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Reference: 16.199r09v02

03 August 2017

JQZ
18 Parramatta Road
Homebush NSW 2140

Attention: Mr Jeremy Hung,

Re: 152 –200 and 206 Rocky Point Road, Kogarah - Traffic Statement in Response to *Bayside Council*'s Request for Information DA-2017/224 dated 14th June 2017

Dear Jeremy,

We refer to the abovementioned proposed development and confirm that we have reviewed all relevant information provided to us including *Bayside Council*'s letter dated 14th June 2017.

TRAFFIX has taken Council's advice into consideration with the intention of satisfying all requirements of the Council's DCP and other relevant authority's requirements including *Roads and Maritime Services Modelling Guideline*. The relevant points and comments from *Bayside Council* are reproduced below with our response provided immediately thereafter.

1. ACCESSIBILITY OF THE SITE

10(a)(ii)(iii)

In addition, Clause 104(3) requires that the consent authority, prior to determination, consider the following:

(ii) The accessibility of the site concerned, including:

- *(a) the efficiency of movement of people and freight to and from the site and the extent of multi-purpose trips, and*
- *(b) B. the potential to minimise the need for travel by car and to maximise movement of freight in containers or bulk freight by rail, and*

(iii) Any potential traffic safety, road congestion or parking implications of the development.

The SEE and/or Traffic Report shall be updated to address the relevant matters identified in Clause 104(3) ii & iii.

Traffix Response

TRAFFIX has taken Clause 104(3) of SEPP infrastructure (2007) into consideration and provides the following comments to address the raised concerns:

10(a)(ii)(a)

The proposed vehicle accesses for the residential development are located on Production Lane and the 'Proposed New Road', which have been assessed as being in the optimal location. Production Lane and the 'Proposed New Road' are both local (minor) roads in comparison with Rocky Point Road, and as such have been designed with the purpose of providing safe and efficient access. In addition, the intersection of the 'Proposed New Road' with Rocky Point Road has been upgraded to provide a signalised intersection capable of accommodating all traffic and service vehicles with a level of service of 'B' in the AM peak and 'A' in the PM peak, indicating significant spare capacity.

10(a)(ii)(b)

- The site benefits from excellent access to bus services, and it is situated within 400 metres of four (4) bus stops. The bus services which operate in the vicinity of the site provide connections to major centres including Rockdale, Kogarah, Dolls Point Loop and Miranda.

- The subject development proposes a cycle path through the site connecting to the wider network, encouraging the use of active transport modes in line with State Government and Local Council objectives.

- Improved pedestrian connectivity for the site is achieved with the pedestrian facilities proposed on both sides of the 'Proposed New Road' in addition to improved pedestrian facilities on the western side of the existing Production Lane.

- In order to further encourage the use of alternative modes of transport and reduce dependency on private vehicle use, it is recommended that a Green Travel Plan (GTP) be prepared with a key objective of reducing the number of single occupancy car journeys.

10(a)(iii)

(iii) Any potential traffic safety, road congestion or parking implications of the development.

The SEE and/or Traffic Report shall be updated to address the relevant matters identified in Clause 104(3) ii & iii.

Traffix Response

The residential flat building car parking has been compartmentalised to achieve a safe and functional basement design. The following key changes have been applied according to Council's advice:

- A boom gate system has been proposed within Basement Level 01 to physically separate visitor and resident parking throughout the development,
- Changes have been made to minimise the walking distance from resident car spaces to the relevant lift core, and
- Lift and stair controls are to be put in place restricting access to different residents and visitors to particular lifts and stairs.
- Additional visitor parking spaces are now all consolidated within Basement level 01.
- A roller shutter and intercom have been provided at the main entry / exit to control all traffic movement into the site.

In summary, Council's concerns and advice have been taken into consideration and the applicant has proposed key changes to incorporate Council's comments. Reference should be made to the revised plans submitted separately to Council.

2. BAYSIDE TRAFFIC DEVELOPMENT ADVISORY COMMITTEE (BTDAC)

10(b)

The recommendations of the Bayside Traffic Development Advisory Committee (BTDAC) held on 1 March 2017 are as follows:

i. *That all the required parking spaces for the childcare centre to be provided on site.*

ii. *That all the regulatory signage associated with the privately owned publicly accessible road be submitted to Bayside Traffic Committee for approval.*

iii. *That the applicant provide details for access, parking and loading/unloading activities for the commercially zoned land along Rocky Point Road with a view to reduce the impact of traffic circulating within the surrounding street network as well as access from the proposed traffic signals and the new road.*

iv. *The applicant needs to provide deceleration and acceleration lanes along Rocky Point Road for the proposed traffic signals at the proposed new access road.*

v. *That the applicant needs to provide turning path details for garbage collection vehicles along the route they propose to use including the proposed traffic signals.*

vi. *The applicant provide a footpath along the entire southern kerbline of the proposed new road.*

vii. *That the applicant comply with all the RMS requirements stated in their letter dated 7 February 2017.*

viii. *The applicant to provide a cycle lantern in the new signalised crossing over Rocky Point Road (see Figure 1).*

ix. *The applicant extend the proposed cycleway in a northerly direction along the eastern side of the development to lead the path over raised pedestrian platform in Production Lane to lead into the proposed Scarborough Park Cycleway (see Figure 1)*

Traffix Response

10(b)(i) and (ii)

These matters have been addressed separately by other appointed consultants.

10(b)(iii), (iv) and (vii)

A comprehensive traffic modelling study has been undertaken in response to the RMS to assess the traffic impacts of the residential and non-residential components. Traffic generation, distribution and modelling has been undertaken on the accumulative analysis basis and represented in letter 16.199r06v06 (**See Attachment 1)**. It is also noted that Council's concern

raised in *Clause 10.b. (d and g)* has been already discussed with RMS and addressed previously in our response letter to RMS.

10(b)(v)

A swept path analysis has been undertaken of Council's Garbage Collection truck and reproduced in **Attachment 2.**

10(b)(vi)

This matter has been addressed separately by the appointed Civil Engineering consultants. The proposed footpath is to be designed and constructed in accordance with Council's specifications.

10(b)(viii) and (ix)

It is anticipated that the addition of a cycle lantern will not create any considerable adverse impacts on the performance of the Rocky Point Road intersection / Weeney Street / New Proposed Road intersection. The intersection is expected to continue operating with a LoS 'B' and 'A' during the AM and PM peak periods respectively.

The cycle path is provided along the proposed new road and is deigned to be connected to Scarborough Park. Nevertheless, no cycle path infrastructure is currently provided on the west side of Rocky Point Road, nor is any proposed as part of this application. It is noted that cyclists are not currently permitted to make use of the footway on the west side of Rocky Point Road. As such, the western side of Rocky Point Road shall require Council upgrades to support Council's proposed lantern connecting to the proposed cycle path on the east side of Rocky Point Road.

3. INTERSECTION OF NEW ROAD & PRODUCTION LANE

10(c)

The intersections of the New Road with both Production Lane & Rocky Point Road must be amended to comply with Austroads Part 4: Table 5.1, including the checking vehicles size.

Traffix Response

The detailed design of the intersection is to be undertaken by the appointed Civil Engineering consultant and designed in accordance with AUSTROADS requirements.

4. ONE-WAY MOVEMENT FOR PART OF PRODUCTION LANE

10(d)

Consideration to be given to making the section of Production Lane between the main basement access and the intersection with Production Avenue into a one-way road in a north-bound direction.

This section of laneway is of a non-compliant width to permit two-way movement and, more importantly, the one-way movement would prevent cars and service vehicles using Production Avenue (including additional vehicles associated with future commercial uses in the B6 zone) from passing through the residential area and new road to exit the locality.

Traffic modelling is required to demonstrate that this proposal will not result in adverse impacts to traffic flow within the surrounding road network.

Traffix Response

A traffic modelling study has been undertaken separately in letter 16.199r08v03 and deal with this concern separately. Reference should be made to **Attachment 3** letter for any further details.

It is concluded that the LoS of the modelled intersections under the Council's proposed change create an adverse impact on the performance of northbound movement on Rocky Point during the AM peak period, and will also have some localised adverse impacts on the performance of Phillips Road during the PM peak period. This also should be noted that this modelling does not consider any potential future development on Production Avenue which will be enforced to only use Philips Road for the outbound movements.

5. PRODUCTION LANE ROAD WIDTH BETWEEN INTERSECTION WITH NEW ROAD / PRODUCTION LANE & MAIN BASEMENT ENTRANCE

10(e)

The proposal results in a significant increase in the use of Production Lane and width of the road carriageway is therefore required to be made compliant with the Austroads Standard for two-way movement for that part of the road between the new access road and the basement entrance driveway.

Required modifications to the current road width must not affect the existing number of on-street car parking spaces.

Traffix Response

It is noted that the eastern side of the Production Lane in front of the main access to the basement is proposed as a No Parking area. This will allow the trucks to enter and exit the site at with enough room to manoeuvre. A swept path analysis has been undertaken and represented in **Attachment 1** to demonstrate that these circulations are practical.

6. PROPOSED TURNING HEAD

10(f)

The proposed turning head is located within Council owned land which is zoned RE1 Recreation. The use of recreational zoned land for the purposes of a turning head or road infrastructure associated with the proposed development is not supported. Therefore, the proposal must be amended to ensure that any road works are not located within the RE1 zoned land.

Traffix Response

The proposal has been amended following discussions with Council and no longer shows a turning head in the RE1 zone.

7. ACCESS TO FUTURE B6 ZONED LAND FROM PROPOSED NEW ROAD

10(f)

The proposal includes car and service vehicle access for part of the B6 zoned land being undertaken from the new internal access road. Details are required to demonstrate that this can be achieved.

Traffix Response

In accordance with clause 101 of SEPP infrastructure (2007), the proposed development should consider the following terms:

(a) to ensure that new development does not compromise the effective and ongoing operation and function of classified roads, and
(b) to prevent or reduce the potential impact of traffic noise and vehicle emission on development adjacent to classified roads

With regards to the above, servicing and car parking access for the non-residential components (i.e. the B6 zoned land) are required to be on minor roads. The northern section of the B6 zone will have an access to the eastern side of Production Avenue. The southern part of the B6 zoned land will have access to the most eastern side of the 'Proposed New Road' and maximum possible distance from Rocky Point Road. The applicant has also confirmed that there is no intention to propose any new access on Rocky Point Road. This assumption formed part of the future scenario for the traffic distribution model. Reference should be made to **Attachment 3** for any further information in relation to the traffic model.

Any further information regarding the geometric details of access and driveways will be dealt with during the development application (DA) stage of the non-residential component.

8. PUBLIC CAR PARKING PROVISION

10(h), (i) and (j)

- *Public car parking for sporting fields*
- *Production Lane*
- *Number of existing parking spaces to be retained*
- *Car Parking and access for No.168 Rocky Point Road*
- *Basement Parking for Residential Flat Buildings*

Traffix Response

These matters have been addressed separately by the appointed consultants.

9. BASEMENT PARKING FOR TOWNHOUSES

10(k)

i. Visitors parking is required to be provided in the basement for the townhouse development.

ii. The proposed single car width driveway entry to the townhouse basement is not supported. An alternative arrangement is to be explored.

iii. *Car wash bays shall be provided for the townhouses in accordance with RDCP 2011. The width of car wash bays shall be a minimum of 3.5m wide.*

iv. *A swept analysis is required for the garage to Townhouse F01.*

v. *The proposed single car width driveway entry to the townhouse basement is not supported. An alternative arrangement is to be explored.*

Traffix Response

10(k)(i), (iii), (iv) and (v)

These matter have been addressed separately in the DA response submission prepared by JBA dated 21 July 2017.

10(k)(ii)

The proposed townhouses generate a total of 20 vehicle trips per hour during the peak period. Traffic signals are not considered necessary for this small amount of movement. Notwithstanding, a stop line with a convex mirror has been proposed to avoid any conflict between opposing traffic movements. The stop line has been indicated on the architectural drawings. The proposed convex mirror is also required to be mounted to provide a suitable sight vision for the inbound / outbound movements to / from the townhouses.

In addition to the above, a conflict assessment has been undertaken based on the Austroads Guide to Traffic Management, Part 2: Traffic Theory, Section 3.2.2-The Poisson Distribution. It is noted that the probability of two (2) vehicles travelling in opposite directions meeting each other along the single lane two-way section of the driveway is 0.624% or 1 in 161 vehicles.

Notwithstanding the above, in the event of a conflict on the single lane access, albeit being very low (1 in 161 vehicles), one of the vehicles will need to stop at the proposed stop line to give way to the other vehicle, which is considered satisfactory. A swept path analysis has been undertaken and represented in **Attachment 2** to demonstrate that this circulation is practical.

10. ON-STREET PARKING / DROP-OFF BAY

i. *A minimum of two (2) on-street parking spaces shall be provided for people with a disability in accordance with AS 2890.6. Such spaces shall be provided in suitable locations for visitors to the townhouses, units and park.*

ii. *Drop-off area – The proposed drop-off arrangement in the landscape plans is not supported. Short-term parking bays may be acceptable for drop off of residents. This is subject to approval from the Traffic Committee and adequate provision of street trees as recommended by the DRP.*

Traffix Response

10(l)(i)

The required visitor car parking spaces for townhouses have been relocated from the Proposed New Road (now a public road) into the main basement car park. Therefore, two (2) accessible

car parking spaces have been provided in accordance with the Council's advice within the main basement.

10(I)(ii)

Drop off areas are not proposed. The proposed parking arrangements are sufficient to allow opportunities for drop off and pick up if required.

11. SUMMARY

This statement is to provide supplementary information and analysis which seeks to address relevant comments and issues provided by *Bayside Council* and *Roads and Maritime*. Please contact the undersigned should you have any further queries or require any further information regarding the above.

Please contact us should you have any queries.

Yours faithfully,

traffix

Martin Mallia
Executive Engineer

Email: martin.mallia@traffix.com.au

Attachments:
1) Traffix response letter to RMS
2) Swept Path Analysis
3) Traffix response letter to Traffic Modelling

Attachment 1

Traffix response letter to RMS Comments

Reference: 16.199r06v06

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03 August 2017

JQZ
18 Parramatta Road
Homebush NSW 2140

Attention: Mr Jeremy Hung and Bryan Zhang

Re: DA2017/224, 152 –200 and 206 Rocky Point Road, Kogarah - Traffic Statement in Response to *Roads and Maritime Services* and *Bayside Council*'s Requests for Information

Dear Jeremy and Bryan,

We refer to the abovementioned proposed development and confirm that we have reviewed all relevant information provided to us including *Bayside Council*'s email dated 17 March 2017 and *Roads and Maritime*'s letter dated 7 February 2017, requesting additional information.

With this in mind and based on the advice from JQZ, the capacity of the proposed child care centre has increased from 60 to 65 children. TRAFFIX has remodelled the intersection of Rocky Point Road / Jubilee Avenue / Phillips Road, Rocky Point Road / Production Avenue, Rocky Point Road / Ramsgate Road and Rocky Point Road / Weeney Street / (New Proposed Street) for submission to *Roads and Maritime.* Furthermore, the relevant points and comments from *Roads and Maritime* and issues from *Bayside Council* are reproduced below with Traffix' response provided immediately thereafter.

1. ROADS AND MARITIME COMMENTS

Point 1

"Roads and Maritime has previously acquired an easement for drainage as shown on the attached DP 599502 and Dealing D379619. Roads and Maritime would further consider the above subject application upon receipt of revised plans showing all works are clear of the easement."

Traffix Response

Point 8 of the RMS letter will be addressed separately by JQZ in due course.

Point 2

"Roads and Maritime requests that the Sidra modelling files be submitted for a detailed assessment."

Traffix Response

The updated model based on the new child care centre's access location and increased number of children is submitted in accompany with this letter.

Point 3

"Rocky Point Road/Jubilee Avenue and Rocky Point Road/Phillip Street intersections have been modelled separately, however this intersection operates as one intersection. Roads and Maritime requires the modelling to be amended or reasons provided for this individual intersection analysis."

Traffix Response

It is noted that the intersection of Rocky Point Road / Phillips Road / Jubilee Avenue is operating under a common grouped signal phase, however the eastern and western legs of the intersection are not in line with each other and are operating at separate signal phases.

Having regard to the above, the network model has been updated to address all comments received from *Roads and Maritime* and other traffic engineering aspects of this network model. Some of the significant features are as follows:

- This model assumed the intersection of Rocky Point Road / Phillips Road / Jubilee Avenue is a combination of two (2) separated intersections with a single and common signal group.
- The link leg between the intersection of Rocky Point Road / Phillips Street and Rocky Point Road / Jubilee Avenue is only 5 metres in length. It is noteworthy to say that SIDRA Intersection 7.0 assumed a minimum length to accommodate a full car is 7 metres by default.
- Signal phasing has been designed and run for the proposed intersection as a common signal group and is based on the current time phasing.

Point 4

"Confirmation is to be provided as to the phasing arrangements for the proposed traffic control light and that pedestrian protection has been included in the modelling."

Traffix Response

We confirm that the updated SIDRA model has been produced to take into account a signal cycle of 120 seconds based on advice issued by *Roads and Maritime* previously in letter SYD16/00784 dated 15 August 2016. In addition, all of the existing traffic and pedestrian movements are retained with the exception of the new signalised intersection that has pedestrian crossings for all approaches.

Point 5

"Confirmation that the above point 3 and 4 has been included in all of the network modelling."

Traffix Response

We confirm that the prepared SIDRA Model has incorporated points 3 and 4 of Roads and Maritime's letter.

Point 6

"Roads and Maritime requires a safety assessment to be included in the traffic impact assessment for the access road approach to the proposed traffic control light intersection as referred to in attached letter to the applicant in relation to a pre-DA discussion with Roads and Maritime (point 1)."

Traffix Response

A Road Safety Audit has been prepared separately by an independent Road Safety Audit team and has been already provided to *Roads and Maritime* separately in due course.

Point 7

"Confirmation if any changes to parking restrictions were included in the modelling."

Traffix Response

We confirm that the parking restrictions along Rocky Point Road were included in the modelling, with the addition of new 'No Stopping' restrictions around the new signalised intersection as advised by *Roads and Maritime* previously in its letter SYD16/00784 dated 15 August 2016. The Signage and Line marking Plan has been prepared by AT&L separately and submitted with the Traffic Impact Assessment report.

Point 8

"Turn paths are to be included with the proposed intersection layout."

Traffix Response

Point 8 of the *Road and Maritime* letter will be addressed separately by AT&L and has been included in **Attachment 1- Swept Path Analysis for the proposed Intersection**.

2. SIDRA MODEL RESULTS

In addition to the above, a summary of the updated modelled results are provided below in **Table 1**. Reference should also be made to the SIDRA outputs provided in **Attachment 2** which provides detailed results for individual intersections:

Table 1: Intersection Performance – Existing and Future

Intersection Description	Control Type	Model	Period	Degree of Saturation	Intersection Delay	Level of Service
Rocky Point Road / Phillips Road (Paired in the Sidra Network Model)	Signals	Existing	AM	0.876	10.1	LOS A
			PM	0.638	16.1	LOS B
		Future	AM	0.392	4.4	LOS A
			PM	0.703	12.4	LOS A
Rocky Point Road / Jubilee Avenue (Paired in the Sidra Network Model)	Signals	Existing	AM	0.864	20.5	LOS B
			PM	0.641	11.0	LOS A
		Future	AM	1.104	29.6	LOS C
			PM	0.692	9.9	LOS A
Rocky Point Road / Production Avenue	T-intersection	Existing	AM	0.469	21.3	LOS B
			PM	0.388	30.1	LOS C
		Future	AM	0.588	19.4	LOS B
			PM	0.501	41.5	LOS C
Rocky Point Road / Weeney Street	T-intersection	Existing	AM	0.246	245.6	LOS F
			PM	0.291	182.7	LOS F
	Signalised	Future	AM	0.885	17.7	LOS B
			PM	0.919	12.7	LOS A
Rocky Point Road / Ramsgate Road	Signals	Existing	AM	0.935	35.8	LOS C
			PM	0.901	42.1	LOS C
		Future	AM	1.030	37.8	LOS C
			PM	0.958	39.7	LOS C

It can be seen from **Table 1** that the intersections immediately adjacent to the site, being Rocky Point Road / Jubilee Avenue / Phillips Road, Rocky Point Road / Production Avenue and Rocky Point Road / Ramsgate Road operate satisfactorily with acceptable delays and spare capacity under the existing 'base case' scenario and the 'proposed' scenario in both the AM and the PM peak periods.

It can also be seen that the new signalised intersection of Rocky Point Road / Weeney Street / New Proposed Road improves significantly from LoS F to B and A during the AM and PM peak periods respectively. In addition to this, the level of service of Phillips Road / Rocky Point Road intersection improves from LoS B to A during the PM peak.

3. Bayside Council Comments

Furthermore, we refer to *Bayside Council*'s email dated 17 March 2017 and more specifically issues 2b (d), (e) and (g). These issues are reproduced and responded accordingly below:

Comment 2b-(e)

(d) The applicant needs to provide deceleration and acceleration lanes along Rocky Point Road for the proposed traffic signals at the proposed new access road.

Traffix Response

Council's request for deceleration and acceleration lanes has been reviewed separately below:

- **Deceleration lane**

The need for an auxiliary deceleration left turn lane has been assessed under the requirements provided in section 5.2.1 of the *Austroads Guidelines for Road Design-Signalised and Signalised Intersections (2010).* According to the Austroads requirements, turning traffic should not impede through traffic to the extent that:

- The operational efficiency of an intersection or intersection approach is compromised
- An unacceptable level of safety would result due to turning traffic slowing or stopping in a through lane.

In addition to the above, Austroads states that the need for auxiliary lanes and the type of treatment should consider:

- The function of the road and its strategic significance
- The volume of heavy vehicles using the road
- Operating speeds at the intersection
- Available sight distance to drivers of turning vehicles
- Consistency of treatment along a corridor to meet driver expectations
- Traffic volumes

The SIDRA intersection analysis for the Rocky Point Road / Weeney Street / Site Access Road intersection has been assessed under the abovementioned requirements from Austroads. The following points are considered critical in the decision making process:

- The north approach is operating with LoS A during the AM and LoS B during the PM peak for through and left movements.
- The right turn for southbound traffic movements into Weeney Street has been banned.

The implication of this analysis is that the northern leg of the new proposed signalised intersection will operate without any adverse queuing impacts, considerable delay or safety issues. In addition to the above, it is proposed to ban the right turn for southbound movements into Weeney Street and this will result in less queuing due to the presence of a dedicated lane for through movements.

In addition to the above, the building located at 168 Rocky Point Road, Kogarah is to be retained and an amendments will be implemented on Rocky Point Road to accommodate the 3.5 metre wide deceleration lane, which will require demolition of the existing building at 168 Rocky Point Road. It is not physically possible to provide any appropriate left turn bay for the proposed new intersection. According to the Table 5.1 and Table 5.2 of the *Austroads Guidelines for Road Design-Signalised and Signalised Intersections (2010),* a minimum length of 20 and 55 metres are required for deceleration and taper, which is recommended for 60km/h speed limit roads. This distance is required for safe and comfortable deceleration of vehicle, which is not achievable unless the structure at 168 Rocky Point Road is demolished as shown in **Figure 1.**

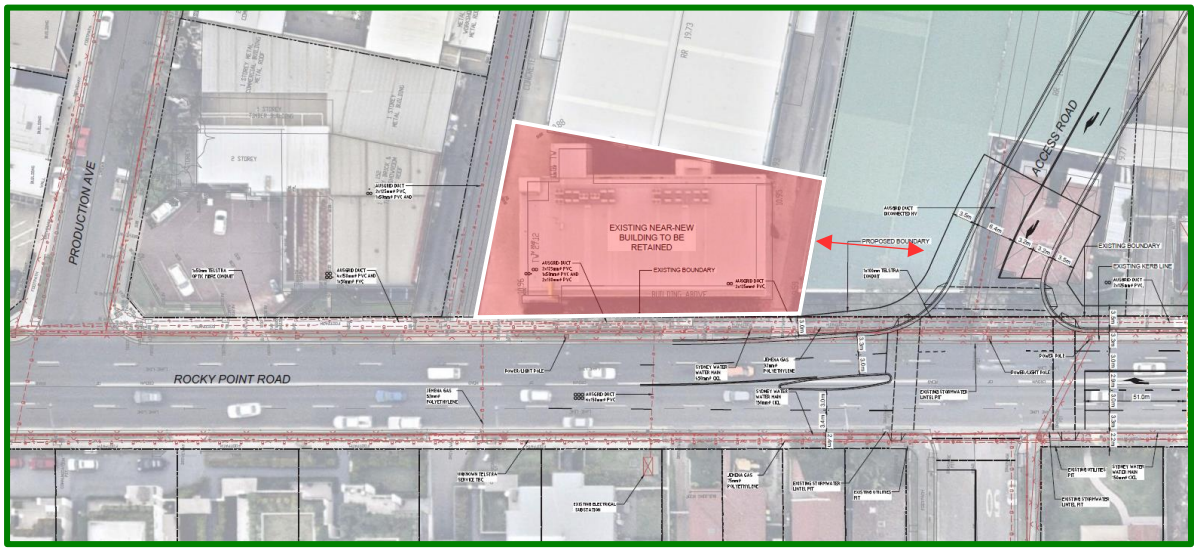


Figure 1 – The Distance between 168 Rocky Point Road and New Proposed Road

It is also noteworthy to mention that TRAFFIX has been involved in some correspondences between the client and *Roads and Maritime* regarding the proposed intersection and specifically the left turn lane. *Roads and Maritime* has agreed that there is no warrant to provide a left turn deceleration lane for the proposed intersection. Reference should be made to letter 16.199r01v05 Traffix to Roads and Maritime which discussed thoroughly regarding the left turn deceleration lane.

It can be concluded that the provision of deceleration left turn lane is not considered necessary for the above mentioned intersection.

- **Acceleration lane**

It is noted that according to the SIDRA intersection layout provided in **Attachment 2**, the proposed SIDRA model comprises of a dedicated left turn short lane of 20 metres in length from the new road to Rocky Point Road, which will operate with a similar function to a deceleration lane and will facilitate left turn movements from the new proposed access road to the southbound approach on Rocky Point Road.

It can be seen from the SIDRA results that the left turn during the AM and PM peak period is operating with LoS A under the future scenario. Therefore, the provision of the acceleration lane is considered unnecessary.

Comment 2b-(e)

(e) That the applicant needs to provide turning path details for garbage collection vehicles along the route they propose to use including the proposed traffic signals.

Traffix Response

Reference should be made to **Attachment 3** for swept paths analysis of Bayside Council's Garbage Collection Truck. **Attachment 3** confirms that council's garbage collection truck will operate satisfactorily.

Comment 2b-(g)

(g) That the applicant comply with all the RMS requirements stated in their letter dated 7 February 2017.

Traffix Response

The updated SDIRA model has incorporated all comments provided by *Roads and Maritime*. Items 2, 3, 4 and 7 of *Roads and Maritime* letter have been addressed through this letter. Points 1, 6 and 8 has been addressed under separate covers.

4. Summary

This statement is to provide supplementary information and analysis which seeks to address relevant comments and issues provided by *Bayside Council* and *Roads and Maritime*. Please contact the undersigned should you have any further queries or require any further information regarding the above.

Please contact us should you have any queries.

Yours faithfully,

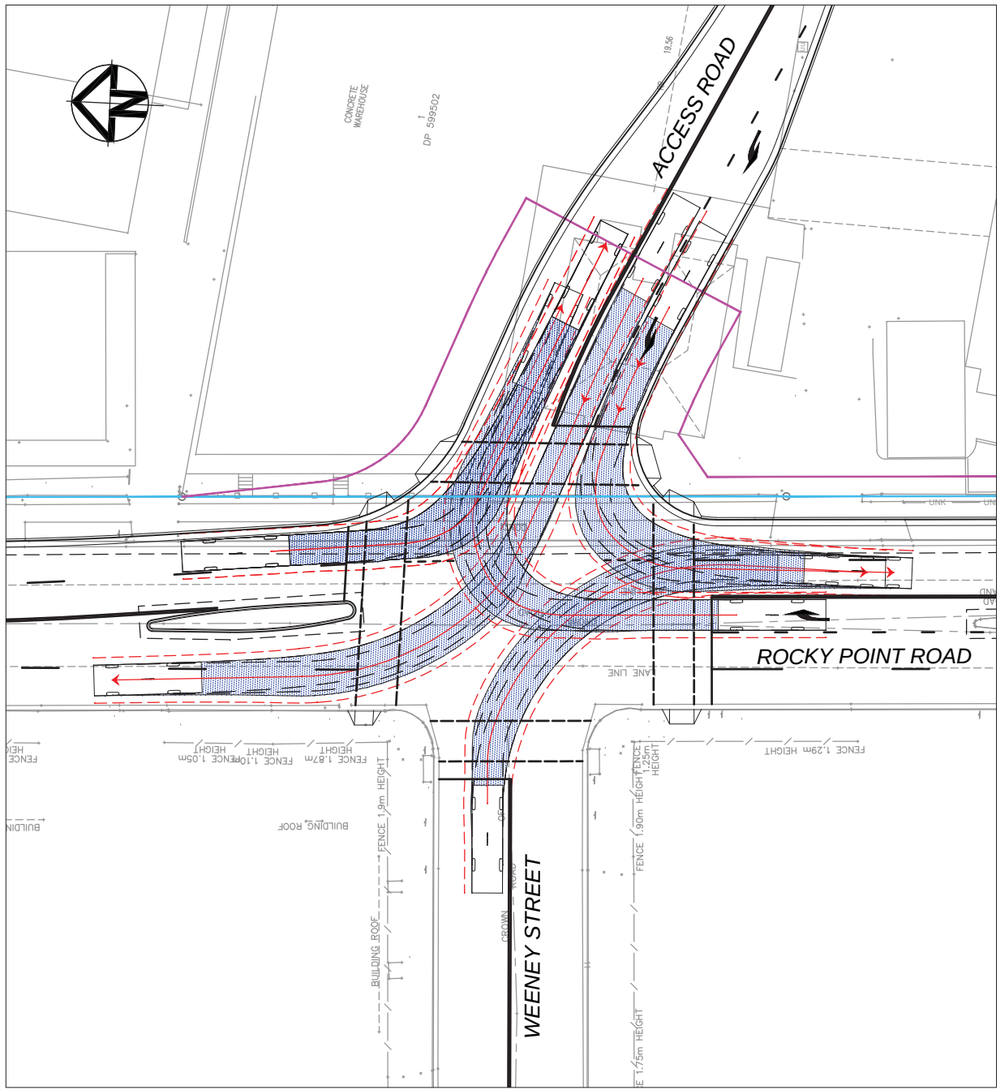
traffix

Martin Mallia
Executive Engineer
Email: martin.mallia@traffix.com.au

Attachments:
1) Swept Path Analysis for the proposed Intersection
2) SIDRA Results
3) Swept Path Analysis

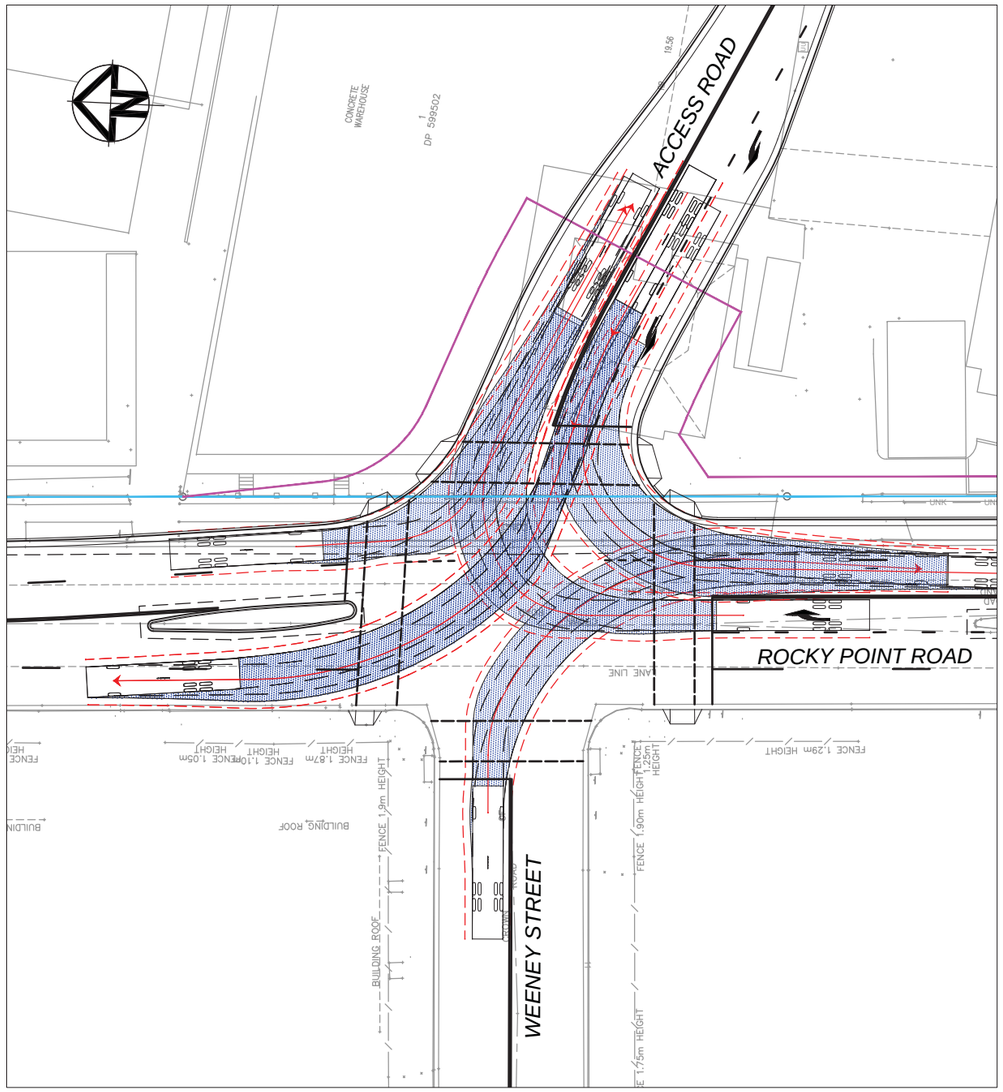
Attachment 1

Swept Path Analysis for New Proposed Intersection



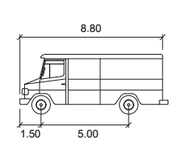
8.8m SERVICE VEHICLE TURN PATH PLAN

1 : 250



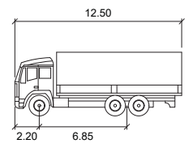
12.5m SINGLE UNIT TRUCK TURN PATH PLAN

1 : 250



8.8m SERVICE VEHICLE meters

Width	: 2.50
Track	: 2.50
Lock to Lock Time	: 6.0
Steering Angle	: 38.7



12.5m SU TRUCK meters

Width	: 2.50
Track	: 2.50
Lock to Lock Time	: 6.0
Steering Angle	: 36.6

Issue	Description	Date
P2	RE-ISSUED FOR RMS CONCEPT APPROVAL	29-03-17
P1	ISSUED FOR RMS CONCEPT APPROVAL	01-06-16

100mm on Original

Bar Scales

0 5 10 15 20 25m

1 : 250 @ A1 1 : 500 @ A3

Client

JQZ

Scales	1 : 250	Drawn	MM
		Designed	MM
Grid	MGA	Checked	PW
Height Datum	AHD	Approved	

Project

152-206 ROCKY POINT ROAD KOGARAH

Title

VEHICLE TURN PLAN

Civil Engineers and Project Managers

at&l

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Status: CONCEPT
NOT TO BE USED FOR CONSTRUCTION

A1

Drawing No.	Project No.	Issue
SKC03	16-380	P2

Date Plotted: 29 Mar 2017 - 01:25PM File Name: F:\16-380 152-206 Rocky Point Rd\Drgs\Civil\Sketches\SKC03_Vehicle Turn Path Plan.dwg

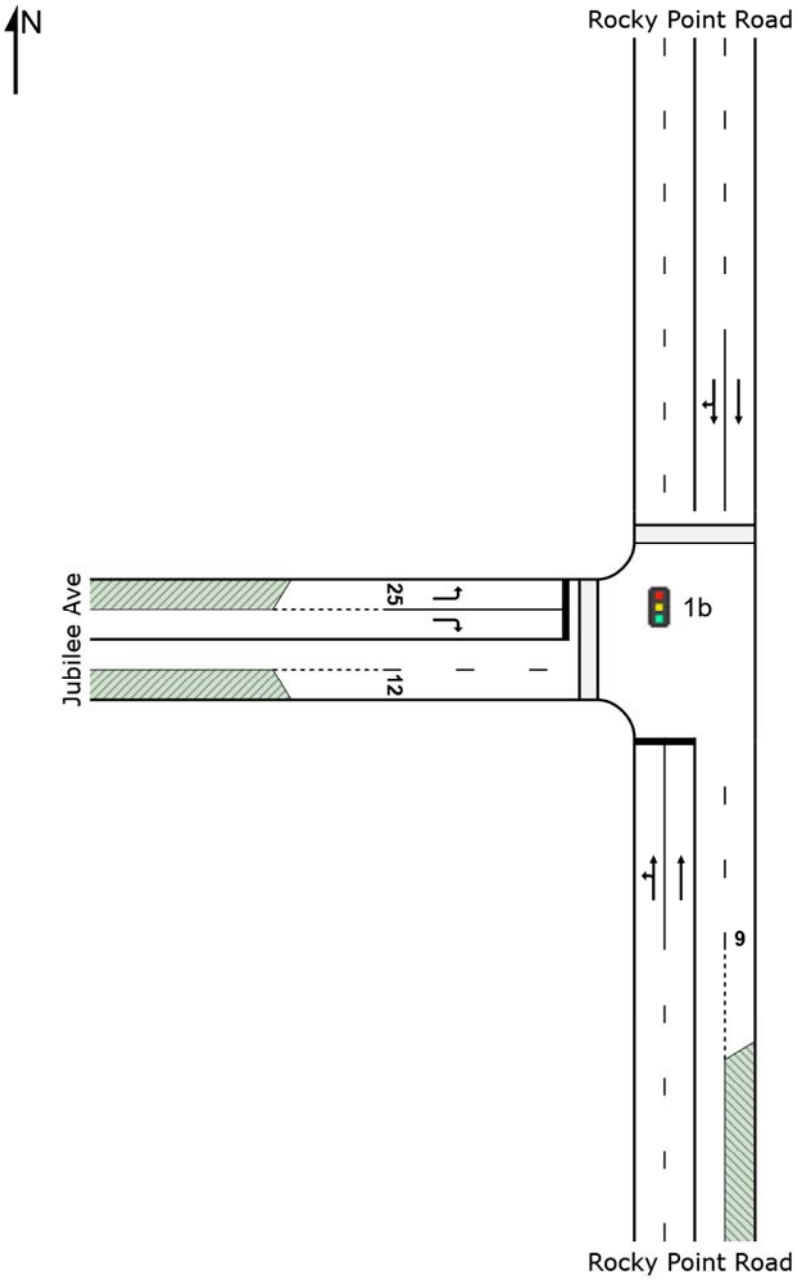
Attachment 2

SIDRA Results

SITE LAYOUT

Site: 1b [AM EX - Rocky Point Rd x Jubilee Ave]

Signalised Intersection: Rocky Point Rd x Jubilee Ave
Period: AM
Scenario: Existing Situation
Signals - Fixed Time Isolated



MOVEMENT SUMMARY

Site: 1b [AM EX - Rocky Point Rd x Jubilee Ave]

Network: 1 [AM EX]

Signalised Intersection: Rocky Point Rd x Jubilee Ave
Period: AM
Scenario: Existing Situation
Signals - Fixed Time Coordinated Cycle Time = 120 seconds (Network Cycle Time - User-Given)
Common Control Group: CCG1 [Rocky Point Road x Jubilee Ave x Phillips Road]

Movement Performance - Vehicles

Mov ID	OD Mov	Demand Flows Total veh/h	HV %	Arrival Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
South: Rocky Point Road													
1	L2	204	0.5	204	0.5	0.849	24.3	LOS B	27.6	197.5	0.67	0.70	29.6
2	T1	1376	3.1	1376	3.1	0.849	21.5	LOS B	27.6	197.5	0.77	0.78	16.3
Approach		1580	2.8	1580	2.8	0.849	21.9	LOS B	27.6	197.5	0.76	0.77	18.6
North: Rocky Point Road													
8	T1	642	8.5	642	8.5	0.320	0.0	LOS A	0.0	0.0	0.00	0.05	52.0
9	R2	66	4.8	66	4.8	0.320	2.1	LOS A	0.0	0.0	0.00	0.06	50.8
Approach		708	8.2	708	8.2	0.320	0.2	LOS A	0.0	0.0	0.00	0.05	51.4
West: Jubilee Ave													
10	L2	106	2.0	106	2.0	0.774	70.4	LOS E	6.7	47.6	1.00	0.87	9.9
12	R2	134	3.1	134	3.1	0.864	72.6	LOS F	8.7	62.3	1.00	0.95	9.7
Approach		240	2.6	240	2.6	0.864	71.6	LOS F	8.7	62.3	1.00	0.92	9.8
All Vehicles		2528	4.3	2528	4.3	0.864	20.5	LOS B	27.6	197.5	0.57	0.58	17.1

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Network tab).
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Largest change in Average Back of Queue or Degree of Saturation for any lane during the last three iterations: 0.9 %
Number of Iterations: 7 (maximum specified: 10)

Movement Performance - Pedestrians

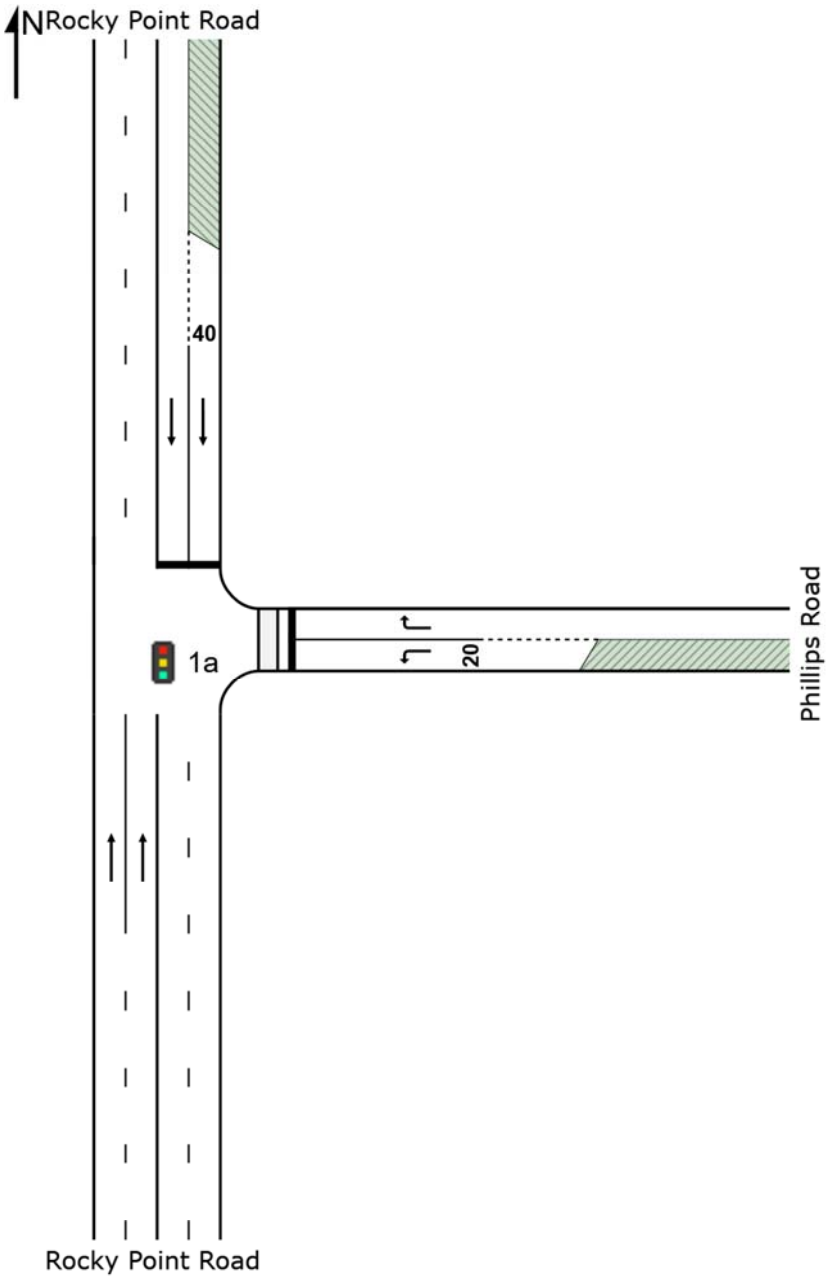
Mov ID	Description	Demand Flow ped/h	Average Delay sec	Level of Service	Average Back of Queue Pedestrian ped	Distance m	Prop. Queued	Effective Stop Rate per ped
P3	North Full Crossing	53	54.3	LOS E	0.2	0.2	0.95	0.95
P4	West Full Crossing	53	11.7	LOS B	0.1	0.1	0.44	0.44
All Pedestrians		105	33.0	LOS D			0.70	0.70

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

SITE LAYOUT

Site: 1a [AM EX - Rocky Point Rd x Phillips Rd]

Signalised Intersection: Rocky Point Rd x Phillips Rd
Period: AM
Scenario: Existing Situation
Signals - Fixed Time Isolated



MOVEMENT SUMMARY

Site: 1a [AM EX - Rocky Point Rd x Phillips Rd]

Network: 1 [AM EX]

Signalised Intersection: Rocky Point Rd x Phillips Rd
Period: AM
Scenario: Existing Situation
Signals - Fixed Time Coordinated Cycle Time = 120 seconds (Network Cycle Time - User-Given)
Common Control Group: CCG1 [Rocky Point Road x Jubilee Ave x Phillips Road]

Movement Performance - Vehicles

Mov ID	OD Mov	Demand Flows Total	HV	Arrival Flows Total	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue Vehicles	Distance	Prop. Queued	Effective Stop Rate	Average Speed
		veh/h	%	veh/h	%	v/c	sec		veh	m		per veh	km/h
South: Rocky Point Road													
2	T1	1482	3.1	1482	3.1	0.388	0.0	LOS A	0.0	0.0	0.00	0.00	59.9
Approach		1482	3.1	1482	3.1	0.388	0.0	LOS A	0.0	0.0	0.00	0.00	59.9
East: Phillips Road													
4	L2	134	3.1	134	3.1	0.876	73.2	LOS F	8.7	62.5	1.00	0.96	11.7
6	R2	106	2.0	106	2.0	0.654	62.9	LOS E	6.2	44.1	0.99	0.81	25.9
Approach		240	2.6	240	2.6	0.876	68.6	LOS E	8.7	62.5	1.00	0.90	18.8
North: Rocky Point Road													
8	T1	669	8.0	669	8.0	0.293	11.3	LOS A	9.0	67.2	0.50	0.44	44.5
Approach		669	8.0	669	8.0	0.293	11.3	LOS A	9.0	67.2	0.50	0.44	44.5
All Vehicles		2392	4.4	2392	4.4	0.876	10.1	LOS A	9.0	67.2	0.24	0.21	45.8

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Network tab).
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Largest change in Average Back of Queue or Degree of Saturation for any lane during the last three iterations: 0.9 %
Number of Iterations: 7 (maximum specified: 10)

Movement Performance - Pedestrians

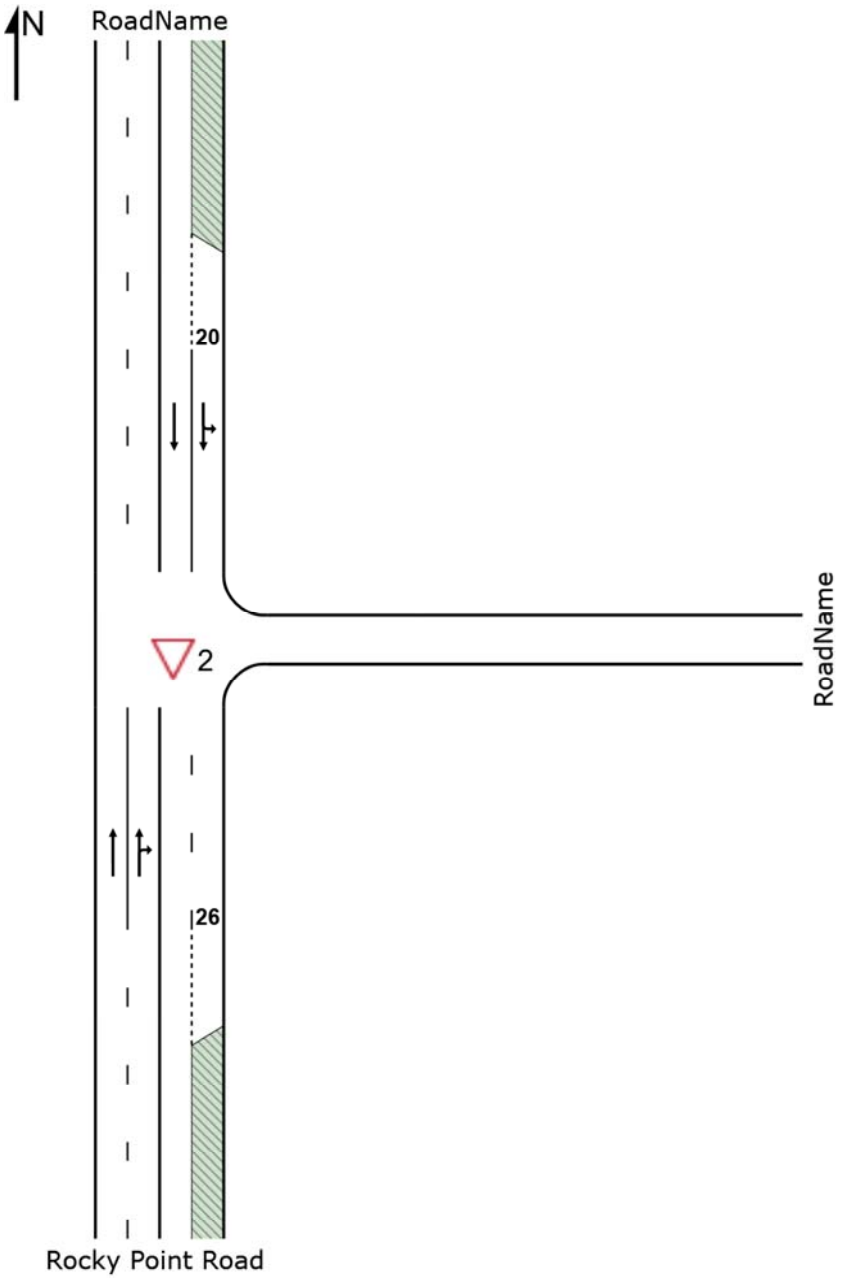
Mov ID	Description	Demand Flow ped/h	Average Delay sec	Level of Service	Average Back of Queue Pedestrian ped	Distance m	Prop. Queued	Effective Stop Rate per ped
P2	East Full Crossing	53	9.6	LOS A	0.1	0.1	0.40	0.40
All Pedestrians		53	9.6	LOS A			0.40	0.40

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

SITE LAYOUT

Site: 2 [AM EX - Rocky Point Road x Production Avenue]

T-intersection:Rocky Point Road x Production Avenue
Period: AM
Scenario: Exisitng Situation
Giveway / Yield (Two-Way)



MOVEMENT SUMMARY

Site: 2 [AM EX - Rocky Point Road x Production Avenue]

Network: 1 [AM EX]

T-intersection:Rocky Point Road x Production Avenue
Period: AM
Scenario: Exisitng Situation
Giveway / Yield (Two-Way)

Movement Performance - Vehicles

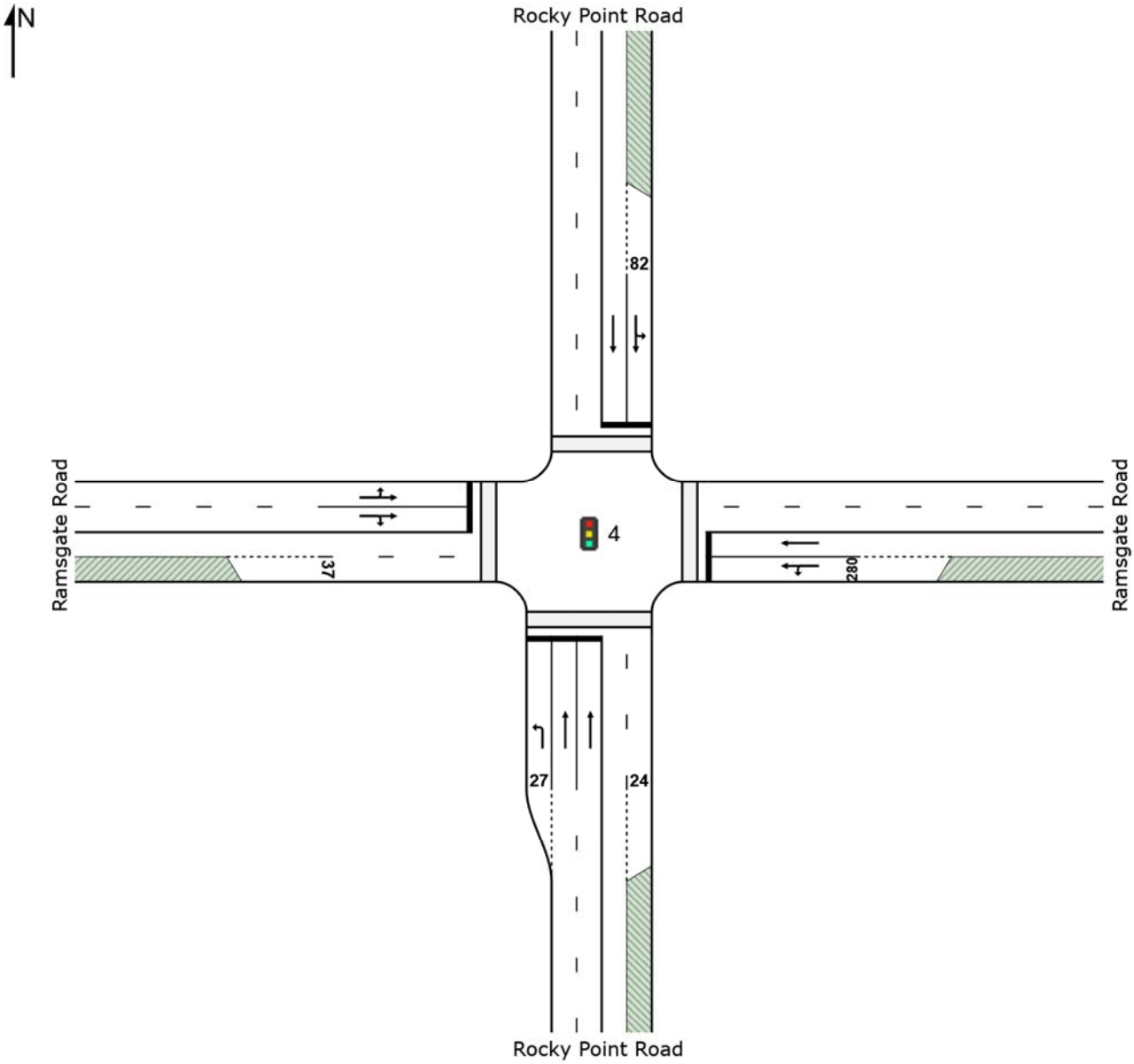
Mov ID	OD Mov	Demand Flows Total	HV	Arrival Flows Total	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue Vehicles	Distance	Prop. Queued	Effective Stop Rate	Average Speed
		veh/h	%	veh/h	%	v/c	sec		veh	m		per veh	km/h
South: Rocky Point Road													
2	T1	1568	2.8	1568	2.8	0.469	1.5	LOS A	11.5	82.1	0.13	0.02	48.1
3	R2	45	4.7	45	4.7	0.469	21.3	LOS B	11.5	82.1	0.30	0.05	45.4
Approach		1614	2.8	1614	2.8	0.469	2.1	NA	11.5	82.1	0.13	0.02	47.9
North: RoadName													
7	L2	62	0.0	62	0.0	0.109	5.5	LOS A	0.0	0.0	0.00	0.24	46.8
8	T1	717	91.6	717	91.6	0.511	0.0	LOS A	0.0	0.0	0.00	0.03	55.3
Approach		779	84.3	779	84.3	0.511	0.5	NA	0.0	0.0	0.00	0.05	53.3
All Vehicles		2393	29.3	2393	29.3	0.511	1.6	NA	11.5	82.1	0.09	0.03	49.6

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Network tab).
Vehicle movement LOS values are based on average delay per movement.
Minor Road Approach LOS values are based on average delay for all vehicle movements.
NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.
SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Largest change in Average Back of Queue or Degree of Saturation for any lane during the last three iterations: 0.9 %
Number of Iterations: 7 (maximum specified: 10)

SITE LAYOUT

Site: 4 [AM EX - Rocky Point Road x Ramsgate Road]

Signalised Intersection: Rocky Point Road x Ramsgate Road
Period: AM
Scenario: Existing Situation
Signals - Fixed Time Isolated



MOVEMENT SUMMARY

Site: 4 [AM EX - Rocky Point Road x Ramsgate Road]

Network: 1 [AM EX]

Signalised Intersection: Rocky Point Road x Ramsgate Road
Period: AM
Scenario: Existing Situation
Signals - Fixed Time Coordinated Cycle Time = 120 seconds (Network Cycle Time - User-Given)

Movement Performance - Vehicles

Mov ID	OD Mov	Demand Flows Total	HV	Arrival Flows Total	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue Vehicles	Distance	Prop. Queued	Effective Stop Rate	Average Speed
		veh/h	%	veh/h	%	v/c	sec		veh	m		per veh	km/h
South: Rocky Point Road													
1	L2	360	5.3	360	5.3	0.394	11.9	LOS A	7.3	53.5	0.38	0.69	45.0
2	T1	1557	2.8	1557	2.8	0.899	37.0	LOS C	56.0	401.2	0.88	0.92	23.3
Approach		1917	3.2	1917	3.2	0.899	32.3	LOS C	56.0	401.2	0.78	0.87	27.1
East: Ramsgate Road													
4	L2	27	7.7	27	7.7	0.269	52.3	LOS D	4.5	32.5	0.91	0.73	27.5
5	T1	386	3.5	386	3.5	0.935	68.8	LOS E	23.4	169.0	0.99	1.06	21.5
Approach		414	3.8	414	3.8	0.935	67.8	LOS E	23.4	169.0	0.98	1.04	21.8
North: Rocky Point Road													
7	L2	33	9.7	33	9.7	0.132	20.0	LOS B	3.6	27.3	0.52	0.50	44.5
8	T1	659	8.0	659	8.0	0.577	18.5	LOS B	21.4	160.1	0.68	0.62	44.8
Approach		692	8.1	692	8.1	0.577	18.6	LOS B	21.4	160.1	0.68	0.61	44.8
West: Ramsgate Road													
10	L2	46	13.6	46	13.6	0.514	38.2	LOS C	15.5	114.3	0.84	0.74	22.2
11	T1	293	4.7	293	4.7	0.514	32.5	LOS C	15.5	114.3	0.84	0.74	32.3
12	R2	213	8.4	213	8.4	0.776	65.6	LOS E	12.2	91.3	1.00	1.04	23.0
Approach		552	6.9	552	6.9	0.776	45.7	LOS D	15.5	114.3	0.90	0.85	27.1
All Vehicles		3574	4.8	3574	4.8	0.935	35.8	LOS C	56.0	401.2	0.80	0.84	29.7

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Network tab).
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Largest change in Average Back of Queue or Degree of Saturation for any lane during the last three iterations: 0.9 %
Number of Iterations: 7 (maximum specified: 10)

Movement Performance - Pedestrians

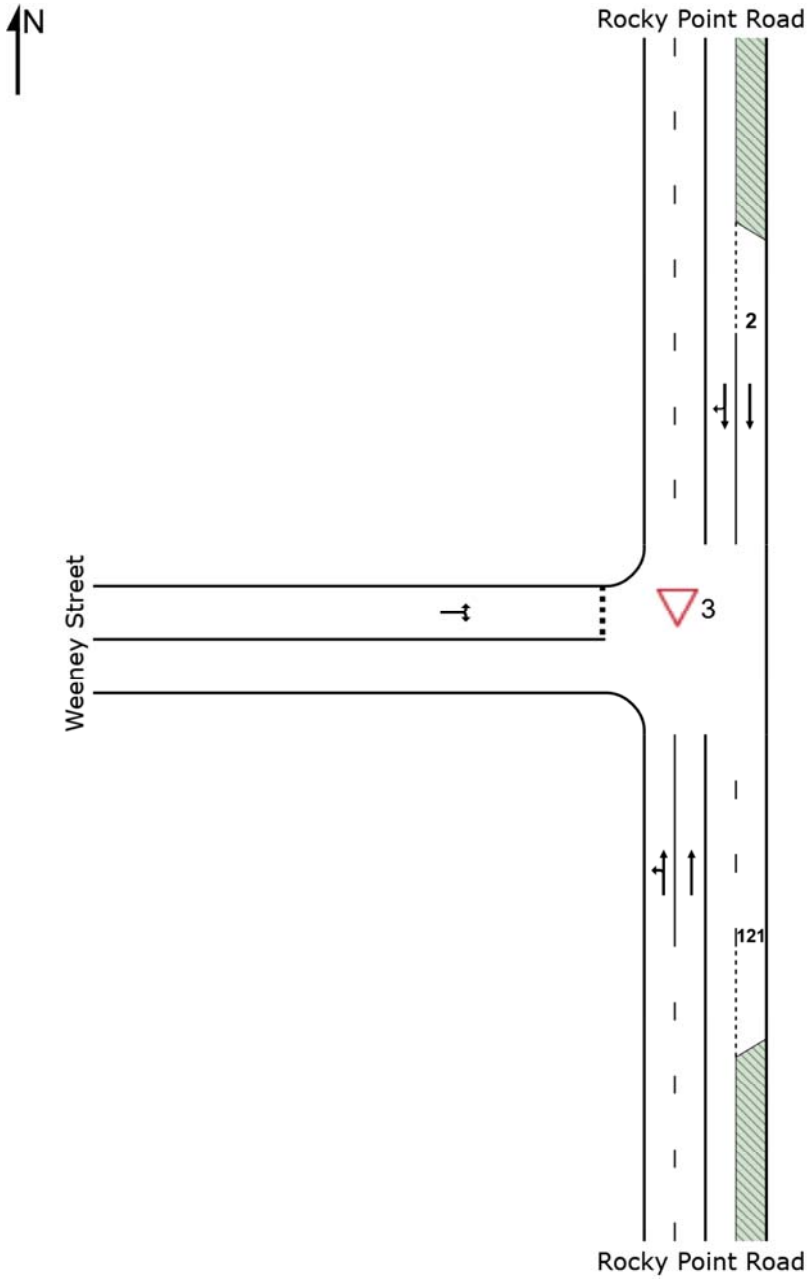
Mov ID	Description	Demand Flow	Average Delay	Level of Service	Average Back of Queue Pedestrian	Distance	Prop. Queued	Effective Stop Rate
		ped/h	sec		ped	m		per ped
P1	South Full Crossing	53	51.5	LOS E	0.2	0.2	0.93	0.93
P2	East Full Crossing	53	17.6	LOS B	0.1	0.1	0.54	0.54
P3	North Full Crossing	53	48.7	LOS E	0.2	0.2	0.90	0.90
P4	West Full Crossing	53	17.6	LOS B	0.1	0.1	0.54	0.54
All Pedestrians		211	33.9	LOS D			0.73	0.73

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

SITE LAYOUT

Site: 3 [AM EX - Rocky Point Road x Weeney Street]

T-intersection: Rocky Point Road x Weeney Street
Period: AM
Scenario: Existing Situation
Giveway / Yield (Two-Way)



MOVEMENT SUMMARY

Site: 3 [AM EX - Rocky Point Road x Weeney Street]

Network: 1 [AM EX]

T-intersection: Rocky Point Road x Weeney Street
Period: AM
Scenario: Existing Situation
Giveway / Yield (Two-Way)

Movement Performance - Vehicles

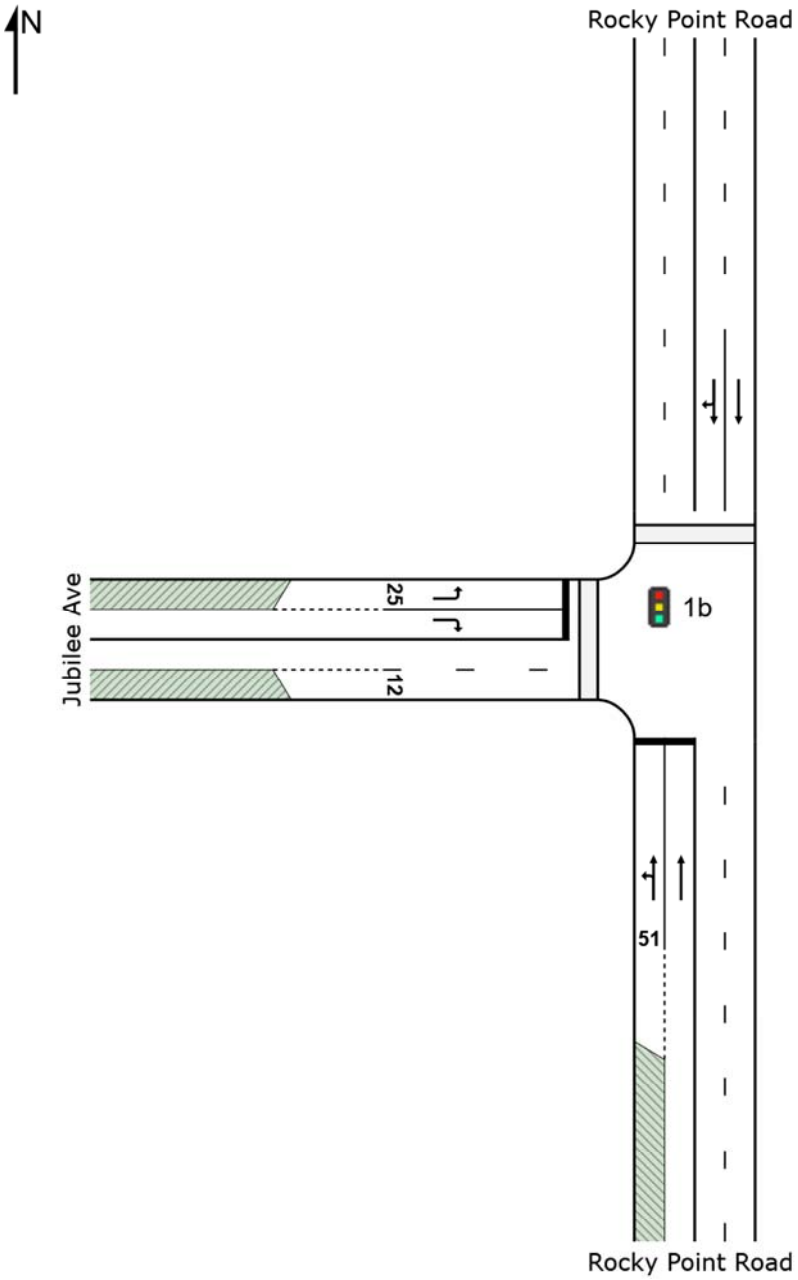
Mov ID	OD Mov	Demand Flows Total	HV	Arrival Flows Total	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue Vehicles	Distance	Prop. Queued	Effective Stop Rate	Average Speed
		veh/h	%	veh/h	%	v/c	sec		veh	m		per veh	km/h
South: Rocky Point Road													
1	L2	57	5.6	57	5.6	0.437	5.7	LOS A	0.0	0.0	0.00	0.04	56.5
2	T1	1613	2.8	1613	2.8	0.437	0.1	LOS A	0.0	0.0	0.00	0.02	59.5
Approach		1669	2.9	1669	2.9	0.437	0.3	NA	0.0	0.0	0.00	0.02	59.4
North: Rocky Point Road													
8	T1	703	8.1	703	8.1	0.542	1.2	LOS A	0.6	4.2	0.03	0.00	52.0
9	R2	4	0.0	4	0.0	0.542	36.8	LOS C	0.6	4.2	0.44	0.07	13.0
Approach		707	8.0	707	8.0	0.542	1.4	NA	0.6	4.2	0.03	0.01	50.5
West: Weeney Street													
10	L2	13	0.0	13	0.0	0.246	17.7	LOS B	0.7	4.6	0.92	0.98	6.2
12	R2	3	0.0	3	0.0	0.246	245.6	LOS F	0.7	4.6	0.92	0.98	6.2
Approach		16	0.0	16	0.0	0.246	63.3	LOS E	0.7	4.6	0.92	0.98	6.2
All Vehicles		2393	4.4	2393	4.4	0.542	1.0	NA	0.7	4.6	0.02	0.02	57.5

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Network tab).
Vehicle movement LOS values are based on average delay per movement.
Minor Road Approach LOS values are based on average delay for all vehicle movements.
NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.
SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Largest change in Average Back of Queue or Degree of Saturation for any lane during the last three iterations: 0.9 %
Number of Iterations: 7 (maximum specified: 10)

SITE LAYOUT

Site: 1b [PM EX - Rocky Point Rd x Jubilee Ave]

Signalised Intersection: Rocky Point Rd x Jubilee Ave
Period: PM
Scenario: Existing Situation
Signals - Fixed Time Isolated



MOVEMENT SUMMARY

Site: 1b [PM EX - Rocky Point Rd x Jubilee Ave]

Network: 2 [PM EX]

Signalised Intersection: Rocky Point Rd x Jubilee Ave
Period: PM
Scenario: Existing Situation
Signals - Fixed Time Coordinated Cycle Time = 120 seconds (Network Cycle Time - User-Given)
Common Control Group: CCG1 [Intersection of Rocky Point Road x Jubliee Avenue x Phillips Road]

Movement Performance - Vehicles

Mov ID	OD Mov	Demand Flows Total veh/h	HV %	Arrival Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
South: Rocky Point Road													
1	L2	123	2.6	123	2.6	0.453	20.4	LOS B	12.1	86.3	0.58	0.59	32.0
2	T1	629	2.7	629	2.7	0.453	15.6	LOS B	12.3	88.4	0.61	0.57	20.1
Approach		753	2.7	753	2.7	0.453	16.4	LOS B	12.3	88.4	0.60	0.57	23.0
North: Rocky Point Road													
8	T1	1343	2.4	1343	2.4	0.387	0.0	LOS A	0.0	0.0	0.00	0.04	53.0
9	R2	135	3.1	135	3.1	0.387	2.1	LOS A	0.0	0.0	0.00	0.10	51.0
Approach		1478	2.5	1478	2.5	0.387	0.2	LOS A	0.0	0.0	0.00	0.05	51.9
West: Jubilee Ave													
10	L2	81	1.3	81	1.3	0.240	51.1	LOS D	4.1	29.0	0.90	0.76	12.9
12	R2	211	0.5	211	0.5	0.641	51.8	LOS D	11.1	78.4	0.95	0.81	12.7
Approach		292	0.7	292	0.7	0.641	51.6	LOS D	11.1	78.4	0.93	0.80	12.8
All Vehicles		2522	2.3	2522	2.3	0.641	11.0	LOS A	12.3	88.4	0.29	0.29	21.3

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Network tab).
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Largest change in Average Back of Queue or Degree of Saturation for any lane during the last three iterations: 0.0 %
Number of Iterations: 5 (maximum specified: 10)

Movement Performance - Pedestrians

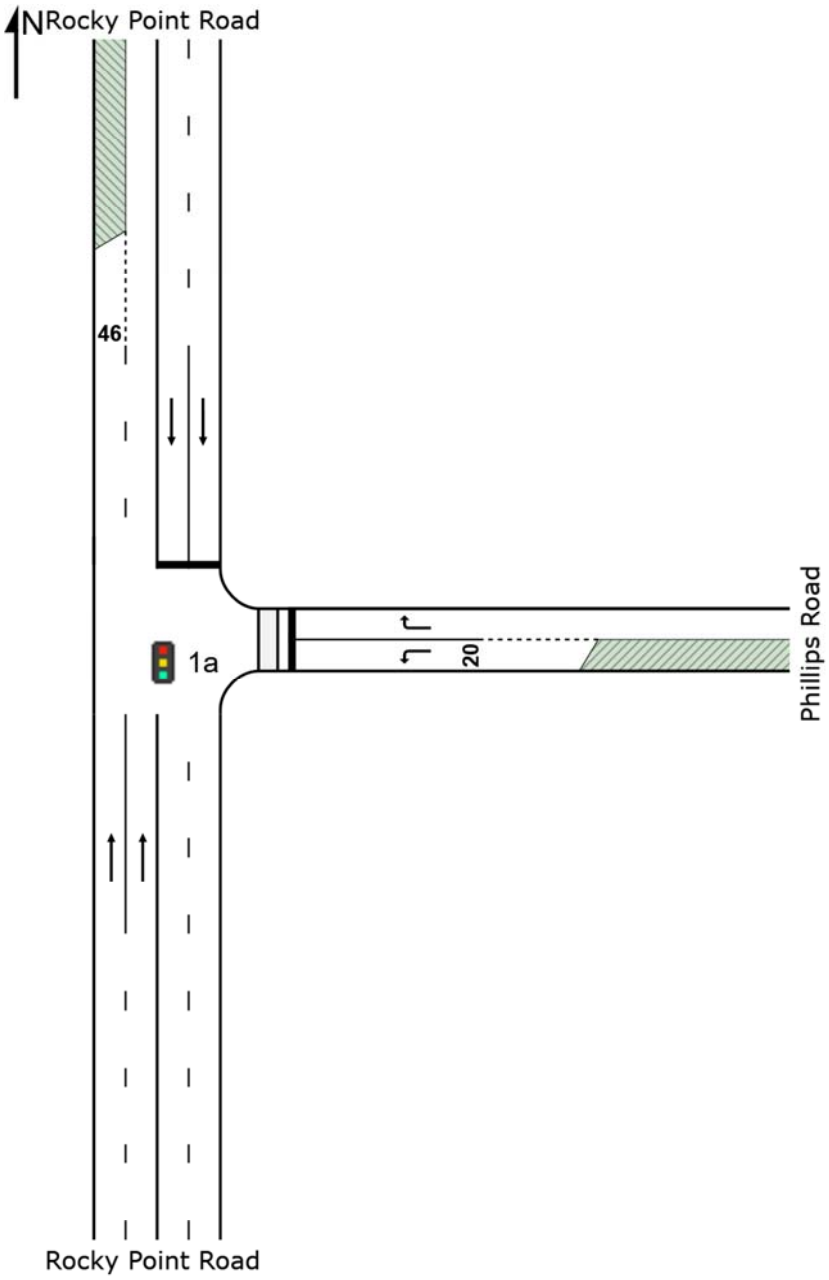
Mov ID	Description	Demand Flow ped/h	Average Delay sec	Level of Service	Average Back of Queue Pedestrian ped	Distance m	Prop. Queued	Effective Stop Rate per ped
P3	North Full Crossing	53	46.0	LOS E	0.2	0.2	0.88	0.88
P4	West Full Crossing	53	16.1	LOS B	0.1	0.1	0.52	0.52
All Pedestrians		105	31.0	LOS D			0.70	0.70

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

SITE LAYOUT

Site: 1a [PM EX - Rocky Point Rd x Phillips Rd]

Signalised Intersection: Rocky Point Rd x Phillips Rd
Period: PM
Scenario: Existing Situation
Signals - Fixed Time Isolated



MOVEMENT SUMMARY

Site: 1a [PM EX - Rocky Point Rd x Phillips Rd]

Network: 2 [PM EX]

Signalised Intersection: Rocky Point Rd x Phillips Rd
Period: PM
Scenario: Existing Situation
Signals - Fixed Time Coordinated Cycle Time = 120 seconds (Network Cycle Time - User-Given)
Common Control Group: CCG1 [Intersection of Rocky Point Road x Jubliee Avenue x Phillips Road]

Movement Performance - Vehicles

Mov ID	OD Mov	Demand Flows Total veh/h	HV %	Arrival Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
South: Rocky Point Road													
2	T1	629	2.7	629	2.7	0.256	0.0	LOS A	0.0	0.0	0.00	0.00	59.9
Approach		629	2.7	629	2.7	0.256	0.0	LOS A	0.0	0.0	0.00	0.00	59.9
East: Phillips Road													
4	L2	85	1.2	85	1.2	0.618	67.2	LOS E	5.1	36.4	1.00	0.79	12.5
6	R2	43	0.0	43	0.0	0.310	64.7	LOS E	2.5	17.5	0.98	0.74	25.5
Approach		128	0.8	128	0.8	0.618	66.4	LOS E	5.1	36.4	0.99	0.78	17.9
North: Rocky Point Road													
8	T1	1386	2.6	1386	2.6	0.638	18.7	LOS B	27.1	194.1	0.73	0.67	38.2
Approach		1386	2.6	1386	2.6	0.638	18.7	LOS B	27.1	194.1	0.73	0.67	38.2
All Vehicles		2144	2.5	2144	2.5	0.638	16.1	LOS B	27.1	194.1	0.53	0.48	40.1

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Network tab).
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Largest change in Average Back of Queue or Degree of Saturation for any lane during the last three iterations: 0.0 %
Number of Iterations: 5 (maximum specified: 10)

Movement Performance - Pedestrians

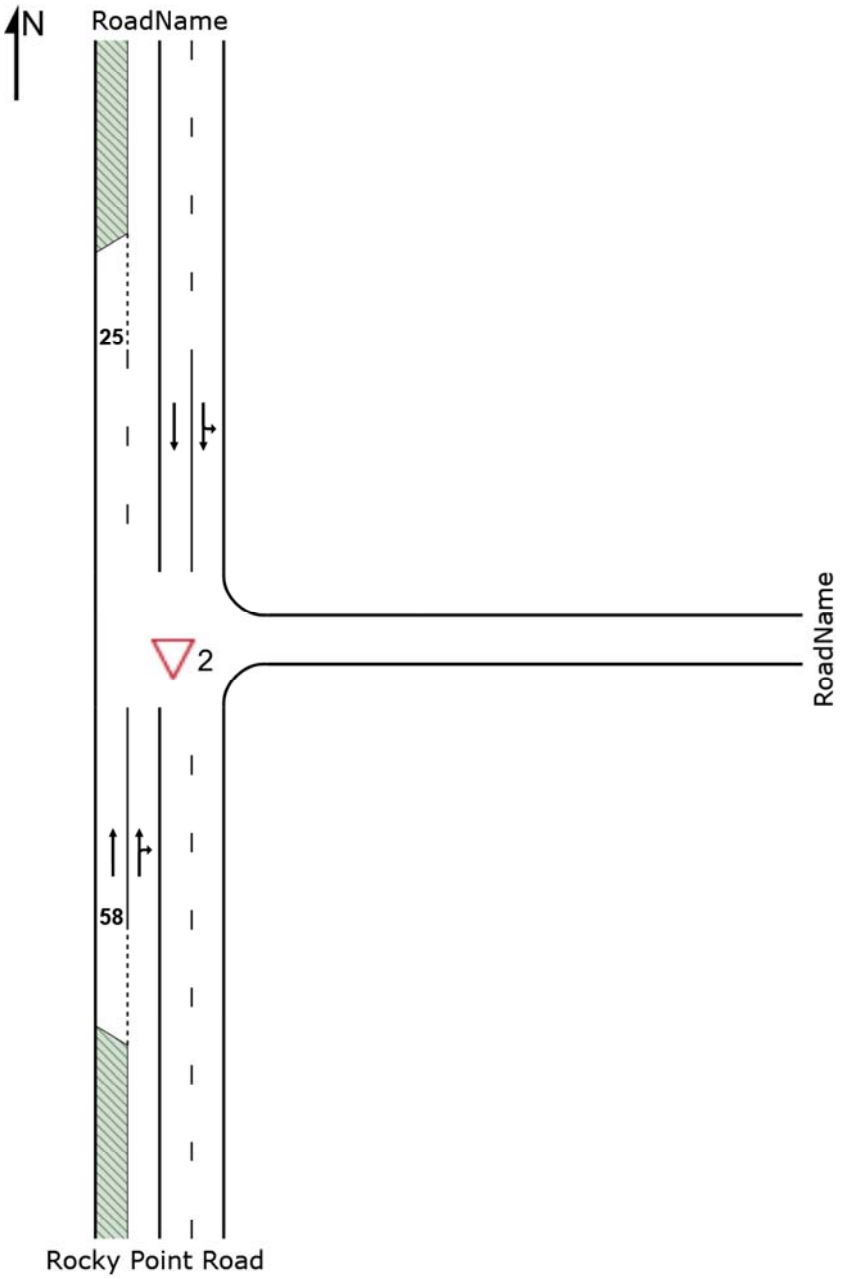
Mov ID	Description	Demand Flow ped/h	Average Delay sec	Level of Service	Average Back of Queue Pedestrian ped	Distance m	Prop. Queued	Effective Stop Rate per ped
P2	East Full Crossing	53	13.6	LOS B	0.1	0.1	0.48	0.48
All Pedestrians		53	13.6	LOS B			0.48	0.48

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

SITE LAYOUT

Site: 2 [PM EX - Rocky Point Road x Production Avenue]

T-intersection:Rocky Point Road x Production Avenue
Period: PM
Scenario: Exisitng Situation
Giveway / Yield (Two-Way)



MOVEMENT SUMMARY

Site: 2 [PM EX - Rocky Point Road x Production Avenue]

Network: 2 [PM EX]

T-intersection:Rocky Point Road x Production Avenue
Period: PM
Scenario: Exisitng Situation
Giveway / Yield (Two-Way)

Movement Performance - Vehicles

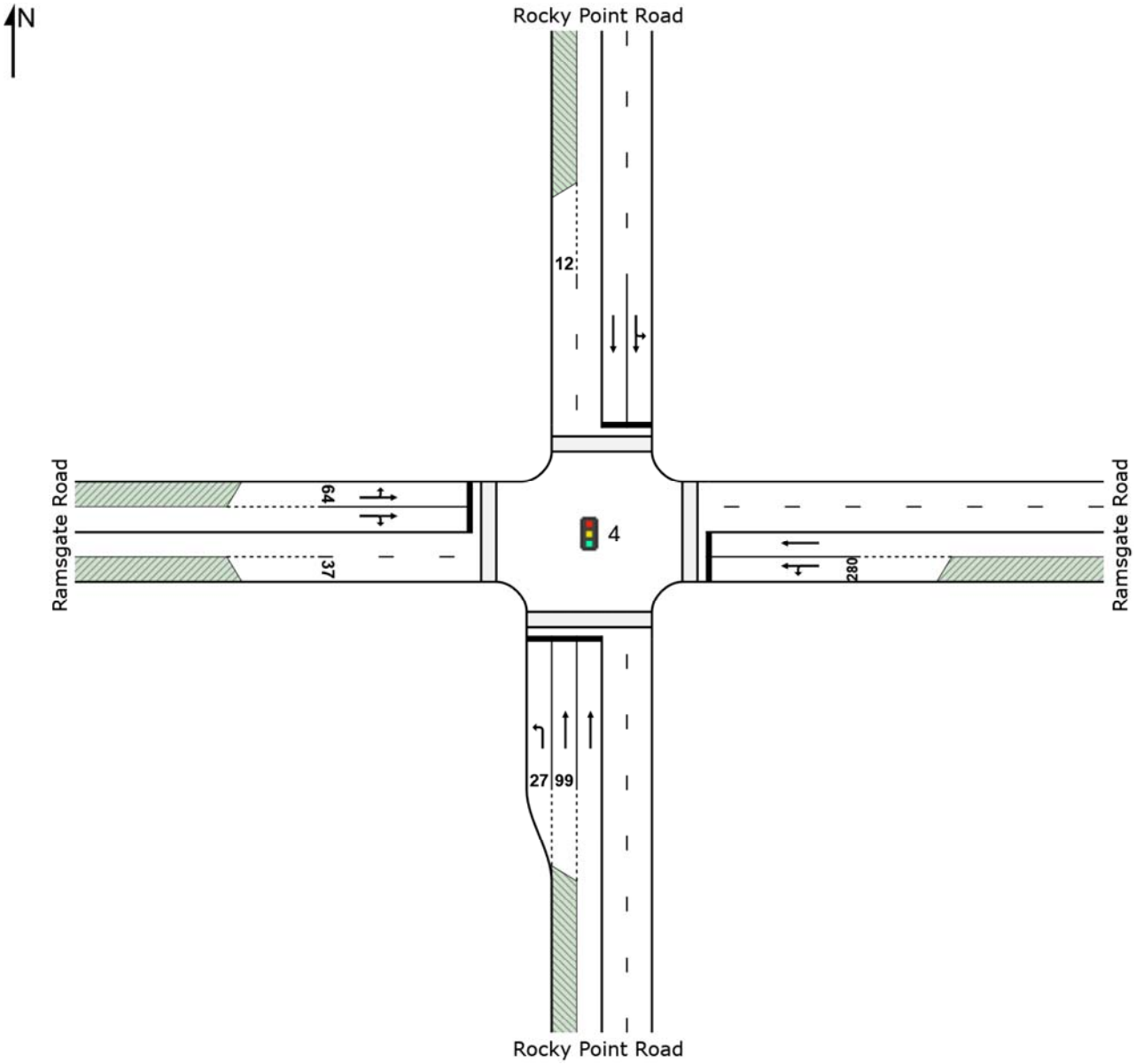
Mov ID	OD Mov	Demand Flows Total	HV	Arrival Flows Total	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue Vehicles	Distance	Prop. Queued	Effective Stop Rate	Average Speed
		veh/h	%	veh/h	%	v/c	sec		veh	m		per veh	km/h
South: Rocky Point Road													
2	T1	755	2.6	755	2.6	0.388	2.8	LOS A	2.0	14.1	0.16	0.02	42.2
3	R2	18	0.0	18	0.0	0.388	30.1	LOS C	2.0	14.1	0.20	0.02	47.1
Approach		773	2.6	773	2.6	0.388	3.4	NA	2.0	14.1	0.16	0.02	42.5
North: RoadName													
7	L2	51	2.1	51	2.1	0.407	5.6	LOS A	0.0	0.0	0.00	0.04	54.3
8	T1	1512	2.2	1512	2.2	0.407	0.0	LOS A	0.0	0.0	0.00	0.02	58.6
Approach		1562	2.2	1562	2.2	0.407	0.2	NA	0.0	0.0	0.00	0.02	58.2
All Vehicles		2335	2.3	2335	2.3	0.407	1.3	NA	2.0	14.1	0.05	0.02	51.8

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Network tab).
Vehicle movement LOS values are based on average delay per movement.
Minor Road Approach LOS values are based on average delay for all vehicle movements.
NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.
SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Largest change in Average Back of Queue or Degree of Saturation for any lane during the last three iterations: 0.0 %
Number of Iterations: 5 (maximum specified: 10)

SITE LAYOUT

Site: 4 [PM EX - Rocky Point Road x Ramsgate Road]

Signalised Intersection: Rocky Point Road x Ramsgate Road
Period: PM
Scenario: Existing Situation
Signals - Fixed Time Isolated



MOVEMENT SUMMARY

Site: 4 [PM EX - Rocky Point Road x Ramsgate Road]

Network: 2 [PM EX]

Signalised Intersection: Rocky Point Road x Ramsgate Road
Period: PM
Scenario: Existing Situation
Signals - Fixed Time Coordinated Cycle Time = 120 seconds (Network Cycle Time - User-Given)

Movement Performance - Vehicles

Mov ID	OD Mov	Demand Flows Total veh/h	HV %	Arrival Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
South: Rocky Point Road													
1	L2	317	2.0	317	2.0	0.324	17.8	LOS B	8.8	62.6	0.52	0.73	40.8
2	T1	736	2.6	736	2.6	0.833	35.8	LOS C	33.4	238.8	0.90	0.84	23.8
Approach		1053	2.4	1053	2.4	0.833	30.4	LOS C	33.4	238.8	0.78	0.81	29.0
East: Ramsgate Road													
4	L2	46	0.0	46	0.0	0.259	40.4	LOS C	6.4	45.2	0.81	0.70	31.6
5	T1	621	1.0	621	1.0	0.901	53.4	LOS D	34.7	244.8	0.97	1.00	25.1
Approach		667	0.9	667	0.9	0.901	52.5	LOS D	34.7	244.8	0.96	0.98	25.5
North: Rocky Point Road													
7	L2	48	2.2	48	2.2	0.897	53.8	LOS D	43.7	311.8	1.00	1.03	30.4
8	T1	1325	2.2	1325	2.2	0.897	48.2	LOS D	44.0	314.2	1.00	1.03	32.0
Approach		1374	2.2	1374	2.2	0.897	48.4	LOS D	44.0	314.2	1.00	1.03	31.9
West: Ramsgate Road													
10	L2	29	0.0	29	0.0	0.366	25.0	LOS B	12.1	88.1	0.65	0.59	29.7
11	T1	313	5.4	313	5.4	0.366	19.5	LOS B	12.1	88.1	0.65	0.59	39.5
12	R2	258	2.4	258	2.4	0.739	59.7	LOS E	13.9	99.5	1.00	1.03	24.4
Approach		600	3.9	600	3.9	0.739	37.0	LOS C	13.9	99.5	0.80	0.78	30.5
All Vehicles		3694	2.3	3694	2.3	0.901	42.1	LOS C	44.0	314.2	0.90	0.92	29.9

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Network tab).
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Largest change in Average Back of Queue or Degree of Saturation for any lane during the last three iterations: 0.0 %
Number of Iterations: 5 (maximum specified: 10)

Movement Performance - Pedestrians

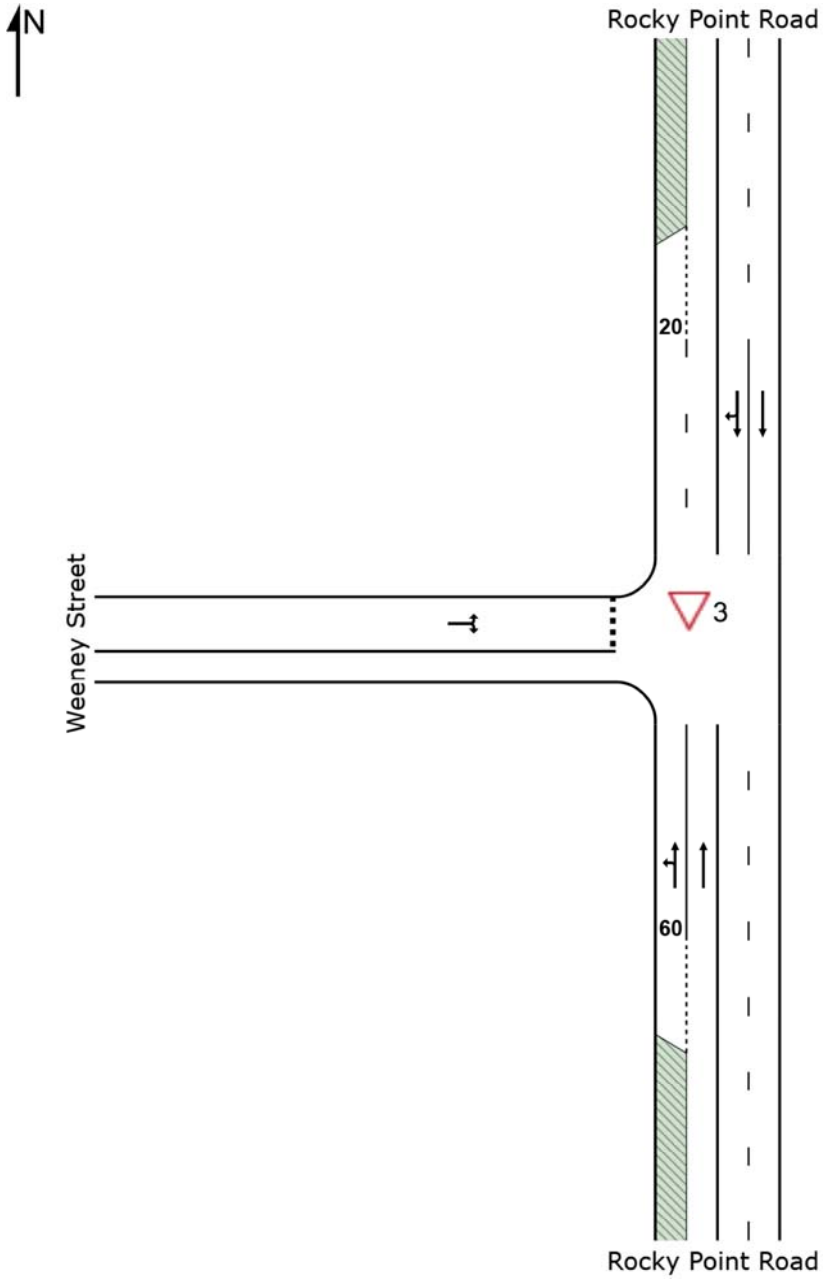
Mov ID	Description	Demand Flow ped/h	Average Delay sec	Level of Service	Average Back of Queue Pedestrian ped	Distance m	Prop. Queued	Effective Stop Rate per ped
P1	South Full Crossing	53	39.3	LOS D	0.1	0.1	0.81	0.81
P2	East Full Crossing	53	28.1	LOS C	0.1	0.1	0.68	0.68
P3	North Full Crossing	53	36.9	LOS D	0.1	0.1	0.79	0.79
P4	West Full Crossing	53	28.1	LOS C	0.1	0.1	0.68	0.68
All Pedestrians		211	33.1	LOS D			0.74	0.74

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

SITE LAYOUT

Site: 3 [PM EX - Rocky Point Road x Weeney Street]

T-intersection: Rocky Point Road x Weeney Street
Period: PM
Scenario: Existing Situation
Giveway / Yield (Two-Way)



MOVEMENT SUMMARY

Site: 3 [PM EX - Rocky Point Road x Weeney Street]

Network: 2 [PM EX]

T-intersection: Rocky Point Road x Weeney Street
Period: PM
Scenario: Existing Situation
Giveway / Yield (Two-Way)

Movement Performance - Vehicles

Mov ID	OD Mov	Demand Flows Total	HV	Arrival Flows Total	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue Vehicles	Distance	Prop. Queued	Effective Stop Rate	Average Speed
		veh/h	%	veh/h	%	v/c	sec		veh	m		per veh	km/h
South: Rocky Point Road													
1	L2	19	5.6	19	5.6	0.069	5.6	LOS A	0.0	0.0	0.00	0.09	56.0
2	T1	756	2.6	756	2.6	0.336	0.0	LOS A	0.0	0.0	0.00	0.01	59.7
Approach		775	2.7	775	2.7	0.336	0.2	NA	0.0	0.0	0.00	0.01	59.6
North: Rocky Point Road													
8	T1	1476	2.2	1476	2.2	0.399	0.3	LOS A	0.7	4.7	0.04	0.01	57.1
9	R2	18	0.0	18	0.0	0.399	13.6	LOS A	0.7	4.7	0.08	0.02	50.7
Approach		1494	2.2	1494	2.2	0.399	0.4	NA	0.7	4.7	0.04	0.01	56.9
West: Weeney Street													
10	L2	25	0.0	25	0.0	0.291	6.0	LOS A	0.8	5.4	0.65	0.59	9.9
12	R2	5	0.0	5	0.0	0.291	182.7	LOS F	0.8	5.4	0.65	0.59	9.9
Approach		31	0.0	31	0.0	0.291	36.4	LOS C	0.8	5.4	0.65	0.59	9.9
All Vehicles		2299	2.3	2299	2.3	0.399	0.8	NA	0.8	5.4	0.03	0.02	57.1

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Network tab).
Vehicle movement LOS values are based on average delay per movement.
Minor Road Approach LOS values are based on average delay for all vehicle movements.
NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.
SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Largest change in Average Back of Queue or Degree of Saturation for any lane during the last three iterations: 0.0 %
Number of Iterations: 5 (maximum specified: 10)

MOVEMENT SUMMARY

Site: 1a [AM FU Rocky Point Rd x Phillips Rd]

Network: N101 [AM FU - Residential DA+Childcare +Commercial]

Signalised Intersection: Rocky Point Rd x Phillips Rd
Period: AM
Scenario: Future
Signals - Fixed Time Coordinated Cycle Time = 120 seconds (Network Cycle Time - User-Given)
Common Control Group: CCG1 [Intersection of Rocky Point Road x Jubilee Ave X Phillips Road]

Movement Performance - Vehicles

Mov ID	OD Mov	Demand Flows Total veh/h	Demand Flows HV %	Arrival Flows Total veh/h	Arrival Flows HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	95% Back of Queue Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
South: Rocky Point Road													
2	T1	1499	2.9	1499	2.9	0.392	0.0	LOS A	0.0	0.0	0.00	0.00	59.9
Approach		1499	2.9	1499	2.9	0.392	0.0	LOS A	0.0	0.0	0.00	0.00	59.9
East: Phillips Road													
4	L2	31	10.3	31	10.3	0.353	69.5	LOS E	1.9	14.2	1.00	0.72	12.2
6	R2	26	8.0	26	8.0	0.300	69.0	LOS E	1.6	11.9	1.00	0.71	24.5
Approach		57	9.3	57	9.3	0.353	69.2	LOS E	1.9	14.2	1.00	0.72	18.9
North: Rocky Point Road													
8	T1	747	7.0	747	7.0	0.297	8.3	LOS A	8.7	64.6	0.44	0.38	47.8
Approach		747	7.0	747	7.0	0.297	8.3	LOS A	8.7	64.6	0.44	0.38	47.8
All Vehicles		2303	4.4	2303	4.4	0.392	4.4	LOS A	8.7	64.6	0.17	0.14	52.8

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Network tab).
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Largest change in Average Back of Queue or Degree of Saturation for any lane during the last three iterations: 8.7 %
Number of Iterations: 10 (maximum specified: 10)

Movement Performance - Pedestrians

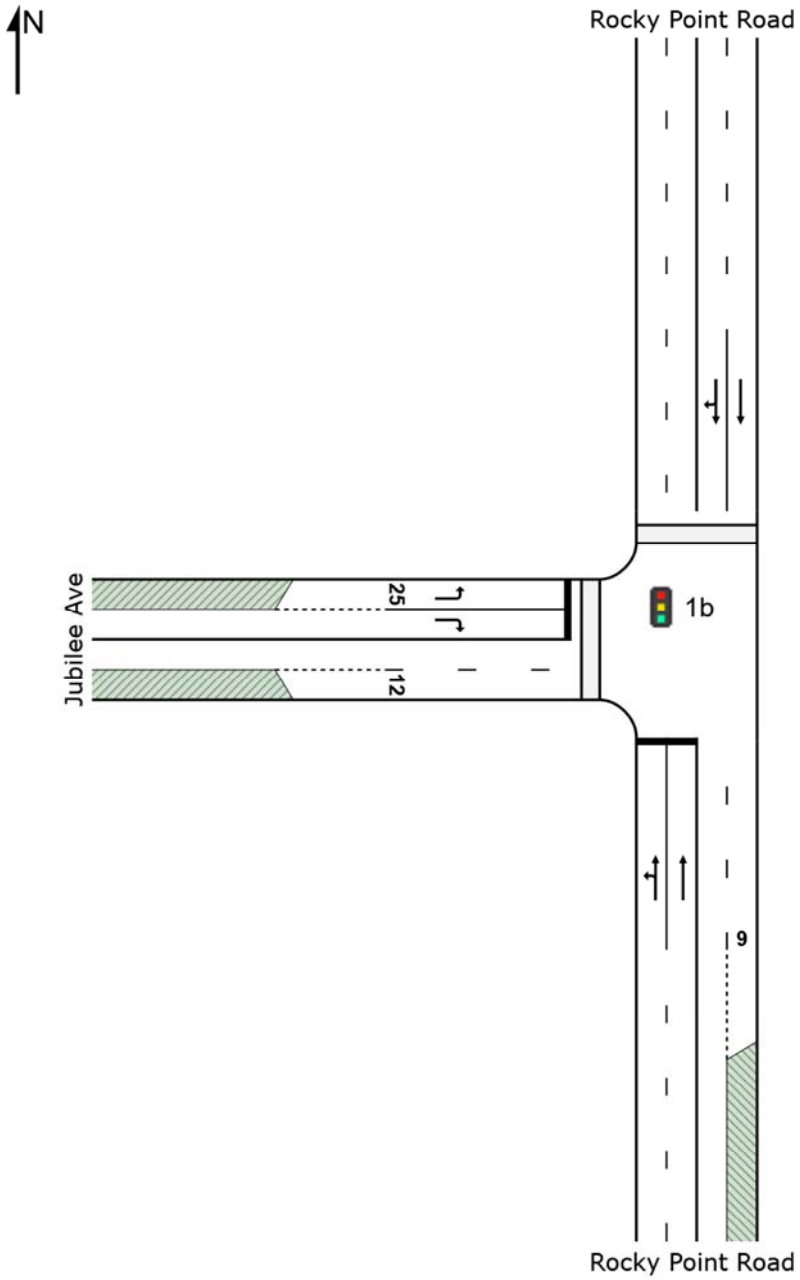
Mov ID	Description	Demand Flow ped/h	Average Delay sec	Level of Service	Average Back of Queue Pedestrian ped	Average Back of Queue Distance m	Prop. Queued	Effective Stop Rate per ped
P2	East Full Crossing	53	8.1	LOS A	0.1	0.1	0.37	0.37
All Pedestrians		53	8.1	LOS A			0.37	0.37

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

SITE LAYOUT

Site: 1b [AM FU Rocky Point Rd x Jubilee Ave]

Signalised Intersection: Rocky Point Rd x Jubilee Ave
Period: AM
Scenario: Future
Signals - Fixed Time Isolated



MOVEMENT SUMMARY

Site: 1b [AM FU Rocky Point Rd x Jubilee Ave]

Network: N101 [AM FU - Residential DA+Childcare +Commercial]

Signalised Intersection: Rocky Point Rd x Jubilee Ave
Period: AM
Scenario: Future
Signals - Fixed Time Coordinated Cycle Time = 120 seconds (Network Cycle Time - User-Given)
Common Control Group: CCG1 [Intersection of Rocky Point Road x Jubilee Ave X Phillips Road]

Movement Performance - Vehicles

Mov ID	OD Mov	Demand Flows Total veh/h	HV %	Arrival Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
South: Rocky Point Road													
1	L2	243	0.4	243	0.4	0.903	20.4	LOS B	18.3	130.4	0.22	0.40	32.4
2	T1	1499	2.9	1499	2.9	0.903	22.1	LOS B	27.5	197.5	0.60	0.70	15.9
Approach		1742	2.5	1742	2.5	0.903	21.9	LOS B	27.5	197.5	0.55	0.65	18.7
North: Rocky Point Road													
8	T1	626	8.7	626	8.7	0.313	0.0	LOS A	0.0	0.0	0.00	0.05	52.1
9	R2	64	4.9	64	4.9	0.313	2.1	LOS A	0.0	0.0	0.00	0.06	50.7
Approach		691	8.4	691	8.4	0.313	0.2	LOS A	0.0	0.0	0.00	0.05	51.3
West: Jubilee Ave													
10	L2	106	2.0	106	2.0	0.581	63.5	LOS E	6.2	44.2	1.00	0.79	10.8
12	R2	206	2.0	206	2.0	1.104	175.8	LOS F	22.9	163.4	1.00	1.32	4.3
Approach		313	2.0	313	2.0	1.104	137.6	LOS F	22.9	163.4	1.00	1.14	5.4
All Vehicles		2745	3.9	2745	3.9	1.104	29.6	LOS C	27.5	197.5	0.46	0.56	13.3

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Network tab).
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Largest change in Average Back of Queue or Degree of Saturation for any lane during the last three iterations: 8.7 %
Number of Iterations: 10 (maximum specified: 10)

Movement Performance - Pedestrians

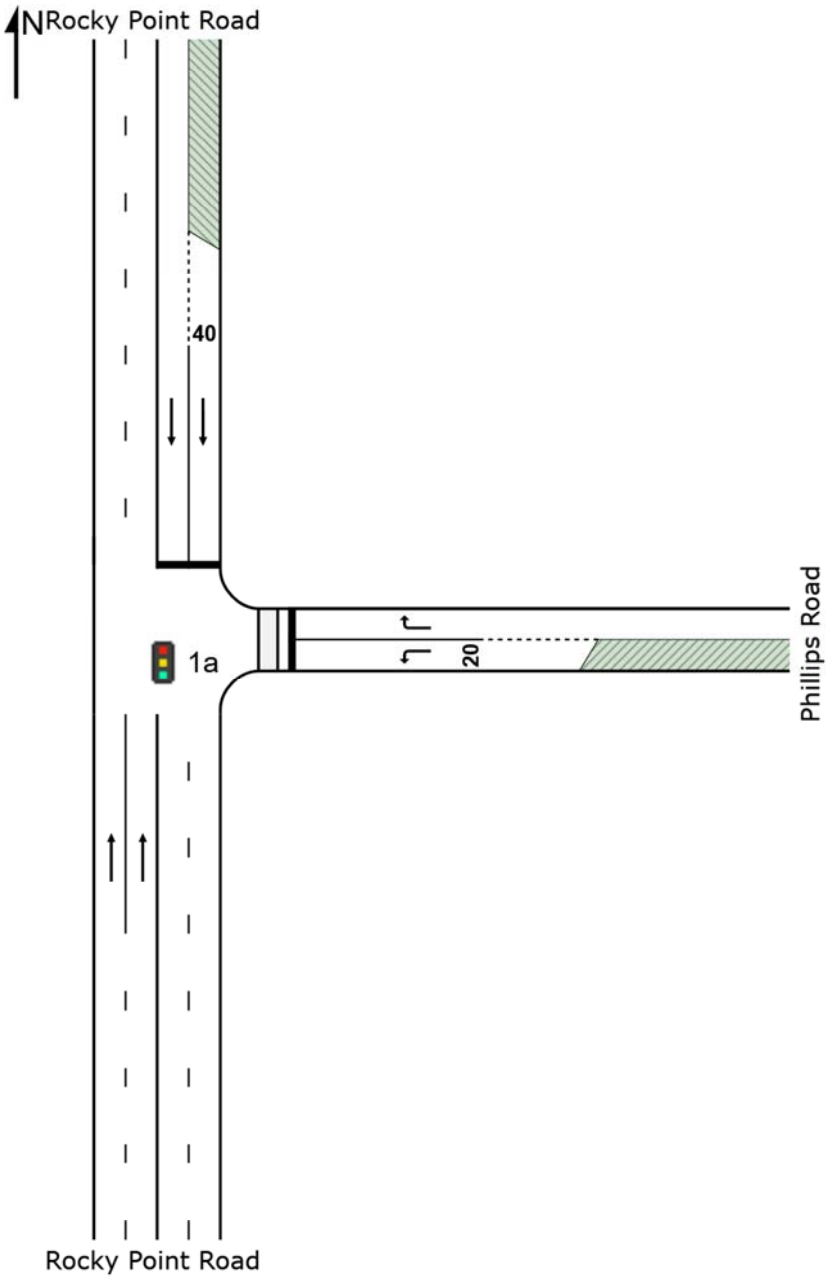
Mov ID	Description	Demand Flow ped/h	Average Delay sec	Level of Service	Average Back of Queue Pedestrian ped	Distance m	Prop. Queued	Effective Stop Rate per ped
P3	North Full Crossing	53	54.3	LOS E	0.2	0.2	0.95	0.95
P4	West Full Crossing	53	10.0	LOS B	0.1	0.1	0.41	0.41
All Pedestrians		105	32.1	LOS D			0.68	0.68

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

SITE LAYOUT

Site: 1a [AM FU Rocky Point Rd x Phillips Rd]

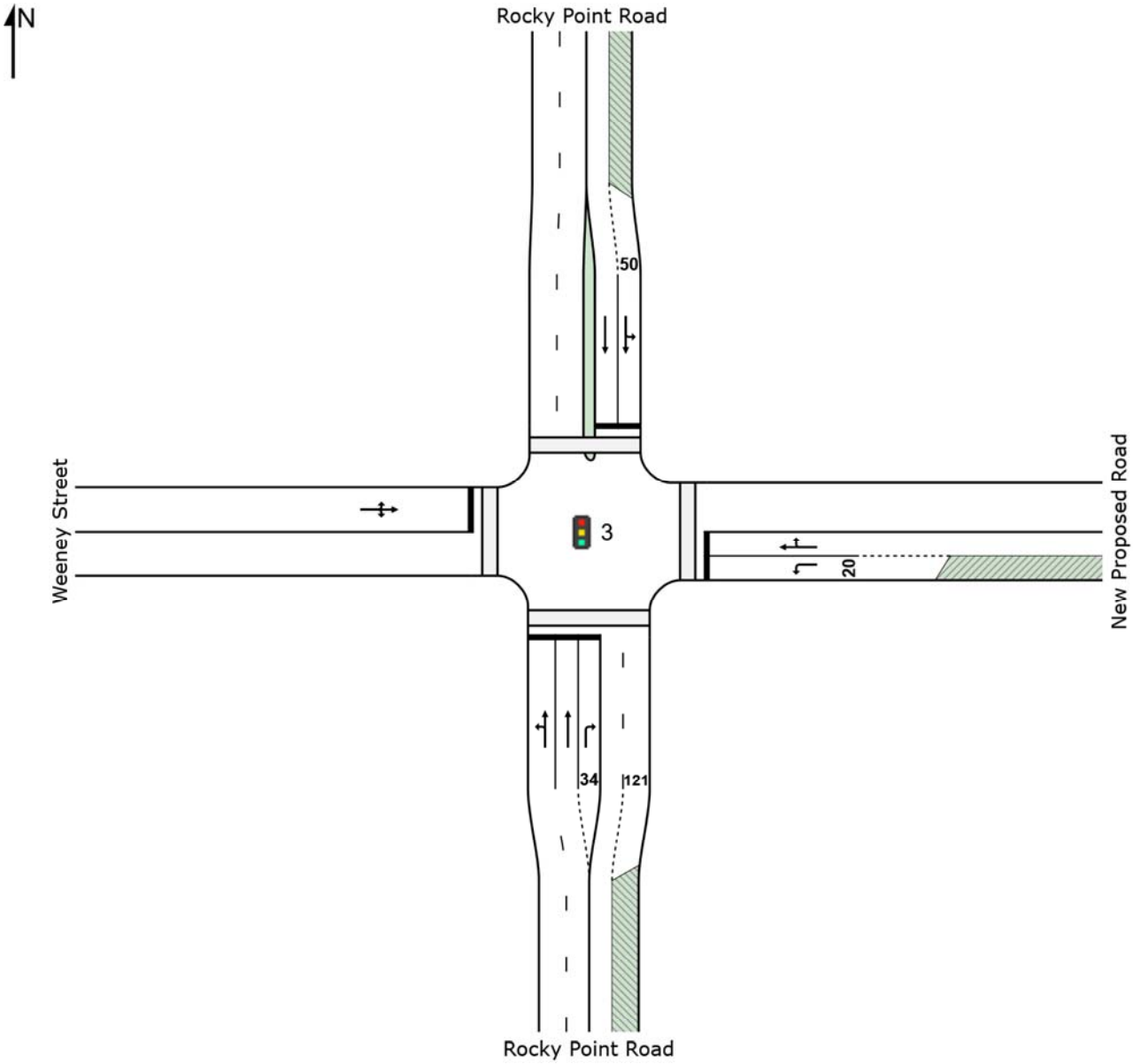
Signalised Intersection: Rocky Point Rd x Phillips Rd
Period: AM
Scenario: Future
Signals - Fixed Time Isolated



SITE LAYOUT

Site: 3 [AM FU Rocky Point Rd x Weeney St x New Proposed Road]

Intersection: Rocky Point Rd x Weeney St x New Proposed Road
Period: AM
Scenario: FU without Left Turn Deceleration Lane
Signals - Fixed Time Isolated



MOVEMENT SUMMARY

Site: 3 [AM FU Rocky Point Rd x Weeney St x New Proposed Road]

Network: N101 [AM FU - Residential DA+Childcare +Commercial]

Intersection: Rocky Point Rd x Weeney St x New Proposed Road
Period: AM
Scenario: FU without Left Turn Deceleration Lane
Signals - Fixed Time Coordinated Cycle Time = 120 seconds (Network Cycle Time - User-Given)

Movement Performance - Vehicles

Mov ID	OD Mov	Demand Flows Total veh/h	HV %	Arrival Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
South: Rocky Point Road													
1	L2	57	5.6	57	5.6	0.859	13.7	LOS A	31.7	227.4	0.54	0.53	47.1
2	T1	1665	2.7	1665	2.7	0.859	10.1	LOS A	31.7	227.4	0.48	0.49	45.7
3	R2	48	0.0	48	0.0	0.456	70.9	LOS F	3.0	20.9	1.00	0.74	22.8
Approach		1771	2.7	1771	2.7	0.859	11.8	LOS A	31.7	227.4	0.50	0.50	44.1
East: New Proposed Road													
4	L2	47	0.0	47	0.0	0.072	31.4	LOS C	1.8	12.6	0.69	0.69	17.0
5	T1	22	0.0	22	0.0	0.885	67.4	LOS E	12.9	90.4	1.00	1.06	12.6
6	R2	162	0.0	162	0.0	0.885	71.9	LOS F	12.9	90.4	1.00	1.06	9.3
Approach		232	0.0	232	0.0	0.885	63.2	LOS E	12.9	90.4	0.94	0.99	10.6
North: Rocky Point Road													
7	L2	71	0.0	68	0.0	0.327	20.5	LOS B	8.5	62.9	0.50	0.49	31.2
8	T1	703	8.1	692	8.2	0.496	15.7	LOS B	13.0	97.2	0.53	0.49	20.6
Approach		774	7.3	760[N1]	7.4	0.496	16.2	LOS B	13.0	97.2	0.53	0.49	22.1
West: Weeney Street													
10	L2	13	0.0	13	0.0	0.113	41.8	LOS C	2.4	16.6	0.81	0.65	9.4
11	T1	37	0.0	37	0.0	0.113	37.2	LOS C	2.4	16.6	0.81	0.65	19.2
12	R2	3	0.0	3	0.0	0.113	41.7	LOS C	2.4	16.6	0.81	0.65	9.4
Approach		53	0.0	53	0.0	0.113	38.6	LOS C	2.4	16.6	0.81	0.65	16.8
All Vehicles		2828	3.7	2815[N1]	3.7	0.885	17.7	LOS B	31.7	227.4	0.55	0.54	34.7

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Network tab).
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Largest change in Average Back of Queue or Degree of Saturation for any lane during the last three iterations: 8.7 %
Number of Iterations: 10 (maximum specified: 10)

N1 Arrival Flow value is reduced due to capacity constraint at oversaturated upstream lanes.

Movement Performance - Pedestrians

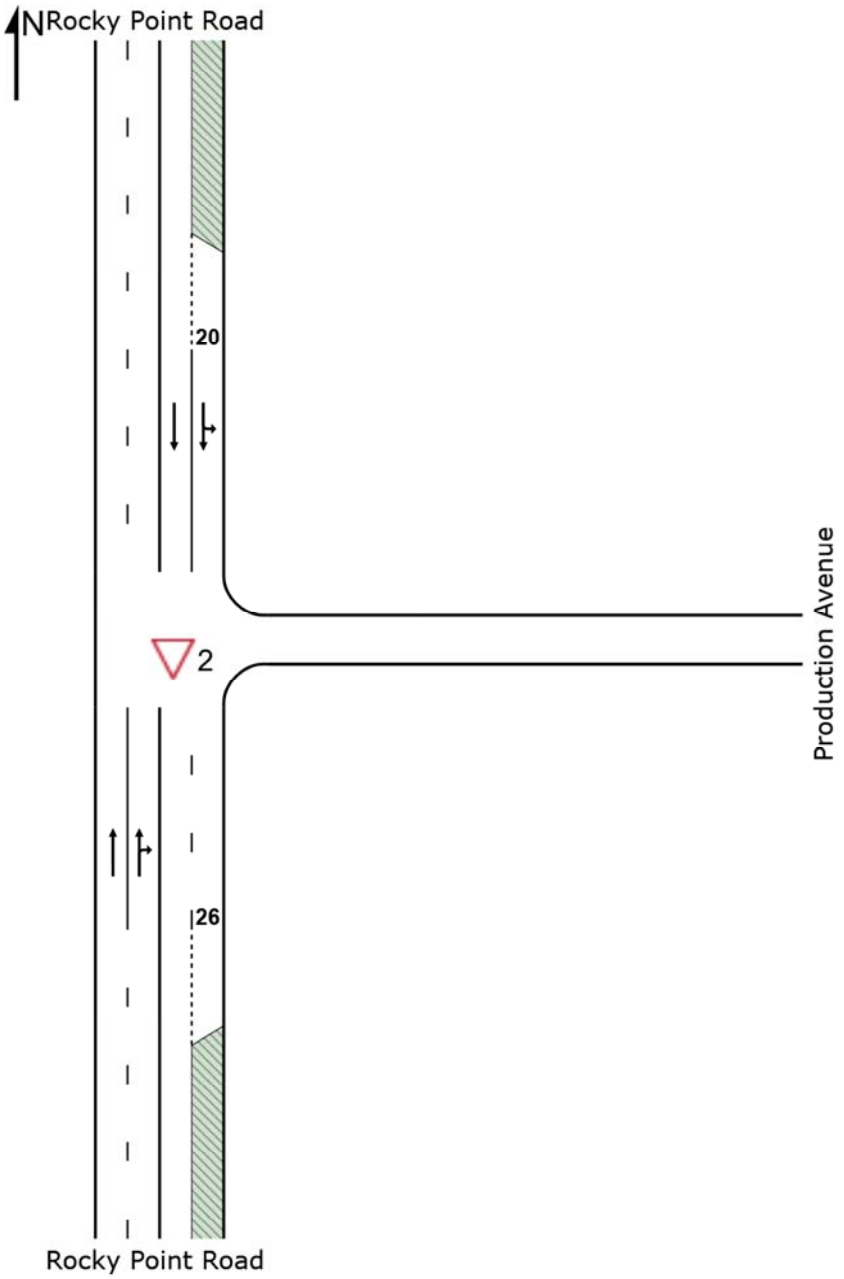
Mov ID	Description	Demand Flow ped/h	Average Delay sec	Level of Service	Average Back of Queue Pedestrian ped	Distance m	Prop. Queued	Effective Stop Rate per ped
P1	South Full Crossing	53	43.4	LOS E	0.2	0.2	0.85	0.85
P2	East Full Crossing	53	17.6	LOS B	0.1	0.1	0.54	0.54
P3	North Full Crossing	53	42.6	LOS E	0.2	0.2	0.84	0.84
P4	West Full Crossing	53	17.1	LOS B	0.1	0.1	0.53	0.53
All Pedestrians		211	30.2	LOS D			0.69	0.69

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

SITE LAYOUT

Site: 2 [AM FU Rocky Point Road x Production Avenue]

T-intersection:Rocky Point Road x Production Avenue
Period: AM
Scenario: Future
Giveway / Yield (Two-Way)



MOVEMENT SUMMARY

Site: 2 [AM FU Rocky Point Road x Production Avenue]

Network: N101 [AM FU - Residential DA+Childcare +Commercial]

T-intersection:Rocky Point Road x Production Avenue
Period: AM
Scenario: Future
Giveway / Yield (Two-Way)

Movement Performance - Vehicles

Mov ID	OD Mov	Demand Flows Total veh/h	HV %	Arrival Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
South: Rocky Point Road													
2	T1	1731	2.5	1731	2.5	0.588	2.1	LOS A	21.0	150.3	0.21	0.04	44.4
3	R2	98	2.2	98	2.2	0.588	19.4	LOS B	21.0	150.3	0.49	0.10	43.1
Approach		1828	2.5	1828	2.5	0.588	3.1	NA	21.0	150.3	0.22	0.05	44.2
North: Rocky Point Road													
7	L2	187	0.0	182	0.0	0.098	5.5	LOS A	0.0	0.0	0.00	0.58	45.9
8	T1	787	7.6	773	7.7	0.416	0.0	LOS A	0.0	0.0	0.00	0.00	59.9
Approach		975	6.2	955[N1]	6.2	0.416	1.1	NA	0.0	0.0	0.00	0.11	53.2
All Vehicles		2803	3.8	2784[N1]	3.8	0.588	2.4	NA	21.0	150.3	0.15	0.07	47.3

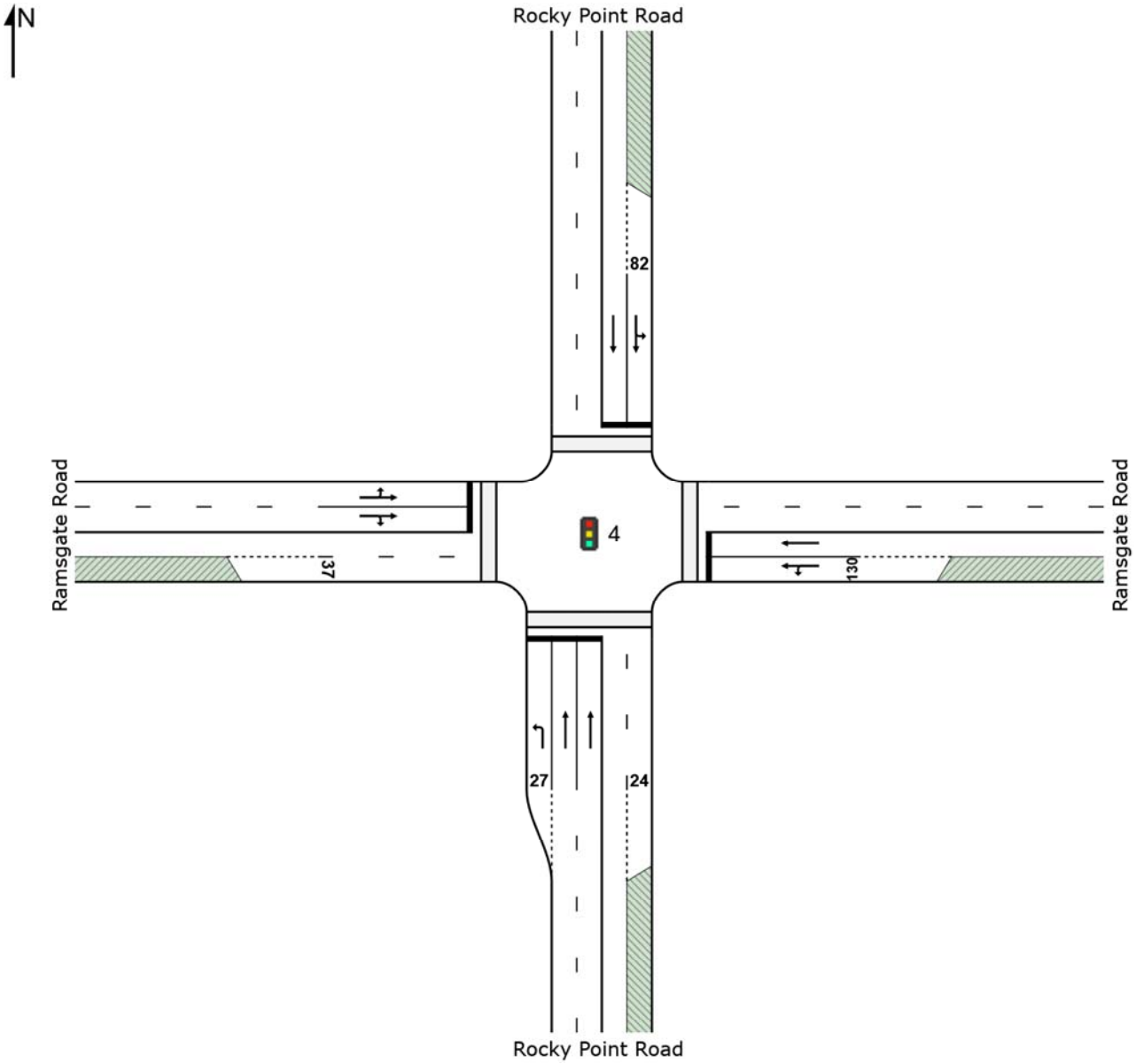
Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Network tab).
Vehicle movement LOS values are based on average delay per movement.
Minor Road Approach LOS values are based on average delay for all vehicle movements.
NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.
SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Largest change in Average Back of Queue or Degree of Saturation for any lane during the last three iterations: 8.7 %
Number of Iterations: 10 (maximum specified: 10)

N1 Arrival Flow value is reduced due to capacity constraint at oversaturated upstream lanes.

SITE LAYOUT

Site: 4 [AM FU Rocky Point Road x Ramsgate Road]

Signalised Intersection: Rocky Point Road x Ramsgate Road
Period: AM
Scenario: Future
Signals - Fixed Time Isolated



MOVEMENT SUMMARY

Site: 4 [AM FU Rocky Point Road x Ramsgate Road]

Network: N101 [AM FU - Residential DA+Childcare +Commercial]

Signalised Intersection: Rocky Point Road x Ramsgate Road
Period: AM
Scenario: Future
Signals - Fixed Time Coordinated Cycle Time = 120 seconds (Network Cycle Time - User-Given)

Movement Performance - Vehicles

Mov ID	OD Mov	Demand Flows Total veh/h	HV %	Arrival Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
South: Rocky Point Road													
1	L2	360	5.3	360	5.3	0.350	11.2	LOS A	6.9	50.3	0.36	0.68	45.6
2	T1	1658	2.6	1658	2.6	0.894	32.8	LOS C	56.7	405.9	0.85	0.88	25.0
Approach		2018	3.1	2018	3.1	0.894	29.0	LOS C	56.7	405.9	0.76	0.84	28.6
East: Ramsgate Road													
4	L2	27	7.7	27	7.7	0.296	54.4	LOS D	4.5	33.2	0.93	0.74	26.9
5	T1	386	3.5	386	3.5	1.030	105.5	LOS F	29.8	215.3	0.99	1.25	15.9
Approach		414	3.8	414	3.8	1.030	102.1	LOS F	29.8	215.3	0.98	1.22	16.4
North: Rocky Point Road													
7	L2	33	9.7	32	9.8	0.132	18.6	LOS B	4.0	30.2	0.55	0.52	45.5
8	T1	706	7.5	696	7.5	0.576	16.8	LOS B	22.7	169.4	0.69	0.63	45.9
Approach		739	7.5	728 N1	7.6	0.576	16.8	LOS B	22.7	169.4	0.69	0.62	45.9
West: Ramsgate Road													
10	L2	46	13.6	46	13.6	0.567	41.7	LOS C	16.4	120.7	0.88	0.77	20.8
11	T1	293	4.7	293	4.7	0.567	36.0	LOS C	16.4	120.7	0.88	0.77	30.7
12	R2	213	8.4	213	8.4	0.837	69.5	LOS E	12.7	95.4	1.00	1.08	22.2
Approach		552	6.9	552	6.9	0.837	49.4	LOS D	16.4	120.7	0.93	0.89	26.0
All Vehicles		3722	4.6	3711 N1	4.6	1.030	37.8	LOS C	56.7	405.9	0.80	0.85	28.8

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Network tab).
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Largest change in Average Back of Queue or Degree of Saturation for any lane during the last three iterations: 8.7 %
Number of Iterations: 10 (maximum specified: 10)

N1 Arrival Flow value is reduced due to capacity constraint at oversaturated upstream lanes.

Movement Performance - Pedestrians

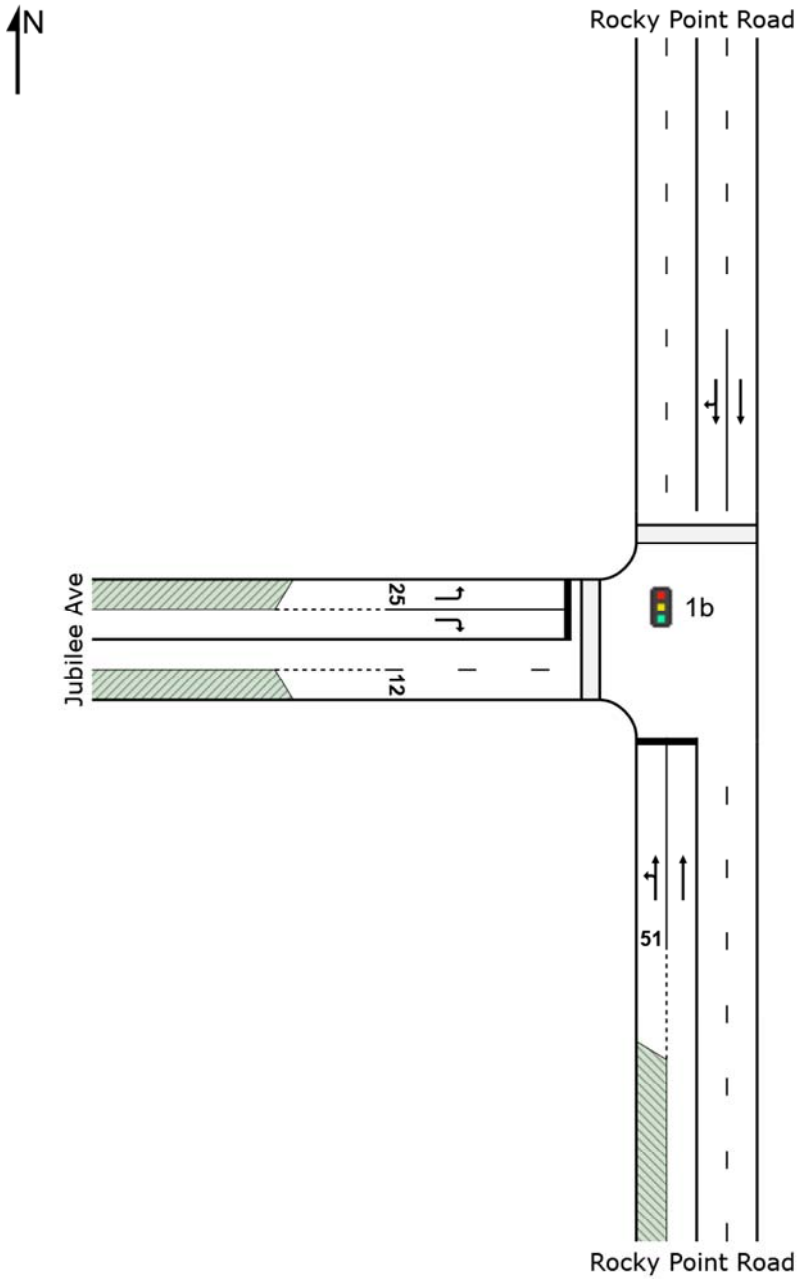
Mov ID	Description	Demand Flow ped/h	Average Delay sec	Level of Service	Average Back of Queue Pedestrian ped	Distance m	Prop. Queued	Effective Stop Rate per ped
P1	South Full Crossing	53	53.3	LOS E	0.2	0.2	0.94	0.94
P2	East Full Crossing	53	15.5	LOS B	0.1	0.1	0.51	0.51
P3	North Full Crossing	53	50.5	LOS E	0.2	0.2	0.92	0.92
P4	West Full Crossing	53	15.5	LOS B	0.1	0.1	0.51	0.51
All Pedestrians		211	33.7	LOS D			0.72	0.72

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

SITE LAYOUT

Site: 1b [PM FU Rocky Point Rd x Jubilee Ave]

Signalised Intersection: Rocky Point Rd x Jubilee Ave
Period: PM
Scenario: Existing Situation
Signals - Fixed Time Coordinated



MOVEMENT SUMMARY

Site: 1b [PM FU Rocky Point Rd x Jubilee Ave]

Network: 2 [PM FU - Residential DA+Childcare +Commercial]

Signalised Intersection: Rocky Point Rd x Jubilee Ave
Period: PM
Scenario: Existing Situation
Signals - Fixed Time Coordinated Cycle Time = 120 seconds (Network Cycle Time - User-Given)
Common Control Group: CCG1 [Intersection of Rocky Point Road x Jubliee Avenue x Phillips Road]

Movement Performance - Vehicles

Mov ID	OD Mov	Demand Flows Total veh/h	HV %	Arrival Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
South: Rocky Point Road													
1	L2	156	2.0	156	2.0	0.544	16.4	LOS B	10.0	71.0	0.40	0.48	35.5
2	T1	740	2.3	740	2.3	0.544	11.5	LOS A	10.8	77.2	0.44	0.44	24.1
Approach		896	2.2	896	2.2	0.544	12.3	LOS A	10.8	77.2	0.43	0.45	27.2
North: Rocky Point Road													
8	T1	1460	2.2	1460	2.2	0.417	0.0	LOS A	0.0	0.0	0.00	0.04	53.4
9	R2	135	3.1	135	3.1	0.417	2.1	LOS A	0.0	0.0	0.00	0.09	51.1
Approach		1595	2.3	1595	2.3	0.417	0.2	LOS A	0.0	0.0	0.00	0.04	52.2
West: Jubilee Ave													
10	L2	81	1.3	81	1.3	0.220	49.1	LOS D	4.0	28.3	0.88	0.76	13.3
12	R2	245	0.4	245	0.4	0.692	51.4	LOS D	13.1	92.2	0.95	0.83	12.8
Approach		326	0.6	326	0.6	0.692	50.8	LOS D	13.1	92.2	0.93	0.82	12.9
All Vehicles		2817	2.1	2817	2.1	0.692	9.9	LOS A	13.1	92.2	0.24	0.26	23.0

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Network tab).
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Largest change in Average Back of Queue or Degree of Saturation for any lane during the last three iterations: 0.0 %
Number of Iterations: 5 (maximum specified: 10)

Movement Performance - Pedestrians

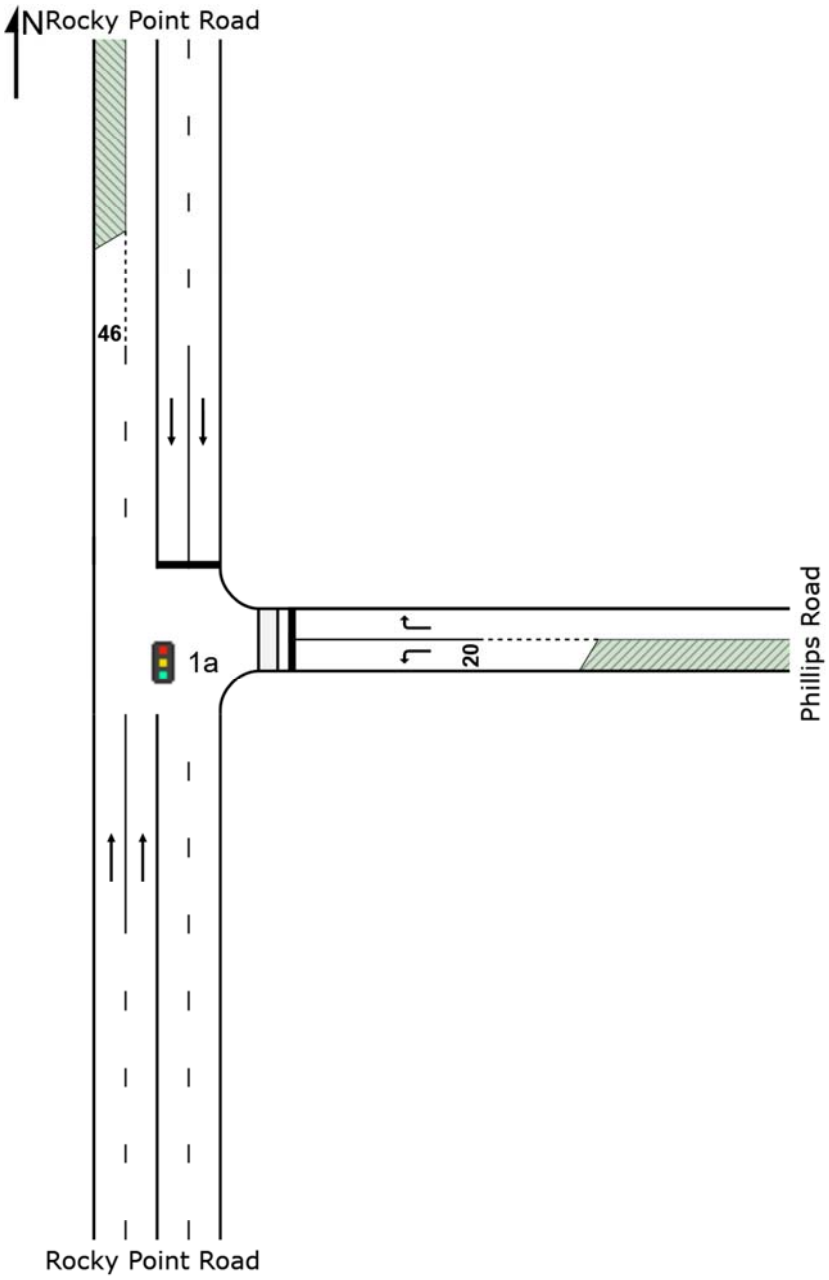
Mov ID	Description	Demand Flow ped/h	Average Delay sec	Level of Service	Average Back of Queue Pedestrian ped	Distance m	Prop. Queued	Effective Stop Rate per ped
P3	North Full Crossing	53	44.3	LOS E	0.2	0.2	0.86	0.86
P4	West Full Crossing	53	16.6	LOS B	0.1	0.1	0.53	0.53
All Pedestrians		105	30.4	LOS D			0.69	0.69

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

SITE LAYOUT

Site: 1a [PM FU Rocky Point Rd x Phillips Rd]

Signalised Intersection: Rocky Point Rd x Phillips Rd
Period: PM
Scenario: Future
Signals - Fixed Time Coordinated



MOVEMENT SUMMARY

Site: 1a [PM FU Rocky Point Rd x Phillips Rd]

Network: 2 [PM FU - Residential DA+Childcare +Commercial]

Signalised Intersection: Rocky Point Rd x Phillips Rd
Period: PM
Scenario: Future
Signals - Fixed Time Coordinated Cycle Time = 120 seconds (Network Cycle Time - User-Given)
Common Control Group: CCG1 [Intersection of Rocky Point Road x Jubliee Avenue x Phillips Road]

Movement Performance - Vehicles

Mov ID	OD Mov	Demand Flows Total veh/h	HV %	Arrival Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
South: Rocky Point Road													
2	T1	740	2.3	740	2.3	0.300	0.0	LOS A	0.0	0.0	0.00	0.00	59.9
Approach		740	2.3	740	2.3	0.300	0.0	LOS A	0.0	0.0	0.00	0.00	59.9
East: Phillips Road													
4	L2	86	1.2	86	1.2	0.703	69.6	LOS E	5.4	37.9	1.00	0.83	12.2
6	R2	47	0.0	47	0.0	0.383	66.4	LOS E	2.8	19.6	0.99	0.74	25.2
Approach		134	0.8	134	0.8	0.703	68.5	LOS E	5.4	37.9	1.00	0.80	17.7
North: Rocky Point Road													
8	T1	1503	2.4	1503	2.4	0.701	13.6	LOS A	23.2	165.7	0.58	0.53	42.4
Approach		1503	2.4	1503	2.4	0.701	13.6	LOS A	23.2	165.7	0.58	0.53	42.4
All Vehicles		2377	2.3	2377	2.3	0.703	12.4	LOS A	23.2	165.7	0.42	0.38	43.4

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Network tab).
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Largest change in Average Back of Queue or Degree of Saturation for any lane during the last three iterations: 0.0 %
Number of Iterations: 5 (maximum specified: 10)

Movement Performance - Pedestrians

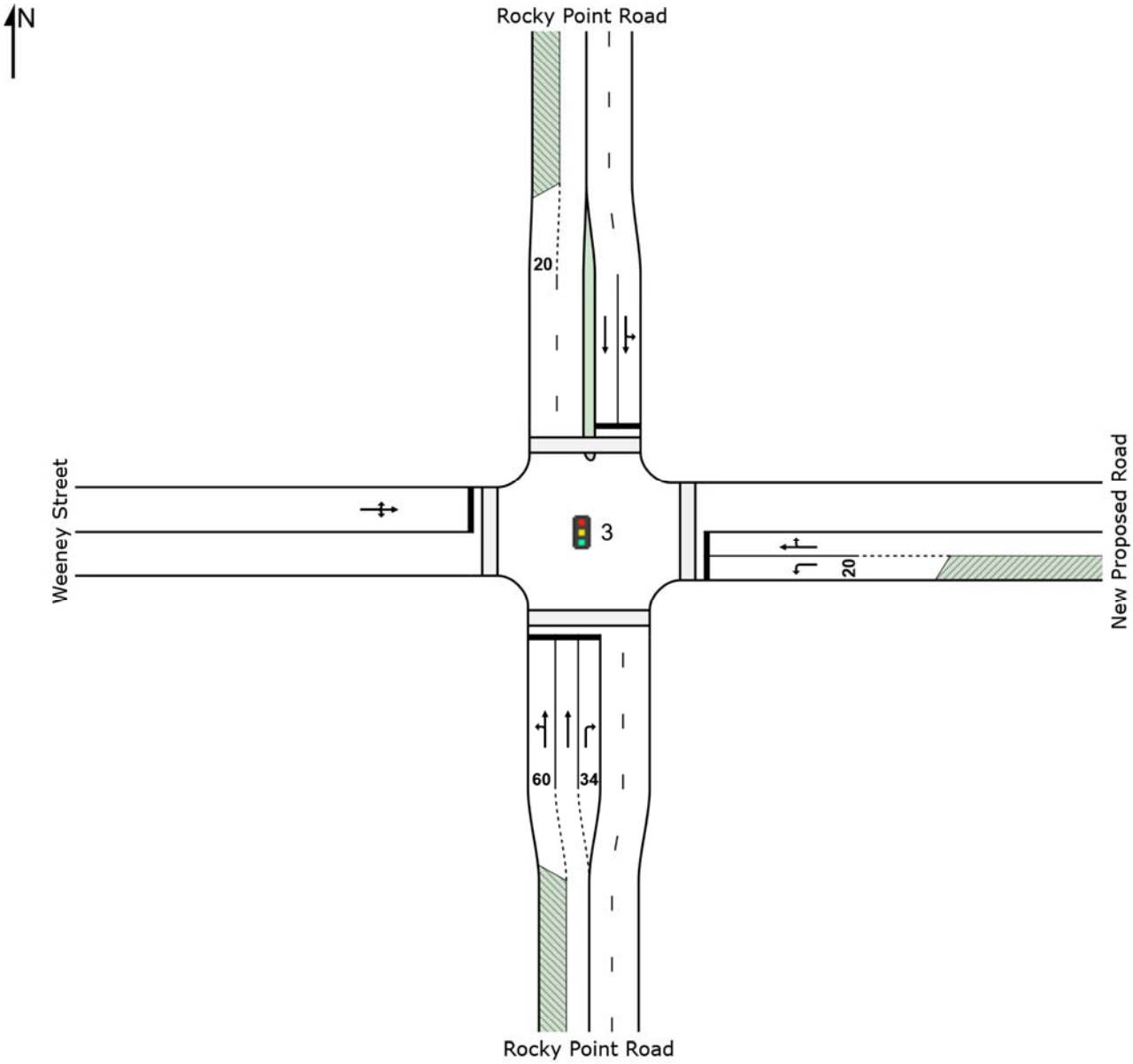
Mov ID	Description	Demand Flow ped/h	Average Delay sec	Level of Service	Average Back of Queue Pedestrian ped	Distance m	Prop. Queued	Effective Stop Rate per ped
P2	East Full Crossing	53	14.0	LOS B	0.1	0.1	0.48	0.48
All Pedestrians		53	14.0	LOS B			0.48	0.48

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

SITE LAYOUT

Site: 3 [PM FU Rocky Point Rd x Weeney St x New Proposed Road]

Intersection: Rocky Point Rd x Weeney St x New Proposed Road
Period: PM
Scenario: FU without Left Turn Deceleration Lane
Signals - Fixed Time Coordinated



MOVEMENT SUMMARY

Site: 3 [PM FU Rocky Point Rd x Weeney St x New Proposed Road]

Network: 2 [PM FU - Residential DA+Childcare +Commercial]

Intersection: Rocky Point Rd x Weeney St x New Proposed Road
Period: PM
Scenario: FU without Left Turn Deceleration Lane
Signals - Fixed Time Coordinated Cycle Time = 120 seconds (Network Cycle Time - User-Given)

Movement Performance - Vehicles

Mov ID	OD Mov	Demand Flows Total veh/h	HV %	Arrival Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
South: Rocky Point Road													
1	L2	19	5.6	19	5.6	0.100	6.1	LOS A	0.2	1.4	0.03	0.10	55.1
2	T1	766	2.6	766	2.6	0.466	0.6	LOS A	1.5	10.9	0.04	0.05	58.7
3	R2	40	0.0	40	0.0	0.440	69.6	LOS E	2.4	16.9	1.00	0.73	23.1
Approach		825	2.6	825	2.6	0.466	4.1	LOS A	2.4	16.9	0.09	0.08	53.2
East: New Proposed Road													
4	L2	87	0.0	87	0.0	0.177	40.9	LOS C	3.9	27.5	0.81	0.74	14.2
5	T1	28	0.0	28	0.0	0.919	73.8	LOS F	12.1	84.7	1.00	1.09	11.8
6	R2	144	0.0	144	0.0	0.919	78.3	LOS F	12.1	84.7	1.00	1.09	8.7
Approach		260	0.0	260	0.0	0.919	65.3	LOS E	12.1	84.7	0.94	0.98	10.4
North: Rocky Point Road													
7	L2	63	0.0	63	0.0	0.647	12.6	LOS A	15.2	108.3	0.37	0.37	39.7
8	T1	1482	2.2	1482	2.2	0.647	7.1	LOS A	15.3	109.2	0.37	0.36	32.2
Approach		1545	2.1	1545	2.1	0.647	7.3	LOS A	15.3	109.2	0.37	0.36	32.8
West: Weeney Street													
10	L2	25	0.0	25	0.0	0.165	52.0	LOS D	2.6	18.1	0.90	0.71	7.5
11	T1	20	0.0	20	0.0	0.165	47.4	LOS D	2.6	18.1	0.90	0.71	16.1
12	R2	5	0.0	5	0.0	0.165	52.0	LOS D	2.6	18.1	0.90	0.71	7.5
Approach		51	0.0	51	0.0	0.165	50.2	LOS D	2.6	18.1	0.90	0.71	11.4
All Vehicles		2681	2.0	2681	2.0	0.919	12.7	LOS A	15.3	109.2	0.35	0.34	33.8

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Network tab).
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Largest change in Average Back of Queue or Degree of Saturation for any lane during the last three iterations: 0.0 %
Number of Iterations: 5 (maximum specified: 10)

Movement Performance - Pedestrians

Mov ID	Description	Demand Flow ped/h	Average Delay sec	Level of Service	Average Back of Queue Pedestrian ped	Distance m	Prop. Queued	Effective Stop Rate per ped
P1	South Full Crossing	53	52.4	LOS E	0.2	0.2	0.94	0.94
P2	East Full Crossing	53	12.2	LOS B	0.1	0.1	0.45	0.45
P3	North Full Crossing	53	51.5	LOS E	0.2	0.2	0.93	0.93
P4	West Full Crossing	53	11.7	LOS B	0.1	0.1	0.44	0.44
All Pedestrians		211	31.9	LOS D			0.69	0.69

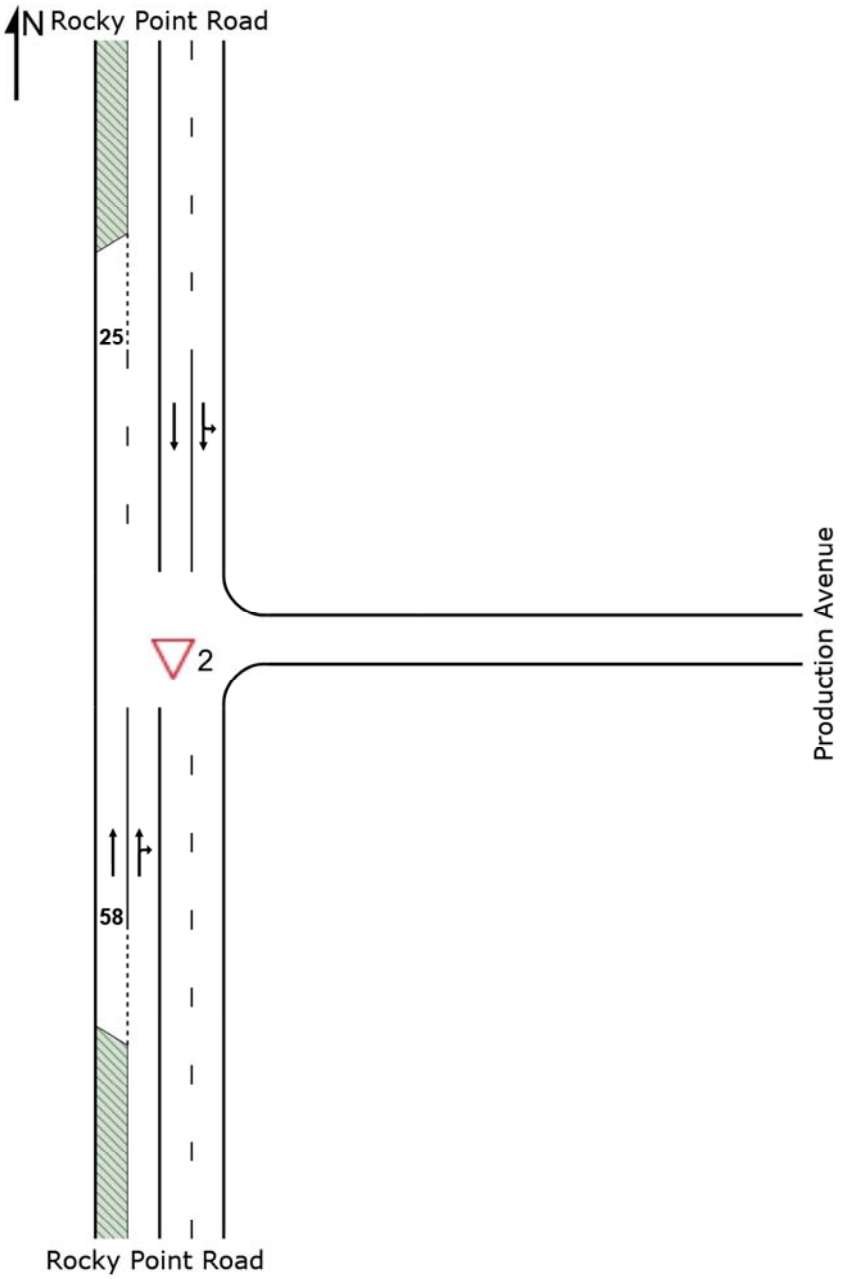
Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)

Pedestrian movement LOS values are based on average delay per pedestrian movement.
Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

SITE LAYOUT

Site: 2 [PM FU Rocky Point Road x Production Avenue]

T-intersection:Rocky Point Road x Production Avenue
Period: PM
Scenario: Exisitng Situation
Giveway / Yield (Two-Way)



MOVEMENT SUMMARY

Site: 2 [PM FU Rocky Point Road x Production Avenue]

Network: 2 [PM FU - Residential DA+Childcare +Commercial]

T-intersection:Rocky Point Road x Production Avenue
Period: PM
Scenario: Exisitng Situation
Giveway / Yield (Two-Way)

Movement Performance - Vehicles

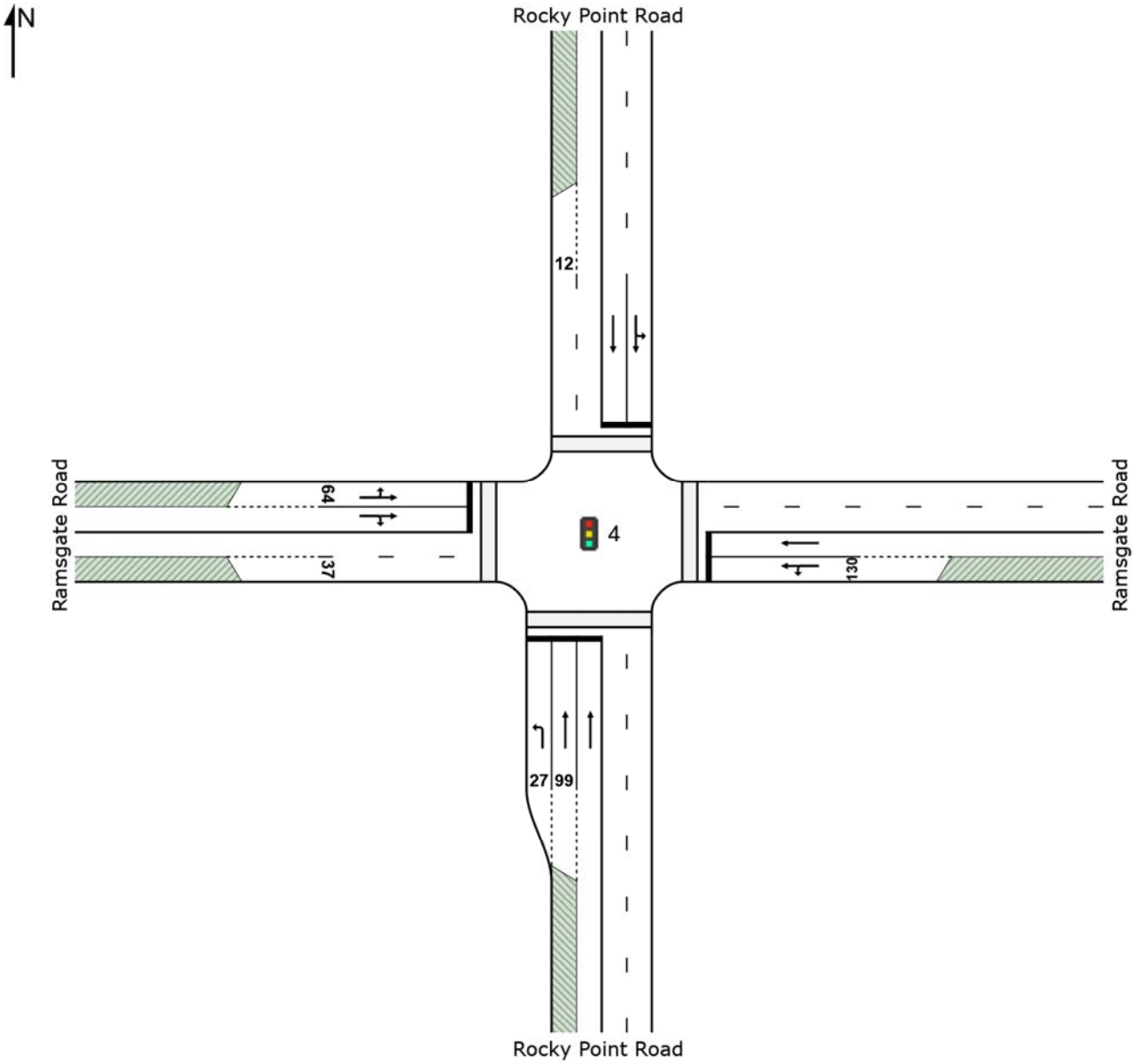
Mov ID	OD Mov	Demand Flows Total veh/h	HV %	Arrival Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
South: Rocky Point Road													
2	T1	899	2.2	899	2.2	0.501	5.8	LOS A	12.7	90.5	0.77	0.03	32.7
3	R2	25	0.0	25	0.0	0.501	41.5	LOS C	12.7	90.5	1.00	0.04	41.0
Approach		924	2.2	924	2.2	0.501	6.8	NA	12.7	90.5	0.78	0.03	33.2
North: Rocky Point Road													
7	L2	157	0.7	157	0.7	0.447	5.6	LOS A	0.0	0.0	0.00	0.11	53.4
8	T1	1557	2.1	1557	2.1	0.447	0.0	LOS A	0.0	0.0	0.00	0.05	56.6
Approach		1714	2.0	1714	2.0	0.447	0.5	NA	0.0	0.0	0.00	0.05	55.8
All Vehicles		2638	2.0	2638	2.0	0.501	2.7	NA	12.7	90.5	0.27	0.05	45.6

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Network tab).
Vehicle movement LOS values are based on average delay per movement.
Minor Road Approach LOS values are based on average delay for all vehicle movements.
NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.
SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Largest change in Average Back of Queue or Degree of Saturation for any lane during the last three iterations: 0.0 %
Number of Iterations: 5 (maximum specified: 10)

SITE LAYOUT

Site: 4 [PM FU Rocky Point Road x Ramsgate Road]

Signalised Intersection: Rocky Point Road x Ramsgate Road
Period: PM
Scenario: Existing Situation
Signals - Fixed Time Coordinated



MOVEMENT SUMMARY

Site: 4 [PM FU Rocky Point Road x Ramsgate Road]

Network: 2 [PM FU - Residential DA+Childcare +Commercial]

Signalised Intersection: Rocky Point Road x Ramsgate Road
Period: PM
Scenario: Existing Situation
Signals - Fixed Time Coordinated Cycle Time = 120 seconds (Network Cycle Time - User-Given)

Movement Performance - Vehicles

Mov ID	OD Mov	Demand Flows Total veh/h	HV %	Arrival Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
South: Rocky Point Road													
1	L2	317	2.0	317	2.0	0.281	11.6	LOS A	4.2	29.9	0.25	0.65	45.5
2	T1	786	2.4	786	2.4	0.834	28.9	LOS C	31.6	225.8	0.79	0.74	26.9
Approach		1103	2.3	1103	2.3	0.834	23.9	LOS B	31.6	225.8	0.64	0.71	32.4
East: Ramsgate Road													
4	L2	46	0.0	46	0.0	0.275	42.2	LOS C	6.6	46.4	0.83	0.71	30.9
5	T1	623	1.0	623	1.0	0.958	68.3	LOS E	39.9	282.1	0.97	1.11	21.6
Approach		669	0.9	669	0.9	0.958	66.5	LOS E	39.9	282.1	0.96	1.09	22.1
North: Rocky Point Road													
7	L2	48	2.2	48	2.2	0.897	44.4	LOS D	42.5	303.0	0.95	0.96	33.5
8	T1	1413	2.1	1413	2.1	0.897	38.7	LOS C	42.8	305.1	0.95	0.96	35.2
Approach		1461	2.1	1461	2.1	0.897	38.9	LOS C	42.8	305.1	0.95	0.96	35.1
West: Ramsgate Road													
10	L2	29	0.0	29	0.0	0.385	27.0	LOS B	12.7	92.6	0.69	0.61	28.2
11	T1	313	5.4	313	5.4	0.385	21.5	LOS B	12.7	92.6	0.69	0.61	38.2
12	R2	258	2.4	258	2.4	0.810	65.4	LOS E	14.6	104.5	1.00	1.06	23.1
Approach		600	3.9	600	3.9	0.810	40.6	LOS C	14.6	104.5	0.82	0.81	29.2
All Vehicles		3834	2.2	3834	2.2	0.958	39.7	LOS C	42.8	305.1	0.84	0.89	30.8

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Network tab).
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Largest change in Average Back of Queue or Degree of Saturation for any lane during the last three iterations: 0.0 %
Number of Iterations: 5 (maximum specified: 10)

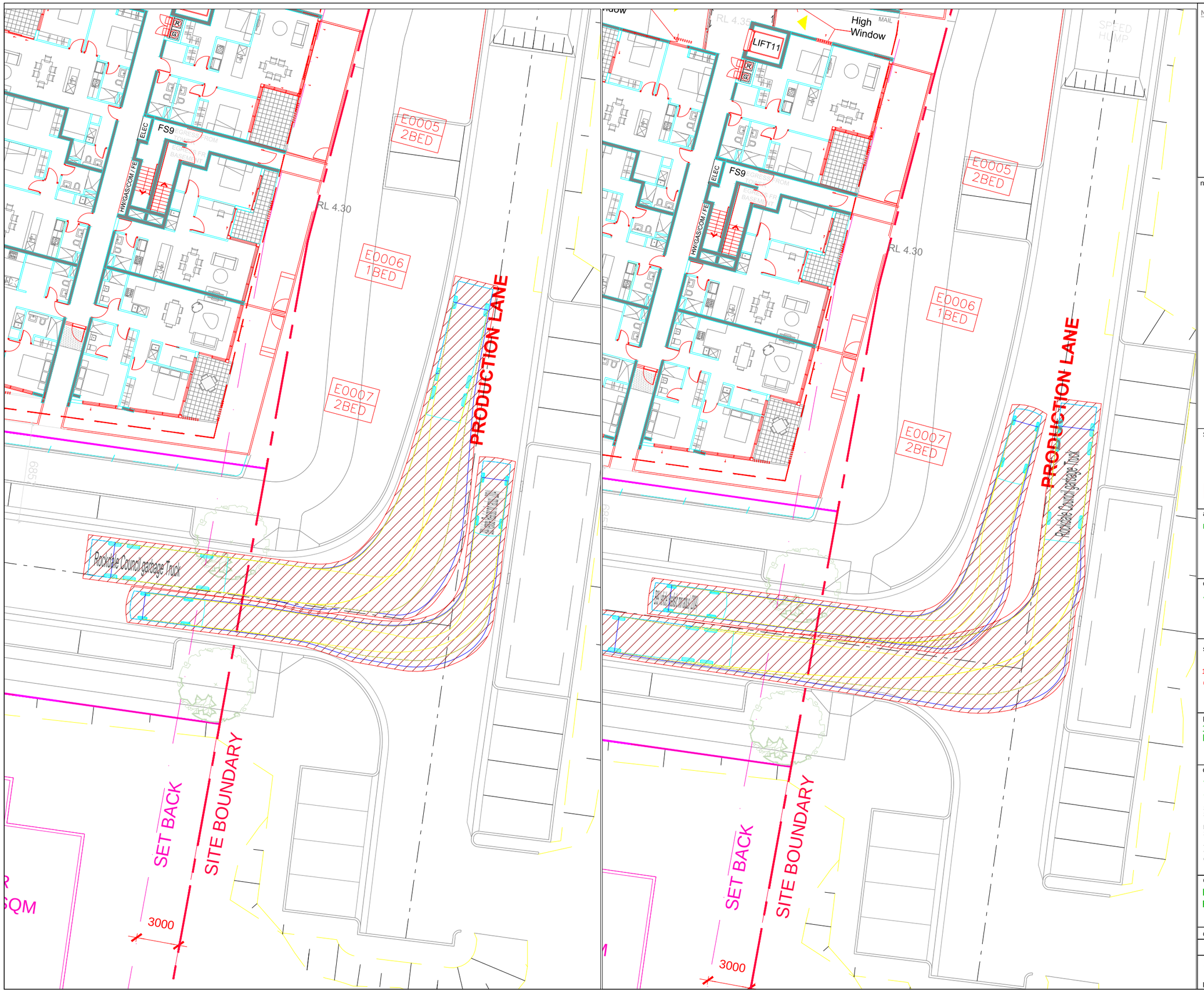
Movement Performance - Pedestrians

Mov ID	Description	Demand Flow ped/h	Average Delay sec	Level of Service	Average Back of Queue Pedestrian ped	Distance m	Prop. Queued	Effective Stop Rate per ped
P1	South Full Crossing	53	40.9	LOS E	0.1	0.1	0.83	0.83
P2	East Full Crossing	53	26.1	LOS C	0.1	0.1	0.66	0.66
P3	North Full Crossing	53	38.5	LOS D	0.1	0.1	0.80	0.80
P4	West Full Crossing	53	26.1	LOS C	0.1	0.1	0.66	0.66
All Pedestrians		211	32.9	LOS D			0.74	0.74

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

Attachment 3

Swept Path Analysis



Notes

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Vehicle swept path diagrams prepared using computer generated turning path software and associated CAD drawing platforms. Vehicle data based upon relevant Australian Standards (*AS/NZS 2890.1-2004 Parking facilities - Off-street car parking*, and/or *AS 2890.2-2002 Parking facilities - Off-street commercial vehicle facilities*). These standards embody a degree of tolerance, however the vehicle characteristics in these standards represent a suitable design vehicle and do not account for all variations in vehicle dimensions / specifications and/or driver ability or behaviour.

no.	revision note	by.	date

Swept Path Legend:

- Wheel Path
- Vehicle Body Envelope
- Clearance Envelope (300mm)

architect
PTW Architects

client
JQZ

scale
1:250 @ A3
0m 2 4 6 8

project
152-200 and 202-206 Rocky Point Road
Kogarah

drawing prepared by

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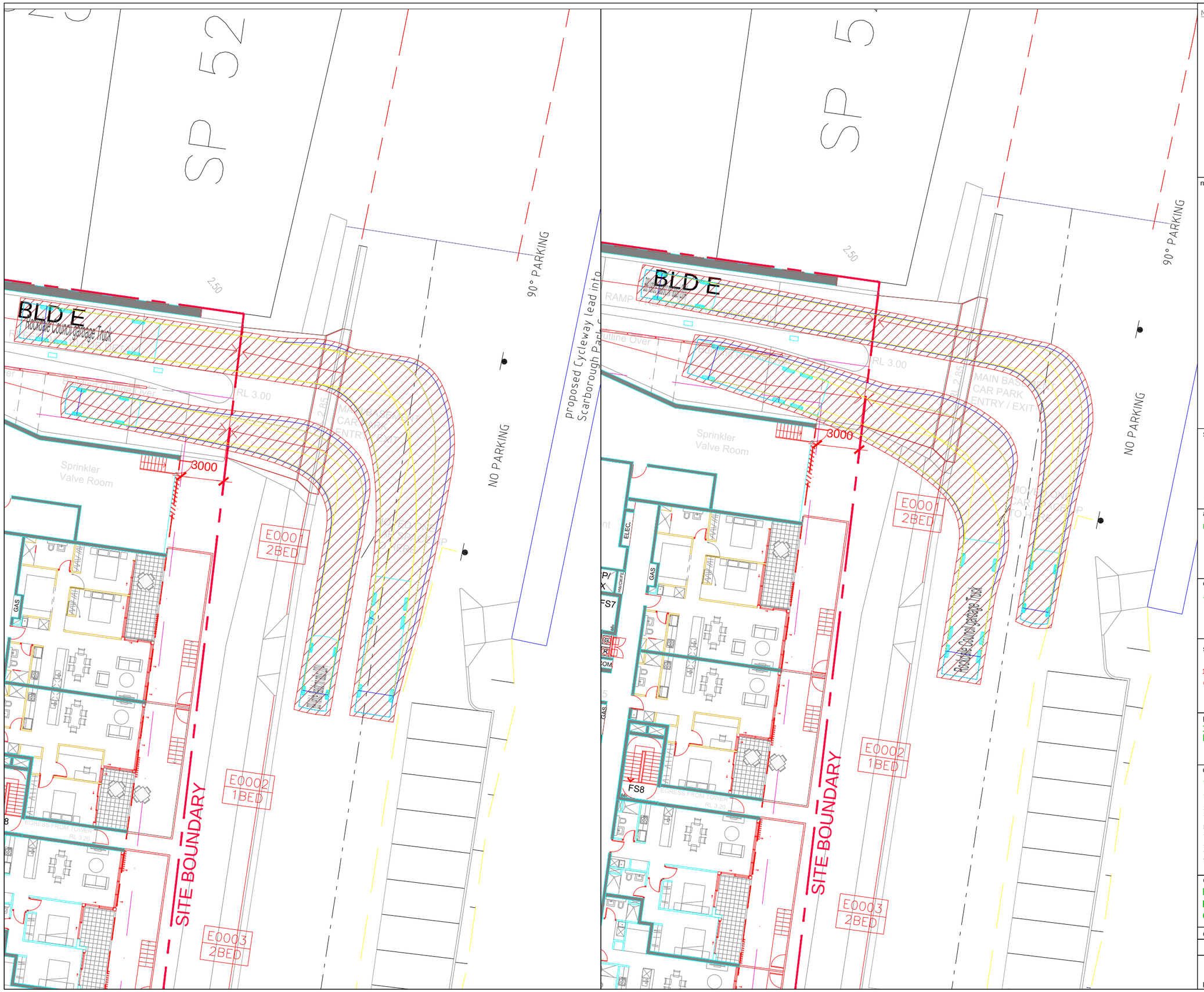
traffic & transport planners

drawing title
Production Lane / New Proposed Road Intersection
Rockdale Council's Garbage Truck and B99

drawn:	checked:	date:
HB	MM	27-Jul-17

project no.	drawing phase.	drawing no.	rev
16.199	DA	TX.01	10



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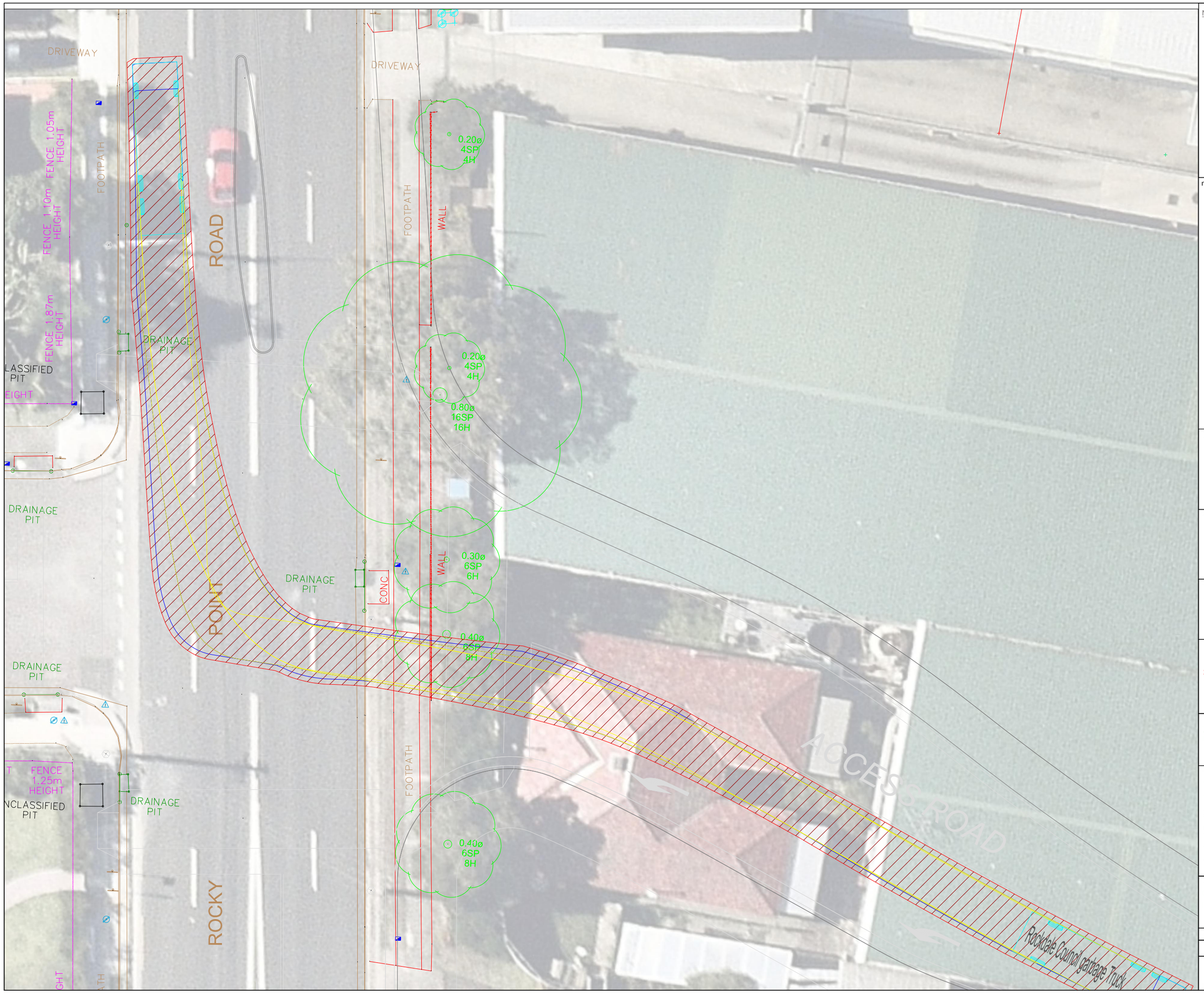
drawing title
Main Basement Access
Rockdale Council Garbage Truck
Council Garbage truck and B99

drawn:	checked:	date:
HB	MM	27-Jul-17

16.199	DA	TX.02	10
project no.	drawing phase.	drawing no.	rev



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drawing title
Garbage Truck Access
Rockdale Council Garbage Truck

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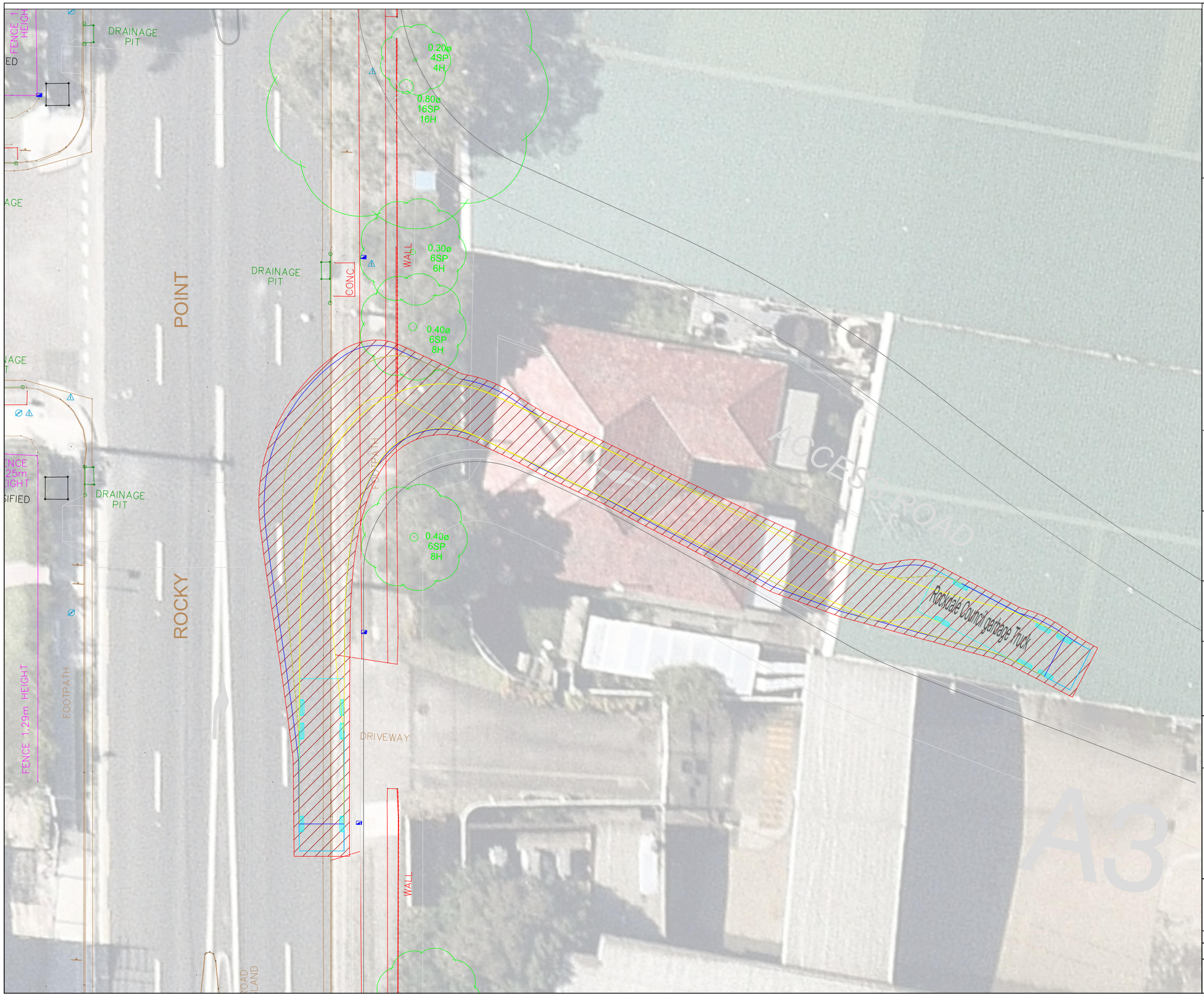
16.199	DA	TX.03	10



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PTW Architects

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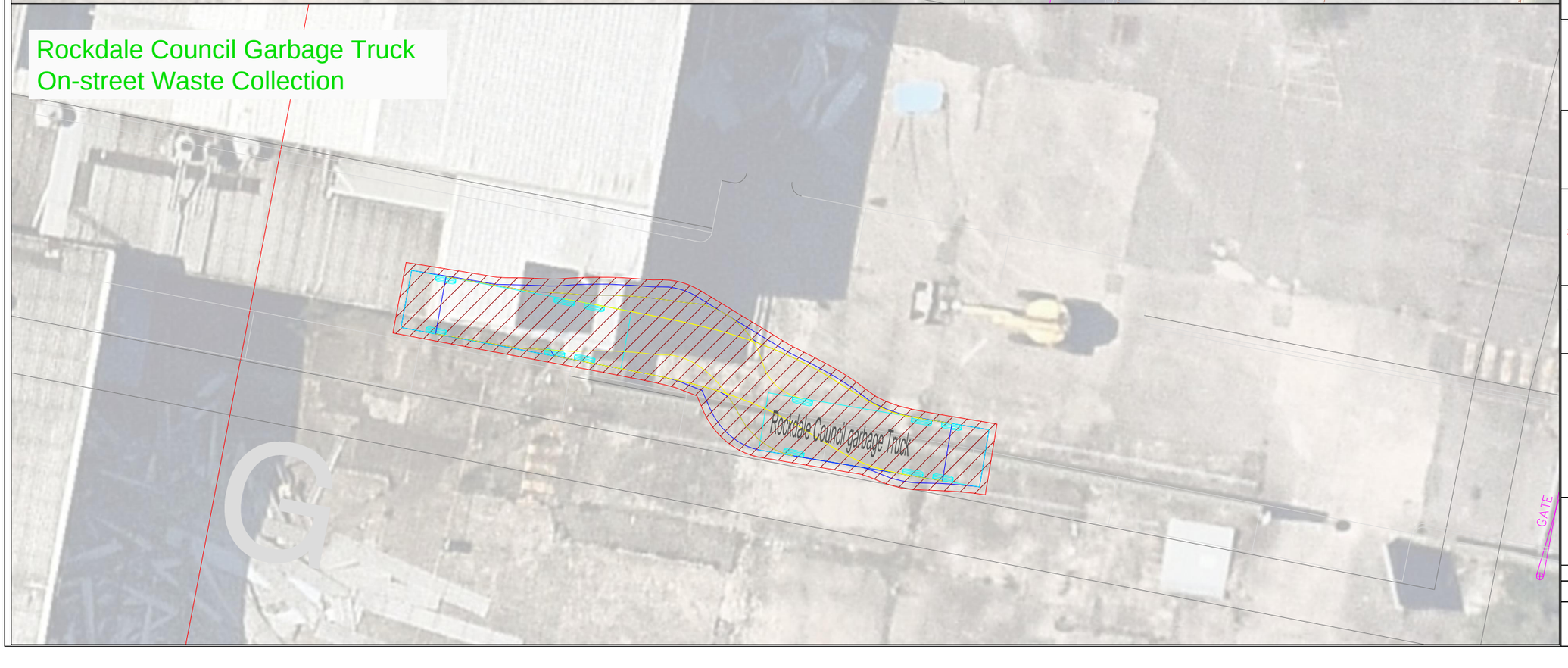
Rockdale Council Garbage Truck

drawn:	checked:	date:
HB	MM	27-Jul-17

project no.	drawing phase.	drawing no.	rev
16.199	DA	TX.04	10



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architect

PTW Architects

client

JQZ

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0m 2 4 6 8

project

152-200 and 202-206 Rocky Point Road
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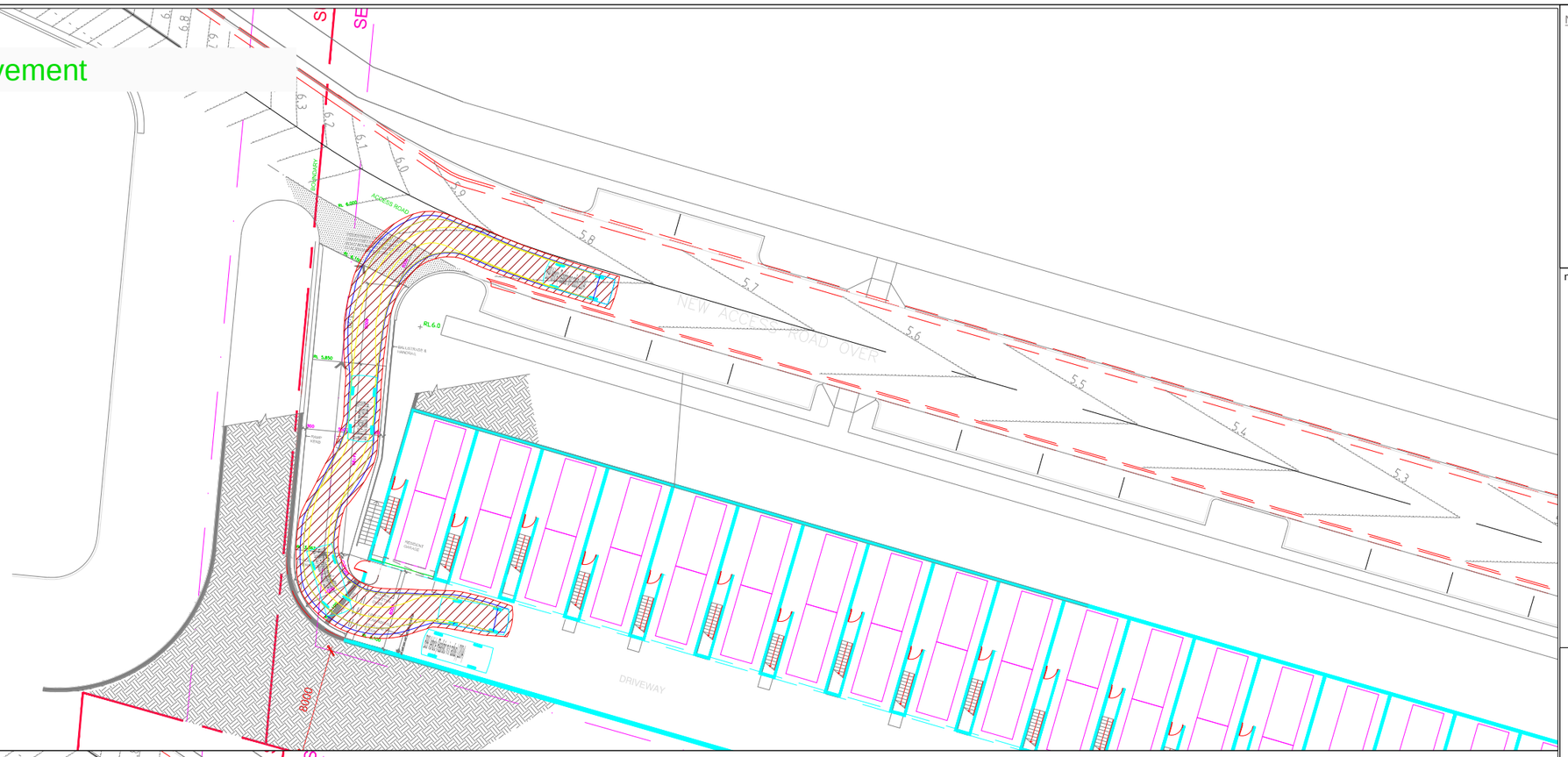
drawing title

Garbage Truck Access
Rockdale Council Garbage Truck

drawn:	checked:	date:
HB	MM	27-Jul-17

project no.	drawing phase.	drawing no.	rev
16.199	DA	TX.05	10

In Bound Movement



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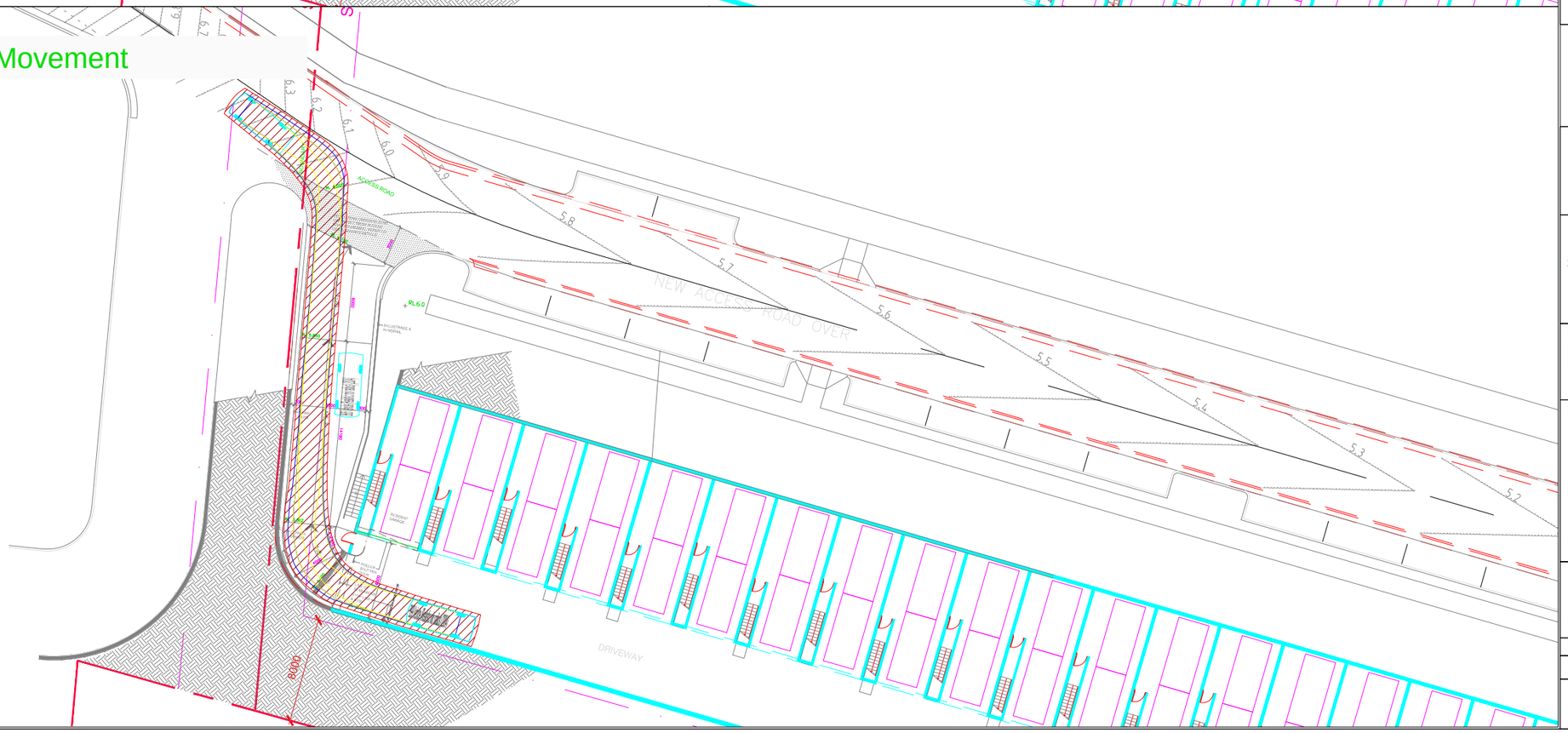

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no.	revision note	by.	date

Swept Path Legend:

- Wheel Path
- Vehicle Body Envelope
- Clearance Envelope (300mm)

architect

PTW Architects

client

JQZ

scale

1:400 @ A3

0m 4 8 12 16

project

152-200 and 202-206 Rocky Point Road
Kogarah

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drawing title

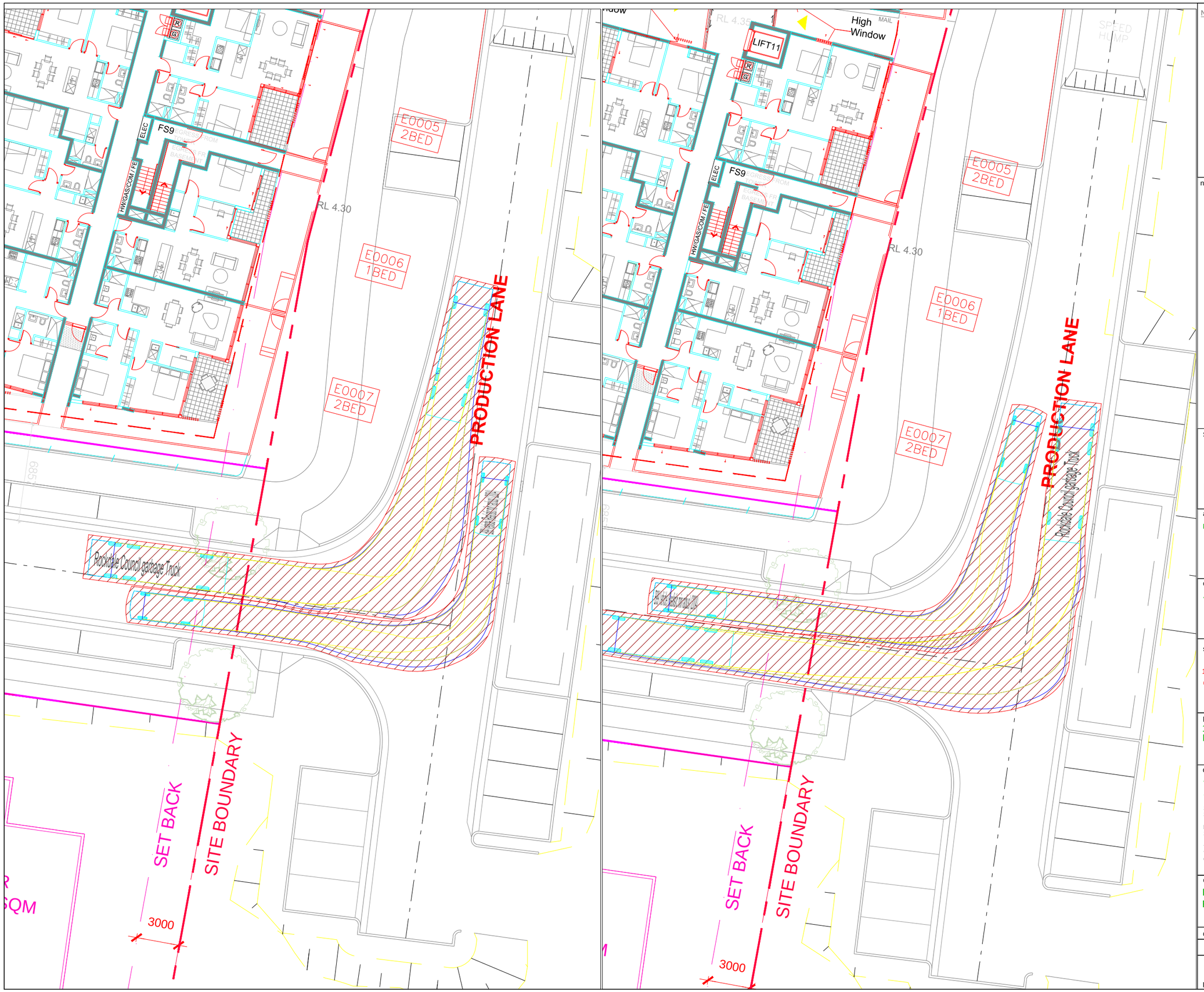
Swept Path Analysis
Access to the Townhouses
B99 and B85

drawn:	checked:	date:
HB	MM	27-Jul-17

project no.	drawing phase.	drawing no.	rev
16.199	DA	TX.06	10

Attachment 2

Swept Path Analysis



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architect
PTW Architects

client
JQZ

scale
1:250 @ A3
0m 2 4 6 8

project
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Kogarah

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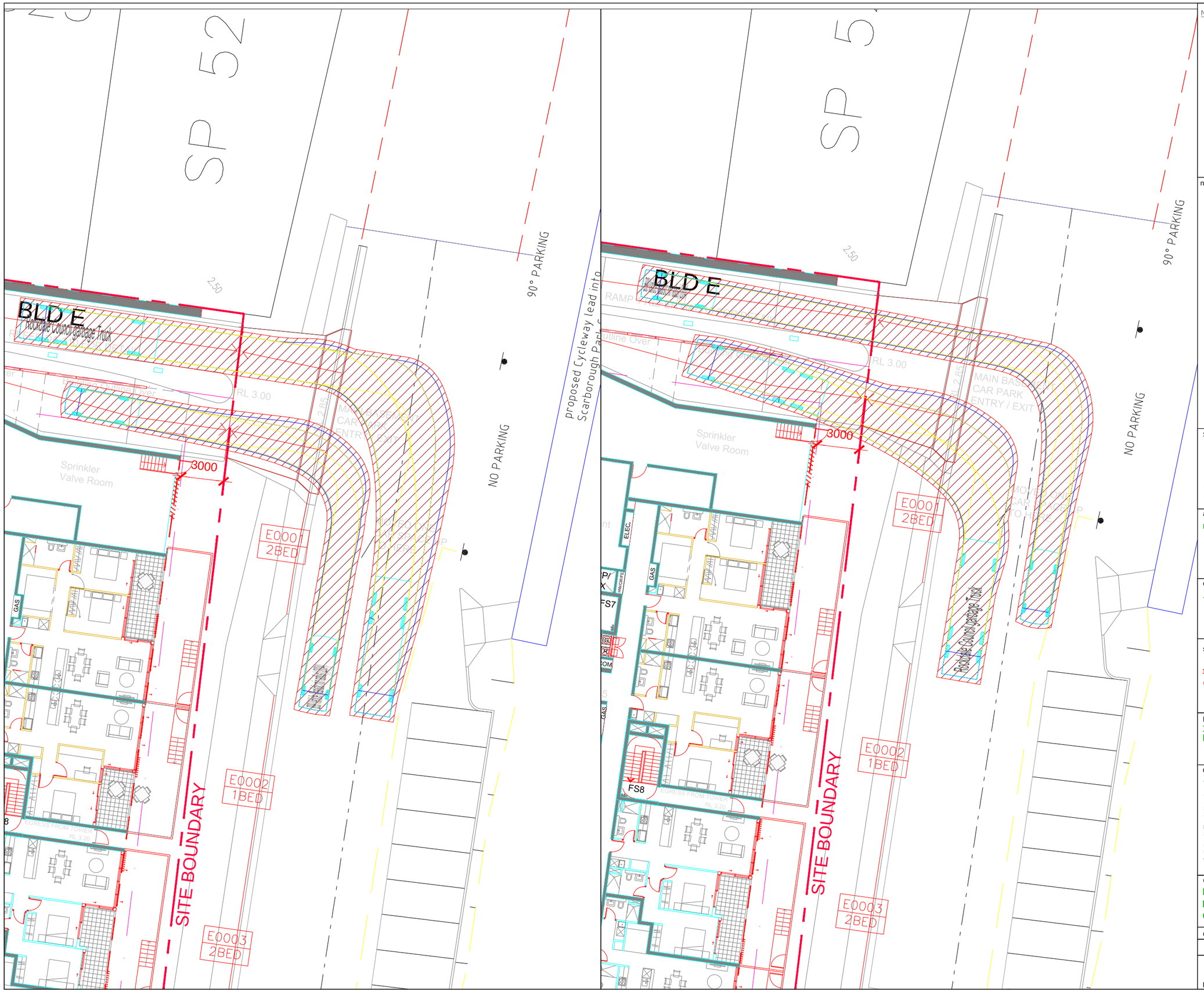
drawing title
Production Lane / New Proposed Road Intersection
Rockdale Council's Garbage Truck and B99

drawn:	checked:	date:
HB	MM	27-Jul-17

project no.	drawing phase.	drawing no.	rev
16.199	DA	TX.01	10



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project
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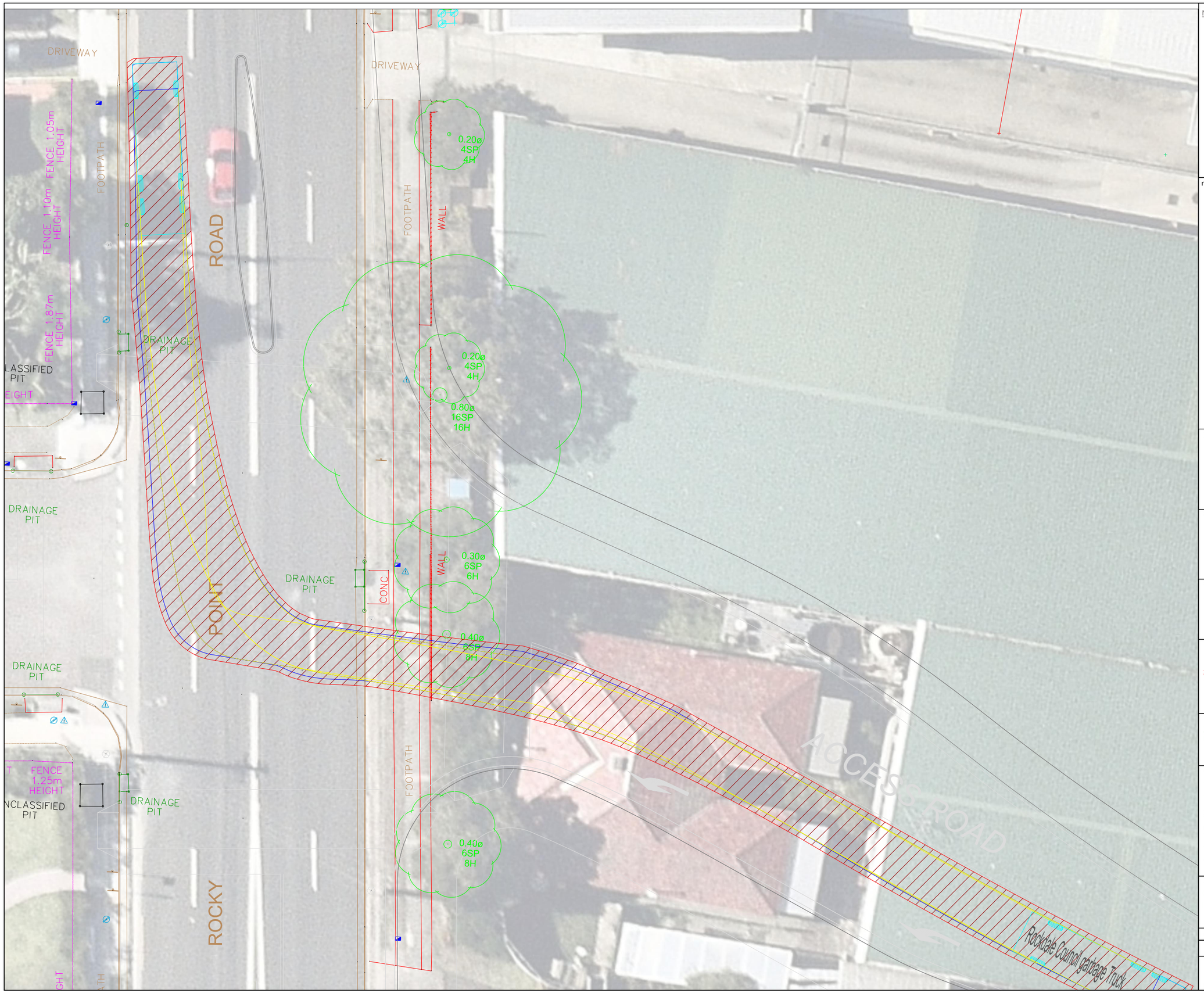
drawing title
Main Basement Access
Rockdale Council Garbage Truck
Council Garbage truck and B99

drawn:	checked:	date:
HB	MM	27-Jul-17

16.199	DA	TX.02	10
project no.	drawing phase.	drawing no.	rev



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1:200 @ A3
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drawing title
Garbage Truck Access
Rockdale Council Garbage Truck

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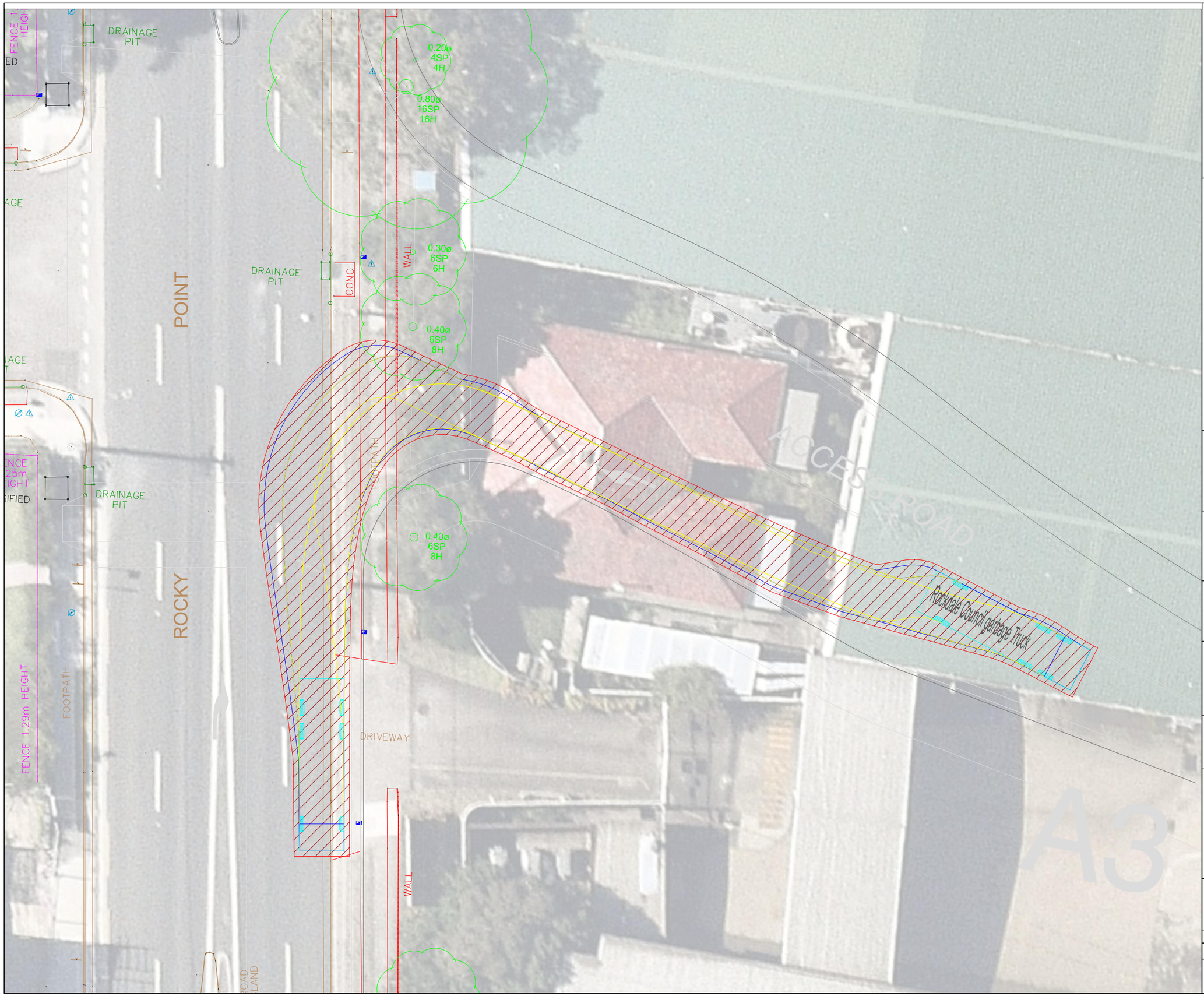

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project
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drawing title
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Rockdale Council Garbage Truck

drawn:	checked:	date:
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project no.	drawing phase.	drawing no.	rev
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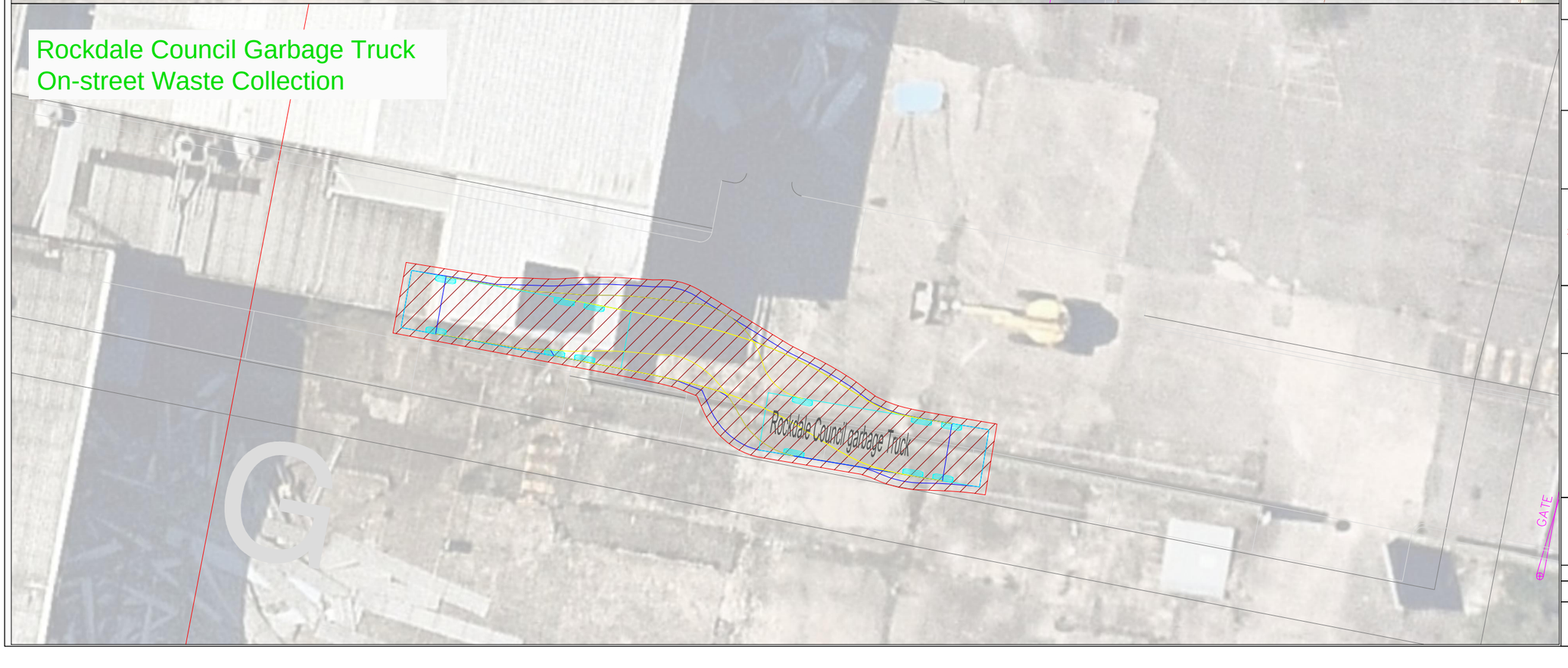

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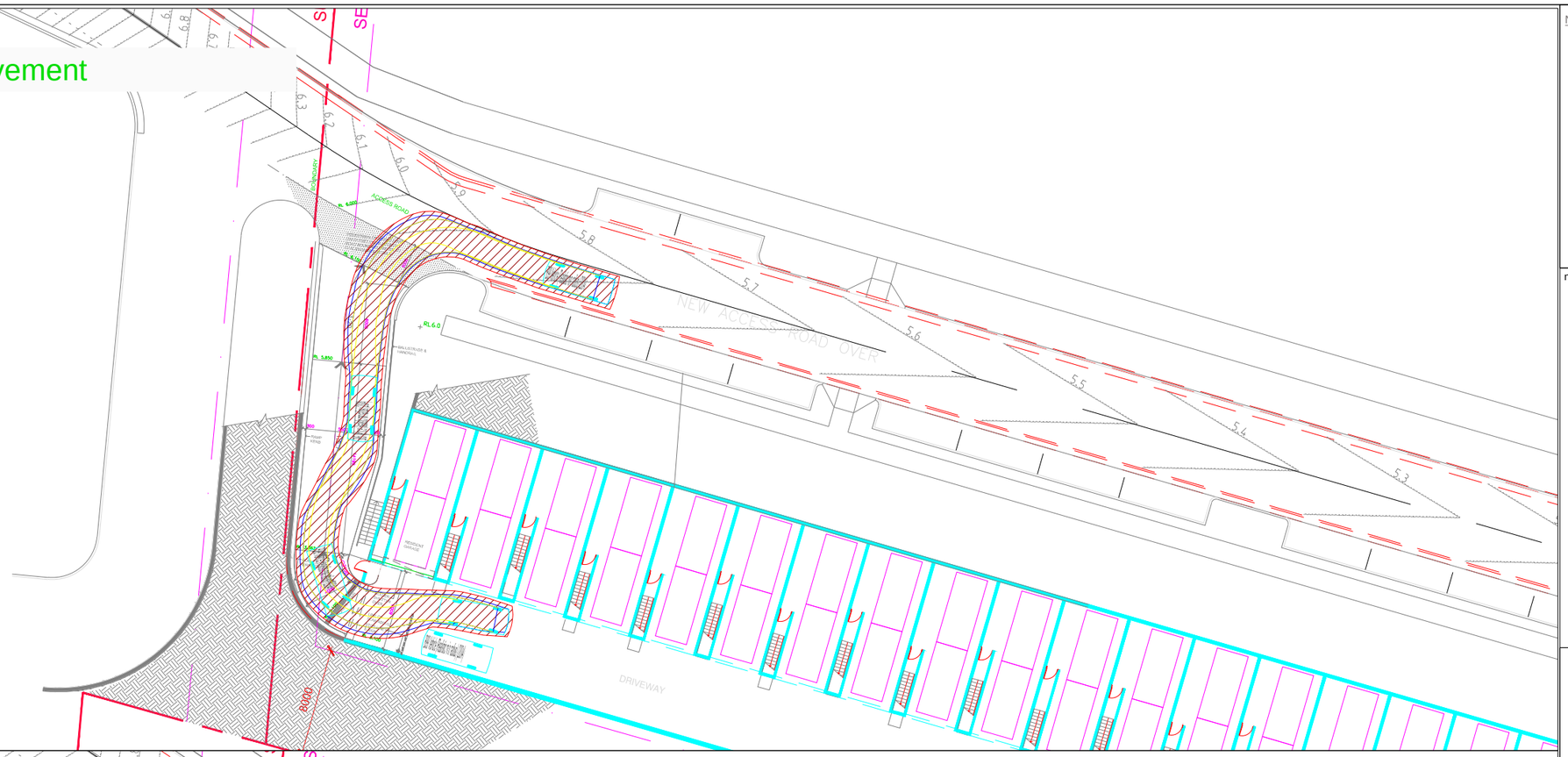
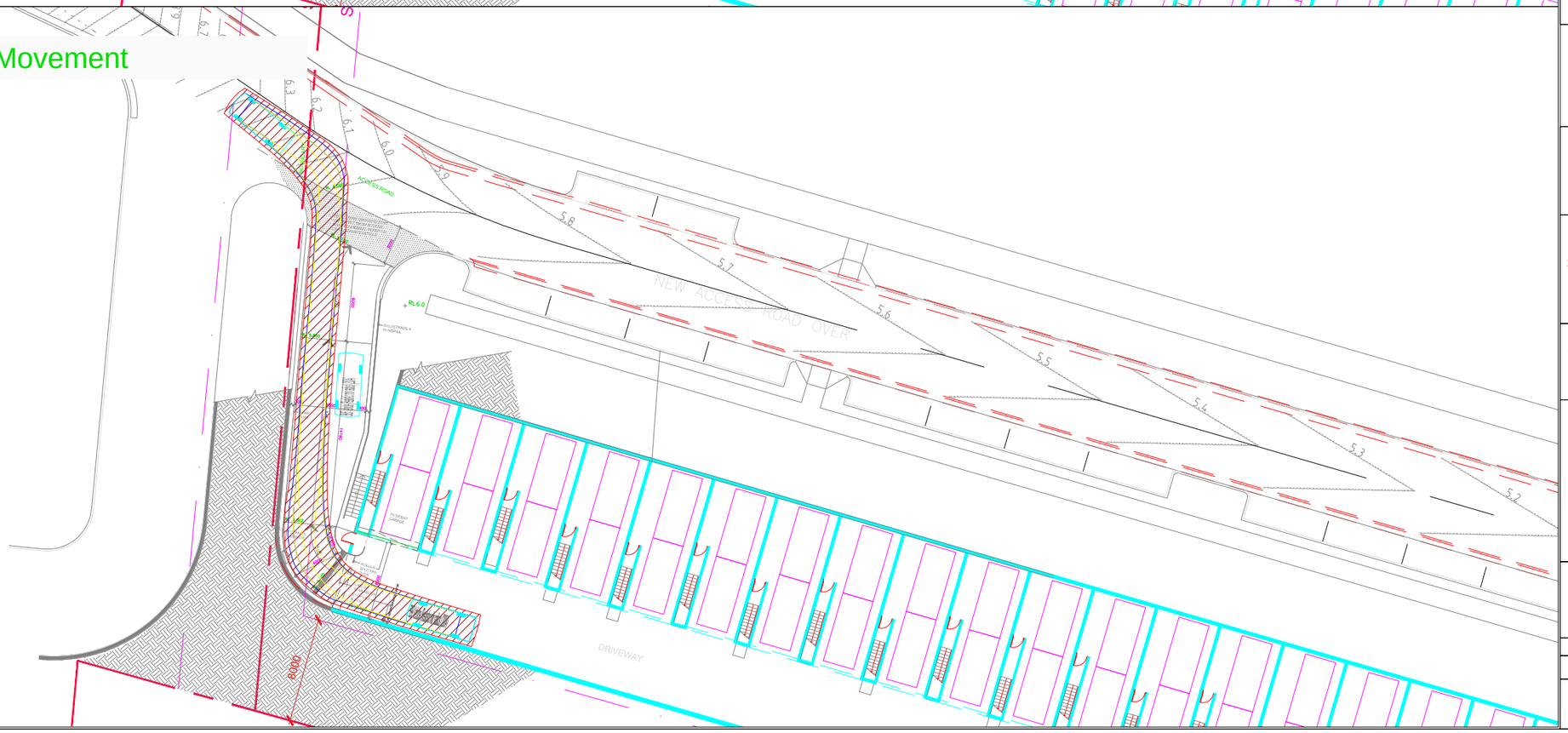
16.199	DA	TX.05	10

In Bound Movement



Out Bound Movement



Notes

This drawing is prepared for information purposes only. It is not to be used for construction.

TRAFFIX is responsible for vehicle swept path diagrams and/or drawing mark-ups only. Base drawing prepared by others.

Vehicle swept path diagrams prepared using computer generated turning path software and associated CAD drawing platforms. Vehicle data based upon relevant Australian Standards (*AS/NZS 2890.1-2004 Parking facilities - Off-street car parking*, and/or *AS 2890.2-2002 Parking facilities - Off-street commercial vehicle facilities*). These standards embody a degree of tolerance, however the vehicle characteristics in these standards represent a suitable design vehicle and do not account for all variations in vehicle dimensions / specifications and/or driver ability or behaviour.

no.	revision note	by.	date

Swept Path Legend:

- Wheel Path
- Vehicle Body Envelope
- Clearance Envelope (300mm)

architect

PTW Architects

client

JQZ

scale

1:400 @ A3

0m 4 8 12 16

project

152-200 and 202-206 Rocky Point Road
Kogarah

drawing prepared by

TRAFFIX
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drawing title

Swept Path Analysis
Access to the Townhouses
B99 and B85

drawn:	checked:	date:
HB	MM	27-Jul-17

project no.	drawing phase.	drawing no.	rev
16.199	DA	TX.06	10

Attachment 3

Traffix response to Traffic Modelling

Reference: 16.199r08v03

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03 August 2017

JQZ
18 Parramatta Road
Homebush NSW 2140

Attention: Mr Jeremy Hung,

Re: 152 –200 and 206 Rocky Point Road, Kogarah - Traffic Statement in Response to *Bayside Council*'s Request for Information DA-2017/224 dated 14th June 2017

Dear Jeremy,

We refer to the abovementioned proposed development and confirm that we have reviewed all relevant information provided to us including *Bayside Council*'s letter dated 14th June 2017.

TRAFFIX has taken Council's advice into consideration with the intention of satisfying all requirements of the Council's DCP and other relevant authority's requirements including *Roads and Maritime Services Modelling Guideline*. In this regard, additional traffic modelling has been undertaken according to *requirement 10(d)* of Council Letter which states:

> *One-way movement for part of Production Lane*
>
> *Consideration to be given to making the section of Production Lane between the main basement access and the intersection with Production Avenue into a one-way road in a north-bound direction.*
>
> *This section of laneway is of a non-compliant width to permit two-way movement and, more importantly, the one-way movement would prevent cars and service vehicles using Production Avenue (including additional vehicles associated with future commercial uses in the B6 zone) from passing through the residential area and new road to exit the locality.*
>
> *Traffic modelling is required to demonstrate that this proposal will not result in adverse impacts to traffic flow within the surrounding road network.*

Additional modelling was required to assess the practicality of Council's suggested change on Production Lane, including an assessment of any possible impact on the functionality of the local road network. *SIDRA intersection 7.0 network* has been utilised to assess both existing and the proposed scenarios (i.e. application of one-way condition on Production Lane).

This matter is discussed further below.

1. TRIP GENERATION

The number of trips generated by the proposed development is presented in **Table 1**. It is understood that this remains unchanged following the applicant's response to additional information.

Table 1: Traffic Generation of Proposed Development

Land Use	No. unit / Area (GLFA) / Child	Block Location	Trip Rate (vehicle per hour)	Trip Generation		
				Total	in	out
Childcare Centre						
AM Peak	65 children	-	0.8 per child	52	26	26
PM Peak			0.7 per child	46	23	23
Residential Flat Building (units)						
AM peak	513	B, C, D, E, BC, CD, DE	0.3 per unit	154	31	123
PM peak			0.3 per unit	154	123	31
Townhouse						
AM peak	20	-	1 per dwelling	20	4	16
PM peak			1 per dwelling	20	16	4
Commercial (m^2)						
AM peak	(20,000 m^2)[2]	B6 land	1.6 per 100m^2 GLFA	320	256	64
PM peak			1.2 per 100m^2 GLFA	240	48	192
		Totals	**AM**	**546**	**317**	**229**
			PM	**459**	**210**	**250**

[1]To maintain a conservative assessment TRAFFIX have adopted a Trip Generation Rate of 0.3 for both the AM and PM peak periods for the residential component of the proposed development.

[2] This is based on the maximum permissible GFA of land in the B6 zone.

2. TRIP DISTRIBUTION

The one-way movement for that part of Production Lane will result in a change in the anticipated trip distribution figures and percentages. A summary of the changes in trip routes are as follows:

- *Residential component* - Southbound traffic movements on Rocky Point Road that are to access the residential parking area on Production Lane will access the site via Rocky Point Road / Weeney Street / New Access Road intersection (left-turn movement on north approach).

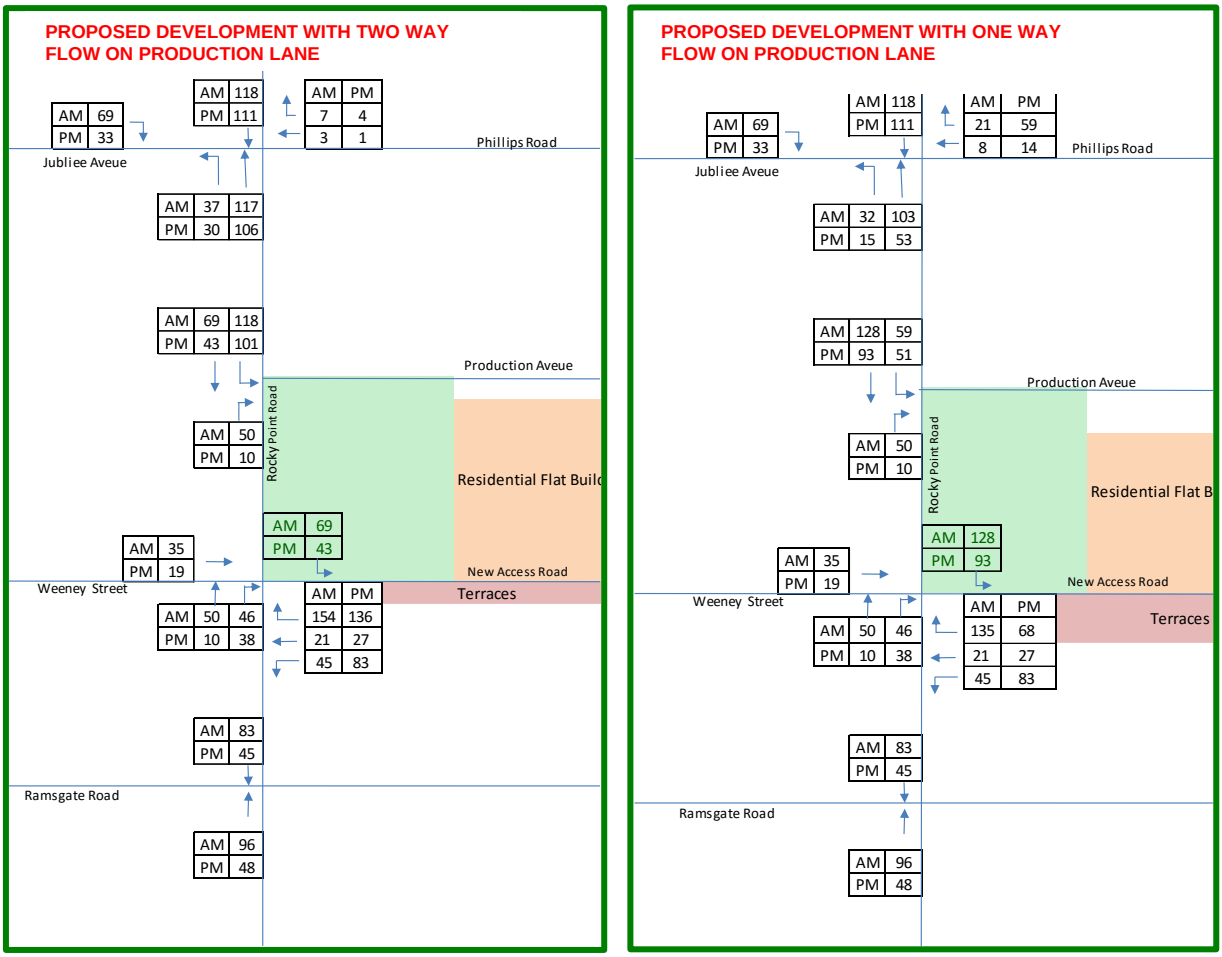
- *Commercial component* - Southbound traffic movements generated by the commercial component are required to exit the site onto Production Avenue only, which is one-way in an eastbound direction. The only way for commercial traffic to access Rocky Point Road (southbound) when exiting the commercial development is to utilise the Phillips Road / Rocky Point Road intersection.

  Westbound traffic movements generated by the commercial component are required to exit the site onto Production Avenue only, which is one-way in an eastbound direction. The only way for commercial traffic to access the western suburbs is via the intersection of Phillips Road / Jubilee Avenue / Rocky Point Road by driving through the intersection from Phillips Road towards Jubilee Avenue (west approach).

- *Childcare centre component – access to the childcare centre will be limited to Rocky Point Road / Weeney Street / New Access Road intersection.*

The trip distribution figures presented in **Figure 1**, below:

Figure 1: Traffic Distribution Diagram of Proposed Development



3. TRAFFIC MODELLING CONSIDERATIONS

Rocky Point Road is an RMS State road (MR 199) and in order to establish a genuine model with appropriate time phases, traffic movements on Rocky Point Road have been defined as the main route (northbound trend for AM peak and southbound trend for PM period).

Furthermore, since the last submission, TRAFFIX has redistributed the traffic; it has been assumed previously that the majority of traffic would access the site via the proposed intersection to provide a conservative assessment. However, it is noted during the last DA meeting with Council that the proposed section of commercial GFA to the north of the proposed new road may require the main car park access to be located on Production Avenue. This proposal will result in rerouting the commercial access from Rocky Point Road / Weeney Street / New Proposed Road intersection to the Rocky Point Road / Production Avenue intersection. Therefore, it can be seen in **Figure 1** that 50 vehicle trips per hour during the AM peak and 10 vehicle trips per hour during the PM peak of the

northbound movement intending to enter the site on Rocky Point Road can only use Production Avenue to access the site. This assumption has been modified in the traffic distribution diagram and traffic model has been updated to represent this change.

4. TRAFFIC MODELLING RESULTS

On the above basis, the "one-way scenario under *requirement 10(d)*." has been created in SIDRA modelling and for comparative purposes a summary of results for both the existing and new one-way scenario are provided in **Table 2** below with all SIDRA outputs in **Attachment 1**.

Table 2: Surrounding Intersection Performance for Existing Situation and One-way Scenario

Intersection Description	Control Type	Model	Period	Degree of Saturation	Intersection Delay	Level of Service
Rocky Point Road / Phillips Road (Paired in the SIDRA Network Model)	Signals	Two-Way Scenario	AM	0.392	4.4	LOS A
			PM	0.703	12.4	LOS A
		One-way Scenario	AM	0.458	5.0	LOS A
			PM	0.723	14.9	LOS B
Rocky Point Road / Jubilee Avenue (Paired in the SIDRA Network Model)	Signals	Two-Way Scenario	AM	1.104	29.6	LOS C
			PM	0.692	9.9	LOS A
		One-way Scenario	AM	1.104	29.6	LOS C
			PM	0.719	10.2	LOS A
Rocky Point Road / Production Avenue	T-intersection	Two-Way Scenario	AM	0.588	19.4	LOS B
			PM	0.501	41.5	LOS C
		One-way Scenario	AM	0.549	18.5	LOS B
			PM	0.470	39.7	LOS C
Rocky Point Road / Weeney Street / (proposed new road)	Signals	Two-Way Scenario	AM	0.885	17.7	LOS B
			PM	0.919	12.7	LOS A
		One-way Scenario	AM	0.898	14.1	LOS A
			PM	0.695	8.6	LOS A
Rocky Point Road / Ramsgate Road	Signals	Two-Way Scenario	AM	1.030	37.8	LOS C
			PM	0.958	39.7	LOS C
		One-way Scenario	AM	1.030	38.0	LOS C
			PM	0.958	39.7	LOS C

As presented in **Table 2,** it is evident that all intersections operate with the same LoS with an exception for Rocky Point Road / Phillips Road intersection under the one-way scenario during the PM peak period which has dropped from LoS A to LoS B.

Notwithstanding, the following results have been extracted from the lane movement summary, which are of greater significance.

5. TRAFFIC IMPACTS

It is noted that Councils one-way suggestion will restrict all traffic using Production Avenue to use the proposed new intersection. This means that any traffic movement on Production Avenue needing to exit to the north will only be able to do so via Phillips Road. Consideration should also be given to the fact that the traffic model only takes into account the traffic impacts of existing traffic movements and the development yield increase. However, if the one-way scenario is implemented, all existing and future traffic from Production Avenue will be directed away from the new intersection, meaning that it will not be operating efficiently due to the lower traffic volumes passing through.

Rocky Point Road / Jubilee Avenue / Phillips Road intersection under the Common Control Signal Group

- Queue lengths during the AM peak period for the through movements at the southern approach on Rocky Point Road increased from 130.4m to 197.5m under the proposed one-way scenario. This caused an increase in the probability of blockage from 11.7% to 50% which results in the adverse impact on the functionality of Rocky Point Road (northbound). The main reason for this blockage is an increase in the traffic movements on Phillips Road. In addition, the total length of the southern approach of this intersection (from its intersection with Production Avenue) is 121m and the envisaged queue length will result in queuing in the downstream intersections.
- Queue lengths during the PM peak period for the through movements at the eastern leg on Phillips Road increased from 19.6m to 44.4m under the proposed one-way scenario.
- Queue lengths during the PM peak period at the northern approach on Rocky Point Road increased for the through movements from 165.7m to 180.2m.

Rocky Point Road / Production Avenue intersection

- As expected during the AM peak period, traffic accessing the B6 zone will be restricted to use the northern intersection of Rocky Point Road / Jubilee Avenue / Phillips Road only. This resulted in an adverse impact in the performance of Phillips Road in terms of increased delays and queuing. This also has an impact the queuing on other approaches to the intersection. The queue will extend northbound on Rocky point Road to the next intersection and will have an adverse impact on its operation.

On the above basis, whilst the proposed one-way scenario will have an acceptable impact on the surrounding road network, with all intersections operating at a Level of Service C or above according to the RMS Guidelines. However, there will be localised negative impacts on Rocky Point Road in the form of additional queuing and intersection delay as demonstrated in the SIDRA intersection analysis.

5. CONCLUSION

In summary:

- Council's proposed one-way traffic flow on Production Lane has been modelled and assessed according to *requirement 10(d)* of the *Bayside Council's letter dated 14th June 2017*.

- *SIDRA INTERSECTION 7.0 NETWORK* has been utilised to assess the impact of this change on the local traffic network. Traffic generation created by the proposed development will not change under this scenario, however the traffic will be redistributed under the new one-wat scenario across the network to reflect this change.

- SIDRA modelling demonstrates that under the new one-way scenario all intersections are functioning satisfactorily under the minimum RMS Guidelines' requirements, with Level of Service C or above. However, this change will create an adverse impact on the performance of northbound movement on Rocky Point during the AM peak period, and will also have some localised adverse impacts on the functionality of Phillips Road during the PM peak period.

On the above basis, TRAFFIX consider that the alternate arrangement will result in adverse impacts on the surrounding network. Thank you for referring this matter for our consideration and, in the meantime, please contact us should you have any queries.

Yours faithfully,

traffix

Martin Mallia
Executive Engineer

Attachments: 1) SIDRA Outputs

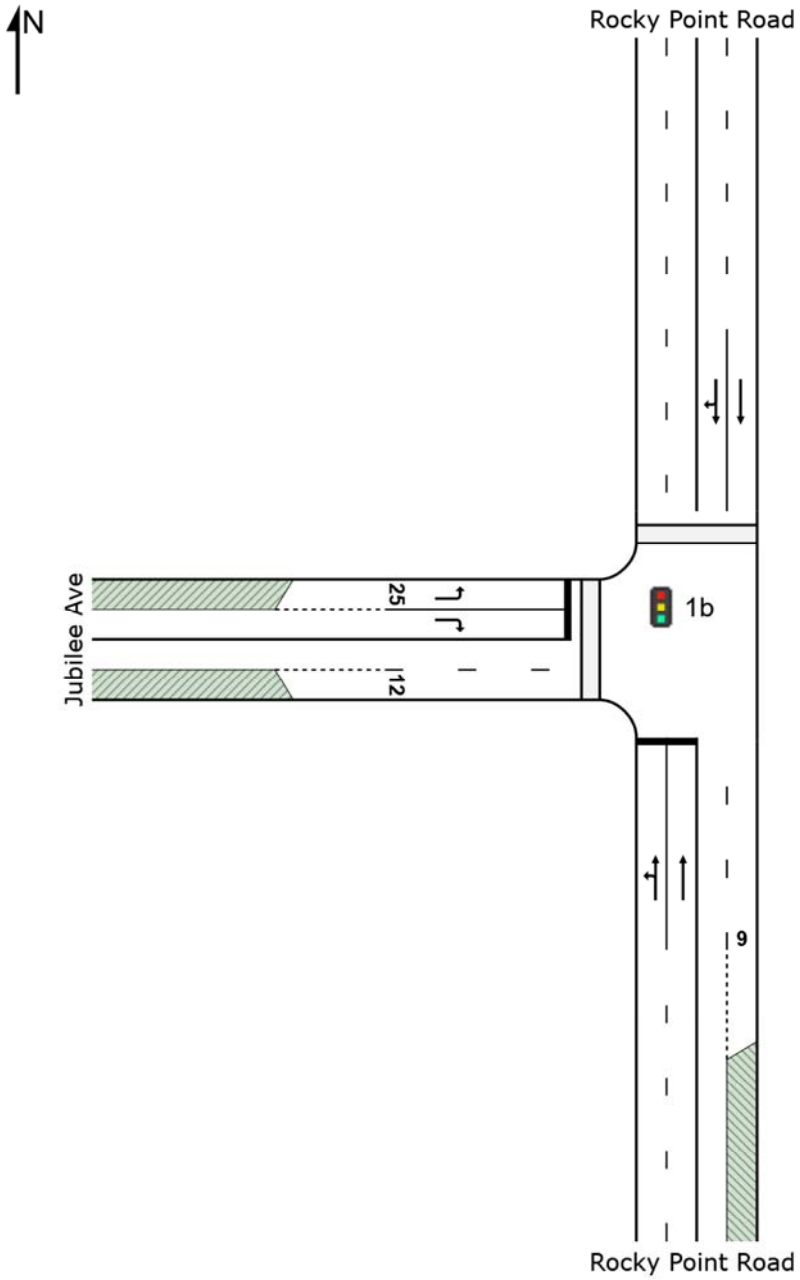
Attachment 1

SIDRA Results

SITE LAYOUT

Site: 1b [AM FU - Rocky Point Rd x Jubilee Ave - One way]

Residential DA + Approved Commercial + Childcare
Signalised Intersection: Rocky Point Rd x Jubilee Ave
Period: AM
Signals - Fixed Time Isolated



MOVEMENT SUMMARY

Site: 1b [AM FU - Rocky Point Rd x Jubilee Ave - One way]

Network: N101 [AM FU - Residential DA+Childcare +Commercial - One way Scenario]

Residential DA + Approved Commercial + Childcare
Signalised Intersection: Rocky Point Rd x Jubilee Ave
Period: AM
Signals - Fixed Time Coordinated Cycle Time = 120 seconds (Network Cycle Time - User-Given)
Common Control Group: CCG1 [Intersection of Rocky Point Road x Jubilee Ave X Phillips Road]

Movement Performance - Vehicles

Mov ID	OD Mov	Demand Flows Total veh/h	HV %	Arrival Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
South: Rocky Point Road													
1	L2	238	0.4	238	0.4	0.898	20.9	LOS B	27.7	197.5	0.49	0.61	32.0
2	T1	1484	2.9	1484	2.9	0.898	22.3	LOS B	27.7	197.5	0.70	0.76	15.9
Approach		1722	2.6	1722	2.6	0.898	22.1	LOS B	27.7	197.5	0.67	0.74	18.6
North: Rocky Point Road													
8	T1	626	8.7	626	8.7	0.315	0.0	LOS A	0.0	0.0	0.00	0.05	51.6
9	R2	69	4.5	69	4.5	0.315	2.1	LOS A	0.0	0.0	0.00	0.06	50.8
Approach		696	8.3	696	8.3	0.315	0.2	LOS A	0.0	0.0	0.00	0.05	51.1
West: Jubilee Ave													
10	L2	106	2.0	106	2.0	0.498	60.9	LOS E	6.0	43.0	0.98	0.79	11.2
12	R2	206	2.0	206	2.0	1.104	175.8	LOS F	22.9	163.4	1.00	1.32	4.3
Approach		313	2.0	313	2.0	1.104	136.7	LOS F	22.9	163.4	0.99	1.14	5.4
All Vehicles		2731	4.0	2731	4.0	1.104	29.6	LOS C	27.7	197.5	0.54	0.61	13.3

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Network tab).
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Largest change in Average Back of Queue or Degree of Saturation for any lane during the last three iterations: 14.3 %
Number of Iterations: 10 (maximum specified: 10)

Movement Performance - Pedestrians

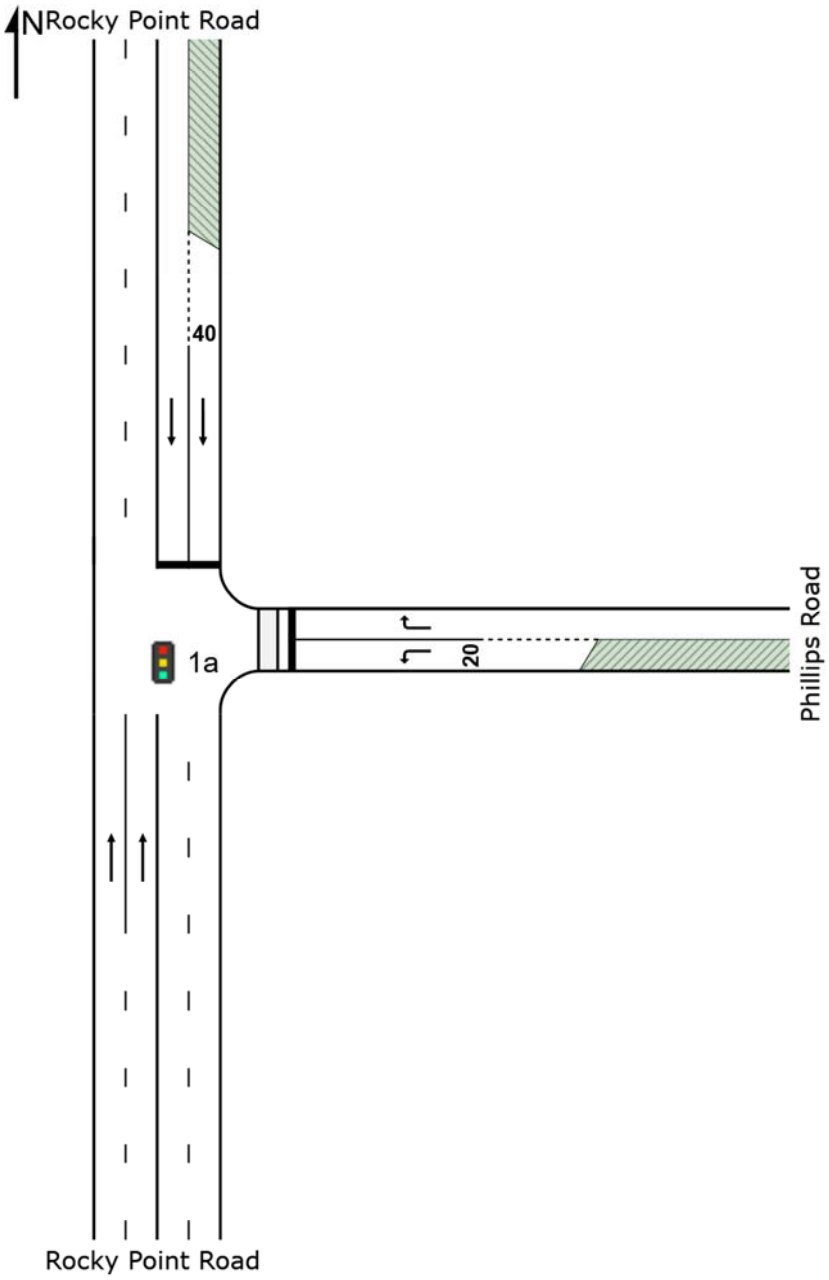
Mov ID	Description	Demand Flow ped/h	Average Delay sec	Level of Service	Average Back of Queue Pedestrian ped	Distance m	Prop. Queued	Effective Stop Rate per ped
P3	North Full Crossing	21	54.2	LOS E	0.1	0.1	0.95	0.95
P4	West Full Crossing	53	10.0	LOS B	0.1	0.1	0.41	0.41
All Pedestrians		74	22.6	LOS C			0.56	0.56

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

SITE LAYOUT

Site: 1a [AM FU - Rocky Point Rd x Phillips Rd - One way]

Residential DA + Approved Commercial + Childcare
Signalised Intersection: Rocky Point Rd x Phillips Rd
Period: AM
Signals - Fixed Time Isolated



MOVEMENT SUMMARY

Site: 1a [AM FU - Rocky Point Rd x Phillips Rd - One way]

Network: N101 [AM FU - Residential DA+Childcare +Commercial - One way Scenario]

Residential DA + Approved Commercial + Childcare
Signalised Intersection: Rocky Point Rd x Phillips Rd
Period: AM
Signals - Fixed Time Coordinated Cycle Time = 120 seconds (Network Cycle Time - User-Given)
Common Control Group: CCG1 [Intersection of Rocky Point Road x Jubilee Ave X Phillips Road]

Movement Performance - Vehicles

Mov ID	OD Mov	Demand Flows Total veh/h	HV %	Arrival Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
South: Rocky Point Road													
2	T1	1484	2.9	1484	2.9	0.388	0.0	LOS A	0.0	0.0	0.00	0.00	59.9
Approach		1484	2.9	1484	2.9	0.388	0.0	LOS A	0.0	0.0	0.00	0.00	59.9
East: Phillips Road													
4	L2	36	8.8	36	8.8	0.410	69.7	LOS E	2.2	16.5	1.00	0.73	12.2
6	R2	41	5.1	41	5.1	0.458	69.7	LOS E	2.5	18.4	1.00	0.73	24.4
Approach		77	6.8	77	6.8	0.458	69.7	LOS E	2.5	18.4	1.00	0.73	19.7
North: Rocky Point Road													
8	T1	747	7.0	747	7.0	0.297	8.3	LOS A	8.7	64.6	0.44	0.38	47.8
Approach		747	7.0	747	7.0	0.297	8.3	LOS A	8.7	64.6	0.44	0.38	47.8
All Vehicles		2308	4.4	2308	4.4	0.458	5.0	LOS A	8.7	64.6	0.17	0.15	52.0

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Network tab).
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Largest change in Average Back of Queue or Degree of Saturation for any lane during the last three iterations: 14.3 %
Number of Iterations: 10 (maximum specified: 10)

Movement Performance - Pedestrians

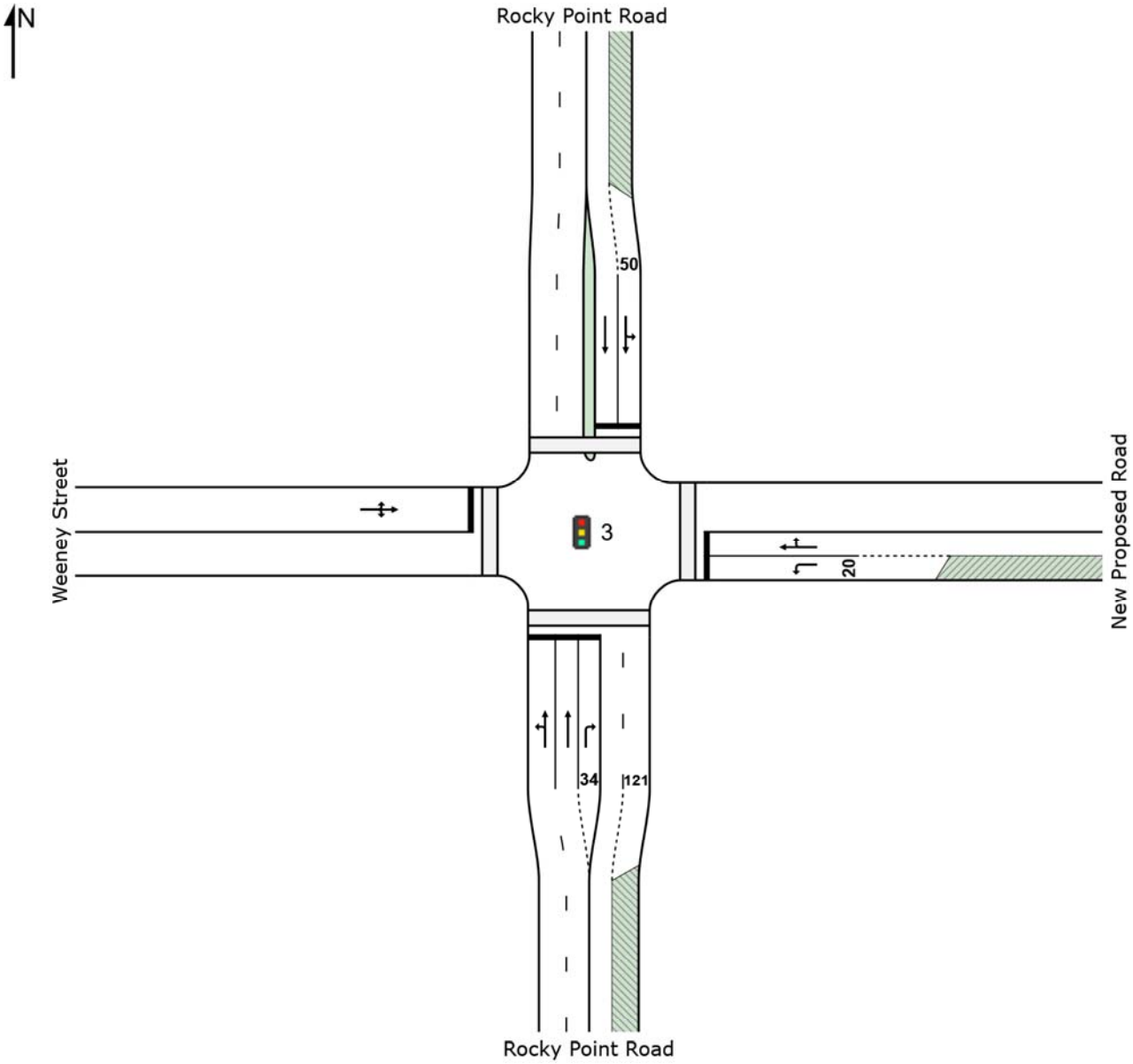
Mov ID	Description	Demand Flow ped/h	Average Delay sec	Level of Service	Average Back of Queue Pedestrian ped	Distance m	Prop. Queued	Effective Stop Rate per ped
P2	East Full Crossing	53	8.1	LOS A	0.1	0.1	0.37	0.37
All Pedestrians		53	8.1	LOS A			0.37	0.37

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

SITE LAYOUT

Site: 3 [AM FU - Rocky Point Rd x Weeney St x New Proposed Road- One way]

Residential DA + Approved Commercial + Childcare
Intersection: Rocky Point Rd x Weeney St x New Proposed Road
Period: AM
Signals - Fixed Time Isolated



MOVEMENT SUMMARY

Site: 3 [AM FU - Rocky Point Rd x Weeney St x New Proposed Road- One way]

Network: N101 [AM FU - Residential DA+Childcare +Commercial - One way Scenario]

Residential DA + Approved Commercial + Childcare
Intersection: Rocky Point Rd x Weeney St x New Proposed Road
Period: AM
Signals - Fixed Time Coordinated Cycle Time = 120 seconds (Network Cycle Time - User-Given)

Movement Performance - Vehicles

Mov ID	OD Mov	Demand Flows Total veh/h	HV %	Arrival Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
South: Rocky Point Road													
1	L2	57	5.6	57	5.6	0.788	11.1	LOS A	22.6	161.9	0.41	0.40	49.7
2	T1	1665	2.7	1665	2.7	0.788	5.2	LOS A	22.6	161.9	0.37	0.36	51.5
3	R2	48	0.0	48	0.0	0.533	72.2	LOS F	3.0	21.2	1.00	0.74	22.6
Approach		1771	2.7	1771	2.7	0.788	7.2	LOS A	22.6	161.9	0.39	0.37	49.1
East: New Proposed Road													
4	L2	47	0.0	47	0.0	0.083	35.9	LOS C	1.9	13.6	0.74	0.70	15.6
5	T1	22	0.0	22	0.0	0.898	71.8	LOS F	11.7	81.9	1.00	1.09	12.0
6	R2	142	0.0	142	0.0	0.898	76.3	LOS F	11.7	81.9	1.00	1.09	8.9
Approach		212	0.0	212	0.0	0.898	66.8	LOS E	11.7	81.9	0.94	1.00	10.2
North: Rocky Point Road													
7	L2	135	0.0	130	0.0	0.321	17.7	LOS B	8.1	59.2	0.44	0.51	32.7
8	T1	703	8.1	692	8.2	0.487	12.7	LOS A	12.7	95.1	0.48	0.46	23.3
Approach		838	6.8	822 N1	6.9	0.487	13.5	LOS A	12.7	95.1	0.47	0.47	25.6
West: Weeney Street													
10	L2	13	0.0	13	0.0	0.135	46.3	LOS D	2.5	17.6	0.85	0.67	8.6
11	T1	37	0.0	37	0.0	0.135	41.7	LOS C	2.5	17.6	0.85	0.67	17.9
12	R2	3	0.0	3	0.0	0.135	46.2	LOS D	2.5	17.6	0.85	0.67	8.6
Approach		53	0.0	53	0.0	0.135	43.1	LOS D	2.5	17.6	0.85	0.67	15.6
All Vehicles		2873	3.7	2857 N1	3.7	0.898	14.1	LOS A	22.6	161.9	0.46	0.45	37.8

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Network tab).
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Largest change in Average Back of Queue or Degree of Saturation for any lane during the last three iterations: 14.3 %
Number of Iterations: 10 (maximum specified: 10)

N1 Arrival Flow value is reduced due to capacity constraint at oversaturated upstream lanes.

Movement Performance - Pedestrians

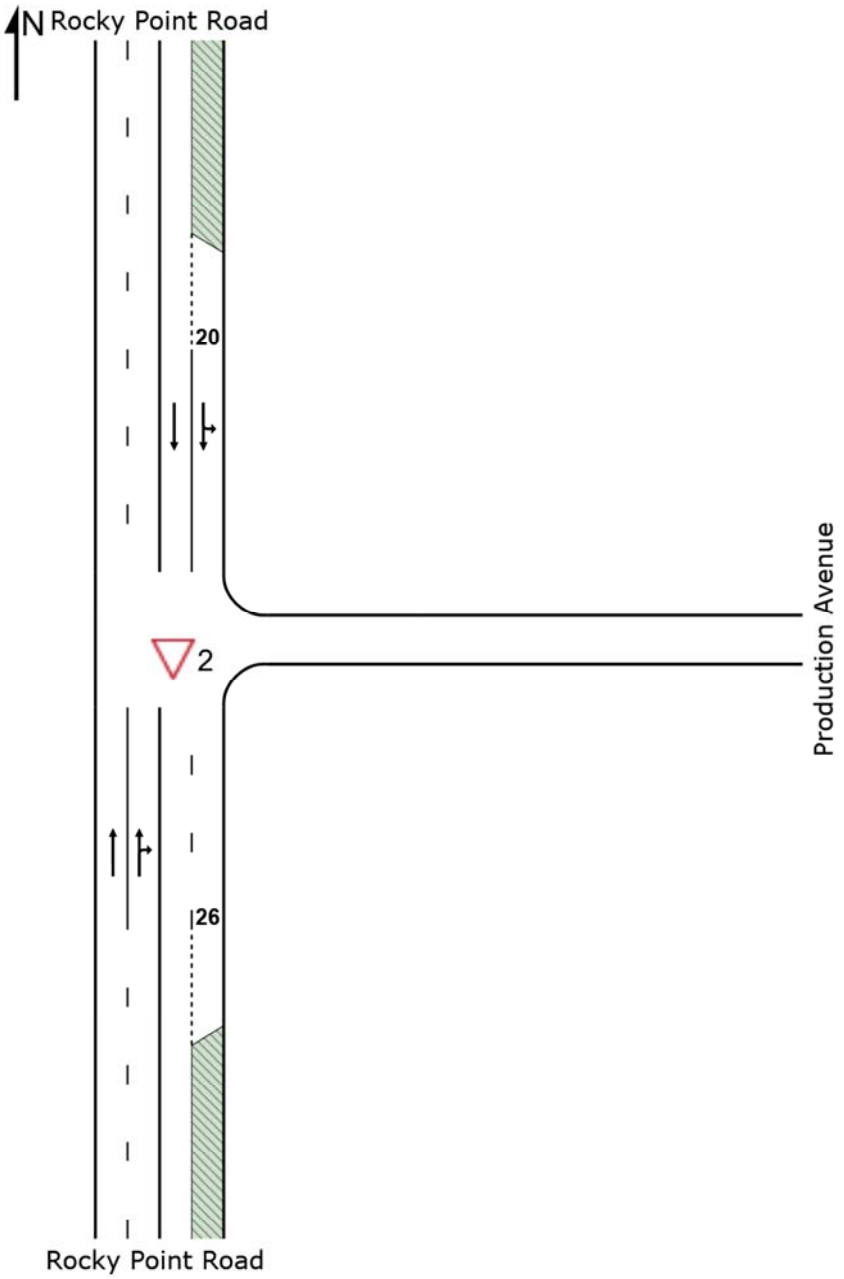
Mov ID	Description	Demand Flow ped/h	Average Delay sec	Level of Service	Average Back of Queue Pedestrian ped	Distance m	Prop. Queued	Effective Stop Rate per ped
P1	South Full Crossing	53	47.8	LOS E	0.2	0.2	0.89	0.89
P2	East Full Crossing	53	14.5	LOS B	0.1	0.1	0.49	0.49
P3	North Full Crossing	53	46.9	LOS E	0.2	0.2	0.89	0.89
P4	West Full Crossing	53	14.0	LOS B	0.1	0.1	0.48	0.48
All Pedestrians		211	30.8	LOS D			0.69	0.69

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

SITE LAYOUT

Site: 2 [AM FU - Rocky Point Road x Production Avenue - One way]

Residential DA + Approved Commercial + Childcare
T-intersection:Rocky Point Road x Production Avenue
Period: AM
Giveway / Yield (Two-Way)



MOVEMENT SUMMARY

Site: 2 [AM FU - Rocky Point Road x Production Avenue - One way]

Network: N101 [AM FU - Residential DA+Childcare +Commercial - One way Scenario]

Residential DA + Approved Commercial + Childcare
T-intersection:Rocky Point Road x Production Avenue
Period: AM
Giveway / Yield (Two-Way)

Movement Performance - Vehicles

Mov ID	OD Mov	Demand Flows Total veh/h	HV %	Arrival Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
South: Rocky Point Road													
2	T1	1711	2.5	1711	2.5	0.549	2.0	LOS A	18.9	134.8	0.19	0.04	45.3
3	R2	98	2.2	98	2.2	0.549	18.5	LOS B	18.9	134.8	0.49	0.11	43.0
Approach		1808	2.5	1808	2.5	0.549	2.9	NA	18.9	134.8	0.21	0.05	44.9
North: Rocky Point Road													
7	L2	124	0.0	121	0.0	0.091	5.5	LOS A	0.0	0.0	0.00	0.42	48.1
8	T1	852	7.0	835	7.1	0.423	0.0	LOS A	0.0	0.0	0.00	0.02	58.2
Approach		976	6.1	956[N1]	6.2	0.423	0.7	NA	0.0	0.0	0.00	0.07	54.7
All Vehicles		2784	3.8	2765[N1]	3.8	0.549	2.1	NA	18.9	134.8	0.14	0.06	48.1

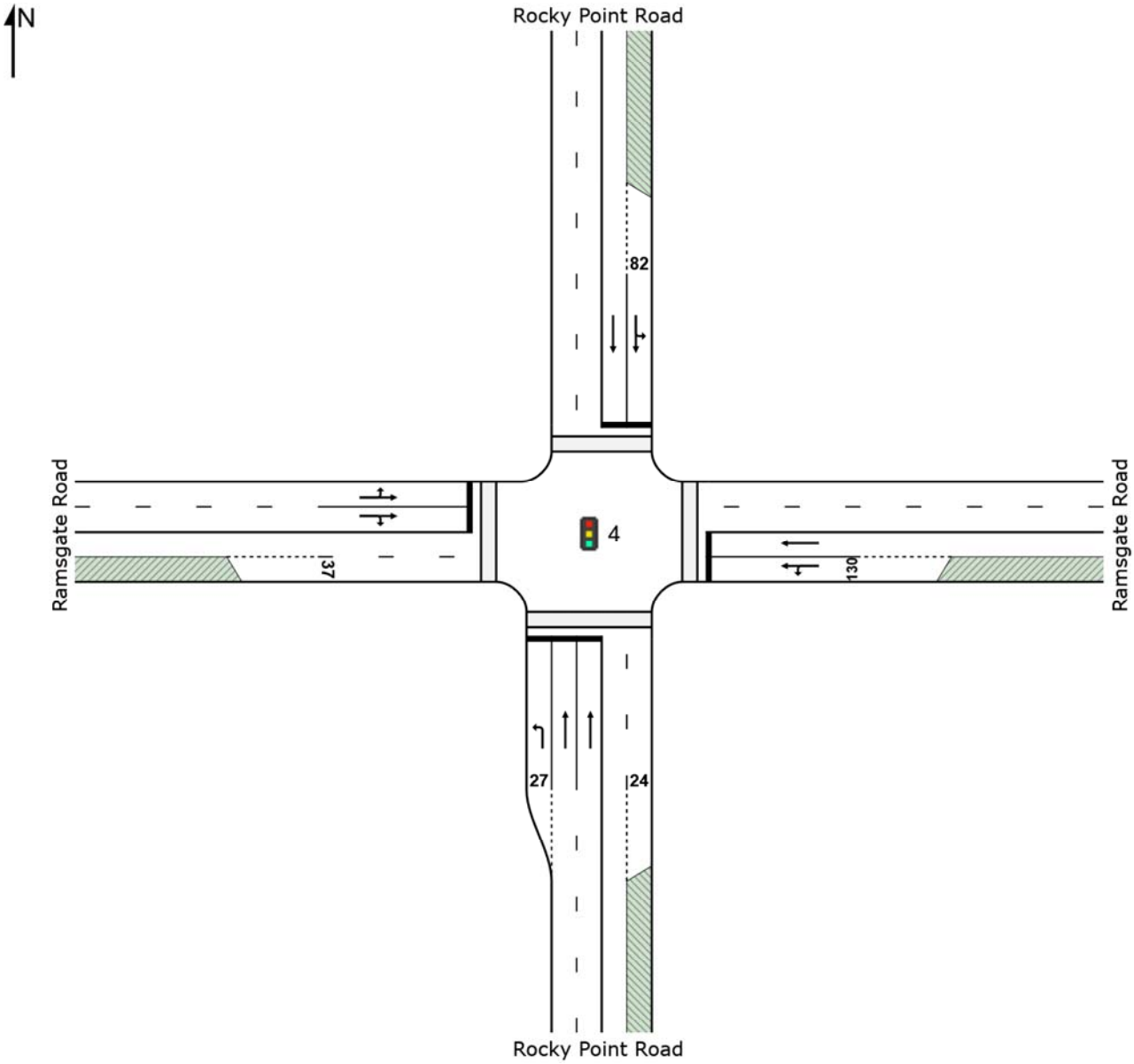
Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Network tab).
Vehicle movement LOS values are based on average delay per movement.
Minor Road Approach LOS values are based on average delay for all vehicle movements.
NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.
SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Largest change in Average Back of Queue or Degree of Saturation for any lane during the last three iterations: 14.3 %
Number of Iterations: 10 (maximum specified: 10)

N1 Arrival Flow value is reduced due to capacity constraint at oversaturated upstream lanes.

SITE LAYOUT

Site: 4 [AM FU - Rocky Point Road x Ramsgate Road - One way]

Residential DA + Approved Commercial + Childcare
Signalised Intersection: Rocky Point Road x Ramsgate Road
Period: AM
Signals - Fixed Time Isolated



MOVEMENT SUMMARY

Site: 4 [AM FU - Rocky Point Road x Ramsgate Road - One way]

Network: N101 [AM FU - Residential DA+Childcare +Commercial - One way Scenario]

Residential DA + Approved Commercial + Childcare
Signalised Intersection: Rocky Point Road x Ramsgate Road
Period: AM
Signals - Fixed Time Coordinated Cycle Time = 120 seconds (Network Cycle Time - User-Given)

Movement Performance - Vehicles

Mov ID	OD Mov	Demand Flows Total veh/h	HV %	Arrival Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
South: Rocky Point Road													
1	L2	360	5.3	360	5.3	0.350	11.2	LOS A	6.9	50.3	0.36	0.68	45.6
2	T1	1658	2.6	1658	2.6	0.894	32.8	LOS C	56.7	405.9	0.85	0.88	25.0
Approach		2018	3.1	2018	3.1	0.894	29.0	LOS C	56.7	405.9	0.76	0.84	28.6
East: Ramsgate Road													
4	L2	27	7.7	27	7.7	0.296	54.4	LOS D	4.5	33.2	0.93	0.74	26.9
5	T1	386	3.5	386	3.5	1.030	105.5	LOS F	29.8	215.3	0.99	1.25	15.9
Approach		414	3.8	414	3.8	1.030	102.1	LOS F	29.8	215.3	0.98	1.22	16.4
North: Rocky Point Road													
7	L2	33	9.7	32	9.8	0.133	19.5	LOS B	4.3	32.4	0.58	0.54	44.9
8	T1	706	7.5	696	7.5	0.581	18.1	LOS B	23.8	177.4	0.73	0.66	45.1
Approach		739	7.5	728 N1	7.6	0.581	18.1	LOS B	23.8	177.4	0.72	0.65	45.1
West: Ramsgate Road													
10	L2	46	13.6	46	13.6	0.567	41.7	LOS C	16.4	120.7	0.88	0.77	20.8
11	T1	293	4.7	293	4.7	0.567	36.0	LOS C	16.4	120.7	0.88	0.77	30.7
12	R2	213	8.4	213	8.4	0.837	69.5	LOS E	12.7	95.4	1.00	1.08	22.2
Approach		552	6.9	552	6.9	0.837	49.4	LOS D	16.4	120.7	0.93	0.89	26.0
All Vehicles		3722	4.6	3711 N1	4.6	1.030	38.0	LOS C	56.7	405.9	0.81	0.86	28.7

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Network tab).
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Largest change in Average Back of Queue or Degree of Saturation for any lane during the last three iterations: 14.3 %
Number of Iterations: 10 (maximum specified: 10)

N1 Arrival Flow value is reduced due to capacity constraint at oversaturated upstream lanes.

Movement Performance - Pedestrians

Mov ID	Description	Demand Flow ped/h	Average Delay sec	Level of Service	Average Back of Queue Pedestrian ped	Distance m	Prop. Queued	Effective Stop Rate per ped
P1	South Full Crossing	53	53.3	LOS E	0.2	0.2	0.94	0.94
P2	East Full Crossing	53	15.5	LOS B	0.1	0.1	0.51	0.51
P3	North Full Crossing	53	50.5	LOS E	0.2	0.2	0.92	0.92
P4	West Full Crossing	53	15.5	LOS B	0.1	0.1	0.51	0.51
All Pedestrians		211	33.7	LOS D			0.72	0.72

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)

Pedestrian movement LOS values are based on average delay per pedestrian movement.
Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

MOVEMENT SUMMARY

Site: 1a [AM FU Rocky Point Rd x Phillips Rd]

Network: N101 [AM FU - Residential DA+Childcare +Commercial]

Signalised Intersection: Rocky Point Rd x Phillips Rd
Period: AM
Scenario: Future
Signals - Fixed Time Coordinated Cycle Time = 120 seconds (Network Cycle Time - User-Given)
Common Control Group: CCG1 [Intersection of Rocky Point Road x Jubilee Ave X Phillips Road]

Movement Performance - Vehicles

Mov ID	OD Mov	Demand Flows Total veh/h	Demand Flows HV %	Arrival Flows Total veh/h	Arrival Flows HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	95% Back of Queue Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
South: Rocky Point Road													
2	T1	1499	2.9	1499	2.9	0.392	0.0	LOS A	0.0	0.0	0.00	0.00	59.9
Approach		1499	2.9	1499	2.9	0.392	0.0	LOS A	0.0	0.0	0.00	0.00	59.9
East: Phillips Road													
4	L2	31	10.3	31	10.3	0.353	69.5	LOS E	1.9	14.2	1.00	0.72	12.2
6	R2	26	8.0	26	8.0	0.300	69.0	LOS E	1.6	11.9	1.00	0.71	24.5
Approach		57	9.3	57	9.3	0.353	69.2	LOS E	1.9	14.2	1.00	0.72	18.9
North: Rocky Point Road													
8	T1	747	7.0	747	7.0	0.297	8.3	LOS A	8.7	64.6	0.44	0.38	47.8
Approach		747	7.0	747	7.0	0.297	8.3	LOS A	8.7	64.6	0.44	0.38	47.8
All Vehicles		2303	4.4	2303	4.4	0.392	4.4	LOS A	8.7	64.6	0.17	0.14	52.8

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Network tab).
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Largest change in Average Back of Queue or Degree of Saturation for any lane during the last three iterations: 8.7 %
Number of Iterations: 10 (maximum specified: 10)

Movement Performance - Pedestrians

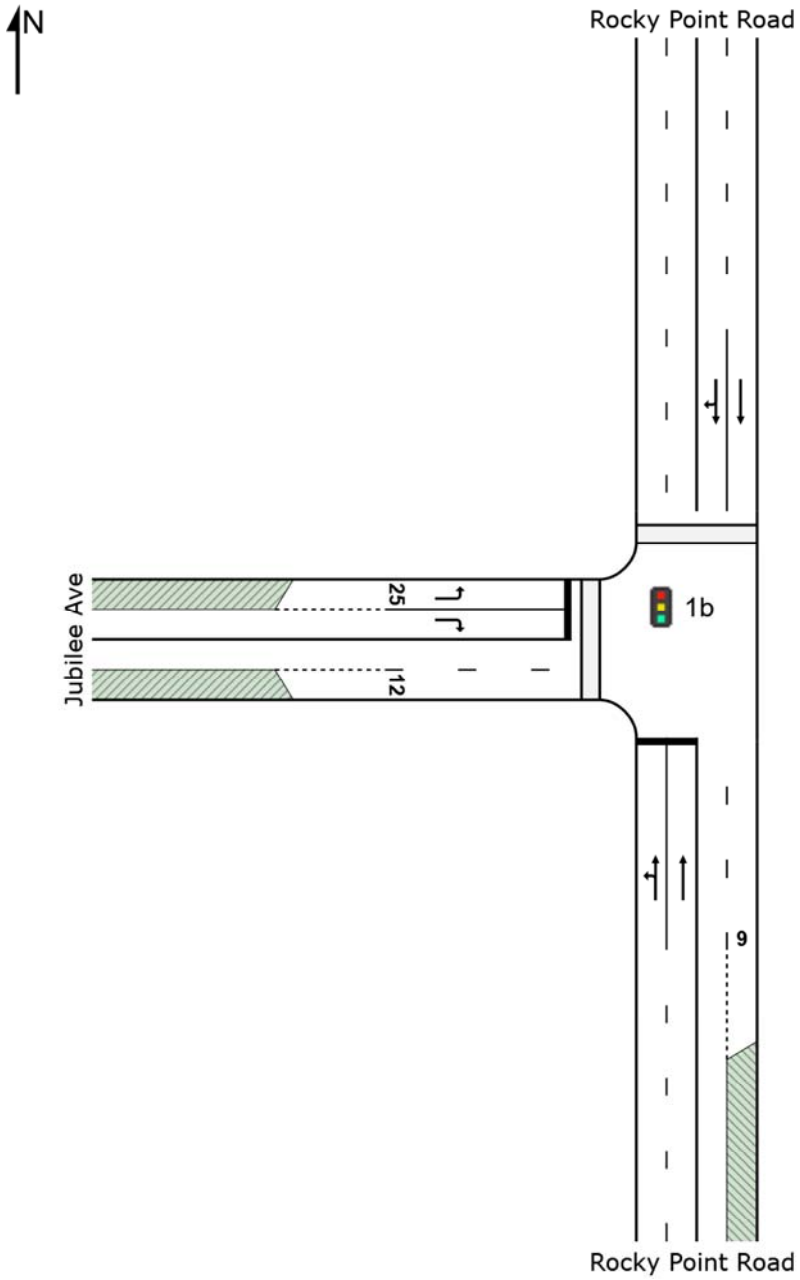
Mov ID	Description	Demand Flow ped/h	Average Delay sec	Level of Service	Average Back of Queue Pedestrian ped	Average Back of Queue Distance m	Prop. Queued	Effective Stop Rate per ped
P2	East Full Crossing	53	8.1	LOS A	0.1	0.1	0.37	0.37
All Pedestrians		53	8.1	LOS A			0.37	0.37

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

SITE LAYOUT

Site: 1b [AM FU Rocky Point Rd x Jubilee Ave]

Signalised Intersection: Rocky Point Rd x Jubilee Ave
Period: AM
Scenario: Future
Signals - Fixed Time Isolated



MOVEMENT SUMMARY

Site: 1b [AM FU Rocky Point Rd x Jubilee Ave]

Network: N101 [AM FU - Residential DA+Childcare +Commercial]

Signalised Intersection: Rocky Point Rd x Jubilee Ave
Period: AM
Scenario: Future
Signals - Fixed Time Coordinated Cycle Time = 120 seconds (Network Cycle Time - User-Given)
Common Control Group: CCG1 [Intersection of Rocky Point Road x Jubilee Ave X Phillips Road]

Movement Performance - Vehicles

Mov ID	OD Mov	Demand Flows Total veh/h	HV %	Arrival Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
South: Rocky Point Road													
1	L2	243	0.4	243	0.4	0.903	20.4	LOS B	18.3	130.4	0.22	0.40	32.4
2	T1	1499	2.9	1499	2.9	0.903	22.1	LOS B	27.5	197.5	0.60	0.70	15.9
Approach		1742	2.5	1742	2.5	0.903	21.9	LOS B	27.5	197.5	0.55	0.65	18.7
North: Rocky Point Road													
8	T1	626	8.7	626	8.7	0.313	0.0	LOS A	0.0	0.0	0.00	0.05	52.1
9	R2	64	4.9	64	4.9	0.313	2.1	LOS A	0.0	0.0	0.00	0.06	50.7
Approach		691	8.4	691	8.4	0.313	0.2	LOS A	0.0	0.0	0.00	0.05	51.3
West: Jubilee Ave													
10	L2	106	2.0	106	2.0	0.581	63.5	LOS E	6.2	44.2	1.00	0.79	10.8
12	R2	206	2.0	206	2.0	1.104	175.8	LOS F	22.9	163.4	1.00	1.32	4.3
Approach		313	2.0	313	2.0	1.104	137.6	LOS F	22.9	163.4	1.00	1.14	5.4
All Vehicles		2745	3.9	2745	3.9	1.104	29.6	LOS C	27.5	197.5	0.46	0.56	13.3

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Network tab).
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Largest change in Average Back of Queue or Degree of Saturation for any lane during the last three iterations: 8.7 %
Number of Iterations: 10 (maximum specified: 10)

Movement Performance - Pedestrians

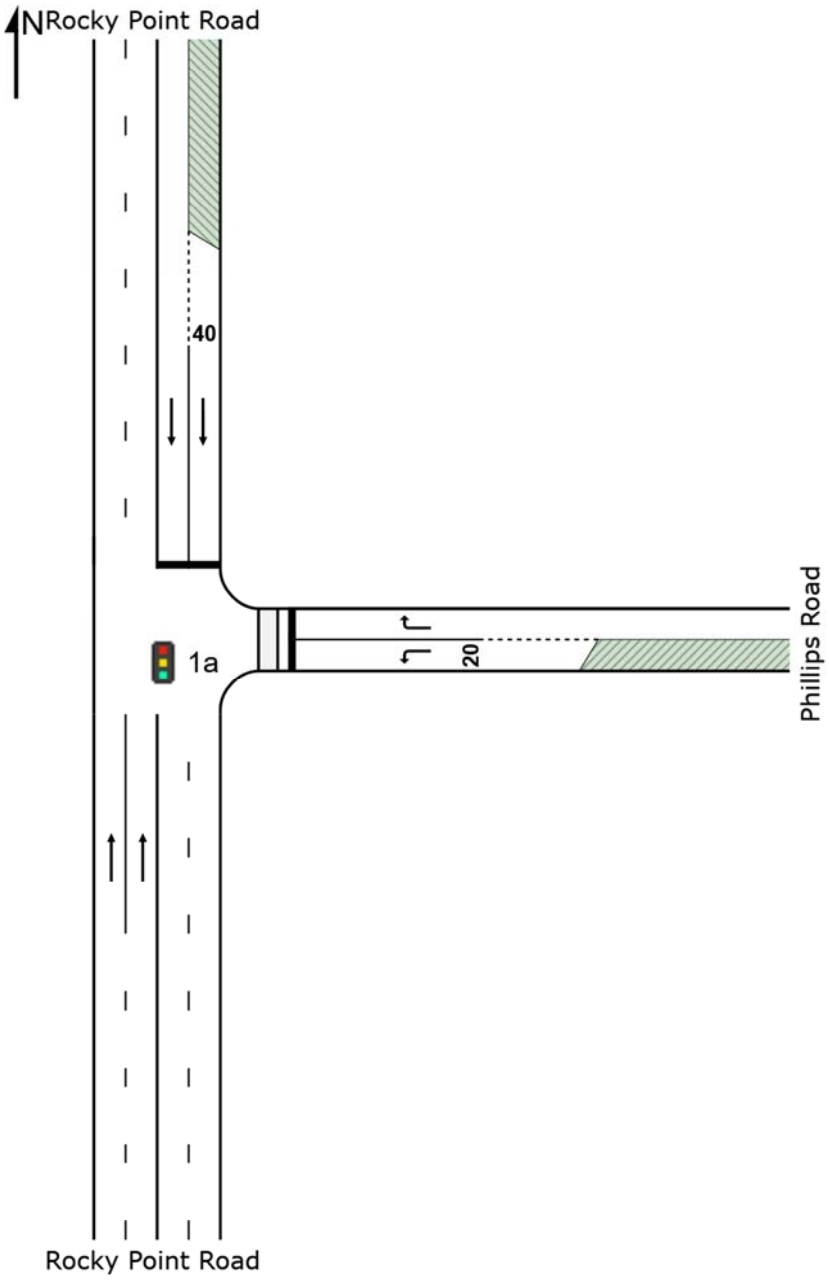
Mov ID	Description	Demand Flow ped/h	Average Delay sec	Level of Service	Average Back of Queue Pedestrian ped	Distance m	Prop. Queued	Effective Stop Rate per ped
P3	North Full Crossing	53	54.3	LOS E	0.2	0.2	0.95	0.95
P4	West Full Crossing	53	10.0	LOS B	0.1	0.1	0.41	0.41
All Pedestrians		105	32.1	LOS D			0.68	0.68

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

SITE LAYOUT

Site: 1a [AM FU Rocky Point Rd x Phillips Rd]

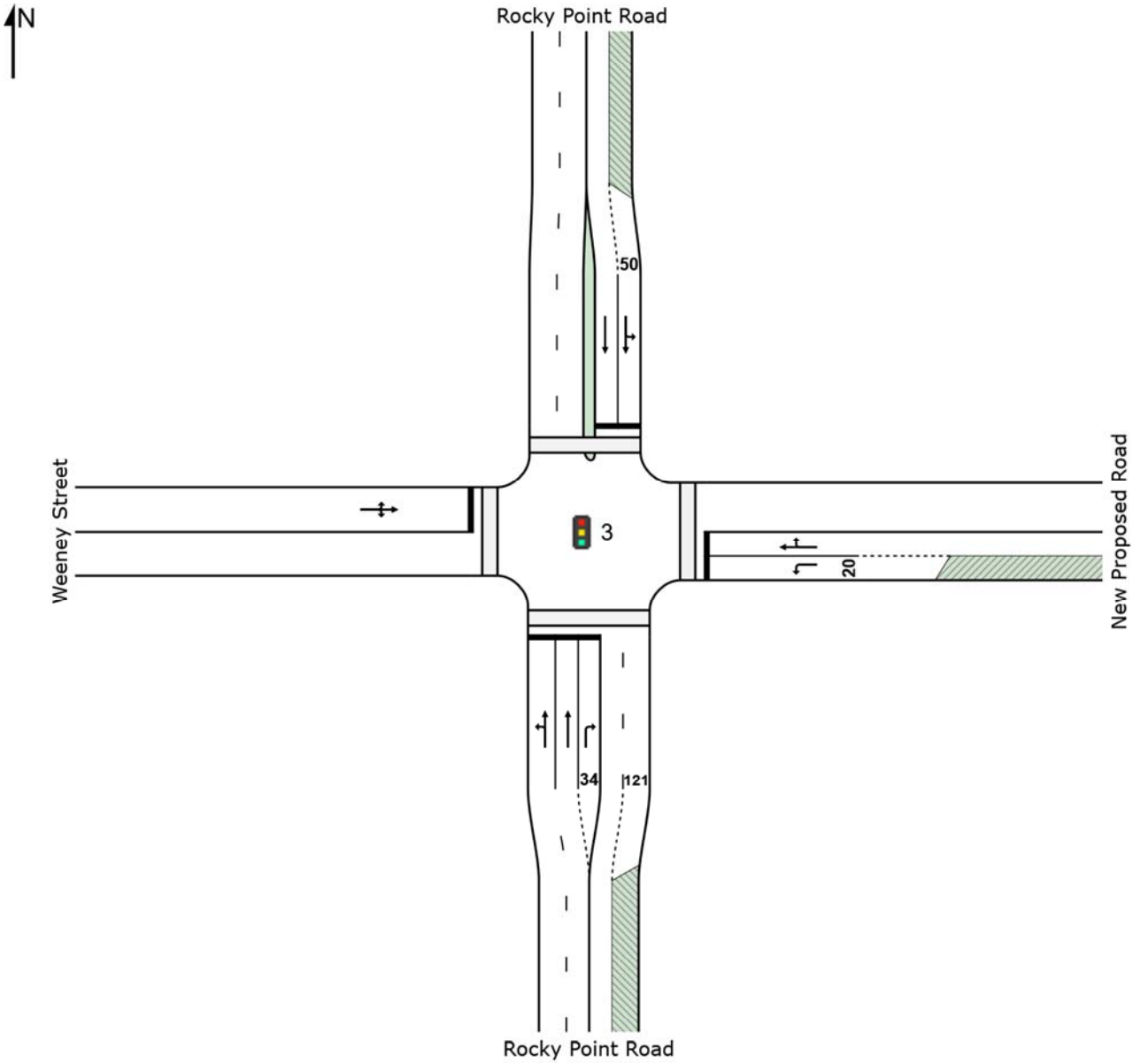
Signalised Intersection: Rocky Point Rd x Phillips Rd
Period: AM
Scenario: Future
Signals - Fixed Time Isolated



SITE LAYOUT

Site: 3 [AM FU Rocky Point Rd x Weeney St x New Proposed Road]

Intersection: Rocky Point Rd x Weeney St x New Proposed Road
Period: AM
Scenario: FU without Left Turn Deceleration Lane
Signals - Fixed Time Isolated



MOVEMENT SUMMARY

Site: 3 [AM FU Rocky Point Rd x Weeney St x New Proposed Road]

Network: N101 [AM FU - Residential DA+Childcare +Commercial]

Intersection: Rocky Point Rd x Weeney St x New Proposed Road
Period: AM
Scenario: FU without Left Turn Deceleration Lane
Signals - Fixed Time Coordinated Cycle Time = 120 seconds (Network Cycle Time - User-Given)

Movement Performance - Vehicles

Mov ID	OD Mov	Demand Flows Total veh/h	HV %	Arrival Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
South: Rocky Point Road													
1	L2	57	5.6	57	5.6	0.859	13.7	LOS A	31.7	227.4	0.54	0.53	47.1
2	T1	1665	2.7	1665	2.7	0.859	10.1	LOS A	31.7	227.4	0.48	0.49	45.7
3	R2	48	0.0	48	0.0	0.456	70.9	LOS F	3.0	20.9	1.00	0.74	22.8
Approach		1771	2.7	1771	2.7	0.859	11.8	LOS A	31.7	227.4	0.50	0.50	44.1
East: New Proposed Road													
4	L2	47	0.0	47	0.0	0.072	31.4	LOS C	1.8	12.6	0.69	0.69	17.0
5	T1	22	0.0	22	0.0	0.885	67.4	LOS E	12.9	90.4	1.00	1.06	12.6
6	R2	162	0.0	162	0.0	0.885	71.9	LOS F	12.9	90.4	1.00	1.06	9.3
Approach		232	0.0	232	0.0	0.885	63.2	LOS E	12.9	90.4	0.94	0.99	10.6
North: Rocky Point Road													
7	L2	71	0.0	68	0.0	0.327	20.5	LOS B	8.5	62.9	0.50	0.49	31.2
8	T1	703	8.1	692	8.2	0.496	15.7	LOS B	13.0	97.2	0.53	0.49	20.6
Approach		774	7.3	760[N1]	7.4	0.496	16.2	LOS B	13.0	97.2	0.53	0.49	22.1
West: Weeney Street													
10	L2	13	0.0	13	0.0	0.113	41.8	LOS C	2.4	16.6	0.81	0.65	9.4
11	T1	37	0.0	37	0.0	0.113	37.2	LOS C	2.4	16.6	0.81	0.65	19.2
12	R2	3	0.0	3	0.0	0.113	41.7	LOS C	2.4	16.6	0.81	0.65	9.4
Approach		53	0.0	53	0.0	0.113	38.6	LOS C	2.4	16.6	0.81	0.65	16.8
All Vehicles		2828	3.7	2815[N1]	3.7	0.885	17.7	LOS B	31.7	227.4	0.55	0.54	34.7

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Network tab).
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Largest change in Average Back of Queue or Degree of Saturation for any lane during the last three iterations: 8.7 %
Number of Iterations: 10 (maximum specified: 10)

N1 Arrival Flow value is reduced due to capacity constraint at oversaturated upstream lanes.

Movement Performance - Pedestrians

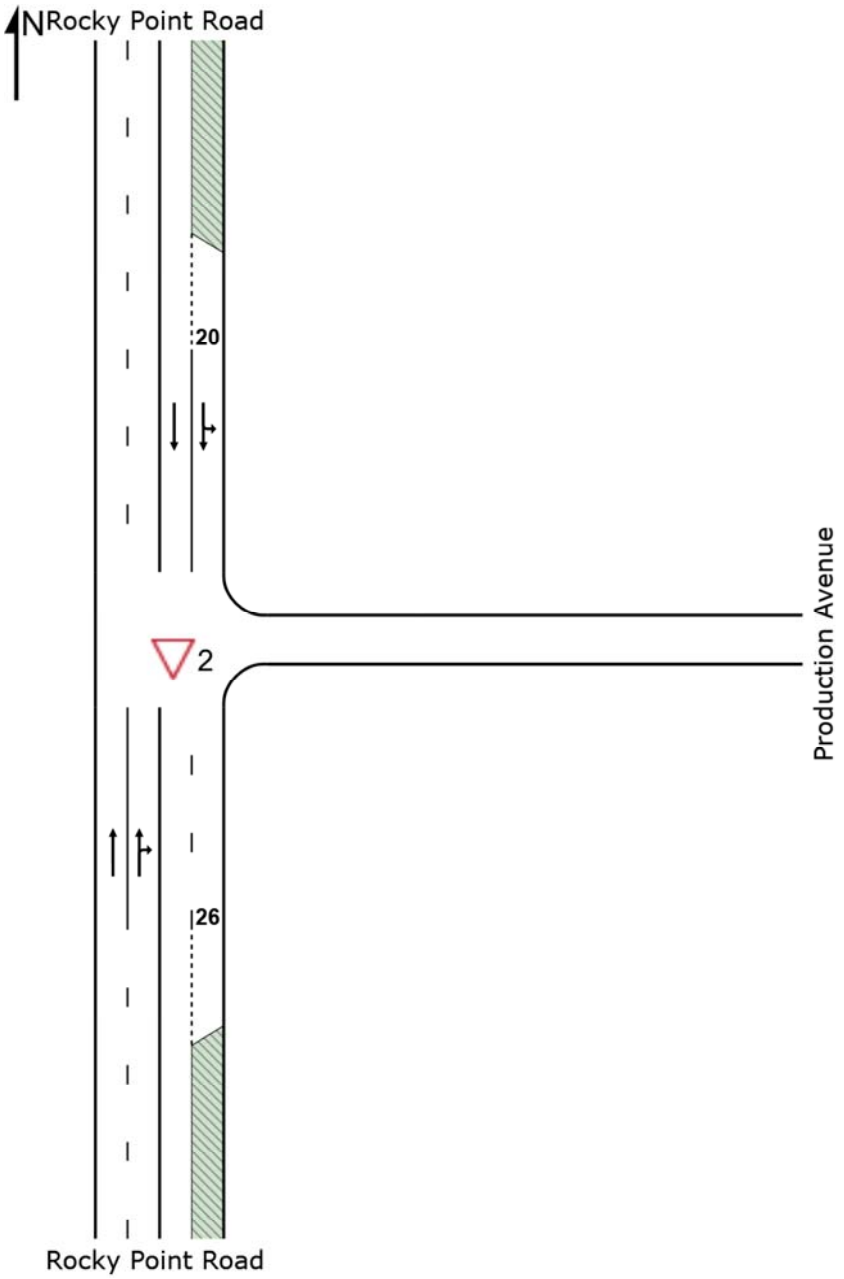
Mov ID	Description	Demand Flow ped/h	Average Delay sec	Level of Service	Average Back of Queue Pedestrian ped	Distance m	Prop. Queued	Effective Stop Rate per ped
P1	South Full Crossing	53	43.4	LOS E	0.2	0.2	0.85	0.85
P2	East Full Crossing	53	17.6	LOS B	0.1	0.1	0.54	0.54
P3	North Full Crossing	53	42.6	LOS E	0.2	0.2	0.84	0.84
P4	West Full Crossing	53	17.1	LOS B	0.1	0.1	0.53	0.53
All Pedestrians		211	30.2	LOS D			0.69	0.69

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

SITE LAYOUT

Site: 2 [AM FU Rocky Point Road x Production Avenue]

T-intersection:Rocky Point Road x Production Avenue
Period: AM
Scenario: Future
Giveway / Yield (Two-Way)



MOVEMENT SUMMARY

Site: 2 [AM FU Rocky Point Road x Production Avenue]

Network: N101 [AM FU - Residential DA+Childcare +Commercial]

T-intersection:Rocky Point Road x Production Avenue
Period: AM
Scenario: Future
Giveway / Yield (Two-Way)

Movement Performance - Vehicles

Mov ID	OD Mov	Demand Flows Total veh/h	HV %	Arrival Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
South: Rocky Point Road													
2	T1	1731	2.5	1731	2.5	0.588	2.1	LOS A	21.0	150.3	0.21	0.04	44.4
3	R2	98	2.2	98	2.2	0.588	19.4	LOS B	21.0	150.3	0.49	0.10	43.1
Approach		1828	2.5	1828	2.5	0.588	3.1	NA	21.0	150.3	0.22	0.05	44.2
North: Rocky Point Road													
7	L2	187	0.0	182	0.0	0.098	5.5	LOS A	0.0	0.0	0.00	0.58	45.9
8	T1	787	7.6	773	7.7	0.416	0.0	LOS A	0.0	0.0	0.00	0.00	59.9
Approach		975	6.2	955[N1]	6.2	0.416	1.1	NA	0.0	0.0	0.00	0.11	53.2
All Vehicles		2803	3.8	2784[N1]	3.8	0.588	2.4	NA	21.0	150.3	0.15	0.07	47.3

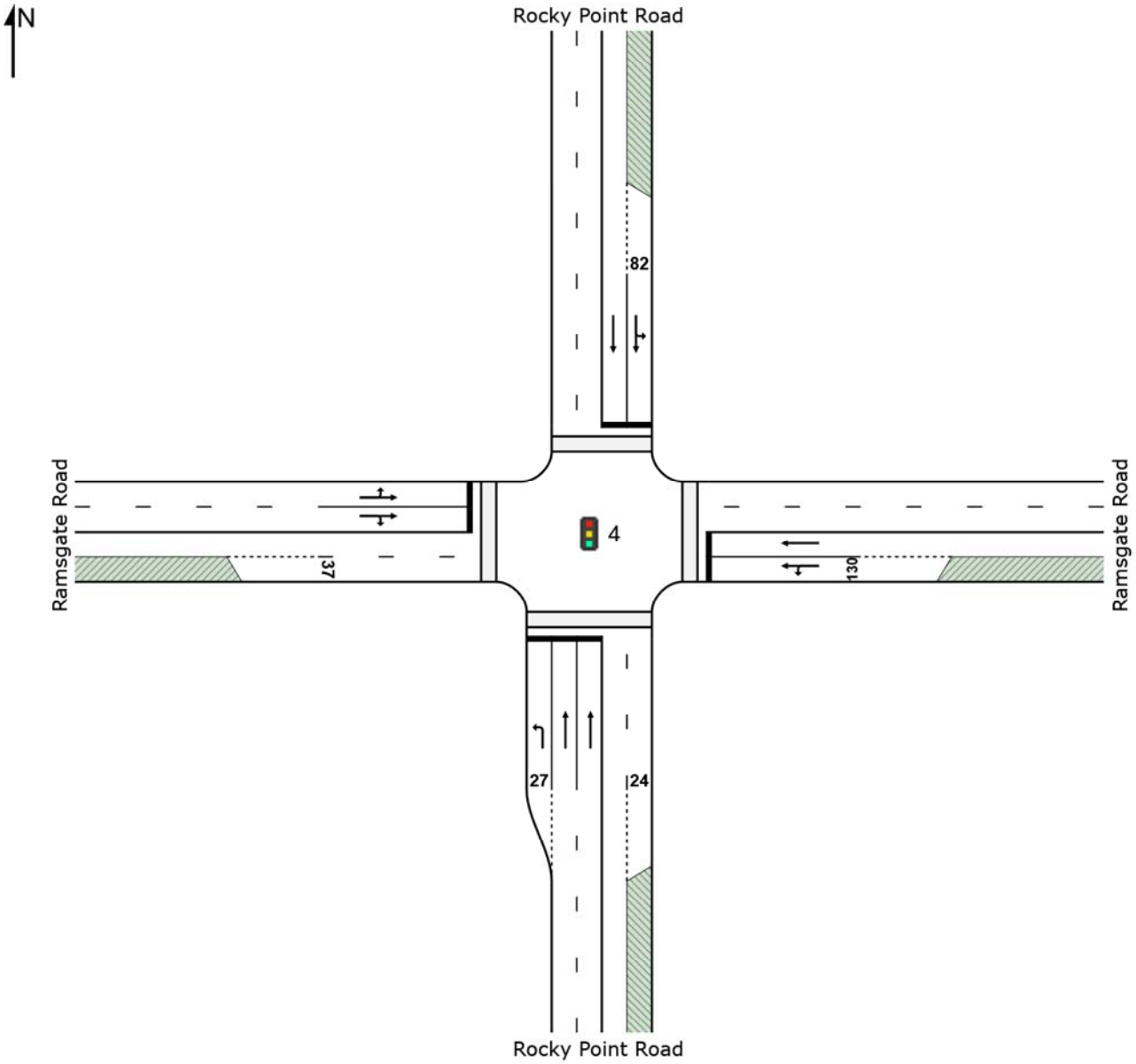
Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Network tab).
Vehicle movement LOS values are based on average delay per movement.
Minor Road Approach LOS values are based on average delay for all vehicle movements.
NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.
SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Largest change in Average Back of Queue or Degree of Saturation for any lane during the last three iterations: 8.7 %
Number of Iterations: 10 (maximum specified: 10)

N1 Arrival Flow value is reduced due to capacity constraint at oversaturated upstream lanes.

SITE LAYOUT

Site: 4 [AM FU Rocky Point Road x Ramsgate Road]

Signalised Intersection: Rocky Point Road x Ramsgate Road
Period: AM
Scenario: Future
Signals - Fixed Time Isolated



MOVEMENT SUMMARY

Site: 4 [AM FU Rocky Point Road x Ramsgate Road]

Network: N101 [AM FU - Residential DA+Childcare +Commercial]

Signalised Intersection: Rocky Point Road x Ramsgate Road
Period: AM
Scenario: Future
Signals - Fixed Time Coordinated Cycle Time = 120 seconds (Network Cycle Time - User-Given)

Movement Performance - Vehicles

Mov ID	OD Mov	Demand Flows Total veh/h	HV %	Arrival Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
South: Rocky Point Road													
1	L2	360	5.3	360	5.3	0.350	11.2	LOS A	6.9	50.3	0.36	0.68	45.6
2	T1	1658	2.6	1658	2.6	0.894	32.8	LOS C	56.7	405.9	0.85	0.88	25.0
Approach		2018	3.1	2018	3.1	0.894	29.0	LOS C	56.7	405.9	0.76	0.84	28.6
East: Ramsgate Road													
4	L2	27	7.7	27	7.7	0.296	54.4	LOS D	4.5	33.2	0.93	0.74	26.9
5	T1	386	3.5	386	3.5	1.030	105.5	LOS F	29.8	215.3	0.99	1.25	15.9
Approach		414	3.8	414	3.8	1.030	102.1	LOS F	29.8	215.3	0.98	1.22	16.4
North: Rocky Point Road													
7	L2	33	9.7	32	9.8	0.132	18.6	LOS B	4.0	30.2	0.55	0.52	45.5
8	T1	706	7.5	696	7.5	0.576	16.8	LOS B	22.7	169.4	0.69	0.63	45.9
Approach		739	7.5	728 N1	7.6	0.576	16.8	LOS B	22.7	169.4	0.69	0.62	45.9
West: Ramsgate Road													
10	L2	46	13.6	46	13.6	0.567	41.7	LOS C	16.4	120.7	0.88	0.77	20.8
11	T1	293	4.7	293	4.7	0.567	36.0	LOS C	16.4	120.7	0.88	0.77	30.7
12	R2	213	8.4	213	8.4	0.837	69.5	LOS E	12.7	95.4	1.00	1.08	22.2
Approach		552	6.9	552	6.9	0.837	49.4	LOS D	16.4	120.7	0.93	0.89	26.0
All Vehicles		3722	4.6	3711 N1	4.6	1.030	37.8	LOS C	56.7	405.9	0.80	0.85	28.8

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Network tab).
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Largest change in Average Back of Queue or Degree of Saturation for any lane during the last three iterations: 8.7 %
Number of Iterations: 10 (maximum specified: 10)

N1 Arrival Flow value is reduced due to capacity constraint at oversaturated upstream lanes.

Movement Performance - Pedestrians

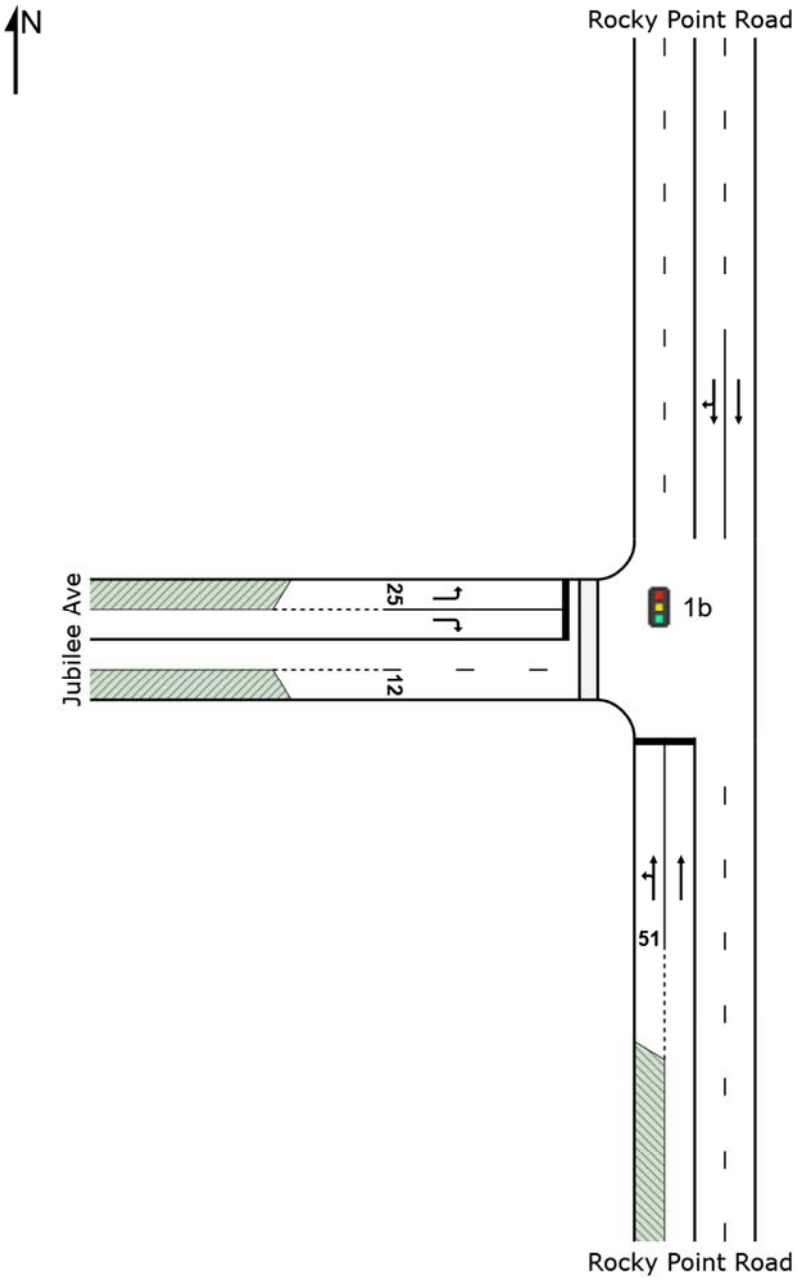
Mov ID	Description	Demand Flow ped/h	Average Delay sec	Level of Service	Average Back of Queue Pedestrian ped	Distance m	Prop. Queued	Effective Stop Rate per ped
P1	South Full Crossing	53	53.3	LOS E	0.2	0.2	0.94	0.94
P2	East Full Crossing	53	15.5	LOS B	0.1	0.1	0.51	0.51
P3	North Full Crossing	53	50.5	LOS E	0.2	0.2	0.92	0.92
P4	West Full Crossing	53	15.5	LOS B	0.1	0.1	0.51	0.51
All Pedestrians		211	33.7	LOS D			0.72	0.72

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

SITE LAYOUT

Site: 1b [PM FU - Rocky Point Rd x Jubilee Ave - One way]

Residential DA + Approved Commercial + Childcare
Signalised Intersection: Rocky Point Rd x Jubilee Ave
Period: PM
Signals - Fixed Time Coordinated



MOVEMENT SUMMARY

Site: 1b [PM FU - Rocky Point Rd x Jubilee Ave - One way]

Network: 2 [PM FU - Residential DA+Childcare +Commercial - Oneway Scenario]

Residential DA + Approved Commercial + Childcare
Signalised Intersection: Rocky Point Rd x Jubilee Ave
Period: PM
Signals - Fixed Time Coordinated Cycle Time = 120 seconds (Network Cycle Time - User-Given)
Common Control Group: CCG1 [Intersection of Rocky Point Road x Jubliee Avenue x Phillips Road]

Movement Performance - Vehicles

Mov ID	OD Mov	Demand Flows Total veh/h	HV %	Arrival Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
South: Rocky Point Road													
1	L2	139	2.3	139	2.3	0.517	17.5	LOS B	9.6	68.5	0.42	0.49	34.5
2	T1	685	2.5	685	2.5	0.517	12.6	LOS A	10.3	73.6	0.45	0.45	22.9
Approach		824	2.4	824	2.4	0.517	13.4	LOS A	10.3	73.6	0.45	0.46	25.9
North: Rocky Point Road													
8	T1	1460	2.2	1460	2.2	0.421	0.0	LOS A	0.0	0.0	0.00	0.04	52.9
9	R2	148	2.8	148	2.8	0.421	2.1	LOS A	0.0	0.0	0.00	0.10	51.1
Approach		1608	2.3	1608	2.3	0.421	0.2	LOS A	0.0	0.0	0.00	0.05	51.9
West: Jubilee Ave													
10	L2	81	1.3	81	1.3	0.203	47.2	LOS D	3.9	27.6	0.86	0.76	13.7
12	R2	245	0.4	245	0.4	0.719	53.1	LOS D	13.4	94.3	0.96	0.85	12.5
Approach		326	0.6	326	0.6	0.719	51.7	LOS D	13.4	94.3	0.93	0.82	12.8
All Vehicles		2759	2.1	2759	2.1	0.719	10.2	LOS A	13.4	94.3	0.24	0.26	22.4

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Network tab).
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Largest change in Average Back of Queue or Degree of Saturation for any lane during the last three iterations: 0.0 %
Number of Iterations: 5 (maximum specified: 10)

Movement Performance - Pedestrians

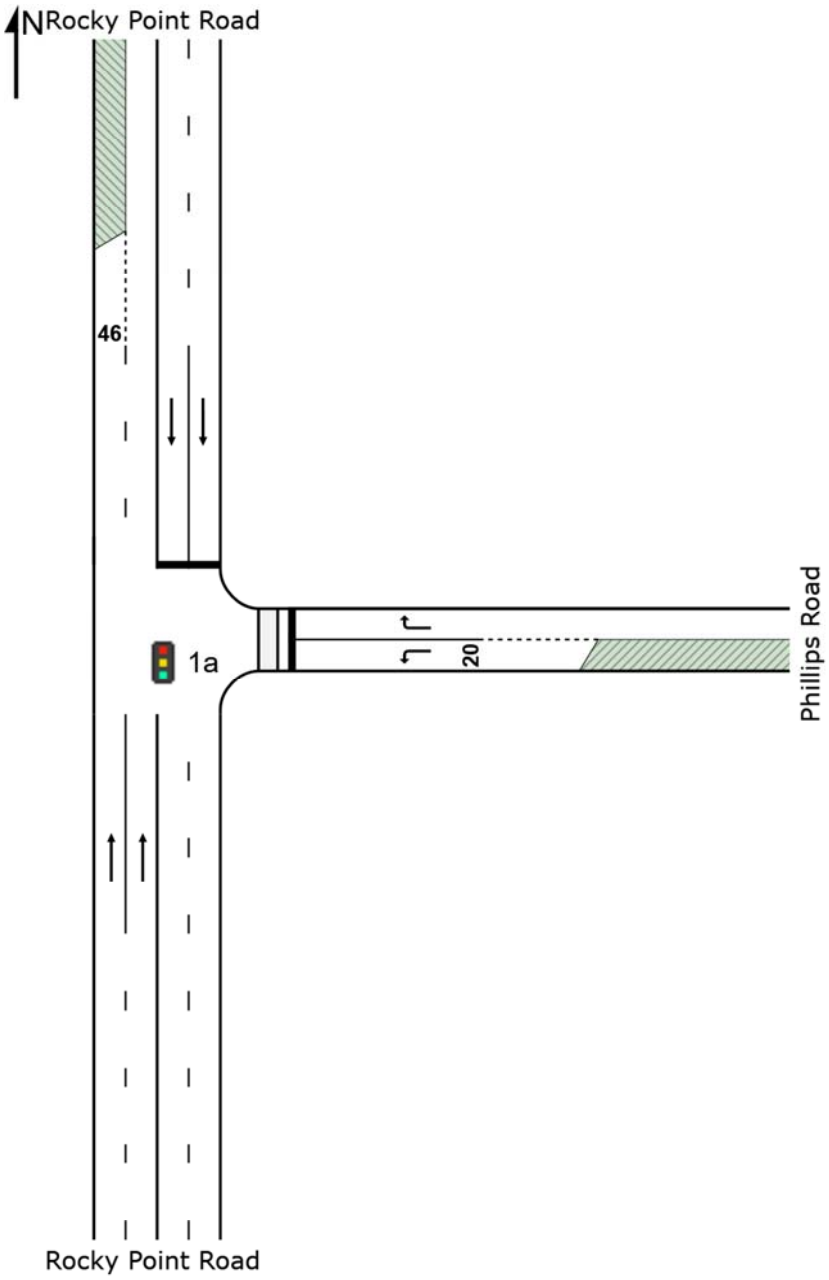
Mov ID	Description	Demand Flow ped/h	Average Delay sec	Level of Service	Average Back of Queue Pedestrian ped	Distance m	Prop. Queued	Effective Stop Rate per ped
P4	West Full Crossing	53	17.6	LOS B	0.1	0.1	0.54	0.54
All Pedestrians		53	17.6	LOS B			0.54	0.54

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

SITE LAYOUT

Site: 1a [PM FU - Rocky Point Rd x Phillips Rd - One way]

Residential DA + Approved Commercial + Childcare
Signalised Intersection: Rocky Point Rd x Phillips Rd
Period: PM
Signals - Fixed Time Coordinated



MOVEMENT SUMMARY

Site: 1a [PM FU - Rocky Point Rd x Phillips Rd - One way]

Network: 2 [PM FU - Residential DA+Childcare +Commercial - Oneway Scenario]

Residential DA + Approved Commercial + Childcare
Signalised Intersection: Rocky Point Rd x Phillips Rd
Period: PM
Signals - Fixed Time Coordinated Cycle Time = 120 seconds (Network Cycle Time - User-Given)
Common Control Group: CCG1 [Intersection of Rocky Point Road x Jubliee Avenue x Phillips Road]

Movement Performance - Vehicles

Mov ID	OD Mov	Demand Flows Total veh/h	HV %	Arrival Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
South: Rocky Point Road													
2	T1	738	2.3	738	2.3	0.299	0.0	LOS A	0.0	0.0	0.00	0.00	59.9
Approach		738	2.3	738	2.3	0.299	0.0	LOS A	0.0	0.0	0.00	0.00	59.9
East: Phillips Road													
4	L2	100	1.1	100	1.1	0.667	65.4	LOS E	6.0	42.1	1.00	0.82	12.8
6	R2	105	0.0	105	0.0	0.714	66.2	LOS E	6.3	44.4	1.00	0.83	25.2
Approach		205	0.5	205	0.5	0.714	65.8	LOS E	6.3	44.4	1.00	0.83	20.2
North: Rocky Point Road													
8	T1	1503	2.4	1503	2.4	0.723	15.3	LOS B	25.2	180.2	0.63	0.57	40.8
Approach		1503	2.4	1503	2.4	0.723	15.3	LOS B	25.2	180.2	0.63	0.57	40.8
All Vehicles		2446	2.2	2446	2.2	0.723	14.9	LOS B	25.2	180.2	0.47	0.42	41.2

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Network tab).
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Largest change in Average Back of Queue or Degree of Saturation for any lane during the last three iterations: 0.0 %
Number of Iterations: 5 (maximum specified: 10)

Movement Performance - Pedestrians

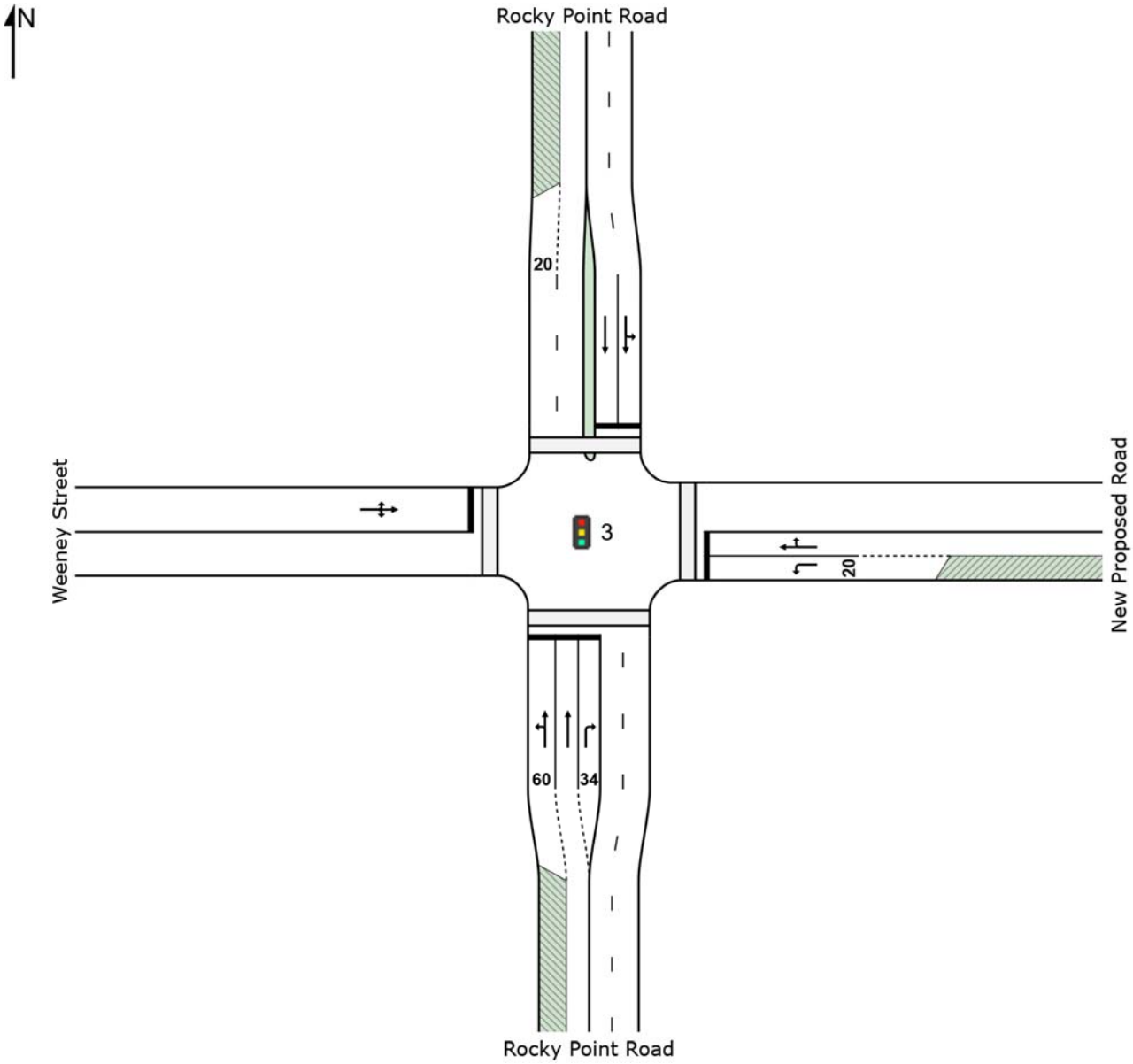
Mov ID	Description	Demand Flow ped/h	Average Delay sec	Level of Service	Average Back of Queue Pedestrian ped	Distance m	Prop. Queued	Effective Stop Rate per ped
P2	East Full Crossing	53	15.0	LOS B	0.1	0.1	0.50	0.50
All Pedestrians		53	15.0	LOS B			0.50	0.50

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

SITE LAYOUT

Site: 3 [PM FU - Rocky Point Rd x Weeney St x New Proposed Road - One way]

Residential DA + Approved Commercial + Childcare Intersection: Rocky Point Rd x Weeney St x New Proposed Road
Period: PM
Scenario: FU without Left Turn Deceleration Lane
Signals - Fixed Time Coordinated



MOVEMENT SUMMARY

Site: 3 [PM FU - Rocky Point Rd x Weeney St x New Proposed Road - One way]

Network: 2 [PM FU - Residential DA+Childcare +Commercial - Oneway Scenario]

Residential DA + Approved Commercial + Childcare Intersection: Rocky Point Rd x Weeney St x New Proposed Road
Period: PM
Scenario: FU without Left Turn Deceleration Lane
Signals - Fixed Time Coordinated Cycle Time = 120 seconds (Network Cycle Time - User-Given)

Movement Performance - Vehicles

Mov ID	OD Mov	Demand Flows Total veh/h	HV %	Arrival Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
South: Rocky Point Road													
1	L2	19	5.6	19	5.6	0.094	5.9	LOS A	0.2	1.3	0.02	0.10	55.2
2	T1	766	2.6	766	2.6	0.436	0.5	LOS A	1.3	9.2	0.04	0.04	59.0
3	R2	40	0.0	40	0.0	0.440	69.6	LOS E	2.4	16.9	1.00	0.73	23.1
Approach		825	2.6	825	2.6	0.440	3.9	LOS A	2.4	16.9	0.08	0.08	53.4
East: New Proposed Road													
4	L2	87	0.0	87	0.0	0.218	46.3	LOS D	4.2	29.6	0.86	0.75	13.0
5	T1	28	0.0	28	0.0	0.695	60.1	LOS E	6.0	42.2	1.00	0.85	13.7
6	R2	72	0.0	72	0.0	0.695	64.7	LOS E	6.0	42.2	1.00	0.85	10.3
Approach		187	0.0	187	0.0	0.695	55.4	LOS D	6.0	42.2	0.94	0.81	12.0
North: Rocky Point Road													
7	L2	116	0.0	116	0.0	0.621	9.1	LOS A	9.4	66.7	0.22	0.27	44.0
8	T1	1482	2.2	1482	2.2	0.621	3.6	LOS A	9.5	67.6	0.22	0.24	40.9
Approach		1598	2.0	1598	2.0	0.621	4.0	LOS A	9.5	67.6	0.22	0.24	41.4
West: Weeney Street													
10	L2	25	0.0	25	0.0	0.243	58.7	LOS E	2.8	19.5	0.95	0.73	6.7
11	T1	20	0.0	20	0.0	0.243	54.2	LOS D	2.8	19.5	0.95	0.73	14.8
12	R2	5	0.0	5	0.0	0.243	58.7	LOS E	2.8	19.5	0.95	0.73	6.7
Approach		51	0.0	51	0.0	0.243	56.9	LOS E	2.8	19.5	0.95	0.73	10.3
All Vehicles		2661	2.0	2661	2.0	0.695	8.6	LOS A	9.5	67.6	0.24	0.24	39.4

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Network tab).
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Largest change in Average Back of Queue or Degree of Saturation for any lane during the last three iterations: 0.0 %
Number of Iterations: 5 (maximum specified: 10)

Movement Performance - Pedestrians

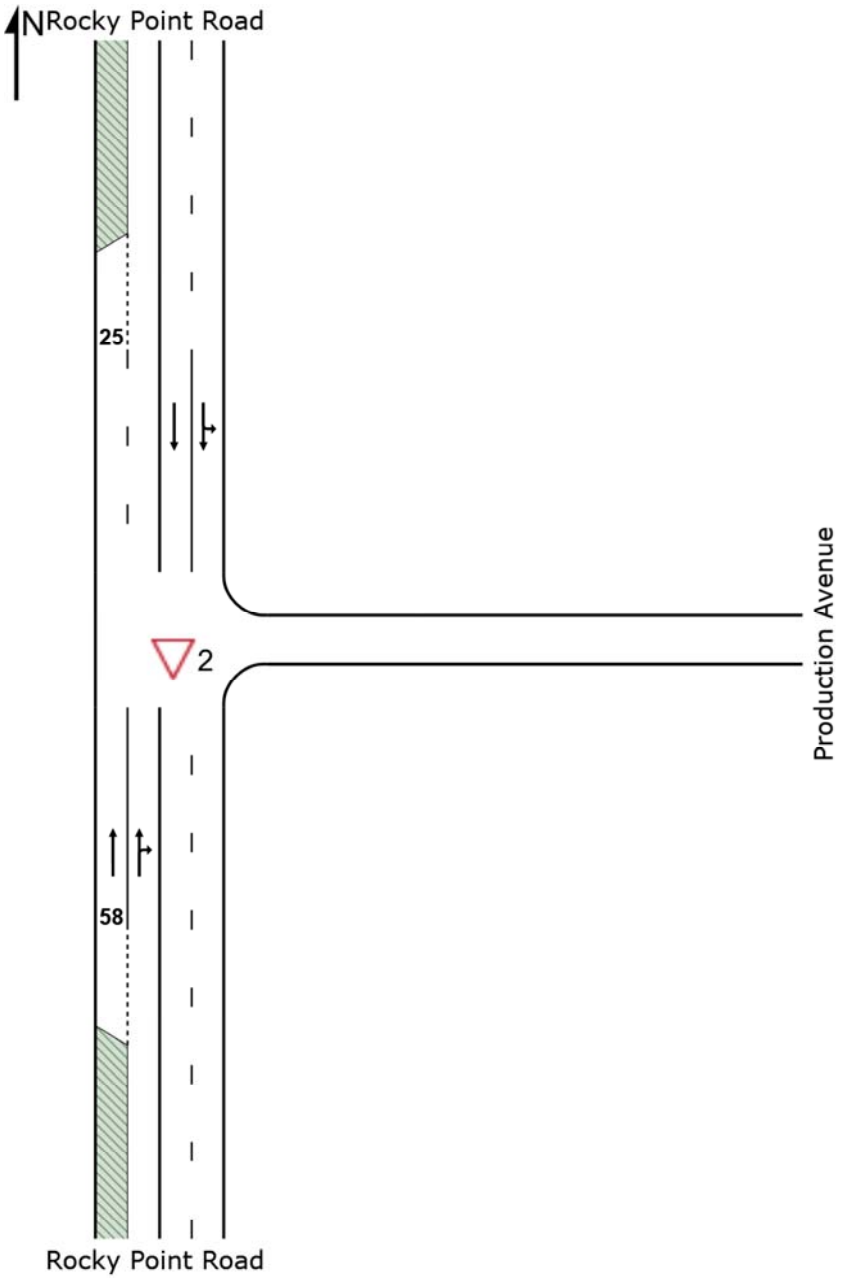
Mov ID	Description	Demand Flow ped/h	Average Delay sec	Level of Service	Average Back of Queue Pedestrian ped	Distance m	Prop. Queued	Effective Stop Rate per ped
P1	South Full Crossing	53	54.3	LOS E	0.2	0.2	0.95	0.95
P2	East Full Crossing	53	9.6	LOS A	0.1	0.1	0.40	0.40
P3	North Full Crossing	53	54.3	LOS E	0.2	0.2	0.95	0.95
P4	West Full Crossing	53	9.2	LOS A	0.1	0.1	0.39	0.39
All Pedestrians		211	31.8	LOS D			0.67	0.67

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

SITE LAYOUT

Site: 2 [PM FU - Rocky Point Road x Production Avenue - One way]

Residential DA + Approved Commercial + Childcare
T-intersection:Rocky Point Road x Production Avenue
Period: PM
Giveway / Yield (Two-Way)



MOVEMENT SUMMARY

Site: 2 [PM FU - Rocky Point Road x Production Avenue - One way]

Network: 2 [PM FU - Residential DA+Childcare +Commercial - Oneway Scenario]

Residential DA + Approved Commercial + Childcare
T-intersection:Rocky Point Road x Production Avenue
Period: PM
Giveway / Yield (Two-Way)

Movement Performance - Vehicles

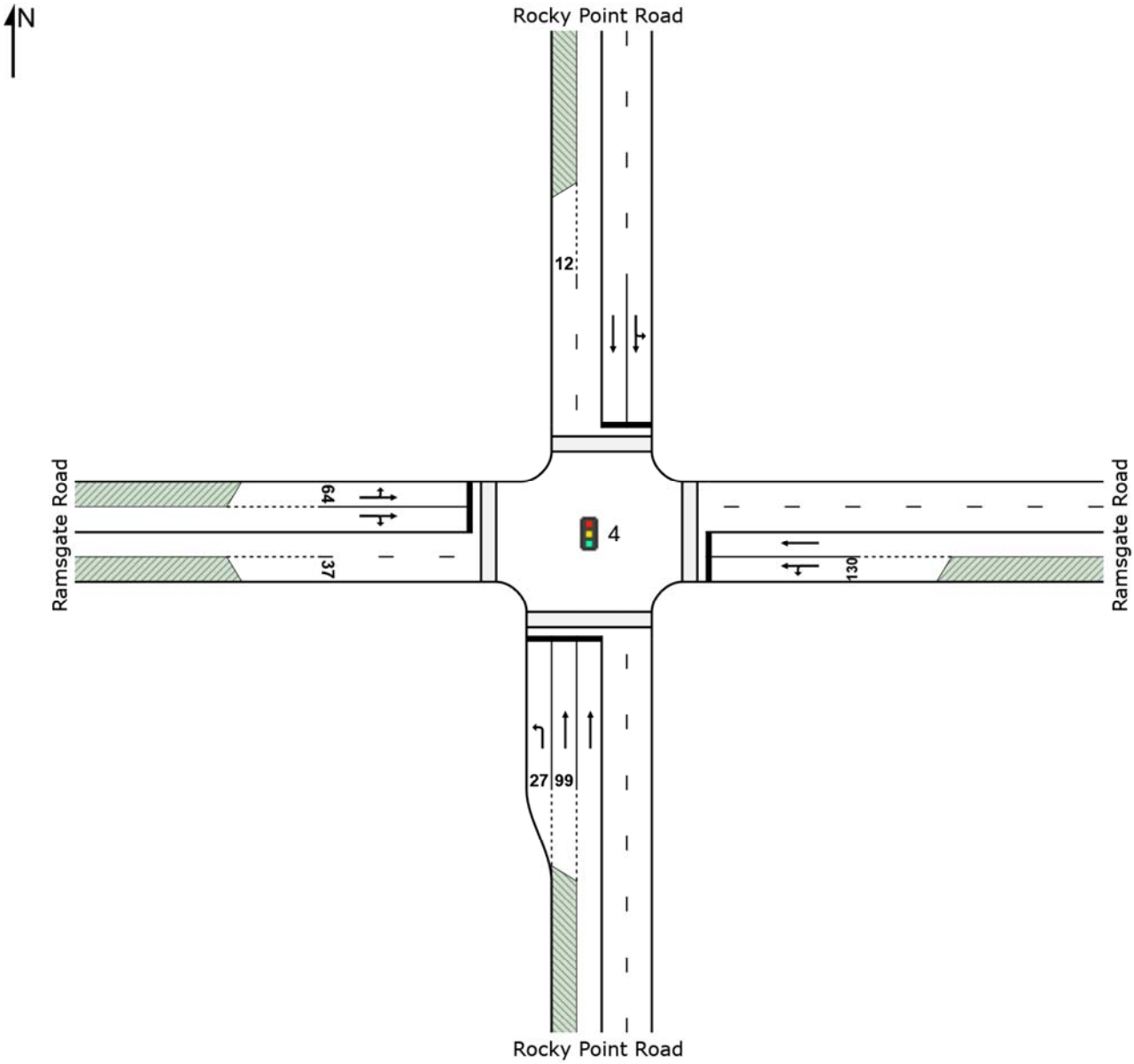
Mov ID	OD Mov	Demand Flows Total veh/h	Demand Flows HV %	Arrival Flows Total veh/h	Arrival Flows HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	95% Back of Queue Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
South: Rocky Point Road													
2	T1	826	2.4	826	2.4	0.470	5.9	LOS A	11.6	82.9	0.77	0.03	32.5
3	R2	25	0.0	25	0.0	0.470	39.7	LOS C	11.6	82.9	1.00	0.04	40.8
Approach		852	2.3	852	2.3	0.470	6.9	NA	11.6	82.9	0.78	0.03	33.0
North: Rocky Point Road													
7	L2	104	1.0	104	1.0	0.446	5.6	LOS A	0.0	0.0	0.00	0.07	54.0
8	T1	1609	2.0	1609	2.0	0.446	0.0	LOS A	0.0	0.0	0.00	0.03	57.6
Approach		1714	2.0	1714	2.0	0.446	0.4	NA	0.0	0.0	0.00	0.04	57.0
All Vehicles		2565	2.1	2565	2.1	0.470	2.5	NA	11.6	82.9	0.26	0.03	46.1

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Network tab).
Vehicle movement LOS values are based on average delay per movement.
Minor Road Approach LOS values are based on average delay for all vehicle movements.
NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.
SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Largest change in Average Back of Queue or Degree of Saturation for any lane during the last three iterations: 0.0 %
Number of Iterations: 5 (maximum specified: 10)

SITE LAYOUT

Site: 4 [PM FU - Rocky Point Road x Ramsgate Road - One way]

Residential DA + Approved Commercial + Childcare
Signalised Intersection: Rocky Point Road x Ramsgate Road
Period: PM
Signals - Fixed Time Coordinated



MOVEMENT SUMMARY

Site: 4 [PM FU - Rocky Point Road x Ramsgate Road - One way]

Network: 2 [PM FU - Residential DA+Childcare +Commercial - Oneway Scenario]

Residential DA + Approved Commercial + Childcare
Signalised Intersection: Rocky Point Road x Ramsgate Road
Period: PM
Signals - Fixed Time Coordinated Cycle Time = 120 seconds (Network Cycle Time - User-Given)

Movement Performance - Vehicles

Mov ID	OD Mov	Demand Flows Total veh/h	HV %	Arrival Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
South: Rocky Point Road													
1	L2	317	2.0	317	2.0	0.281	11.6	LOS A	4.2	29.9	0.25	0.65	45.5
2	T1	786	2.4	786	2.4	0.834	28.9	LOS C	31.6	225.8	0.79	0.74	26.9
Approach		1103	2.3	1103	2.3	0.834	23.9	LOS B	31.6	225.8	0.64	0.71	32.4
East: Ramsgate Road													
4	L2	46	0.0	46	0.0	0.275	42.2	LOS C	6.6	46.4	0.83	0.71	30.9
5	T1	623	1.0	623	1.0	0.958	68.3	LOS E	39.9	282.1	0.97	1.11	21.6
Approach		669	0.9	669	0.9	0.958	66.5	LOS E	39.9	282.1	0.96	1.09	22.1
North: Rocky Point Road													
7	L2	48	2.2	48	2.2	0.897	44.4	LOS D	42.5	303.0	0.95	0.96	33.5
8	T1	1413	2.1	1413	2.1	0.897	38.7	LOS C	42.8	305.1	0.95	0.96	35.2
Approach		1461	2.1	1461	2.1	0.897	38.9	LOS C	42.8	305.1	0.95	0.96	35.1
West: Ramsgate Road													
10	L2	29	0.0	29	0.0	0.385	27.0	LOS B	12.7	92.6	0.69	0.61	28.2
11	T1	313	5.4	313	5.4	0.385	21.5	LOS B	12.7	92.6	0.69	0.61	38.2
12	R2	258	2.4	258	2.4	0.810	65.4	LOS E	14.6	104.5	1.00	1.06	23.1
Approach		600	3.9	600	3.9	0.810	40.6	LOS C	14.6	104.5	0.82	0.81	29.2
All Vehicles		3834	2.2	3834	2.2	0.958	39.7	LOS C	42.8	305.1	0.84	0.89	30.8

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Network tab).
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Largest change in Average Back of Queue or Degree of Saturation for any lane during the last three iterations: 0.0 %
Number of Iterations: 5 (maximum specified: 10)

Movement Performance - Pedestrians

Mov ID	Description	Demand Flow ped/h	Average Delay sec	Level of Service	Average Back of Queue Pedestrian ped	Distance m	Prop. Queued	Effective Stop Rate per ped
P1	South Full Crossing	53	40.9	LOS E	0.1	0.1	0.83	0.83
P2	East Full Crossing	53	26.1	LOS C	0.1	0.1	0.66	0.66
P3	North Full Crossing	53	38.5	LOS D	0.1	0.1	0.80	0.80
P4	West Full Crossing	53	26.1	LOS C	0.1	0.1	0.66	0.66
All Pedestrians		211	32.9	LOS D			0.74	0.74

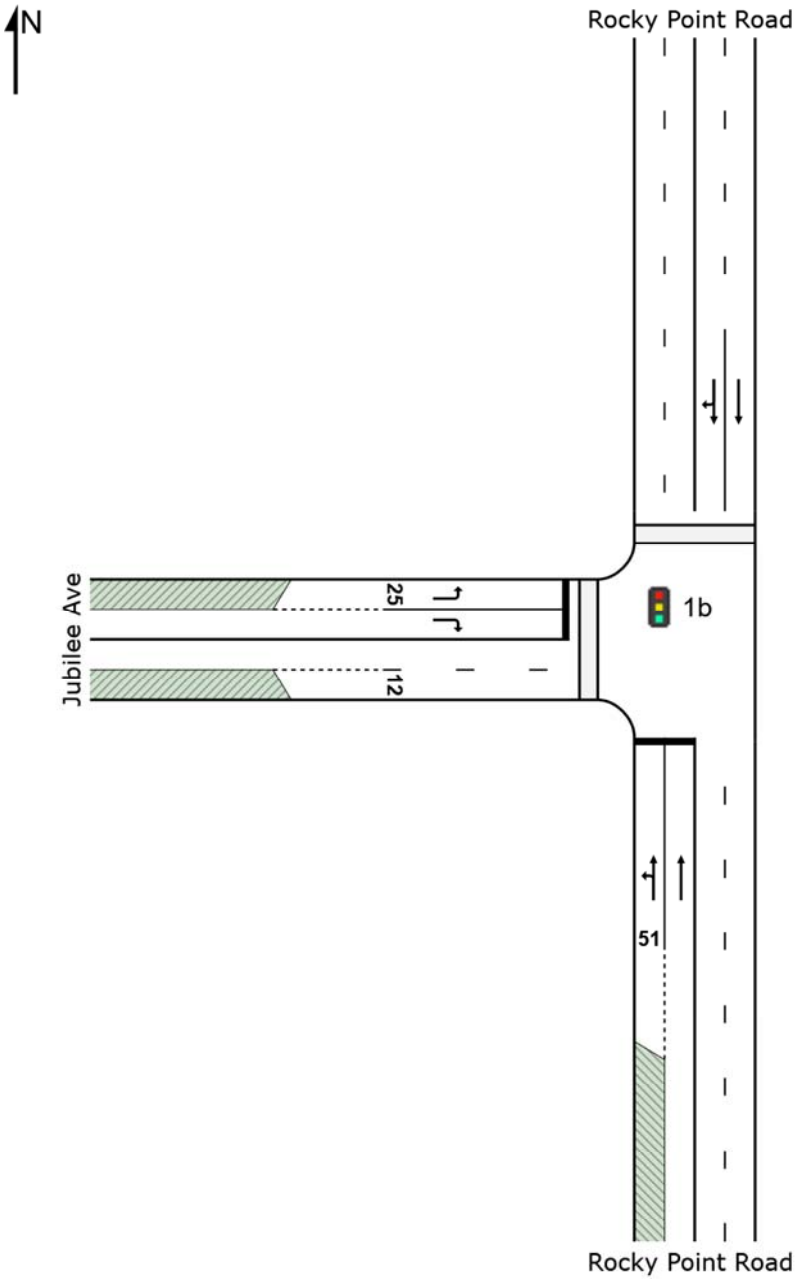
Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)
Pedestrian movement LOS values are based on average delay per pedestrian movement.

Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

SITE LAYOUT

Site: 1b [PM FU Rocky Point Rd x Jubilee Ave]

Signalised Intersection: Rocky Point Rd x Jubilee Ave
Period: PM
Scenario: Future
Signals - Fixed Time Coordinated



MOVEMENT SUMMARY

Site: 1b [PM FU Rocky Point Rd x Jubilee Ave]

Network: 2 [PM FU - Residential DA+Childcare +Commercial]

Signalised Intersection: Rocky Point Rd x Jubilee Ave
Period: PM
Scenario: Future
Signals - Fixed Time Coordinated Cycle Time = 120 seconds (Network Cycle Time - User-Given)
Common Control Group: CCG1 [Intersection of Rocky Point Road x Jubliee Avenue x Phillips Road]

Movement Performance - Vehicles

Mov ID	OD Mov	Demand Flows Total veh/h	HV %	Arrival Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
South: Rocky Point Road													
1	L2	156	2.0	156	2.0	0.544	16.4	LOS B	10.0	71.0	0.40	0.48	35.5
2	T1	740	2.3	740	2.3	0.544	11.5	LOS A	10.8	77.2	0.44	0.44	24.1
Approach		896	2.2	896	2.2	0.544	12.3	LOS A	10.8	77.2	0.43	0.45	27.2
North: Rocky Point Road													
8	T1	1460	2.2	1460	2.2	0.417	0.0	LOS A	0.0	0.0	0.00	0.04	53.4
9	R2	135	3.1	135	3.1	0.417	2.1	LOS A	0.0	0.0	0.00	0.09	51.1
Approach		1595	2.3	1595	2.3	0.417	0.2	LOS A	0.0	0.0	0.00	0.04	52.2
West: Jubilee Ave													
10	L2	81	1.3	81	1.3	0.220	49.1	LOS D	4.0	28.3	0.88	0.76	13.3
12	R2	245	0.4	245	0.4	0.692	51.4	LOS D	13.1	92.2	0.95	0.83	12.8
Approach		326	0.6	326	0.6	0.692	50.8	LOS D	13.1	92.2	0.93	0.82	12.9
All Vehicles		2817	2.1	2817	2.1	0.692	9.9	LOS A	13.1	92.2	0.24	0.26	23.0

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Network tab).
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Largest change in Average Back of Queue or Degree of Saturation for any lane during the last three iterations: 0.0 %
Number of Iterations: 5 (maximum specified: 10)

Movement Performance - Pedestrians

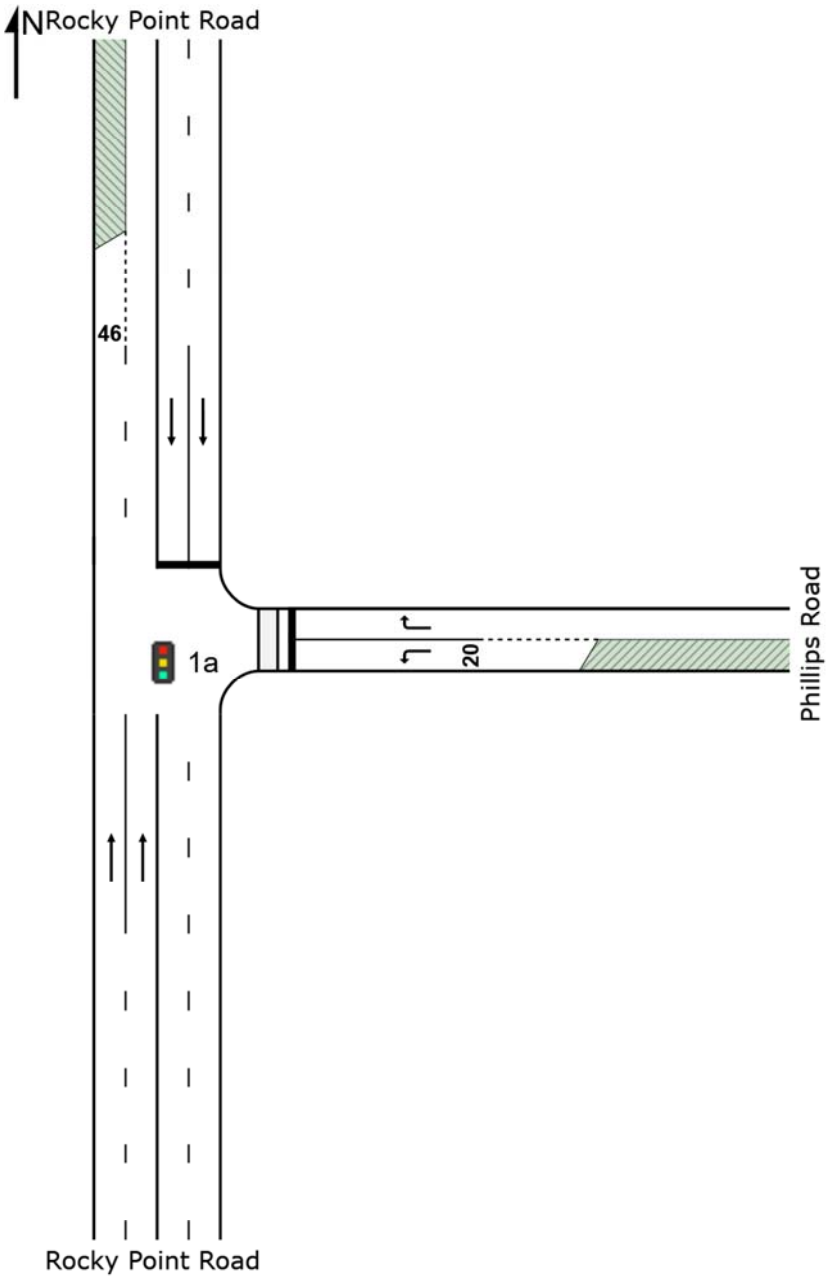
Mov ID	Description	Demand Flow ped/h	Average Delay sec	Level of Service	Average Back of Queue Pedestrian ped	Distance m	Prop. Queued	Effective Stop Rate per ped
P3	North Full Crossing	53	44.3	LOS E	0.2	0.2	0.86	0.86
P4	West Full Crossing	53	16.6	LOS B	0.1	0.1	0.53	0.53
All Pedestrians		105	30.4	LOS D			0.69	0.69

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

SITE LAYOUT

Site: 1a [PM FU Rocky Point Rd x Phillips Rd]

Signalised Intersection: Rocky Point Rd x Phillips Rd
Period: PM
Scenario: Future
Signals - Fixed Time Coordinated



MOVEMENT SUMMARY

Site: 1a [PM FU Rocky Point Rd x Phillips Rd]

Network: 2 [PM FU - Residential DA+Childcare +Commercial]

Signalised Intersection: Rocky Point Rd x Phillips Rd
Period: PM
Scenario: Future
Signals - Fixed Time Coordinated Cycle Time = 120 seconds (Network Cycle Time - User-Given)
Common Control Group: CCG1 [Intersection of Rocky Point Road x Jubliee Avenue x Phillips Road]

Movement Performance - Vehicles

Mov ID	OD Mov	Demand Flows Total veh/h	HV %	Arrival Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
South: Rocky Point Road													
2	T1	740	2.3	740	2.3	0.300	0.0	LOS A	0.0	0.0	0.00	0.00	59.9
Approach		740	2.3	740	2.3	0.300	0.0	LOS A	0.0	0.0	0.00	0.00	59.9
East: Phillips Road													
4	L2	86	1.2	86	1.2	0.703	69.6	LOS E	5.4	37.9	1.00	0.83	12.2
6	R2	47	0.0	47	0.0	0.383	66.4	LOS E	2.8	19.6	0.99	0.74	25.2
Approach		134	0.8	134	0.8	0.703	68.5	LOS E	5.4	37.9	1.00	0.80	17.7
North: Rocky Point Road													
8	T1	1503	2.4	1503	2.4	0.701	13.6	LOS A	23.2	165.7	0.58	0.53	42.4
Approach		1503	2.4	1503	2.4	0.701	13.6	LOS A	23.2	165.7	0.58	0.53	42.4
All Vehicles		2377	2.3	2377	2.3	0.703	12.4	LOS A	23.2	165.7	0.42	0.38	43.4

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Network tab).
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Largest change in Average Back of Queue or Degree of Saturation for any lane during the last three iterations: 0.0 %
Number of Iterations: 5 (maximum specified: 10)

Movement Performance - Pedestrians

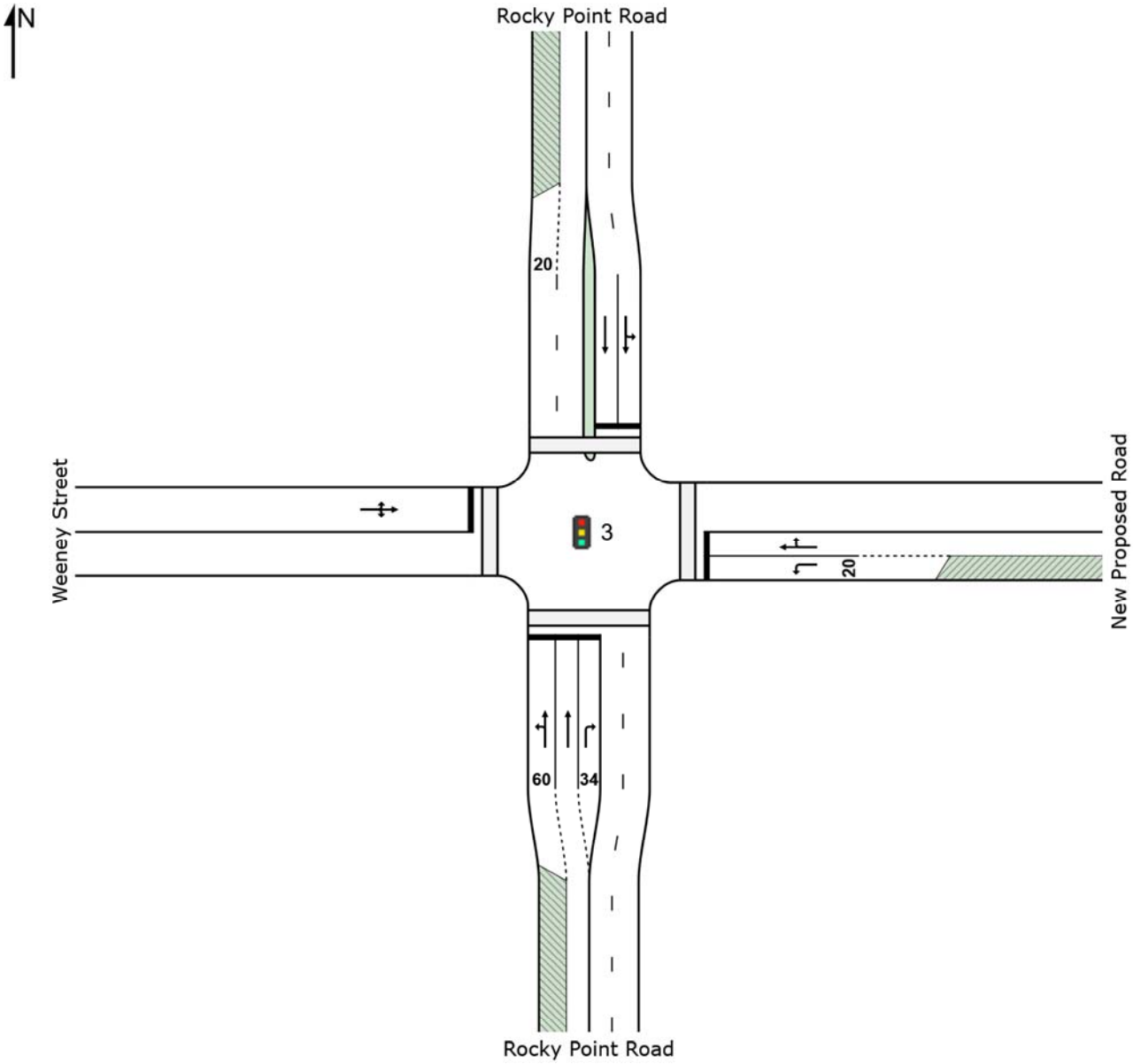
Mov ID	Description	Demand Flow ped/h	Average Delay sec	Level of Service	Average Back of Queue Pedestrian ped	Distance m	Prop. Queued	Effective Stop Rate per ped
P2	East Full Crossing	53	14.0	LOS B	0.1	0.1	0.48	0.48
All Pedestrians		53	14.0	LOS B			0.48	0.48

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

SITE LAYOUT

Site: 3 [PM FU Rocky Point Rd x Weeney St x New Proposed Road]

Intersection: Rocky Point Rd x Weeney St x New Proposed Road
Period: PM
Scenario: FU without Left Turn Deceleration Lane
Signals - Fixed Time Coordinated



MOVEMENT SUMMARY

Site: 3 [PM FU Rocky Point Rd x Weeney St x New Proposed Road]

Network: 2 [PM FU - Residential DA+Childcare +Commercial]

Intersection: Rocky Point Rd x Weeney St x New Proposed Road
Period: PM
Scenario: FU without Left Turn Deceleration Lane
Signals - Fixed Time Coordinated Cycle Time = 120 seconds (Network Cycle Time - User-Given)

Movement Performance - Vehicles

Mov ID	OD Mov	Demand Flows Total veh/h	HV %	Arrival Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
South: Rocky Point Road													
1	L2	19	5.6	19	5.6	0.100	6.1	LOS A	0.2	1.4	0.03	0.10	55.1
2	T1	766	2.6	766	2.6	0.466	0.6	LOS A	1.5	10.9	0.04	0.05	58.7
3	R2	40	0.0	40	0.0	0.440	69.6	LOS E	2.4	16.9	1.00	0.73	23.1
Approach		825	2.6	825	2.6	0.466	4.1	LOS A	2.4	16.9	0.09	0.08	53.2
East: New Proposed Road													
4	L2	87	0.0	87	0.0	0.177	40.9	LOS C	3.9	27.5	0.81	0.74	14.2
5	T1	28	0.0	28	0.0	0.919	73.8	LOS F	12.1	84.7	1.00	1.09	11.8
6	R2	144	0.0	144	0.0	0.919	78.3	LOS F	12.1	84.7	1.00	1.09	8.7
Approach		260	0.0	260	0.0	0.919	65.3	LOS E	12.1	84.7	0.94	0.98	10.4
North: Rocky Point Road													
7	L2	63	0.0	63	0.0	0.647	12.6	LOS A	15.2	108.3	0.37	0.37	39.7
8	T1	1482	2.2	1482	2.2	0.647	7.1	LOS A	15.3	109.2	0.37	0.36	32.2
Approach		1545	2.1	1545	2.1	0.647	7.3	LOS A	15.3	109.2	0.37	0.36	32.8
West: Weeney Street													
10	L2	25	0.0	25	0.0	0.165	52.0	LOS D	2.6	18.1	0.90	0.71	7.5
11	T1	20	0.0	20	0.0	0.165	47.4	LOS D	2.6	18.1	0.90	0.71	16.1
12	R2	5	0.0	5	0.0	0.165	52.0	LOS D	2.6	18.1	0.90	0.71	7.5
Approach		51	0.0	51	0.0	0.165	50.2	LOS D	2.6	18.1	0.90	0.71	11.4
All Vehicles		2681	2.0	2681	2.0	0.919	12.7	LOS A	15.3	109.2	0.35	0.34	33.8

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Network tab).
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Largest change in Average Back of Queue or Degree of Saturation for any lane during the last three iterations: 0.0 %
Number of Iterations: 5 (maximum specified: 10)

Movement Performance - Pedestrians

Mov ID	Description	Demand Flow ped/h	Average Delay sec	Level of Service	Average Back of Queue Pedestrian ped	Distance m	Prop. Queued	Effective Stop Rate per ped
P1	South Full Crossing	53	52.4	LOS E	0.2	0.2	0.94	0.94
P2	East Full Crossing	53	12.2	LOS B	0.1	0.1	0.45	0.45
P3	North Full Crossing	53	51.5	LOS E	0.2	0.2	0.93	0.93
P4	West Full Crossing	53	11.7	LOS B	0.1	0.1	0.44	0.44
All Pedestrians		211	31.9	LOS D			0.69	0.69

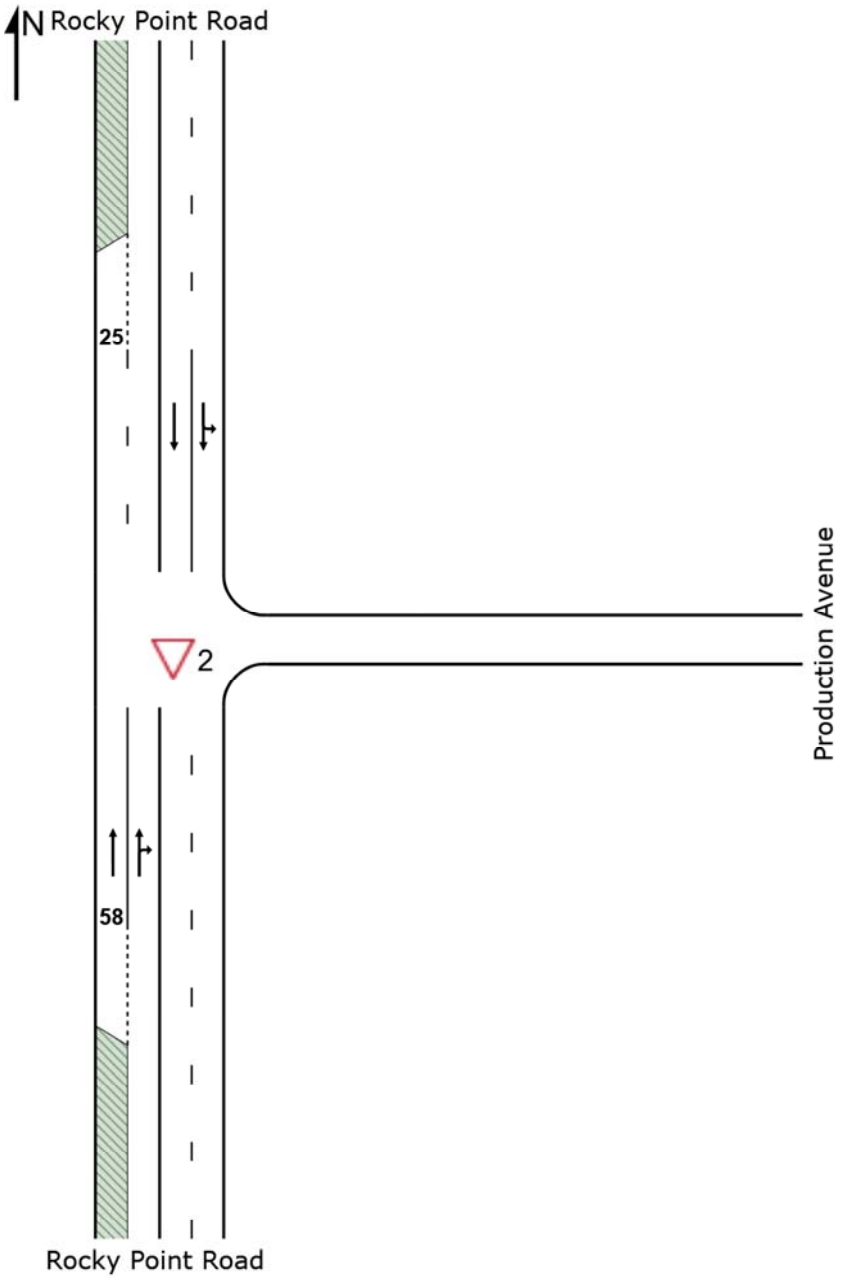
Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)

Pedestrian movement LOS values are based on average delay per pedestrian movement.
Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

SITE LAYOUT

Site: 2 [PM FU Rocky Point Road x Production Avenue]

T-intersection:Rocky Point Road x Production Avenue
Period: PM
Scenario: Future
Giveway / Yield (Two-Way)



MOVEMENT SUMMARY

Site: 2 [PM FU Rocky Point Road x Production Avenue]

Network: 2 [PM FU - Residential DA+Childcare +Commercial]

T-intersection:Rocky Point Road x Production Avenue
Period: PM
Scenario: Future
Giveway / Yield (Two-Way)

Movement Performance - Vehicles

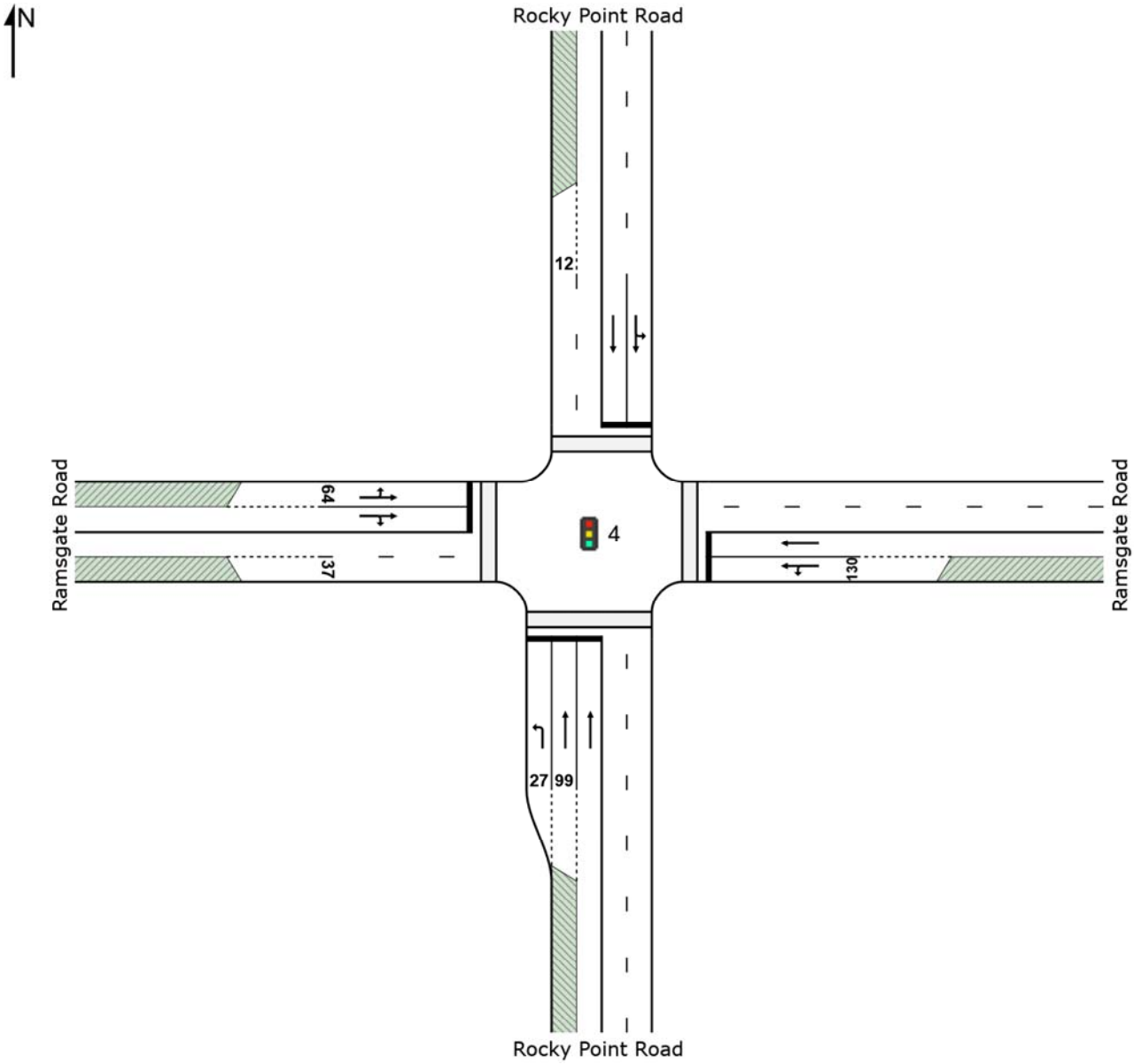
Mov ID	OD Mov	Demand Flows Total	HV	Arrival Flows Total	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue Vehicles	Distance	Prop. Queued	Effective Stop Rate	Average Speed
		veh/h	%	veh/h	%	v/c	sec		veh	m		per veh	km/h
South: Rocky Point Road													
2	T1	899	2.2	899	2.2	0.501	5.8	LOS A	12.7	90.5	0.77	0.03	32.7
3	R2	25	0.0	25	0.0	0.501	41.5	LOS C	12.7	90.5	1.00	0.04	41.0
Approach		924	2.2	924	2.2	0.501	6.8	NA	12.7	90.5	0.78	0.03	33.2
North: Rocky Point Road													
7	L2	157	0.7	157	0.7	0.447	5.6	LOS A	0.0	0.0	0.00	0.11	53.4
8	T1	1557	2.1	1557	2.1	0.447	0.0	LOS A	0.0	0.0	0.00	0.05	56.6
Approach		1714	2.0	1714	2.0	0.447	0.5	NA	0.0	0.0	0.00	0.05	55.8
All Vehicles		2638	2.0	2638	2.0	0.501	2.7	NA	12.7	90.5	0.27	0.05	45.6

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Network tab).
Vehicle movement LOS values are based on average delay per movement.
Minor Road Approach LOS values are based on average delay for all vehicle movements.
NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.
SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Largest change in Average Back of Queue or Degree of Saturation for any lane during the last three iterations: 0.0 %
Number of Iterations: 5 (maximum specified: 10)

SITE LAYOUT

Site: 4 [PM FU Rocky Point Road x Ramsgate Road]

Signalised Intersection: Rocky Point Road x Ramsgate Road
Period: PM
Scenario: Future
Signals - Fixed Time Coordinated



MOVEMENT SUMMARY

Site: 4 [PM FU Rocky Point Road x Ramsgate Road]

Network: 2 [PM FU - Residential DA+Childcare +Commercial]

Signalised Intersection: Rocky Point Road x Ramsgate Road
Period: PM
Scenario: Future
Signals - Fixed Time Coordinated Cycle Time = 120 seconds (Network Cycle Time - User-Given)

Movement Performance - Vehicles

Mov ID	OD Mov	Demand Flows Total veh/h	HV %	Arrival Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
South: Rocky Point Road													
1	L2	317	2.0	317	2.0	0.281	11.6	LOS A	4.2	29.9	0.25	0.65	45.5
2	T1	786	2.4	786	2.4	0.834	28.9	LOS C	31.6	225.8	0.79	0.74	26.9
Approach		1103	2.3	1103	2.3	0.834	23.9	LOS B	31.6	225.8	0.64	0.71	32.4
East: Ramsgate Road													
4	L2	46	0.0	46	0.0	0.275	42.2	LOS C	6.6	46.4	0.83	0.71	30.9
5	T1	623	1.0	623	1.0	0.958	68.3	LOS E	39.9	282.1	0.97	1.11	21.6
Approach		669	0.9	669	0.9	0.958	66.5	LOS E	39.9	282.1	0.96	1.09	22.1
North: Rocky Point Road													
7	L2	48	2.2	48	2.2	0.897	44.4	LOS D	42.5	303.0	0.95	0.96	33.5
8	T1	1413	2.1	1413	2.1	0.897	38.7	LOS C	42.8	305.1	0.95	0.96	35.2
Approach		1461	2.1	1461	2.1	0.897	38.9	LOS C	42.8	305.1	0.95	0.96	35.1
West: Ramsgate Road													
10	L2	29	0.0	29	0.0	0.385	27.0	LOS B	12.7	92.6	0.69	0.61	28.2
11	T1	313	5.4	313	5.4	0.385	21.5	LOS B	12.7	92.6	0.69	0.61	38.2
12	R2	258	2.4	258	2.4	0.810	65.4	LOS E	14.6	104.5	1.00	1.06	23.1
Approach		600	3.9	600	3.9	0.810	40.6	LOS C	14.6	104.5	0.82	0.81	29.2
All Vehicles		3834	2.2	3834	2.2	0.958	39.7	LOS C	42.8	305.1	0.84	0.89	30.8

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Network tab).
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Largest change in Average Back of Queue or Degree of Saturation for any lane during the last three iterations: 0.0 %
Number of Iterations: 5 (maximum specified: 10)

Movement Performance - Pedestrians

Mov ID	Description	Demand Flow ped/h	Average Delay sec	Level of Service	Average Back of Queue Pedestrian ped	Distance m	Prop. Queued	Effective Stop Rate per ped
P1	South Full Crossing	53	40.9	LOS E	0.1	0.1	0.83	0.83
P2	East Full Crossing	53	26.1	LOS C	0.1	0.1	0.66	0.66
P3	North Full Crossing	53	38.5	LOS D	0.1	0.1	0.80	0.80
P4	West Full Crossing	53	26.1	LOS C	0.1	0.1	0.66	0.66
All Pedestrians		211	32.9	LOS D			0.74	0.74

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