



TRAFFIC IMPACT ASSESSMENT

Planning Proposal for Mixed Use Development 10-20 Brooks Point Road, Appin

Reference: 23.241r01v03
Date: September 2023

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DOCUMENT VERIFICATION

Job Number	23.241			
Project	10-20 Brooks Point Road, Appin NSW 2560			
Client	Auslands Developments Pty Ltd			
Revision	Date	Prepared By	Checked By	Signed
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1. INTRODUCTION

TRAFFIX has been commissioned by Auslands Developments Pty Limited to undertake a Traffic Impact Assessment (TIA) in support of a Planning Proposal relating to a residential subdivision at 10-20 Brooks Point Road, Appin. For the purposes of the planning proposal, the site is proposed to be subdivided to 241 residential lots. The development is located within the Wollondilly Shire Local Government Area (LGA) and has been assessed under that Council's controls.

This report documents the findings of our investigations and should be read in the context of the Planning Proposal Justification Report prepared separately. The development is a development that requires referral to Transport for NSW (TfNSW) under Schedule 3 Chapter 2 of the State Environmental Planning Policy (Transport and Infrastructure) 2021.

The report is structured as follows:

- Section 2: Describes the site and its location
- Section 3: Documents existing traffic conditions
- Section 4: Describes the concept development
- Section 5: Assesses the parking requirements
- Section 6: Assesses traffic impacts
- Section 7: Discusses access and internal design aspects
- Section 8: Presents the overall study conclusions

2. LOCATION AND SITE

The subject site is known as 10-20 Brooks Point Road, Appin is located on the northwest corner of Brooks Point Road and Appin Road and is comprised of the following lots:

- Lots, 14 and 5 DP 249446
- Lot 1 DP 584515
- Lot 3 DP 249446

The site is also located approximately 55 kilometres southwest of the Sydney Central Business District (CBD) and is currently zoned RU2 Rural Landscape under Wollondilly LEP 2011.

The site has a total site area of approximately 39 hectares and consists predominately of cleared vacant land with two residential dwellings. It is irregular in configuration and has an eastern frontage measuring approximately 415 metres to Appin Road and a southern frontage of approximately 990 metres to Brooks Point Road. It is bounded to the north and east, boundaries to neighbouring residential dwellings and vacant cleared land.

Vehicular access to the site is currently provided via three (3) access driveways along Brooks Point Road.

A Location Plan is presented in **Figure 1**, with a Site Plan presented in **Figure 2** which provides an appreciation of the general character of roads and other key attributes in proximity to the site.



Figure 1: Location Plan



Figure 2: Site Plan

3. EXISTING TRAFFIC CONDITIONS

3.1 Road Network

The road hierarchy in the vicinity of the site is shown in **Figure 3** with the following roads of particular interest:

- Appin Road: is a TfNSW Main Road (MR 177 and MR 610) that traverses north-south between Oxley Street in the north and Wilton Road in the south. It is classified as MR 177 between Oxley Street and Chjurch Street and MR 160 between Church Street and Wilton Road. Within the vicinity of the site, Appin Road provides one lane of traffic in each direction, is subject to a speed zoning of 50km/hr and permits unrestricted on-street parking along both shoulders.
- Church Street: is a TfNSW Main Road (MR 177) that traverses east-west between Bulli-Appin Road in the east and Appin Road in the west. Within the vicinity of the site, Church Street provides one lane of traffic in each direction, is subject to a speed zoning of 50km/hr and permits unrestricted on-street parking along both shoulders.
- Brooks Point Road: is a local road that traverses east-west, between Appin Road in the east and Quarter Sessions Road in the west where the road passes over a culvert and then becomes unpaved. Within the vicinity of the site, Brooks Point Road is subject to 80km/h speed zoning, accommodates a single lane of traffic in each direction and does not permit parking on either sides.

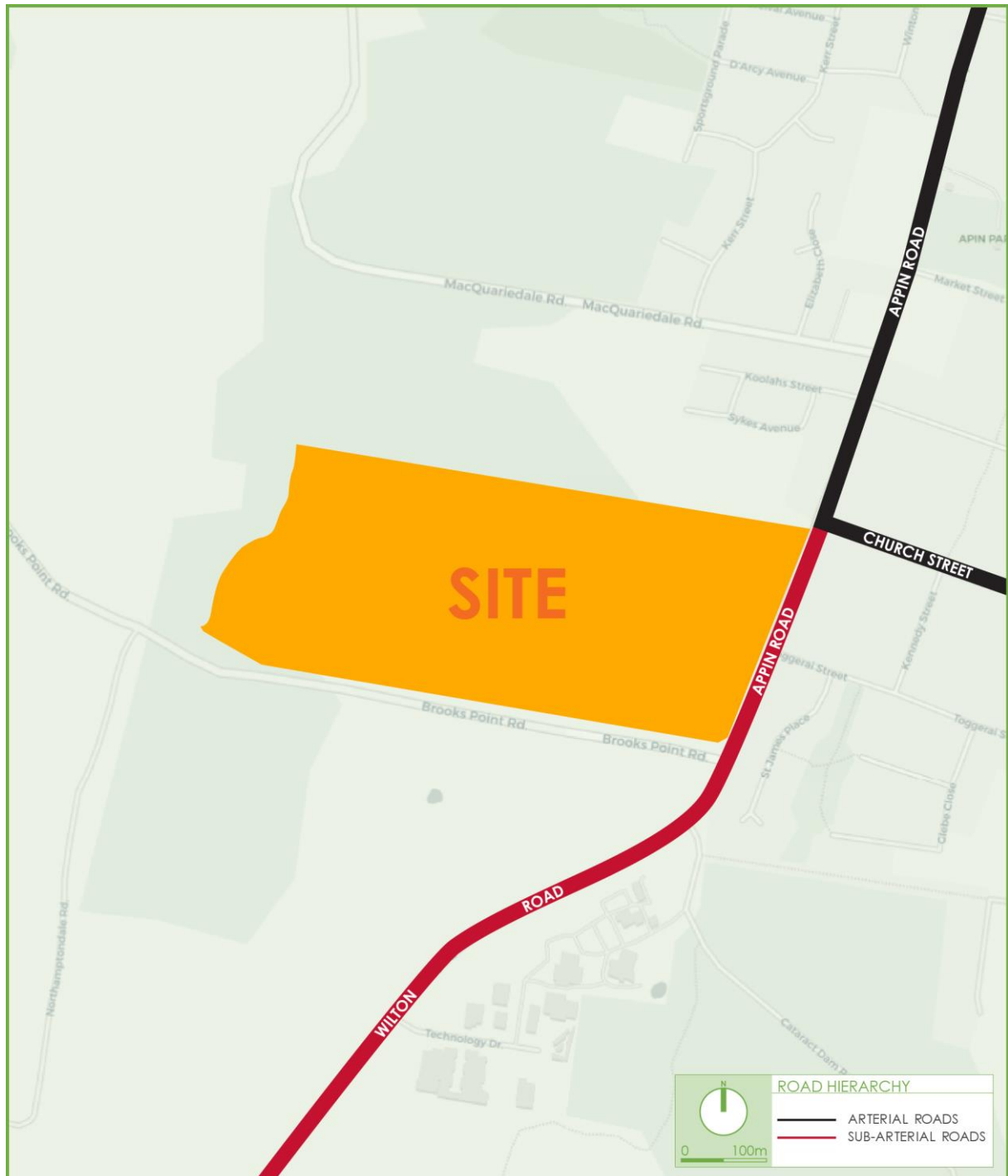


Figure 3: Road Hierarchy

3.2 Key Intersections

The key intersections in the vicinity of the site are shown below and provide an understanding of the existing road geometry and alignment.

3.2.1 Appin Road and Church Street



Figure 4: Intersection of Appin Road and Church Street

It can be seen from **Figure 4** that the intersection of Appin Road and Church Street is a three-legged priority-controlled intersection. The main attributes of each approach outlined as follows:

- Appin Road (north and south legs)
 - The northbound approach provides two (2) lanes, with the left lane permitting through movements, and the right lane permitting right turn movements only.
 - The southbound approach provides two (2) lanes, with the left lane permitting left turn movements only, and the right lane permitting through movements.

➤ Church Street (east leg)

- The westbound approach provides one lane permitting left and right turn movements.

3.2.2 Appin Road and Toggerai Street



Figure 5: Intersection of Appin Road and Toggerai Street

It can be seen from **Figure 5** that the intersection of Appin Street and Toggerai Street is a three-legged priority-controlled intersection. The main attributes of each approach outlined as follows:

➤ Appin Road (north and south legs)

- The northbound approach provides a single lane permitting through and right turn movements.
- The southbound approach provides a single lane permitting through and left turn movements.

➤ Toggerai Street (east leg)

- The westbound approach provides one lane permitting left and right turn movements.

3.2.3 Appin Road and Brooks Point Road



Figure 5: Intersection of Appin Road and Brooks Point Road

It can be seen from **Figure 5** that the intersection of Appin Street and Brooks Point Road is a three-legged priority-controlled intersection. The main attributes of each approach outlined as follows:

- Appin Road (north and south legs)
 - The northbound approach provides a single lane permitting through and right turn movements.
 - The southbound approach provides a single lane permitting through and left turn movements.
- Brooks Point Road (west leg)
 - The eastbound approach provides one lane permitting left and right turn movements.

3.3 Public Transport

The existing public transport services that operate in the locality are presented in **Figure 4**. The subject site is within optimal walking distance (400 metres) of a bus stop which is serviced by the 887 - Campbelltown to Wollongong via Appin bus route. This route provides bus service to Campbelltown and Wollongong with services roughly every 60 minutes.

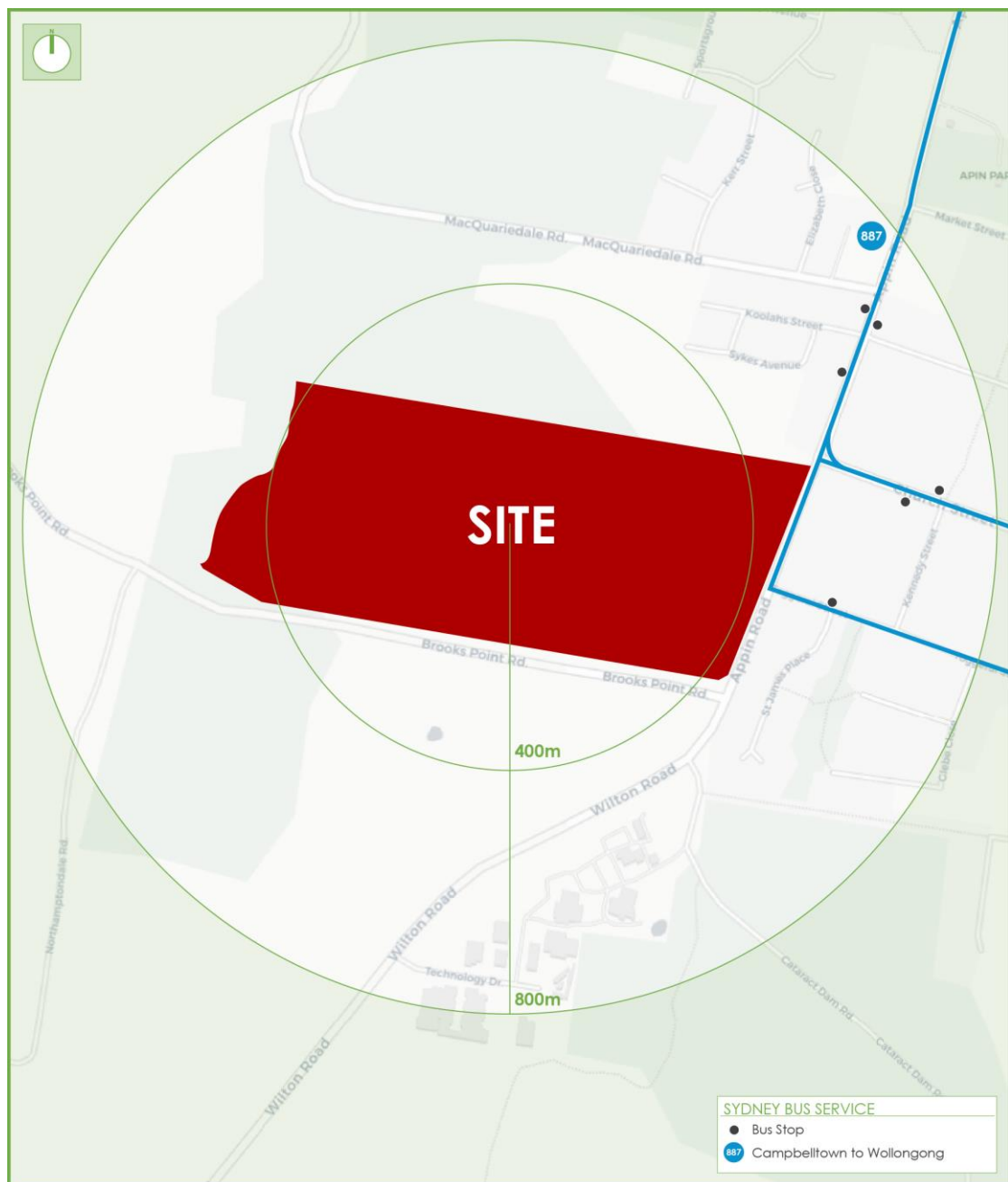


Figure 4: Bus Services

4. DESCRIPTION OF CONCEPT DEVELOPMENT

A detailed description of the concept development adopted for the purpose of assessing the planning Proposal impacts is provided in the Planning Proposal Justification Report prepared separately. In summary, the concept development is a subdivided residential development comprising of the following components:

- Subdivision of the existing lot to accommodate between 220 and 250 separate lots ranging from 230m² lots to 772m² in area with a concept development of 241 lots assessed.
- A local road network to service the proposed lots with access from Appin Road and Brooks Point Road.
- Future connection of the proposed road network to an extension of Church Street along the northern boundary as part of the approved subdivision for the neighbouring property at 55 Macqauriedale Road.

The parking and traffic impacts arising from the development are discussed in **Section 5** and **Section 6**. Reference should be made to the plans submitted separately to Council which are presented at reduced scale in **Appendix A**.

It is emphasised that further analysis will be provided at development application stage, based on a confirmed development yield.

5. SUBDIVISION REQUIREMENTS

5.1 Council Parking Controls

Full details of WQollondilly Council's parking requirements are to be addressed at the subsequent development application stage(s) for the individual dwelling houses. The Wollondilly Development Control Plan (DCP) 2016 provides car parking rates for developments located within the Wollondilly Shire council. The parking rates for the different single occupancy residential lots are as follows

- 1 car parking space per lot under 450m²;
- 1 car parking space per lot between 450m² and 699m²; and,
- 2 car parking spaces per lot Between 700m² and 1499m².

5.2 Street Design

The indicative subdivision plan allows for 12 local roads in the following hierarchy:

- A single local main access road from Appin Road with a median along its length.
- 10 local access roads with one road access connecting to Brooks Point Road and a future road along the northern boundary in the adjacent property. Three other local roads will also connect to the proposed future road along the northern boundary.
- Two accessways through three blocks for vehicular access from the rear of the properties.

The separated carriageways for the main local road should be provided with "a 5.5 m carriageway allows a moving car to pass a truck, but is clearly too narrow for cars to park opposite each other without blocking the street" for each side. This will allow trucks and parked cars to pass in each direction for waste vehicle access to the subdivision from Appin Road.

The carriageways proposed for the 11 local roads will comply with the AMCORD design guide for Street Design and On-street Carparking. The guide states "A 7-7.5m carriageway is wide enough for two vehicles to pass each other while passing a parked car. It is wide enough for a moving car to pass between two parked cars but is clearly not wide enough for moving vehicles to pass at once. One must give way." In addition, driveways are to be located

adjacent to each other, where possible, to accommodate areas for vehicles to give way and pass and to maximise available on-street parking.

The carriageway proposed for the accessway will comply with the AMCORD design guide for Street Design and On-street Carparking. The guide states "A 5.5 m carriageway allows a moving car to pass a truck, but is clearly too narrow for cars to park opposite each other without blocking the street."

5.3 Public Transport

The existing bus route along Appin Road and Church Street provides connections to Campbelltown and Wollongong. To improve access for pedestrians between the subdivision and bus stops on Appin Road, Church Street and Toggerai Street additional crossing facilities across Appin Road should be provided between the Church Street and Toggerai Street intersections. Should demand for public transport increase the option of extending the bus route through development should be investigated to ensure adequate access to services is provided.

5.4 Walking Infrastructure

All streets within and fronting the subdivision will be provided with footpaths to ensure adequate pedestrian access for residents and visitors.

5.5 Waste Collection

Waste collection for the subdivided lots will be undertaken by kerbside council waste collection which will be accommodated by the proposed road designs in accordance with AMCORD requirements.

6. TRAFFIC AND TRANSPORT IMPACTS

6.1 Existing Site Generation

The site is currently occupied by two residential dwellings however for the purpose of this assessment the site is assumed to not generate any traffic.

6.2 Development Trip Generation

The trip generation of the subject development and adjacent approved development have been calculated below to conduct assessment of both the subject development and a combined analysis to provide a cumulative assessment.

6.2.1 Subject Development Trip Generation

The trip generation for the development resulting from the proposed subdivision has been calculated based on the TfNSW rates for a low-density residential development, as stated below:

- 0.71 vehicle trips per hour during the AM peak periods; and,
- 0.78 vehicle trips per hour during the PM peak periods.

Based on the above rates, the proposed subdivision consisting of 241 lots for dwelling units will result in the following traffic generations:

- 171 vehicle trips per hour during the AM peak period; and, (34 in, 137 out)
- 188 vehicle trips per hour during the PM peak period. (150 in, 38 out)

6.2.2 Adjacent Development Trip Generation

The trip generation for the development resulting from the proposed subdivision has been calculated based on the TfNSW rates for a low-density residential development, as stated below:

- 0.71 vehicle trips per hour during the AM peak periods; and,
- 0.78 vehicle trips per hour during the PM peak periods.

Based on the above rates, the proposed subdivision consisting of 212 lots for dwelling units will result in the following traffic generations:

- 151 vehicle trips per hour during the AM peak period; and, (30 in, 121 out)
- 165 vehicle trips per hour during the PM peak period. (132 in, 33 out)

6.3 Intersection Performance

6.3.1 Traffic Surveys

For the purposes of assessing the traffic impacts of this development, traffic surveys were obtained at the critical intersections within proximity of the site. These surveys were conducted during the network peak periods between 6:00am – 9:00am and 3:30pm – 6:30pm at the following key intersections with the date of the survey.

- Appin Road and Church Street; Wednesday 12 October 2022
- Appin Road and Toggerai Street; and Thursday 29 June 2023
- Appin Road and Brooks Point Road. Wednesday 12 October 2022

6.3.2 Trip Distribution

The adopted trip distribution of traffic onto the surrounding road network is summarised in **Table 1** below.

Table 1: Origin/Destination Traffic Distributions

Intersection	Inbound Movements		Outbound Movements	
	AM	PM	AM	PM
Arrives/departs north on Appin Road	23%	33%	66%	42%
Arrives/departs west on Church Street	67%	55%	20%	45%
Arrives/departs south on Appin Road	10%	12%	14	13%

The above splits have been based on existing travel patterns of residents along Toggerai Street, Appin Road and Church Street, which is considered the most appropriate method to determine the distribution to the wider transport network.

The splits between each of the accesses shown in **Table 2** has also been adopted for the 2023 and 2033 assessments.

Table 2: Access Traffic Distributions

Direction	Subject Development Only	Cumulative Assessment with 55 Macquariedale Road
Church Street	-	45%
Appin Road (Main Access)	74%	29%
Brooks Point Road	26%	26%

The above splits have been based on the closest available access to each lot which is considered the most appropriate method to determine the distributions between the access. Based on the above assumptions the following traffic distributions in **Figures 5 - 8** for the proposed development resulted for the existing network scenario and the future network scenario with the additional access via the neighbouring subdivision.



Figure 5: AM Development Traffic Distribution for Existing Road Network



Figure 6: PM Development Traffic Distribution for Existing Road Network

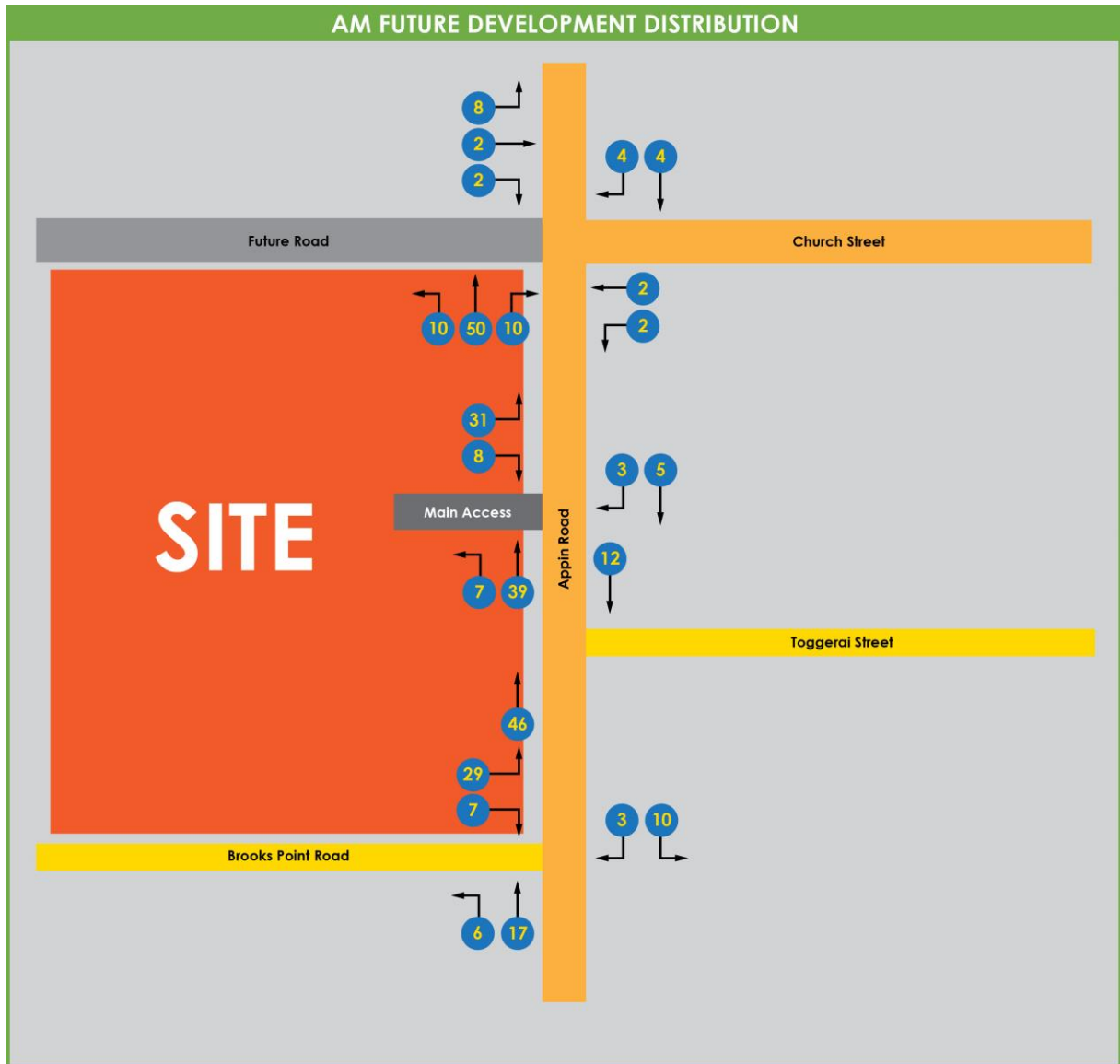


Figure 7: AM Development Traffic Distribution for Future Road Network

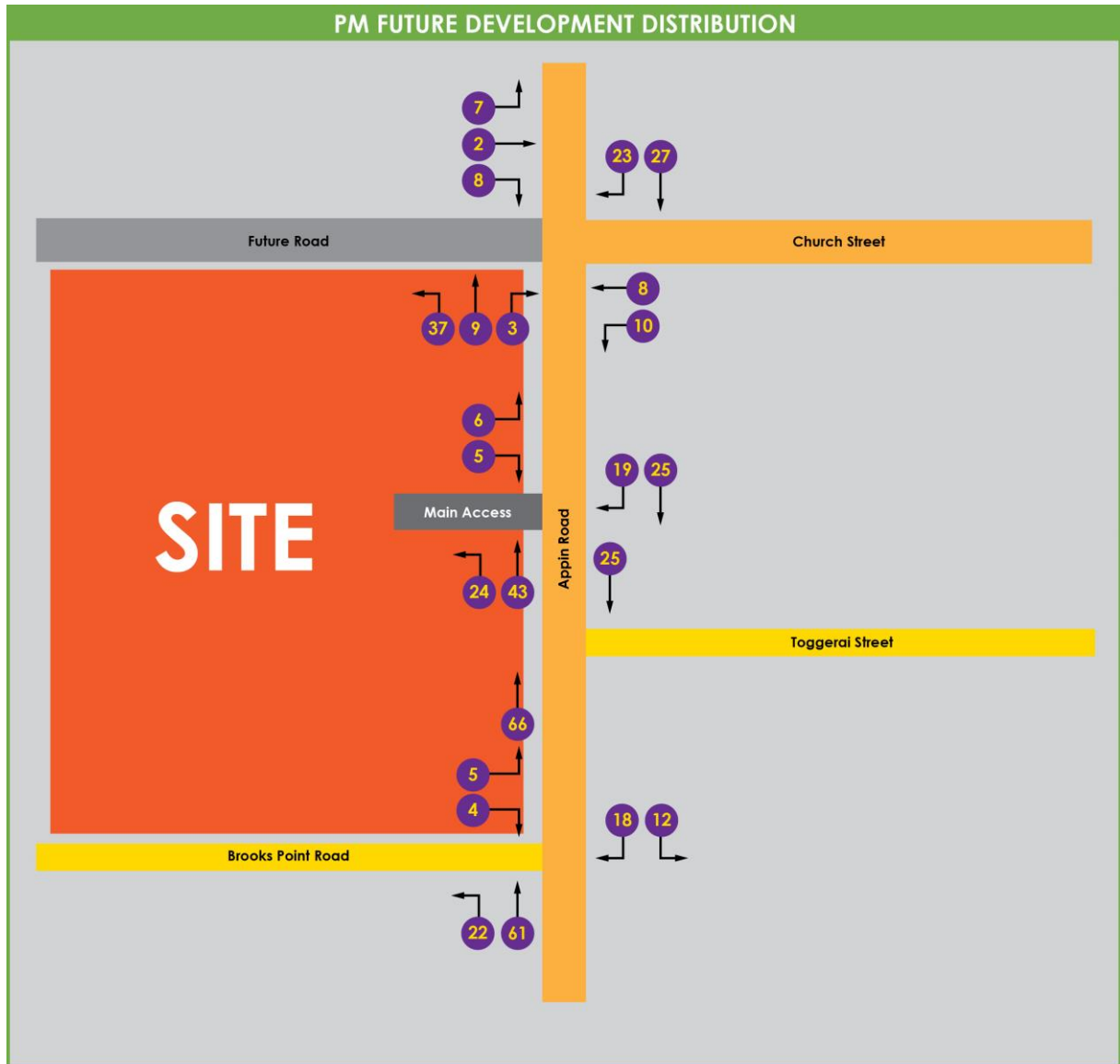


Figure 8: PM Development Traffic Distribution for Future Road Network

Transport for NSW also requested a modelling scenario with the approved development adjacent to the subject site at 55 Macquariedale Road to be assessed in addition to the existing plus development scenario. **Table 3** provides the assumption of the distribution of traffic at each access. The direction of the traffic is assumed to be consistent with the assumption of the subject site distribution in **Table 1**.

Table 3: Access Traffic Distributions

Direction	Percentage
Koolahs Street / Macquariedale Road	58%
Church Street	42%

The above assumptions for the neighbouring development results in the following traffic distributions in **Figures 9 and 10** for the future road network.



Figure 9: AM Neighbouring Traffic Distribution for Future Road Network



Figure 10: PM Neighbouring Traffic Distribution for Future Road Network

6.3.3 Scenarios

In order to assess the potential traffic impacts of a proposed development, the following scenarios were identified:

- Existing Scenario;
- Existing + Development Scenario; and
- Existing + Development + Approved Development Scenario.

6.3.4 2023 Intersection Analysis

The surveys were analysed using the SIDRA Intersection 9.1 computer program to determine their performance characteristics under existing traffic conditions. The SIDRA model produces a range of outputs, the most useful of which are the Degree of Saturation (DoS) and Average Vehicle Delay per vehicle (AVD). The AVD is in turn related to a level of service (LoS) criteria. These performance measures can be interpreted using the following explanations:

- DoS** the DoS is a measure of the operational performance of individual intersections. As both queue length and delay increase rapidly as DoS approaches 1, it is usual to attempt to keep DoS to less than 0.9. When DoS exceeds 0.9 residual queues can be anticipated, as occurs at many major intersections throughout the metropolitan area during peak periods. In this regard, a practical limit at 1.1 can be assumed. For intersections controlled by roundabout or give way / stop control, satisfactory intersection operation is generally indicated by a DoS of 0.8 or less.
- AVD** the AVD for individual intersections provides a measure of the operational performance of an intersection. In general, levels of acceptability of AVD for individual intersections depend on the time of day (motorists generally accept higher delays during peak commuter periods) and the road system being modelled (motorists are more likely to accept longer delays on side streets than on the main road system).
- LoS** this is a comparative measure which provides an indication of the operating performance of an intersection as shown in **Table 4**.

Table 4: Intersection Performance Indicators (TfNSW)

Level of Service (LoS)	Average Delay per Vehicle (secs/veh)	Traffic Signals, Roundabout	Give Way and Stop Signs
A	less than 14	Good operation	Good operation
B	15 to 28	Good with acceptable delays and spare capacity	Acceptable delays and spare capacity
C	29 to 42	Satisfactory	Satisfactory but accident study required
D	43 to 56	Operating near capacity	Near capacity and accident study required
E	57 to 70	At capacity; at signals incidents will cause excessive delays. Roundabouts require other control mode	At capacity and requires other control mode

Level of Service (LoS)	Average Delay per Vehicle (secs/veh)	Traffic Signals, Roundabout	Give Way and Stop Signs
F	More than 70	Unsatisfactory and requires additional capacity.	Unsatisfactory and requires other control mode or major treatment.

It is noted that the existing plus development assumes no changes to the existing intersection arrangements. The existing plus development plus approved development assumes the upgrade of the intersection of Appin Road and Church Street which is required as part of the approval for the neighbouring subdivision. This intersection is required to be provided as a roundabout with an additional western leg which will provide access to both the subject development and approved neighbouring development at 55 Macquariedale Road.

A summary of the modelled results is provided in **Table 5**, reference should also be made to the SIDRA outputs provided in **Appendix B** which provide detailed results for each movement.

Table 5: Intersection Performance for Existing and Development

Intersection	Control Type	Scenario	Period	Degree of Saturation (DoS)	Average Delay	Level of Service
Appin Road and Church Street	Priority	Existing	AM	0.364	17.6	B
			PM	0.271	16.7	B
		Existing + Development	AM	0.366	18.1	B
			PM	0.278	18.1	B
	Roundabout	Existing + Development + Approved	AM	0.597	24.0	B
			PM	0.520	17.6	B
Appin Road and Toggerai Street	Priority	Existing	AM	0.086	6.1	A
			PM	0.103	6.3	A
		Existing + Development	AM	0.099	6.4	A
			PM	0.140	7.0	A
		Existing + Development + Approved	AM	0.111	6.8	A
			PM	0.191	7.9	A
Appin Road and Brooks Point Road	Priority	Existing	AM	0.054	5.2	A
			PM	0.121	6.7	A
Appin Road and Brooks Point Road	Priority	Existing + Development	AM	0.067	5.4	A
			PM	0.167	7.5	A
			AM	0.080	5.7	A

Intersection	Control Type	Scenario	Period	Degree of Saturation (DoS)	Average Delay	Level of Service
		Existing + Development + Approved	PM	0.217	8.9	A

It can be seen from **Table 5** that all intersections experience only minor increases to the average delay in the two development scenarios for both peak periods with no change to the level of service for any intersection scenario. Therefore, the proposed development will have minimal impact on the surrounding road network with no external infrastructure improvements (intersection upgrades etc.) are required to accommodate the proposed development.

6.3.5 2033 Intersection Analysis

TfNSW provide the STFM traffic volumes for 2035 to allow a 10-year growth scenario to be modelled. The difference between the surveyed volumes and the future volumes was used to determine a growth rate for the approach for each intersection and applied to each of the movements of the existing traffic volumes. Some approaches had reduced traffic volumes in the future and therefore have a negative growth rate. In the model a 0% growth rate used instead for all approaches with a negative growth rate. The growth rates are provided in **Figure 11** overleaf.



Figure 11: Annual Growth Rates for the 2033 Scenario

A summary of the modelled results is provided in **Table 5**, reference should also be made to the SIDRA outputs provided in **Appendix B** which provide detailed results for each movement.

Table 6: Intersection Performance for Future and Development

Intersection	Control Type	Scenario	Period	Degree of Saturation (DoS)	Average Delay	Level of Service
Appin Road and Church Street	Priority	2033	AM	0.461	36.9	C
			PM	0.395	34.9	C
		2033 + Development	AM	0.462	43.6	D
			PM	0.486	39.6	C
	Roundabout	2033 + Development + Approved	AM	0.809	36.0	C
			PM	0.756	22.6	B
Appin Road and Toggerai Street	Priority	2033	AM	0.109	6.5	A
			PM	0.104	6.4	A
		2033 + Development	AM	0.122	7.0	A
			PM	0.140	7.1	A
		2033 + Development + Approved	AM	0.134	7.3	A
			PM	0.191	8.0	A
Appin Road and Brooks Point Road	Priority	2033	AM	0.073	5.4	A
			PM	0.121	6.8	A
Appin Road and Brooks Point Road	Priority	2033 + Development	AM	0.086	5.6	A
			PM	0.167	7.5	A
		2033 + Development + Approved	AM	0.099	5.8	A
			PM	0.217	9.0	A

It can be seen from **Table 6** that all intersections except one experience only minor increases to the average delay in the two development scenarios for both peak periods with no change to the level of service for any intersection scenario. The intersection of Appin Road and Church Street experiences an increase in average delay of 3.7 seconds for the worst movement which results in a Level of Service D. This is considered acceptable as the increase in average is relatively small and in line with the PM peak and the intersection operates efficiently for all other movements. Therefore, the proposed development will have minor impacts on the surrounding road network in 2033 with no external infrastructure improvements (intersection upgrades etc.) are required to accommodate the proposed development.

7. CONCLUSIONS

In summary:

- The planning proposal seeks to amend the Wollondilly LEP 2011 such that the site could accommodate a development consistent with the indicative concept design at 10-20 Brooks Point Road, Appin, that could potentially comprise 200-250 low density residential lots with streets and other necessary infrastructure.
- Parking within each allotment will be provided in accordance with the Wollondilly DCP requirements with each lot provided at least one frontage to the internal road network. The parking provision for each lot will be assessed upon application to develop each lot.
- The traffic generation arising from the development has been assessed as a net increase over existing conditions and equates to an additional 171 vehicle trips per hour during the morning peak and 188 vehicle trips per hour during evening peak periods. SIDRA modelling of the additional trips demonstrated small increases in average delay and no change to the level of service. As such, no external improvements are required to facilitate the development beyond the road layout design as proposed. The traffic impacts of the development are therefore considered acceptable.
- In addition, a cumulative and future assessment of the proposed concept development and approved subdivision at 55 Macquariedale Road was conducted to assess the combined impact of both developments. This assessment included the upgrade of Appin Road and Church Street to a roundabout which is conditioned as part of the adjacent subdivision. The SIDRA results for this assessment also demonstrated only minor increases in average delay with only one change to the current level of service experience in 2033 for the worst movement. As such, no additional external improvements are required to facilitate the cumulative impact of both developments beyond the road layout design as proposed. The traffic impacts of the development are therefore considered acceptable.
- The internal road network is considered compliant with all Council DCP, TfNSW, and Austroads requirements.

This Traffic Impact Assessment therefore demonstrates that the planning proposal is supportable on traffic planning grounds. TRAFFIX anticipates an ongoing involvement during the development approval process.

APPENDIX A

Reduced Plans

LEGEND

Title boundary (approx.)

Proposed cycleway

400m local park walkable catchment

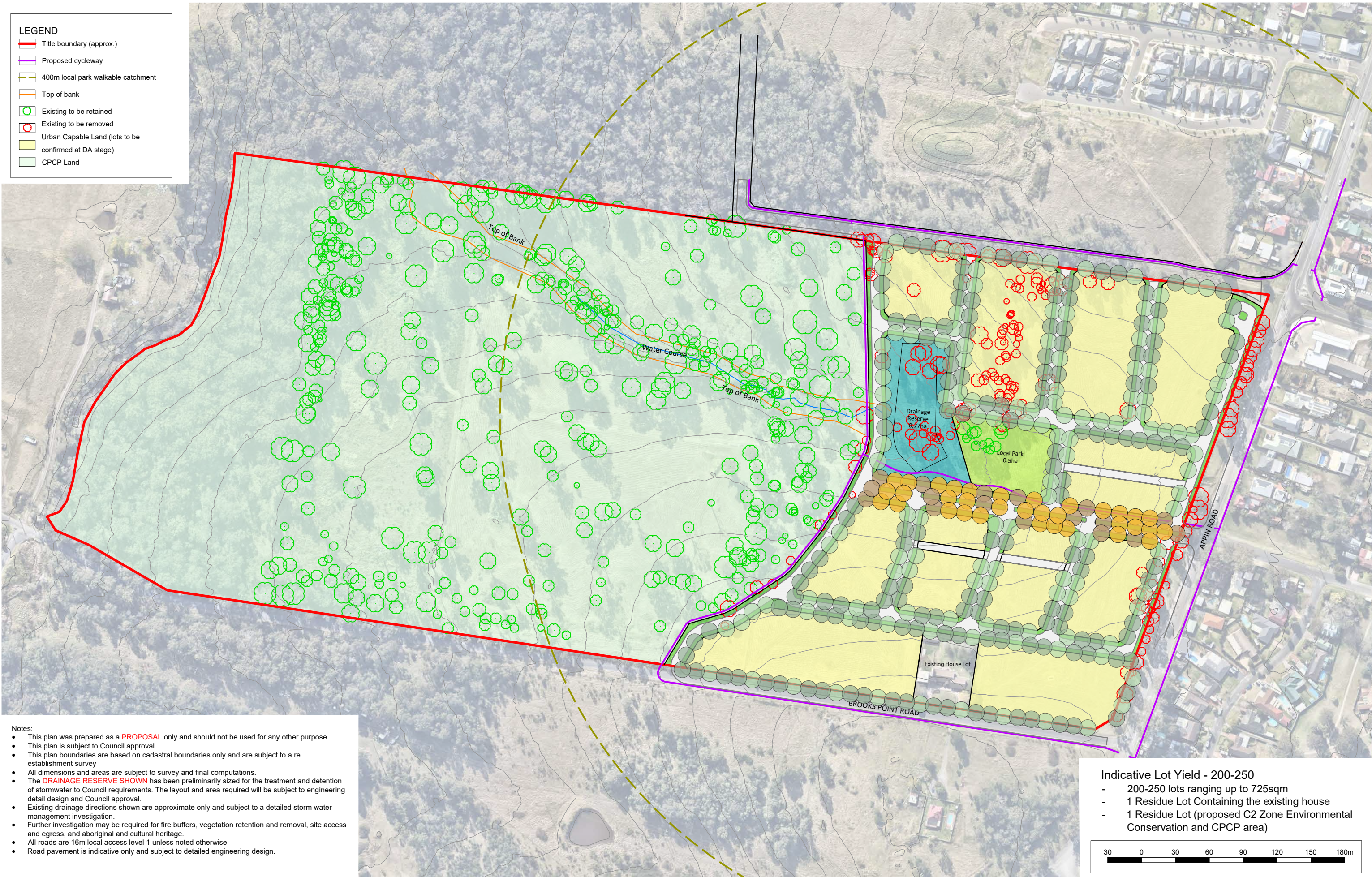
Top of bank

Existing to be retained

Existing to be removed

Urban Capable Land (lots to be confirmed at DA stage)

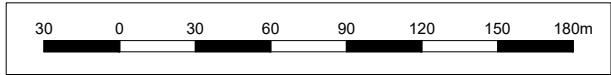
CPCP Land



- Notes:
- This plan was prepared as a **PROPOSAL** only and should not be used for any other purpose.
 - This plan is subject to Council approval.
 - This plan boundaries are based on cadastral boundaries only and are subject to a re establishment survey
 - All dimensions and areas are subject to survey and final computations.
 - The **DRAINAGE RESERVE SHOWN** has been preliminarily sized for the treatment and detention of stormwater to Council requirements. The layout and area required will be subject to engineering detail design and Council approval.
 - Existing drainage directions shown are approximate only and subject to a detailed storm water management investigation.
 - Further investigation may be required for fire buffers, vegetation retention and removal, site access and egress, and aboriginal and cultural heritage.
 - All roads are 16m local access level 1 unless noted otherwise
 - Road pavement is indicative only and subject to detailed engineering design.

Indicative Lot Yield - 200-250

- 200-250 lots ranging up to 725sqm
- 1 Residue Lot Containing the existing house
- 1 Residue Lot (proposed C2 Zone Environmental Conservation and CPCP area)



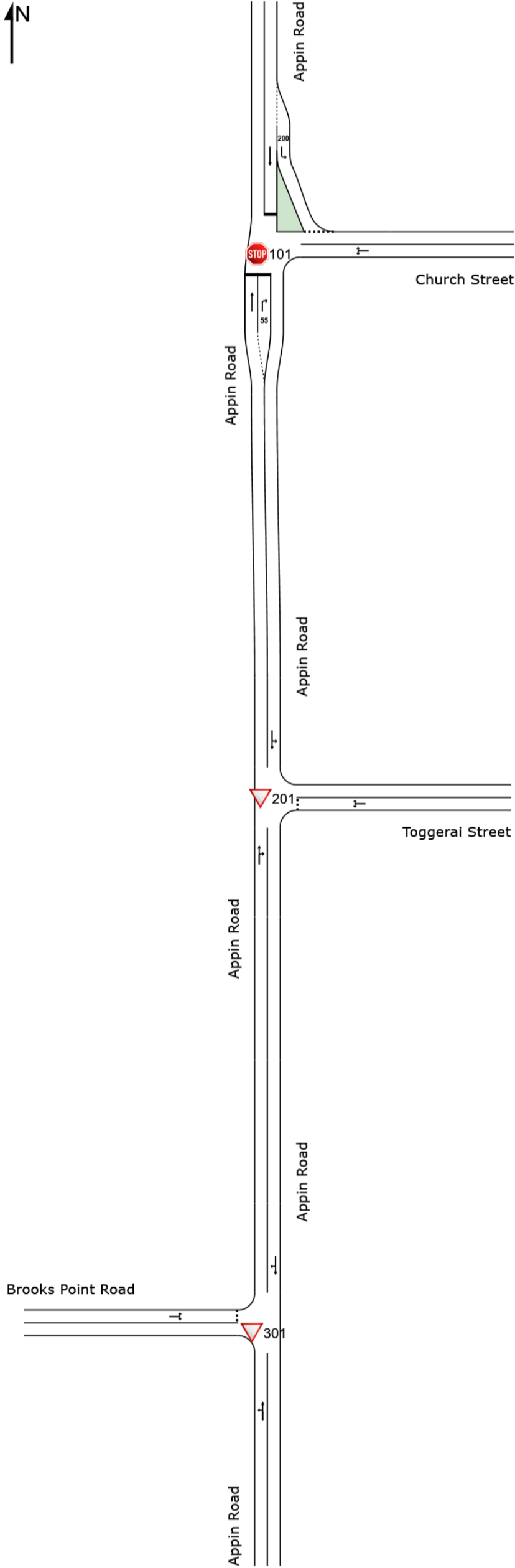
FOR PLANNING PURPOSES ONLY

08	20.10.2022	Minor amendments	WEB	DRAFT	Date: 23.05.2023
09	06.10.2022	Amendments as per the landscape assessment	WEB	DRAFT	Version No:
10	19.10.2022	Amended drainage reserve	WEB	DRAFT	11A
	22.05.2023	Amended layout based on comments	OX	WEB	Job No: 19171
11A	23.05.2023	Amended based on comments	OX	WEB	Scale (A1): 1:1500
Version	Date	Description	Drafted	Approved	(A3): 1:3000

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APPENDIX B

SIDRA Outputs



USER REPORT FOR NETWORK SITE

 Project: 23.241m01v01 Appin Road Model

Output produced by SIDRA INTERSECTION Version: 9.1.3.210

Template: Movement Summaries

 Site: 101 [101 Appin Rd Church St EX AM (Site Folder: Existing)]

 Network: 1 [N101 Appin Road Network EX AM (Network Folder: Existing)]

Intersection: Appin Road and Church Street
Scenario: Existing AM
Site Category: (None)
Stop (Two-Way)

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand [Total	Flows HV]	Arrival [Total	Flows HV]	Deg. Satn	Aver. Delay	Level of Service	95% Back Of Queue [Veh.	Dist]	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed
			veh/h	%	veh/h	%	v/c	sec		veh	m				km/h
South: Appin Road															
2	T1	All MCs	111	1.0	111	1.0	0.179	11.5	LOS A	0.6	4.4	0.58	1.04	0.58	39.7
3	R2	All MCs	23	0.0	23	0.0	0.080	17.6	LOS B	0.2	1.7	0.76	1.00	0.76	36.8
Approach			134	0.8	134	0.8	0.179	12.6	LOS A	0.6	4.4	0.61	1.04	0.61	39.1
East: Church Street															
4	L2	All MCs	32	0.0	32	0.0	0.364	4.7	LOS A	0.0	0.0	0.00	0.54	0.00	44.4
6	R2	All MCs	635	2.3	635	2.3	0.364	4.7	LOS A	0.0	0.0	0.00	0.54	0.00	45.4
Approach			666	2.2	666	2.2	0.364	4.7	NA	0.0	0.0	0.00	0.54	0.00	45.4
North: Appin Road															
7	L2	All MCs	345	4.9	345	4.9	0.192	4.5	LOS A	0.0	0.0	0.00	0.49	0.00	45.9
8	T1	All MCs	73	7.2	73	7.2	0.141	12.9	LOS A	0.4	3.2	0.62	1.05	0.62	36.9
Approach			418	5.3	418	5.3	0.192	6.0	LOS A	0.4	3.2	0.11	0.59	0.11	44.9
All Vehicles			1218	3.1	1218	3.1	0.364	6.0	NA	0.6	4.4	0.10	0.61	0.10	44.6

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

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

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

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

Two-Way Sign Control Capacity Model: SIDRA Standard.

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

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

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

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

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

Intersection: Appin Road and Toggerai Street
Scenario: Existing AM 7.15am-8.15am
Site Category: (None)
Give-Way (Two-Way)

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand Flows [Total HV]		Arrival Flows [Total HV]		Deg. Satn	Aver. Delay	Level of Service	95% Back Of Queue [Veh. Dist]		Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed
			veh/h	%	veh/h	%	v/c	sec		veh	m				km/h
South: Appin Road															
2	T1	All MCs	88	7.1	88	7.1	0.062	0.0	LOS A	0.1	1.0	0.12	0.14	0.12	45.9
3	R2	All MCs	19	16.7	19	16.7	0.062	6.1	LOS A	0.1	1.0	0.12	0.14	0.12	46.4
Approach			107	8.8	107	8.8	0.062	1.1	NA	0.1	1.0	0.12	0.14	0.12	46.1
East: Toggerai Street															
4	L2	All MCs	4	0.0	4	0.0	0.021	4.7	LOS A	0.1	0.5	0.23	0.53	0.23	43.6
6	R2	All MCs	19	0.0	19	0.0	0.021	5.3	LOS A	0.1	0.5	0.23	0.53	0.23	43.6
Approach			23	0.0	23	0.0	0.021	5.2	LOS A	0.1	0.5	0.23	0.53	0.23	43.6
North: Appin Road															
7	L2	All MCs	93	4.5	93	4.5	0.086	4.6	LOS A	0.0	0.0	0.00	0.31	0.00	45.9
8	T1	All MCs	66	3.2	66	3.2	0.086	0.0	LOS A	0.0	0.0	0.00	0.31	0.00	42.8
Approach			159	4.0	159	4.0	0.086	2.7	NA	0.0	0.0	0.00	0.31	0.00	45.3
All Vehicles			289	5.5	289	5.5	0.086	2.3	NA	0.1	1.0	0.06	0.27	0.06	45.3

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

Intersection: Appin Road and Brooks Point Road
Scenario: Existing AM 7.15am-8.15am
Site Category: (None)
Give-Way (Two-Way)

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand Flows [Total HV]		Arrival Flows [Total HV]		Deg. Satn	Aver. Delay	Level of Service	95% Back Of Queue [Veh. Dist]		Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed
			veh/h	%	veh/h	%	v/c	sec		veh	m				km/h
South: Appin Road															
1	L2	All MCs	1	0.0	1	0.0	0.051	4.6	LOS A	0.0	0.0	0.00	0.01	0.00	48.7
2	T1	All MCs	98	1.1	98	1.1	0.051	0.0	LOS A	0.0	0.0	0.00	0.01	0.00	49.9
Approach			99	1.1	99	1.1	0.051	0.1	NA	0.0	0.0	0.00	0.01	0.00	49.9
North: Appin Road															
8	T1	All MCs	97	2.2	97	2.2	0.054	0.0	LOS A	0.0	0.2	0.02	0.03	0.02	49.7
9	R2	All MCs	5	0.0	5	0.0	0.054	4.9	LOS A	0.0	0.2	0.02	0.03	0.02	47.6
Approach			102	2.1	102	2.1	0.054	0.3	NA	0.0	0.2	0.02	0.03	0.02	49.5
West: Brooks Point Road															
10	L2	All MCs	13	0.0	13	0.0	0.009	4.8	LOS A	0.0	0.3	0.19	0.50	0.19	43.7
12	R2	All MCs	1	0.0	1	0.0	0.009	5.2	LOS A	0.0	0.3	0.19	0.50	0.19	45.3
Approach			14	0.0	14	0.0	0.009	4.9	LOS A	0.0	0.3	0.19	0.50	0.19	44.0
All Vehicles			215	1.5	215	1.5	0.054	0.5	NA	0.0	0.3	0.02	0.05	0.02	49.3

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

USER REPORT FOR NETWORK SITE

 Project: 23.241m01v01 Appin Road Model

Output produced by SIDRA INTERSECTION Version: 9.1.3.210

Template: Movement Summaries

 Site: 102 [102 Appin Rd Church St EX PM (Site Folder: Existing)]

 Network: 2 [N102 Appin Road Network EX PM (Network Folder: Existing)]

Intersection: Appin Road and Church Street
Scenario: Existing PM 15:45pm-16:45pm
Site Category: (None)
Stop (Two-Way)

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand [Total	Flows HV]	Arrival [Total	Flows HV]	Deg. Satn	Aver. Delay	Level of Service	95% Back Of Queue [Veh.	Dist]	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed
			veh/h	%	veh/h	%	v/c	sec		veh	m				km/h
South: Appin Road															
2	T1	All MCs	173	0.6	173	0.6	0.201	9.5	LOS A	0.8	5.4	0.48	0.98	0.48	40.9
3	R2	All MCs	54	0.0	54	0.0	0.167	16.7	LOS B	0.5	3.7	0.75	1.00	0.75	37.3
Approach			226	0.5	226	0.5	0.201	11.2	LOS A	0.8	5.4	0.54	0.99	0.54	39.9
East: Church Street															
4	L2	All MCs	52	0.0	52	0.0	0.246	4.6	LOS A	0.0	0.0	0.00	0.54	0.00	44.4
6	R2	All MCs	382	8.8	382	8.8	0.246	4.7	LOS A	0.0	0.0	0.00	0.54	0.00	45.3
Approach			434	7.8	434	7.8	0.246	4.7	NA	0.0	0.0	0.00	0.54	0.00	45.3
North: Appin Road															
7	L2	All MCs	499	1.3	499	1.3	0.271	4.5	LOS A	0.0	0.0	0.00	0.49	0.00	46.0
8	T1	All MCs	145	2.9	145	2.9	0.198	10.5	LOS A	0.7	4.8	0.49	1.04	0.49	38.7
Approach			644	1.6	644	1.6	0.271	5.9	LOS A	0.7	4.8	0.11	0.62	0.11	45.0
All Vehicles			1304	3.5	1304	3.5	0.271	6.4	NA	0.8	5.4	0.15	0.65	0.15	44.3

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

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

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

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

Two-Way Sign Control Capacity Model: SIDRA Standard.

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

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

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

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

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

Intersection: Appin Road and Toggerai Street
Scenario: Existing PM 15.45pm-16.45pm
Site Category: (None)
Give-Way (Two-Way)

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand Flows [Total HV]		Arrival Flows [Total HV]		Deg. Satn	Aver. Delay	Level of Service	95% Back Of Queue [Veh. Dist]		Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed
			veh/h	%	veh/h	%	v/c	sec		veh	m				km/h
South: Appin Road															
2	T1	All MCs	149	0.7	149	0.7	0.103	0.0	LOS A	0.3	1.8	0.14	0.17	0.14	45.3
3	R2	All MCs	37	5.7	37	5.7	0.103	6.1	LOS A	0.3	1.8	0.14	0.17	0.14	46.5
Approach			186	1.7	186	1.7	0.103	1.2	NA	0.3	1.8	0.14	0.17	0.14	45.8
East: Toggerai Street															
4	L2	All MCs	7	0.0	7	0.0	0.020	5.0	LOS A	0.1	0.5	0.31	0.55	0.31	43.2
6	R2	All MCs	13	16.7	13	16.7	0.020	6.3	LOS A	0.1	0.5	0.31	0.55	0.31	43.2
Approach			20	10.5	20	10.5	0.020	5.8	LOS A	0.1	0.5	0.31	0.55	0.31	43.2
North: Appin Road															
7	L2	All MCs	36	8.8	36	8.8	0.095	4.6	LOS A	0.0	0.0	0.00	0.11	0.00	47.3
8	T1	All MCs	145	0.0	145	0.0	0.095	0.0	LOS A	0.0	0.0	0.00	0.11	0.00	47.4
Approach			181	1.7	181	1.7	0.095	0.9	NA	0.0	0.0	0.00	0.11	0.00	47.4
All Vehicles			387	2.2	387	2.2	0.103	1.3	NA	0.3	1.8	0.08	0.16	0.08	46.3

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

Intersection: Appin Road and Brooks Point Road
Scenario: Existing PM 15.45pm-16.45pm
Site Category: (None)
Give-Way (Two-Way)

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand Flows [Total HV]		Arrival Flows [Total HV]		Deg. Satn	Aver. Delay	Level of Service	95% Back Of Queue [Veh. Dist]		Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed
			veh/h	%	veh/h	%	v/c	sec		veh	m				km/h
South: Appin Road															
1	L2	All MCs	2	0.0	2	0.0	0.121	4.6	LOS A	0.0	0.0	0.00	0.00	0.00	48.7
2	T1	All MCs	234	0.5	234	0.5	0.121	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	49.9
Approach			236	0.4	236	0.4	0.121	0.1	NA	0.0	0.0	0.00	0.00	0.00	49.9
North: Appin Road															
8	T1	All MCs	156	0.7	156	0.7	0.091	0.0	LOS A	0.1	0.8	0.07	0.08	0.07	49.4
9	R2	All MCs	14	7.7	14	7.7	0.091	6.7	LOS A	0.1	0.8	0.07	0.08	0.07	47.1
Approach			169	1.2	169	1.2	0.091	0.5	NA	0.1	0.8	0.07	0.08	0.07	49.2
West: Brooks Point Road															
10	L2	All MCs	7	0.0	7	0.0	0.008	5.2	LOS A	0.0	0.2	0.32	0.52	0.32	43.2
12	R2	All MCs	2	0.0	2	0.0	0.008	6.1	LOS A	0.0	0.2	0.32	0.52	0.32	45.0
Approach			9	0.0	9	0.0	0.008	5.4	LOS A	0.0	0.2	0.32	0.52	0.32	43.8
All Vehicles			415	0.8	415	0.8	0.121	0.4	NA	0.1	0.8	0.04	0.05	0.04	49.4

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

USER REPORT FOR NETWORK SITE

 Project: 23.241m01v01 Appin Road Model

Output produced by SIDRA INTERSECTION Version: 9.1.3.210

Template: Movement Summaries

 Site: 103 [103 Appin Rd Church St EX+DEV AM (Site Folder: Existing + Development)]

 Network: 3 [N103 Appin Road Network EX+DEV AM (Network Folder: Existing + Development)]

Intersection: Appin Road and Church Street
Scenario: Existing + Development AM
Site Category: (None)
Stop (Two-Way)

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand [Total	Flows HV]	Arrival [Total	Flows HV]	Deg. Satn	Aver. Delay	Level of Service	95% Back Of [Veh.	Queue Dist]	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed
			veh/h	%	veh/h	%	v/c	sec		veh	m				km/h
South: Appin Road															
2	T1	All MCs	206	0.5	206	0.5	0.333	12.5	LOS A	1.4	10.2	0.63	1.09	0.78	39.1
3	R2	All MCs	43	0.0	43	0.0	0.151	18.1	LOS B	0.5	3.3	0.78	1.00	0.78	36.6
Approach			249	0.4	249	0.4	0.333	13.5	LOS A	1.4	10.2	0.66	1.07	0.78	38.6
East: Church Street															
4	L2	All MCs	35	0.0	35	0.0	0.366	4.7	LOS A	0.0	0.0	0.00	0.54	0.00	44.4
6	R2	All MCs	635	2.3	635	2.3	0.366	4.7	LOS A	0.0	0.0	0.00	0.54	0.00	45.4
Approach			669	2.2	669	2.2	0.366	4.7	NA	0.0	0.0	0.00	0.54	0.00	45.4
North: Appin Road															
7	L2	All MCs	345	4.9	345	4.9	0.192	4.5	LOS A	0.0	0.0	0.00	0.49	0.00	45.9
8	T1	All MCs	81	6.5	81	6.5	0.167	13.6	LOS A	0.5	3.8	0.66	1.04	0.66	36.9
Approach			426	5.2	426	5.2	0.192	6.3	LOS A	0.5	3.8	0.12	0.60	0.12	44.8
All Vehicles			1345	2.8	1345	2.8	0.366	6.8	NA	1.4	10.2	0.16	0.66	0.18	44.1

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

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

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

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

Two-Way Sign Control Capacity Model: SIDRA Standard.

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

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

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

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

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

Intersection: Appin Road and Toggerai Street
Scenario: Existing + Development AM 7.15am-8.15am
Site Category: (None)
Give-Way (Two-Way)

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand Flows [Total HV]		Arrival Flows [Total HV]		Deg. Satn	Aver. Delay	Level of Service	95% Back Of Queue [Veh. Dist]		Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed
			veh/h	%	veh/h	%	v/c	sec		veh	m				km/h
South: Appin Road															
2	T1	All MCs	137	4.6	137	4.6	0.087	0.0	LOS A	0.1	1.1	0.09	0.11	0.09	47.0
3	R2	All MCs	19	16.7	19	16.7	0.087	6.4	LOS A	0.1	1.1	0.09	0.11	0.09	46.7
Approach			156	6.1	156	6.1	0.087	0.8	NA	0.1	1.1	0.09	0.11	0.09	46.9
East: Toggerai Street															
4	L2	All MCs	4	0.0	4	0.0	0.022	4.8	LOS A	0.1	0.5	0.28	0.55	0.28	43.4
6	R2	All MCs	19	0.0	19	0.0	0.022	5.6	LOS A	0.1	0.5	0.28	0.55	0.28	43.4
Approach			23	0.0	23	0.0	0.022	5.5	LOS A	0.1	0.5	0.28	0.55	0.28	43.4
North: Appin Road															
7	L2	All MCs	93	4.5	93	4.5	0.099	4.6	LOS A	0.0	0.0	0.00	0.27	0.00	46.2
8	T1	All MCs	91	2.3	91	2.3	0.099	0.0	LOS A	0.0	0.0	0.00	0.27	0.00	43.6
Approach			183	3.4	183	3.4	0.099	2.3	NA	0.0	0.0	0.00	0.27	0.00	45.6
All Vehicles			362	4.4	362	4.4	0.099	1.9	NA	0.1	1.1	0.06	0.22	0.06	45.7

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

Intersection: Appin Road and Brooks Point Road
Scenario: Existing + Development AM 7.15am-8.15am
Site Category: (None)
Give-Way (Two-Way)

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand	Flows	Arrival	Flows	Deg.	Aver.	Level of	95% Back Of	Queue	Prop.	Eff.	Aver.	Aver.
			[Total	HV]	[Total	HV]	Satn	Delay	Service	[Veh.	Dist]	Que	Stop Rate	No. of	Speed
			veh/h	%	veh/h	%	v/c	sec		veh	m			Cycles	km/h
South: Appin Road															
1	L2	All MCs	7	0.0	7	0.0	0.064	4.6	LOS A	0.0	0.0	0.00	0.03	0.00	48.6
2	T1	All MCs	116	0.9	116	0.9	0.064	0.0	LOS A	0.0	0.0	0.00	0.03	0.00	49.6
Approach			123	0.9	123	0.9	0.064	0.3	NA	0.0	0.0	0.00	0.03	0.00	49.5
North: Appin Road															
8	T1	All MCs	118	1.8	118	1.8	0.067	0.0	LOS A	0.1	0.4	0.04	0.05	0.04	49.5
9	R2	All MCs	8	0.0	8	0.0	0.067	5.2	LOS A	0.1	0.4	0.04	0.05	0.04	47.5
Approach			126	1.7	126	1.7	0.067	0.3	NA	0.1	0.4	0.04	0.05	0.04	49.4
West: Brooks Point Road															
10	L2	All MCs	43	0.0	43	0.0	0.037	4.9	LOS A	0.1	1.0	0.22	0.51	0.22	43.6
12	R2	All MCs	8	0.0	8	0.0	0.037	5.4	LOS A	0.1	1.0	0.22	0.51	0.22	45.3
Approach			52	0.0	52	0.0	0.037	5.0	LOS A	0.1	1.0	0.22	0.51	0.22	44.1
All Vehicles			301	1.0	301	1.0	0.067	1.1	NA	0.1	1.0	0.05	0.12	0.05	48.4

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

USER REPORT FOR NETWORK SITE

 Project: 23.241m01v01 Appin Road Model

Output produced by SIDRA INTERSECTION Version: 9.1.3.210

Template: Movement Summaries

 Site: 104 [104 Appin Rd Church St EX+DEV PM (Site Folder: Existing + Development)]

 Network: 4 [N104 Appin Road Network EX+DEV PM (Network Folder: Existing + Development)]

Intersection: Appin Road and Church Street
Scenario: Existing + Development PM 15:45pm-16:45pm
Site Category: (None)
Stop (Two-Way)

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand [Total	Flows HV]	Arrival [Total	Flows HV]	Deg. Satn	Aver. Delay	Level of Service	95% Back Of [Veh.	Queue Dist]	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed
			veh/h	%	veh/h	%	v/c	sec		veh	m				km/h
South: Appin Road															
2	T1	All MCs	189	0.6	189	0.6	0.223	9.6	LOS A	0.9	6.1	0.49	0.98	0.49	40.9
3	R2	All MCs	59	0.0	59	0.0	0.198	18.1	LOS B	0.6	4.5	0.78	1.01	0.81	36.6
Approach			248	0.4	248	0.4	0.223	11.6	LOS A	0.9	6.1	0.56	0.99	0.57	39.7
East: Church Street															
4	L2	All MCs	71	0.0	71	0.0	0.257	4.6	LOS A	0.0	0.0	0.00	0.54	0.00	44.4
6	R2	All MCs	382	8.8	382	8.8	0.257	4.7	LOS A	0.0	0.0	0.00	0.54	0.00	45.3
Approach			453	7.4	453	7.4	0.257	4.7	NA	0.0	0.0	0.00	0.54	0.00	45.3
North: Appin Road															
7	L2	All MCs	499	1.3	499	1.3	0.271	4.5	LOS A	0.0	0.0	0.00	0.49	0.00	46.0
8	T1	All MCs	198	2.1	198	2.1	0.278	11.2	LOS A	1.1	7.5	0.54	1.07	0.59	39.6
Approach			697	1.5	697	1.5	0.278	6.4	LOS A	1.1	7.5	0.15	0.66	0.17	44.8
All Vehicles			1398	3.2	1398	3.2	0.278	6.8	NA	1.1	7.5	0.18	0.68	0.18	44.1

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

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

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

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

Two-Way Sign Control Capacity Model: SIDRA Standard.

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

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

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

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

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

Intersection: Appin Road and Toggerai Street
Scenario: Existing + Development PM 15.45pm-16.45pm
Site Category: (None)
Give-Way (Two-Way)

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand Flows [Total HV]		Arrival Flows [Total HV]		Deg. Satn	Aver. Delay	Level of Service	95% Back Of Queue [Veh. Dist]		Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed
			veh/h	%	veh/h	%	v/c	sec		veh	m				km/h
South: Appin Road															
2	T1	All MCs	219	0.5	219	0.5	0.140	0.0	LOS A	0.3	2.0	0.12	0.14	0.12	46.2
3	R2	All MCs	37	5.7	37	5.7	0.140	6.5	LOS A	0.3	2.0	0.12	0.14	0.12	46.7
Approach			256	1.2	256	1.2	0.140	0.9	NA	0.3	2.0	0.12	0.14	0.12	46.4
East: Toggerai Street															
4	L2	All MCs	7	0.0	7	0.0	0.022	5.1	LOS A	0.1	0.6	0.36	0.57	0.36	42.8
6	R2	All MCs	13	16.7	13	16.7	0.022	7.0	LOS A	0.1	0.6	0.36	0.57	0.36	42.8
Approach			20	10.5	20	10.5	0.022	6.3	LOS A	0.1	0.6	0.36	0.57	0.36	42.8
North: Appin Road															
7	L2	All MCs	36	8.8	36	8.8	0.111	4.6	LOS A	0.0	0.0	0.00	0.09	0.00	47.4
8	T1	All MCs	177	0.0	177	0.0	0.111	0.0	LOS A	0.0	0.0	0.00	0.09	0.00	47.8
Approach			213	1.5	213	1.5	0.111	0.8	NA	0.0	0.0	0.00	0.09	0.00	47.6
All Vehicles			488	1.7	488	1.7	0.140	1.1	NA	0.3	2.0	0.08	0.13	0.08	46.7

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

Intersection: Appin Road and Brooks Point Road
Scenario: Existing + Development PM 15.45pm-16.45pm
Site Category: (None)
Give-Way (Two-Way)

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand Flows [Total HV]		Arrival Flows [Total HV]		Deg. Satn	Aver. Delay	Level of Service	95% Back Of Queue [Veh. Dist]		Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed
			veh/h	%	veh/h	%	v/c	sec		veh	m				km/h
South: Appin Road															
1	L2	All MCs	25	0.0	25	0.0	0.167	4.6	LOS A	0.0	0.0	0.00	0.04	0.00	48.5
2	T1	All MCs	298	0.4	298	0.4	0.167	0.0	LOS A	0.0	0.0	0.00	0.04	0.00	49.5
Approach			323	0.3	323	0.3	0.167	0.4	NA	0.0	0.0	0.00	0.04	0.00	49.3
North: Appin Road															
8	T1	All MCs	168	0.6	168	0.6	0.113	0.0	LOS A	0.3	1.9	0.16	0.19	0.16	48.6
9	R2	All MCs	33	3.2	33	3.2	0.113	7.5	LOS A	0.3	1.9	0.16	0.19	0.16	46.6
Approach			201	1.0	201	1.0	0.113	1.2	NA	0.3	1.9	0.16	0.19	0.16	48.3
West: Brooks Point Road															
10	L2	All MCs	13	0.0	13	0.0	0.018	5.5	LOS A	0.1	0.4	0.38	0.57	0.38	43.0
12	R2	All MCs	6	0.0	6	0.0	0.018	6.7	LOS A	0.1	0.4	0.38	0.57	0.38	44.9
Approach			19	0.0	19	0.0	0.018	5.9	LOS A	0.1	0.4	0.38	0.57	0.38	43.9
All Vehicles			543	0.6	543	0.6	0.167	0.9	NA	0.3	1.9	0.07	0.11	0.07	48.6

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

USER REPORT FOR NETWORK SITE

Project: 23.241m01v01 Appin Road Model

Output produced by SIDRA INTERSECTION Version: 9.1.3.210

Template: Movement Summaries

Site: 105 [105 Appin Rd Church St EX+DEV+ADEV AM (Site Folder: Existing + Development + Approved Development)] Network: 5 [N105 Appin Road Network EX+DEV+APDEV AM (Network Folder: Existing + Development + Approved Development)]

Intersection: Appin Road and Church Street
Scenario: Existing + Development + Approved Development AM
Site Category: (None)
Roundabout

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand	Flows	Arrival	Flows	Deg. Satn	Aver. Delay	Level of Service	95% Back Of	Queue	Prop. Que	Eff.	Aver. No. of Cycles	Aver. Speed
			[Total	HV]	[Total	HV]				[Veh.	Dist]		Stop Rate		
			veh/h	%	veh/h	%		sec		veh	m				km/h
South: Appin Road															
1	L2	All MCs	23	0.0	23	0.0	0.436	16.8	LOS B	3.3	24.1	0.88	0.82	0.97	42.6
2	T1	All MCs	180	0.6	180	0.6	0.436	11.6	LOS A	3.3	24.1	0.88	0.82	0.97	38.6
3	R2	All MCs	34	0.0	34	0.0	0.436	14.4	LOS A	3.3	24.1	0.88	0.82	0.97	39.1
3u	U	All MCs	1	0.0	1	0.0	0.436	16.8	LOS B	3.3	24.1	0.88	0.82	0.97	28.2
Approach			238	0.4	238	0.4	0.436	12.5	LOS A	3.3	24.1	0.88	0.82	0.97	39.1
East: Church Street															
4	L2	All MCs	34	0.0	34	0.0	0.597	5.9	LOS A	6.0	43.1	0.62	0.59	0.62	40.8
5	T1	All MCs	4	0.0	4	0.0	0.597	7.5	LOS A	6.0	43.1	0.62	0.59	0.62	47.0
6	R2	All MCs	637	2.3	637	2.3	0.597	8.5	LOS A	6.0	43.1	0.62	0.59	0.62	43.1
6u	U	All MCs	1	0.0	1	0.0	0.597	10.8	LOS A	6.0	43.1	0.62	0.59	0.62	46.5
Approach			676	2.2	676	2.2	0.597	8.3	LOS A	6.0	43.1	0.62	0.59	0.62	43.1
North: Appin Road															
7	L2	All MCs	359	4.7	359	4.7	0.250	4.2	LOS A	1.7	12.5	0.22	0.48	0.22	45.5
8	T1	All MCs	98	5.4	98	5.4	0.088	4.6	LOS A	0.5	3.7	0.28	0.49	0.28	45.0
9	R2	All MCs	8	0.0	8	0.0	0.088	8.4	LOS A	0.5	3.7	0.28	0.49	0.28	49.5
9u	U	All MCs	1	0.0	1	0.0	0.088	9.5	LOS A	0.5	3.7	0.28	0.49	0.28	48.8
Approach			466	4.7	466	4.7	0.250	4.4	LOS A	1.7	12.5	0.23	0.48	0.23	45.6
West: Church Street															
10	L2	All MCs	59	0.0	59	0.0	0.349	19.2	LOS B	1.9	23.5	0.84	0.91	0.93	42.7
11	T1	All MCs	13	0.0	13	0.0	0.349	18.6	LOS B	1.9	23.5	0.84	0.91	0.93	43.9
12	R2	All MCs	17	0.0	17	0.0	0.349	21.7	LOS B	1.9	23.5	0.84	0.91	0.93	36.3
12u	U	All MCs	13	0.0	13	0.0	0.349	24.0	LOS B	1.9	23.5	0.84	0.91	0.93	43.4
Approach			101	0.0	101	0.0	0.349	20.1	LOS B	1.9	23.5	0.84	0.91	0.93	42.2
All Vehicles			1481	2.6	1481	2.6	0.597	8.6	LOS A	6.0	43.1	0.56	0.61	0.58	43.2

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

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

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

Roundabout Capacity Model: SIDRA Standard.

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

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

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

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

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

Intersection: Appin Road and Toggerai Street
Scenario: Existing + Development + Approved Development AM 7.15am-8.15am
Site Category: (None)
Give-Way (Two-Way)

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand Flows [Total HV]		Arrival Flows [Total HV]		Deg. Satn	Aver. Delay	Level of Service	95% Back Of Queue [Veh. Dist]		Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed
			veh/h	%	veh/h	%	v/c	sec		veh	m				km/h
South: Appin Road															
2	T1	All MCs	166	3.8	166	3.8	0.103	0.0	LOS A	0.2	1.1	0.09	0.10	0.09	47.3
3	R2	All MCs	19	16.7	19	16.7	0.103	6.8	LOS A	0.2	1.1	0.09	0.10	0.09	46.8
Approach			185	5.1	185	5.1	0.103	0.7	NA	0.2	1.1	0.09	0.10	0.09	47.2
East: Toggerai Street															
4	L2	All MCs	4	0.0	4	0.0	0.023	4.9	LOS A	0.1	0.5	0.31	0.56	0.31	43.3
6	R2	All MCs	19	0.0	19	0.0	0.023	5.9	LOS A	0.1	0.5	0.31	0.56	0.31	43.3
Approach			23	0.0	23	0.0	0.023	5.7	LOS A	0.1	0.5	0.31	0.56	0.31	43.3
North: Appin Road															
7	L2	All MCs	93	4.5	93	4.5	0.111	4.6	LOS A	0.0	0.0	0.00	0.24	0.00	46.4
8	T1	All MCs	115	1.8	115	1.8	0.111	0.0	LOS A	0.0	0.0	0.00	0.24	0.00	44.3
Approach			207	3.0	207	3.0	0.111	2.1	NA	0.0	0.0	0.00	0.24	0.00	45.8
All Vehicles			416	3.8	416	3.8	0.111	1.7	NA	0.2	1.1	0.06	0.20	0.06	46.0

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

Intersection: Appin Road and Brooks Point Road
Scenario: Existing + Development + Approved Development AM 7.15am-8.15am
Site Category: (None)
Give-Way (Two-Way)

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand	Flows	Arrival	Flows	Deg. Satn	Aver. Delay	Level of Service	95% Back Of	Queue	Prop. Que	Eff.	Aver. No. of Cycles	Aver. Speed
			[Total	HV]	[Total	HV]				[Veh.	Dist]		Stop Rate		
			veh/h	%	veh/h	%				veh	m				km/h
South: Appin Road															
1	L2	All MCs	7	0.0	7	0.0	0.079	4.8	LOS A	0.0	0.0	0.00	0.03	0.00	50.1
2	T1	All MCs	145	0.7	145	0.7	0.079	0.0	LOS A	0.0	0.0	0.00	0.03	0.00	51.3
Approach			153	0.7	153	0.7	0.079	0.3	NA	0.0	0.0	0.00	0.03	0.00	51.2
North: Appin Road															
8	T1	All MCs	143	1.5	143	1.5	0.080	0.0	LOS A	0.1	0.4	0.04	0.04	0.04	52.0
9	R2	All MCs	8	0.0	8	0.0	0.080	5.5	LOS A	0.1	0.4	0.04	0.04	0.04	48.1
Approach			152	1.4	152	1.4	0.080	0.3	NA	0.1	0.4	0.04	0.04	0.04	51.8
West: Brooks Point Road															
10	L2	All MCs	43	0.0	43	0.0	0.038	5.0	LOS A	0.1	1.0	0.25	0.52	0.25	43.5
12	R2	All MCs	8	0.0	8	0.0	0.038	5.7	LOS A	0.1	1.0	0.25	0.52	0.25	45.2
Approach			52	0.0	52	0.0	0.038	5.1	LOS A	0.1	1.0	0.25	0.52	0.25	43.9
All Vehicles			356	0.9	356	0.9	0.080	1.0	NA	0.1	1.0	0.05	0.11	0.05	50.3

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

USER REPORT FOR NETWORK SITE

Project: 23.241m01v01 Appin Road Model

Output produced by SIDRA INTERSECTION Version: 9.1.3.210

Template: Movement Summaries

Site: 106 [106 Appin Rd Church St EX+DEV+ADEV PM (Site Folder: Existing + Development + Approved Development)]

Network: 6 [N106 Appin Road Network EX+DEV+ADEV PM (Network Folder: Existing + Development + Approved Development)]

Intersection: Appin Road and Church Street
Scenario: Existing + Development + Approved Development PM
Site Category: (None)
Roundabout

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand	Flows	Arrival	Flows	Deg. Satn	Aver. Delay	Level of Service	95% Back Of Queue	Dist	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed
			[Total	HV]	[Total	HV]				[Veh.					
			veh/h	%	veh/h	%		sec		veh	m				km/h
South: Appin Road															
1	L2	All MCs	78	0.0	78	0.0	0.509	14.1	LOS A	4.3	33.0	0.85	0.79	0.97	43.5
2	T1	All MCs	192	0.5	192	0.5	0.509	10.2	LOS A	4.3	33.0	0.85	0.79	0.97	39.4
3	R2	All MCs	57	0.0	57	0.0	0.509	13.0	LOS A	4.3	33.0	0.85	0.79	0.97	39.8
3u	U	All MCs	1	0.0	1	0.0	0.509	15.5	LOS B	4.3	33.0	0.85	0.79	0.97	29.5
Approach			327	0.3	327	0.3	0.509	11.6	LOS A	4.3	33.0	0.85	0.79	0.97	40.4
East: Church Street															
4	L2	All MCs	62	0.0	62	0.0	0.520	7.0	LOS A	4.4	33.0	0.71	0.64	0.71	40.3
5	T1	All MCs	17	0.0	17	0.0	0.520	8.9	LOS A	4.4	33.0	0.71	0.64	0.71	46.7
6	R2	All MCs	394	8.6	394	8.6	0.520	9.8	LOS A	4.4	33.0	0.71	0.64	0.71	42.7
6u	U	All MCs	1	0.0	1	0.0	0.520	11.9	LOS A	4.4	33.0	0.71	0.64	0.71	46.1
Approach			474	7.1	474	7.1	0.520	9.4	LOS A	4.4	33.0	0.71	0.64	0.71	42.7
North: Appin Road															
7	L2	All MCs	502	1.3	502	1.3	0.346	4.3	LOS A	2.8	19.5	0.28	0.48	0.28	45.5
8	T1	All MCs	181	2.3	181	2.3	0.186	4.4	LOS A	1.2	9.0	0.28	0.51	0.28	44.8
9	R2	All MCs	54	0.0	54	0.0	0.186	8.3	LOS A	1.2	9.0	0.28	0.51	0.28	49.4
9u	U	All MCs	1	0.0	1	0.0	0.186	9.5	LOS A	1.2	9.0	0.28	0.51	0.28	48.7
Approach			738	1.4	738	1.4	0.346	4.6	LOS A	2.8	19.5	0.28	0.49	0.28	45.7
West: Church Street															
10	L2	All MCs	16	0.0	16	0.0	0.084	11.7	LOS A	0.4	4.2	0.70	0.78	0.70	47.0
11	T1	All MCs	4	0.0	4	0.0	0.084	11.2	LOS A	0.4	4.2	0.70	0.78	0.70	48.1
12	R2	All MCs	17	0.0	17	0.0	0.084	14.0	LOS A	0.4	4.2	0.70	0.78	0.70	42.4
12u	U	All MCs	1	0.0	1	0.0	0.084	17.6	LOS B	0.4	4.2	0.70	0.78	0.70	47.5
Approach			38	0.0	38	0.0	0.084	12.8	LOS A	0.4	4.2	0.70	0.78	0.70	45.7
All Vehicles			1577	2.9	1577	2.9	0.520	7.7	LOS A	4.4	33.0	0.54	0.61	0.56	43.7

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

Intersection: Appin Road and Toggerai Street
Scenario: Existing + Development + Approved Development PM 15.45pm-16.45pm
Site Category: (None)
Give-Way (Two-Way)

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand Flows [Total HV]		Arrival Flows [Total HV]		Deg. Satn	Aver. Delay	Level of Service	95% Back Of Queue [Veh. Dist]		Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed
			veh/h	%	veh/h	%	v/c	sec		veh	m				km/h
South: Appin Road															
2	T1	All MCs	317	0.3	317	0.3	0.191	0.0	LOS A	0.3	2.1	0.09	0.11	0.09	47.1
3	R2	All MCs	37	5.7	37	5.7	0.191	6.8	LOS A	0.3	2.1	0.09	0.11	0.09	47.0
Approach			354	0.9	354	0.9	0.191	0.7	NA	0.3	2.1	0.09	0.11	0.09	47.1
East: Toggerai Street															
4	L2	All MCs	7	0.0	7	0.0	0.025	5.1	LOS A	0.1	0.6	0.40	0.59	0.40	42.3
6	R2	All MCs	13	16.7	13	16.7	0.025	7.9	LOS A	0.1	0.6	0.40	0.59	0.40	42.3
Approach			20	10.5	20	10.5	0.025	6.9	LOS A	0.1	0.6	0.40	0.59	0.40	42.3
North: Appin Road															
7	L2	All MCs	36	8.8	36	8.8	0.119	4.6	LOS A	0.0	0.0	0.00	0.09	0.00	47.4
8	T1	All MCs	192	0.0	192	0.0	0.119	0.0	LOS A	0.0	0.0	0.00	0.09	0.00	47.9
Approach			227	1.4	227	1.4	0.119	0.7	NA	0.0	0.0	0.00	0.09	0.00	47.7
All Vehicles			601	1.4	601	1.4	0.191	0.9	NA	0.3	2.1	0.07	0.12	0.07	47.0

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

Intersection: Appin Road and Brooks Point Road
Scenario: Existing + Development + Approved Development PM 15.45pm-16.45pm
Site Category: (None)
Give-Way (Two-Way)

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand	Flows	Arrival	Flows	Deg. Satn	Aver. Delay	Level of Service	95% Back Of	Queue	Prop. Que	Eff.	Aver. No. of Cycles	Aver. Speed
			[Total	HV]	[Total	HV]				[Veh.	Dist]		Stop Rate		
			veh/h	%	veh/h	%				veh	m				km/h
South: Appin Road															
1	L2	All MCs	25	0.0	25	0.0	0.217	4.8	LOS A	0.0	0.0	0.00	0.03	0.00	50.3
2	T1	All MCs	396	0.3	396	0.3	0.217	0.1	LOS A	0.0	0.0	0.00	0.03	0.00	51.5
Approach			421	0.3	421	0.3	0.217	0.4	NA	0.0	0.0	0.00	0.03	0.00	51.4
North: Appin Road															
8	T1	All MCs	188	0.6	188	0.6	0.126	0.0	LOS A	0.3	2.1	0.18	0.20	0.18	49.6
9	R2	All MCs	33	3.2	33	3.2	0.126	8.9	LOS A	0.3	2.1	0.18	0.20	0.18	46.8
Approach			221	1.0	221	1.0	0.126	1.3	NA	0.3	2.1	0.18	0.20	0.18	49.2
West: Brooks Point Road															
10	L2	All MCs	13	0.0	13	0.0	0.020	5.9	LOS A	0.1	0.5	0.44	0.61	0.44	42.6
12	R2	All MCs	6	0.0	6	0.0	0.020	7.5	LOS A	0.1	0.5	0.44	0.61	0.44	44.7
Approach			19	0.0	19	0.0	0.020	6.4	LOS A	0.1	0.5	0.44	0.61	0.44	43.6
All Vehicles			661	0.5	661	0.5	0.217	0.8	NA	0.3	2.1	0.07	0.11	0.07	50.2

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

USER REPORT FOR NETWORK SITE

 Project: 23.241m01v01 Appin Road Model

Output produced by SIDRA INTERSECTION Version: 9.1.3.210

Template: Movement Summaries

 Site: 101 [101 Appin Rd Church St EX AM (Site Folder: Existing)]

 Network: 8 [N107 Appin Road Network 2033 AM (Network Folder: 2033)]

Intersection: Appin Road and Church Street
Scenario: Existing AM
Site Category: (None)
Stop (Two-Way)
Design Life Analysis (Final Year): Results for 10 years

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand [Total	Flows HV]	Arrival [Total	Flows HV]	Deg. Satn	Aver. Delay	Level of Service	95% Back Of Queue [Veh.	Dist]	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed
			veh/h	%	veh/h	%	v/c	sec		veh	m				km/h
South: Appin Road															
2	T1	All MCs	111	1.0	111	1.0	0.240	14.3	LOS A	0.9	6.1	0.71	1.05	0.78	38.0
3	R2	All MCs	23	0.0	23	0.0	0.195	36.9	LOS C	0.6	3.9	0.91	1.01	0.96	29.0
Approach			134	0.8	134	0.8	0.240	18.2	LOS B	0.9	6.1	0.74	1.05	0.81	35.9
East: Church Street															
4	L2	All MCs	40	0.0	40	0.0	0.461	4.8	LOS A	0.0	0.0	0.00	0.54	0.00	44.3
6	R2	All MCs	802	2.3	802	2.3	0.461	4.8	LOS A	0.0	0.0	0.00	0.54	0.00	45.3
Approach			842	2.2	842	2.2	0.461	4.8	NA	0.0	0.0	0.00	0.54	0.00	45.3
North: Appin Road															
7	L2	All MCs	635	4.0	635	4.0	0.352	4.5	LOS A	0.0	0.0	0.00	0.49	0.00	45.9
8	T1	All MCs	133	6.0	133	6.0	0.355	17.8	LOS B	1.2	9.1	0.78	1.09	0.97	33.3
Approach			768	4.3	768	4.3	0.355	6.8	LOS A	1.2	9.1	0.14	0.60	0.17	44.4
All Vehicles			1744	3.0	1744	3.0	0.461	6.7	NA	1.2	9.1	0.12	0.60	0.14	44.3

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

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

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

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

Two-Way Sign Control Capacity Model: SIDRA Standard.

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

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

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

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

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

Intersection: Appin Road and Toggerai Street
Scenario: Existing AM 7.15am-8.15am
Site Category: (None)
Give-Way (Two-Way)
Design Life Analysis (Final Year): Results for 10 years

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand	Flows	Arrival	Flows	Deg.	Aver.	Level of	95% Back Of	Queue	Prop.	Eff.	Aver.	Aver.
			[Total	HV]	[Total	HV]	Satn	Delay	Service	[Veh.	Dist]	Que	Stop Rate	No. of	Speed
			veh/h	%	veh/h	%	v/c	sec		veh	m			Cycles	km/h
South: Appin Road															
2	T1	All MCs	88	7.1	88	7.1	0.063	0.0	LOS A	0.1	1.1	0.14	0.16	0.14	45.7
3	R2	All MCs	19	16.7	19	16.7	0.063	6.5	LOS A	0.1	1.1	0.14	0.16	0.14	46.3
Approach			107	8.8	107	8.8	0.063	1.2	NA	0.1	1.1	0.14	0.16	0.14	46.0
East: Toggerai Street															
4	L2	All MCs	4	0.0	4	0.0	0.021	4.8	LOS A	0.1	0.5	0.26	0.54	0.26	43.5
6	R2	All MCs	19	0.0	19	0.0	0.021	5.5	LOS A	0.1	0.5	0.26	0.54	0.26	43.5
Approach			23	0.0	23	0.0	0.021	5.3	LOS A	0.1	0.5	0.26	0.54	0.26	43.5
North: Appin Road															
7	L2	All MCs	117	4.5	117	4.5	0.109	4.6	LOS A	0.0	0.0	0.00	0.31	0.00	45.9
8	T1	All MCs	84	3.2	84	3.2	0.109	0.0	LOS A	0.0	0.0	0.00	0.31	0.00	42.8
Approach			202	4.0	202	4.0	0.109	2.7	NA	0.0	0.0	0.00	0.31	0.00	45.3
All Vehicles			332	5.3	332	5.3	0.109	2.4	NA	0.1	1.1	0.06	0.28	0.06	45.3

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

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

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

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

Two-Way Sign Control Capacity Model: SIDRA Standard.

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

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

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

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

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

Intersection: Appin Road and Brooks Point Road
Scenario: Existing AM 7.15am-8.15am
Site Category: (None)
Give-Way (Two-Way)
Design Life Analysis (Final Year): Results for 10 years

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand [Total	Flows HV]	Arrival [Total	Flows HV]	Deg. Satn	Aver. Delay	Level of Service	95% Back [Veh.	Of Queue Dist]	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed
			veh/h	%	veh/h	%	v/c	sec		veh	m				km/h
South: Appin Road															
1	L2	All MCs	1	0.0	1	0.0	0.051	4.6	LOS A	0.0	0.0	0.00	0.01	0.00	48.7
2	T1	All MCs	98	1.1	98	1.1	0.051	0.0	LOS A	0.0	0.0	0.00	0.01	0.00	49.9
Approach			99	1.1	99	1.1	0.051	0.1	NA	0.0	0.0	0.00	0.01	0.00	49.9
North: Appin Road															
8	T1	All MCs	132	2.2	132	2.2	0.073	0.0	LOS A	0.0	0.3	0.03	0.03	0.03	49.7
9	R2	All MCs	7	0.0	7	0.0	0.073	4.9	LOS A	0.0	0.3	0.03	0.03	0.03	47.6
Approach			139	2.1	139	2.1	0.073	0.3	NA	0.0	0.3	0.03	0.03	0.03	49.5
West: Brooks Point Road															
10	L2	All MCs	13	0.0	13	0.0	0.009	4.8	LOS A	0.0	0.3	0.19	0.50	0.19	43.7
12	R2	All MCs	1	0.0	1	0.0	0.009	5.4	LOS A	0.0	0.3	0.19	0.50	0.19	45.3
Approach			14	0.0	14	0.0	0.009	4.9	LOS A	0.0	0.3	0.19	0.50	0.19	43.9
All Vehicles			252	1.6	252	1.6	0.073	0.4	NA	0.0	0.3	0.02	0.05	0.02	49.3

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

USER REPORT FOR NETWORK SITE

 Project: 23.241m01v01 Appin Road Model

Output produced by SIDRA INTERSECTION Version: 9.1.3.210

Template: Movement Summaries

 Site: 102 [102 Appin Rd Church St EX PM (Site Folder: Existing)]

 Network: 11 [N108 Appin Road Network 2033 PM (Network Folder: 2033)]

Intersection: Appin Road and Church Street
Scenario: Existing PM 15:45pm-16:45pm
Site Category: (None)
Stop (Two-Way)
Design Life Analysis (Final Year): Results for 10 years

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand [Total	Flows HV]	Arrival [Total	Flows HV]	Deg. Satn	Aver. Delay	Level of Service	95% Back Of Queue [Veh.	Dist]	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed
			veh/h	%	veh/h	%	v/c	sec		veh	m				km/h
South: Appin Road															
2	T1	All MCs	173	0.6	173	0.6	0.252	11.1	LOS A	1.0	6.9	0.57	1.04	0.61	39.9
3	R2	All MCs	54	0.0	54	0.0	0.360	34.9	LOS C	1.2	8.2	0.91	1.05	1.09	29.6
Approach			226	0.5	226	0.5	0.360	16.8	LOS B	1.2	8.2	0.65	1.04	0.72	36.6
East: Church Street															
4	L2	All MCs	72	0.0	72	0.0	0.345	4.7	LOS A	0.0	0.0	0.00	0.54	0.00	44.4
6	R2	All MCs	535	8.8	535	8.8	0.345	4.8	LOS A	0.0	0.0	0.00	0.54	0.00	45.3
Approach			608	7.8	608	7.8	0.345	4.8	NA	0.0	0.0	0.00	0.54	0.00	45.2
North: Appin Road															
7	L2	All MCs	727	1.3	727	1.3	0.395	4.5	LOS A	0.0	0.0	0.00	0.49	0.00	46.0
8	T1	All MCs	212	2.9	212	2.9	0.377	13.7	LOS A	1.5	11.1	0.68	1.10	0.87	36.2
Approach			939	1.6	939	1.6	0.395	6.6	LOS A	1.5	11.1	0.15	0.63	0.20	44.5
All Vehicles			1773	3.6	1773	3.6	0.395	7.3	NA	1.5	11.1	0.16	0.65	0.20	43.8

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

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

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

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

Two-Way Sign Control Capacity Model: SIDRA Standard.

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

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

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

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

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

Intersection: Appin Road and Toggerai Street
Scenario: Existing PM 15.45pm-16.45pm
Site Category: (None)
Give-Way (Two-Way)
Design Life Analysis (Final Year): Results for 10 years

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand	Flows	Arrival	Flows	Deg. Satn	Aver. Delay	Level of Service	95% Back Of	Queue	Prop. Que	Eff.	Aver. No. of Cycles	Aver. Speed
			[Total	HV]	[Total	HV]				[Veh.	Dist]		Stop Rate		
			veh/h	%	veh/h	%				veh	m				km/h
South: Appin Road															
2	T1	All MCs	149	0.7	149	0.7	0.104	0.0	LOS A	0.3	1.9	0.14	0.17	0.14	45.2
3	R2	All MCs	37	5.7	37	5.7	0.104	6.2	LOS A	0.3	1.9	0.14	0.17	0.14	46.4
Approach			186	1.7	186	1.7	0.104	1.2	NA	0.3	1.9	0.14	0.17	0.14	45.8
East: Toggerai Street															
4	L2	All MCs	7	0.0	7	0.0	0.021	5.0	LOS A	0.1	0.5	0.32	0.55	0.32	43.2
6	R2	All MCs	13	16.7	13	16.7	0.021	6.4	LOS A	0.1	0.5	0.32	0.55	0.32	43.2
Approach			20	10.5	20	10.5	0.021	5.9	LOS A	0.1	0.5	0.32	0.55	0.32	43.2
North: Appin Road															
7	L2	All MCs	39	8.8	39	8.8	0.102	4.6	LOS A	0.0	0.0	0.00	0.11	0.00	47.3
8	T1	All MCs	157	0.0	157	0.0	0.102	0.0	LOS A	0.0	0.0	0.00	0.11	0.00	47.4
Approach			195	1.7	195	1.7	0.102	0.9	NA	0.0	0.0	0.00	0.11	0.00	47.4
All Vehicles			402	2.2	402	2.2	0.104	1.3	NA	0.3	1.9	0.08	0.16	0.08	46.3

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

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

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

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

Two-Way Sign Control Capacity Model: SIDRA Standard.

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

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

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

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

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

Intersection: Appin Road and Brooks Point Road
Scenario: Existing PM 15.45pm-16.45pm
Site Category: (None)
Give-Way (Two-Way)
Design Life Analysis (Final Year): Results for 10 years

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand [Total	Flows HV]	Arrival [Total	Flows HV]	Deg. Satn	Aver. Delay	Level of Service	95% Back [Veh.	Of Queue Dist]	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed
			veh/h	%	veh/h	%	v/c	sec		veh	m				km/h
South: Appin Road															
1	L2	All MCs	2	0.0	2	0.0	0.121	4.6	LOS A	0.0	0.0	0.00	0.00	0.00	48.7
2	T1	All MCs	234	0.5	234	0.5	0.121	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	49.9
Approach			236	0.4	236	0.4	0.121	0.1	NA	0.0	0.0	0.00	0.00	0.00	49.9
North: Appin Road															
8	T1	All MCs	184	0.7	184	0.7	0.107	0.0	LOS A	0.1	0.9	0.07	0.08	0.07	49.4
9	R2	All MCs	16	7.7	16	7.7	0.107	6.8	LOS A	0.1	0.9	0.07	0.08	0.07	47.1
Approach			200	1.2	200	1.2	0.107	0.5	NA	0.1	0.9	0.07	0.08	0.07	49.2
West: Brooks Point Road															
10	L2	All MCs	7	0.0	7	0.0	0.008	5.2	LOS A	0.0	0.2	0.32	0.52	0.32	43.2
12	R2	All MCs	2	0.0	2	0.0	0.008	6.2	LOS A	0.0	0.2	0.32	0.52	0.32	45.0
Approach			9	0.0	9	0.0	0.008	5.5	LOS A	0.0	0.2	0.32	0.52	0.32	43.8
All Vehicles			445	0.8	445	0.8	0.121	0.4	NA	0.1	0.9	0.04	0.05	0.04	49.4

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

USER REPORT FOR NETWORK SITE

 Project: 23.241m01v01 Appin Road Model

Output produced by SIDRA INTERSECTION Version: 9.1.3.210

Template: Movement Summaries

 Site: 103 [103 Appin Rd Church St EX+DEV AM (Site Folder: Existing + Development)]

 Network: 7 [N109 Appin Road Network 2033+DEV AM (Network Folder: 2033 + Development)]

Intersection: Appin Road and Church Street
Scenario: Existing + Development AM
Site Category: (None)
Stop (Two-Way)
Design Life Analysis (Final Year): Results for 10 years

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand [Total	Flows HV]	Arrival [Total	Flows HV]	Deg. Satn	Aver. Delay	Level of Service	95% Back Of Queue [Veh.	Dist]	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed
			veh/h	%	veh/h	%	v/c	sec		veh	m				km/h
South: Appin Road															
2	T1	All MCs	206	0.5	206	0.5	0.445	16.3	LOS B	2.0	14.0	0.77	1.13	1.08	36.9
3	R2	All MCs	43	0.0	43	0.0	0.375	43.6	LOS D ¹¹	1.2	8.2	0.93	1.05	1.11	26.9
Approach			249	0.4	249	0.4	0.445	21.0	LOS B	2.0	14.0	0.80	1.11	1.09	34.5
East: Church Street															
4	L2	All MCs	43	0.0	43	0.0	0.462	4.8	LOS A	0.0	0.0	0.00	0.54	0.00	44.3
6	R2	All MCs	802	2.3	802	2.3	0.462	4.8	LOS A	0.0	0.0	0.00	0.54	0.00	45.3
Approach			845	2.2	845	2.2	0.462	4.8	NA	0.0	0.0	0.00	0.54	0.00	45.3
North: Appin Road															
7	L2	All MCs	641	4.9	641	4.9	0.357	4.5	LOS A	0.0	0.0	0.00	0.49	0.00	45.9
8	T1	All MCs	143	6.8	143	6.8	0.419	19.8	LOS B	1.5	11.1	0.82	1.10	1.08	32.3
Approach			784	5.2	784	5.2	0.419	7.3	LOS A	1.5	11.1	0.15	0.60	0.20	44.2
All Vehicles			1879	3.2	1879	3.2	0.462	8.0	NA	2.0	14.0	0.17	0.64	0.23	43.5

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

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

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

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

Two-Way Sign Control Capacity Model: SIDRA Standard.

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

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

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

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

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

¹¹ Level of Service is worse than the Level of Service Target specified in the Parameter Settings dialog.

Intersection: Appin Road and Toggerai Street
Scenario: Existing + Development AM 7.15am-8.15am
Site Category: (None)
Give-Way (Two-Way)
Design Life Analysis (Final Year): Results for 10 years

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand [Total	Flows HV]	Arrival [Total	Flows HV]	Deg. Satn	Aver. Delay	Level of Service	95% Back [Veh.	Of Queue Dist]	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed
			veh/h	%	veh/h	%	v/c	sec		veh	m				km/h
South: Appin Road															
2	T1	All MCs	137	4.6	137	4.6	0.088	0.0	LOS A	0.2	1.1	0.11	0.12	0.11	46.8
3	R2	All MCs	19	16.7	19	16.7	0.088	7.0	LOS A	0.2	1.1	0.11	0.12	0.11	46.6
Approach			156	6.1	156	6.1	0.088	0.8	NA	0.2	1.1	0.11	0.12	0.11	46.7
East: Toggerai Street															
4	L2	All MCs	4	0.0	4	0.0	0.023	4.9	LOS A	0.1	0.5	0.30	0.56	0.30	43.3
6	R2	All MCs	19	0.0	19	0.0	0.023	5.8	LOS A	0.1	0.5	0.30	0.56	0.30	43.3
Approach			23	0.0	23	0.0	0.023	5.6	LOS A	0.1	0.5	0.30	0.56	0.30	43.3
North: Appin Road															
7	L2	All MCs	117	4.5	117	4.5	0.122	4.6	LOS A	0.0	0.0	0.00	0.28	0.00	46.1
8	T1	All MCs	108	2.5	108	2.5	0.122	0.0	LOS A	0.0	0.0	0.00	0.28	0.00	43.5
Approach			226	3.5	226	3.5	0.122	2.4	NA	0.0	0.0	0.00	0.28	0.00	45.5
All Vehicles			405	4.3	405	4.3	0.122	2.0	NA	0.2	1.1	0.06	0.23	0.06	45.6

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

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

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

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

Two-Way Sign Control Capacity Model: SIDRA Standard.

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

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

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

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

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

Intersection: Appin Road and Brooks Point Road
Scenario: Existing + Development AM 7.15am-8.15am
Site Category: (None)
Give-Way (Two-Way)
Design Life Analysis (Final Year): Results for 10 years

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand [Total	Flows HV]	Arrival [Total	Flows HV]	Deg. Satn	Aver. Delay	Level of Service	95% Back Of Queue [Veh.	Dist]	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed
			veh/h	%	veh/h	%	v/c	sec		veh	m				km/h
South: Appin Road															
1	L2	All MCs	7	0.0	7	0.0	0.064	4.6	LOS A	0.0	0.0	0.00	0.03	0.00	48.6
2	T1	All MCs	116	0.9	116	0.9	0.064	0.0	LOS A	0.0	0.0	0.00	0.03	0.00	49.6
Approach			123	0.9	123	0.9	0.064	0.3	NA	0.0	0.0	0.00	0.03	0.00	49.5
North: Appin Road															
8	T1	All MCs	153	1.9	153	1.9	0.086	0.0	LOS A	0.1	0.5	0.04	0.05	0.04	49.6
9	R2	All MCs	10	0.0	10	0.0	0.086	5.2	LOS A	0.1	0.5	0.04	0.05	0.04	47.5
Approach			163	1.8	163	1.8	0.086	0.3	NA	0.1	0.5	0.04	0.05	0.04	49.4
West: Brooks Point Road															
10	L2	All MCs	43	0.0	43	0.0	0.037	4.9	LOS A	0.1	1.0	0.22	0.51	0.22	43.6
12	R2	All MCs	8	0.0	8	0.0	0.037	5.6	LOS A	0.1	1.0	0.22	0.51	0.22	45.3
Approach			52	0.0	52	0.0	0.037	5.0	LOS A	0.1	1.0	0.22	0.51	0.22	44.1
All Vehicles			338	1.2	338	1.2	0.086	1.0	NA	0.1	1.0	0.05	0.11	0.05	48.6

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

USER REPORT FOR NETWORK SITE

 Project: 23.241m01v01 Appin Road Model

Output produced by SIDRA INTERSECTION Version: 9.1.3.210

Template: Movement Summaries

 Site: 104 [104 Appin Rd Church St EX+DEV PM (Site Folder: Existing + Development)]

 Network: 10 [N110 Appin Road Network 2033+DEV PM (Network Folder: 2033 + Development)]

Intersection: Appin Road and Church Street
Scenario: Existing + Development PM 15:45pm-16:45pm
Site Category: (None)
Stop (Two-Way)
Design Life Analysis (Final Year): Results for 10 years

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand [Total	Flows HV]	Arrival [Total	Flows HV]	Deg. Satn	Aver. Delay	Level of Service	95% Back Of Queue [Veh.	Dist]	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed
			veh/h	%	veh/h	%	v/c	sec		veh	m				km/h
South: Appin Road															
2	T1	All MCs	189	0.6	189	0.6	0.279	11.4	LOS A	1.1	8.0	0.58	1.06	0.65	39.8
3	R2	All MCs	59	0.0	59	0.0	0.432	39.6	LOS C	1.4	10.0	0.93	1.06	1.16	28.1
Approach			248	0.4	248	0.4	0.432	18.1	LOS B	1.4	10.0	0.66	1.06	0.77	35.9
East: Church Street															
4	L2	All MCs	91	0.0	91	0.0	0.355	4.7	LOS A	0.0	0.0	0.00	0.54	0.00	44.4
6	R2	All MCs	535	8.8	535	8.8	0.355	4.8	LOS A	0.0	0.0	0.00	0.54	0.00	45.3
Approach			627	7.5	627	7.5	0.355	4.8	NA	0.0	0.0	0.00	0.54	0.00	45.2
North: Appin Road															
7	L2	All MCs	727	1.3	727	1.3	0.395	4.5	LOS A	0.0	0.0	0.00	0.49	0.00	46.0
8	T1	All MCs	264	2.3	264	2.3	0.486	15.2	LOS B	2.3	16.1	0.73	1.14	1.06	36.0
Approach			992	1.5	992	1.5	0.486	7.4	LOS A	2.3	16.1	0.20	0.67	0.28	44.2
All Vehicles			1867	3.4	1867	3.4	0.486	7.9	NA	2.3	16.1	0.19	0.68	0.25	43.5

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

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

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

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

Two-Way Sign Control Capacity Model: SIDRA Standard.

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

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

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

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

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

Intersection: Appin Road and Toggerai Street
Scenario: Existing + Development PM 15.45pm-16.45pm
Site Category: (None)
Give-Way (Two-Way)
Design Life Analysis (Final Year): Results for 10 years

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand [Total	Flows HV]	Arrival [Total	Flows HV]	Deg. Satn	Aver. Delay	Level of Service	95% Back [Veh.	Of Queue Dist]	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed
			veh/h	%	veh/h	%	v/c	sec		veh	m				km/h
South: Appin Road															
2	T1	All MCs	219	0.5	219	0.5	0.140	0.0	LOS A	0.3	2.0	0.12	0.14	0.12	46.2
3	R2	All MCs	37	5.7	37	5.7	0.140	6.6	LOS A	0.3	2.0	0.12	0.14	0.12	46.7
Approach			256	1.2	256	1.2	0.140	1.0	NA	0.3	2.0	0.12	0.14	0.12	46.4
East: Toggerai Street															
4	L2	All MCs	7	0.0	7	0.0	0.023	5.1	LOS A	0.1	0.6	0.37	0.57	0.37	42.8
6	R2	All MCs	13	16.7	13	16.7	0.023	7.1	LOS A	0.1	0.6	0.37	0.57	0.37	42.8
Approach			20	10.5	20	10.5	0.023	6.3	LOS A	0.1	0.6	0.37	0.57	0.37	42.8
North: Appin Road															
7	L2	All MCs	39	8.8	39	8.8	0.119	4.6	LOS A	0.0	0.0	0.00	0.09	0.00	47.4
8	T1	All MCs	188	0.0	188	0.0	0.119	0.0	LOS A	0.0	0.0	0.00	0.09	0.00	47.8
Approach			227	1.5	227	1.5	0.119	0.8	NA	0.0	0.0	0.00	0.09	0.00	47.6
All Vehicles			503	1.7	503	1.7	0.140	1.1	NA	0.3	2.0	0.08	0.14	0.08	46.7

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

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

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

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

Two-Way Sign Control Capacity Model: SIDRA Standard.

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

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

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

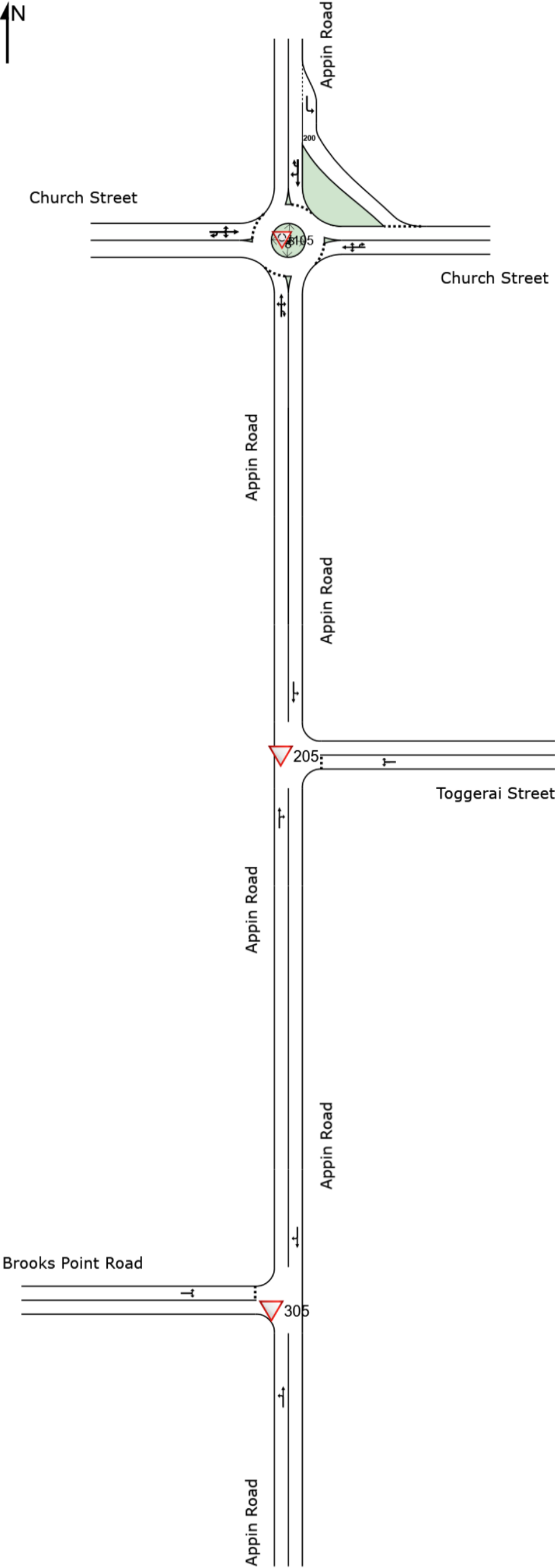
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

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

Intersection: Appin Road and Brooks Point Road
Scenario: Existing + Development PM 15.45pm-16.45pm
Site Category: (None)
Give-Way (Two-Way)
Design Life Analysis (Final Year): Results for 10 years

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand [Total	Flows HV]	Arrival [Total	Flows HV]	Deg. Satn	Aver. Delay	Level of Service	95% Back [Veh.	Of Queue Dist]	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed
			veh/h	%	veh/h	%	v/c	sec		veh	m				km/h
South: Appin Road															
1	L2	All MCs	25	0.0	25	0.0	0.167	4.6	LOS A	0.0	0.0	0.00	0.04	0.00	48.5
2	T1	All MCs	298	0.4	298	0.4	0.167	0.0	LOS A	0.0	0.0	0.00	0.04	0.00	49.5
Approach			323	0.3	323	0.3	0.167	0.4	NA	0.0	0.0	0.00	0.04	0.00	49.3
North: Appin Road															
8	T1	All MCs	199	0.6	199	0.6	0.133	0.0	LOS A	0.3	2.2	0.16	0.19	0.16	48.6
9	R2	All MCs	39	3.2	39	3.2	0.133	7.5	LOS A	0.3	2.2	0.16	0.19	0.16	46.5
Approach			237	1.0	237	1.0	0.133	1.2	NA	0.3	2.2	0.16	0.19	0.16	48.3
West: Brooks Point Road															
10	L2	All MCs	13	0.0	13	0.0	0.018	5.5	LOS A	0.1	0.5	0.38	0.57	0.38	42.9
12	R2	All MCs	6	0.0	6	0.0	0.018	6.9	LOS A	0.1	0.5	0.38	0.57	0.38	44.9
Approach			19	0.0	19	0.0	0.018	6.0	LOS A	0.1	0.5	0.38	0.57	0.38	43.9
All Vehicles			580	0.6	580	0.6	0.167	0.9	NA	0.3	2.2	0.08	0.12	0.08	48.6

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



USER REPORT FOR NETWORK SITE

Project: 23.241m01v01 Appin Road Model

Output produced by SIDRA INTERSECTION Version: 9.1.3.210

Template: Movement Summaries

Site: 105 [105 Appin Rd Church St EX+DEV+ADEV AM (Site Folder: Existing + Development + Approved Development)]

Network: 9 [N111 Appin Road Network 2033+DEV+APDEV AM (Network Folder: 2033 + Development + Approved Development)]

Intersection: Appin Road and Church Street
Scenario: Existing + Development + Approved Development AM
Site Category: (None)
Roundabout
Design Life Analysis (Final Year): Results for 10 years

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand [Total	Flows HV]	Arrival [Total	Flows HV]	Deg. Satn	Aver. Delay	Level of Service	95% Back Of [Veh.	Queue Dist]	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed
			veh/h	%	veh/h	%	v/c	sec		veh	m				km/h
South: Appin Road															
1	L2	All MCs	23	0.0	23	0.0	0.618	27.4	LOS B	5.9	43.1	1.00	1.03	1.37	36.9
2	T1	All MCs	180	0.6	180	0.6	0.618	20.9	LOS B	5.9	43.1	1.00	1.03	1.37	33.4
3	R2	All MCs	34	0.0	34	0.0	0.618	23.7	LOS B	5.9	43.1	1.00	1.03	1.37	34.2
3u	U	All MCs	1	0.0	1	0.0	0.618	26.1	LOS B	5.9	43.1	1.00	1.03	1.37	21.1
Approach			238	0.4	238	0.4	0.618	22.0	LOS B	5.9	43.1	1.00	1.03	1.37	33.8
East: Church Street															
4	L2	All MCs	42	0.0	42	0.0	0.809	11.0	LOS A	14.5	103.7	0.96	0.70	1.13	36.9
5	T1	All MCs	4	0.0	4	0.0	0.809	13.5	LOS A	14.5	103.7	0.96	0.70	1.13	44.3
6	R2	All MCs	804	2.3	804	2.3	0.809	13.5	LOS A	14.5	103.7	0.96	0.70	1.13	40.6
6u	U	All MCs	1	0.0	1	0.0	0.809	15.9	LOS B	14.5	103.7	0.96	0.70	1.13	43.8
Approach			852	2.2	852	2.2	0.809	13.4	LOS A	14.5	103.7	0.96	0.70	1.13	40.5
North: Appin Road															
7	L2	All MCs	654	4.8	654	4.8	0.443	4.3	LOS A	3.9	28.3	0.28	0.48	0.28	45.4
8	T1	All MCs	160	6.1	160	6.1	0.136	4.5	LOS A	0.8	6.1	0.29	0.48	0.29	44.3
9	R2	All MCs	8	0.0	8	0.0	0.136	8.4	LOS A	0.8	6.1	0.29	0.48	0.29	49.1
9u	U	All MCs	2	0.0	2	0.0	0.136	9.5	LOS A	0.8	6.1	0.29	0.48	0.29	48.4
Approach			825	5.0	825	5.0	0.443	4.4	LOS A	3.9	28.3	0.28	0.48	0.28	45.4
West: Church Street															
10	L2	All MCs	59	0.0	59	0.0	0.512	30.9	LOS C	3.3	40.0	0.93	1.04	1.22	37.2
11	T1	All MCs	13	0.0	13	0.0	0.512	30.3	LOS C	3.3	40.0	0.93	1.04	1.22	38.5
12	R2	All MCs	17	0.0	17	0.0	0.512	33.5	LOS C	3.3	40.0	0.93	1.04	1.22	29.6
12u	U	All MCs	13	0.0	13	0.0	0.512	36.0	LOS C	3.3	40.0	0.93	1.04	1.22	38.1
Approach			101	0.0	101	0.0	0.512	31.8	LOS C	3.3	40.0	0.93	1.04	1.22	36.6
All Vehicles			2016	3.0	2016	3.0	0.809	11.7	LOS A	14.5	103.7	0.68	0.67	0.81	41.3

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

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

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

Roundabout Capacity Model: SIDRA Standard.

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

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

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

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

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

Intersection: Appin Road and Toggerai Street
Scenario: Existing + Development + Approved Development AM 7.15am-8.15am
Site Category: (None)
Give-Way (Two-Way)
Design Life Analysis (Final Year): Results for 10 years

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand	Flows	Arrival	Flows	Deg. Satn	Aver. Delay	Level of Service	95% Back Of	Queue	Prop. Que	Eff.	Aver. No. of Cycles	Aver. Speed
			[Total	HV]	[Total	HV]				[Veh.	Dist]		Stop Rate		
			veh/h	%	veh/h	%				veh	m				km/h
South: Appin Road															
2	T1	All MCs	166	3.8	166	3.8	0.104	0.0	LOS A	0.2	1.2	0.10	0.11	0.10	47.2
3	R2	All MCs	19	16.7	19	16.7	0.104	7.3	LOS A	0.2	1.2	0.10	0.11	0.10	46.7
Approach			185	5.1	185	5.1	0.104	0.7	NA	0.2	1.2	0.10	0.11	0.10	47.1
East: Toggerai Street															
4	L2	All MCs	4	0.0	4	0.0	0.024	4.9	LOS A	0.1	0.5	0.33	0.57	0.33	43.2
6	R2	All MCs	19	0.0	19	0.0	0.024	6.0	LOS A	0.1	0.5	0.33	0.57	0.33	43.2
Approach			23	0.0	23	0.0	0.024	5.8	LOS A	0.1	0.5	0.33	0.57	0.33	43.2
North: Appin Road															
7	L2	All MCs	117	4.5	117	4.5	0.134	4.6	LOS A	0.0	0.0	0.00	0.25	0.00	46.3
8	T1	All MCs	133	2.0	133	2.0	0.134	0.0	LOS A	0.0	0.0	0.00	0.25	0.00	44.0
Approach			250	3.2	250	3.2	0.134	2.2	NA	0.0	0.0	0.00	0.25	0.00	45.7
All Vehicles			458	3.8	458	3.8	0.134	1.8	NA	0.2	1.2	0.06	0.21	0.06	45.9

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

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

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

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

Two-Way Sign Control Capacity Model: SIDRA Standard.

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

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

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

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

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

Intersection: Appin Road and Brooks Point Road
Scenario: Existing + Development + Approved Development AM 7.15am-8.15am
Site Category: (None)
Give-Way (Two-Way)
Design Life Analysis (Final Year): Results for 10 years

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand [Total	Flows HV]	Arrival [Total	Flows HV]	Deg. Satn	Aver. Delay	Level of Service	95% Back Of Queue [Veh.	Dist]	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed
			veh/h	%	veh/h	%	v/c	sec		veh	m				km/h
South: Appin Road															
1	L2	All MCs	7	0.0	7	0.0	0.079	4.8	LOS A	0.0	0.0	0.00	0.03	0.00	50.1
2	T1	All MCs	145	0.7	145	0.7	0.079	0.0	LOS A	0.0	0.0	0.00	0.03	0.00	51.3
Approach			153	0.7	153	0.7	0.079	0.3	NA	0.0	0.0	0.00	0.03	0.00	51.2
North: Appin Road															
8	T1	All MCs	178	1.6	178	1.6	0.099	0.0	LOS A	0.1	0.5	0.04	0.04	0.04	51.5
9	R2	All MCs	10	0.0	10	0.0	0.099	5.5	LOS A	0.1	0.5	0.04	0.04	0.04	48.0
Approach			188	1.5	188	1.5	0.099	0.3	NA	0.1	0.5	0.04	0.04	0.04	51.3
West: Brooks Point Road															
10	L2	All MCs	43	0.0	43	0.0	0.039	5.0	LOS A	0.1	1.0	0.25	0.52	0.25	43.5
12	R2	All MCs	8	0.0	8	0.0	0.039	5.8	LOS A	0.1	1.0	0.25	0.52	0.25	45.2
Approach			52	0.0	52	0.0	0.039	5.1	LOS A	0.1	1.0	0.25	0.52	0.25	43.9
All Vehicles			393	1.0	393	1.0	0.099	0.9	NA	0.1	1.0	0.05	0.10	0.05	50.2

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

USER REPORT FOR NETWORK SITE

 Project: 23.241m01v01 Appin Road Model

Output produced by SIDRA INTERSECTION Version: 9.1.3.210

Template: Movement Summaries

 Site: 106 [106 Appin Rd Church St EX+DEV+ADEV PM (Site Folder: Existing + Development + Approved Development)]

 Network: 12 [N112 Appin Road Network 2033+DEV+ADEV PM (Network Folder: 2033 + Development + Approved Development)]

Intersection: Appin Road and Church Street
Scenario: Existing + Development + Approved Development PM
Site Category: (None)
Roundabout
Design Life Analysis (Final Year): Results for 10 years

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand	Flows	Arrival	Flows	Deg. Satn	Aver. Delay	Level of Service	95% Back Of	Queue	Prop. Que	Eff.	Aver. No. of Cycles	Aver. Speed
			[Total	HV]	[Total	HV]				[Veh.	Dist]		Stop Rate		
			veh/h	%	veh/h	%		sec		veh	m				km/h
South: Appin Road															
1	L2	All MCs	78	0.0	78	0.0	0.657	22.6	LOS B	6.9	53.0	1.00	1.00	1.39	38.6
2	T1	All MCs	192	0.5	192	0.5	0.657	17.4	LOS B	6.9	53.0	1.00	1.00	1.39	35.0
3	R2	All MCs	57	0.0	57	0.0	0.657	20.2	LOS B	6.9	53.0	1.00	1.00	1.39	35.7
3u	U	All MCs	1	0.0	1	0.0	0.657	22.6	LOS B	6.9	53.0	1.00	1.00	1.39	23.1
Approach			327	0.3	327	0.3	0.657	19.1	LOS B	6.9	53.0	1.00	1.00	1.39	36.0
East: Church Street															
4	L2	All MCs	83	0.0	83	0.0	0.756	13.4	LOS A	11.5	86.8	0.96	0.82	1.25	35.3
5	T1	All MCs	17	0.0	17	0.0	0.756	16.2	LOS B	11.5	86.8	0.96	0.82	1.25	43.1
6	R2	All MCs	547	8.6	547	8.6	0.756	16.3	LOS B	11.5	86.8	0.96	0.82	1.25	39.4
6u	U	All MCs	1	0.0	1	0.0	0.756	18.3	LOS B	11.5	86.8	0.96	0.82	1.25	42.6
Approach			648	7.3	648	7.3	0.756	15.9	LOS B	11.5	86.8	0.96	0.82	1.25	39.2
North: Appin Road															
7	L2	All MCs	731	1.3	731	1.3	0.496	4.4	LOS A	4.9	34.8	0.34	0.48	0.34	45.3
8	T1	All MCs	248	2.5	248	2.5	0.234	4.4	LOS A	1.6	11.9	0.30	0.50	0.30	44.4
9	R2	All MCs	54	0.0	54	0.0	0.234	8.4	LOS A	1.6	11.9	0.30	0.50	0.30	49.2
9u	U	All MCs	2	0.0	2	0.0	0.234	9.5	LOS A	1.6	11.9	0.30	0.50	0.30	48.4
Approach			1033	1.5	1033	1.5	0.496	4.6	LOS A	4.9	34.8	0.33	0.49	0.33	45.4
West: Church Street															
10	L2	All MCs	16	0.0	16	0.0	0.110	14.1	LOS A	0.6	5.9	0.80	0.83	0.80	45.5
11	T1	All MCs	4	0.0	4	0.0	0.110	13.6	LOS A	0.6	5.9	0.80	0.83	0.80	46.7
12	R2	All MCs	17	0.0	17	0.0	0.110	16.4	LOS B	0.6	5.9	0.80	0.83	0.80	40.2
12u	U	All MCs	1	0.0	1	0.0	0.110	20.6	LOS B	0.6	5.9	0.80	0.83	0.80	46.1
Approach			38	0.0	38	0.0	0.110	15.3	LOS B	0.6	5.9	0.80	0.83	0.80	43.9
All Vehicles			2047	3.1	2047	3.1	0.756	10.7	LOS A	11.5	86.8	0.64	0.68	0.80	41.7

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

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

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

Roundabout Capacity Model: SIDRA Standard.

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

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

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

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

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

Intersection: Appin Road and Toggerai Street
Scenario: Existing + Development + Approved Development PM 15.45pm-16.45pm
Site Category: (None)
Give-Way (Two-Way)
Design Life Analysis (Final Year): Results for 10 years

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand	Flows	Arrival	Flows	Deg. Satn	Aver. Delay	Level of Service	95% Back Of	Queue	Prop. Que	Eff. Stop	Aver. No. of Cycles	Aver. Speed
			[Total	HV]	[Total	HV]				[Veh.	Dist]		Rate		
			veh/h	%	veh/h	%				veh	m				
South: Appin Road															
2	T1	All MCs	317	0.3	317	0.3	0.191	0.0	LOS A	0.3	2.2	0.10	0.11	0.10	47.1
3	R2	All MCs	37	5.7	37	5.7	0.191	7.0	LOS A	0.3	2.2	0.10	0.11	0.10	47.0
Approach			354	0.9	354	0.9	0.191	0.7	NA	0.3	2.2	0.10	0.11	0.10	47.0
East: Toggerai Street															
4	L2	All MCs	7	0.0	7	0.0	0.025	5.2	LOS A	0.1	0.6	0.41	0.59	0.41	42.2
6	R2	All MCs	13	16.7	13	16.7	0.025	8.0	LOS A	0.1	0.6	0.41	0.59	0.41	42.2
Approach			20	10.5	20	10.5	0.025	6.9	LOS A	0.1	0.6	0.41	0.59	0.41	42.2
North: Appin Road															
7	L2	All MCs	39	8.8	39	8.8	0.126	4.7	LOS A	0.0	0.0	0.00	0.09	0.00	47.4
8	T1	All MCs	203	0.0	203	0.0	0.126	0.0	LOS A	0.0	0.0	0.00	0.09	0.00	47.9
Approach			242	1.4	242	1.4	0.126	0.8	NA	0.0	0.0	0.00	0.09	0.00	47.7
All Vehicles			615	1.4	615	1.4	0.191	0.9	NA	0.3	2.2	0.07	0.12	0.07	47.0

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

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

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

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

Two-Way Sign Control Capacity Model: SIDRA Standard.

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

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

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

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

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

Intersection: Appin Road and Brooks Point Road
Scenario: Existing + Development + Approved Development PM 15.45pm-16.45pm
Site Category: (None)
Give-Way (Two-Way)
Design Life Analysis (Final Year): Results for 10 years

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand [Total	Flows HV]	Arrival [Total	Flows HV]	Deg. Satn	Aver. Delay	Level of Service	95% Back [Veh.	Of Queue Dist]	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed
			veh/h	%	veh/h	%	v/c	sec		veh	m				km/h
South: Appin Road															
1	L2	All MCs	25	0.0	25	0.0	0.217	4.8	LOS A	0.0	0.0	0.00	0.03	0.00	50.3
2	T1	All MCs	396	0.3	396	0.3	0.217	0.1	LOS A	0.0	0.0	0.00	0.03	0.00	51.5
Approach			421	0.3	421	0.3	0.217	0.4	NA	0.0	0.0	0.00	0.03	0.00	51.4
North: Appin Road															
8	T1	All MCs	217	0.6	217	0.6	0.143	0.0	LOS A	0.3	2.3	0.17	0.20	0.17	49.5
9	R2	All MCs	35	3.5	35	3.5	0.143	9.0	LOS A	0.3	2.3	0.17	0.20	0.17	46.8
Approach			252	1.0	252	1.0	0.143	1.3	NA	0.3	2.3	0.17	0.20	0.17	49.1
West: Brooks Point Road															
10	L2	All MCs	13	0.0	13	0.0	0.021	5.9	LOS A	0.1	0.5	0.44	0.61	0.44	42.5
12	R2	All MCs	6	0.0	6	0.0	0.021	7.7	LOS A	0.1	0.5	0.44	0.61	0.44	44.7
Approach			19	0.0	19	0.0	0.021	6.5	LOS A	0.1	0.5	0.44	0.61	0.44	43.6
All Vehicles			692	0.5	692	0.5	0.217	0.8	NA	0.3	2.3	0.07	0.11	0.07	50.1

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