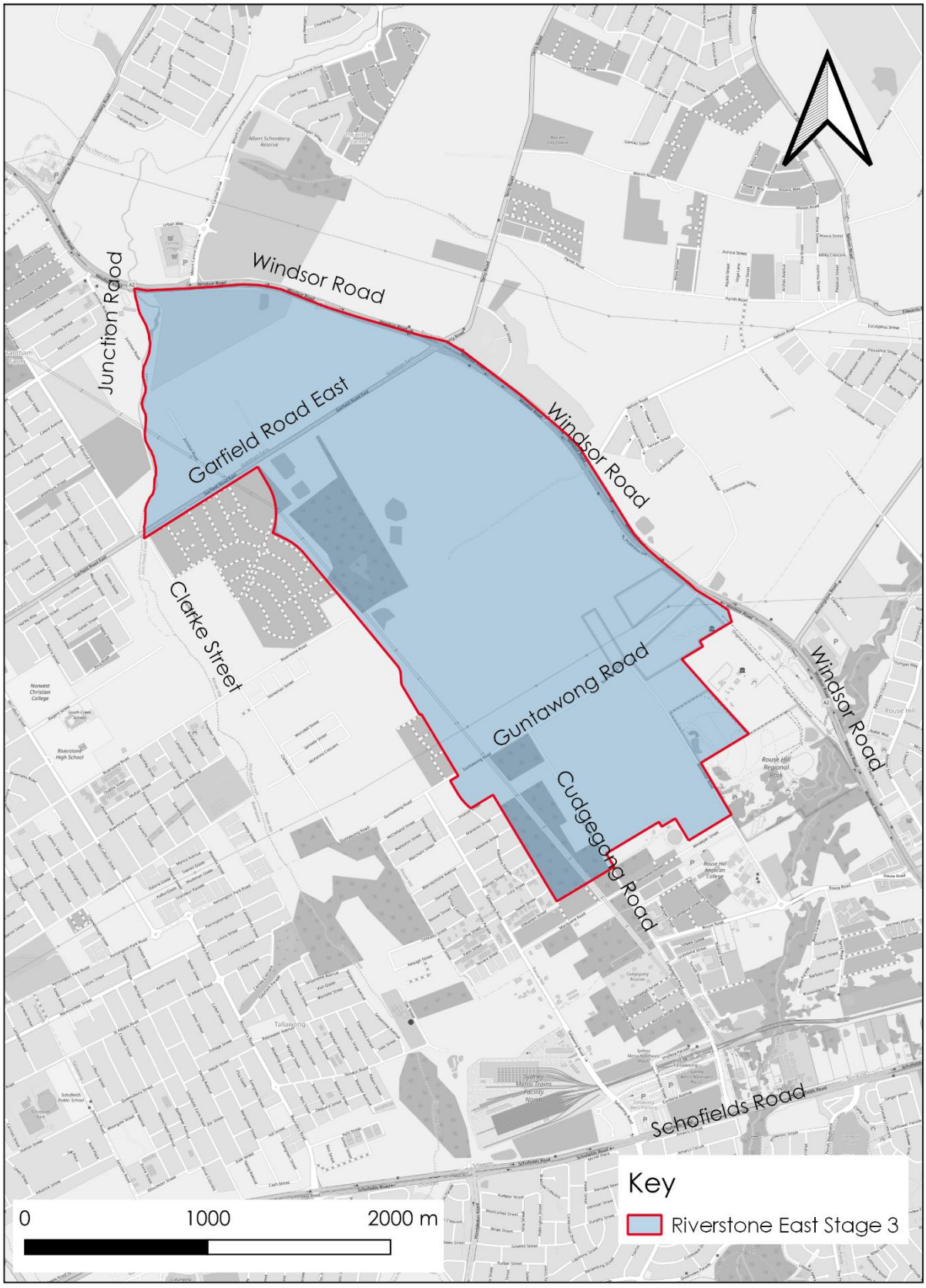
Hambledon Road – Hambledon Road is a regional road that is jointly funded by Transport for NSW and Blacktown City Council. It has two lanes in each direction on a divided road. This road has been identified to be extended north from Schofields Road where it currently ends.

Tallawong Road – Tallawong Road local road that connects Schofields Road to Riverstone East Stages 1 and 2. It has been constructed as a collector road with a carriageway width of 11m.

Guntawong Road – Guntawong Road is currently a two-way two-lane road with unsealed shoulders and swale drains. It has a speed limit of 60km/h. Line marking is only provided for the first 500m from Windsor Road.

Cudgegong Road - Cudgegong Road local road that connects Schofields Road to Riverstone East Stages 1 and 2. It has been constructed as a collector road with a carriageway width of 11m.

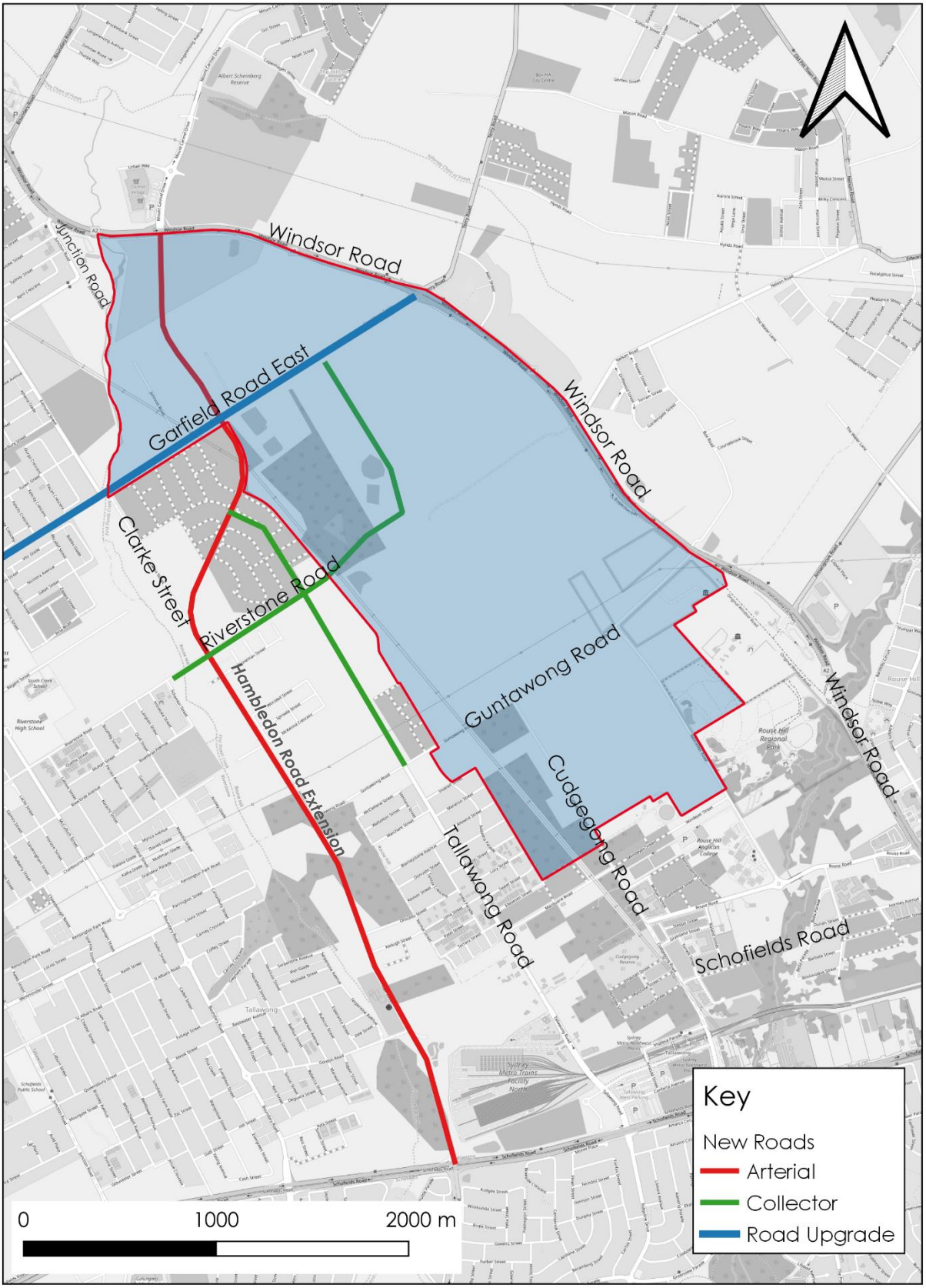
Figure 2.10: Study Area



2.11 Road Network Upgrades

Garfield Road East and the Hambledon Road extension are proposed and will create additional arterial and sub arterial road connections. The location of theroad upgrades are shown in Figure 2.11.

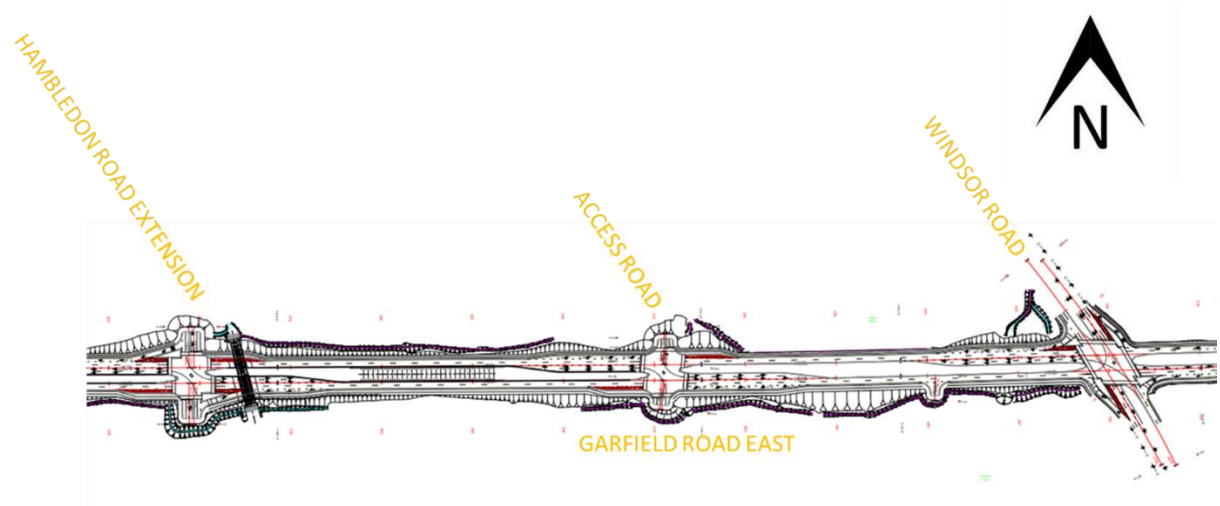
Figure 2.11: Road Upgrades



2.11.1 Garfield Road East

3.4 km of Garfield Road East between Piccadilly Street to Windsor Road is to be upgraded to a 4 lane road with two lanes in each direction. A Review of Environmental Factors (REF) has been prepared for this and the designs have been updated. It is understood that funding for the upgrade has not been committed yet.

Figure 2.12: Garfield Road East Upgrade Windsor Road to Hambledon Road Extension



Source: Transport for NSW (2023)

2.11.2 Hambledon Road Extension

It has been identified that Hambledon Road will be extended from Schofields Road through to Garfield Road East. This road will be two lanes in each direction and form a sub-arterial road function. Future intersections at Garfield Road East and Windsor Road will be upgraded to accommodate the future road. The typical configuration of the existing Hambledon Road is shown in Figure 2.13.

Figure 2.13: Hambledon Road

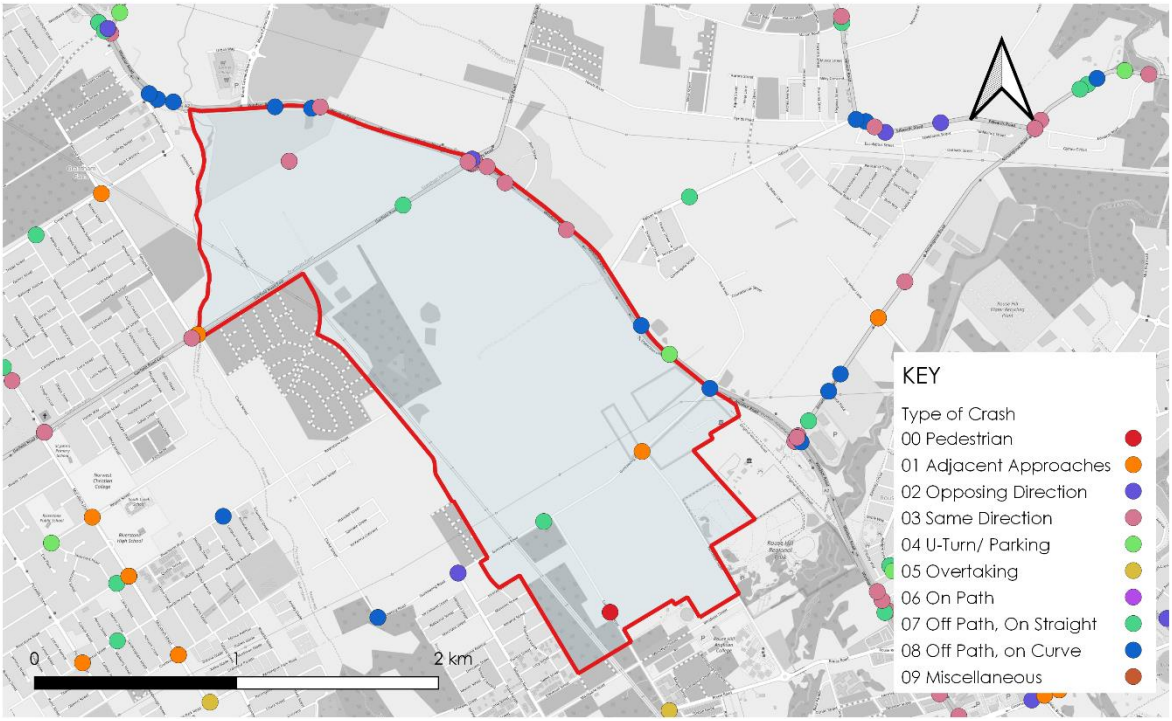
Source: Google Streetview (2022)

2.12 Crash History

Crash data has assessed using the 5 year crash history recorded by the Centre for Road Safety 2017 - 2021. Crash data is collected based on police reports for incidents where there has been injury, vehicle towed. It should be noted that minor incidents or near misses are not reported.

The location and type of crashes have been plotted in Figure 2.12.

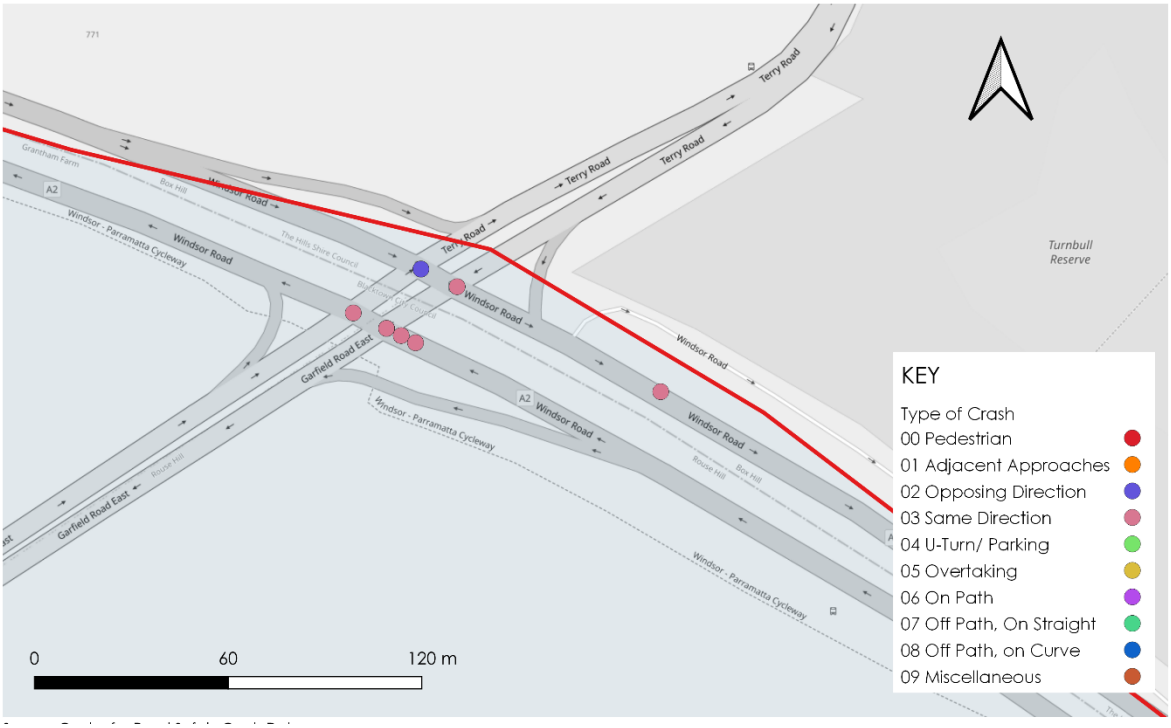
Figure 2.14: Crashes by Type



The data shows that there were few crashes within the study area reflecting the current low traffic volumes on the internal roads. Most of the crashes were recorded along Windsor Road with a crash cluster around the intersection of Garfield Road East and Windsor Road.

The crashes at the intersection of Windsor Road and Garfield Road East is shown in Figure 2.15.

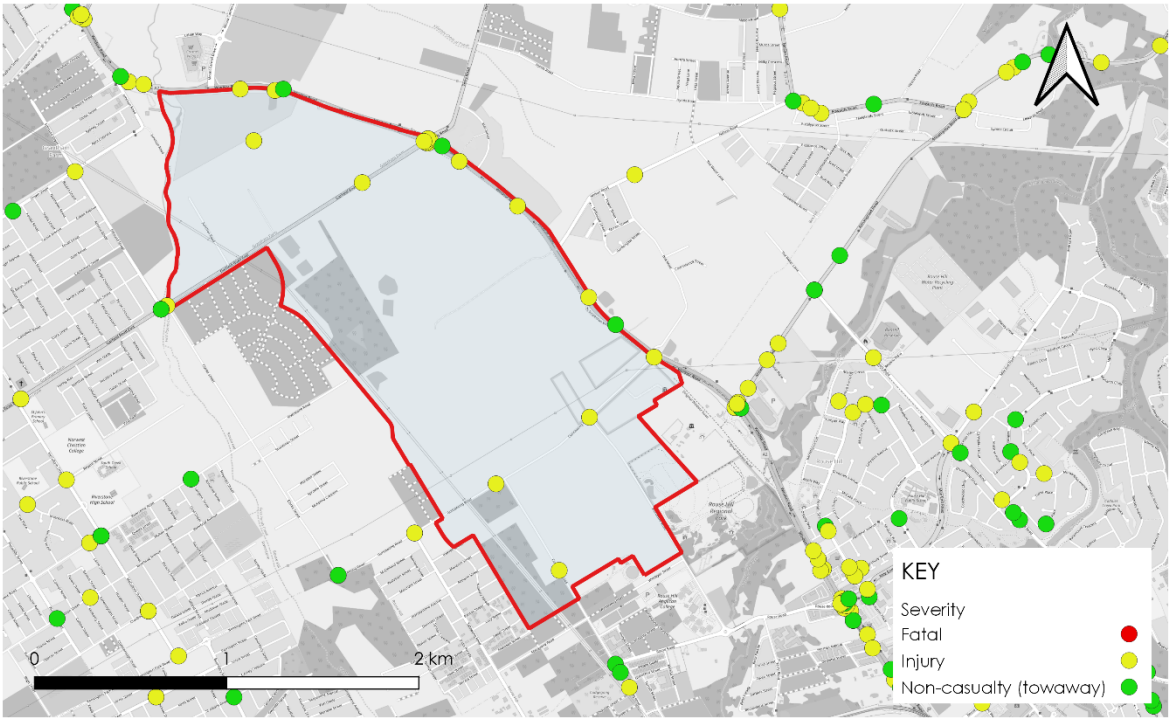
Figure 2.15: Crashes by Type at Garfield Road East and Windsor Road



The data shows that there were seven (7) crashes associated with this intersection. The majority of crashes at this location involved vehicles travelling in the same direction. That is rear end type crashes and side swipe type crashes. One crash involved vehicles from opposite directions (that is head on or a through movement hitting a right turning vehicle type crashes).

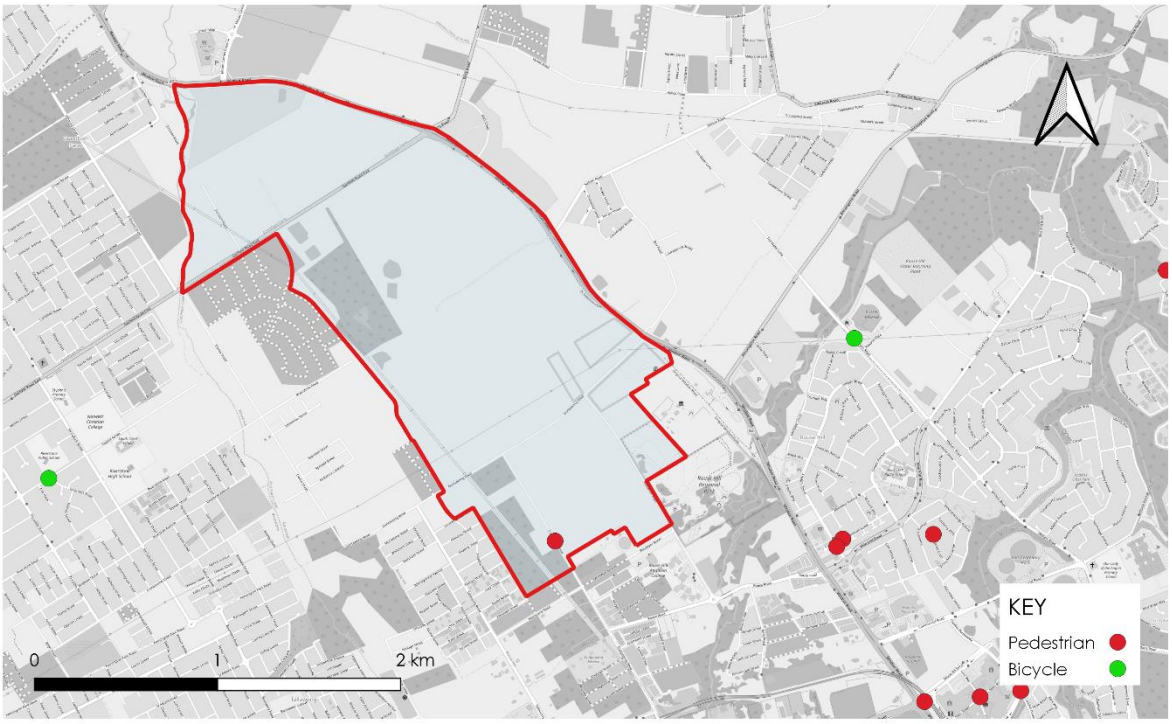
The severity of crashes is shown in Figure 2.16.

Figure 2.16: Crash Severity



There were no fatal crashes in the study area with most crashes involve some injury. Crashes involving volnerable road users, pedestrians and cyclists is shown on Figure 2.16.

Figure 2.17: Pedestrian and Cyclist Crashes



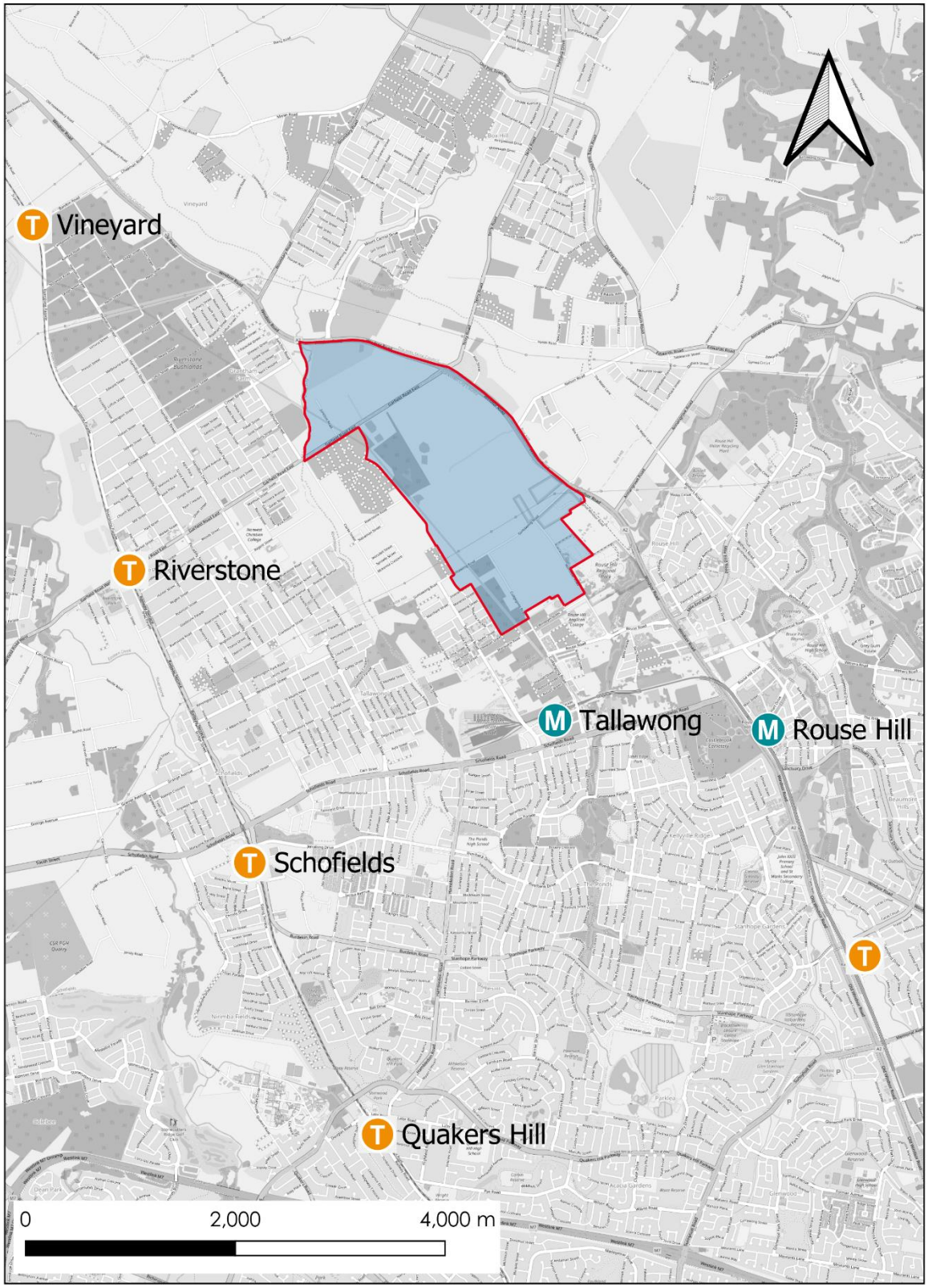
There was only one incident reported involving a pedestrian within the study area which resulted in an injury. There were no cyclist crashes reported.

2.13 Public Transport

2.13.1 Rail

The nearest railway stations are shown in Figure 2.18. Tallawong Station and Rouse Hill are part of the Sydney Metro North West while Riverstone, Vineyard and Schofields Stations are located on the T1 and T5 Richmond Line.

Figure 2.18: Location of Rail Stations

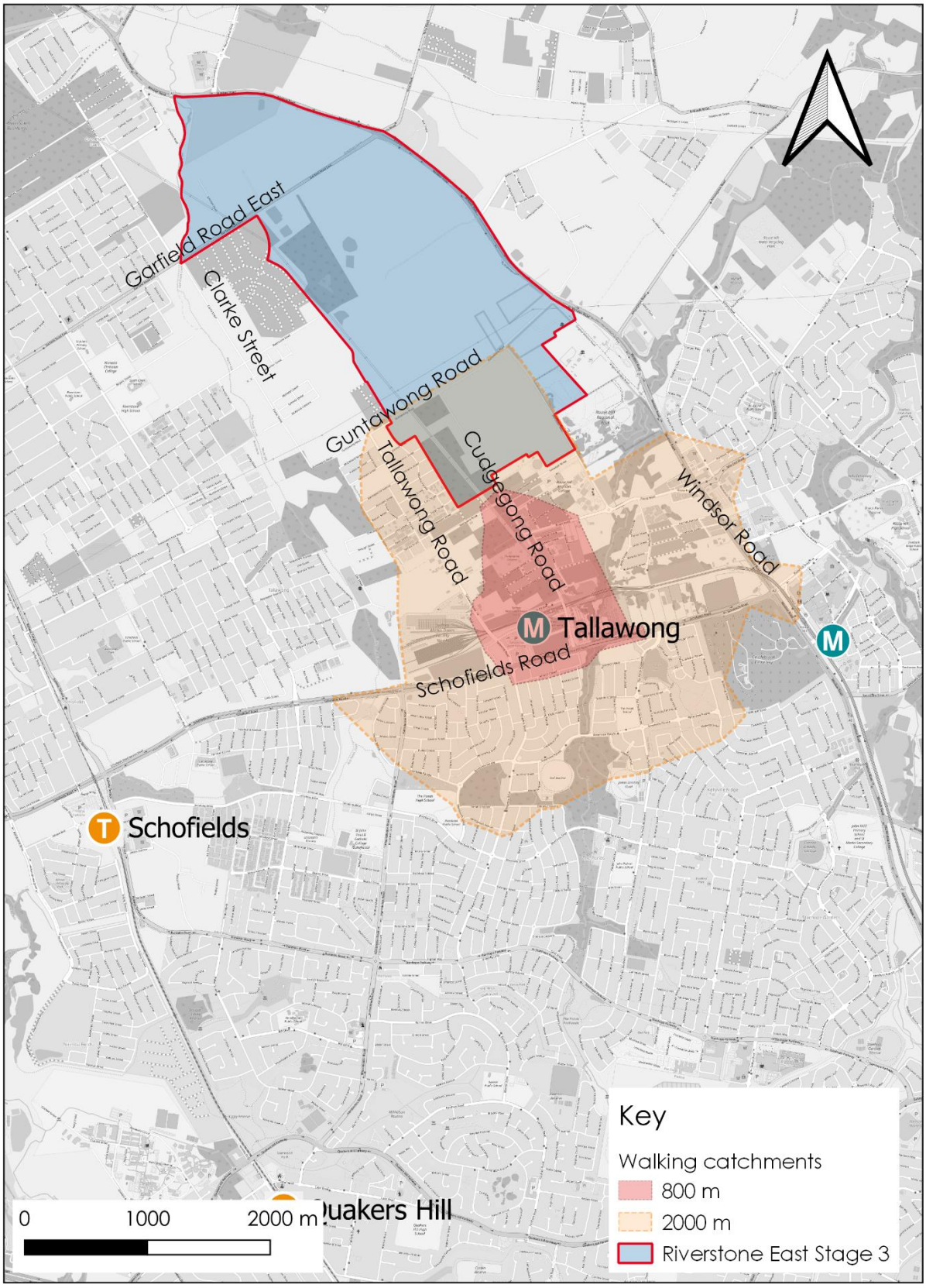


Walking catchments are an important consideration when planning public transportation routes. A walking catchment is a distance that someone is willing or able to walk to access public transportation, such as a bus stop or train station. The size of the walking catchment can vary depending on factors such as the age and physical ability of the population, the availability of parking, and the quality of the pedestrian environment.

The traditional walking catchment for rail services is 800m however it has been shown that some people are willing to walk longer distances to high-quality public transport services.

The walking catchments of 800m and 2000 m from Tallawong Station are shown in Figure 2.19. It shows that most of the Riverstone East study area is outside the 800m walking distance but some portions are within 2km. Riverstone, Schofields and Vinyard Station to the west are outside typical walking distance for a rail station.

Figure 2.19: Walking Catchment from Tallawong Station



Car parking is provided at Tallawong Station with parking for 1000 vehicles. However, observations on-site indicate that this parking spills onto the local roads.

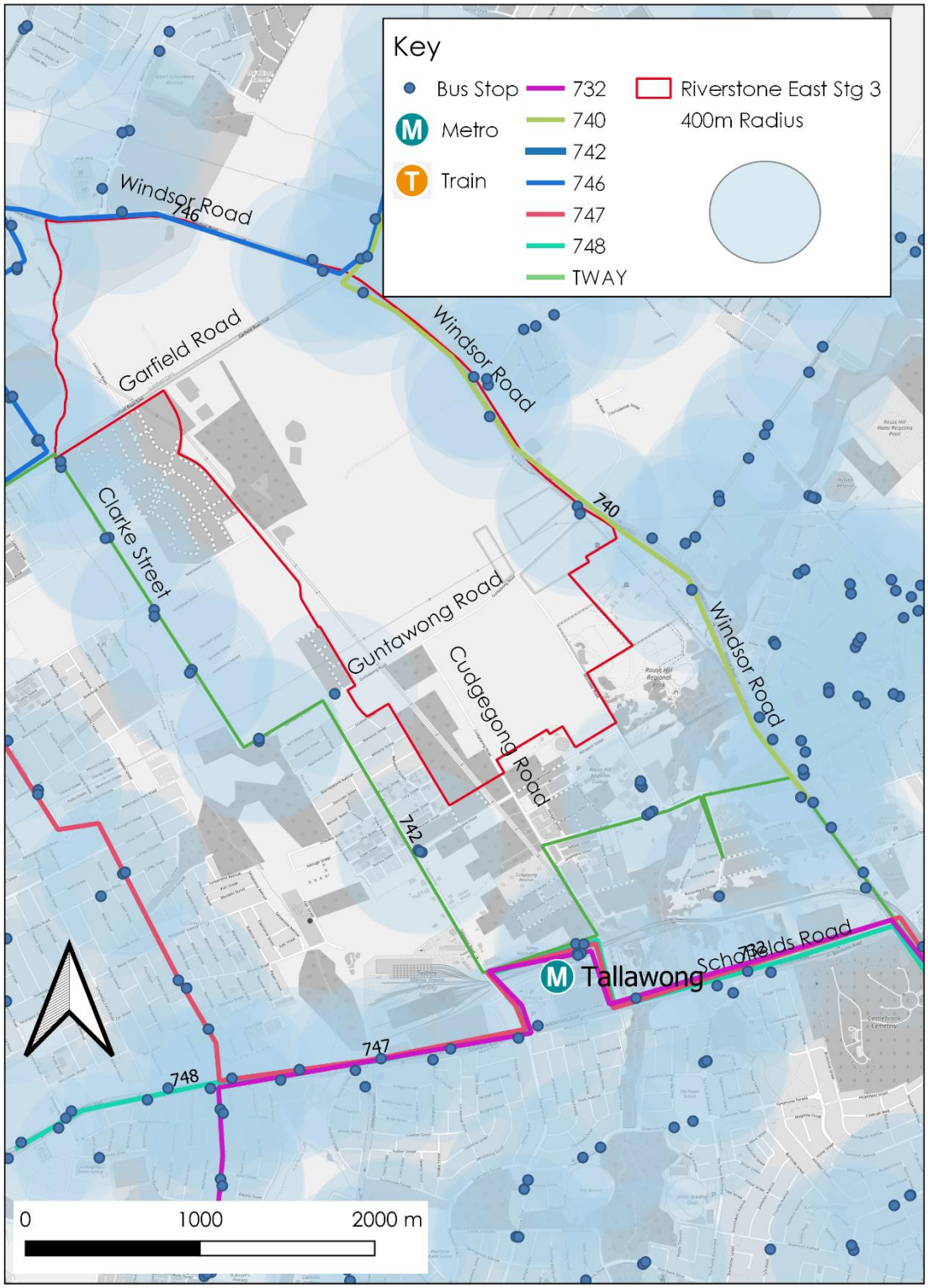
2.13.2 Bus Transport

Bus services should be focused on providing access to the suburban rail network and metro lines and T-Way interchanges through feeders services as well as access to the regional centres such as Rouse Hill.

Providing feeder bus routes to rail stations can greatly improve access to public transport and encourage more people to use it. Feeder buses are designed to transport passengers from areas that are not directly served by rail stations to the station itself. This can include suburban areas that are not within easy walking distance of a rail station. By providing a feeder bus service, people who might not have access to a car or who live too far away from the station can still benefit from the speed and convenience of rail transportation. In addition, feeder buses can reduce the need for parking at rail stations, which can be limited and expensive. By providing this service, communities can increase the use of public transportation, reduce traffic congestion, and promote sustainable modes of transportation.

The existing bus routes are shown in Figure 2.20 with shaded areas around the bus stops showing the typical 400m walking catchment for a bus route. The map shows that there would be a need for more bus routes in the future to provide a well-connected bus network that would provide access to key centres and rail stations.

Figure 2.20: Existing Bus Routes and Catchments



2.14 Active Transport

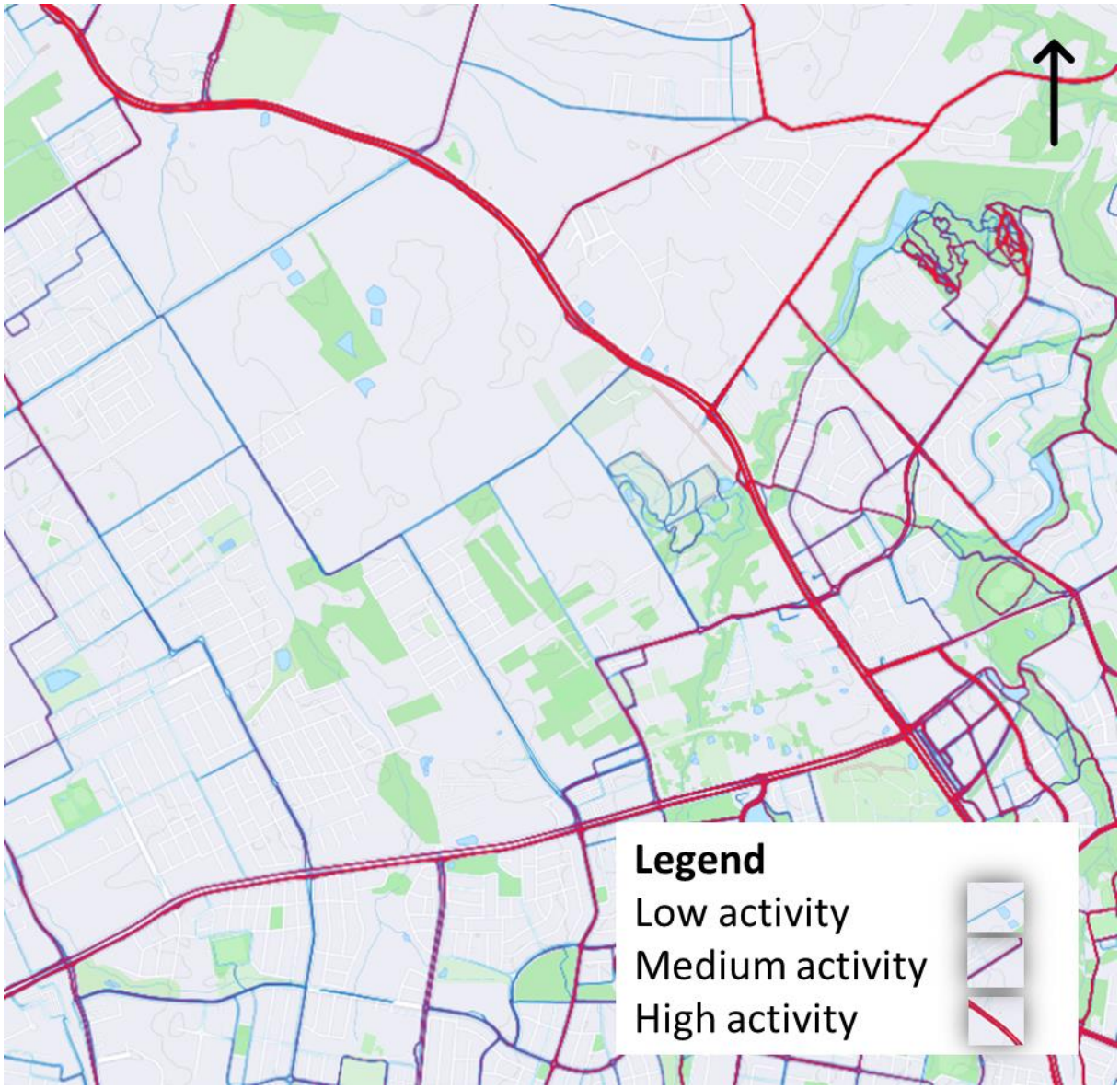
The study area currently has a limited pedestrian network with most of the roads having no pedestrian footpaths.

Riverstone East Stages 1 and 2 will provide new footpaths however, local streets in Stages 1 and 2 will only provide footpaths along one side of the road.

Garfield Road East and Windsor Road create barriers to pedestrians that will require future pedestrian crossings to allow connections to Box Hill and the western side of Windsor Road

Data from the Stava fitness app shows that Windsor Road and Schofields Road are heavily used by cyclists. These are roads that feature high-quality regional cycle paths. The Strava heat map is shown in Figure 2.21.

Figure 2.21: Strava Cycling Heat Map



Source: Strava Data (2023)

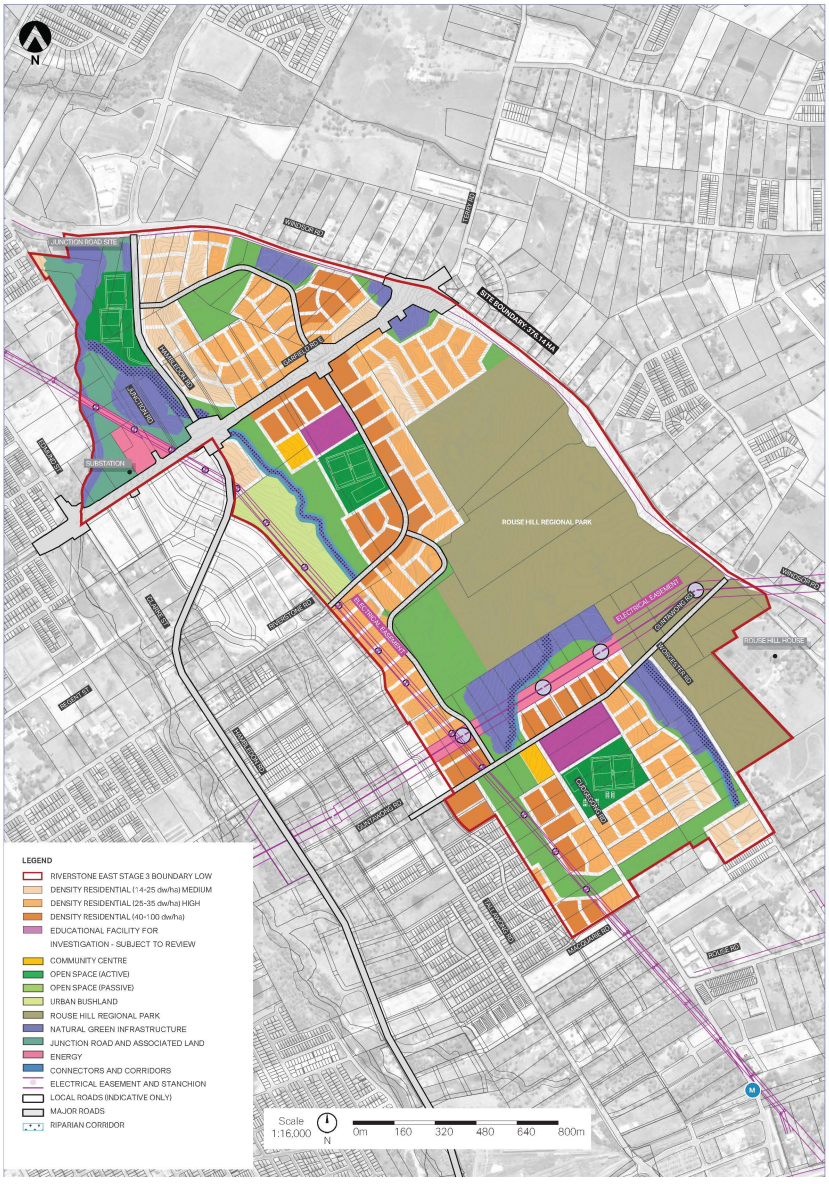
3 Riverstone East Stage 3 - Draft Indicative Layout Plan (ILP)

3.1 Overview

A draft ILP for the Riverstone East Stage 3 precinct has been prepared and the proposed layout is shown in Figure 3.1. The proposed land uses are primarily for residential dwellings with community facilities such as schools, playing fields and community centres.

The proposed residential yields would be approximately 3,147 dwellings of which 443 dwellings would be apartments, 1106 medium density and 1447 low-density dwellings.

Figure 3.1: Draft Riverstone East Stage 3 Precinct ILP



Source: Hatch Roberts Day

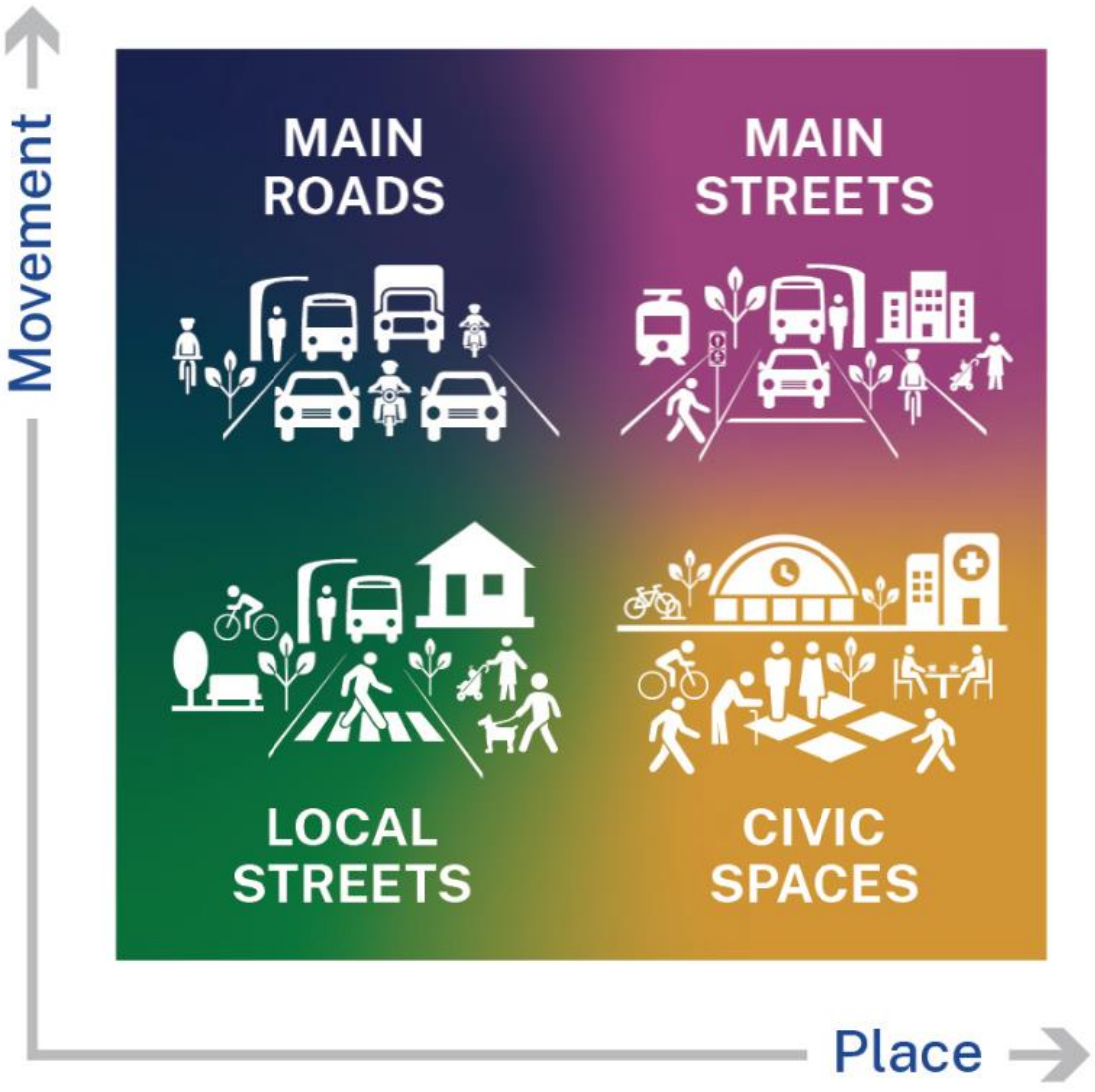
Key features of the ILP include:

- Playing fields located north of Guntawong Road
- Community centres located near the Riverstone Road extension and south of Guntawong Road
- High school south of Guntawong Road
- Primary school.

3.2 Road Network

The principle of the road network hierarchy is guided by the movement and place framework as shown in Figure 3.2.

Figure 3.2: Movement and Place Framework



Source: Transport for NSW

The draft ILP features minimal retail and community centres, therefore the road network will be focused on providing main roads along Garfield Road East and Hambledon Road Extension and a network of local streets with the provision of public transport to support the development.

The road network will provide movement corridors along Hambledon Road Extension and Garfield Road East. A network of collector roads with higher amenity will provide cycling routes through shared path as well as being capable of carrying buses within 10 minute of Tallawong Station.

The proposed road hierarchy and road types have also been developed based on consistency with the North West Growth Area DCP and lessons learnt from the Riverstone Stages 1 and 2. The key differences are:

- Widening collector roads by 2m to make them capable of carrying buses
- Providing footpaths on both sides of the local streets.

The draft road types and features are shown in Table 3.1 and typical cross sections are shown in Appendix A.

Table 3.1: Road Types

Road Type	Description	Speed Limit (km/h)	Carriageway	Parking Lane Width	Road Reserve	Paths	Notes	Movement and Place Classifiecation
Access Street	One-way with on-street parking	40	5.6m	2.3m	13.1m	1.5m footpath on one side	One-way	Local Street
Local Street	Two-way road with on-street parking (low-density residential streets)	50	9m	2.3m	16m	1.5m footpaths on both sides		Local Street
Collector Road	Two-way road with on-street parking. Suitable for buses	50	13m	2.3m	22m	1.5m footpath, 3.0m shared use path.	Bus capable road	Main Road
Sub-Arterial	2 lanes in each direction of the divided carriageway.	60	7m and 7m on a dual carriageway	-	26m	1.5m footpath and 3.0m shared use path	Hambledon Road Extension	Main Road

4 Precinct Transport Planning Objectives

4.1 Overview

The following section outlines how the draft ILP development for the Precinct fits into the Greater Sydney Commission objectives of creating a '30 Minute City' and '15 Minute Neighbourhoods'.

4.2 30-Minute City

One of the objectives of the Greater Sydney Commission is to create a city where most residents live within 30 minutes of their jobs education, health facilities, and services. The Central City District plan that encompasses the study area sets the objective of having more dwellings within 30 minutes by public transport to a metropolitan centre or strategic centre.

The closest metropolitan centres are:

- Blacktown
- Parramatta.

The closest strategic centres to the site are:

- Rouse Hill
- Norwest
- Castle Hill.

The estimated travel times between the Precinct and the nearby metropolitan and strategic centres are set out in Table 4.1

Table 4.1: Estimated Travel Times (By Public Transport Modes)

Destination	Description	Time*
Blacktown	Bus to Riverstone Station, Train to Blacktown	55 – 65 minutes
Parramatta	Bus to Riverstone Station, Train to Parramatta	65 – 75 minutes
Sydney CBD	Bus to Tallawong Station, Metro to Chatswood Station, Train to Town Hall	70 – 80 minutes
Rouse Hill	Bus to Tallawong Station, Metro to Rouse Hill	25 – 30 minutes
Norwest	Bus to Tallawong Station, Metro to Rouse Hill	35 – 40 minutes
Castle Hill	Bus to Tallawong Station, Castle Hill	35 - 40 minutes

**Trip times based on Transport for NSW, Trip Planner during morning and evening peak periods to and from Guntawong Road.*

The draft ILP for the Precinct meets one of the objectives by being within 30 minutes of a strategic centre however, currently, the site is more than 30 minutes from a Metropolitan centre with the time to Parramatta greater than 60 minutes.

Future infrastructure upgrades with the Chatswood to Sydney CBD metro would reduce travel times to Sydney CBD. Additional bus services to Riverstone Station would be needed to reduce the time to Blacktown and Parramatta.

A future extension of the Sydney Metro from Tallawong Station to the Aerotropolis and Western Sydney Airport would be significant in providing public transport to major employment centres.

4.3 15-Minute Neighbourhood

The 15 Minute neighbourhood seeks to provide local services within 15 minutes walk or ride of people's homes.

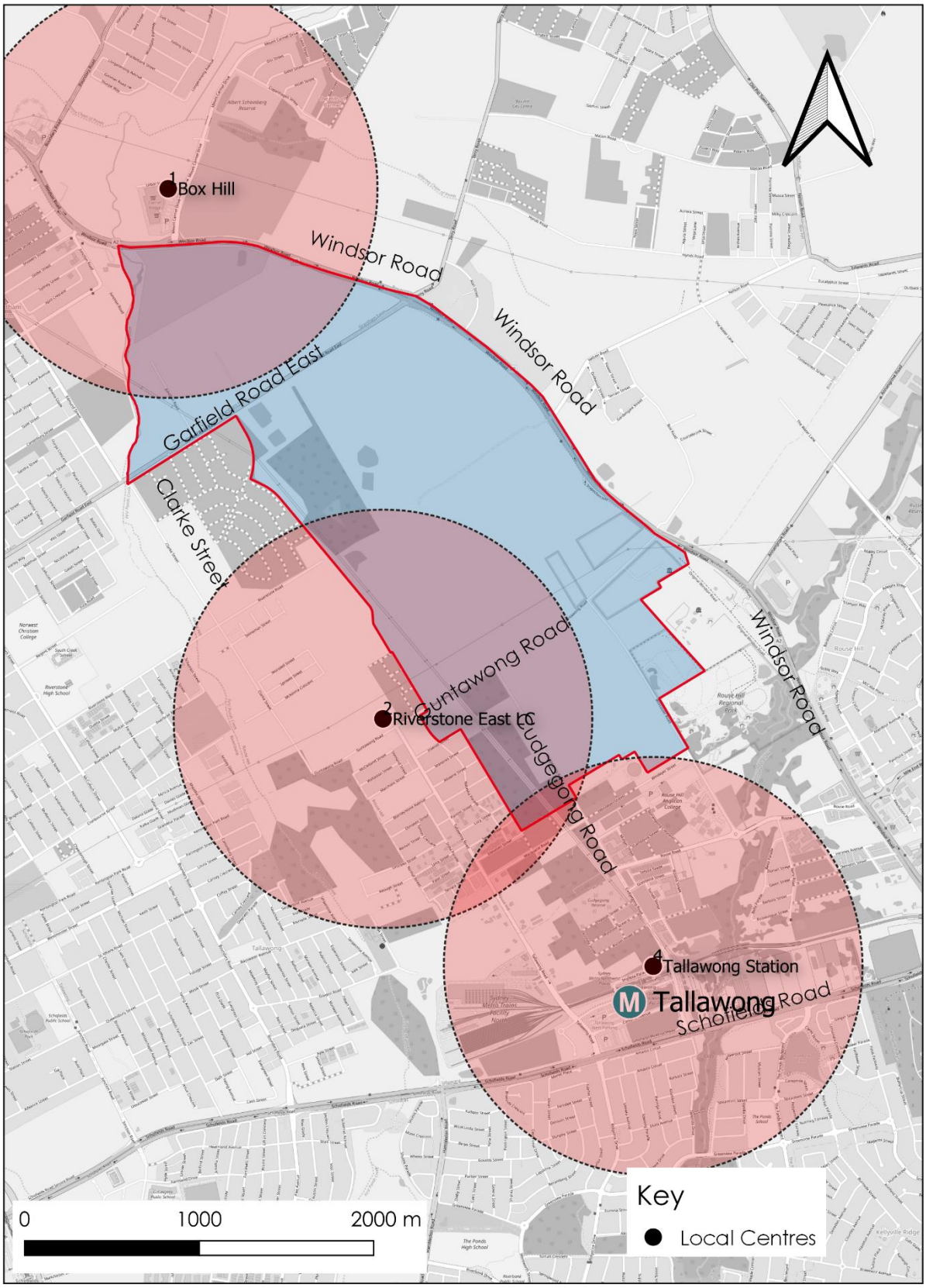
This includes local shops, schools, transport nodes and health facilities. Preferably this would be 15 minutes walking distance.

The key local retail centres will be:

- Box Hill Shopping Centre
- Riverstone East Stage 1 and 2 local centre (Future)
- Tallawong Station (Transport hub)
- Rouse Hill Hospital.

The 15-minute walking catchments for these centres are shown in Figure 4.1.

Figure 4.1: Walking Catchment from Local Centres (15 Minute Neighbourhood)

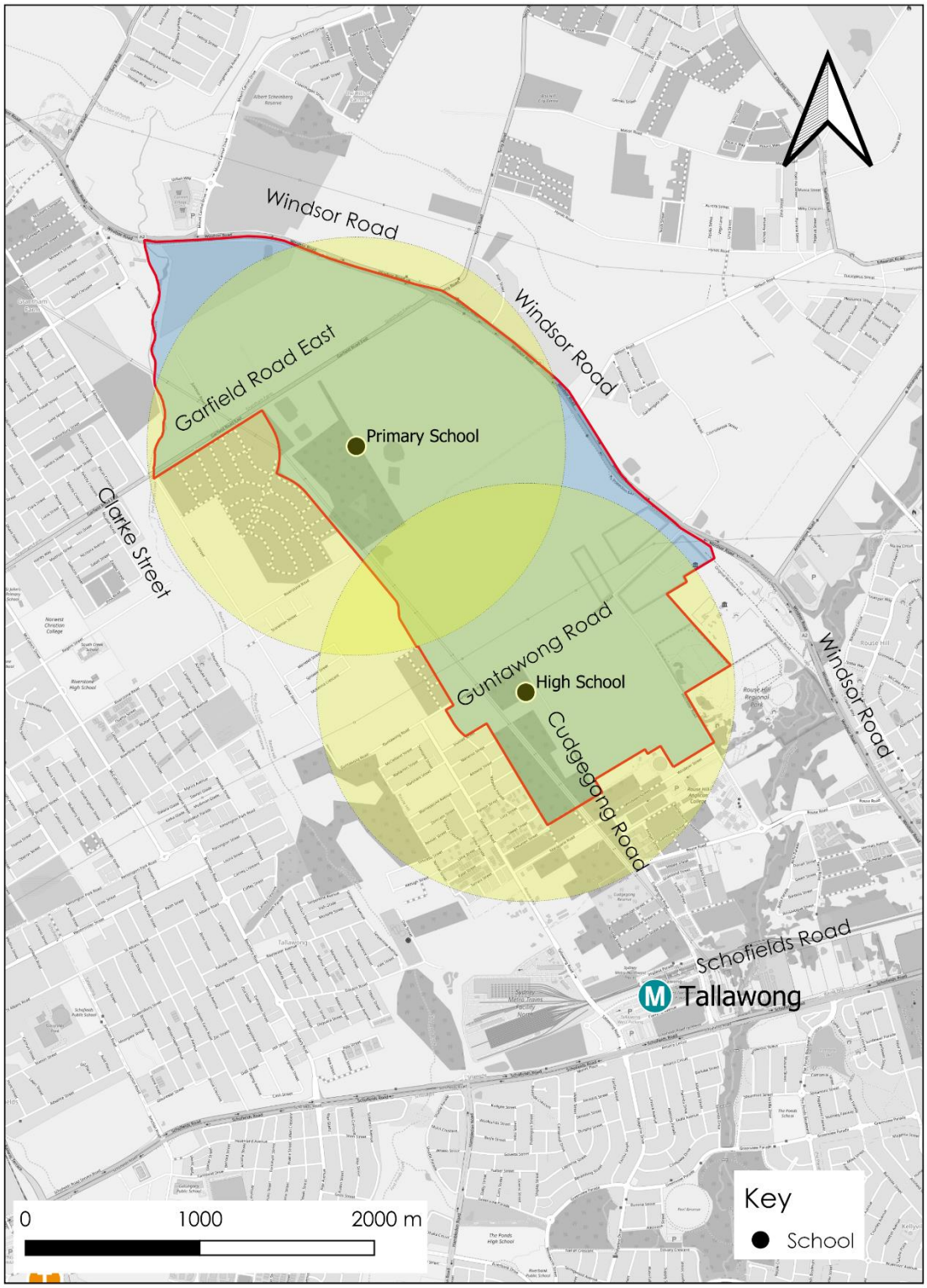


The 15-minute walking catchment indicates that there will be an area south of Garfield Road East in the precinct that will be more than a 15minutes walk from a small retail centre.

Schools are another service within the precinct that should be supported by network of safe pedestrian paths. The primary school will be centrally located within the precinct and a high school located in the southern section of the precinct. The 15-minute walking catchments are shown in Figure 4.2.

Section 7 of this report address the provision of active transport corridors through the precinct. The 15 minute neighbourhood is supported by a network of quality cycle routes and pedestrian footpaths to make walking and cycling pleasant and encourage their use.

Figure 4.2: Schools 15 minute Walking



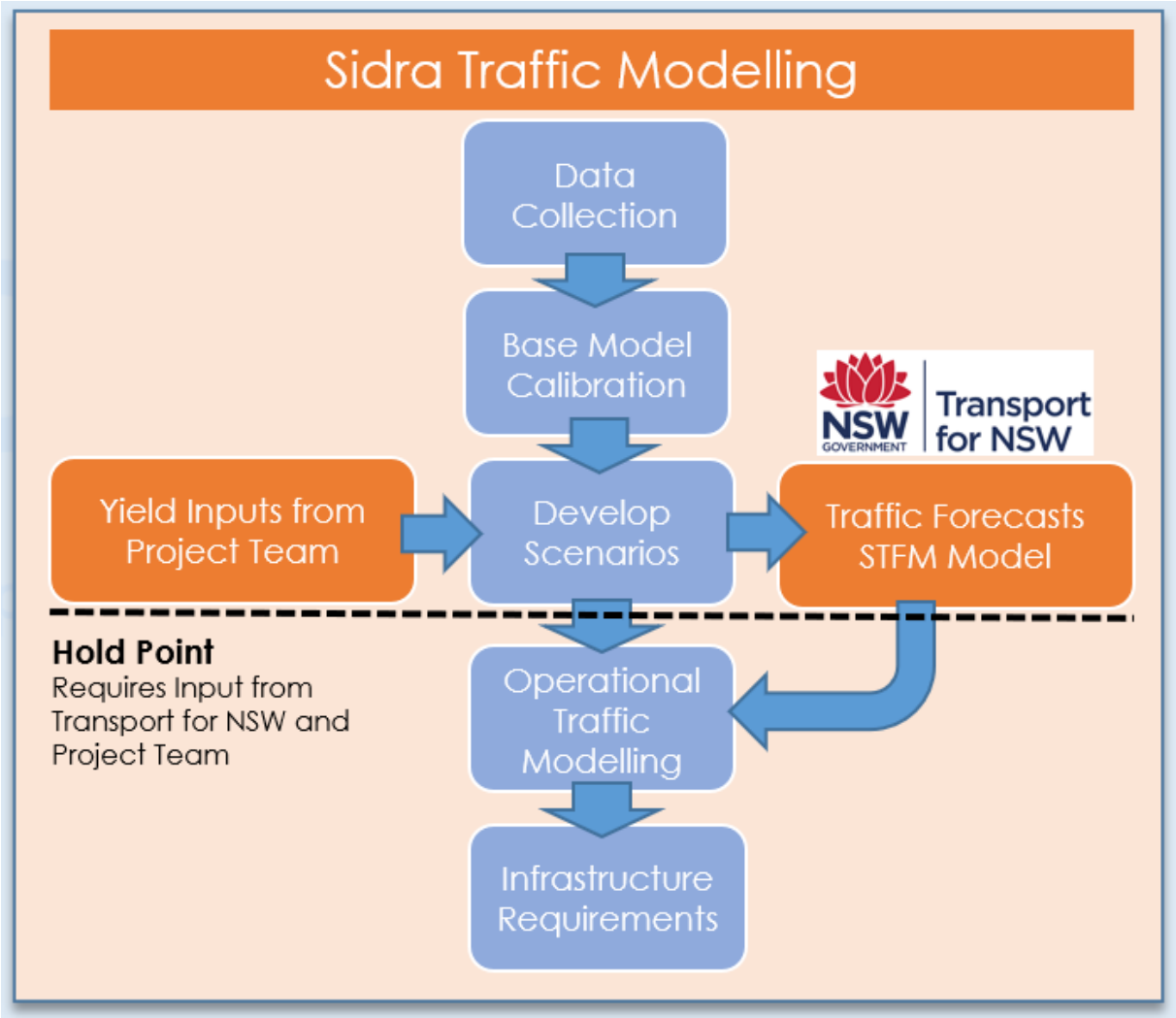
5 Precinct Traffic Modelling

5.1 Traffic Modelling Scope

The Precinct is located within the broader context of the North West Growth Area which is being planned for by Transport for NSW. This study is focused on the local access immediately surrounding the study area.

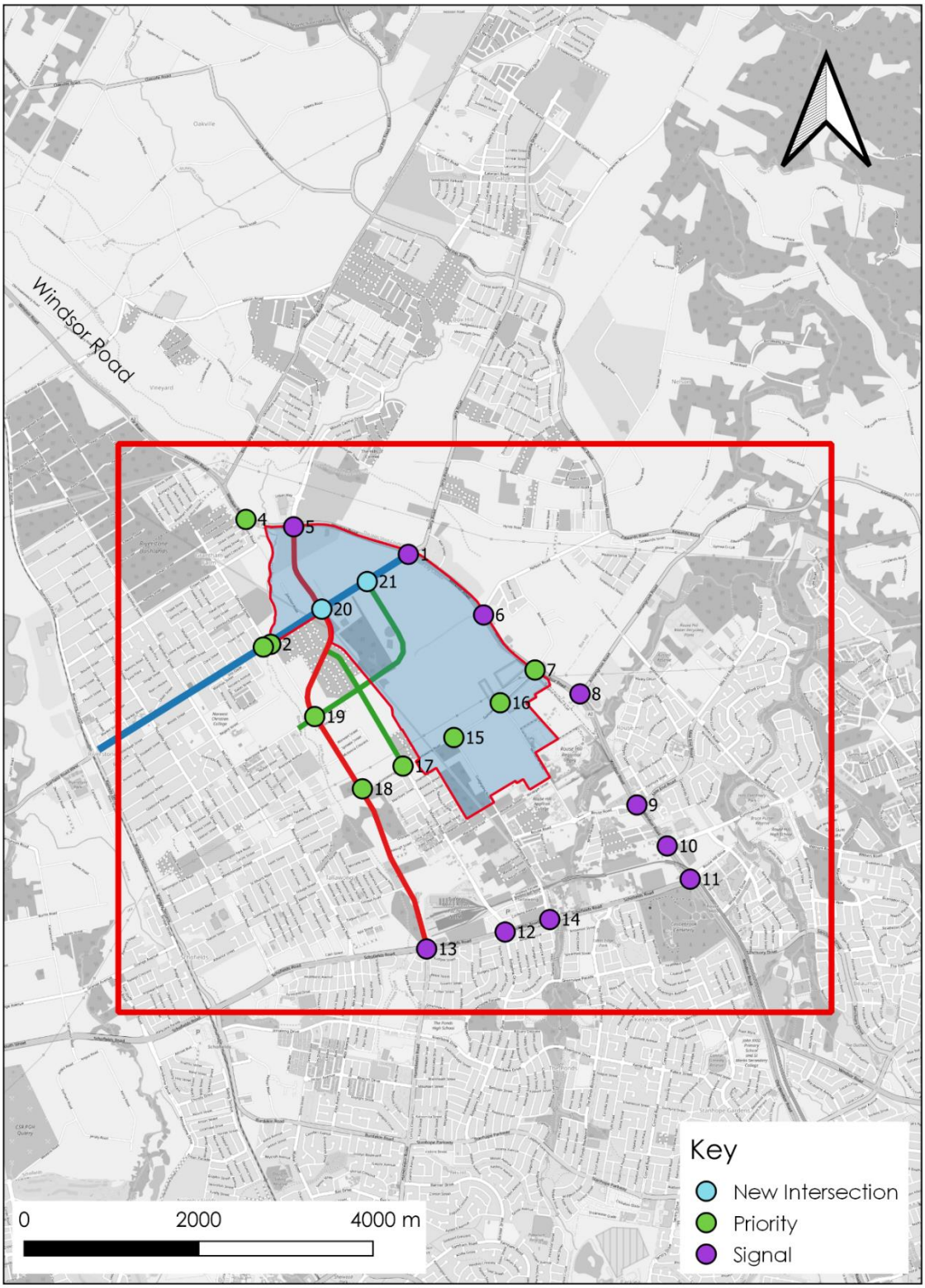
The scope of the traffic modelling for the Precinct as presented in this report is to use Sidra Intersection to build an operational model of the future road network within the area to assess the impacts of the precinct and identify infrastructure upgrades that would be required to accommodate planed development in the draft ILP. Traffic forecasts were provided by Transport for NSW through the Sydney Strategic Forecast Model (STFM). An overview of the proposed modelling methodology is shown in Figure 5.1.

Figure 5.1: Traffic Modelling Methodology



The modelling assessed two future year scenarios, namely 2031 and 2041. The extent of the base models is shown in Figure 5.2.

Figure 5.2: Modelled Intersections



5.2 Traffic Modelling Assumptions

The following outlines the modelling assumptions used for the traffic modelling assessment.

5.2.1 STFM Forecasts

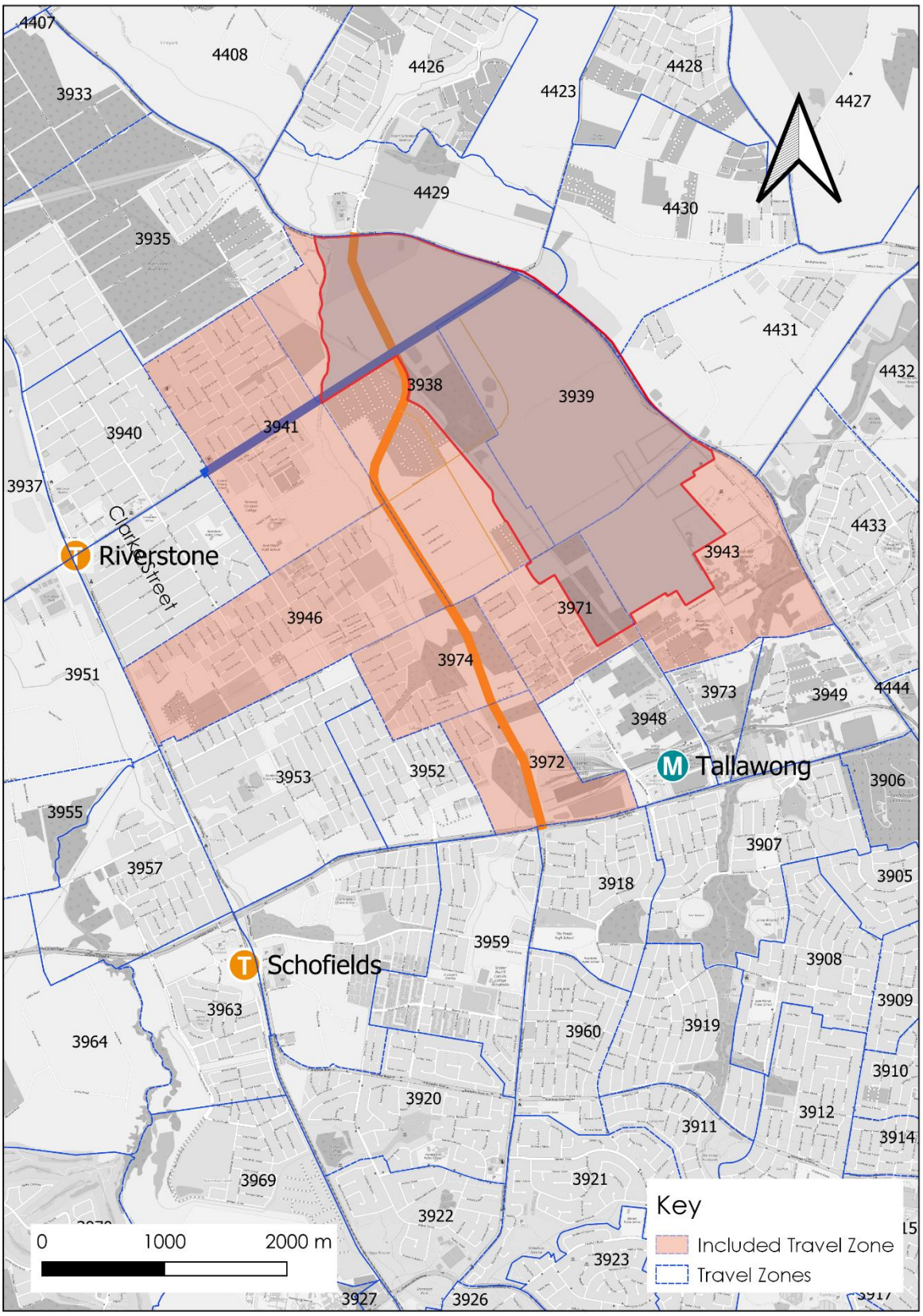
The traffic modelling has relied on traffic forecasts provided by Transport for NSW.

The population and dwelling forecasts for the study area were compared to the draft ILP and the dwelling forecasts for Riverstone Stages 1 and 2 provided by the Department of Planning and Environment. It was found that the STFM dwelling forecasts were lower than what is expected by the Departement of Planning and Environment. Therefore, additional traffic generation was estimated based on traditional traffic generation rates to make up for the difference.

The total number of dwellings that are forecast for Riverstone East Stage 3 Precinct is 2,849 dwellings. Riverstone Stages 1 and 2 were planned for 3500 dwellings however it is understood that this number may have been exceeded in the actual rollout of the precinct is likely to be some 4,000 dwellings.

The STFM travel zones are shown in Figure 5.3.

Figure 5.3: STFM Travel Zones



Travel zones related to Riverstone East are assumed to be:

- 3938
- 3939
- 3971
- 3974
- 3943
- 3972
- 3946 (half)
- 3941

The estimated dwelling numbers compared to the TZP22 projections are shown in Table 5.1. The TZP22 projections are forecasts that are used in Tranpsort for NSW's STFM model.

Table 5.1: Riverstone East - Estimated Dwelling Numbers Compared to TZP22 Projections

	No. of Residential Dwellings 2031 (70%)	No. of Residential Dwellings 2041
Stages 1 and 2	2800	4000
Stage 3	2170	3147
Total	**4970**	**7147**
STFM Assumption	**2907**	**5294**
Difference	+1903	+1853

The assumptions in transport for NSW's model are that there will be fewer dwellings than what is expected according to the Department of Planning and Environment.

The estimated net increase in dwellings by travel zone is shown in Table 5.2.

Table 5.2: Net Additional Dwellings by Travel Zone

Travel Zone	No. of Residential Dwellings 2031 (70%)	No. of Residential Dwellings 2041
3938	413	269
3971	296	175
3943	296	175
3939	90	94
3941	198	206
3946 (Half)	198	206
3972	198	206
3974	216	225
Total	**1903**	**1853**

5.2.2 Traffic Generation Rates

Assumed traffic generation rates are based on published rates from:

- Guide to Traffic Generating Developments, RTA, 2002
- Guide to Traffic Generating Developments Technical Direction (TDT 2013/04)
- Trip Generation Surveys High-Density Residential (Car Based) Analysis Report, Bitzios Consulting (2017)

The rates have been adjusted based on the likely establishment of schools and the assumption of future trip containment. The following are the assumed traffic generation rates for 2031 and 2041.

5.2.2.1 2031 Trip Generation Assumptions

Assumed rates for low density have been increased by 5% to account for school trips going outside the area in the initial years of the development.

Table 5.3: Traffic Generation Rates (vehicle trips per hour) 2031

Column 1	Morning Rate	Evening Rate	Source
Low Density	1.0 trips per dwelling	1.05 trips per dwelling	TDT 2013/04a
Medium Density	0.65 trips per dwelling	0.65 trips per dwelling	RTA GTTGD (2002)
High Density	0.28 trips per dwelling*	0.34 trips per dwelling*	Bitzios Consulting, Trip Generation Surveys High-Density Residential (Car Based) Analysis Report (2017) * Sub Metropolitan

5.2.2.2 2041 Trip Generation Assumptions

The ultimate trip rates will be based on the rates shown in Table 5.4.

Table 5.4: Traffic Generation Rates (vehicle trips per hour) 2041

Type	Morning Rate	Evening Rate	Source
Low Density	0.95 trips per dwelling	0.99 trips per dwelling	TDT 2013/04a
Medium Density	0.65 trips per dwelling	0.65 trips per dwelling	RTA GTTGD (2002)
High Density	0.28 trips per dwelling*	0.34 trips per dwelling*	Bitzios Consulting, Trip Generation Surveys High-Density Residential (Car Based) Analysis Report (2017) * Sub Metropolitan

For our traffic generation calculations, we have assumed that 'High-Density Yield' equates to medium density in terms of traffic generation rates on the basis that 'high-density yield has an average lot size of some 250 m^2 and that there would be very little actual high-density residential dwellings.

5.2.3 Estimated Additional Trips

Using a combination of the STFM forecasts and trip generation rates means it is difficult to accurately estimate the traffic generation for the Riverstone East Stage 3. The STFM travel zones do not evenly fit within the precinct outline. A methodology (developed in consultation with Transport for NSW and DPE) was used to account for a wider area encompassing Riverstone Stages 1 and 2. Based on the short fall in the STFM assumptions the additional traffic generation for the broader area is shown in Table 5.5 and Table 5.6 for 2031 and 2041 respectively.

Table 5.5: Estimated Additional Traffic Generation 2031 Peak Hours

Type	Morning Rate	Evening Rate	Dwellings	Morning Trips (veh. / hr)	Evening Trips (veh. / hr)
Low Density	1.0 trips per dwelling	1.05 trips per dwelling	1522	1522	1599
Medium Density	0.65 trips per dwelling	0.65 trips per dwelling	285	186	186
High Density	0.28 trips per dwelling*	0.34 trips per dwelling*	95	27	32
			1903	1735	1816

Table 5.6: Estimated Additional Traffic Generation 2041 Peak Hours

Type	Morning Rate	Evening Rate	Dwellings	Morning Trips (veh. / hr)	Evening Trips (veh. / hr)
Low Density	0.95 trips per dwelling	0.99 trips per dwelling	1482	1482	1557
Medium Density	0.65 trips per dwelling	0.65 trips per dwelling	278	181	181
High Density	0.28 trips per dwelling*	0.34 trips per dwelling*	93	26	32
			1853	1689	1769

The total traffic generation for the Precinct shown in Figure 5.3 is presented in Table 5.7.

Table 5.7: Estimated Traffic Generation

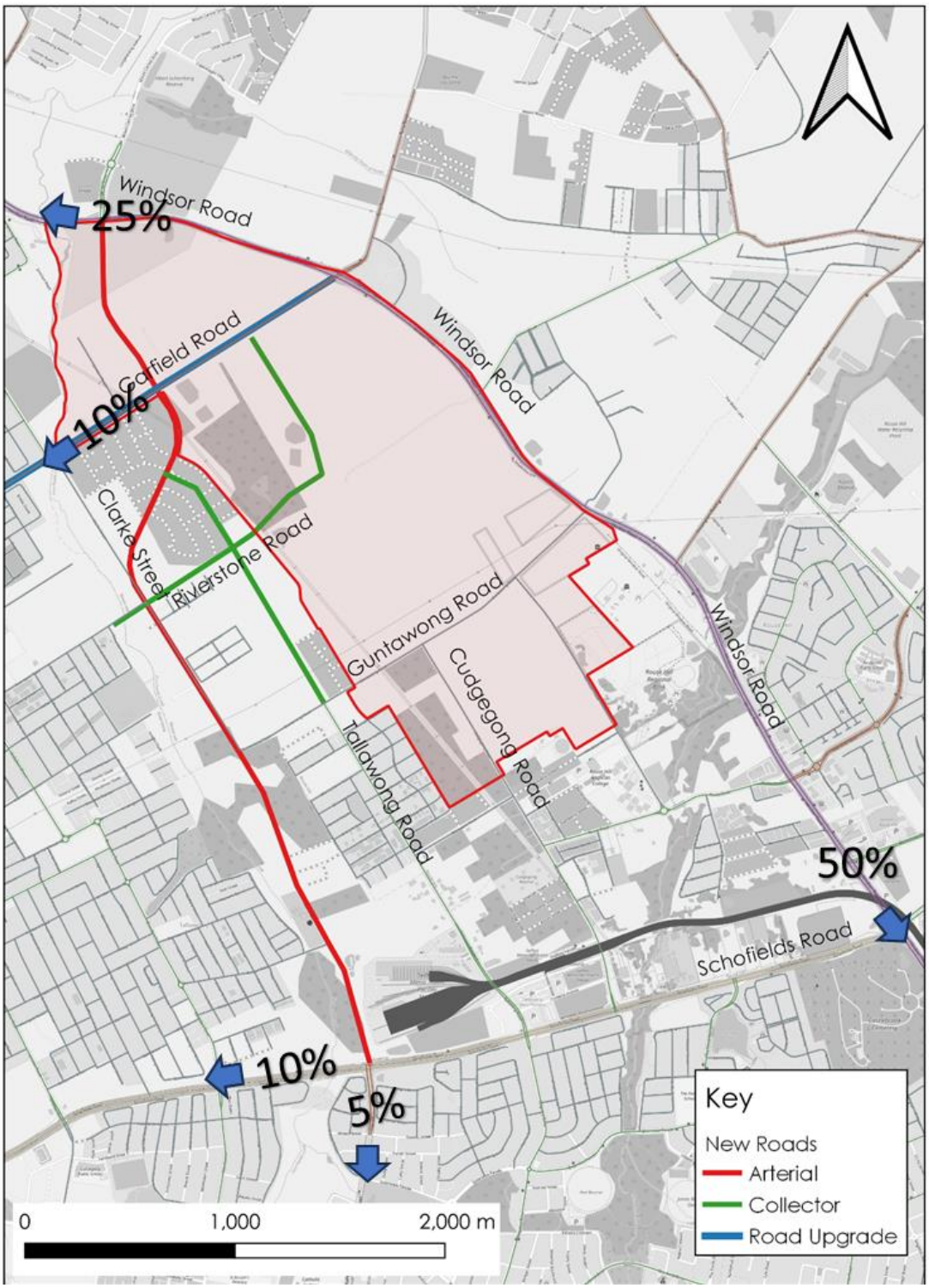
Scenario	STFM (Veh. / hr)	Additional Trips (Veh. / hr)	Total (Veh. / hr)
2031 Morning	1937	1969	3906
2031 Evening	2213	1816	4029
2041 Morning	3130	1969	5099
2041 Evening	3597	1816	5413

For context 1000 vehicles per hour is the nominal capacity of traffic lane in an urban road.

5.2.4 Traffic Generation and Distribution

The additional traffic generation was distributed on the network as shown in Figure 5.4. The distribution is based on a select link plot provided for Travel Zone 3938. This traffic was added to the traffic forecasts from the STFM models.

Figure 5.4: Assumed Traffic Distribution



5.3 Model Coding

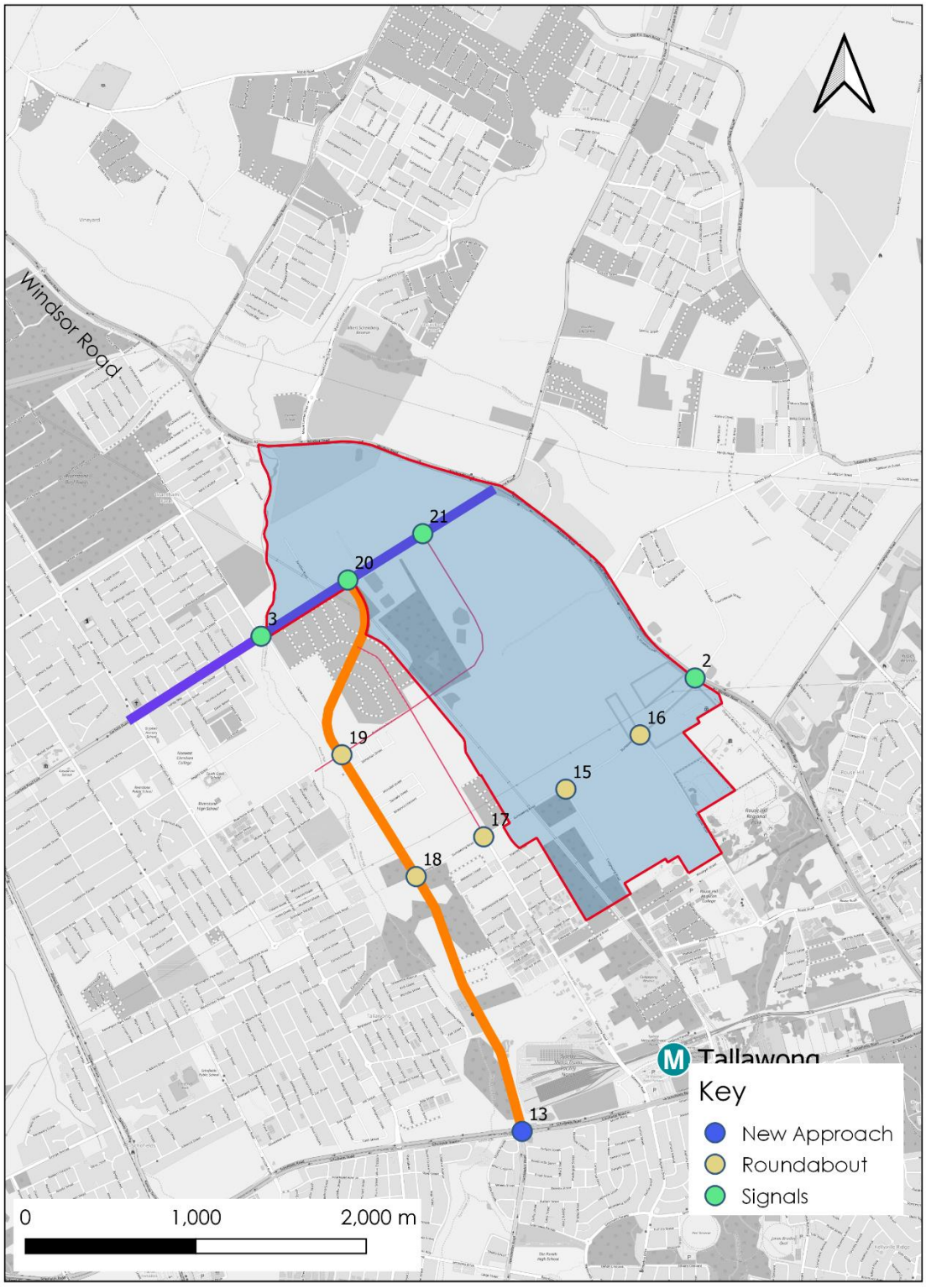
See Appendix B fore details of the model coding.

5.4 Modelled Scenarios

The following scenarios have been modelled in Sidra 9.1:

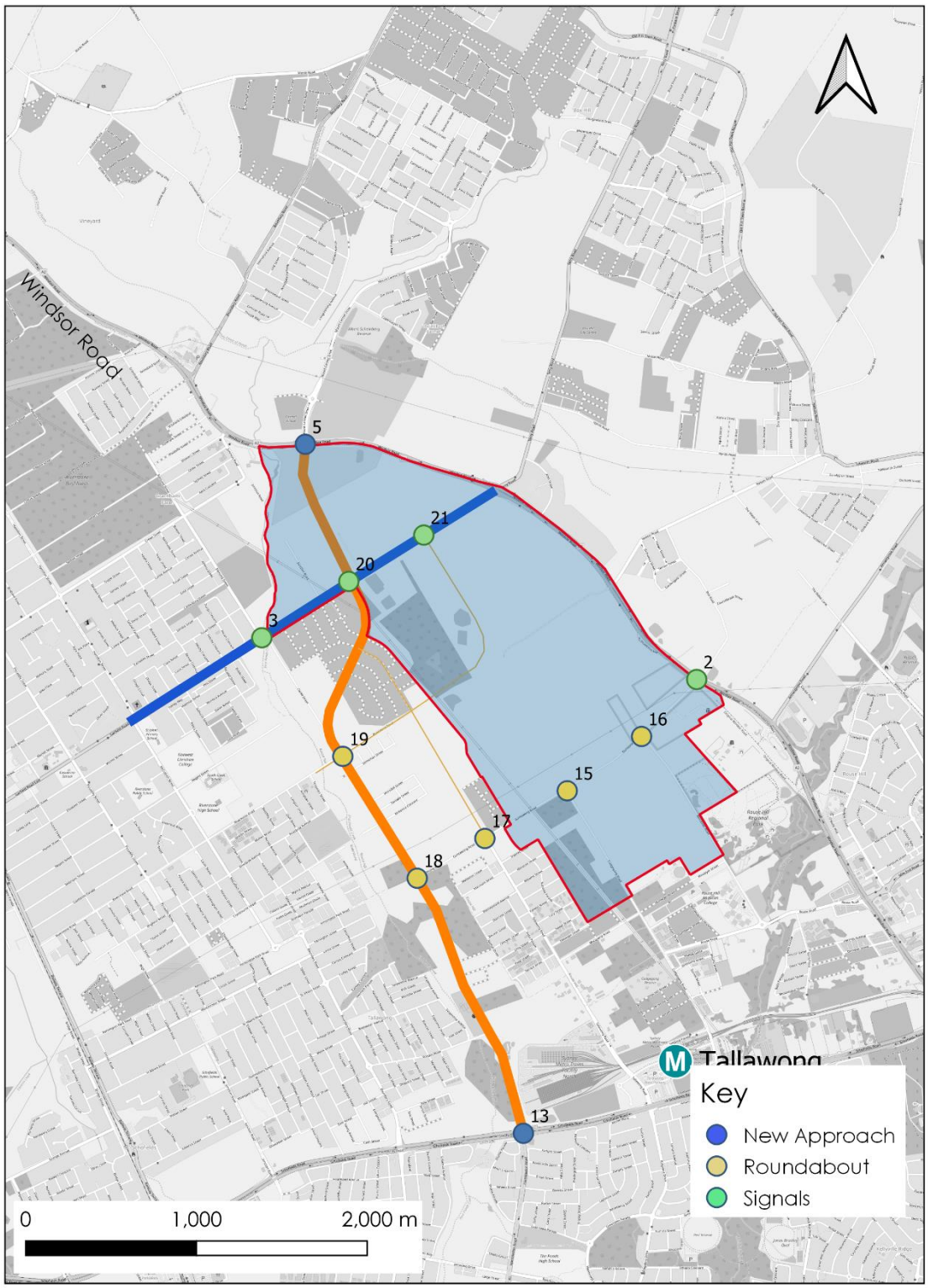
- 2023 Base model – existing conditions based on 2023 survey data.
- 10-Year Future Conditions – 10-Year future conditions (including Riverstone development calculated from 2021-2031 STFM volume growth plots). This scenario includes:
  - Permanent closure of Intersection 2 (Garfield Rd East-Clarke St)
  - Upgrade of Intersection 3 (Garfield Rd East-Edmund St) from a priority intersection to a signalised intersection
  - Upgrade of Intersection 7 (Windsor Rd-Guntawong Rd) from a left-in/left-out priority intersection to a three-legged signalised intersection
  - Upgrade of Intersection 13 (Schofields Rd-Hambledon Rd) from three-legged signals to four-legged signalised intersections.
  - Upgrade Intersection 15 (Guntawong Rd-Cudgegong Rd) and Intersection 16 (Guntawong Rd-Worcester Rd) from three-legged priority intersection to roundabout
  - Upgrade Intersection 17 (Guntawong Rd-Tallawong Rd) from T-junction priority to roundabout.
  - Upgrade Intersection 18 (Guntawong Rd-Clarke St) to roundabout.
  - Upgrade Intersection 19 (Riverstone Rd-Clarke St) from four-way priority to roundabout.
  - New signalised intersection 20 (Hambledon Rd extension) and 21 (Access Road 3). Note: Hambledon Rd extension does not yet provide connectivity to Windsor Rd-Mt Carmel.

Figure 5.5: 2031 Intersection Assumptions



- 20-Year Future Conditions – 10-Year future conditions (including Riverstone development calculated from 2021-2041 STFM volume growth plots). This scenario includes:
  - Extension of Hambledon Rd (Intersection 20) to Windsor Rd-Mt Carmel Dr
  - Upgrade Intersection 5 (Windsor Rd-Mt Carmel Dr) from a three-legged to a four-legged signalised intersection.

Figure 5.6: 2041 Intersection Assumptions



5.5 Planned Road Network Upgrades

Road network upgrades for key intersections on Windsor Road, Schofields Road and Garfield Road East are shown below in Figure 5.7 to Figure 5.12. These layouts are based on the TfNSW future plans for Garfield Road, Future TCS plans provided for Mt Carmel Drive / Windsor Road and Hambledon Road / Schofields Road and assumptions from the Arup 2015 report.

Figure 5.7: Garfield Road East – Edmund Street (Intersection 3)

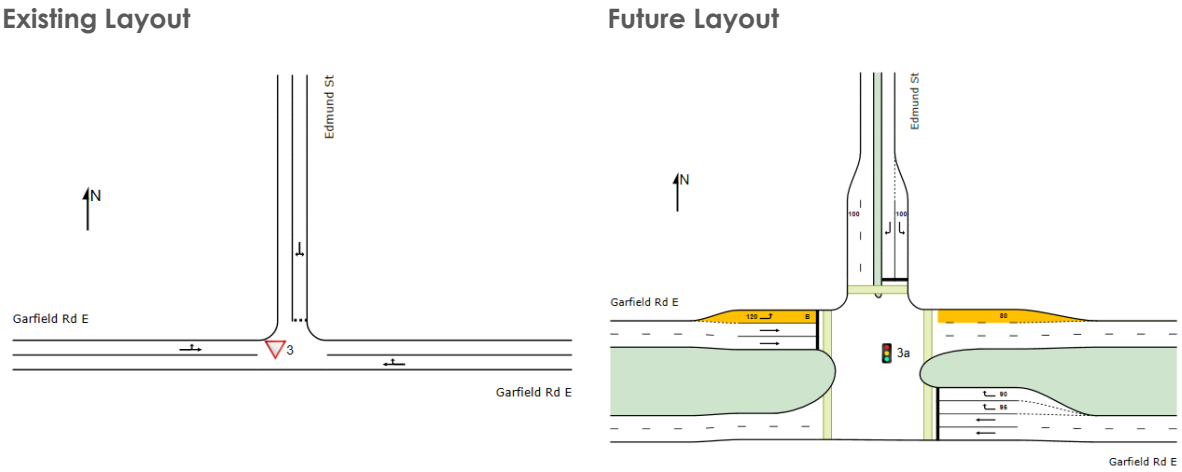


Figure 5.8: Windsor Road – Mt Carmel Drive (Intersection 5)

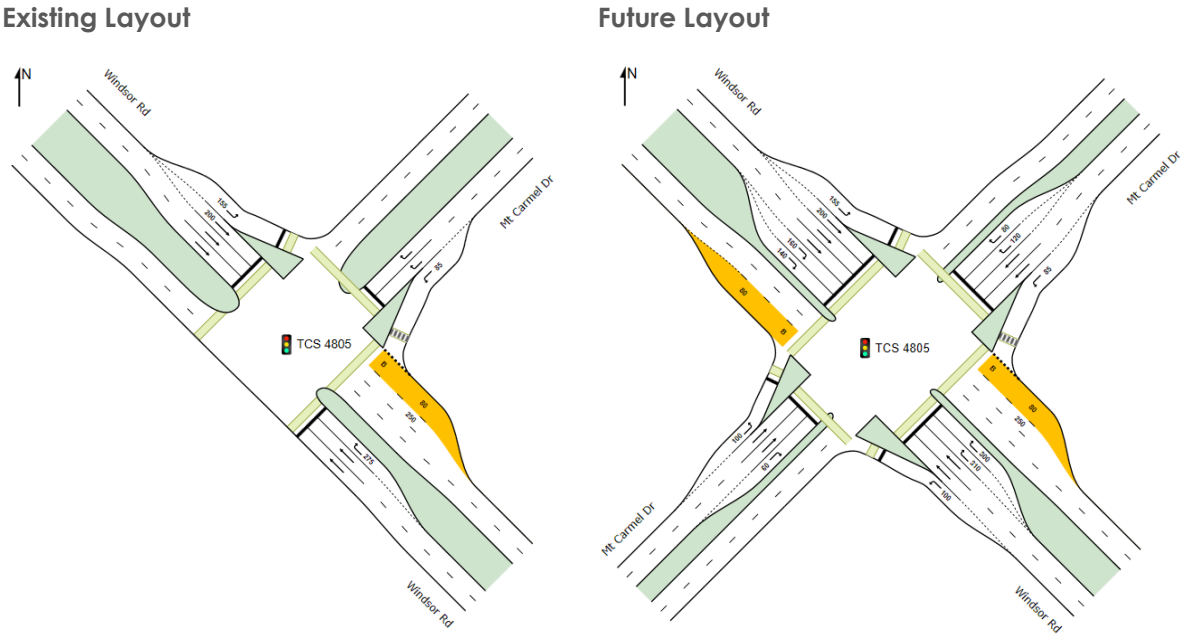
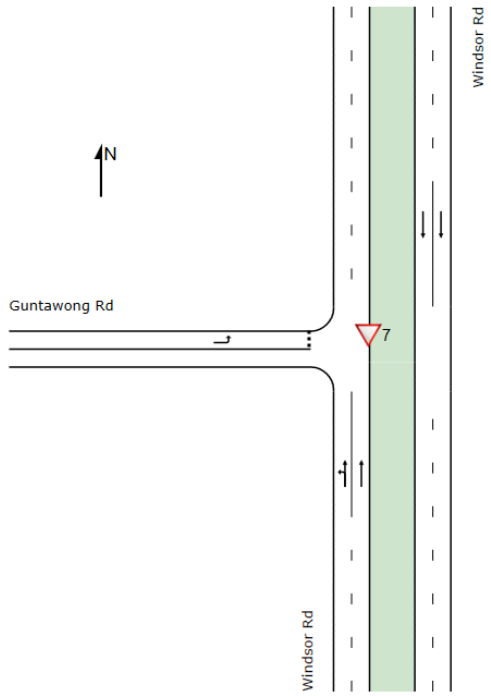
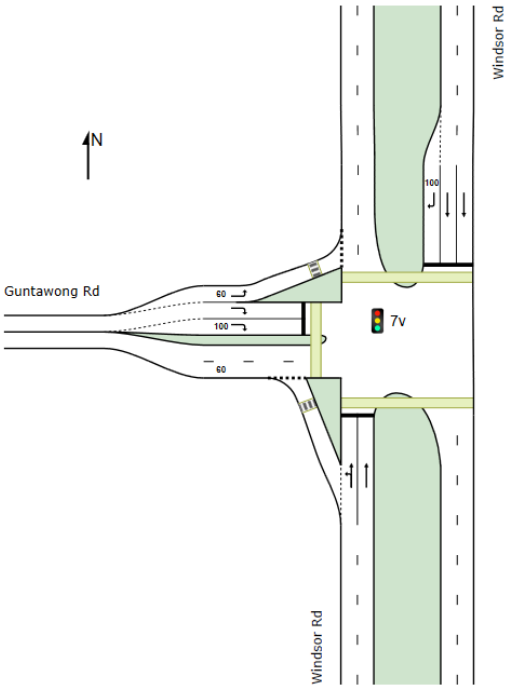


Figure 5.9: Windsor Road – Guntawong Road (Intersection 7)

Existing Layout



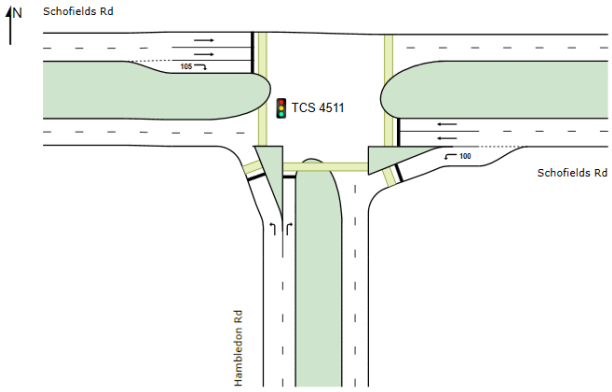
Future Layout



Guntawong Road signalising has been proposed by Transport for NSW. The traffic forecasts indicate that it would meet the warrants with more than 600 vehicles per hour in each direction on the main road and 200 vehicles per hour on the side road.

Figure 5.10: Schofields Road – Hambledon Road (Intersection 13)

Existing Layout



Future Layout

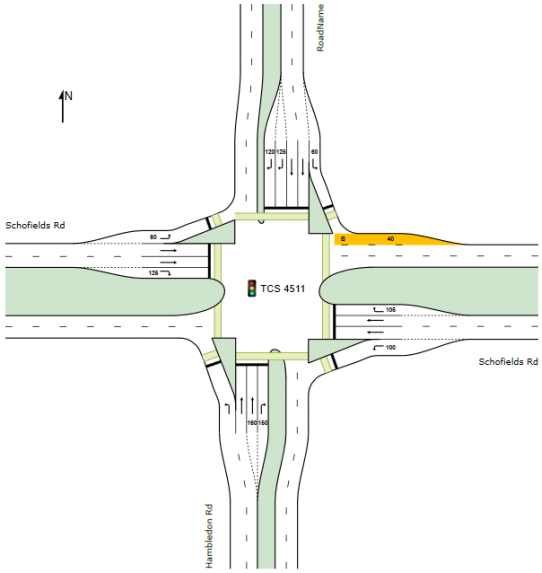


Figure 5.11: Garfield Road East – Hambledon Road (Intersection 20)

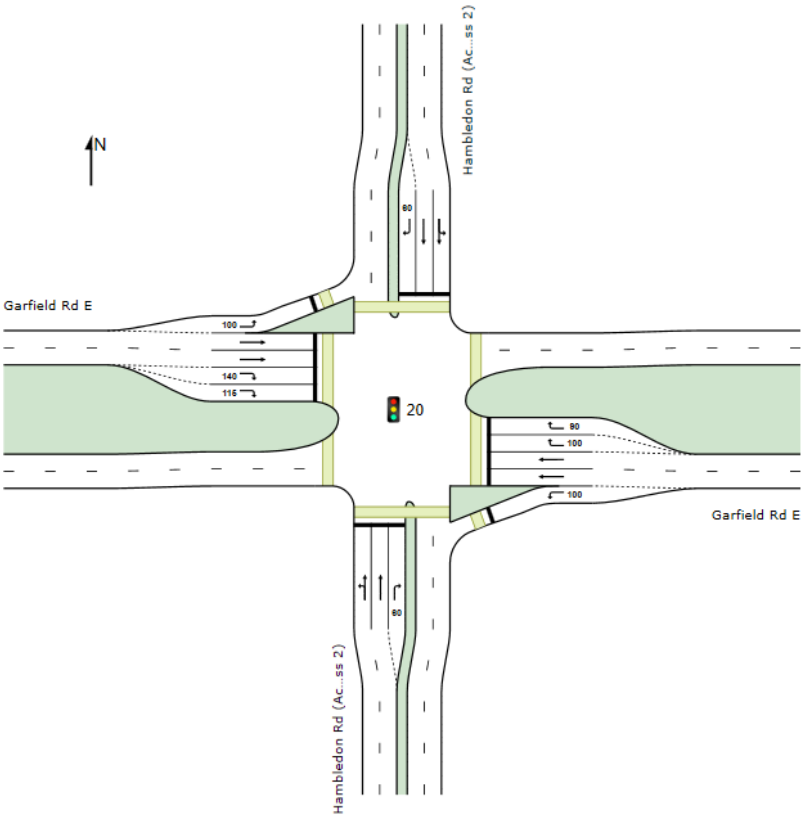
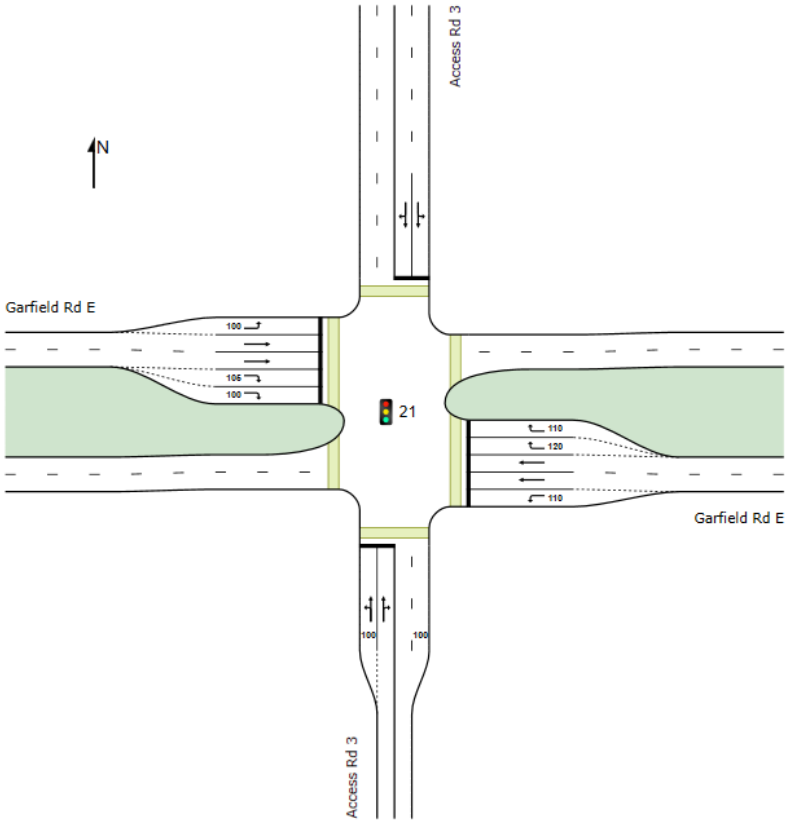


Figure 5.12: Garfield Road East – Access Road 3 (Intersection 21)



5.6 Level of Service Criteria

Transport for NSW uses the performance measure level of service to define how efficiently an intersection is operating under given prevailing traffic conditions.

Level of service (LoS) is directly related to the delays experienced by traffic travelling the intersection. Level of service ranges from LoS A to LoS F. LoS A indicates the intersection is operating with spare capacity, while LoS F indicates the intersection is operating above capacity. LoS D is the long-term desirable level of service.

At signalised intersections, the average delay is the volume-weighted average of all movements. For roundabouts and priority (give way and stop sign) controlled intersections, the average delay relates to the worst movement.

Table 5.8 shows the criteria that Sidra Intersection adopts in assessing the level of service.

Table 5.8: Level of Service Criteria

Level of Service (LoS)	Average Delay per vehicle (secs/veh)	Traffic Signals, Roundabout	Give Way & Stop Sign
A	Less than 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	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	Greater than 70	Unsatisfactory, requires additional capacity	Unsatisfactory, requires other control mode or major treatment

5.7 Modelling Results

Based on the above, the intersection operation for the existing conditions, 10-year future and 20-year future conditions is presented in Table 5.9 (Morning Peak) and Table 5.10 (Evening Peak). Detailed model outputs are provided in Appendix B.

Table 5.9: Morning Peak Intersection Operation (Modelled)

Travel Corridor	Intersection	2023 Base Conditions			10-Year Future Conditions			20-Year Future Conditions		
		Control / Upgrade	Ave. Delay (s)	LoS	Control / Upgrade	Ave. Delay (s)	LoS	Control / Upgrade	Ave. Delay (s)	LoS
Windsor Rd	1. Garfield Rd East - Windsor Rd - Terry Rd	Signal	49	D	Signal	116	F	Signal	85	F
	4. Windsor Rd - Junction Rd	Priority	50	D	Priority	989	F	Priority	1,245	F
	5. Windsor Rd - Mt Carmel Dr	Signal	15	B	Signal	37	C	Signal	44	D
	6. Windsor Rd - Nelson Rd	Signal	40	C	Signal	114	F	Signal	141	F
	7. Windsor Rd - Guntawong Rd	Priority	11	A	Signal	22	B	Signal	25	B
	8. Windsor Rd - Annangrove Rd	Signal	40	C	Signal	83	F	Signal	150	F
	9. Windsor Rd - Rouse Rd - Mile End Rd	Signal	96	F	Signal	186	F	Signal	201	F
	10. Windsor Rd - Commercial Rd	Signal	46	D	Signal	52	D	Signal	50	D
	11. Windsor Rd - Schofields Rd - Rouse Hill Dr	Signal	75	F	Signal	213	F	Signal	185	F
Schofields Rd	12. Schofields Rd - Tallawong Rd - Ridgeline Dr	Signal	44	D	Signal	83	F	Signal	121	F
	13. Schofields Rd - Hambledon Rd	Signal	30	C	Signal	65	E	Signal	120	F
	14. Schofields Rd - Cudgegong Rd	Signal	44	D	Signal	68	E	Signal	63	E
Garfield Rd E	2. Garfield Rd E - Clarke St	Priority	28	B						
	3. Garfield Rd E - Edmund St	Priority	24	B	Signal	15	B	Signal	12	A
	20. Garfield Rd E - Hambledon Rd (Access 2)				Signal	33	C	Signal	40	C
	21. Garfield Rd E - Access 3				Signal	34	C	Signal	30	C
Internal Intersections	15. Guntawong Rd - Cudgegong Rd	Priority	8	A	Roundabout	10	A	Roundabout	11	A
	16. Guntawong Rd - Worecster Rd	Priority	8	A	Roundabout	10	A	Roundabout	10	A
	17. Guntawong Rd - Tallawong Rd	Priority	11	A	Roundabout	16	B	Roundabout	16	B
	18. Guntawong Rd - Clarke St	Priority	6	A	Roundabout	11	A	Roundabout	11	A
	19. Clarke St - Riverstone Rd	Priority	12	A	Roundabout	13	A	Roundabout	15	B

Table 5.10: Evening Peak Intersection Operation (Modelled)

Travel Corridor	Intersection	2023 Base Conditions			10-Year Future Conditions			20-Year Future Conditions		
		Control / Upgrade	Ave. Delay (s)	LoS	Control / Upgrade	Ave. Delay (s)	LoS	Control / Upgrade	Ave. Delay (s)	LoS
Windsor Rd	1. Garfield Rd E - Windsor Rd - Terry Rd	Signal	60	E	Signal	93	F	Signal	86	F
	4. Windsor Rd - Junction Rd	Priority	68	E	Priority	845	F	Priority	592	F
	5. Windsor Rd - Mt Carmel Dr	Signal	12	A	Signal	18	B	Signal	50	D
	6. Windsor Rd - Nelson Rd	Signal	52	D	Signal	85	F	Signal	159	F
	7. Windsor Rd - Guntawong Rd	Priority	15	B	Signal	24	B	Signal	53	D
	8. Windsor Rd - Annangrove Rd	Signal	66	E	Signal	112	F	Signal	131	F
	9. Windsor Rd - Rouse Rd - Mile End Rd	Signal	68	E	Signal	85	F	Signal	121	F
	10. Windsor Rd - Commercial Rd	Signal	38	C	Signal	47	D	Signal	63	E
	11. Windsor Rd - Schofields Rd - Rouse Hill Dr	Signal	62	E	Signal	295	F	Signal	316	F
Schofields Rd	12. Schofields Rd - Tallawong Rd - Ridgeline Dr	Signal	37	C	Signal	57	E	Signal	145	F
	13. Schofields Rd - Hambledon Rd	Signal	57	E	Signal	191	F	Signal	214	F
	14. Schofields Rd - Cudgegong Rd	Signal	35	C	Signal	44	D	Signal	75	F
Garfield Rd E	2. Garfield Rd E - Clarke St	Priority	19	B						
	3. Garfield Rd E - Edmund St	Priority	31	C	Signal	19	B	Signal	14	A
	20. Garfield Rd E - Hambledon Rd (Access 2)				Signal	29	C	Signal	37	C
	21. Garfield Rd E - Access 3				Signal	33	C	Signal	33	C
Internal Intersections	15. Guntawong Rd - Cudgegong Rd	Priority	7	A	Roundabout	13	A	Roundabout	14	A
	16. Guntawong Rd - Worecster Rd	Priority	7	A	Roundabout	10	A	Roundabout	10	A
	17. Guntawong Rd - Tallawong Rd	Priority	9	A	Roundabout	13	A	Roundabout	14	A
	18. Guntawong Rd - Clarke St	Priority	6	A	Roundabout	12	A	Roundabout	12	A
	19. Clarke St - Riverstone Rd	Priority	15	B	Roundabout	12	A	Roundabout	14	A

Existing

Table 5.9 indicates the existing intersection of Windsor Road-Mile End Road (Int. 9) and Windsor Road-Schofields Road-Rouse Hill Drive (Int. 11) is currently operating at capacity (LoS F) under existing conditions in the morning peak period, while Intersections 1, 4, 10, 12 and 14 are operating near capacity (LoS D). The remaining intersections operate well at LoS C or better.

Table 5.10 indicates several intersections on Windsor Road (Int. 1, 4, 8, 9 and 11) currently operating at capacity (LoS F) under existing conditions in the evening peak period. Windsor Road-Nelson Road (Int. 6) operates near capacity at LoS D while the remaining intersections operate well at LoS C or better.

10-Year Future Conditions

The forecasted 10-Year traffic growth would result in several intersections deteriorating to LoS F in the future year in both morning and evening peak periods. It is noted that based on the 2021-2031 STFM volume growth plots, traffic volumes along Windsor Road are expected to increase by some 200-500vph in each direction.

Additionally, Windsor Road-Junction Road (Int. 4) currently operates as a seagull intersection with the worst movement results relating to the right-turn out from Junction Road to Windsor Road, as this movement must give way to right-turn in movements, adjacent westbound through movement and the eastbound through movement at the seagull merge point. Future traffic growth would exacerbate the existing poor performance at this intersection due to increased traffic on Windsor Road. Notwithstanding, in reality, motorists would unlikely wait to turn right with delays up to 800-900 seconds and would likely either accept smaller gap acceptances to make the right turn out or alternatively motorists would find alternative routes to connect to Windsor Road.

The upgraded and new intersections along Garfield Road East (Int. 3, 20 and 21) and the upgraded internal intersections (Int. 15-19) would all operate satisfactorily at LOS C or better.

The upgraded intersection of Windsor Road-Guntawong Road (Int. 7) to signals would also continue to operate satisfactorily in the 10-year future.

20-Year Future Conditions

The Hambledon Road extension at Windsor Road-Hambledon Road (Int. 20) would be provided to connect with Windsor Road-Mt Carmel Drive (Int. 5). This new link will provide motorists with an additional connection to Windsor Road. This would result in some traffic being diverted away from the Windsor Road-Garfield Road E-Terry Road intersection (Int 1). Therefore, there is a reduction in delay at Intersection 1 in the 20-Year future condition as a result of the new connection. Notwithstanding, Intersection 1 would continue to operate at

LoS F while Intersection 5 would operate near capacity at LoS D with the additional traffic now utilising this intersection.

The remaining intersections along Windsor Road and Schofields Road would continue to operate at LoS E/F while the intersections along Garfield Road (Int. 3, 20 and 21) and the internal intersections (Int. 15-19) would all continue to operate satisfactorily at LoS C or better.

5.8 Conclusions

The traffic modelling indicates that with the proposed development of Riverstone East Stage 3 Precinct the local intersections within the precinct along Garfield Road would operate acceptably. However, intersections along Windsor Road are currently at capacity and would experience an increase in average vehicle delay in the future.

Intersections on Schofields Road are also predicted to be at capacity in 2023 and will continue to experience increased average vehicle delay. However, very few of the forecast volumes for the Riverstone Stone East Stage 3 precinct are expected to use Schofields Road.

It is understood that Transport for NSW is currently undertaking its own modelling for the Norther West Growth Area and this will inform upgrades on Windsor Road and Schofields Road. It is beyond the scope of this study to recommend regional or state significant infrastructure.

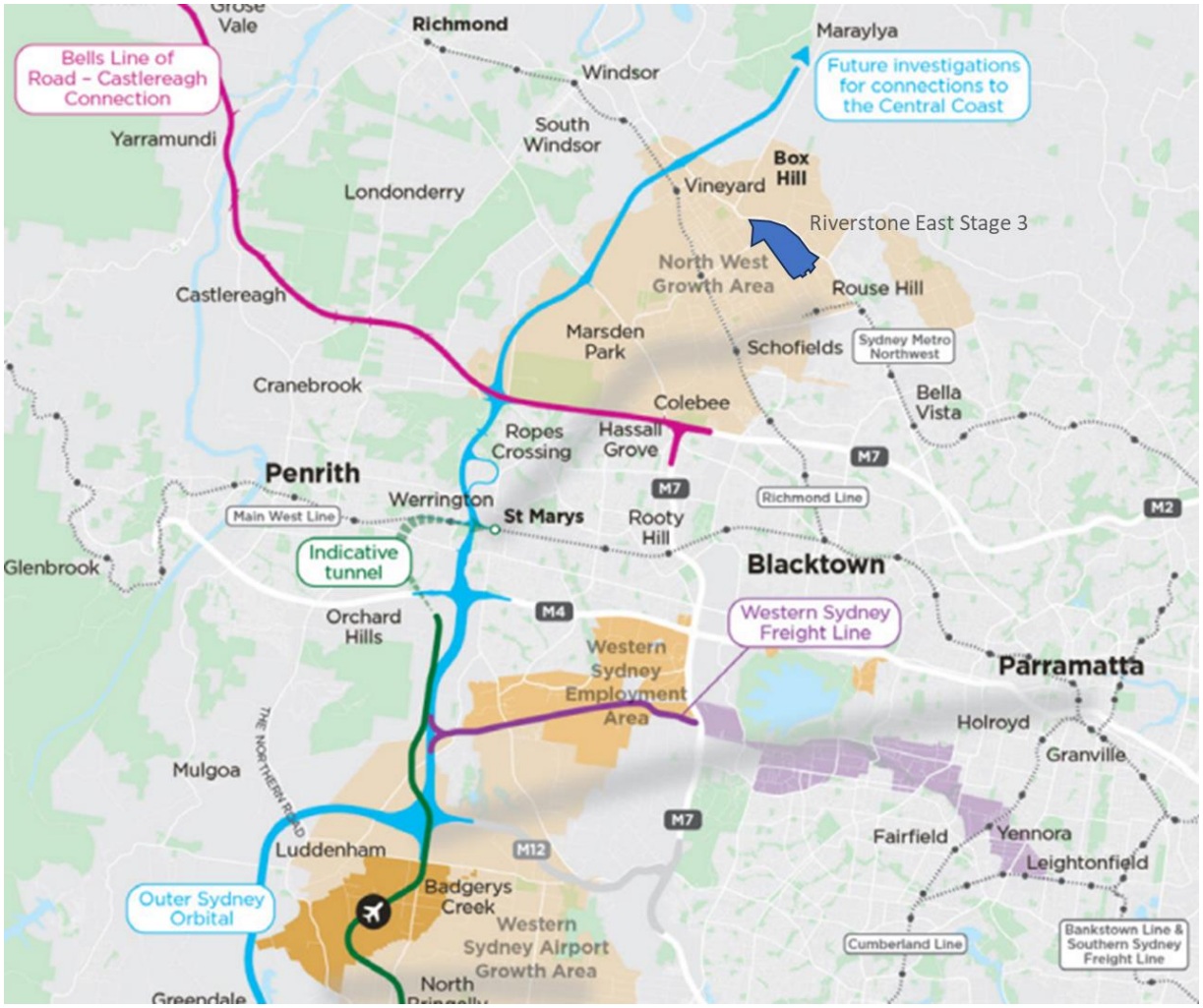
For example, upgrades to Windsor Road may not fully address capacity issues, therefore there is a need for significant infrastructure to enhance transportation in the area. This could involve:

- Developing efficient public transportation with connections to make better use of existing heavy rail.
- Extending the existing Sydney Metro to the aerotropolis.
- Building the Outer Sydney Orbital to increase road capacity beyond what the current roads can offer.

The indicative alignment for the Outer Sydney Orbital (OSO) is shown in Figure 5.13. Corridors for Stage 1 and Stage 2 of the OSO have been identified and are being preserved. However, the alignment planning only extends to Richmond Road.

It should be noted that Transport for NSW traffic forecasts has not included the OSO in this area.

Figure 5.13: Outer Sydney Orbital



Source: Transport for NSW (2018)

5.8.1 Access to the State Road Network

The development will have four direct access to the State Road Network which will be:

- Garfield Road East at Hambledon Road Extension
- Garfield Road East at Access Road 3
- Windsor Road at Guntawong Road
- Windsor Road at Hambledon Road Extension

The new intersections on Garfield Road East are to be signalised as part of the Garfield Road East Upgrade.

It is recommended that the upgrade of Guntawong Road and Windsor Road is prioritised to provide an additional access option to Windsor. Hambledon Road Extension would eventually connect through to Windsor Road providing another connection through to Windsor Road north.

6 Public Transport Strategy

6.1 Overview

To support the 30-minute city requires a public transport network to support these objectives. The review of existing conditions shows that there should be a new bus route through the precinct to support connections to Riverstone.

6.2 Buses

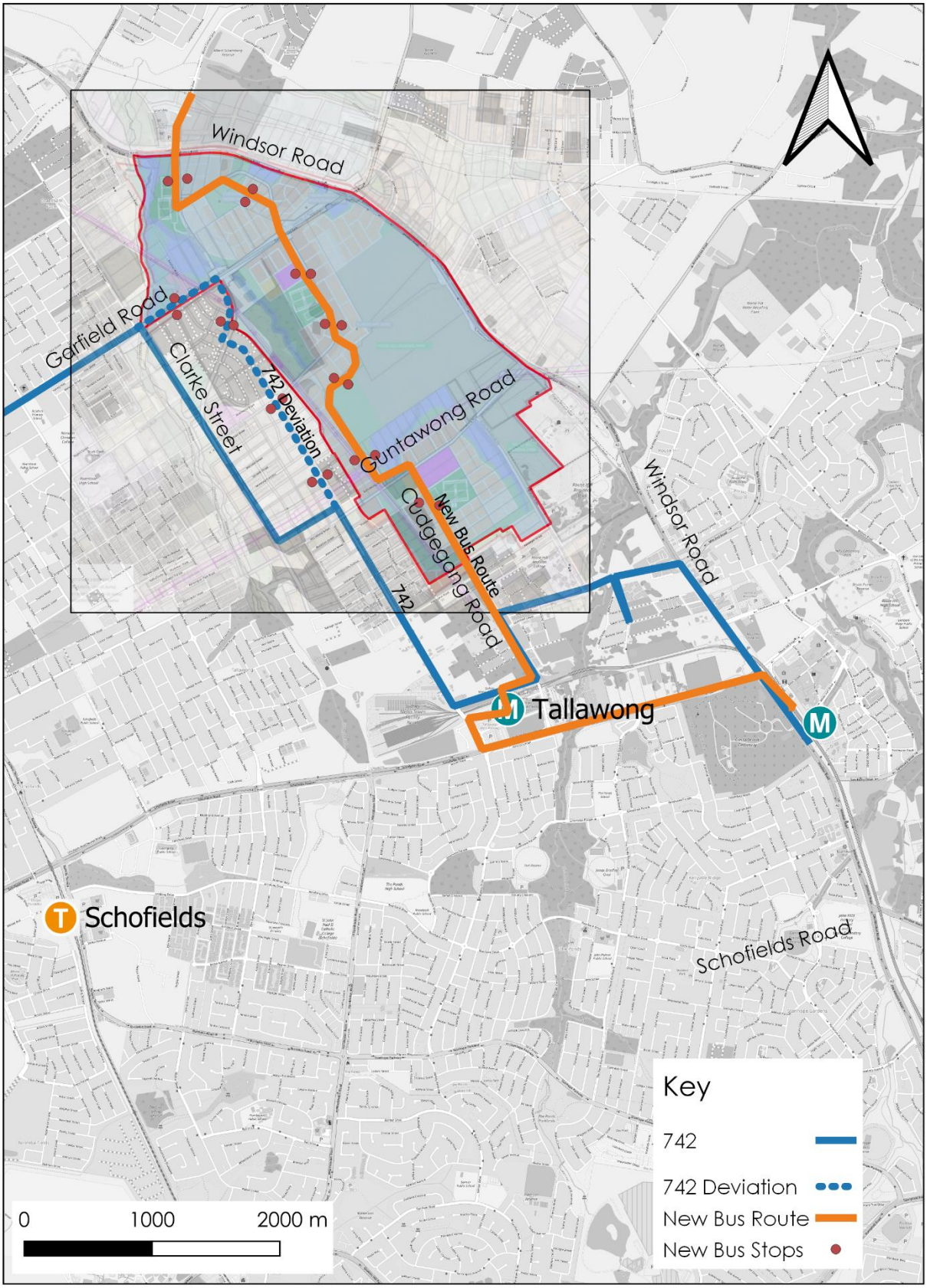
It is recommended to provide a bus route through the 'spine' of Riverstone East Stage 3 precinct that would connect Box Hill Shopping Centre to Tallawong Station Interchange and then on to Rouse Hill Station.

The catchment for this route would service all of Riverstone Stage 3 precinct and provide nearby connections for the future public school and high school.

For access to Riverstone Station bus Route 742 would need to be redirected once the Hambledon Road extension is completed and Clarke Street is closed. This would provide connections to Riverstone Station and then Blacktown and Parramatta.

Indicatively the travel time between northern portion and of the site and Tallawong Station would be 10 minutes based on a travel speed of 30 km/h.

Figure 6.1: Recommended Bus Routes



6.3 Rail

Metro rail would provide the main rail connections to the Sydney CBD. The Chatswood to Sydenham component of the Sydney Metro City and Southwest will be completed by 2024.

Riverstone Station will continue to provide connections to Parramatta and Blacktown supported by 'feeder' bus routes to provide last-mile connections.

The Greater Sydney Commission plans for this region include an extension of the Sydney Metro to the Aerotropolis via St Mary's. There is currently no commitment to provide this infrastructure however, this infrastructure is strongly recommended to support the transport needs of the growing North West Growth Area.

7 Active Transport

7.1 Pedestrian and Cycleway Links

The goal is to create a pedestrian and cyclist-friendly environment that encourages people to walk, bike or use other forms of active transportation instead of relying solely on cars.

A well-designed active transport network can increase physical activity levels, reduce traffic congestion, improve air quality, and create a sense of community by providing opportunities for people to interact with one another.

The first step in creating an active transport network is to identify key destinations in the suburb, such as schools, parks, shopping centres, and public transportation hubs. Once these destinations have been identified, the network can be designed to connect them through a variety of active transportation options, such as walking and biking paths, shared roadways, and bike lanes. The network should also take into account factors such as safety, accessibility, and convenience, ensuring that residents can easily and safely navigate through the suburb on foot or by bike.

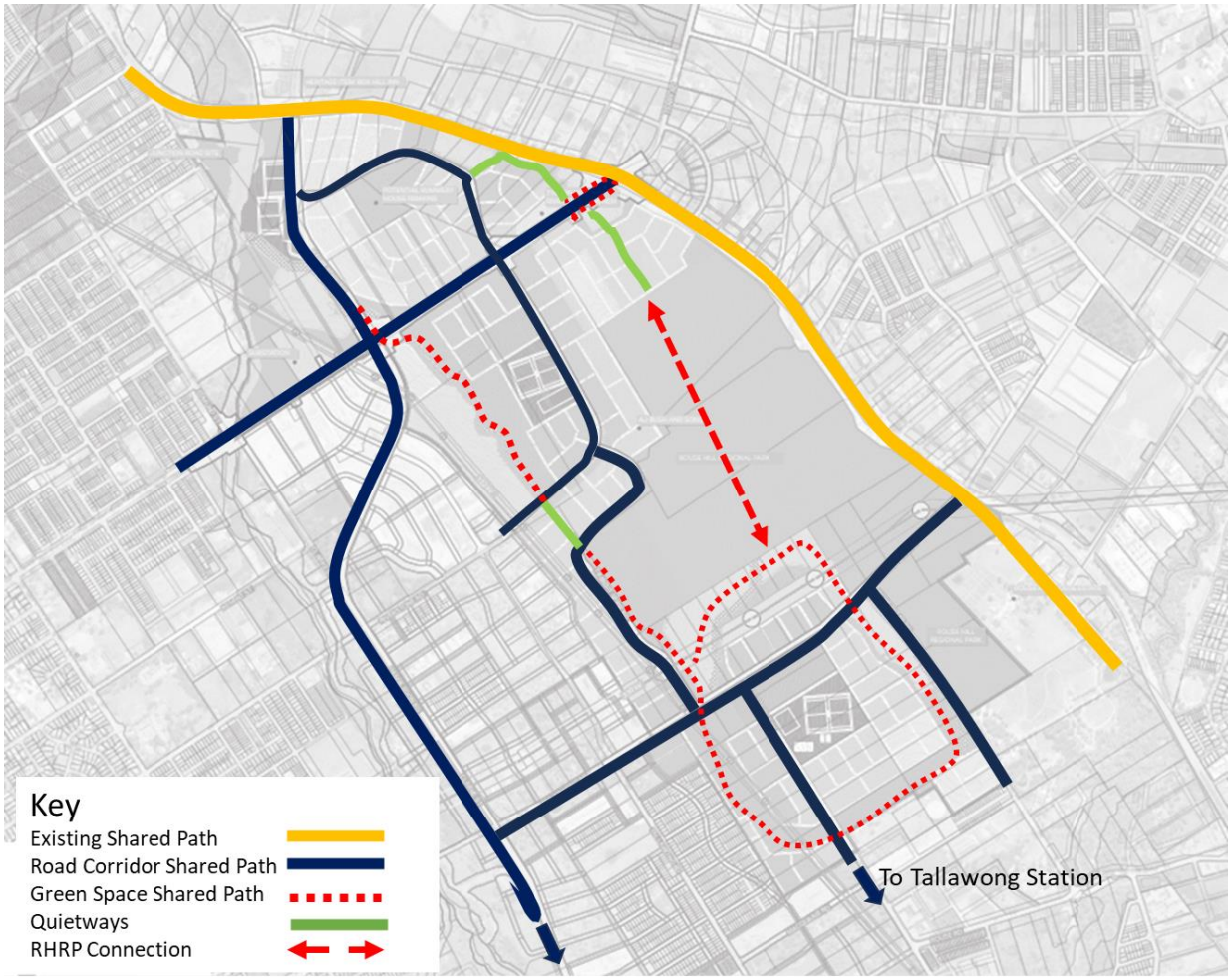
To encourage people to use active transportation, it's important to create a culture of walking and biking in the suburb. This can be achieved by providing amenities such as bike racks, benches, and shade structures along the network, as well as promoting the use of active transportation through community events, education programs, and social media campaigns.

7.2 Cycling

In addition to the shared paths provided along the road corridors, there are opportunities to provide off-road shared paths through the green spaces within the precinct. This would provide for both recreational and commuter cyclists with the potential for a loop within the precinct to link with the Rouse Hill Regional Park (RHRP).

The recommended cycle routes including green space cycle routes are shown in Figure 7.1. The loop includes a short 'Quietway' section to link the green spaces along the riparian corridor across the local street. Quietways local roads with a 30km/h speed limit and pavement markings to indicate mixed road space.

Figure 7.1: Recommended Cycle Routes Recommendation



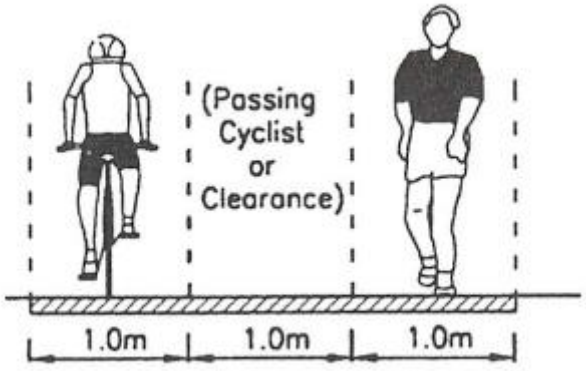
The paths will need to integrate with the interpretive walk and urban design requirements. The typical path widths and types are shown in Table 7.1. The shared path along Cudgegong Road will link into the existing bike paths.

Table 7.1: Path Widths for Cyclists

Path Type	Description	Width	Note
Road Corridor Shared Use Path	Shared use path	3.0m	Mixed pedestrians and cyclists
Green Space Shared Use Path	Paths in parklands shared use path	4.0m	Separated 1.5m footpath, 2.5m cycle path
QuietWay	On Street mixed traffic	-	30 km/h speed limit with traffic calming elements to support the lower speed limit and on-street

The shared paths along the collector roads are shown in Figure 7.2.

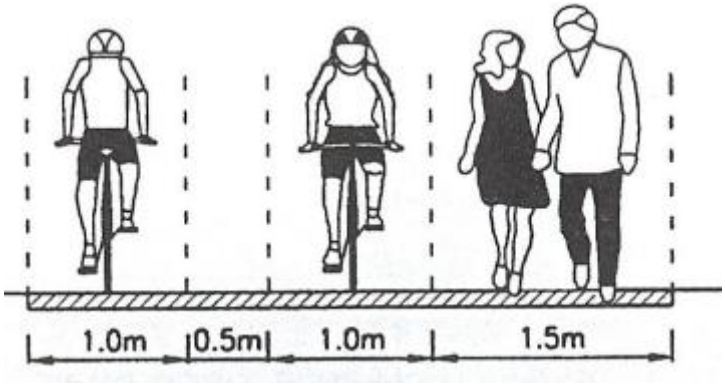
Figure 7.2: Road Corridor Shared Use Path



Source: Austroads

The green space shared-use path would have 1.5m bicycle lanes and a 1.5m pedestrian path side by side as shown in Figure 7.3.

Figure 7.3: Green Space Shared Use Path



Source: Austroads

The quietways provide a safe environment for mixed-traffic cycling on local streets. They are characterised by 30 km/h speed limits and pavement markings. They are suitable for road environments where there are no trucks or buses and low vehicle volumes. Visual cues are provided to drivers to define low speed environments.

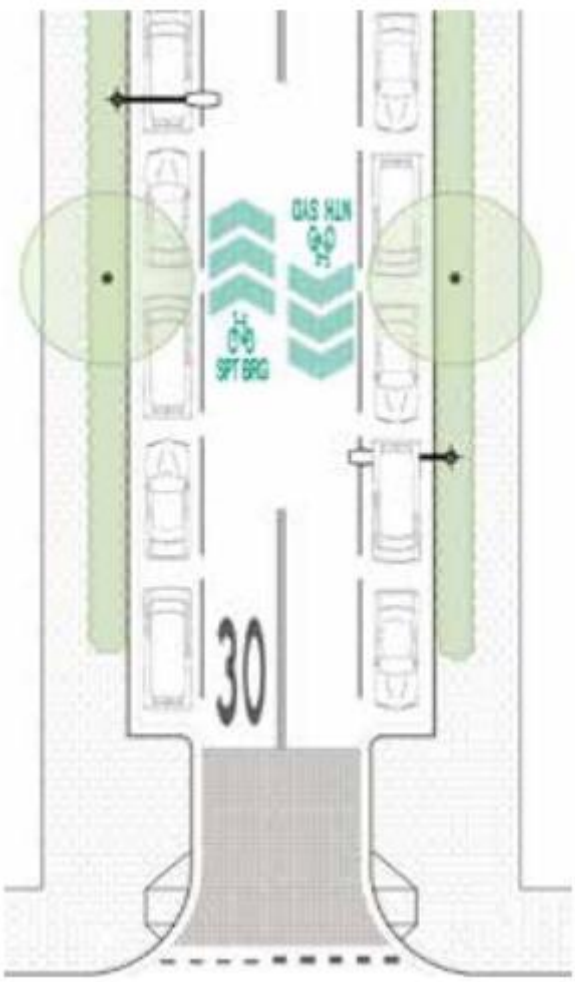
Transport for NSW's Cycleway Design Toolbox (2020) recommends the following features:

- Differing pavement texture and colour designed to increase awareness and adjust behaviour of all road users, with consideration given to green pavement to indicate priority to people cycling
- Inclusion of a median strip, where appropriate, making it difficult for motor vehicles to overtake.
- Narrow traffic lanes designed to reduce speed and discourage overtaking
- Bicycle insignias painted on the roadway to indicate priority for people cycling, ideally accompanied by sharrow markings

- Traffic calming features, such as flat top speed humps, raised road platforms with gentle ramp gradients, and kerb blisters / kerb extensions to narrow the roadway
- Priority over side streets and driveways, using raised threshold and continuous footpath treatments at entry and exit points to the quietway.

A typical road section for the quiet way is shown in Figure 7.4.

Figure 7.4: Quietway

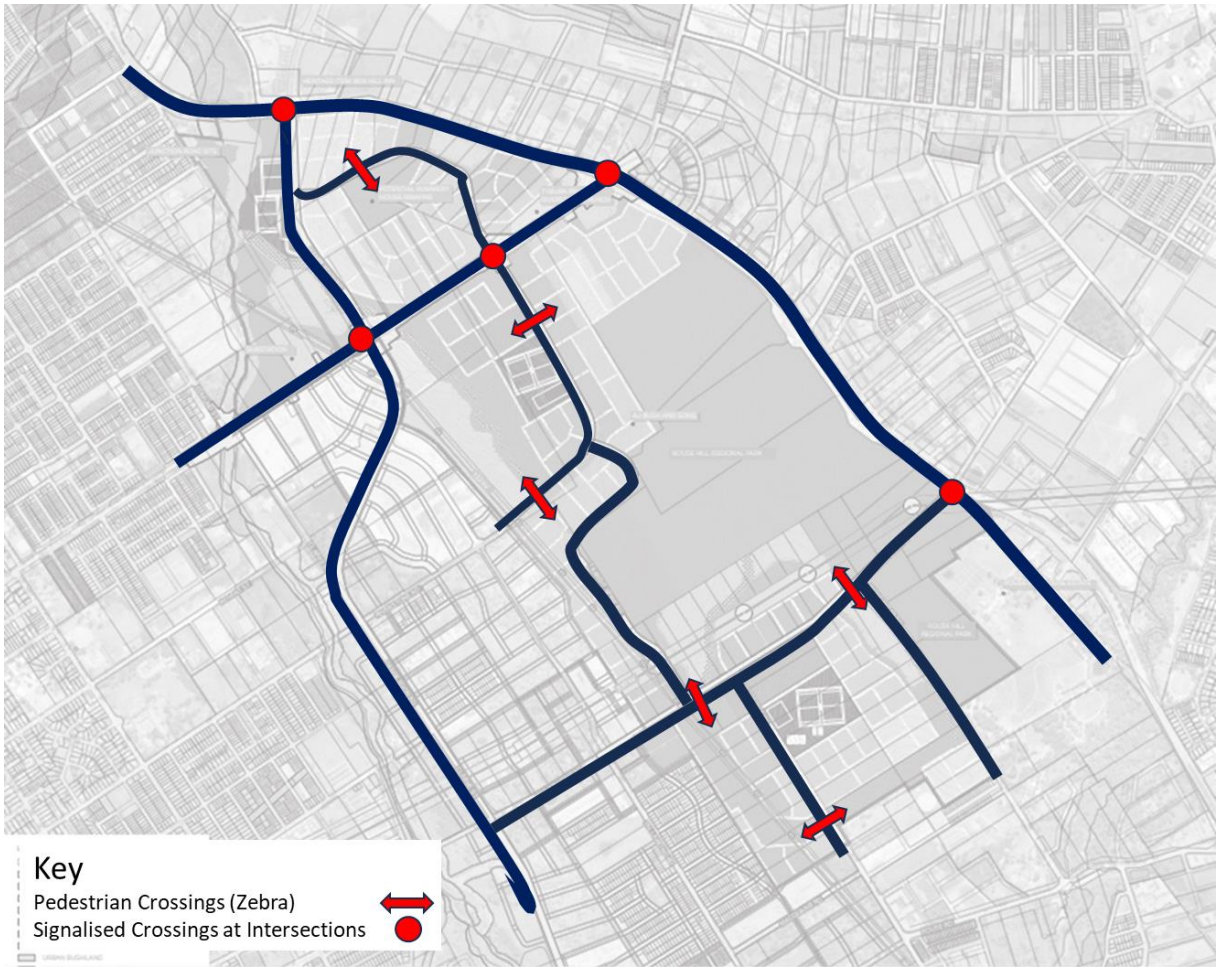


Source: TfNSW Cycleway Design Toolkit (2020)

7.3 Pedestrians

To support the network of pedestrian footpaths locations for pedestrian crossings have been identified. Pedestrian crossing locations are shown in Figure 7.5. This includes a pedestrian crossing to connect the high school with playing fields opposite and a school crossing at the location of the primary school in the centre of the precinct. Guidelines for implemented pedestrian crossings are provided in the "Pedestrian Crossings, A Best Practice Guideline for Local Governments" Transport for NSW (April 2022).

Figure 7.5: Pedestrian Crossings



Transport for NSW uses a warrant system to determine if a pedestrian crossing is warranted. However, this is not mandatory for roads operated by local government. Therefore, it is for the discretion of Council to implement pedestrian crossings.

8 Conclusions

TTPP has prepared a traffic and transport assessment for the Riverstone Stage 3 Precinct as part of the Department of Planning and Environment (DPE) Special Activation Precincts (SAP) program. The purpose of the study was to identify the transport infrastructure requirements for the development of the Precinct.

The Precinct will provide an additional 3,147 dwellings along with schools, community centres, parklands and playing fields.

The key findings of the study were:

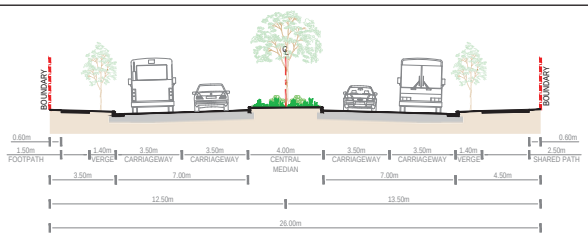
- Traffic modelling for the future of 2031 and 2041 has identified that the local road network will operate acceptably, however, Windsor Road and Schofields Road which are currently close to capacity will have high delays.
- To support development adequate access to public transport will be required. It is recommended to provide a new bus route through the 'spine' road of the Precinct. Route 742 would also be rerouted due to the Hambledon Road Extension.
- Providing a mix of in-road corridor cycleways connected to the regional cycle network and a network of greenspace off-road cycle paths to allow for recreational and commuter cycling.

The study has identified that there are capacity constraints on Windsor Road and therefore it is recommended that the Precinct provide feeder bus services to make use of the higher capacity heavy rail and metro rail infrastructure.

Additionally, the study also identifies opportunities to extend the existing Sydney Metro to the Western Sydney Airport via St Marys Station. Longer term the construction of the Outer Sydney Orbital Road (M9) would provide some relief to the congestion on Windsor Road.

Appendix A

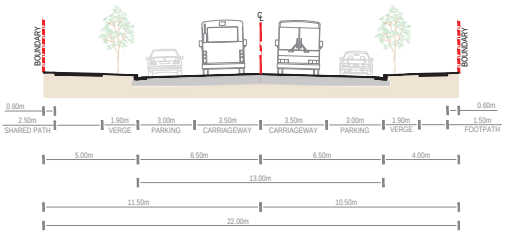
Typical Road Cross Sections



SUB-ARTERIAL ROAD - 26.00m

(HAMBLEDON ROAD EXTENSION)

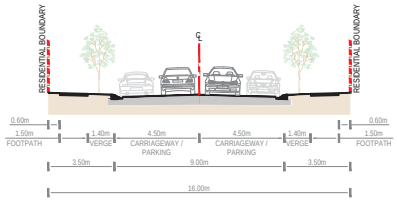
SCALE 1:100



COLLECTOR ROAD (TYPE 1) 22.00m

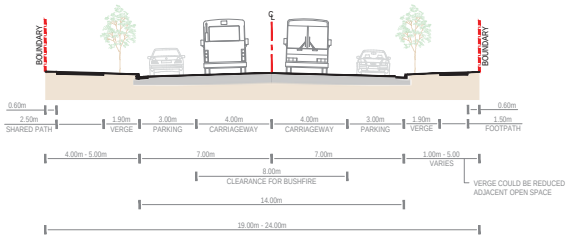
(BUS CAPABLE)

SCALE 1:100



LOCAL ROAD (TYPE 1) - 16.00m

SCALE 1:100



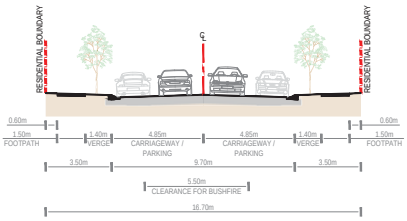
COLLECTOR ROAD (TYPE 2) 19.00m - 24.00m

(BUS CAPABLE)

SCALE 1:100

(BUSHFIRE COMPLIANT)

NOTE:
COLLECTOR ROAD (TYPE 2) ROAD COMPLIANT WITH PLANNING FOR BUSHFIRE PROTECTION (2019).

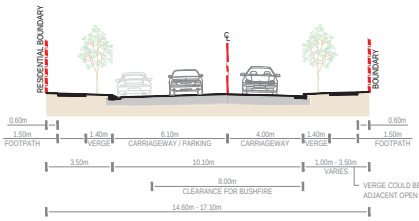


LOCAL ROAD (TYPE 2) - 16.70m

SCALE 1:100

(BUSHFIRE COMPLIANT)

NOTE:
LOCAL ROAD (TYPE 2) COMPLIANT WITH PLANNING FOR BUSHFIRE PROTECTION (2019).

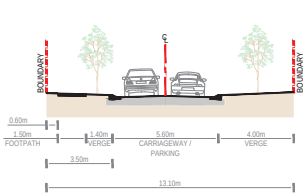


PERIMETER ROAD 14.60m - 17.10m

SCALE 1:100

(BUSHFIRE COMPLIANT)

NOTE:
PERIMETER ROAD COMPLIANT WITH PLANNING FOR BUSHFIRE PROTECTION (2019).



ACCESS STREET - 13.10m

(ONE-WAY)

SCALE 1:100

REV	DATE	DESCRIPTION	DRN	DES.	VERF.	APPD.
2	10/08/2023	ISSUED FOR INFORMATION	BLA	BLA	CVE	LSA
1	8/08/2023	ISSUED FOR INFORMATION	BLA	BLA	CVE	LSA

Client

Scale: 0 1 2 4 6 8 10m — SCALE 1:100 @A1

North

Enspire Solutions Pty Ltd
Level 4, 153 Walker Street, North Sydney NSW 2060
ABN: 71 624 801 690
Phone: 02 9922 6135
enspiresolutions.com.au

Project: RIVERSTONE EAST STAGE 3

Title: TYPICAL ROAD CROSS SECTIONS

Scale: 1:100

Date: 08/08/2023

Size: A1

Datum: -

Status: FOR INFORMATION ONLY — NOT TO BE USED FOR CONSTRUCTION

Project Number/Drawing Number: SK0002-220121-00

Revision: 2

CAD File: P:\220121 RiverstoneEastStg3\SAPD-Civil\00-Stan\Wide\Drawings\4-Sketches\DWG\SK0002-220121-00-Enspire-R02-230818-RiverstoneEastStg3RoadCrossSections.dwg

DATE PLOTTED: 10-August-2023 4:25 PM BY: BRENDAN LAWN

Appendix B

Model Development

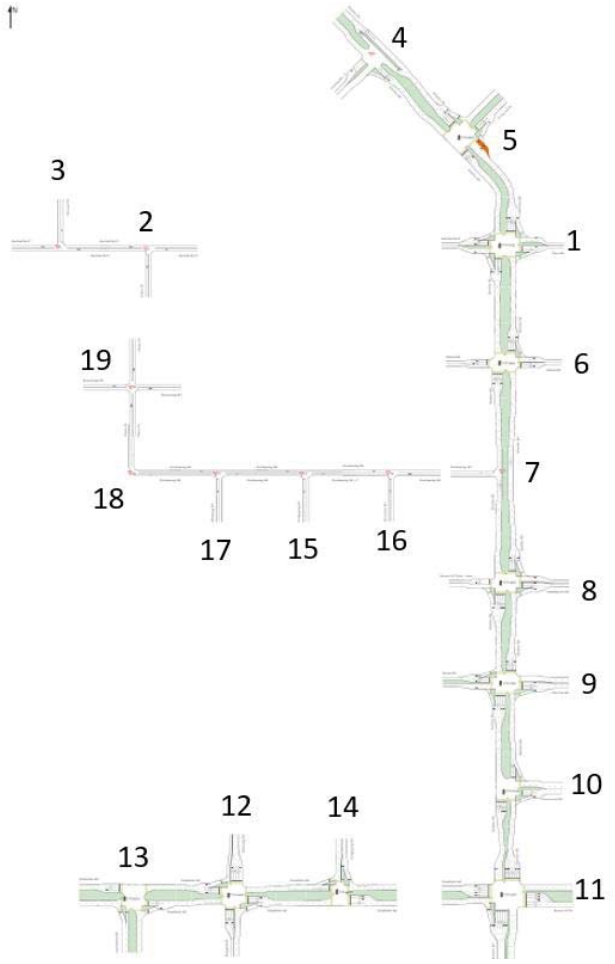
Model Development

Coding of the Network

The geometric coding of the sites/network was based on nearmap aerial photography and Traffic Control Sites (TCS) plans of the key intersections. The modelled area is shown in **Error! Reference source not found.**Figure 1.

It is noted that a limitation of Sidra Network models is that they only allow coordination to one set of traffic signals. Therefore, the intersections along Windsor Road and Schofields Road have been modelled as two separate network corridors. The remaining intersections have been modelled as isolated intersections.

Figure 1: Base Model Layout



Site ID	CCG ID	Site Name
TCS 1280	NA	1. Garfield Rd E - Windsor Rd - Terry Rd
2	NA	2. Garfield Rd E - Clarke St
3	NA	3. Garfield Rd E - Edmund St
4	NA	4. Windsor Rd - Junction Rd
TCS 4805	NA	5. Windsor Rd - Mt Carmel Dr
TCS 3986	NA	6. Windsor Rd - Nelson Rd
7	NA	7. Windsor Rd - Guntawong Rd
TCS 3985	NA	8. Windsor Rd - Annangrove Rd
TCS 3789	NA	9. Windsor Rd - Rouse Rd - Mile End Rd
TCS 3788	NA	10. Windsor Rd - Commercial Rd
TCS 3557	NA	11. Windsor Rd - Schofields Rd - Rouse Hill Dr
TCS 4463	NA	12. Schofields Rd - Tallawong Rd - Ridgeline Dr
TCS 4511	NA	13. Schofields Rd - Hambledon Rd
TCS 4474	NA	14. Schofields Rd - Cudgegong Rd
15	NA	15. Guntawong Rd - Cudgegong Rd
16	NA	16. Guntawong Rd - Worcester Rd
17	NA	17. Guntawong Rd - Tallawong Rd
18	NA	18. Guntawong Rd - Clarke St
19	NA	19. Clarke St - Riverstone Rd

SCATS History Files

The SCATS history files provide data recorded on the phase times and cycle times that were taken from the same day that the intersection counts were recorded. The hourly averages were used to calibrate the fixed user-given phase times in the existing base model.

LX files and Offsets

LX files provide Subsystem (SS) and Link Plan (LP) data which were used to determine the signal coordination and offsets between coordinated traffic control sites. It is noted that not all intersections in the modelled area are coordinated. For example, along the Windsor Road corridor, only Intersections 9 and 10 are coordinated with Intersection 11. Intersections 1, 4-8 exist on separate Subsystems and are not coordinated with Intersection 11 on Windsor Road. Meanwhile, Intersection 12 and 14 are coordinated with Intersection 13 on Schofields Road.

TCS Signal Plans

These plans provide the geometric details of the intersection including the gradients, layout for lanes and lane widths. They also provide details on the phasing arrangements and additional information about how the intersection operates.

Notably, a number of the TCS plans state the following note (or similarly worded):

- "V9, V10, P5 and P6 displays associated with the slip lanes are to operate **independently** to the site. V9 and V10 are to rest in the "Off State" and P5 and P6 are to rest displaying "Don't Walk". Push buttons P5 and P6 demand will display V9 and V10 yellow then red and remain red until "walk" and clearance has expired followed by "Off" state. P5 and P6 are to have delay timer". Additionally, the V9 and V10 signposts state: "STOP HERE ON RED ARROW. OTHERWISE TURN LEFT WITH CARE".
- P5/V9 and P6/V10 are the pedestrian/ vehicle signal lanterns for the respective approach left turn slip lanes. Based on the above, this indicates that the left-turn vehicles would function as give-way movements – i.e. left turn vehicles give priority to pedestrians when the pedestrian call button is activated and oncoming vehicles from the right-hand side at all times. Furthermore, the phasing arrangement as shown in the TCS plans indicates that the left turn slip lane and its pedestrian crossing "operates" in every phase, noting that they operate independently as per the above note.

Based on the above points, for modelling purposes, the relevant left turn slip lane and its pedestrian crossing have been ticked to 'operate' in every phase and with the vehicle priorities set to give way to the opposing pedestrian movement and oncoming vehicles from the right-hand side.

Travel Time Surveys

Travel time surveys were undertaken on the same day as the traffic surveys were undertaken. The travel time surveys were undertaken for the northbound and southbound route along Windsor Road. Model calibration was based on the travel time surveys.

Base Model Calibration and Validation

The 2023 existing conditions model has been developed for the morning peak hour (8 am-9 am) and evening peak hour (5 pm-6 pm).

In the absence of queue length survey data, the Sidra model has been calibrated to travel time surveys that were recorded during the intersection surveys. The observed and modelled Sidra route travel times for the weekday morning peak hour and evening peak hour are summarised in Table 1and Table 2.

Table 1: Travel Time Northbound

Check Point along Windsor Rd	Distance (m)	Morning Peak (8am-9am)		Evening Peak (5 pm-6 pm)	
		Observed	Modelled	Observed	Modelled
Schofields Rd	0	0:00	0:00	0:00	0:00
Commercial Rd	355.5	0:31	0:33	0:40	0:33
Mile End Rd	829.6	1:31	1:34	2:18	2:19
Annangrove Rd	1,992.4	2:32	2:40	3:22	3:28
Nelson Rd	3,215.5	3:48	4:05	4:55	5:06
Garfield Rd - Terry Rd	4,088.8	5:04	5:22	6:54	7:18
Mount Carmel Dr	5,219.6	6:11	6:24	7:58	8:14
Junction Rd	6,037.6	6:36	7:01	8:25	8:51

Table 2: Travel Time Southbound

Check Point along Windsor Rd	Distance (m)	Morning Peak (8am-9am)		Evening Peak (5 pm-6 pm)	
		Observed	Modelled	Observed	Modelled
Junction Rd	0	0:00	0:00	0:00	0:00
Mount Carmel Dr	470.8	0:35	0:38	0:40	0:39
Garfield Rd - Terry Rd	1,594.1	2:16	2:22	2:19	1:57
Nelson Rd	2,461.6	3:42	3:45	3:40	3:26
Annangrove Rd	3,689.4	5:09	5:21	5:04	5:18
Mile End Rd	4,853.5	7:22	6:51	7:01	6:58
Commercial Rd	5,328.8	8:30	8:16	8:01	8:02
Schofields Rd	6,079.9	8:57	9:47	9:03	9:24

A comparison of the observed and modelled travel time routes of the modelled networks is shown in Figure 2 to Figure 5 The results indicate the validity of the model calibration to the existing conditions.

Figure 2: Morning Peak Travel Time Northbound (8:00 am – 9:00 am) along Windsor Road

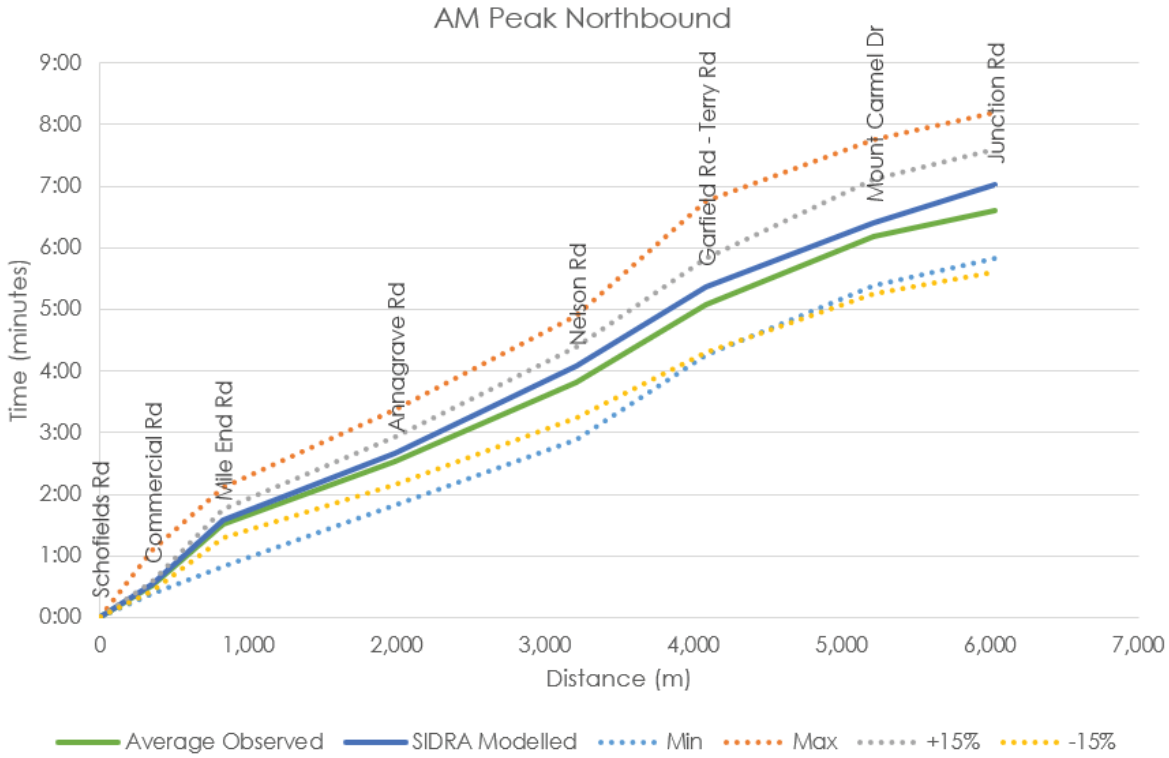


Figure 3: Morning Peak Travel Time Southbound (8:00 am – 9:00 am) along Windsor Road

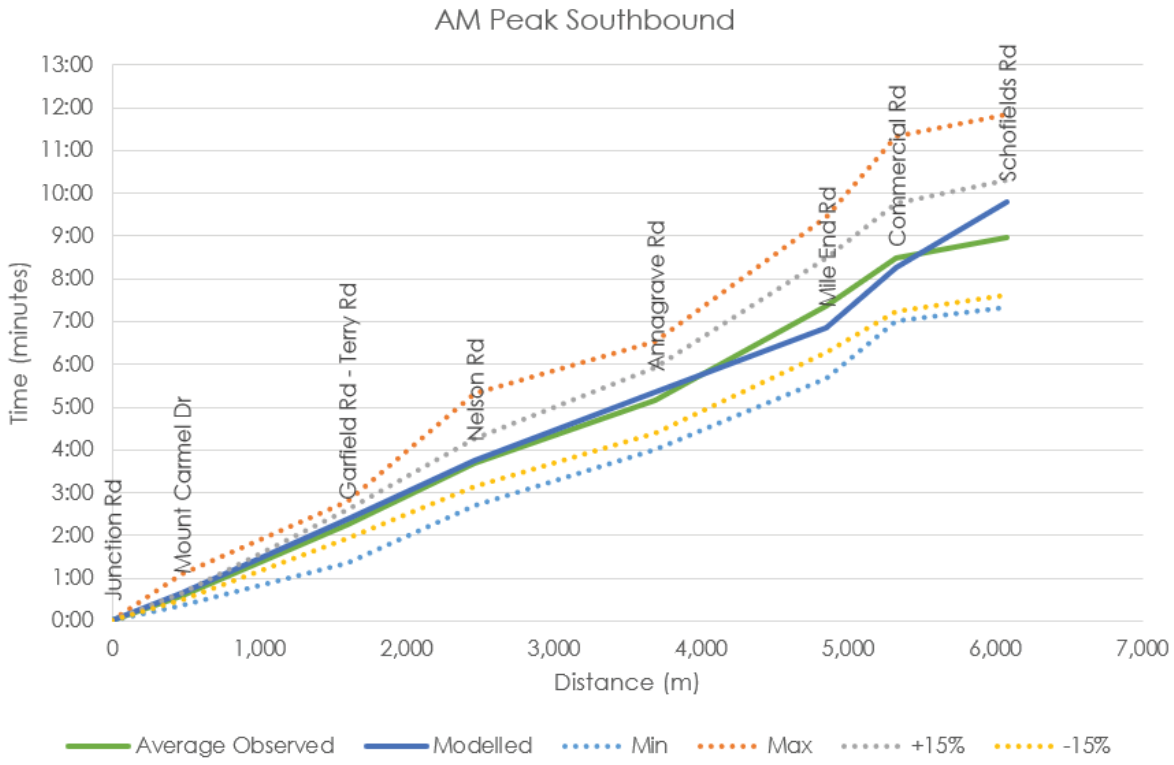


Figure 4: Evening Peak Travel Time Northbound (5:00 pm – 6:00 pm) along Windsor Road

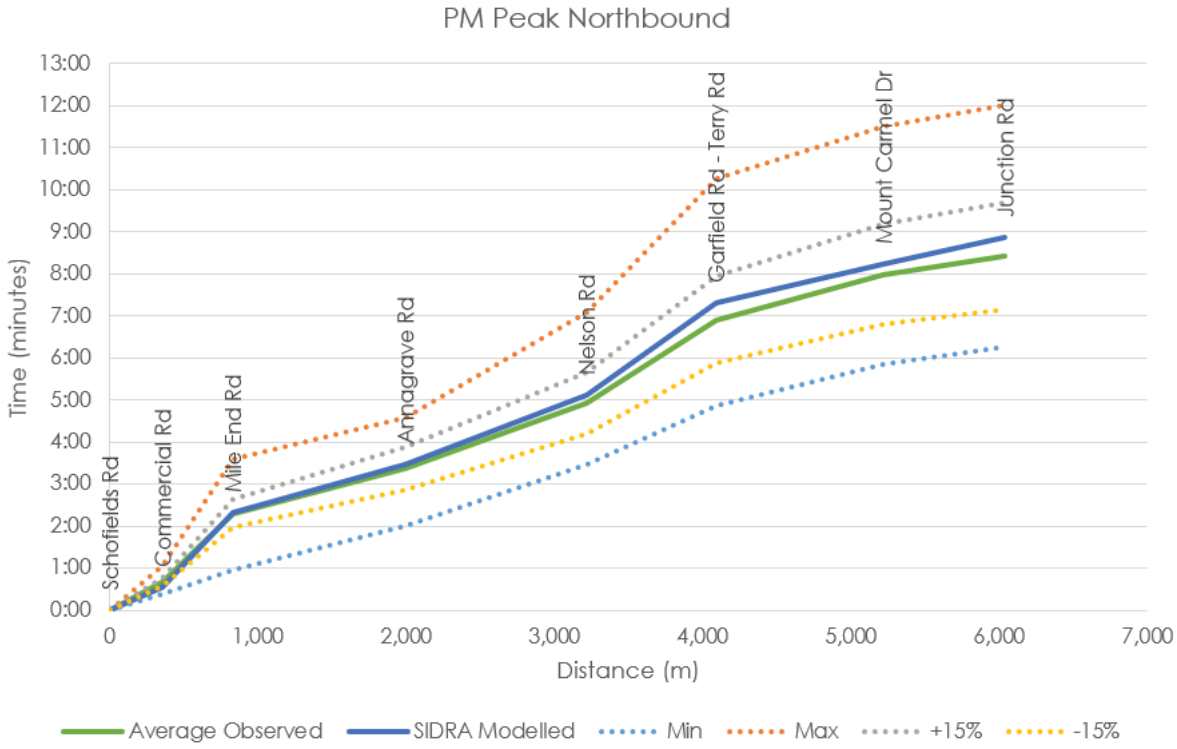
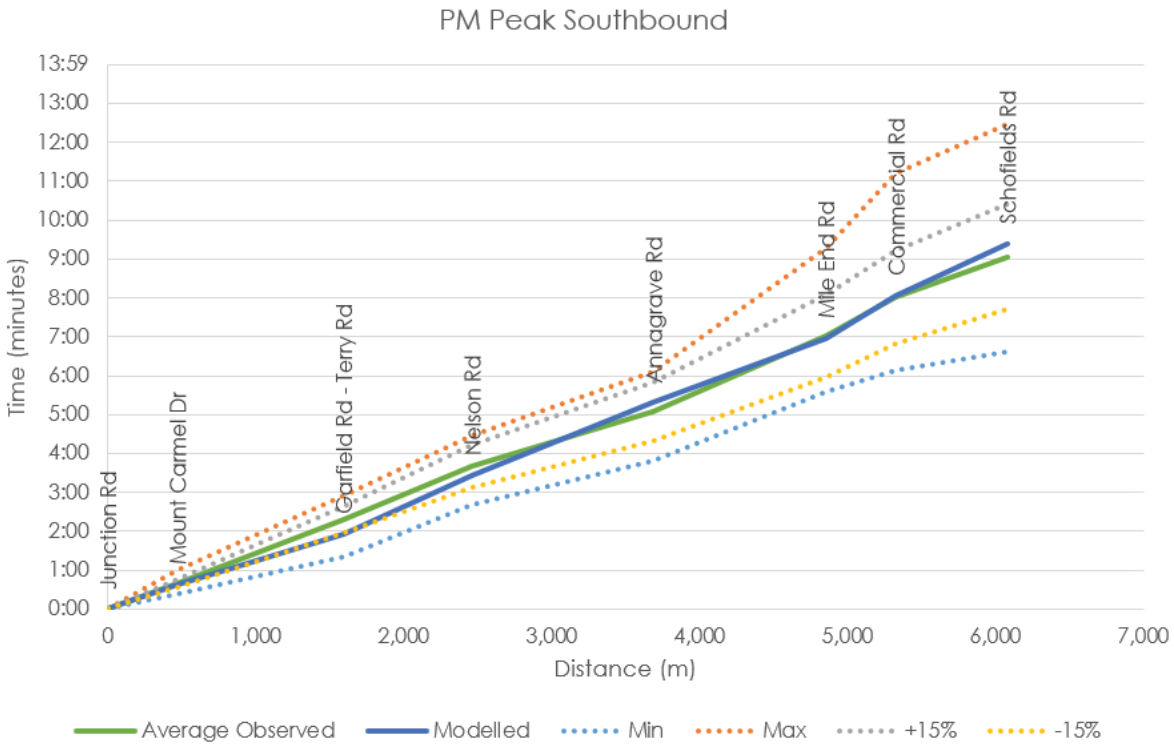


Figure 5: Evening Peak Travel Time Southbound (5:00 pm – 6:00 pm) along Windsor Road



The model has been calibrated to observed signal data and traffic volumes. Travel time comparisons along Windsor Road indicate that the models are reflective of the current levels of delay and the models are considered to be calibrated and validated.

Appendix B

Sidra Modelling Results

USER REPORT FOR NETWORK SITE

Project: 23009-Riverstone Sid v9.1 - 230728

Output produced by SIDRA INTERSECTION Version: 9.1.3.210 **Template: Movement Summary**

Site: TCS 1280 [1. Garfield Rd E - Windsor Rd - Terry Rd (Site Folder: Existing AM)]

Network: 5 [EX AM - Windsor Corridor (Network Folder: Base Conditions)]

8am-9am
Site Category: Existing Design
Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 120 seconds (Site User-Given Phase Times)

Timings based on settings in the Site Phasing & Timing dialog
Phase Times specified by the user
Phase Sequence: ADEG
Input Phase Sequence: A, D, E, G
Output Phase Sequence: A, D, E, G
Reference Phase: Phase A

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	Aver. Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Windsor Rd															
4	L2	All MCs	322	9.5	322	9.5	0.281	14.4	LOS A	3.7	27.9	0.41	0.71	0.41	69.2
5	T1	All MCs	1206	6.9	1205	6.9	0.920	46.7	LOS D	23.3	172.7	0.98	1.00	1.16	37.9
6	R2	All MCs	205	8.7	205	8.7	*0.771	57.3	LOS E	5.2	39.2	1.00	0.89	1.12	41.7
Approach			1734	7.6	1732	7.6	0.920	41.9	LOS C	23.3	172.7	0.88	0.93	1.02	46.1
East: Terry Rd															
7	L2	All MCs	108	11.7	108	11.7	0.826	33.0	LOS C	10.2	76.7	1.00	1.09	1.13	22.3
8	T1	All MCs	233	6.8	233	6.8	*0.826	64.2	LOS E	10.2	76.7	1.00	1.09	1.13	47.5
9	R2	All MCs	84	30.0	84	30.0	0.248	36.8	LOS C	2.1	18.9	0.85	0.74	0.85	28.2
Approach			425	12.6	425	12.6	0.826	50.8	LOS D	10.2	76.7	0.97	1.02	1.08	40.7
North: Windsor Rd															
10	L2	All MCs	66	33.3	66	33.3	0.065	15.8	LOS B	0.5	4.7	0.33	0.66	0.33	60.9
11	T1	All MCs	1249	7.2	1249	7.2	*0.964	58.0	LOS E	27.5	204.6	1.00	1.11	1.29	39.0
12	R2	All MCs	239	9.7	239	9.7	0.788	69.5	LOS E	5.8	44.2	0.99	0.86	1.11	50.0
Approach			1555	8.7	1555	8.7	0.964	58.0	LOS E	27.5	204.6	0.97	1.05	1.22	42.5
West: Garfield Rd E															
1	L2	All MCs	59	21.4	59	21.4	0.078	17.3	LOS B	0.9	7.6	0.51	0.66	0.51	50.5
2	T1	All MCs	131	11.3	131	11.3	0.484	51.6	LOS D	4.4	33.8	0.96	0.77	0.96	42.2
3	R2	All MCs	244	10.8	244	10.8	*0.733	42.4	LOS C	7.2	54.7	0.99	0.86	1.05	41.1
Approach			434	12.4	434	12.4	0.733	41.7	LOS C	7.2	54.7	0.92	0.81	0.95	42.5
All Vehicles			4147	9.0	4146	9.0	0.964	48.8	LOS D	27.5	204.6	0.93	0.97	1.09	43.6

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)

Site: 4 [4. Windsor Rd - Junction Rd (Site Folder: Existing AM)]

Network: 5 [EX AM - Windsor Corridor (Network Folder: Base Conditions)]

8am-9am
Site Category: Existing Design
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	Aver. Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
SouthEast: Windsor Rd															
3	L2	All MCs	62	13.6	62	13.6	0.054	8.7	LOS A	0.1	0.6	0.30	0.62	0.30	55.5
4	T1	All MCs	1178	10.3	1177	10.3	0.322	0.1	LOS A	0.0	0.0	0.00	0.00	0.00	79.8
Approach			1240	10.4	1239	10.4	0.322	0.5	LOS A	0.1	0.6	0.01	0.03	0.01	77.8
NorthWest: Windsor Rd															
5	T1	All MCs	1213	7.6	1213	7.6	0.326	0.1	LOS A	0.0	0.0	0.00	0.00	0.00	79.8
6	R2	All MCs	283	7.1	283	7.1	0.824	35.9	LOS C	2.6	19.4	0.94	1.34	2.54	37.3
Approach			1496	7.5	1496	7.5	0.824	6.8	NA	2.6	19.4	0.18	0.25	0.48	56.9
SouthWest: Junction Rd - S															
1	L2	All MCs	234	11.7	234	11.7	0.367	11.4	LOS A	0.8	5.9	0.63	0.87	0.81	48.5
2	R2	All MCs	68	10.8	68	10.8	0.564	49.8	LOS D	0.8	5.8	0.94	1.07	1.35	23.9
Approach			302	11.5	302	11.5	0.564	20.1	LOS B	0.8	5.9	0.70	0.92	0.93	42.0
All Vehicles			3038	9.1	3037	9.1	0.824	5.6	NA	2.6	19.4	0.16	0.23	0.34	62.9

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.

Site: TCS 4805 [5. Windsor Rd - Mt Carmel Dr (Site Folder: Existing AM)]

Network: 5 [EX AM - Windsor Corridor (Network Folder: Base Conditions)]

8am-9am
Site Category: Existing Design
Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 75 seconds (Site User-Given Phase Times)

Timings based on settings in the Site Phasing & Timing dialog
Phase Times specified by the user
Phase Sequence: ABC
Input Phase Sequence: A, B, C
Output Phase Sequence: A, B, C
Reference Phase: Phase A

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	Aver. Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
SouthEast: Windsor Rd															
5	T1	All MCs	1157	8.3	1156	8.3	0.429	11.4	LOS A	10.3	77.4	0.87	0.41	0.87	65.4
6	R2	All MCs	182	15.6	182	15.6	* 0.407	21.2	LOS B	2.9	22.8	0.82	0.80	0.82	55.1
Approach			1339	9.3	1338	9.3	0.429	12.7	LOS A	10.3	77.4	0.86	0.46	0.86	63.5
NorthEast: Mt Carmel Dr															
7	L2	All MCs	289	10.9	289	10.9	0.353	9.3	LOS A	2.1	15.9	0.45	0.69	0.45	37.0
9	R2	All MCs	20	15.8	20	15.8	* 0.050	38.3	LOS C	0.2	1.6	0.91	0.67	0.91	17.2
Approach			309	11.2	309	11.2	0.353	11.1	LOS A	2.1	15.9	0.48	0.69	0.48	34.4
NorthWest: Windsor Rd															
10	L2	All MCs	24	4.3	24	4.3	0.014	8.1	LOS A	0.1	0.5	0.20	0.64	0.20	54.7
11	T1	All MCs	1246	8.4	1246	8.4	* 0.524	17.5	LOS B	6.9	52.0	0.79	0.69	0.79	44.1
Approach			1271	8.3	1271	8.3	0.524	17.3	LOS B	6.9	52.0	0.78	0.69	0.78	44.4
All Vehicles			2919	9.1	2918	9.1	0.524	14.6	LOS B	10.3	77.4	0.78	0.58	0.78	55.5

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

* Critical Movement (Signal Timing)

Site: TCS 3986 [6. Windsor Rd - Nelson Rd (Site Folder: Existing AM)]

Network: 5 [EX AM - Windsor Corridor (Network Folder: Base Conditions)]

8am-9am
Site Category: Existing Design
Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 110 seconds (Site User-Given Phase Times)

Timings based on settings in the Site Phasing & Timing dialog
Phase Times specified by the user
Phase Sequence: ADEG
Input Phase Sequence: A, D, E, G
Output Phase Sequence: A, D, E, G
Reference Phase: Phase A

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	Aver. Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Windsor Rd															
4	L2	All MCs	5	40.0	5	40.0	0.006	21.5	LOS B	0.1	0.6	0.37	0.65	0.37	41.4
5	T1	All MCs	1513	7.0	1511	7.0	0.910	34.9	LOS C	25.3	187.5	0.91	0.93	1.05	42.7
6	R2	All MCs	163	1.3	163	1.3	* 0.791	52.9	LOS D	3.4	24.0	1.00	0.87	1.19	41.0
Approach			1681	6.5	1679	6.5	0.910	36.6	LOS C	25.3	187.5	0.92	0.92	1.06	42.4
East: Nelson Rd															
7	L2	All MCs	243	3.9	243	3.9	0.651	49.2	LOS D	7.5	54.2	0.97	0.83	0.97	23.2
8	T1	All MCs	1	0.0	1	0.0	* 0.651	60.2	LOS E	7.5	54.2	0.97	0.83	0.97	26.1
9	R2	All MCs	221	11.0	221	11.0	* 0.588	41.1	LOS C	6.1	47.0	0.94	0.81	0.94	26.2
Approach			465	7.2	465	7.2	0.651	45.4	LOS D	7.5	54.2	0.95	0.82	0.95	24.6
North: Windsor Rd															
10	L2	All MCs	197	8.0	197	8.0	0.148	9.6	LOS A	0.9	6.8	0.25	0.67	0.25	61.2
11	T1	All MCs	1657	7.1	1657	7.1	* 1.008	45.5	LOS D	38.3	284.0	1.00	1.26	1.37	37.9
12	R2	All MCs	2	50.0	2	50.0	0.013	37.6	LOS C	0.0	0.3	0.85	0.63	0.85	38.5
Approach			1856	7.2	1856	7.2	1.008	41.7	LOS C	38.3	284.0	0.92	1.20	1.25	40.3
West: Nelson Rd															
1	L2	All MCs	4	25.0	4	25.0	0.020	40.7	LOS C	0.1	1.2	0.85	0.61	0.85	17.9
2	T1	All MCs	1	0.0	1	0.0	0.020	49.1	LOS D	0.1	1.2	0.85	0.61	0.85	27.0
3	R2	All MCs	1	0.0	1	0.0	0.004	31.4	LOS C	0.0	0.2	0.87	0.54	0.87	20.1
Approach			6	16.7	6	16.7	0.020	40.6	LOS C	0.1	1.2	0.86	0.60	0.86	20.1
All Vehicles			4008	6.9	4007	6.9	1.008	40.0	LOS C	38.3	284.0	0.92	1.04	1.14	39.2

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)

Site: 7 [7. Windsor Rd - Guntawong Rd (Site Folder: Existing AM)]

Network: 5 [EX AM - Windsor Corridor (Network Folder: Base Conditions)]

8am-9am
Site Category: Existing Design
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	Aver. Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Windsor Rd															
4	L2	All MCs	187	0.0	187	0.0	0.436	7.0	LOS A	0.0	0.0	0.00	0.15	0.00	70.2
5	T1	All MCs	1436	7.4	1434	7.4	0.436	0.1	LOS A	0.0	0.0	0.00	0.07	0.00	77.0
Approach			1623	6.5	1621	6.6	0.436	0.9	NA	0.0	0.0	0.00	0.08	0.00	75.5
North: Windsor Rd															
11	T1	All MCs	1923	6.7	1910	6.7	0.511	0.2	LOS A	0.0	0.0	0.00	0.00	0.00	79.5
Approach			1923	6.7	1910	6.7	0.511	0.2	NA	0.0	0.0	0.00	0.00	0.00	79.5
West: Guntawong Rd															
1	L2	All MCs	231	1.8	231	1.8	0.349	10.8	LOS A	0.7	4.9	0.62	0.87	0.78	43.3
Approach			231	1.8	231	1.8	0.349	10.8	LOS A	0.7	4.9	0.62	0.87	0.78	43.3
All Vehicles			3777	6.3	3762	6.4	0.511	1.2	NA	0.7	4.9	0.04	0.09	0.05	75.2

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.

Site: TCS 3985 [8. Windsor Rd - Annangrove Rd (Site Folder: Existing AM)]

Network: 5 [EX AM - Windsor Corridor (Network Folder: Base Conditions)]

8am-9am
Site Category: Existing Design
Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 105 seconds (Site User-Given Phase Times)

Timings based on settings in the Site Phasing & Timing dialog
Phase Times specified by the user
Phase Sequence: ABDEG
Input Phase Sequence: A, B, D, E, G
Output Phase Sequence: A, B, D, E, G
Reference Phase: Phase A

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	Aver. Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Windsor Rd															
4	L2	All MCs	1	0.0	1	0.0	0.001	8.1	LOS A	0.0	0.0	0.18	0.61	0.18	64.5
5	T1	All MCs	1187	8.7	1187	8.7	0.637	13.5	LOS A	11.1	83.1	0.64	0.58	0.64	63.6
6	R2	All MCs	389	6.5	389	6.5	* 1.120	114.2	LOS F	13.2	97.5	1.00	1.19	1.84	29.1
Approach			1578	8.1	1578	8.1	1.120	38.3	LOS C	13.2	97.5	0.73	0.73	0.94	45.2
East: Annangrove Rd															
7	L2	All MCs	166	10.8	166	10.8	0.197	16.3	LOS B	2.3	17.8	0.56	0.71	0.56	43.7
8	T1	All MCs	1	0.0	1	0.0	0.028	59.6	LOS E	0.0	0.2	1.00	0.57	1.00	33.2
9	R2	All MCs	395	1.3	395	1.3	* 1.005	86.0	LOS F	16.5	116.6	1.00	1.26	1.64	18.8
Approach			562	4.1	562	4.1	1.005	65.3	LOS E	16.5	116.6	0.87	1.09	1.32	22.5
North: Windsor Rd															
10	L2	All MCs	584	4.5	580	4.5	0.498	11.6	LOS A	5.8	42.4	0.47	0.74	0.47	54.8
11	T1	All MCs	1276	8.2	1267	8.2	* 0.880	43.7	LOS D	21.3	159.9	1.00	1.00	1.15	27.8
12	R2	All MCs	6	0.0	6	0.0	0.021	32.6	LOS C	0.1	0.6	0.72	0.66	0.72	46.6
Approach			1866	7.0	1854	7.0	0.880	33.6	LOS C	21.3	159.9	0.83	0.92	0.94	37.6
West: Rouse Hill Estate Access															
1	L2	All MCs	6	0.0	6	0.0	0.051	53.1	LOS D	0.2	1.5	0.94	0.66	0.94	22.0
2	T1	All MCs	1	0.0	1	0.0	0.051	58.8	LOS E	0.2	1.5	0.94	0.66	0.94	34.5
3	R2	All MCs	1	0.0	1	0.0	0.003	35.2	LOS C	0.0	0.2	0.82	0.58	0.82	28.6
Approach			8	0.0	8	0.0	0.051	51.5	LOS D	0.2	1.5	0.93	0.65	0.93	24.9
All Vehicles			4015	7.0	4002	7.0	1.120	40.0	LOS C	21.3	159.9	0.80	0.87	0.99	38.4

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Override Site Data tab).
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Green.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).

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

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

* Critical Movement (Signal Timing)

Site: TCS 3789 [9. Windsor Rd - Rouse Rd - Mile End Rd (Site Folder: Existing AM)]

Network: 5 [EX AM - Windsor Corridor (Network Folder: Base Conditions)]

8am-9am
Site Category: Existing Design
Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 140 seconds (Network Site User-Given Phase Times)

Timings based on settings in the Network Timing dialog
Phase Times specified by the user
Phase Sequence: ADEG
Input Phase Sequence: A, D, E, G
Output Phase Sequence: A, D, E, G
Reference Phase: Phase A

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	Aver. Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Windsor Rd															
1	L2	All MCs	253	5.0	253	5.0	0.197	25.9	LOS B	1.6	11.8	0.29	0.68	0.29	55.7
2	T1	All MCs	1243	9.2	1243	9.2	0.763	43.0	LOS D	22.0	166.5	0.91	0.81	0.91	31.4
3	R2	All MCs	358	7.1	358	7.1	* 1.181	259.8	LOS F	13.9	103.5	1.00	1.30	2.20	7.3
Approach			1854	8.2	1854	8.2	1.181	82.5	LOS F	22.0	166.5	0.85	0.89	1.08	20.6
East: Mile End Rd															
4	L2	All MCs	366	5.2	366	5.2	1.003	74.9	LOS F	17.5	127.8	1.00	1.22	1.50	3.6
5	T1	All MCs	248	1.3	248	1.3	0.534	60.3	LOS E	5.8	41.2	0.97	0.77	0.97	25.3
6	R2	All MCs	189	2.2	189	2.2	0.839	59.3	LOS E	7.1	50.9	1.00	0.90	1.20	6.8
Approach			804	3.3	804	3.3	1.003	66.7	LOS E	17.5	127.8	0.99	1.01	1.26	10.8
North: Windsor Rd															
7	L2	All MCs	41	10.3	41	10.3	0.037	17.0	LOS B	0.6	4.7	0.39	0.69	0.39	58.1
8	T1	All MCs	1342	8.9	1334	8.9	* 1.083	97.8	LOS F	52.2	393.5	1.00	1.45	1.63	27.9
9	R2	All MCs	63	11.7	63	11.7	0.266	31.4	LOS C	1.2	9.4	0.84	0.76	0.84	51.9
Approach			1446	9.1	1438	9.1	1.083	92.6	LOS F	52.2	393.5	0.98	1.40	1.56	29.2
West: Rouse Rd															
10	L2	All MCs	132	1.6	132	1.6	0.271	49.3	LOS D	4.3	30.8	0.84	0.77	0.84	25.9
11	T1	All MCs	307	0.3	307	0.3	* 1.106	185.6	LOS F	21.1	148.1	1.00	1.46	1.90	11.8
12	R2	All MCs	188	7.3	188	7.3	* 1.204	259.1	LOS F	13.3	98.5	1.00	1.51	2.35	7.3
Approach			627	2.7	627	2.7	1.204	179.1	LOS F	21.1	148.1	0.97	1.33	1.81	11.0
All Vehicles			4732	6.9	4723	6.9	1.204	95.7	LOS F	52.2	393.5	0.93	1.12	1.35	20.1

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)

Site: TCS 3788 [10. Windsor Rd - Commercial Rd (Site Folder: Existing AM)]

Network: 5 [EX AM - Windsor Corridor (Network Folder: Base Conditions)]

8am-9am
Site Category: Existing Design
Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 140 seconds (Network Site User-Given Phase Times)

Timings based on settings in the Network Timing dialog
Phase Times specified by the user
Phase Sequence: ABCD
Input Phase Sequence: A, B, C, D
Output Phase Sequence: A, B, C, D
Reference Phase: Phase A

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	Aver. Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Windsor Rd															
2	T1	All MCs	1561	8.4	1561	8.4	0.560	16.9	LOS B	22.3	167.1	0.74	0.38	0.74	43.5
3	R2	All MCs	337	2.8	337	2.8	* 0.696	59.1	LOS E	5.5	39.7	1.00	0.82	1.04	23.6
Approach			1898	7.4	1898	7.4	0.696	24.4	LOS B	22.3	167.1	0.79	0.46	0.80	36.1
East: Commercial Rd															
4	L2	All MCs	381	3.6	381	3.6	0.714	57.1	LOS E	11.9	86.2	0.91	0.91	0.91	12.6
6	R2	All MCs	292	6.9	292	6.9	* 0.671	78.3	LOS F	6.2	46.0	1.00	0.83	1.04	8.6
Approach			673	5.0	673	5.0	0.714	66.3	LOS E	11.9	86.2	0.95	0.88	0.97	10.5
North: Windsor Rd															
7	L2	All MCs	168	3.1	156	3.1	1.023	70.8	LOS F	42.0	313.2	1.00	1.21	1.43	21.1
8	T1	All MCs	1703	8.7	1575	8.7	* 1.023	61.3	LOS E	55.2	415.1	1.00	1.24	1.36	20.2
Approach			1872	8.2	1731	8.2	1.023	62.2	LOS E	55.2	415.1	1.00	1.23	1.36	20.3
All Vehicles			4442	7.4	4302	7.6	1.023	46.1	LOS D	55.2	415.1	0.90	0.84	1.05	22.9

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)

Site: TCS 3557 [11. Windsor Rd - Schofields Rd - Rouse Hill Dr (Site Folder: Existing AM)]

Network: 5 [EX AM - Windsor Corridor (Network Folder: Base Conditions)]

8am-9am
Site Category: Existing Design
Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 140 seconds (Network Site User-Given Phase Times)

Timings based on settings in the Network Timing dialog
Phase Times specified by the user
Phase Sequence: ADEG
Input Phase Sequence: A, D, E, G
Output Phase Sequence: A, D, E, G
Reference Phase: Phase A

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	Aver. Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Windsor Rd															
1	L2	All MCs	489	2.6	489	2.6	0.269	28.7	LOS C	5.8	41.8	0.62	0.76	0.62	53.0
2	T1	All MCs	1246	9.5	1246	9.5	0.791	47.2	LOS D	18.1	136.9	0.95	0.85	0.97	23.2
3	R2	All MCs	54	43.1	54	43.1	0.122	64.0	LOS E	1.0	9.4	0.89	0.72	0.89	23.3
Approach			1789	8.6	1789	8.6	0.791	42.6	LOS D	18.1	136.9	0.86	0.82	0.87	35.3
East: Rouse Hill Dr															
4	L2	All MCs	106	25.7	106	25.7	0.184	35.6	LOS C	2.9	25.1	0.71	0.73	0.71	28.3
5	T1	All MCs	189	6.7	189	6.7	0.303	55.0	LOS D	3.5	25.9	0.92	0.73	0.92	40.4
6	R2	All MCs	80	1.3	80	1.3	0.137	64.9	LOS E	1.1	8.0	0.93	0.71	0.93	11.2
Approach			376	10.9	376	10.9	0.303	51.6	LOS D	3.5	25.9	0.86	0.72	0.86	33.5
North: Windsor Rd															
7	L2	All MCs	68	0.0	63	0.0	0.277	88.5	LOS F	2.4	17.1	0.95	0.76	0.95	20.3
8	T1	All MCs	1613	8.7	1487	8.6	* 0.932	70.0	LOS E	24.5	184.0	0.99	1.03	1.19	29.7
9	R2	All MCs	416	5.3	384	5.2	0.691	79.6	LOS F	8.2	59.9	1.00	0.87	1.02	36.8
Approach			2097	7.8	1934	7.7	0.932	72.5	LOS F	24.5	184.0	0.99	0.99	1.15	31.6
West: Schofields Rd															
10	L2	All MCs	576	3.7	576	3.7	* 0.995	121.4	LOS F	33.0	238.2	1.00	1.11	1.40	29.2
11	T1	All MCs	416	1.0	416	1.0	0.629	72.2	LOS F	8.2	57.8	0.98	0.82	0.98	39.1
12	R2	All MCs	476	4.4	476	4.4	* 1.091	176.4	LOS F	15.9	115.8	1.00	1.28	1.88	23.8
Approach			1467	3.2	1467	3.2	1.091	125.3	LOS F	33.0	238.2	1.00	1.08	1.44	29.0
All Vehicles			5729	7.1	5567	7.3	1.091	75.4	LOS F	33.0	238.2	0.94	0.94	1.12	31.4

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Override Site Data tab).
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Green.

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

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

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

* Critical Movement (Signal Timing)

USER REPORT FOR NETWORK SITE

Project: 23009-Riverstone Sid v9.1 - 230728

Output produced by SIDRA INTERSECTION Version: 9.1.3.210 **Template: Movement Summary**

Site: TCS 1280 [1. Garfield Rd E - Windsor Rd - Terry Rd (Site Folder: Existing PM)]

Network: 6 [EX PM - Windsor Corridor (Network Folder: Base Conditions)]

5pm-6pm
Site Category: Existing Design
Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 120 seconds (Site User-Given Phase Times)

Timings based on settings in the Site Phasing & Timing dialog
Phase Times specified by the user
Phase Sequence: ADEG
Input Phase Sequence: A, D, E, G
Output Phase Sequence: A, D, E, G
Reference Phase: Phase A

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	Aver. Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Windsor Rd															
4	L2	All MCs	308	6.5	298	6.5	0.257	22.6	LOS B	3.2	23.4	0.38	0.70	0.38	69.4
5	T1	All MCs	1673	3.5	1619	3.5	* 1.075	95.9	LOS F	48.4	349.0	1.00	1.47	1.67	23.8
6	R2	All MCs	373	0.8	361	0.8	* 0.967	84.0	LOS F	14.3	101.0	1.00	1.11	1.47	31.9
Approach			2354	3.4	2278	3.4	1.075	84.4	LOS F	48.4	349.0	0.92	1.31	1.47	30.8
East: Terry Rd															
7	L2	All MCs	208	5.1	208	5.1	0.708	17.8	LOS B	9.4	67.6	0.92	0.91	0.92	30.0
8	T1	All MCs	175	1.8	175	1.8	* 0.708	48.5	LOS D	9.4	67.6	0.92	0.91	0.92	55.5
9	R2	All MCs	89	15.3	89	15.3	0.444	47.8	LOS D	2.7	21.3	0.98	0.77	0.98	24.2
Approach			473	5.8	473	5.8	0.708	34.8	LOS C	9.4	67.6	0.93	0.88	0.93	42.6
North: Windsor Rd															
10	L2	All MCs	69	10.6	69	10.6	0.079	16.6	LOS B	0.8	6.0	0.55	0.70	0.55	58.5
11	T1	All MCs	1284	2.4	1284	2.4	0.783	29.4	LOS C	19.0	135.5	0.89	0.80	0.89	51.9
12	R2	All MCs	122	10.3	122	10.3	0.314	58.7	LOS E	2.6	19.6	0.93	0.76	0.93	52.6
Approach			1476	3.4	1476	3.4	0.783	31.2	LOS C	19.0	135.5	0.87	0.79	0.88	52.4
West: Garfield Rd E															
1	L2	All MCs	49	8.5	49	8.5	0.077	26.7	LOS B	1.0	7.8	0.65	0.68	0.65	46.4
2	T1	All MCs	164	4.5	164	4.5	0.808	62.6	LOS E	6.3	45.7	1.00	0.94	1.20	39.7
3	R2	All MCs	229	6.0	229	6.0	* 0.870	63.4	LOS E	8.2	60.5	1.00	1.04	1.27	35.6
Approach			443	5.7	443	5.7	0.870	59.0	LOS E	8.2	60.5	0.96	0.96	1.17	38.2
All Vehicles			4745	3.9	4669	3.9	1.075	60.2	LOS E	48.4	349.0	0.91	1.07	1.20	37.7

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)

Site: 4 [4. Windsor Rd - Junction Rd (Site Folder: Existing PM)]

Network: 6 [EX PM - Windsor Corridor (Network Folder: Base Conditions)]

5pm-6pm
Site Category: Existing Design
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	Aver. Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
SouthEast: Windsor Rd															
3	L2	All MCs	92	4.6	83	4.7	0.065	8.2	LOS A	0.1	0.7	0.31	0.61	0.31	55.9
4	T1	All MCs	1394	4.3	1268	4.4	0.334	0.1	LOS A	0.0	0.0	0.00	0.00	0.00	79.8
Approach			1485	4.3	1351	4.4	0.334	0.6	LOS A	0.1	0.7	0.02	0.04	0.02	77.4
NorthWest: Windsor Rd															
5	T1	All MCs	1183	2.6	1183	2.6	0.308	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	79.8
6	R2	All MCs	240	7.0	240	7.0	0.940	63.6	LOS E	3.6	26.6	0.99	1.58	3.74	28.2
Approach			1423	3.3	1423	3.3	0.940	10.8	NA	3.6	26.6	0.17	0.27	0.63	50.2
SouthWest: Junction Rd															
1	L2	All MCs	261	2.8	261	2.8	0.415	11.6	LOS A	0.9	6.1	0.65	0.93	0.89	49.7
2	R2	All MCs	75	4.2	75	4.2	0.717	67.8	LOS E	1.1	7.7	0.97	1.14	1.62	19.5
Approach			336	3.1	336	3.1	0.717	24.1	LOS B	1.1	7.7	0.72	0.98	1.05	40.4
All Vehicles			3244	3.8	3110	3.9	0.940	7.8	NA	3.6	26.6	0.16	0.24	0.41	59.8

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.

Site: TCS 4805 [5. Windsor Rd - Mt Carmel Dr (Site Folder: Existing PM)]

Network: 6 [EX PM - Windsor Corridor (Network Folder: Base Conditions)]

5pm-6pm
Site Category: Existing Design
Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 70 seconds (Site User-Given Phase Times)

Timings based on settings in the Site Phasing & Timing dialog
Phase Times specified by the user
Phase Sequence: ABC
Input Phase Sequence: A, B, C
Output Phase Sequence: A, B, C
Reference Phase: Phase A

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	Aver. Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
SouthEast: Windsor Rd															
5	T1	All MCs	1513	4.2	1374	4.3	0.502	4.8	LOS A	6.4	46.2	0.48	0.43	0.48	73.2
6	R2	All MCs	220	3.3	200	3.4	* 0.392	19.8	LOS B	2.8	20.4	0.80	0.80	0.80	56.6
Approach			1733	4.1	1573	4.2	0.502	6.7	LOS A	6.4	46.2	0.52	0.48	0.52	70.1
NorthEast: Mt Carmel Dr															
7	L2	All MCs	224	5.2	224	5.2	0.257	8.7	LOS A	1.4	9.9	0.42	0.67	0.42	37.7
9	R2	All MCs	29	7.1	29	7.1	* 0.073	36.8	LOS C	0.3	2.1	0.92	0.68	0.92	17.7
Approach			254	5.4	254	5.4	0.257	12.0	LOS A	1.4	9.9	0.48	0.67	0.48	33.2
NorthWest: Windsor Rd															
10	L2	All MCs	15	0.0	15	0.0	0.009	8.1	LOS A	0.0	0.3	0.21	0.63	0.21	55.2
11	T1	All MCs	1235	3.3	1235	3.3	* 0.536	17.6	LOS B	6.7	47.9	0.82	0.71	0.82	43.9
Approach			1249	3.3	1249	3.3	0.536	17.5	LOS B	6.7	47.9	0.81	0.71	0.81	44.0
All Vehicles			3236	3.9	3076	4.1	0.536	11.5	LOS A	6.7	47.9	0.63	0.59	0.63	59.9

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)

Site: TCS 3986 [6. Windsor Rd - Nelson Rd (Site Folder: Existing PM)]

Network: 6 [EX PM - Windsor Corridor (Network Folder: Base Conditions)]

5pm-6pm
Site Category: Existing Design
Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 120 seconds (Site User-Given Phase Times)

Timings based on settings in the Site Phasing & Timing dialog
Phase Times specified by the user
Phase Sequence: ABDEG
Input Phase Sequence: A, B, D, E, G
Output Phase Sequence: A, B, D, E, G
Reference Phase: Phase A

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	Aver. Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Windsor Rd															
4	L2	All MCs	6	50.0	6	49.9	0.006	20.3	LOS B	0.1	0.6	0.28	0.65	0.28	42.5
5	T1	All MCs	2088	3.3	2016	3.3	* 1.002	48.7	LOS D	49.1	353.5	1.00	1.23	1.29	34.9
6	R2	All MCs	189	3.9	183	3.9	* 0.687	40.8	LOS C	3.9	28.0	0.99	0.83	1.03	44.1
Approach			2284	3.5	2205	3.4	1.002	47.9	LOS D	49.1	353.5	1.00	1.19	1.26	35.9
East: Nelson Rd															
7	L2	All MCs	161	2.6	161	2.6	0.449	33.6	LOS C	3.9	27.7	0.92	0.79	0.92	28.7
8	T1	All MCs	1	0.0	1	0.0	* 0.449	69.0	LOS E	3.9	27.7	0.92	0.79	0.92	29.3
9	R2	All MCs	295	3.9	295	3.9	* 0.873	61.4	LOS E	10.7	77.4	1.00	1.02	1.23	20.5
Approach			457	3.5	457	3.5	0.873	51.6	LOS D	10.7	77.4	0.97	0.94	1.12	22.8
North: Windsor Rd															
10	L2	All MCs	204	2.1	204	2.1	0.255	36.9	LOS C	4.0	28.5	0.63	0.77	0.63	50.7
11	T1	All MCs	1626	2.8	1626	2.8	0.997	59.7	LOS E	38.0	272.7	1.00	1.17	1.29	35.1
12	R2	All MCs	4	0.0	4	0.0	0.029	64.9	LOS E	0.1	0.5	0.96	0.63	0.96	36.2
Approach			1835	2.8	1835	2.8	0.997	57.1	LOS E	38.0	272.7	0.96	1.13	1.22	37.0
West: Nelson Rd															
1	L2	All MCs	7	0.0	7	0.0	0.037	51.0	LOS D	0.3	1.9	0.90	0.64	0.90	16.4
2	T1	All MCs	1	0.0	1	0.0	0.037	57.0	LOS E	0.3	1.9	0.90	0.64	0.90	25.2
3	R2	All MCs	4	25.0	4	25.0	0.015	37.6	LOS C	0.1	1.0	0.85	0.58	0.85	18.9
Approach			13	8.3	13	8.3	0.037	47.0	LOS D	0.3	1.9	0.89	0.62	0.89	18.1
All Vehicles			4588	3.2	4510	3.2	1.002	52.0	LOS D	49.1	353.5	0.98	1.14	1.23	35.0

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)

Site: 7 [7. Windsor Rd - Guntawong Rd (Site Folder: Existing PM)]

Network: 6 [EX PM - Windsor Corridor (Network Folder: Base Conditions)]

5pm-6pm
Site Category: Existing Design
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	Aver. Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Windsor Rd															
4	L2	All MCs	124	1.7	119	1.7	0.510	7.1	LOS A	0.0	0.0	0.00	0.08	0.00	70.6
5	T1	All MCs	1895	4.0	1816	4.0	0.510	0.1	LOS A	0.0	0.0	0.00	0.04	0.00	78.0
Approach			2019	3.9	1935	3.9	0.510	0.6	NA	0.0	0.0	0.00	0.04	0.00	77.1
North: Windsor Rd															
11	T1	All MCs	1862	3.1	1862	3.1	0.487	0.2	LOS A	0.0	0.0	0.00	0.00	0.00	79.5
Approach			1862	3.1	1862	3.1	0.487	0.2	NA	0.0	0.0	0.00	0.00	0.00	79.5
West: Guntawong Rd															
1	L2	All MCs	214	1.0	214	1.0	0.433	14.8	LOS B	0.9	6.3	0.75	0.99	1.06	39.2
Approach			214	1.0	214	1.0	0.433	14.8	LOS B	0.9	6.3	0.75	0.99	1.06	39.2
All Vehicles			4095	3.3	4011	3.4	0.510	1.2	NA	0.9	6.3	0.04	0.07	0.06	75.4

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.

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.

Site: TCS 3985 [8. Windsor Rd - Annangrove Rd (Site Folder: Existing PM)]

Network: 6 [EX PM - Windsor Corridor (Network Folder: Base Conditions)]

5pm-6pm
Site Category: Existing Design
Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 105 seconds (Site User-Given Phase Times)

Timings based on settings in the Site Phasing & Timing dialog
Phase Times specified by the user
Phase Sequence: ABDEG
Input Phase Sequence: A, B, D, E, G
Output Phase Sequence: A, B, D, E, G
Reference Phase: Phase A

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	Aver. Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Windsor Rd															
4	L2	All MCs	2	0.0	2	0.0	0.002	12.8	LOS A	0.0	0.0	0.16	0.62	0.16	64.6
5	T1	All MCs	1557	3.9	1521	3.8	0.880	18.1	LOS B	19.3	139.6	0.79	0.76	0.86	60.9
6	R2	All MCs	331	5.4	323	5.4	* 0.922	45.0	LOS D	4.8	35.1	0.99	0.89	1.28	47.6
Approach			1889	4.1	1845	4.1	0.922	22.8	LOS B	19.3	139.6	0.82	0.79	0.93	56.9
East: Annangrove Rd															
7	L2	All MCs	277	3.4	277	3.4	0.324	17.1	LOS B	4.2	30.6	0.61	0.74	0.61	43.0
8	T1	All MCs	2	0.0	2	0.0	0.011	46.7	LOS D	0.1	0.4	0.92	0.57	0.92	36.7
9	R2	All MCs	454	3.2	454	3.2	* 1.117	156.4	LOS F	22.7	163.7	1.00	1.58	2.20	12.0
Approach			733	3.3	733	3.3	1.117	103.5	LOS F	22.7	163.7	0.85	1.26	1.59	16.5
North: Windsor Rd															
10	L2	All MCs	451	1.2	451	1.2	0.379	20.4	LOS B	5.7	40.4	0.53	0.75	0.53	52.7
11	T1	All MCs	1333	3.5	1333	3.5	* 1.107	121.0	LOS F	36.7	264.8	1.00	1.52	1.91	12.6
12	R2	All MCs	3	0.0	3	0.0	0.016	42.9	LOS D	0.1	0.4	0.93	0.62	0.93	41.2
Approach			1786	2.9	1786	2.9	1.107	95.5	LOS F	36.7	264.8	0.88	1.33	1.56	19.3
West: Rouse Hill Estate Access															
1	L2	All MCs	4	0.0	4	0.0	0.020	44.5	LOS D	0.1	1.0	0.87	0.64	0.87	24.5
2	T1	All MCs	1	0.0	1	0.0	* 0.020	48.8	LOS D	0.1	1.0	0.87	0.64	0.87	37.0
3	R2	All MCs	1	0.0	1	0.0	0.003	33.2	LOS C	0.0	0.2	0.79	0.58	0.79	29.5
Approach			6	0.0	6	0.0	0.020	43.3	LOS D	0.1	1.0	0.86	0.63	0.86	28.2
All Vehicles			4415	3.5	4371	3.5	1.117	66.1	LOS E	36.7	264.8	0.85	1.09	1.30	30.2

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)

Site: TCS 3789 [9. Windsor Rd - Rouse Rd - Mile End Rd (Site Folder: Existing PM)]

Network: 6 [EX PM - Windsor Corridor (Network Folder: Base Conditions)]

5pm-6pm
Site Category: Existing Design
Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 140 seconds (Network Site User-Given Phase Times)

Timings based on settings in the Network Timing dialog
Phase Times specified by the user
Phase Sequence: ADEG
Input Phase Sequence: A, D, E, G
Output Phase Sequence: A, D, E, G
Reference Phase: Phase A

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	Aver. Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Windsor Rd															
1	L2	All MCs	229	0.9	229	0.9	0.169	30.9	LOS C	1.8	12.4	0.28	0.68	0.28	55.7
2	T1	All MCs	1500	4.8	1500	4.8	* 1.030	98.9	LOS F	45.0	328.1	1.00	1.32	1.44	16.1
3	R2	All MCs	314	4.0	314	4.0	* 0.936	102.1	LOS F	7.4	53.6	1.00	0.95	1.28	16.8
Approach			2043	4.3	2043	4.3	1.030	91.7	LOS F	45.0	328.1	0.92	1.19	1.28	19.2
East: Mile End Rd															
4	L2	All MCs	343	2.8	343	2.8	0.679	46.2	LOS D	10.1	72.6	0.90	0.97	0.90	8.3
5	T1	All MCs	288	0.4	288	0.4	0.513	56.6	LOS E	6.6	46.2	0.95	0.77	0.95	26.2
6	R2	All MCs	217	1.0	217	1.0	0.821	53.5	LOS D	7.6	53.7	1.00	0.89	1.15	7.5
Approach			848	1.5	848	1.5	0.821	51.6	LOS D	10.1	72.6	0.94	0.88	0.98	16.7
North: Windsor Rd															
7	L2	All MCs	69	7.6	64	7.7	0.061	19.2	LOS B	1.1	8.0	0.44	0.70	0.44	56.5
8	T1	All MCs	1357	4.3	1249	4.3	1.023	47.3	LOS D	37.6	272.6	1.00	1.20	1.30	42.0
9	R2	All MCs	126	1.7	116	1.7	0.513	41.3	LOS C	2.6	18.7	0.98	0.77	0.98	48.1
Approach			1553	4.2	1429	4.3	1.023	45.6	LOS D	37.6	272.6	0.97	1.14	1.24	43.2
West: Rouse Rd															
10	L2	All MCs	154	1.4	154	1.4	0.272	44.7	LOS D	4.8	34.1	0.80	0.77	0.80	27.3
11	T1	All MCs	303	0.3	303	0.3	* 0.909	75.7	LOS F	14.3	100.7	1.00	1.06	1.26	22.0
12	R2	All MCs	164	2.6	164	2.6	* 0.744	52.3	LOS D	6.0	42.6	0.98	0.87	1.08	25.2
Approach			621	1.2	621	1.2	0.909	61.8	LOS E	14.3	100.7	0.94	0.94	1.10	23.8
All Vehicles			5065	3.4	4942	3.5	1.030	67.7	LOS E	45.0	328.1	0.94	1.09	1.19	26.7

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)

Site: TCS 3788 [10. Windsor Rd - Commercial Rd (Site Folder: Existing PM)]

Network: 6 [EX PM - Windsor Corridor (Network Folder: Base Conditions)]

5pm-6pm
Site Category: Existing Design
Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 140 seconds (Network Site User-Given Phase Times)

Timings based on settings in the Network Timing dialog
Phase Times specified by the user
Phase Sequence: ABCD
Input Phase Sequence: A, B, C, D
Output Phase Sequence: A, B, C, D
Reference Phase: Phase D

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	Aver. Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Windsor Rd															
2	T1	All MCs	1777	3.7	1777	3.7	0.781	19.1	LOS B	28.4	205.1	0.83	0.58	0.83	39.4
3	R2	All MCs	401	0.5	401	0.5	* 0.775	56.1	LOS D	6.4	44.9	1.00	0.86	1.08	24.1
Approach			2178	3.1	2178	3.1	0.781	25.9	LOS B	28.4	205.1	0.86	0.63	0.88	34.0
East: Commercial Rd															
4	L2	All MCs	327	2.6	327	2.6	0.582	41.5	LOS C	9.9	71.1	0.83	0.82	0.83	14.6
6	R2	All MCs	323	6.5	323	6.5	* 0.863	84.4	LOS F	7.8	58.0	1.00	0.99	1.27	7.7
Approach			651	4.5	651	4.5	0.863	62.8	LOS E	9.9	71.1	0.92	0.90	1.05	10.0
North: Windsor Rd															
7	L2	All MCs	234	1.4	217	1.4	0.995	53.6	LOS D	39.0	281.0	1.00	1.18	1.32	25.9
8	T1	All MCs	1623	4.1	1505	4.1	* 0.995	43.3	LOS D	48.4	350.9	1.00	1.16	1.25	26.4
Approach			1857	3.7	1722	3.7	0.995	44.6	LOS D	48.4	350.9	1.00	1.16	1.26	26.3
All Vehicles			4685	3.5	4550	3.7	0.995	38.3	LOS C	48.4	350.9	0.92	0.87	1.05	26.1

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)

Site: TCS 3557 [11. Windsor Rd - Schofields Rd - Rouse Hill Dr (Site Folder: Existing PM)]

Network: 6 [EX PM - Windsor Corridor (Network Folder: Base Conditions)]

5pm-6pm
Site Category: Existing Design
Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 140 seconds (Network Site User-Given Phase Times)

Timings based on settings in the Network Timing dialog
Phase Times specified by the user
Phase Sequence: ADEG
Input Phase Sequence: A, D, E, G
Output Phase Sequence: A, D, E, G
Reference Phase: Phase A

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	Aver. Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Windsor Rd															
1	L2	All MCs	761	1.7	761	1.7	0.441	33.5	LOS C	10.5	74.8	0.72	0.80	0.72	51.0
2	T1	All MCs	1540	3.8	1540	3.8	* 0.990	79.9	LOS F	32.2	232.9	0.98	1.11	1.26	15.4
3	R2	All MCs	72	35.3	72	35.3	0.163	65.1	LOS E	1.3	12.1	0.91	0.74	0.91	23.0
Approach			2373	4.0	2373	4.0	0.990	64.6	LOS E	32.2	232.9	0.89	1.00	1.08	29.0
East: Rouse Hill Dr															
4	L2	All MCs	127	9.1	127	9.1	0.184	32.8	LOS C	3.4	25.4	0.68	0.73	0.68	30.8
5	T1	All MCs	385	4.9	385	4.9	0.542	55.3	LOS D	7.3	53.5	0.95	0.79	0.95	40.4
6	R2	All MCs	211	1.0	211	1.0	0.447	70.7	LOS F	3.2	22.8	0.98	0.77	0.98	10.5
Approach			723	4.5	723	4.5	0.542	55.8	LOS D	7.3	53.5	0.91	0.77	0.91	32.7
North: Windsor Rd															
7	L2	All MCs	146	0.7	138	0.7	0.737	90.6	LOS F	6.0	42.1	1.00	0.86	1.08	18.1
8	T1	All MCs	1400	5.0	1317	5.0	0.795	53.0	LOS D	18.7	136.8	0.96	0.87	1.00	33.3
9	R2	All MCs	447	1.2	421	1.2	* 0.772	61.2	LOS E	8.4	59.4	0.97	0.84	1.02	41.3
Approach			1994	3.9	1876	3.8	0.795	57.6	LOS E	18.7	136.8	0.97	0.86	1.01	34.7
West: Schofields Rd															
10	L2	All MCs	402	2.4	402	2.4	0.589	47.3	LOS D	13.2	93.9	0.85	0.84	0.85	43.9
11	T1	All MCs	433	0.5	433	0.5	* 0.580	60.6	LOS E	8.3	58.3	0.96	0.81	0.96	39.9
12	R2	All MCs	345	4.0	345	4.0	* 0.958	100.0	LOS F	8.9	64.5	1.00	1.07	1.47	33.2
Approach			1180	2.1	1180	2.1	0.958	67.6	LOS E	13.2	93.9	0.93	0.90	1.07	38.4
All Vehicles			6269	3.7	6151	3.7	0.990	62.0	LOS E	32.2	232.9	0.93	0.91	1.04	33.3

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)

USER REPORT FOR NETWORK SITE

Project: 23009-Riverstone Sid v9.1 - 230728

Output produced by SIDRA INTERSECTION Version: 9.1.3.210 **Template: Movement Summary**

Site: TCS 4463 [12. Schofields Rd - Tallawong Rd - Ridgeline Dr (Site Folder: Existing AM)]

Network: 3 [EX AM - Schofields Corridor (Network Folder: Base Conditions)]

8am-9am
Site Category: Existing Design
Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 120 seconds (Network Site User-Given Phase Times)

Timings based on settings in the Network Timing dialog
Phase Times specified by the user
Phase Sequence: ADEG
Input Phase Sequence: A, D, E, G
Output Phase Sequence: A, D, E, G
Reference Phase: Phase A

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	Aver. Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Ridgeline Dr															
1	L2	All MCs	176	0.0	176	0.0	0.285	55.8	LOS D	4.7	32.6	0.79	0.77	0.79	25.1
2	T1	All MCs	278	0.4	278	0.4	0.995	115.1	LOS F	14.0	98.4	1.00	1.30	1.60	17.4
3	R2	All MCs	177	2.4	177	2.4	* 0.973	105.2	LOS F	8.2	58.8	1.00	1.19	1.59	14.6
Approach			631	0.8	631	0.8	0.995	95.7	LOS F	14.0	98.4	0.94	1.12	1.37	17.9
East: Schofields Rd															
4	L2	All MCs	222	0.9	222	0.9	0.172	17.2	LOS B	1.7	12.0	0.27	0.65	0.27	47.6
5	T1	All MCs	1084	4.2	1084	4.2	0.751	35.6	LOS C	17.7	128.1	0.92	0.81	0.92	27.3
6	R2	All MCs	55	0.0	55	0.0	0.297	67.3	LOS E	2.0	14.0	1.00	0.78	1.00	21.1
Approach			1361	3.5	1361	3.5	0.751	33.9	LOS C	17.7	128.1	0.82	0.78	0.82	30.8
North: Tallawong Rd															
7	L2	All MCs	76	4.2	76	4.2	0.130	36.7	LOS C	1.9	13.9	0.75	0.73	0.75	14.0
8	T1	All MCs	299	3.2	299	3.2	0.858	60.7	LOS E	11.6	83.3	1.00	1.00	1.20	23.2
9	R2	All MCs	236	12.1	236	12.1	0.693	65.8	LOS E	4.4	33.7	1.00	0.85	1.09	9.1
Approach			611	6.7	611	6.7	0.858	59.7	LOS E	11.6	83.3	0.97	0.91	1.10	17.8
West: Schofields Rd															
10	L2	All MCs	512	3.3	512	3.3	* 0.387	10.3	LOS A	4.5	32.1	0.31	0.67	0.31	53.7
11	T1	All MCs	1283	3.4	1283	3.4	* 0.887	30.8	LOS C	21.7	156.5	0.91	0.88	0.99	40.1
12	R2	All MCs	161	0.7	161	0.7	0.880	72.1	LOS F	6.2	43.8	1.00	0.91	1.20	31.3
Approach			1956	3.2	1956	3.2	0.887	28.8	LOS C	21.7	156.5	0.76	0.83	0.83	41.7
All Vehicles			4558	3.4	4558	3.4	0.995	43.7	LOS D	21.7	156.5	0.83	0.87	0.94	30.4

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

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

* Critical Movement (Signal Timing)

Site: TCS 4511 [13. Schofields Rd - Hambledon Rd (Site Folder: Existing AM)]

Network: 3 [EX AM - Schofields Corridor (Network Folder: Base Conditions)]

8am-9am
Site Category: Existing Design
Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 120 seconds (Network Site User-Given Phase Times)

Timings based on settings in the Network Timing dialog
Phase Times specified by the user
Phase Sequence: ABC
Input Phase Sequence: A, B, C
Output Phase Sequence: A, B, C
Reference Phase: Phase A

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	Aver. Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Hambledon Rd															
1	L2	All MCs	251	4.6	251	4.6	0.266	7.6	LOS A	1.7	12.3	0.27	0.64	0.27	55.0
3	R2	All MCs	337	6.9	337	6.9	* 0.918	72.9	LOS F	14.3	105.7	1.00	1.07	1.31	12.7
Approach			587	5.9	587	5.9	0.918	45.0	LOS D	14.3	105.7	0.69	0.88	0.87	27.1
East: Schofields Rd															
4	L2	All MCs	451	4.7	451	4.7	0.362	9.8	LOS A	3.4	25.0	0.27	0.66	0.27	54.4
5	T1	All MCs	1005	4.6	1005	4.6	* 0.643	6.5	LOS A	6.0	43.8	0.36	0.32	0.36	64.3
Approach			1456	4.6	1456	4.6	0.643	7.5	LOS A	6.0	43.8	0.33	0.42	0.33	61.5
West: Schofields Rd															
11	T1	All MCs	1597	2.8	1597	2.8	0.611	11.4	LOS A	15.8	113.0	0.60	0.55	0.60	53.3
12	R2	All MCs	412	1.8	412	1.8	* 1.083	156.1	LOS F	24.9	177.2	1.00	1.34	1.90	16.9
Approach			2008	2.6	2008	2.6	1.083	41.0	LOS C	24.9	177.2	0.68	0.71	0.87	33.8
All Vehicles			4052	3.8	4052	3.8	1.083	29.6	LOS C	24.9	177.2	0.56	0.63	0.67	42.4

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

* Critical Movement (Signal Timing)

Site: TCS 4474 [14. Schofields Rd - Cudgegong Rd (Site Folder: Existing AM)]

Network: 3 [EX AM - Schofields Corridor (Network Folder: Base Conditions)]

8am-9am
Site Category: Existing Design
Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 120 seconds (Network Site User-Given Phase Times)

Timings based on settings in the Network Timing dialog
Phase Times specified by the user
Phase Sequence: ABC
Input Phase Sequence: A, B, C
Output Phase Sequence: A, B, C
Reference Phase: Phase A

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	Aver. Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
East: Schofields Rd															
5	T1	All MCs	926	4.0	926	4.0	0.421	29.8	LOS C	14.8	107.2	0.98	0.55	0.98	49.4
6	R2	All MCs	172	7.4	172	7.4	0.489	64.0	LOS E	3.0	22.7	0.99	0.78	0.99	38.1
Approach			1098	4.5	1098	4.5	0.489	35.1	LOS C	14.8	107.2	0.98	0.59	0.98	46.9
North: Cudgegong Rd															
7	L2	All MCs	325	3.6	325	3.6	0.412	21.5	LOS B	6.6	47.7	0.66	0.76	0.66	52.8
9	R2	All MCs	457	2.3	457	2.3	0.900	63.9	LOS E	18.4	131.7	1.00	1.01	1.22	11.3
Approach			782	2.8	782	2.8	0.900	46.2	LOS D	18.4	131.7	0.86	0.90	0.99	32.0
West: Schofields Rd															
10	L2	All MCs	302	6.3	302	6.3	* 0.892	14.1	LOS A	26.6	192.3	1.00	0.93	1.06	29.1
11	T1	All MCs	1243	2.7	1243	2.7	* 0.892	56.6	LOS E	27.1	194.1	1.00	0.96	1.06	45.9
Approach			1545	3.4	1545	3.4	0.892	48.3	LOS D	27.1	194.1	1.00	0.95	1.06	43.9
All Vehicles			3425	3.6	3425	3.6	0.900	43.6	LOS D	27.1	194.1	0.96	0.83	1.02	42.6

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)

USER REPORT FOR NETWORK SITE

Project: 23009-Riverstone Sid v9.1 - 230728

Output produced by SIDRA INTERSECTION Version: 9.1.3.210 **Template: Movement Summary**

Site: TCS 4463 [12. Schofields Rd - Tallawong Rd - Ridgeline Dr (Site Folder: Existing PM)]

Network: 4 [EX PM - Schofields Corridor (Network Folder: Base Conditions)]

5pm-6pm
Site Category: Existing Design
Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 120 seconds (Network Site User-Given Phase Times)

Timings based on settings in the Network Timing dialog
Phase Times specified by the user
Phase Sequence: ADEG
Input Phase Sequence: A, D, E, G
Output Phase Sequence: A, D, E, G
Reference Phase: Phase A

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	Aver. Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Ridgeline Dr															
1	L2	All MCs	122	0.9	122	0.9	0.205	40.0	LOS C	3.2	22.4	0.77	0.75	0.77	25.2
2	T1	All MCs	197	1.1	197	1.1	0.545	50.4	LOS D	6.4	45.3	0.95	0.78	0.95	26.4
3	R2	All MCs	137	2.3	137	2.3	0.753	65.8	LOS E	5.1	36.7	1.00	0.90	1.15	18.3
Approach			456	1.4	456	1.4	0.753	52.2	LOS D	6.4	45.3	0.92	0.81	0.96	23.4
East: Schofields Rd															
4	L2	All MCs	214	0.0	214	0.0	0.151	7.7	LOS A	0.6	4.3	0.11	0.62	0.11	49.6
5	T1	All MCs	1366	1.3	1366	1.3	*0.890	22.8	LOS B	23.1	163.4	0.83	0.81	0.90	34.2
6	R2	All MCs	58	3.6	58	3.6	0.430	69.8	LOS E	2.2	15.5	1.00	0.77	1.00	20.6
Approach			1638	1.2	1638	1.2	0.890	22.5	LOS B	23.1	163.4	0.74	0.78	0.80	35.9
North: Tallawong Rd															
7	L2	All MCs	62	0.0	62	0.0	0.106	37.1	LOS C	1.6	11.0	0.75	0.73	0.75	13.8
8	T1	All MCs	212	1.5	212	1.5	*0.550	48.3	LOS D	6.9	49.0	0.95	0.80	0.95	26.2
9	R2	All MCs	316	6.3	316	6.3	*0.893	75.9	LOS F	6.5	47.9	1.00	1.02	1.37	8.1
Approach			589	3.9	589	3.9	0.893	61.9	LOS E	6.9	49.0	0.96	0.91	1.16	15.6
West: Schofields Rd															
10	L2	All MCs	388	3.3	362	3.2	0.249	11.8	LOS A	4.9	35.1	0.53	0.59	0.53	52.4
11	T1	All MCs	1172	1.9	1092	1.8	0.725	41.9	LOS C	17.7	125.8	0.97	0.85	0.97	34.7
12	R2	All MCs	124	0.8	116	0.8	*0.845	82.0	LOS F	4.6	32.6	1.00	0.94	1.31	29.5
Approach			1684	2.1	1570	2.1	0.845	37.9	LOS C	17.7	125.8	0.87	0.79	0.90	37.2
All Vehicles			4367	2.0	4253	2.0	0.893	36.8	LOS C	23.1	163.4	0.84	0.81	0.90	31.2

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)

Site: TCS 4511 [13. Schofields Rd - Hambledon Rd (Site Folder: Existing PM)]

Network: 4 [EX PM - Schofields Corridor (Network Folder: Base Conditions)]

5pm-6pm
Site Category: Existing Design
Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 120 seconds (Network Site User-Given Phase Times)

Timings based on settings in the Network Timing dialog
Phase Times specified by the user
Phase Sequence: ABC
Input Phase Sequence: A, B, C
Output Phase Sequence: A, B, C
Reference Phase: Phase A

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	Aver. Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Hambledon Rd															
1	L2	All MCs	286	1.5	286	1.5	0.355	12.8	LOS A	4.0	28.3	0.49	0.71	0.49	51.1
3	R2	All MCs	476	3.1	476	3.1	* 1.316	352.3	LOS F	43.1	310.0	1.00	1.97	2.92	3.2
Approach			762	2.5	762	2.5	1.316	224.7	LOS F	43.1	310.0	0.81	1.50	2.01	8.0
East: Schofields Rd															
4	L2	All MCs	400	5.5	400	5.5	0.294	8.9	LOS A	2.7	20.0	0.26	0.66	0.26	55.0
5	T1	All MCs	1331	4.3	1331	4.3	* 0.777	11.5	LOS A	14.9	108.5	0.62	0.56	0.62	60.5
Approach			1731	4.6	1731	4.6	0.777	10.9	LOS A	14.9	108.5	0.54	0.58	0.54	59.4
West: Schofields Rd															
11	T1	All MCs	1058	2.3	1058	2.3	0.399	8.7	LOS A	8.2	58.5	0.47	0.42	0.47	56.4
12	R2	All MCs	249	3.4	249	3.4	* 0.790	62.4	LOS E	9.2	66.2	1.00	0.91	1.12	30.3
Approach			1307	2.5	1307	2.5	0.790	18.9	LOS B	9.2	66.2	0.57	0.51	0.59	46.4
All Vehicles			3800	3.4	3800	3.4	1.316	56.6	LOS E	43.1	310.0	0.60	0.74	0.85	32.6

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)

Site: TCS 4474 [14. Schofields Rd - Cudgegong Rd (Site Folder: Existing PM)]

Network: 4 [EX PM - Schofields Corridor (Network Folder: Base Conditions)]

5pm-6pm
Site Category: Existing Design
Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 120 seconds (Network Site User-Given Phase Times)

Timings based on settings in the Network Timing dialog
Phase Times specified by the user
Phase Sequence: ABC
Input Phase Sequence: A, B, C
Output Phase Sequence: A, B, C
Reference Phase: Phase A

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	Aver. Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
East: Schofields Rd															
5	T1	All MCs	1262	1.4	1262	1.4	0.581	32.8	LOS C	20.2	142.9	0.98	0.65	0.98	47.9
6	R2	All MCs	139	9.8	139	9.8	0.483	66.2	LOS E	2.5	19.1	1.00	0.77	1.00	37.5
Approach			1401	2.3	1401	2.3	0.581	36.2	LOS C	20.2	142.9	0.98	0.66	0.98	46.4
North: Cudgegong Rd															
7	L2	All MCs	156	5.4	156	5.4	0.186	15.2	LOS B	2.3	16.7	0.49	0.69	0.49	56.0
9	R2	All MCs	408	0.5	408	0.5	0.728	46.5	LOS D	13.2	92.9	0.96	0.86	0.96	14.5
Approach			564	1.9	564	1.9	0.728	37.8	LOS C	13.2	92.9	0.83	0.81	0.83	30.8
West: Schofields Rd															
10	L2	All MCs	279	3.4	263	3.3	* 0.726	7.6	LOS A	15.4	109.8	0.87	0.81	0.87	39.6
11	T1	All MCs	1075	1.5	1013	1.4	* 0.726	39.0	LOS C	20.3	144.2	0.94	0.82	0.94	50.4
Approach			1354	1.9	1275	1.8	0.726	32.6	LOS C	20.3	144.2	0.93	0.82	0.93	49.3
All Vehicles			3319	2.0	3241	2.1	0.728	35.0	LOS C	20.3	144.2	0.93	0.75	0.93	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.
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)

USER REPORT FOR SITE

Project: 23009-Riverstone Sid v9.1 - 230728

Output produced by SIDRA INTERSECTION Version: 9.1.3.210 **Template: Movement Summary**

Site: 2 [2. Garfield Rd E - Clarke St (Site Folder: Existing AM)]

8am-9am
Site Category: Existing Design
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Clarke St															
1	L2	All MCs	192	7.7	192	7.7	0.401	10.3	LOS A	1.8	13.7	0.68	0.94	0.94	22.2
3	R2	All MCs	32	13.3	32	13.3	0.401	28.1	LOS B	1.8	13.7	0.68	0.94	0.94	53.7
Approach			223	8.5	223	8.5	0.401	12.8	LOS A	1.8	13.7	0.68	0.94	0.94	27.1
East: Garfield Rd E															
4	L2	All MCs	208	6.1	208	6.1	0.427	6.1	LOS A	0.0	0.0	0.00	0.16	0.00	57.8
5	T1	All MCs	569	9.2	569	9.2	0.427	0.5	LOS A	0.0	0.0	0.00	0.16	0.00	58.7
Approach			778	8.4	778	8.4	0.427	2.0	NA	0.0	0.0	0.00	0.16	0.00	58.4
West: Garfield Rd E															
11	T1	All MCs	375	11.0	375	11.0	0.573	3.9	LOS A	6.4	48.5	0.66	0.81	1.33	53.8
12	R2	All MCs	216	9.8	216	9.8	0.573	22.4	LOS B	6.4	48.5	0.66	0.81	1.33	46.9
Approach			591	10.5	591	10.5	0.573	10.7	NA	6.4	48.5	0.66	0.81	1.33	51.9
All Vehicles			1592	9.2	1592	9.2	0.573	6.7	NA	6.4	48.5	0.34	0.51	0.63	50.5

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Parameter Settings dialog (Options 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.

Site: 3 [3. Garfield Rd E - Edmund St (Site Folder: Existing AM)]

8am-9am
Site Category: Existing Design
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
East: Garfield Rd E															
11	T1	All MCs	619	9.9	619	9.9	0.479	0.5	LOS A	2.6	19.7	0.28	0.35	0.41	57.3
12	R2	All MCs	142	4.4	142	4.4	0.479	11.0	LOS A	2.6	19.7	0.28	0.35	0.41	50.9
Approach			761	8.9	761	8.9	0.479	2.5	NA	2.6	19.7	0.28	0.35	0.41	56.4
North: Edmund St															
1	L2	All MCs	135	3.9	135	3.9	0.258	8.1	LOS A	1.0	7.2	0.62	0.80	0.68	43.5
3	R2	All MCs	25	8.3	25	8.3	0.258	23.9	LOS B	1.0	7.2	0.62	0.80	0.68	51.2
Approach			160	4.6	160	4.6	0.258	10.6	LOS A	1.0	7.2	0.62	0.80	0.68	45.7
West: Garfield Rd E															
4	L2	All MCs	33	12.9	33	12.9	0.272	5.8	LOS A	0.0	0.0	0.00	0.04	0.00	57.3
5	T1	All MCs	456	12.5	456	12.5	0.272	0.1	LOS A	0.0	0.0	0.00	0.04	0.00	59.4
Approach			488	12.5	488	12.5	0.272	0.5	NA	0.0	0.0	0.00	0.04	0.00	59.2
All Vehicles			1409	9.6	1409	9.6	0.479	2.7	NA	2.6	19.7	0.22	0.29	0.30	56.2

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Parameter Settings dialog (Options 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.

Site: 15 [15. Guntawong Rd - Cudgegong Rd (Site Folder: Existing AM)]

8am-9am
Site Category: Existing Design
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Cudgegong Rd															
1	L2	All MCs	75	4.2	75	4.2	0.152	5.9	LOS A	0.6	4.1	0.31	0.59	0.31	53.7
3	R2	All MCs	82	3.8	82	3.8	0.152	7.8	LOS A	0.6	4.1	0.31	0.59	0.31	53.5
Approach			157	4.0	157	4.0	0.152	6.9	LOS A	0.6	4.1	0.31	0.59	0.31	53.6
East: Guntawong Rd - E															
4	L2	All MCs	25	0.0	25	0.0	0.067	5.6	LOS A	0.0	0.0	0.00	0.12	0.00	57.3
5	T1	All MCs	100	5.3	100	5.3	0.067	0.0	LOS A	0.0	0.0	0.00	0.12	0.00	58.9
Approach			125	4.2	125	4.2	0.067	1.1	NA	0.0	0.0	0.00	0.12	0.00	58.5
West: Guntawong Rd															
11	T1	All MCs	197	5.9	197	5.9	0.189	0.0	LOS A	0.8	5.9	0.20	0.28	0.20	57.4
12	R2	All MCs	127	5.8	127	5.8	0.189	6.4	LOS A	0.8	5.9	0.20	0.28	0.20	55.7
Approach			324	5.8	324	5.8	0.189	2.5	NA	0.8	5.9	0.20	0.28	0.20	56.6
All Vehicles			606	5.0	606	5.0	0.189	3.4	NA	0.8	5.9	0.19	0.33	0.19	56.1

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Parameter Settings dialog (Options 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.

Site: 16 [16. Guntawong Rd - Worcester Rd (Site Folder: Existing AM)]

8am-9am
Site Category: Existing Design
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Worcester Rd															
1	L2	All MCs	18	11.8	18	11.8	0.020	6.0	LOS A	0.1	0.6	0.23	0.54	0.23	55.1
3	R2	All MCs	5	20.0	5	20.0	0.020	7.7	LOS A	0.1	0.6	0.23	0.54	0.23	54.5
Approach			23	13.6	23	13.6	0.020	6.4	LOS A	0.1	0.6	0.23	0.54	0.23	55.0
East: Guntawong Rd															
4	L2	All MCs	5	0.0	5	0.0	0.058	5.6	LOS A	0.0	0.0	0.00	0.03	0.00	58.4
5	T1	All MCs	106	3.0	106	3.0	0.058	0.0	LOS A	0.0	0.0	0.00	0.03	0.00	59.7
Approach			112	2.8	112	2.8	0.058	0.3	NA	0.0	0.0	0.00	0.03	0.00	59.6
West: Guntawong Rd															
11	T1	All MCs	218	5.3	218	5.3	0.157	0.0	LOS A	0.4	3.1	0.12	0.17	0.12	58.3
12	R2	All MCs	64	4.9	64	4.9	0.157	6.4	LOS A	0.4	3.1	0.12	0.17	0.12	57.4
Approach			282	5.2	282	5.2	0.157	1.5	NA	0.4	3.1	0.12	0.17	0.12	58.0
All Vehicles			417	5.1	417	5.1	0.157	1.4	NA	0.4	3.1	0.09	0.15	0.09	58.1

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Parameter Settings dialog (Options 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.

Site: 17 [17. Guntawong Rd - Tallawong Rd (Site Folder: Existing AM)]

8am-9am
Site Category: Existing Design
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Tallawong Rd															
1	L2	All MCs	120	7.0	120	7.0	0.300	6.2	LOS A	1.2	9.1	0.46	0.63	0.46	45.5
3	R2	All MCs	121	7.0	121	7.0	0.300	11.1	LOS A	1.2	9.1	0.46	0.63	0.46	46.9
Approach			241	7.0	241	7.0	0.300	8.7	LOS A	1.2	9.1	0.46	0.63	0.46	46.3
East: Guntawong Rd															
4	L2	All MCs	38	5.6	38	5.6	0.093	5.6	LOS A	0.0	0.0	0.00	0.13	0.00	54.4
5	T1	All MCs	136	4.7	136	4.7	0.093	0.0	LOS A	0.0	0.0	0.00	0.13	0.00	58.7
Approach			174	4.8	174	4.8	0.093	1.2	NA	0.0	0.0	0.00	0.13	0.00	58.0
West: Guntawong Rd															
11	T1	All MCs	204	5.2	204	5.2	0.337	0.0	LOS A	2.0	14.4	0.35	0.44	0.35	55.5
12	R2	All MCs	335	5.0	335	5.0	0.337	6.8	LOS A	2.0	14.4	0.35	0.44	0.35	48.9
Approach			539	5.1	539	5.1	0.337	4.2	NA	2.0	14.4	0.35	0.44	0.35	51.9
All Vehicles			954	5.5	954	5.5	0.337	4.8	NA	2.0	14.4	0.31	0.43	0.31	51.7

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Parameter Settings dialog (Options 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.

Site: 18 [18. Guntawong Rd - Clarke St (Site Folder: Existing AM)]

8am-9am
Site Category: Existing Design
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
East: Guntawong Rd															
6	R2	All MCs	257	5.7	257	5.7	0.144	5.5	LOS A	0.0	0.0	0.00	0.60	0.00	50.6
Approach			257	5.7	257	5.7	0.144	5.5	NA	0.0	0.0	0.00	0.60	0.00	50.6
North: Clarke St															
7	L2	All MCs	524	5.2	524	5.2	0.293	5.7	LOS A	0.0	0.0	0.00	0.57	0.00	50.9
Approach			524	5.2	524	5.2	0.293	5.7	NA	0.0	0.0	0.00	0.57	0.00	50.9
All Vehicles			781	5.4	781	5.4	0.293	5.6	NA	0.0	0.0	0.00	0.58	0.00	50.8

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Parameter Settings dialog (Options 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.

Site: 19 [19. Clarke St - Riverstone Rd (Site Folder: Existing AM)]

8am-9am
Site Category: Existing Design
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Clarke St															
1	L2	All MCs	120	0.0	120	0.0	0.143	5.5	LOS A	0.0	0.3	0.02	0.29	0.02	52.7
2	T1	All MCs	136	12.4	136	12.4	0.143	0.0	LOS A	0.0	0.3	0.02	0.29	0.02	57.8
3	R2	All MCs	2	50.0	2	50.0	0.143	12.4	LOS A	0.0	0.3	0.02	0.29	0.02	52.6
Approach			258	6.9	258	6.9	0.143	2.7	NA	0.0	0.3	0.02	0.29	0.02	56.1
East: Riverstone Rd															
4	L2	All MCs	3	66.7	3	66.7	0.008	8.6	LOS A	0.0	0.3	0.48	0.62	0.48	48.8
5	T1	All MCs	1	0.0	1	0.0	0.008	7.7	LOS A	0.0	0.3	0.48	0.62	0.48	49.4
6	R2	All MCs	1	0.0	1	0.0	0.008	9.6	LOS A	0.0	0.3	0.48	0.62	0.48	53.1
Approach			5	40.0	5	40.0	0.008	8.6	LOS A	0.0	0.3	0.48	0.62	0.48	50.0
North: Clarke St															
7	L2	All MCs	1	100.0	1	100.0	0.233	6.7	LOS A	0.5	3.7	0.14	0.16	0.14	53.9
8	T1	All MCs	352	6.9	352	6.9	0.233	0.0	LOS A	0.5	3.7	0.14	0.16	0.14	59.0
9	R2	All MCs	55	11.5	55	11.5	0.233	8.5	LOS A	0.5	3.7	0.14	0.16	0.14	54.9
Approach			407	7.8	407	7.8	0.233	1.2	NA	0.5	3.7	0.14	0.16	0.14	58.5
West: Riverstone Rd															
10	L2	All MCs	82	12.8	82	12.8	0.380	7.1	LOS A	2.0	14.9	0.56	0.74	0.69	49.0
11	T1	All MCs	1	0.0	1	0.0	0.380	9.5	LOS A	2.0	14.9	0.56	0.74	0.69	47.4
12	R2	All MCs	168	1.9	168	1.9	0.380	12.3	LOS A	2.0	14.9	0.56	0.74	0.69	44.7
Approach			252	5.4	252	5.4	0.380	10.6	LOS A	2.0	14.9	0.56	0.74	0.69	46.4
All Vehicles			922	7.1	922	7.1	0.380	4.2	NA	2.0	14.9	0.22	0.36	0.26	54.9

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Parameter Settings dialog (Options 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.

Site: 2 [2. Garfield Rd E - Clarke St (Site Folder: Existing PM)]

5pm-6pm
Site Category: Existing Design
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Clarke St															
1	L2	All MCs	268	0.8	268	0.8	0.389	9.4	LOS A	2.0	13.9	0.64	0.89	0.84	20.8
3	R2	All MCs	27	0.0	27	0.0	0.389	19.0	LOS B	2.0	13.9	0.64	0.89	0.84	54.8
Approach			296	0.7	296	0.7	0.389	10.3	LOS A	2.0	13.9	0.64	0.89	0.84	24.1
East: Garfield Rd E															
4	L2	All MCs	85	1.2	85	1.2	0.348	5.9	LOS A	0.0	0.0	0.00	0.08	0.00	58.3
5	T1	All MCs	563	6.7	563	6.7	0.348	0.3	LOS A	0.0	0.0	0.00	0.08	0.00	59.3
Approach			648	6.0	648	6.0	0.348	1.1	NA	0.0	0.0	0.00	0.08	0.00	59.1
West: Garfield Rd E															
11	T1	All MCs	443	5.5	443	5.5	0.409	0.6	LOS A	2.5	18.5	0.39	0.49	0.53	57.6
12	R2	All MCs	144	2.2	144	2.2	0.409	13.4	LOS A	2.5	18.5	0.39	0.49	0.53	52.9
Approach			587	4.7	587	4.7	0.409	3.7	NA	2.5	18.5	0.39	0.49	0.53	56.9
All Vehicles			1532	4.5	1532	4.5	0.409	3.9	NA	2.5	18.5	0.27	0.39	0.37	48.7

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Parameter Settings dialog (Options 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.

Site: 3 [3. Garfield Rd E - Edmund St (Site Folder: Existing PM)]

5pm-6pm
Site Category: Existing Design
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
East: Garfield Rd E															
11	T1	All MCs	591	6.4	591	6.4	0.540	1.0	LOS A	4.5	32.6	0.41	0.50	0.65	56.0
12	R2	All MCs	241	0.9	241	0.9	0.540	10.4	LOS A	4.5	32.6	0.41	0.50	0.65	49.5
Approach			832	4.8	832	4.8	0.540	3.7	NA	4.5	32.6	0.41	0.50	0.65	54.6
North: Edmund St															
1	L2	All MCs	136	1.6	136	1.6	0.297	8.2	LOS A	1.2	8.3	0.65	0.83	0.77	42.3
3	R2	All MCs	26	16.0	26	16.0	0.297	30.9	LOS C	1.2	8.3	0.65	0.83	0.77	50.3
Approach			162	3.9	162	3.9	0.297	11.8	LOS A	1.2	8.3	0.65	0.83	0.77	44.7
West: Garfield Rd E															
4	L2	All MCs	29	10.7	29	10.7	0.257	5.8	LOS A	0.0	0.0	0.00	0.04	0.00	57.4
5	T1	All MCs	452	5.6	452	5.6	0.257	0.1	LOS A	0.0	0.0	0.00	0.04	0.00	59.5
Approach			481	5.9	481	5.9	0.257	0.5	NA	0.0	0.0	0.00	0.04	0.00	59.3
All Vehicles			1475	5.1	1475	5.1	0.540	3.5	NA	4.5	32.6	0.30	0.39	0.45	55.1

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Parameter Settings dialog (Options 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.

Site: 15 [15. Guntawong Rd - Cudgegong Rd (Site Folder: Existing PM)]

5pm-6pm
Site Category: Existing Design
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Cudgegong Rd															
1	L2	All MCs	94	1.1	94	1.1	0.166	6.1	LOS A	0.6	4.5	0.33	0.61	0.33	53.8
3	R2	All MCs	91	1.2	91	1.2	0.166	7.2	LOS A	0.6	4.5	0.33	0.61	0.33	53.6
Approach			184	1.1	184	1.1	0.166	6.7	LOS A	0.6	4.5	0.33	0.61	0.33	53.7
East: Guntawong Rd															
4	L2	All MCs	13	8.3	13	8.3	0.090	5.7	LOS A	0.0	0.0	0.00	0.04	0.00	57.5
5	T1	All MCs	161	1.3	161	1.3	0.090	0.0	LOS A	0.0	0.0	0.00	0.04	0.00	59.6
Approach			174	1.8	174	1.8	0.090	0.4	NA	0.0	0.0	0.00	0.04	0.00	59.4
West: Guntawong Rd															
11	T1	All MCs	145	2.9	145	2.9	0.119	0.0	LOS A	0.4	2.9	0.19	0.24	0.19	57.8
12	R2	All MCs	63	3.3	63	3.3	0.119	6.7	LOS A	0.4	2.9	0.19	0.24	0.19	56.2
Approach			208	3.0	208	3.0	0.119	2.0	NA	0.4	2.9	0.19	0.24	0.19	57.2
All Vehicles			566	2.0	566	2.0	0.166	3.1	NA	0.6	4.5	0.18	0.30	0.18	56.5

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Parameter Settings dialog (Options 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.

Site: 16 [16. Guntawong Rd - Worcester Rd (Site Folder: Existing PM)]

5pm-6pm
Site Category: Existing Design
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Worcester Rd															
1	L2	All MCs	56	0.0	56	0.0	0.049	5.9	LOS A	0.2	1.3	0.23	0.55	0.23	55.4
3	R2	All MCs	11	0.0	11	0.0	0.049	6.9	LOS A	0.2	1.3	0.23	0.55	0.23	55.1
Approach			66	0.0	66	0.0	0.049	6.0	LOS A	0.2	1.3	0.23	0.55	0.23	55.4
East: Guntawong Rd															
4	L2	All MCs	3	0.0	3	0.0	0.064	5.6	LOS A	0.0	0.0	0.00	0.02	0.00	58.4
5	T1	All MCs	118	3.6	118	3.6	0.064	0.0	LOS A	0.0	0.0	0.00	0.02	0.00	59.8
Approach			121	3.5	121	3.5	0.064	0.2	NA	0.0	0.0	0.00	0.02	0.00	59.8
West: Guntawong Rd															
11	T1	All MCs	199	3.2	199	3.2	0.127	0.0	LOS A	0.2	1.7	0.09	0.12	0.09	58.8
12	R2	All MCs	37	0.0	37	0.0	0.127	6.3	LOS A	0.2	1.7	0.09	0.12	0.09	57.8
Approach			236	2.7	236	2.7	0.127	1.0	NA	0.2	1.7	0.09	0.12	0.09	58.5
All Vehicles			423	2.5	423	2.5	0.127	1.5	NA	0.2	1.7	0.08	0.16	0.08	58.0

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Parameter Settings dialog (Options 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.

Site: 17 [17. Guntawong Rd - Tallawong Rd (Site Folder: Existing PM)]

5pm-6pm
Site Category: Existing Design
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Tallawong Rd															
1	L2	All MCs	214	2.0	214	2.0	0.309	6.5	LOS A	1.4	9.7	0.44	0.64	0.44	47.1
3	R2	All MCs	109	3.8	109	3.8	0.309	8.9	LOS A	1.4	9.7	0.44	0.64	0.44	48.2
Approach			323	2.6	323	2.6	0.309	7.3	LOS A	1.4	9.7	0.44	0.64	0.44	47.5
East: Guntawong Rd															
4	L2	All MCs	36	0.0	36	0.0	0.135	5.6	LOS A	0.0	0.0	0.00	0.08	0.00	55.5
5	T1	All MCs	222	1.9	222	1.9	0.135	0.0	LOS A	0.0	0.0	0.00	0.08	0.00	59.1
Approach			258	1.6	258	1.6	0.135	0.8	NA	0.0	0.0	0.00	0.08	0.00	58.7
West: Guntawong Rd															
11	T1	All MCs	104	2.0	104	2.0	0.196	0.0	LOS A	1.0	7.2	0.38	0.48	0.38	55.2
12	R2	All MCs	196	2.2	196	2.2	0.196	7.0	LOS A	1.0	7.2	0.38	0.48	0.38	48.9
Approach			300	2.1	300	2.1	0.196	4.6	NA	1.0	7.2	0.38	0.48	0.38	51.6
All Vehicles			881	2.2	881	2.2	0.309	4.5	NA	1.4	9.7	0.29	0.42	0.29	52.5

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Parameter Settings dialog (Options 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.

Site: 18 [18. Guntawong Rd - Clarke St (Site Folder: Existing PM)]

5pm-6pm
Site Category: Existing Design
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
East: Guntawong Rd															
6	R2	All MCs	440	1.7	440	1.7	0.240	5.5	LOS A	0.0	0.0	0.00	0.60	0.00	50.8
Approach			440	1.7	440	1.7	0.240	5.5	NA	0.0	0.0	0.00	0.60	0.00	50.8
North: Clarke St															
7	L2	All MCs	299	2.5	299	2.5	0.164	5.6	LOS A	0.0	0.0	0.00	0.58	0.00	51.0
Approach			299	2.5	299	2.5	0.164	5.6	NA	0.0	0.0	0.00	0.58	0.00	51.0
All Vehicles			739	2.0	739	2.0	0.240	5.5	NA	0.0	0.0	0.00	0.59	0.00	50.9

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Parameter Settings dialog (Options 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.

Site: 19 [19. Clarke St - Riverstone Rd (Site Folder: Existing PM)]

5pm-6pm
Site Category: Existing Design
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Clarke St															
1	L2	All MCs	202	1.6	202	1.6	0.236	5.6	LOS A	0.0	0.1	0.00	0.27	0.00	52.8
2	T1	All MCs	241	2.2	241	2.2	0.236	0.0	LOS A	0.0	0.1	0.00	0.27	0.00	58.1
3	R2	All MCs	1	0.0	1	0.0	0.236	5.7	LOS A	0.0	0.1	0.00	0.27	0.00	55.1
Approach			444	1.9	444	1.9	0.236	2.5	NA	0.0	0.1	0.00	0.27	0.00	56.4
East: Riverstone Rd															
4	L2	All MCs	6	0.0	6	0.0	0.010	6.2	LOS A	0.0	0.2	0.38	0.56	0.38	52.0
5	T1	All MCs	1	0.0	1	0.0	0.010	8.1	LOS A	0.0	0.2	0.38	0.56	0.38	50.4
6	R2	All MCs	2	0.0	2	0.0	0.010	8.7	LOS A	0.0	0.2	0.38	0.56	0.38	53.7
Approach			9	0.0	9	0.0	0.010	7.0	LOS A	0.0	0.2	0.38	0.56	0.38	52.3
North: Clarke St															
7	L2	All MCs	1	0.0	1	0.0	0.161	5.5	LOS A	0.5	3.3	0.22	0.26	0.22	56.9
8	T1	All MCs	224	2.8	224	2.8	0.161	0.0	LOS A	0.5	3.3	0.22	0.26	0.22	58.5
9	R2	All MCs	48	2.2	48	2.2	0.161	10.1	LOS A	0.5	3.3	0.22	0.26	0.22	55.3
Approach			274	2.7	274	2.7	0.161	1.8	NA	0.5	3.3	0.22	0.26	0.22	58.0
West: Riverstone Rd															
10	L2	All MCs	36	0.0	36	0.0	0.156	6.4	LOS A	0.6	3.9	0.50	0.72	0.50	50.6
11	T1	All MCs	1	100.0	1	100.0	0.156	14.9	LOS B	0.6	3.9	0.50	0.72	0.50	45.1
12	R2	All MCs	69	0.0	69	0.0	0.156	10.0	LOS A	0.6	3.9	0.50	0.72	0.50	46.2
Approach			106	1.0	106	1.0	0.156	8.8	LOS A	0.6	3.9	0.50	0.72	0.50	48.0
All Vehicles			834	2.0	834	2.0	0.236	3.2	NA	0.6	3.9	0.14	0.33	0.14	56.0

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Parameter Settings dialog (Options 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.

USER REPORT FOR NETWORK SITE

Project: 23009-Riverstone Sid v9.1 - 230728

Output produced by SIDRA INTERSECTION Version: 9.1.3.210 **Template: Movement Summary**

Site: TCS 1280 [1. Garfield Rd E - Windsor Rd - Terry Rd (Site Folder: 10-Year Future AM)]

Network: 19 [AM - Windsor Corridor - Int 5 per existing layout + Int 7 upgrade to T-junction signal (Network Folder: 10-Year Future Conditions)]

8am-9am
Site Category: Proposed Design
Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 120 seconds (Site User-Given Phase Times)

Timings based on settings in the Site Phasing & Timing dialog
Phase Times specified by the user
Phase Sequence: ADEG
Input Phase Sequence: A, D, E, G
Output Phase Sequence: A, D, E, G
Reference Phase: Phase A

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	Aver. Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Windsor Rd															
4	L2	All MCs	499	6.1	473	6.3	* 0.366	23.8	LOS B	6.5	48.0	0.49	0.74	0.49	59.9
5	T1	All MCs	1396	6.0	1325	6.1	1.044	106.8	LOS F	36.7	270.7	1.00	1.37	1.60	22.9
6	R2	All MCs	219	8.2	208	8.4	0.783	70.4	LOS E	5.4	40.6	1.00	0.89	1.13	41.5
Approach			2114	6.2	2006	6.4	1.044	83.4	LOS F	36.7	270.7	0.88	1.18	1.29	30.6
East: Terry Rd															
7	L2	All MCs	146	8.6	146	8.6	0.248	30.6	LOS C	3.4	25.7	0.76	0.73	0.76	30.5
8	T1	All MCs	440	3.6	440	3.6	0.762	56.3	LOS D	8.0	57.9	1.00	0.90	1.10	33.0
9	R2	All MCs	216	11.7	216	11.7	0.550	38.8	LOS C	5.9	45.8	0.91	0.80	0.91	27.3
Approach			802	6.7	802	6.7	0.762	46.9	LOS D	8.0	57.9	0.93	0.84	0.99	31.5
North: Windsor Rd															
10	L2	All MCs	156	14.2	154	14.1	0.137	26.8	LOS B	1.2	9.3	0.33	0.68	0.33	62.0
11	T1	All MCs	1393	6.5	1374	6.4	* 1.109	154.7	LOS F	45.1	333.3	1.00	1.58	1.92	20.8
12	R2	All MCs	488	4.7	482	4.7	1.198	261.6	LOS F	18.3	133.2	1.00	1.49	2.49	17.5
Approach			2037	6.7	2010	6.6	1.198	170.6	LOS F	45.1	333.3	0.95	1.49	1.93	21.0
West: Garfield Rd E															
1	L2	All MCs	680	1.9	680	1.9	1.070	147.8	LOS F	34.5	245.0	1.00	1.36	1.77	10.7
2	T1	All MCs	194	7.6	194	7.6	0.351	68.0	LOS E	3.2	23.7	0.94	0.74	0.94	32.9
3	R2	All MCs	677	3.9	677	3.9	* 1.047	112.5	LOS F	16.3	117.7	1.00	1.35	1.77	11.5
Approach			1551	3.5	1551	3.5	1.070	122.4	LOS F	34.5	245.0	0.99	1.28	1.67	13.0
All Vehicles			6503	5.8	6368	5.9	1.198	115.8	LOS F	45.1	333.3	0.94	1.26	1.55	22.1

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)

Site: 4 [4. Windsor Rd - Junction Rd (Site Folder: 10-Year Future AM)]

Network: 19 [AM - Windsor Corridor - Int 5 per existing layout + Int 7 upgrade to T-junction signal (Network Folder: 10-Year Future Conditions)]

8am-9am
Site Category: Proposed Design
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	Aver. Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
SouthEast: Windsor Rd															
3	L2	All MCs	76	11.1	71	11.4	0.062	8.7	LOS A	0.1	0.6	0.30	0.63	0.30	55.6
4	T1	All MCs	1799	6.7	1675	6.9	0.449	0.1	LOS A	0.0	0.0	0.00	0.00	0.00	79.6
Approach			1875	6.9	1746	7.1	0.449	0.5	LOS A	0.1	0.6	0.01	0.03	0.01	78.0
NorthWest: Windsor Rd															
5	T1	All MCs	1645	5.6	1645	5.6	0.732	11.6	LOS A	5.4	39.3	0.16	0.15	0.45	47.5
6	R2	All MCs	299	6.7	299	6.7	2.051	988.6	LOS F	39.8	294.2	1.00	4.54	18.75	3.1
Approach			1944	5.8	1944	5.8	2.051	161.9	NA	39.8	294.2	0.29	0.83	3.27	8.9
SouthWest: Junction Rd - S															
1	L2	All MCs	249	11.0	249	11.0	0.570	18.6	LOS B	1.3	10.3	0.81	1.09	1.37	43.7
2	R2	All MCs	71	10.4	71	10.4	1.748	792.0	LOS F	8.5	64.9	1.00	2.41	7.12	2.3
Approach			320	10.9	320	10.9	1.748	189.0	LOS F	8.5	64.9	0.85	1.38	2.64	12.1
All Vehicles			4139	6.7	4010	6.9	2.051	93.8	NA	39.8	294.2	0.21	0.52	1.80	18.6

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.

Site: TCS 4805 [5. Windsor Rd - Mt Carmel Dr - Existing layout (Site Folder: 10-Year Future AM)]

Network: 19 [AM - Windsor Corridor - Int 5 per existing layout + Int 7 upgrade to T-junction signal (Network Folder: 10-Year Future Conditions)]

8am-9am
Site Category: Proposed Design
Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 75 seconds (Site User-Given Phase Times)

Timings based on settings in the Site Phasing & Timing dialog
Phase Times specified by the user
Phase Sequence: ABC
Input Phase Sequence: A, B, C
Output Phase Sequence: A, B, C
Reference Phase: Phase A

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	Aver. Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
SouthEast: Windsor Rd															
5	T1	All MCs	1737	5.5	1608	5.6	0.588	12.6	LOS A	14.6	107.4	0.88	0.49	0.88	64.1
6	R2	All MCs	571	5.0	528	5.1	* 1.177	197.0	LOS F	30.4	222.0	1.00	1.74	3.10	17.5
Approach			2307	5.4	2136	5.5	1.177	58.2	LOS E	30.4	222.0	0.91	0.80	1.43	36.5
NorthEast: Mt Carmel Dr															
7	L2	All MCs	488	6.5	488	6.5	0.612	12.0	LOS A	5.5	40.4	0.65	0.77	0.65	33.5
9	R2	All MCs	69	4.5	69	4.5	* 0.161	39.0	LOS C	0.7	5.3	0.93	0.72	0.93	17.0
Approach			558	6.2	558	6.2	0.612	15.3	LOS B	5.5	40.4	0.69	0.77	0.69	29.7
NorthWest: Windsor Rd															
10	L2	All MCs	160	0.7	157	0.6	0.092	8.1	LOS A	0.5	3.2	0.21	0.66	0.21	55.1
11	T1	All MCs	1537	6.8	1510	6.7	* 0.628	19.0	LOS B	8.9	66.0	0.84	0.74	0.84	42.9
Approach			1697	6.2	1667	6.1	0.628	18.0	LOS B	8.9	66.0	0.78	0.73	0.78	44.2
All Vehicles			4562	5.8	4361	6.1	1.177	37.4	LOS C	30.4	222.0	0.83	0.77	1.09	37.7

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)

Site: TCS 3986 [6. Windsor Rd - Nelson Rd (Site Folder: 10-Year Future AM)]

Network: 19 [AM - Windsor Corridor - Int 5 per existing layout + Int 7 upgrade to T-junction signal (Network Folder: 10-Year Future Conditions)]

8am-9am
Site Category: Proposed Design
Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 110 seconds (Site User-Given Phase Times)

Timings based on settings in the Site Phasing & Timing dialog
Phase Times specified by the user
Phase Sequence: ADEG
Input Phase Sequence: A, D, E, G
Output Phase Sequence: A, D, E, G
Reference Phase: Phase A

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	Aver. Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Windsor Rd															
4	L2	All MCs	5	40.0	5	40.7	0.005	27.0	LOS B	0.1	0.5	0.37	0.65	0.37	41.4
5	T1	All MCs	1761	6.0	1674	6.1	1.013	77.6	LOS F	41.0	302.3	1.00	1.32	1.46	26.6
6	R2	All MCs	238	0.9	226	0.9	* 1.096	153.3	LOS F	10.8	75.9	1.00	1.33	2.13	19.4
Approach			2004	5.5	1905	5.6	1.096	86.5	LOS F	41.0	302.3	1.00	1.32	1.53	24.9
East: Nelson Rd															
7	L2	All MCs	278	3.4	278	3.4	0.740	51.9	LOS D	9.0	64.9	0.99	0.87	1.06	22.4
8	T1	All MCs	1	0.0	1	0.0	* 0.740	63.1	LOS E	9.0	64.9	0.99	0.87	1.06	25.6
9	R2	All MCs	358	6.8	358	6.8	* 0.930	66.4	LOS E	12.8	95.1	1.00	1.15	1.37	19.5
Approach			637	5.3	637	5.3	0.930	60.1	LOS E	12.8	95.1	1.00	1.03	1.23	20.7
North: Windsor Rd															
10	L2	All MCs	339	4.7	313	4.6	0.233	16.5	LOS B	1.5	10.8	0.28	0.68	0.28	61.2
11	T1	All MCs	2078	5.6	1920	5.5	* 1.173	176.2	LOS F	68.2	499.7	1.00	1.91	2.28	14.9
12	R2	All MCs	2	50.0	2	49.6	0.012	48.7	LOS D	0.0	0.3	0.92	0.61	0.92	37.4
Approach			2419	5.5	2235	5.4	1.173	153.7	LOS F	68.2	499.7	0.90	1.74	2.00	17.7
West: Nelson Rd															
1	L2	All MCs	4	25.0	4	25.0	0.020	40.7	LOS C	0.1	1.2	0.85	0.61	0.85	17.9
2	T1	All MCs	1	0.0	1	0.0	0.020	49.2	LOS D	0.1	1.2	0.85	0.61	0.85	27.0
3	R2	All MCs	1	0.0	1	0.0	0.004	31.4	LOS C	0.0	0.2	0.87	0.54	0.87	20.1
Approach			6	16.7	6	16.7	0.020	40.6	LOS C	0.1	1.2	0.86	0.60	0.86	20.1
All Vehicles			5066	5.5	4782	5.8	1.173	114.3	LOS F	68.2	499.7	0.95	1.48	1.71	20.2

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)

Site: 7v [7. Windsor Rd - Guntawong Rd - Convert to T-junction signal (Site Folder: 10-Year Future AM)]

Network: 19 [AM - Windsor Corridor - Int 5 per existing layout + Int 7 upgrade to T-junction signal (Network Folder: 10-Year Future Conditions)]

8am-9am
Site Category: Proposed Design
Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 150 seconds (Site Practical Cycle Time)

Timings based on settings in the Site Phasing & Timing dialog
Phase Times determined by the program
Downstream lane blockage effects included in determining phase times
Phase Sequence: ABCD
Input Phase Sequence: A, B, C, D*
Output Phase Sequence: A, B, C
Reference Phase: Phase A
(* Variable Phase)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	Aver. Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Windsor Rd															
4	L2	All MCs	308	0.0	289	0.0	0.867	14.5	LOS A	24.0	174.4	0.82	0.85	0.87	45.7
5	T1	All MCs	1618	6.6	1518	6.8	* 0.867	24.4	LOS B	36.8	272.7	0.86	0.82	0.88	39.1
Approach			1926	5.5	1807	5.7	0.867	22.8	LOS B	36.8	272.7	0.86	0.83	0.88	40.7
North: Windsor Rd															
11	T1	All MCs	2043	6.3	1661	6.2	0.604	10.9	LOS A	17.4	128.1	0.52	0.48	0.52	61.7
12	R2	All MCs	6	0.0	5	0.0	* 0.069	87.3	LOS F	0.2	1.6	0.99	0.65	0.99	29.2
Approach			2049	6.3	1666	6.1	0.604	11.1	LOS A	17.4	128.1	0.52	0.48	0.52	61.3
West: Guntawong Rd															
1	L2	All MCs	259	1.6	259	1.6	0.566	37.5	LOS C	9.2	65.1	0.88	0.84	0.88	25.9
3	R2	All MCs	257	0.0	257	0.0	* 0.432	67.4	LOS E	5.2	36.7	0.95	0.79	0.95	17.9
Approach			516	0.8	516	0.8	0.566	52.4	LOS D	9.2	65.1	0.92	0.82	0.92	21.2
All Vehicles			4492	5.3	3988	6.0	0.867	21.8	LOS B	36.8	272.7	0.73	0.68	0.73	44.2

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)

Site: TCS 3985 [8. Windsor Rd - Annangrove Rd (Site Folder: 10-Year Future AM)]

Network: 19 [AM - Windsor Corridor - Int 5 per existing layout + Int 7 upgrade to T-junction signal (Network Folder: 10-Year Future Conditions)]

8am-9am
Site Category: Proposed Design
Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 105 seconds (Site User-Given Phase Times)

Timings based on settings in the Site Phasing & Timing dialog
Phase Times specified by the user
Phase Sequence: ABDEG
Input Phase Sequence: A, B, D, E, G
Output Phase Sequence: A, B, D, E, G
Reference Phase: Phase A

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	Aver. Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Windsor Rd															
4	L2	All MCs	1	0.0	1	0.0	0.001	11.0	LOS A	0.0	0.0	0.18	0.61	0.18	64.5
5	T1	All MCs	1443	7.1	1411	7.2	0.754	15.6	LOS B	15.2	112.9	0.74	0.67	0.74	62.3
6	R2	All MCs	467	5.4	457	5.4	* 1.305	215.0	LOS F	22.8	167.1	1.00	1.37	2.43	20.2
Approach			1912	6.7	1869	6.8	1.305	64.3	LOS E	22.8	167.1	0.80	0.84	1.15	36.5
East: Annangrove Rd															
7	L2	All MCs	248	7.2	248	7.2	0.310	20.5	LOS B	4.3	31.7	0.67	0.75	0.67	40.7
8	T1	All MCs	1	0.0	1	0.0	0.028	59.6	LOS E	0.0	0.2	1.00	0.57	1.00	33.2
9	R2	All MCs	477	1.1	477	1.1	* 1.225	255.5	LOS F	34.3	242.3	1.00	1.71	2.75	8.5
Approach			726	3.2	726	3.2	1.225	174.8	LOS F	34.3	242.3	0.89	1.38	2.04	11.6
North: Windsor Rd															
10	L2	All MCs	622	4.2	520	4.0	0.445	14.5	LOS B	5.3	38.2	0.46	0.74	0.46	54.6
11	T1	All MCs	1689	6.2	1410	5.9	* 0.997	84.3	LOS F	33.7	248.1	1.00	1.31	1.50	17.5
12	R2	All MCs	6	0.0	5	0.0	0.020	45.0	LOS D	0.1	0.5	0.79	0.66	0.79	45.2
Approach			2318	5.6	1935	5.4	0.997	65.4	LOS E	33.7	248.1	0.85	1.15	1.22	25.8
West: Rouse Hill Estate Access															
1	L2	All MCs	6	0.0	6	0.0	0.051	53.1	LOS D	0.2	1.5	0.94	0.66	0.94	22.0
2	T1	All MCs	1	0.0	1	0.0	0.051	58.7	LOS E	0.2	1.5	0.94	0.66	0.94	34.5
3	R2	All MCs	1	0.0	1	0.0	0.003	35.2	LOS C	0.0	0.2	0.82	0.58	0.82	28.6
Approach			8	0.0	8	0.0	0.051	51.5	LOS D	0.2	1.5	0.93	0.65	0.93	24.9
All Vehicles			4964	5.7	4539	6.2	1.305	82.5	LOS F	34.3	248.1	0.84	1.06	1.32	26.3

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)

Site: TCS 3789 [9. Windsor Rd - Rouse Rd - Mile End Rd (Site Folder: 10-Year Future AM)]

Network: 19 [AM - Windsor Corridor - Int 5 per existing layout + Int 7 upgrade to T-junction signal (Network Folder: 10-Year Future Conditions)]

8am-9am
Site Category: Proposed Design
Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 140 seconds (Network Site User-Given Phase Times)

Timings based on settings in the Network Timing dialog
Phase Times specified by the user
Phase Sequence: ADEG
Input Phase Sequence: A, D, E, G
Output Phase Sequence: A, D, E, G
Reference Phase: Phase A

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	Aver. Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Windsor Rd															
1	L2	All MCs	305	4.1	297	4.2	0.220	38.0	LOS C	2.9	21.3	0.38	0.65	0.38	54.9
2	T1	All MCs	1518	7.6	1476	7.6	0.933	74.0	LOS F	36.5	272.0	1.00	1.07	1.17	21.5
3	R2	All MCs	384	6.6	373	6.6	* 1.228	302.6	LOS F	15.6	115.5	1.00	1.35	2.32	6.4
Approach			2207	6.9	2146	7.0	1.228	108.8	LOS F	36.5	272.0	0.91	1.06	1.26	17.1
East: Mile End Rd															
4	L2	All MCs	399	4.7	399	4.7	1.019	93.3	LOS F	20.1	146.8	1.00	1.24	1.55	3.4
5	T1	All MCs	303	1.0	303	1.0	0.650	65.8	LOS E	7.3	51.3	0.98	0.80	0.99	25.0
6	R2	All MCs	212	2.0	212	2.0	0.935	71.8	LOS F	8.9	63.4	1.00	0.99	1.38	5.8
Approach			914	2.9	914	2.9	1.019	79.2	LOS F	20.1	146.8	0.99	1.03	1.32	10.6
North: Windsor Rd															
7	L2	All MCs	75	5.6	64	5.5	0.056	22.2	LOS B	1.0	7.2	0.40	0.70	0.40	58.1
8	T1	All MCs	1786	6.7	1530	6.6	* 1.244	236.4	LOS F	79.7	589.4	1.00	1.94	2.32	14.7
9	R2	All MCs	80	9.2	69	9.0	0.329	40.7	LOS C	1.7	12.8	0.95	0.76	0.95	48.3
Approach			1941	6.8	1663	6.7	1.244	220.1	LOS F	79.7	589.4	0.97	1.84	2.19	15.8
West: Rouse Rd															
10	L2	All MCs	169	1.2	169	1.2	0.348	50.4	LOS D	5.7	40.5	0.86	0.79	0.86	25.6
11	T1	All MCs	353	0.3	353	0.3	* 1.268	332.3	LOS F	31.6	221.5	1.00	1.84	2.50	7.3
12	R2	All MCs	256	5.3	256	5.3	* 1.875	873.3	LOS F	34.2	250.6	1.00	2.07	4.06	2.5
Approach			778	2.2	778	2.2	1.875	448.8	LOS F	34.2	250.6	0.97	1.68	2.66	5.0
All Vehicles			5840	5.6	5500	6.0	1.875	185.6	LOS F	79.7	589.4	0.95	1.38	1.75	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.

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)

Site: TCS 3788 [10. Windsor Rd - Commercial Rd (Site Folder: 10-Year Future AM)]

Network: 19 [AM - Windsor Corridor - Int 5 per existing layout + Int 7 upgrade to T-junction signal (Network Folder: 10-Year Future Conditions)]

8am-9am
Site Category: Proposed Design
Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 140 seconds (Network Site User-Given Phase Times)

Timings based on settings in the Network Timing dialog
Phase Times specified by the user
Phase Sequence: ABCD
Input Phase Sequence: A, B, C, D
Output Phase Sequence: A, B, C, D
Reference Phase: Phase A

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	Aver. Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Windsor Rd															
2	T1	All MCs	1894	6.9	1832	7.0	0.668	17.7	LOS B	26.6	197.0	0.76	0.45	0.76	42.9
3	R2	All MCs	376	2.5	363	2.5	* 0.749	62.9	LOS E	6.1	43.6	1.00	0.84	1.07	22.8
Approach			2269	6.2	2195	6.2	0.749	25.2	LOS B	26.6	197.0	0.80	0.52	0.81	35.7
East: Commercial Rd															
4	L2	All MCs	457	3.0	457	3.0	0.885	80.0	LOS F	16.9	121.4	1.00	1.07	1.16	9.7
6	R2	All MCs	311	6.4	311	6.4	* 0.726	83.2	LOS F	6.9	50.6	1.00	0.86	1.08	8.5
Approach			767	4.4	767	4.4	0.885	81.2	LOS F	16.9	121.4	1.00	0.99	1.13	9.1
North: Windsor Rd															
7	L2	All MCs	179	2.9	129	2.9	1.040	84.0	LOS F	43.2	317.7	1.00	1.24	1.51	18.8
8	T1	All MCs	2237	6.6	1611	6.5	* 1.040	73.0	LOS F	58.8	434.1	1.00	1.28	1.43	17.7
Approach			2416	6.4	1740	6.2	1.040	73.8	LOS F	58.8	434.1	1.00	1.28	1.44	17.8
All Vehicles			5453	6.0	4703	7.0	1.040	52.3	LOS D	58.8	434.1	0.91	0.88	1.09	21.0

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)

Site: TCS 3557 [11. Windsor Rd - Schofields Rd - Rouse Hill Dr (Site Folder: 10-Year Future AM)]

Network: 19 [AM - Windsor Corridor - Int 5 per existing layout + Int 7 upgrade to T-junction signal (Network Folder: 10-Year Future Conditions)]

8am-9am
Site Category: Proposed Design
Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 140 seconds (Network Site User-Given Phase Times)

Timings based on settings in the Network Timing dialog
Phase Times specified by the user
Phase Sequence: ADEG
Input Phase Sequence: A, D, E, G
Output Phase Sequence: A, D, E, G
Reference Phase: Phase A

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	Aver. Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Windsor Rd															
1	L2	All MCs	588	2.1	588	2.1	0.323	29.4	LOS C	7.3	51.7	0.64	0.77	0.64	52.7
2	T1	All MCs	1599	7.4	1599	7.4	* 1.014	91.1	LOS F	35.1	261.4	0.98	1.16	1.32	14.1
3	R2	All MCs	66	34.9	66	34.9	0.144	65.9	LOS E	1.2	11.0	0.90	0.73	0.90	23.3
Approach			2254	6.9	2254	6.9	1.014	74.2	LOS F	35.1	261.4	0.89	1.05	1.13	25.4
East: Rouse Hill Dr															
4	L2	All MCs	147	18.6	147	18.6	0.244	36.4	LOS C	4.2	33.9	0.73	0.75	0.73	28.6
5	T1	All MCs	192	6.6	192	6.6	0.307	55.1	LOS D	3.5	26.2	0.92	0.73	0.92	40.4
6	R2	All MCs	87	1.2	87	1.2	0.151	65.4	LOS E	1.2	8.8	0.93	0.71	0.93	11.2
Approach			426	9.6	426	9.6	0.307	50.7	LOS D	4.2	33.9	0.85	0.73	0.85	32.9
North: Windsor Rd															
7	L2	All MCs	82	0.0	61	0.0	0.270	89.9	LOS F	2.4	16.7	0.95	0.76	0.95	20.1
8	T1	All MCs	2047	6.9	1526	6.5	0.951	77.4	LOS F	26.4	195.4	1.00	1.07	1.23	27.6
9	R2	All MCs	575	3.8	429	3.6	0.764	81.7	LOS F	9.3	67.0	1.00	0.89	1.05	36.4
Approach			2704	6.0	2017	5.7	0.951	78.7	LOS F	26.4	195.4	1.00	1.02	1.19	30.2
West: Schofields Rd															
10	L2	All MCs	643	3.3	643	3.3	* 1.104	197.5	LOS F	45.0	323.6	1.00	1.27	1.81	20.5
11	T1	All MCs	422	1.0	422	1.0	0.639	85.5	LOS F	8.3	58.7	0.98	0.82	0.98	39.1
12	R2	All MCs	891	2.4	891	2.4	* 2.013	1016.1	LOS F	66.1	472.0	1.00	2.38	4.27	5.9
Approach			1956	2.4	1956	2.4	2.013	546.0	LOS F	66.1	472.0	1.00	1.68	2.75	9.6
All Vehicles			7340	5.5	6653	6.1	2.013	212.8	LOS F	66.1	472.0	0.95	1.21	1.61	15.3

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)

USER REPORT FOR NETWORK SITE

Project: 23009-Riverstone Sid v9.1 - 230728

Output produced by SIDRA INTERSECTION Version: 9.1.3.210 **Template: Movement Summary**

Site: TCS 1280 [1. Garfield Rd E - Windsor Rd - Terry Rd (Site Folder: 10-Year Future PM)]

Network: 20 [PM - Windsor Corridor - Int 5 per existing layout + Int 7 upgrade to T-junction signal (Network Folder: 10-Year Future Conditions)]

5pm-6pm
Site Category: Proposed Design
Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 120 seconds (Site User-Given Phase Times)

Timings based on settings in the Site Phasing & Timing dialog
Phase Times specified by the user
Phase Sequence: ADEG
Input Phase Sequence: A, D, E, G
Output Phase Sequence: A, D, E, G
Reference Phase: Phase A

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	Aver. Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Windsor Rd															
4	L2	All MCs	684	2.9	567	2.7	0.437	18.4	LOS B	7.7	55.2	0.54	0.81	0.54	58.3
5	T1	All MCs	1718	3.4	1422	3.2	0.845	9.4	LOS A	14.3	102.9	0.57	0.54	0.60	64.7
6	R2	All MCs	406	0.8	337	0.7	0.987	91.2	LOS F	14.1	99.6	1.00	1.14	1.53	30.7
Approach			2808	2.9	2326	2.7	0.987	23.4	LOS B	14.3	102.9	0.63	0.69	0.72	52.1
East: Terry Rd															
7	L2	All MCs	224	4.7	224	4.7	0.335	29.1	LOS C	5.2	37.9	0.75	0.75	0.75	31.2
8	T1	All MCs	381	0.8	381	0.8	* 0.897	69.3	LOS E	7.8	54.9	1.00	1.03	1.35	29.6
9	R2	All MCs	185	7.4	185	7.4	0.815	55.1	LOS D	6.3	46.6	1.00	0.91	1.19	22.2
Approach			791	3.5	791	3.5	0.897	54.6	LOS D	7.8	54.9	0.93	0.92	1.14	28.3
North: Windsor Rd															
10	L2	All MCs	242	3.0	239	3.0	0.208	23.1	LOS B	2.9	20.6	0.46	0.71	0.46	60.3
11	T1	All MCs	1457	2.1	1440	2.1	* 0.959	65.5	LOS E	33.0	235.4	1.00	1.14	1.29	37.1
12	R2	All MCs	741	1.7	732	1.7	* 1.386	423.4	LOS F	36.0	255.9	1.00	1.84	3.21	11.8
Approach			2440	2.1	2411	2.0	1.386	170.0	LOS F	36.0	255.9	0.95	1.31	1.79	21.2
West: Garfield Rd E															
1	L2	All MCs	388	1.1	388	1.1	0.492	18.3	LOS B	7.7	54.3	0.68	0.78	0.68	37.4
2	T1	All MCs	273	2.7	273	2.7	0.663	58.2	LOS E	4.9	35.3	1.00	0.83	1.05	30.7
3	R2	All MCs	460	3.0	460	3.0	* 1.152	194.3	LOS F	14.0	100.3	1.00	1.48	2.29	7.6
Approach			1121	2.3	1121	2.3	1.152	100.2	LOS F	14.0	100.3	0.89	1.08	1.43	15.5
All Vehicles			7160	2.6	6648	2.8	1.386	93.2	LOS F	36.0	255.9	0.82	1.01	1.28	26.3

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)

Site: 4 [4. Windsor Rd - Junction Rd (Site Folder: 10-Year Future PM)]

Network: 20 [PM - Windsor Corridor - Int 5 per existing layout + Int 7 upgrade to T-junction signal (Network Folder: 10-Year Future Conditions)]

5pm-6pm
Site Category: Proposed Design
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	Aver. Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
SouthEast: Windsor Rd															
3	L2	All MCs	117	3.6	103	3.4	0.086	8.5	LOS A	0.1	0.9	0.35	0.64	0.35	55.8
4	T1	All MCs	1749	3.4	1540	3.3	0.403	0.1	LOS A	0.0	0.0	0.00	0.00	0.00	79.7
Approach			1866	3.4	1642	3.3	0.403	0.6	LOS A	0.1	0.9	0.02	0.04	0.02	77.3
NorthWest: Windsor Rd															
5	T1	All MCs	1842	1.7	1842	1.7	0.779	13.4	LOS A	7.4	52.7	0.18	0.17	0.61	44.8
6	R2	All MCs	307	5.5	307	5.5	1.894	844.8	LOS F	37.8	277.0	1.00	4.56	18.90	3.6
Approach			2149	2.2	2149	2.2	1.894	132.3	NA	37.8	277.0	0.30	0.80	3.22	10.5
SouthWest: Junction Rd															
1	L2	All MCs	338	2.2	338	2.2	0.649	17.0	LOS B	1.7	12.4	0.81	1.14	1.54	45.9
2	R2	All MCs	83	3.8	83	3.8	1.601	644.3	LOS F	8.9	64.6	1.00	2.37	7.07	2.8
Approach			421	2.5	421	2.5	1.601	140.9	LOS F	8.9	64.6	0.85	1.38	2.63	15.4
All Vehicles			4437	2.8	4213	2.9	1.894	81.8	NA	37.8	277.0	0.25	0.56	1.92	20.3

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.

Site: TCS 4805 [5. Windsor Rd - Mt Carmel Dr - Existing layout (Site Folder: 10-Year Future PM)]

Network: 20 [PM - Windsor Corridor - Int 5 per existing layout + Int 7 upgrade to T-junction signal (Network Folder: 10-Year Future Conditions)]

5pm-6pm
Site Category: Proposed Design
Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 70 seconds (Site User-Given Phase Times)

Timings based on settings in the Site Phasing & Timing dialog
Phase Times specified by the user
Phase Sequence: ABC
Input Phase Sequence: A, B, C
Output Phase Sequence: A, B, C
Reference Phase: Phase A

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	Aver. Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
SouthEast: Windsor Rd															
5	T1	All MCs	1788	3.6	1557	3.4	0.566	5.1	LOS A	7.8	56.0	0.52	0.47	0.52	72.7
6	R2	All MCs	439	1.7	383	1.6	* 0.820	38.8	LOS C	7.4	52.3	1.00	1.03	1.22	46.6
Approach			2227	3.2	1940	3.1	0.820	11.8	LOS A	7.8	56.0	0.61	0.58	0.66	64.4
NorthEast: Mt Carmel Dr															
7	L2	All MCs	653	1.8	653	1.8	0.803	20.3	LOS B	11.1	78.6	0.89	0.91	0.99	25.8
9	R2	All MCs	137	1.5	137	1.5	* 0.326	38.2	LOS C	1.4	9.9	0.96	0.75	0.96	17.2
Approach			789	1.7	789	1.7	0.803	23.4	LOS B	11.1	78.6	0.90	0.88	0.99	23.7
NorthWest: Windsor Rd															
10	L2	All MCs	140	0.0	138	0.0	0.081	8.2	LOS A	0.4	2.8	0.23	0.66	0.23	55.1
11	T1	All MCs	1777	2.3	1748	2.3	* 0.754	22.6	LOS B	11.1	79.3	0.92	0.85	0.97	40.0
Approach			1917	2.1	1886	2.1	0.754	21.5	LOS B	11.1	79.3	0.87	0.83	0.92	41.1
All Vehicles			4934	2.6	4615	2.7	0.820	17.7	LOS B	11.1	79.3	0.77	0.74	0.82	51.5

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

* Critical Movement (Signal Timing)

Site: TCS 3986 [6. Windsor Rd - Nelson Rd (Site Folder: 10-Year Future PM)]

Network: 20 [PM - Windsor Corridor - Int 5 per existing layout + Int 7 upgrade to T-junction signal (Network Folder: 10-Year Future Conditions)]

5pm-6pm
Site Category: Proposed Design
Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 120 seconds (Site User-Given Phase Times)

Timings based on settings in the Site Phasing & Timing dialog
Phase Times specified by the user
Phase Sequence: ABDEG
Input Phase Sequence: A, B, D, E, G
Output Phase Sequence: A, B, D, E, G
Reference Phase: Phase A

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	Aver. Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Windsor Rd															
4	L2	All MCs	6	50.0	5	47.7	0.005	19.9	LOS B	0.0	0.4	0.28	0.65	0.28	42.5
5	T1	All MCs	2505	2.7	2018	2.5	0.995	44.3	LOS D	46.4	331.9	0.91	1.07	1.17	37.2
6	R2	All MCs	231	3.2	186	2.9	* 0.697	43.4	LOS D	4.0	28.6	0.99	0.83	1.05	43.9
Approach			2742	2.9	2208	2.6	0.995	44.1	LOS D	46.4	331.9	0.92	1.05	1.16	38.0
East: Nelson Rd															
7	L2	All MCs	271	1.6	271	1.6	* 0.744	63.2	LOS E	6.8	48.3	0.99	0.94	1.05	24.1
8	T1	All MCs	1	0.0	1	0.0	* 0.744	112.3	LOS F	6.8	48.3	0.99	0.94	1.05	26.7
9	R2	All MCs	342	3.4	342	3.4	* 1.009	104.1	LOS F	13.2	95.1	1.00	1.29	1.61	13.6
Approach			614	2.6	614	2.6	1.009	86.1	LOS F	13.2	95.1	1.00	1.14	1.37	16.8
North: Windsor Rd															
10	L2	All MCs	393	1.1	379	1.1	0.471	47.1	LOS D	7.5	52.9	0.72	0.87	0.72	48.6
11	T1	All MCs	1842	2.5	1778	2.5	* 1.111	144.4	LOS F	56.7	405.5	1.00	1.61	1.85	18.3
12	R2	All MCs	4	0.0	4	0.0	0.028	72.4	LOS F	0.1	0.5	0.96	0.63	0.96	36.2
Approach			2239	2.3	2161	2.2	1.111	127.2	LOS F	56.7	405.5	0.95	1.48	1.65	21.8
West: Nelson Rd															
1	L2	All MCs	7	0.0	7	0.0	0.037	51.0	LOS D	0.3	1.9	0.90	0.64	0.90	16.4
2	T1	All MCs	1	0.0	1	0.0	0.037	57.1	LOS E	0.3	1.9	0.90	0.64	0.90	25.2
3	R2	All MCs	4	25.0	4	25.0	0.017	38.0	LOS C	0.1	1.0	0.88	0.59	0.88	18.8
Approach			13	8.3	13	8.3	0.037	47.2	LOS D	0.3	1.9	0.90	0.62	0.90	18.0
All Vehicles			5607	2.6	4996	2.9	1.111	85.2	LOS F	56.7	405.5	0.94	1.25	1.40	25.8

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)

Site: 7v [7. Windsor Rd - Guntawong Rd - Convert to T-junction signal (Site Folder: 10-Year Future PM)]

Network: 20 [PM - Windsor Corridor - Int 5 per existing layout + Int 7 upgrade to T-junction signal (Network Folder: 10-Year Future Conditions)]

5pm-6pm
Site Category: Proposed Design
Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 150 seconds (Site Practical Cycle Time)

Timings based on settings in the Site Phasing & Timing dialog
Phase Times determined by the program
Downstream lane blockage effects included in determining phase times
Phase Sequence: ABCD
Input Phase Sequence: A, B, C, D*
Output Phase Sequence: A, B, C
Reference Phase: Phase A
(* Variable Phase)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	Aver. Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Windsor Rd															
4	L2	All MCs	224	0.9	166	0.9	0.831	11.1	LOS A	20.1	144.5	0.79	0.80	0.81	47.0
5	T1	All MCs	2045	3.7	1511	3.6	0.831	22.5	LOS B	34.1	246.3	0.82	0.78	0.83	40.5
Approach			2269	3.4	1677	3.4	0.831	21.4	LOS B	34.1	246.3	0.82	0.78	0.83	41.5
North: Windsor Rd															
11	T1	All MCs	2142	2.7	1902	2.6	* 0.877	20.1	LOS B	32.6	233.6	0.82	0.76	0.84	51.7
12	R2	All MCs	15	0.0	13	0.0	0.176	89.9	LOS F	0.6	4.2	0.99	0.68	0.99	29.0
Approach			2157	2.6	1915	2.6	0.877	20.5	LOS B	32.6	233.6	0.82	0.76	0.84	51.3
West: Guntawong Rd															
1	L2	All MCs	238	0.9	238	0.9	0.493	32.5	LOS C	7.6	53.7	0.80	0.81	0.80	28.0
3	R2	All MCs	214	0.0	214	0.0	* 0.465	68.5	LOS E	4.4	31.1	0.95	0.79	0.95	17.7
Approach			452	0.5	452	0.5	0.493	49.5	LOS D	7.6	53.7	0.88	0.80	0.88	22.0
All Vehicles			4878	2.8	4044	3.4	0.877	24.1	LOS B	34.1	246.3	0.83	0.77	0.84	42.9

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)

Site: TCS 3985 [8. Windsor Rd - Annangrove Rd (Site Folder: 10-Year Future PM)]

Network: 20 [PM - Windsor Corridor - Int 5 per existing layout + Int 7 upgrade to T-junction signal (Network Folder: 10-Year Future Conditions)]

5pm-6pm
Site Category: Proposed Design
Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 105 seconds (Site User-Given Phase Times)

Timings based on settings in the Site Phasing & Timing dialog
Phase Times specified by the user
Phase Sequence: ABDEG
Input Phase Sequence: A, B, D, E, G
Output Phase Sequence: A, B, D, E, G
Reference Phase: Phase A

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	Aver. Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Windsor Rd															
4	L2	All MCs	2	0.0	2	0.0	0.001	15.7	LOS B	0.0	0.0	0.16	0.62	0.16	64.6
5	T1	All MCs	2156	2.8	1586	2.7	0.915	23.4	LOS B	22.9	164.0	0.85	0.85	0.96	57.5
6	R2	All MCs	389	4.6	286	4.4	* 0.812	37.9	LOS C	3.6	26.2	0.99	0.83	1.13	50.5
Approach			2547	3.1	1874	2.9	0.915	25.6	LOS B	22.9	164.0	0.87	0.85	0.98	55.8
East: Annangrove Rd															
7	L2	All MCs	335	2.8	335	2.8	0.393	19.9	LOS B	5.4	38.6	0.64	0.75	0.64	42.6
8	T1	All MCs	2	0.0	2	0.0	0.011	49.0	LOS D	0.1	0.4	0.92	0.57	0.92	36.7
9	R2	All MCs	541	2.7	541	2.7	* 1.328	337.0	LOS F	43.0	307.8	1.00	2.09	3.24	6.6
Approach			878	2.8	878	2.8	1.328	215.4	LOS F	43.0	307.8	0.86	1.58	2.25	9.7
North: Windsor Rd															
10	L2	All MCs	515	1.0	462	1.0	0.388	24.1	LOS B	5.7	40.6	0.53	0.75	0.53	53.0
11	T1	All MCs	1596	2.9	1433	2.9	* 1.186	191.7	LOS F	48.3	346.1	1.00	1.82	2.39	8.5
12	R2	All MCs	3	0.0	3	0.0	0.015	46.5	LOS D	0.0	0.3	0.92	0.62	0.92	41.2
Approach			2114	2.4	1898	2.4	1.186	150.6	LOS F	48.3	346.1	0.88	1.56	1.94	13.4
West: Rouse Hill Estate Access															
1	L2	All MCs	4	0.0	4	0.0	0.020	44.5	LOS D	0.1	1.0	0.87	0.64	0.87	24.5
2	T1	All MCs	1	0.0	1	0.0	* 0.020	48.8	LOS D	0.1	1.0	0.87	0.64	0.87	37.0
3	R2	All MCs	1	0.0	1	0.0	0.003	33.2	LOS C	0.0	0.2	0.79	0.58	0.79	29.5
Approach			6	0.0	6	0.0	0.020	43.3	LOS D	0.1	1.0	0.86	0.63	0.86	28.2
All Vehicles			5545	2.8	4656	3.3	1.328	112.4	LOS F	48.3	346.1	0.87	1.27	1.61	21.2

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Override Site Data tab).
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
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)

Site: TCS 3789 [9. Windsor Rd - Rouse Rd - Mile End Rd (Site Folder: 10-Year Future PM)]

Network: 20 [PM - Windsor Corridor - Int 5 per existing layout + Int 7 upgrade to T-junction signal (Network Folder: 10-Year Future Conditions)]

5pm-6pm
Site Category: Proposed Design
Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 140 seconds (Network Site User-Given Phase Times)

Timings based on settings in the Network Timing dialog
Phase Times specified by the user
Phase Sequence: ADEG
Input Phase Sequence: A, D, E, G
Output Phase Sequence: A, D, E, G
Reference Phase: Phase A

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	Aver. Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Windsor Rd															
1	L2	All MCs	324	0.6	231	0.6	0.170	31.7	LOS C	2.0	14.1	0.31	0.67	0.31	55.5
2	T1	All MCs	2155	3.4	1537	3.4	1.037	104.0	LOS F	47.0	338.7	1.00	1.34	1.46	15.5
3	R2	All MCs	335	3.8	239	3.8	* 0.711	85.9	LOS F	5.1	36.8	1.00	0.83	1.07	19.6
Approach			2814	3.1	2007	3.1	1.037	93.5	LOS F	47.0	338.7	0.92	1.21	1.28	19.0
East: Mile End Rd															
4	L2	All MCs	362	2.6	362	2.6	0.816	57.4	LOS E	11.6	83.2	0.98	1.05	1.07	6.9
5	T1	All MCs	307	0.3	307	0.3	0.547	57.0	LOS E	7.1	49.5	0.95	0.78	0.95	26.1
6	R2	All MCs	226	0.9	226	0.9	0.847	55.3	LOS D	8.1	57.4	1.00	0.90	1.19	7.3
Approach			896	1.4	896	1.4	0.847	56.7	LOS E	11.6	83.2	0.98	0.92	1.06	15.6
North: Windsor Rd															
7	L2	All MCs	108	4.9	87	5.0	0.081	19.3	LOS B	1.5	10.8	0.44	0.71	0.44	56.5
8	T1	All MCs	1618	3.6	1295	3.7	* 1.083	92.4	LOS F	45.1	325.7	1.00	1.39	1.57	28.9
9	R2	All MCs	136	1.6	109	1.6	0.479	41.0	LOS C	2.4	17.4	0.97	0.77	0.97	48.3
Approach			1862	3.5	1491	3.6	1.083	84.4	LOS F	45.1	325.7	0.97	1.30	1.46	31.2
West: Rouse Rd															
10	L2	All MCs	161	1.3	161	1.3	0.285	44.9	LOS D	5.1	35.9	0.80	0.77	0.80	27.3
11	T1	All MCs	334	0.3	334	0.3	* 1.035	129.9	LOS F	20.0	140.7	1.00	1.32	1.62	15.5
12	R2	All MCs	202	2.1	202	2.1	* 0.947	92.2	LOS F	9.3	66.0	1.00	1.09	1.44	18.6
Approach			697	1.1	697	1.1	1.035	99.3	LOS F	20.0	140.7	0.95	1.13	1.38	18.0
All Vehicles			6268	2.8	5091	3.4	1.083	85.2	LOS F	47.0	338.7	0.95	1.17	1.31	22.8

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)

Site: TCS 3788 [10. Windsor Rd - Commercial Rd (Site Folder: 10-Year Future PM)]

Network: 20 [PM - Windsor Corridor - Int 5 per existing layout + Int 7 upgrade to T-junction signal (Network Folder: 10-Year Future Conditions)]

5pm-6pm
Site Category: Proposed Design
Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 140 seconds (Network Site User-Given Phase Times)

Timings based on settings in the Network Timing dialog
Phase Times specified by the user
Phase Sequence: ABCD
Input Phase Sequence: A, B, C, D
Output Phase Sequence: A, B, C, D
Reference Phase: Phase D

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	Aver. Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Windsor Rd															
2	T1	All MCs	2504	2.6	1725	2.5	0.802	16.6	LOS B	28.1	200.6	0.83	0.60	0.83	39.3
3	R2	All MCs	492	0.4	339	0.4	* 0.654	45.4	LOS D	5.2	36.2	0.98	0.81	0.99	25.7
Approach			2996	2.2	2064	2.1	0.802	21.3	LOS B	28.1	200.6	0.86	0.63	0.86	35.1
East: Commercial Rd															
4	L2	All MCs	398	2.1	398	2.1	0.704	54.8	LOS D	12.1	86.3	0.90	0.91	0.90	13.1
6	R2	All MCs	361	5.8	361	5.8	* 1.033	144.6	LOS F	11.6	85.6	1.00	1.24	1.72	4.8
Approach			759	3.9	759	3.9	1.033	97.5	LOS F	12.1	86.3	0.95	1.06	1.29	7.1
North: Windsor Rd															
7	L2	All MCs	291	1.1	235	1.1	1.018	64.9	LOS E	43.4	310.7	1.00	1.19	1.39	23.0
8	T1	All MCs	1908	3.5	1543	3.5	* 1.018	53.8	LOS D	53.8	387.5	1.00	1.22	1.33	22.3
Approach			2199	3.2	1778	3.1	1.018	55.3	LOS D	53.8	387.5	1.00	1.22	1.34	22.4
All Vehicles			5954	2.8	4600	3.6	1.033	47.0	LOS D	53.8	387.5	0.93	0.93	1.12	22.0

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)

Site: TCS 3557 [11. Windsor Rd - Schofields Rd - Rouse Hill Dr (Site Folder: 10-Year Future PM)]

Network: 20 [PM - Windsor Corridor - Int 5 per existing layout + Int 7 upgrade to T-junction signal (Network Folder: 10-Year Future Conditions)]

5pm-6pm
Site Category: Proposed Design
Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 140 seconds (Network Site User-Given Phase Times)

Timings based on settings in the Network Timing dialog
Phase Times specified by the user
Phase Sequence: ADEG
Input Phase Sequence: A, D, E, G
Output Phase Sequence: A, D, E, G
Reference Phase: Phase A

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	Aver. Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Windsor Rd															
1	L2	All MCs	963	1.3	963	1.3	0.682	46.8	LOS D	15.5	109.9	0.84	0.85	0.84	49.3
2	T1	All MCs	2266	2.6	2266	2.6	* 1.842	653.9	LOS F	109.0	780.0	1.00	2.45	3.45	2.3
3	R2	All MCs	85	29.6	85	29.6	0.188	74.0	LOS F	1.6	13.9	0.91	0.74	0.91	23.0
Approach			3315	2.9	3315	2.9	1.842	462.6	LOS F	109.0	780.0	0.95	1.94	2.62	6.0
East: Rouse Hill Dr															
4	L2	All MCs	151	7.7	151	7.7	0.215	33.2	LOS C	4.0	30.1	0.69	0.74	0.69	30.8
5	T1	All MCs	386	4.9	386	4.9	0.544	55.3	LOS D	7.4	53.7	0.95	0.79	0.95	40.4
6	R2	All MCs	215	1.0	215	1.0	0.581	72.8	LOS F	3.1	22.2	0.99	0.79	1.01	10.2
Approach			752	4.3	752	4.3	0.581	55.9	LOS D	7.4	53.7	0.91	0.78	0.92	32.4
North: Windsor Rd															
7	L2	All MCs	159	0.7	132	0.7	0.709	88.4	LOS F	5.7	39.9	1.00	0.84	1.08	18.6
8	T1	All MCs	1624	4.3	1353	4.3	0.821	56.7	LOS E	19.9	144.5	0.98	0.91	1.04	32.1
9	R2	All MCs	568	0.9	474	0.9	* 0.867	65.3	LOS E	10.1	71.3	1.00	0.89	1.12	40.2
Approach			2352	3.3	1959	3.2	0.867	60.9	LOS E	19.9	144.5	0.98	0.90	1.06	34.1
West: Schofields Rd															
10	L2	All MCs	478	2.0	478	2.0	0.748	56.9	LOS E	17.0	121.2	0.92	0.87	0.92	42.7
11	T1	All MCs	458	0.5	458	0.5	* 0.614	86.1	LOS F	8.8	62.1	0.97	0.82	0.97	39.8
12	R2	All MCs	623	2.2	623	2.2	* 1.708	761.8	LOS F	40.7	289.9	1.00	2.11	3.73	7.9
Approach			1559	1.6	1559	1.6	1.708	347.3	LOS F	40.7	289.9	0.97	1.35	2.06	14.4
All Vehicles			7977	2.9	7584	3.0	1.842	294.8	LOS F	109.0	780.0	0.96	1.44	1.94	11.2

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)

USER REPORT FOR NETWORK SITE

Project: 23009-Riverstone Sid v9.1 - 230728

Output produced by SIDRA INTERSECTION Version: 9.1.3.210 **Template: Movement Summary**

Site: TCS 4463 [12. Schofields Rd - Tallawong Rd - Ridgeline Dr (Site Folder: 10-Year Future AM)]

Network: 8 [AM - Schofields Corridor (Network Folder: 10-Year Future Conditions)]

8am-9am
Site Category: Proposed Design
Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 120 seconds (Network Site User-Given Phase Times)

Timings based on settings in the Network Timing dialog
Phase Times specified by the user
Phase Sequence: ADEG
Input Phase Sequence: A, D, E, G
Output Phase Sequence: A, D, E, G
Reference Phase: Phase A

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	Aver. Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Ridgeline Dr															
1	L2	All MCs	186	0.0	186	0.0	0.302	58.4	LOS E	5.0	34.8	0.79	0.77	0.79	25.0
2	T1	All MCs	299	0.4	299	0.4	1.067	162.2	LOS F	17.5	123.2	1.00	1.52	1.89	13.3
3	R2	All MCs	251	1.7	251	1.7	*1.372	422.6	LOS F	24.3	172.3	1.00	2.10	3.18	4.3
Approach			736	0.7	736	0.7	1.372	224.6	LOS F	24.3	172.3	0.95	1.53	2.05	8.7
East: Schofields Rd															
4	L2	All MCs	275	0.8	264	0.8	0.215	26.3	LOS B	3.4	23.9	0.43	0.69	0.43	45.1
5	T1	All MCs	1216	3.7	1167	3.8	0.828	45.1	LOS D	20.8	150.2	0.97	0.92	1.03	23.8
6	R2	All MCs	134	0.0	128	0.0	0.696	71.1	LOS F	4.8	33.7	1.00	0.85	1.05	20.4
Approach			1624	2.9	1558	3.0	0.828	44.1	LOS D	20.8	150.2	0.88	0.87	0.93	27.2
North: Tallawong Rd															
7	L2	All MCs	151	2.1	151	2.1	0.254	43.1	LOS D	4.0	28.4	0.79	0.77	0.79	13.6
8	T1	All MCs	329	2.9	329	2.9	0.994	100.0	LOS F	16.4	117.9	1.00	1.26	1.56	17.6
9	R2	All MCs	415	6.9	415	6.9	1.177	236.8	LOS F	15.1	112.0	1.00	1.54	2.41	2.9
Approach			895	4.6	895	4.6	1.177	153.8	LOS F	16.4	117.9	0.96	1.31	1.82	7.8
West: Schofields Rd															
10	L2	All MCs	584	2.9	570	2.9	*0.454	11.1	LOS A	4.7	33.4	0.31	0.72	0.31	53.1
11	T1	All MCs	1328	3.3	1296	3.3	*0.896	32.0	LOS C	22.4	161.6	0.92	0.90	1.01	39.5
12	R2	All MCs	182	0.6	178	0.6	0.971	93.7	LOS F	7.7	54.0	1.00	1.02	1.40	27.3
Approach			2095	3.0	2044	3.0	0.971	31.5	LOS C	22.4	161.6	0.76	0.86	0.85	40.3
All Vehicles			5349	2.9	5233	3.0	1.372	83.3	LOS F	24.3	172.3	0.86	1.03	1.21	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.
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)

Site: TCS 4511 [13. Schofields Rd - Hambledon Rd - Upgrade to 4-way signal (Site Folder: 10-Year Future AM)]

Network: 8 [AM - Schofields Corridor (Network Folder: 10-Year Future Conditions)]

8am-9am
Site Category: Proposed Design
Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 120 seconds (Network User-Given Cycle Time)

Timings based on settings in the Network Timing dialog
Phase Times determined by the program
Downstream lane blockage effects included in determining phase times
Phase Sequence: All Phases
Input Phase Sequence: A, B*, C*, D, D1*, D2*, E, F1*, F2*, G, G1*, G2*
Output Phase Sequence: A, B*, D, E, G, G1*
Reference Phase: Phase A
(* Variable Phase)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	Aver. Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Hambledon Rd															
1	L2	All MCs	348	3.3	348	3.3	0.383	17.2	LOS B	4.6	33.1	0.62	0.75	0.62	48.0
2	T1	All MCs	108	0.0	108	0.0	0.559	64.5	LOS E	2.0	14.3	1.00	0.77	1.04	26.0
3	R2	All MCs	392	5.9	392	5.9	* 1.019	111.8	LOS F	20.8	152.7	1.00	1.26	1.63	8.8
Approach			848	4.1	848	4.1	1.019	66.9	LOS E	20.8	152.7	0.84	0.99	1.14	22.5
East: Schofields Rd															
4	L2	All MCs	625	3.4	587	3.3	0.388	7.0	LOS A	2.2	16.1	0.12	0.61	0.12	56.8
5	T1	All MCs	1097	4.2	1029	4.2	0.947	16.8	LOS B	16.2	117.4	0.82	0.81	0.95	57.0
6	R2	All MCs	67	0.0	63	0.0	* 0.685	67.3	LOS E	2.4	16.5	1.00	0.76	1.04	32.8
Approach			1789	3.8	1680	3.7	0.947	15.3	LOS B	16.2	117.4	0.58	0.74	0.66	55.4
North: RoadName															
7	L2	All MCs	54	0.0	54	0.0	0.159	48.7	LOS D	1.7	11.6	0.87	0.70	0.87	23.5
8	T1	All MCs	149	0.0	149	0.0	* 0.767	67.4	LOS E	2.9	20.5	1.00	0.87	1.23	25.4
9	R2	All MCs	167	0.0	167	0.0	0.208	47.2	LOS D	2.5	17.3	0.86	0.75	0.86	37.3
Approach			371	0.0	371	0.0	0.767	55.6	LOS D	2.9	20.5	0.92	0.79	1.01	30.8
West: Schofields Rd															
10	L2	All MCs	204	0.0	204	0.0	0.152	49.1	LOS D	0.9	6.5	0.19	0.63	0.19	56.8
11	T1	All MCs	1661	2.7	1661	2.7	* 1.027	110.6	LOS F	45.7	327.6	1.00	1.42	1.53	19.2
12	R2	All MCs	456	1.6	456	1.6	0.998	98.1	LOS F	15.8	112.2	1.00	1.13	1.52	26.4
Approach			2321	2.2	2321	2.2	1.027	102.7	LOS F	45.7	327.6	0.93	1.30	1.41	22.7
All Vehicles			5329	2.9	5220	2.9	1.027	65.4	LOS E	45.7	327.6	0.80	1.03	1.10	31.4

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Override Site Data tab).
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).

Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Green.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

* Critical Movement (Signal Timing)

Site: TCS 4474 [14. Schofields Rd - Cudgegong Rd (Site Folder: 10-Year Future AM)]

Network: 8 [AM - Schofields Corridor (Network Folder: 10-Year Future Conditions)]

8am-9am
Site Category: Proposed Design
Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 120 seconds (Network Site User-Given Phase Times)

Timings based on settings in the Network Timing dialog
Phase Times specified by the user
Phase Sequence: ABC
Input Phase Sequence: A, B, C
Output Phase Sequence: A, B, C
Reference Phase: Phase A

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	Aver. Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
East: Schofields Rd															
5	T1	All MCs	1137	3.2	1137	3.2	0.514	32.1	LOS C	18.5	132.9	0.99	0.60	0.99	48.2
6	R2	All MCs	239	5.3	239	5.3	0.671	66.1	LOS E	4.4	32.1	1.00	0.83	1.07	37.7
Approach			1376	3.6	1376	3.6	0.671	38.0	LOS C	18.5	132.9	0.99	0.64	1.01	45.7
North: Cudgegong Rd															
7	L2	All MCs	622	1.9	622	1.9	* 0.777	46.4	LOS D	14.9	105.9	0.88	0.95	0.88	49.4
9	R2	All MCs	539	2.0	539	2.0	* 1.145	209.6	LOS F	37.4	265.9	1.00	1.53	2.16	4.1
Approach			1161	1.9	1161	1.9	1.145	122.2	LOS F	37.4	265.9	0.94	1.22	1.48	21.6
West: Schofields Rd															
10	L2	All MCs	333	5.7	314	5.8	0.930	19.8	LOS B	30.0	216.5	1.00	0.98	1.10	26.5
11	T1	All MCs	1379	2.4	1299	2.5	0.930	63.6	LOS E	30.0	216.5	1.00	1.02	1.11	43.8
Approach			1712	3.1	1613	3.1	0.930	55.1	LOS D	30.0	216.5	1.00	1.01	1.11	41.7
All Vehicles			4248	2.9	4149	3.0	1.145	68.2	LOS E	37.4	265.9	0.98	0.94	1.18	36.0

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)

USER REPORT FOR NETWORK SITE

Project: 23009-Riverstone Sid v9.1 - 230728

Output produced by SIDRA INTERSECTION Version: 9.1.3.210 **Template: Movement Summary**

Site: TCS 4463 [12. Schofields Rd - Tallawong Rd - Ridgeline Dr (Site Folder: 10-Year Future PM)]

Network: 11 [PM - Schofields Corridor (Network Folder: 10-Year Future Conditions)]

5pm-6pm
Site Category: Proposed Design
Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 120 seconds (Network Site User-Given Phase Times)

Timings based on settings in the Network Timing dialog
Phase Times specified by the user
Phase Sequence: ADEG
Input Phase Sequence: A, D, E, G
Output Phase Sequence: A, D, E, G
Reference Phase: Phase A

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	Aver. Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Ridgeline Dr															
1	L2	All MCs	134	0.8	134	0.8	0.224	45.0	LOS D	3.5	24.7	0.78	0.75	0.78	25.1
2	T1	All MCs	220	1.0	220	1.0	0.650	56.4	LOS D	7.3	51.9	0.97	0.81	0.97	26.1
3	R2	All MCs	217	1.5	217	1.5	*1.185	250.2	LOS F	16.0	113.7	1.00	1.68	2.44	6.8
Approach			571	1.1	571	1.1	1.185	127.4	LOS F	16.0	113.7	0.94	1.13	1.49	13.2
East: Schofields Rd															
4	L2	All MCs	292	0.0	292	0.0	0.210	7.8	LOS A	0.9	6.3	0.12	0.62	0.12	49.6
5	T1	All MCs	1398	1.3	1398	1.3	*0.918	25.5	LOS B	25.1	177.9	0.85	0.85	0.96	32.2
6	R2	All MCs	105	2.0	105	2.0	0.772	73.3	LOS F	4.1	28.9	1.00	0.87	1.16	20.0
Approach			1795	1.1	1795	1.1	0.918	25.4	LOS B	25.1	177.9	0.74	0.82	0.83	34.3
North: Tallawong Rd															
7	L2	All MCs	97	0.0	97	0.0	0.166	37.8	LOS C	2.5	17.6	0.77	0.75	0.77	13.7
8	T1	All MCs	228	1.4	228	1.4	0.594	48.8	LOS D	7.5	53.4	0.96	0.81	0.96	26.0
9	R2	All MCs	379	5.3	379	5.3	1.064	145.0	LOS F	10.8	79.1	1.00	1.31	1.93	4.5
Approach			704	3.3	704	3.3	1.064	99.0	LOS F	10.8	79.1	0.96	1.07	1.46	10.5
West: Schofields Rd															
10	L2	All MCs	614	2.1	546	2.0	*0.393	16.9	LOS B	11.0	78.2	0.74	0.58	0.74	48.6
11	T1	All MCs	1361	1.6	1212	1.6	0.810	45.4	LOS D	21.6	153.1	0.99	0.90	1.01	33.4
12	R2	All MCs	174	0.6	155	0.6	1.127	202.1	LOS F	10.0	70.5	1.00	1.28	2.16	16.6
Approach			2148	1.7	1913	1.6	1.127	49.9	LOS D	21.6	153.1	0.92	0.84	1.03	32.6
All Vehicles			5218	1.6	4982	1.7	1.185	56.9	LOS E	25.1	177.9	0.86	0.90	1.07	24.8

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)

Site: TCS 4511 [13. Schofields Rd - Hambledon Rd - Upgrade to 4-way signal (Site Folder: 10-Year Future PM)]

Network: 11 [PM - Schofields Corridor (Network Folder: 10-Year Future Conditions)]

5pm-6pm
Site Category: Proposed Design
Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 120 seconds (Network User-Given Cycle Time)

Timings based on settings in the Network Timing dialog
Phase Times determined by the program
Downstream lane blockage effects included in determining phase times
Phase Sequence: All Phases
Input Phase Sequence: A, B*, C*, D, D1*, D2*, E, F1*, F2*, G, G1*, G2*
Output Phase Sequence: A, D, E, G, G1*
Reference Phase: Phase A
(* Variable Phase)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	Aver. Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Hambledon Rd															
1	L2	All MCs	367	1.1	367	1.1	1.253	276.3	LOS F	29.0	205.1	1.00	1.69	2.71	10.0
2	T1	All MCs	153	0.0	153	0.0	0.674	69.7	LOS E	2.9	20.3	1.00	0.82	1.12	26.0
3	R2	All MCs	687	2.1	687	2.1	* 1.225	276.9	LOS F	54.9	391.1	1.00	1.76	2.51	4.1
Approach			1207	1.6	1207	1.6	1.253	250.5	LOS F	54.9	391.1	1.00	1.62	2.39	7.4
East: Schofields Rd															
4	L2	All MCs	434	5.1	429	5.1	0.300	21.4	LOS B	0.4	3.1	0.03	0.59	0.03	56.9
5	T1	All MCs	1360	4.2	1344	4.2	* 1.230	272.5	LOS F	56.6	410.1	1.00	2.01	2.51	15.6
6	R2	All MCs	18	0.0	18	0.0	0.088	83.1	LOS F	0.6	4.4	1.00	0.72	1.00	33.4
Approach			1812	4.4	1790	4.3	1.230	210.5	LOS F	56.6	410.1	0.77	1.66	1.90	18.2
North: RoadName															
7	L2	All MCs	34	0.0	34	0.0	0.077	41.1	LOS C	0.9	6.5	0.79	0.67	0.79	26.0
8	T1	All MCs	181	0.0	181	0.0	* 0.796	67.1	LOS E	3.5	24.8	1.00	0.90	1.26	25.5
9	R2	All MCs	202	0.0	202	0.0	0.176	38.0	LOS C	2.6	18.4	0.77	0.74	0.77	40.5
Approach			417	0.0	417	0.0	0.796	50.9	LOS D	3.5	24.8	0.87	0.80	0.98	32.7
West: Schofields Rd															
10	L2	All MCs	160	0.0	160	0.0	0.117	53.6	LOS D	0.6	4.1	0.17	0.63	0.17	57.1
11	T1	All MCs	1249	1.9	1249	1.9	1.096	168.8	LOS F	40.4	287.7	1.00	1.60	1.91	13.4
12	R2	All MCs	354	2.4	354	2.4	* 1.113	188.7	LOS F	22.8	162.6	1.00	1.40	2.06	15.1
Approach			1763	1.9	1763	1.9	1.113	162.3	LOS F	40.4	287.7	0.92	1.47	1.78	15.4
All Vehicles			5199	2.5	5178	2.5	1.253	190.6	LOS F	56.6	410.1	0.88	1.52	1.90	14.8

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)

Site: TCS 4474 [14. Schofields Rd - Cudgegong Rd (Site Folder: 10-Year Future PM)]

Network: 11 [PM - Schofields Corridor (Network Folder: 10-Year Future Conditions)]

5pm-6pm
Site Category: Proposed Design
Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 120 seconds (Network Site User-Given Phase Times)

Timings based on settings in the Network Timing dialog
Phase Times specified by the user
Phase Sequence: ABC
Input Phase Sequence: A, B, C
Output Phase Sequence: A, B, C
Reference Phase: Phase A

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	Aver. Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
East: Schofields Rd															
5	T1	All MCs	1428	1.3	1428	1.3	0.657	35.1	LOS C	23.2	164.5	1.00	0.69	1.00	46.9
6	R2	All MCs	304	4.5	304	4.5	1.020	116.6	LOS F	7.8	56.9	1.00	1.16	1.78	28.4
Approach			1733	1.8	1733	1.8	1.020	49.4	LOS D	23.2	164.5	1.00	0.77	1.14	41.5
North: Cudgegong Rd															
7	L2	All MCs	309	2.7	309	2.7	0.368	19.1	LOS B	5.7	40.7	0.61	0.74	0.61	54.0
9	R2	All MCs	429	0.5	429	0.5	0.766	48.2	LOS D	14.4	101.1	0.97	0.88	1.01	14.1
Approach			739	1.4	739	1.4	0.766	36.1	LOS C	14.4	101.1	0.82	0.82	0.84	36.1
West: Schofields Rd															
10	L2	All MCs	354	2.7	315	2.6	* 0.839	11.7	LOS A	21.7	154.2	0.96	0.92	0.99	34.9
11	T1	All MCs	1309	1.2	1166	1.2	* 0.839	48.0	LOS D	25.1	177.4	0.98	0.92	1.02	47.6
Approach			1663	1.5	1481	1.5	0.839	40.2	LOS C	25.1	177.4	0.98	0.92	1.01	46.1
All Vehicles			4135	1.6	3953	1.7	1.020	43.5	LOS D	25.1	177.4	0.96	0.84	1.03	42.6

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)

USER REPORT FOR NETWORK SITE

Project: 23009-Riverstone Sid v9.1 - 230728

Output produced by SIDRA INTERSECTION Version: 9.1.3.210 **Template: Movement Summary**

Site: 3a [3. Garfield Rd E - Edmund St (Site Folder: 10-Year Future AM)]

Network: 9 [AM - Garfield Corridor (Network Folder: 10-Year Future Conditions)]

8am-9am
Site Category: Proposed Design
Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 120 seconds (Network User-Given Cycle Time)

Timings based on settings in the Network Timing dialog
Phase Times determined by the program
Downstream lane blockage effects included in determining phase times
Phase Sequence: ABC
Input Phase Sequence: A, B, C
Output Phase Sequence: A, B, C
Reference Phase: Phase A

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	Aver. Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
East: Garfield Rd E															
11	T1	All MCs	1051	5.8	1051	5.8	0.349	5.0	LOS A	7.3	53.5	0.41	0.28	0.41	65.6
12	R2	All MCs	157	4.0	157	4.0	* 0.322	50.0	LOS D	2.9	21.1	0.85	0.75	0.85	33.7
Approach			1207	5.6	1207	5.6	0.349	10.9	LOS A	7.3	53.5	0.47	0.34	0.47	59.8
North: Edmund St															
1	L2	All MCs	178	3.0	178	3.0	0.335	40.5	LOS C	5.0	35.9	0.83	0.78	0.83	23.9
3	R2	All MCs	36	5.9	36	5.9	* 0.268	63.5	LOS E	1.3	9.3	0.98	0.73	0.98	33.5
Approach			214	3.4	214	3.4	0.335	44.3	LOS D	5.0	35.9	0.86	0.77	0.86	26.6
West: Garfield Rd E															
4	L2	All MCs	54	7.8	54	7.8	0.042	11.1	LOS A	0.5	3.8	0.29	0.66	0.29	52.6
5	T1	All MCs	711	8.0	711	8.0	* 0.329	13.6	LOS A	6.4	48.2	0.55	0.48	0.55	53.6
Approach			764	8.0	764	8.0	0.329	13.4	LOS A	6.4	48.2	0.53	0.50	0.53	53.5
All Vehicles			2185	6.2	2185	6.2	0.349	15.0	LOS B	7.3	53.5	0.53	0.44	0.53	54.3

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)

Site: 20 [20. Garfield Rd E - Hambledon Rd (Access 2) (Site Folder: 10-Year Future AM)]

Network: 9 [AM - Garfield Corridor (Network Folder: 10-Year Future Conditions)]

8am-9am
Site Category: Proposed Design
Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 120 seconds (Network User-Given Cycle Time)

Timings based on settings in the Network Timing dialog
Phase Times determined by the program
Downstream lane blockage effects included in determining phase times
Phase Sequence: All Phases
Input Phase Sequence: A, B*, C*, D, D1*, D2*, E, F1*, F2*, G, G1*, G2*
Output Phase Sequence: A, C*, D, D2*, E, G, G1*
Reference Phase: Phase A
(* Variable Phase)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	Aver. Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Hambledon Rd (Access 2)															
1	L2	All MCs	112	0.0	112	0.0	0.103	17.2	LOS B	1.7	12.1	0.47	0.69	0.47	38.6
2	T1	All MCs	1	0.0	1	0.0	0.002	34.5	LOS C	0.0	0.2	0.76	0.46	0.76	38.6
3	R2	All MCs	166	0.0	166	0.0	* 0.287	33.8	LOS C	4.1	29.0	0.78	0.75	0.78	29.2
Approach			279	0.0	279	0.0	0.287	27.1	LOS B	4.1	29.0	0.66	0.73	0.66	32.3
East: Garfield Rd E															
4	L2	All MCs	331	0.0	331	0.0	0.388	26.5	LOS B	7.1	49.4	0.64	0.77	0.64	43.0
5	T1	All MCs	331	0.0	331	0.0	* 0.424	54.4	LOS D	5.9	41.0	1.00	0.84	1.00	23.1
6	R2	All MCs	1	0.0	1	0.0	* 0.002	32.6	LOS C	0.0	0.1	0.92	0.57	0.92	40.3
Approach			662	0.0	662	0.0	0.424	40.4	LOS C	7.1	49.4	0.82	0.80	0.82	33.3
North: Hambledon Rd (Access 2)															
7	L2	All MCs	3	0.0	3	0.0	0.008	21.8	LOS B	0.1	0.4	0.77	0.61	0.77	33.7
8	T1	All MCs	2	0.0	2	0.0	0.008	49.8	LOS D	0.1	0.4	0.88	0.57	0.88	34.4
9	R2	All MCs	3	0.0	3	0.0	0.010	33.9	LOS C	0.1	0.5	0.84	0.62	0.84	29.2
Approach			8	0.0	8	0.0	0.010	33.4	LOS C	0.1	0.5	0.82	0.60	0.82	32.4
West: Garfield Rd E															
10	L2	All MCs	4	0.0	4	0.0	0.006	18.5	LOS B	0.1	0.4	0.51	0.62	0.51	48.6
11	T1	All MCs	301	0.0	301	0.0	0.265	21.9	LOS B	3.3	23.0	0.56	0.46	0.56	41.0
12	R2	All MCs	72	0.0	72	0.0	0.070	28.7	LOS C	0.6	4.3	0.51	0.67	0.51	43.3
Approach			377	0.0	377	0.0	0.265	23.2	LOS B	3.3	23.0	0.55	0.50	0.55	41.8
All Vehicles			1326	0.0	1326	0.0	0.424	32.7	LOS C	7.1	49.4	0.71	0.70	0.71	35.2

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Override Site Data tab).
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Green.

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

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

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

* Critical Movement (Signal Timing)

Site: 21 [21. Garfield Rd E - Access 3 (Site Folder: 10-Year Future AM)]

Network: 9 [AM - Garfield Corridor (Network Folder: 10-Year Future Conditions)]

8am-9am
Site Category: Proposed Design
Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 120 seconds (Network User-Given Cycle Time)

Timings based on settings in the Network Timing dialog
Phase Times determined by the program
Downstream lane blockage effects included in determining phase times
Phase Sequence: All Phase
Input Phase Sequence: A, B*, C*, D, E, E1*, E2*
Output Phase Sequence: A, B*, D, E, E2*
Reference Phase: Phase A
(* Variable Phase)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	Aver. Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Access Rd 3															
1	L2	All MCs	61	0.0	61	0.0	0.119	11.7	LOS A	2.1	14.7	0.52	0.57	0.52	39.0
2	T1	All MCs	61	0.0	61	0.0	0.119	22.2	LOS B	2.1	14.7	0.52	0.57	0.52	47.1
3	R2	All MCs	487	0.0	487	0.0	* 0.675	28.7	LOS C	12.9	90.6	0.80	0.82	0.80	41.5
Approach			609	0.0	609	0.0	0.675	26.4	LOS B	12.9	90.6	0.74	0.77	0.74	41.8
East: Garfield Rd E															
4	L2	All MCs	167	0.0	167	0.0	0.676	62.0	LOS E	6.0	41.7	1.00	0.83	1.04	29.8
5	T1	All MCs	434	0.0	434	0.0	0.702	54.6	LOS D	7.6	53.4	1.00	0.85	1.04	22.3
6	R2	All MCs	66	0.0	66	0.0	* 0.134	38.1	LOS C	0.8	5.7	0.91	0.71	0.91	37.6
Approach			667	0.0	667	0.0	0.702	54.8	LOS D	7.6	53.4	0.99	0.83	1.03	26.4
North: Access Rd 3															
7	L2	All MCs	268	0.0	268	0.0	0.203	10.6	LOS A	3.0	20.9	0.34	0.67	0.34	51.4
8	T1	All MCs	48	0.0	48	0.0	0.310	16.9	LOS B	4.5	31.3	0.60	0.69	0.60	44.4
9	R2	All MCs	171	0.0	171	0.0	0.310	24.4	LOS B	4.5	31.3	0.62	0.69	0.62	35.0
Approach			487	0.0	487	0.0	0.310	16.1	LOS B	4.5	31.3	0.46	0.68	0.46	45.7
West: Garfield Rd E															
10	L2	All MCs	47	0.0	47	0.0	0.219	45.8	LOS D	1.2	8.7	0.74	0.71	0.74	34.8
11	T1	All MCs	382	0.0	382	0.0	* 0.692	32.4	LOS C	5.8	40.7	0.80	0.70	0.81	40.9
12	R2	All MCs	47	0.0	47	0.0	0.091	42.3	LOS C	0.7	5.1	0.70	0.69	0.70	36.3
Approach			477	0.0	477	0.0	0.692	34.7	LOS C	5.8	40.7	0.79	0.70	0.80	39.7
All Vehicles			2241	0.0	2241	0.0	0.702	34.4	LOS C	12.9	90.6	0.77	0.75	0.78	37.0

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)

USER REPORT FOR NETWORK SITE

Project: 23009-Riverstone Sid v9.1 - 230728

Output produced by SIDRA INTERSECTION Version: 9.1.3.210 **Template: Movement Summary**

Site: 3a [3. Garfield Rd E - Edmund St (Site Folder: 10-Year Future PM)]

Network: 12 [PM - Garfield Corridor (Network Folder: 10-Year Future Conditions)]

5pm-6pm
Site Category: Proposed Design
Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 120 seconds (Network User-Given Cycle Time)

Timings based on settings in the Network Timing dialog
Phase Times determined by the program
Downstream lane blockage effects included in determining phase times
Phase Sequence: ABC
Input Phase Sequence: A, B, C
Output Phase Sequence: A, B, C
Reference Phase: Phase A

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	Aver. Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
East: Garfield Rd E															
11	T1	All MCs	903	6.8	903	6.8	0.302	2.3	LOS A	3.2	23.9	0.22	0.19	0.22	67.9
12	R2	All MCs	306	2.1	306	2.1	* 0.444	51.1	LOS D	6.1	43.2	0.92	0.80	0.92	33.4
Approach			1209	5.6	1209	5.6	0.444	14.7	LOS B	6.1	43.2	0.40	0.35	0.40	55.9
North: Edmund St															
1	L2	All MCs	216	2.4	216	2.4	0.330	34.5	LOS C	5.6	40.0	0.77	0.77	0.77	25.9
3	R2	All MCs	35	6.1	35	6.1	* 0.260	63.4	LOS E	1.2	9.1	0.98	0.73	0.98	33.5
Approach			251	2.9	251	2.9	0.330	38.5	LOS C	5.6	40.0	0.80	0.76	0.80	27.8
West: Garfield Rd E															
4	L2	All MCs	55	7.7	55	7.7	0.047	13.7	LOS A	0.7	4.9	0.36	0.67	0.36	51.2
5	T1	All MCs	884	6.4	884	6.4	* 0.457	19.5	LOS B	9.9	73.1	0.68	0.60	0.68	48.7
Approach			939	6.5	939	6.5	0.457	19.1	LOS B	9.9	73.1	0.66	0.61	0.66	49.0
All Vehicles			2399	5.7	2399	5.7	0.457	18.9	LOS B	9.9	73.1	0.54	0.49	0.54	50.6

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)

Site: 20 [20. Garfield Rd E - Hambledon Rd (Access 2) (Site Folder: 10-Year Future PM)]

Network: 12 [PM - Garfield Corridor (Network Folder: 10-Year Future Conditions)]

5pm-6pm
Site Category: Proposed Design
Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 120 seconds (Network User-Given Cycle Time)

Timings based on settings in the Network Timing dialog
Phase Times determined by the program
Downstream lane blockage effects included in determining phase times
Phase Sequence: All Phases
Input Phase Sequence: A, B*, C*, D, D1*, D2*, E, F1*, F2*, G, G1*, G2*
Output Phase Sequence: A, B*, D, D2*, E, G, G2*
Reference Phase: Phase A
(* Variable Phase)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	Aver. Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Hambledon Rd (Access 2)															
1	L2	All MCs	108	0.0	108	0.0	*0.109	14.1	LOS A	1.3	9.3	0.52	0.69	0.52	41.2
2	T1	All MCs	3	0.0	3	0.0	0.006	32.4	LOS C	0.1	0.6	0.74	0.48	0.74	39.5
3	R2	All MCs	162	0.0	162	0.0	*0.273	32.9	LOS C	4.0	27.7	0.77	0.75	0.77	29.6
Approach			274	0.0	274	0.0	0.273	25.5	LOS B	4.0	27.7	0.67	0.72	0.67	33.4
East: Garfield Rd E															
4	L2	All MCs	268	0.0	268	0.0	*0.354	25.9	LOS B	4.7	32.9	0.95	0.72	0.95	43.3
5	T1	All MCs	268	0.0	268	0.0	0.359	49.8	LOS D	4.6	31.9	0.97	0.78	0.97	24.5
6	R2	All MCs	5	0.0	5	0.0	0.008	52.4	LOS D	0.1	0.6	0.89	0.63	0.89	33.1
Approach			542	0.0	542	0.0	0.359	38.0	LOS C	4.7	32.9	0.96	0.75	0.96	34.4
North: Hambledon Rd (Access 2)															
7	L2	All MCs	2	0.0	2	0.0	0.007	42.1	LOS C	0.1	0.5	0.83	0.61	0.83	24.2
8	T1	All MCs	2	0.0	2	0.0	0.007	53.5	LOS D	0.1	0.5	0.89	0.57	0.89	33.4
9	R2	All MCs	2	0.0	2	0.0	0.007	34.1	LOS C	0.0	0.3	0.85	0.60	0.85	29.1
Approach			6	0.0	6	0.0	0.007	43.2	LOS D	0.1	0.5	0.86	0.59	0.86	29.5
West: Garfield Rd E															
10	L2	All MCs	5	0.0	5	0.0	0.007	22.2	LOS B	0.1	0.5	0.43	0.63	0.43	46.5
11	T1	All MCs	429	0.0	429	0.0	0.367	19.1	LOS B	4.6	31.9	0.53	0.44	0.53	43.3
12	R2	All MCs	102	0.0	102	0.0	*0.122	28.8	LOS C	1.0	6.8	0.82	0.72	0.82	43.3
Approach			537	0.0	537	0.0	0.367	21.0	LOS B	4.6	31.9	0.58	0.50	0.58	43.3
All Vehicles			1359	0.0	1359	0.0	0.367	28.8	LOS C	4.7	32.9	0.75	0.64	0.75	37.2

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)

Site: 21 [21. Garfield Rd E - Access 3 (Site Folder: 10-Year Future PM)]

Network: 12 [PM - Garfield Corridor (Network Folder: 10-Year Future Conditions)]

5pm-6pm
Site Category: Proposed Design
Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 120 seconds (Network User-Given Cycle Time)

Timings based on settings in the Network Timing dialog
Phase Times determined by the program
Downstream lane blockage effects included in determining phase times
Phase Sequence: All Phase
Input Phase Sequence: A, B*, C*, D, E, E1*, E2*
Output Phase Sequence: A, B*, D, E, E2*
Reference Phase: Phase A
(* Variable Phase)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	Aver. Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Access Rd 3															
1	L2	All MCs	34	0.0	34	0.0	0.122	26.5	LOS B	1.8	12.3	0.77	0.67	0.77	28.0
2	T1	All MCs	34	0.0	34	0.0	0.122	45.6	LOS D	1.8	12.3	0.77	0.67	0.77	37.8
3	R2	All MCs	272	0.0	272	0.0	* 0.675	47.9	LOS D	8.8	61.7	0.95	0.84	0.95	34.0
Approach			339	0.0	339	0.0	0.675	45.6	LOS D	8.8	61.7	0.91	0.81	0.91	34.0
East: Garfield Rd E															
4	L2	All MCs	481	0.0	481	0.0	* 0.691	40.3	LOS C	14.5	101.5	0.91	0.86	0.91	36.4
5	T1	All MCs	421	0.0	421	0.0	0.270	26.8	LOS B	5.0	35.1	0.71	0.65	0.71	34.1
6	R2	All MCs	301	0.0	301	0.0	* 0.360	28.7	LOS C	2.4	16.8	0.89	0.78	0.89	41.6
Approach			1203	0.0	1203	0.0	0.691	32.7	LOS C	14.5	101.5	0.83	0.77	0.83	37.3
North: Access Rd 3															
7	L2	All MCs	95	0.0	95	0.0	0.161	23.5	LOS B	2.7	18.6	0.68	0.70	0.68	40.8
8	T1	All MCs	42	0.0	42	0.0	0.246	44.8	LOS D	2.7	18.7	0.75	0.72	0.75	38.1
9	R2	All MCs	74	0.0	74	0.0	0.246	44.4	LOS D	2.7	18.7	0.83	0.74	0.83	25.8
Approach			211	0.0	211	0.0	0.246	35.1	LOS C	2.7	18.7	0.75	0.72	0.75	35.6
West: Garfield Rd E															
10	L2	All MCs	185	0.0	185	0.0	0.363	29.3	LOS C	3.8	26.4	0.60	0.74	0.60	41.3
11	T1	All MCs	308	0.0	308	0.0	0.264	19.0	LOS B	3.1	21.4	0.47	0.49	0.47	48.2
12	R2	All MCs	123	0.0	123	0.0	0.227	42.5	LOS C	2.0	13.9	0.73	0.72	0.73	36.3
Approach			617	0.0	617	0.0	0.363	26.8	LOS B	3.8	26.4	0.56	0.61	0.56	43.2
All Vehicles			2369	0.0	2369	0.0	0.691	33.2	LOS C	14.5	101.5	0.77	0.73	0.77	38.1

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)

USER REPORT FOR SITE

Project: 23009-Riverstone Sid v9.1 - 230913 Updates

Output produced by SIDRA INTERSECTION Version: 9.1.3.210 **Template: Movement Summary**

Site: 15v [15. Guntawong Rd - Cudgegong Rd - Convert to Roundabout (Site Folder: 10-Year Future AM)]

8am-9am
Site Category: Proposed Design
Roundabout

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Cudgegong Rd															
1	L2	All MCs	153	2.1	153	2.1	0.223	5.3	LOS A	1.5	11.0	0.52	0.57	0.52	54.0
3	R2	All MCs	85	3.7	85	3.7	0.223	10.3	LOS A	1.5	11.0	0.52	0.57	0.52	53.5
Approach			238	2.7	238	2.7	0.223	7.1	LOS A	1.5	11.0	0.52	0.57	0.52	53.8
East: Guntawong Rd - E															
4	L2	All MCs	27	0.0	27	0.0	0.283	7.2	LOS A	1.9	13.8	0.70	0.62	0.70	53.8
5	T1	All MCs	217	2.4	217	2.4	0.283	7.5	LOS A	1.9	13.8	0.70	0.62	0.70	52.5
Approach			244	2.2	244	2.2	0.283	7.5	LOS A	1.9	13.8	0.70	0.62	0.70	52.7
West: Guntawong Rd															
11	T1	All MCs	371	3.1	371	3.1	0.596	5.0	LOS A	6.7	48.1	0.49	0.52	0.49	52.1
12	R2	All MCs	458	1.6	458	1.6	0.596	9.6	LOS A	6.7	48.1	0.49	0.52	0.49	53.0
Approach			828	2.3	828	2.3	0.596	7.5	LOS A	6.7	48.1	0.49	0.52	0.49	52.6
All Vehicles			1311	2.3	1311	2.3	0.596	7.4	LOS A	6.7	48.1	0.53	0.55	0.53	52.9

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Parameter Settings dialog (Options 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.

Site: 16v [16. Guntawong Rd - Worcester Rd - Convert to Roundabout (Site Folder: 10-Year Future AM)]

8am-9am
Site Category: Proposed Design
Roundabout

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Worcester Rd															
1	L2	All MCs	28	7.4	28	7.4	0.038	4.7	LOS A	0.2	1.6	0.34	0.53	0.34	55.6
3	R2	All MCs	16	6.7	16	6.7	0.038	9.6	LOS A	0.2	1.6	0.34	0.53	0.34	55.0
Approach			44	7.1	44	7.1	0.038	6.5	LOS A	0.2	1.6	0.34	0.53	0.34	55.4
East: Guntawong Rd															
4	L2	All MCs	7	0.0	7	0.0	0.118	4.4	LOS A	0.7	4.8	0.29	0.42	0.29	56.1
5	T1	All MCs	139	2.3	139	2.3	0.118	4.7	LOS A	0.7	4.8	0.29	0.42	0.29	53.7
Approach			146	2.2	146	2.2	0.118	4.7	LOS A	0.7	4.8	0.29	0.42	0.29	53.9
West: Guntawong Rd															
11	T1	All MCs	307	3.8	307	3.8	0.260	4.2	LOS A	1.9	13.6	0.12	0.46	0.12	53.7
12	R2	All MCs	102	3.1	102	3.1	0.260	8.8	LOS A	1.9	13.6	0.12	0.46	0.12	55.8
Approach			409	3.6	409	3.6	0.260	5.3	LOS A	1.9	13.6	0.12	0.46	0.12	54.5
All Vehicles			600	3.5	600	3.5	0.260	5.2	LOS A	1.9	13.6	0.18	0.46	0.18	54.5

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Parameter Settings dialog (Options 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.

Site: 17 [17. Guntawong Rd - Tallawong Rd - Upgrade to roundabout (Site Folder: 10-Year Future AM)]

8am-9am
Site Category: Proposed Design
Roundabout

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Tallawong Rd - S															
1	L2	All MCs	140	6.0	140	6.0	0.328	5.8	LOS A	2.2	15.9	0.57	0.61	0.57	47.1
2	T1	All MCs	44	0.0	44	0.0	0.328	5.8	LOS A	2.2	15.9	0.57	0.61	0.57	48.9
3	R2	All MCs	149	5.6	149	5.6	0.328	10.6	LOS A	2.2	15.9	0.57	0.61	0.57	48.0
Approach			334	5.0	334	5.0	0.328	8.0	LOS A	2.2	15.9	0.57	0.61	0.57	47.8
East: Guntawong Rd - E															
4	L2	All MCs	168	1.3	168	1.3	0.471	7.7	LOS A	3.5	25.2	0.77	0.69	0.79	48.5
5	T1	All MCs	203	3.1	203	3.1	0.471	8.0	LOS A	3.5	25.2	0.77	0.69	0.79	51.4
6	R2	All MCs	39	0.0	39	0.0	0.471	12.5	LOS A	3.5	25.2	0.77	0.69	0.79	51.2
Approach			411	2.1	411	2.1	0.471	8.3	LOS A	3.5	25.2	0.77	0.69	0.79	50.3
North: Tallawong Rd - N															
7	L2	All MCs	13	0.0	13	0.0	0.264	10.8	LOS A	1.9	13.1	0.89	0.78	0.89	49.2
8	T1	All MCs	89	0.0	89	0.0	0.264	11.0	LOS A	1.9	13.1	0.89	0.78	0.89	45.4
9	R2	All MCs	45	0.0	45	0.0	0.264	15.6	LOS B	1.9	13.1	0.89	0.78	0.89	47.8
Approach			147	0.0	147	0.0	0.264	12.4	LOS A	1.9	13.1	0.89	0.78	0.89	46.6
West: Guntawong Rd - W															
10	L2	All MCs	23	0.0	23	0.0	0.669	6.5	LOS A	7.0	50.4	0.72	0.63	0.76	50.1
11	T1	All MCs	389	2.7	389	2.7	0.669	6.7	LOS A	7.0	50.4	0.72	0.63	0.76	50.7
12	R2	All MCs	358	4.7	358	4.7	0.669	11.4	LOS A	7.0	50.4	0.72	0.63	0.76	45.2
Approach			771	3.6	771	3.6	0.669	8.9	LOS A	7.0	50.4	0.72	0.63	0.76	48.6
All Vehicles			1662	3.2	1662	3.2	0.669	8.9	LOS A	7.0	50.4	0.72	0.66	0.74	48.7

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Parameter Settings dialog (Options 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.

Site: 18 [18. Guntawong Rd - Clarke St (Site Folder: 10-Year Future AM)]

8am-9am
Site Category: Proposed Design
Roundabout

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Clarke St - S															
2	T1	All MCs	138	0.0	138	0.0	0.339	6.2	LOS A	2.2	15.6	0.60	0.64	0.60	50.0
3	R2	All MCs	206	0.0	206	0.0	0.339	10.8	LOS A	2.2	15.6	0.60	0.64	0.60	49.8
Approach			344	0.0	344	0.0	0.339	9.0	LOS A	2.2	15.6	0.60	0.64	0.60	49.8
East: Guntawong Rd - E															
4	L2	All MCs	58	0.0	58	0.0	0.350	5.1	LOS A	2.5	17.7	0.50	0.61	0.50	49.9
6	R2	All MCs	344	4.3	344	4.3	0.350	10.0	LOS A	2.5	17.7	0.50	0.61	0.50	47.8
Approach			402	3.7	402	3.7	0.350	9.3	LOS A	2.5	17.7	0.50	0.61	0.50	48.1
North: Clarke St - N															
7	L2	All MCs	546	5.0	546	5.0	0.631	5.8	LOS A	6.1	43.8	0.67	0.56	0.67	50.6
8	T1	All MCs	201	0.0	201	0.0	0.631	5.8	LOS A	6.1	43.8	0.67	0.56	0.67	51.8
Approach			747	3.7	747	3.7	0.631	5.8	LOS A	6.1	43.8	0.67	0.56	0.67	50.9
All Vehicles			1494	2.8	1494	2.8	0.631	7.5	LOS A	6.1	43.8	0.61	0.59	0.61	49.9

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Parameter Settings dialog (Options 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.

Site: 19 [19. Clarke St - Riverstone Rd (Site Folder: 10-Year Future AM)]

8am-9am
Site Category: Proposed Design
Roundabout

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Clarke St - S															
1	L2	All MCs	234	0.0	234	0.0	0.348	4.2	LOS A	2.6	18.6	0.29	0.43	0.29	51.0
2	T1	All MCs	249	6.8	249	6.8	0.348	4.5	LOS A	2.6	18.6	0.29	0.43	0.29	55.1
3	R2	All MCs	2	50.0	2	50.0	0.348	9.8	LOS A	2.6	18.6	0.29	0.43	0.29	51.5
Approach			485	3.7	485	3.7	0.348	4.4	LOS A	2.6	18.6	0.29	0.43	0.29	53.7
East: Riverstone Rd - E															
4	L2	All MCs	3	66.7	3	66.7	0.010	11.3	LOS A	0.1	0.5	0.73	0.65	0.73	48.1
5	T1	All MCs	1	0.0	1	0.0	0.010	8.4	LOS A	0.1	0.5	0.73	0.65	0.73	47.6
6	R2	All MCs	1	0.0	1	0.0	0.010	13.0	LOS A	0.1	0.5	0.73	0.65	0.73	51.7
Approach			5	40.0	5	40.0	0.010	11.1	LOS A	0.1	0.5	0.73	0.65	0.73	48.9
North: Clarke St - N															
7	L2	All MCs	13	8.3	13	8.3	0.479	6.0	LOS A	3.6	26.6	0.61	0.56	0.61	53.7
8	T1	All MCs	439	5.5	439	5.5	0.479	6.1	LOS A	3.6	26.6	0.61	0.56	0.61	53.5
9	R2	All MCs	64	9.8	64	9.8	0.479	10.8	LOS A	3.6	26.6	0.61	0.56	0.61	50.7
Approach			516	6.1	516	6.1	0.479	6.6	LOS A	3.6	26.6	0.61	0.56	0.61	53.2
West: Riverstone Rd - W															
10	L2	All MCs	93	11.4	93	11.4	0.325	5.8	LOS A	2.0	14.6	0.51	0.62	0.51	50.6
11	T1	All MCs	1	0.0	1	0.0	0.325	5.6	LOS A	2.0	14.6	0.51	0.62	0.51	49.2
12	R2	All MCs	259	1.2	259	1.2	0.325	10.3	LOS A	2.0	14.6	0.51	0.62	0.51	46.5
Approach			353	3.9	353	3.9	0.325	9.1	LOS A	2.0	14.6	0.51	0.62	0.51	47.9
All Vehicles			1359	4.8	1359	4.8	0.479	6.5	LOS A	3.6	26.6	0.47	0.53	0.47	52.2

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Parameter Settings dialog (Options 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.

Site: 15v [15. Guntawong Rd - Cudgegong Rd - Convert to Roundabout (Site Folder: 10-Year Future PM)]

5pm-6pm
Site Category: Proposed Design
Roundabout

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Cudgegong Rd															
1	L2	All MCs	305	0.3	305	0.3	0.467	7.8	LOS A	3.7	26.0	0.80	0.69	0.81	53.2
3	R2	All MCs	96	1.1	96	1.1	0.467	12.7	LOS A	3.7	26.0	0.80	0.69	0.81	52.8
Approach			401	0.5	401	0.5	0.467	9.0	LOS A	3.7	26.0	0.80	0.69	0.81	53.1
East: Guntawong Rd															
4	L2	All MCs	17	6.3	17	6.3	0.422	5.8	LOS A	3.3	23.4	0.58	0.51	0.58	54.0
5	T1	All MCs	462	0.5	462	0.5	0.422	5.8	LOS A	3.3	23.4	0.58	0.51	0.58	53.0
Approach			479	0.7	479	0.7	0.422	5.8	LOS A	3.3	23.4	0.58	0.51	0.58	53.1
West: Guntawong Rd															
11	T1	All MCs	234	1.8	234	1.8	0.343	4.8	LOS A	2.9	20.5	0.40	0.51	0.40	52.6
12	R2	All MCs	219	1.0	219	1.0	0.343	9.4	LOS A	2.9	20.5	0.40	0.51	0.40	53.3
Approach			453	1.4	453	1.4	0.343	7.0	LOS A	2.9	20.5	0.40	0.51	0.40	53.0
All Vehicles			1333	0.9	1333	0.9	0.467	7.2	LOS A	3.7	26.0	0.58	0.57	0.59	53.0

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Parameter Settings dialog (Options 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.

Site: 16v [16. Guntawong Rd - Worcester Rd - Convert to Roundabout (Site Folder: 10-Year Future PM)]

5pm-6pm
Site Category: Proposed Design
Roundabout

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Worcester Rd															
1	L2	All MCs	78	0.0	78	0.0	0.085	4.9	LOS A	0.5	3.4	0.39	0.53	0.39	55.9
3	R2	All MCs	20	0.0	20	0.0	0.085	9.7	LOS A	0.5	3.4	0.39	0.53	0.39	55.4
Approach			98	0.0	98	0.0	0.085	5.9	LOS A	0.5	3.4	0.39	0.53	0.39	55.8
East: Guntawong Rd															
4	L2	All MCs	6	0.0	6	0.0	0.141	4.2	LOS A	0.8	5.9	0.24	0.40	0.24	56.2
5	T1	All MCs	182	2.3	182	2.3	0.141	4.5	LOS A	0.8	5.9	0.24	0.40	0.24	54.0
Approach			188	2.2	188	2.2	0.141	4.5	LOS A	0.8	5.9	0.24	0.40	0.24	54.1
West: Guntawong Rd															
11	T1	All MCs	256	2.5	256	2.5	0.209	4.2	LOS A	1.5	10.4	0.13	0.45	0.13	53.8
12	R2	All MCs	67	0.0	67	0.0	0.209	8.8	LOS A	1.5	10.4	0.13	0.45	0.13	55.9
Approach			323	2.0	323	2.0	0.209	5.1	LOS A	1.5	10.4	0.13	0.45	0.13	54.5
All Vehicles			609	1.7	609	1.7	0.209	5.0	LOS A	1.5	10.4	0.20	0.45	0.20	54.7

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Parameter Settings dialog (Options 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.

Site: 17 [17. Guntawong Rd - Tallawong Rd - Upgrade to roundabout (Site Folder: 10-Year Future PM)]

5pm-6pm
Site Category: Proposed Design
Roundabout

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Tallawong Rd - S															
1	L2	All MCs	255	1.7	255	1.7	0.583	8.5	LOS A	5.4	38.3	0.80	0.75	0.91	45.4
2	T1	All MCs	93	0.0	93	0.0	0.583	8.6	LOS A	5.4	38.3	0.80	0.75	0.91	47.1
3	R2	All MCs	194	2.2	194	2.2	0.583	13.4	LOS A	5.4	38.3	0.80	0.75	0.91	46.5
Approach			541	1.6	541	1.6	0.583	10.3	LOS A	5.4	38.3	0.80	0.75	0.91	46.1
East: Guntawong Rd - E															
4	L2	All MCs	87	0.0	87	0.0	0.439	6.0	LOS A	3.1	22.0	0.62	0.58	0.62	49.4
5	T1	All MCs	335	1.3	335	1.3	0.439	6.2	LOS A	3.1	22.0	0.62	0.58	0.62	52.1
6	R2	All MCs	40	0.0	40	0.0	0.439	10.8	LOS A	3.1	22.0	0.62	0.58	0.62	51.8
Approach			462	0.9	462	0.9	0.439	6.6	LOS A	3.1	22.0	0.62	0.58	0.62	51.7
North: Tallawong Rd - N															
7	L2	All MCs	18	0.0	18	0.0	0.150	7.5	LOS A	0.9	6.4	0.69	0.70	0.69	50.6
8	T1	All MCs	38	0.0	38	0.0	0.150	7.7	LOS A	0.9	6.4	0.69	0.70	0.69	47.2
9	R2	All MCs	64	0.0	64	0.0	0.150	12.3	LOS A	0.9	6.4	0.69	0.70	0.69	49.2
Approach			120	0.0	120	0.0	0.150	10.1	LOS A	0.9	6.4	0.69	0.70	0.69	48.9
West: Guntawong Rd - W															
10	L2	All MCs	15	0.0	15	0.0	0.442	6.1	LOS A	3.3	23.3	0.66	0.63	0.66	50.4
11	T1	All MCs	222	0.9	222	0.9	0.442	6.3	LOS A	3.3	23.3	0.66	0.63	0.66	51.0
12	R2	All MCs	211	2.0	211	2.0	0.442	11.0	LOS A	3.3	23.3	0.66	0.63	0.66	45.7
Approach			447	1.4	447	1.4	0.442	8.5	LOS A	3.3	23.3	0.66	0.63	0.66	48.9
All Vehicles			1571	1.2	1571	1.2	0.583	8.7	LOS A	5.4	38.3	0.70	0.66	0.74	49.0

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Parameter Settings dialog (Options 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.

Site: 18 [18. Guntawong Rd - Clarke St (Site Folder: 10-Year Future PM)]

5pm-6pm
Site Category: Proposed Design
Roundabout

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Clarke St - S															
2	T1	All MCs	176	0.0	176	0.0	0.303	7.0	LOS A	2.0	13.9	0.68	0.66	0.68	50.1
3	R2	All MCs	95	0.0	95	0.0	0.303	11.7	LOS A	2.0	13.9	0.68	0.66	0.68	49.9
Approach			271	0.0	271	0.0	0.303	8.7	LOS A	2.0	13.9	0.68	0.66	0.68	50.0
East: Guntawong Rd - E															
4	L2	All MCs	192	0.0	192	0.0	0.550	5.3	LOS A	4.6	32.5	0.56	0.60	0.56	50.2
6	R2	All MCs	487	1.5	487	1.5	0.550	10.2	LOS A	4.6	32.5	0.56	0.60	0.56	48.2
Approach			679	1.1	679	1.1	0.550	8.8	LOS A	4.6	32.5	0.56	0.60	0.56	48.8
North: Clarke St - N															
7	L2	All MCs	346	2.1	346	2.1	0.393	4.5	LOS A	3.1	21.9	0.36	0.45	0.36	51.9
8	T1	All MCs	187	0.0	187	0.0	0.393	4.6	LOS A	3.1	21.9	0.36	0.45	0.36	53.0
Approach			534	1.4	534	1.4	0.393	4.5	LOS A	3.1	21.9	0.36	0.45	0.36	52.3
All Vehicles			1483	1.0	1483	1.0	0.550	7.2	LOS A	4.6	32.5	0.51	0.56	0.51	50.2

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Parameter Settings dialog (Options 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.

Site: 19 [19. Clarke St - Riverstone Rd (Site Folder: 10-Year Future PM)]

5pm-6pm
Site Category: Proposed Design
Roundabout

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Clarke St - S															
1	L2	All MCs	291	1.1	291	1.1	0.476	4.5	LOS A	3.9	27.8	0.36	0.44	0.36	50.4
2	T1	All MCs	374	1.4	374	1.4	0.476	4.7	LOS A	3.9	27.8	0.36	0.44	0.36	54.9
3	R2	All MCs	1	0.0	1	0.0	0.476	9.3	LOS A	3.9	27.8	0.36	0.44	0.36	53.1
Approach			665	1.3	665	1.3	0.476	4.6	LOS A	3.9	27.8	0.36	0.44	0.36	53.6
East: Riverstone Rd - E															
4	L2	All MCs	6	0.0	6	0.0	0.011	6.9	LOS A	0.1	0.4	0.62	0.60	0.62	51.9
5	T1	All MCs	1	0.0	1	0.0	0.011	7.1	LOS A	0.1	0.4	0.62	0.60	0.62	50.2
6	R2	All MCs	2	0.0	2	0.0	0.011	11.7	LOS A	0.1	0.4	0.62	0.60	0.62	53.4
Approach			9	0.0	9	0.0	0.011	8.0	LOS A	0.1	0.4	0.62	0.60	0.62	52.2
North: Clarke St - N															
7	L2	All MCs	1	0.0	1	0.0	0.370	4.8	LOS A	2.6	18.7	0.45	0.50	0.45	54.3
8	T1	All MCs	369	1.7	369	1.7	0.370	5.1	LOS A	2.6	18.7	0.45	0.50	0.45	54.1
9	R2	All MCs	85	1.2	85	1.2	0.370	9.7	LOS A	2.6	18.7	0.45	0.50	0.45	51.9
Approach			456	1.6	456	1.6	0.370	5.9	LOS A	2.6	18.7	0.45	0.50	0.45	53.7
West: Riverstone Rd - W															
10	L2	All MCs	41	0.0	41	0.0	0.202	5.9	LOS A	1.2	8.2	0.55	0.66	0.55	50.7
11	T1	All MCs	1	100.0	1	100.0	0.202	9.2	LOS A	1.2	8.2	0.55	0.66	0.55	46.5
12	R2	All MCs	160	0.0	160	0.0	0.202	10.7	LOS A	1.2	8.2	0.55	0.66	0.55	46.3
Approach			202	0.5	202	0.5	0.202	9.8	LOS A	1.2	8.2	0.55	0.66	0.55	47.4
All Vehicles			1333	1.3	1333	1.3	0.476	5.9	LOS A	3.9	27.8	0.42	0.49	0.42	52.9

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Parameter Settings dialog (Options 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.

USER REPORT FOR NETWORK SITE

Project: 23009-Riverstone Sid v9.1 - 230728

Output produced by SIDRA INTERSECTION Version: 9.1.3.210 **Template: Movement Summary**

Site: TCS 1280 [1. Garfield Rd E - Windsor Rd - Terry Rd (Site Folder: 20-Year Future AM)]

Network: 21 [AM - Windsor Corridor - Int 5 upgraded (Network Folder: 20-Year Future Conditions)]

8am-9am
Site Category: Proposed Design
Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 120 seconds (Site User-Given Phase Times)

Timings based on settings in the Site Phasing & Timing dialog
Phase Times specified by the user
Phase Sequence: ADEG
Input Phase Sequence: A, D, E, G
Output Phase Sequence: A, D, E, G
Reference Phase: Phase A

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	Aver. Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Windsor Rd															
4	L2	All MCs	539	5.7	466	5.9	0.373	20.5	LOS B	6.6	48.4	0.52	0.79	0.52	58.2
5	T1	All MCs	1425	5.8	1234	6.0	0.959	58.7	LOS E	26.7	196.4	1.00	1.09	1.27	33.7
6	R2	All MCs	352	5.1	304	5.3	* 1.125	179.1	LOS F	17.7	129.4	1.00	1.39	2.14	18.7
Approach			2316	5.7	2004	5.9	1.125	68.1	LOS E	26.7	196.4	0.89	1.07	1.23	32.6
East: Terry Rd															
7	L2	All MCs	368	3.4	368	3.4	0.585	37.0	LOS C	9.1	65.3	0.86	0.92	0.86	27.6
8	T1	All MCs	558	2.8	558	2.8	* 0.961	80.8	LOS F	12.7	91.1	1.00	1.17	1.47	27.1
9	R2	All MCs	149	16.9	149	16.9	0.441	38.2	LOS C	4.0	31.7	0.91	0.78	0.91	27.6
Approach			1076	5.0	1076	5.0	0.961	59.8	LOS E	12.7	91.1	0.94	1.03	1.18	27.2
North: Windsor Rd															
10	L2	All MCs	135	16.4	133	16.2	0.122	27.8	LOS B	1.4	11.1	0.40	0.69	0.40	60.5
11	T1	All MCs	1328	6.8	1314	6.7	* 1.099	143.9	LOS F	43.6	322.5	1.00	1.54	1.87	21.6
12	R2	All MCs	394	5.9	390	5.8	0.975	98.7	LOS F	9.2	67.6	1.00	1.11	1.58	33.5
Approach			1857	7.3	1837	7.2	1.099	125.9	LOS F	43.6	322.5	0.96	1.39	1.70	25.6
West: Garfield Rd E															
1	L2	All MCs	484	2.6	484	2.6	0.635	26.3	LOS B	11.5	82.6	0.81	0.83	0.81	32.1
2	T1	All MCs	326	4.5	326	4.5	0.580	52.5	LOS D	5.6	40.6	0.98	0.80	0.98	32.3
3	R2	All MCs	622	4.2	622	4.2	* 1.061	123.2	LOS F	16.5	119.8	1.00	1.36	1.85	10.8
Approach			1433	3.7	1433	3.7	1.061	74.4	LOS F	16.5	119.8	0.93	1.06	1.30	18.8
All Vehicles			6681	5.6	6350	5.9	1.125	84.8	LOS F	43.6	322.5	0.93	1.15	1.37	26.4

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

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

* Critical Movement (Signal Timing)

Site: 4 [4. Windsor Rd - Junction Rd (Site Folder: 20-Year Future AM)]

Network: 21 [AM - Windsor Corridor - Int 5 upgraded (Network Folder: 20-Year Future Conditions)]

8am-9am
Site Category: Proposed Design
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	Aver. Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
SouthEast: Windsor Rd															
3	L2	All MCs	40	21.1	37	21.4	0.033	8.7	LOS A	0.0	0.4	0.28	0.60	0.28	55.3
4	T1	All MCs	1923	6.3	1793	6.4	0.479	0.1	LOS A	0.0	0.0	0.00	0.00	0.00	79.5
Approach			1963	6.6	1830	6.7	0.479	0.3	LOS A	0.0	0.4	0.01	0.01	0.01	78.7
NorthWest: Windsor Rd															
5	T1	All MCs	1820	5.1	1820	5.1	0.825	17.2	LOS B	8.1	59.0	0.14	0.14	0.50	39.7
6	R2	All MCs	257	7.8	257	7.8	2.328	1245.3	LOS F	37.9	283.0	1.00	4.20	17.38	2.5
Approach			2077	5.4	2077	5.4	2.328	169.1	NA	37.9	283.0	0.25	0.64	2.59	8.3
SouthWest: Junction Rd - S															
1	L2	All MCs	164	16.7	164	16.7	0.447	18.9	LOS B	0.8	6.7	0.80	1.02	1.14	42.9
2	R2	All MCs	61	12.1	61	12.1	1.869	919.5	LOS F	8.0	61.6	1.00	2.32	6.74	2.0
Approach			225	15.4	225	15.4	1.869	263.0	LOS F	8.0	61.6	0.85	1.37	2.66	9.0
All Vehicles			4265	6.5	4132	6.7	2.328	99.5	NA	37.9	283.0	0.17	0.40	1.45	17.5

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.
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.

Site: TCS 4805 [5. Windsor Rd - Mt Carmel Dr - Upgrade to 4-way signal (Site Folder: 20-Year Future AM)]

Network: 21 [AM - Windsor Corridor - Int 5 upgraded (Network Folder: 20-Year Future Conditions)]

8am-9am
Site Category: Proposed Design
Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 120 seconds (Site Practical Cycle Time)

Timings based on settings in the Site Phasing & Timing dialog
Phase Times determined by the program
Downstream lane blockage effects included in determining phase times
Phase Sequence: All Phases
Input Phase Sequence: A, B*, C*, D, D1*, D2*, E, F1*, F2*, G, G1*, G2*
Output Phase Sequence: A, C*, D, E, F2*, G
Reference Phase: Phase A
(* Variable Phase)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	Aver. Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
SouthEast: Windsor Rd															
21	L2	All MCs	155	0.0	140	0.0	0.093	9.1	LOS A	0.8	5.4	0.25	0.66	0.25	63.6
5	T1	All MCs	1435	6.7	1302	6.9	* 0.902	45.3	LOS D	32.3	239.7	0.96	0.87	1.02	43.7
6	R2	All MCs	398	7.1	361	7.3	* 0.726	38.2	LOS C	3.7	27.8	1.00	0.84	1.09	46.6
Approach			1987	6.3	1803	6.4	0.902	41.1	LOS C	32.3	239.7	0.91	0.85	0.97	45.8
NorthEast: Mt Carmel Dr															
7	L2	All MCs	399	7.9	399	7.9	0.668	33.4	LOS C	11.1	83.2	0.89	0.84	0.89	18.4
25	T1	All MCs	246	0.0	246	0.0	0.842	67.3	LOS E	4.9	34.0	1.00	0.95	1.30	24.3
9	R2	All MCs	212	1.5	212	1.5	* 0.863	75.4	LOS F	4.3	30.2	1.00	0.96	1.36	10.2
Approach			857	4.1	857	4.1	0.863	53.5	LOS D	11.1	83.2	0.95	0.90	1.12	18.5
NorthWest: Windsor Rd															
10	L2	All MCs	456	0.2	450	0.2	0.360	16.5	LOS B	6.9	48.5	0.52	0.75	0.52	46.5
11	T1	All MCs	1383	7.5	1363	7.4	0.711	37.4	LOS C	14.2	105.4	0.93	0.82	0.93	29.2
29	R2	All MCs	128	0.0	127	0.0	0.582	71.1	LOS F	2.4	16.6	1.00	0.78	1.04	28.1
Approach			1967	5.4	1939	5.3	0.711	34.8	LOS C	14.2	105.4	0.84	0.80	0.84	32.5
SouthWest: Mt Carmel Dr															
30	L2	All MCs	104	0.0	104	0.0	0.155	34.9	LOS C	2.2	15.5	0.66	0.71	0.66	32.7
31	T1	All MCs	598	0.0	598	0.0	* 0.894	66.5	LOS E	12.3	86.3	1.00	1.05	1.27	24.9
32	R2	All MCs	142	0.0	142	0.0	0.656	55.3	LOS D	4.2	29.6	1.00	0.81	1.04	24.5
Approach			844	0.0	844	0.0	0.894	60.8	LOS E	12.3	86.3	0.96	0.97	1.16	25.4
All Vehicles			5656	4.7	5443	4.9	0.902	43.8	LOS D	32.3	239.7	0.90	0.86	0.98	34.3

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)

Site: TCS 3986 [6. Windsor Rd - Nelson Rd (Site Folder: 20-Year Future AM)]

Network: 21 [AM - Windsor Corridor - Int 5 upgraded (Network Folder: 20-Year Future Conditions)]

8am-9am
Site Category: Proposed Design
Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 110 seconds (Site User-Given Phase Times)

Timings based on settings in the Site Phasing & Timing dialog
Phase Times specified by the user
Phase Sequence: ADEG
Input Phase Sequence: A, D, E, G
Output Phase Sequence: A, D, E, G
Reference Phase: Phase A

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	Aver. Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Windsor Rd															
4	L2	All MCs	5	40.0	5	40.9	0.005	22.9	LOS B	0.1	0.5	0.37	0.65	0.37	41.4
5	T1	All MCs	1744	6.0	1560	6.3	0.937	42.1	LOS C	28.6	211.0	0.95	1.01	1.15	39.0
6	R2	All MCs	237	0.9	211	0.9	* 1.027	97.5	LOS F	7.9	55.9	1.00	1.24	1.81	24.7
Approach			1986	5.5	1776	5.7	1.027	48.6	LOS D	28.6	211.0	0.96	1.03	1.22	35.3
East: Nelson Rd															
7	L2	All MCs	276	3.4	276	3.4	0.735	64.6	LOS E	8.9	64.2	0.99	0.87	1.05	22.5
8	T1	All MCs	1	0.0	1	0.0	* 0.735	75.9	LOS F	8.9	64.2	0.99	0.87	1.05	25.6
9	R2	All MCs	517	4.7	517	4.7	* 1.327	348.2	LOS F	40.6	295.8	1.00	2.06	3.14	4.9
Approach			794	4.2	794	4.2	1.327	249.3	LOS F	40.6	295.8	1.00	1.64	2.41	6.7
North: Windsor Rd															
10	L2	All MCs	482	3.3	451	3.2	0.333	17.0	LOS B	2.4	17.4	0.31	0.70	0.31	61.1
11	T1	All MCs	2095	5.6	1958	5.4	* 1.211	210.1	LOS F	75.9	556.1	1.00	2.06	2.49	12.8
12	R2	All MCs	2	50.0	2	49.4	0.012	46.6	LOS D	0.0	0.3	0.87	0.62	0.87	38.2
Approach			2579	5.2	2410	5.1	1.211	173.8	LOS F	75.9	556.1	0.87	1.80	2.08	16.3
West: Nelson Rd															
1	L2	All MCs	4	25.0	4	25.0	0.020	40.7	LOS C	0.1	1.2	0.85	0.61	0.85	17.9
2	T1	All MCs	1	0.0	1	0.0	0.020	49.2	LOS D	0.1	1.2	0.85	0.61	0.85	27.0
3	R2	All MCs	1	0.0	1	0.0	0.004	31.4	LOS C	0.0	0.2	0.87	0.54	0.87	20.1
Approach			6	16.7	6	16.7	0.020	40.6	LOS C	0.1	1.2	0.86	0.60	0.86	20.1
All Vehicles			5365	5.2	4987	5.6	1.327	141.1	LOS F	75.9	556.1	0.92	1.50	1.83	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)

Site: 7v [7. Windsor Rd - Guntawong Rd - Convert to T-junction signal (Site Folder: 20-Year Future AM)]

Network: 21 [AM - Windsor Corridor - Int 5 upgraded (Network Folder: 20-Year Future Conditions)]

8am-9am
Site Category: Proposed Design
Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 150 seconds (Site Practical Cycle Time)

Timings based on settings in the Site Phasing & Timing dialog
Phase Times determined by the program
Downstream lane blockage effects included in determining phase times
Phase Sequence: ABCD
Input Phase Sequence: A, B, C, D*
Output Phase Sequence: A, B, C
Reference Phase: Phase A
(* Variable Phase)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	Aver. Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Windsor Rd															
4	L2	All MCs	308	0.0	267	0.0	0.805	8.2	LOS A	17.3	125.7	0.74	0.76	0.74	51.5
5	T1	All MCs	1618	6.6	1408	7.0	0.805	20.1	LOS B	31.3	232.2	0.79	0.75	0.79	42.9
Approach			1926	5.5	1675	5.9	0.805	18.2	LOS B	31.3	232.2	0.78	0.75	0.78	44.9
North: Windsor Rd															
11	T1	All MCs	2043	6.3	1631	6.1	* 0.885	24.0	LOS B	31.3	230.8	0.83	0.80	0.88	46.8
12	R2	All MCs	6	0.0	5	0.0	0.068	85.5	LOS F	0.2	1.6	0.99	0.65	0.99	29.2
Approach			2049	6.3	1636	6.1	0.885	24.2	LOS B	31.3	230.8	0.83	0.80	0.88	46.6
West: Guntawong Rd															
1	L2	All MCs	259	1.6	259	1.6	0.533	30.7	LOS C	8.3	59.0	0.81	0.82	0.81	28.9
3	R2	All MCs	257	0.0	257	0.0	* 0.644	71.6	LOS F	5.8	40.7	0.99	0.83	1.01	17.2
Approach			516	0.8	516	0.8	0.644	51.1	LOS D	8.3	59.0	0.90	0.82	0.91	21.5
All Vehicles			4492	5.3	3827	6.2	0.885	25.2	LOS B	31.3	232.2	0.82	0.78	0.84	41.1

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)

Site: TCS 3985 [8. Windsor Rd - Annangrove Rd (Site Folder: 20-Year Future AM)]

Network: 21 [AM - Windsor Corridor - Int 5 upgraded (Network Folder: 20-Year Future Conditions)]

8am-9am
Site Category: Proposed Design
Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 105 seconds (Site User-Given Phase Times)

Timings based on settings in the Site Phasing & Timing dialog
Phase Times specified by the user
Phase Sequence: ABDEG
Input Phase Sequence: A, B, D, E, G
Output Phase Sequence: A, B, D, E, G
Reference Phase: Phase A

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	Aver. Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Windsor Rd															
4	L2	All MCs	1	0.0	1	0.0	0.001	9.5	LOS A	0.0	0.0	0.18	0.61	0.18	64.5
5	T1	All MCs	1465	7.0	1381	7.0	0.733	14.9	LOS B	14.4	106.9	0.72	0.65	0.72	62.6
6	R2	All MCs	513	4.9	483	4.9	* 1.375	254.7	LOS F	26.6	194.2	1.00	1.44	2.64	18.1
Approach			1979	6.5	1865	6.5	1.375	77.1	LOS F	26.6	194.2	0.79	0.86	1.22	33.2
East: Annangrove Rd															
7	L2	All MCs	264	6.8	264	6.8	0.409	24.6	LOS B	5.0	37.3	0.73	0.77	0.73	39.5
8	T1	All MCs	1	0.0	1	0.0	0.028	61.8	LOS E	0.0	0.2	1.00	0.57	1.00	33.2
9	R2	All MCs	577	0.9	577	0.9	* 1.464	466.6	LOS F	57.6	406.6	1.00	2.13	3.80	5.0
Approach			842	2.8	842	2.8	1.464	327.4	LOS F	57.6	406.6	0.92	1.70	2.83	6.9
North: Windsor Rd															
10	L2	All MCs	797	3.3	677	3.0	0.577	26.7	LOS B	7.7	55.4	0.52	0.76	0.52	54.3
11	T1	All MCs	1914	5.4	1622	5.0	* 1.144	192.9	LOS F	54.7	399.1	1.00	1.82	2.27	8.6
12	R2	All MCs	6	0.0	5	0.0	0.020	53.7	LOS D	0.1	0.5	0.78	0.66	0.78	45.4
Approach			2717	4.8	2304	4.4	1.144	143.7	LOS F	54.7	399.1	0.86	1.51	1.75	15.0
West: Rouse Hill Estate Access															
1	L2	All MCs	6	0.0	6	0.0	0.051	53.1	LOS D	0.2	1.5	0.94	0.66	0.94	22.0
2	T1	All MCs	1	0.0	1	0.0	0.051	59.0	LOS E	0.2	1.5	0.94	0.66	0.94	34.5
3	R2	All MCs	1	0.0	1	0.0	0.003	35.2	LOS C	0.0	0.2	0.82	0.58	0.82	28.6
Approach			8	0.0	8	0.0	0.051	51.6	LOS D	0.2	1.5	0.93	0.65	0.93	24.9
All Vehicles			5546	5.1	5020	5.6	1.464	149.6	LOS F	57.6	406.6	0.84	1.30	1.73	17.4

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Override Site Data tab).
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Green.

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

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

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

* Critical Movement (Signal Timing)

Site: TCS 3789 [9. Windsor Rd - Rouse Rd - Mile End Rd (Site Folder: 20-Year Future AM)]

Network: 21 [AM - Windsor Corridor - Int 5 upgraded (Network Folder: 20-Year Future Conditions)]

8am-9am
Site Category: Proposed Design
Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 140 seconds (Network Site User-Given Phase Times)

Timings based on settings in the Network Timing dialog
Phase Times specified by the user
Phase Sequence: ADEG
Input Phase Sequence: A, D, E, G
Output Phase Sequence: A, D, E, G
Reference Phase: Phase A

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	Aver. Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Windsor Rd															
1	L2	All MCs	365	3.5	339	3.5	0.247	38.2	LOS C	3.7	26.4	0.39	0.64	0.39	54.9
2	T1	All MCs	1605	7.1	1490	7.2	0.955	82.7	LOS F	39.6	294.6	1.00	1.13	1.23	19.4
3	R2	All MCs	415	6.1	385	6.1	* 1.262	332.5	LOS F	16.9	124.5	1.00	1.40	2.44	5.9
Approach			2385	6.4	2214	6.4	1.262	119.3	LOS F	39.6	294.6	0.91	1.10	1.31	16.0
East: Mile End Rd															
4	L2	All MCs	420	4.5	420	4.5	1.038	106.3	LOS F	22.0	160.3	1.00	1.27	1.61	3.1
5	T1	All MCs	317	1.0	317	1.0	0.680	67.1	LOS E	7.7	54.1	0.99	0.81	1.00	24.9
6	R2	All MCs	220	1.9	220	1.9	0.972	83.5	LOS F	9.9	70.8	1.00	1.05	1.47	5.0
Approach			957	2.8	957	2.8	1.038	88.0	LOS F	22.0	160.3	1.00	1.06	1.37	9.9
North: Windsor Rd															
7	L2	All MCs	67	6.3	52	6.0	0.046	21.0	LOS B	0.8	5.8	0.39	0.69	0.39	58.1
8	T1	All MCs	2019	5.9	1562	5.7	* 1.197	194.0	LOS F	73.9	543.1	1.00	1.82	2.12	17.2
9	R2	All MCs	89	8.2	69	8.0	0.335	42.0	LOS C	1.7	13.0	0.96	0.75	0.96	47.8
Approach			2176	6.0	1683	5.8	1.197	182.4	LOS F	73.9	543.1	0.98	1.74	2.02	18.3
West: Rouse Rd															
10	L2	All MCs	177	1.2	177	1.2	0.363	71.3	LOS F	6.0	42.5	0.86	0.79	0.86	25.5
11	T1	All MCs	376	0.3	376	0.3	* 1.351	411.0	LOS F	37.2	260.9	1.00	2.01	2.78	6.1
12	R2	All MCs	303	4.5	303	4.5	* 2.097	1068.5	LOS F	44.3	322.2	1.00	2.21	4.41	2.1
Approach			856	2.0	856	2.0	2.097	573.7	LOS F	44.3	322.2	0.97	1.83	2.96	4.0
All Vehicles			6374	5.1	5710	5.7	2.097	200.8	LOS F	73.9	543.1	0.95	1.39	1.78	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.
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)

Site: TCS 3788 [10. Windsor Rd - Commercial Rd (Site Folder: 20-Year Future AM)]

Network: 21 [AM - Windsor Corridor - Int 5 upgraded (Network Folder: 20-Year Future Conditions)]

8am-9am
Site Category: Proposed Design
Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 140 seconds (Network Site User-Given Phase Times)

Timings based on settings in the Network Timing dialog
Phase Times specified by the user
Phase Sequence: ABCD
Input Phase Sequence: A, B, C, D
Output Phase Sequence: A, B, C, D
Reference Phase: Phase A

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	Aver. Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Windsor Rd															
2	T1	All MCs	2062	6.3	1891	6.3	0.727	18.2	LOS B	28.2	208.5	0.77	0.50	0.77	42.6
3	R2	All MCs	376	2.5	345	2.5	* 0.710	61.8	LOS E	5.7	40.8	1.00	0.82	1.04	23.3
Approach			2438	5.7	2235	5.8	0.727	25.0	LOS B	28.2	208.5	0.81	0.55	0.81	36.2
East: Commercial Rd															
4	L2	All MCs	481	2.8	481	2.8	0.930	92.6	LOS F	19.4	139.3	1.00	1.12	1.24	8.4
6	R2	All MCs	317	6.3	317	6.3	* 0.787	86.8	LOS F	7.3	54.0	1.00	0.91	1.15	8.2
Approach			798	4.2	798	4.2	0.930	90.3	LOS F	19.4	139.3	1.00	1.04	1.21	8.3
North: Windsor Rd															
7	L2	All MCs	211	2.5	143	2.4	1.026	72.8	LOS F	42.1	308.6	1.00	1.21	1.44	20.7
8	T1	All MCs	2366	6.3	1600	6.1	* 1.026	62.9	LOS E	56.5	416.1	1.00	1.24	1.37	19.8
Approach			2577	6.0	1743	5.8	1.026	63.7	LOS E	56.5	416.1	1.00	1.24	1.37	19.9
All Vehicles			5813	5.6	4776	6.9	1.026	50.0	LOS D	56.5	416.1	0.91	0.88	1.08	21.9

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)

Site: TCS 3557 [11. Windsor Rd - Schofields Rd - Rouse Hill Dr (Site Folder: 20-Year Future AM)]

Network: 21 [AM - Windsor Corridor - Int 5 upgraded (Network Folder: 20-Year Future Conditions)]

8am-9am
Site Category: Proposed Design
Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 140 seconds (Network Site User-Given Phase Times)

Timings based on settings in the Network Timing dialog
Phase Times specified by the user
Phase Sequence: ADEG
Input Phase Sequence: A, D, E, G
Output Phase Sequence: A, D, E, G
Reference Phase: Phase A

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	Aver. Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Windsor Rd															
1	L2	All MCs	639	2.0	639	2.0	0.350	29.8	LOS C	8.0	57.0	0.65	0.78	0.65	52.6
2	T1	All MCs	1725	6.9	1725	6.9	* 1.117	147.3	LOS F	46.4	344.1	0.99	1.37	1.63	9.4
3	R2	All MCs	77	30.1	77	30.1	0.162	68.3	LOS E	1.4	12.4	0.90	0.74	0.90	23.3
Approach			2441	6.3	2441	6.3	1.117	114.1	LOS F	46.4	344.1	0.90	1.20	1.35	18.9
East: Rouse Hill Dr															
4	L2	All MCs	183	14.9	183	14.9	0.296	37.1	LOS C	5.3	41.9	0.74	0.76	0.74	28.6
5	T1	All MCs	195	6.5	195	6.5	0.311	55.1	LOS D	3.6	26.6	0.92	0.73	0.92	40.4
6	R2	All MCs	95	1.1	95	1.1	0.167	65.7	LOS E	1.4	9.7	0.93	0.72	0.93	11.2
Approach			473	8.7	473	8.7	0.311	50.2	LOS D	5.3	41.9	0.85	0.74	0.85	32.5
North: Windsor Rd															
7	L2	All MCs	92	0.0	66	0.0	0.289	90.0	LOS F	2.6	18.1	0.96	0.76	0.96	20.0
8	T1	All MCs	2126	6.6	1524	6.2	0.948	76.7	LOS F	26.2	193.0	1.00	1.07	1.23	27.7
9	R2	All MCs	633	3.5	454	3.3	0.807	83.1	LOS F	9.9	71.5	1.00	0.91	1.07	36.1
Approach			2851	5.7	2044	5.4	0.948	78.5	LOS F	26.2	193.0	1.00	1.02	1.18	30.3
West: Schofields Rd															
10	L2	All MCs	656	3.2	656	3.2	* 1.124	214.4	LOS F	47.6	342.3	1.00	1.30	1.89	19.2
11	T1	All MCs	429	1.0	429	1.0	0.650	82.4	LOS F	8.5	59.9	0.99	0.82	0.99	39.1
12	R2	All MCs	783	2.7	783	2.7	* 1.774	795.4	LOS F	52.8	378.0	1.00	2.19	3.86	7.4
Approach			1868	2.5	1868	2.5	1.774	427.6	LOS F	52.8	378.0	1.00	1.56	2.51	11.8
All Vehicles			7633	5.3	6827	5.9	1.774	184.8	LOS F	52.8	378.0	0.95	1.21	1.58	16.9

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)

USER REPORT FOR NETWORK SITE

Project: 23009-Riverstone Sid v9.1 - 230728

Output produced by SIDRA INTERSECTION Version: 9.1.3.210 **Template: Movement Summary**

Site: TCS 1280 [1. Garfield Rd E - Windsor Rd - Terry Rd (Site Folder: 20-Year Future PM)]

Network: 22 [PM - Windsor Corridor - Int 5 upgraded (Network Folder: 20-Year Future Conditions)]

5pm-6pm
Site Category: Proposed Design
Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 120 seconds (Site User-Given Phase Times)

Timings based on settings in the Site Phasing & Timing dialog
Phase Times specified by the user
Phase Sequence: ADEG
Input Phase Sequence: A, D, E, G
Output Phase Sequence: A, D, E, G
Reference Phase: Phase A

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	Aver. Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Windsor Rd															
4	L2	All MCs	707	2.8	532	2.6	0.411	18.0	LOS B	7.2	51.7	0.52	0.80	0.52	58.6
5	T1	All MCs	1776	3.3	1334	3.0	0.792	7.2	LOS A	11.0	79.2	0.50	0.45	0.50	67.8
6	R2	All MCs	511	0.6	384	0.6	* 1.134	169.0	LOS F	23.5	165.0	1.00	1.39	2.15	18.3
Approach			2994	2.7	2250	2.5	1.134	37.4	LOS C	23.5	165.0	0.59	0.69	0.79	41.4
East: Terry Rd															
7	L2	All MCs	391	2.7	391	2.7	0.652	39.5	LOS C	9.8	70.5	0.90	0.95	0.90	26.6
8	T1	All MCs	509	0.6	509	0.6	* 1.198	248.3	LOS F	19.2	135.4	1.00	1.64	2.48	12.1
9	R2	All MCs	181	7.6	181	7.6	0.851	56.6	LOS E	6.2	46.4	1.00	0.93	1.26	21.8
Approach			1081	2.5	1081	2.5	1.198	140.8	LOS F	19.2	135.4	0.96	1.27	1.70	14.9
North: Windsor Rd															
10	L2	All MCs	218	3.4	218	3.4	0.193	28.7	LOS C	3.0	21.4	0.47	0.70	0.47	59.2
11	T1	All MCs	1507	2.0	1507	2.0	* 1.011	92.4	LOS F	40.8	290.8	1.00	1.33	1.48	30.1
12	R2	All MCs	481	2.6	481	2.6	0.916	82.7	LOS F	10.2	72.8	1.00	1.03	1.37	37.6
Approach			2206	2.3	2205	2.3	1.011	84.0	LOS F	40.8	290.8	0.95	1.20	1.35	34.0
West: Garfield Rd E															
1	L2	All MCs	202	2.1	202	2.1	0.241	13.6	LOS A	2.8	20.0	0.48	0.70	0.48	41.3
2	T1	All MCs	482	1.5	482	1.5	1.164	219.2	LOS F	17.1	121.2	1.00	1.56	2.34	13.1
3	R2	All MCs	425	3.2	425	3.2	* 1.024	95.4	LOS F	8.9	63.8	1.00	1.29	1.74	12.5
Approach			1109	2.3	1109	2.3	1.164	134.3	LOS F	17.1	121.2	0.91	1.30	1.77	14.1
All Vehicles			7391	2.5	6646	2.8	1.198	85.9	LOS F	40.8	290.8	0.82	1.06	1.29	27.1

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)

Site: 4 [4. Windsor Rd - Junction Rd (Site Folder: 20-Year Future PM)]

Network: 22 [PM - Windsor Corridor - Int 5 upgraded (Network Folder: 20-Year Future Conditions)]

5pm-6pm
Site Category: Proposed Design
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	Aver. Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
SouthEast: Windsor Rd															
3	L2	All MCs	28	14.8	24	13.7	0.019	8.3	LOS A	0.0	0.2	0.25	0.59	0.25	55.7
4	T1	All MCs	2073	2.9	1753	2.7	0.457	0.1	LOS A	0.0	0.0	0.00	0.00	0.00	79.6
Approach			2101	3.1	1776	2.8	0.457	0.2	LOS A	0.0	0.2	0.00	0.01	0.00	79.1
NorthWest: Windsor Rd															
5	T1	All MCs	1903	1.6	1903	1.6	0.798	17.9	LOS B	10.7	76.1	0.19	0.18	0.72	38.9
6	R2	All MCs	220	7.7	220	7.7	1.602	592.0	LOS F	22.2	165.6	1.00	3.54	13.73	5.0
Approach			2123	2.2	2123	2.2	1.602	77.4	NA	22.2	165.6	0.27	0.53	2.06	15.9
SouthWest: Junction Rd															
1	L2	All MCs	242	3.0	242	3.0	0.510	16.6	LOS B	1.2	8.4	0.78	1.04	1.23	46.0
2	R2	All MCs	62	5.1	62	5.1	1.020	195.3	LOS F	2.3	16.8	1.00	1.44	2.92	8.5
Approach			304	3.5	304	3.5	1.020	53.1	LOS D	2.3	16.8	0.82	1.12	1.57	28.7
All Vehicles			4528	2.7	4204	2.9	1.602	43.0	NA	22.2	165.6	0.20	0.35	1.16	30.9

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.

Site: TCS 4805 [5. Windsor Rd - Mt Carmel Dr - Upgrade to 4-way signal (Site Folder: 20-Year Future PM)]

Network: 22 [PM - Windsor Corridor - Int 5 upgraded (Network Folder: 20-Year Future Conditions)]

5pm-6pm
Site Category: Proposed Design
Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 150 seconds (Site Practical Cycle Time)

Timings based on settings in the Site Phasing & Timing dialog
Phase Times determined by the program
Downstream lane blockage effects included in determining phase times
Phase Sequence: All Phases
Input Phase Sequence: A, B*, C*, D, D1*, D2*, E, F1*, F2*, G, G1*, G2*
Output Phase Sequence: A, C*, D, D1*, E, G
Reference Phase: Phase A
(* Variable Phase)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	Aver. Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
SouthEast: Windsor Rd															
21	L2	All MCs	99	0.0	79	0.0	0.057	10.8	LOS A	0.7	5.0	0.29	0.66	0.29	62.4
5	T1	All MCs	1663	3.9	1323	3.7	* 0.911	45.0	LOS D	39.0	281.4	0.90	0.86	0.95	44.9
6	R2	All MCs	302	2.4	240	2.4	0.662	46.2	LOS D	3.1	22.0	1.00	0.80	1.04	43.4
Approach			2064	3.5	1642	3.3	0.911	43.5	LOS D	39.0	281.4	0.89	0.84	0.93	45.5
NorthEast: Mt Carmel Dr															
7	L2	All MCs	538	2.2	538	2.2	0.567	19.2	LOS B	12.6	89.6	0.62	0.77	0.62	26.2
25	T1	All MCs	501	0.0	501	0.0	0.535	53.4	LOS D	9.8	68.4	0.93	0.78	0.93	27.7
9	R2	All MCs	468	0.4	468	0.4	* 0.903	88.1	LOS F	11.8	82.9	1.00	1.01	1.27	8.9
Approach			1507	0.9	1507	0.9	0.903	52.0	LOS D	12.6	89.6	0.84	0.85	0.92	19.6
NorthWest: Windsor Rd															
10	L2	All MCs	196	0.0	196	0.0	0.139	13.2	LOS A	2.4	17.1	0.35	0.69	0.35	49.7
11	T1	All MCs	1651	2.5	1650	2.5	0.737	42.8	LOS D	20.9	149.4	0.92	0.83	0.92	26.9
29	R2	All MCs	172	0.0	171	0.0	* 0.861	94.0	LOS F	4.3	29.8	1.00	0.91	1.32	23.7
Approach			2018	2.0	2017	2.0	0.861	44.3	LOS D	20.9	149.4	0.87	0.82	0.90	27.9
SouthWest: Mt Carmel Dr															
30	L2	All MCs	72	0.0	72	0.0	0.119	49.4	LOS D	2.0	13.9	0.68	0.71	0.68	28.6
31	T1	All MCs	522	0.0	522	0.0	* 0.889	84.1	LOS F	13.1	91.5	1.00	1.02	1.23	22.0
32	R2	All MCs	55	0.0	55	0.0	0.553	95.5	LOS F	2.5	17.7	1.00	0.77	1.01	16.4
Approach			648	0.0	648	0.0	0.889	81.2	LOS F	13.1	91.5	0.96	0.97	1.15	22.0
All Vehicles			6238	2.0	5814	2.2	0.911	50.2	LOS D	39.0	281.4	0.88	0.85	0.94	30.6

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)

Site: TCS 3986 [6. Windsor Rd - Nelson Rd (Site Folder: 20-Year Future PM)]

Network: 22 [PM - Windsor Corridor - Int 5 upgraded (Network Folder: 20-Year Future Conditions)]

5pm-6pm
Site Category: Proposed Design
Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 120 seconds (Site User-Given Phase Times)

Timings based on settings in the Site Phasing & Timing dialog
Phase Times specified by the user
Phase Sequence: ABDEG
Input Phase Sequence: A, B, D, E, G
Output Phase Sequence: A, B, D, E, G
Reference Phase: Phase A

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	Aver. Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Windsor Rd															
4	L2	All MCs	6	50.0	5	47.3	0.005	16.4	LOS B	0.0	0.4	0.28	0.64	0.28	42.5
5	T1	All MCs	2460	2.8	1925	2.5	0.938	21.8	LOS B	30.4	217.1	0.75	0.78	0.86	51.4
6	R2	All MCs	240	3.1	188	2.8	* 0.705	40.8	LOS C	4.0	29.0	1.00	0.83	1.06	43.8
Approach			2706	2.9	2117	2.6	0.938	23.5	LOS B	30.4	217.1	0.77	0.79	0.87	50.1
East: Nelson Rd															
7	L2	All MCs	274	1.5	274	1.5	* 0.752	67.4	LOS E	6.9	49.1	1.00	0.95	1.06	23.9
8	T1	All MCs	1	0.0	1	0.0	* 0.752	116.8	LOS F	6.9	49.1	1.00	0.95	1.06	26.6
9	R2	All MCs	558	2.1	558	2.1	* 1.633	635.6	LOS F	62.9	448.0	1.00	2.39	3.97	2.9
Approach			833	1.9	833	1.9	1.633	448.2	LOS F	62.9	448.0	1.00	1.92	3.01	4.0
North: Windsor Rd															
10	L2	All MCs	532	0.8	526	0.8	0.653	53.6	LOS D	11.6	81.7	0.81	0.93	0.81	47.0
11	T1	All MCs	1901	2.4	1881	2.4	* 1.189	212.4	LOS F	71.5	511.1	1.00	1.90	2.26	13.2
12	R2	All MCs	4	0.0	4	0.0	0.029	74.7	LOS F	0.1	0.5	0.92	0.64	0.92	36.7
Approach			2437	2.1	2411	2.1	1.189	177.5	LOS F	71.5	511.1	0.96	1.69	1.94	17.0
West: Nelson Rd															
1	L2	All MCs	7	0.0	7	0.0	0.037	51.0	LOS D	0.3	1.9	0.90	0.64	0.90	16.4
2	T1	All MCs	1	0.0	1	0.0	0.037	57.1	LOS E	0.3	1.9	0.90	0.64	0.90	25.2
3	R2	All MCs	4	25.0	4	25.0	0.017	38.0	LOS C	0.1	1.0	0.88	0.59	0.88	18.8
Approach			13	8.3	13	8.3	0.037	47.2	LOS D	0.3	1.9	0.90	0.62	0.90	18.0
All Vehicles			5988	2.4	5373	2.7	1.633	158.5	LOS F	71.5	511.1	0.89	1.36	1.68	15.9

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)

Site: 7v [7. Windsor Rd - Guntawong Rd - Convert to T-junction signal (Site Folder: 20-Year Future PM)]

Network: 22 [PM - Windsor Corridor - Int 5 upgraded (Network Folder: 20-Year Future Conditions)]

5pm-6pm
Site Category: Proposed Design
Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 150 seconds (Site Practical Cycle Time)

Timings based on settings in the Site Phasing & Timing dialog
Phase Times determined by the program
Downstream lane blockage effects included in determining phase times
Phase Sequence: ABCD
Input Phase Sequence: A, B, C, D*
Output Phase Sequence: A, B, C
Reference Phase: Phase A
(* Variable Phase)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	Aver. Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Windsor Rd															
4	L2	All MCs	224	0.9	160	0.9	0.800	8.3	LOS A	17.5	125.4	0.76	0.76	0.76	49.6
5	T1	All MCs	2045	3.7	1456	3.6	0.800	20.6	LOS B	31.5	227.6	0.79	0.75	0.79	42.3
Approach			2269	3.4	1616	3.3	0.800	19.3	LOS B	31.5	227.6	0.79	0.75	0.79	43.4
North: Windsor Rd															
11	T1	All MCs	2142	2.7	1829	2.7	* 1.021	84.4	LOS F	58.7	420.0	1.00	1.31	1.38	22.9
12	R2	All MCs	15	0.0	13	0.0	0.169	86.7	LOS F	0.6	4.0	0.99	0.68	0.99	29.0
Approach			2157	2.6	1842	2.7	1.021	84.4	LOS F	58.7	420.0	1.00	1.30	1.38	22.9
West: Guntawong Rd															
1	L2	All MCs	238	0.9	238	0.9	0.481	29.6	LOS C	7.3	51.4	0.77	0.81	0.77	29.5
3	R2	All MCs	214	0.0	214	0.0	* 0.562	70.3	LOS E	4.6	32.0	0.97	0.80	0.97	17.4
Approach			452	0.5	452	0.5	0.562	48.8	LOS D	7.3	51.4	0.87	0.81	0.87	22.2
All Vehicles			4878	2.8	3910	3.5	1.021	53.4	LOS D	58.7	420.0	0.90	1.01	1.08	27.3

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)

Site: TCS 3985 [8. Windsor Rd - Annangrove Rd (Site Folder: 20-Year Future PM)]

Network: 22 [PM - Windsor Corridor - Int 5 upgraded (Network Folder: 20-Year Future Conditions)]

5pm-6pm
Site Category: Proposed Design
Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 105 seconds (Site User-Given Phase Times)

Timings based on settings in the Site Phasing & Timing dialog
Phase Times specified by the user
Phase Sequence: ABDEG
Input Phase Sequence: A, B, D, E, G
Output Phase Sequence: A, B, D, E, G
Reference Phase: Phase A

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	Aver. Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Windsor Rd															
4	L2	All MCs	2	0.0	1	0.0	0.001	13.5	LOS A	0.0	0.0	0.16	0.62	0.16	64.6
5	T1	All MCs	2179	2.8	1547	2.6	0.889	19.2	LOS B	20.2	144.7	0.80	0.78	0.88	60.2
6	R2	All MCs	377	4.7	267	4.5	*0.758	36.2	LOS C	3.2	23.4	0.99	0.82	1.08	51.0
Approach			2558	3.0	1816	2.9	0.889	21.7	LOS B	20.2	144.7	0.83	0.79	0.91	57.9
East: Annangrove Rd															
7	L2	All MCs	414	2.3	414	2.3	0.487	24.1	LOS B	7.1	50.9	0.69	0.77	0.69	42.0
8	T1	All MCs	2	0.0	2	0.0	0.011	52.3	LOS D	0.1	0.4	0.92	0.57	0.92	36.7
9	R2	All MCs	566	2.6	566	2.6	*1.389	391.0	LOS F	49.1	351.1	1.00	2.22	3.51	5.8
Approach			982	2.5	982	2.5	1.389	235.7	LOS F	49.1	351.1	0.87	1.61	2.31	9.1
North: Windsor Rd															
10	L2	All MCs	703	0.7	603	0.7	0.506	26.9	LOS B	8.2	57.5	0.58	0.77	0.58	52.7
11	T1	All MCs	1746	2.7	1498	2.6	*1.238	238.5	LOS F	56.0	400.5	1.00	2.00	2.68	6.9
12	R2	All MCs	3	0.0	3	0.0	0.014	48.7	LOS D	0.0	0.3	0.92	0.62	0.92	41.2
Approach			2453	2.1	2104	2.1	1.238	177.6	LOS F	56.0	400.5	0.88	1.64	2.08	12.2
West: Rouse Hill Estate Access															
1	L2	All MCs	4	0.0	4	0.0	0.020	44.5	LOS D	0.1	1.0	0.87	0.64	0.87	24.5
2	T1	All MCs	1	0.0	1	0.0	*0.020	49.0	LOS D	0.1	1.0	0.87	0.64	0.87	37.0
3	R2	All MCs	1	0.0	1	0.0	0.003	33.2	LOS C	0.0	0.2	0.79	0.58	0.79	29.5
Approach			6	0.0	6	0.0	0.020	43.3	LOS D	0.1	1.0	0.86	0.63	0.86	28.2
All Vehicles			5999	2.6	4909	3.1	1.389	131.4	LOS F	56.0	400.5	0.86	1.32	1.69	18.8

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)

Site: TCS 3789 [9. Windsor Rd - Rouse Rd - Mile End Rd (Site Folder: 20-Year Future PM)]

Network: 22 [PM - Windsor Corridor - Int 5 upgraded (Network Folder: 20-Year Future Conditions)]

5pm-6pm
Site Category: Proposed Design
Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 140 seconds (Network Site User-Given Phase Times)

Timings based on settings in the Network Timing dialog
Phase Times specified by the user
Phase Sequence: ADEG
Input Phase Sequence: A, D, E, G
Output Phase Sequence: A, D, E, G
Reference Phase: Phase A

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	Aver. Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Windsor Rd															
1	L2	All MCs	417	0.5	286	0.5	0.213	29.0	LOS C	2.6	18.6	0.33	0.69	0.33	55.2
2	T1	All MCs	2218	3.3	1521	3.2	1.041	106.2	LOS F	47.5	341.6	1.00	1.35	1.48	15.1
3	R2	All MCs	361	3.5	248	3.4	*0.735	86.4	LOS F	5.3	38.3	1.00	0.84	1.09	19.5
Approach			2996	2.9	2055	2.9	1.041	93.1	LOS F	47.5	341.6	0.91	1.20	1.27	19.3
East: Mile End Rd															
4	L2	All MCs	382	2.5	382	2.5	0.940	81.4	LOS F	15.6	111.2	1.00	1.17	1.31	5.0
5	T1	All MCs	319	0.3	319	0.3	0.568	57.2	LOS E	7.4	51.6	0.96	0.78	0.96	26.1
6	R2	All MCs	224	0.9	224	0.9	0.839	54.7	LOS D	8.0	56.4	1.00	0.90	1.18	7.3
Approach			925	1.4	925	1.4	0.940	66.6	LOS E	15.6	111.2	0.98	0.97	1.15	13.9
North: Windsor Rd															
7	L2	All MCs	140	3.8	105	3.9	0.097	19.5	LOS B	1.8	13.2	0.45	0.71	0.45	56.4
8	T1	All MCs	1766	3.3	1330	3.4	*1.162	160.2	LOS F	55.9	402.6	1.00	1.63	1.94	19.7
9	R2	All MCs	162	1.3	122	1.3	0.537	43.0	LOS D	2.8	19.6	0.98	0.78	0.98	47.5
Approach			2068	3.2	1558	3.2	1.162	141.5	LOS F	55.9	402.6	0.96	1.50	1.77	22.2
West: Rouse Rd															
10	L2	All MCs	171	1.2	171	1.2	0.302	45.1	LOS D	5.4	38.2	0.81	0.78	0.81	27.2
11	T1	All MCs	344	0.3	344	0.3	*1.073	158.6	LOS F	22.3	156.2	1.00	1.41	1.76	13.4
12	R2	All MCs	271	1.6	271	1.6	*1.363	395.4	LOS F	24.6	174.7	1.00	1.75	2.85	5.1
Approach			785	0.9	785	0.9	1.363	215.6	LOS F	24.6	174.7	0.96	1.39	1.93	9.4
All Vehicles			6775	2.5	5323	3.2	1.363	120.7	LOS F	55.9	402.6	0.94	1.28	1.49	17.4

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Override Site Data tab).
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).

Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Green.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

* Critical Movement (Signal Timing)

Site: TCS 3788 [10. Windsor Rd - Commercial Rd (Site Folder: 20-Year Future PM)]

Network: 22 [PM - Windsor Corridor - Int 5 upgraded (Network Folder: 20-Year Future Conditions)]

5pm-6pm
Site Category: Proposed Design
Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 140 seconds (Network Site User-Given Phase Times)

Timings based on settings in the Network Timing dialog
Phase Times specified by the user
Phase Sequence: ABCD
Input Phase Sequence: A, B, C, D
Output Phase Sequence: A, B, C, D
Reference Phase: Phase D

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	Aver. Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Windsor Rd															
2	T1	All MCs	2628	2.5	1770	2.4	0.809	16.7	LOS B	29.3	209.4	0.84	0.61	0.84	39.2
3	R2	All MCs	494	0.4	333	0.4	* 0.642	45.4	LOS D	5.0	35.4	0.98	0.80	0.98	25.7
Approach			3122	2.2	2103	2.0	0.809	21.2	LOS B	29.3	209.4	0.86	0.64	0.86	35.2
East: Commercial Rd															
4	L2	All MCs	428	2.0	428	2.0	0.754	59.1	LOS E	13.1	93.5	0.92	0.94	0.93	12.6
6	R2	All MCs	424	5.0	424	5.0	* 1.188	265.8	LOS F	18.3	133.6	1.00	1.51	2.27	2.7
Approach			853	3.5	853	3.5	1.188	162.0	LOS F	18.3	133.6	0.96	1.23	1.59	4.4
North: Windsor Rd															
7	L2	All MCs	303	1.0	218	1.0	1.031	73.6	LOS F	44.6	319.1	1.00	1.22	1.44	21.2
8	T1	All MCs	2178	3.0	1569	3.0	* 1.031	62.4	LOS E	56.2	403.4	1.00	1.26	1.38	20.1
Approach			2481	2.8	1788	2.8	1.031	63.8	LOS E	56.2	403.4	1.00	1.25	1.39	20.2
All Vehicles			6456	2.6	4743	3.5	1.188	62.6	LOS E	56.2	403.4	0.93	0.98	1.19	17.7

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

* Critical Movement (Signal Timing)

Site: TCS 3557 [11. Windsor Rd - Schofields Rd - Rouse Hill Dr (Site Folder: 20-Year Future PM)]

Network: 22 [PM - Windsor Corridor - Int 5 upgraded (Network Folder: 20-Year Future Conditions)]

5pm-6pm
Site Category: Proposed Design
Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 140 seconds (Network Site User-Given Phase Times)

Timings based on settings in the Network Timing dialog
Phase Times specified by the user
Phase Sequence: ADEG
Input Phase Sequence: A, D, E, G
Output Phase Sequence: A, D, E, G
Reference Phase: Phase A

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	Aver. Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Windsor Rd															
1	L2	All MCs	1039	1.2	1039	1.2	0.806	54.8	LOS D	19.1	135.0	0.92	0.88	0.95	47.3
2	T1	All MCs	2358	2.5	2358	2.5	* 1.897	700.2	LOS F	118.0	843.6	1.00	2.53	3.56	2.1
3	R2	All MCs	99	25.5	99	25.5	0.213	75.3	LOS F	1.8	15.8	0.92	0.75	0.92	23.0
Approach			3496	2.7	3496	2.7	1.897	490.7	LOS F	118.0	843.6	0.97	1.99	2.71	5.8
East: Rouse Hill Dr															
4	L2	All MCs	173	6.7	173	6.7	0.245	33.6	LOS C	4.7	34.7	0.70	0.74	0.70	30.7
5	T1	All MCs	393	4.8	393	4.8	0.552	55.4	LOS D	7.5	54.6	0.96	0.79	0.96	40.3
6	R2	All MCs	234	0.9	234	0.9	0.626	73.5	LOS F	3.5	24.7	0.99	0.80	1.03	10.2
Approach			799	4.1	799	4.1	0.626	56.0	LOS D	7.5	54.6	0.91	0.79	0.92	31.9
North: Windsor Rd															
7	L2	All MCs	220	0.5	166	0.5	0.886	96.1	LOS F	7.7	54.2	1.00	0.94	1.30	17.4
8	T1	All MCs	1793	3.9	1349	3.8	0.820	56.8	LOS E	19.9	144.0	0.98	0.91	1.04	32.0
9	R2	All MCs	637	0.8	479	0.8	* 0.877	65.9	LOS E	10.3	72.7	1.00	0.90	1.14	40.0
Approach			2649	2.9	1994	2.8	0.886	62.2	LOS E	19.9	144.0	0.98	0.91	1.09	33.5
West: Schofields Rd															
10	L2	All MCs	523	1.8	523	1.8	0.840	68.1	LOS E	21.1	149.7	0.98	0.91	1.05	40.2
11	T1	All MCs	469	0.4	469	0.4	* 0.629	89.6	LOS F	9.1	63.9	0.97	0.82	0.97	39.8
12	R2	All MCs	653	2.1	653	2.1	* 1.788	836.0	LOS F	44.3	315.7	1.00	2.19	3.89	7.3
Approach			1645	1.5	1645	1.5	1.788	378.8	LOS F	44.3	315.7	0.98	1.39	2.15	13.4
All Vehicles			8589	2.7	7934	2.9	1.897	316.1	LOS F	118.0	843.6	0.97	1.47	2.01	10.6

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)

USER REPORT FOR NETWORK SITE

Project: 23009-Riverstone Sid v9.1 - 230728

Output produced by SIDRA INTERSECTION Version: 9.1.3.210 **Template: Movement Summary**

Site: TCS 4463 [12. Schofields Rd - Tallawong Rd - Ridgeline Dr (Site Folder: 20-Year Future AM)]

Network: 15 [AM - Schofields Corridor (Network Folder: 20-Year Future Conditions)]

8am-9am
Site Category: Proposed Design
Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 120 seconds (Network Site User-Given Phase Times)

Timings based on settings in the Network Timing dialog
Phase Times specified by the user
Phase Sequence: ADEG
Input Phase Sequence: A, D, E, G
Output Phase Sequence: A, D, E, G
Reference Phase: Phase A

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	Aver. Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Ridgeline Dr															
1	L2	All MCs	298	0.0	298	0.0	0.691	64.0	LOS E	9.3	65.2	0.93	0.84	0.93	23.3
2	T1	All MCs	302	0.3	302	0.3	1.169	243.6	LOS F	21.9	153.8	1.00	1.81	2.35	9.3
3	R2	All MCs	274	1.5	274	1.5	*1.497	536.4	LOS F	29.9	212.3	1.00	2.34	3.59	3.4
Approach			874	0.6	874	0.6	1.497	274.1	LOS F	29.9	212.3	0.98	1.65	2.26	7.1
East: Schofields Rd															
4	L2	All MCs	287	0.7	278	0.7	0.228	30.9	LOS C	4.4	31.1	0.53	0.71	0.53	43.7
5	T1	All MCs	1368	3.3	1326	3.3	*0.952	70.3	LOS E	29.8	214.3	1.00	1.14	1.24	17.5
6	R2	All MCs	142	0.0	138	0.0	0.747	74.2	LOS F	5.2	36.4	1.00	0.87	1.07	20.2
Approach			1798	2.6	1742	2.7	0.952	64.3	LOS E	29.8	214.3	0.93	1.05	1.11	21.4
North: Tallawong Rd															
7	L2	All MCs	186	1.7	186	1.7	0.314	48.8	LOS D	5.0	35.9	0.80	0.78	0.80	13.4
8	T1	All MCs	364	2.6	364	2.6	1.102	176.3	LOS F	22.9	163.9	1.00	1.55	2.01	11.8
9	R2	All MCs	459	6.2	459	6.2	1.296	356.5	LOS F	20.3	149.4	1.00	1.78	2.90	2.0
Approach			1009	4.1	1009	4.1	1.296	234.7	LOS F	22.9	163.9	0.96	1.51	2.19	5.5
West: Schofields Rd															
10	L2	All MCs	647	2.6	561	2.6	*0.448	10.3	LOS A	3.9	28.0	0.26	0.71	0.26	53.8
11	T1	All MCs	1419	3.1	1229	3.1	0.843	26.3	LOS B	18.9	135.7	0.86	0.81	0.90	42.4
12	R2	All MCs	252	0.4	218	0.4	1.189	251.2	LOS F	15.9	111.8	1.00	1.42	2.34	13.9
Approach			2318	2.7	2008	2.7	1.189	46.3	LOS D	18.9	135.7	0.71	0.85	0.88	33.5
All Vehicles			5999	2.6	5633	2.8	1.497	120.9	LOS F	29.9	214.3	0.86	1.15	1.40	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)

Site: TCS 4511 [13. Schofields Rd - Hambledon Rd - Upgrade to 4-way signal (Site Folder: 20-Year Future AM)]

Network: 15 [AM - Schofields Corridor (Network Folder: 20-Year Future Conditions)]

8am-9am
Site Category: Proposed Design
Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 120 seconds (Network User-Given Cycle Time)

Timings based on settings in the Network Timing dialog
Phase Times determined by the program
Downstream lane blockage effects included in determining phase times
Phase Sequence: All Phases
Input Phase Sequence: A, B*, C*, D, D1*, D2*, E, F1*, F2*, G, G1*, G2*
Output Phase Sequence: A, D, E, G, G1*
Reference Phase: Phase A
(* Variable Phase)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	Aver. Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Hambledon Rd															
1	L2	All MCs	385	3.0	385	3.0	0.580	29.1	LOS C	7.7	55.6	0.80	0.87	0.80	41.3
2	T1	All MCs	159	0.0	159	0.0	0.819	69.0	LOS E	3.2	22.1	1.00	0.90	1.31	25.1
3	R2	All MCs	435	5.3	435	5.3	* 1.172	227.6	LOS F	31.6	231.6	1.00	1.62	2.31	4.7
Approach			979	3.5	979	3.5	1.172	123.7	LOS F	31.6	231.6	0.92	1.21	1.56	14.7
East: Schofields Rd															
4	L2	All MCs	677	3.1	630	3.0	0.434	7.2	LOS A	3.4	24.3	0.17	0.59	0.17	56.6
5	T1	All MCs	1216	3.8	1131	3.7	0.860	9.8	LOS A	12.0	86.7	0.60	0.56	0.63	61.8
6	R2	All MCs	159	0.0	148	0.0	* 1.069	131.8	LOS F	7.9	55.5	1.00	1.10	1.69	22.4
Approach			2052	3.3	1909	3.2	1.069	18.4	LOS B	12.0	86.7	0.49	0.61	0.56	53.3
North: RoadName															
7	L2	All MCs	56	0.0	56	0.0	0.149	46.0	LOS D	1.7	11.6	0.84	0.70	0.84	24.3
8	T1	All MCs	205	0.0	205	0.0	* 1.053	130.9	LOS F	5.6	39.2	1.00	1.17	1.97	16.5
9	R2	All MCs	229	0.0	229	0.0	0.297	49.1	LOS D	3.5	24.5	0.89	0.77	0.89	36.7
Approach			491	0.0	491	0.0	1.053	83.0	LOS F	5.6	39.2	0.93	0.93	1.34	25.0
West: Schofields Rd															
10	L2	All MCs	203	0.0	203	0.0	0.161	55.6	LOS D	1.4	9.6	0.25	0.64	0.25	56.1
11	T1	All MCs	1800	2.5	1800	2.5	* 1.159	213.9	LOS F	66.6	475.7	1.00	1.93	2.17	10.9
12	R2	All MCs	527	1.4	527	1.4	1.153	222.2	LOS F	37.0	262.4	1.00	1.49	2.20	13.5
Approach			2531	2.0	2531	2.0	1.159	202.9	LOS F	66.6	475.7	0.94	1.73	2.02	12.8
All Vehicles			6052	2.5	5909	2.6	1.172	120.2	LOS F	66.6	475.7	0.79	1.22	1.42	20.9

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Override Site Data tab).
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
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)

Site: TCS 4474 [14. Schofields Rd - Cudgegong Rd (Site Folder: 20-Year Future AM)]

Network: 15 [AM - Schofields Corridor (Network Folder: 20-Year Future Conditions)]

8am-9am
Site Category: Proposed Design
Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 120 seconds (Network Site User-Given Phase Times)

Timings based on settings in the Network Timing dialog
Phase Times specified by the user
Phase Sequence: ABC
Input Phase Sequence: A, B, C
Output Phase Sequence: A, B, C
Reference Phase: Phase A

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	Aver. Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
East: Schofields Rd															
5	T1	All MCs	1307	2.8	1307	2.8	0.590	34.3	LOS C	21.5	154.3	1.00	0.64	1.00	47.2
6	R2	All MCs	265	4.8	265	4.8	* 0.742	67.8	LOS E	5.0	36.3	1.00	0.87	1.14	37.3
Approach			1573	3.1	1573	3.1	0.742	40.0	LOS C	21.5	154.3	1.00	0.67	1.02	44.9
North: Cudgegong Rd															
7	L2	All MCs	525	2.2	525	2.2	0.646	40.2	LOS C	12.4	88.8	0.79	0.82	0.79	51.3
9	R2	All MCs	529	2.0	529	2.0	* 1.119	187.9	LOS F	34.9	248.3	1.00	1.45	2.04	4.6
Approach			1055	2.1	1055	2.1	1.119	114.3	LOS F	34.9	248.3	0.89	1.14	1.42	21.6
West: Schofields Rd															
10	L2	All MCs	344	5.5	293	5.5	0.907	16.8	LOS B	28.0	201.9	1.00	0.95	1.07	27.4
11	T1	All MCs	1502	2.2	1278	2.3	* 0.907	59.6	LOS E	28.2	201.9	1.00	0.98	1.08	44.9
Approach			1846	2.9	1571	2.9	0.907	51.6	LOS D	28.2	201.9	1.00	0.98	1.08	42.8
All Vehicles			4474	2.8	4198	3.0	1.119	63.0	LOS E	34.9	248.3	0.97	0.90	1.14	37.2

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)

USER REPORT FOR NETWORK SITE

Project: 23009-Riverstone Sid v9.1 - 230728

Output produced by SIDRA INTERSECTION Version: 9.1.3.210 **Template: Movement Summary**

Site: TCS 4463 [12. Schofields Rd - Tallawong Rd - Ridgeline Dr (Site Folder: 20-Year Future PM)]

Network: 16 [PM - Schofields Corridor (Network Folder: 20-Year Future Conditions)]

5pm-6pm
Site Category: Proposed Design
Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 120 seconds (Network Site User-Given Phase Times)

Timings based on settings in the Network Timing dialog
Phase Times specified by the user
Phase Sequence: ADEG
Input Phase Sequence: A, D, E, G
Output Phase Sequence: A, D, E, G
Reference Phase: Phase A

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	Aver. Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Ridgeline Dr															
1	L2	All MCs	187	0.6	187	0.6	0.316	51.4	LOS D	5.1	35.7	0.80	0.77	0.80	24.7
2	T1	All MCs	249	0.8	249	0.8	0.821	73.8	LOS F	9.4	66.0	1.00	1.00	1.17	24.1
3	R2	All MCs	281	1.1	281	1.1	* 1.533	567.7	LOS F	31.7	223.7	1.00	2.44	3.70	3.2
Approach			718	0.9	718	0.9	1.533	261.3	LOS F	31.7	223.7	0.95	1.51	2.07	7.4
East: Schofields Rd															
4	L2	All MCs	286	0.0	273	0.0	0.203	25.4	LOS B	4.3	30.3	0.58	0.65	0.58	44.7
5	T1	All MCs	1584	1.1	1508	1.1	* 1.082	146.6	LOS F	44.1	311.7	1.00	1.53	1.72	9.3
6	R2	All MCs	131	1.6	124	1.6	0.909	82.1	LOS F	5.1	36.0	1.00	0.97	1.37	19.3
Approach			2001	1.0	1905	1.0	1.082	125.1	LOS F	44.1	311.7	0.94	1.37	1.53	12.4
North: Tallawong Rd															
7	L2	All MCs	129	0.0	129	0.0	0.221	38.5	LOS C	3.4	24.0	0.78	0.76	0.78	13.5
8	T1	All MCs	281	1.1	281	1.1	0.729	51.6	LOS D	9.8	69.0	0.99	0.87	1.04	25.3
9	R2	All MCs	415	4.8	415	4.8	1.206	262.1	LOS F	16.4	119.7	1.00	1.60	2.54	2.6
Approach			825	2.8	825	2.8	1.206	155.3	LOS F	16.4	119.7	0.96	1.22	1.75	7.4
West: Schofields Rd															
10	L2	All MCs	698	1.8	598	1.8	* 0.452	13.3	LOS A	7.5	53.1	0.46	0.74	0.46	51.4
11	T1	All MCs	1443	1.5	1236	1.5	0.827	29.8	LOS C	19.0	134.7	0.88	0.83	0.93	40.5
12	R2	All MCs	293	0.4	251	0.3	1.823	820.4	LOS F	33.6	236.1	1.00	2.16	4.42	5.0
Approach			2434	1.5	2085	1.4	1.823	120.2	LOS F	33.6	236.1	0.78	0.96	1.21	18.7
All Vehicles			5978	1.4	5532	1.5	1.823	145.4	LOS F	44.1	311.7	0.88	1.21	1.51	12.8

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)

Site: TCS 4511 [13. Schofields Rd - Hambledon Rd - Upgrade to 4-way signal (Site Folder: 20-Year Future PM)]

Network: 16 [PM - Schofields Corridor (Network Folder: 20-Year Future Conditions)]

5pm-6pm
Site Category: Proposed Design
Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 120 seconds (Network User-Given Cycle Time)

Timings based on settings in the Network Timing dialog
Phase Times determined by the program
Downstream lane blockage effects included in determining phase times
Phase Sequence: All Phases
Input Phase Sequence: A, B*, C*, D, D1*, D2*, E, F1*, F2*, G, G1*, G2*
Output Phase Sequence: A, B*, D, D2*, E, G, G2*
Reference Phase: Phase A
(* Variable Phase)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	Aver. Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Hambledon Rd															
1	L2	All MCs	460	0.9	460	0.9	0.585	21.5	LOS B	10.7	75.4	0.75	0.81	0.75	45.4
2	T1	All MCs	138	0.0	138	0.0	0.251	57.1	LOS E	2.2	15.7	0.93	0.72	0.93	29.8
3	R2	All MCs	737	2.0	737	2.0	* 1.312	355.9	LOS F	66.5	473.8	1.00	1.96	2.88	3.2
Approach			1335	1.4	1335	1.4	1.312	209.8	LOS F	66.5	473.8	0.91	1.43	1.94	9.2
East: Schofields Rd															
4	L2	All MCs	528	4.2	466	4.4	0.340	44.3	LOS D	3.8	27.5	0.31	0.68	0.31	54.5
5	T1	All MCs	1533	3.7	1352	3.9	* 1.320	347.3	LOS F	62.6	452.7	1.00	2.22	2.87	12.8
6	R2	All MCs	58	0.0	51	0.0	0.207	67.2	LOS E	1.4	10.1	0.80	0.72	0.80	37.8
Approach			2119	3.7	1870	3.9	1.320	264.1	LOS F	62.6	452.7	0.82	1.79	2.18	15.3
North: RoadName															
7	L2	All MCs	140	0.0	140	0.0	0.713	44.1	LOS D	3.9	27.1	1.00	0.81	1.09	25.0
8	T1	All MCs	186	0.0	186	0.0	* 0.955	82.4	LOS F	4.1	28.7	1.00	1.04	1.63	22.5
9	R2	All MCs	212	0.0	212	0.0	0.263	47.8	LOS D	3.2	22.2	0.87	0.76	0.87	37.1
Approach			538	0.0	538	0.0	0.955	58.8	LOS E	4.1	28.7	0.95	0.87	1.19	29.0
West: Schofields Rd															
10	L2	All MCs	299	0.0	299	0.0	0.185	52.6	LOS D	1.3	9.3	0.16	0.63	0.16	57.0
11	T1	All MCs	1374	1.8	1374	1.8	1.145	208.2	LOS F	50.6	359.8	1.00	1.79	2.14	11.1
12	R2	All MCs	324	2.6	324	2.6	* 1.341	374.6	LOS F	26.5	189.5	1.00	1.76	3.04	8.2
Approach			1997	1.6	1997	1.6	1.341	211.9	LOS F	50.6	359.8	0.87	1.61	1.99	12.4
All Vehicles			5988	2.2	5739	2.3	1.341	214.1	LOS F	66.5	473.8	0.87	1.56	1.96	13.6

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)

Site: TCS 4474 [14. Schofields Rd - Cudgegong Rd (Site Folder: 20-Year Future PM)]

Network: 16 [PM - Schofields Corridor (Network Folder: 20-Year Future Conditions)]

5pm-6pm
Site Category: Proposed Design
Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 120 seconds (Network Site User-Given Phase Times)

Timings based on settings in the Network Timing dialog
Phase Times specified by the user
Phase Sequence: ABC
Input Phase Sequence: A, B, C
Output Phase Sequence: A, B, C
Reference Phase: Phase A

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	Aver. Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
East: Schofields Rd															
5	T1	All MCs	1618	1.1	1618	1.1	* 0.997	83.5	LOS F	39.4	278.6	1.00	1.24	1.30	32.2
6	R2	All MCs	372	3.7	372	3.7	1.238	291.8	LOS F	15.1	109.0	1.00	1.52	2.68	15.3
Approach			1989	1.6	1989	1.6	1.238	122.4	LOS F	39.4	278.6	1.00	1.29	1.56	26.1
North: Cudgegong Rd															
7	L2	All MCs	296	2.8	296	2.8	0.335	14.2	LOS A	4.4	31.5	0.51	0.71	0.51	56.6
9	R2	All MCs	424	0.5	424	0.5	* 1.031	119.2	LOS F	23.9	167.8	1.00	1.28	1.68	6.7
Approach			720	1.5	720	1.5	1.031	76.1	LOS F	23.9	167.8	0.80	1.05	1.20	24.0
West: Schofields Rd															
10	L2	All MCs	363	2.6	303	2.5	0.867	10.3	LOS A	15.7	111.5	0.64	0.71	0.67	46.8
11	T1	All MCs	1459	1.1	1219	1.0	0.867	14.5	LOS B	18.9	133.4	0.70	0.72	0.75	60.7
Approach			1822	1.4	1523	1.3	0.867	13.7	LOS A	18.9	133.4	0.69	0.72	0.73	59.2
All Vehicles			4532	1.5	4232	1.6	1.238	75.4	LOS F	39.4	278.6	0.85	1.04	1.20	33.5

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

* Critical Movement (Signal Timing)

USER REPORT FOR NETWORK SITE

Project: 23009-Riverstone Sid v9.1 - 230728

Output produced by SIDRA INTERSECTION Version: 9.1.3.210 **Template: Movement Summary**

Site: 3a [3. Garfield Rd E - Edmund St (Site Folder: 20-Year Future AM)]

Network: 17 [AM - Garfield Corridor (Network Folder: 20-Year Future Conditions)]

8am-9am
Site Category: Proposed Design
Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 120 seconds (Network User-Given Cycle Time)

Timings based on settings in the Network Timing dialog
Phase Times determined by the program
Downstream lane blockage effects included in determining phase times
Phase Sequence: ABC
Input Phase Sequence: A, B, C
Output Phase Sequence: A, B, C
Reference Phase: Phase A

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	Aver. Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
East: Garfield Rd E															
11	T1	All MCs	1266	4.8	1266	4.8	0.419	5.7	LOS A	9.5	69.0	0.46	0.30	0.46	65.1
12	R2	All MCs	115	5.5	115	5.5	* 0.397	61.7	LOS E	2.4	18.0	0.96	0.75	0.96	30.6
Approach			1381	4.9	1381	4.9	0.419	10.3	LOS A	9.5	69.0	0.50	0.34	0.50	60.6
North: Edmund St															
1	L2	All MCs	71	7.5	71	7.5	0.178	45.2	LOS D	2.0	15.3	0.85	0.74	0.85	22.6
3	R2	All MCs	9	22.2	9	22.2	* 0.079	62.3	LOS E	0.3	2.7	0.96	0.67	0.96	33.5
Approach			80	9.2	80	9.2	0.178	47.2	LOS D	2.0	15.3	0.86	0.73	0.86	24.7
West: Garfield Rd E															
4	L2	All MCs	33	12.9	33	12.9	0.024	9.1	LOS A	0.2	1.8	0.21	0.64	0.21	53.7
5	T1	All MCs	1014	5.6	1014	5.6	* 0.414	10.6	LOS A	8.5	62.6	0.52	0.46	0.52	56.6
Approach			1046	5.8	1046	5.8	0.414	10.6	LOS A	8.5	62.6	0.51	0.47	0.51	56.4
All Vehicles			2507	5.4	2507	5.4	0.419	11.6	LOS A	9.5	69.0	0.51	0.41	0.51	57.9

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)

Site: 20 [20. Garfield Rd E - Hambledon Rd (Access 2) (Site Folder: 20-Year Future AM)]

Network: 17 [AM - Garfield Corridor (Network Folder: 20-Year Future Conditions)]

8am-9am
Site Category: Proposed Design
Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 120 seconds (Network User-Given Cycle Time)

Timings based on settings in the Network Timing dialog
Phase Times determined by the program
Downstream lane blockage effects included in determining phase times
Phase Sequence: All Phases
Input Phase Sequence: A, B*, C*, D, D1*, D2*, E, F1*, F2*, G, G1*, G2*
Output Phase Sequence: A, C*, D, E, G, G1*
Reference Phase: Phase A
(* Variable Phase)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	Aver. Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Hambledon Rd (Access 2)															
1	L2	All MCs	137	0.0	137	0.0	0.496	27.5	LOS B	7.3	51.4	0.90	0.79	0.90	25.0
2	T1	All MCs	328	0.0	328	0.0	* 0.496	50.4	LOS D	7.3	51.4	0.91	0.78	0.91	35.3
3	R2	All MCs	82	0.0	82	0.0	0.194	33.0	LOS C	2.0	13.8	0.79	0.72	0.79	29.6
Approach			547	0.0	547	0.0	0.496	42.1	LOS C	7.3	51.4	0.89	0.77	0.89	32.5
East: Garfield Rd E															
4	L2	All MCs	269	0.0	269	0.0	0.425	52.5	LOS D	9.2	64.5	1.00	0.77	1.00	33.0
5	T1	All MCs	385	0.0	385	0.0	* 0.515	55.5	LOS D	6.9	48.1	1.00	0.85	1.00	22.8
6	R2	All MCs	116	0.0	116	0.0	* 0.156	35.5	LOS C	1.3	9.3	1.00	0.75	1.00	39.1
Approach			771	0.0	771	0.0	0.515	51.4	LOS D	9.2	64.5	1.00	0.81	1.00	29.5
North: Hambledon Rd (Access 2)															
7	L2	All MCs	42	0.0	42	0.0	0.271	19.1	LOS B	3.2	22.5	0.85	0.76	0.85	26.4
8	T1	All MCs	211	0.0	211	0.0	0.271	44.9	LOS D	3.6	25.4	0.86	0.72	0.86	36.3
9	R2	All MCs	168	0.0	168	0.0	* 0.499	35.9	LOS C	4.3	30.0	0.91	0.78	0.91	28.3
Approach			421	0.0	421	0.0	0.499	38.7	LOS C	4.3	30.0	0.88	0.75	0.88	32.9
West: Garfield Rd E															
10	L2	All MCs	141	0.0	141	0.0	0.240	17.0	LOS B	1.6	10.9	0.51	0.70	0.51	49.5
11	T1	All MCs	423	0.0	423	0.0	0.501	26.1	LOS B	5.1	35.8	0.68	0.56	0.68	38.0
12	R2	All MCs	141	0.0	141	0.0	0.138	29.5	LOS C	1.3	9.1	0.54	0.69	0.54	42.9
Approach			705	0.0	705	0.0	0.501	25.0	LOS B	5.1	35.8	0.62	0.61	0.62	42.0
All Vehicles			2444	0.0	2444	0.0	0.515	39.5	LOS C	9.2	64.5	0.84	0.73	0.84	33.7

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)

Site: 21 [21. Garfield Rd E - Access 3 (Site Folder: 20-Year Future AM)]

Network: 17 [AM - Garfield Corridor (Network Folder: 20-Year Future Conditions)]

8am-9am
Site Category: Proposed Design
Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 120 seconds (Network User-Given Cycle Time)

Timings based on settings in the Network Timing dialog
Phase Times determined by the program
Downstream lane blockage effects included in determining phase times
Phase Sequence: All Phase
Input Phase Sequence: A, B*, C*, D, E, E1*, E2*
Output Phase Sequence: A, B*, D, E, E2*
Reference Phase: Phase A
(* Variable Phase)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	Aver. Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Access Rd 3															
1	L2	All MCs	236	0.0	236	0.0	0.425	19.4	LOS B	8.7	61.2	0.71	0.73	0.71	32.7
2	T1	All MCs	135	0.0	135	0.0	0.425	38.0	LOS C	8.7	61.2	0.71	0.73	0.71	42.1
3	R2	All MCs	303	0.0	303	0.0	0.515	34.9	LOS C	8.2	57.6	0.81	0.80	0.81	38.7
Approach			674	0.0	674	0.0	0.515	30.1	LOS C	8.7	61.2	0.76	0.76	0.76	38.0
East: Garfield Rd E															
4	L2	All MCs	145	0.0	145	0.0	0.348	48.7	LOS D	4.4	30.9	0.89	0.79	0.89	33.6
5	T1	All MCs	435	0.0	435	0.0	0.446	42.1	LOS C	6.6	46.2	0.89	0.77	0.89	26.4
6	R2	All MCs	145	0.0	145	0.0	* 0.293	35.1	LOS C	1.6	11.0	0.94	0.75	0.94	38.8
Approach			725	0.0	725	0.0	0.446	42.0	LOS C	6.6	46.2	0.90	0.77	0.90	31.2
North: Access Rd 3															
7	L2	All MCs	263	0.0	263	0.0	0.313	17.9	LOS B	6.1	42.6	0.58	0.71	0.58	45.3
8	T1	All MCs	158	0.0	158	0.0	0.479	29.2	LOS C	6.1	42.6	0.76	0.74	0.76	39.6
9	R2	All MCs	105	0.0	105	0.0	* 0.479	47.6	LOS D	6.0	42.3	0.85	0.76	0.85	27.5
Approach			526	0.0	526	0.0	0.479	27.2	LOS B	6.1	42.6	0.69	0.73	0.69	40.3
West: Garfield Rd E															
10	L2	All MCs	56	0.0	56	0.0	0.144	28.7	LOS C	0.9	6.6	0.49	0.69	0.49	41.6
11	T1	All MCs	443	0.0	443	0.0	* 0.487	15.0	LOS B	3.5	24.5	0.43	0.47	0.43	51.0
12	R2	All MCs	56	0.0	56	0.0	0.108	35.0	LOS C	0.7	4.9	0.57	0.67	0.57	39.2
Approach			555	0.0	555	0.0	0.487	18.4	LOS B	3.5	24.5	0.45	0.51	0.45	48.4
All Vehicles			2480	0.0	2480	0.0	0.515	30.4	LOS C	8.7	61.2	0.72	0.70	0.72	38.6

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)

USER REPORT FOR NETWORK SITE

Project: 23009-Riverstone Sid v9.1 - 230728

Output produced by SIDRA INTERSECTION Version: 9.1.3.210 **Template: Movement Summary**

Site: 3a [3. Garfield Rd E - Edmund St (Site Folder: 20-Year Future PM)]

Network: 18 [PM - Garfield Corridor (Network Folder: 20-Year Future Conditions)]

5pm-6pm
Site Category: Proposed Design
Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 120 seconds (Network User-Given Cycle Time)

Timings based on settings in the Network Timing dialog
Phase Times determined by the program
Downstream lane blockage effects included in determining phase times
Phase Sequence: ABC
Input Phase Sequence: A, B, C
Output Phase Sequence: A, B, C
Reference Phase: Phase A

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	Aver. Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
East: Garfield Rd E															
11	T1	All MCs	1245	4.9	1245	4.9	0.412	5.0	LOS A	8.3	60.7	0.41	0.30	0.41	65.6
12	R2	All MCs	209	3.0	209	3.0	* 0.475	57.9	LOS E	4.4	31.4	0.96	0.78	0.96	31.5
Approach			1455	4.6	1455	4.6	0.475	12.6	LOS A	8.3	60.7	0.49	0.37	0.49	58.4
North: Edmund St															
1	L2	All MCs	56	9.4	56	9.4	0.117	39.5	LOS C	1.5	11.3	0.78	0.72	0.78	24.2
3	R2	All MCs	6	33.3	6	33.3	0.056	62.3	LOS E	0.2	2.0	0.95	0.65	0.95	33.3
Approach			62	11.9	62	11.9	0.117	41.9	LOS C	1.5	11.3	0.80	0.71	0.80	25.9
West: Garfield Rd E															
4	L2	All MCs	33	12.9	33	12.9	0.026	10.6	LOS A	0.3	2.2	0.27	0.65	0.27	52.8
5	T1	All MCs	1128	5.0	1128	5.0	* 0.498	14.5	LOS A	11.3	82.9	0.62	0.55	0.62	52.9
Approach			1161	5.3	1161	5.3	0.498	14.4	LOS A	11.3	82.9	0.61	0.56	0.61	52.9
All Vehicles			2678	5.1	2678	5.1	0.498	14.1	LOS A	11.3	82.9	0.55	0.46	0.55	55.6

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)

Site: 20 [20. Garfield Rd E - Hambledon Rd (Access 2) (Site Folder: 20-Year Future PM)]

Network: 18 [PM - Garfield Corridor (Network Folder: 20-Year Future Conditions)]

5pm-6pm
Site Category: Proposed Design
Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 120 seconds (Network User-Given Cycle Time)

Timings based on settings in the Network Timing dialog
Phase Times determined by the program
Downstream lane blockage effects included in determining phase times
Phase Sequence: All Phases
Input Phase Sequence: A, B*, C*, D, D1*, D2*, E, F1*, F2*, G, G1*, G2*
Output Phase Sequence: A, C*, D, E, G, G1*
Reference Phase: Phase A
(* Variable Phase)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	Aver. Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Hambledon Rd (Access 2)															
1	L2	All MCs	107	0.0	107	0.0	0.447	28.8	LOS C	6.0	41.8	0.91	0.78	0.91	24.5
2	T1	All MCs	267	0.0	267	0.0	0.447	52.1	LOS D	6.0	41.8	0.92	0.77	0.92	34.7
3	R2	All MCs	160	0.0	160	0.0	0.366	32.3	LOS C	3.8	26.7	0.84	0.77	0.84	29.9
Approach			535	0.0	535	0.0	0.447	41.5	LOS C	6.0	41.8	0.89	0.77	0.89	31.8
East: Garfield Rd E															
4	L2	All MCs	226	0.0	226	0.0	0.332	51.5	LOS D	7.9	55.3	1.00	0.72	1.00	33.3
5	T1	All MCs	323	0.0	323	0.0	* 0.497	58.2	LOS E	5.8	40.8	1.00	0.85	1.00	22.1
6	R2	All MCs	97	0.0	97	0.0	* 0.196	36.9	LOS C	1.1	7.4	1.00	0.74	1.00	38.5
Approach			646	0.0	646	0.0	0.497	52.6	LOS D	7.9	55.3	1.00	0.79	1.00	29.1
North: Hambledon Rd (Access 2)															
7	L2	All MCs	93	0.0	93	0.0	0.470	25.7	LOS B	5.7	39.6	0.91	0.85	0.91	24.8
8	T1	All MCs	307	0.0	307	0.0	* 0.470	51.0	LOS D	6.1	42.5	0.92	0.80	0.92	34.7
9	R2	All MCs	215	0.0	215	0.0	* 0.494	33.3	LOS C	5.3	37.1	0.88	0.79	0.88	29.4
Approach			615	0.0	615	0.0	0.494	41.0	LOS C	6.1	42.5	0.90	0.80	0.90	32.0
West: Garfield Rd E															
10	L2	All MCs	155	0.0	155	0.0	0.204	12.5	LOS A	1.2	8.3	0.32	0.66	0.32	52.4
11	T1	All MCs	504	0.0	504	0.0	0.500	19.4	LOS B	5.2	36.2	0.57	0.48	0.57	43.0
12	R2	All MCs	116	0.0	116	0.0	0.113	26.8	LOS B	0.9	6.6	0.48	0.67	0.48	44.3
Approach			775	0.0	775	0.0	0.500	19.2	LOS B	5.2	36.2	0.51	0.55	0.51	45.6
All Vehicles			2571	0.0	2571	0.0	0.500	37.4	LOS C	7.9	55.3	0.81	0.71	0.81	34.2

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)

Site: 21 [21. Garfield Rd E - Access 3 (Site Folder: 20-Year Future PM)]

Network: 18 [PM - Garfield Corridor (Network Folder: 20-Year Future Conditions)]

5pm-6pm
Site Category: Proposed Design
Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 120 seconds (Network User-Given Cycle Time)

Timings based on settings in the Network Timing dialog
Phase Times determined by the program
Downstream lane blockage effects included in determining phase times
Phase Sequence: All Phase
Input Phase Sequence: A, B*, C*, D, E, E1*, E2*
Output Phase Sequence: A, B*, D, E, E2*
Reference Phase: Phase A
(* Variable Phase)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	Aver. Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Access Rd 3															
1	L2	All MCs	100	0.0	100	0.0	0.440	28.1	LOS B	6.7	47.2	0.88	0.77	0.88	26.1
2	T1	All MCs	160	0.0	160	0.0	0.440	49.0	LOS D	6.7	47.2	0.88	0.77	0.88	35.7
3	R2	All MCs	140	0.0	140	0.0	0.440	47.2	LOS D	5.3	37.0	0.89	0.79	0.89	34.7
Approach			400	0.0	400	0.0	0.440	43.2	LOS D	6.7	47.2	0.88	0.78	0.88	33.5
East: Garfield Rd E															
4	L2	All MCs	357	0.0	357	0.0	* 0.512	37.5	LOS C	9.9	69.0	0.83	0.82	0.83	37.5
5	T1	All MCs	476	0.0	476	0.0	0.305	27.2	LOS B	5.8	40.3	0.73	0.67	0.73	33.9
6	R2	All MCs	357	0.0	357	0.0	* 0.443	29.6	LOS C	3.1	21.7	0.91	0.79	0.91	41.2
Approach			1189	0.0	1189	0.0	0.512	31.0	LOS C	9.9	69.0	0.81	0.75	0.81	37.8
North: Access Rd 3															
7	L2	All MCs	61	0.0	61	0.0	0.331	22.5	LOS B	4.9	34.4	0.83	0.72	0.83	37.2
8	T1	All MCs	166	0.0	166	0.0	0.506	44.9	LOS D	4.9	34.4	0.87	0.74	0.87	35.6
9	R2	All MCs	76	0.0	76	0.0	* 0.506	59.1	LOS E	4.3	29.9	0.95	0.79	0.95	22.9
Approach			303	0.0	303	0.0	0.506	43.9	LOS D	4.9	34.4	0.88	0.75	0.88	33.2
West: Garfield Rd E															
10	L2	All MCs	76	0.0	76	0.0	0.136	28.5	LOS B	1.4	9.7	0.54	0.71	0.54	41.7
11	T1	All MCs	494	0.0	494	0.0	0.389	19.3	LOS B	4.8	33.6	0.54	0.54	0.54	48.0
12	R2	All MCs	191	0.0	191	0.0	0.322	40.4	LOS C	3.0	21.3	0.72	0.74	0.72	37.1
Approach			760	0.0	760	0.0	0.389	25.5	LOS B	4.8	33.6	0.58	0.60	0.58	44.0
All Vehicles			2653	0.0	2653	0.0	0.512	32.7	LOS C	9.9	69.0	0.77	0.71	0.77	38.2

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)

USER REPORT FOR SITE

Project: 23009-Riverstone Sid v9.1 - 230913 Updates

Output produced by SIDRA INTERSECTION Version: 9.1.3.210 **Template: Movement Summary**

Site: 15v [15. Guntawong Rd - Cudgegong Rd - Convert to Roundabout (Site Folder: 20-Year Future AM)]

8am-9am
Site Category: Proposed Design
Roundabout

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Cudgegong Rd															
1	L2	All MCs	207	1.5	207	1.5	0.348	5.6	LOS A	2.6	18.6	0.57	0.59	0.57	53.6
3	R2	All MCs	171	1.9	171	1.9	0.348	10.5	LOS A	2.6	18.6	0.57	0.59	0.57	53.2
Approach			378	1.7	378	1.7	0.348	7.8	LOS A	2.6	18.6	0.57	0.59	0.57	53.4
East: Guntawong Rd - E															
4	L2	All MCs	42	0.0	42	0.0	0.267	5.7	LOS A	1.9	13.5	0.59	0.54	0.59	54.2
5	T1	All MCs	228	2.3	228	2.3	0.267	6.0	LOS A	1.9	13.5	0.59	0.54	0.59	53.1
Approach			271	1.9	271	1.9	0.267	6.0	LOS A	1.9	13.5	0.59	0.54	0.59	53.3
West: Guntawong Rd															
11	T1	All MCs	568	2.0	568	2.0	0.686	6.1	LOS A	8.1	57.5	0.74	0.56	0.74	51.8
12	R2	All MCs	271	2.7	271	2.7	0.686	10.7	LOS A	8.1	57.5	0.74	0.56	0.74	52.7
Approach			839	2.3	839	2.3	0.686	7.6	LOS A	8.1	57.5	0.74	0.56	0.74	52.2
All Vehicles			1487	2.1	1487	2.1	0.686	7.4	LOS A	8.1	57.5	0.67	0.56	0.67	52.7

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Parameter Settings dialog (Options 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.

Site: 16v [16. Guntawong Rd - Worcester Rd - Convert to Roundabout (Site Folder: 20-Year Future AM)]

8am-9am
Site Category: Proposed Design
Roundabout

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Worcester Rd															
1	L2	All MCs	27	7.7	27	7.7	0.064	5.1	LOS A	0.4	2.6	0.41	0.59	0.41	54.9
3	R2	All MCs	43	2.4	43	2.4	0.064	9.9	LOS A	0.4	2.6	0.41	0.59	0.41	54.4
Approach			71	4.5	71	4.5	0.064	8.1	LOS A	0.4	2.6	0.41	0.59	0.41	54.6
East: Guntawong Rd															
4	L2	All MCs	29	0.0	29	0.0	0.177	4.4	LOS A	1.1	7.9	0.29	0.42	0.29	56.1
5	T1	All MCs	202	1.6	202	1.6	0.177	4.6	LOS A	1.1	7.9	0.29	0.42	0.29	53.8
Approach			232	1.4	232	1.4	0.177	4.6	LOS A	1.1	7.9	0.29	0.42	0.29	54.3
West: Guntawong Rd															
11	T1	All MCs	445	2.6	445	2.6	0.361	4.4	LOS A	3.0	21.3	0.24	0.43	0.24	53.5
12	R2	All MCs	89	3.5	89	3.5	0.361	9.0	LOS A	3.0	21.3	0.24	0.43	0.24	55.7
Approach			535	2.8	535	2.8	0.361	5.2	LOS A	3.0	21.3	0.24	0.43	0.24	54.0
All Vehicles			837	2.5	837	2.5	0.361	5.2	LOS A	3.0	21.3	0.27	0.44	0.27	54.2

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Parameter Settings dialog (Options 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.

Site: 17 [17. Guntawong Rd - Tallawong Rd - Upgrade to roundabout (Site Folder: 20-Year Future AM)]

8am-9am
Site Category: Proposed Design
Roundabout

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Tallawong Rd - S															
1	L2	All MCs	151	5.6	151	5.6	0.385	6.0	LOS A	2.7	19.5	0.62	0.62	0.62	47.0
2	T1	All MCs	78	0.0	78	0.0	0.385	6.0	LOS A	2.7	19.5	0.62	0.62	0.62	48.8
3	R2	All MCs	159	5.3	159	5.3	0.385	10.8	LOS A	2.7	19.5	0.62	0.62	0.62	48.0
Approach			387	4.3	387	4.3	0.385	8.0	LOS A	2.7	19.5	0.62	0.62	0.62	47.8
East: Guntawong Rd - E															
4	L2	All MCs	167	1.3	167	1.3	0.490	8.0	LOS A	3.9	27.4	0.78	0.71	0.83	48.1
5	T1	All MCs	192	3.3	192	3.3	0.490	8.2	LOS A	3.9	27.4	0.78	0.71	0.83	51.1
6	R2	All MCs	63	0.0	63	0.0	0.490	12.7	LOS A	3.9	27.4	0.78	0.71	0.83	50.9
Approach			422	2.0	422	2.0	0.490	8.8	LOS A	3.9	27.4	0.78	0.71	0.83	50.0
North: Tallawong Rd - N															
7	L2	All MCs	42	0.0	42	0.0	0.333	11.0	LOS A	2.4	17.0	0.92	0.79	0.92	49.1
8	T1	All MCs	83	0.0	83	0.0	0.333	11.2	LOS A	2.4	17.0	0.92	0.79	0.92	45.2
9	R2	All MCs	54	0.0	54	0.0	0.333	15.8	LOS B	2.4	17.0	0.92	0.79	0.92	47.6
Approach			179	0.0	179	0.0	0.333	12.5	LOS A	2.4	17.0	0.92	0.79	0.92	47.1
West: Guntawong Rd - W															
10	L2	All MCs	22	0.0	22	0.0	0.711	8.3	LOS A	8.6	62.1	0.82	0.73	0.95	49.3
11	T1	All MCs	382	2.8	382	2.8	0.711	8.6	LOS A	8.6	62.1	0.82	0.73	0.95	49.8
12	R2	All MCs	357	4.7	357	4.7	0.711	13.4	LOS A	8.6	62.1	0.82	0.73	0.95	44.1
Approach			761	3.6	761	3.6	0.711	10.8	LOS A	8.6	62.1	0.82	0.73	0.95	47.6
All Vehicles			1749	3.0	1749	3.0	0.711	9.9	LOS A	8.6	62.1	0.78	0.71	0.84	48.2

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Parameter Settings dialog (Options 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.

Site: 18 [18. Guntawong Rd - Clarke St (Site Folder: 20-Year Future AM)]

8am-9am
Site Category: Proposed Design
Roundabout

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Clarke St - S															
2	T1	All MCs	302	0.0	302	0.0	0.458	5.9	LOS A	3.5	24.2	0.61	0.60	0.61	50.5
3	R2	All MCs	201	0.0	201	0.0	0.458	10.6	LOS A	3.5	24.2	0.61	0.60	0.61	50.2
Approach			503	0.0	503	0.0	0.458	7.8	LOS A	3.5	24.2	0.61	0.60	0.61	50.4
East: Guntawong Rd - E															
4	L2	All MCs	119	0.0	119	0.0	0.367	5.5	LOS A	2.6	18.7	0.58	0.62	0.58	50.3
6	R2	All MCs	271	5.4	271	5.4	0.367	10.5	LOS A	2.6	18.7	0.58	0.62	0.58	48.1
Approach			389	3.8	389	3.8	0.367	9.0	LOS A	2.6	18.7	0.58	0.62	0.58	48.8
North: Clarke St - N															
7	L2	All MCs	554	4.9	554	4.9	0.684	6.0	LOS A	7.3	52.8	0.72	0.57	0.73	50.3
8	T1	All MCs	267	0.0	267	0.0	0.684	6.0	LOS A	7.3	52.8	0.72	0.57	0.73	51.6
Approach			821	3.3	821	3.3	0.684	6.0	LOS A	7.3	52.8	0.72	0.57	0.73	50.8
All Vehicles			1714	2.5	1714	2.5	0.684	7.2	LOS A	7.3	52.8	0.65	0.59	0.66	50.2

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Parameter Settings dialog (Options 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.

Site: 19 [19. Clarke St - Riverstone Rd (Site Folder: 20-Year Future AM)]

8am-9am
Site Category: Proposed Design
Roundabout

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Clarke St - S															
1	L2	All MCs	234	0.0	234	0.0	0.441	4.6	LOS A	3.6	26.2	0.42	0.45	0.42	50.3
2	T1	All MCs	346	4.9	346	4.9	0.441	4.8	LOS A	3.6	26.2	0.42	0.45	0.42	54.7
3	R2	All MCs	2	50.0	2	50.0	0.441	10.4	LOS A	3.6	26.2	0.42	0.45	0.42	51.0
Approach			582	3.1	582	3.1	0.441	4.7	LOS A	3.6	26.2	0.42	0.45	0.42	53.4
East: Riverstone Rd - E															
4	L2	All MCs	3	66.7	3	66.7	0.013	13.8	LOS A	0.1	0.7	0.81	0.70	0.81	46.8
5	T1	All MCs	1	0.0	1	0.0	0.013	10.2	LOS A	0.1	0.7	0.81	0.70	0.81	45.9
6	R2	All MCs	1	0.0	1	0.0	0.013	14.8	LOS B	0.1	0.7	0.81	0.70	0.81	50.5
Approach			5	40.0	5	40.0	0.013	13.3	LOS A	0.1	0.7	0.81	0.70	0.81	47.6
North: Clarke St - N															
7	L2	All MCs	1	100.0	1	100.0	0.608	9.9	LOS A	5.7	41.6	0.72	0.62	0.75	51.3
8	T1	All MCs	548	4.4	548	4.4	0.608	6.7	LOS A	5.7	41.6	0.72	0.62	0.75	53.1
9	R2	All MCs	104	6.1	104	6.1	0.608	11.4	LOS A	5.7	41.6	0.72	0.62	0.75	50.5
Approach			654	4.8	654	4.8	0.608	7.5	LOS A	5.7	41.6	0.72	0.62	0.75	52.7
West: Riverstone Rd - W															
10	L2	All MCs	164	6.4	164	6.4	0.438	6.5	LOS A	3.1	21.9	0.65	0.66	0.65	50.8
11	T1	All MCs	1	0.0	1	0.0	0.438	6.5	LOS A	3.1	21.9	0.65	0.66	0.65	49.2
12	R2	All MCs	269	1.2	269	1.2	0.438	11.2	LOS A	3.1	21.9	0.65	0.66	0.65	46.5
Approach			435	3.1	435	3.1	0.438	9.4	LOS A	3.1	21.9	0.65	0.66	0.65	48.5
All Vehicles			1676	3.9	1676	3.9	0.608	7.1	LOS A	5.7	41.6	0.60	0.57	0.61	52.0

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Parameter Settings dialog (Options 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.

Site: 15v [15. Guntawong Rd - Cudgegong Rd - Convert to Roundabout (Site Folder: 20-Year Future PM)]

5pm-6pm
Site Category: Proposed Design
Roundabout

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Cudgegong Rd															
1	L2	All MCs	334	0.3	334	0.3	0.528	8.6	LOS A	4.7	32.9	0.81	0.73	0.88	52.6
3	R2	All MCs	133	0.8	133	0.8	0.528	13.5	LOS A	4.7	32.9	0.81	0.73	0.88	52.2
Approach			466	0.5	466	0.5	0.528	10.0	LOS A	4.7	32.9	0.81	0.73	0.88	52.5
East: Guntawong Rd															
4	L2	All MCs	57	1.9	57	1.9	0.402	4.9	LOS A	3.3	23.3	0.47	0.46	0.47	54.5
5	T1	All MCs	452	0.5	452	0.5	0.402	5.1	LOS A	3.3	23.3	0.47	0.46	0.47	53.5
Approach			508	0.6	508	0.6	0.402	5.1	LOS A	3.3	23.3	0.47	0.46	0.47	53.7
West: Guntawong Rd															
11	T1	All MCs	388	1.1	388	1.1	0.418	5.1	LOS A	3.7	26.4	0.50	0.50	0.50	52.8
12	R2	All MCs	136	1.6	136	1.6	0.418	9.8	LOS A	3.7	26.4	0.50	0.50	0.50	53.5
Approach			524	1.2	524	1.2	0.418	6.3	LOS A	3.7	26.4	0.50	0.50	0.50	53.0
All Vehicles			1499	0.8	1499	0.8	0.528	7.0	LOS A	4.7	32.9	0.59	0.55	0.61	53.0

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Parameter Settings dialog (Options 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.

Site: 16v [16. Guntawong Rd - Worcester Rd - Convert to Roundabout (Site Folder: 20-Year Future PM)]

5pm-6pm
Site Category: Proposed Design
Roundabout

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Worcester Rd															
1	L2	All MCs	78	0.0	78	0.0	0.129	5.3	LOS A	0.8	5.4	0.47	0.59	0.47	55.3
3	R2	All MCs	62	0.0	62	0.0	0.129	10.2	LOS A	0.8	5.4	0.47	0.59	0.47	54.7
Approach			140	0.0	140	0.0	0.129	7.5	LOS A	0.8	5.4	0.47	0.59	0.47	55.1
East: Guntawong Rd															
4	L2	All MCs	26	0.0	26	0.0	0.200	4.2	LOS A	1.3	9.3	0.26	0.41	0.26	56.2
5	T1	All MCs	246	1.7	246	1.7	0.200	4.5	LOS A	1.3	9.3	0.26	0.41	0.26	53.9
Approach			273	1.5	273	1.5	0.200	4.5	LOS A	1.3	9.3	0.26	0.41	0.26	54.3
West: Guntawong Rd															
11	T1	All MCs	387	1.6	387	1.6	0.322	4.5	LOS A	2.5	17.9	0.29	0.44	0.29	53.3
12	R2	All MCs	71	0.0	71	0.0	0.322	9.1	LOS A	2.5	17.9	0.29	0.44	0.29	55.7
Approach			458	1.4	458	1.4	0.322	5.2	LOS A	2.5	17.9	0.29	0.44	0.29	53.9
All Vehicles			871	1.2	871	1.2	0.322	5.3	LOS A	2.5	17.9	0.31	0.45	0.31	54.3

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Parameter Settings dialog (Options 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.

Site: 17 [17. Guntawong Rd - Tallawong Rd - Upgrade to roundabout (Site Folder: 20-Year Future PM)]

5pm-6pm
Site Category: Proposed Design
Roundabout

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Tallawong Rd - S															
1	L2	All MCs	239	1.8	239	1.8	0.614	9.4	LOS A	6.1	43.3	0.84	0.79	1.00	44.6
2	T1	All MCs	104	0.0	104	0.0	0.614	9.5	LOS A	6.1	43.3	0.84	0.79	1.00	46.3
3	R2	All MCs	205	2.1	205	2.1	0.614	14.2	LOS A	6.1	43.3	0.84	0.79	1.00	45.8
Approach			548	1.5	548	1.5	0.614	11.2	LOS A	6.1	43.3	0.84	0.79	1.00	45.4
East: Guntawong Rd - E															
4	L2	All MCs	83	0.0	83	0.0	0.489	6.5	LOS A	3.6	25.4	0.68	0.62	0.68	48.9
5	T1	All MCs	341	1.2	341	1.2	0.489	6.7	LOS A	3.6	25.4	0.68	0.62	0.68	51.7
6	R2	All MCs	69	0.0	69	0.0	0.489	11.3	LOS A	3.6	25.4	0.68	0.62	0.68	51.4
Approach			494	0.9	494	0.9	0.489	7.3	LOS A	3.6	25.4	0.68	0.62	0.68	51.3
North: Tallawong Rd - N															
7	L2	All MCs	29	0.0	29	0.0	0.234	8.2	LOS A	1.5	10.7	0.76	0.71	0.76	50.7
8	T1	All MCs	85	0.0	85	0.0	0.234	8.4	LOS A	1.5	10.7	0.76	0.71	0.76	47.4
9	R2	All MCs	60	0.0	60	0.0	0.234	13.0	LOS A	1.5	10.7	0.76	0.71	0.76	49.4
Approach			175	0.0	175	0.0	0.234	10.0	LOS A	1.5	10.7	0.76	0.71	0.76	48.8
West: Guntawong Rd - W															
10	L2	All MCs	9	0.0	9	0.0	0.506	6.7	LOS A	4.0	28.3	0.73	0.67	0.74	50.1
11	T1	All MCs	264	0.8	264	0.8	0.506	6.9	LOS A	4.0	28.3	0.73	0.67	0.74	50.7
12	R2	All MCs	215	2.0	215	2.0	0.506	11.6	LOS A	4.0	28.3	0.73	0.67	0.74	45.3
Approach			488	1.3	488	1.3	0.506	9.0	LOS A	4.0	28.3	0.73	0.67	0.74	48.8
All Vehicles			1705	1.1	1705	1.1	0.614	9.3	LOS A	6.1	43.3	0.76	0.70	0.81	48.6

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Parameter Settings dialog (Options 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.

Site: 18 [18. Guntawong Rd - Clarke St (Site Folder: 20-Year Future PM)]

5pm-6pm
Site Category: Proposed Design
Roundabout

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Clarke St - S															
2	T1	All MCs	288	0.0	288	0.0	0.496	7.7	LOS A	4.0	28.0	0.78	0.70	0.82	49.6
3	R2	All MCs	156	0.0	156	0.0	0.496	12.3	LOS A	4.0	28.0	0.78	0.70	0.82	49.4
Approach			444	0.0	444	0.0	0.496	9.3	LOS A	4.0	28.0	0.78	0.70	0.82	49.6
East: Guntawong Rd - E															
4	L2	All MCs	183	0.0	183	0.0	0.603	6.9	LOS A	5.6	39.7	0.73	0.68	0.78	49.6
6	R2	All MCs	460	1.6	460	1.6	0.603	11.8	LOS A	5.6	39.7	0.73	0.68	0.78	47.6
Approach			643	1.1	643	1.1	0.603	10.4	LOS A	5.6	39.7	0.73	0.68	0.78	48.2
North: Clarke St - N															
7	L2	All MCs	334	2.2	334	2.2	0.515	5.0	LOS A	4.6	32.4	0.54	0.50	0.54	51.1
8	T1	All MCs	313	0.0	313	0.0	0.515	5.2	LOS A	4.6	32.4	0.54	0.50	0.54	52.2
Approach			646	1.1	646	1.1	0.515	5.1	LOS A	4.6	32.4	0.54	0.50	0.54	51.6
All Vehicles			1734	0.9	1734	0.9	0.603	8.1	LOS A	5.6	39.7	0.67	0.62	0.70	49.8

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Parameter Settings dialog (Options 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.

Site: 19 [19. Clarke St - Riverstone Rd (Site Folder: 20-Year Future PM)]

5pm-6pm
Site Category: Proposed Design
Roundabout

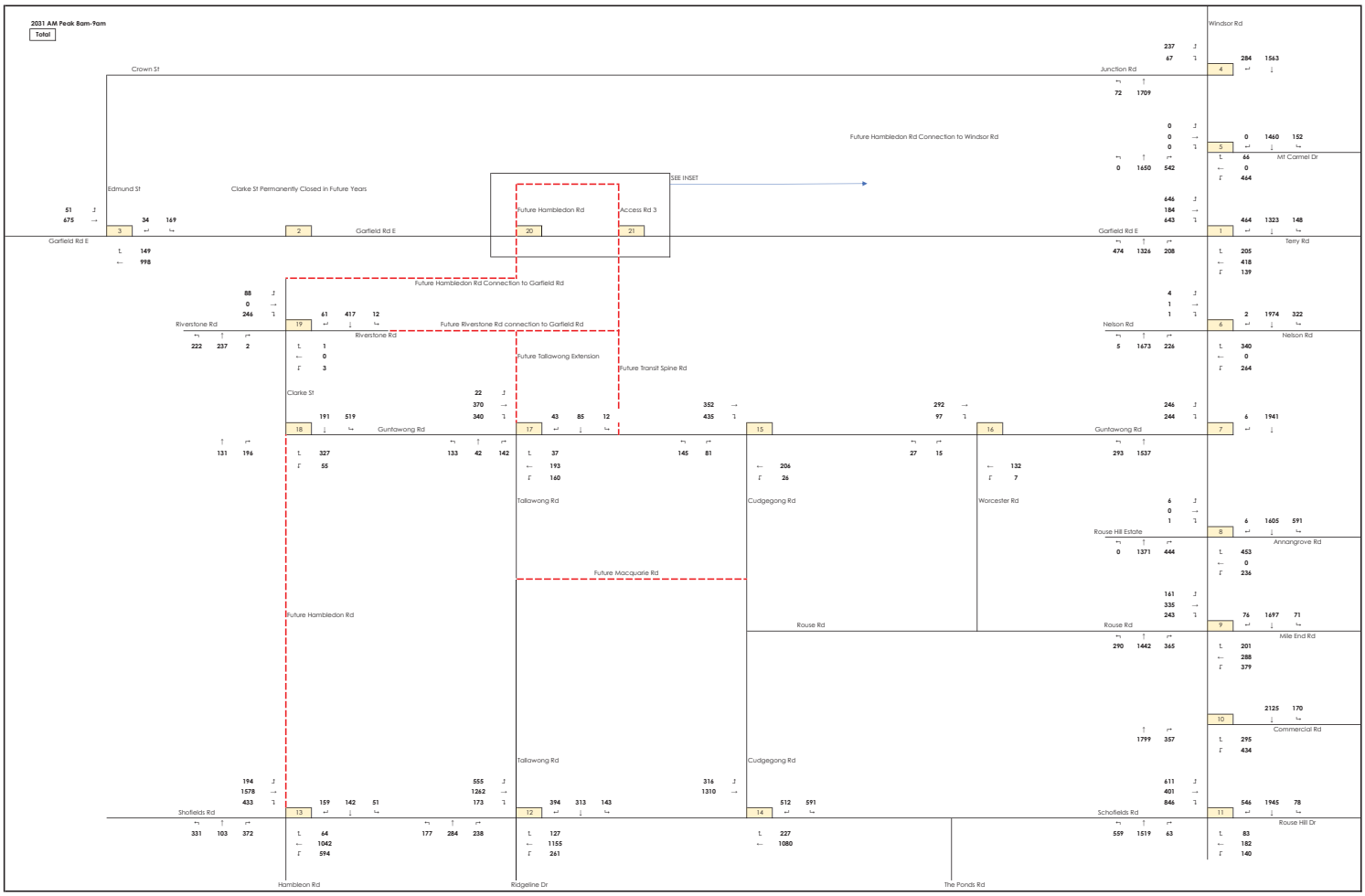
Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Clarke St - S															
1	L2	All MCs	324	1.0	324	1.0	0.579	5.0	LOS A	5.4	38.4	0.54	0.49	0.54	49.5
2	T1	All MCs	423	1.2	423	1.2	0.579	5.2	LOS A	5.4	38.4	0.54	0.49	0.54	54.4
3	R2	All MCs	1	0.0	1	0.0	0.579	9.8	LOS A	5.4	38.4	0.54	0.49	0.54	52.4
Approach			748	1.1	748	1.1	0.579	5.2	LOS A	5.4	38.4	0.54	0.49	0.54	52.9
East: Riverstone Rd - E															
4	L2	All MCs	6	0.0	6	0.0	0.015	8.9	LOS A	0.1	0.6	0.76	0.65	0.76	50.6
5	T1	All MCs	1	0.0	1	0.0	0.015	9.0	LOS A	0.1	0.6	0.76	0.65	0.76	48.6
6	R2	All MCs	2	0.0	2	0.0	0.015	13.7	LOS A	0.1	0.6	0.76	0.65	0.76	52.4
Approach			9	0.0	9	0.0	0.015	9.9	LOS A	0.1	0.6	0.76	0.65	0.76	50.9
North: Clarke St - N															
7	L2	All MCs	1	0.0	1	0.0	0.536	5.3	LOS A	4.6	32.9	0.58	0.54	0.58	53.8
8	T1	All MCs	505	1.3	505	1.3	0.536	5.5	LOS A	4.6	32.9	0.58	0.54	0.58	53.6
9	R2	All MCs	142	0.7	142	0.7	0.536	10.1	LOS A	4.6	32.9	0.58	0.54	0.58	51.4
Approach			648	1.1	648	1.1	0.536	6.5	LOS A	4.6	32.9	0.58	0.54	0.58	53.2
West: Riverstone Rd - W															
10	L2	All MCs	115	0.0	115	0.0	0.322	6.5	LOS A	2.1	14.8	0.65	0.67	0.65	50.9
11	T1	All MCs	1	100.0	1	100.0	0.322	10.3	LOS A	2.1	14.8	0.65	0.67	0.65	46.8
12	R2	All MCs	187	0.0	187	0.0	0.322	11.3	LOS A	2.1	14.8	0.65	0.67	0.65	46.5
Approach			303	0.3	303	0.3	0.322	9.5	LOS A	2.1	14.8	0.65	0.67	0.65	48.6
All Vehicles			1709	1.0	1709	1.0	0.579	6.5	LOS A	5.4	38.4	0.58	0.54	0.58	52.3

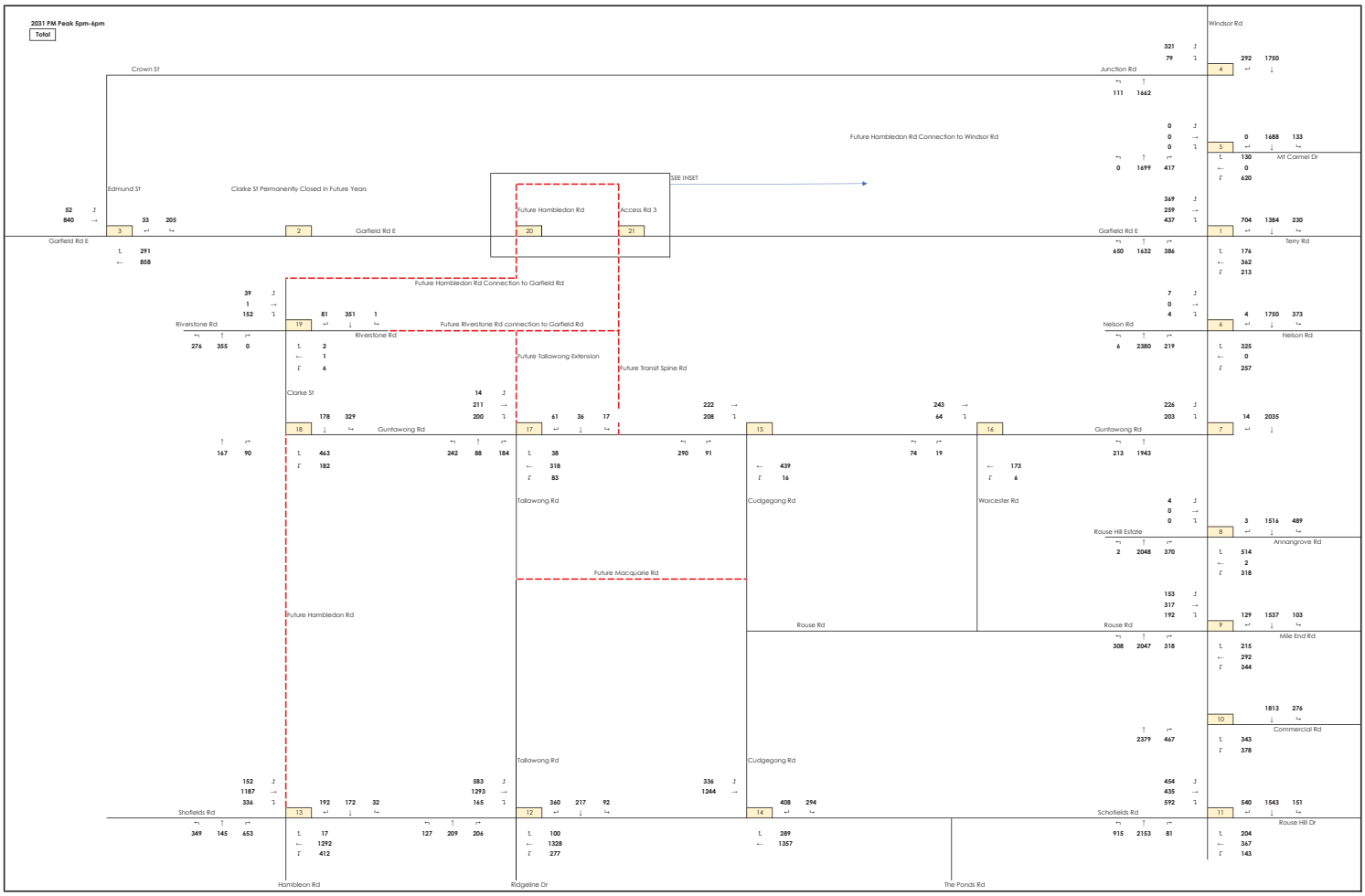
Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Parameter Settings dialog (Options tab).
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Roundabout 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.

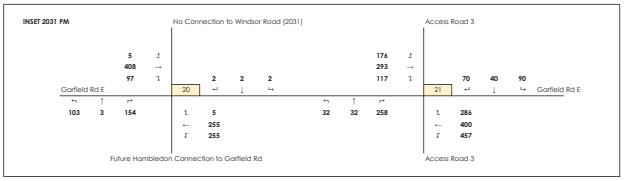
Appendix C

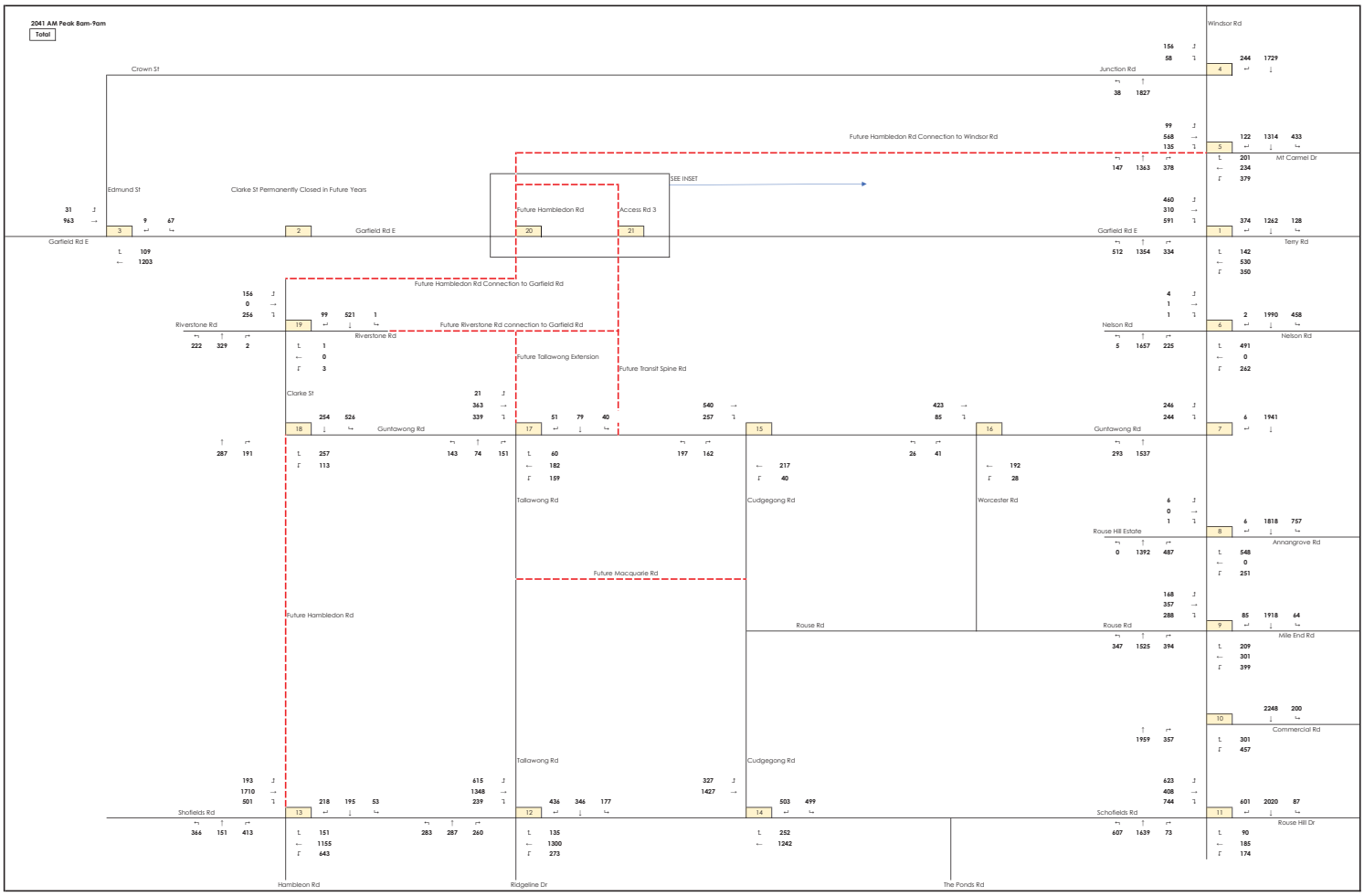
Estimated Traffic Volumes

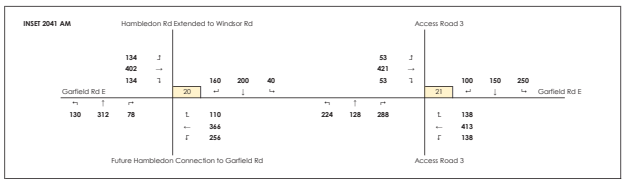

2031 AM Peak 8am-9am
Total
Windsor Rd
Crown St
Junction Rd
Future Hambledon Rd Connection to Windsor Rd
SEE INSET
Edmund St
Clarke St Permanently Closed In Future Years
Future Hambledon Rd
Access Rd 3
Garfield Rd E
Mt Carmel Dr
Terry Rd
Future Hambledon Rd Connection to Garfield Rd
Riverstone Rd
Future Riverstone Rd connection to Garfield Rd
Nelson Rd
Future Tallawong Extension
Future Transit Spine Rd
Clarke St
Guntawong Rd
Tallawong Rd
Cudgegong Rd
Worcester Rd
Rouse Hill Estate
Annangrove Rd
Future Macquarie Rd
Future Hambledon Rd
Rouse Rd
Mile End Rd
Commercial Rd
Shofields Rd
Rouse Hill Dr
Hambleton Rd
Ridgeline Dr
The Ponds Rd

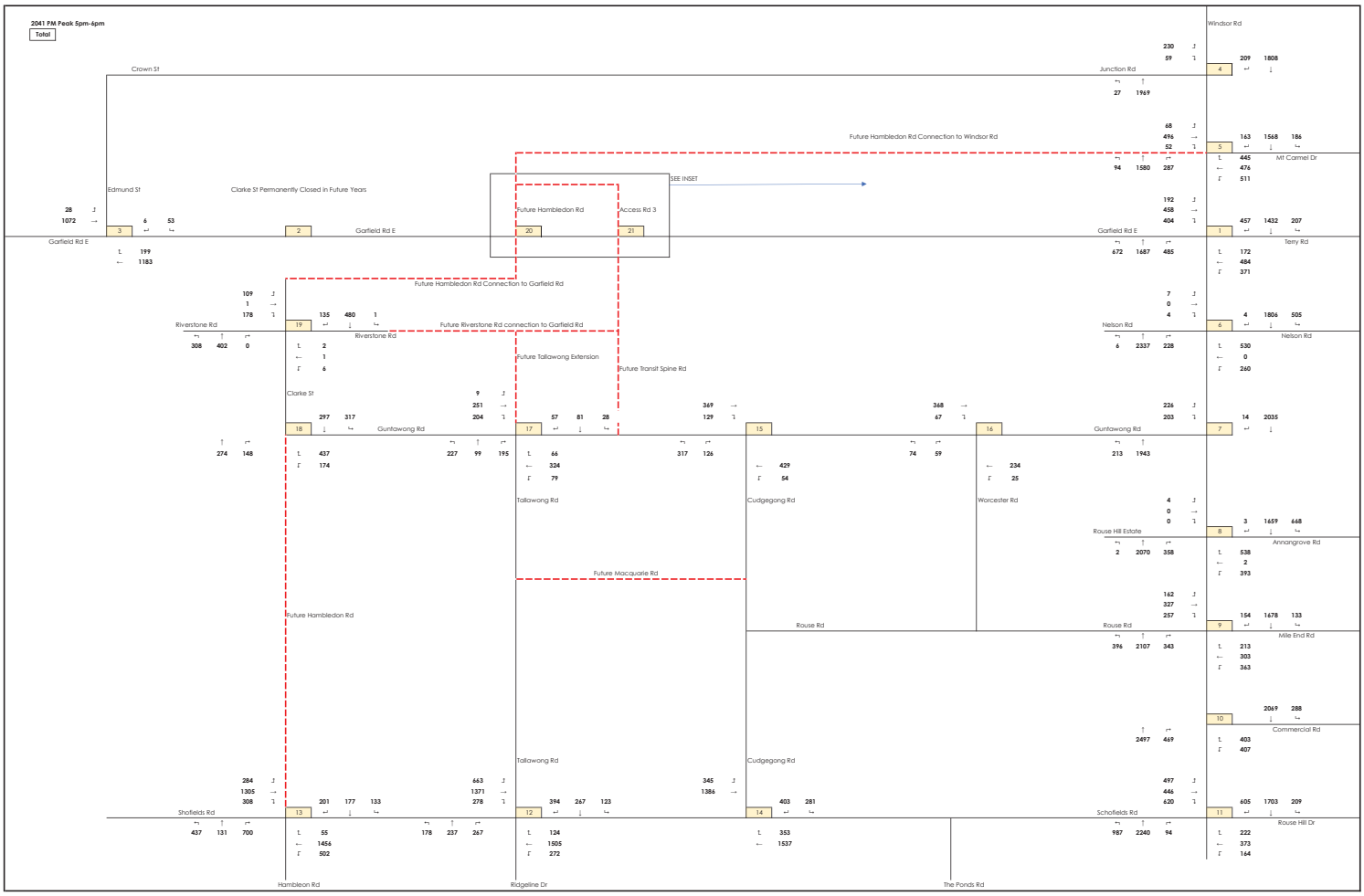

INSET 2031 AM
No Connection to Windsor Road (2031)
Access Road 3
4
286
68
45
363
45
Garfield Rd E
20
3
2
3
21
162
46
255
Garfield Rd E
106
0
158
0
314
314
58
58
463
63
412
159
Future Hambledon Connection to Garfield Rd
Access Road 3


2031 PM Peak 5pm-6pm
Total
Crown St
Windsor Rd
Junction Rd
Edmund St
Clarke St Permanently Closed In Future Years
Future Hambledon Rd Connection to Windsor Rd
SEE INSET
Future Hambledon Rd
Access Rd 3
Garfield Rd E
Mt Carmel Dr
Terry Rd
Future Hambledon Rd Connection to Garfield Rd
Riverstone Rd
Future Riverstone Rd connection to Garfield Rd
Nelson Rd
Future Tallawong Extension
Future Transit Spine Rd
Clarke St
Gunlawong Rd
Tallawong Rd
Cudgegong Rd
Worcester Rd
Rouse Hill Estate
Annangrove Rd
Future Macquarie Rd
Future Hambledon Rd
Rouse Rd
Mile End Rd
Commercial Rd
Shofields Rd
Schofields Rd
Rouse Hill Dr
Hambleton Rd
Ridgeline Dr
The Ponds Rd


INSET 2031 PM
No Connection to Windsor Road (2031)
Access Road 3
Garfield Rd E
20
21
Garfield Rd E
Future Hambledon Connection to Garfield Rd
Access Road 3


2041 AM Peak 8am-9am
Total
Windsor Rd
Crown St
Junction Rd
Future Hambledon Rd Connection to Windsor Rd
SEE INSET
Edmund St
Clarke St Permanently Closed in Future Years
Future Hambledon Rd
Access Rd 3
Garfield Rd E
Mt Carmel Dr
Terry Rd
Future Hambledon Rd Connection to Garfield Rd
Riverstone Rd
Future Riverstone Rd connection to Garfield Rd
Nelson Rd
Future Tallawong Extension
Future Transit Spine Rd
Clarke St
Guntawong Rd
Tallawong Rd
Cudgegong Rd
Worcester Rd
Rouse Hill Estate
Annangrove Rd
Future Macquarie Rd
Future Hambledon Rd
Rouse Rd
Mile End Rd
Commercial Rd
Shofields Rd
Rouse Hill Dr
Hambleon Rd
Ridgeline Dr
The Ponds Rd


INSET 2041 AM
Hambledon Rd Extended to Windsor Rd
Access Road 3
134
402
134
53
421
53
Garfield Rd E
20
160
200
40
21
100
150
250
Garfield Rd E
130
312
78
110
366
256
224
128
288
138
413
138
Future Hambledon Connection to Garfield Rd
Access Road 3


2041 PM Peak 5pm-6pm
Total
Windsor Rd
Crown St
Junction Rd
Future Hambledon Rd Connection to Windsor Rd
SEE INSET
Edmund St
Clarke St Permanently Closed in Future Years
Future Hambledon Rd
Access Rd 3
Garfield Rd E
Mt Carmel Dr
Terry Rd
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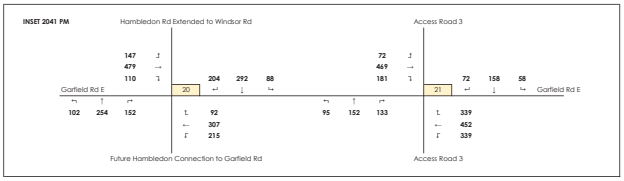
Worcester Rd
Rouse Hill Estate
Annangrove Rd
Future Macquarie Rd
Future Hambledon Rd
Rouse Rd
Mile End Rd
Commercial Rd
Shofields Rd
Schofields Rd
Rouse Hill Dr
Hambleon Rd
Ridgeline Dr
The Ponds Rd


INSET 2041 PM
Hambledon Rd Extended to Windsor Rd
Access Road 3
147
479
110
204
292
88
72
469
181
72
158
58
Garfield Rd E
20
21
Garfield Rd E
102
254
152
92
307
215
95
152
133
339
452
339
Future Hambledon Connection to Garfield Rd
Access Road 3

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