

186A Mount Low Parkway



TRAFFIC IMPACT ASSESSMENT

Richard Grant Ferguson

LANGTREE CONSULTING

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APPENDICES

APPENDIX A – SIDRA Results Summary

1.0 INTRODUCTION

Langtree Consulting has been engaged by Richard Grant Ferguson to prepare this Traffic Impact Assessment (TIA) to support the Material Changes of Use (MCU) application for Lot 11 on SP136003 (186A Mount Low Parkway, Mount Low). The MCU application is in response to a show cause notice (SC25/0016) issued by Townsville City Council (TCC) dated 25 February 2025.

This TIA report outlines the following:

- Background information for the project and proposed development;
- Existing traffic conditions, proposed development traffic generation and post-development traffic conditions;
- Intersection analysis;
- Assessment of the development impacts including safety at the site accesses; and
- Any recommendations and mitigation measures, if required.

2.0 BACKGROUND

A show cause noticed has been issued by TCC as a result of a complaint made with regarding the usage of the property. TCC has performed a desktop investigation which has found that the premise use is currently defined closer to Transport Depot than the approved use and that the use is unlawful. In response to the show cause noticed the applicant is applying for a MCU to address the issue.

3.0 SITE

The subject site is located at 186A Mount Low Parkway, Mount Low on the land described as Lot 11 on SP136003 (hereon in described as the subject site). The subject site is 10ha in area and is bound by rural residential lots on the east, and adjacent Lot 12 on SP282790 to the north, west and south. Refer to **Figure 1** and **Figure 2** for the subject site locality.

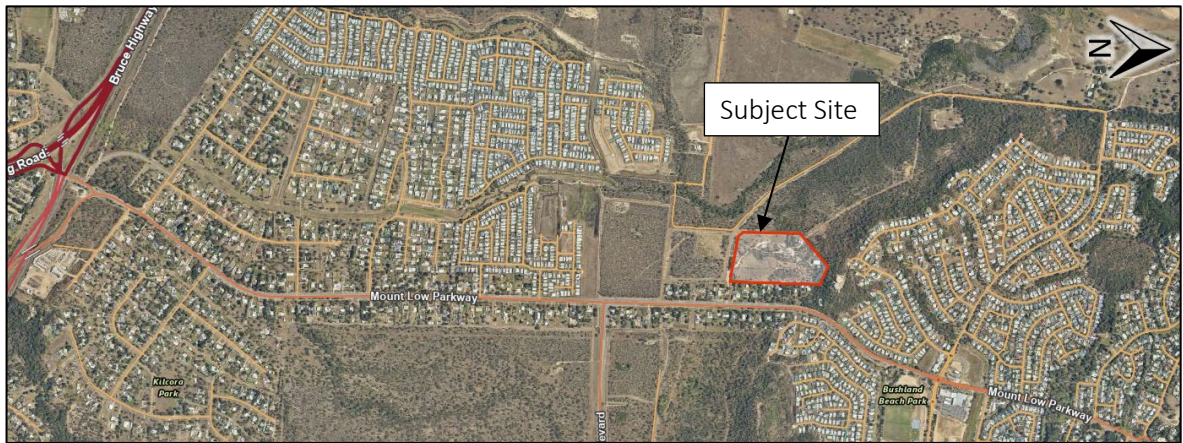


Figure 1. Site Locality (Source: Queensland Globe)



Figure 2. Subject Site (Source: Queensland Globe)

4.0 EXISTING ENVIRONMENTS

4.1 LAND USE AND SURROUND AREA

In accordance with Townsville City Council (TCC) TownsvilleMAPS City Plan, the subject site is currently zoned as Emerging Community Zone (refer to **Figure 3**).

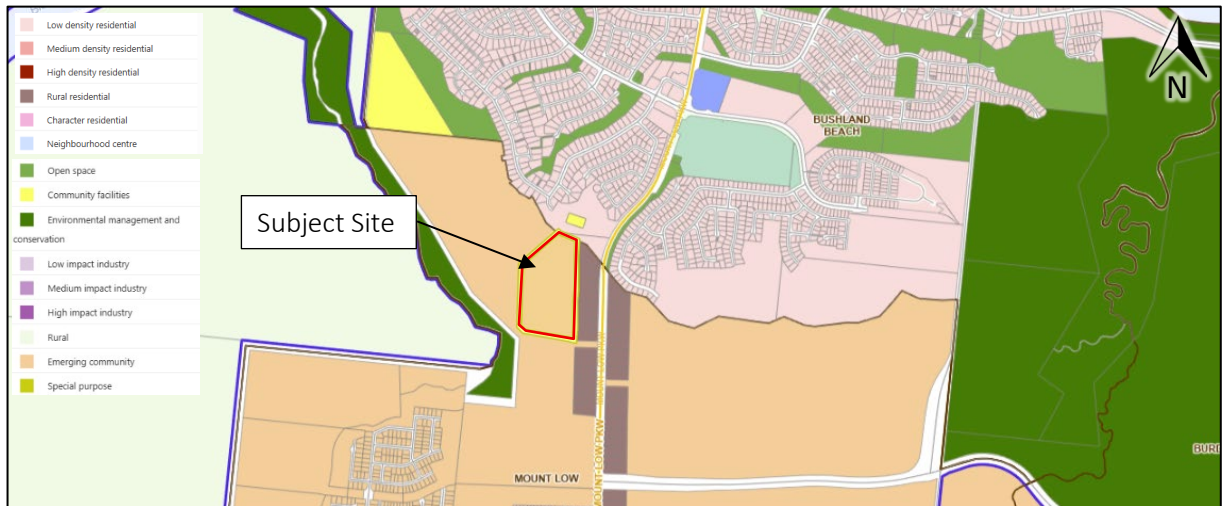


Figure 3. Site Zoning (Source: TCC TownsvilleMaps City Plan)

4.2 SITE ACCESS

Access to the subject site is gained via an easement (Easement W/SP136003) over Lot 12 on SP282790. The easement is located along the southern boundary of the subject site and provides formal legal access to both Lot 10 on SP136003 and the subject site (Lot 10 on SP136003). Refer to **Figure 4** and **Figure 5** for existing access.

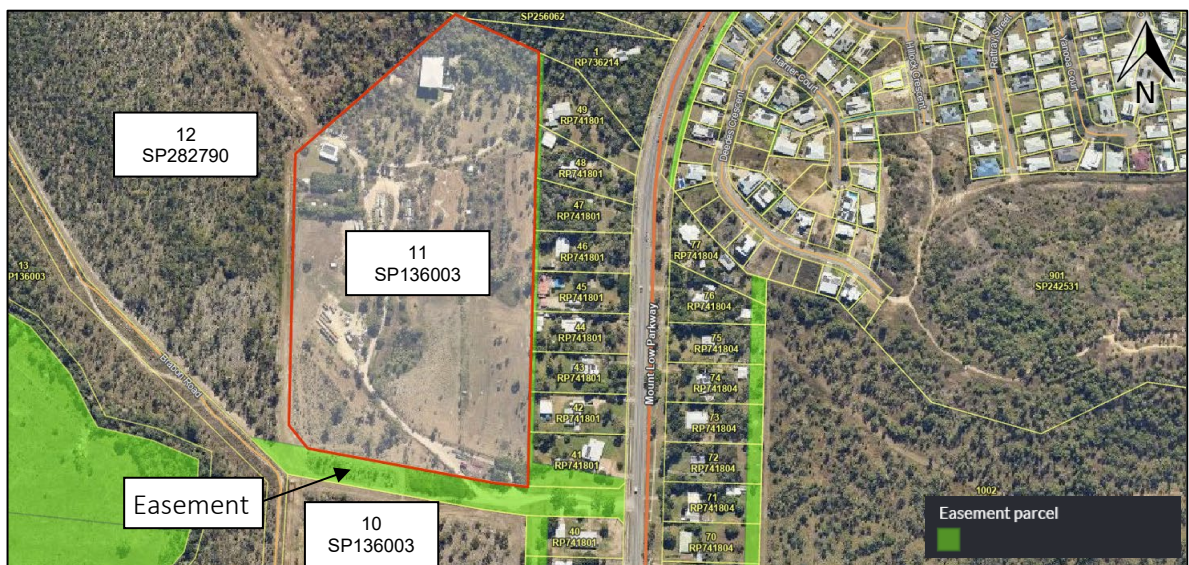


Figure 4. Site Access (Source: Queensland Globe)



Figure 5. Key Intersection (Source: Google Street View)

4.3 SURROUNDING ROAD NETWORK

The key surrounding roads in the proximity of the subject site has been identified and summarised in **Table 1**. For the purposes of this assessment, the easement (W/SP136003) over Lot 12 on SP282790 will hereafter be referred to as the "Access."

Table 1. Key Roads

Road Name	Jurisdiction	Local Council	Hierarchy	Speed limit
Mount Low Parkway	TCC	TCC	Arterial Road	70km/h
Access	Private	TCC	Access	-

4.4 KEY INTERSECTIONS / ACCESSES

The key intersection/s for assessment has been summarised below in **Table 2** and are shown in **Figure 6**.

Table 2. Key Intersection / Access

ID	Roads	Control
Access Intersection	Mount Low Parkway/ Access	Unsignalised

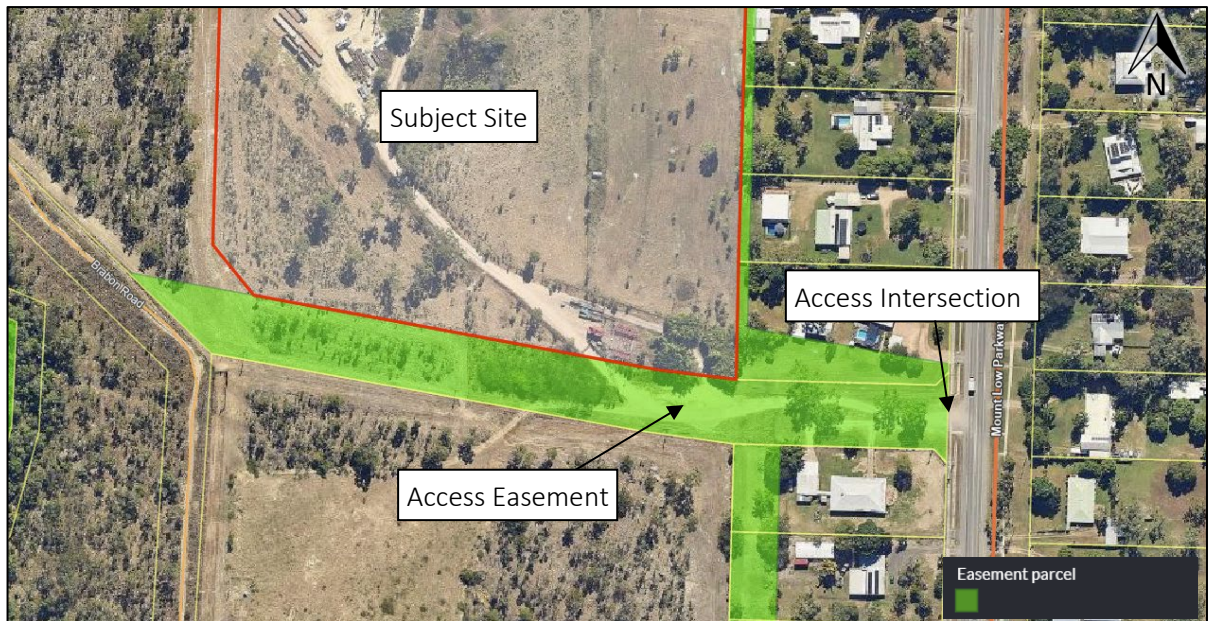


Figure 6. Key Intersection (Source: Queensland Globe)

4.5 CRASH HISTORY

Queensland Globe was used to investigate the crash history in the vicinity of the key roads and access/intersection. All reported road crash locations within the last 20 years and within 250m of the subject site have been reviewed. All crashes appear to be isolated incidents. No safety deficiencies have been identified from the crash reports. Refer to **Figure 7** for the crash sites and to **Table 3** for the crash data summary.

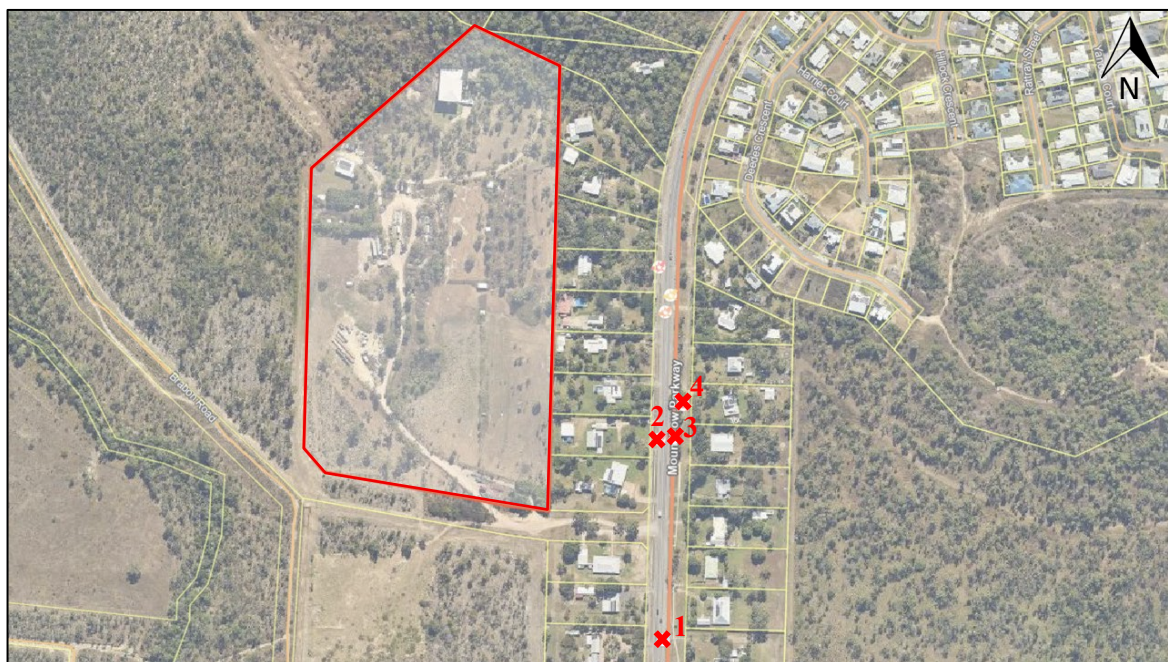


Figure 7. Crash Report Locality (Source: Queensland Globe)

Table 3: Crash Data Summary

Location	Year	Severity	Crash Type (DCA Code)	Crash Nature	Crash Description
1	2009	Property Damage Only	Multi-Vehicle (301)	Rear-End	Daylight, Clear, sealed-dry, straight, level, Vehicles Same Direction: Rear-End
2	2018	Hospitalisation	Multi-Vehicle (302)	Rear-End	Daylight, raining, sealed-wet, straight, grade, Vehicles Same Direction: Left rear
3	2012	Fatal	Single Vehicle (400)	Hit Object	Darkness-not lighted, clear, sealed-dry, straight, Veh's Maneuvering: Other
4	2015	Hospitalisation	Single Vehicle (702)	Overtaken	Darkness-not lighted, clear, sealed-dry, straight, level, Off Path-Straight: right Off Cway

5.0 BACKGROUND TRAFFIC

5.1 MOUNT LOW PARKWAY

Background data for Mount Low Parkway has been obtained from the TCC 2025 Traffic Calibration Model. Traffic data obtained from TCC Traffic Model has been summarised in **Table 4**.

Table 4. TCC Traffic Model at Mount Low Parkway

Year/ Projected Year	Travel Direction	Model ID	AADT (vpd)	AM PH (vph)	PM PH (vph)	%HV	Traffic Growth
2025	North Bound	90304	7,409	422	992	3.10%	
	South Bound	69715	7,715	766	489	2.55%	
2026	North Bound	2392	6118	308	613	5.10%	-17.43%
	South Bound	2161	7027	512	306	5.05%	-8.91%
2031	North Bound	2392	6073	307	635	5.42%	-0.74%
	South Bound	2161	6970	509	315	5.27%	-0.81%
2036	North Bound	2392	6674	332	678	2.33%	9.90%
	South Bound	2161	7561	557	337	5.22%	8.48%

5.1.1 Traffic Growth

As shown in **Table 4**, the TCC model has negative growth on Mount Low Parkway. To be conservative, a 1% traffic growth has been adopted between 2026 and 2031. Traffic growth rate as per the table has been adopted for the period between 2031 to 2036.

5.1.2 Peak Hour Distribution

The base year for assessment has been taken to be 2025 and the 10 year horizon is 2035. The peak hour distribution for the base and horizon year at 1% traffic growth is shown in **Table 5**. The projected heavy vehicle percentage for 2035 is adopted from the 2025 TCC model, due to observed variation in heavy vehicle percentages across projected years.

Table 5. Peak Hour Distribution

Year	Travel Direction	AADT, vpd	AM PH, vph (8:00-9:00)	PM PH, vph (4:00-5:00)	%HV
Base year 2025	North Bound	7,409	422	992	3.10%
	South Bound	7,715	766	489	2.55%
Horizon year 2035	North Bound	8,150	464	1091	3.10%
	South Bound	8,487	843	538	2.55%

5.2 ACCESS

As per advice provided by Brazier Motti, the access easement provides access rights to Lots 10 SP136003 and the subject site (Lot 11 on SP136003). Based on concreted shed access and vehicle tracks in the easement, it is noted that Lot 40 on RP741801 (184 Mount Low Parkway) is unlawfully utilising the access.

For the purpose of this assessment the following assumptions have been made:

- Traffic generated from Lot 40 on RP741801 has been considered and included as part of the access traffic;
- Background traffic from the subject site's is assumed to be from the residential dwelling.
- Lot 12 on SP282790 and Lot 10 on SP136003 are undeveloped do not currently generate traffic, however, it has been assumed that the lot has approval for a rural residential dwelling. As shown in **Figure 8** Lot 12 and Lot 10 is part of the proposed development with the approved residential RAF funding. It is assumed that the proposed residential development at these Lots will utilise the proposed Northshore Boulevard Extension.

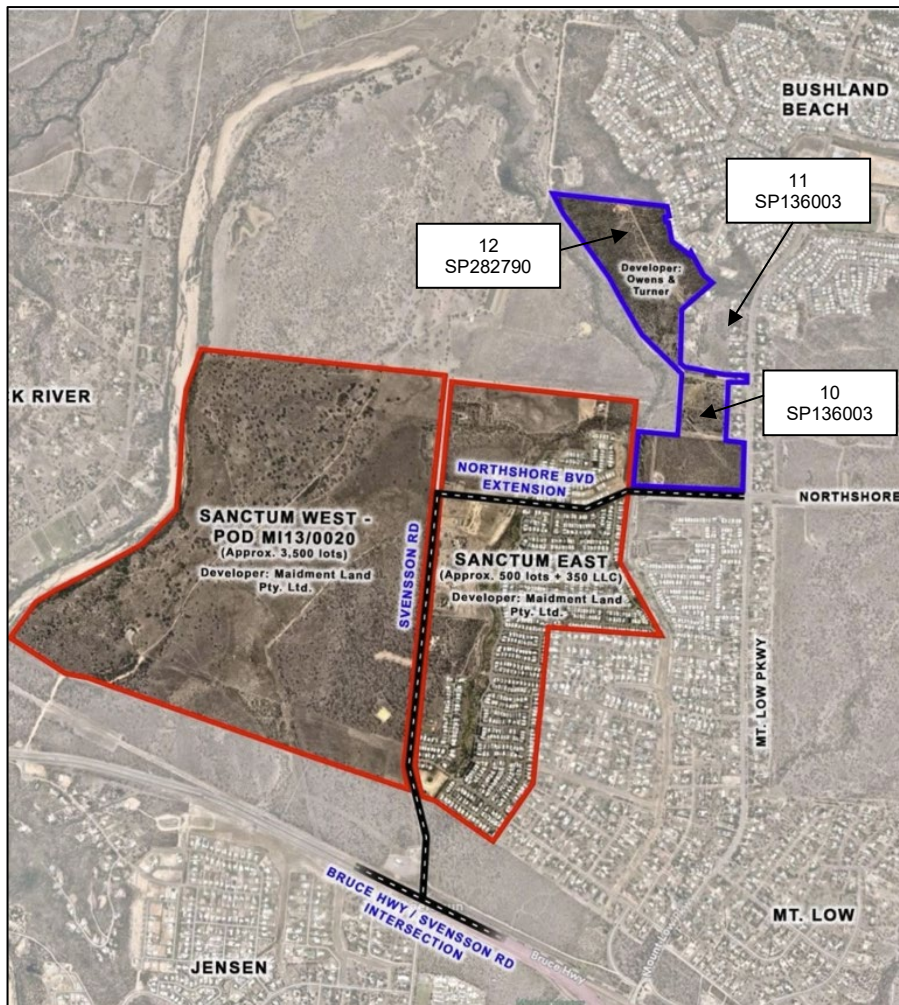


Figure 8. Development on Lot 12 and Lot 11.

RTA provides peak rates for a dwelling of 9.0 per dwelling for the daily vehicle trips and 0.85 vehicle trips per dwelling. Refer to **Table 6** for the background traffic along the access easement.

Table 6. Access Traffic Generation

Land Use	No of Dwelling	RTA peak hour vehicle trips rate	Peak Hour Trips
Lot 11 on SP136003 (Subject Site)	1	0.85	0.85
Lot 40 RP741801 (Existing Corner Dwelling)	1	0.85	0.85
Total			1.7 = 2

It is assumed that 100% of the vehicle during the AM peak hour trips are turning right to south Mount Low Parkway and in the PM peak hour, 100% of the vehicle are turning left to the Access from south Mount Low Parkway.

5.3 BACKGROUND TRIP DISTRIBUTION

The background traffic trip distribution for the access easement for the base year (2025) and horizon year (2035) are shown **Figure 9** and **Figure 10**.

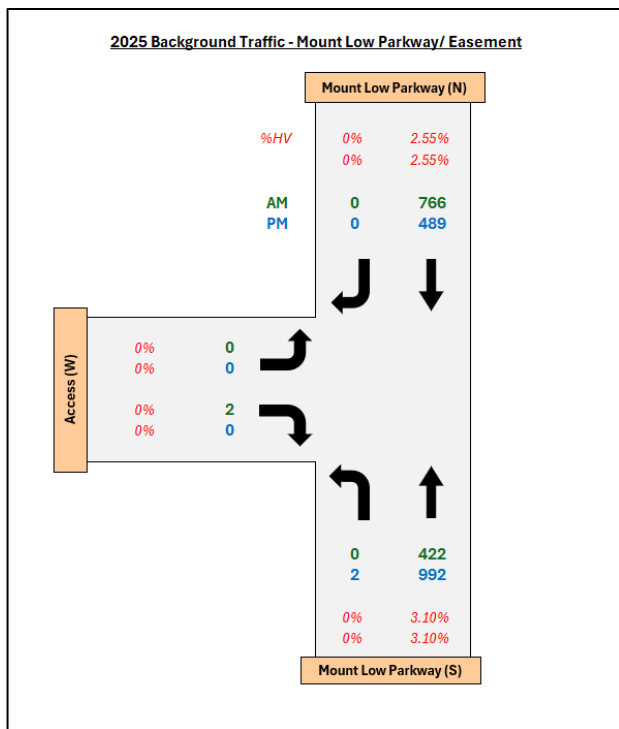


Figure 9. 2025 Background Traffic AM and PM Peak Hour Traffic Distribution- Mount Low Parkway/Access.

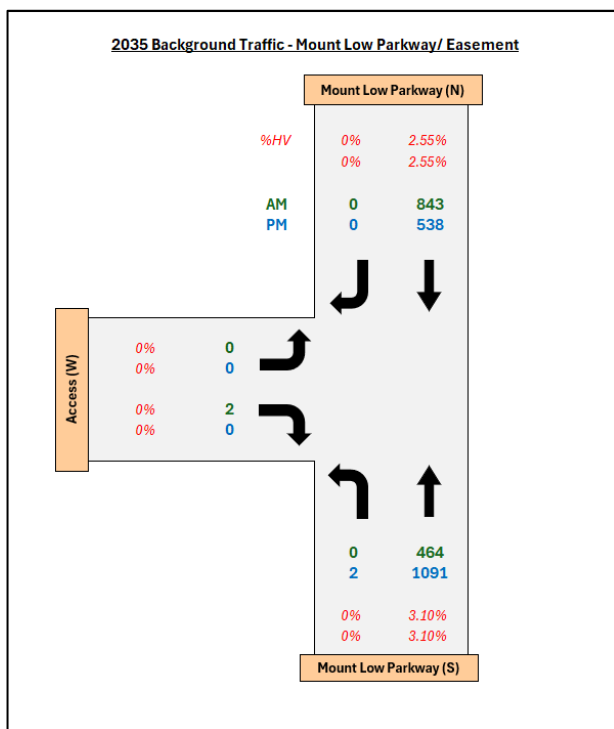


Figure 10. 2035 Background Traffic AM and PM Peak Hour Traffic Distribution- Easement/ Site Access.

6.0 PROPOSED DEVELOPMENT

It is acknowledged that the subject site has been operating in the capacity of a transport depot. As such, the MCU application proposes to formalise the current use as a transport depot.

6.1 HOURS OF OPERATION

The proposed operational hours are to be from 6:30am- 2:30pm from Monday to Thursday, 6:30am- 12:00pm on Fridays and is closed during weekends. It is assumed that staff will arrive and depart within the half an hour before and after operational hours.

6.2 EMPLOYEES

The development proposed to have three (3) permanent office-based employees. All other staff are generally permanently based at work sites.

6.3 STORED VEHICLES AND MACHINES

Based on information provided by the client, most of the heavy equipment are kept on work sites throughout the year and return during the Christmas holiday break or periods of extended wet weather. Some crane and excavator attachments are however stored on-site when not in active use.

6.4 VEHICLE MOVEMENT

As part of the transport depot operations, three (3) light vehicles (generated by the (3) permanent staff members) access the site daily. Additionally, two (2) trucks access the subject site approximately three (3) to four (4) times per month. All other vehicles are kept on work sites when not in active use, thus does not contribute to the vehicle movement in the site.

7.0 DEVELOPMENT TRAFFIC

7.1 DEVELOPMENT TRAFFIC GENERATION

As mentioned in **Section 6.4** the subject site has a regular vehicle movement from three (3) light vehicles and two (2) trucks access the subject site approximately three (3) to four (4) times per month. For a worst-case scenario it is assumed that the three (3) light vehicle trips and four (4) heavy vehicle trips (generated by two (2) heavy vehicles entering and departing) occur during the peak hours.

In addition to the above, the following development traffic distribution assumptions have been made as part of the assessment of the proposed development traffic:

- In the AM peak hour, it is assumed that all staff members are entering the site whilst the heavy vehicle enters and depart during the same peak hour.
- In the PM peak hour, it is assumed that all staff members depart the site whilst the heavy vehicle enters and depart the site with the same peak hour.

Please note that although the operational hours of the transport depot are not within the AM and PM peak hour, for a worst-case scenario, the development traffic at peak hour is considered in this assessment.

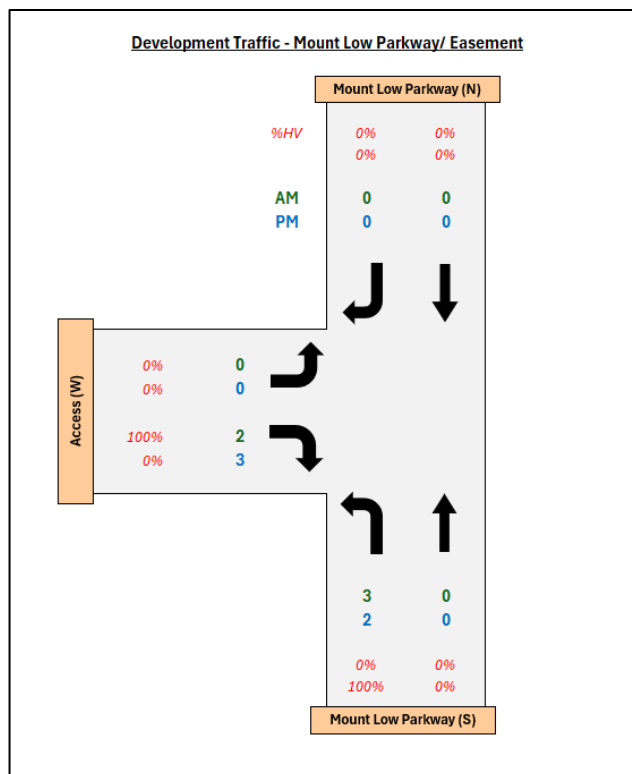


Figure 11. Development Traffic- Mount Low Parkway/ Access

8.0 POST DEVELOPMENT TRAFFIC

The 2025 and 2035 AM and PM traffic distribution post-development is summarised in **Figure 12** and **Figure 13**.

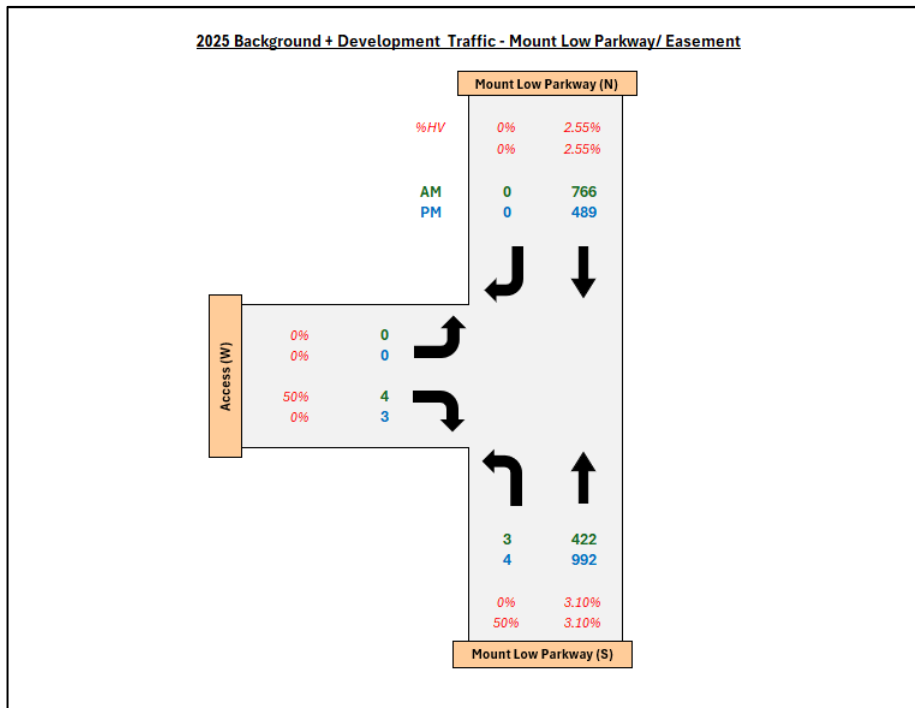


Figure 12. 2025 Background + Development Traffic AM and PM Peak Hour Traffic Distribution- Mount Low Parkway/Access.

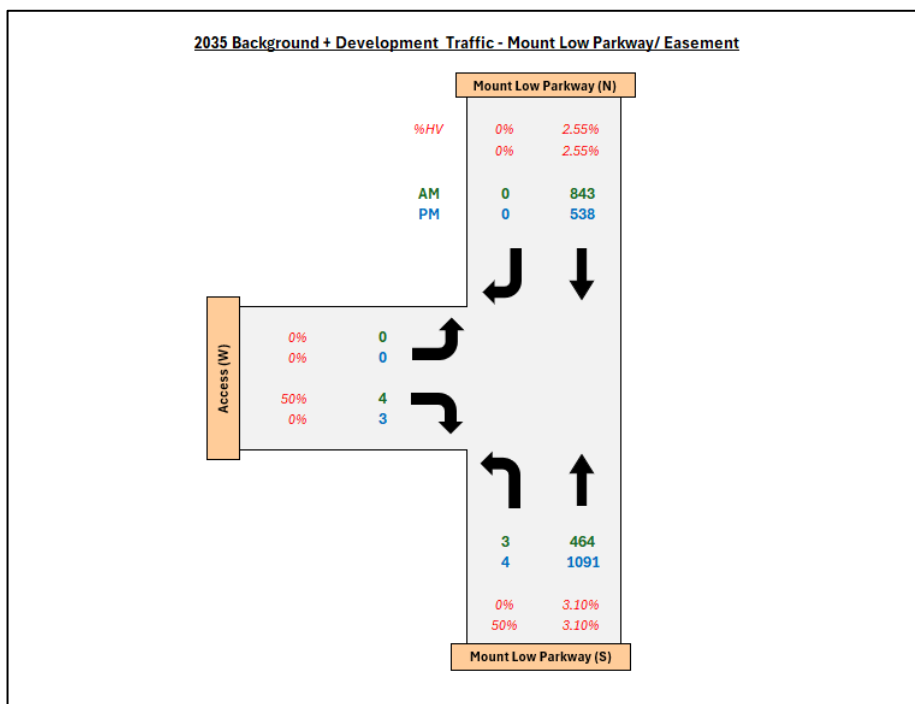


Figure 13. 2035 Background + Development Traffic AM and PM Peak Hour Traffic Distribution- Mount Low Parkway/Access.

9.0 TRAFFIC IMPACT ASSESSMENT

9.1 SIDRA INTERSECTION ANALYSIS

It is proposed to measure the operational performance of the access “intersections” using SIDRA 9.1 software package. SIDRA is a computer package used to describe the capability and operational performance of an intersection in terms of the parameters as defined below:

- Degree of Saturation (DoS) – is the ratio of demand flow (or number of vehicles) to the physical capacity of the intersection or approach and is usually represented by a value that lies between zero and one. A DoS in excess of 1.0 indicates that the intersection will operate above capacity and that long delays and congestion will occur;
- Average Delay – is usually defined as the difference in time between interrupted and uninterrupted travel times through an intersection;
- Queue Length – is the 95th percentile back of queue length. This is the length to the back of the queue for a particular approach which 95% of all observed queue lengths fall below; and
- Level of Service (LOS) – an index of the operational performance of traffic-on-traffic lane, approach, intersection, route or network, based on measures such as delay, degree of saturation, density, speed, congestion coefficient, speed efficiency or travel time index during a given flow period. This provides a quantitative stratification of a performance measure or measures that represent the quality of service, measured on an A to F scale, with LOS A representing the best operating conditions from the traveller’s perspective and LOS F the worst.

9.1.1 Intersection Performance Assessment Criteria

The two key performance measurements adopted to assess the intersection operational conditions were Degree of Saturation (DoS) and Level of Service (LOS).

In general, the intersection capacity DoS, where it is considered that the operation of the intersection is constrained, are:

- 0.80 (80%) for un-signalised intersections;
- 0.85 (85%) for roundabouts; and
- 0.90 (90%) for signalised intersections.

The typical LOS, its characteristics and rating are defined in **Table 7**.

Table 7. Summary of traffic movements

LOS	Description	Rating
A	Free, unrestrictive flow	Very good
B	Mostly free flow, few disruptions	Very good
C	Stable flow	Good
D	Mostly stable flow, some delays	Acceptable
E	Congested	Bad
F	Forced flow	Bad

9.2 SIDRA INTERSECTION ANALYSIS

The SIDRA movement results for 2025 and 2035 AM and PM at key intersection and site access is summarised in **Table 8**, **Table 9**, **Table 10** and **Table 11** below. Refer to **Appendix A** for the SIDRA summary results.

Table 8. 2025 AM Pre and Post Development SIDRA Summary

Intersection	Approach	Movement	2025 AM Background			2025 AM Background + Development		
			DoS	Delay (s)	LOS	DoS	Delay (s)	LOS
Mount Low Parkway/ Access	Mount Low Parkway (S)	Left Turn	0.231	5.60	A	0.232	5.60	A
		Through	0.231	0.00	A	0.232	0.00	A
		Approach	0.231	0.10	NA	0.232	0.10	NA
	Mount Low Parkway (N)	Through	0.417	0.00	A	0.417	0.00	A
		Right Turn	0.417	5.60	A	0.417	5.60	A
		Approach	0.417	0.00	NA	0.417	0.00	NA
	Access (W)	Left Turn	0.009	6.50	A	0.039	6.50	A
		Right Turn	0.009	16.10	C	0.039	33.10	D
		Approach	0.009	12.90	B	0.039	27.80	D
		Overall	0.417	0.10	NA	0.417	0.10	NA

Table 9. 2025 PM Pre and Post Development SIDRA Summary

Intersection	Approach	Movement	2025 PM Background			2025 PM Background + Development		
			DoS	Delay (s)	LOS	DoS	Delay (s)	LOS
Mount Low Parkway/ Parkway/ Access	Mount Low Parkway (S)	Left Turn	0.542	5.60	A	0.544	6.20	A
		Through	0.542	0.10	A	0.544	0.20	A
		Approach	0.542	0.20	NA	0.544	0.20	NA
	Mount Low Parkway (N)	Through	0.268	0.00	A	0.268	0.00	A
		Right Turn	0.268	8.50	A	0.268	8.60	A
		Approach	0.268	0.00	NA	0.268	0.00	NA
	Access (W)	Left Turn	0.011	12.70	B	0.027	12.80	B
		Right Turn	0.011	28.60	D	0.027	29.00	D
		Approach	0.011	20.60	C	0.027	25.00	C
			Overall	0.542	0.10	NA	0.544	0.20

As shown in **Table 8 and Table 9**, traffic conditions along Mount Low Parkway have maintained a high level of service (LOS A and LOS B) for both background and post-development scenarios, including the left-turn movement from the Access at AM and PM peak hour.

However, the right-turn movement from the Access onto southbound Mount Low Parkway experiences a decrease in performance, with **LOS dropping from C to D**. Additionally, the overall **approach at the Access degrades from LOS B to LOS D**. This decline in performance is primarily attributed to the high volume of southbound traffic along Mount Low Parkway during the AM peak period, which results in increased delays for vehicles attempting the right-turn movement. During the PM peak hour, the right and approach movement to/from the access have maintained its level of service at LOS D and LOS C respectively. It should be noted that, in the worst-case scenario, it is assumed that development-related traffic coincides with the network peak hour.

Table 10. 2025 AM Pre and Post Development SIDRA Summary

Intersection	Approach	Movement	2025 AM Background			2025 AM Background + Dev		
			DoS	Delay (s)	LOS	DoS	Delay (s)	LOS
Mount Low Parkway/ Access	Mount Low Parkway (S)	Left Turn	0.253	5.60	A	0.255	5.60	A
		Through	0.253	0.00	A	0.255	0.00	A
		Approach	0.253	0.10	NA	0.255	0.10	NA
	Mount Low Parkway (N)	Through	0.459	0.00	A	0.459	0.00	A
		Right Turn	0.459	5.60	A	0.459	5.60	A
		Approach	0.459	0.00	NA	0.459	0.00	NA
	Access (W)	Left Turn	0.011	6.70	A	0.056	6.70	A
		Right Turn	0.011	19.70	C	0.056	46.00	E
		Approach	0.011	15.40	C	0.056	38.10	E
		Overall	0.459	0.10	NA	0.459	0.20	NA

Table 11. 2025 PM Pre and Post Development SIDRA Summary

Intersection	Approach	Movement	2025 AM Background			2025 AM Background + Dev		
			DoS	Delay (s)	LOS	DoS	Delay (s)	LOS
Mount Low Parkway/ Access	Mount Low Parkway (S)	Left Turn	0.596	5.70	A	0.598	6.20	A
		Through	0.596	0.20	A	0.598	0.20	A
		Approach	0.596	0.20	NA	0.598	0.20	NA
	Mount Low Parkway (N)	Through	0.296	0.00	A	0.296	0.00	A
		Right Turn	0.296	10.20	A	0.296	10.20	B
		Approach	0.296	0.10	NA	0.296	0.10	NA
	Access (W)	Left Turn	0.016	15.40	C	0.041	15.60	C
		Right Turn	0.016	41.20	E	0.041	41.80	E
		Approach	0.016	28.30	D	0.041	35.30	E
		Overall	0.596	0.20	NA	0.598	0.20	NA

Similar to 2025 base year, traffic conditions in the horizon year along Mount Low Parkway have maintained a high level of service (LOS A) for both background and post-development scenarios, at AM and PM peak hour. However, the right-turn and approach movement for the Access experiences a decrease in performance, with LOS dropping from **LOS C to LOS E** during the AM peak hour. During the PM peak hour, the left and right turn movement from the access have maintained its level of service at **LOS C** and **Los E** respectively, while the approach movement decreases from **LOS D to Los E**.

In summary, movements along Mount Low Parkway have maintained its level of service at LOS A for both the base and horizon year at pre and post development scenario. It is noted that although the development peak traffic does not within the AM and PM peak hour, the development traffic was considered to be occurring during the network peak hour as a worst-case scenario. Given the low traffic volumes and being an access road, a lower level of service on the access road is considered acceptable.

9.3 TURN WARRANT ASSESSMENT

9.3.1 Mount Low Parkway/Access

A turn warrant check was conducted on the intersection to determine the required turn treatment at the access. The turn warrant check has been completed in accordance with Austroads Guide to Traffic Management Part 6: Intersections, Interchanges and Crossings.

Table 12 shows the Mount Low Parkway/Access warrant check.

Table 12. Mount Low Parkway/ Access warrant Check

Scenario	Right Turn In ✖		Left Turn In ✖		Warrants
	QR	QM	QL	QM	
2025 AM	0	1191	3	422	BAR/BAL
2025 PM	0	1485	4	992	BAR/BAL
2035 AM	0	1310	3	464	BAR/BAL
2035 PM	0	1633	4	1091	BAR/BAL

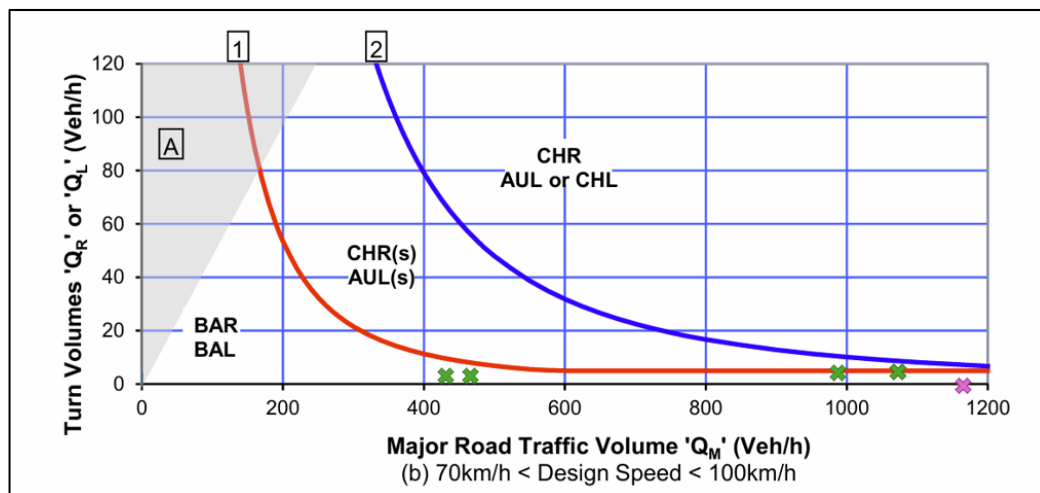


Figure 14. Warrant Check Turn Treatment

As shown in Figure 14, a BAR/ BAL is warranted for the turn treatments at Mount Low Parkway- Access Intersection (refer to Figure 15). Currently, a BAR/BAL turn treatment for urban road is implemented in the intersection (shown in Figure 16), therefore no turn warrant upgrade is necessary for the intersection. Due to high AM and PM peak hour volume along Mount Low Parkway, the 2025 PM, 2035 AM and PM major road traffic volume (Q_m) for right turn in movements was unable to be plotted on the figure.

10.0 SIGHT DISTANCES

10.1 SAFE INTERSECTION SIGHT DISTANCE (SISD)

10.1.1 Mount Low Parkway/ Access

A SISD check was conducted for Mount Low Parkway/ Access Intersection in accordance with AS2890.2 Parking Facilities Part 2, Off Street commercial vehicle facilities Figure 3.3 (shown as **Figure 17**) below.

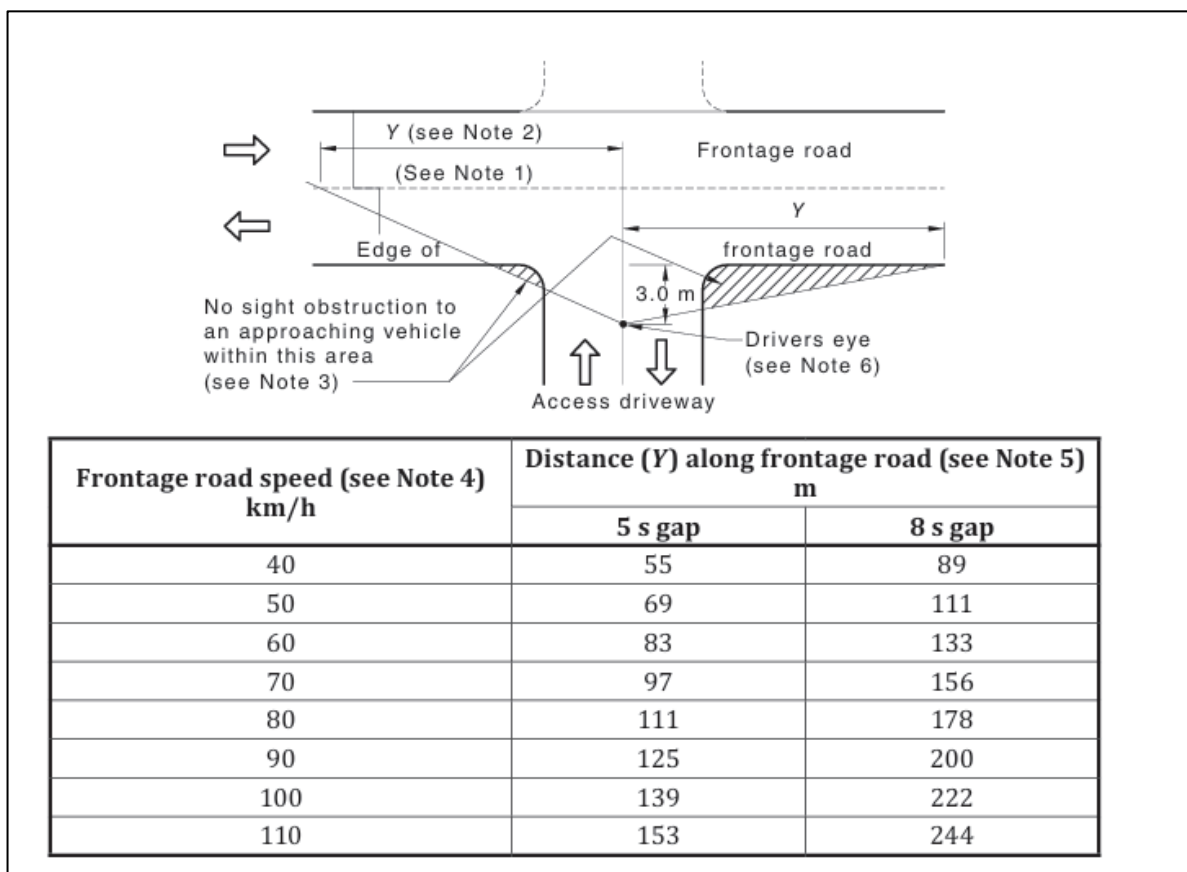


Figure 17. AS2890.2 Figure 3.3 Sight distance requirements at access driveway exits.

For the key intersection, the access fronting speed is 70km/hr. Considering an 8s gap, the required minimum safe intersection sight distance in the access is 156m. Refer to **Figure 18** , **Figure 19**, **Figure 20**, **Figure 21** for the available safe intersection sight distance.

As shown in the figures below, the access has available safe intersection sight distance.



Figure 18. Available SISD-South of Intersection



Figure 19. Sight Line from access looking south

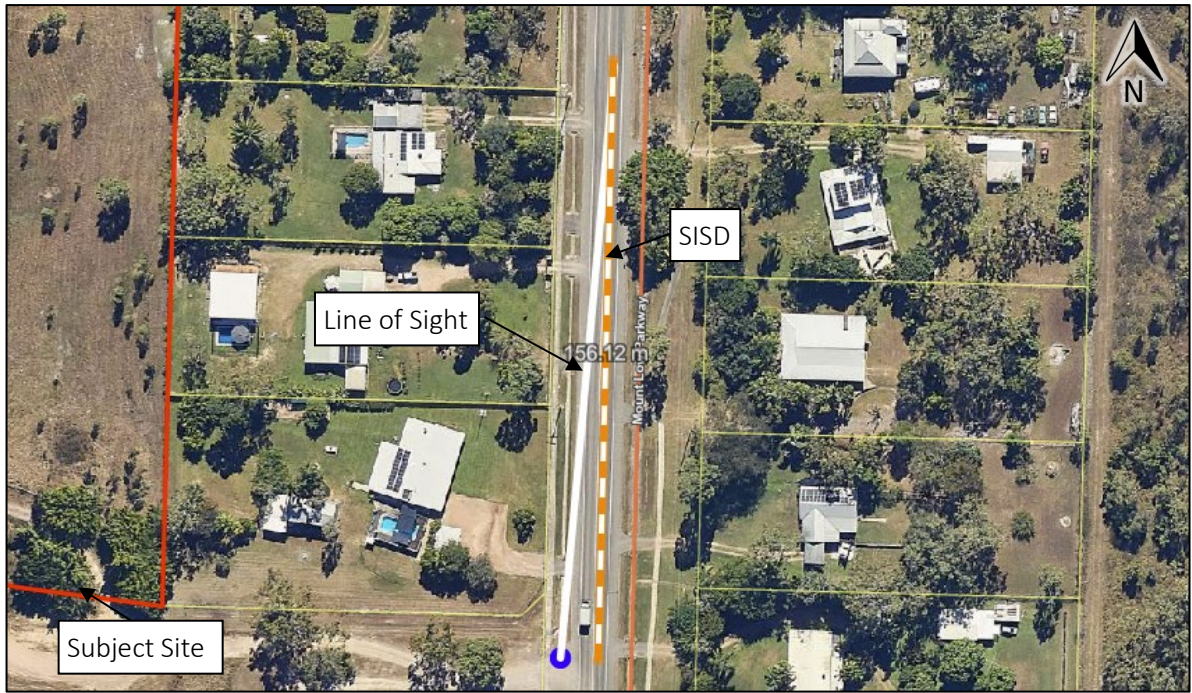


Figure 20. Available SISD-North of Intersection



Figure 21. North of Intersection Sight Line from Vehicles exiting the Access

11.0 SWEEP PATHS

Swept paths for a semi-trailer and a B99 vehicle have been assessed and are shown in figures below.

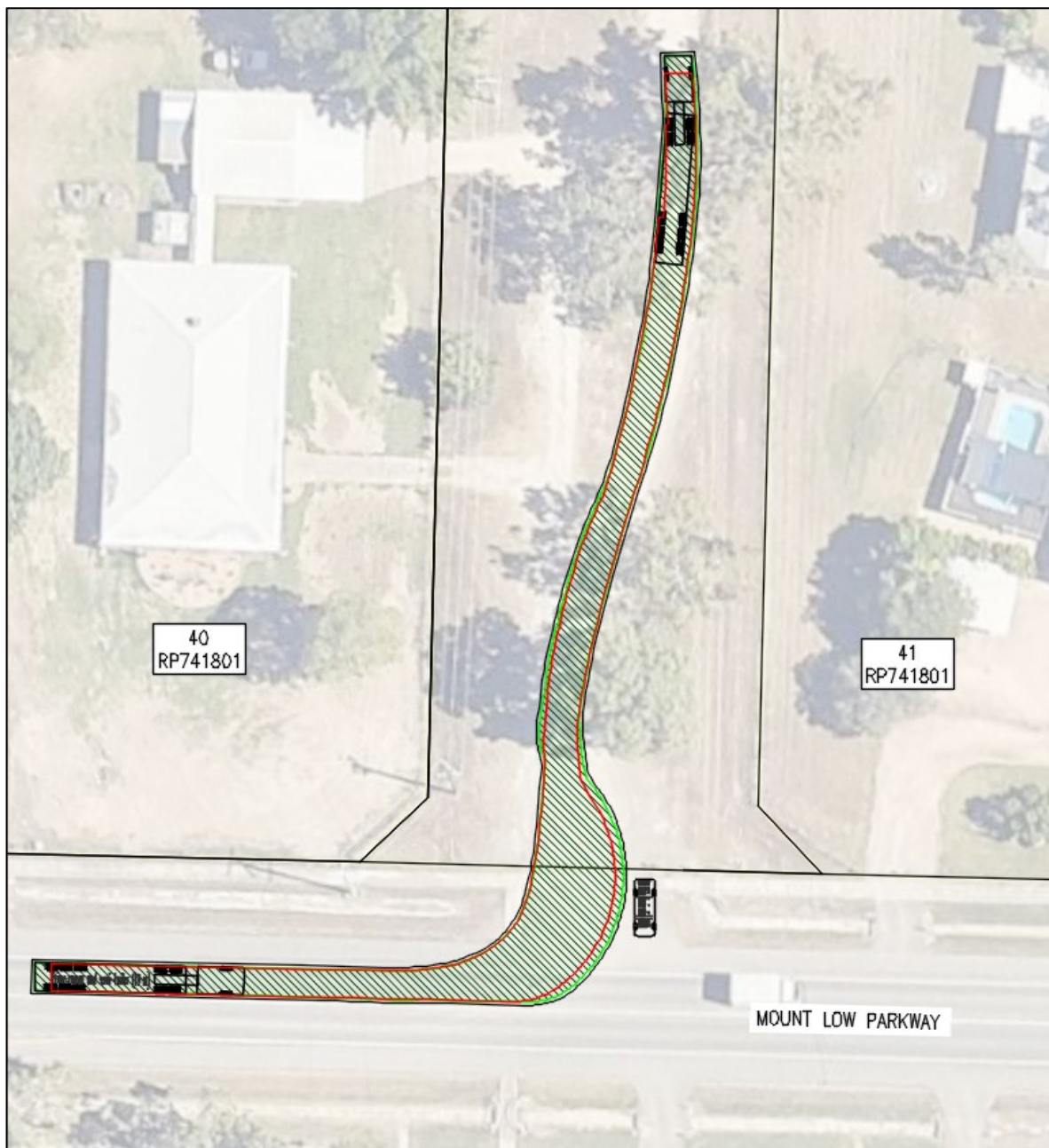


Figure 22. Semi-Trailer left turning into the Access/ B99 vehicle left turning out to South Mount Low Parkway.

Error! Reference source not found. demonstrates a semi-trailer entering whilst a B99 vehicle is waiting to depart. It shall be noted that given the nature of the site, it is unlikely that a light vehicle shall be departing the access whilst a heavy vehicle is entering, however, there is sufficient space should this occur.

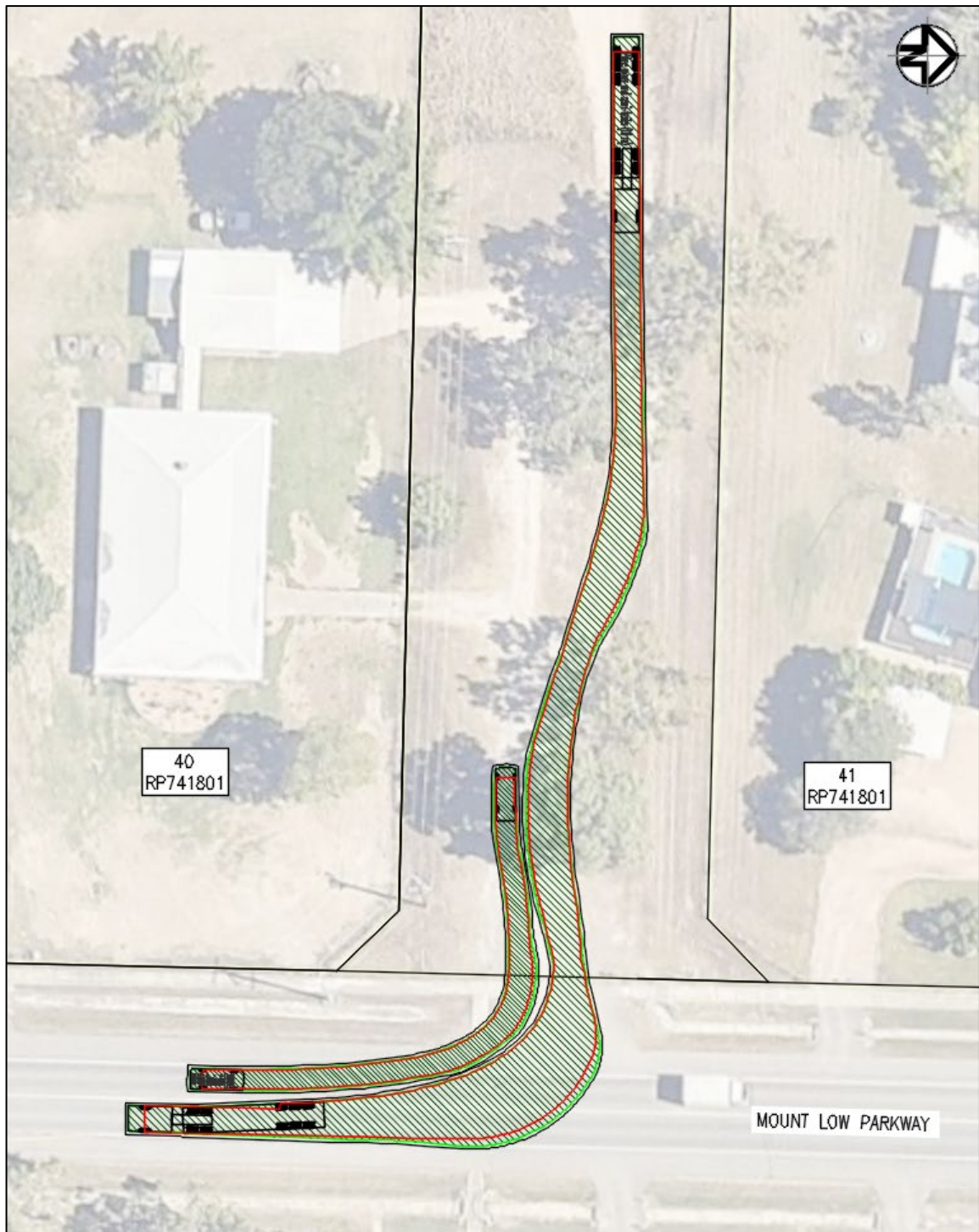


Figure 23. B99 vehicle left turning into the Access/ Semi Trailer left turning out to South Mount Low Parkway.

Error! Reference source not found. demonstrates the swept path of a semi-trailer exiting the access whilst a B99 is entering. From the figure, there is sufficient have adequate space for a heavy vehicle to enter as a light vehicle is exiting.

12.0 SAFETY ASSESSMENT

In accordance with the TMR Guide to Impact Assessment (GTIA), Table 9.3.3(a) and Table 9.3.3(b), (shown as **Table 13** and **Table 14** below) the Road environment safety rating matrix (level of risk) for Key Intersection (Mount Low Parkway / Access) is Medium and the type of assessment required is a road safety assessment

Table 13. Road environment safety rating matrix (level of risk). (Source: TMR GTIA, 2048, Table 9.3.3(a))

Traffic volume (AADT)	Speed (km/h)		
	Up to 50 km/h	60 km/h to 70 km/h	80 km/h+
≤ 8000	Low	Medium	Medium
> 8000	Medium	Medium	High

Table 14. Type of road safety assessment based on road environment safety rating (Source: TMR GTIA, 2018, Table 9.3.3(b))

Development type	Road environment safety rating		
	Low	Medium	High
Major Development	road safety assessment	road safety audit	road safety audit
Planning Act Development	road safety assessment	road safety assessment	road safety audit

12.1 ROAD SAFETYASSESSMENT

A road safety risk assessment has been performed in accordance with the Safety Risk Score Matrix in accordance with **Table 15** below.

Table 15. Safety risk score matrix (Source: TMR GTIA, 2018, Table 9.3.2(a))

		Potential consequence				
		Property only (1)	Minor injury (2)	Medical treatment (3)	Hospitalisation (4)	Fatality (5)
Potential likelihood	Almost certain (5)	M	M	H	H	H
	Likely (4)	M	M	M	H	H
	Moderate (3)	L	M	M	M	H
	Unlikely (2)	L	L	M	M	M
	Rare (1)	L	L	L	M	M

L: Low risk
M: Medium risk
H: High risk

Safety risks identified for the development have been summarised in **Table 16**.

Table 16. Safety risk assessment

Risk Item	Without Development			With Development			Mitigation Measure	With Development and mitigation		
	Likelihood	Consequence	Risk Score	Likelihood	Consequence	Risk Score		Likelihood	Consequence	Risk Score
Vehicles from Lot 40 RP741801 accessing the access easement, colliding with vehicles entering and departing the access due to Y-junction arrangement implemented by the lot	3	4	M	3	4	M	Access from Lot 40 on RP741801 does not have lawful access to the easement.			
Risk of Mount Low traffic rear ended with development traffic	4	2	M	4	2	M	Turn warrant assessment has been performed, and BAR/BAL arrangement has been deemed appropriate. The access is located on a long straight section of road with no sight distance issues.			

13.0 SUMMARY

This report has assessed the impact of the traffic generated by the proposed development on the existing road network including at key intersection and access. Consideration has been given to operational performance and road safety. The report has found the following:

- The crash history findings did not indicate any safety issues for the current access for the last 20 years;
- The development's operational hours are not within the AM and PM peak hour, for a worst-case scenario, the development traffic is considered in the peak hour for this assessment.
- A worst-case SIDRA analysis has been conducted for key intersection. The proposed development has been found to not have a significant impact on the existing road network as the LOS along Mount Low Parkway remains unchanged at LOS A in the pre and post development scenarios. The access right turn, and approach movement have decreased its performance in the 2025 post development scenario from LOS C to LOS D and LOS B to LOS D respectively. Only the approach movement in the 2035 post development scenario have decreased its performance from LOS D to LOS E. It shall be noted that, for the purpose of this assessment, the development of traffic was assumed to occur during the road network's peak hour, despite the development's operational hours falling outside of this period.
- A turn warrant assessment has been conducted for the key road intersection. The existing treatment was found to be adequate.
- A sight distance check has been conducted for the access intersection and has found that there are no issues with regards to sight distances;
- A swept path assessment for the access has been conducted and has found that a semi-trailer has adequate space and clearance to avoid a B99 vehicle when accessing or departing the site.

In conclusion, the proposed development has been found to be adequate and not have a significant adverse impact on the operational performance or safety of the surrounding road network. No mitigation measures have been identified as part of the assessment.

14.0 CERTIFICATION

Registered Professional Engineer Queensland

for

Project Title:	186A Mount Low Parkway, Mount Low 4818
-----------------------	--

As a professional engineer registered by the Board of Professional Engineers of Queensland pursuant to the *Professional Engineers Act 2002* as competent in my areas of nominated expertise, I understand and recognise:

- the significant role of engineering as a profession, and that
- the community has a legitimate expectation that my certification affixed to this engineering work can be trusted, and that
- I am responsible for ensuring its preparation has satisfied all necessary standards, conduct and contemporary practice.

As the responsible RPEQ, I certify:

- i. I am satisfied that all submitted components comprising this traffic impact assessment, listed in the following table, have been completed in accordance with the *Guide to Traffic Impact Assessment* published by the Queensland Department of Transport and Main Roads and using sound engineering principles, and
- ii. where specialised areas of work have not been under my direct supervision, I have reviewed the outcomes of the work and consider the work and its outcomes as suitable for the purposes of this traffic impact assessment, and that
- iii. the outcomes of this traffic impact assessment are a true reflection of results of assessment, and that
- iv. I believe the strategies recommended for mitigating impacts by this traffic impact assessment, embrace contemporary practice initiatives and will deliver the desired outcomes.

Name:	Brett Langtree		
RPEQ competencies:	Civil Engineering	RPEQ No:	11932
Signature:		Date:	01 August 2025
Postal address:	14 Ingham Road, West End QLD 4810		
Email:	brett@langtreeconsulting.com.au		

APPENDIX A

SIDRA RESULTS SUMMARY

MOVEMENT SUMMARY

Site: 101 [2025 AM Background (Site Folder: General)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

New Site

Site Category: Base Year

Give-Way (Two-Way)

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand Flows		Arrival Flows		Deg. Satn	Aver. Delay	Level of Service	95% Back Of Queue		Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed
			[Total HV] veh/h	%	[Total HV] veh/h	%				[Veh.] veh	[Dist] m				
South: Mount Low Parkway															
1	L2	All MCs	1	0.0	1	0.0	0.231	5.6	LOS A	0.0	0.0	0.00	0.00	0.00	25.1
2	T1	All MCs	444	3.1	444	3.1	0.231	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	59.9
Approach			445	3.1	445	3.1	0.231	0.1	NA	0.0	0.0	0.00	0.00	0.00	59.8
North: Mount Low Parkway															
8	T1	All MCs	806	2.6	806	2.6	0.417	0.0	LOS A	0.0	0.1	0.00	0.00	0.00	60.0
9	R2	All MCs	1	0.0	1	0.0	0.417	5.6	LOS A	0.0	0.1	0.00	0.00	0.00	37.3
Approach			807	2.5	807	2.5	0.417	0.0	NA	0.0	0.1	0.00	0.00	0.00	59.9
West: Access															
10	L2	All MCs	1	0.0	1	0.0	0.009	6.5	LOS A	0.0	0.2	0.68	0.74	0.68	41.4
12	R2	All MCs	2	0.0	2	0.0	0.009	16.1	LOS C	0.0	0.2	0.68	0.74	0.68	35.6
Approach			3	0.0	3	0.0	0.009	12.9	LOS B	0.0	0.2	0.68	0.74	0.68	37.8
All Vehicles			1256	2.7	1256	2.7	0.417	0.1	NA	0.0	0.2	0.00	0.00	0.00	59.8

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

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

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

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

Two-Way Sign Control Capacity Model: SIDRA Standard.

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

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

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

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

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

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MOVEMENT SUMMARY

Site: 101 [2025 PM Background (Site Folder: General)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

New Site

Site Category: Base Year

Give-Way (Two-Way)

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand Flows		Arrival Flows		Deg. Satn	Aver. Delay	Level of Service	95% Back Of Queue		Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed
			[Total HV] veh/h	%	[Total HV] veh/h	%				[Veh.] veh	[Dist] m				
South: Mount Low Parkway															
1	L2	All MCs	2	0.0	2	0.0	0.542	5.6	LOS A	0.0	0.0	0.00	0.00	0.00	25.0
2	T1	All MCs	1044	3.1	1044	3.1	0.542	0.1	LOS A	0.0	0.0	0.00	0.00	0.00	59.5
Approach			1046	3.1	1046	3.1	0.542	0.2	NA	0.0	0.0	0.00	0.00	0.00	59.4
North: Mount Low Parkway															
8	T1	All MCs	515	2.6	515	2.6	0.268	0.0	LOS A	0.0	0.3	0.01	0.01	0.01	59.9
9	R2	All MCs	1	0.0	1	0.0	0.268	8.5	LOS A	0.0	0.3	0.01	0.01	0.01	37.3
Approach			516	2.5	516	2.5	0.268	0.0	NA	0.0	0.3	0.01	0.01	0.01	59.9
West: Access															
10	L2	All MCs	1	0.0	1	0.0	0.011	12.7	LOS B	0.0	0.2	0.86	0.93	0.86	35.8
12	R2	All MCs	1	0.0	1	0.0	0.011	28.6	LOS D	0.0	0.2	0.86	0.93	0.86	29.7
Approach			2	0.0	2	0.0	0.011	20.6	LOS C	0.0	0.2	0.86	0.93	0.86	33.1
All Vehicles			1564	2.9	1564	2.9	0.542	0.1	NA	0.0	0.3	0.00	0.00	0.00	59.5

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

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

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

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

Two-Way Sign Control Capacity Model: SIDRA Standard.

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

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

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

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

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

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MOVEMENT SUMMARY

Site: 101 [2035 AM Background (Site Folder: General)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

New Site

Site Category: Base Year

Give-Way (Two-Way)

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand Flows		Arrival Flows		Deg. Satn	Aver. Delay	Level of Service	95% Back Of Queue		Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed
			[Total HV] veh/h	%	[Total HV] veh/h	%				[Veh.] veh	[Dist] m				
South: Mount Low Parkway															
1	L2	All MCs	1	0.0	1	0.0	0.253	5.6	LOS A	0.0	0.0	0.00	0.00	0.00	25.1
2	T1	All MCs	488	3.1	488	3.1	0.253	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	59.8
Approach			489	3.1	489	3.1	0.253	0.1	NA	0.0	0.0	0.00	0.00	0.00	59.8
North: Mount Low Parkway															
8	T1	All MCs	887	2.6	887	2.6	0.459	0.0	LOS A	0.0	0.1	0.00	0.00	0.00	60.0
9	R2	All MCs	1	0.0	1	0.0	0.459	5.6	LOS A	0.0	0.1	0.00	0.00	0.00	37.3
Approach			888	2.5	888	2.5	0.459	0.0	NA	0.0	0.1	0.00	0.00	0.00	59.9
West: Access															
10	L2	All MCs	1	0.0	1	0.0	0.011	6.7	LOS A	0.0	0.2	0.74	0.79	0.74	39.4
12	R2	All MCs	2	0.0	2	0.0	0.011	19.7	LOS C	0.0	0.2	0.74	0.79	0.74	33.4
Approach			3	0.0	3	0.0	0.011	15.4	LOS C	0.0	0.2	0.74	0.79	0.74	35.8
All Vehicles			1381	2.7	1381	2.7	0.459	0.1	NA	0.0	0.2	0.00	0.00	0.00	59.8

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

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

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

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

Two-Way Sign Control Capacity Model: SIDRA Standard.

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

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

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

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

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

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MOVEMENT SUMMARY

Site: 101 [2035 PM Background (Site Folder: General)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

New Site

Site Category: Base Year

Give-Way (Two-Way)

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand Flows		Arrival Flows		Deg. Satn	Aver. Delay	Level of Service	95% Back Of Queue		Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed
			[Total HV]	[Total HV]	[Total HV]	[Total HV]	v/c	sec		[Veh.]	[Dist]				km/h
			veh/h	%	veh/h	%				veh	m				
South: Mount Low Parkway															
1	L2	All MCs	2	0.0	2	0.0	0.596	5.7	LOS A	0.0	0.0	0.00	0.00	0.00	24.9
2	T1	All MCs	1148	3.1	1148	3.1	0.596	0.2	LOS A	0.0	0.0	0.00	0.00	0.00	59.4
Approach			1151	3.1	1151	3.1	0.596	0.2	NA	0.0	0.0	0.00	0.00	0.00	59.3
North: Mount Low Parkway															
8	T1	All MCs	566	2.6	566	2.6	0.296	0.0	LOS A	0.1	0.4	0.01	0.01	0.01	59.9
9	R2	All MCs	1	0.0	1	0.0	0.296	10.2	LOS B	0.1	0.4	0.01	0.01	0.01	37.2
Approach			567	2.5	567	2.5	0.296	0.1	NA	0.1	0.4	0.01	0.01	0.01	59.9
West: Access															
10	L2	All MCs	1	0.0	1	0.0	0.016	15.4	LOS C	0.0	0.3	0.90	0.96	0.90	31.7
12	R2	All MCs	1	0.0	1	0.0	0.016	41.2	LOS E	0.0	0.3	0.90	0.96	0.90	25.5
Approach			2	0.0	2	0.0	0.016	28.3	LOS D	0.0	0.3	0.90	0.96	0.90	28.9
All Vehicles			1720	2.9	1720	2.9	0.596	0.2	NA	0.1	0.4	0.00	0.00	0.00	59.5

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

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

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

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

Two-Way Sign Control Capacity Model: SIDRA Standard.

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

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

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

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

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

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MOVEMENT SUMMARY

Site: 101 [2025 AM Background + Devt (Site Folder: General)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

New Site
 Site Category: Base Year
 Give-Way (Two-Way)

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand Flows		Arrival Flows		Deg. Satn	Aver. Delay	Level of Service	95% Back Of Queue		Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed
			[Total HV]	%	[Total HV]	%	v/c	sec		[Veh.]	[Dist]				km/h
			veh/h		veh/h					veh	m				
South: Mount Low Parkway															
1	L2	All MCs	3	0.0	3	0.0	0.232	5.6	LOS A	0.0	0.0	0.00	0.00	0.00	25.1
2	T1	All MCs	444	3.1	444	3.1	0.232	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	59.8
Approach			447	3.1	447	3.1	0.232	0.1	NA	0.0	0.0	0.00	0.00	0.00	59.5
North: Mount Low Parkway															
8	T1	All MCs	806	2.6	806	2.6	0.417	0.0	LOS A	0.0	0.1	0.00	0.00	0.00	60.0
9	R2	All MCs	1	0.0	1	0.0	0.417	5.6	LOS A	0.0	0.1	0.00	0.00	0.00	37.3
Approach			807	2.5	807	2.5	0.417	0.0	NA	0.0	0.1	0.00	0.00	0.00	59.9
West: Access															
10	L2	All MCs	1	0.0	1	0.0	0.039	6.5	LOS A	0.1	0.8	0.83	0.93	0.83	31.9
12	R2	All MCs	4	50.0	4	50.0	0.039	33.1	LOS D	0.1	0.8	0.83	0.93	0.83	24.4
Approach			5	40.0	5	40.0	0.039	27.8	LOS D	0.1	0.8	0.83	0.93	0.83	26.0
All Vehicles			1260	2.9	1260	2.9	0.417	0.1	NA	0.1	0.8	0.00	0.01	0.00	59.6

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

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MOVEMENT SUMMARY

Site: 101 [2025 PM Background + Devt (Site Folder: General)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

New Site
 Site Category: Base Year
 Give-Way (Two-Way)

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand Flows		Arrival Flows		Deg. Satn	Aver. Delay	Level of Service	95% Back Of Queue		Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed
			[Total HV]	%	[Total HV]	%	v/c	sec		[Veh. veh	Dist] m				km/h
South: Mount Low Parkway															
1	L2	All MCs	4	50.0	4	50.0	0.544	6.2	LOS A	0.0	0.0	0.00	0.00	0.00	24.4
2	T1	All MCs	1044	3.1	1044	3.1	0.544	0.2	LOS A	0.0	0.0	0.00	0.00	0.00	59.5
Approach			1048	3.3	1048	3.3	0.544	0.2	NA	0.0	0.0	0.00	0.00	0.00	59.3
North: Mount Low Parkway															
8	T1	All MCs	515	2.6	515	2.6	0.268	0.0	LOS A	0.0	0.3	0.01	0.01	0.01	59.9
9	R2	All MCs	1	0.0	1	0.0	0.268	8.6	LOS A	0.0	0.3	0.01	0.01	0.01	37.3
Approach			516	2.5	516	2.5	0.268	0.0	NA	0.0	0.3	0.01	0.01	0.01	59.9
West: Access															
10	L2	All MCs	1	0.0	1	0.0	0.027	12.8	LOS B	0.1	0.5	0.88	0.95	0.88	33.3
12	R2	All MCs	3	0.0	3	0.0	0.027	29.0	LOS D	0.1	0.5	0.88	0.95	0.88	27.1
Approach			4	0.0	4	0.0	0.027	25.0	LOS C	0.1	0.5	0.88	0.95	0.88	28.9
All Vehicles			1568	3.0	1568	3.0	0.544	0.2	NA	0.1	0.5	0.00	0.01	0.00	59.4

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

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MOVEMENT SUMMARY

Site: 101 [2035 AM Background + Devt (Site Folder: General)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

New Site

Site Category: Base Year

Give-Way (Two-Way)

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand Flows		Arrival Flows		Deg. Satn	Aver. Delay	Level of Service	95% Back Of Queue		Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed
			[Total HV] veh/h	%	[Total HV] veh/h	%				[Veh.] veh	[Dist] m				
South: Mount Low Parkway															
1	L2	All MCs	3	0.0	3	0.0	0.255	5.6	LOS A	0.0	0.0	0.00	0.00	0.00	25.1
2	T1	All MCs	488	3.1	488	3.1	0.255	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	59.8
Approach			492	3.1	492	3.1	0.255	0.1	NA	0.0	0.0	0.00	0.00	0.00	59.6
North: Mount Low Parkway															
8	T1	All MCs	887	2.6	887	2.6	0.459	0.0	LOS A	0.0	0.1	0.00	0.00	0.00	60.0
9	R2	All MCs	1	0.0	1	0.0	0.459	5.6	LOS A	0.0	0.1	0.00	0.00	0.00	37.3
Approach			888	2.5	888	2.5	0.459	0.0	NA	0.0	0.1	0.00	0.00	0.00	59.9
West: Access															
10	L2	All MCs	1	0.0	1	0.0	0.056	6.7	LOS A	0.1	1.1	0.87	0.95	0.87	27.5
12	R2	All MCs	4	50.0	4	50.0	0.056	46.0	LOS E	0.1	1.1	0.87	0.95	0.87	20.6
Approach			5	40.0	5	40.0	0.056	38.1	LOS E	0.1	1.1	0.87	0.95	0.87	22.1
All Vehicles			1385	2.9	1385	2.9	0.459	0.2	NA	0.1	1.1	0.00	0.01	0.00	59.6

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

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

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

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

Two-Way Sign Control Capacity Model: SIDRA Standard.

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

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

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

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

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

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MOVEMENT SUMMARY

Site: 101 [2035 PM Background + Devt (Site Folder: General)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

New Site

Site Category: Base Year

Give-Way (Two-Way)

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand Flows		Arrival Flows		Deg. Satn	Aver. Delay	Level of Service	95% Back Of Queue		Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed
			[Total HV] veh/h	%	[Total HV] veh/h	%				[Veh.] veh	[Dist] m				
South: Mount Low Parkway															
1	L2	All MCs	4	50.0	4	50.0	0.598	6.2	LOS A	0.0	0.0	0.00	0.00	0.00	24.4
2	T1	All MCs	1148	3.1	1148	3.1	0.598	0.2	LOS A	0.0	0.0	0.00	0.00	0.00	59.4
Approach			1153	3.3	1153	3.3	0.598	0.2	NA	0.0	0.0	0.00	0.00	0.00	59.2
North: Mount Low Parkway															
8	T1	All MCs	566	2.6	566	2.6	0.296	0.0	LOS A	0.1	0.4	0.01	0.01	0.01	59.9
9	R2	All MCs	1	0.0	1	0.0	0.296	10.2	LOS B	0.1	0.4	0.01	0.01	0.01	37.2
Approach			567	2.5	567	2.5	0.296	0.1	NA	0.1	0.4	0.01	0.01	0.01	59.9
West: Access															
10	L2	All MCs	1	0.0	1	0.0	0.041	15.6	LOS C	0.1	0.7	0.92	0.97	0.92	28.6
12	R2	All MCs	3	0.0	3	0.0	0.041	41.8	LOS E	0.1	0.7	0.92	0.97	0.92	22.6
Approach			4	0.0	4	0.0	0.041	35.3	LOS E	0.1	0.7	0.92	0.97	0.92	24.3
All Vehicles			1724	3.0	1724	3.0	0.598	0.2	NA	0.1	0.7	0.00	0.01	0.00	59.3

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

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

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

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

Two-Way Sign Control Capacity Model: SIDRA Standard.

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

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

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

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