

A photograph of a lush green field with tall grass and scattered trees, including a large tree on the right and a fence in the background.

TRAFFIC IMPACT ASSESSMENT

COMMUNITY TITLE RESIDENTIAL SUBDIVISION

LOT C DP163627

256 PATERSON ROAD, BOLWARRA

PREPARED FOR: HGBE PROPERTIES PTY LTD

SEPTEMBER 2024

24/036

**TRAFFIC IMPACT ASSESSMENT
COMMUNITY TITLE RESIDENTIAL SUBDIVISION****LOT C DP163627
256 PATERSON ROAD, BOLWARRA**

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This document has been prepared, checked, and released in accordance with the Quality Control Standards established by Intersect Traffic Pty Ltd.

Issue	Date	Description	By
A	18/06/24	Draft	JG
B	21/06/24	Edit	JG
C	27/06/24	Final Proof	JG
D	27/06/24	Approved	JG
E	25/07/24	Amended Subdivision Plan / Approved	JG
F	13/09/24	Amended Subdivision Plan / Approved	JG

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Date 13th September 2024**Disclaimer**

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1.0 INTRODUCTION

Intersect Traffic Pty Ltd (Intersect Traffic) has been engaged by HGBE Properties Pty Ltd to prepare a Traffic Impact Assessment for the proposed community title residential subdivision of Lot C DP163627, 256 Paterson Road, Bolwarra. The current proposal yields up to 13 new residential lots as shown in the current concept subdivision plan provided in **Attachment A**. Vehicular access to the site development is proposed via a new private road (8 metres wide) connection to Paterson Road approximately 680 metres east of Tocal Road.

This report is required to support a development application to Maitland City Council and allow the Council to assess the application's impact on the local and state road network. This report presents the findings of the traffic assessment and includes the following.

1. An outline of the existing situation near the site.
2. An assessment of the traffic impacts of the proposed development including the predicted traffic generation and its impact on existing road and intersection capacities.
3. Determines any triggers for the provision of additional infrastructure.
4. Reviews access, parking, public transport, pedestrian, and cycle way requirements for the proposed development, including assessment against Council's DCP, Austroads and Australian Standard requirements.
5. Presentation of conclusions and recommendations.

2.0 SITE DESCRIPTION

The subject site is located on the northern side of Paterson Road approximately 680 metres east of Tocal Road Bolwarra. The site is approximately 4.5 km north-east of the Lorn Village shopping precinct and 5.1 km north-east of the Maitland CBD. It is bordered to the north, east and west by rural residential land and to the south by residential properties. Its location within the context of surrounding residential and rural land is shown in the location plan provided as **Figure 1**, below. The site currently contains a single residential dwelling and ancillary shed. A vehicular access to the residential dwelling on the site (256 Paterson Road) is located off Paterson Road.

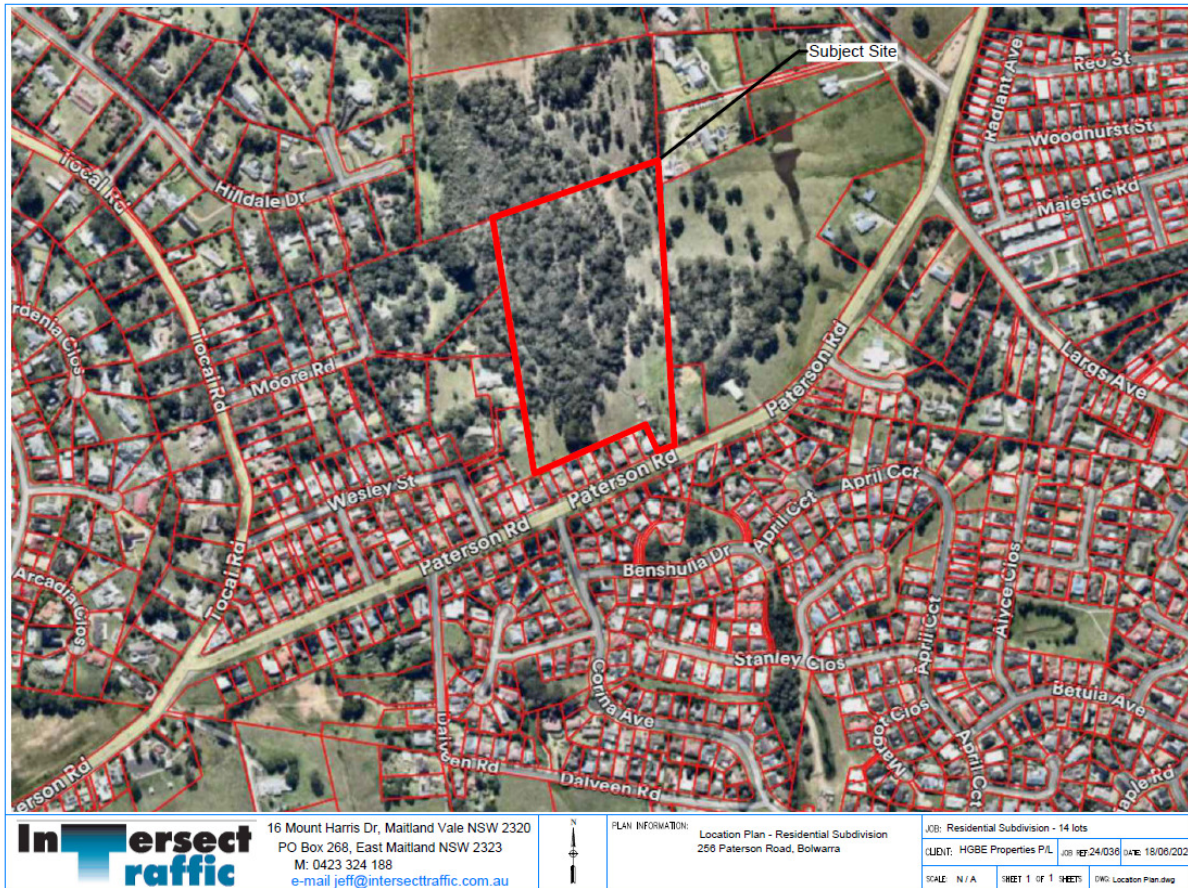


Figure 1 – Site Location

The site contains the following property descriptors:

- ◆ Formal land title of Lot C DP163627;
- ◆ Residential address of 256 Paterson Road, Bolwarra;
- ◆ Site area of approximately 7.3 hectares; and
- ◆ Land zoning of R5 – Large Lot Residential in accordance with Maitland LEP (2011).

The site has road frontage to Paterson Road with an existing residential vehicular access crossing. **Photograph 1** below shows the existing site development from Paterson Road including the existing vehicular access to the site.



Photograph 1 – Development site from Paterson Road and existing vehicular access.

3.0 EXISTING ROAD NETWORK

In terms of the local road network, the road most likely to be impacted by the additional traffic generated by the proposed development will be Paterson Road.

Paterson Road near the site is a classified regional road (MR101) performing the function of a sub-arterial road connecting Maitland to Paterson and Dungog and therefore is under the care and control of Maitland City Council with some funding assistance from TfNSW. It has a sealed width of 11.5 metres providing a single travel lane in both directions and a parking lane on the western side of the road. It is constructed to a typical semi urban standard with kerb and gutter on the western side and sealed shoulders and grass verges on the eastern side fronting the site. Additional lanes are provided at major intersections. Travel lane widths are 3.3 metres, and the road is both centre line and edge line marked. On inspection the road was observed to be in good condition with a 60 km/h speed zoning applying near the site. *Photograph 2* shows Paterson Road along the site frontage.

4.0 ROAD NETWORK IMPROVEMENTS

There are no known road network improvements that will increase the capacity of the local and state road network near the site. Maintenance work will be carried out on the local and state road network in accordance with Maitland City Council's annual works programmes.



Photograph 2 – Paterson Road along site frontage.

5.0 TRAFFIC VOLUMES

Intersect Traffic undertook peak hour traffic counts at the Paterson Road / Tocal Road intersection on Thursday 6th June 2024. This is likely to be the intersection most impacted by the proposed development therefore the counts were required to Sidra model the intersection. They are however also suitable to determine two-way mid-block traffic volumes on the road network. The peak hour periods of 8 am – 9 am and 3.30 pm – 4.30 pm were chosen based on historical counts in the Maitland area. The traffic count data collected during these counts are shown in **Attachment B**. The two-way mid-block existing traffic volumes calculated from this data are shown below in **Table 1**.

The predicted 2034 volumes have been calculated using an annual background growth rate factor of 2 % per annum and are also shown in **Table 1** below. These existing and future baseline traffic volumes have been adopted in this assessment.

Table 1 – Baseline two-way mid-block 2024 and 2034 traffic volumes

Road	Section	2024		2034 @2% p.a.	
		AM (vtph)	PM (vtph)	AM (vtph)	PM (vtph)
Paterson Road	south of Tocal Road	1053	1087	1284	1325
Paterson Road	east of Tocal Road	573	585	698	713
Tocal Road	north of Paterson Road	584	622	712	758

6.0 ROAD CAPACITY

The capacity of the road network is generally determined by the capacity of intersections. However, the *RTA's Guide to Traffic Generating Developments* provides some guidance on mid-block capacities and likely levels of service. For urban roads *Table 4.3* of the *RTA's Guide*, reproduced below, provides some guidance on mid-block capacities and likely levels of service.

Table 4.3
Typical mid-block capacities for urban roads with interrupted flow

Type of Road	One-Way Mid-block Lane Capacity (pcu/hr)	
Median or inner lane:	Divided Road	1,000
	Undivided Road	900
Outer or kerb lane:	With Adjacent Parking Lane	900
	Clearway Conditions	900
	Occasional Parked Cars	600
4 lane undivided:	Occasional Parked Cars	1,500
	Clearway Conditions	1,800
4 lane divided:	Clearway Conditions	1,900

Source: - *RTA's Guide to Traffic Generating Developments (2002)*.

Noting the road network is generally two-way two-lane roads, the one-way mid-block capacity taken from table 4.3 above is 900 vtpm therefore the two-way mid-block capacity is 1,800 vtpm. The local and state road network capacities adopted for this assessment therefore are;

- ◆ Paterson Road – 1,800 vtpm
- ◆ Total Road – 1,800 vtpm.

7.0 ALTERNATE TRANSPORT MODES

Hunter Valley Buses operates service route 185 Largs to Maitland via Bolwarra and Lorn (**Figure 2** below) within the vicinity of the development site. Route 185 runs along the Paterson Road and then down Corina Avenue and Dalveen Road with the nearest bus stops located on Paterson Road near Corina Avenue approximately 160 metres west of the site. This provides a convenient public transport service to the site with access to the Maitland CBD, Maitland Train Station, and schools within the local area. Subsequent connections to the heavy rail line and other services at Maitland Railway Station ensures the site is conveniently serviced by public transport services to all the major retail, health, commercial and educational facilities in the area.

There are no concrete pedestrian footpaths running along either side of Paterson Road east of Total Road however the grassed verges on both sides are well maintained and suitable for the pedestrian traffic in the area. No on or off-road bicycle facilities were observed near the site.

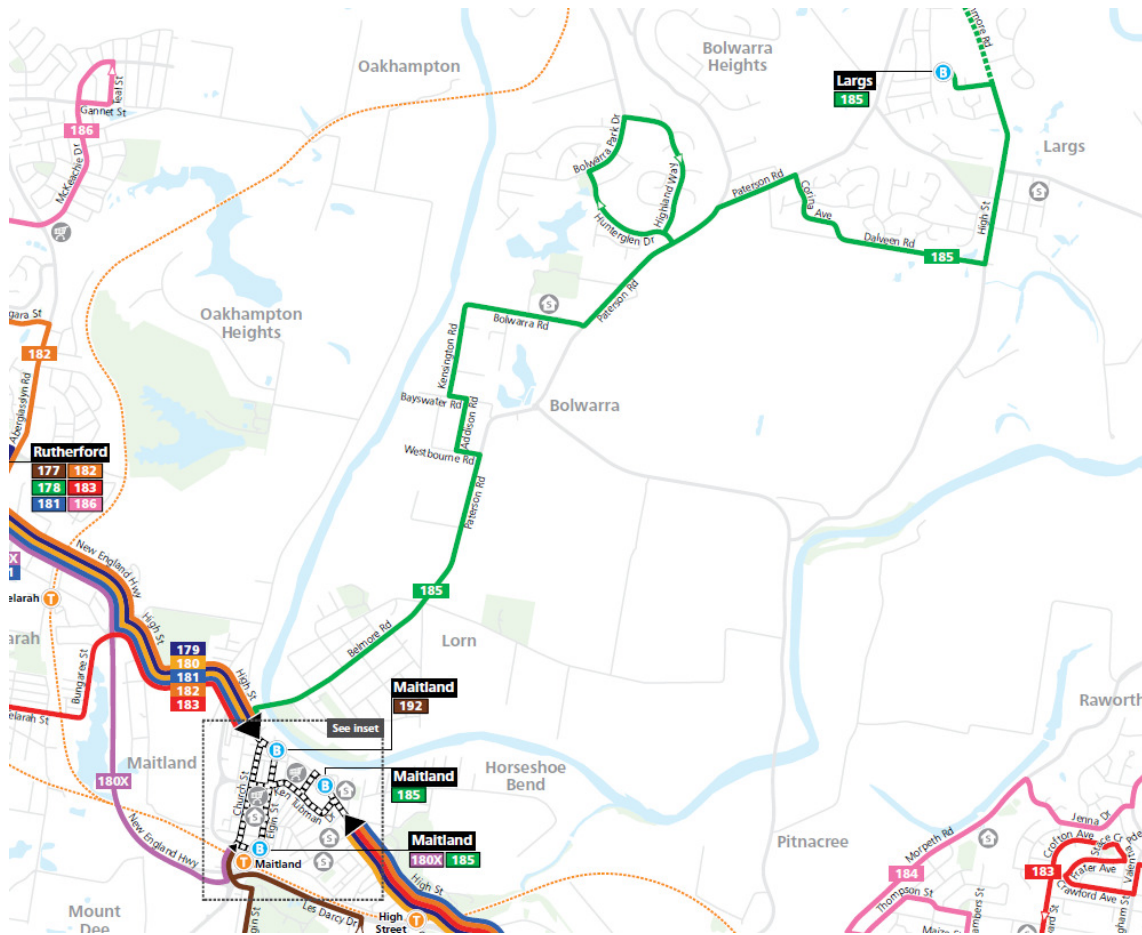


Figure 2 – Hunter Valley Buses Service Route 185.

8.0 DEVELOPMENT PROPOSAL

The development involves the subdivision of the property into 13 new community title residential lots ranging in size from 5,006 m² to 5,521 m². The existing dwelling and other structures at 256 Paterson Road will be demolished as part of development works. The new lots will be accessed from a new private road cul-de-sac running north- west from Paterson Road.

All new infrastructure will be constructed to Maitland City Council’s ‘MOES’ and Austroads *Guide to Road Design* and *Guide to Traffic Management* requirements. The concept subdivision plan for the site is provided within **Attachment A**.

9.0 TRAFFIC GENERATION

Transport for NSW's Technical Direction TDT 13/04 provides the latest advice in regard to the traffic generation potential of low-density residential housing. The advice contained in Technical Direction (TDT 2013/4) is as follows.

Rates

Daily vehicle trips = 10.7 per dwelling in Sydney, 7.4 per dwelling in regional areas
 Weekday average evening peak hour vehicle trips = 0.99 per dwelling in Sydney (maximum 1.39), 0.78 per dwelling in regional areas (maximum 0.90).
 Weekday average morning peak hour vehicle trips = 0.95 per dwelling in Sydney (maximum 1.32), 0.71 per dwelling in regional areas (maximum 0.85).
 (The above rates do not include trips made internal to the subdivision, which may add up to an additional 25%).

Therefore, the total traffic generated by the proposed residential subdivision during the weekday peak period can be calculated as follows (rounded up);

Daily vehicle trips	= 13 dwellings x 7.4 trips per dwelling = 97 vtpd.
Weekday AM peak hour	= 13 dwellings x 0.85 trips per dwelling = 12 vtpd.
Weekday PM peak hour	= 13 dwellings x 0.9 trips per dwelling = 12 vtpd.

These peak traffic volumes have been adopted in this assessment as the additional traffic generated by the development.

10.0 TRIP DISTRIBUTION

Before carrying out any traffic assessment the additional peak hour traffic generated by the development needs to be distributed through the adjoining road network. This involves making assumptions as to distribution patterns to and from the development, which have been based on current traffic distribution at the Paterson Road / Tocal Road intersection. Therefore, in distributing the peak hour traffic through the adjacent road network, the following assumptions have been made for this site.

- ◆ In the AM peak 80 % trips are outbound and 20 % of trips are inbound while in the PM peak 70 % of trips are inbound and 30 % are outbound.
- ◆ At Paterson Road 80% of traffic will have an origin / destination west (Maitland) while 20% of traffic will have an origin / destination east (Largs and Woodville).
- ◆ At the Paterson Road / Tocal Road intersection 90 % of traffic will have an origin / destination south (Maitland) and 10 % of traffic will have an origin / destination north (Tocal).

These assumptions will result in the trip distributions shown in **Figure 3** for the relevant traffic movements near the site for the additional traffic generated by the development.

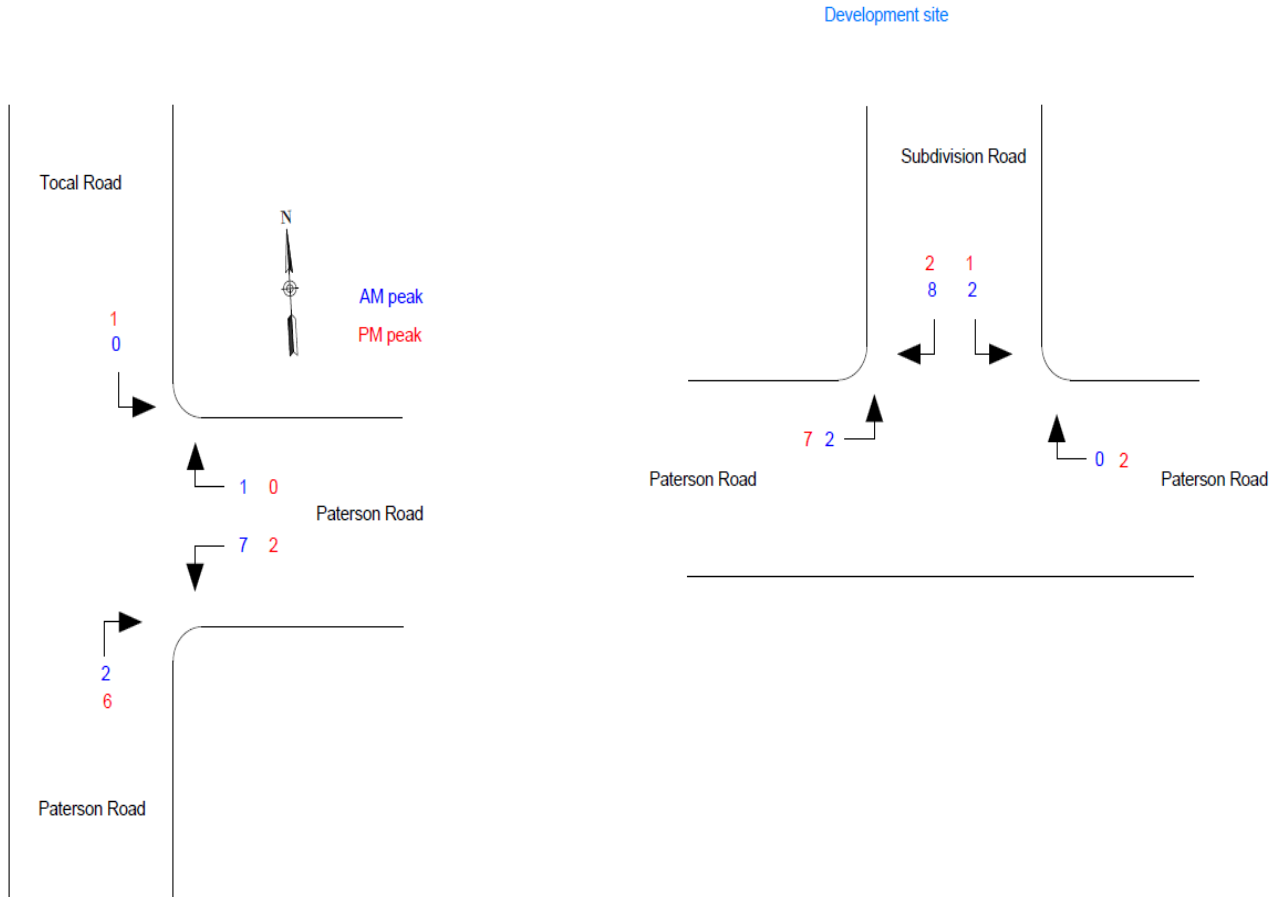


Figure 3 – Development Trip Distribution

11.0 TRAFFIC IMPACTS OF DEVELOPMENT

11.1 Road Network Capacity

It has previously been shown in **Section 6** of this report that the local and state road network is currently operating within its technical two-way mid-block capacity. The development is likely to generate the following maximum additional traffic on the local road network based on the trip distributions shown in **Figure 3**:

- ◆ Paterson Road south of Tocal Road – 9 vtph in the AM peak and 8 vtph in the PM peak,
- ◆ Paterson Road east of Tocal Road – 10 vtph in the AM peak and 9 vtph in the PM peak; and
- ◆ Tocal Road north of Paterson Road – 1 vtph in the AM peak and 1 vtph in the PM peak.

The addition of this traffic onto the existing traffic volumes determined in **Section 5** will not result in the two-way mid-block capacity thresholds for Paterson Road and Tocal Road determined in **Section 6** to be reached. Even with 1.5 % per annum background traffic growth over a ten-year period on Paterson Road and Tocal Road, these road capacity thresholds are not reached. This is demonstrated in **Table 2** below.

Table 2 - Road Capacity Assessment

Road	Section	Capacity vtph	2024		2034 @ 2% p.a.		Development traffic	
			AM (vtph)	PM (vtph)	AM (vtph)	PM (vtph)	AM	PM
Paterson Road	south of Tocal Road	1800	1062	1095	1293	1333	9	8
Paterson Road	east of Tocal Road	1800	583	594	708	722	10	9
Tocal Road	north of Paterson Road	1800	585	623	713	759	1	1

Therefore, it can be concluded that the local and state road network subject to suitable intersection controls being in place has sufficient spare capacity to cater for the proposed development.

11.2 Intersection Capacity

In assessing intersection performance, the main intersection impacted by the development will be the Paterson Road / Tocal Road CHR / BAL intersection. With large right turn movements and small left turn movements into Paterson Road at the intersection the CHR / BAL intersection would still be suitable post development subject to satisfactory performance.

The impacts of the development on the Paterson Road / Tocal Road intersection are best assessed using the SIDRA INTERSECTION modelling software. This software package predicts likely delays, queue lengths and thus levels of service that will occur at intersections. Assessment is then based on the level of service requirements of TfNSW shown below in Table 4.2. Assumptions made in this modelling were:

- ◆ The intersection layout has been modelled as a CHR / BAL as per its current layout.
- ◆ Baseline traffic volumes as per Intersect Traffic counts provided in **Attachment B**.
- ◆ Traffic generated by the development is distributed as per **Figure 3**; and
- ◆ Adopted a relatively conservative background traffic growth rate of 2% per annum.

Table 4.2
Level of service criteria for intersections

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

Source: - RTA's Guide to Traffic Generating Developments (2002).

The summarised results of the modelling of the Paterson Road / Tocal Road intersection for the worst movement delay and level of service (LoS) is provided in **Table 3**. The full Sidra Movement Summary Tables are provided in **Attachment C**.

Table 3 – Paterson Road / Tocal Road CHR / BAL – Sidra Modelling – Results Summary

Modelled Peak	Degree of Saturation (v/c)	Worst Delay (s)	Worst Level of Service	95% back of queue length (cars)
2024 AM + development	0.363	10.1	A	2.0
2024 PM + development	0.276	11.8	A	1.4
2034 AM + development	0.494	11.8	A	3.3
2034 PM + development	0.369	14.5	A	2.2

The modelling shows that the Paterson Road / Tocal Road intersection would continue to operate satisfactorily post development through to the development completion and full occupancy in 2034. Average delays, LoS and 95% back of queue lengths all remain at acceptable levels based on the TfNSW assessment criteria listed above. Therefore, no upgrading of the intersection is required resulting from this development. As development traffic is further dispersed through the road network it is not expected to impact on any adjoining intersections which have been observed as operating with little delay even during peak traffic periods.

Overall, it is concluded that the proposed subdivision will not adversely impact on the operation and efficiency of the local and state road network around the site.

11.3 Access

The development seeks connection to the existing road network off Paterson Road as a give way BAR / BAL T-intersection to a new private road serving the development.

A turning lane assessment of this new access has been undertaken in accordance with the warrants within *Austrroads Guide to Traffic Management Part 6 – Intersections, interchanges, and crossings management (2020)* for 2034 traffic data. The figures from the Guide relevant for this assessment (*Figures 3.25 and 3.26*) are reproduced below.

The 2034 data relevant for this assessment is as follows;

$$Q_R = 2 \text{ vtp} \quad Q_L = 7 \text{ vtp} \quad Q_{T1} = 274 \text{ vtp} \quad Q_{T2} = 488 \text{ vtp}$$

$$Q_{MR} = 274 + 488 + 7 = 769 \text{ vtp} \quad Q_{ML} = 488 \text{ vtp}$$

Reading from the graph below the required intersection configuration is a BAR / BAL intersection.

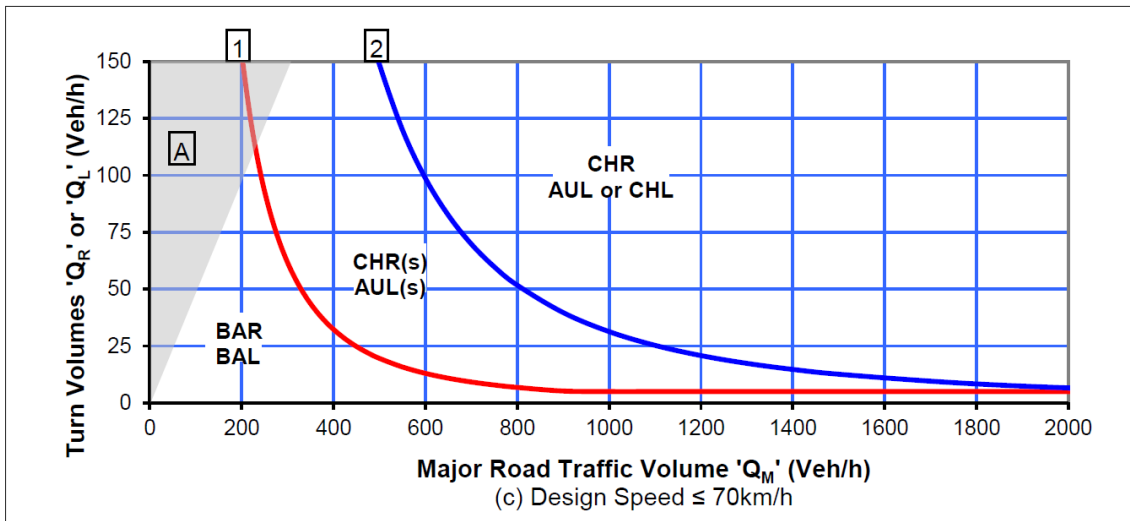
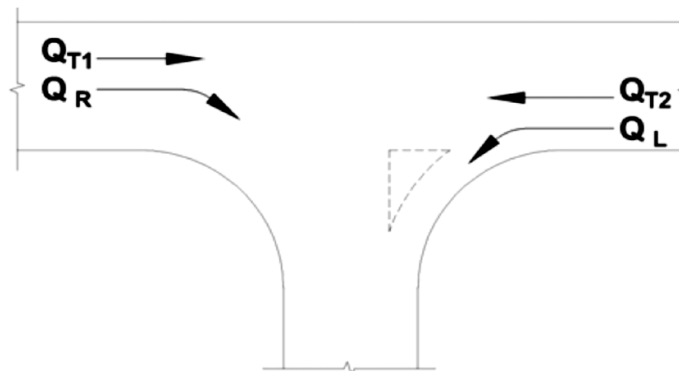


Figure 3.26: Calculation of the major road traffic volume Q_M



Road type	Turn type	Splitter island	Q_M (veh/h)
Two-lane two-way	Right	No	$= Q_{T1} + Q_{T2} + Q_L$
		Yes	$= Q_{T1} + Q_{T2}$
	Left	Yes or no	$= Q_{T2}$
Four-lane two-way	Right	No	$= 50\% \times Q_{T1} + Q_{T2} + Q_L$
		Yes	$= 50\% \times Q_{T1} + Q_{T2}$
	Left	Yes or no	$= 50\% \times Q_{T2}$
Six-lane two-way	Right	No	$= 33\% \times Q_{T1} + Q_{T2} + Q_L$
		Yes	$= 33\% \times Q_{T1} + Q_{T2}$
	Left	Yes or no	$= 33\% \times Q_{T2}$

Source: - RTA's Guide to Traffic Generating Developments (2002).

This new intersection has also been modelled using the SIDRA Intersection model described above. Assumptions made in this modelling were;

- ◆ A BAR/BAL intersection has been modelled as determined above.

- ◆ Baseline traffic volumes as per Intersect Traffic counts provided in **Attachment B**.
- ◆ Traffic generated by the development is distributed as per **Figure 3**; and
- ◆ Adopted a relatively conservative background traffic growth rate of 2% per annum for Paterson Road.

The summarised results of the modelling of the Paterson Road / Subdivision access intersection for the worst movement delay and level of service (LoS) is provided in **Table 4**. The full Sidra Movement Summary Tables are provided in **Attachment C**.

Table 4 – Paterson Road / Subdivision Access BAR / BAL – Sidra Modelling – Results Summary

Modelled Peak	Degree of Saturation (v/c)	Worst Delay (s)	Worst Level of Service	95% back of queue length (cars)
2024 AM + development	0.204	7.0	A	0
2024 PM + development	0.212	7.0	A	0
2034 AM + development	0.249	7.5	A	0
2034 PM + development	0.257	7.6	A	0

This modelling shows the access intersection will operate with uninterrupted flow conditions with little if any delay or queuing occurring through to 2034.

Sight distance along Paterson Road at the subdivision access has been observed to be in excess of 200 metres in both directions therefore safe intersection sight distance at the subdivision access will be able to comply with the requirements of Austroads *“Guide to Road Design – Part 4A Unsignalised and signalised intersections (2017)”* of 125 metres for a 60 km/h speed zoning or 155 metres for a 70 km/h speed zoning.

Therefore, it can be concluded a suitable and safe private road BAR / BAL intersection can be constructed to Paterson Road to service the proposed development.

The lots within the development will meet the minimum lot requirements of Maitland City Council therefore will be provided with enough frontage to be able to construct a normal residential access crossing that complies with the requirements of Maitland City Council.

11.4 Off-Street Parking

The development as a community title residential subdivision does not generate an immediate on-site parking demand however future development of the individual allotments will generate such a demand. The allotments with a general minimum size of 5,006 m² are large enough to ensure that the on-site parking provisions can be accommodated within the lots. Future development on the individual allotments will need to be compliant with the Maitland DCP (2011) which is the provision of a minimum of 1 space for each one- or two-bedroom dwelling and two (2) spaces for each dwelling containing more than two bedrooms.

11.5 Subdivision Design

The current subdivision design involves a private road connection to Paterson Road and then a single cul-de-sac private road that provides vehicular access to individual lots. This is considered to comply with current best practice for a subdivision road layout noting the relatively low lot yield, with cross-intersections and long straight sections of road being avoided. The site is being developed as large lot residential and the road is not gun barrel straight therefore with suitable width controls, vehicle speeds can be controlled on the road without the need for traffic calming devices.

12.0 PEDESTRIAN & CYCLE FACILITIES

It is considered that the external pedestrian and bicycle traffic generated by the development would not be significant enough as to provide a nexus for the provision of additional external pedestrian and bicycle paths (on or off road) to the site particularly given the lack of existing infrastructure in the area. Suitable internal pedestrian linkages will be included in the site. However, this will be a matter for consideration by the determining authority at development application stage for the development.

13.0 PUBLIC TRANSPORT FACILITIES

The existing public transport (bus) services provided by Hunter Valley Buses already conveniently services the site with the nearby bus stop in Paterson Road. As development in the area continues there may be changes to the bus routes as demand increases particularly for school services. However, this will not involve extension of the bus service into the subdivision and as such the internal cul-de-sac road does not need to be constructed to cater for use by buses.

14.0 CONCLUSIONS

This traffic impact assessment for the proposed large lot community title residential subdivision of Lot C DP163627, 256 Paterson Road, Bolwarra to yield up to 13 residential lots on the site has concluded the following.

- ◆ Existing traffic volumes on the local and state road network are within the technical two-way mid-block capacity standards determined by Austroads and TfNSW, as relevant.
- ◆ The local and state road network is currently operating satisfactorily with acceptable levels of service and has capacity to cater for additional traffic associated with new development in the area.
- ◆ The proposed development is likely to generate up to an additional 97 vehicle trips per day or 12 vehicle trips per hour during the AM peak and PM peak traffic periods.
- ◆ The local and state road network will cater for the development traffic generated by this development in 2024 and other developments in the area through to 2034 without adversely impacting on current levels of service experienced by motorists on the road network.
- ◆ A turn lane warrant assessment has determined that a BAR / BAL intersection only is required for the subdivision access.
- ◆ Sidra modelling of the Paterson Road / Tocal Road intersection has shown the intersection will continue to operate satisfactorily post development in 2024 and with 10 years traffic growth to 2034 representing full development of the subdivision.
- ◆ Sidra modelling of the proposed subdivision access for the development off Paterson Road would operate with uninterrupted flow conditions post development with little or no delay or queuing for motorists using the new intersection.
- ◆ Overall, the community title subdivision will not adversely impact on the operation and efficiency of the local and state road network around the site.
- ◆ The lots within the community title subdivision meet the minimum lot requirements of Maitland City Council and have sufficient frontage to be able to construct a normal residential access crossing that complies with the requirements of Maitland City Council.

- ◆ The development as a community title residential subdivision does not generate an immediate on-site parking demand however future development of the individual allotments will generate such a demand. The new allotments with a minimum size of 5,006 m² are large enough to ensure that the on-site parking provisions as required by the Maitland DCP (2011) can be accommodated within the lots.
- ◆ The current subdivision design involves a private road connection to Paterson Road and then a cul-de-sac private road that provides vehicular access to individual lots. This is considered to comply with current best practice for a subdivision road layout noting the relatively low lot yield, with cross-intersections and long straight sections of road being avoided. The site is being developed as large lot residential and the road is not gun barrel straight therefore with suitable width controls, vehicle speeds can be controlled on the road without the need for traffic calming devices.
- ◆ The external pedestrian and bicycle traffic generated by the development would not be significant enough as to provide a nexus for the provision of additional external pedestrian and bicycle paths (on or off road) to the site particularly given the lack of existing infrastructure in the area. Suitable internal pedestrian linkages will be included in the site should Maitland Council require it.
- ◆ The existing public transport (bus) services provided by Hunter Valley Buses already conveniently services the site with the nearby bus stop in Paterson Road. As development in the area continues there may be changes to the bus routes as demand increases particularly for school services. However, this will not involve extension of the bus service into the subdivision and as such the internal private cul-de-sac road does not need to be constructed to cater for use by buses.

15.0 RECOMMENDATION

Having carried out this traffic impact assessment for the proposed large lot community title residential subdivision of Lot C DP163627, 256 Paterson Road, Bolwarra it is recommended that the proposal can be supported from a traffic impact perspective as it will not adversely impact on the local and state road network and can comply with all relevant Maitland City Council, Austroads and TfNSW traffic related requirements.



JR Garry BE (Civil), Masters of Traffic
Director
Intersect Traffic Pty Ltd

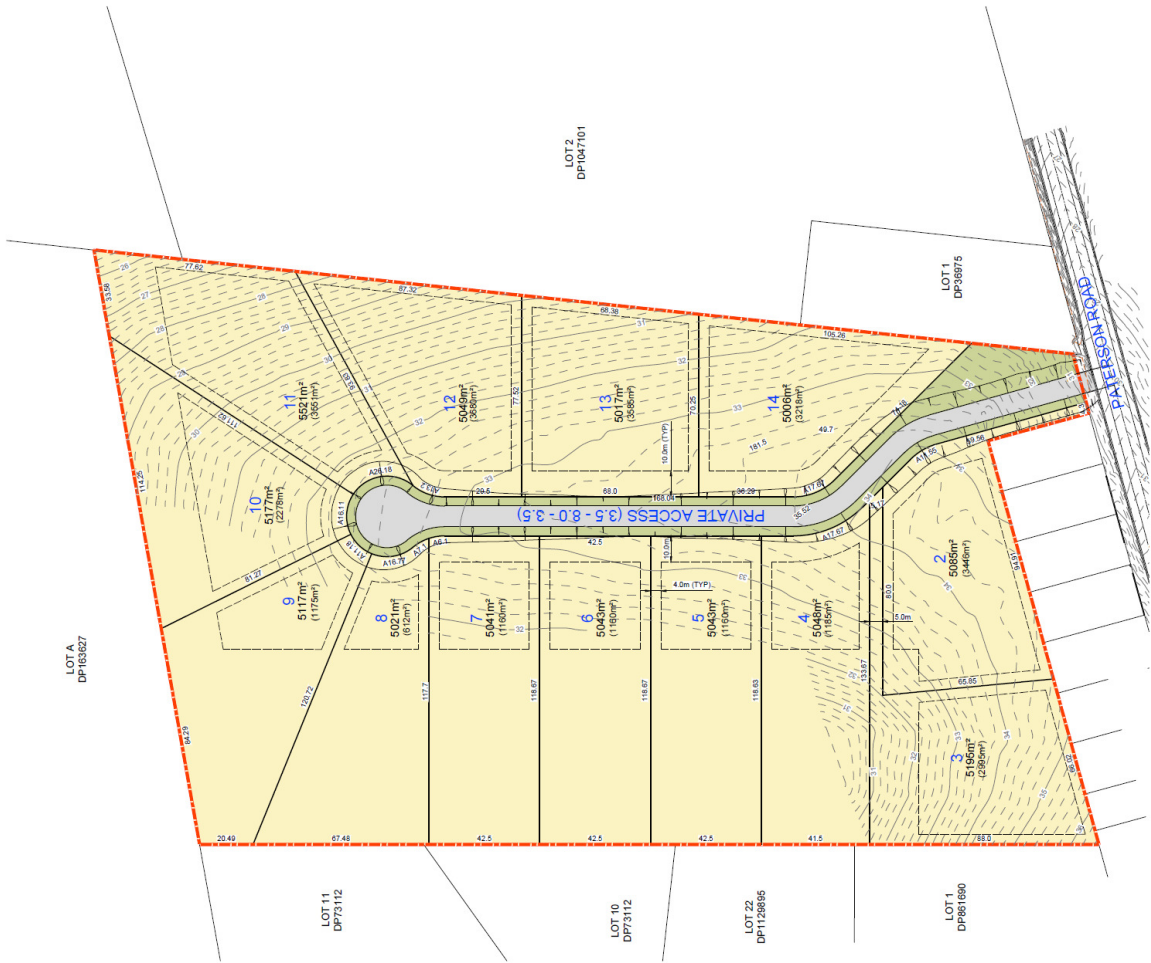
ATTACHMENT A

Concept Subdivision Plan

LEGEND

---	EXISTING SURFACE CONTOUR - MAJOR (1m INTERVAL)
---	EXISTING SURFACE CONTOUR - MINOR (0.2m INTERVAL)
---	PROPOSED SITE DEVELOPMENT

Rev	Description	Drawn	Date
5	REVISED BUILDING ENVELOPES	DB	20.08.24
4	REVISED BUILDING ENVELOPES	DB	15.08.24
3	MINOR UPDATE	AS	13.08.24
2	DIMENSIONS ADDED	DB	12.08.24
1	ORIGINAL ISSUE	DB	07.08.24



Project Title:
PROPOSED SUBDIVISION

Project Address:
256 PATERSON ROAD, BOLWARRA

Client:
HGBE PROPERTIES PTY LTD

Project Status:
CONCEPT

Drawing Title:
SUBDIVISION PLAN

Project No: 24126LD
Revision: 5
Drawing No: LD01

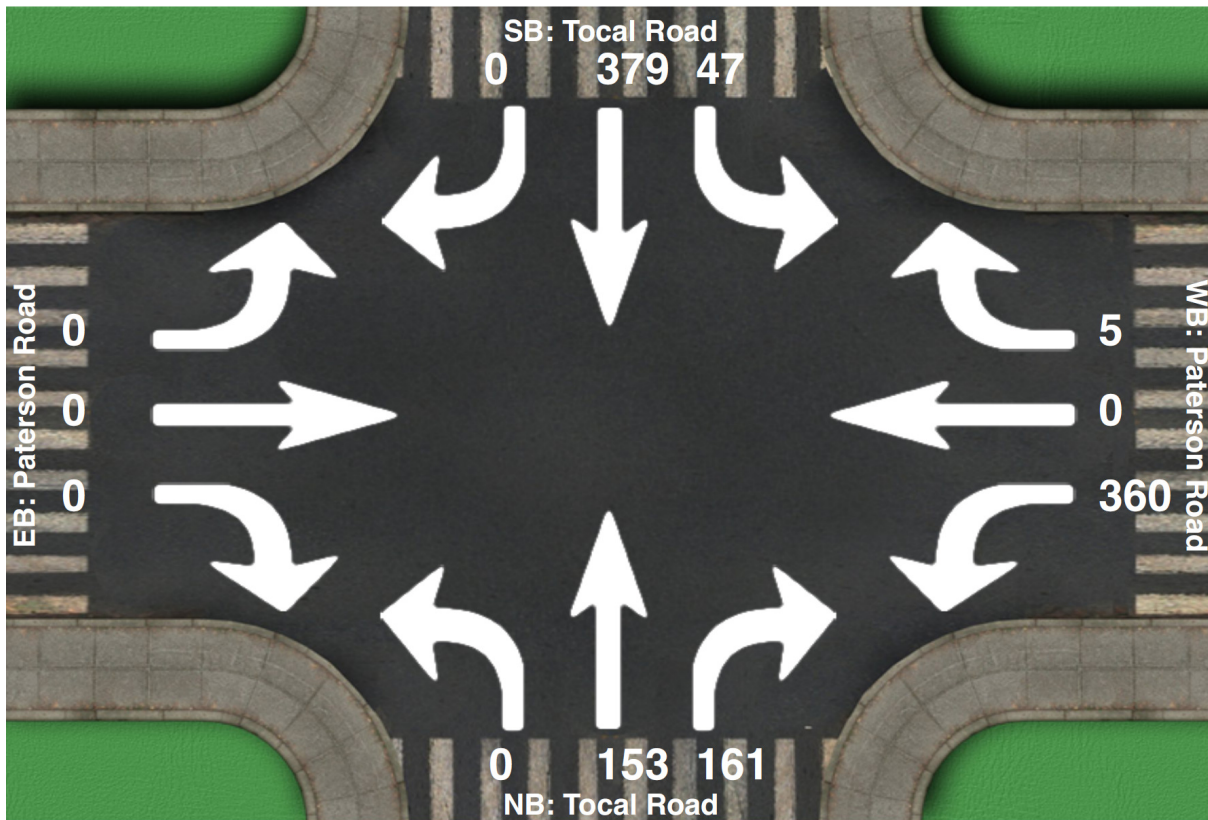
Scale:
0 10 20 30 40m
1:5000 (A3)

ATTACHMENT B

Traffic Count Data

Intersection Peak Hour

Location: Tocal Road at Paterson Road, Bolwarra
 GPS Coordinates: Lat=-32.701588, Lon=151.584118
 Date: 2024-06-06
 Day of week: Thursday
 Weather:
 Analyst: Jeff



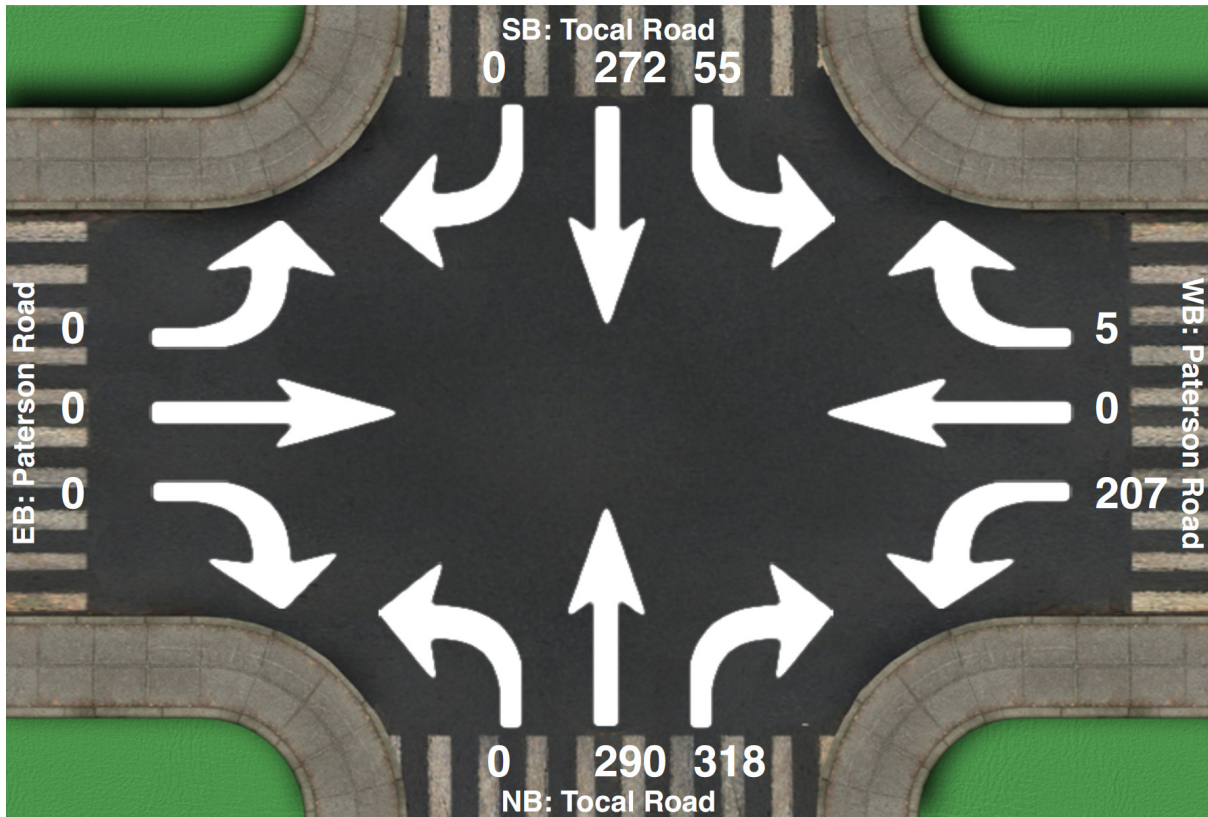
Intersection Peak Hour

08:00 - 09:00

	SouthBound			Westbound			Northbound			Eastbound			Total
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
Vehicle Total	47	379	0	360	0	5	0	153	161	0	0	0	1105
Factor	0.65	0.88	0.00	0.80	0.00	0.62	0.00	0.91	0.71	0.00	0.00	0.00	0.90
Approach Factor	0.85			0.79			0.84			0.00			

Intersection Peak Hour

Location: Total Road at Paterson Road, Bolwarra
GPS Coordinates: Lat=-32.701649, Lon=151.584020
Date: 2024-06-06
Day of week: Thursday
Weather:
Analyst: Jeff



Intersection Peak Hour

15:00 - 16:00

	SouthBound			Westbound			Northbound			Eastbound			Total
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
Vehicle Total	55	272	0	207	0	5	0	290	318	0	0	0	1147
Factor	0.62	0.86	0.00	0.92	0.00	0.42	0.00	0.81	0.87	0.00	0.00	0.00	0.90
Approach Factor	0.92			0.90			0.88			0.00			

ATTACHMENT C

SIDRA Movement Summary Tables

MOVEMENT SUMMARY

Site: 101 [2024AM + development (Site Folder: General)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Paterson Road / Tocal Road CHR/BAL
 Bolwarra
 2024 counts
 Site Category: (None)
 Give-Way (Two-Way)

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand Flows		Arrival Flows		Deg. Satn	Aver. Delay	Level of Service	95% Back Of Queue		Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed
			[Total HV]	%	[Total HV]	%	v/c	sec		[Veh.]	[Dist]				km/h
			veh/h		veh/h					veh	m				
East: Paterson Road															
4a	L1	All MCs	386	5.0	386	5.0	0.363	7.4	LOS A	2.0	14.2	0.53	0.73	0.60	51.2
6b	R3	All MCs	7	5.0	7	5.0	0.012	10.1	LOS A	0.0	0.3	0.56	0.73	0.56	49.0
Approach			394	5.0	394	5.0	0.363	7.5	LOS A	2.0	14.2	0.53	0.73	0.60	51.2
NorthEast: Tocal Road															
24b	L3	All MCs	49	5.0	49	5.0	0.243	6.6	LOS A	0.0	0.0	0.00	0.07	0.00	56.5
25	T1	All MCs	399	5.0	399	5.0	0.243	0.1	LOS A	0.0	0.0	0.00	0.07	0.00	59.2
Approach			448	5.0	448	5.0	0.243	0.8	NA	0.0	0.0	0.00	0.07	0.00	58.9
SouthWest: Paterson Road															
31	T1	All MCs	161	5.0	161	5.0	0.085	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	60.0
32a	R1	All MCs	172	5.0	172	5.0	0.158	6.6	LOS A	0.7	5.1	0.51	0.67	0.51	52.2
Approach			333	5.0	333	5.0	0.158	3.4	NA	0.7	5.1	0.27	0.35	0.27	55.7
All Vehicles			1175	5.0	1175	5.0	0.363	3.8	NA	2.0	14.2	0.25	0.37	0.28	55.2

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

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

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

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

Two-Way Sign Control Capacity Model: SIDRA Standard.

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

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

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

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

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

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Organisation: INTERSECT TRAFFIC PTY LTD | Licence: NETWORK / 1PC | Processed: Friday, 21 June 2024 9:45:40 AM

Project: D:\Work\2024\24.036 - 256 Paterson Road, Bolwara residential subdivision\Sidra\Paterson_Tocal.sip9

MOVEMENT SUMMARY

Site: 101 [2024PM + development (Site Folder: General)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Paterson Road / Tocal Road CHR/BAL
 Bolwarra
 2024 counts
 Site Category: (None)
 Give-Way (Two-Way)

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand Flows		Arrival Flows		Deg. Satn	Aver. Delay	Level of Service	95% Back Of Queue		Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed
			[Total HV]	%	[Total HV]	%				[Veh. veh]	[Dist] m				
East: Paterson Road															
4a	L1	All MCs	220	5.0	220	5.0	0.182	6.2	LOS A	0.8	5.7	0.39	0.62	0.39	51.9
6b	R3	All MCs	5	5.0	5	5.0	0.011	11.8	LOS A	0.0	0.3	0.65	0.77	0.65	48.0
Approach			225	5.0	225	5.0	0.182	6.4	LOS A	0.8	5.7	0.40	0.63	0.40	51.8
NorthEast: Tocal Road															
24b	L3	All MCs	59	5.0	59	5.0	0.189	6.6	LOS A	0.0	0.0	0.00	0.11	0.00	56.2
25	T1	All MCs	286	5.0	286	5.0	0.189	0.1	LOS A	0.0	0.0	0.00	0.11	0.00	58.8
Approach			345	5.0	345	5.0	0.189	1.2	NA	0.0	0.0	0.00	0.11	0.00	58.4
SouthWest: Paterson Road															
31	T1	All MCs	305	5.0	305	5.0	0.162	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	59.9
32a	R1	All MCs	341	5.0	341	5.0	0.276	6.2	LOS A	1.4	10.0	0.49	0.63	0.49	52.3
Approach			646	5.0	646	5.0	0.276	3.3	NA	1.4	10.0	0.26	0.33	0.26	55.6
All Vehicles			1217	5.0	1217	5.0	0.276	3.3	NA	1.4	10.0	0.21	0.33	0.21	55.6

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

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

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

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

Two-Way Sign Control Capacity Model: SIDRA Standard.

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

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

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

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

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

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Organisation: INTERSECT TRAFFIC PTY LTD | Licence: NETWORK / 1PC | Processed: Friday, 21 June 2024 9:45:42 AM

Project: D:\Work\2024\24.036 - 256 Paterson Road, Bolwara residential subdivision\Sidra\Paterson_Tocal.sip9

MOVEMENT SUMMARY

Site: 101 [2034AM + development (Site Folder: General)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Paterson Road / Tocal Road CHR/BAL
 Bolwarra
 2024 counts
 Site Category: (None)
 Give-Way (Two-Way)
 Design Life Analysis (Final Year): Results for 10 years

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand Flows		Arrival Flows		Deg. Satn	Aver. Delay	Level of Service	95% Back Of Queue		Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed
			[Total HV] veh/h	%	[Total HV] veh/h	%				[Veh. veh	[Dist] m				
East: Paterson Road															
4a	L1	All MCs	471	5.0	471	5.0	0.494	9.1	LOS A	3.3	24.3	0.63	0.88	0.90	50.0
6b	R3	All MCs	9	5.0	9	5.0	0.018	11.8	LOS A	0.1	0.4	0.65	0.80	0.65	47.9
Approach			480	5.0	480	5.0	0.494	9.2	LOS A	3.3	24.3	0.63	0.88	0.89	50.0
NorthEast: Tocal Road															
24b	L3	All MCs	60	5.0	60	5.0	0.296	6.6	LOS A	0.0	0.0	0.00	0.07	0.00	56.5
25	T1	All MCs	486	5.0	486	5.0	0.296	0.1	LOS A	0.0	0.0	0.00	0.07	0.00	59.1
Approach			547	5.0	547	5.0	0.296	0.8	NA	0.0	0.0	0.00	0.07	0.00	58.8
SouthWest: Paterson Road															
31	T1	All MCs	196	5.0	196	5.0	0.104	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	60.0
32a	R1	All MCs	209	5.0	209	5.0	0.220	7.4	LOS A	1.0	7.0	0.58	0.74	0.58	51.7
Approach			405	5.0	405	5.0	0.220	3.8	NA	1.0	7.0	0.30	0.38	0.30	55.4
All Vehicles			1432	5.0	1432	5.0	0.494	4.5	NA	3.3	24.3	0.29	0.43	0.38	54.6

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

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

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

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

Two-Way Sign Control Capacity Model: SIDRA Standard.

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

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

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

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

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

MOVEMENT SUMMARY

Site: 101 [2034PM + development (Site Folder: General)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Paterson Road / Tocal Road CHR/BAL
 Bolwarra
 2024 counts
 Site Category: (None)
 Give-Way (Two-Way)
 Design Life Analysis (Final Year): Results for 10 years

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand Flows		Arrival Flows		Deg. Satn	Aver. Delay	Level of Service	95% Back Of Queue		Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed
			[Total HV]	%	[Total HV]	%				[Veh. veh	[Dist] m				
East: Paterson Road															
4a	L1	All MCs	268	5.0	268	5.0	0.237	6.6	LOS A	1.0	7.5	0.45	0.66	0.45	51.7
6b	R3	All MCs	6	5.0	6	5.0	0.017	14.5	LOS A	0.1	0.4	0.73	0.86	0.73	46.3
Approach			275	5.0	275	5.0	0.237	6.8	LOS A	1.0	7.5	0.46	0.66	0.46	51.6
NorthEast: Tocal Road															
24b	L3	All MCs	72	5.0	72	5.0	0.230	6.6	LOS A	0.0	0.0	0.00	0.11	0.00	56.2
25	T1	All MCs	349	5.0	349	5.0	0.230	0.1	LOS A	0.0	0.0	0.00	0.11	0.00	58.8
Approach			421	5.0	421	5.0	0.230	1.2	NA	0.0	0.0	0.00	0.11	0.00	58.3
SouthWest: Paterson Road															
31	T1	All MCs	372	5.0	372	5.0	0.197	0.1	LOS A	0.0	0.0	0.00	0.00	0.00	59.9
32a	R1	All MCs	416	5.0	416	5.0	0.369	7.2	LOS A	2.2	16.1	0.57	0.73	0.65	51.8
Approach			788	5.0	788	5.0	0.369	3.8	NA	2.2	16.1	0.30	0.38	0.35	55.4
All Vehicles			1483	5.0	1483	5.0	0.369	3.6	NA	2.2	16.1	0.24	0.36	0.27	55.4

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

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

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

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

Two-Way Sign Control Capacity Model: SIDRA Standard.

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

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

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

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

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

MOVEMENT SUMMARY

Site: 101 [2024 AM + development (Site Folder: General)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Paterson Road / Subdivision access intersection
 Bolwarra
 2024 counts
 Site Category: (None)
 Give-Way (Two-Way)

Vehicle Movement Performance														
Mov ID	Turn	Mov Class	Demand Flows [Total HV] veh/h	%	Arrival Flows [Total HV] veh/h	%	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. Dist] veh m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
East: Paterson Road														
5	T1	All MCs	384	5.0	384	5.0	0.204	0.0	LOS A	0.0	0.1	0.00	0.00	60.0
6	R2	All MCs	1	2.0	1	2.0	0.204	5.5	LOS A	0.0	0.1	0.00	0.00	57.0
Approach			385	5.0	385	5.0	0.204	0.0	NA	0.0	0.1	0.00	0.00	60.0
North: Subdivision access														
7	L2	All MCs	2	2.0	2	2.0	0.010	6.2	LOS A	0.0	0.2	0.38	0.61	51.8
9	R2	All MCs	8	2.0	8	2.0	0.010	7.0	LOS A	0.0	0.2	0.38	0.61	51.5
Approach			11	2.0	11	2.0	0.010	6.9	LOS A	0.0	0.2	0.38	0.61	51.6
West: Paterson Road														
10	L2	All MCs	2	2.0	2	2.0	0.117	5.6	LOS A	0.0	0.0	0.00	0.01	57.3
11	T1	All MCs	219	5.0	219	5.0	0.117	0.0	LOS A	0.0	0.0	0.00	0.01	59.9
Approach			221	5.0	221	5.0	0.117	0.1	NA	0.0	0.0	0.00	0.01	59.9
All Vehicles			617	4.9	617	4.9	0.204	0.2	NA	0.0	0.2	0.01	0.01	59.8

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

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

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

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

Two-Way Sign Control Capacity Model: SIDRA Standard.

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

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

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

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

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

MOVEMENT SUMMARY

Site: 101 [2024 PM + development (Site Folder: General)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Paterson Road / Subdivision access intersection
 Bolwarra
 2024 counts
 Site Category: (None)
 Give-Way (Two-Way)

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand Flows		Arrival Flows		Deg. Satn	Aver. Delay	Level of Service	95% Back Of Queue		Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed
			[Total HV]	%	[Total HV]	%	v/c	sec		[Veh.]	[Dist]				km/h
			veh/h		veh/h					veh	m				
East: Paterson Road															
5	T1	All MCs	223	5.0	223	5.0	0.120	0.0	LOS A	0.0	0.1	0.01	0.01	0.01	59.9
6	R2	All MCs	2	2.0	2	2.0	0.120	6.1	LOS A	0.0	0.1	0.01	0.01	0.01	57.0
Approach			225	5.0	225	5.0	0.120	0.1	NA	0.0	0.1	0.01	0.01	0.01	59.9
North: Subdivision access															
7	L2	All MCs	1	2.0	1	2.0	0.003	6.9	LOS A	0.0	0.1	0.41	0.59	0.41	51.7
9	R2	All MCs	2	2.0	2	2.0	0.003	7.0	LOS A	0.0	0.1	0.41	0.59	0.41	51.4
Approach			3	2.0	3	2.0	0.003	7.0	LOS A	0.0	0.1	0.41	0.59	0.41	51.5
West: Paterson Road															
10	L2	All MCs	7	2.0	7	2.0	0.212	5.6	LOS A	0.0	0.0	0.00	0.01	0.00	57.2
11	T1	All MCs	393	5.0	393	5.0	0.212	0.1	LOS A	0.0	0.0	0.00	0.01	0.00	59.8
Approach			400	4.9	400	4.9	0.212	0.2	NA	0.0	0.0	0.00	0.01	0.00	59.7
All Vehicles			628	4.9	628	4.9	0.212	0.2	NA	0.0	0.1	0.01	0.01	0.01	59.7

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

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

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

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

Two-Way Sign Control Capacity Model: SIDRA Standard.

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

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

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

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

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

MOVEMENT SUMMARY

▽ Site: 101 [2034 AM + development (Site Folder: General)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Paterson Road / Subdivision access intersection
 Bolwarra
 2024 counts
 Site Category: (None)
 Give-Way (Two-Way)
 Design Life Analysis (Final Year): Results for 10 years

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand Flows		Arrival Flows		Deg. Satn	Aver. Delay	Level of Service	95% Back Of Queue		Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed
			[Total HV]	[Total HV]	[Total HV]	[Total HV]	v/c	sec		[Veh. veh]	[Dist]				km/h
			veh/h	%	veh/h	%				veh	m				
East: Paterson Road															
5	T1	All MCs	468	5.0	468	5.0	0.249	0.0	LOS A	0.0	0.1	0.00	0.00	0.00	60.0
6	R2	All MCs	1	2.0	1	2.0	0.249	5.5	LOS A	0.0	0.1	0.00	0.00	0.00	57.0
Approach			469	5.0	469	5.0	0.249	0.0	NA	0.0	0.1	0.00	0.00	0.00	60.0
North: Subdivision access															
7	L2	All MCs	2	2.0	2	2.0	0.011	6.4	LOS A	0.0	0.2	0.42	0.64	0.42	51.5
9	R2	All MCs	8	2.0	8	2.0	0.011	7.5	LOS A	0.0	0.2	0.42	0.64	0.42	51.2
Approach			11	2.0	11	2.0	0.011	7.3	LOS A	0.0	0.2	0.42	0.64	0.42	51.3
West: Paterson Road															
10	L2	All MCs	2	2.0	2	2.0	0.142	5.6	LOS A	0.0	0.0	0.00	0.00	0.00	57.3
11	T1	All MCs	267	5.0	267	5.0	0.142	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	59.9
Approach			269	5.0	269	5.0	0.142	0.1	NA	0.0	0.0	0.00	0.00	0.00	59.9
All Vehicles			749	4.9	749	4.9	0.249	0.1	NA	0.0	0.2	0.01	0.01	0.01	59.8

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

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

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

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

Two-Way Sign Control Capacity Model: SIDRA Standard.

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

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

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

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

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

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Project: D:\Work\2024\24.036 - 256 Paterson Road, Bolwara residential subdivision\Sidra\Access\Paterson_Access.sip9

MOVEMENT SUMMARY

Site: 101 [2034 PM + development (Site Folder: General)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

Paterson Road / Subdivision access intersection

Bolwarra

2024 counts

Site Category: (None)

Give-Way (Two-Way)

Design Life Analysis (Final Year): Results for 10 years

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand Flows [Total HV]		Arrival Flows [Total HV]		Deg. Satn	Aver. Delay	Level of Service	95% Back Of Queue [Veh. Dist]		Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed
			veh/h	%	veh/h	%	v/c	sec		veh	m				km/h
East: Paterson Road															
5	T1	All MCs	272	5.0	272	5.0	0.146	0.0	LOS A	0.0	0.2	0.01	0.01	0.01	59.9
6	R2	All MCs	2	2.0	2	2.0	0.146	6.4	LOS A	0.0	0.2	0.01	0.01	0.01	57.0
Approach			274	5.0	274	5.0	0.146	0.1	NA	0.0	0.2	0.01	0.01	0.01	59.9
North: Subdivision access															
7	L2	All MCs	1	2.0	1	2.0	0.004	7.3	LOS A	0.0	0.1	0.46	0.62	0.46	51.4
9	R2	All MCs	2	2.0	2	2.0	0.004	7.6	LOS A	0.0	0.1	0.46	0.62	0.46	51.1
Approach			3	2.0	3	2.0	0.004	7.5	LOS A	0.0	0.1	0.46	0.62	0.46	51.2
West: Paterson Road															
10	L2	All MCs	7	2.0	7	2.0	0.257	5.6	LOS A	0.0	0.0	0.00	0.01	0.00	57.2
11	T1	All MCs	479	5.0	479	5.0	0.257	0.1	LOS A	0.0	0.0	0.00	0.01	0.00	59.8
Approach			486	5.0	486	5.0	0.257	0.2	NA	0.0	0.0	0.00	0.01	0.00	59.7
All Vehicles			763	5.0	763	5.0	0.257	0.2	NA	0.0	0.2	0.01	0.01	0.01	59.7

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

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

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

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

Two-Way Sign Control Capacity Model: SIDRA Standard.

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

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

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

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

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