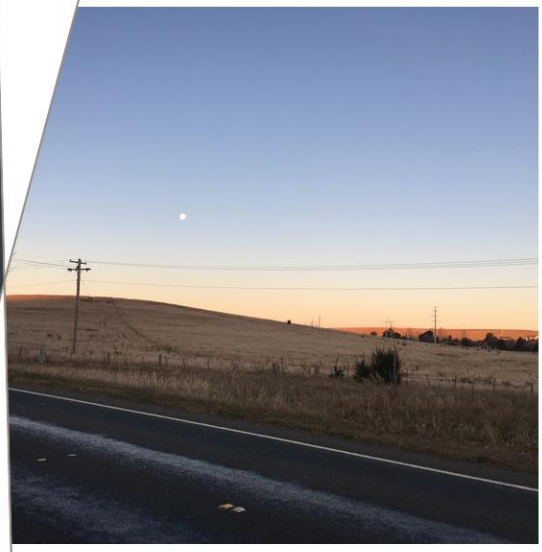
Transport Impact Assessment

Polo Flat Road Subdivision
Development Application

50522046



Prepared for

NSW Land and Housing Corporation

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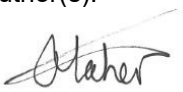

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Table of Contents

Appendices

Tables

Figures

1 Introduction

Cardno, now Stantec was engaged by NSW Land and Housing Corporation to undertake a local traffic network assessment to assess the potential traffic impacts generated by the proposed staged residential developments upon Lot 2 DP1285072, Lot 3 DP1285072 and Lot 4 DP1285072, Cooma, off Polo Flat Road and the Monaro Highway. This report will present outcomes for separate precincts as well as the combined ultimate development.

1.1 Scope of Services

1.1.1 Literature Review and Data Gathering

Cardno, now Stantec have examined number of resources available for the project. This included *RTA Guide to Traffic Generating Developments (October 2002)*, *Guide to Traffic Generating Developments Updated Traffic Surveys (August 2013)*, *RMS Trip Generation Surveys*, *Cooma-Monaro Development Control Plan (2014)* and *Austroads Guide to Traffic Management Part 12 – Traffic Impacts of Development Chapter 4 (August 2009)*.

1.1.2 Traffic Modelling

Two intersections within direct proximity to the development along with the two proposed network interfacing intersections will be investigated to determine the flow on affects from this development. This report analyses the development across three stages (“Precinct 2”, “Precinct 3” and the ultimate “Combined” developments) to identify specific impacts upon the network. Using SIDRA 9 traffic modelling software, Cardno, now Stantec undertook individual modelling of the following non-signalised intersections across the Polo Flat Road network (shown in **Table 1-1** and **Figure 1-1**).

Table 1-1 List of Nominated Intersections

No.	Intersection
1.	Monaro Highway / Polo Flat Road
2.	Proposed Road 01 / Polo Flat Road (Precinct 2)
3.	Proposed Road 07A / Polo Flat Road (Precinct 3)
4.	Polo Flat Road / Numeralla Road / Yareen Road

Figure 1-1 Aerial image of Nominated Intersections

1.1.3 Scenario Modelling

Cardno, now Stantec modelled the intersections in both the AM and PM Peak hours for the following scenarios:

- Current 2022 Base Normal Conditions
- Future 2032 'Pre-Development' Normal Conditions
- Future 2032 'Post-Development' Normal Conditions

A total of 3 individual models with 6 varying scenarios each have been created for each separate precinct modelling exercises.

A total of 4 individual models with 8 varying scenarios each have been created for the ultimate development modelling exercise. The modelling is aimed to demonstrate the projected impact of developments on the external road network across each stage along with the combined impact.

1.1.4 Reporting

Results and findings from the investigation have been compiled and summarised within this report.

1.2 Objectives

The purpose of this report is to assess the current operation of the existing Polo Flat Road traffic network and to determine the net effect that the proposed Polo Flat Road subdivision developments will have on the immediate road network.

Cardno, now Stantec have undertaken SIDRA traffic modelling for the local network which included the traffic survey data from local network and the proposed traffic generation volumes from the Polo Flat Road residential developments.

The purpose is to achieve in-principal support from both TfNSW and the Snowy Monaro Regional Council confirming that the proposed subdivision development will not have significant detrimental impact on the surrounding local traffic network.

1.3 Standards

The following standards were used in the preparation of this report.

Table 1-2 List of Standard Documentation

Standard	Authority	Year
Cooma Monaro Shire Development Control Plan (Amendment 4)	Snowy Monaro Regional Council	2014
NSW Development Design Specification D1, Geometric Road Design (Urban and Rural)	Snowy Monaro Regional Council	2000
Traffic Modelling Guidelines 2002	NSW Transport Roads and Maritime Services (now TfNSW)	2013
Guide to Traffic Generating Developments - Updated Traffic Surveys	NSW Transport Roads and Maritime Services (now TfNSW)	2013
AGTM Part 12 Traffic Impacts of Development Chapter 4 – Traffic Impact Assessment	Austroads	2009
AGTM Part 6: Intersections, Interchanges and Crossing Management	Austroads	2021
AGRD Part 4A – Unsignalised and Signalised Intersections.	Austroads	2021
RMS Supplement to Austroads Guide to Road Design Part 3 (Publication No. 17.435)	NSW Transport RMS	2016

2 Existing Conditions

2.1 Location of Site

The site is located northeast of the existing Cooma regional township between Polo Flat Road and the Monaro Highway. The site is currently accessed via rural gates off Polo Flat Road and Yareen Road. The site is currently undeveloped and has previously been used as grazing land. **Figure 2-1** below provides an aerial image of both sites and their surroundings.

Figure 2-1 Aerial Image of the site and its surroundings

2.2 Land Use Zoning

The below figure shows the land use zoning of the proposed development site in the context of the surrounding area including adjacent sites. Precinct 2 is is located Lot 2 DP1285072 which is zoned R2 Low Density Residiential. Precinct 3 is located on Lot 3 DP1285072and is also zoned R2 Low Density Residiential.

Figure 2-2 Land Use Zoning

2.3 Local Road and Intersection Descriptions

The local roads within direct proximity to the proposed Polo Flat Road subdivision developments are listed below. These roads have the potential to be impacted by the proposed developments and as such will be subject to analysis within this assessment.

2.3.1 Monaro Highway

The Monaro Highway classified state road connecting the townships of Cooma and Canberra. Adjacent to the proposed subject sites, the Monaro Highway has a single lane sealed carriageway of approximately 10 meters. This section of the road does not have formal kerb and gutters, and has a sign posted speed limit of 80 km/h. This road displays recreation route characteristics as it is the primary route to the Kosciuszko ski fields from Canberra and Sydney. This results in significant peaks in traffic volume during the winter month weekends and public holidays.

Figure 2-3 Monaro Highway heading South towards Cooma

2.3.2 Polo Flat Road

The Polo Flat Road is a sub arterial road which runs in a north-south direction connecting the Monaro Highway with Polo Flat and Numeralla. Adjacent to the proposed subject sites, Polo Flat Road has a single lane sealed carriageway of approximately 8 meters. This section of the road does not have formal kerb and gutters, Polo Flat Road has a sign posted speed limit of 60 km/h. This road displays both rural and recreational route characteristics with increased in heavy vehicle volumes accessing Polo Flat and tourists bypassing Cooma travelling to the south coast from Canberra.

Figure 2-4 Polo Flat Road heading South towards Yareen Road and Cooma

2.3.3 Yareen Road

Yareen Road is a sub arterial road which runs in an east-west direction. Yareen road connects Numeralla Road and Polo Flat Road to a local residential estate in East Cooma and the Monaro highway/Sharp Street.

Yareen Road has a single lane sealed carriageway of approximately 8 meters. The road does not have formal kerb and gutters. However, it does contain large verges which allow for informal parking along shoulder and verges. Yareen Road has a sign posted speed limit of 60 km/h. This road displays typical suburban route characteristics with residents travelling from their home to Cooma and vice versa.

Figure 2-5 Yareen Road heading South towards Cooma

2.3.4 Monaro Highway / Polo Flat Road Intersection

The Monaro Highway / Polo Flat Road intersection is a three-way roundabout with an internal diameter of 27m. The roundabout is design with a reverse curve radius to slow approaching traffic.

Figure 2-6 Monaro Highway / Polo Flat Road Intersection heading West towards the Monaro Highway

2.3.5 Polo Flat Road / Numeralla Road / Yareen Road Intersection

The Polo Flat Road / Numeralla Road / Yareen Road Intersection is a four-way cross-intersection with give-way control attributed to Numeralla Road and Yareen Road.

Figure 2-7 Polo Flat Road / Numeralla Road / Yareen Road Intersection heading south towards Polo Flat / Cooma

2.4 Active Travel

2.4.1 Footpaths and Cycling

The existing road network surrounding the proposed Polo Flat Road Development does not contain formalised footpaths or allocations for on-road cycling. Due to the locality and proximity to urban amenity it is expected that low levels of pedestrian activity occur within the existing carriageway (road shoulders) and verges across Polo Flat Road and Yareen Road. It is not expected that any pedestrian activity occurs along the Monaro Highway.

Residents within the proposed Polo Flat Road Development will have access to internal footpaths across all streets which will allow for connection to open spaces and permeability throughout each of the proposed precincts.

The proposed development does not have provisions for dedicated bicycle lanes or routes, with bicycle activity expected to occur within the road shoulder or footpath. Due the low-speed nature of roads and the expected low daily volumes along the proposed road and footpath network, the area will be considered bicycle friendly. For further information, refer to the drawing numbers *50522046-C-2009* and *50522046-C-3009*.

2.4.2 Bus Services

A regional loop bus service currently provides public transport opportunities for the Cooma community. This service is operated by Cooma Coaches with Route 870 connecting Polo Flat to Cooma. This service stops upon signalling the driver and runs three times daily during weekdays (shoppers service) and twice daily during non-school days. A map of the route is displayed in **Figure 2-8** of the following page:

Figure 2-8 Cooma Coaches Route 870 (Loop Service) – Route Map

The community also has access to TfNSW Reginal Trains and Coaches Network bus service routes 771 and 772 which runs between Canberra to Eden, via Cooma, and routes 775 and 776 which runs between Canberra and Bombala, via Cooma. Users can access the rail and air network from Canberra.

2.4.3 Road Safety and Crash History

Cardno have utilised crash history Data from the NSW Centre for Road Safety Interactive crash statistics to review the local traffic network, around the intersections being assessed, in the context of road safety. Overall, there have been 7 crashes in the assessment area since 2015. The search area for the proposed development includes the following roads:

- Monaro Highway from Polo Flat Road to Yareen Road; and,
- Polo Flat Road between Monaro Highway and Yareen Road.

All crash locations within proximity to the intersections analysed in this report are listed in **Figure 2-9** with additional details listed in **Table 2-1** below.

It is noted that one of the seven incidents was classified as a major incident, which resulted in one fatality and one injury. This occurred upon the Monaro Highway at the exit of the rest stop. Another of the seven incidents resulted in minor injury. This incident occurred on Polo Flat drive with the northbound vehicle driving off the left-hand side of the road at the right-hand bend after the Polo Flat Road / Yareen Road Intersection.

The development has been reviewed in the context of road safety and possible issues arising from the development. The review considered existing transport infrastructure surrounding the site, as well as the proposed interfaces of new connections to be constructed.

Based on the review of available information, the proposed development is unlikely to have an adverse impact on the safety and operability of the road network surrounding the site.

Figure 2-9 Vehicle crash locations between 2016 and 2020 within proximity to the Polo Flat Road network

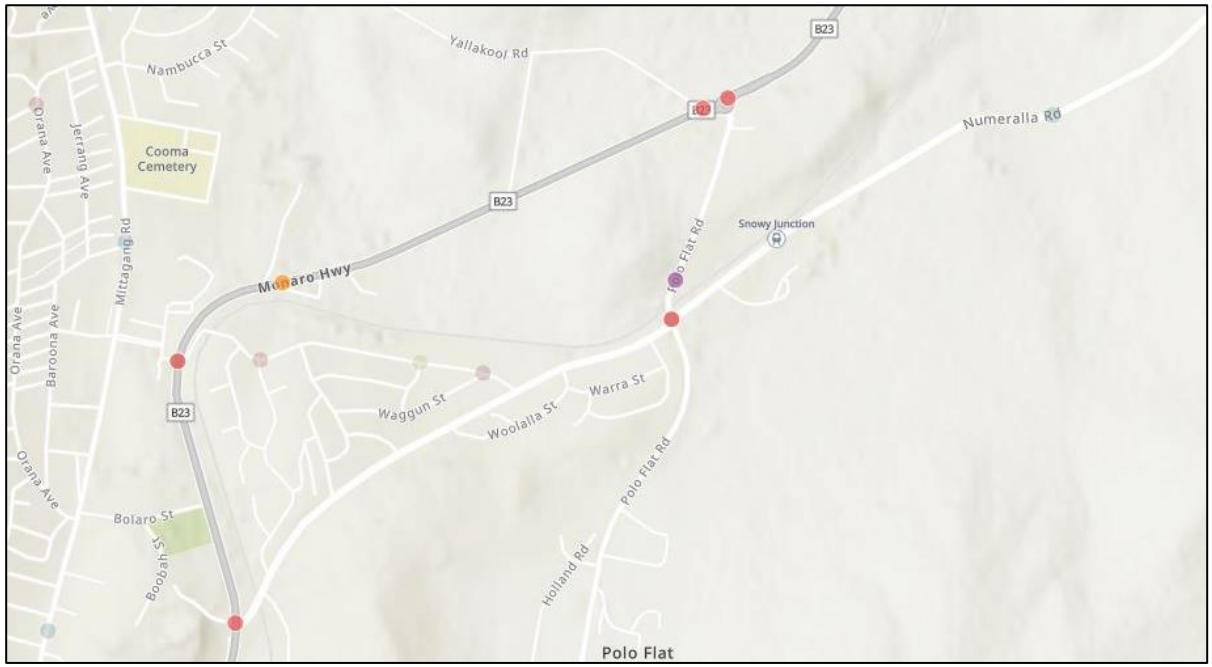


Table 2-1 Vehicle crash details between 2016 and 2020 within proximity to the Polo Flat Road network

Year	Crash Id	Degree of crash	RUM code	RUM description	Type of location	Natural lighting	Longitude	Latitude	No. killed	No. injured
2016	1101143	Minor / Other Injury	80	Off left/right bend	2-way undivided	Daylight	149.149769	-36.218009	-	1
2018	1166895	Fatal	47	Emerging from Drive	2-way undivided	Daylight	149.136906	-36.218078	1	1
2018	1186543	Non-casualty (towaway)	10	Cross traffic	X-intersection	Daylight	149.133497	-36.220156	-	-
2019	1203584	Non-casualty (towaway)	30	Rear end	T-junction	Daylight	149.150699	-36.213476	-	-
2020	1233060	Non-casualty (towaway)	10	Cross traffic	X-intersection	Daylight	149.149674	-36.219053	-	-
2020	1238764	Non-casualty (towaway)	16	Left near	X-intersection	Daylight	149.135384	-36.227084	-	-
2020	1253688	Non-casualty (towaway)	71	Off road left => obj	T-junction	Daylight	149.151515	-36.213172	-	-

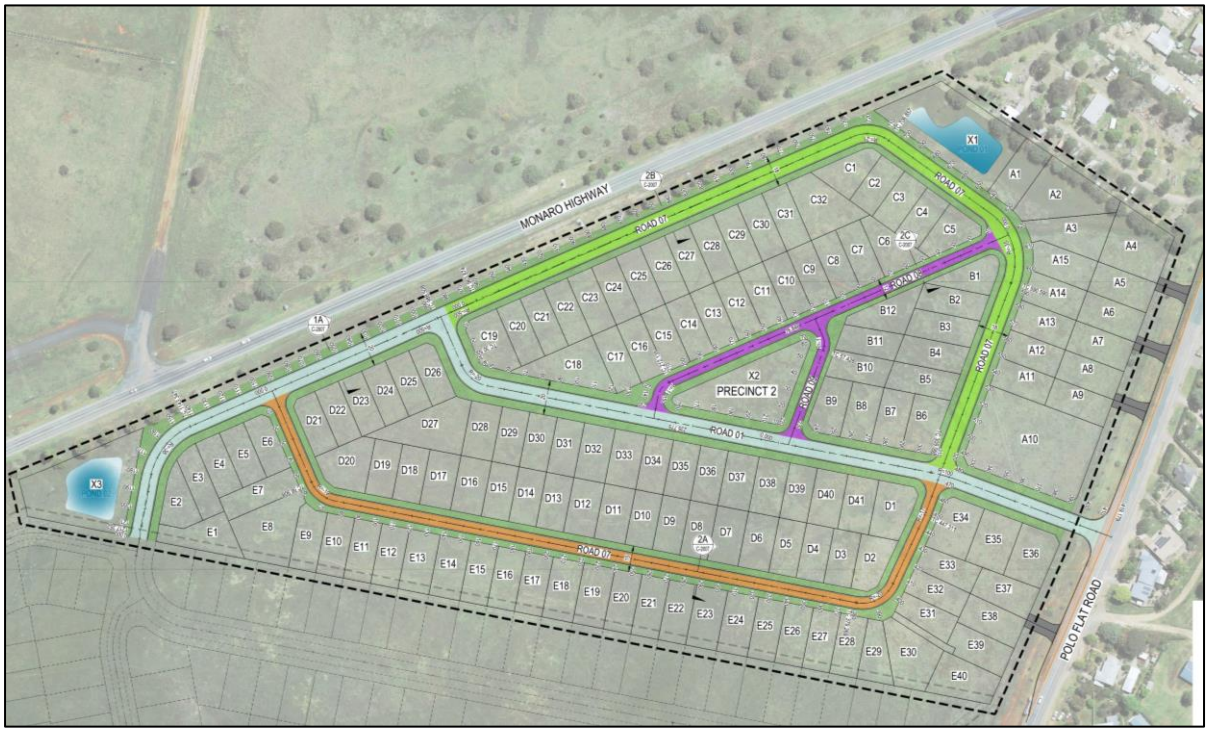
3 Proposed Development

The proposed development will occur across two precincts which will be connected by road during the ultimate development. The total development will be made up of 274 residential allotments and 1 senior living allotment. Proposed access to the subdivision is to be gained via two T-intersections along Polo Flat Road along with driveway access to 8 lots from Polo Flat Road.

3.1 Precinct 2

It is proposed that the development of Precinct 2 in the southern part of Lot 2 DP1285072 will house 139 residential lots with individual lots sizes ranging between approx. 500m^2 - 1200m^2, one Seniors housing lot approximately 3270m^2 and one open space parkland.

Figure 3-1 Proposed Polo Flat Road Precinct 2 Subdivision Layout



3.1.2 Internal Roads

The concept layout shown in **Figure 3-1** above provides an indicative layout of the proposed subdivision and internal road network, of which there will be four new roads and intersections. The concept plans have been assessed against *Cooma Monaro Specification for Engineering Design Chapter D1, Geometric Road Design (Urban and Rural)* and developed accordingly.

- Road 01 is a collector road with a 20-meter road reserve
- Road 07 operates in a split condition, with the northern portion classified as a Local B Road with an 18-meter road reserve and the southern portion classified as a Local A with a 15-meter road reserve.
- Roads 08 and 09 are classified as access streets with a 12-meter road reserve.

All internal roads will contain Roll Top Kerb and will provide access to residential dwellings and allowing for two lanes of traffic and passive parking opportunities on sides of the road. The speed environment would be expected to be < 50km/h, similar to typical residential streets within the local area.

3.1.3 Internal Footpaths

Residents within Precinct 2 will have access to internal footpaths across all streets which will allow for connection to open spaces and permeability throughout each of the proposed precincts. All proposed footpaths are designed in accordance with SMRC specifications and will be 1.2 - 2-metre footpaths connecting the proposed residential and seniors living lots to all recreation areas within both precincts.

The proposed development does not have provisions for dedicated bicycle lanes or routes, with bicycle activity expected to occur within the road shoulder or footpath. Due the low-speed nature of roads and the expected low daily volumes along the proposed road and footpath network, the area will be considered bicycle friendly. For further information, refer to the drawing number *50522046-C-2009*.

3.2 Precinct 3

It is proposed that the development of Precinct 3 in the southern part of Lot 3 DP1285072 will contain 151 residential lots with individual lots sizes ranging from approx. 500m^2 to 900m^2 and 1 open space parkland.

Figure 3-2 Proposed Polo Flat Road Precinct 3 Subdivision Layout

3.2.2 Internal Roads

The concept layout shown in **Figure 3-2** above provides an indicative layout of the proposed subdivision and internal road network, of which there will be seven new roads and intersections. The concept plans have been assessed against *Cooma Monaro Specification for Engineering Design Chapter D1, Geometric Road Design (Urban and Rural)* and developed accordingly.

- Roads 02, 03, 04, 05 and 06 are classified as Local A roads with a 15-meter road reserve
- Road 07A operates as a collector road with a 20-meter road reserve and connects to through to Precinct 2.

All internal roads will contain Roll Top Kerb and will provide access to residential dwellings and allowing for two lanes of traffic and passive parking opportunities on sides of the road. The speed environment would be expected to be < 50km/h, like typical residential streets within the local area.

3.2.3 Internal Footpaths

Residents within Precinct 3 will have access to internal footpaths across all streets which will allow for connection to open spaces and permeability throughout each of the proposed precincts. All proposed footpaths are designed in accordance with SMRC specifications and will be 1.2 - 2-metre footpaths connecting the proposed residential lots to all recreation areas within both precincts.

The proposed development does not have provisions for dedicated bicycle lanes or routes, with bicycle activity expected to occur within the road shoulder or footpath. Due the low-speed nature of roads and the expected low daily volumes along the proposed road and footpath network, the area will be considered bicycle friendly. For further information, refer to the drawing number *50522046-C-3009*.

4 Traffic Engineering Assessment

Cardno have undertaken a traffic assessment in accordance with *Snowy Monaro Regional Council Development Control Plan* and relevant chapters within *AUSTROADS Guide to Traffic Management Part 12*, *RTA Guide to Traffic Generating Developments (2002)*, *RMS Guide to Traffic Generating Developments – Updated Traffic Surveys (2013)*, and *AS/NZS 2890 Parking Facilities set*.

4.1 Existing Traffic Volumes

Under TfNSW direction, Cardno, now Stantec analysed traffic survey data from the **RMS Traffic Volume Viewer Station ID 6113** to determine the base peak hour traffic volumes across the Monaro Highway during the third Sunday of August. This is deemed the be the busiest day of the year, with large amounts of traffic travelling back from the Kosciusko snow fields, refer to **Table 4-1**. TfNSW also provided traffic turn counts for the Monaro Highway / Polo Flat roundabout, refer to **Table 4-2**. Both sets of data were analysed and combined to generate a base traffic volume.

In addition to the above, the Snowy Monaro Regional Council provided traffic tube count information for Polo Flat Road in the form of annual average daily trip data, refer to **Table 4-3**. This information was converted to peak hour trips as per *RTA Guide to Traffic Generating Developments (2002)* guidelines to approximate 10% of the AADT. Based on the local characteristics of Polo Flat Road, a 50/50 directional split was applied to the tube count data to allow for directional peak hour volumes to be established for each approach.

Table 4-1 Monaro Hwy Base Traffic Volumes (Source: TfNSW Traffic Volume Viewer Station ID 6113)

Year	Date	Classification	Approach	11am – 12pm	3pm - 4pm
2019	18/08/2019	Light Vehicles	South	748	943
			North	328	397
		Heavy Vehicles	South	67	82
			North	35	22
		Total	**South**	**815**	**1025**
			North	**363**	**419**

Table 4-2 Monaro Hwy / Polo Flat Rd Roundabout Manual Traffic Survey (Source: Snowy Monaro Regional Council)

Approach	Direction	LV	HV	HV %	Total
South	Through	136	6	4	142
	Right	12	3	20	15
North	Left	193	9	4	202
	Through	77	18	19	95
East	Left	13	0	0	13
	Right	36	14	28	50

Table 4-3 Polo Flat Road Base Traffic Volumes (Source: Snowy Monaro Regional Council, Tube Counts)

Asset ID	Segment	Road	Date range	AADT	HV %
12904	010 - Monaro Hwy to Yareen Rd	Polo Flat Rd	07/07/18 – 16/09/18	1588	27.7

The above volumes were factored to the year 2022 utilising a growth factor of 2%, as advised by TfNSW, refer to **Section 4.4.4** for further details.

4.2 Traffic Generation

RMS' *Guide to Traffic Generation Developments – Technical Direction 2013 04a (TDT 2013 /04a)* specifies traffic generation rates for different land uses. For low density residential dwellings in regional areas, as is being considered for the proposed subdivision, *TDT 2013/04a* recommends maximum trip rates of 0.85 trips per dwelling per hour during the morning peak (AM), and 0.90 trips per dwelling per hour during the evening peak (PM). In order to provide a more conservative traffic generation, it was assumed that all of the corner lots will have dual occupancy developments developed upon them, meaning they would have double the yield of a regular block. This results in 12 dual occupancy blocks for Precinct 2 and 19 dual occupancy blocks for Precinct 3. The abovementioned reference document was also used to determine the trip generation for the Seniors Living portion of the Precinct 2 development, which is approximately 0.4 trips per unit during the peak hour. The guide stipulates that a Seniors Living morning peak hour does not typically coincide with the network peak hour, however, in this instance it was assumed that they occur at the same time to be conservative. As such, the expected trip generation for the two precinct subdivisions is shown below in **Tables 4-4** and **4-5**.

Table 4-4 Trip Generation Rates in the Peak Hour for Precinct 2

Land Use	Yield	Peak Period	Trip Rate	Peak Direction	Peak Split	Trips
Single Residential	127	AM	0.85	In	0.10	11
				Out	0.90	96
		PM	0.9	In	0.90	102
				Out	0.10	11
Dual Occupancy	12 (24 Dwellings)	AM	0.85	In	0.10	2
				Out	0.90	18
		PM	0.9	In	0.90	19
				Out	0.10	2
Seniors Living	1 (20 Units)	AM	0.4	In	0	0
				Out	1.0	8
		PM	0.4	In	1.0	8
				Out	0	0
Total		**AM**		In		13
				Out		123
				Total		**136**
		PM		In		130
				Out		14
				Total		**144**

Table 4-5 Trip Generation Rates in the Peak Hour for Precinct 3

Land Use	Yield	Peak Period	Trip Rate	Peak Direction	Peak Split	Trips
Single Residential	132	AM	0.85	In	0.10	11
				Out	0.90	101
		PM	0.9	In	0.90	107
				Out	0.10	12
Dual Occupancy	19 (38 Dwellings)	AM	0.85	In	0.10	3
				Out	0.90	29
		PM	0.9	In	0.90	31
				Out	0.10	3
Total		**AM**		In		15
				Out		130
				Total		**145**
		PM		In		138
				Out		14
				Total		**152**

4.3 Traffic Distribution

Cardno has developed an assumption of traffic distribution to and from the development based on places of employment in the region, local services, and likely destinations for visitors to the area. The traffic modelling incorporates the single access point. The percentage of residents accessing the proposed development via each access point was determined through analysis of the shortest route from the assumed origin.

4.3.1 Polo Flat Road Residential Development AM Peak Hour Traffic Distribution

Outbound via both Northern and Southern Entrance T-intersections

- 10% turn left onto Polo Flat Road from Proposed Road 01; Whereby,
  - 5% turn right onto Monaro Highway;
  - 95% turn left onto Monaro Highway;
- 90% turn right onto Polo Flat Road from the Proposed Road 01; Whereby,
  - 20% turn continue through on Polo Flat Road;
  - 80% turn right onto Yareen Road.

Inbound via Northern and Southern Entrance T-intersection

- 90% turn left onto Proposed Road 01 from Polo Flat Road; whereby;
  - 20% continued through from Polo Flat Road at the Polo Flat Road / Numeralla Road / Yareen Road Intersection; and,
  - 80% turned left from Yareen Road at the Polo Flat Road / Numeralla Road / Yareen Road Intersection
- 10% turn right onto Proposed Road 01 from Polo Flat Road; whereby;
  - 95% turned right at the Monaro Highway / Polo Flat Road Roundabout; and,
  - 5% turned left at the Monaro Highway / Polo Flat Road Roundabout.

4.3.2 Heavy Vehicles

Due to the regional nature of the Monaro Highway, Polo Flat Road and Yareen Road, the presence of heavy vehicles is much greater than standard local roads. Data provided from the TfNSW, and the Snowy Monaro Regional Council shows approximate base year heavy vehicle percentages between 8 - 10% for the Monaro Highway, 22 - 28% for Polo Flat Road, and 22% for Yareen Road. These

percentages were applied to all movements across existing local traffic network. A lower percentage of 5% was adopted for proposed roads within proposed development owing to their local nature and low interconnectivity with the existing network.

To reduce the complexity of the traffic volume application, it was assumed that the same percentage of heavy vehicles be applied to both directions of travel throughout the modelling.

4.3.3 Growth Rate

2% Linear growth rates were applied to all intersection turn volumes to determine the 2022 Base, 2032 'Pre' and 'Post' development modelling scenarios.

4.4 Proposed Access Roads

Access to and from each precinct site will be gained via two locations, one external road, and one internal road, to allow for improved vehicular circulation and permeability within the local network. Access from these locations will require construction of two new external intersections, they will include:

1. T-intersection at the eastern end of Proposed Road 01 and Polo Flat Road; and,
2. T-intersection at the south-eastern end of Proposed Road 07A and Polo Flat Road.

Internally, Road 07 will connect the two precincts. It is envisaged that each T-intersection will contain localised widenings and local area traffic management treatments (LATM) to ensure that the safe turning treatments for vehicles accessing the site and driveways.

Specific shoulder widening and LATM treatments will be further refined and incorporated in the detailed design phase of the project. These treatments will aid in the improving both vehicle and pedestrian circulation and safety in and around the Polo Flat Road development area.

4.5 Safe Intersection Sight Distance (SISD)

An assessment of the Safe Intersection Site Distance (SISD) was calculated for both Proposed Road 01 and Proposed Road 07A intersections with reference to Section 3.2.2 of *Austroads Guide to Road Design Part 4a – Unsignalised and Signalised Intersections (2021).* This assessment utilised an 85th percentile operating speed of 60 km/h and a reaction time of Rt=1.50 sec and a maximum downgrade of 5%, as per *RMS Supplement to Austroads Guide to Road Design Part 3 (No. 17.435)*. The required safe intersection sight distance for both intersections was determined to be 120 metres. Upon review of relevant mapping and aerial imagery, it was concluded that these requirements are achievable for both proposed intersection locations. Further analysis of all proposed intersections is subject to detail design.

4.6 Turn Warrant Assessment

4.6.1 Proposed Road 01/ Polo Flat Road T-Intersection

A turn warrant assessment of the Proposed Road 01 T-intersection was undertaken to determine the appropriate turn treatments allow for safe turning movements of northbound and southbound vehicles from Polo Flat Road into Precinct 2 and vice versa. The assessment was undertaken in accordance with *Austroads Guide to Traffic Management Part 6: Intersections, Interchanges and Crossing Management,* and *Austroads Guide to Road Design Part 4A – Unsignalised and Signalised Intersections.*

The following PM peak hour traffic flows were determined from the calculated traffic volumes in **Table 6-18**:

- Right turn major road traffic volume (Q_M) = 357
- Right turn volume (Q_R) = 79
- Left turn major road traffic volume (Q_M) = 15
- Left turn volume (Q_L) = 131

In accordance with *Figure 3.25* from the *Austroads Guide to Traffic Management Part 6: Intersections, Interchanges and Crossing Management* these volumes warrant both Basic right-turn (BAR) and Basic left-turn (BAL) treatments at both north and south approaches of the Proposed Road 01 / Polo Flat Road T-intersection. An initial geometric assessment has confirmed that the existing carriageway has the capacity to house the required turning treatment and will be incorporated into the proposed localised widening across Polo Flat Road as a result of the Precinct 2 development.

4.6.2 Proposed Road 07A / Polo Flat Road T-Intersection

A turn warrant assessment of the proposed Road 07A T-intersection was undertaken to determine the appropriate turn treatments allow for safe turning movements of northbound and southbound vehicles from Polo Flat Road into Precinct 3 and vice versa. The assessment was undertaken in accordance with *Austroads Guide to Traffic Management Part 6: Intersections, Interchanges and Crossing Management,* and *Austroads Guide to Road Design Part 4A – Unsignalised and Signalised Intersections.*

The following PM peak hour traffic flows were determined from the calculated traffic volumes in **Table 6-19**:

- Right turn major road traffic volume (Q_M) = 474
- Right turn volume (Q_R) = 208
- Left turn major road traffic volume (Q_M) = 13
- Left turn volume (Q_L) = 118

In accordance with *Figure 3.25* from the *Austroads Guide to Traffic Management Part 6: Intersections, Interchanges and Crossing Management* these volumes warrant both Basic right-turn (BAR) and Basic left-turn (BAL) treatments at both north and south approaches of the Proposed Road 07A / Polo Flat Road T-intersection. An initial geometric assessment has confirmed that the existing carriageway has the capacity to house the required turning treatment.

4.7 Construction Traffic

4.7.1 Construction Outline

The proposed subdivision development will involve approximately 291 residential allotments including 1 Seniors Living allotment to be constructed in two stages, commencing in 2023. It is expected that each stage will take approximately 12 months.

Traffic generated by construction activities for the duration of the project will include light vehicles used by construction workers to get to and from the site and heavy vehicles associated with the construction plant, deliveries, and removal of materials.

4.7.1.1 Light Vehicles

It is expected that there will be a maximum of approximately 20 construction workers on the work site at any one time.

It is expected that most of these workers will reside nearby in Cooma and Canberra/Queanbeyan, which will provide opportunities for carpooling. For this analysis, it has been assumed that the average occupancy rate of light vehicles will be 1.0 workers per vehicles.

From this occupancy rate, the typical traffic generation for the development will be approximately 20 light vehicles per day, arriving in the morning and departing in the evening.

4.7.1.2 Heavy Vehicles

Preliminary estimates of the heavy vehicles associated with the development of the new subdivision is as follows:

- Truck and dog trailer – will likely be required for the entire of the 3 years of construction with an expected maximum of four to five trucks doing eight to ten movements per day, inbound and outbound.
- Material deliveries – likely won't be an everyday occurrence, only when materials (mainly pipes and pits) are ready to be installed. Expected maximum of two to three deliveries on these days for total of four to six movements.
- Concrete truck – likely won't be an everyday occurrence, only when concrete and/or stabilised sand needs pouring. Expected maximum of two to three trucks, four to six movements, per day.

Table 4-6 Peak Vehicle Movements In/Out of Site

Vehicles	Peak Movements (accessing site)	Peak Movements (egressing of site)
Light vehicles	20	20
Truck and dog trailer	4-5	4-5
Material Deliveries	2-3	2-3
Concrete truck	2-3	2-3

4.7.1.3 Oversize Vehicles

A review of the suitability for the local network to handle oversized vehicles should be undertaken independently by the contractor and may require specific traffic control if oversize vehicles are required.

Currently, details of any oversized vehicles needed to transport equipment or plant to the site are not available. However, if it is found that oversized vehicles are required, the contractor will be required to apply for permits from Transport for NSW (TfNSW) and Council, along with the submission of a suitable traffic management and transportation routes plan.

Oversized vehicle routes are to be planned for designated heavy vehicle routes, wherever possible, approved by TfNSW. Additionally, all oversized traffic movements should occur outside of peak times wherever possible to reduce the impact on the road network.

4.7.1.4 Construction Traffic Impacts

The number of construction vehicles accessing and egressing the site will need to be confirmed by the contractor as part of the detailed construction planning stage. However, the estimated construction traffic volumes are not expected to adversely affect the existing road network. Furthermore, the predicted construction traffic is significantly less than the calculated future operational traffic of the proposed development. Therefore, from the completed development TIA, it can be assumed that the network will continue to operate at an acceptable level of service even with the expected impact of construction vehicles.

4.7.2 Construction Compound

The construction compound will be located within the subject site, away from any of the existing roads and move as the stages of development progress. Until the staging for construction can be confirmed, the exact location of the construction compound within the subject site cannot be confirmed.

The entrance to the compound will be fenced off to prevent members of the public from entering the compound.

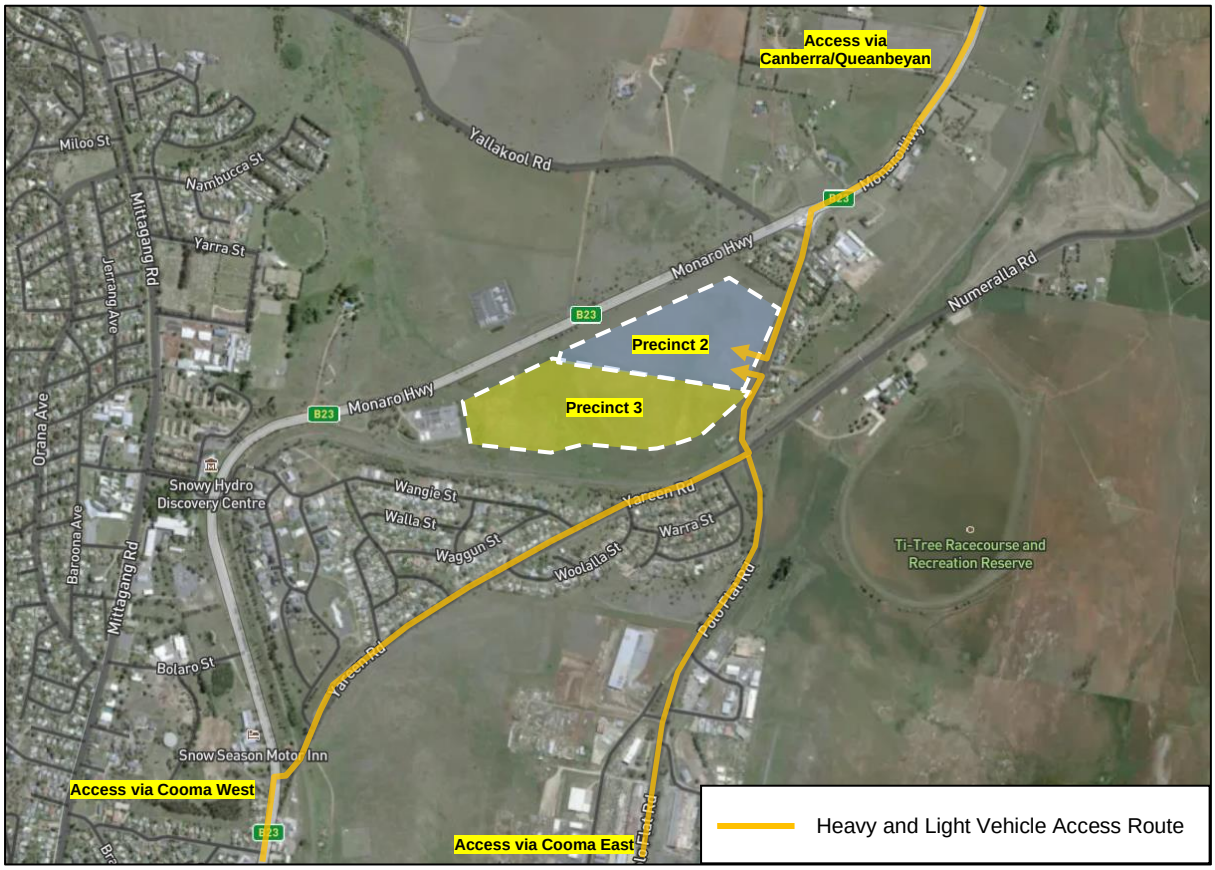
4.7.3 Preliminary Construction Management Plan

4.7.3.1 Construction Vehicle Access Route

The proposed construction entrance to the subject site will be off Polo Flat Road, northeast of the Cooma town centre. As mentioned above, all vehicles will access/egress the subject site to and from the Cooma and Canberra/Queanbeyan areas via Polo Flat Road.

See **Figure 4-1** below for the proposed vehicle access route.

Figure 4-1 Proposed Construction Traffic Access Route



4.7.3.2 Construction Hours

The NSW Environmental Protection Authority, Draft Construction Noise Guidelines, detail the recommended standard hours for construction works:

- Weekdays 7:00 am – 6:00 pm.
- Saturdays 8:00 am – 1:00 pm.
- Sundays and public holidays, no work.

The construction works for the proposed subdivision will be scheduled to occur during standard hours.

4.7.3.3 Construction Parking

All expected construction vehicles, both heavy and light vehicles are expected to be able to park within the construction compound, or within the subject site, all of which is away from any public traffic networks.

4.7.3.4 Pedestrian and Bicycle Management

Access to the subject site will be restricted to authorised personnel only. Due to the subject site's location in relation to the existing township, it is anticipated that there will only be a very minor impact on the construction works or traffic.

4.7.3.5 Impacts on Public Transport

It is anticipated that the proposed construction works, and traffic will have no impact on the existing public transport system in Cooma.

5 Intersection Capacity and Performance Analysis

Intersection capacity has been assessed using SIDRA 9.0 which is a micro-modelling software package. SIDRA provides an indication of an intersection's performance capacity through the following key outputs:

- Degree of Saturation (DOS) - Ratio of Demand to Capacity;
- Average Delay (in seconds);
- 95th Percentile Queue Length (in meters);
- The Level of Service (LOS) criteria.

The SIDRA NETWORK model determines the backward spread of congestion as queues on downstream lanes block upstream lanes (queue spillback). SIDRA applies capacity constraint to oversaturated upstream lanes, hence limiting the flows entering downstream lanes. These two elements are highly interactive with opposing effects. A network wide iterative process is used to find a solution that balances these opposing effects.

Each model was set to 30 iterations which is the maximum number of iterations permissible by SIDRA. The following sections discuss the capacity modelling for the key external intersections.

5.1 Level of Service Criteria

Level of Service (LOS) is determined by the average delay for each vehicle (RMS NSW method). The range definitions for LOS are indicated in **Table 5-1** below.

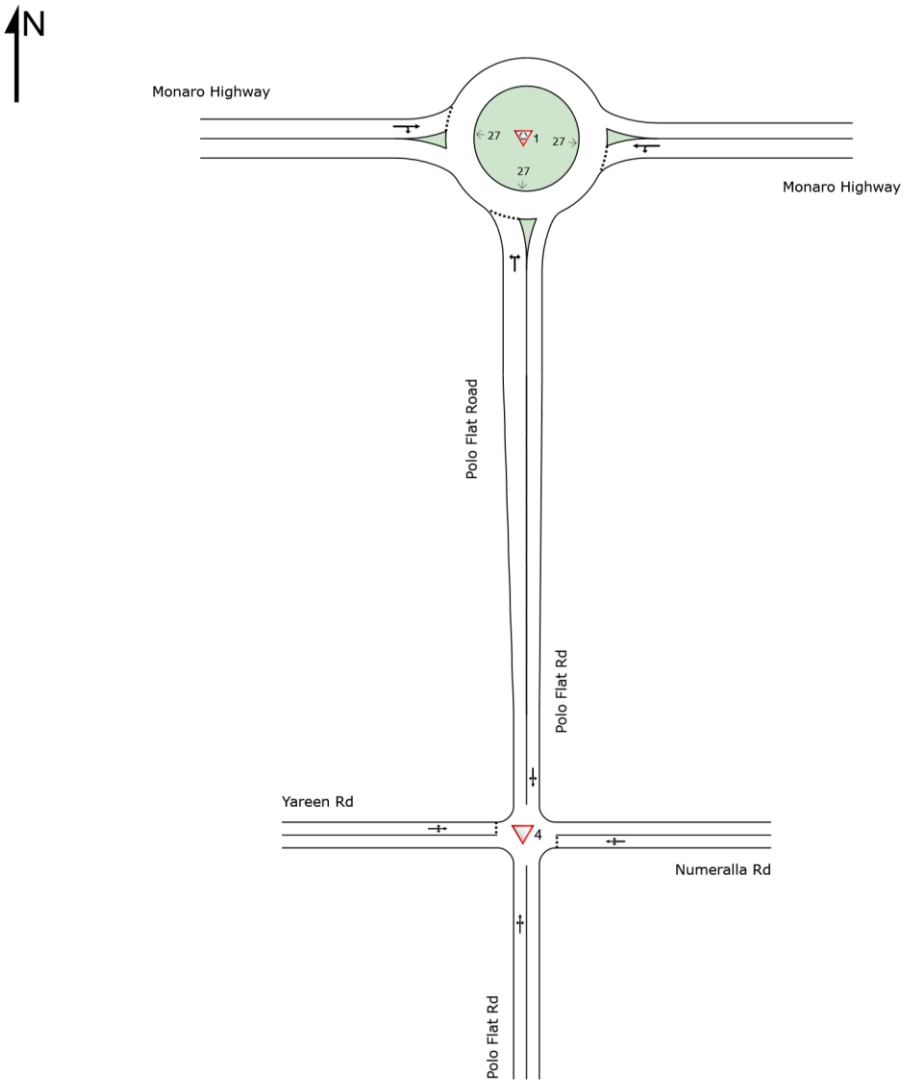
Table 5-1 Level of Service Definition Table

Level of Service	Average Delay / Vehicle (sec/veh)	Traffic Signals, Roundabouts	Give Way and Stop Signs
LOS A	<14	Good operation	Good operation
LOS B	15 to 28	Good with acceptable delays and spare capacity	Acceptable delays and spare capacity
LOS C	29 to 42	Satisfactory	Satisfactory, accident study required
LOS D	43 to 56	Operating near capacity	Near capacity, accident study required
LOS E	57 to 70	At capacity, at signals incidents will cause excessive delays. Roundabouts require other control mode	At capacity, requires other control mode.
LOS F	>70	Over capacity requires investigation of other control modes.	Over capacity, requires other control mode.

In general, intersections should operate at a minimum of LOS C to operate under satisfactory conditions. Note: For priority control signalised intersection (With Stop and Give Way signs or operating under the T-junction rule) the critical movement for Level of Service assessment should be that with the worst movement delay. **Figures 5-1,** and **5-2** below show all 2022 'Base', 2032 'Pre-Development' and 2032 'Post-Development' site / network layouts and intersection numbering utilised for reference during the assessment.

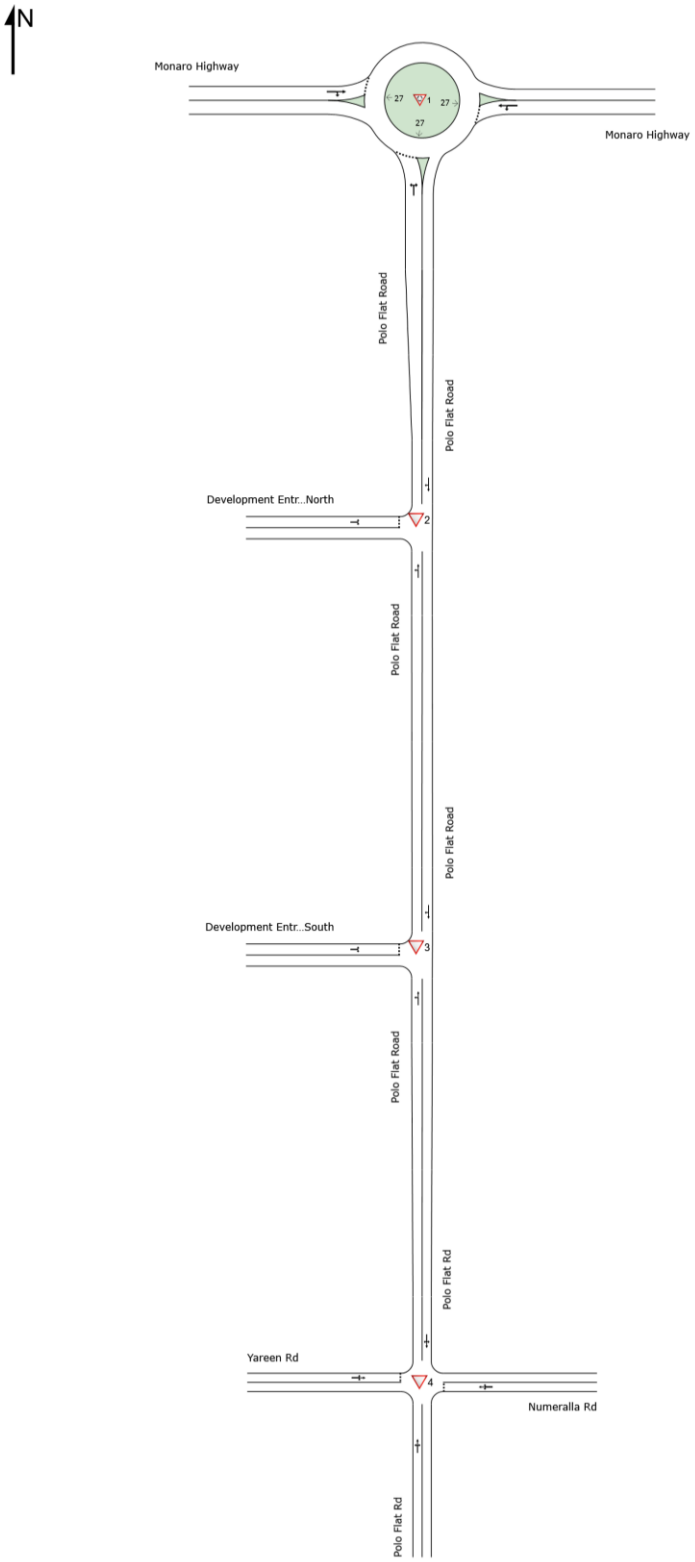
5.2 Network Layout

Figure 5-1 2022 Base and 2032 Pre-Development Network Layout



SITES	
Site ID	**Site Name**
1	Monaro Highway / Polo Flat Road
4	Polo Flat Road / Numeralla Road / Yareen Road

Figure 5-2 2032 Post-Development Network Layout



SITES IN NETWORK	
Site ID	**Site Name**
1	Monaro Highway / Polo Flat Road
2	Proposed Road 01 / Polo Flat Road
3	Proposed Road 07A / Polo Flat Road
4	Polo Flat Road / Numeralla Road / Yareen Road

5.3 SIDRA Result Summaries

The level of service performance for each intersection approach leg across all proposed scenarios are summarized in **Tables 5-2**, **5-3** and **5-4** below.

5.3.1 Precinct 2 Summary

Table 5-2 Precinct 2 Level of Service Performance Summary

Intersection	Leg	AM Peak Hour			PM Peak Hour		
		2022 AM 'Base Model'	2032 AM 'Pre-Development' Model	2032 AM 'Post-Development' Model	2022 AM 'Base Model'	2032 AM 'Pre-Development' Model	2032 AM 'Post-Development' Model
Monaro Highway / Polo Flat Road	*North*	LOS A	LOS A	LOS A	LOS A	LOS A	LOS A
	East	LOS A	LOS A	LOS A	LOS A	LOS A	LOS A
	South	LOS A	LOS A	LOS A	LOS A	LOS A	LOS A
	Intersection	LOS A	LOS A	LOS A	LOS A	LOS A	LOS A
Proposed Road 01 / Polo Flat Road	*North*	N/A	N/A	LOS A	N/A	N/A	LOS A
	South	N/A	N/A	LOS A	N/A	N/A	LOS A
	West	N/A	N/A	LOS A	N/A	N/A	LOS A
	Intersection	N/A	N/A	LOS A	N/A	N/A	LOS A
Polo Flat Road / Numeralla Road / Yareen Road	*North*	LOS A	LOS A	LOS A	LOS A	LOS A	LOS A
	East	LOS A	LOS A	LOS A	LOS A	LOS A	LOS A
	South	LOS A	LOS A	LOS A	LOS A	LOS A	LOS A
	West	LOS A	LOS A	LOS A	LOS A	LOS A	LOS A
	Intersection	LOS A	LOS A	LOS A	LOS A	LOS A	LOS A

5.3.2 Precinct 3Summary

Table 5-3 Precinct 3 Level of Service Performance Summary

Intersection	Leg	AM Peak Hour			PM Peak Hour		
		2022 AM 'Base Model'	2032 AM 'Pre-Development' Model	2032 AM 'Post-Development' Model	2022 AM 'Base Model'	2032 AM 'Pre-Development' Model	2032 AM 'Post-Development' Model
Monaro Highway / Polo Flat Road	*North*	LOS A	LOS A	LOS A	LOS A	LOS A	LOS A
	East	LOS A	LOS A	LOS A	LOS A	LOS A	LOS A
	South	LOS A	LOS A	LOS A	LOS A	LOS A	LOS A
	Intersection	LOS A	LOS A	LOS A	LOS A	LOS A	LOS A
Proposed Road 07A / Polo Flat Road	*North*	N/A	N/A	LOS A	N/A	N/A	LOS A
	South	N/A	N/A	LOS A	N/A	N/A	LOS A
	West	N/A	N/A	LOS A	N/A	N/A	LOS A
	Intersection	N/A	N/A	LOS A	N/A	N/A	LOS A
Polo Flat Road / Numeralla Road / Yareen Road	*North*	LOS A	LOS A	LOS A	LOS A	LOS A	LOS A
	East	LOS A	LOS A	LOS A	LOS A	LOS A	LOS A
	South	LOS A	LOS A	LOS A	LOS A	LOS A	LOS A
	West	LOS A	LOS A	LOS A	LOS A	LOS A	LOS A
	Intersection	LOS A	LOS A	LOS A	LOS A	LOS A	LOS A

5.3.3 Ultimate Development Summary

Table 5-4 Ultimate Development Level of Service Performance Summary

Intersection	Leg	AM Peak Hour			PM Peak Hour		
		2022 AM 'Base Model'	2032 AM 'Pre-Development' Model	2032 AM 'Post-Development' Model	2022 AM 'Base Model'	2032 AM 'Pre-Development' Model	2032 AM 'Post-Development' Model
Monaro Highway / Polo Flat Road	*North*	LOS A	LOS A	LOS A	LOS A	LOS A	LOS A
	East	LOS A	LOS A	LOS A	LOS A	LOS A	LOS A
	South	LOS A	LOS A	LOS A	LOS A	LOS A	LOS A
	Intersection	LOS A	LOS A	LOS A	LOS A	LOS A	LOS A
Proposed Road 01 / Polo Flat Road	*North*	N/A	N/A	LOS A	N/A	N/A	LOS A
	South	N/A	N/A	LOS A	N/A	N/A	LOS A
	West	N/A	N/A	LOS A	N/A	N/A	LOS A
	Intersection	N/A	N/A	LOS A	N/A	N/A	LOS A
Proposed Road 07A / Polo Flat Road	*North*	N/A	N/A	LOS A	N/A	N/A	LOS A
	South	N/A	N/A	LOS A	N/A	N/A	LOS A
	West	N/A	N/A	LOS A	N/A	N/A	LOS A
	Intersection	N/A	N/A	LOS A	N/A	N/A	LOS A
Polo Flat Road / Numeralla Road / Yareen Road	*North*	LOS A	LOS A	LOS A	LOS A	LOS A	LOS A
	East	LOS A	LOS A	LOS A	LOS A	LOS A	LOS A
	South	LOS A	LOS A	LOS A	LOS A	LOS A	LOS A
	West	LOS A	LOS A	LOS A	LOS A	LOS A	LOS A
	Intersection	LOS A	LOS A	LOS A	LOS A	LOS A	LOS A

5.4 Detailed Intersection Summary

An assessment of the existing and proposed intersections within the local traffic network was undertaken to determine the impact from the proposed residential subdivision. **Tables 5-5** through to **5-24** below describe the increase in vehicles as a result of the proposed development across each SIDRA modelling scenario. These volumes are presented to provide context in determining the net impact of the development across the local network. **Tables 5-2, 5-3** and **5-4** present the level of service (LOS) outputs for each intersection approach leg across both AM and PM ultimate development scenarios and provides a key metric for analysing intersection performance. Additional intersection performance information detailing traffic volumes, degree of saturation, queue length, average delay and sign control analysis are listed in individual movement, lane and sign control summaries included in **Appendix A** of this report.

5.4.1 Monaro Highway / Polo Flat Road Intersection

The Monaro Highway / Polo Flat Road Intersection does not see any significant impact to the key performance indicators with the increase in traffic volumes as a result of the any of the proposed development scenarios assessed within this report.

Increases in traffic volumes from the proposed development across the existing major flow approaches is negligible in both the AM and PM peak hour periods under each precinct and ultimate development scenarios.

Overall, the intersection experiences negligible impacts to the Degree of Saturation and Average Delay and minor impacts to the northbound 95th Percentile Queue Length across all 2032 post-development design year scenarios. The level of service across all design years remains at LOS A – Good operation.

5.4.2 Proposed Road 01 / Polo Flat Road Intersection

The Proposed Road 01 / Polo Flat Road T-intersection does not show any significant negative performance indicators with the increase in traffic volumes as across all stages of the proposed development.

Polo Flat Road experiences negligible impacts to the Degree of Saturation, Average Delay and 95th Percentile Queue Length within all 2032 post-development design year scenarios.

The overall level of service across all design years remains at LOS A – Good operation for the proposed intersection.

5.4.3 Proposed Road 07A / Polo Flat Road Intersection

The performance of the Proposed Road 07A / Polo Flat Road intersection does not show any negative performance indicators with the increase in traffic volumes under each development stage.

Polo Flat Road experiences negligible impacts to the Degree of Saturation, Average Delay and 95th Percentile Queue Length within all 2032 post-development design year scenarios.

The intersection displays good levels of Degree of Saturation and Average Delay across the 2032 'post-development' design year. The level of service is LOS A – Good operation across all three approaches during both AM and PM peak hour periods. The 95th percentile queuing is minimal during both AM and PM scenarios.

5.4.4 Polo Flat Road / Numeralla Road / Yareen Road Intersection

The performance of the Polo Flat Road / Numeralla Road / Yareen Road Intersection does not see any negative performance indicators with the increase in traffic volumes across Polo Flat Road and Yareen Road as a result of the proposed development stages and the additional traffic generation. The west approach experiences moderate increases in traffic volumes as a result of the proposed development, however these movements are not significant enough to impact the operational performance of the intersection.

The intersection displays good levels of Degree of Saturation and Average Delay across the 2032 'post-development' design year. The level of service is LOS A – Good operation across all four approaches during both AM and PM peak hour periods. The 95th percentile queuing is minimal for both AM and PM scenarios.

5.4.5 Increase in Traffic Volumes during the AM Scenario with the Precinct 2 Development

Table 5-5 Increase in Monaro Highway / Polo Flat Road in the AM Post Developed Scenario (Precinct 2 Development)

	AM TRAFFIC Monaro Highway / Polo Flat Road Roundabout					
Intersection No.	Intersection Legs (Clockwise: East-South-West)					
1	East		South		West	
	North Approach – Monaro Highway		East Approach – Polo Flat Road		South Approach - Monaro Highway	
	L	T	L	R	T	R
2022 Base	95	268	13	50	800	15
2032 Pre-Development	116	327	16	61	975	18
2032 Post-Development	116	327	27	62	975	19
Additional Trips 2032 Post-dev			11	1		1

Table 5-6 Increase in Proposed Road 01 / Polo Flat Road in the AM Post Developed Scenario (Precinct 2 Development)

	AM TRAFFIC Proposed Road 01 / Polo Flat Road T-intersection					
Intersection No.	Intersection Legs (Clockwise: North-South-West)					
2	North		South		West	
	East Approach - Polo Flat Road		South Approach – Proposed Road 01		West Approach - Polo Flat Road	
	T	R	L	T	L	R
2022 Base	110	0	0	63	0	0
2032 Pre-Development	134	0	0	77	0	0
2032 Post-Development	134	1	17	77	12	111
Additional Trips 2032 Post-dev		1	17		12	111

Table 5-7 Increase in Polo Flat Road / Numeralla Road / Yareen Road in the AM Post Developed Scenario (Precinct 2 Development)

	AM TRAFFIC Polo Flat Road / Numeralla Road / Yareen Road											
Intersection No.	Intersection Legs (Clockwise: North-East-South-West)											
4	North			East			South			West		
	North Approach - Polo Flat Road			East Approach – Numeralla Road			South Approach - Polo Flat Road			West Approach – Yareen Road		
	L	T	R	L	T	R	L	T	R	L	T	R
2022 Base	6	50	55	0	23	0	0	63	0	63	23	5
2032 Pre-Development	7	60	67	0	27	0	0	77	0	77	27	5
2032 Post-Development	7	82	156	0	27	0	0	79	0	87	27	5
Additional Trips 2032 Post-dev		22	89					2		10		

5.4.6 Increase in Traffic Volumes during the PM Scenario with the Precinct 2 Development

Table 5-8 Increase in Monaro Highway / Polo Flat Road in the PM Post Developed Scenario (Precinct 2 Development)

	PM TRAFFIC Monaro Highway / Polo Flat Road Roundabout					
Intersection No.	Intersection Legs (Clockwise: East-South-West)					
1	East		South		West	
	North Approach – Monaro Highway		East Approach – Polo Flat Road		South Approach - Monaro Highway	
	L	T	L	R	T	R
2022 Base	95	324	13	50	1010	15
2032 Pre-Development	116	395	16	61	1231	18
2032 Post-Development	117	395	17	61	1231	30
Additional Trips 2032 Post-dev	1		1			12

Table 5-9 Increase in Proposed Road 01 / Polo Flat Road in the PM Post Developed Scenario (Precinct 2 Development)

	PM TRAFFIC Proposed Road 01 / Polo Flat Road T-intersection					
Intersection No.	Intersection Legs (Clockwise: North-South-West)					
2	North		South		West	
	East Approach - Polo Flat Road		South Approach – Proposed Road 01		West Approach - Polo Flat Road	
	T	R	L	T	L	R
2022 Base	110	0	0	63	0	0
2032 Pre-Development	134	0	0	77	0	0
2032 Post-Development	134	13	117	77	1	13
Additional Trips 2032 Post-dev		13	117		1	13

Table 5-10 Increase in Polo Flat Road / Numeralla Road / Yareen Road in the PM Post Developed Scenario (Precinct 2 Development)

	PM TRAFFIC Polo Flat Road / Numeralla Road / Yareen Road											
Intersection No.	Intersection Legs (Clockwise: North-East-South-West)											
4	North			East			South			West		
	North Approach - Polo Flat Road			East Approach – Numeralla Road			South Approach - Polo Flat Road			West Approach – Yareen Road		
	L	T	R	L	T	R	L	T	R	L	T	R
2022 Base	6	50	55	0	23	0	0	63	0	63	23	5
2032 Pre-Development	7	60	67	0	27	0	0	77	0	77	27	5
2032 Post-Development	7	63	77	0	27	0	0	100	0	171	27	5
Additional Trips 2032 Post-dev		3	10					23		94		

5.4.7 Increase in Traffic Volumes during the AM Scenario with the Precinct 3 Development

Table 5-11 Increase in Monaro Highway / Polo Flat Road in the AM Post Developed Scenario (Precinct 3 Development)

	AM TRAFFIC Monaro Highway / Polo Flat Road Roundabout					
Intersection No.	Intersection Legs (Clockwise: East-South-West)					
1	East		South		West	
	North Approach – Monaro Highway		East Approach – Polo Flat Road		South Approach - Monaro Highway	
	L	T	L	R	T	R
2022 Base	95	268	13	50	800	15
2032 Pre-Development	116	327	16	61	975	18
2032 Post-Development	116	327	27	62	975	21
Additional Trips 2032 Post-dev			11	1		3

Table 5-12 Increase in Proposed Road 07A / Polo Flat Road in the AM Post Developed Scenario (Precinct 3 Development)

	AM TRAFFIC Proposed Road 07A / Polo Flat Road T-intersection					
Intersection No.	Intersection Legs (Clockwise: North-South-West)					
3	North		South		West	
	East Approach - Polo Flat Road		South Approach – Proposed Road 07A		West Approach - Polo Flat Road	
	T	R	L	T	L	R
2022 Base	110	0	0	63	0	0
2032 Pre-Development	134	0	0	77	0	0
2032 Post-Development	245	2	14	89	13	118
Additional Trips 2032 Post-dev	111	2	14	12	13	118

Table 5-13 Increase in Polo Flat Road / Numeralla Road / Yareen Road in the AM Post Developed Scenario (Precinct 3 Development)

	AM TRAFFIC Polo Flat Road / Numeralla Road / Yareen Road											
Intersection No.	Intersection Legs (Clockwise: North-East-South-West)											
4	North			East			South			West		
	North Approach - Polo Flat Road			East Approach – Numeralla Road			South Approach - Polo Flat Road			West Approach – Yareen Road		
	L	T	R	L	T	R	L	T	R	L	T	R
2022 Base	6	50	55	0	23	0	0	63	0	63	23	5
2032 Pre-Development	7	60	67	0	27	0	0	77	0	77	27	5
2032 Post-Development	7	84	161	0	27	0	0	80	0	88	27	5
Additional Trips 2032 Post-dev		24	94					3		11		

5.4.8 Increase in Traffic Volumes during the PM Scenario with the Precinct 3 Development

Table 5-14 Increase in Monaro Highway / Polo Flat Road in the PM Post Developed Scenario (Precinct 3 Development)

	PM TRAFFIC Monaro Highway / Polo Flat Road Roundabout					
Intersection No.	Intersection Legs (Clockwise: East-South-West)					
1	East		South		West	
	North Approach – Monaro Highway		East Approach – Polo Flat Road		South Approach - Monaro Highway	
	L	T	L	R	T	R
2022 Base	95	324	13	50	1010	15
2032 Pre-Development	116	395	16	61	1231	18
2032 Post-Development	118	395	19	61	1231	43
Additional Trips 2032 Post-dev	2		3			25

Table 5-15 Increase in Proposed Road 07A / Polo Flat Road in the PM Post Developed Scenario (Precinct 3 Development)

	PM TRAFFIC Proposed Road 07A / Polo Flat Road T-intersection					
Intersection No.	Intersection Legs (Clockwise: North-South-West)					
3	North		South		West	
	East Approach - Polo Flat Road		South Approach – Proposed Road 07A		West Approach - Polo Flat Road	
	T	R	L	T	L	R
2022 Base	110	0	0	63	0	0
2032 Pre-Development	134	0	0	77	0	0
2032 Post-Development	147	14	124	194	2	14
Additional Trips 2032 Post-dev	13	14	124	117	2	14

Table 5-16 Increase in Polo Flat Road / Numeralla Road / Yareen Road in the PM Post Developed Scenario (Precinct 3 Development)

	PM TRAFFIC Polo Flat Road / Numeralla Road / Yareen Road											
Intersection No.	Intersection Legs (Clockwise: North-East-South-West)											
4	North			East			South			West		
	North Approach - Polo Flat Road			East Approach – Numeralla Road			South Approach - Polo Flat Road			West Approach – Yareen Road		
	L	T	R	L	T	R	L	T	R	L	T	R
2022 Base	6	50	55	0	23	0	0	63	0	63	23	5
2032 Pre-Development	7	60	67	0	27	0	0	77	0	77	27	5
2032 Post-Development	7	63	78	0	27	0	0	102	0	176	27	5
Additional Trips 2032 Post-dev		3	11					25		99		

5.4.9 Increase in Traffic Volumes in Ultimate Development Scenario during the AM Scenario

Table 5-17 Increase in Monaro Highway / Polo Flat Road in the AM Post Developed Scenario (Ultimate Development)

	AM TRAFFIC Monaro Highway / Polo Flat Road Roundabout					
Intersection No.	Intersection Legs (Clockwise: East-South-West)					
1	East		South		West	
	North Approach – Monaro Highway		East Approach – Polo Flat Road		South Approach - Monaro Highway	
	L	T	L	R	T	R
2022 Base	95	268	13	50	800	15
2032 Pre-Development	116	327	16	61	975	18
2032 Post-Development	116	327	27	62	975	21
Additional Trips 2032 Post-dev			11	1		3

Table 5-18 Increase in Proposed Road 01 / Polo Flat Road in the AM Post Developed Scenario (Ultimate Development)

	AM TRAFFIC Proposed Road 01 / Polo Flat Road T-intersection					
Intersection No.	Intersection Legs (Clockwise: North-South-West)					
2	North		South		West	
	East Approach - Polo Flat Road		South Approach – Proposed Road 01		West Approach - Polo Flat Road	
	T	R	L	T	L	R
2022 Base	110	0	0	63	0	0
2032 Pre-Development	134	0	0	77	0	0
2032 Post-Development	136	1	12	90	12	111
Additional Trips 2032 Post-dev	2	1	12	13	12	111

Table 5-19 Increase in Proposed Road 07A / Polo Flat Road in the AM Post Developed Scenario (Ultimate Development)

	AM TRAFFIC Proposed Road 07A / Polo Flat Road T-intersection					
Intersection No.	Intersection Legs (Clockwise: North-South-West)					
3	North		South		West	
	East Approach - Polo Flat Road		South Approach – Proposed Road 07A		West Approach - Polo Flat Road	
	T	R	L	T	L	R
2022 Base	110	0	0	63	0	0
2032 Pre-Development	134	0	0	77	0	0
2032 Post-Development	245	2	14	89	13	118
Additional Trips 2032 Post-dev	111	2	14	12	13	118

Table 5-20 Increase in Polo Flat Road / Numeralla Road / Yareen Road in the AM Post Developed Scenario (Ultimate Development)

	AM TRAFFIC Polo Flat Road / Numeralla Road / Yareen Road											
Intersection No.	Intersection Legs (Clockwise: North-East-South-West)											
4	North			East			South			West		
	North Approach - Polo Flat Road			East Approach – Numeralla Road			South Approach - Polo Flat Road			West Approach – Yareen Road		
	L	T	R	L	T	R	L	T	R	L	T	R
2022 Base	6	50	55	0	23	0	0	63	0	63	23	5
2032 Pre-Development	7	7	67	0	27	0	0	77	0	77	27	5
2032 Post-Development	7	53	250	0	27	0	0	82	0	98	27	5
Additional Trips 2032 Post-dev		46	183					5		21		

5.4.10 Increase in Traffic Volumes in Ultimate Development Scenario during the PM Scenario

Table 5-21 Increase in Monaro Highway / Polo Flat Road in the PM Post Developed Scenario (Ultimate Development)

	PM TRAFFIC Monaro Highway / Polo Flat Road Roundabout					
Intersection No.	Intersection Legs (Clockwise: East-South-West)					
1	East		South		West	
	North Approach – Monaro Highway		East Approach – Polo Flat Road		South Approach - Monaro Highway	
	L	T	L	R	T	R
2022 Base	95	324	13	50	1010	15
2032 Pre-Development	116	395	16	61	1231	18
2032 Post-Development	118	395	19	61	1231	43
Additional Trips 2032 Post-dev	2		3			25

Table 5-22 Increase in Proposed Road 01 / Polo Flat Road in the PM Post Developed Scenario (Ultimate Development)

	PM TRAFFIC Proposed Road 01 / Polo Flat Road T-intersection					
Intersection No.	Intersection Legs (Clockwise: North-South-West)					
2	North		South		West	
	East Approach - Polo Flat Road		South Approach – Proposed Road 01		West Approach - Polo Flat Road	
	T	R	L	T	L	R
2022 Base	110	0	0	63	0	0
2032 Pre-Development	134	0	0	77	0	0
2032 Post-Development	148	13	117	79	1	13
Additional Trips 2032 Post-dev	14	13	117	2	1	13

Table 5-23 Increase in Proposed Road 07A / Polo Flat Road in the PM Post Developed Scenario (Ultimate Development)

	PM TRAFFIC Proposed Road 07A / Polo Flat Road T-intersection					
Intersection No.	Intersection Legs (Clockwise: North-South-West)					
3	North		South		West	
	East Approach - Polo Flat Road		South Approach – Proposed Road 07A		West Approach - Polo Flat Road	
	T	R	L	T	L	R
2022 Base	110	0	0	63	0	0
2032 Pre-Development	134	0	0	77	0	0
2032 Post-Development	147	14	124	194	2	14
Additional Trips 2032 Post-dev	13	14	124	117	2	14

Table 5-24 Increase in Polo Flat Road / Numeralla Road / Yareen Road in the PM Post Developed Scenario (Ultimate Development)

	PM TRAFFIC Polo Flat Road / Numeralla Road / Yareen Road											
Intersection No.	Intersection Legs (Clockwise: North-East-South-West)											
4	North			East			South			West		
	North Approach - Polo Flat Road			East Approach – Numeralla Road			South Approach - Polo Flat Road			West Approach – Yareen Road		
	L	T	R	L	T	R	L	T	R	L	T	R
2022 Base	6	50	55	0	23	0	0	63	0	63	23	5
2032 Pre-Development	7	60	67	0	27	0	0	77	0	77	27	5
2032 Post-Development	7	66	88	0	27	0	0	125	0	270	27	5
Additional Trips 2032 Post-dev		6	21					48		193		

6 Conclusion

Cardno, now Stantec have undertaken a traffic impact assessment for the proposed staged Polo Flat Road subdivision in Cooma, NSW.

Historical traffic volume counts for the below mentioned roads were sourced from both RMS Traffic Volume Viewer data (Station ID 6113) and Snowy Monaro Regional Council traffic surveys to establish base traffic volumes within the Polo Flat Road network.

- Monaro Highway;
- Polo Flat Road; and,
- Yareen Road.

The proposed development will contain two new intersections and will impact two existing intersections in which traffic modelling was undertaken for the 2022 base, 2032 pre-development and 2032 post-development scenarios during both AM and PM peak hours:

- Monaro Highway / Polo Flat road Roundabout;
- Proposed Road 01 / Polo Flat Road T-Intersection;
- Proposed Road 07A / Polo Flat Road T-Intersection; and,
- Polo Flat Road / Numeralla Road / Yareen Road X-Intersection.

Vehicular access to and from each precinct will be gained via two separate locations (Proposed Road 01 and Proposed Road 07 T-intersections) to allow for staged construction. The two precincts will be connected via Road 07 to provide vehicular circulation and permeability between the ultimate development and the local traffic network.

Pedestrian access will be provided through both abovementioned intersections and within both development precincts. Footpaths will be located along all roads and will contain either 1.2 - 2-metre footpaths connecting proposed lots to all recreation and parkland areas.

It is envisaged that both intersections will contain localised widening and local area traffic management treatments (LATM) as part of the development. Specific widening and LATM treatments will be further refined and incorporated in the detailed design phase of the project. These treatments will aid in the improving both vehicle and pedestrian safety in and around the Polo Flat Road traffic network.

The modelling results revealed that each intersection experiences relatively low level of traffic during peak hours, which were assumed as the normal peak hours for the purposes of this assessment.

- Precinct 2 generates 154 and 161 vehicle trips per hour during the AM and PM peak hours, respectively;
- Precinct 3 generates 138 and 146 vehicle trips per hour during the AM and PM peak hours, respectively;
- The Ultimate (Combined) Development will generate 292 and 307 vehicle trips per hour during the AM and PM peak hours, respectively;

Based on the assessments completed, the above additional trips reflect and addition 5 movements per minute in the peak hour during the ultimate development scenario; an additional load which is readily managed within the capacity of the existing road network. With the addition of this traffic to the existing network operations and allowing for an annual growth rate of 2% to a 2032 pre and post development model year, the SIDRA results indicate that all existing and proposed intersections are expected to operate at Level of Service ‘A’ following completion of the subdivision.

6.1 Closing

It is appreciated that local experiences with traffic, particularly in peak periods may differ from the outputs of the modelling presented within this report. In accordance with standards for the development of Traffic Impact Assessments, the model attempts to provide an accurate representation of the mean operating conditions. In this way, the assessment should be viewed as a tool for comparative assessment between the existing and proposed conditions. It is accepted that some parts of the existing road network may benefit from augmentation through this development process. The development team is committed to mitigating traffic impacts on the local community and welcomes feedback on how the performance and safety of the existing road and pedestrian networks may be further improved through this development.

APPENDIX

A

CONCEPT MASTERPLANS

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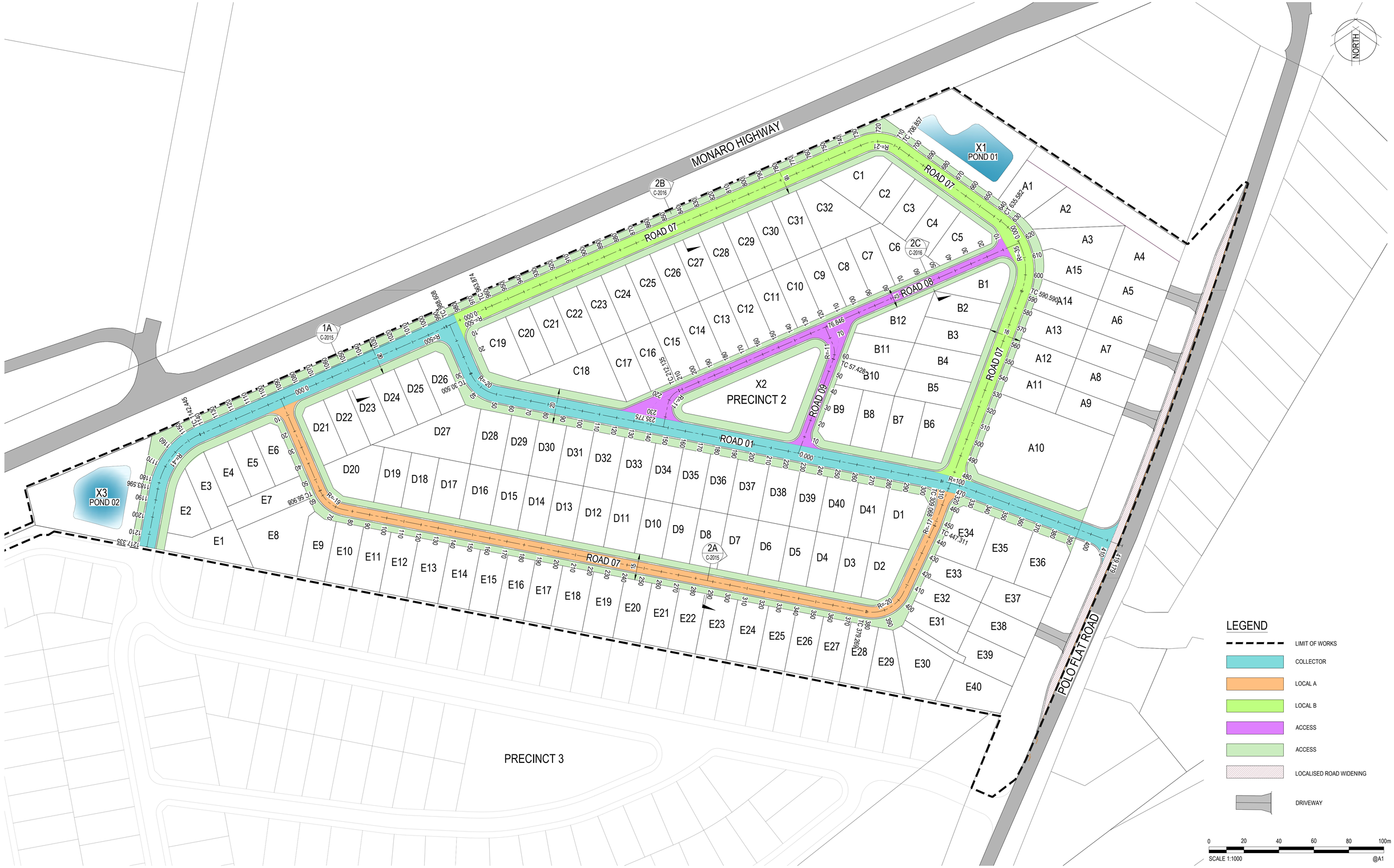

Rev.	Date	Description	Des.	Verif.	Appd.
A	09/09/2022	DRAFT FOR REVIEW	TM	FL	JS

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		Date
Drawn	AA	21/07/2022
Checked	JS	21/07/2022
Designed	TM	21/07/2028
Verified	FL	21/07/2022
Approved	JS	21/07/2028

Client: NSW Department of Planning and Environment

Project: YALLAKOOL ROAD RESIDENTIAL DEVELOPMENT PRECINCT 2

Title: ROAD HIERARCHY PLAN

Status: FOR APPROVAL
NOT TO BE USED FOR CONSTRUCTION PURPOSES

Date	Datum	Scale	Size
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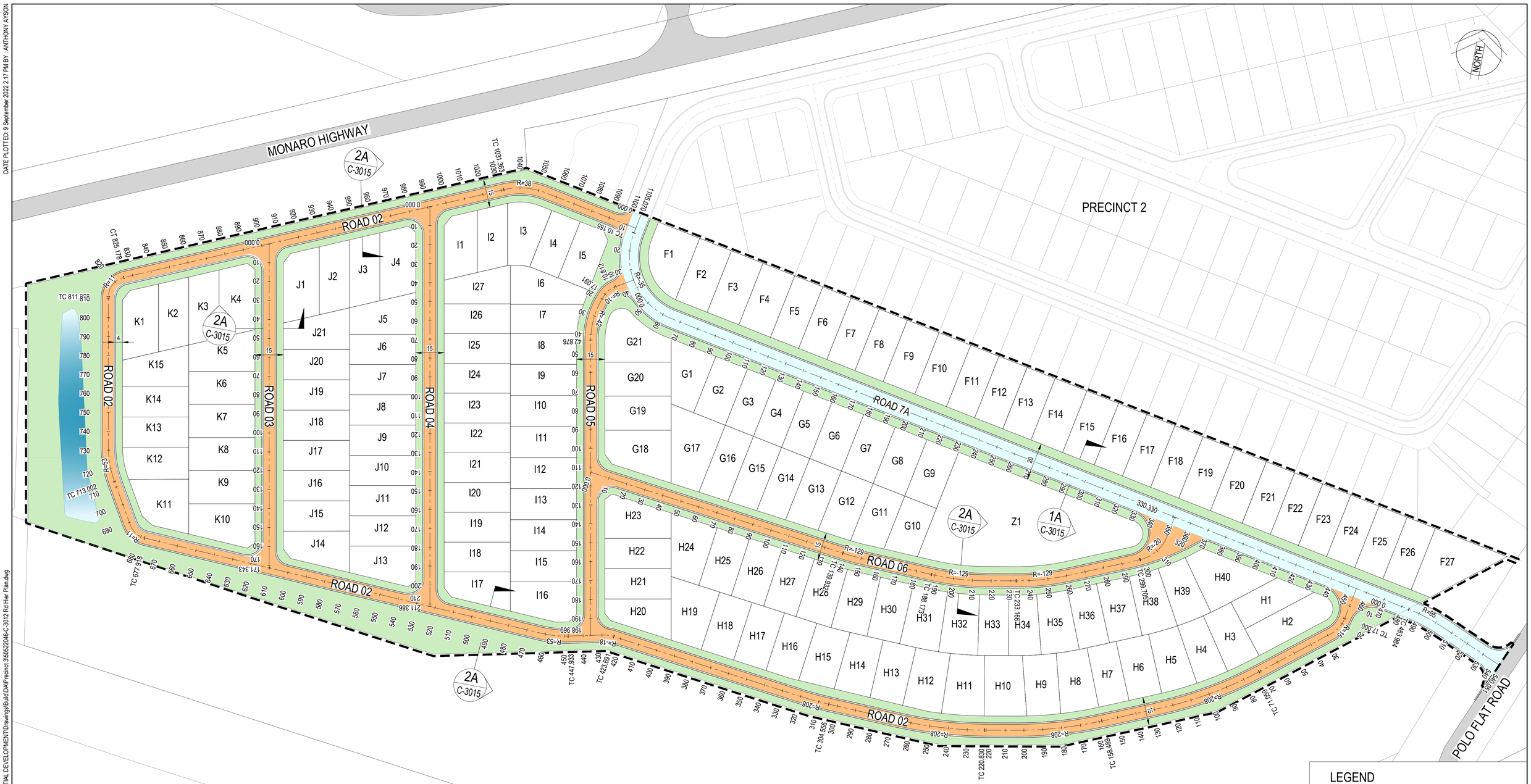
Drawing Number: 50522046-C-2012

Revision: A



Rev.	Date	Description	Des.	Verif.	Appd.
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Drawn	AA	Date 21/07/2022
Checked	JS	Date 21/07/2022
Designed	TM	Date 21/07/2022
Verified	FL	Date 21/07/2022
Approved	JS	21/07/2022

Client: NSW Department of Planning and Environment
Project: YALLAKOOL ROAD RESIDENTIAL DEVELOPMENT PRECINCT 3
Title: ROAD HIERARCHY PLAN
Status: FOR CONCEPT APPROVAL NOT TO BE USED FOR CONSTRUCTION PURPOSES
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Drawing Number: 50522046-C-3012 | Revision: A

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DATE PLOTTED: 9 September 2022 2:17 PM BY - ANTHONY AYSON

APPENDIX

B

SIDRA OUTPUTS

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SIDRA Movement Summary
Precinct 2

MOVEMENT SUMMARY

Site: 1 [AM - Monaro Highway / Polo Flat Road (Site Folder: 2022 Precinct 2 Base Model)]

Network: 01B [AM - 2022 Base Model (Network Folder: Precinct 2 Development)]

Polo Flat Road Residential Development - Precinct 2 Development
Site Category: Base Year
Roundabout

Vehicle Movement Performance

Mov ID	Turn	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	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
South: Polo Flat Road														
1	L2	14	10.0	14	10.0	0.055	4.4	LOS A	0.2	1.2	0.26	0.62	0.26	34.5
3	R2	53	8.0	53	8.0	0.055	9.7	LOS A	0.2	1.2	0.26	0.62	0.26	65.4
Approach		66	8.4	66	8.4	0.055	8.6	LOS A	0.2	1.2	0.26	0.62	0.26	59.8
East: Monaro Highway														
4	L2	100	22.0	100	22.0	0.250	7.1	LOS A	1.2	9.3	0.08	0.54	0.08	82.7
5	T1	282	10.0	282	10.0	0.250	7.7	LOS A	1.2	9.3	0.08	0.54	0.08	54.5
Approach		382	13.1	382	13.1	0.250	7.6	LOS A	1.2	9.3	0.08	0.54	0.08	59.6
West: Monaro Highway														
11	T1	842	8.0	842	8.0	0.571	3.9	LOS A	4.3	32.4	0.25	0.47	0.25	77.9
12	R2	16	22.0	16	22.0	0.571	8.9	LOS A	4.3	32.4	0.25	0.47	0.25	43.2
Approach		858	8.3	858	8.3	0.571	4.0	LOS A	4.3	32.4	0.25	0.47	0.25	77.8
All Vehicles		1306	9.7	1306	9.7	0.571	5.3	LOS A	4.3	32.4	0.20	0.50	0.20	70.2

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Network 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 (Geometric Delay is included).
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

MOVEMENT SUMMARY

Site: 4 [AM - Polo Flat Road / Yareen Road / Numeralla Road (Site Folder: 2022 Precinct 2 Base Model)]

Network: 01B [AM - 2022 Base Model (Network Folder: Precinct 2 Development)]

Polo Flat Road Residential Development - Precinct 2 Development
Site Category: Future Conditions 2
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	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	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
South: Polo Flat Rd														
1	L2	1	22.0	1	22.0	0.040	5.9	LOS A	0.0	0.1	0.01	0.02	0.01	29.6
2	T1	66	22.0	66	22.0	0.040	0.0	LOS A	0.0	0.1	0.01	0.02	0.01	59.7
3	R2	1	22.0	1	22.0	0.040	5.9	LOS A	0.0	0.1	0.01	0.02	0.01	56.7
Approach		68	22.0	68	22.0	0.040	0.2	NA	0.0	0.1	0.01	0.02	0.01	58.6
East: Numeralla Rd														
4	L2	1	22.0	1	22.0	0.027	6.0	LOS A	0.1	0.8	0.28	0.54	0.28	53.4
5	T1	24	22.0	24	22.0	0.027	5.3	LOS A	0.1	0.8	0.28	0.54	0.28	32.9
6	R2	1	22.0	1	22.0	0.027	7.6	LOS A	0.1	0.8	0.28	0.54	0.28	51.2
Approach		26	22.0	26	22.0	0.027	5.4	LOS A	0.1	0.8	0.28	0.54	0.28	34.3
North: Polo Flat Rd														
7	L2	6	22.0	6	22.0	0.074	6.1	LOS A	0.3	2.7	0.17	0.31	0.17	54.8
8	T1	53	22.0	53	22.0	0.074	0.2	LOS A	0.3	2.7	0.17	0.31	0.17	57.2
9	R2	58	22.0	58	22.0	0.074	6.0	LOS A	0.3	2.7	0.17	0.31	0.17	41.7
Approach		117	22.0	117	22.0	0.074	3.4	NA	0.3	2.7	0.17	0.31	0.17	50.2
West: Yareen Rd														
10	L2	66	22.0	66	22.0	0.080	5.4	LOS A	0.3	2.6	0.18	0.54	0.18	30.5
11	T1	24	22.0	24	22.0	0.080	4.7	LOS A	0.3	2.6	0.18	0.54	0.18	49.0
12	R2	5	22.0	5	22.0	0.080	6.5	LOS A	0.3	2.6	0.18	0.54	0.18	49.2
Approach		96	22.0	96	22.0	0.080	5.3	LOS A	0.3	2.6	0.18	0.54	0.18	42.4
All Vehicles		307	22.0	307	22.0	0.080	3.4	NA	0.3	2.7	0.15	0.34	0.15	48.8

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Network 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: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.
Delay Model: SIDRA Standard (Geometric Delay is included).
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

MOVEMENT SUMMARY

Site: 1 [PM - Monaro Highway / Polo Flat Road (Site Folder: 2022 Precinct 2 Base Model)]

Network: 02B [PM - 2022 Base Model (Network Folder: Precinct 2 Development)]

Polo Flat Road Residential Development - Precinct 2 Development
Site Category: Base Year
Roundabout

Vehicle Movement Performance

Mov ID	Turn	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	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
South: Polo Flat Road														
1	L2	14	10.0	14	10.0	0.060	4.6	LOS A	0.2	1.5	0.30	0.63	0.30	34.5
3	R2	53	22.0	53	22.0	0.060	10.1	LOS A	0.2	1.5	0.30	0.63	0.30	61.2
Approach		66	19.5	66	19.5	0.060	9.0	LOS A	0.2	1.5	0.30	0.63	0.30	56.7
East: Monaro Highway														
4	L2	100	22.0	100	22.0	0.286	7.1	LOS A	1.5	11.5	0.09	0.54	0.09	82.6
5	T1	341	10.0	341	10.0	0.286	7.7	LOS A	1.5	11.5	0.09	0.54	0.09	54.5
Approach		441	12.7	441	12.7	0.286	7.6	LOS A	1.5	11.5	0.09	0.54	0.09	58.9
West: Monaro Highway														
11	T1	1063	8.0	1063	8.0	0.715	4.1	LOS A	7.4	55.7	0.35	0.47	0.35	77.4
12	R2	16	22.0	16	22.0	0.715	9.1	LOS A	7.4	55.7	0.35	0.47	0.35	41.3
Approach		1079	8.2	1079	8.2	0.715	4.1	LOS A	7.4	55.7	0.35	0.47	0.35	77.3
All Vehicles		1586	9.9	1586	9.9	0.715	5.3	LOS A	7.4	55.7	0.27	0.50	0.27	69.9

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Network 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 (Geometric Delay is included).
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

MOVEMENT SUMMARY

Site: 4 [PM - Polo Flat Road / Yareen Road / Numeralla Road (Site Folder: 2022 Precinct 2 Base Model)]

Network: 02B [PM - 2022 Base Model (Network Folder: Precinct 2 Development)]

Polo Flat Road Residential Development - Precinct 2 Development
Site Category: Future Conditions 2
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	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	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
South: Polo Flat Rd														
1	L2	1	22.0	1	22.0	0.040	5.9	LOS A	0.0	0.1	0.01	0.02	0.01	29.6
2	T1	66	22.0	66	22.0	0.040	0.0	LOS A	0.0	0.1	0.01	0.02	0.01	59.7
3	R2	1	22.0	1	22.0	0.040	5.9	LOS A	0.0	0.1	0.01	0.02	0.01	56.7
Approach		68	22.0	68	22.0	0.040	0.2	NA	0.0	0.1	0.01	0.02	0.01	58.6
East: Numeralla Rd														
4	L2	1	22.0	1	22.0	0.027	6.0	LOS A	0.1	0.8	0.28	0.54	0.28	53.4
5	T1	24	22.0	24	22.0	0.027	5.3	LOS A	0.1	0.8	0.28	0.54	0.28	32.9
6	R2	1	22.0	1	22.0	0.027	7.6	LOS A	0.1	0.8	0.28	0.54	0.28	51.2
Approach		26	22.0	26	22.0	0.027	5.4	LOS A	0.1	0.8	0.28	0.54	0.28	34.3
North: Polo Flat Rd														
7	L2	6	22.0	6	22.0	0.074	6.1	LOS A	0.3	2.7	0.17	0.31	0.17	54.8
8	T1	53	22.0	53	22.0	0.074	0.2	LOS A	0.3	2.7	0.17	0.31	0.17	57.2
9	R2	58	22.0	58	22.0	0.074	6.0	LOS A	0.3	2.7	0.17	0.31	0.17	41.7
Approach		117	22.0	117	22.0	0.074	3.4	NA	0.3	2.7	0.17	0.31	0.17	50.2
West: Yareen Rd														
10	L2	66	22.0	66	22.0	0.080	5.4	LOS A	0.3	2.6	0.18	0.54	0.18	30.5
11	T1	24	22.0	24	22.0	0.080	4.7	LOS A	0.3	2.6	0.18	0.54	0.18	49.0
12	R2	5	22.0	5	22.0	0.080	6.5	LOS A	0.3	2.6	0.18	0.54	0.18	49.2
Approach		96	22.0	96	22.0	0.080	5.3	LOS A	0.3	2.6	0.18	0.54	0.18	42.4
All Vehicles		307	22.0	307	22.0	0.080	3.4	NA	0.3	2.7	0.15	0.34	0.15	48.8

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Network 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: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.
Delay Model: SIDRA Standard (Geometric Delay is included).
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

MOVEMENT SUMMARY

Site: 1 [AM - Monaro Highway / Polo Flat Road (Site Folder: 2032 Precinct 2 Pre-Development Model)]

Network: 03B [AM - 2032 Pre-Development Model (Network Folder: Precinct 2 Development)]

Polo Flat Road Residential Development - Precinct 2 Development
Site Category: Future Conditions 1
Roundabout

Vehicle Movement Performance

Mov ID	Turn	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	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
South: Polo Flat Road														
1	L2	17	10.0	17	10.0	0.069	4.6	LOS A	0.2	1.7	0.30	0.64	0.30	34.4
3	R2	64	8.0	64	8.0	0.069	9.9	LOS A	0.2	1.7	0.30	0.64	0.30	65.3
Approach		81	8.4	81	8.4	0.069	8.8	LOS A	0.2	1.7	0.30	0.64	0.30	59.6
East: Monaro Highway														
4	L2	122	22.0	122	22.0	0.305	7.2	LOS A	1.6	12.7	0.10	0.54	0.10	82.5
5	T1	344	10.0	344	10.0	0.305	7.7	LOS A	1.6	12.7	0.10	0.54	0.10	54.5
Approach		466	13.1	466	13.1	0.305	7.6	LOS A	1.6	12.7	0.10	0.54	0.10	59.5
West: Monaro Highway														
11	T1	1026	8.0	1026	8.0	0.702	4.1	LOS A	7.0	52.6	0.36	0.48	0.36	77.3
12	R2	19	22.0	19	22.0	0.702	9.2	LOS A	7.0	52.6	0.36	0.48	0.36	41.0
Approach		1045	8.3	1045	8.3	0.702	4.2	LOS A	7.0	52.6	0.36	0.48	0.36	77.2
All Vehicles		1593	9.7	1593	9.7	0.702	5.4	LOS A	7.0	52.6	0.28	0.50	0.28	69.8

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Network 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 (Geometric Delay is included).
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

MOVEMENT SUMMARY

Site: 4 [AM - Polo Flat Road / Yareen Road / Numeralla Road (Site Folder: 2032 Precinct 2 Pre-Development Model)]

Network: 03B [AM - 2032 Pre-Development Model (Network Folder: Precinct 2 Development)]

Polo Flat Road Residential Development - Precinct 2 Development
Site Category: Future Conditions 2
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	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	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
South: Polo Flat Rd														
1	L2	1	22.0	1	22.0	0.049	5.9	LOS A	0.0	0.1	0.01	0.02	0.01	29.6
2	T1	81	22.0	81	22.0	0.049	0.0	LOS A	0.0	0.1	0.01	0.02	0.01	59.7
3	R2	1	22.0	1	22.0	0.049	6.0	LOS A	0.0	0.1	0.01	0.02	0.01	56.7
Approach		83	22.0	83	22.0	0.049	0.2	NA	0.0	0.1	0.01	0.02	0.01	58.8
East: Numeralla Rd														
4	L2	1	22.0	1	22.0	0.033	6.0	LOS A	0.1	1.0	0.32	0.56	0.32	53.3
5	T1	28	22.0	28	22.0	0.033	5.5	LOS A	0.1	1.0	0.32	0.56	0.32	32.8
6	R2	1	22.0	1	22.0	0.033	8.1	LOS A	0.1	1.0	0.32	0.56	0.32	51.0
Approach		31	22.0	31	22.0	0.033	5.7	LOS A	0.1	1.0	0.32	0.56	0.32	34.0
North: Polo Flat Rd														
7	L2	7	22.0	7	22.0	0.090	6.1	LOS A	0.4	3.3	0.19	0.31	0.19	54.8
8	T1	63	22.0	63	22.0	0.090	0.3	LOS A	0.4	3.3	0.19	0.31	0.19	57.2
9	R2	71	22.0	71	22.0	0.090	6.1	LOS A	0.4	3.3	0.19	0.31	0.19	41.6
Approach		141	22.0	141	22.0	0.090	3.5	NA	0.4	3.3	0.19	0.31	0.19	50.1
West: Yareen Rd														
10	L2	81	22.0	81	22.0	0.098	5.5	LOS A	0.4	3.2	0.21	0.55	0.21	30.2
11	T1	28	22.0	28	22.0	0.098	5.0	LOS A	0.4	3.2	0.21	0.55	0.21	48.9
12	R2	5	22.0	5	22.0	0.098	6.9	LOS A	0.4	3.2	0.21	0.55	0.21	49.1
Approach		115	22.0	115	22.0	0.098	5.4	LOS A	0.4	3.2	0.21	0.55	0.21	41.9
All Vehicles		369	22.0	369	22.0	0.098	3.5	NA	0.4	3.3	0.16	0.34	0.16	48.7

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Network 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: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.
Delay Model: SIDRA Standard (Geometric Delay is included).
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

MOVEMENT SUMMARY

Site: 1 [PM - Monaro Highway / Polo Flat Road (Site Folder: 2032 Precinct 2 Pre-Development Model)]

Network: 04B [PM - 2032 Pre-Development Model (Network Folder: Precinct 2 Development)]

Polo Flat Road Residential Development - Precinct 2 Development
Site Category: Future Conditions 1
Roundabout

Vehicle Movement Performance

Mov ID	Turn	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	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
South: Polo Flat Road														
1	L2	17	10.0	17	10.0	0.071	4.8	LOS A	0.2	1.8	0.34	0.65	0.34	34.3
3	R2	64	8.0	64	8.0	0.071	10.1	LOS A	0.2	1.8	0.34	0.65	0.34	65.1
Approach		81	8.4	81	8.4	0.071	9.0	LOS A	0.2	1.8	0.34	0.65	0.34	59.5
East: Monaro Highway														
4	L2	122	22.0	122	22.0	0.350	7.2	LOS A	2.2	16.8	0.12	0.53	0.12	82.3
5	T1	416	10.0	416	10.0	0.350	7.7	LOS A	2.2	16.8	0.12	0.53	0.12	54.4
Approach		538	12.7	538	12.7	0.350	7.6	LOS A	2.2	16.8	0.12	0.53	0.12	58.7
West: Monaro Highway														
11	T1	1296	8.0	1296	8.0	0.874	4.6	LOS A	17.0	127.6	0.64	0.48	0.64	75.8
12	R2	19	22.0	19	22.0	0.874	9.7	LOS A	17.0	127.6	0.64	0.48	0.64	36.6
Approach		1315	8.2	1315	8.2	0.874	4.7	LOS A	17.0	127.6	0.64	0.48	0.64	75.7
All Vehicles		1934	9.5	1934	9.5	0.874	5.7	LOS A	17.0	127.6	0.48	0.50	0.48	69.1

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Network 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 (Geometric Delay is included).
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

MOVEMENT SUMMARY

Site: 4 [PM - Polo Flat Road / Yareen Road / Numeralla Road (Site Folder: 2032 Precinct 2 Pre-Development Model)]

Network: 04B [PM - 2032 Pre-Development Model (Network Folder: Precinct 2 Development)]

Polo Flat Road Residential Development - Precinct 2 Development
Site Category: Future Conditions 2
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	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	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
South: Polo Flat Rd														
1	L2	1	22.0	1	22.0	0.049	5.9	LOS A	0.0	0.1	0.01	0.02	0.01	29.6
2	T1	81	22.0	81	22.0	0.049	0.0	LOS A	0.0	0.1	0.01	0.02	0.01	59.7
3	R2	1	22.0	1	22.0	0.049	6.0	LOS A	0.0	0.1	0.01	0.02	0.01	56.7
Approach		83	22.0	83	22.0	0.049	0.2	NA	0.0	0.1	0.01	0.02	0.01	58.8
East: Numeralla Rd														
4	L2	1	22.0	1	22.0	0.033	6.0	LOS A	0.1	1.0	0.32	0.56	0.32	53.3
5	T1	28	22.0	28	22.0	0.033	5.5	LOS A	0.1	1.0	0.32	0.56	0.32	32.8
6	R2	1	22.0	1	22.0	0.033	8.1	LOS A	0.1	1.0	0.32	0.56	0.32	51.0
Approach		31	22.0	31	22.0	0.033	5.7	LOS A	0.1	1.0	0.32	0.56	0.32	34.0
North: Polo Flat Rd														
7	L2	7	22.0	7	22.0	0.090	6.1	LOS A	0.4	3.3	0.19	0.31	0.19	54.8
8	T1	63	22.0	63	22.0	0.090	0.3	LOS A	0.4	3.3	0.19	0.31	0.19	57.2
9	R2	71	22.0	71	22.0	0.090	6.1	LOS A	0.4	3.3	0.19	0.31	0.19	41.6
Approach		141	22.0	141	22.0	0.090	3.5	NA	0.4	3.3	0.19	0.31	0.19	50.1
West: Yareen Rd														
10	L2	81	22.0	81	22.0	0.098	5.5	LOS A	0.4	3.2	0.21	0.55	0.21	30.2
11	T1	28	22.0	28	22.0	0.098	5.0	LOS A	0.4	3.2	0.21	0.55	0.21	48.9
12	R2	5	22.0	5	22.0	0.098	6.9	LOS A	0.4	3.2	0.21	0.55	0.21	49.1
Approach		115	22.0	115	22.0	0.098	5.4	LOS A	0.4	3.2	0.21	0.55	0.21	41.9
All Vehicles		369	22.0	369	22.0	0.098	3.5	NA	0.4	3.3	0.16	0.34	0.16	48.7

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Network 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: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.
Delay Model: SIDRA Standard (Geometric Delay is included).
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

MOVEMENT SUMMARY

Site: 1 [AM - Monaro Highway / Polo Flat Road (Site Folder: 2032 Precinct 2 Post-Development Model)]

Polo Flat Road Residential Development - Precinct 2 Development
Site Category: Future Conditions 2
Roundabout

Vehicle Movement Performance

Mov ID	Turn	INPUT VOLUMES [Total veh/h	HV] %	DEMAND 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	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
South: Polo Flat Road														
1	L2	27	10.0	28	10.0	0.080	4.6	LOS A	0.3	1.9	0.31	0.63	0.31	27.1
3	R2	62	8.0	65	8.0	0.080	9.9	LOS A	0.3	1.9	0.31	0.63	0.31	67.0
Approach		89	8.6	94	8.6	0.080	8.3	LOS A	0.3	1.9	0.31	0.63	0.31	56.6
East: Monaro Highway														
4	L2	116	22.0	122	22.0	0.306	7.2	LOS A	1.6	12.8	0.11	0.54	0.11	73.8
5	T1	327	10.0	344	10.0	0.306	7.7	LOS A	1.6	12.8	0.11	0.54	0.11	72.5
Approach		443	13.1	466	13.1	0.306	7.6	LOS A	1.6	12.8	0.11	0.54	0.11	72.9
West: Monaro Highway														
11	T1	975	8.0	1026	8.0	0.704	4.1	LOS A	7.1	52.9	0.37	0.48	0.37	77.2
12	R2	19	22.0	20	22.0	0.704	9.2	LOS A	7.1	52.9	0.37	0.48	0.37	55.3
Approach		994	8.3	1046	8.3	0.704	4.2	LOS A	7.1	52.9	0.37	0.48	0.37	77.0
All Vehicles		1526	9.7	1606	9.7	0.704	5.4	LOS A	7.1	52.9	0.29	0.51	0.29	74.2

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Parameter Settings dialog (Site 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 (Geometric Delay is included).
Queue Model: SIDRA Standard.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

MOVEMENT SUMMARY

Site: 2 [AM - Polo Flat Road / Northern Development Entrance (Site Folder: 2032 Precinct 2 Post-Development Model)]

Polo Flat Road Residential Development - Precinct 2 Development
Site Category: Future Conditions 2
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	INPUT VOLUMES [Total veh/h	HV] %	DEMAND 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	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
South: Polo Flat Road														
1	L2	12	5.0	13	5.0	0.053	5.6	LOS A	0.0	0.0	0.00	0.08	0.00	56.7
2	T1	77	22.0	81	22.0	0.053	0.0	LOS A	0.0	0.0	0.00	0.08	0.00	58.7
Approach		89	19.7	94	19.7	0.053	0.8	NA	0.0	0.0	0.00	0.08	0.00	58.3
North: Polo Flat Road														
8	T1	134	22.0	141	22.0	0.081	0.0	LOS A	0.0	0.1	0.00	0.00	0.00	59.9
9	R2	1	5.0	1	5.0	0.081	5.9	LOS A	0.0	0.1	0.00	0.00	0.00	57.2
Approach		135	21.9	142	21.9	0.081	0.0	NA	0.0	0.1	0.00	0.00	0.00	59.9
West: Development Entrance North														
10	L2	12	5.0	13	5.0	0.125	5.9	LOS A	0.4	3.2	0.29	0.61	0.29	51.5
12	R2	111	5.0	117	5.0	0.125	6.6	LOS A	0.4	3.2	0.29	0.61	0.29	50.6
Approach		123	5.0	129	5.0	0.125	6.5	LOS A	0.4	3.2	0.29	0.61	0.29	50.7
All Vehicles		347	15.3	365	15.3	0.125	2.5	NA	0.4	3.2	0.10	0.24	0.10	55.5

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Parameter Settings dialog (Site 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: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.
Delay Model: SIDRA Standard (Geometric Delay is included).
Queue Model: SIDRA Standard.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

MOVEMENT SUMMARY

Site: 4 [AM - Polo Flat Road / Yareen Road / Numeralla Road (Site Folder: 2032 Precinct 2 Post-Development Model)]

Polo Flat Road Residential Development - Precinct 2 Development
Site Category: Future Conditions 2
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	INPUT VOLUMES [Total veh/h	HV] %	DEMAND 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	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
South: Polo Flat Rd														
1	L2	1	22.0	1	22.0	0.050	6.0	LOS A	0.0	0.1	0.01	0.01	0.01	39.6
2	T1	79	22.0	83	22.0	0.050	0.0	LOS A	0.0	0.1	0.01	0.01	0.01	59.8
3	R2	1	22.0	1	22.0	0.050	6.1	LOS A	0.0	0.1	0.01	0.01	0.01	56.7
Approach		81	22.0	85	22.0	0.050	0.2	NA	0.0	0.1	0.01	0.01	0.01	59.5
East: Numeralla Rd														
4	L2	1	22.0	1	22.0	0.039	6.1	LOS A	0.1	1.1	0.40	0.61	0.40	52.7
5	T1	27	22.0	28	22.0	0.039	6.4	LOS A	0.1	1.1	0.40	0.61	0.40	47.6
6	R2	1	22.0	1	22.0	0.039	9.5	LOS A	0.1	1.1	0.40	0.61	0.40	49.8
Approach		29	22.0	31	22.0	0.039	6.5	LOS A	0.1	1.1	0.40	0.61	0.40	48.0
North: Polo Flat Rd														
7	L2	7	22.0	7	22.0	0.168	6.2	LOS A	0.9	7.1	0.22	0.38	0.22	52.1
8	T1	82	22.0	86	22.0	0.168	0.3	LOS A	0.9	7.1	0.22	0.38	0.22	55.5
9	R2	156	22.0	164	22.0	0.168	6.1	LOS A	0.9	7.1	0.22	0.38	0.22	32.1
Approach		245	22.0	258	22.0	0.168	4.2	NA	0.9	7.1	0.22	0.38	0.22	42.1
West: Yareen Rd														
10	L2	87	22.0	92	22.0	0.112	5.5	LOS A	0.4	3.7	0.21	0.55	0.21	44.0
11	T1	27	22.0	28	22.0	0.112	6.0	LOS A	0.4	3.7	0.21	0.55	0.21	48.7
12	R2	5	22.0	5	22.0	0.112	8.2	LOS A	0.4	3.7	0.21	0.55	0.21	48.9
Approach		119	22.0	125	22.0	0.112	5.7	LOS A	0.4	3.7	0.21	0.55	0.21	45.6
All Vehicles		474	22.0	499	22.0	0.168	4.0	NA	0.9	7.1	0.19	0.37	0.19	46.6

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Parameter Settings dialog (Site 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: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.
Delay Model: SIDRA Standard (Geometric Delay is included).
Queue Model: SIDRA Standard.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

MOVEMENT SUMMARY

Site: 1 [PM - Monaro Highway / Polo Flat Road (Site Folder: 2032 Precinct 2 Post-Development Model)]

Polo Flat Road Residential Development - Precinct 2 Development
Site Category: Future Conditions 2
Roundabout

Vehicle Movement Performance

Mov ID	Turn	INPUT VOLUMES [Total veh/h	HV] %	DEMAND 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	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
South: Polo Flat Road														
1	L2	17	10.0	18	10.0	0.072	4.8	LOS A	0.2	1.9	0.35	0.65	0.35	26.9
3	R2	61	8.0	64	8.0	0.072	10.1	LOS A	0.2	1.9	0.35	0.65	0.35	66.4
Approach		78	8.4	82	8.4	0.072	9.0	LOS A	0.2	1.9	0.35	0.65	0.35	59.1
East: Monaro Highway														
4	L2	117	22.0	123	22.0	0.362	7.2	LOS A	2.3	17.7	0.16	0.53	0.16	73.4
5	T1	395	10.0	416	10.0	0.362	7.8	LOS A	2.3	17.7	0.16	0.53	0.16	72.1
Approach		512	12.7	539	12.7	0.362	7.7	LOS A	2.3	17.7	0.16	0.53	0.16	72.4
West: Monaro Highway														
11	T1	1231	8.0	1296	8.0	0.882	4.7	LOS A	18.1	135.5	0.66	0.48	0.66	75.6
12	R2	30	22.0	32	22.0	0.882	9.8	LOS A	18.1	135.5	0.66	0.48	0.66	53.3
Approach		1261	8.3	1327	8.3	0.882	4.8	LOS A	18.1	135.5	0.66	0.48	0.66	75.3
All Vehicles		1851	9.6	1948	9.6	0.882	5.8	LOS A	18.1	135.5	0.51	0.50	0.51	73.5

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Parameter Settings dialog (Site 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 (Geometric Delay is included).
Queue Model: SIDRA Standard.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

MOVEMENT SUMMARY

Site: 2 [PM - Polo Flat Road / Northern Development Entrance (Site Folder: 2032 Precinct 2 Post-Development Model)]

Polo Flat Road Residential Development - Precinct 2 Development
Site Category: Future Conditions 2
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	INPUT VOLUMES [Total veh/h	HV] %	DEMAND 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	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
South: Polo Flat Road														
1	L2	117	5.0	123	5.0	0.113	5.6	LOS A	0.0	0.0	0.00	0.35	0.00	53.8
2	T1	77	22.0	81	22.0	0.113	0.0	LOS A	0.0	0.0	0.00	0.35	0.00	55.0
Approach		194	11.7	204	11.7	0.113	3.4	NA	0.0	0.0	0.00	0.35	0.00	54.2
North: Polo Flat Road														
8	T1	134	22.0	141	22.0	0.090	0.1	LOS A	0.1	0.8	0.07	0.05	0.07	58.7
9	R2	13	5.0	14	5.0	0.090	6.3	LOS A	0.1	0.8	0.07	0.05	0.07	56.4
Approach		147	20.5	155	20.5	0.090	0.6	NA	0.1	0.8	0.07	0.05	0.07	58.4
West: Development Entrance North														
10	L2	1	5.0	1	5.0	0.015	5.9	LOS A	0.0	0.4	0.30	0.59	0.30	51.4
12	R2	13	5.0	14	5.0	0.015	6.8	LOS A	0.0	0.4	0.30	0.59	0.30	50.6
Approach		14	5.0	15	5.0	0.015	6.7	LOS A	0.0	0.4	0.30	0.59	0.30	50.6
All Vehicles		355	15.1	374	15.1	0.113	2.4	NA	0.1	0.8	0.04	0.24	0.04	55.6

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Parameter Settings dialog (Site 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: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.
Delay Model: SIDRA Standard (Geometric Delay is included).
Queue Model: SIDRA Standard.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

MOVEMENT SUMMARY

Site: 4 [PM - Polo Flat Road / Yareen Road / Numeralla Road (Site Folder: 2032 Precinct 2 Post-Development Model)]

Polo Flat Road Residential Development - Precinct 2 Development
Site Category: Future Conditions 2
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	INPUT VOLUMES [Total veh/h	HV] %	DEMAND 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	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
South: Polo Flat Rd														
1	L2	1	22.0	1	22.0	0.063	5.9	LOS A	0.0	0.1	0.01	0.01	0.01	39.6
2	T1	100	22.0	105	22.0	0.063	0.0	LOS A	0.0	0.1	0.01	0.01	0.01	59.9
3	R2	1	22.0	1	22.0	0.063	6.0	LOS A	0.0	0.1	0.01	0.01	0.01	56.8
Approach		102	22.0	107	22.0	0.063	0.1	NA	0.0	0.1	0.01	0.01	0.01	59.6
East: Numeralla Rd														
4	L2	1	22.0	1	22.0	0.035	6.0	LOS A	0.1	1.0	0.34	0.57	0.34	53.1
5	T1	27	22.0	28	22.0	0.035	5.8	LOS A	0.1	1.0	0.34	0.57	0.34	48.3
6	R2	1	22.0	1	22.0	0.035	9.5	LOS A	0.1	1.0	0.34	0.57	0.34	50.3
Approach		29	22.0	31	22.0	0.035	5.9	LOS A	0.1	1.0	0.34	0.57	0.34	48.6
North: Polo Flat Rd														
7	L2	7	22.0	7	22.0	0.101	6.2	LOS A	0.5	3.8	0.23	0.32	0.23	52.5
8	T1	63	22.0	66	22.0	0.101	0.4	LOS A	0.5	3.8	0.23	0.32	0.23	55.9
9	R2	77	22.0	81	22.0	0.101	6.2	LOS A	0.5	3.8	0.23	0.32	0.23	32.4
Approach		147	22.0	155	22.0	0.101	3.7	NA	0.5	3.8	0.23	0.32	0.23	45.2
West: Yareen Rd														
10	L2	171	22.0	180	22.0	0.176	5.6	LOS A	0.8	6.4	0.25	0.56	0.25	43.7
11	T1	27	22.0	28	22.0	0.176	5.4	LOS A	0.8	6.4	0.25	0.56	0.25	48.5
12	R2	5	22.0	5	22.0	0.176	7.5	LOS A	0.8	6.4	0.25	0.56	0.25	48.8
Approach		203	22.0	214	22.0	0.176	5.6	LOS A	0.8	6.4	0.25	0.56	0.25	44.7
All Vehicles		481	22.0	506	22.0	0.176	3.9	NA	0.8	6.4	0.20	0.37	0.20	49.0

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Parameter Settings dialog (Site 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: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.
Delay Model: SIDRA Standard (Geometric Delay is included).
Queue Model: SIDRA Standard.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

SIDRA Movement Summary
Precinct 3

MOVEMENT SUMMARY

Site: 1 [AM - Monaro Highway / Polo Flat Road (Site Folder: 2022 Precinct 3 Base Model)]

Network: 01C [AM - 2022 Base Model (Network Folder: Precinct 3 Development)]

Polo Flat Road Residential Development - Precinct 3 Development
Site Category: Base Year
Roundabout

Vehicle Movement Performance

Mov ID	Turn	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	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
South: Polo Flat Road														
1	L2	14	10.0	14	10.0	0.055	4.4	LOS A	0.2	1.2	0.26	0.62	0.26	34.5
3	R2	53	8.0	53	8.0	0.055	9.7	LOS A	0.2	1.2	0.26	0.62	0.26	65.4
Approach		66	8.4	66	8.4	0.055	8.6	LOS A	0.2	1.2	0.26	0.62	0.26	59.8
East: Monaro Highway														
4	L2	100	22.0	100	22.0	0.250	7.1	LOS A	1.2	9.3	0.08	0.54	0.08	82.7
5	T1	282	10.0	282	10.0	0.250	7.7	LOS A	1.2	9.3	0.08	0.54	0.08	54.5
Approach		382	13.1	382	13.1	0.250	7.6	LOS A	1.2	9.3	0.08	0.54	0.08	59.6
West: Monaro Highway														
11	T1	842	8.0	842	8.0	0.571	3.9	LOS A	4.3	32.4	0.25	0.47	0.25	77.9
12	R2	16	22.0	16	22.0	0.571	8.9	LOS A	4.3	32.4	0.25	0.47	0.25	43.2
Approach		858	8.3	858	8.3	0.571	4.0	LOS A	4.3	32.4	0.25	0.47	0.25	77.8
All Vehicles		1306	9.7	1306	9.7	0.571	5.3	LOS A	4.3	32.4	0.20	0.50	0.20	70.2

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Network 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 (Geometric Delay is included).
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

MOVEMENT SUMMARY

Site: 4 [AM - Polo Flat Road / Yareen Road / Numeralla Road (Site Folder: 2022 Precinct 3 Base Model)]

Network: 01C [AM - 2022 Base Model (Network Folder: Precinct 3 Development)]

Polo Flat Road Residential Development - Precinct 3 Development
Site Category: Future Conditions 2
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	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	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
South: Polo Flat Rd														
1	L2	1	22.0	1	22.0	0.040	5.9	LOS A	0.0	0.1	0.01	0.02	0.01	29.6
2	T1	66	22.0	66	22.0	0.040	0.0	LOS A	0.0	0.1	0.01	0.02	0.01	59.7
3	R2	1	22.0	1	22.0	0.040	5.9	LOS A	0.0	0.1	0.01	0.02	0.01	56.7
Approach		68	22.0	68	22.0	0.040	0.2	NA	0.0	0.1	0.01	0.02	0.01	58.6
East: Numeralla Rd														
4	L2	1	22.0	1	22.0	0.027	6.0	LOS A	0.1	0.8	0.28	0.54	0.28	53.4
5	T1	24	22.0	24	22.0	0.027	5.3	LOS A	0.1	0.8	0.28	0.54	0.28	32.9
6	R2	1	22.0	1	22.0	0.027	7.6	LOS A	0.1	0.8	0.28	0.54	0.28	51.2
Approach		26	22.0	26	22.0	0.027	5.4	LOS A	0.1	0.8	0.28	0.54	0.28	34.3
North: Polo Flat Rd														
7	L2	6	22.0	6	22.0	0.074	6.1	LOS A	0.3	2.7	0.17	0.31	0.17	54.8
8	T1	53	22.0	53	22.0	0.074	0.2	LOS A	0.3	2.7	0.17	0.31	0.17	57.2
9	R2	58	22.0	58	22.0	0.074	6.0	LOS A	0.3	2.7	0.17	0.31	0.17	41.7
Approach		117	22.0	117	22.0	0.074	3.4	NA	0.3	2.7	0.17	0.31	0.17	50.2
West: Yareen Rd														
10	L2	66	22.0	66	22.0	0.080	5.4	LOS A	0.3	2.6	0.18	0.54	0.18	30.5
11	T1	24	22.0	24	22.0	0.080	4.7	LOS A	0.3	2.6	0.18	0.54	0.18	49.0
12	R2	5	22.0	5	22.0	0.080	6.5	LOS A	0.3	2.6	0.18	0.54	0.18	49.2
Approach		96	22.0	96	22.0	0.080	5.3	LOS A	0.3	2.6	0.18	0.54	0.18	42.4
All Vehicles		307	22.0	307	22.0	0.080	3.4	NA	0.3	2.7	0.15	0.34	0.15	48.8

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Network 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: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.
Delay Model: SIDRA Standard (Geometric Delay is included).
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

MOVEMENT SUMMARY

Site: 1 [PM - Monaro Highway / Polo Flat Road (Site Folder: 2022 Precinct 3 Base Model)]

Network: 02C [PM - 2022 Base Model (Network Folder: Precinct 3 Development)]

Polo Flat Road Residential Development - Precinct 3 Development
Site Category: Base Year
Roundabout

Vehicle Movement Performance

Mov ID	Turn	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	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
South: Polo Flat Road														
1	L2	14	10.0	14	10.0	0.056	4.6	LOS A	0.2	1.3	0.30	0.63	0.30	34.4
3	R2	53	8.0	53	8.0	0.056	9.9	LOS A	0.2	1.3	0.30	0.63	0.30	65.3
Approach		66	8.4	66	8.4	0.056	8.8	LOS A	0.2	1.3	0.30	0.63	0.30	59.7
East: Monaro Highway														
4	L2	100	22.0	100	22.0	0.286	7.1	LOS A	1.5	11.4	0.09	0.54	0.09	82.6
5	T1	341	10.0	341	10.0	0.286	7.7	LOS A	1.5	11.4	0.09	0.54	0.09	54.5
Approach		441	12.7	441	12.7	0.286	7.6	LOS A	1.5	11.4	0.09	0.54	0.09	58.9
West: Monaro Highway														
11	T1	1063	8.0	1063	8.0	0.711	4.0	LOS A	7.3	55.0	0.33	0.47	0.33	77.5
12	R2	16	22.0	16	22.0	0.711	9.1	LOS A	7.3	55.0	0.33	0.47	0.33	41.6
Approach		1079	8.2	1079	8.2	0.711	4.1	LOS A	7.3	55.0	0.33	0.47	0.33	77.4
All Vehicles		1586	9.5	1586	9.5	0.711	5.3	LOS A	7.3	55.0	0.26	0.49	0.26	70.2

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Network 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 (Geometric Delay is included).
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

MOVEMENT SUMMARY

Site: 4 [PM - Polo Flat Road / Yareen Road / Numeralla Road (Site Folder: 2022 Precinct 3 Base Model)]

Network: 02C [PM - 2022 Base Model (Network Folder: Precinct 3 Development)]

Polo Flat Road Residential Development - Precinct 3 Development
Site Category: Future Conditions 2
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	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	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
South: Polo Flat Rd														
1	L2	1	22.0	1	22.0	0.040	5.9	LOS A	0.0	0.1	0.01	0.02	0.01	29.6
2	T1	66	22.0	66	22.0	0.040	0.0	LOS A	0.0	0.1	0.01	0.02	0.01	59.7
3	R2	1	22.0	1	22.0	0.040	5.9	LOS A	0.0	0.1	0.01	0.02	0.01	56.7
Approach		68	22.0	68	22.0	0.040	0.2	NA	0.0	0.1	0.01	0.02	0.01	58.6
East: Numeralla Rd														
4	L2	1	22.0	1	22.0	0.027	6.0	LOS A	0.1	0.8	0.28	0.54	0.28	53.4
5	T1	24	22.0	24	22.0	0.027	5.3	LOS A	0.1	0.8	0.28	0.54	0.28	32.9
6	R2	1	22.0	1	22.0	0.027	7.6	LOS A	0.1	0.8	0.28	0.54	0.28	51.2
Approach		26	22.0	26	22.0	0.027	5.4	LOS A	0.1	0.8	0.28	0.54	0.28	34.3
North: Polo Flat Rd														
7	L2	6	22.0	6	22.0	0.074	6.1	LOS A	0.3	2.7	0.17	0.31	0.17	54.8
8	T1	53	22.0	53	22.0	0.074	0.2	LOS A	0.3	2.7	0.17	0.31	0.17	57.2
9	R2	58	22.0	58	22.0	0.074	6.0	LOS A	0.3	2.7	0.17	0.31	0.17	41.7
Approach		117	22.0	117	22.0	0.074	3.4	NA	0.3	2.7	0.17	0.31	0.17	50.2
West: Yareen Rd														
10	L2	66	22.0	66	22.0	0.080	5.4	LOS A	0.3	2.6	0.18	0.54	0.18	30.5
11	T1	24	22.0	24	22.0	0.080	4.7	LOS A	0.3	2.6	0.18	0.54	0.18	49.0
12	R2	5	22.0	5	22.0	0.080	6.5	LOS A	0.3	2.6	0.18	0.54	0.18	49.2
Approach		96	22.0	96	22.0	0.080	5.3	LOS A	0.3	2.6	0.18	0.54	0.18	42.4
All Vehicles		307	22.0	307	22.0	0.080	3.4	NA	0.3	2.7	0.15	0.34	0.15	48.8

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Network 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: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.
Delay Model: SIDRA Standard (Geometric Delay is included).
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

MOVEMENT SUMMARY

Site: 1 [AM - Monaro Highway / Polo Flat Road (Site Folder: 2032 Precinct 3 Pre-Development Model)]

Network: 03C [AM - 2032 Pre-Development Model (Network Folder: Precinct 3 Development)]

Polo Flat Road Residential Development - Precinct 3 Development
Site Category: Future Conditions 1
Roundabout

Vehicle Movement Performance

Mov ID	Turn	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	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
South: Polo Flat Road														
1	L2	17	10.0	17	10.0	0.069	4.6	LOS A	0.2	1.7	0.30	0.64	0.30	34.4
3	R2	64	8.0	64	8.0	0.069	9.9	LOS A	0.2	1.7	0.30	0.64	0.30	65.3
Approach		81	8.4	81	8.4	0.069	8.8	LOS A	0.2	1.7	0.30	0.64	0.30	59.6
East: Monaro Highway														
4	L2	122	22.0	122	22.0	0.308	7.2	LOS A	1.6	12.8	0.11	0.54	0.11	82.4
5	T1	344	10.0	344	10.0	0.308	7.8	LOS A	1.6	12.8	0.11	0.54	0.11	54.4
Approach		466	13.1	466	13.1	0.308	7.6	LOS A	1.6	12.8	0.11	0.54	0.11	59.5
West: Monaro Highway														
11	T1	1026	8.0	1026	8.0	0.704	4.1	LOS A	7.1	53.0	0.36	0.48	0.36	77.2
12	R2	22	22.0	22	22.0	0.704	9.2	LOS A	7.1	53.0	0.36	0.48	0.36	40.9
Approach		1048	8.3	1048	8.3	0.704	4.2	LOS A	7.1	53.0	0.36	0.48	0.36	77.1
All Vehicles		1596	9.7	1596	9.7	0.704	5.4	LOS A	7.1	53.0	0.29	0.50	0.29	69.8

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Network 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 (Geometric Delay is included).
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

MOVEMENT SUMMARY

Site: 4 [AM - Polo Flat Road / Yareen Road / Numeralla Road (Site Folder: 2032 Precinct 3 Pre-Development Model)]

Network: 03C [AM - 2032 Pre-Development Model (Network Folder: Precinct 3 Development)]

Polo Flat Road Residential Development - Precinct 3 Development
Site Category: Future Conditions 2
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	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	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
South: Polo Flat Rd														
1	L2	1	22.0	1	22.0	0.049	5.9	LOS A	0.0	0.1	0.01	0.02	0.01	29.6
2	T1	81	22.0	81	22.0	0.049	0.0	LOS A	0.0	0.1	0.01	0.02	0.01	59.7
3	R2	1	22.0	1	22.0	0.049	6.0	LOS A	0.0	0.1	0.01	0.02	0.01	56.7
Approach		83	22.0	83	22.0	0.049	0.2	NA	0.0	0.1	0.01	0.02	0.01	58.8
East: Numeralla Rd														
4	L2	1	22.0	1	22.0	0.033	6.0	LOS A	0.1	1.0	0.32	0.56	0.32	53.3
5	T1	28	22.0	28	22.0	0.033	5.5	LOS A	0.1	1.0	0.32	0.56	0.32	32.8
6	R2	1	22.0	1	22.0	0.033	8.1	LOS A	0.1	1.0	0.32	0.56	0.32	51.0
Approach		31	22.0	31	22.0	0.033	5.7	LOS A	0.1	1.0	0.32	0.56	0.32	34.0
North: Polo Flat Rd														
7	L2	7	22.0	7	22.0	0.090	6.1	LOS A	0.4	3.3	0.19	0.31	0.19	54.8
8	T1	63	22.0	63	22.0	0.090	0.3	LOS A	0.4	3.3	0.19	0.31	0.19	57.2
9	R2	71	22.0	71	22.0	0.090	6.1	LOS A	0.4	3.3	0.19	0.31	0.19	41.6
Approach		141	22.0	141	22.0	0.090	3.5	NA	0.4	3.3	0.19	0.31	0.19	50.1
West: Yareen Rd														
10	L2	81	22.0	81	22.0	0.098	5.5	LOS A	0.4	3.2	0.21	0.55	0.21	30.2
11	T1	28	22.0	28	22.0	0.098	5.0	LOS A	0.4	3.2	0.21	0.55	0.21	48.9
12	R2	5	22.0	5	22.0	0.098	6.9	LOS A	0.4	3.2	0.21	0.55	0.21	49.1
Approach		115	22.0	115	22.0	0.098	5.4	LOS A	0.4	3.2	0.21	0.55	0.21	41.9
All Vehicles		369	22.0	369	22.0	0.098	3.5	NA	0.4	3.3	0.16	0.34	0.16	48.7

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Network 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: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.
Delay Model: SIDRA Standard (Geometric Delay is included).
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

MOVEMENT SUMMARY

Site: 1 [PM - Monaro Highway / Polo Flat Road (Site Folder: 2032 Precinct 3 Pre-Development Model)]

Network: 04C [PM - 2032 Pre-Development Model (Network Folder: Precinct 3 Development)]

Polo Flat Road Residential Development - Precinct 3 Development
Site Category: Future Conditions 1
Roundabout

Vehicle Movement Performance

Mov ID	Turn	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	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
South: Polo Flat Road														
1	L2	17	10.0	17	10.0	0.071	4.8	LOS A	0.2	1.8	0.34	0.65	0.34	34.3
3	R2	64	8.0	64	8.0	0.071	10.1	LOS A	0.2	1.8	0.34	0.65	0.34	65.1
Approach		81	8.4	81	8.4	0.071	9.0	LOS A	0.2	1.8	0.34	0.65	0.34	59.5
East: Monaro Highway														
4	L2	122	22.0	122	22.0	0.350	7.2	LOS A	2.2	16.8	0.12	0.53	0.12	82.3
5	T1	416	10.0	416	10.0	0.350	7.7	LOS A	2.2	16.8	0.12	0.53	0.12	54.4
Approach		538	12.7	538	12.7	0.350	7.6	LOS A	2.2	16.8	0.12	0.53	0.12	58.7
West: Monaro Highway														
11	T1	1296	8.0	1296	8.0	0.874	4.6	LOS A	17.0	127.6	0.64	0.48	0.64	75.8
12	R2	19	22.0	19	22.0	0.874	9.7	LOS A	17.0	127.6	0.64	0.48	0.64	36.6
Approach		1315	8.2	1315	8.2	0.874	4.7	LOS A	17.0	127.6	0.64	0.48	0.64	75.7
All Vehicles		1934	9.5	1934	9.5	0.874	5.7	LOS A	17.0	127.6	0.48	0.50	0.48	69.1

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Network 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 (Geometric Delay is included).
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

MOVEMENT SUMMARY

Site: 4 [PM - Polo Flat Road / Yareen Road / Numeralla Road (Site Folder: 2032 Precinct 3 Pre-Development Model)]

Network: 04C [PM - 2032 Pre-Development Model (Network Folder: Precinct 3 Development)]

Polo Flat Road Residential Development - Precinct 3 Development
Site Category: Future Conditions 2
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	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	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
South: Polo Flat Rd														
1	L2	1	22.0	1	22.0	0.049	5.9	LOS A	0.0	0.1	0.01	0.02	0.01	29.6
2	T1	81	22.0	81	22.0	0.049	0.0	LOS A	0.0	0.1	0.01	0.02	0.01	59.7
3	R2	1	22.0	1	22.0	0.049	6.0	LOS A	0.0	0.1	0.01	0.02	0.01	56.7
Approach		83	22.0	83	22.0	0.049	0.2	NA	0.0	0.1	0.01	0.02	0.01	58.8
East: Numeralla Rd														
4	L2	1	22.0	1	22.0	0.033	6.0	LOS A	0.1	1.0	0.32	0.56	0.32	53.3
5	T1	28	22.0	28	22.0	0.033	5.5	LOS A	0.1	1.0	0.32	0.56	0.32	32.8
6	R2	1	22.0	1	22.0	0.033	8.1	LOS A	0.1	1.0	0.32	0.56	0.32	51.0
Approach		31	22.0	31	22.0	0.033	5.7	LOS A	0.1	1.0	0.32	0.56	0.32	34.0
North: Polo Flat Rd														
7	L2	7	22.0	7	22.0	0.090	6.1	LOS A	0.4	3.3	0.19	0.31	0.19	54.8
8	T1	63	22.0	63	22.0	0.090	0.3	LOS A	0.4	3.3	0.19	0.31	0.19	57.2
9	R2	71	22.0	71	22.0	0.090	6.1	LOS A	0.4	3.3	0.19	0.31	0.19	41.6
Approach		141	22.0	141	22.0	0.090	3.5	NA	0.4	3.3	0.19	0.31	0.19	50.1
West: Yareen Rd														
10	L2	81	22.0	81	22.0	0.098	5.5	LOS A	0.4	3.2	0.21	0.55	0.21	30.2
11	T1	28	22.0	28	22.0	0.098	5.0	LOS A	0.4	3.2	0.21	0.55	0.21	48.9
12	R2	5	22.0	5	22.0	0.098	6.9	LOS A	0.4	3.2	0.21	0.55	0.21	49.1
Approach		115	22.0	115	22.0	0.098	5.4	LOS A	0.4	3.2	0.21	0.55	0.21	41.9
All Vehicles		369	22.0	369	22.0	0.098	3.5	NA	0.4	3.3	0.16	0.34	0.16	48.7

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Network 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: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.
Delay Model: SIDRA Standard (Geometric Delay is included).
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

MOVEMENT SUMMARY

Site: 1 [AM - Monaro Highway / Polo Flat Road (Site Folder: 2032 Precinct 3 Post-Development Model)]

Polo Flat Road Residential Development - Precinct 3 Development
Site Category: Future Conditions 2
Roundabout

Vehicle Movement Performance

Mov ID	Turn	INPUT VOLUMES [Total veh/h	HV] %	DEMAND 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	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
South: Polo Flat Road														
1	L2	27	10.0	28	10.0	0.084	4.6	LOS A	0.3	2.2	0.31	0.63	0.31	30.0
3	R2	62	22.0	65	22.0	0.084	10.2	LOS A	0.3	2.2	0.31	0.63	0.31	61.8
Approach		89	18.4	94	18.4	0.084	8.5	LOS A	0.3	2.2	0.31	0.63	0.31	53.9
East: Monaro Highway														
4	L2	116	22.0	122	22.0	0.308	7.2	LOS A	1.7	12.9	0.11	0.53	0.11	72.7
5	T1	327	10.0	344	10.0	0.308	7.8	LOS A	1.7	12.9	0.11	0.53	0.11	65.3
Approach		443	13.1	466	13.1	0.308	7.6	LOS A	1.7	12.9	0.11	0.53	0.11	67.5
West: Monaro Highway														
11	T1	975	8.0	1026	8.0	0.710	4.2	LOS A	7.2	54.0	0.39	0.49	0.39	77.1
12	R2	21	22.0	22	22.0	0.710	9.2	LOS A	7.2	54.0	0.39	0.49	0.39	56.0
Approach		996	8.3	1048	8.3	0.710	4.3	LOS A	7.2	54.0	0.39	0.49	0.39	76.8
All Vehicles		1528	10.3	1608	10.3	0.710	5.5	LOS A	7.2	54.0	0.30	0.51	0.30	71.8

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Parameter Settings dialog (Site 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 (Geometric Delay is included).
Queue Model: SIDRA Standard.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

MOVEMENT SUMMARY

Site: 3 [AM - Polo Flat Road / Southern Development Entrance (Site Folder: 2032 Precinct 3 Post-Development Model)]

Polo Flat Road Residential Development - Precinct 3 Development
Site Category: Future Conditions 2
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	INPUT VOLUMES [Total veh/h	HV] %	DEMAND 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	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
South: Polo Flat Road														
1	L2	14	5.0	15	5.0	0.062	5.6	LOS A	0.0	0.0	0.00	0.08	0.00	55.9
2	T1	89	22.0	94	22.0	0.062	0.0	LOS A	0.0	0.0	0.00	0.08	0.00	58.6
Approach		103	19.7	108	19.7	0.062	0.8	NA	0.0	0.0	0.00	0.08	0.00	58.2
North: Polo Flat Road														
8	T1	245	22.0	258	22.0	0.149	0.0	LOS A	0.0	0.1	0.00	0.00	0.00	59.9
9	R2	2	5.0	2	5.0	0.149	6.0	LOS A	0.0	0.1	0.00	0.00	0.00	57.5
Approach		247	21.9	260	21.9	0.149	0.1	NA	0.0	0.1	0.00	0.00	0.00	59.8
West: Development Entrance South														
10	L2	13	5.0	14	5.0	0.154	5.9	LOS A	0.5	3.9	0.36	0.67	0.36	51.7
12	R2	118	5.0	124	5.0	0.154	7.4	LOS A	0.5	3.9	0.36	0.67	0.36	48.1
Approach		131	5.0	138	5.0	0.154	7.3	LOS A	0.5	3.9	0.36	0.67	0.36	48.6
All Vehicles		481	16.8	506	16.8	0.154	2.2	NA	0.5	3.9	0.10	0.20	0.10	55.7

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Parameter Settings dialog (Site 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: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.
Delay Model: SIDRA Standard (Geometric Delay is included).
Queue Model: SIDRA Standard.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

MOVEMENT SUMMARY

Site: 4 [AM - Polo Flat Road / Yareen Road / Numeralla Road (Site Folder: 2032 Precinct 3 Post-Development Model)]

Polo Flat Road Residential Development - Precinct 3 Development
Site Category: Future Conditions 2
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	INPUT VOLUMES [Total veh/h	HV] %	DEMAND 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	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
South: Polo Flat Rd														
1	L2	1	22.0	1	22.0	0.051	6.0	LOS A	0.0	0.1	0.01	0.01	0.01	46.2
2	T1	80	22.0	84	22.0	0.051	0.0	LOS A	0.0	0.1	0.01	0.01	0.01	59.8
3	R2	1	22.0	1	22.0	0.051	6.1	LOS A	0.0	0.1	0.01	0.01	0.01	56.7
Approach		82	22.0	86	22.0	0.051	0.2	NA	0.0	0.1	0.01	0.01	0.01	59.5
East: Numeralla Rd														
4	L2	1	22.0	1	22.0	0.039	6.1	LOS A	0.1	1.1	0.41	0.62	0.41	52.7
5	T1	27	22.0	28	22.0	0.039	6.5	LOS A	0.1	1.1	0.41	0.62	0.41	44.9
6	R2	1	22.0	1	22.0	0.039	9.6	LOS A	0.1	1.1	0.41	0.62	0.41	47.3
Approach		29	22.0	31	22.0	0.039	6.6	LOS A	0.1	1.1	0.41	0.62	0.41	45.4
North: Polo Flat Rd														
7	L2	7	22.0	7	22.0	0.173	6.2	LOS A	0.9	7.4	0.23	0.38	0.23	50.6
8	T1	84	22.0	88	22.0	0.173	0.4	LOS A	0.9	7.4	0.23	0.38	0.23	54.6
9	R2	161	22.0	169	22.0	0.173	6.1	LOS A	0.9	7.4	0.23	0.38	0.23	24.9
Approach		252	22.0	265	22.0	0.173	4.2	NA	0.9	7.4	0.23	0.38	0.23	38.0
West: Yareen Rd														
10	L2	88	22.0	93	22.0	0.113	5.5	LOS A	0.5	3.8	0.21	0.55	0.21	36.7
11	T1	27	22.0	28	22.0	0.113	6.1	LOS A	0.5	3.8	0.21	0.55	0.21	48.7
12	R2	5	22.0	5	22.0	0.113	8.3	LOS A	0.5	3.8	0.21	0.55	0.21	48.9
Approach		120	22.0	126	22.0	0.113	5.7	LOS A	0.5	3.8	0.21	0.55	0.21	41.6
All Vehicles		483	22.0	508	22.0	0.173	4.0	NA	0.9	7.4	0.20	0.37	0.20	43.6

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Parameter Settings dialog (Site 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: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.
Delay Model: SIDRA Standard (Geometric Delay is included).
Queue Model: SIDRA Standard.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

MOVEMENT SUMMARY

Site: 1 [PM - Monaro Highway / Polo Flat Road (Site Folder: 2032 Precinct 3 Post-Development Model)]

Polo Flat Road Residential Development - Precinct 3 Development
Site Category: Future Conditions 2
Roundabout

Vehicle Movement Performance

Mov ID	Turn	INPUT VOLUMES [Total veh/h	HV] %	DEMAND 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	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
South: Polo Flat Road														
1	L2	19	10.0	20	10.0	0.074	4.8	LOS A	0.3	2.0	0.35	0.65	0.35	29.8
3	R2	61	8.0	64	8.0	0.074	10.1	LOS A	0.3	2.0	0.35	0.65	0.35	66.0
Approach		80	8.5	84	8.5	0.074	8.9	LOS A	0.3	2.0	0.35	0.65	0.35	58.6
East: Monaro Highway														
4	L2	118	22.0	124	22.0	0.374	7.3	LOS A	2.4	18.6	0.21	0.53	0.21	72.1
5	T1	395	10.0	416	10.0	0.374	7.9	LOS A	2.4	18.6	0.21	0.53	0.21	64.7
Approach		513	12.8	540	12.8	0.374	7.7	LOS A	2.4	18.6	0.21	0.53	0.21	66.6
West: Monaro Highway														
11	T1	1231	8.0	1296	8.0	0.891	4.7	LOS A	19.3	145.1	0.69	0.48	0.69	75.4
12	R2	43	22.0	45	22.0	0.891	9.8	LOS A	19.3	145.1	0.69	0.48	0.69	54.2
Approach		1274	8.5	1341	8.5	0.891	4.9	LOS A	19.3	145.1	0.69	0.48	0.69	74.9
All Vehicles		1867	9.7	1965	9.7	0.891	5.8	LOS A	19.3	145.1	0.55	0.50	0.55	71.3

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Parameter Settings dialog (Site 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 (Geometric Delay is included).
Queue Model: SIDRA Standard.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

MOVEMENT SUMMARY

Site: 3 [PM - Polo Flat Road / Southern Development Entrance (Site Folder: 2032 Precinct 3 Post-Development Model)]

Polo Flat Road Residential Development - Precinct 3 Development
Site Category: Future Conditions 2
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	INPUT VOLUMES [Total veh/h	HV] %	DEMAND 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	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
South: Polo Flat Road														
1	L2	124	5.0	131	5.0	0.188	5.6	LOS A	0.0	0.0	0.00	0.23	0.00	54.0
2	T1	194	22.0	204	22.0	0.188	0.0	LOS A	0.0	0.0	0.00	0.23	0.00	56.2
Approach		318	15.4	335	15.4	0.188	2.2	NA	0.0	0.0	0.00	0.23	0.00	55.3
North: Polo Flat Road														
8	T1	147	22.0	155	22.0	0.100	0.2	LOS A	0.1	1.1	0.09	0.05	0.09	58.4
9	R2	14	5.0	15	5.0	0.100	7.0	LOS A	0.1	1.1	0.09	0.05	0.09	56.6
Approach		161	20.5	169	20.5	0.100	0.8	NA	0.1	1.1	0.09	0.05	0.09	58.2
West: Development Entrance South														
10	L2	2	5.0	2	5.0	0.020	6.3	LOS A	0.1	0.5	0.40	0.64	0.40	51.6
12	R2	14	5.0	15	5.0	0.020	7.6	LOS A	0.1	0.5	0.40	0.64	0.40	48.0
Approach		16	5.0	17	5.0	0.020	7.4	LOS A	0.1	0.5	0.40	0.64	0.40	48.6
All Vehicles		495	16.7	521	16.7	0.188	1.9	NA	0.1	1.1	0.04	0.19	0.04	55.9

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Parameter Settings dialog (Site 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: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.
Delay Model: SIDRA Standard (Geometric Delay is included).
Queue Model: SIDRA Standard.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

MOVEMENT SUMMARY

Site: 4 [PM - Polo Flat Road / Yareen Road / Numeralla Road (Site Folder: 2032 Precinct 3 Post-Development Model)]

Polo Flat Road Residential Development - Precinct 3 Development
Site Category: Future Conditions 2
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	INPUT VOLUMES [Total veh/h	HV] %	DEMAND 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	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
South: Polo Flat Rd														
1	L2	1	22.0	1	22.0	0.064	5.9	LOS A	0.0	0.1	0.01	0.01	0.01	46.2
2	T1	102	22.0	107	22.0	0.064	0.0	LOS A	0.0	0.1	0.01	0.01	0.01	59.8
3	R2	1	22.0	1	22.0	0.064	6.0	LOS A	0.0	0.1	0.01	0.01	0.01	56.8
Approach		104	22.0	109	22.0	0.064	0.1	NA	0.0	0.1	0.01	0.01	0.01	59.6
East: Numeralla Rd														
4	L2	1	22.0	1	22.0	0.035	6.0	LOS A	0.1	1.0	0.35	0.58	0.35	53.1
5	T1	27	22.0	28	22.0	0.035	5.8	LOS A	0.1	1.0	0.35	0.58	0.35	45.5
6	R2	1	22.0	1	22.0	0.035	9.6	LOS A	0.1	1.0	0.35	0.58	0.35	47.9
Approach		29	22.0	31	22.0	0.035	6.0	LOS A	0.1	1.0	0.35	0.58	0.35	46.0
North: Polo Flat Rd														
7	L2	7	22.0	7	22.0	0.102	6.3	LOS A	0.5	3.9	0.23	0.33	0.23	51.1
8	T1	63	22.0	66	22.0	0.102	0.4	LOS A	0.5	3.9	0.23	0.33	0.23	55.1
9	R2	78	22.0	82	22.0	0.102	6.2	LOS A	0.5	3.9	0.23	0.33	0.23	25.2
Approach		148	22.0	156	22.0	0.102	3.7	NA	0.5	3.9	0.23	0.33	0.23	41.8
West: Yareen Rd														
10	L2	176	22.0	185	22.0	0.180	5.6	LOS A	0.8	6.6	0.26	0.56	0.26	36.5
11	T1	27	22.0	28	22.0	0.180	5.5	LOS A	0.8	6.6	0.26	0.56	0.26	48.5
12	R2	5	22.0	5	22.0	0.180	7.5	LOS A	0.8	6.6	0.26	0.56	0.26	48.8
Approach		208	22.0	219	22.0	0.180	5.7	LOS A	0.8	6.6	0.26	0.56	0.26	39.6
All Vehicles		489	22.0	515	22.0	0.180	3.9	NA	0.8	6.6	0.20	0.37	0.20	46.2

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Parameter Settings dialog (Site 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: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.
Delay Model: SIDRA Standard (Geometric Delay is included).
Queue Model: SIDRA Standard.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

SIDRA Movement Summary
Ultimate Development

MOVEMENT SUMMARY

Site: 1 [AM - Monaro Highway / Polo Flat Road (Site Folder: 2022 Ultimate Development Base Model)]

Network: 01A [AM - 2022 Base Model (Network Folder: Ultimate Development)]

Polo Flat Road Residential Development - Ultimate Development
Site Category: Base Year
Roundabout

Vehicle Movement Performance

Mov ID	Turn	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	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
South: Polo Flat Road														
1	L2	14	0.0	14	0.0	0.059	4.3	LOS A	0.2	1.5	0.27	0.62	0.27	34.6
3	R2	53	28.0	53	28.0	0.059	10.0	LOS A	0.2	1.5	0.27	0.62	0.27	59.8
Approach		66	22.2	66	22.2	0.059	8.8	LOS A	0.2	1.5	0.27	0.62	0.27	55.6
East: Monaro Highway														
4	L2	100	19.0	100	19.0	0.249	7.1	LOS A	1.2	9.3	0.08	0.54	0.08	82.7
5	T1	282	10.0	282	10.0	0.249	7.7	LOS A	1.2	9.3	0.08	0.54	0.08	54.5
Approach		382	12.4	382	12.4	0.249	7.6	LOS A	1.2	9.3	0.08	0.54	0.08	59.6
West: Monaro Highway														
11	T1	842	8.0	842	8.0	0.576	3.9	LOS A	4.4	32.9	0.26	0.48	0.26	77.8
12	R2	16	20.0	16	20.0	0.576	8.2	LOS A	4.4	32.9	0.26	0.48	0.26	42.7
Approach		858	8.2	858	8.2	0.576	4.0	LOS A	4.4	32.9	0.26	0.48	0.26	77.7
All Vehicles		1306	10.1	1306	10.1	0.576	5.3	LOS A	4.4	32.9	0.21	0.50	0.21	69.7

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Network 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 (Geometric Delay is included).
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

MOVEMENT SUMMARY

Site: 4 [AM - Polo Flat Road / Yareen Road / Numeralla Road (Site Folder: 2022 Ultimate Development Base Model)]

Network: 01A [AM - 2022 Base Model (Network Folder: Ultimate Development)]

Polo Flat Road Residential Development - Ultimate Development
Site Category: Future Conditions 2
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	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	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
South: Polo Flat Rd														
1	L2	1	22.0	1	22.0	0.040	5.9	LOS A	0.0	0.1	0.01	0.02	0.01	29.6
2	T1	66	22.0	66	22.0	0.040	0.0	LOS A	0.0	0.1	0.01	0.02	0.01	59.7
3	R2	1	22.0	1	22.0	0.040	5.9	LOS A	0.0	0.1	0.01	0.02	0.01	56.7
Approach		68	22.0	68	22.0	0.040	0.2	NA	0.0	0.1	0.01	0.02	0.01	58.6
East: Numeralla Rd														
4	L2	1	22.0	1	22.0	0.027	6.0	LOS A	0.1	0.8	0.28	0.54	0.28	53.4
5	T1	24	22.0	24	22.0	0.027	5.3	LOS A	0.1	0.8	0.28	0.54	0.28	32.9
6	R2	1	22.0	1	22.0	0.027	7.6	LOS A	0.1	0.8	0.28	0.54	0.28	51.2
Approach		26	22.0	26	22.0	0.027	5.4	LOS A	0.1	0.8	0.28	0.54	0.28	34.3
North: Polo Flat Rd														
7	L2	6	22.0	6	22.0	0.074	6.1	LOS A	0.3	2.7	0.17	0.31	0.17	54.8
8	T1	53	22.0	53	22.0	0.074	0.2	LOS A	0.3	2.7	0.17	0.31	0.17	57.2
9	R2	58	22.0	58	22.0	0.074	6.0	LOS A	0.3	2.7	0.17	0.31	0.17	41.7
Approach		117	22.0	117	22.0	0.074	3.4	NA	0.3	2.7	0.17	0.31	0.17	50.2
West: Yareen Rd														
10	L2	66	22.0	66	22.0	0.080	5.4	LOS A	0.3	2.6	0.18	0.54	0.18	30.5
11	T1	24	22.0	24	22.0	0.080	4.7	LOS A	0.3	2.6	0.18	0.54	0.18	49.0
12	R2	5	22.0	5	22.0	0.080	6.5	LOS A	0.3	2.6	0.18	0.54	0.18	49.2
Approach		96	22.0	96	22.0	0.080	5.3	LOS A	0.3	2.6	0.18	0.54	0.18	42.4
All Vehicles		307	22.0	307	22.0	0.080	3.4	NA	0.3	2.7	0.15	0.34	0.15	48.8

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Network 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: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.
Delay Model: SIDRA Standard (Geometric Delay is included).
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

MOVEMENT SUMMARY

Site: 1 [PM - Monaro Highway / Polo Flat Road (Site Folder: 2022 Ultimate Development Base Model)]

Network: 02A [PM - 2022 Base Model (Network Folder: Ultimate Development)]

Polo Flat Road Residential Development - Ultimate Development
Site Category: Base Year
Roundabout

Vehicle Movement Performance

Mov ID	Turn	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	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
South: Polo Flat Road														
1	L2	14	0.0	14	0.0	0.060	4.4	LOS A	0.2	1.6	0.30	0.63	0.30	34.6
3	R2	53	28.0	53	28.0	0.060	10.2	LOS A	0.2	1.6	0.30	0.63	0.30	59.7
Approach		66	22.2	66	22.2	0.060	9.0	LOS A	0.2	1.6	0.30	0.63	0.30	55.5
East: Monaro Highway														
4	L2	100	19.0	100	19.0	0.280	7.1	LOS A	1.4	10.8	0.09	0.54	0.09	82.6
5	T1	341	5.0	341	5.0	0.280	7.6	LOS A	1.4	10.8	0.09	0.54	0.09	54.5
Approach		441	8.2	441	8.2	0.280	7.5	LOS A	1.4	10.8	0.09	0.54	0.09	58.9
West: Monaro Highway														
11	T1	1063	8.0	1063	8.0	0.716	4.1	LOS A	7.5	55.9	0.35	0.47	0.35	77.3
12	R2	16	20.0	16	20.0	0.716	9.1	LOS A	7.5	55.9	0.35	0.47	0.35	41.2
Approach		1079	8.2	1079	8.2	0.716	4.2	LOS A	7.5	55.9	0.35	0.47	0.35	77.2
All Vehicles		1586	8.8	1586	8.8	0.716	5.3	LOS A	7.5	55.9	0.28	0.50	0.28	69.7

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Network 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 (Geometric Delay is included).
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

MOVEMENT SUMMARY

Site: 4 [PM - Polo Flat Road / Yareen Road / Numeralla Road (Site Folder: 2022 Ultimate Development Base Model)]

Network: 02A [PM - 2022 Base Model (Network Folder: Ultimate Development)]

Polo Flat Road Residential Development - Ultimate Development
Site Category: Future Conditions 2
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	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	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
South: Polo Flat Rd														
1	L2	1	22.0	1	22.0	0.040	5.9	LOS A	0.0	0.1	0.01	0.02	0.01	29.6
2	T1	66	22.0	66	22.0	0.040	0.0	LOS A	0.0	0.1	0.01	0.02	0.01	59.7
3	R2	1	22.0	1	22.0	0.040	5.9	LOS A	0.0	0.1	0.01	0.02	0.01	56.7
Approach		68	22.0	68	22.0	0.040	0.2	NA	0.0	0.1	0.01	0.02	0.01	58.6
East: Numeralla Rd														
4	L2	1	22.0	1	22.0	0.027	6.0	LOS A	0.1	0.8	0.28	0.54	0.28	53.4
5	T1	24	22.0	24	22.0	0.027	5.3	LOS A	0.1	0.8	0.28	0.54	0.28	32.9
6	R2	1	22.0	1	22.0	0.027	7.6	LOS A	0.1	0.8	0.28	0.54	0.28	51.2
Approach		26	22.0	26	22.0	0.027	5.4	LOS A	0.1	0.8	0.28	0.54	0.28	34.3
North: Polo Flat Rd														
7	L2	6	22.0	6	22.0	0.074	6.1	LOS A	0.3	2.7	0.17	0.31	0.17	54.8
8	T1	53	22.0	53	22.0	0.074	0.2	LOS A	0.3	2.7	0.17	0.31	0.17	57.2
9	R2	58	22.0	58	22.0	0.074	6.0	LOS A	0.3	2.7	0.17	0.31	0.17	41.7
Approach		117	22.0	117	22.0	0.074	3.4	NA	0.3	2.7	0.17	0.31	0.17	50.2
West: Yareen Rd														
10	L2	66	22.0	66	22.0	0.080	5.4	LOS A	0.3	2.6	0.18	0.54	0.18	30.5
11	T1	24	22.0	24	22.0	0.080	4.7	LOS A	0.3	2.6	0.18	0.54	0.18	49.0
12	R2	5	22.0	5	22.0	0.080	6.5	LOS A	0.3	2.6	0.18	0.54	0.18	49.2
Approach		96	22.0	96	22.0	0.080	5.3	LOS A	0.3	2.6	0.18	0.54	0.18	42.4
All Vehicles		307	22.0	307	22.0	0.080	3.4	NA	0.3	2.7	0.15	0.34	0.15	48.8

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Network 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: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.
Delay Model: SIDRA Standard (Geometric Delay is included).
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

MOVEMENT SUMMARY

Site: 1 [AM - Monaro Highway / Polo Flat Road (Site Folder: 2032 Ultimate Development Pre-Development Model)]

Network: 03A [AM - 2032 Pre-Development Model (Network Folder: Ultimate Development)]

Polo Flat Road Residential Development - Ultimate Development
Site Category: Future Conditions 1
Roundabout

Vehicle Movement Performance

Mov ID	Turn	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	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
South: Polo Flat Road														
1	L2	17	10.0	17	10.0	0.069	4.6	LOS A	0.2	1.7	0.30	0.64	0.30	34.4
3	R2	64	8.0	64	8.0	0.069	9.9	LOS A	0.2	1.7	0.30	0.64	0.30	65.3
Approach		81	8.4	81	8.4	0.069	8.8	LOS A	0.2	1.7	0.30	0.64	0.30	59.6
East: Monaro Highway														
4	L2	122	22.0	122	22.0	0.305	7.2	LOS A	1.6	12.7	0.10	0.54	0.10	82.5
5	T1	344	10.0	344	10.0	0.305	7.7	LOS A	1.6	12.7	0.10	0.54	0.10	54.5
Approach		466	13.1	466	13.1	0.305	7.6	LOS A	1.6	12.7	0.10	0.54	0.10	59.5
West: Monaro Highway														
11	T1	1026	8.0	1026	8.0	0.702	4.1	LOS A	7.0	52.6	0.36	0.48	0.36	77.3
12	R2	19	22.0	19	22.0	0.702	9.2	LOS A	7.0	52.6	0.36	0.48	0.36	41.0
Approach		1045	8.3	1045	8.3	0.702	4.2	LOS A	7.0	52.6	0.36	0.48	0.36	77.2
All Vehicles		1593	9.7	1593	9.7	0.702	5.4	LOS A	7.0	52.6	0.28	0.50	0.28	69.8

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Network 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 (Geometric Delay is included).
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

MOVEMENT SUMMARY

Site: 4 [AM - Polo Flat Road / Yareen Road / Numeralla Road (Site Folder: 2032 Ultimate Development Pre-Development Model)]

Network: 03A [AM - 2032 Pre-Development Model (Network Folder: Ultimate Development)]

Polo Flat Road Residential Development - Ultimate Development
Site Category: Future Conditions 2
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	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	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
South: Polo Flat Rd														
1	L2	1	22.0	1	22.0	0.049	5.8	LOS A	0.0	0.1	0.00	0.02	0.00	29.6
2	T1	81	22.0	81	22.0	0.049	0.0	LOS A	0.0	0.1	0.00	0.02	0.00	59.8
3	R2	1	22.0	1	22.0	0.049	5.8	LOS A	0.0	0.1	0.00	0.02	0.00	56.7
Approach		83	22.0	83	22.0	0.049	0.1	NA	0.0	0.1	0.00	0.02	0.00	58.8
East: Numeralla Rd														
4	L2	1	22.0	1	22.0	0.031	5.8	LOS A	0.1	0.9	0.18	0.53	0.18	53.6
5	T1	28	22.0	28	22.0	0.031	5.2	LOS A	0.1	0.9	0.18	0.53	0.18	33.0
6	R2	1	22.0	1	22.0	0.031	7.6	LOS A	0.1	0.9	0.18	0.53	0.18	51.5
Approach		31	22.0	31	22.0	0.031	5.3	LOS A	0.1	0.9	0.18	0.53	0.18	34.2
North: Polo Flat Rd														
7	L2	7	22.0	7	22.0	0.057	6.1	LOS A	0.3	2.2	0.21	0.50	0.21	53.4
8	T1	7	22.0	7	22.0	0.057	0.3	LOS A	0.3	2.2	0.21	0.50	0.21	55.8
9	R2	71	22.0	71	22.0	0.057	6.0	LOS A	0.3	2.2	0.21	0.50	0.21	40.4
Approach		85	22.0	85	22.0	0.057	5.6	NA	0.3	2.2	0.21	0.50	0.21	43.2
West: Yareen Rd														
10	L2	81	22.0	81	22.0	0.095	5.5	LOS A	0.4	3.2	0.21	0.54	0.21	30.2
11	T1	28	22.0	28	22.0	0.095	4.6	LOS A	0.4	3.2	0.21	0.54	0.21	48.9
12	R2	5	22.0	5	22.0	0.095	6.4	LOS A	0.4	3.2	0.21	0.54	0.21	49.1
Approach		115	22.0	115	22.0	0.095	5.3	LOS A	0.4	3.2	0.21	0.54	0.21	41.9
All Vehicles		314	22.0	314	22.0	0.095	4.0	NA	0.4	3.2	0.15	0.39	0.15	45.3

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Network 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: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.
Delay Model: SIDRA Standard (Geometric Delay is included).
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

MOVEMENT SUMMARY

Site: 1 [PM - Monaro Highway / Polo Flat Road (Site Folder: 2032 Ultimate Development Pre-Development Model)]

Network: 04A [PM - 2032 Pre-Development Model (Network Folder: Ultimate Development)]

Polo Flat Road Residential Development - Ultimate Development
Site Category: Future Conditions 1
Roundabout

Vehicle Movement Performance

Mov ID	Turn	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	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
South: Polo Flat Road														
1	L2	17	10.0	17	10.0	0.071	4.8	LOS A	0.2	1.8	0.34	0.65	0.34	34.4
3	R2	64	8.0	64	8.0	0.071	10.1	LOS A	0.2	1.8	0.34	0.65	0.34	65.2
Approach		81	8.4	81	8.4	0.071	9.0	LOS A	0.2	1.8	0.34	0.65	0.34	59.5
East: Monaro Highway														
4	L2	122	22.0	122	22.0	0.344	7.2	LOS A	2.1	16.0	0.12	0.53	0.12	82.3
5	T1	416	5.0	416	5.0	0.344	7.7	LOS A	2.1	16.0	0.12	0.53	0.12	54.4
Approach		538	8.9	538	8.9	0.344	7.5	LOS A	2.1	16.0	0.12	0.53	0.12	58.7
West: Monaro Highway														
11	T1	1296	8.0	1296	8.0	0.873	4.6	LOS A	17.0	127.3	0.63	0.48	0.63	75.8
12	R2	19	22.0	19	22.0	0.873	9.7	LOS A	17.0	127.3	0.63	0.48	0.63	36.6
Approach		1315	8.2	1315	8.2	0.873	4.7	LOS A	17.0	127.3	0.63	0.48	0.63	75.7
All Vehicles		1934	8.4	1934	8.4	0.873	5.7	LOS A	17.0	127.3	0.48	0.50	0.48	69.1

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Network 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 (Geometric Delay is included).
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

MOVEMENT SUMMARY

Site: 4 [PM - Polo Flat Road / Yareen Road / Numeralla Road (Site Folder: 2032 Ultimate Development Pre-Development Model)]

Network: 04A [PM - 2032 Pre-Development Model (Network Folder: Ultimate Development)]

Polo Flat Road Residential Development - Ultimate Development
Site Category: Future Conditions 2
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	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	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
South: Polo Flat Rd														
1	L2	1	22.0	1	22.0	0.049	5.9	LOS A	0.0	0.1	0.01	0.02	0.01	29.6
2	T1	81	22.0	81	22.0	0.049	0.0	LOS A	0.0	0.1	0.01	0.02	0.01	59.7
3	R2	1	22.0	1	22.0	0.049	6.0	LOS A	0.0	0.1	0.01	0.02	0.01	56.7
Approach		83	22.0	83	22.0	0.049	0.2	NA	0.0	0.1	0.01	0.02	0.01	58.8
East: Numeralla Rd														
4	L2	1	22.0	1	22.0	0.033	6.0	LOS A	0.1	1.0	0.32	0.56	0.32	53.3
5	T1	28	22.0	28	22.0	0.033	5.5	LOS A	0.1	1.0	0.32	0.56	0.32	32.8
6	R2	1	22.0	1	22.0	0.033	8.1	LOS A	0.1	1.0	0.32	0.56	0.32	51.0
Approach		31	22.0	31	22.0	0.033	5.7	LOS A	0.1	1.0	0.32	0.56	0.32	34.0
North: Polo Flat Rd														
7	L2	7	22.0	7	22.0	0.090	6.1	LOS A	0.4	3.3	0.19	0.31	0.19	54.8
8	T1	63	22.0	63	22.0	0.090	0.3	LOS A	0.4	3.3	0.19	0.31	0.19	57.2
9	R2	71	22.0	71	22.0	0.090	6.1	LOS A	0.4	3.3	0.19	0.31	0.19	41.6
Approach		141	22.0	141	22.0	0.090	3.5	NA	0.4	3.3	0.19	0.31	0.19	50.1
West: Yareen Rd														
10	L2	81	22.0	81	22.0	0.098	5.5	LOS A	0.4	3.2	0.21	0.55	0.21	30.2
11	T1	28	22.0	28	22.0	0.098	5.0	LOS A	0.4	3.2	0.21	0.55	0.21	48.9
12	R2	5	22.0	5	22.0	0.098	6.9	LOS A	0.4	3.2	0.21	0.55	0.21	49.1
Approach		115	22.0	115	22.0	0.098	5.4	LOS A	0.4	3.2	0.21	0.55	0.21	41.9
All Vehicles		369	22.0	369	22.0	0.098	3.5	NA	0.4	3.3	0.16	0.34	0.16	48.7

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Network 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: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.
Delay Model: SIDRA Standard (Geometric Delay is included).
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

MOVEMENT SUMMARY

Site: 1 [AM - Monaro Highway / Polo Flat Road (Site Folder: 2032 Ultimate Development Post-Development Model)]

Polo Flat Road Residential Development - Ultimate Development
Site Category: Future Conditions 2
Roundabout

Vehicle Movement Performance

Mov ID	Turn	INPUT VOLUMES [Total veh/h	HV] %	DEMAND 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	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
South: Polo Flat Road														
1	L2	27	10.0	28	10.0	0.080	4.6	LOS A	0.3	2.0	0.31	0.63	0.31	27.1
3	R2	62	8.0	65	8.0	0.080	9.9	LOS A	0.3	2.0	0.31	0.63	0.31	67.0
Approach		89	8.6	94	8.6	0.080	8.3	LOS A	0.3	2.0	0.31	0.63	0.31	56.6
East: Monaro Highway														
4	L2	116	22.0	122	22.0	0.308	7.2	LOS A	1.7	12.9	0.11	0.54	0.11	73.8
5	T1	327	10.0	344	10.0	0.308	7.8	LOS A	1.7	12.9	0.11	0.54	0.11	72.5
Approach		443	13.1	466	13.1	0.308	7.6	LOS A	1.7	12.9	0.11	0.54	0.11	72.9
West: Monaro Highway														
11	T1	975	8.0	1026	8.0	0.705	4.1	LOS A	7.1	53.2	0.37	0.48	0.37	77.2
12	R2	21	22.0	22	22.0	0.705	9.2	LOS A	7.1	53.2	0.37	0.48	0.37	55.3
Approach		996	8.3	1048	8.3	0.705	4.2	LOS A	7.1	53.2	0.37	0.48	0.37	77.0
All Vehicles		1528	9.7	1608	9.7	0.705	5.4	LOS A	7.1	53.2	0.29	0.51	0.29	74.1

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Parameter Settings dialog (Site 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 (Geometric Delay is included).
Queue Model: SIDRA Standard.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

MOVEMENT SUMMARY

Site: 2 [AM - Polo Flat Road / Northern Development Entrance (Site Folder: 2032 Ultimate Development Post-Development Model)]

Polo Flat Road Residential Development - Ultimate Development
Site Category: Future Conditions 2
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	INPUT VOLUMES [Total veh/h	HV] %	DEMAND 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	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
South: Polo Flat Road														
1	L2	12	5.0	13	5.0	0.061	5.6	LOS A	0.0	0.0	0.00	0.07	0.00	56.1
2	T1	90	22.0	95	22.0	0.061	0.0	LOS A	0.0	0.0	0.00	0.07	0.00	58.5
Approach		102	20.0	107	20.0	0.061	0.7	NA	0.0	0.0	0.00	0.07	0.00	58.1
North: Polo Flat Road														
8	T1	136	22.0	143	22.0	0.082	0.0	LOS A	0.0	0.1	0.00	0.00	0.00	59.9
9	R2	1	5.0	1	5.0	0.082	5.9	LOS A	0.0	0.1	0.00	0.00	0.00	57.2
Approach		137	21.9	144	21.9	0.082	0.0	NA	0.0	0.1	0.00	0.00	0.00	59.8
West: Development Entrance North														
10	L2	12	5.0	13	5.0	0.127	5.9	LOS A	0.4	3.2	0.30	0.62	0.30	51.4
12	R2	111	5.0	117	5.0	0.127	6.7	LOS A	0.4	3.2	0.30	0.62	0.30	48.7
Approach		123	5.0	129	5.0	0.127	6.6	LOS A	0.4	3.2	0.30	0.62	0.30	49.0
All Vehicles		362	15.6	381	15.6	0.127	2.5	NA	0.4	3.2	0.11	0.23	0.11	54.6

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Parameter Settings dialog (Site 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: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.
Delay Model: SIDRA Standard (Geometric Delay is included).
Queue Model: SIDRA Standard.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

MOVEMENT SUMMARY

Site: 3 [AM - Polo Flat Road / Southern Development Entrance (Site Folder: 2032 Ultimate Development Post-Development Model)]

Polo Flat Road Residential Development - Ultimate Development
Site Category: Future Conditions 2
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	INPUT VOLUMES [Total veh/h	HV] %	DEMAND 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	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
South: Polo Flat Road														
1	L2	14	5.0	15	5.0	0.062	5.6	LOS A	0.0	0.0	0.00	0.08	0.00	55.9
2	T1	89	22.0	94	22.0	0.062	0.0	LOS A	0.0	0.0	0.00	0.08	0.00	57.2
Approach		103	19.7	108	19.7	0.062	0.8	NA	0.0	0.0	0.00	0.08	0.00	56.9
North: Polo Flat Road														
8	T1	245	22.0	258	22.0	0.149	0.0	LOS A	0.0	0.1	0.00	0.00	0.00	59.8
9	R2	2	5.0	2	5.0	0.149	6.0	LOS A	0.0	0.1	0.00	0.00	0.00	56.4
Approach		247	21.9	260	21.9	0.149	0.1	NA	0.0	0.1	0.00	0.00	0.00	59.7
West: Development Entrance South														
10	L2	13	5.0	14	5.0	0.154	5.9	LOS A	0.5	3.9	0.36	0.67	0.36	48.6
12	R2	118	5.0	124	5.0	0.154	7.4	LOS A	0.5	3.9	0.36	0.67	0.36	48.1
Approach		131	5.0	138	5.0	0.154	7.3	LOS A	0.5	3.9	0.36	0.67	0.36	48.2
All Vehicles		481	16.8	506	16.8	0.154	2.2	NA	0.5	3.9	0.10	0.20	0.10	53.7

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Parameter Settings dialog (Site 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: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.
Delay Model: SIDRA Standard (Geometric Delay is included).
Queue Model: SIDRA Standard.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

MOVEMENT SUMMARY

Site: 4 [AM - Polo Flat Road / Yareen Road / Numeralla Road (Site Folder: 2032 Ultimate Development Post-Development Model)]

Polo Flat Road Residential Development - Ultimate Development
Site Category: Future Conditions 2
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	INPUT VOLUMES [Total veh/h	HV] %	DEMAND 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	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
South: Polo Flat Rd														
1	L2	1	22.0	1	22.0	0.052	5.9	LOS A	0.0	0.1	0.01	0.01	0.01	46.2
2	T1	82	22.0	86	22.0	0.052	0.0	LOS A	0.0	0.1	0.01	0.01	0.01	59.8
3	R2	1	22.0	1	22.0	0.052	6.0	LOS A	0.0	0.1	0.01	0.01	0.01	56.7
Approach		84	22.0	88	22.0	0.052	0.1	NA	0.0	0.1	0.01	0.01	0.01	59.5
East: Numeralla Rd														
4	L2	1	22.0	1	22.0	0.043	6.0	LOS A	0.1	1.2	0.42	0.64	0.42	52.3
5	T1	27	22.0	28	22.0	0.043	7.0	LOS A	0.1	1.2	0.42	0.64	0.42	44.4
6	R2	1	22.0	1	22.0	0.043	10.6	LOS A	0.1	1.2	0.42	0.64	0.42	46.8
Approach		29	22.0	31	22.0	0.043	7.1	LOS A	0.1	1.2	0.42	0.64	0.42	44.9
North: Polo Flat Rd														
7	L2	7	22.0	7	22.0	0.217	6.2	LOS A	1.2	9.8	0.25	0.47	0.25	49.6
8	T1	53	22.0	56	22.0	0.217	0.4	LOS A	1.2	9.8	0.25	0.47	0.25	53.6
9	R2	250	22.0	263	22.0	0.217	6.1	LOS A	1.2	9.8	0.25	0.47	0.25	24.2
Approach		310	22.0	326	22.0	0.217	5.2	NA	1.2	9.8	0.25	0.47	0.25	31.6
West: Yareen Rd														
10	L2	98	22.0	103	22.0	0.126	5.5	LOS A	0.5	4.2	0.21	0.56	0.21	36.5
11	T1	27	22.0	28	22.0	0.126	6.7	LOS A	0.5	4.2	0.21	0.56	0.21	48.5
12	R2	5	22.0	5	22.0	0.126	9.1	LOS A	0.5	4.2	0.21	0.56	0.21	48.8
Approach		130	22.0	137	22.0	0.126	5.9	LOS A	0.5	4.2	0.21	0.56	0.21	41.1
All Vehicles		553	22.0	582	22.0	0.217	4.7	NA	1.2	9.8	0.21	0.43	0.21	39.3

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Parameter Settings dialog (Site 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: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.
Delay Model: SIDRA Standard (Geometric Delay is included).
Queue Model: SIDRA Standard.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

MOVEMENT SUMMARY

Site: 1 [PM - Monaro Highway / Polo Flat Road (Site Folder: 2032 Ultimate Development Post-Development Model)]

Polo Flat Road Residential Development - Ultimate Development
Site Category: Future Conditions 2
Roundabout

Vehicle Movement Performance

Mov ID	Turn	INPUT VOLUMES [Total veh/h	HV] %	DEMAND 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	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
South: Polo Flat Road														
1	L2	19	10.0	20	10.0	0.074	4.8	LOS A	0.3	2.0	0.35	0.65	0.35	26.9
3	R2	61	8.0	64	8.0	0.074	10.1	LOS A	0.3	2.0	0.35	0.65	0.35	66.5
Approach		80	8.5	84	8.5	0.074	8.9	LOS A	0.3	2.0	0.35	0.65	0.35	58.5
East: Monaro Highway														
4	L2	118	22.0	124	22.0	0.374	7.3	LOS A	2.4	18.6	0.21	0.53	0.21	73.2
5	T1	395	10.0	416	10.0	0.374	7.9	LOS A	2.4	18.6	0.21	0.53	0.21	71.7
Approach		513	12.8	540	12.8	0.374	7.7	LOS A	2.4	18.6	0.21	0.53	0.21	72.1
West: Monaro Highway														
11	T1	1231	8.0	1296	8.0	0.891	4.7	LOS A	19.3	145.1	0.69	0.48	0.69	75.4
12	R2	43	22.0	45	22.0	0.891	9.8	LOS A	19.3	145.1	0.69	0.48	0.69	53.0
Approach		1274	8.5	1341	8.5	0.891	4.9	LOS A	19.3	145.1	0.69	0.48	0.69	74.9
All Vehicles		1867	9.7	1965	9.7	0.891	5.8	LOS A	19.3	145.1	0.55	0.50	0.55	73.2

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Parameter Settings dialog (Site 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 (Geometric Delay is included).
Queue Model: SIDRA Standard.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

MOVEMENT SUMMARY

Site: 2 [PM - Polo Flat Road / Northern Development Entrance (Site Folder: 2032 Ultimate Development Post-Development Model)]

Polo Flat Road Residential Development - Ultimate Development
Site Category: Future Conditions 2
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	INPUT VOLUMES [Total veh/h	HV] %	DEMAND 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	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
South: Polo Flat Road														
1	L2	117	5.0	123	5.0	0.114	5.6	LOS A	0.0	0.0	0.00	0.35	0.00	52.6
2	T1	79	22.0	83	22.0	0.114	0.0	LOS A	0.0	0.0	0.00	0.35	0.00	53.7
Approach		196	11.9	206	11.9	0.114	3.3	NA	0.0	0.0	0.00	0.35	0.00	53.0
North: Polo Flat Road														
8	T1	148	22.0	156	22.0	0.098	0.1	LOS A	0.1	0.8	0.06	0.05	0.06	58.5
9	R2	13	5.0	14	5.0	0.098	6.3	LOS A	0.1	0.8	0.06	0.05	0.06	56.4
Approach		161	20.6	169	20.6	0.098	0.6	NA	0.1	0.8	0.06	0.05	0.06	58.2
West: Development Entrance North														
10	L2	1	5.0	1	5.0	0.016	5.9	LOS A	0.0	0.4	0.31	0.60	0.31	51.4
12	R2	13	5.0	14	5.0	0.016	6.8	LOS A	0.0	0.4	0.31	0.60	0.31	48.6
Approach		14	5.0	15	5.0	0.016	6.8	LOS A	0.0	0.4	0.31	0.60	0.31	48.9
All Vehicles		371	15.4	391	15.4	0.114	2.3	NA	0.1	0.8	0.04	0.23	0.04	54.8

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Parameter Settings dialog (Site 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: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.
Delay Model: SIDRA Standard (Geometric Delay is included).
Queue Model: SIDRA Standard.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

MOVEMENT SUMMARY

Site: 3 [PM - Polo Flat Road / Southern Development Entrance (Site Folder: 2032 Ultimate Development Post-Development Model)]

Polo Flat Road Residential Development - Ultimate Development
Site Category: Future Conditions 2
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	INPUT VOLUMES [Total veh/h	HV] %	DEMAND 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	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
South: Polo Flat Road														
1	L2	124	5.0	131	5.0	0.188	5.6	LOS A	0.0	0.0	0.00	0.23	0.00	54.0
2	T1	194	22.0	204	22.0	0.188	0.0	LOS A	0.0	0.0	0.00	0.23	0.00	53.1
Approach		318	15.4	335	15.4	0.188	2.2	NA	0.0	0.0	0.00	0.23	0.00	53.6
North: Polo Flat Road														
8	T1	147	22.0	155	22.0	0.100	0.2	LOS A	0.1	1.1	0.09	0.05	0.09	57.0
9	R2	14	5.0	15	5.0	0.100	7.0	LOS A	0.1	1.1	0.09	0.05	0.09	55.2
Approach		161	20.5	169	20.5	0.100	0.8	NA	0.1	1.1	0.09	0.05	0.09	56.7
West: Development Entrance South														
10	L2	2	5.0	2	5.0	0.020	6.3	LOS A	0.1	0.5	0.40	0.64	0.40	48.4
12	R2	14	5.0	15	5.0	0.020	7.6	LOS A	0.1	0.5	0.40	0.64	0.40	48.0
Approach		16	5.0	17	5.0	0.020	7.4	LOS A	0.1	0.5	0.40	0.64	0.40	48.0
All Vehicles		495	16.7	521	16.7	0.188	1.9	NA	0.1	1.1	0.04	0.19	0.04	54.0

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Parameter Settings dialog (Site 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: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.
Delay Model: SIDRA Standard (Geometric Delay is included).
Queue Model: SIDRA Standard.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

MOVEMENT SUMMARY

Site: 4 [PM - Polo Flat Road / Yareen Road / Numeralla Road (Site Folder: 2032 Ultimate Development Post-Development Model)]

Polo Flat Road Residential Development - Ultimate Development
Site Category: Future Conditions 2
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	INPUT VOLUMES [Total veh/h	HV] %	DEMAND 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	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
South: Polo Flat Rd														
1	L2	1	22.0	1	22.0	0.079	6.0	LOS A	0.0	0.1	0.00	0.01	0.00	46.2
2	T1	125	22.0	132	22.0	0.079	0.0	LOS A	0.0	0.1	0.00	0.01	0.00	59.9
3	R2	1	22.0	1	22.0	0.079	6.0	LOS A	0.0	0.1	0.00	0.01	0.00	56.8
Approach		127	22.0	134	22.0	0.079	0.1	NA	0.0	0.1	0.00	0.01	0.00	59.7
East: Numeralla Rd														
4	L2	1	22.0	1	22.0	0.037	6.1	LOS A	0.1	1.1	0.37	0.59	0.37	52.9
5	T1	27	22.0	28	22.0	0.037	6.1	LOS A	0.1	1.1	0.37	0.59	0.37	45.2
6	R2	1	22.0	1	22.0	0.037	11.5	LOS A	0.1	1.1	0.37	0.59	0.37	47.6
Approach		29	22.0	31	22.0	0.037	6.3	LOS A	0.1	1.1	0.37	0.59	0.37	45.7
North: Polo Flat Rd														
7	L2	7	22.0	7	22.0	0.113	6.4	LOS A	0.5	4.4	0.26	0.34	0.26	50.8
8	T1	66	22.0	69	22.0	0.113	0.5	LOS A	0.5	4.4	0.26	0.34	0.26	54.9
9	R2	88	22.0	93	22.0	0.113	6.3	LOS A	0.5	4.4	0.26	0.34	0.26	25.0
Approach		161	22.0	169	22.0	0.113	3.9	NA	0.5	4.4	0.26	0.34	0.26	41.1
West: Yareen Rd														
10	L2	270	22.0	284	22.0	0.263	5.8	LOS A	1.2	10.3	0.31	0.57	0.31	36.1
11	T1	27	22.0	28	22.0	0.263	6.0	LOS A	1.2	10.3	0.31	0.57	0.31	48.2
12	R2	5	22.0	5	22.0	0.263	8.2	LOS A	1.2	10.3	0.31	0.57	0.31	48.5
Approach		302	22.0	318	22.0	0.263	5.9	LOS A	1.2	10.3	0.31	0.57	0.31	38.3
All Vehicles		619	22.0	652	22.0	0.263	4.2	NA	1.2	10.3	0.24	0.40	0.24	45.3

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Parameter Settings dialog (Site 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: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.
Delay Model: SIDRA Standard (Geometric Delay is included).
Queue Model: SIDRA Standard.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

APPENDIX

C

TRAFFIC DATA AND CALCULATIONS

Cardno

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Stantec

Monaro Highway Traffic Volume Viewer Data

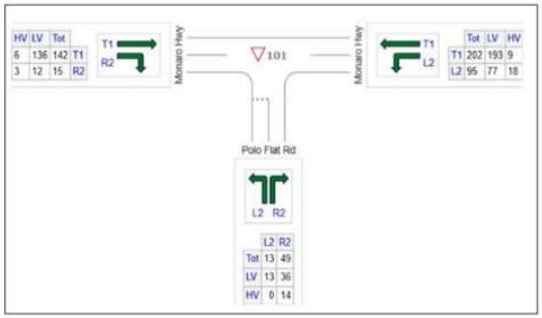
	Sunday 18/08/2019			
	AM Peak - 11am		PM Peak - 3pm	
	NB	SB	NB	SB
Light Vehicles	748	328	943	397
Heavy Vehicles	67	35	82	22
HV (%)	8%	10%	8%	5%
Total Vehicles	815	363	1025	419

Polo Flat Road Calculations

From TfNSW Construction of Roundabout at Intersection with Monaro Highway

	Monaro Hwy					
	EB/NB			WB/SB		
	T	R	Total	T	L	Total
LV	136	12	148	193	77	270
HV	6	3	9	9	18	27
HV%	4%	20%	6%	4%	19%	9%
Total	142	15	157	202	95	297
% of Total	90%	10%	100%	68%	32%	100%

Appendix H: Traffic Analysis



	Polo Flat Rd		
	Left	Right	Total
LV	13	36	49
HV	0	14	14
HV%	0%	28%	22%
TV	13	50	63
% of Total	21%	79%	100%

	Yareen Rd			
	Left	Through	Right	Total
LV	49	18	4	70
HV	14	5	1	20
HV%	22%	22%	22%	22%
TV	63	23	5	90
% of Total	70%	25%	5%	

	Numeralla Rd			
	Left	Through	Right	Total
LV	0	18	0	18
HV	0	5	0	5
HV%	0%	22%	0%	22%
TV	0	23	0	23
% of Total	70%	25%	5%	

	Polo Flat Rd
	Through
LV	49
HV	14
HV%	22%
TV	63
% of Total	100%

Proposed Development Traffic Generation Calculations

Development	Lots	Single Res	Dual Occ	Multi Res	Total Dwellings	Trips Rate		Trips		In		Out	
						AM	PM	AM	PM	AM	PM	AM	PM
Precinct 2	140	127	12	1	171	0.85	0.9	128	136	13	130	123	14
Precinct 3	151	132	19	0	170	0.85	0.9	145	153	15	138	131	15

In AM	Out AM	In PM	Out PM	AM	PM	Seniors Living
10%	90%	90%	10%	0.4	0.4	20
			In	0	1	
			Out	1	0	

Proposed Road 01 / Polo Flat Road (Northern Entrance)

AM								PM							
In				Out				In				Out			
S Polo		N Polo		L		R		S Polo		N Polo		L		R	
90%		10%		10%		90%		90%		10%		10%		90%	
12		1		12		111		117		13		1		13	
S Polo	Yareen	E Monaro	W Monaro	R Monaro	L Monaro	R Yareen	T Polo	S Polo	Yareen	E Monaro	W Monaro	R Monaro	L Monaro	R Yareen	T Polo
20%	80%	5%	95%	5%	95%	80%	20%	20%	80%	5%	95%	5%	95%	80%	20%
2	10	0	1	1	11	89	22	23	94	1	12	0	1	10	3
			Yalakool	W Monaro		T Monaro	R Yallakool				Yalakool	W Monaro		T Monaro	R Yallakool
			50%	50%		50%	50%				50%	50%		50%	50%
			0.5	0.5		5.5	5.5				6	7		0.5	0.5

Proposed Road 07A / Polo Flat Road (Southern Entrance)

AM								PM							
In				Out				In				Out			
S Polo		N Polo		L		R		S Polo		N Polo		L		R	
90%		10%		10%		90%		90%		10%		10%		90%	
14		2		13		118		124		14		2		14	
S Polo	Yareen	E Monaro	W Monaro	R Monaro	L Monaro	R Yareen	T Polo	S Polo	Yareen	E Monaro	W Monaro	R Monaro	L Monaro	R Yareen	T Polo
20%	80%	5%	95%	5%	95%	80%	20%	20%	80%	5%	95%	5%	95%	80%	20%
3	11	0	2	1	12	94	24	25	99	1	13	0	2	11	3
			Yalakool	W Monaro		T Monaro	R Yallakool				Yalakool	W Monaro		T Monaro	R Yallakool
			50%	50%		50%	50%				50%	50%		50%	50%
			0	1		6	5				6	6		1	1