Traffic Engineering

Proposed Residential Subdivision Development

At Lot 13 Henrey Lawson Drive and Lot 3 Mahers Lane, Terranora

On Behalf of Mahers Lane Development P/L

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Revision Record

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4.				
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1 Introduction

1.1 Background

TTM Consulting (now a 'Colliers' company) has been engaged by Mahers Lane Development P/L to prepare a traffic engineering report investigating a proposed residential subdivision development in Terranora, NSW. It is understood that a Development Application will be lodged with Tweed Shire Council.

1.2 Scope

This report investigates the transport aspects associated with the proposed development. The scope of the traffic aspects investigated includes:

- Identification of likely traffic volumes and traffic distribution from the proposed development
- Identification of likely traffic impact of development on the public road network
- Access configuration and internal road layout to provide efficient and safe manoeuvring within the site and the public road network
- Suitability of access and internal facilities to provide for pedestrian and cyclist operation
- Access to a suitable level of public transport.

To assess the proposed transport arrangements, the development plans have been assessed against the following guidelines and planning documents:

- Tweed Development Control Plan
- Australian Standard 2890
- Austroads Guide to Road Design packages
- Northern Rivers Local Government Development Design and Construction Manual.

1.3 Site Location

The site is located at Lot 13 Henrey Lawson Drive and Lot 3 Mahers Lane in Terranora, NSW. The site location and site area are shown in Figure 1.1 and Figure 1.2. The property description is part Lot 13 on DP1264394 and Lot 3 in DP622318.

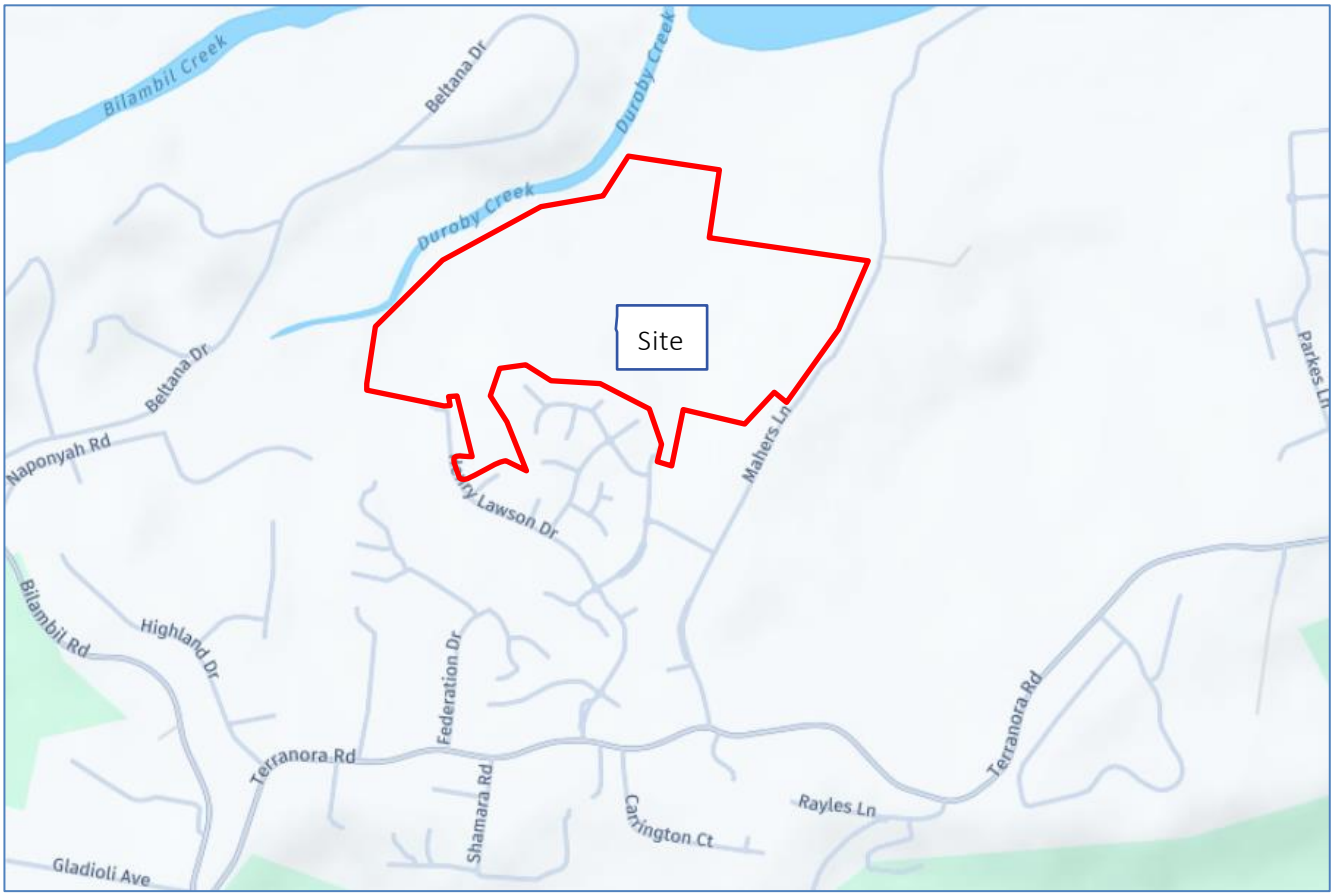


Figure 1.1: Site location

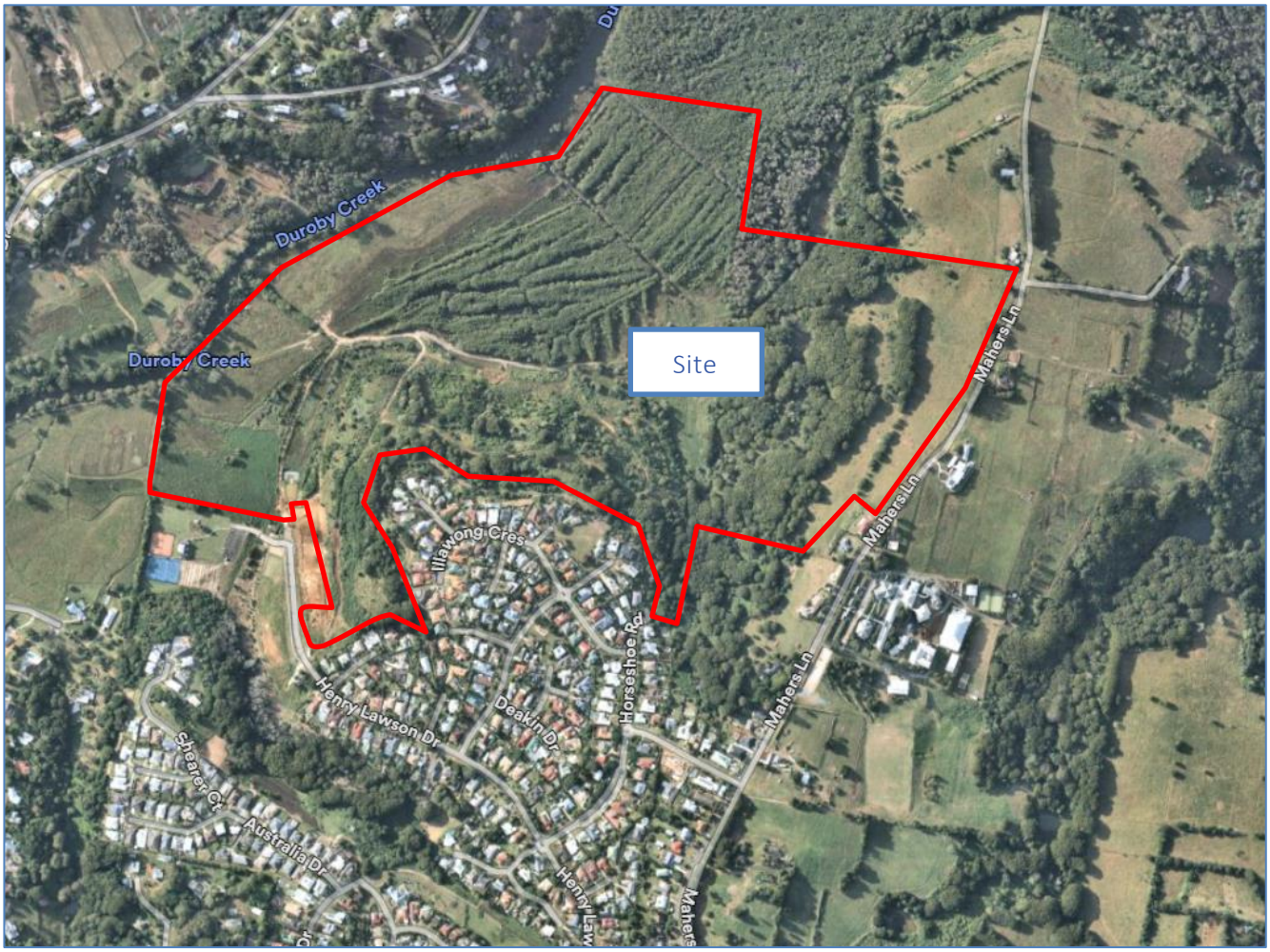


Figure 1.2: Site area

1.4 Development Profile

The proposed residential subdivision consists of 216 residential lots. The development will be undertaken over 4 stages. The proposed land uses and lot numbers in each stage are summarised in Table 1.1.

Table 1.1: Proposed Land Uses

Use	Stages	Area/Qty
Residential	Stage 1	56 lots
	Stage 2	46 lots
	Stage 3	62 lots
	Stage 4	52 lots
	Total	**216 lots**

Among the 216 residential lots, 102 residential lots of Stage 1 and Stage 2 are located in the western side of the development whereas 114 residential lots of Stage 3 and Stage 4 are located in the eastern side of the development. Stage 1-2 and Stage 3-4 are connected via Internal Road named as Road 1. The detailed layout of Subdivision Staging Plan is shown in Appendix A.

1.5 Access

The access to the proposed Stage 1-2 development will be via Henry Lawson Drive. The internal road (named as Road 1) of Stage 1-2 will be connected to the existing end of Henry Lawson Drive without creating additional intersection.

The access to the proposed Stage 3-4 development will be via Mahers Lane. The internal road (named as Road 1) of Stage 3-4 will be connected to the existing Mahers Lane via a priority-controlled intersection.

Stage 1-2 and Stage 3-4 are connected via Road 1. Traffic from/into Stage 3-4 or Stage 1-2 can be accessed to Henry Lawson Drive and Mahers Lane by utilising Road 1.

2 Existing Transport Infrastructure

2.1 The Road Network

The roads in the immediate vicinity of the site are administered by Tweed Shire Council. The hierarchy and characteristics of roads in the immediate vicinity of the site are shown below in Table 2.1.

Table 2.1: Local Road Hierarchy

Road	Speed Limit	Lanes	Classification	Road Authority
Henry Lawson Drive	50kph	2 (undivided)	Neighbourhood Connector	Tweed Shire Council
Mahers Lane	50kph	2 (undivided)	Neighbourhood Connector	Tweed Shire Council
Terranora Road	60kph	2 (undivided)	Sub-arterial	Tweed Shire Council

Henry Lawson Drive and Mahers Lane have approximately 8.5m and 7.5m wide carriageways. At the proposed site access, the section of Mahers Lane currently has a 4m-wide carriageway. Both Henry Lawson Drive and Mahers Lane are currently no through roads.

The adjacent major intersections of the proposed development are Terranora Road/Henry Lawson Drive Intersection and Terranora Road/Mahers Lane Intersection. Both intersections are priority-controlled intersections.

2.2 Road Planning

In the Tweed Shire Council's "Area E" development at Terranora, several road upgrades are planned to accommodate anticipated growth and support accessibility. Key among these is the construction of the Broadwater Parkway, which is essential for connecting new development areas. The proposed Broadwater Parkway will link Fraser Drive and Mahers Lane with other critical local routes, serving as a central transportation corridor within Area E. The traffic generated from the full development of Area E will utilise two main access points namely, Mahers Lane and Fraser Drive. Additional road infrastructure plans include upgrades along Terranora Road and Mahers Lane to manage increased traffic volumes. These upgrades are part of a broader strategic effort to enhance overall road capacity in Tweed, particularly to mitigate traffic impacts from the new residential and mixed-use developments in the area. The council has also incorporated a Contribution Plan, through which developers contribute to funding road enhancements and other infrastructure essential for sustainable urban growth in Terranora.

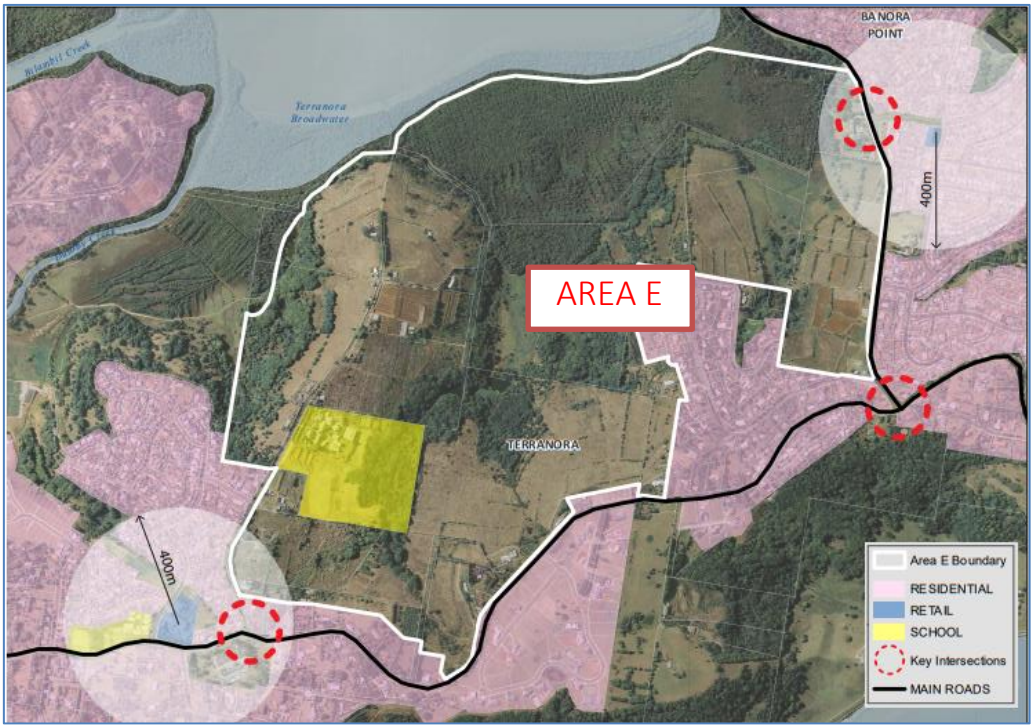


Figure 2.1: Planned 'Area E Development' in Terranora (snippet from Tweed shire Council's Area E Urban Release Development Code- Supplementary Site Analysis)

Figure 2.2: Planned future link of Mahers lane and Broadwater Parkway (snippet from Tweed shire Council's Area E Urban Release Development Code- Supplementary Site Analysis)

2.3 Public Transport and Active Transport Facilities

Buses

North Coast Network Bus Service 605 Line travels between Tweed Heads and Murwillumbah. This bus service runs along Terranora Road. The inbound and outbound bus stops are located eastern and western side of Terranora Road/Henry Lawson Drive Intersection. This bus runs with a frequency of 2 hours on weekends and weekdays.

Pedestrians

Formal pedestrian footpaths are located on Mahers Lane and Henry Lawson Drive. Both roads have footpaths on one side from their intersections with Terranora Road to the north.

Cyclists

No dedicated on-street and off-street cycleway is available on Mahers Lane and Henry Lawson Drive. Cyclists currently share the carriageway on Mahers Lane and Henry Lawson Drive with the motorists.

3 Existing Traffic Volumes

3.1 Peak Hour Traffic

TTM conducted peak-hour traffic surveys at the priority-controlled Mahers Lane/Terranora Road Intersection and Henry Lawson Drive/Terranora Road Intersection. The survey took place at Mahers Lane/Terranora Road Intersection on Thursday, August 8, 2024, and at Henry Lawson Drive/Terranora Road Intersection on Thursday, April 7, 2022. The hours covered by the traffic surveys are 7am-9am and 4-6pm. The graphical representation of the AM and PM peak-hour traffic volume for the two intersections is illustrated in Figure 3.1 to Figure 3.4.

AM and PM peak hours of Mahers Lane/Terranora Road Intersection are found to be 7:30am-8:30am and 4pm-5pm while AM and PM peak hours of Henry Lawson Drive /Terranora Road Intersection are found to be 7:45am-8:45am and 4pm-5pm.

As these two intersections are located nearby and accommodate traffic of similar development (e.g., residential), the peak hours found from the latest traffic survey at Mahers Lane/Terranora Road Intersection are considered as peak hours for both intersections for intersection assessment.

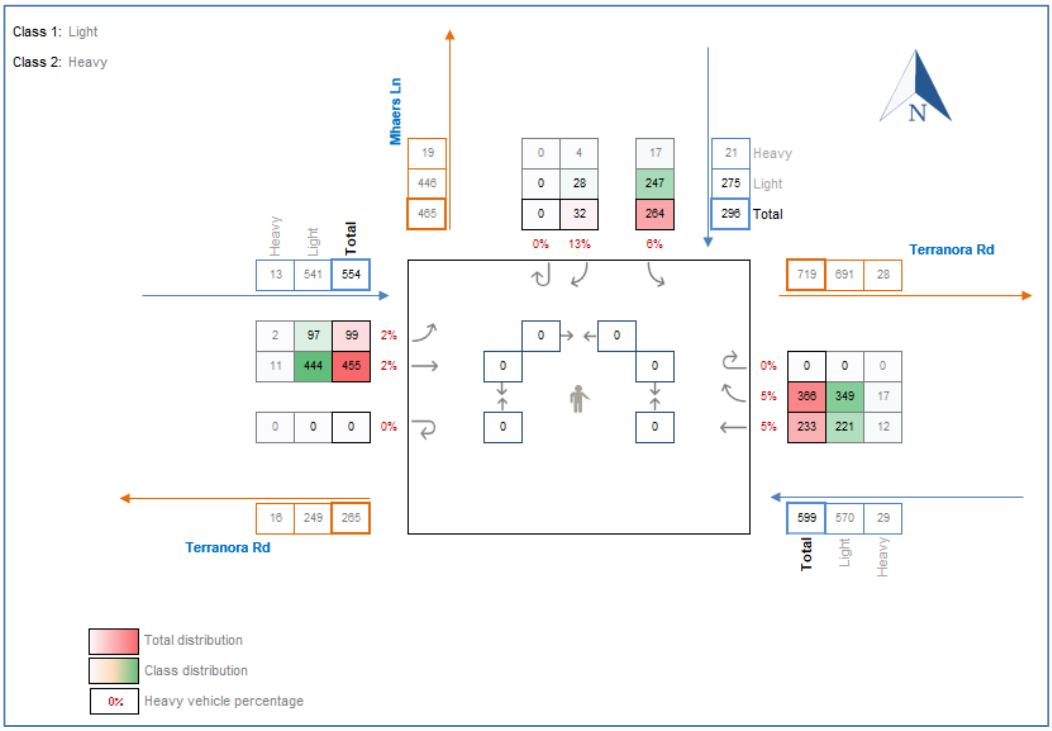


Figure 3.1: AM peak hour traffic volume at Mahers Lane/Terranora Road Intersection

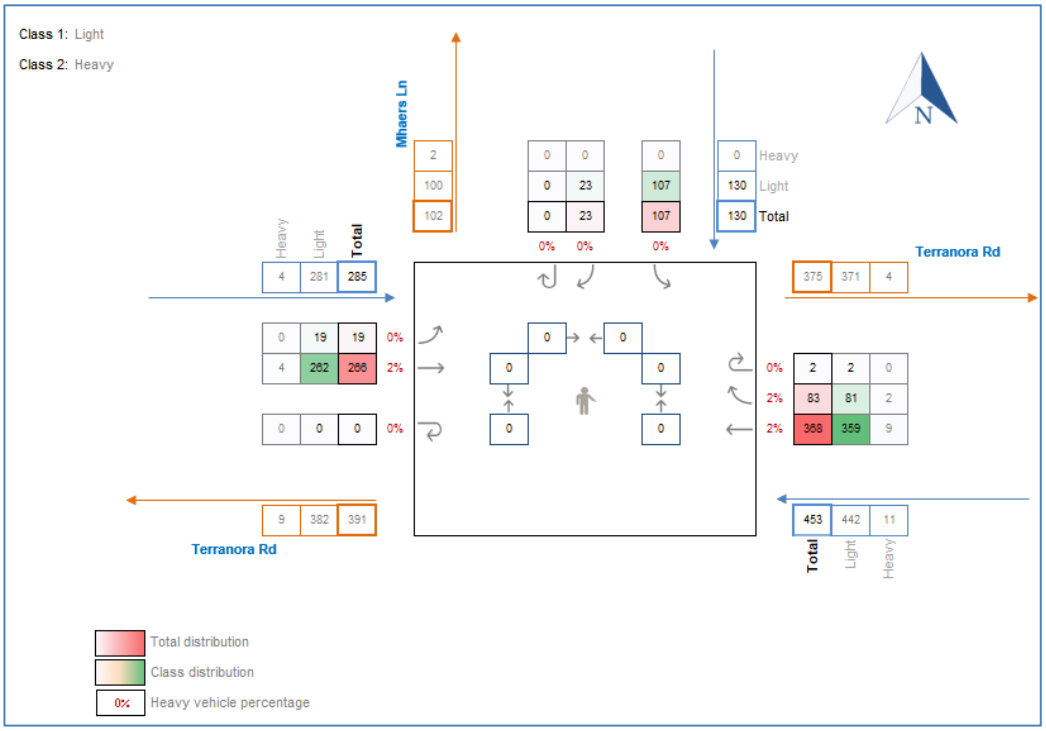


Figure 3.2: PM peak hour traffic volume at Mahers Lane/Terranora Road Intersection

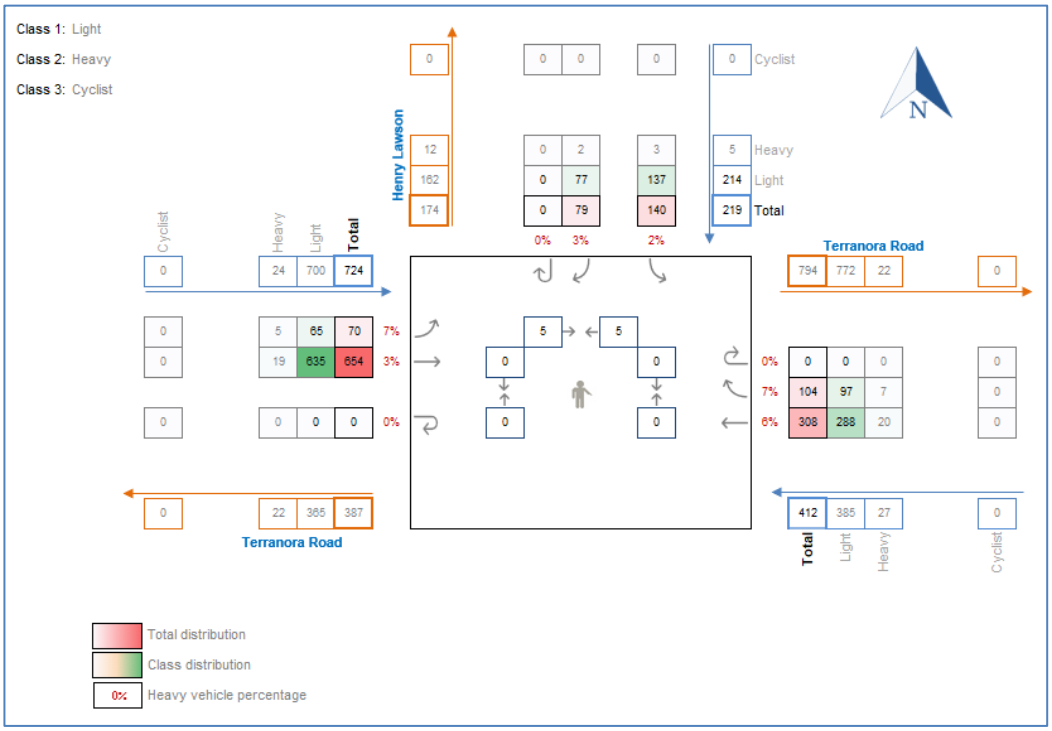


Figure 3.3: AM peak hour traffic volume at Henry Lawson Drive/ Terranora Road Intersection

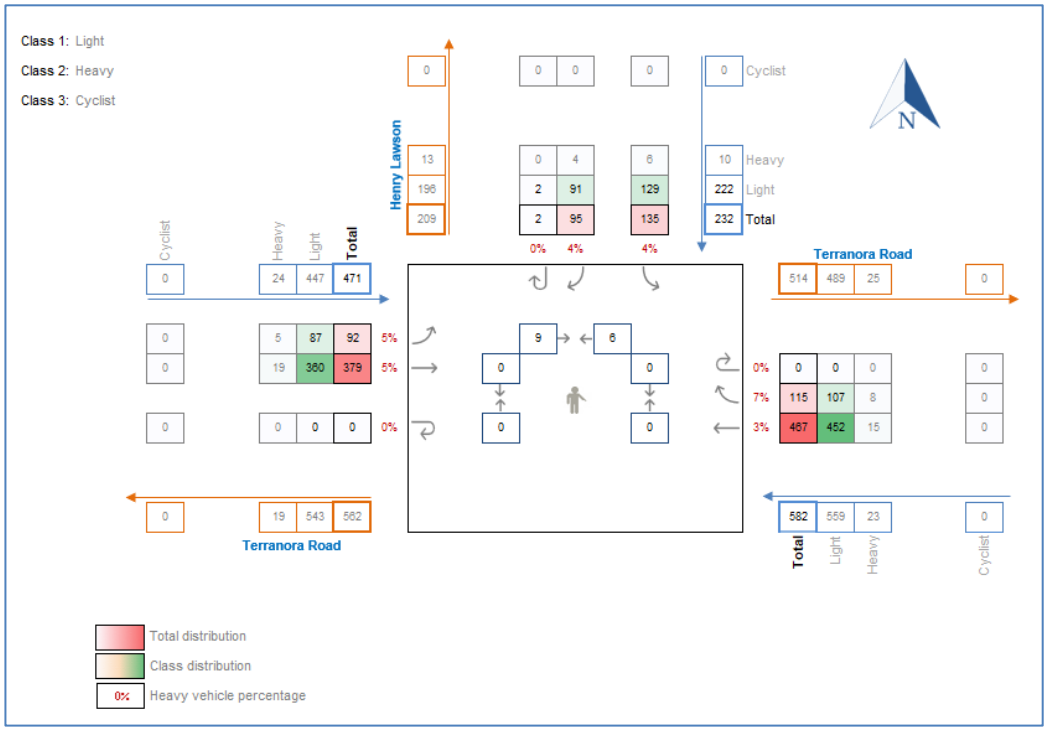


Figure 3.4: PM peak hour traffic volume at Henry Lawson Drive/ Terranora Road Intersection

4 Estimated Future Transport Demands

4.1 Estimated Development Traffic Generation

TfNSW's Guide to Traffic Generating Developments (2002) recommends using specific generation rates for planning purposes for different development types. Application of these rates to the proposed development results in the estimation of development site traffic generation, as shown in Table 4.1.

Table 4.1: Proposed Development Peak Hour Trip Generation Rates and Generated Trips

Land Use	TfNSW Peak Hour Trip Rate	Extent (Qty/Area)	AM Trip Generation	PM Trip Generation
Low-density residential	0.71 per dwelling in AM peak hour 0.78 per dwelling in PM peak hour	216	154 trips	169 trips
Total			**154 trips in AM peak**	**169 trips in PM peak**

A stage-wise trip generation is also estimated, as shown in Table 4.2.

Table 4.2: Proposed Stage-Wise Development Peak Hour Trip Generation Rates and Generated Trips

Land Use	TfNSW Peak Hour Trip Rate	Extent (Qty/Area)	AM Trip Generation	PM Trip Generation
Stage- 1 Low-density residential	0.71 per dwelling in AM peak hour 0.78 per dwelling in PM peak hour	56	40 trips	44 trips
Stage- 2 Low-density residential		46	33 trips	36 trips
Stage- 3 Low-density residential		62	44 trips	48 trips
Stage- 4 Low-density residential		52	37 trips	41 trips
Total			**154 trips in AM peak**	**169 trips in PM peak**

4.2 Estimated Development Traffic Distribution

The generated traffic from/into the proposed development will be distributed into the surrounding road network. The following assumptions are adopted to estimate the generated traffic distribution.

- During Stage 1-2, all generated traffic from the western part of the development will utilise Henry Lawson Drive access to reach Terranora Road and wider external road network.
- During Stage 3-4, all generated traffic from the eastern part of the development will utilise Mahers Lane access to reach Terranora Road and wider external road network.

- During opening year of Stage 3 development, Road 1 is connected between eastern and western parts of the development. An assumption of 50% trips from Stage 2 development will utilise Mahers Lane access to reach Terranora Road and wider external road network. This assumption is based on the proximity of Mahers lane access and less traffic volume and existing intersections available along Mahers Lane to Terranora Road compared to the route of Henry Lawson Drive to Terranora Road.
- In/out splits for the residential units are likely to be 20%/80% in the AM peak hour and 70%/30% in the PM peak hour.
- The generated trips from the proposed development onto Terranora Road will be further distributed into 75% to the eastern side and 25% to the western side. This assumption is based on the average percentage of peak hour traffic distribution on eastern and western side of Terranora Road, as apparent from the traffic survey at Mahers Lane/Terranora Road Intersection and Henry Lawson Drive/Terranora Road Intersection. This is also supported by the demographic and the existing developments in the eastern and western side of Terranora Road.

A summary of the trip distribution associated with the proposed developments during peak hours is presented in Table 4.3.

Table 4.3: Proposed Development Peak Hour Trip Distribution

Land Use	Trip Generation			
	AM Peak		PM Peak	
	IN	OUT	IN	OUT
Residential – Western side (Stage 1 & 2 – 102 lots)	15vph	58vph	56vph	24vph
Residential – Eastern side (Stage 3 & 4 - 114 lots)	16vph	65vph	62vph	27vph
	31vph	**123vph**	**118vph**	**51vph**

A summary of the trip distribution into the site access during peak hours of opening year of Stage 2 and Stage 4 are presented in Table 4.4.

Table 4.4: Proposed Development Peak Hour Trip Distribution into the Accesses

Stages	Access	Trip Generation			
		AM Peak		PM Peak	
		IN	OUT	IN	OUT
Stage 1&2	Henry Lawson Drive Access	15vph	58vph	56vph	24vph
	Mahers Lane Access	-	-	-	-
Total		**15vph**	**58vph**	**56vph**	**24vph**
Stage 3&4	Henry Lawson Drive Access	11vph	45vph	43vph	18vph
	Mahers Lane Access	20vph	78vph	75vph	33vph
Total		**31vph**	**123vph**	**118vph**	**51vph**

Estimation of development's generated trips into the approaches the adjacent intersections during peak hours of opening year of Stage 2 and Stage 4 are presented in Table 4.5.

Table 4.5: Development's Generated Trips into the Approaches of the Adjacent Intersection

Stages	Intersection	Generated trips into intersection approaches							
		AM Peak				PM Peak			
		IN		OUT		IN		OUT	
		West	East	West	East	West	East	West	East
Stage 1 & 2	Henry Lawson Drive/Terranora Road Intersection	4vph	11vph	14vph	44vph	14vph	42vph	6vph	18vph
Total		**15vph**		**58vph**		**56vph**		**24vph**	
Stage 3 & 4	Henry Lawson Drive/Terranora Road Intersection	3vph	8vph	11vph	34vph	11vph	32vph	4vph	14vph
	Mahers Lane/Terranora Road Intersection	5vph	15vph	20vph	58vph	19vph	56vph	8vph	25vph
Total		**31vph**		**123vph**		**118vph**		**51vph**	

5 Traffic Impact Assessment

5.1 Impact on the Existing Road Network

The impact of the proposed development relates to the extent of new trips on the network adjacent to the site.

5.1.1 Development Scenarios

TTM has identified four assessment periods for analysis of the impact of the developments on the surrounding road network (i.e., to the nearest intersections) during AM and PM peak hours as follows:

Base Year (2024) Traffic Scenario

The Base case scenario includes traffic volumes at the end of 2024, modelled over the existing road network without development.

Stage 2 Opening Year (2026) Traffic Scenario

It is expected that Stage 2 will be completed within 2 years from the base year of 2024. Therefore, it is considered that Stage 1-2 will be fully in operation at the end of 2026. A growth rate of 1.4% is considered to project the background traffic volume of 2024 into the traffic volume of 2026. According to the Tweed Growth Management and Housing Strategy, the projected rate of population annual growth in Tweed Shire area is 1.4% during 2021-2041. TTM has adopted a 1.4% per annum background traffic growth rate, as this aligns with the population growth rate of the greater Tweed Shire area.

Stage 4 Opening Year (2028) Traffic Scenario

It is expected that Stage 4 will be completed within 4 years from the base year at the end of 2024. Therefore, it is considered that the proposed development will be fully in operation in 2028. A growth rate of 1.4% is considered to project the background traffic volume of 2024 into the traffic volume of 2028.

5- Year Design Horizon (2033) Traffic Scenario

This analysis incorporates a conservative 1.4% per annum increase in the background traffic volume for a period of 5 years past the opening year of Stage 4 of the proposed development.

10-Year Design Horizon (2038) Traffic Scenario

This analysis incorporates a conservative 1.4% per annum increase in the background traffic volume for a period of 10 years past the opening year of Stage 4 of the proposed development.

5.1.2 Intersection Analysis

The SIDRA Intersection 9.0 software package was utilised to evaluate the future traffic operations at the surrounding road intersections as part of this traffic impact assessment. Key operational outputs used in the assessment included intersection Degree of Saturation (DOS), intersection delays, Level of Service (LOS), and

95th percentile queuing. The recommended DOS threshold is 0.8 for priority-controlled intersections. The minimum LOS should be either LOS D or LOS E. Intersection approach lengths should be designed to accommodate the 95th percentile queue length.

The generated traffic from/into the proposed development will travel via Mahers Lane and Henry Lawson Drive, traffic analysis at the following two intersections is conducted to assess the impacts of the proposed development on the existing road network.

- Mahers Lane/Terranora Road Intersection (priority-controlled)
- Henry Lawson Drive/Terranora Road Intersection (priority-controlled).

Mahers Lane/ Terranora Road Intersection is a three-legged priority-controlled intersection. Terranora Road has a slip lane on its western approach and a short right turn lane on its eastern approach of this intersection. Similarly, Henry Lawson Drive/ Terranora Road Intersection is a three-legged priority-controlled intersection. Terranora Road has a slip lane on its western approach and a short right turn lane on its eastern approach of this intersection. Figure 5.1 and Figure 5.2 illustrate the configuration of these intersections as adopted in the SIDRA analysis.

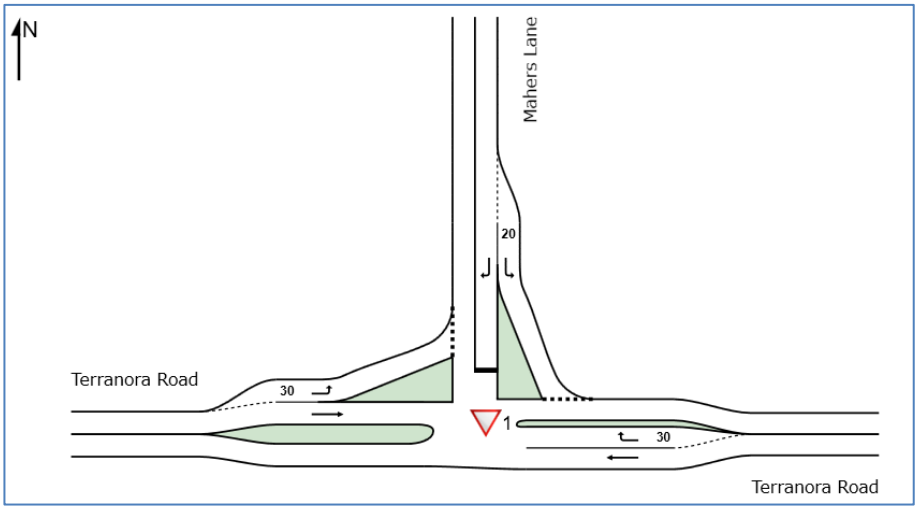


Figure 5.1: Mahers Lane/Terranora Road Intersection – SIDRA Layout

In SIDRA analysis, a 1.4% growth rate for the background traffic has been adopted to project future traffic volume of the background traffic. The results of the SIDRA analysis for the AM peak and PM peak of the Base case (2024) scenario, Base + Stage 2 Opening Year (2026) scenario, Base + Stage 4 Opening Year (2028) scenario and 10-Year Design Horizon (2038) scenario are summarised in Table 5.1 and Table 5.2. Detailed SIDRA output data is also included in Appendix B.

Table 5.1: Mahers Lane/ Terranora Road Intersection – SIDRA Results Summary

Scenario	DOS	Average Delay (Sec)		LOS	95th Percentile Queue (m)		
		Overall	Worst Movement		East	North	West
Existing condition (2024) - AM	0.362	4.7	32.8 (North- R)	A	15.4	9.6	2.6
Without development (2026) -AM	0.378	4.8	35 (North- R)	A	16.5	10.2	2.7
Stage 2 Opening Year (2026) -AM	0.400	5	39.8 (North-R)	A	17.9	11.1	2.7
Without development (2028) -AM	0.397	5	37.8 (North- R)	A	17.9	11.1	2.8
Stage 4 Opening Year (2028) -AM	0.45	6	46.6 (North-R)	A	20.4	12.2	3
Without development (2033) -AM	0.445	5.5	46.9 (North-R)	A	21.6	13.3	3.1
5-year design horizon (2033) -AM	0.587	6.9	63.3 (North-R)	B	24.7	19.1	3.3
Without development (2038) -AM	0.498	6.2	60.1 (North-R)	A	25.9	15.7	3.4
10-year design horizon (2038) -AM	0.769	8.6	99 (North-R)	B	29.8	23.9	3.7
Existing condition (2024) - PM	0.205	1.9	15.5 (North-R)	A	2.1	2.5	0.4
Without development (2026) -PM	0.211	1.9	15.9 (North-R)	A	2.1	2.6	0.4
Stage 2 Opening Year (2026) -PM	0.236	1.8	17.3 (North-R)	A	2.1	2.6	0.4
Without development (2028) -PM	0.217	1.9	16.4 (North-R)	A	2.2	2.7	0.4
Stage 4 Opening Year (2028) -PM	0.237	2.4	19.2 (North-R)	A	3.7	3.3	0.8
Without development (2033) -PM	0.232	2	17.7 (North-R)	A	2.4	2.9	0.4
5-year design horizon (2033) -PM	0.254	2.5	21.2 (North-R)	A	4	3.7	0.9
Without development (2038) -AM	0.248	2	19.1 (North-R)	A	2.6	3.2	0.4
10-year design horizon (2038) -PM	0.271	2.6	23.5 (North-R)	A	4.4	4.1	0.9

*R=Right Turn Movement

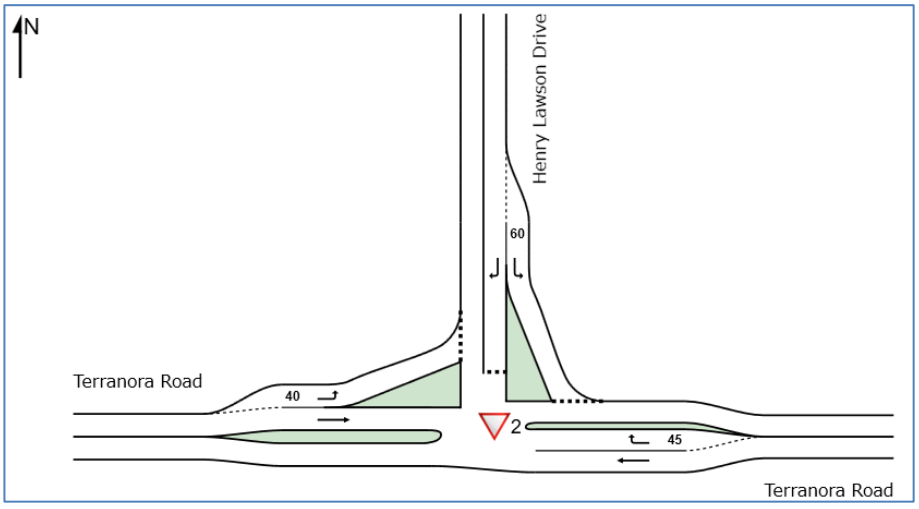


Figure 5.2: Henry Lawson Drive/Terranora Road Intersection – SIDRA Layout

Table 5.2: Henry Lawson Drive/ Terranora Road Intersection – SIDRA Results Summary

Scenario	DOS	Average Delay (Sec)		LOS	95th Percentile Queue (m)		
		Overall	Worst Movement		East	North	West
Existing condition (2024) - AM	0.442	3.7	29.8 (North- R)	B	4.5	12.3	1.4
Without development (2026) -AM	0.487	3.9	33.1 (North- R)	B	4.7	13.7	1.6
Stage 2 Opening Year (2026) -AM	0.58	4.7	37.2 (North- R)	B	5.1	17.3	1.7
Without development (2028) -AM	0.536	4.2	37.1 (North- R)	B	5	16.3	1.7
Stage 4 Opening Year (2028) -AM	0.645	5	44.8 (North-R)	B	5.4	19.7	1.7
Without development (2033) -AM	0.698	5.4	54.5 (North-R)	B	5.8	21.6	1.8
5-year design horizon (2033) -AM	0.845	7.4	79.1 (North-R)	C	6.4	32	1.9
Without development (2038) -AM	0.914	8.6	107.6 (North-R)	D	7.1	39	1.9
10-year design horizon (2038) -AM	1.116	16	214.7(North-R)	F	7.8	96.7	2
Existing condition (2024) - PM	0.428	3.6	24 (North-R)	A	3.5	12.8	2.1
Without development (2026) -PM	0.461	3.7	25.8 (North-R)	A	3.7	13.9	2.1
Stage 2 Opening Year (2026) -PM	0527	4.3	29.5 (North-R)	B	4.9	16.4	2.5
Without development (2028) -PM	0.501	3.9	28.2 (North-R)	B	3.9	15.4	2.2
Stage 4 Opening Year (2028) -PM	0.582	4.5	33.9 (North-R)	B	4.9	18.4	2.5
Without development (2033) -PM	0.626	4.6	37.2 (North-R)	B	4.3	20.4	2.4
5-year design horizon (2033) -PM	0.735	5.7	49.1 (North-R)	B	5.5	26	2.7
Without development (2038) -AM	0.784	6.1	56 (North-R)	B	4.8	29.5	2.6
10-year design horizon (2038) -PM	0.931	9.2	95.9 (North-R)	D	6.1	48.3	2.9

*R=Right Turn Movement

The results of the SIDRA analysis for the intersections, as shown in the tables above, compare future performance of the subject intersections for scenarios with and without the proposed development. The key performance criteria are Degree of Saturation (DOS), intersection delays, Level of Service (LOS), and 95th percentile queue length.

Mahers Lane/Terranora Road Intersection will perform well during AM and PM peak hours of future years of development scenarios, both with and without the proposed development The intersection will maintain a DOS less than 0.8, intersection delays of less than 9 seconds, Level of Service B, and sufficient approach lengths to accommodate the 95th percentile queue lengths. Therefore, the proposed development is determined to have no adverse effect on Mahers Lane/Terranora Road Intersection operations compared to existing conditions, and no additional treatments of the intersections are deemed necessary.

Henry Lawson Drive/Terranora Road Intersection will perform well during AM and PM peak hours of the opening year of Stage 2 (2026), the opening year of Stage 4 (2028). The intersection will maintain a DOS less than 0.8, intersection delays of less than 5 seconds, Level of Service B, and sufficient approach lengths to accommodate the 95th percentile queue lengths.

It is evident from the SIDRA analysis results that the Henry Lawson Drive/Terranora Road Intersection will reach its design capacity at 5-year design horizon (2033). This is due to the fact that right-turning vehicles on Henry Lawson Drive will experience an approximate wait time of 79 seconds during the AM peak hour. The intersection is not expected to reach its design capacity by 2033 based on background traffic (without the proposed development). In the 10-year design horizon (2038), the intersection will be over the capacity since DOS will be 1.116 (higher than the recommended threshold of 0.8), right turn delays (from Henrey Lawson Drive) will be 214 seconds and Level of Service will be F.

However, it is important to note that the intersection will reach its capacity by the projected background traffic (without the proposed development) by 2036. In 2038, the intersection will be over the capacity since DOS will be 0.914 and right turn delays will be 107 seconds (from Henrey Lawson Drive) while 95th queue length can be accommodated by the approach length.

Therefore, Henry Lawson Drive/Terranora Road Intersection is required to be upgraded to accommodate the background traffic (without the proposed development) in 2036 and is required to be upgraded to accommodate the traffic from the proposed development with background traffic at 5-design year horizon in 2033. To enhance capacity and improve the level of service, the priority-controlled Henry Lawson Drive/Terranora Road Intersection will need to be upgraded to a single-lane roundabout in 2033. This upgrade will facilitate balanced movements from each approach and significantly reduce delays experienced at the priority-controlled intersection configuration.

5.2 Turn Treatment Warrant

Traffic from the residential lots of the proposed development stage 3-4 will use the priority-controlled Mahers Lane/Road 1 intersection. Warrants for left turn treatment at this intersection have been assessed according to the Austroads Guide to Traffic Management Part 6 to determine the need for turn treatments for right-turning traffic. This assessment is based on trip distribution estimates as outlined in Section 4.2 and existing traffic volumes as detailed in Section 3.1.

Figure 5.3 illustrates the turn treatment warrants for Mahers Lane/Road 1 intersection. It is to be noted that the background traffic of Mahers Lane at the site access is not available, however, it would be very low as there are a few lots are currently occupied. The green dotted lines represent the peak hour traffic volume for left turns from Mahers Lane into Road 1. As it is expected that insignificant number of traffic would be coming from the north of the subject intersection during opening year of Stage 4 of the proposed development, the right turn treatment from Mahers Lane into Road 1 is not required to be assessed. The analysis indicates that a Basic Left (BAL) turn treatment is sufficient for left-turning traffic. Therefore, no additional treatments are required for the arrangement of the Mahers Lane/Road 1 intersection.

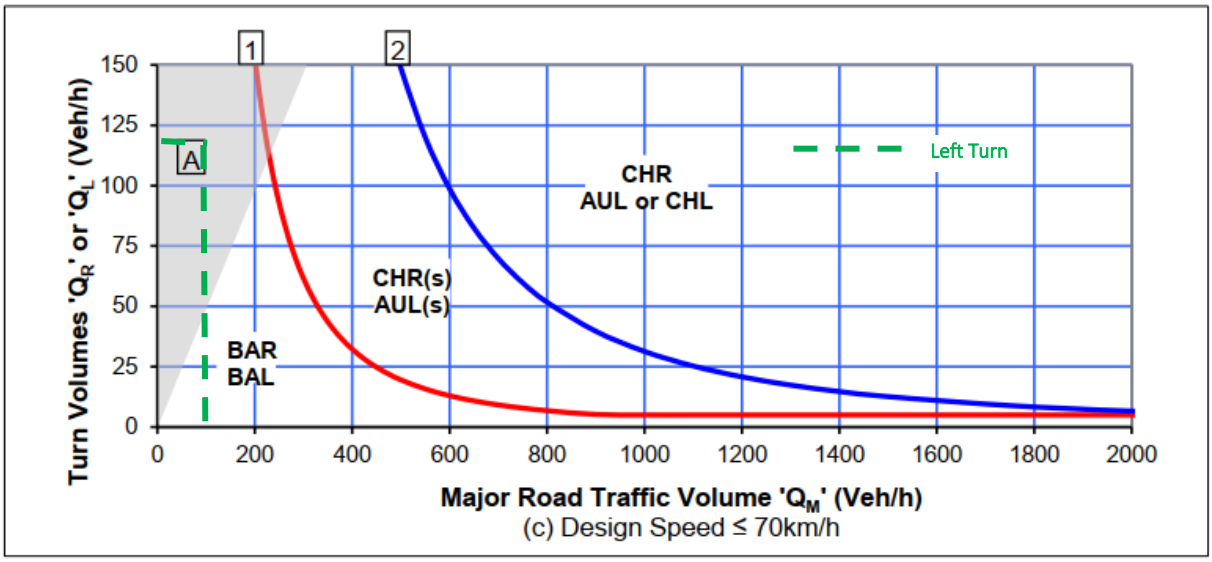


Figure 5.3: Requirement of left turn warrant treatment on Mahers Lane/Road 1 Intersection

5.3 Sight distance check

The sight distance check for the proposed intersection was carried out based on the site visit on 17th October 2024. Stopping sight distance is found to be compliant for Mahers Lane, as shown in Table 5.3.

Table 5.3: Sight Distance Check for Access

Approach Road	Desirable minimum stopping sight distance (design speed 60km/h and reaction time 2 sec)	Available Sight distance	Compliant/Non-compliant
Proposed new road (Road 1) connection on Mahers Lane	73m	>73m	Compliant

It would be expected that upgrade to Mahers Lane would take into account requirements to maintain safe sight distances of all existing accesses at the time.

5.4 Impact on Safety

Road crashes near the proposed site access on Mahers Lane and Henry Lawson Drive have been assessed using crash data from the past ten years (2019-2023) obtained from TfNSW Interactive Crash Statistics. Table 5.4 and Figure 5.4 show that two crashes occurred near the site in 2023.

It can be surmised that no crash has been observed near the proposed site access at Mahers Lane and Henry Lawson Drive. The nearest crash locations to the site are on Terranora Road adjacent to Mahers Lane/Terranora Road Intersection and on Henry Lawson Drive adjacent to Eliza Fraser Court/ Henry Lawson Drive Roundabout. The crashes involved moderate to serious injury due to an off-bend collision with an object and driver's out of control. Although no further detailed information is available in the crash statistics, these crashes likely occurred due to driver inattention rather than issues with road geometry or inadequate traffic safety measures.

Table 5.4: Crash History Adjacent to the Proposed Development

Year	Road	Location	Type of casualty	RUM- code and description	Time of Occurrence
2023	Terranora Road	East of Mahers Lane/Terranora Road Intersection	Moderate injury. Number of injured - 1	RUM Code- 51 Out of control overtake	Daylight
2023	Henry Lawson Drive	South of Eliza Fraser Court/ Henry Lawson Drive Roundabout	Serious injury. Number of injured - 1	RUM Code- 85 Off-Right/Left- bend - object	Daylight

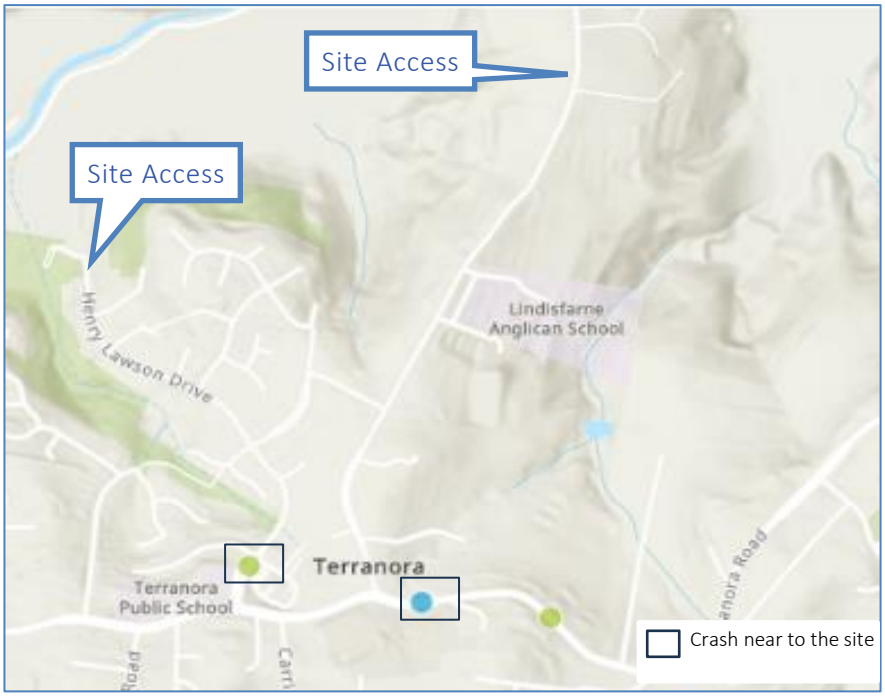


Figure 5.4: Crash history adjacent to the proposed site access to the development

5.5 Consideration of School Traffic

Mahers Lane serves as the primary access route for Lindisfarne Anglican Grammar School, located to the south of the site (refer to Figure 5.4). The school is considered to generate significant traffic volumes on Mahers Lane during peak periods, particularly in the morning (7:30 am–8:30 am) and the afternoon (2:30 pm–3:30 pm).

The afternoon peak traffic generated by the school and the residential development is not expected to overlap significantly, minimising the impact on Mahers Lane during this period. However, the morning peak traffic from the development may coincide with school drop-off activity, potentially causing localised congestion near the school frontage.

The current road infrastructure includes a children's crossing facility, signage, and a school zone speed limit, which enhance safety during peak periods. The localised congestion during the morning is not anticipated to persist for long and can be effectively managed through the school's traffic management plans. These plans

typically outline designated entry and exit routes, parking arrangements, and traffic flow strategies during peak hours.

SIDRA analysis incorporates traffic volumes from both the proposed residential development and the school. The results indicate that while there may be localised impacts near the school, these do not significantly affect the performance of the Mahers Lane/Terranora Road intersection.

5.6 Impact of Construction Traffic

The proposed development will be constructed in stages, progressing sequentially from Stage 1 through Stage 4. The construction commencement timelines are as follows:

- Stage 1: Late 2025 (i.e., December 2025)
- Stage 2: Late 2026 (i.e., December 2026)
- Stage 3: Mid 2027 (i.e., September 2027)
- Stage 4: Early 2028 (i.e., March 2028)

Access to the construction site will vary by stage, with Henry Lawson Drive serving as the primary access point for Stages 1 and 2, and Mahers Lane utilised for Stages 3 and 4. This arrangement will involve short-term shared access with residents, with efforts made to minimise overlap wherever possible. Heavy vehicles transporting construction materials to and from the site, including those required for earthworks, will primarily travel via Terranora Road.

The construction phase of this development will involve various vehicle types, including dump trucks, excavators, loaders, rollers, cranes, concrete mixers, water trucks, material delivery trucks, and workers' utility vehicles. The largest vehicle anticipated during construction will likely be comparable in size to a heavy rigid vehicle (HRV). Different vehicles will be used based on the specific phases of the construction work.

Site access will be facilitated via Henry Lawson Drive and Mahers Lane, with all construction vehicles entering and exiting in forward gear. Vehicles accessing or leaving the site via Mahers Lane will perform left or right turns as appropriate, depending on their direction of travel. This setup ensures minimal disruption to local traffic and safe manoeuvring of construction vehicles. To ensure safety and efficiency, a Traffic Management Plan (TMP) and Traffic Guidance Scheme (TGS) will be implemented to regulate vehicle access and egress throughout the construction period.

5.6.1 Estimated Trip Generation During Construction

The construction of the proposed development is expected to generate varying levels of truck movements across its four stages, reflecting the differing durations and activities:

- Stage 1:
  - Duration: 40 weeks
  - Estimated Truck Movements: 80 trucks per day
  - During operational hours (7 am–6 pm on weekdays, 8 am–1 pm on Saturdays).
  This equates to approximately 8 truck movements per hour or roughly one truck every 7 minutes.
- Stage 2:
  - Duration: 20 weeks
  - Estimated Truck Movements: 10 trucks per day
  - During operational hours (7 am–6 pm on weekdays, 8 am–1 pm on Saturdays).
  This results in a low hourly volume of 1–2 truck movements during working hours.
- Stage 3:
  - Duration: 26 weeks
  - Estimated Truck Movements: 10 trucks per day
  - During operational hours (7 am–6 pm on weekdays, 8 am–1 pm on Saturdays).
  This equates to a low hourly volume of 1–2 truck movements.
- Stage 4:
  - Duration: 20 weeks
  - Estimated Truck Movements: 10 trucks per day
  - During operational hours (7 am–6 pm on weekdays, 8 am–1 pm on Saturdays).
  - This is considered a low hourly volume of 1–2 truck movements.

Truck operations will be confined to approved working hours, with no activity on Sundays or public holidays. Construction traffic volumes for Stage 2 to Stage 4 are expected to have negligible impact on the road network, given the low hourly truck movements. For Stage 1, although moderately higher at 8 trucks per hour, impacts will remain manageable with traffic guidance schemes in place.

Approximately 40 trips by workers per day are expected to travel to and from the site, with 20 arriving in the morning and 20 departing in the afternoon. Worker trips are considered low in volume and are unlikely to coincide with peak hours of the surrounding road network. However, for a conservative assessment, worker trips have been included within the morning and afternoon peak-hour analysis. Worker vehicles will have access to designated parking areas:

- Stages 1–2: Along the verge or designated facilities on Henry Lawson Drive.
- Stages 3–4: Designated areas within the site or on Mahers Lane.

The planned TMP and on-site parking provisions will ensure minimal disruption to local traffic flow during construction.

5.6.2 Estimated Peak Hour Trip Generation and Trip Distribution During Construction

The stage-wise heavy vehicle trip generation during the construction and bulk earthworks phase is summarised in Table 5.5 and Table 5.6, reflecting the estimated peak hour trips for each stage.

Table 5.5: Proposed stage-wise peak hour trip generation during construction and bulk earthwork

Construction Stage	AM Trip Generation	PM Trip Generation
Stage- 1 (late 2025)	8 trips	8 trips
Stage- 2 (late 2026)	2 trips	2 trips
Stage- 3 (mid 2027)	2 trips	2 trips
Stage- 4 (early 2028)	2 trips	2 trips

Table 5.6: Proposed stage-wise peak hour trip generation during construction and bulk earthwork

Construction Stage	AM Trip Generation	PM Trip Generation
Stage- 1 (late 2025)	20 trips	20 trips
Stage- 2 (late 2026)	20 trips	20 trips
Stage- 3 (mid 2027)	20 trips	20 trips
Stage- 4 (early 2028)	20 trips	20 trips

Additionally, for the worker trips during construction, the following assumptions are made:

- 50% of heavy vehicle trips will be inbound and outbound during both AM and PM peak hours.
- 80% of workers' inbound trips are expected during the morning peak hours, and 80% of outbound trips will occur during the afternoon peak.

The anticipated trip distribution for each construction stage is presented in Table 5.7, which shows the distribution of trips for the site access during the peak hours.

Table 5.7: Proposed Development Peak Hour Trip Distribution into the Accesses

Stages	Access	Trip Generation			
		AM Peak		PM Peak	
		IN	OUT	IN	OUT
Stage 1	Henry Lawson Drive Access	20vph	4vph	4vph	20vph
Stage 2	Henry Lawson Drive Access	17vph	1vph	1vph	17vph
Stage 3	Mahers Lane Access	17vph	1vph	1vph	17vph
Stage 4	Mahers Lane Access	17vph	1vph	1vph	17vph

It is assumed that the majority of heavy vehicle trips will travel to/from the eastern area of Terranora. Consequently, all heavy vehicle trips during the construction phase will predominantly use the eastern approach of Terranora Road at either the Henry Lawson Drive/Terranora Road or

Mahers Lane/Terranora Road intersections. For worker trips, the distribution is expected to be 75% to the eastern side and 25% to the western side, supported by the demographics and existing developments on both sides of Terranora Road. The estimation of generated trips during peak hours for each stage of the development is provided in Table 5.8.

Table 5.8: Development's Generated Trips into the Approaches of the Adjacent Intersection (light vehicle)

Stages	Intersection	Generated trips into intersection approaches							
		AM Peak				PM Peak			
		IN		OUT		IN		OUT	
		West	East	West	East	West	East	West	East
Stage 1	Henry Lawson Drive/Terranora Road Intersection	8vph	12vph	4vph	0vph	4vph	0vph	8vph	12vph
Stage 2	Henry Lawson Drive/Terranora Road Intersection	5vph	12vph	1vph	0vph	1vph	0vph	5vph	12vph
Stage 3	Mahers Lane/Terranora Road Intersection	5vph	12vph	1vph	0vph	1vph	0vph	5vph	12vph
Stage 4	Mahers Lane/Terranora Road Intersection	5vph	12vph	1vph	0vph	1vph	0vph	5vph	12vph

5.6.3 Impact of the Construction Traffic into the Nearest Intersections

The traffic generated during construction and earthworks for the proposed development will primarily use Mahers Lane and Henry Lawson Drive. To assess the potential impacts of this traffic on the existing road network, traffic analyses were conducted at two critical intersections: Mahers Lane/Terranora Road and Henry Lawson Drive/Terranora Road. Since Stage 1 of construction is expected to generate the highest traffic volumes, and traffic levels during Stages 2 to 4 are anticipated to be similar, SIDRA modelling was carried out for the worst-case scenario by analysing Stages 1 and 4.

The SIDRA analysis results indicate that both intersections will function well during the AM and PM peak hours of construction for these stages. The intersections will maintain a degree of saturation below 0.8, ensuring adequate capacity, with delays of less than 5 seconds, representing minimal waiting times. The intersections are expected to operate at Level of Service B, reflecting efficient performance, and approach lengths will be sufficient to accommodate the 95th percentile queue lengths.

Therefore, construction traffic is not anticipated to have any significant impact on the operational performance of the Henry Lawson Drive/Terranora Road and Mahers Lane/Terranora Road intersections during the assessed construction stages. Detailed SIDRA analysis results are provided in Table 5.9 and Table 5.10, with detailed results are available in Appendix B.

Table 5.9: Mahers Lane/ Terranora Road Intersection During Construction – SIDRA Results Summary

Scenario	DOS	Average Delay (Sec)		LOS	95th Percentile Queue (m)		
		Overall	Worst Movement		East	North	West
Stage 1 of Construction (late 2025) -AM	0.378	4.8	35.8 (North- R)	A	16.5	10.2	2.7
Stage 1 of Construction (late 2025) -PM	0.211	1.9	16.1 (North-R)	A	2.1	2.6	0.4
Stage 4 of Construction (early 2028) -AM	0.409	5.1	40.9 (North- R)	A	18.9	11.1	3
Stage 4 of Construction (early 2028) -PM	0.217	2.1	17 (North-R)	A	2.2	3	0.4

Table 5.10: Henry Lawson Drive/ Terranora Road Intersection During Construction – SIDRA Results Summary

Scenario	DOS	Average Delay (Sec)		LOS	95th Percentile Queue (m)		
		Overall	Worst Movement		East	North	West
Stage 1 of Construction (late 2025) -AM	0.526	4.2	35.4 (North- R)	B	5.1	15	1.9
Stage 1 of Construction (late 2025) -PM	0.522	4.1	28.7 (North-R)	B	3.7	16.9	2.4
Stage 4 of Construction (early 2028) -AM	0.545	4.2	38 (North- R)	B	5.1	15.5	1.7
Stage 4 of Construction (early 2028) -PM	0.508	3.9	28.7 (North-R)	B	3.9	15.6	2.2

6 Internal Road Network Arrangements

6.1 Road Hierarchy of the Internal Road Network

Tweed Development Control Plan-Subdivision Manual provides guidance on the road hierarchy of the internal road network of a subdivision. The criteria of road hierarchy are based on the road function, characteristics, daily traffic volume and speed environment of the road.

In such subdivision,

- The highest-order road is the distributor road, designed to carry more than 10,000vpd. It is recommended that direct access to the distributor road should not be provided for single dwellings.
- The second highest-order road is neighbourhood connectors, capable of carrying a maximum of 5,000vpd to 7,000vpd, with a maximum speed limit of 60 km/h. Neighbourhood connectors are mainly classified as low volume connectors (capable of carrying 5,000vpd) and normal neighbourhood connectors (capable of carrying 7,000vpd). There are no restrictions on direct access from single dwellings to neighbourhood connectors.
- The third highest-order road is access street, designed to carry a maximum of 3,00vpd with a speed limit of 50 km/h. This road has direct access from/to single dwellings.
- The lowest-order road is laneways, designed to carry a maximum of 300vpd with a speed limit of 15 km/h. This road has direct access from/to single dwellings.

Based on the above guidelines and the estimated daily traffic volume on each road, the possible road hierarchy of the internal road network of the development is determined. Figure 6.1 displays the hierarchy of roads in the internal road network, especially low-volume neighbourhood connectors and access streets.

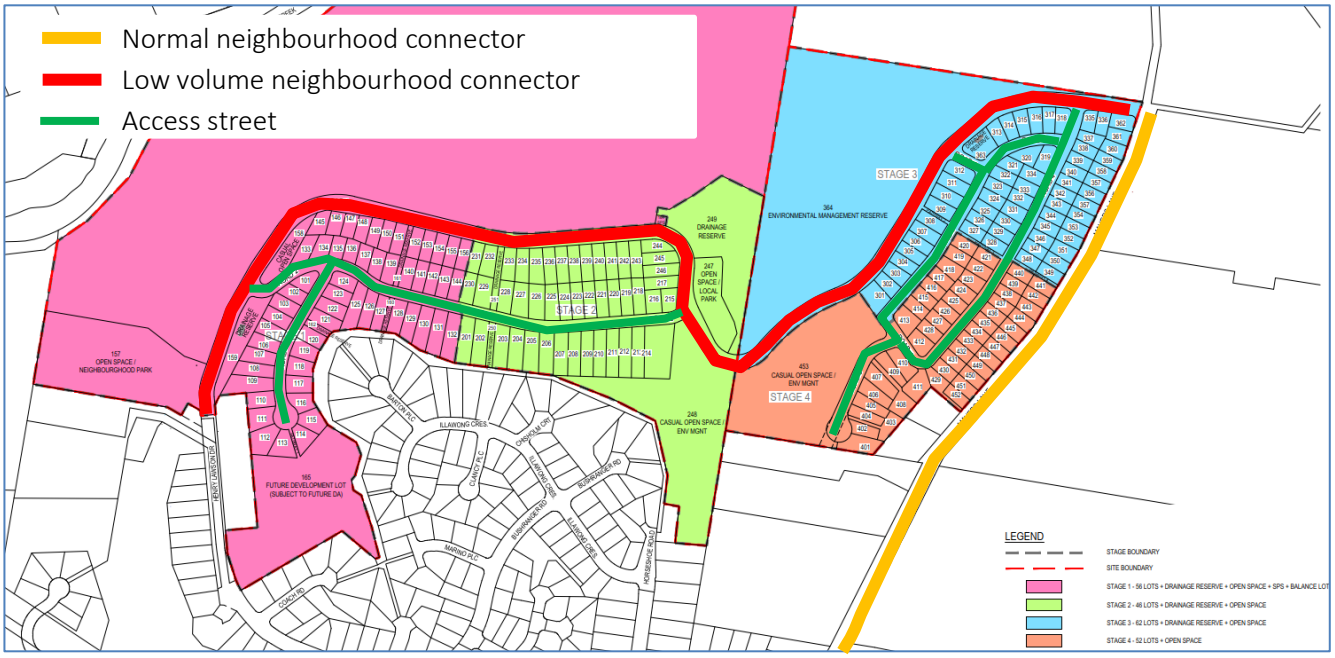


Figure 6.1: Indicative road hierarchy of the development

The internal road network and the road hierarchy shown in Figure 6.1 adhere to the following principles:

- No road in the internal road network is classified as distributor road. The highest order road is low-volume connectors, and the lowest order road is access streets.
- No road directly connects with another road that is more than two levels higher or lower in the hierarchy.
- Direct access to the neighbourhood connector and access street are provided for single dwellings.
- Traffic volumes on each road align with the functions and hierarchy of that road.
- The hierarchy is compatible with the external road network, and sufficient connections to the external road network are provided, including access point to Mahers Lane and Henry Lawson Drive.

Overall, the proposed road hierarchy is deemed sufficient for the development and aligns with Tweed Development Control Plan.

6.2 Road Connectivity

The connectivity of the roads within the internal network of the proposed development is well-suited to each stage of the development. The western part (Stage 1-2) of the development is connected to the eastern part (Stage 3-4) via the internal road named as Road 1 which is directly connected to the external roads namely, Mahers Lane and Henry Lawson Drive. The internal road network allows for multiple route options, enabling drivers to access the external road network either by Mahers Lane or Henry Lawson Drive.

The proposed internal roads are two-way, two-lane, accommodating traffic in both directions to and from the residential dwellings. Most dwellings have frontage onto local roads or access streets, with east-most dwellings in Stage 3 and Stage 4 have frontage onto neighbourhood connector road, namely Mahers Lane.

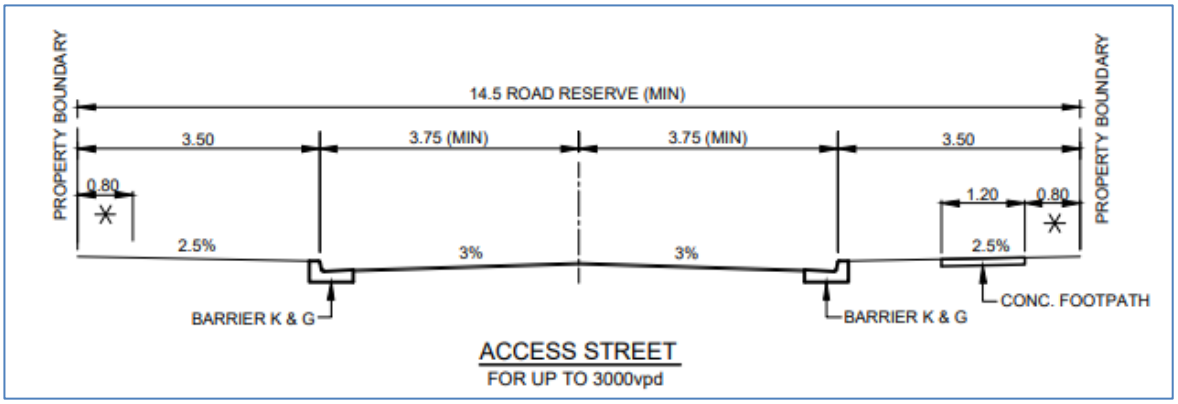
6.3 Adequacy of Midblock of Internal Roads Configuration

The proposed internal road network of the development meets the requirements of Tweed Shire Council's Development Control Plan- Subdivision Manual, as outlined in Table 6.1. The typical cross section of Access Street and Neighbourhood Connector is illustrated in Figure 6.2. Stopping sight distances along the internal road alignment, particularly at road curves, have been maintained in accordance with the design speed of the roads (60kph), as specified in the Austroads Guide to Road Design.

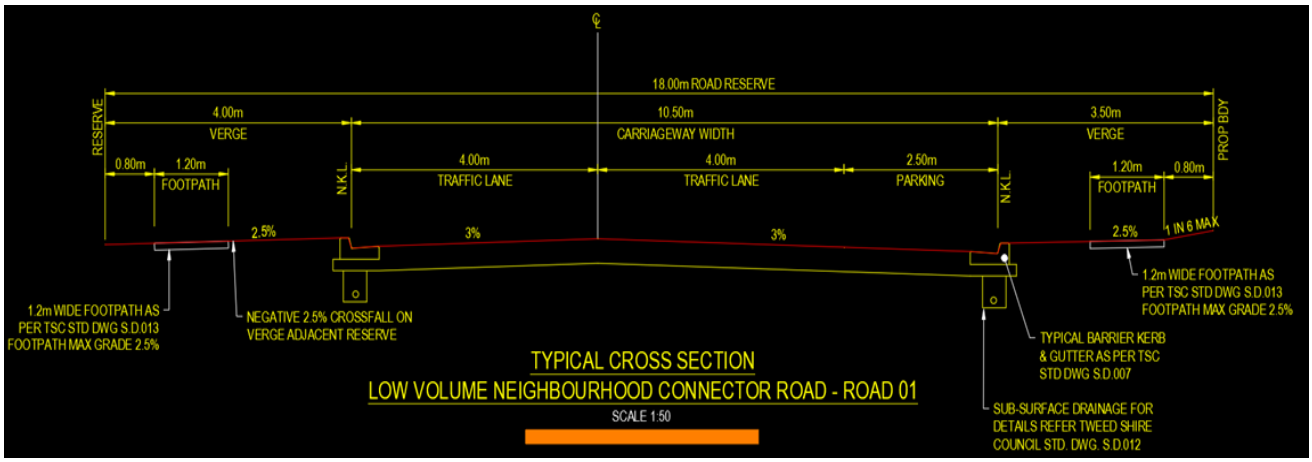
Table 6.1: Characteristics of Roads within the Proposed Subdivision

Road Type	Minimum Carriageway width (m)	Minimum Verge Width (m)	Minimum Road Reserved width (m)	Internal Road Name
Access Street	7.5	3.5	14-16	Road 2, Road 3, Road 4 and Road 5
Neighbourhood Connector (low volume connector)	10.5	3.5	18	Road 1

A 10.5m carriageway width is provided for Road 1. Road 1 is considered a perimeter road in accordance with the NSW Rural Fire Service (RFS) Planning for Bushfire Protection (2019) document. As such, a minimum 8.0m carriageway width is required 'outside of car parking' in accordance with SA3.9 of that document. In order to achieve this, a 2 x 4.0m (8.0m total) carriageway is proposed. Since residential lots are located on only one side of Road 1, on-street parking is proposed on that side only, as demand on the opposite side is expected to be minimal. A yellow line marking on the opposite edge of Road 1 will restrict parking. The proposed change will not impact two-way traffic flow and is considered appropriate for Road 1.



a) Typical cross section of Access Street (Snippet from Tweed Shire Council's Standard Drawings of Urban Road Cross Sections)



b) Cross section of low-volume neighbourhood connector (named as Road 1)

Figure 6.2: Cross section of the Internal Roads of the proposed development

Mahers Lane at the site frontage is classified as a standard neighbourhood connector road with a road reserve width of 20.9m. The proposed cross-section for Mahers Lane at the site frontage, as shown in Figure 6.3, complies with the council's requirements for a standard neighbourhood connector road.

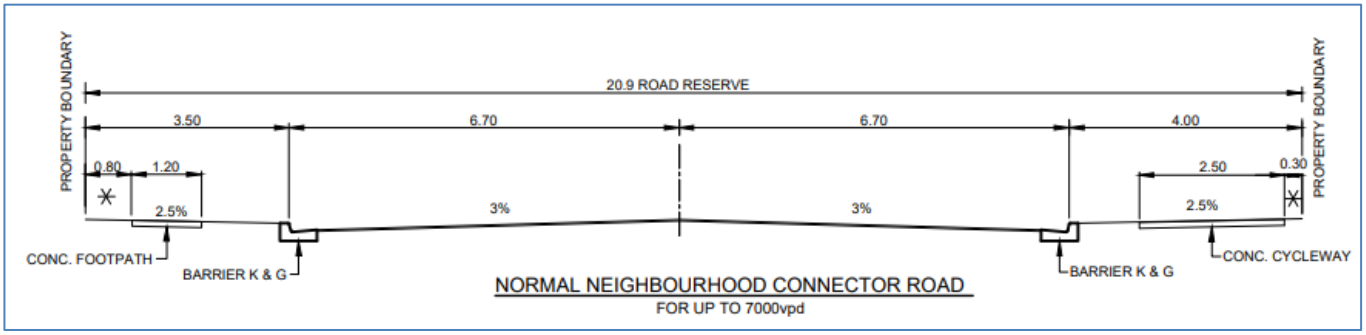


Figure 6.3: Typical cross section of normal neighbourhood connector road (Snippet from Tweed Shire Council's Standard Drawings of Urban Road Cross Sections)

6.4 Adequacy of Intersection Configuration of the development

The proposed internal road network primarily consists of priority-controlled intersections. The access to the development is designed as priority-controlled intersections. The intersection configurations within the internal road network comply with the Austroads Guide to Traffic Management Part 6, as outlined in Table 6.2. Priority-controlled intersections are considered appropriate for junctions between two collector streets (i.e., neighbourhood connector roads), between collector street (i.e., neighbourhood connector) and local street (i.e., access street), or between two local streets (i.e., access streets).

Table 6.2: Intersection Configuration of the Internal Road Network

Road Type	Collector Street and local crossing road	Local Street
Collector and local Crossing Road	Roundabout – *Most Likely Appropriate* Priority control – ***Most Likely Appropriate***	Roundabout – *May be appropriate* Priority control – ***Most Likely Appropriate***
Local Street	Roundabout – *Most Likely Appropriate* Priority control – ***Most Likely Appropriate***	Roundabout – *May be appropriate* Priority control – ***Most Likely Appropriate***

The proposed priority-controlled intersections are three-leg T-intersections. In accordance with the Tweed Development Control Plan, a minimum spacing of 40m (centre to centre) and 80m between two intersections in Access Street and neighbourhood connectors respectively are to be maintained throughout the internal road network. The spacing of intersections along the internal roads exceeds the minimum required spacing. Overall, the proposed intersection configurations are considered adequate for the development.

6.5 Midblock Capacity in Peak Hours

The proposed roads within the internal network of the development are configured as two-way, two-lane roads. According to the Austroads Guide to Traffic Management Part 3, the one-way mid-block capacity for an urban undivided road is 900 vehicles per hour per lane.

An assessment of the AM and PM peak hour volumes for the ultimate year of development, as shown in Table 4.2, indicates that the projected traffic volumes on these roads are below 900vph. The roads will therefore have spare capacity, demonstrating that the internal road network can effectively accommodate the trips generated by the proposed development and can support additional yield or changes to the proposed uses.

7 Car Parking Arrangements

7.1 Car Parking Requirements

The Tweed Development Control Plan specifies parking requirements for this type of development for planning purposes. TTM has estimated the car parking demand for the proposed development based on the rates outlined in the Tweed Development Control Plan - Subdivision Manual. The car parking requirements and supply are detailed in Table 7.1. The provision of carparking spaces would meet the Council's requirements.

Table 7.1: Car Parking Supply Requirement

Land Use	Council Requirement	Extent	Requirement	Provision
Dwelling House	1 space per dwelling plus provision for driveway parking of another vehicle (2 spaces per dwelling)	216	432 spaces	Shall be provided with double car garage in each dwelling or 1 space in car garage plus provision for driveway parking of another vehicle.

On-street parking facilities within street reserve are provided in the internal roads which meets Tweed Shire Council's Development Control Plan- Subdivision manual. Since it is not required, no dedicated on-street parking bays have been provided.

8 Service Vehicle Arrangements

8.1 Proposed Service Vehicle Arrangements and their Adequacy

The proposed development will have service vehicles using the internal road network, including refuse collection vehicles (RCVs) that will service each frontage road of the residential lots. The internal road network is designed in accordance with the Northern Rivers Council Development Design Guidelines and Tweed Development Control Plan, ensuring it can accommodate RCVs.

9 Active Transport Arrangements

9.1 Proposed Bicycle Path Arrangements and their Adequacy

According to Tweed Development Control Plan – Subdivision Manual, dedicated bicycle paths are not required for access Streets and low volume neighbourhood connectors and the cyclists needs to share the carriageway with vehicles.

In the proposed development, no dedicated cycle lane is provided for internal road network. In the internal road network consists of access streets and low volume neighbourhood connectors, cyclists are expected to share the carriageway with motorists, as these streets will carry light traffic. This provision aligns with Tweed Development Control Plan- Subdivision Manual.

9.2 Pedestrian Access

According to Tweed Development Control Plan – Subdivision Manual, minimum one side footpath requires to be provided on access Streets and two side footpath requires to be provided on low volume neighbourhood connectors. The minimum requirement of the footpaths along the internal roads of the proposed development is depicted in Table 9.1.

Table 9.1: Pedestrian Footpath Requirements

Road Types	Minimum width	Provision
Access Street	1x 1.2m (road carries up to 1,500vpd)	1.2m wide footpaths required to be provided on one side of Road 2, Road 3, Road 4 and Road 5 utilising the available 3.5m verge width.
Neighbourhood connectors (low volume connector)	2x 1.2m (road carries up to 3,000vpd)	1.2m wide footpaths required to be provided on both sides of Road 1 utilising the available 3.5m verge width on both sides of the road.

Refer to appendix A for Subdivision Staging Plan which illustrates the available road verge along the internal road network which will be utilised to provide required footpaths.

10 Summary and Conclusions

10.1 Development Summary

The proposed development is a residential development that includes 216 dwellings. The development will be carried out by four stages.

10.2 Development Access

The accesses to the development via Mahers Lane and Henry Lawson Drive. The western part of the development will mostly utilise Henry Lawson Drive access and the eastern part of the development will utilise Mahers Lane access. The accesses are sufficient for the movement of the traffic from the proposed development to the external road network.

10.3 Impact on Surrounding Road Network

Assessment of the proposed development indicates that the development will not have a significant impact on the road network. Furthermore, no substantial effects on the adjacent intersections have been identified during the construction phase. As such, no further mitigating road works are required at the existing road network.

10.4 Internal Road Network Arrangements

The proposed road hierarchy and the road connectivity are suitable for the development.

The configurations of midblock of internal roads and the intersections are deemed sufficient for the development.

10.5 Service Vehicle Arrangements

The provision of the internal road network can accommodate service vehicles including RCVs.

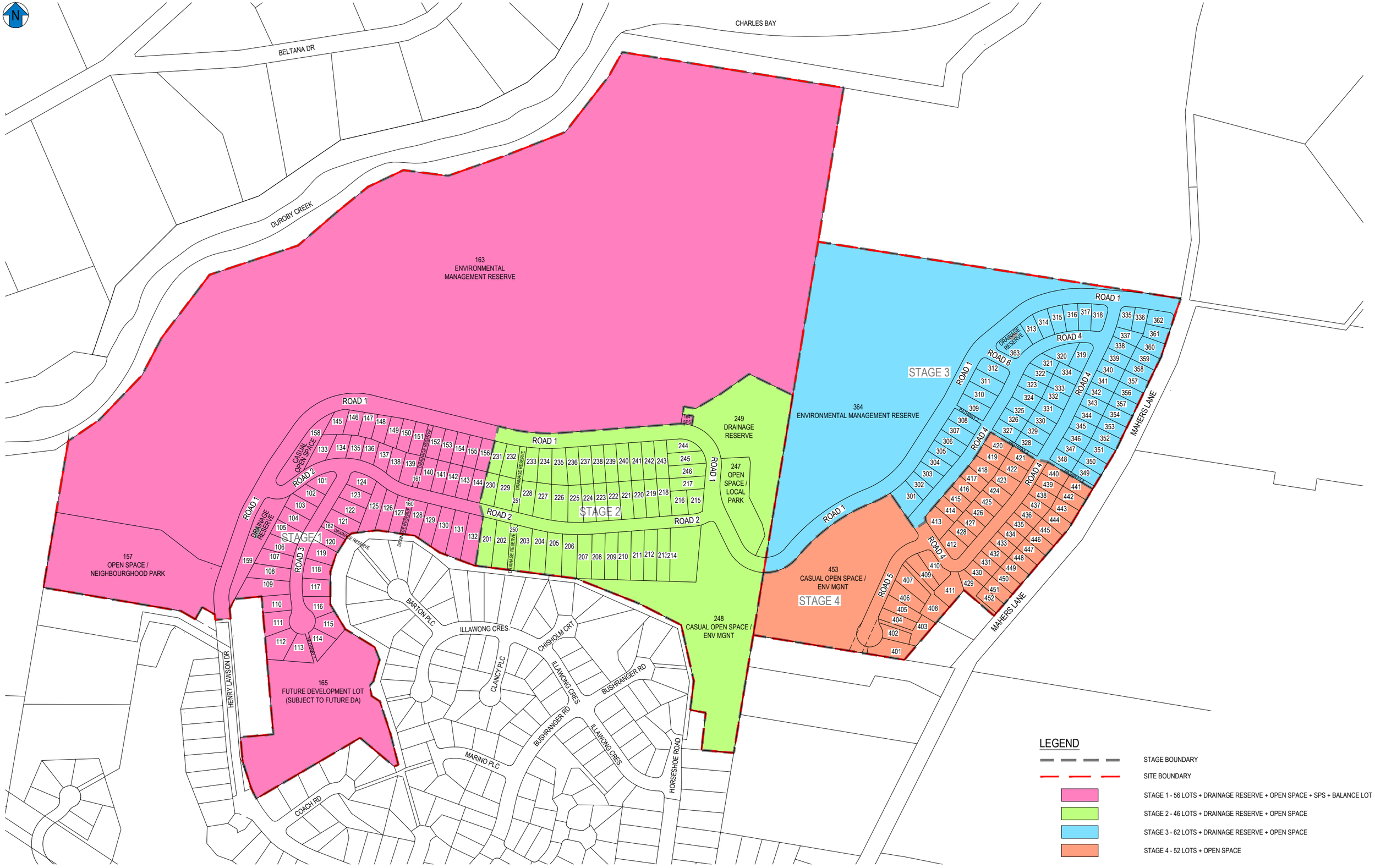
10.6 Active Transport Facilities

Proposed site provisions for pedestrian/bicycle facilities are considered adequate for the development.

10.7 Conclusion

Based on the assessment contained within this report, TTM sees no traffic engineering reason why the relevant approvals should not be granted.

Appendix A Proposed Development Plan



LEGEND

- STAGE BOUNDARY
- SITE BOUNDARY
- STAGE 1 - 56 LOTS + DRAINAGE RESERVE + OPEN SPACE + SPS + BALANCE LOT
- STAGE 2 - 46 LOTS + DRAINAGE RESERVE + OPEN SPACE
- STAGE 3 - 62 LOTS + DRAINAGE RESERVE + OPEN SPACE
- STAGE 4 - 52 LOTS + OPEN SPACE

REV	REVISION DESCRIPTION	DESIGN	DRAWN	DATE
A	ISSUE FOR INFORMATION	DH	TB	15.07.24
B	ISSUE FOR DISCUSSION	DH	MT	16.07.24
C	ISSUE FOR AUTHORITY INFORMATION	DH	MT	17.07.24
F	LOT LAYOUT UPDATED	DH	ED	17.09.24
G	LOT LAYOUT UPDATED	DH	ED	24.10.24
H	OPEN SPACE & DRAINAGE RESERVE NUMBERS UPDATED	DH	MT	24.10.24
I	LOT 606 & SPS ADDED AND MAHER LANE BOUNDARIES UPDATED	DH	MT	21.11.24
J	RESERVES, OPEN SPACES, PATHWAYS & SPS LOT NO. UPDATED	DH	MT	25.11.24
K	LOT 408 /411 BDY. UPDATED & ROAD 5 FUT. ROAD RESERVE ADDED	DH	MT	26.11.24
L	LOT 606 DELETED & STAGE 1 BOUNDARY UPDATED	DH	MT	27.11.24

SCALE
1 : 2000 20 0 20 40 60 80 100m A1
1 : 4000 A3

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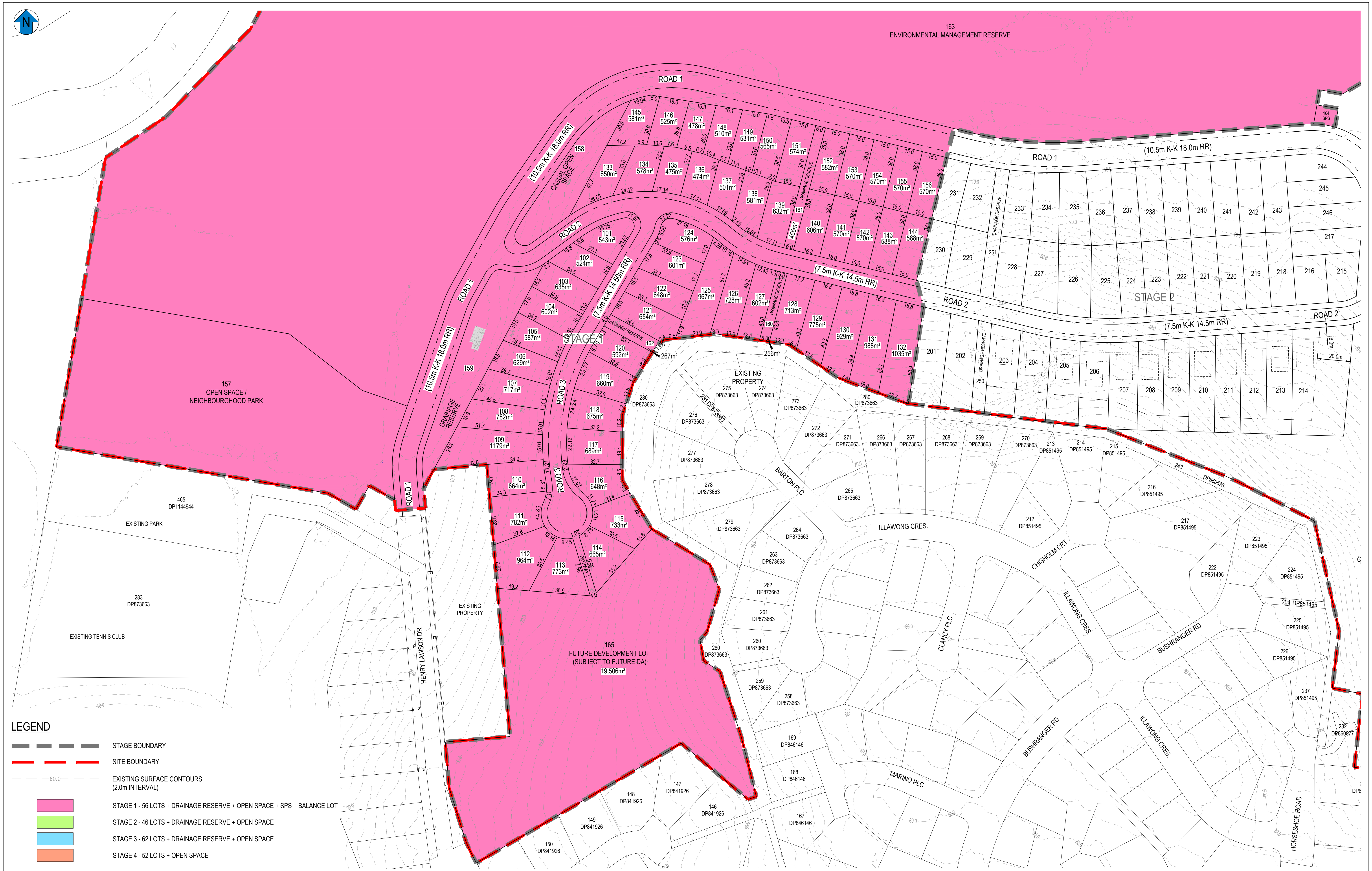
PROJECT
NORTH - TERRANORA
HENRY LAWSON DRIVE, TERRANORA
LOT 13 ON DP1264394

DRAWING TITLE
OVERALL STAGING PLAN

STATUS
ISSUE FOR APPROVAL

PROJECT No.	DRAWING No.	REVISION
2023076	SK100	L



LEGEND

- STAGE BOUNDARY
- SITE BOUNDARY
- EXISTING SURFACE CONTOURS (2.0m INTERVAL)
- STAGE 1 - 56 LOTS + DRAINAGE RESERVE + OPEN SPACE + SPS + BALANCE LOT
- STAGE 2 - 46 LOTS + DRAINAGE RESERVE + OPEN SPACE
- STAGE 3 - 62 LOTS + DRAINAGE RESERVE + OPEN SPACE
- STAGE 4 - 52 LOTS + OPEN SPACE

REV	REVISION DESCRIPTION	DESIGN	DRAWN	DATE
A	ISSUE FOR INFORMATION	DH	TB	15.07.24
B	ISSUE FOR DISCUSSION	DH	MT	16.07.24
C	ISSUE FOR AUTHORITY INFORMATION	DH	MT	17.07.24
F	LOT LAYOUT UPDATED	DH	ED	17.09.24
G	LOT LAYOUT UPDATED	DH	ED	23.10.24
H	OPEN SPACE & DRAINAGE RESERVE NUMBERS UPDATED	DH	MT	24.10.24
I	LOT 606 ADDED, LOT 900 BOUNDARIES & ROAD 1 WIDTH UPDATED	DH	MT	21.11.24
J	RESERVES, OPEN SPACES, PATHWAYS & SPS LOT NO. UPDATED	DH	MT	25.11.24
K	MINOR UPDATE	DH	MT	26.11.24
L	BALANCE LOT 165 AREA AND HATCH ADDED & STG. 1 BDY UPDATED	DH	MT	27.11.24

SCALE
1 : 1000 A1
1 : 2000 A3
10 0 10 20 30 40 50m

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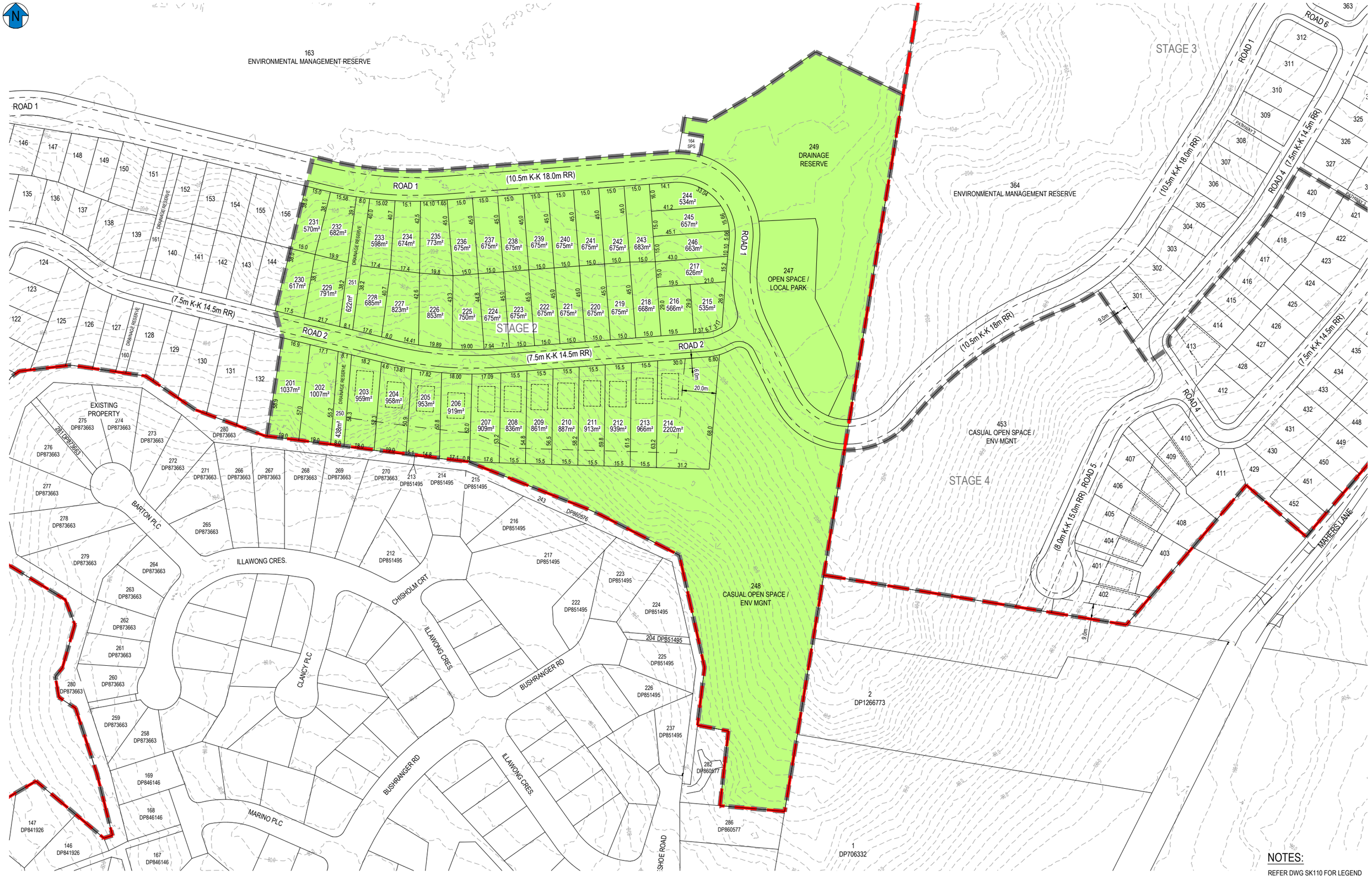
PROJECT
NORTH - TERRANORA
HENRY LAWSON DRIVE, TERRANORA
LOT 13 ON DP1264394

STATUS
ISSUE FOR APPROVAL

DRAWING TITLE
DETAILED SUBDIVISION STAGING PLAN - STAGE 1

PROJECT No. 2023076
DRAWING No. SK110
REVISION L



REV	REVISION DESCRIPTION	DESIGN	DRAWN	DATE
A	ISSUE FOR INFORMATION	DH	TB	15.07.24
B	ISSUE FOR DISCUSSION	DH	MT	16.07.24
C	ISSUE FOR AUTHORITY INFORMATION	DH	MT	17.07.24
F	LOT LAYOUT UPDATED	DH	ED	17.09.24
G	LOT LAYOUT UPDATED	DH	ED	23.10.24
H	OPEN SPACE & DRAINAGE RESERVE NUMBERS UPDATED	DH	MT	24.10.24
I	LOTS 207-214 & SPS BOUNDARIES AND ROAD 1 WIDTH UPDATED	DH	MT	21.11.24
J	RESERVES, OPEN SPACES, PATHWAYS & SPS LOT NO. UPDATED	DH	MT	25.11.24
K	MINOR UPDATE	DH	MT	26.11.24
L	ISSUE FOR APPROVAL	DH	MT	27.11.24

SCALE
1 : 1000 10 0 10 20 30 40 50m A1
1 : 2000 A3

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LOT 13 ON DP1264394

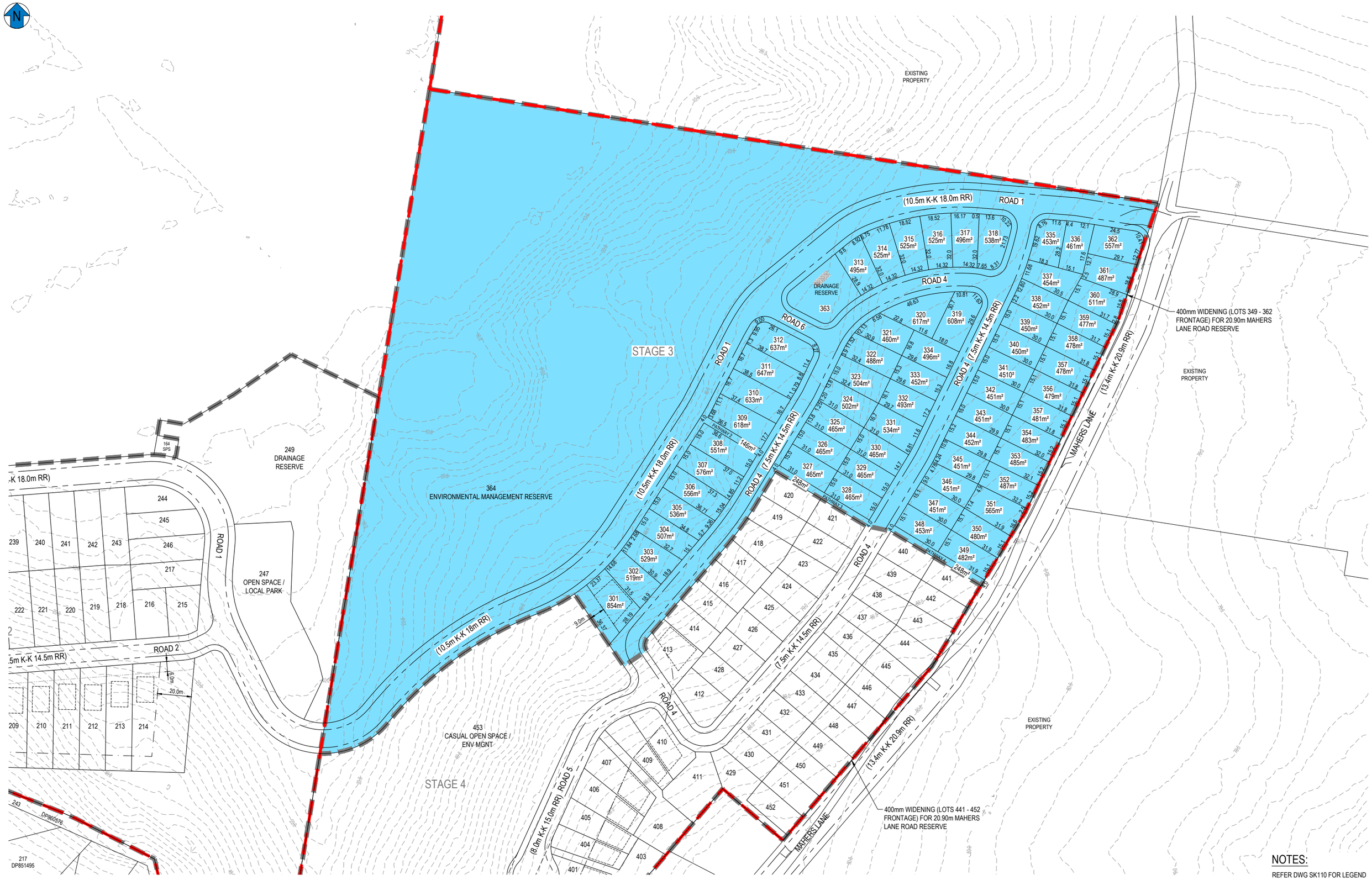
DRAWING TITLE
DETAILED SUBDIVISION STAGING PLAN - STAGE 2

STATUS
ISSUE FOR APPROVAL

PROJECT No.
2023076

DRAWING No.
SK111

REVISION
L



REV	REVISION DESCRIPTION	DESIGN	DRAWN	DATE
A	ISSUE FOR INFORMATION	DH	TB	15.07.24
B	ISSUE FOR DISCUSSION	DH	MT	16.07.24
C	ISSUE FOR AUTHORITY INFORMATION	DH	MT	17.07.24
G	LOT 362 & 363 AMENDED	DH	ED	19.09.24
H	LOT LAYOUT UPDATED	DH	ED	23.10.24
I	OPEN SPACE & DRAINAGE RESERVE NUMBERS UPDATED	DH	MT	24.10.24
J	MAHER LANE BOUNDARIES AND ROAD 1 WIDTH UPDATED	DH	MT	21.11.24
K	RESERVES, OPEN SPACES, PATHWAYS & SPS LOT NO. UPDATED	DH	MT	25.11.24
L	MAHERS LANE ROAD WIDENING NOTES ADDED	DH	MT	26.11.24
M	LOT LAYOUT UPDATED	DH	MT	27.11.24

SCALE
1 : 1000 1 : 2000
10 0 10 20 30 40 50m
A1 A3

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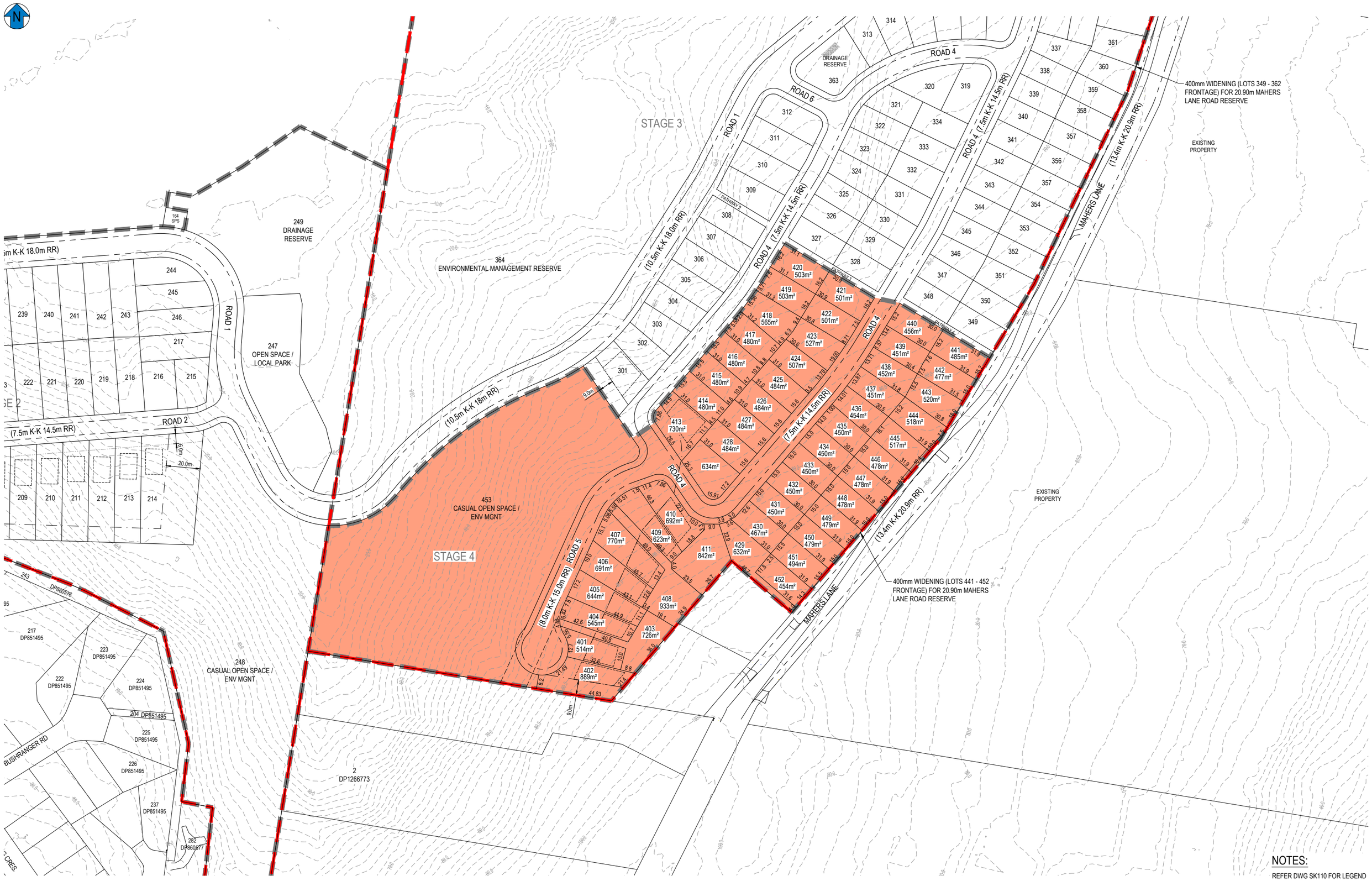
PROJECT
NORTH - TERRANORA
HENRY LAWSON DRIVE, TERRANORA
LOT 13 ON DP1264394

STATUS
ISSUE FOR APPROVAL

DRAWING TITLE
DETAILED SUBDIVISION STAGING PLAN - STAGE 3

PROJECT No.	DRAWING No.	REVISION
2023076	SK112	M



NOTES:

REFER DWG SK110 FOR LEGEND

REV	REVISION DESCRIPTION	DESIGN	DRAWN	DATE
A	ISSUE FOR INFORMATION	DH	TB	15.07.24
B	ISSUE FOR DISCUSSION	DH	MT	16.07.24
C	ISSUE FOR AUTHORITY INFORMATION	DH	MT	17.07.24
F	LOT LAYOUT UPDATED	DH	ED	17.09.24
G	LOT LAYOUT UPDATED	DH	ED	23.10.24
H	OPEN SPACE & DRAINAGE RESERVE NUMBERS UPDATED	DH	MT	24.10.24
I	MAHER LANE AND LOTS 429-430 & 451-452 BOUNDARIES UPDATED	DH	MT	21.11.24
J	RESERVES, OPEN SPACES, PATHWAYS & SPS LOT NO. UPDATED	DH	MT	25.11.24
K	LOT 408 /411 BDY. UPDATED & ROAD 5 FUT. ROAD RESERVE ADDED	DH	MT	26.11.24
L	LOT LAYOUT UPDATED	DH	MT	27.11.24

SCALE
1 : 1000
1 : 2000
10 0 10 20 30 40 50m
A1
A3

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PROJECT
NORTH - TERRANORA
HENRY LAWSON DRIVE, TERRANORA
LOT 13 ON DP1264394

DRAWING TITLE
DETAILED SUBDIVISION STAGING PLAN - STAGE 4

STATUS
ISSUE FOR APPROVAL

PROJECT No.
2023076

DRAWING No.
SK113

REVISION
L

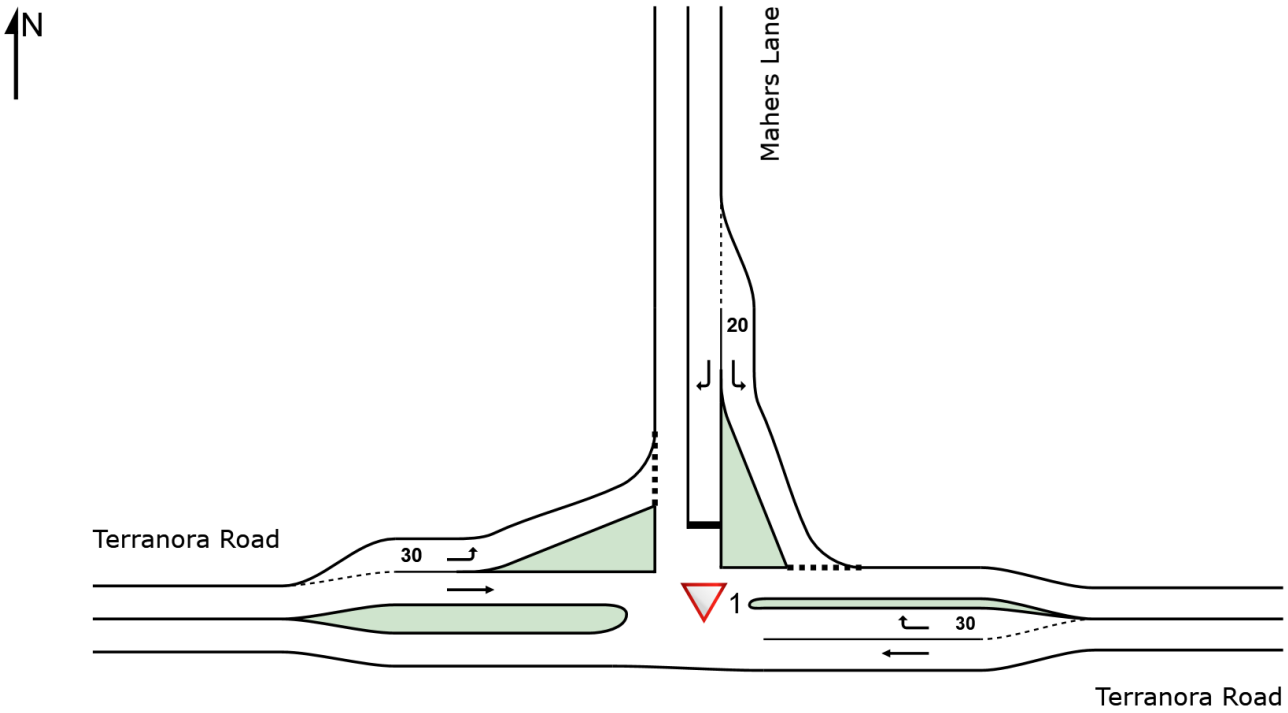
Appendix B SIDRA Analysis Results

SITE LAYOUT

Site: 1 [Site 1 - AM - Base Case-Terranora Road/Mahers Lane Intersection-2024 (Site Folder: Traffic Survey Year -2024)]

Existing Site
Site Category: (None)
Give-Way (Two-Way)

Layout pictures are schematic functional drawings reflecting input data. They are not design drawings.



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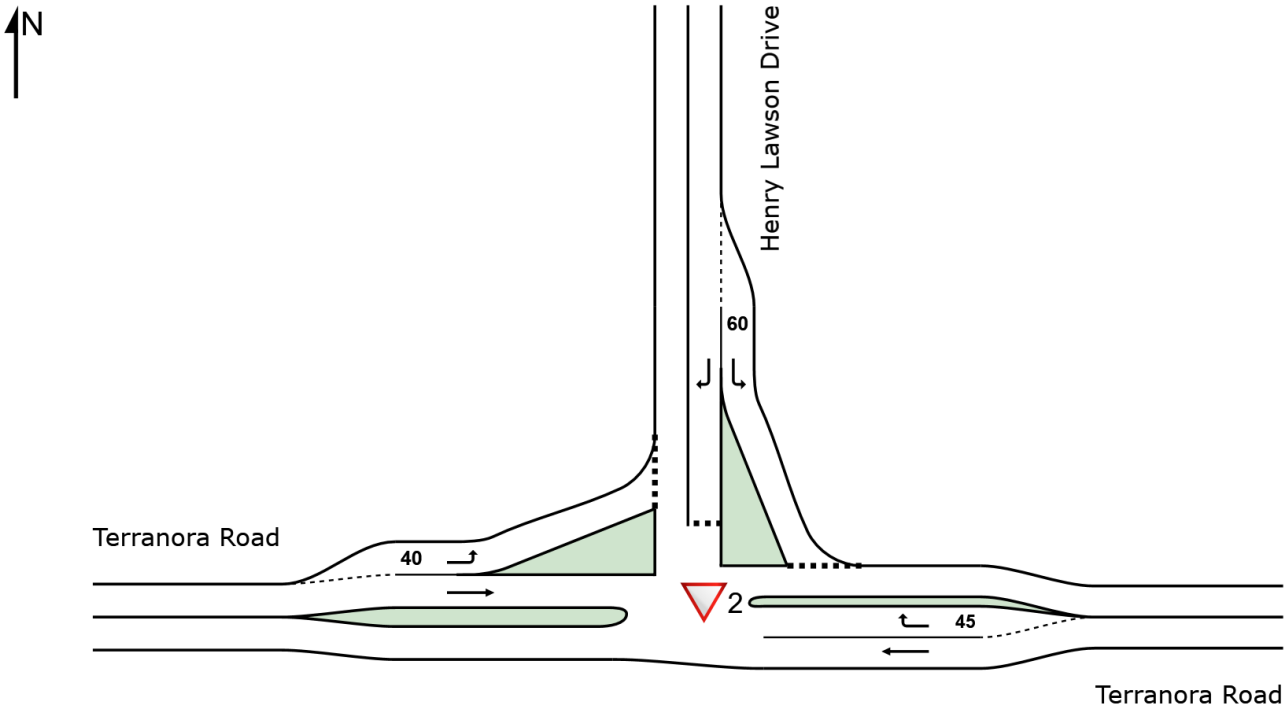
Project: C:\Users\mhasan\OneDrive - TTM\Desktop\TASK TO DO\Mahers Ln\24GCT0118 - updated final.sip9

SITE LAYOUT

Site: 2 [Site 2 - AM - Base Case-Terranora Road/Henry Lawson Drive Intersection-2024 (Site Folder: Traffic Survey Year -2024)]

Existing Site
Site Category: (None)
Give-Way (Two-Way)

Layout pictures are schematic functional drawings reflecting input data. They are not design drawings.



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MOVEMENT SUMMARY

Site: 1 [Site 1 - AM - Base Case-Terranora Road/Mahers Lane Intersection-2024 (Site Folder: Traffic Survey Year -2024)]

Existing Site
Site Category: (None)
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	INPUT VOLUMES [Total veh/h	HV] veh/h	DEMAND FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
East: Terranora Road														
8	T1	233	12	245	5.2	0.134	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	59.9
9	R2	366	17	385	4.6	0.362	8.5	LOS A	2.1	15.4	0.59	0.82	0.69	50.7
Approach		599	29	631	4.8	0.362	5.2	NA	2.1	15.4	0.36	0.50	0.42	53.3
North: Mahers Lane														
10	L2	264	17	278	6.4	0.287	7.1	LOS A	1.3	9.6	0.54	0.74	0.57	45.5
12	R2	32	4	34	12.5	0.219	32.8	LOS C	0.7	5.6	0.88	1.02	0.94	30.0
Approach		296	21	312	7.1	0.287	9.9	LOS A	1.3	9.6	0.58	0.77	0.61	43.8
West: Terranora Road														
1	L2	99	2	104	2.0	0.094	7.1	LOS A	0.4	2.6	0.43	0.64	0.43	49.5
2	T1	455	11	479	2.4	0.249	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	59.9
Approach		554	13	583	2.3	0.249	1.3	LOS A	0.4	2.6	0.08	0.11	0.08	57.8
All Vehicles		1449	63	1525	4.3	0.362	4.7	NA	2.1	15.4	0.30	0.41	0.33	52.0

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

MOVEMENT SUMMARY

Site: 1 [Site 1 - PM - Base Case-Terranora Road/Mahers Lane Intersection-2024 (Site Folder: Traffic Survey Year -2024)]

Existing Site
Site Category: (None)
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	INPUT VOLUMES [Total veh/h	HV] veh/h	DEMAND FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
East: Terranora Road														
8	T1	368	9	387	2.4	0.205	0.1	LOS A	0.0	0.0	0.00	0.00	0.00	59.9
9	R2	85	2	89	2.4	0.066	6.5	LOS A	0.3	2.1	0.38	0.59	0.38	51.9
Approach		453	11	477	2.4	0.205	1.3	NA	0.3	2.1	0.07	0.11	0.07	57.8
North: Mahers Lane														
10	L2	107	0	113	0.0	0.089	5.5	LOS A	0.4	2.5	0.36	0.55	0.36	46.1
12	R2	23	0	24	0.0	0.066	15.5	LOS B	0.2	1.6	0.68	1.00	0.68	38.0
Approach		130	0	137	0.0	0.089	7.2	LOS A	0.4	2.5	0.41	0.63	0.41	44.9
West: Terranora Road														
1	L2	19	0	20	0.0	0.013	5.8	LOS A	0.1	0.4	0.17	0.51	0.17	50.9
2	T1	266	4	280	1.5	0.144	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	59.9
Approach		285	4	300	1.4	0.144	0.4	LOS A	0.1	0.4	0.01	0.03	0.01	59.3
All Vehicles		868	15	914	1.7	0.205	1.9	NA	0.4	2.5	0.10	0.16	0.10	55.3

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

MOVEMENT SUMMARY

Site: 2 [Site 2 - AM - Base Case-Terranora Road/Henry Lawson Drive Intersection-2024 - If diff am peak 7:30-8 (Site Folder: Traffic Survey Year -2024)]

Existing Site
Site Category: (None)
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	INPUT VOLUMES [Total veh/h	HV] veh/h	DEMAND FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
East: Terranora Road														
8	T1	317	21	334	6.6	0.184	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	59.9
9	R2	107	7	113	6.5	0.150	9.5	LOS A	0.6	4.5	0.62	0.84	0.62	31.9
Approach		424	28	446	6.6	0.184	2.4	NA	0.6	4.5	0.16	0.21	0.16	51.2
North: Henry Lawson Drive														
10	L2	144	3	152	2.1	0.209	8.5	LOS A	0.8	5.6	0.61	0.80	0.61	33.4
12	R2	81	2	85	2.5	0.442	29.8	LOS C	1.7	12.3	0.90	1.04	1.19	22.3
Approach		225	5	237	2.2	0.442	16.1	LOS B	1.7	12.3	0.71	0.89	0.82	27.3
West: Terranora Road														
1	L2	62	5	65	8.1	0.046	6.1	LOS A	0.2	1.4	0.21	0.52	0.21	43.8
2	T1	673	20	708	3.0	0.370	0.1	LOS A	0.0	0.0	0.00	0.00	0.00	59.8
Approach		735	25	774	3.4	0.370	0.6	LOS A	0.2	1.4	0.02	0.04	0.02	57.8
All Vehicles		1384	58	1457	4.2	0.442	3.7	NA	1.7	12.3	0.17	0.23	0.19	48.0

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

MOVEMENT SUMMARY

Site: 2 [Site 2 - PM - Base Case-Terranora Road/Henry Lawson Drive Intersection-2024 (Site Folder: Traffic Survey Year -2024)]

Existing Site
Site Category: (None)
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	INPUT VOLUMES [Total veh/h	HV] veh/h	DEMAND FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
East: Terranora Road														
8	T1	480	15	505	3.1	0.269	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	59.8
9	R2	118	8	124	6.8	0.110	7.2	LOS A	0.5	3.5	0.48	0.67	0.48	34.8
Approach		598	23	629	3.8	0.269	1.4	NA	0.5	3.5	0.09	0.13	0.09	54.0
North: Henry Lawson Drive														
10	L2	139	6	146	4.3	0.138	6.3	LOS A	0.6	4.0	0.46	0.64	0.46	35.9
12	R2	100	4	105	4.0	0.428	24.0	LOS B	1.8	12.8	0.87	1.03	1.16	24.9
Approach		239	10	252	4.2	0.428	13.7	LOS A	1.8	12.8	0.63	0.80	0.75	29.3
West: Terranora Road														
1	L2	94	5	99	5.3	0.069	6.1	LOS A	0.3	2.1	0.23	0.53	0.23	43.9
2	T1	390	20	411	5.1	0.219	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	59.9
Approach		484	25	509	5.2	0.219	1.2	LOS A	0.3	2.1	0.04	0.10	0.04	55.6
All Vehicles		1321	58	1391	4.4	0.428	3.6	NA	1.8	12.8	0.17	0.24	0.20	47.8

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

MOVEMENT SUMMARY

Site: 1 [Site 1 - AM - Base Case-Terranora Road/Mahers Lane Intersection-2026 (Site Folder: Traffic Survey Year -2026-Without Development)]

Existing Site
Site Category: (None)
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	INPUT VOLUMES [Total veh/h	HV] veh/h	DEMAND FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
East: Terranora Road														
8	T1	239	12	252	5.0	0.137	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	59.9
9	R2	376	17	396	4.5	0.378	8.7	LOS A	2.3	16.5	0.60	0.84	0.73	50.5
Approach		615	29	647	4.7	0.378	5.3	NA	2.3	16.5	0.37	0.51	0.45	53.2
North: Mahers Lane														
10	L2	271	17	285	6.3	0.299	7.3	LOS A	1.4	10.2	0.55	0.76	0.60	45.4
12	R2	33	4	35	12.1	0.239	35.0	LOS C	0.8	6.1	0.89	1.03	0.97	29.2
Approach		304	21	320	6.9	0.299	10.3	LOS A	1.4	10.2	0.59	0.79	0.64	43.5
West: Terranora Road														
1	L2	102	2	107	2.0	0.098	7.2	LOS A	0.4	2.7	0.44	0.64	0.44	49.5
2	T1	467	11	492	2.4	0.255	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	59.9
Approach		569	13	599	2.3	0.255	1.3	LOS A	0.4	2.7	0.08	0.12	0.08	57.8
All Vehicles		1488	63	1566	4.2	0.378	4.8	NA	2.3	16.5	0.30	0.42	0.34	51.9

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

MOVEMENT SUMMARY

Site: 1 [Site 1 - PM - Base Case-Terranora Road/Mahers Lane Intersection-2026 (Site Folder: Traffic Survey Year -2026-Without Development)]

Existing Site
Site Category: (None)
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	INPUT VOLUMES [Total veh/h	HV] veh/h	DEMAND FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
East: Terranora Road														
8	T1	378	9	398	2.4	0.211	0.1	LOS A	0.0	0.0	0.00	0.00	0.00	59.9
9	R2	86	2	91	2.3	0.067	6.5	LOS A	0.3	2.1	0.38	0.60	0.38	51.9
Approach		464	11	488	2.4	0.211	1.3	NA	0.3	2.1	0.07	0.11	0.07	57.8
North: Mahers Lane														
10	L2	110	0	116	0.0	0.092	5.5	LOS A	0.4	2.6	0.36	0.55	0.36	46.1
12	R2	24	0	25	0.0	0.071	15.9	LOS B	0.2	1.7	0.69	1.00	0.69	37.8
Approach		134	0	141	0.0	0.092	7.4	LOS A	0.4	2.6	0.42	0.63	0.42	44.8
West: Terranora Road														
1	L2	20	0	21	0.0	0.014	5.9	LOS A	0.1	0.4	0.18	0.51	0.18	50.9
2	T1	273	4	287	1.5	0.148	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	59.9
Approach		293	4	308	1.4	0.148	0.4	LOS A	0.1	0.4	0.01	0.04	0.01	59.2
All Vehicles		891	15	938	1.7	0.211	1.9	NA	0.4	2.6	0.10	0.16	0.10	55.3

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

MOVEMENT SUMMARY

Site: 2 [Site 2 - AM - Base Case-Terranora Road/Henry Lawson Drive Intersection-2026 (Site Folder: Traffic Survey Year -2026-Without Development)]

Existing Site
Site Category: (None)
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	INPUT VOLUMES [Total veh/h	HV] veh/h	DEMAND FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
East: Terranora Road														
8	T1	325	21	342	6.5	0.188	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	59.9
9	R2	109	7	115	6.4	0.158	9.7	LOS A	0.6	4.7	0.63	0.85	0.63	31.6
Approach		434	28	457	6.5	0.188	2.5	NA	0.6	4.7	0.16	0.21	0.16	51.1
North: Henry Lawson Drive														
10	L2	148	3	156	2.0	0.221	8.8	LOS A	0.8	6.0	0.62	0.82	0.64	33.1
12	R2	83	2	87	2.4	0.487	33.1	LOS C	1.9	13.7	0.92	1.06	1.25	21.0
Approach		231	5	243	2.2	0.487	17.5	LOS B	1.9	13.7	0.73	0.90	0.86	26.3
West: Terranora Road														
1	L2	74	5	78	6.8	0.055	6.1	LOS A	0.2	1.6	0.22	0.52	0.22	43.9
2	T1	691	20	727	2.9	0.380	0.1	LOS A	0.0	0.0	0.00	0.00	0.00	59.7
Approach		765	25	805	3.3	0.380	0.6	LOS A	0.2	1.6	0.02	0.05	0.02	57.5
All Vehicles		1430	58	1505	4.1	0.487	3.9	NA	1.9	13.7	0.18	0.24	0.20	47.5

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

MOVEMENT SUMMARY

Site: 2 [Site 2 - PM - Base Case-Terranora Road/Henry Lawson Drive Intersection-2026 (Site Folder: Traffic Survey Year -2026-Without Development)]

Existing Site
Site Category: (None)
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	INPUT VOLUMES [Total veh/h	HV] veh/h	DEMAND FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
East: Terranora Road														
8	T1	493	16	519	3.2	0.277	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	59.8
9	R2	121	8	127	6.6	0.114	7.3	LOS A	0.5	3.7	0.49	0.68	0.49	34.7
Approach		614	24	646	3.9	0.277	1.5	NA	0.5	3.7	0.10	0.13	0.10	54.0
North: Henry Lawson Drive														
10	L2	142	6	149	4.2	0.142	6.3	LOS A	0.6	4.1	0.47	0.64	0.47	35.9
12	R2	102	4	107	3.9	0.461	25.8	LOS B	1.9	13.9	0.88	1.05	1.21	24.0
Approach		244	10	257	4.1	0.461	14.5	LOS A	1.9	13.9	0.64	0.81	0.78	28.6
West: Terranora Road														
1	L2	97	5	102	5.2	0.072	6.1	LOS A	0.3	2.1	0.23	0.53	0.23	43.9
2	T1	400	20	421	5.0	0.224	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	59.9
Approach		497	25	523	5.0	0.224	1.2	LOS A	0.3	2.1	0.05	0.10	0.05	55.5
All Vehicles		1355	59	1426	4.4	0.461	3.7	NA	1.9	13.9	0.18	0.24	0.20	47.5

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

MOVEMENT SUMMARY

Site: 1 [Site 1 - AM - Base Case-Terranora Road/Mahers Lane Intersection-2026 (Site Folder: Traffic Survey Year -2026-With Development)]

Existing Site
Site Category: (None)
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	INPUT VOLUMES [Total veh/h	HV] veh/h	DEMAND FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
East: Terranora Road														
8	T1	250	12	263	4.8	0.142	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	59.9
9	R2	376	17	396	4.5	0.400	9.3	LOS A	2.5	17.9	0.63	0.89	0.80	50.1
Approach		626	29	659	4.6	0.400	5.6	NA	2.5	17.9	0.38	0.53	0.48	53.0
North: Mahers Lane														
10	L2	271	17	285	6.3	0.316	7.7	LOS A	1.5	11.1	0.58	0.80	0.66	45.1
12	R2	33	4	35	12.1	0.272	39.8	LOS C	0.9	7.0	0.91	1.03	1.01	27.6
Approach		304	21	320	6.9	0.316	11.2	LOS A	1.5	11.1	0.61	0.83	0.70	43.0
West: Terranora Road														
1	L2	102	2	107	2.0	0.098	7.2	LOS A	0.4	2.7	0.44	0.64	0.44	49.5
2	T1	509	11	536	2.2	0.278	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	59.8
Approach		611	13	643	2.1	0.278	1.2	LOS A	0.4	2.7	0.07	0.11	0.07	57.9
All Vehicles		1541	63	1622	4.1	0.400	5.0	NA	2.5	17.9	0.30	0.42	0.36	51.8

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

MOVEMENT SUMMARY

Site: 1 [Site 1 - PM - Base Case-Terranora Road/Mahers Lane Intersection-2026 (Site Folder: Traffic Survey Year -2026-With Development)]

Existing Site
Site Category: (None)
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	INPUT VOLUMES [Total veh/h	HV] veh/h	DEMAND FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
East: Terranora Road														
8	T1	425	9	447	2.1	0.236	0.1	LOS A	0.0	0.0	0.00	0.00	0.00	59.9
9	R2	86	2	91	2.3	0.068	6.6	LOS A	0.3	2.1	0.39	0.60	0.39	51.8
Approach		511	11	538	2.2	0.236	1.2	NA	0.3	2.1	0.07	0.10	0.07	57.9
North: Mahers Lane														
10	L2	110	0	116	0.0	0.093	5.5	LOS A	0.4	2.6	0.37	0.56	0.37	46.1
12	R2	24	0	25	0.0	0.079	17.3	LOS B	0.3	1.9	0.72	1.00	0.72	37.0
Approach		134	0	141	0.0	0.093	7.7	LOS A	0.4	2.6	0.43	0.64	0.43	44.6
West: Terranora Road														
1	L2	20	0	21	0.0	0.014	5.9	LOS A	0.1	0.4	0.18	0.51	0.18	50.9
2	T1	285	4	300	1.4	0.154	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	59.9
Approach		305	4	321	1.3	0.154	0.4	LOS A	0.1	0.4	0.01	0.03	0.01	59.3
All Vehicles		950	15	1000	1.6	0.236	1.8	NA	0.4	2.6	0.10	0.16	0.10	55.5

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

MOVEMENT SUMMARY

Site: 2 [Site 2 - AM - Base Case-Terranora Road/Henry Lawson Drive Intersection-2026 (Site Folder: Traffic Survey Year -2026-With Development)]

Existing Site
Site Category: (None)
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	INPUT VOLUMES [Total veh/h	HV] veh/h	DEMAND FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
East: Terranora Road														
8	T1	325	21	342	6.5	0.188	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	59.9
9	R2	120	7	126	5.8	0.173	9.7	LOS A	0.7	5.1	0.63	0.85	0.63	31.7
Approach		445	28	468	6.3	0.188	2.6	NA	0.7	5.1	0.17	0.23	0.17	50.5
North: Henry Lawson Drive														
10	L2	192	3	202	1.6	0.285	9.2	LOS A	1.2	8.6	0.64	0.85	0.74	32.5
12	R2	97	2	102	2.1	0.580	37.2	LOS C	2.4	17.3	0.93	1.10	1.40	19.7
Approach		289	5	304	1.7	0.580	18.6	LOS B	2.4	17.3	0.74	0.94	0.96	25.5
West: Terranora Road														
1	L2	78	5	82	6.4	0.058	6.1	LOS A	0.2	1.7	0.23	0.53	0.23	43.8
2	T1	691	20	727	2.9	0.380	0.1	LOS A	0.0	0.0	0.00	0.00	0.00	59.7
Approach		769	25	809	3.3	0.380	0.7	LOS A	0.2	1.7	0.02	0.05	0.02	57.4
All Vehicles		1503	58	1582	3.9	0.580	4.7	NA	2.4	17.3	0.20	0.28	0.25	45.7

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

MOVEMENT SUMMARY

Site: 2 [Site 2 - PM - Base Case-Terranora Road/Henry Lawson Drive Intersection-2026 (Site Folder: Traffic Survey Year -2026-With Development)]

Existing Site
Site Category: (None)
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	INPUT VOLUMES [Total veh/h	HV] veh/h	DEMAND FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
East: Terranora Road														
8	T1	493	16	519	3.2	0.277	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	59.8
9	R2	163	8	172	4.9	0.151	7.3	LOS A	0.7	4.9	0.50	0.69	0.50	34.8
Approach		656	24	691	3.7	0.277	1.8	NA	0.7	4.9	0.12	0.17	0.12	52.6
North: Henry Lawson Drive														
10	L2	160	6	168	3.8	0.160	6.4	LOS A	0.6	4.7	0.47	0.65	0.47	35.9
12	R2	108	4	114	3.7	0.527	29.5	LOS C	2.3	16.4	0.90	1.08	1.32	22.4
Approach		268	10	282	3.7	0.527	15.7	LOS B	2.3	16.4	0.65	0.82	0.81	27.6
West: Terranora Road														
1	L2	111	5	117	4.5	0.085	6.2	LOS A	0.3	2.5	0.28	0.54	0.28	43.6
2	T1	400	20	421	5.0	0.224	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	59.9
Approach		511	25	538	4.9	0.224	1.4	LOS A	0.3	2.5	0.06	0.12	0.06	55.0
All Vehicles		1435	59	1511	4.1	0.527	4.3	NA	2.3	16.4	0.20	0.27	0.23	46.2

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

MOVEMENT SUMMARY

Site: 1 [Site 1 - AM - Base Case-Terranora Road/Mahers Lane Intersection-2028 (Site Folder: Traffic Survey Year -2028-Without Development)]

Existing Site
Site Category: (None)
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	INPUT VOLUMES [Total veh/h	HV] veh/h	DEMAND FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
East: Terranora Road														
8	T1	246	13	259	5.3	0.141	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	59.9
9	R2	387	18	407	4.7	0.397	9.0	LOS A	2.5	17.9	0.62	0.86	0.77	50.3
Approach		633	31	666	4.9	0.397	5.5	NA	2.5	17.9	0.38	0.53	0.47	53.0
North: Mahers Lane														
10	L2	279	18	294	6.5	0.314	7.5	LOS A	1.5	11.1	0.56	0.78	0.63	45.2
12	R2	34	4	36	11.8	0.264	37.8	LOS C	0.9	6.8	0.90	1.03	1.00	28.3
Approach		313	22	329	7.0	0.314	10.8	LOS A	1.5	11.1	0.60	0.81	0.67	43.3
West: Terranora Road														
1	L2	104	2	109	1.9	0.101	7.2	LOS A	0.4	2.8	0.45	0.65	0.45	49.5
2	T1	481	12	506	2.5	0.263	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	59.9
Approach		585	14	616	2.4	0.263	1.3	LOS A	0.4	2.8	0.08	0.12	0.08	57.8
All Vehicles		1531	67	1612	4.4	0.397	5.0	NA	2.5	17.9	0.31	0.43	0.36	51.7

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

MOVEMENT SUMMARY

Site: 1 [Site 1 - PM - Base Case-Terranora Road/Mahers Lane Intersection-2028 (Site Folder: Traffic Survey Year -2028-Without Development)]

Existing Site
Site Category: (None)
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	INPUT VOLUMES [Total veh/h	HV] veh/h	DEMAND FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
East: Terranora Road														
8	T1	389	10	409	2.6	0.217	0.1	LOS A	0.0	0.0	0.00	0.00	0.00	59.9
9	R2	88	2	93	2.3	0.069	6.6	LOS A	0.3	2.2	0.39	0.60	0.39	51.8
Approach		477	12	502	2.5	0.217	1.3	NA	0.3	2.2	0.07	0.11	0.07	57.8
North: Mahers Lane														
10	L2	113	0	119	0.0	0.095	5.5	LOS A	0.4	2.7	0.37	0.56	0.37	46.1
12	R2	24	0	25	0.0	0.074	16.4	LOS B	0.3	1.8	0.70	1.00	0.70	37.5
Approach		137	0	144	0.0	0.095	7.4	LOS A	0.4	2.7	0.43	0.64	0.43	44.8
West: Terranora Road														
1	L2	20	0	21	0.0	0.014	5.9	LOS A	0.1	0.4	0.18	0.51	0.18	50.9
2	T1	281	4	296	1.4	0.152	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	59.9
Approach		301	4	317	1.3	0.152	0.4	LOS A	0.1	0.4	0.01	0.03	0.01	59.3
All Vehicles		915	16	963	1.7	0.217	1.9	NA	0.4	2.7	0.11	0.16	0.11	55.3

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

MOVEMENT SUMMARY

Site: 2 [Site 2 - AM - Base Case-Terranora Road/Henry Lawson Drive Intersection-2028 - If diff am peak 7:30-8 (Site Folder: Traffic Survey Year -2028-Without Development)]

Existing Site
Site Category: (None)
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	INPUT VOLUMES [Total veh/h	HV] veh/h	DEMAND FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
East: Terranora Road														
8	T1	334	22	352	6.6	0.194	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	59.9
9	R2	113	8	119	7.1	0.170	10.0	LOS A	0.7	5.0	0.64	0.85	0.64	31.2
Approach		447	30	471	6.7	0.194	2.5	NA	0.7	5.0	0.16	0.21	0.16	50.8
North: Henry Lawson Drive														
10	L2	152	3	160	2.0	0.234	9.1	LOS A	0.9	6.5	0.64	0.83	0.68	32.7
12	R2	85	2	89	2.4	0.536	37.1	LOS C	2.1	15.3	0.93	1.08	1.32	19.7
Approach		237	5	249	2.1	0.536	19.1	LOS B	2.1	15.3	0.74	0.92	0.91	25.2
West: Terranora Road														
1	L2	75	5	79	6.7	0.056	6.1	LOS A	0.2	1.7	0.22	0.52	0.22	43.8
2	T1	709	21	746	3.0	0.390	0.1	LOS A	0.0	0.0	0.00	0.00	0.00	59.7
Approach		784	26	825	3.3	0.390	0.6	LOS A	0.2	1.7	0.02	0.05	0.02	57.5
All Vehicles		1468	61	1545	4.2	0.536	4.2	NA	2.1	15.3	0.18	0.24	0.21	46.9

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

MOVEMENT SUMMARY

Site: 2 [Site 2 - PM - Base Case-Terranora Road/Henry Lawson Drive Intersection-2028 (Site Folder: Traffic Survey Year -2028-Without Development)]

Existing Site
Site Category: (None)
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	INPUT VOLUMES [Total veh/h	HV] veh/h	DEMAND FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
East: Terranora Road														
8	T1	506	16	533	3.2	0.284	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	59.8
9	R2	125	9	132	7.2	0.120	7.4	LOS A	0.5	3.9	0.50	0.69	0.50	34.6
Approach		631	25	664	4.0	0.284	1.5	NA	0.5	3.9	0.10	0.14	0.10	54.0
North: Henry Lawson Drive														
10	L2	147	7	155	4.8	0.150	6.4	LOS A	0.6	4.4	0.48	0.65	0.48	35.8
12	R2	105	4	111	3.8	0.501	28.2	LOS B	2.1	15.4	0.90	1.07	1.28	23.0
Approach		252	11	265	4.4	0.501	15.5	LOS B	2.1	15.4	0.65	0.83	0.81	27.8
West: Terranora Road														
1	L2	99	5	104	5.1	0.074	6.1	LOS A	0.3	2.2	0.24	0.53	0.24	43.9
2	T1	411	21	433	5.1	0.231	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	59.9
Approach		510	26	537	5.1	0.231	1.2	LOS A	0.3	2.2	0.05	0.10	0.05	55.5
All Vehicles		1393	62	1466	4.5	0.501	3.9	NA	2.1	15.4	0.18	0.25	0.21	47.1

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

MOVEMENT SUMMARY

Site: 1 [Site 1 - AM - Base Case-Terranora Road/Mahers Lane Intersection-2028 (Site Folder: Traffic Survey Year -2028-With Development)]

Existing Site
Site Category: (None)
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	INPUT VOLUMES [Total veh/h	HV] veh/h	DEMAND FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
East: Terranora Road														
8	T1	254	13	267	5.1	0.145	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	59.9
9	R2	402	18	423	4.5	0.432	9.6	LOS A	2.8	20.4	0.64	0.92	0.86	49.9
Approach		656	31	691	4.7	0.432	5.9	NA	2.8	20.4	0.40	0.56	0.53	52.7
North: Mahers Lane														
10	L2	338	18	356	5.3	0.395	8.3	LOS A	2.2	15.9	0.61	0.87	0.78	44.8
12	R2	54	4	57	7.4	0.450	46.6	LOS D	1.6	12.2	0.93	1.08	1.20	25.6
Approach		392	22	413	5.6	0.450	13.6	LOS A	2.2	15.9	0.65	0.90	0.84	41.7
West: Terranora Road														
1	L2	109	2	115	1.8	0.108	7.3	LOS A	0.4	3.0	0.46	0.66	0.46	49.4
2	T1	515	12	542	2.3	0.282	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	59.8
Approach		624	14	657	2.2	0.282	1.3	LOS A	0.4	3.0	0.08	0.12	0.08	57.8
All Vehicles		1672	67	1760	4.0	0.450	6.0	NA	2.8	20.4	0.34	0.47	0.43	50.6

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

MOVEMENT SUMMARY

Site: 1 [Site 1 - PM - Base Case-Terranora Road/Mahers Lane Intersection-2028 (Site Folder: Traffic Survey Year -2028-With Development)]

Existing Site
Site Category: (None)
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	INPUT VOLUMES [Total veh/h	HV] veh/h	DEMAND FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
East: Terranora Road														
8	T1	427	10	449	2.3	0.237	0.1	LOS A	0.0	0.0	0.00	0.00	0.00	59.9
9	R2	145	2	153	1.4	0.114	6.6	LOS A	0.5	3.7	0.41	0.62	0.41	51.8
Approach		572	12	602	2.1	0.237	1.7	NA	0.5	3.7	0.10	0.16	0.10	57.1
North: Mahers Lane														
10	L2	138	0	145	0.0	0.118	5.6	LOS A	0.5	3.3	0.38	0.57	0.38	46.0
12	R2	32	0	34	0.0	0.120	19.2	LOS B	0.4	2.9	0.77	1.00	0.77	36.0
Approach		170	0	179	0.0	0.120	8.2	LOS A	0.5	3.3	0.45	0.65	0.45	44.3
West: Terranora Road														
1	L2	39	0	41	0.0	0.029	6.0	LOS A	0.1	0.8	0.24	0.53	0.24	50.5
2	T1	291	4	306	1.4	0.158	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	59.9
Approach		330	4	347	1.2	0.158	0.7	LOS A	0.1	0.8	0.03	0.06	0.03	58.7
All Vehicles		1072	16	1128	1.5	0.237	2.4	NA	0.5	3.7	0.14	0.21	0.14	54.6

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

MOVEMENT SUMMARY

Site: 2 [Site 2 - AM - Base Case-Terranora Road/Henry Lawson Drive Intersection-2028 - If diff am peak 7:30-8 (Site Folder: Traffic Survey Year -2028-With Development)]

Existing Site
Site Category: (None)
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	INPUT VOLUMES [Total veh/h	HV] veh/h	DEMAND FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
East: Terranora Road														
8	T1	354	22	373	6.2	0.205	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	59.9
9	R2	121	8	127	6.6	0.183	10.1	LOS A	0.7	5.4	0.65	0.85	0.65	31.2
Approach		475	30	500	6.3	0.205	2.6	NA	0.7	5.4	0.17	0.22	0.17	50.7
North: Henry Lawson Drive														
10	L2	186	3	196	1.6	0.288	9.5	LOS A	1.2	8.6	0.66	0.87	0.76	32.2
12	R2	96	2	101	2.1	0.645	44.8	LOS D	2.8	19.7	0.95	1.14	1.52	17.6
Approach		282	5	297	1.8	0.645	21.5	LOS B	2.8	19.7	0.76	0.96	1.02	23.7
West: Terranora Road														
1	L2	78	5	82	6.4	0.058	6.1	LOS A	0.2	1.7	0.23	0.53	0.23	43.8
2	T1	714	21	752	2.9	0.393	0.1	LOS A	0.0	0.0	0.00	0.00	0.00	59.7
Approach		792	26	834	3.3	0.393	0.7	LOS A	0.2	1.7	0.02	0.05	0.02	57.4
All Vehicles		1549	61	1631	3.9	0.645	5.0	NA	2.8	19.7	0.20	0.27	0.25	45.1

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

MOVEMENT SUMMARY

Site: 2 [Site 2 - PM - Base Case-Terranora Road/Henry Lawson Drive Intersection-2028 - Copy (Site Folder: Traffic Survey Year -2028-With Development)]

Existing Site
Site Category: (None)
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	INPUT VOLUMES [Total veh/h	HV] veh/h	DEMAND FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
East: Terranora Road														
8	T1	514	16	541	3.1	0.289	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	59.8
9	R2	157	9	165	5.7	0.152	7.5	LOS A	0.7	4.9	0.52	0.71	0.52	34.6
Approach		671	25	706	3.7	0.289	1.8	NA	0.7	4.9	0.12	0.17	0.12	52.9
North: Henry Lawson Drive														
10	L2	161	7	169	4.3	0.168	6.6	LOS A	0.7	4.9	0.49	0.67	0.49	35.7
12	R2	109	4	115	3.7	0.582	33.9	LOS C	2.6	18.4	0.92	1.11	1.42	20.8
Approach		270	11	284	4.1	0.582	17.6	LOS B	2.6	18.4	0.67	0.85	0.87	26.3
West: Terranora Road														
1	L2	110	5	116	4.5	0.084	6.2	LOS A	0.3	2.5	0.27	0.54	0.27	43.7
2	T1	430	21	453	4.9	0.241	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	59.9
Approach		540	26	568	4.8	0.241	1.3	LOS A	0.3	2.5	0.06	0.11	0.06	55.3
All Vehicles		1481	62	1559	4.2	0.582	4.5	NA	2.6	18.4	0.20	0.27	0.23	45.8

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

MOVEMENT SUMMARY

Site: 1 [Site 1 - AM - Base Case-Terranora Road/Mahers Lane Intersection-2028 - Copy (2) - Copy (Site Folder: Traffic Survey Year -2033-Without Development)]

Existing Site
Site Category: (None)
Give-Way (Two-Way)
Design Life Analysis (Final Year): Results for 5 years

Vehicle Movement Performance

Mov ID	Turn	INPUT VOLUMES [Total veh/h	HV] veh/h	DEMAND FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
East: Terranora Road														
8	T1	246	13	277	5.3	0.150	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	59.9
9	R2	387	18	436	4.7	0.445	9.7	LOS A	3.0	21.6	0.65	0.93	0.89	49.8
Approach		633	31	713	4.9	0.445	5.9	NA	3.0	21.6	0.40	0.57	0.54	52.7
North: Mahers Lane														
10	L2	279	18	314	6.5	0.352	8.0	LOS A	1.8	13.3	0.59	0.84	0.71	44.9
12	R2	34	4	38	11.8	0.341	46.9	LOS D	1.1	8.8	0.93	1.05	1.08	25.5
Approach		313	22	353	7.0	0.352	12.3	LOS A	1.8	13.3	0.63	0.86	0.75	42.5
West: Terranora Road														
1	L2	104	2	117	1.9	0.112	7.4	LOS A	0.4	3.1	0.46	0.67	0.46	49.4
2	T1	481	12	542	2.5	0.282	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	59.8
Approach		585	14	659	2.4	0.282	1.3	LOS A	0.4	3.1	0.08	0.12	0.08	57.8
All Vehicles		1531	67	1724	4.4	0.445	5.5	NA	3.0	21.6	0.32	0.46	0.41	51.3

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

MOVEMENT SUMMARY

Site: 1 [Site 1 - PM - Base Case-Terranora Road/Mahers Lane Intersection-2028 - Copy (2) - Copy (Site Folder: Traffic Survey Year -2033-Without Development)]

Existing Site
Site Category: (None)
Give-Way (Two-Way)
Design Life Analysis (Final Year): Results for 5 years

Vehicle Movement Performance

Mov ID	Turn	INPUT VOLUMES [Total veh/h	HV] veh/h	DEMAND FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
East: Terranora Road														
8	T1	389	10	438	2.6	0.232	0.1	LOS A	0.0	0.0	0.00	0.00	0.00	59.9
9	R2	88	2	99	2.3	0.075	6.7	LOS A	0.3	2.4	0.40	0.61	0.40	51.8
Approach		477	12	537	2.5	0.232	1.3	NA	0.3	2.4	0.07	0.11	0.07	57.8
North: Mahers Lane														
10	L2	113	0	127	0.0	0.104	5.6	LOS A	0.4	2.9	0.39	0.57	0.39	46.0
12	R2	24	0	27	0.0	0.087	17.7	LOS B	0.3	2.1	0.73	1.00	0.73	36.8
Approach		137	0	154	0.0	0.104	7.7	LOS A	0.4	2.9	0.45	0.65	0.45	44.6
West: Terranora Road														
1	L2	20	0	23	0.0	0.015	5.9	LOS A	0.1	0.4	0.19	0.51	0.19	50.8
2	T1	281	4	316	1.4	0.163	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	59.9
Approach		301	4	339	1.3	0.163	0.4	LOS A	0.1	0.4	0.01	0.03	0.01	59.3
All Vehicles		915	16	1031	1.7	0.232	2.0	NA	0.4	2.9	0.11	0.17	0.11	55.3

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

MOVEMENT SUMMARY

Site: 2 [Site 2 - AM - Base Case-Terranora Road/Henry Lawson Drive Intersection-2028 - If diff am peak 7:30-8 (Site Folder: Traffic Survey Year -2033-Without Development)]

Existing Site
Site Category: (None)
Give-Way (Two-Way)
Design Life Analysis (Final Year): Results for 5 years

Vehicle Movement Performance

Mov ID	Turn	INPUT VOLUMES [Total veh/h	HV] veh/h	DEMAND FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
East: Terranora Road														
8	T1	334	22	376	6.6	0.208	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	59.9
9	R2	113	8	127	7.1	0.200	10.7	LOS A	0.8	5.8	0.68	0.87	0.68	30.4
Approach		447	30	503	6.7	0.208	2.7	NA	0.8	5.8	0.17	0.22	0.17	50.4
North: Henry Lawson Drive														
10	L2	152	3	171	2.0	0.273	10.0	LOS A	1.1	7.9	0.69	0.87	0.78	31.5
12	R2	85	2	96	2.4	0.698	54.5	LOS D	3.0	21.6	0.96	1.17	1.63	15.4
Approach		237	5	267	2.1	0.698	26.0	LOS B	3.0	21.6	0.78	0.98	1.09	21.4
West: Terranora Road														
1	L2	75	5	84	6.7	0.060	6.1	LOS A	0.2	1.8	0.23	0.53	0.23	43.8
2	T1	709	21	799	3.0	0.417	0.1	LOS A	0.0	0.0	0.00	0.00	0.00	59.7
Approach		784	26	883	3.3	0.417	0.6	LOS A	0.2	1.8	0.02	0.05	0.02	57.5
All Vehicles		1468	61	1653	4.2	0.698	5.4	NA	3.0	21.6	0.19	0.25	0.24	44.7

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

MOVEMENT SUMMARY

Site: 2 [Site 2 - PM - Base Case-Terranora Road/Henry Lawson Drive Intersection-2028 - Copy (2) - Copy (Site Folder: Traffic Survey Year -2033-Without Development)]

Existing Site
Site Category: (None)
Give-Way (Two-Way)
Design Life Analysis (Final Year): Results for 5 years

Vehicle Movement Performance

Mov ID	Turn	INPUT VOLUMES [Total veh/h	HV] veh/h	DEMAND FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
East: Terranora Road														
8	T1	506	16	570	3.2	0.304	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	59.8
9	R2	125	9	141	7.2	0.133	7.6	LOS A	0.6	4.3	0.52	0.71	0.52	34.4
Approach		631	25	711	4.0	0.304	1.5	NA	0.6	4.3	0.10	0.14	0.10	53.9
North: Henry Lawson Drive														
10	L2	147	7	166	4.8	0.167	6.7	LOS A	0.7	4.9	0.50	0.68	0.50	35.6
12	R2	105	4	118	3.8	0.626	37.2	LOS C	2.8	20.4	0.93	1.14	1.51	19.7
Approach		252	11	284	4.4	0.626	19.4	LOS B	2.8	20.4	0.68	0.87	0.92	25.2
West: Terranora Road														
1	L2	99	5	112	5.1	0.079	6.1	LOS A	0.3	2.4	0.25	0.53	0.25	43.8
2	T1	411	21	463	5.1	0.247	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	59.9
Approach		510	26	574	5.1	0.247	1.2	LOS A	0.3	2.4	0.05	0.10	0.05	55.5
All Vehicles		1393	62	1569	4.5	0.626	4.6	NA	2.8	20.4	0.19	0.26	0.23	45.7

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

MOVEMENT SUMMARY

Site: 1 [Site 1 - AM - Base Case-Terranora Road/Mahers Lane Intersection-2028 (Site Folder: Traffic Survey Year -2033-With Development- 5 design year horizon)]

Existing Site
Site Category: (None)
Give-Way (Two-Way)
Design Life Analysis (Final Year): Results for 5 years

Vehicle Movement Performance

Mov ID	Turn	INPUT VOLUMES [Total veh/h	HV] veh/h	DEMAND FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
East: Terranora Road														
8	T1	254	13	286	5.1	0.155	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	59.9
9	R2	402	18	453	4.5	0.487	10.4	LOS A	3.4	24.7	0.68	0.98	1.00	49.3
Approach		656	31	739	4.7	0.487	6.4	NA	3.4	24.7	0.42	0.60	0.61	52.3
North: Mahers Lane														
10	L2	338	18	381	5.3	0.445	9.0	LOS A	2.6	19.1	0.64	0.92	0.89	44.4
12	R2	54	4	61	7.4	0.587	63.3	LOS E[11]	2.2	16.4	0.96	1.11	1.36	21.7
Approach		392	22	442	5.6	0.587	16.5	LOS B	2.6	19.1	0.68	0.94	0.95	40.3
West: Terranora Road														
1	L2	109	2	123	1.8	0.119	7.5	LOS A	0.5	3.3	0.47	0.68	0.47	49.3
2	T1	515	12	580	2.3	0.301	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	59.8
Approach		624	14	703	2.2	0.301	1.3	LOS A	0.5	3.3	0.08	0.12	0.08	57.8
All Vehicles		1672	67	1883	4.0	0.587	6.9	NA	3.4	24.7	0.35	0.50	0.49	49.8

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

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

MOVEMENT SUMMARY

Site: 1 [Site 1 - PM - Base Case-Terranora Road/Mahers Lane Intersection-2028 (Site Folder: Traffic Survey Year -2033-With Development- 5 design year horizon)]

Existing Site
Site Category: (None)
Give-Way (Two-Way)
Design Life Analysis (Final Year): Results for 5 years

Vehicle Movement Performance

Mov ID	Turn	INPUT VOLUMES [Total veh/h	HV] veh/h	DEMAND FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
East: Terranora Road														
8	T1	427	10	481	2.3	0.254	0.1	LOS A	0.0	0.0	0.00	0.00	0.00	59.9
9	R2	145	2	163	1.4	0.125	6.8	LOS A	0.6	4.0	0.42	0.63	0.42	51.8
Approach		572	12	644	2.1	0.254	1.8	NA	0.6	4.0	0.11	0.16	0.11	57.1
North: Mahers Lane														
10	L2	138	0	155	0.0	0.129	5.7	LOS A	0.5	3.7	0.40	0.58	0.40	46.0
12	R2	32	0	36	0.0	0.145	21.2	LOS B	0.5	3.4	0.80	1.00	0.80	35.0
Approach		170	0	191	0.0	0.145	8.6	LOS A	0.5	3.7	0.47	0.66	0.47	44.1
West: Terranora Road														
1	L2	39	0	44	0.0	0.031	6.1	LOS A	0.1	0.9	0.25	0.53	0.25	50.5
2	T1	291	4	328	1.4	0.169	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	59.9
Approach		330	4	372	1.2	0.169	0.7	LOS A	0.1	0.9	0.03	0.06	0.03	58.7
All Vehicles		1072	16	1207	1.5	0.254	2.5	NA	0.6	4.0	0.14	0.21	0.14	54.5

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

MOVEMENT SUMMARY

Site: 2 [Site 2 - AM - Base Case-Terranora Road/Henry Lawson Drive Intersection-2028 - If diff am peak 7:30-8 (Site Folder: Traffic Survey Year -2033-With Development- 5 design year horizon)]

Existing Site
Site Category: (None)
Give-Way (Two-Way)
Design Life Analysis (Final Year): Results for 5 years

Vehicle Movement Performance

Mov ID	Turn	INPUT VOLUMES [Total veh/h	HV] veh/h	DEMAND FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
East: Terranora Road														
8	T1	354	22	399	6.2	0.219	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	59.9
9	R2	121	8	136	6.6	0.215	10.9	LOS A	0.9	6.4	0.69	0.88	0.71	30.3
Approach		475	30	535	6.3	0.219	2.8	NA	0.9	6.4	0.18	0.22	0.18	50.2
North: Henry Lawson Drive														
10	L2	186	3	209	1.6	0.336	10.5	LOS A	1.5	10.5	0.71	0.91	0.88	30.9
12	R2	96	2	108	2.1	0.845	79.1	LOS F[11]	4.5	32.0	0.98	1.33	2.22	11.8
Approach		282	5	318	1.8	0.845	33.9	LOS C	4.5	32.0	0.80	1.06	1.34	18.2
West: Terranora Road														
1	L2	78	5	88	6.4	0.063	6.1	LOS A	0.3	1.9	0.24	0.53	0.24	43.7
2	T1	714	21	804	2.9	0.420	0.1	LOS A	0.0	0.0	0.00	0.00	0.00	59.7
Approach		792	26	892	3.3	0.420	0.7	LOS A	0.3	1.9	0.02	0.05	0.02	57.4
All Vehicles		1549	61	1745	3.9	0.845	7.4	NA	4.5	32.0	0.21	0.29	0.31	41.1

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

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

MOVEMENT SUMMARY

Site: 2 [Site 2 - PM - Base Case-Terranora Road/Henry Lawson Drive Intersection-2028 (Site Folder: Traffic Survey Year -2033-With Development- 5 design year horizon)]

Existing Site
Site Category: (None)
Give-Way (Two-Way)
Design Life Analysis (Final Year): Results for 5 years

Vehicle Movement Performance

Mov ID	Turn	INPUT VOLUMES [Total veh/h	HV] veh/h	DEMAND FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
East: Terranora Road														
8	T1	514	16	579	3.1	0.309	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	59.8
9	R2	157	9	177	5.7	0.170	7.8	LOS A	0.7	5.5	0.54	0.73	0.54	34.3
Approach		671	25	756	3.7	0.309	1.8	NA	0.7	5.5	0.13	0.17	0.13	52.8
North: Henry Lawson Drive														
10	L2	161	7	181	4.3	0.187	6.8	LOS A	0.8	5.5	0.51	0.70	0.51	35.6
12	R2	109	4	123	3.7	0.735	49.1	LOS D	3.6	26.0	0.96	1.23	1.81	16.5
Approach		270	11	304	4.1	0.735	23.9	LOS B	3.6	26.0	0.69	0.91	1.04	22.6
West: Terranora Road														
1	L2	110	5	124	4.5	0.091	6.3	LOS A	0.4	2.7	0.28	0.55	0.28	43.6
2	T1	430	21	484	4.9	0.258	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	59.9
Approach		540	26	608	4.8	0.258	1.3	LOS A	0.4	2.7	0.06	0.11	0.06	55.2
All Vehicles		1481	62	1668	4.2	0.735	5.7	NA	3.6	26.0	0.20	0.28	0.27	43.7

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

MOVEMENT SUMMARY

Site: 1 [Site 1 - AM - Base Case-Terranora Road/Mahers Lane Intersection-2028 (Site Folder: Traffic Survey Year -2038-Without Development)]

Existing Site
Site Category: (None)
Give-Way (Two-Way)
Design Life Analysis (Final Year): Results for 10 years

Vehicle Movement Performance

Mov ID	Turn	INPUT VOLUMES [Total veh/h	HV] veh/h	DEMAND FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
East: Terranora Road														
8	T1	246	13	295	5.3	0.251	0.9	LOS A	1.1	8.2	0.45	0.00	0.45	57.2
9	R2	387	18	464	4.7	0.498	10.5	LOS A	3.6	25.9	0.68	0.99	1.02	49.3
Approach		633	31	760	4.9	0.498	6.7	NA	3.6	25.9	0.59	0.60	0.80	51.5
North: Mahers Lane														
10	L2	279	18	335	6.5	0.394	8.7	LOS A	2.1	15.7	0.62	0.88	0.81	44.6
12	R2	34	4	41	11.8	0.440	60.1	LOS E[11]	1.5	11.5	0.95	1.07	1.17	22.4
Approach		313	22	376	7.0	0.440	14.3	LOS A	2.1	15.7	0.66	0.90	0.85	41.4
West: Terranora Road														
1	L2	104	2	125	1.9	0.123	7.6	LOS A	0.5	3.4	0.48	0.69	0.48	49.3
2	T1	481	12	577	2.5	0.300	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	59.8
Approach		585	14	702	2.4	0.300	1.4	LOS A	0.5	3.4	0.09	0.12	0.09	57.7
All Vehicles		1531	67	1837	4.4	0.498	6.2	NA	3.6	25.9	0.41	0.48	0.54	50.4

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

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

MOVEMENT SUMMARY

Site: 1 [Site 1 - PM - Base Case-Terranora Road/Mahers Lane Intersection-2028 (Site Folder: Traffic Survey Year -2038- Without Development)]

Existing Site
Site Category: (None)
Give-Way (Two-Way)
Design Life Analysis (Final Year): Results for 10 years

Vehicle Movement Performance

Mov ID	Turn	INPUT VOLUMES [Total veh/h	HV] veh/h	DEMAND FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
East: Terranora Road														
8	T1	389	10	467	2.6	0.248	0.1	LOS A	0.0	0.0	0.00	0.00	0.00	59.9
9	R2	88	2	106	2.3	0.082	6.8	LOS A	0.4	2.6	0.42	0.62	0.42	51.7
Approach		477	12	572	2.5	0.248	1.3	NA	0.4	2.6	0.08	0.11	0.08	57.7
North: Mahers Lane														
10	L2	113	0	136	0.0	0.113	5.7	LOS A	0.5	3.2	0.40	0.58	0.40	46.0
12	R2	24	0	29	0.0	0.103	19.1	LOS B	0.3	2.4	0.76	1.00	0.76	36.0
Approach		137	0	164	0.0	0.113	8.1	LOS A	0.5	3.2	0.46	0.66	0.46	44.4
West: Terranora Road														
1	L2	20	0	24	0.0	0.016	5.9	LOS A	0.1	0.4	0.19	0.51	0.19	50.8
2	T1	281	4	337	1.4	0.174	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	59.9
Approach		301	4	361	1.3	0.174	0.4	LOS A	0.1	0.4	0.01	0.03	0.01	59.2
All Vehicles		915	16	1098	1.7	0.248	2.0	NA	0.5	3.2	0.11	0.17	0.11	55.2

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

MOVEMENT SUMMARY

Site: 2 [Site 2 - AM - Base Case-Terranora Road/Henry Lawson Drive Intersection-2028 (Site Folder: Traffic Survey Year -2038-Without Development)]

Existing Site
Site Category: (None)
Give-Way (Two-Way)
Design Life Analysis (Final Year): Results for 10 years

Vehicle Movement Performance

Mov ID	Turn	INPUT VOLUMES [Total veh/h	HV] veh/h	DEMAND FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
East: Terranora Road														
8	T1	334	22	401	6.6	0.220	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	59.9
9	R2	113	8	136	7.1	0.235	11.8	LOS A	1.0	7.1	0.72	0.90	0.78	29.2
Approach		447	30	536	6.7	0.235	3.0	NA	1.0	7.1	0.18	0.23	0.20	49.7
North: Henry Lawson Drive														
10	L2	152	3	182	2.0	0.320	11.1	LOS A	1.3	9.5	0.73	0.92	0.89	30.3
12	R2	85	2	102	2.4	0.914	107.6	LOS F[11]	5.5	39.0	0.99	1.44	2.61	9.3
Approach		237	5	284	2.1	0.914	45.7	LOS D	5.5	39.0	0.82	1.11	1.51	15.0
West: Terranora Road														
1	L2	75	5	90	6.7	0.064	6.1	LOS A	0.3	1.9	0.24	0.53	0.24	43.7
2	T1	709	21	851	3.0	0.445	0.1	LOS A	0.0	0.0	0.00	0.00	0.00	59.7
Approach		784	26	941	3.3	0.445	0.7	LOS A	0.3	1.9	0.02	0.05	0.02	57.4
All Vehicles		1468	61	1762	4.2	0.914	8.6	NA	5.5	39.0	0.20	0.27	0.32	39.4

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

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

MOVEMENT SUMMARY

Site: 2 [Site 2 - PM - Base Case-Terranora Road/Henry Lawson Drive Intersection-2028 (Site Folder: Traffic Survey Year -2038-Without Development)]

Existing Site
Site Category: (None)
Give-Way (Two-Way)
Design Life Analysis (Final Year): Results for 10 years

Vehicle Movement Performance

Mov ID	Turn	INPUT VOLUMES [Total veh/h	HV] veh/h	DEMAND FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
East: Terranora Road														
8	T1	506	16	607	3.2	0.324	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	59.8
9	R2	125	9	150	7.2	0.148	7.8	LOS A	0.6	4.8	0.54	0.73	0.54	34.1
Approach		631	25	757	4.0	0.324	1.6	NA	0.6	4.8	0.11	0.14	0.11	53.7
North: Henry Lawson Drive														
10	L2	147	7	176	4.8	0.185	6.9	LOS A	0.7	5.4	0.52	0.70	0.52	35.5
12	R2	105	4	126	3.8	0.784	56.0	LOS D	4.1	29.5	0.97	1.28	2.00	15.1
Approach		252	11	302	4.4	0.784	27.4	LOS B	4.1	29.5	0.71	0.94	1.14	21.0
West: Terranora Road														
1	L2	99	5	119	5.1	0.085	6.2	LOS A	0.4	2.6	0.26	0.54	0.26	43.7
2	T1	411	21	493	5.1	0.263	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	59.9
Approach		510	26	612	5.1	0.263	1.2	LOS A	0.4	2.6	0.05	0.10	0.05	55.5
All Vehicles		1393	62	1672	4.5	0.784	6.1	NA	4.1	29.5	0.19	0.27	0.27	43.0

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

MOVEMENT SUMMARY

Site: 1 [Site 1 - AM - Base Case-Terranora Road/Mahers Lane Intersection-2028 (Site Folder: Traffic Survey Year -2038-With Development-10 design year horizon)]

Existing Site
Site Category: (None)
Give-Way (Two-Way)
Design Life Analysis (Final Year): Results for 10 years

Vehicle Movement Performance

Mov ID	Turn	INPUT VOLUMES [Total veh/h	HV] veh/h	DEMAND FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
East: Terranora Road														
8	T1	254	13	305	5.1	0.271	1.0	LOS A	1.2	9.0	0.47	0.00	0.47	57.1
9	R2	402	18	482	4.5	0.548	11.4	LOS A	4.1	29.8	0.71	1.04	1.15	48.6
Approach		656	31	787	4.7	0.548	7.4	NA	4.1	29.8	0.62	0.63	0.89	51.0
North: Mahers Lane														
10	L2	338	18	406	5.3	0.501	9.9	LOS A	3.1	22.8	0.67	0.97	1.02	43.9
12	R2	54	4	65	7.4	0.769	99.0	LOS F[11]	3.2	23.9	0.98	1.20	1.72	16.4
Approach		392	22	470	5.6	0.769	22.2	LOS B	3.2	23.9	0.71	1.00	1.11	37.7
West: Terranora Road														
1	L2	109	2	131	1.8	0.132	7.7	LOS A	0.5	3.7	0.49	0.70	0.49	49.3
2	T1	515	12	618	2.3	0.321	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	59.8
Approach		624	14	749	2.2	0.321	1.4	LOS A	0.5	3.7	0.09	0.12	0.09	57.7
All Vehicles		1672	67	2006	4.0	0.769	8.6	NA	4.1	29.8	0.44	0.53	0.64	48.3

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

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

MOVEMENT SUMMARY

Site: 1 [Site 1 - PM - Base Case-Terranora Road/Mahers Lane Intersection-2028 (Site Folder: Traffic Survey Year -2038-With Development-10 design year horizon)]

Existing Site
Site Category: (None)
Give-Way (Two-Way)
Design Life Analysis (Final Year): Results for 10 years

Vehicle Movement Performance

Mov ID	Turn	INPUT VOLUMES [Total veh/h	HV] veh/h	DEMAND FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
East: Terranora Road														
8	T1	427	10	512	2.3	0.271	0.1	LOS A	0.0	0.0	0.00	0.00	0.00	59.8
9	R2	145	2	174	1.4	0.136	6.9	LOS A	0.6	4.4	0.44	0.64	0.44	51.7
Approach		572	12	686	2.1	0.271	1.8	NA	0.6	4.4	0.11	0.16	0.11	57.0
North: Mahers Lane														
10	L2	138	0	166	0.0	0.140	5.8	LOS A	0.6	4.0	0.42	0.60	0.42	45.9
12	R2	32	0	38	0.0	0.174	23.5	LOS B	0.6	4.1	0.83	1.00	0.84	33.9
Approach		170	0	204	0.0	0.174	9.2	LOS A	0.6	4.1	0.49	0.67	0.50	43.8
West: Terranora Road														
1	L2	39	0	47	0.0	0.033	6.1	LOS A	0.1	0.9	0.26	0.53	0.26	50.5
2	T1	291	4	349	1.4	0.180	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	59.9
Approach		330	4	396	1.2	0.180	0.7	LOS A	0.1	0.9	0.03	0.06	0.03	58.7
All Vehicles		1072	16	1286	1.5	0.271	2.6	NA	0.6	4.4	0.15	0.21	0.15	54.4

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

MOVEMENT SUMMARY

Site: 2 [Site 2 - AM - Base Case-Terranora Road/Henry Lawson Drive Intersection-2028 - If diff am peak 7:30-8 (Site Folder: Traffic Survey Year -2038-With Development-10 design year horizon)]

Existing Site
Site Category: (None)
Give-Way (Two-Way)
Design Life Analysis (Final Year): Results for 10 years

Vehicle Movement Performance

Mov ID	Turn	INPUT VOLUMES [Total veh/h	HV] veh/h	DEMAND FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
East: Terranora Road														
8	T1	354	22	425	6.2	0.233	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	59.9
9	R2	121	8	145	6.6	0.253	12.0	LOS A	1.1	7.8	0.73	0.91	0.81	29.0
Approach		475	30	570	6.3	0.253	3.1	NA	1.1	7.8	0.19	0.23	0.21	49.5
North: Henry Lawson Drive														
10	L2	186	3	223	1.6	0.394	11.8	LOS A	1.8	12.7	0.75	0.96	1.01	29.5
12	R2	96	2	115	2.1	1.116	214.7	LOS F[11]	13.6	96.7	1.00	2.07	4.94	5.1
Approach		282	5	338	1.8	1.116	80.9	LOS F[11]	13.6	96.7	0.84	1.34	2.34	9.6
West: Terranora Road														
1	L2	78	5	94	6.4	0.067	6.2	LOS A	0.3	2.0	0.25	0.53	0.25	43.6
2	T1	714	21	857	2.9	0.448	0.1	LOS A	0.0	0.0	0.00	0.00	0.00	59.7
Approach		792	26	950	3.3	0.448	0.7	LOS A	0.3	2.0	0.02	0.05	0.02	57.4
All Vehicles		1549	61	1859	3.9	1.116	16.0	NA	13.6	96.7	0.22	0.34	0.50	30.7

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

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

Organisation: TTM CONSULTING PTY LTD | Licence: NETWORK / Enterprise | Processed: Thursday, 26 September 2024 5:21:20 PM
Project: C:\Users\mhasan\OneDrive - TTM\Desktop\TASK TO DO\Mahers Ln\24GCT0118 - updated final.sip9

MOVEMENT SUMMARY

Site: 2 [Site 2 - PM - Base Case-Terranora Road/Henry Lawson Drive Intersection-2028 - Copy - Copy (Site Folder: Traffic Survey Year -2038-With Development-10 design year horizon)]

Existing Site
Site Category: (None)
Give-Way (Two-Way)
Design Life Analysis (Final Year): Results for 10 years

Vehicle Movement Performance

Mov ID	Turn	INPUT VOLUMES [Total veh/h	HV] veh/h	DEMAND FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
East: Terranora Road														
8	T1	514	16	617	3.1	0.328	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	59.8
9	R2	157	9	188	5.7	0.189	8.0	LOS A	0.8	6.1	0.56	0.75	0.56	33.9
Approach		671	25	805	3.7	0.328	1.9	NA	0.8	6.1	0.13	0.18	0.13	52.6
North: Henry Lawson Drive														
10	L2	161	7	193	4.3	0.208	7.1	LOS A	0.8	6.1	0.53	0.72	0.53	35.3
12	R2	109	4	131	3.7	0.931	95.9	LOS F[11]	6.7	48.3	0.99	1.57	3.02	10.2
Approach		270	11	324	4.1	0.931	42.9	LOS D	6.7	48.3	0.72	1.06	1.54	15.8
West: Terranora Road														
1	L2	110	5	132	4.5	0.098	6.3	LOS A	0.4	2.9	0.29	0.55	0.29	43.5
2	T1	430	21	516	4.9	0.275	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	59.8
Approach		540	26	648	4.8	0.275	1.3	LOS A	0.4	2.9	0.06	0.11	0.06	55.2
All Vehicles		1481	62	1777	4.2	0.931	9.2	NA	6.7	48.3	0.21	0.31	0.36	38.3

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

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

Organisation: TTM CONSULTING PTY LTD | Licence: NETWORK / Enterprise | Processed: Tuesday, 29 October 2024 2:09:52 PM
Project: C:\Users\mhasan\OneDrive - TTM\Desktop\TASK TO DO\Mahers Ln\24GCT0118 - updated final.sip9

MOVEMENT SUMMARY

Site: 1 [Site 1 - AM - Base Case-Terranora Road/Mahers Lane Intersection-2026 - Copy (Site Folder: Construction Stage 1 - Without Development plus Construction Traffic)]

Existing Site
Site Category: (None)
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	INPUT VOLUMES [Total veh/h	HV] veh/h	DEMAND FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
East: Terranora Road														
8	T1	251	12	264	4.8	0.143	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	59.9
9	R2	376	17	396	4.5	0.378	8.7	LOS A	2.3	16.5	0.60	0.84	0.73	50.5
Approach		627	29	660	4.6	0.378	5.2	NA	2.3	16.5	0.36	0.50	0.44	53.3
North: Mahers Lane														
10	L2	271	17	285	6.3	0.299	7.3	LOS A	1.4	10.2	0.55	0.76	0.60	45.4
12	R2	33	4	35	12.1	0.244	35.8	LOS C	0.8	6.3	0.89	1.03	0.98	29.0
Approach		304	21	320	6.9	0.299	10.4	LOS A	1.4	10.2	0.59	0.79	0.64	43.5
West: Terranora Road														
1	L2	102	2	107	2.0	0.098	7.2	LOS A	0.4	2.7	0.44	0.64	0.44	49.5
2	T1	467	11	492	2.4	0.255	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	59.9
Approach		569	13	599	2.3	0.255	1.3	LOS A	0.4	2.7	0.08	0.12	0.08	57.8
All Vehicles		1500	63	1579	4.2	0.378	4.8	NA	2.3	16.5	0.30	0.41	0.34	51.9

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

MOVEMENT SUMMARY

Site: 1 [Site 1 - PM - Base Case-Terranora Road/Mahers Lane Intersection-2026 - Copy (Site Folder: Construction Stage 1 - Without Development plus Construction Traffic)]

Existing Site
Site Category: (None)
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	INPUT VOLUMES [Total veh/h	HV] veh/h	DEMAND FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
East: Terranora Road														
8	T1	378	9	398	2.4	0.211	0.1	LOS A	0.0	0.0	0.00	0.00	0.00	59.9
9	R2	86	2	91	2.3	0.068	6.6	LOS A	0.3	2.1	0.39	0.60	0.39	51.8
Approach		464	11	488	2.4	0.211	1.3	NA	0.3	2.1	0.07	0.11	0.07	57.8
North: Mahers Lane														
10	L2	110	0	116	0.0	0.093	5.5	LOS A	0.4	2.6	0.37	0.56	0.37	46.1
12	R2	24	0	25	0.0	0.072	16.1	LOS B	0.2	1.7	0.70	1.00	0.70	37.7
Approach		134	0	141	0.0	0.093	7.4	LOS A	0.4	2.6	0.43	0.64	0.43	44.8
West: Terranora Road														
1	L2	20	0	21	0.0	0.014	5.9	LOS A	0.1	0.4	0.18	0.51	0.18	50.9
2	T1	285	4	300	1.4	0.154	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	59.9
Approach		305	4	321	1.3	0.154	0.4	LOS A	0.1	0.4	0.01	0.03	0.01	59.3
All Vehicles		903	15	951	1.7	0.211	1.9	NA	0.4	2.6	0.10	0.16	0.10	55.4

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

MOVEMENT SUMMARY

Site: 2 [Site 2 - AM - Base Case-Terranora Road/Henry Lawson Drive Intersection-2026 (Site Folder: Construction Stage 1 -Without Development plus Construction Traffic)]

Existing Site
Site Category: (None)
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	INPUT VOLUMES [Total veh/h	HV] veh/h	DEMAND FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
East: Terranora Road														
8	T1	325	21	342	6.5	0.188	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	59.9
9	R2	121	7	127	5.8	0.174	9.7	LOS A	0.7	5.1	0.63	0.85	0.63	31.7
Approach		446	28	469	6.3	0.188	2.6	NA	0.7	5.1	0.17	0.23	0.17	50.5
North: Henry Lawson Drive														
10	L2	148	3	156	2.0	0.221	8.8	LOS A	0.8	6.0	0.62	0.82	0.64	33.1
12	R2	87	2	92	2.3	0.526	35.4	LOS C	2.1	15.0	0.92	1.08	1.31	20.3
Approach		235	5	247	2.1	0.526	18.6	LOS B	2.1	15.0	0.74	0.91	0.89	25.6
West: Terranora Road														
1	L2	82	9	86	11.0	0.063	6.2	LOS A	0.3	1.9	0.23	0.53	0.23	43.4
2	T1	691	20	727	2.9	0.380	0.1	LOS A	0.0	0.0	0.00	0.00	0.00	59.7
Approach		773	29	814	3.8	0.380	0.7	LOS A	0.3	1.9	0.02	0.06	0.02	57.2
All Vehicles		1454	62	1531	4.3	0.526	4.2	NA	2.1	15.0	0.18	0.25	0.21	46.9

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

MOVEMENT SUMMARY

Site: 2 [Site 2 - PM - Base Case-Terranora Road/Henry Lawson Drive Intersection-2026 (Site Folder: Construction Stage 1 -Without Development plus Construction Traffic)]

Existing Site
Site Category: (None)
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	INPUT VOLUMES [Total veh/h	HV] veh/h	DEMAND FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
East: Terranora Road														
8	T1	493	16	519	3.2	0.277	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	59.8
9	R2	121	8	127	6.6	0.114	7.3	LOS A	0.5	3.7	0.49	0.68	0.49	34.7
Approach		614	24	646	3.9	0.277	1.5	NA	0.5	3.7	0.10	0.13	0.10	54.0
North: Henry Lawson Drive														
10	L2	154	6	162	3.9	0.154	6.4	LOS A	0.6	4.5	0.47	0.65	0.47	35.9
12	R2	110	8	116	7.3	0.522	28.7	LOS C	2.3	16.9	0.90	1.08	1.32	22.7
Approach		264	14	278	5.3	0.522	15.7	LOS B	2.3	16.9	0.65	0.83	0.82	27.7
West: Terranora Road														
1	L2	101	9	106	8.9	0.076	6.1	LOS A	0.3	2.4	0.23	0.53	0.23	43.5
2	T1	400	20	421	5.0	0.224	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	59.9
Approach		501	29	527	5.8	0.224	1.3	LOS A	0.3	2.4	0.05	0.11	0.05	55.3
All Vehicles		1379	67	1452	4.9	0.522	4.1	NA	2.3	16.9	0.18	0.26	0.22	46.6

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

MOVEMENT SUMMARY

Site: 1 [Site 1 - AM - Base Case-Terranora Road/Mahers Lane Intersection-2028 (Site Folder: Construction Stage 4-Without Development plus Construction Traffic)]

Existing Site
Site Category: (None)
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	INPUT VOLUMES [Total veh/h	HV] veh/h	DEMAND FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
East: Terranora Road														
8	T1	246	13	259	5.3	0.141	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	59.9
9	R2	399	18	420	4.5	0.409	9.1	LOS A	2.6	18.9	0.62	0.87	0.79	50.3
Approach		645	31	679	4.8	0.409	5.6	NA	2.6	18.9	0.38	0.54	0.49	52.9
North: Mahers Lane														
10	L2	279	18	294	6.5	0.314	7.5	LOS A	1.5	11.1	0.56	0.78	0.63	45.2
12	R2	35	5	37	14.3	0.291	40.9	LOS C	1.0	7.7	0.91	1.04	1.03	27.3
Approach		314	23	331	7.3	0.314	11.2	LOS A	1.5	11.1	0.60	0.81	0.68	43.0
West: Terranora Road														
1	L2	109	3	115	2.8	0.108	7.3	LOS A	0.4	3.0	0.46	0.66	0.46	49.4
2	T1	481	12	506	2.5	0.263	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	59.9
Approach		590	15	621	2.5	0.263	1.4	LOS A	0.4	3.0	0.08	0.12	0.08	57.7
All Vehicles		1549	69	1631	4.5	0.409	5.1	NA	2.6	18.9	0.31	0.44	0.37	51.6

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

MOVEMENT SUMMARY

Site: 1 [Site 1 - PM - Base Case-Terranora Road/Mahers Lane Intersection-2028 (Site Folder: Construction Stage 4-Without Development plus Construction Traffic)]

Existing Site
Site Category: (None)
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	INPUT VOLUMES [Total veh/h	HV] veh/h	DEMAND FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
East: Terranora Road														
8	T1	389	10	409	2.6	0.217	0.1	LOS A	0.0	0.0	0.00	0.00	0.00	59.9
9	R2	88	2	93	2.3	0.069	6.6	LOS A	0.3	2.2	0.39	0.60	0.39	51.8
Approach		477	12	502	2.5	0.217	1.3	NA	0.3	2.2	0.07	0.11	0.07	57.8
North: Mahers Lane														
10	L2	125	0	132	0.0	0.105	5.5	LOS A	0.4	3.0	0.37	0.56	0.37	46.1
12	R2	29	1	31	3.4	0.093	17.0	LOS B	0.3	2.3	0.71	1.00	0.71	37.2
Approach		154	1	162	0.6	0.105	7.7	LOS A	0.4	3.0	0.44	0.64	0.44	44.6
West: Terranora Road														
1	L2	21	1	22	4.8	0.015	5.9	LOS A	0.1	0.4	0.18	0.51	0.18	50.6
2	T1	281	4	296	1.4	0.152	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	59.9
Approach		302	5	318	1.7	0.152	0.4	LOS A	0.1	0.4	0.01	0.04	0.01	59.2
All Vehicles		933	18	982	1.9	0.217	2.1	NA	0.4	3.0	0.11	0.17	0.11	55.0

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

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MOVEMENT SUMMARY

Site: 2 [Site 2 - AM - Base Case-Terranora Road/Henry Lawson Drive Intersection-2028 - Copy (Site Folder: Construction Stage 4-Without Development plus Construction Traffic)]

Existing Site
Site Category: (None)
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	INPUT VOLUMES [Total veh/h	HV] veh/h	DEMAND FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
East: Terranora Road														
8	T1	335	23	353	6.9	0.195	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	59.9
9	R2	113	8	119	7.1	0.172	10.1	LOS A	0.7	5.1	0.65	0.85	0.65	31.2
Approach		448	31	472	6.9	0.195	2.5	NA	0.7	5.1	0.16	0.21	0.16	50.8
North: Henry Lawson Drive														
10	L2	152	3	160	2.0	0.236	9.1	LOS A	0.9	6.6	0.65	0.84	0.69	32.6
12	R2	85	2	89	2.4	0.545	38.0	LOS C	2.2	15.5	0.93	1.08	1.34	19.4
Approach		237	5	249	2.1	0.545	19.5	LOS B	2.2	15.5	0.75	0.92	0.92	25.0
West: Terranora Road														
1	L2	75	5	79	6.7	0.056	6.1	LOS A	0.2	1.7	0.22	0.52	0.22	43.8
2	T1	714	22	752	3.1	0.393	0.1	LOS A	0.0	0.0	0.00	0.00	0.00	59.7
Approach		789	27	831	3.4	0.393	0.6	LOS A	0.2	1.7	0.02	0.05	0.02	57.5
All Vehicles		1474	63	1552	4.3	0.545	4.2	NA	2.2	15.5	0.18	0.24	0.21	46.8

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

MOVEMENT SUMMARY

Site: 2 [Site 2 - PM - Base Case-Terranora Road/Henry Lawson Drive Intersection-2028 - Copy (Site Folder: Construction Stage 4-Without Development plus Construction Traffic)]

Existing Site
Site Category: (None)
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	INPUT VOLUMES [Total veh/h	HV] veh/h	DEMAND FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
East: Terranora Road														
8	T1	511	17	538	3.3	0.287	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	59.8
9	R2	125	9	132	7.2	0.120	7.4	LOS A	0.5	3.9	0.50	0.69	0.50	34.6
Approach		636	26	669	4.1	0.287	1.5	NA	0.5	3.9	0.10	0.13	0.10	54.0
North: Henry Lawson Drive														
10	L2	147	7	155	4.8	0.150	6.4	LOS A	0.6	4.4	0.48	0.65	0.48	35.8
12	R2	105	4	111	3.8	0.508	28.7	LOS C	2.2	15.6	0.90	1.07	1.29	22.7
Approach		252	11	265	4.4	0.508	15.7	LOS B	2.2	15.6	0.65	0.83	0.82	27.6
West: Terranora Road														
1	L2	100	6	105	6.0	0.075	6.1	LOS A	0.3	2.2	0.24	0.53	0.24	43.8
2	T1	411	21	433	5.1	0.231	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	59.9
Approach		511	27	538	5.3	0.231	1.2	LOS A	0.3	2.2	0.05	0.10	0.05	55.5
All Vehicles		1399	64	1473	4.6	0.508	3.9	NA	2.2	15.6	0.18	0.25	0.21	47.0

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

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