

Traffic Impact Assessment

Proposed Southern Highlands Regional Shooting
Complex
Wattle Ridge Road, Hill Top NSW




Reference: 15 473r01v03 TIA Report - Hill Top

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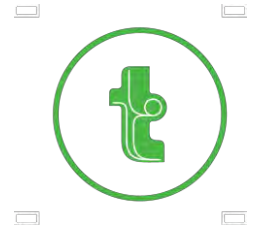
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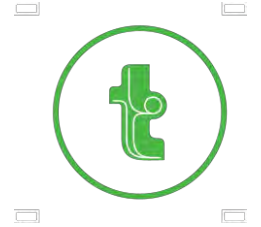
1. Introduction

TRAFFIX has been commissioned by Office of Sport to undertake a traffic impact assessment with regards to the proposed Southern Highlands Regional Shooting Complex located along Wattle Ridge Road, Hill Top. The development is located within the Wingecarribee Shire Council LGA and has been assessed under that council's controls.

It is noted that GHD Pty Ltd has previously prepared a traffic impact assessment report for the proposed development in November 2007, with an addendum prepared in July 2008. This report reference information provided within the above mentioned documents and presents the traffic impacts of the subject development in light of the updated surveys undertaken along the Wattle Ridge Road / West Parade corridor.

This report documents the findings of our investigations and should be read in the context of the Environmental Assessment prepared separately. The development is a minor development and does not require referral to the RMS under the provisions of SEPP (Infrastructure) 2007. This report documents the findings of our investigations and is structured as follows:

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



2. Location and Site

The subject site is known as Lot 100 of DP 1088254 and is located on the southern side of Wattle Ridge Road. It is also located approximately 3.3 kilometres northwest of Wattle Ridge Firetrail, 7.1 kilometres northwest of the Hill Top and 29.4 kilometres southwest of Picton.

The site currently accommodates the Southern Highlands Rifle Club and is mostly undeveloped. A Location Plan is presented in **Figure 1**. Reference should also be made to the Photographic Record presented in **Appendix A**, which provides an appreciation of the general character of roads and other key attributes in proximity to the site.

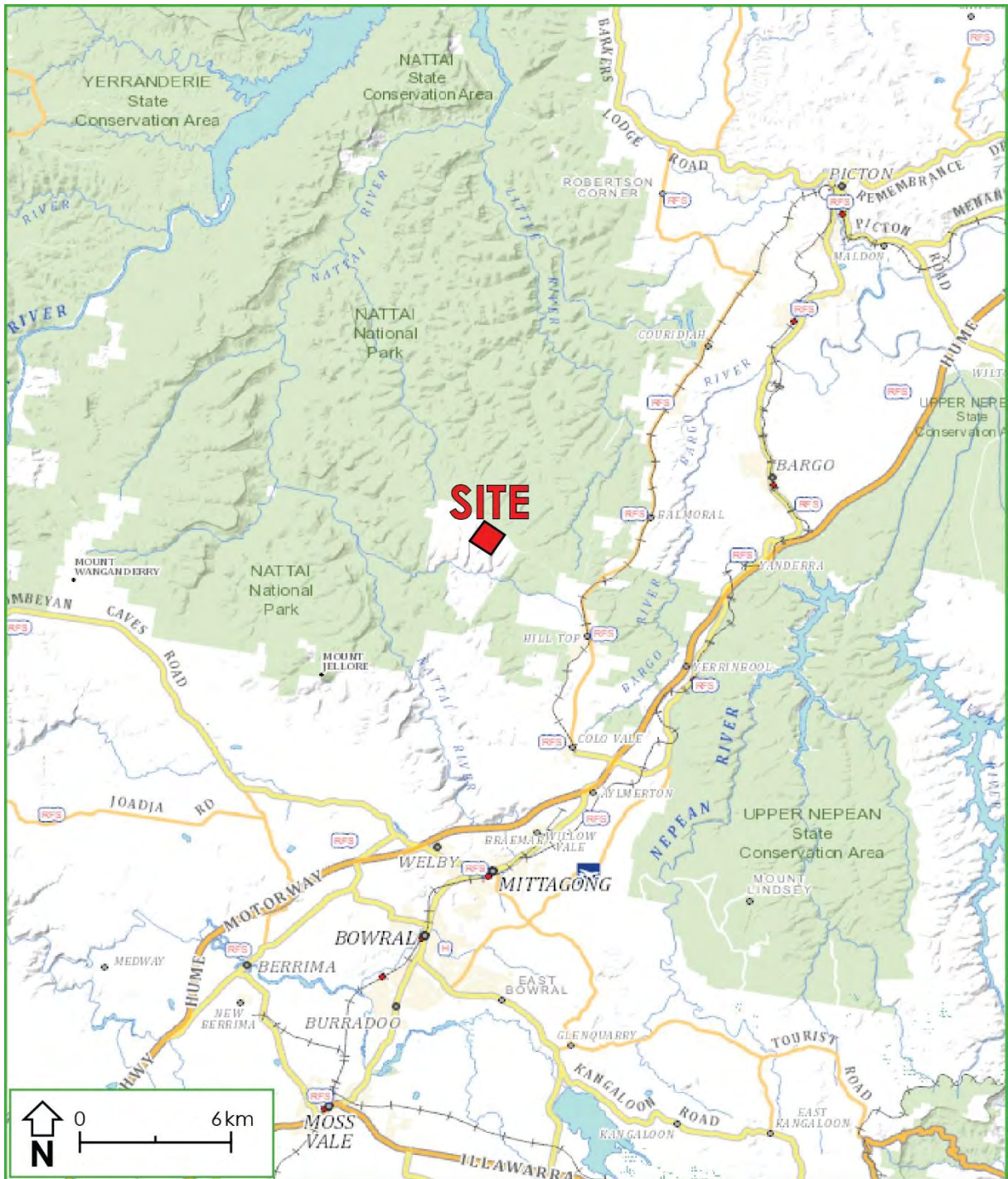
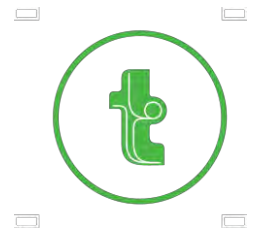


Figure 1: Location Plan



3. Existing Traffic Conditions

3.1 Road Network

The road hierarchy in the vicinity of the site is shown in **Figure 2** with the following roads of particular interest:

- ➊ Wilson Drive: a collector road that generally runs in a north-south direction between Boundary Road, Buxton in the north and Alpine Close, Colo Vale in the south. Wilson Drive connects to Hume Highway (via Church Street) in Colo Vale. It is generally subject to an 80 km/h speed zoning and provides a single lane of traffic in either direction along a divided carriageway width of approximately 6.6 metres.
- ➋ West Parade: a local / collector road that generally runs in a north-south direction between Wattle Ridge Road in the north and Laura Street in the south. It carries approximately 2,000 vpd (2015 counts) at the bridge connecting to Wilson Drive. West Parade is subject to a 50 km/h speed zoning and carries a single lane of traffic in either direction along an undivided carriageway width of approximately 9.6 metres.
- ➌ Wattle Ridge Road: a local road that generally runs in a north-south direction between Nattai Road in the north and West Parade in the south. It carries approximately 50 vpd (2015 counts) and is subject to a 60 km/h speed zoning. Wattle Ridge Road carries a single lane of traffic lane in either direction along an undivided carriageway width of approximately 7.3 metres. This road provides direct access to the subject site.

It can be seen from **Figure 2** that the site is conveniently located with respect to the collector and local road systems serving the region. It is therefore able to effectively distribute traffic onto the wider road network, minimising traffic impacts.

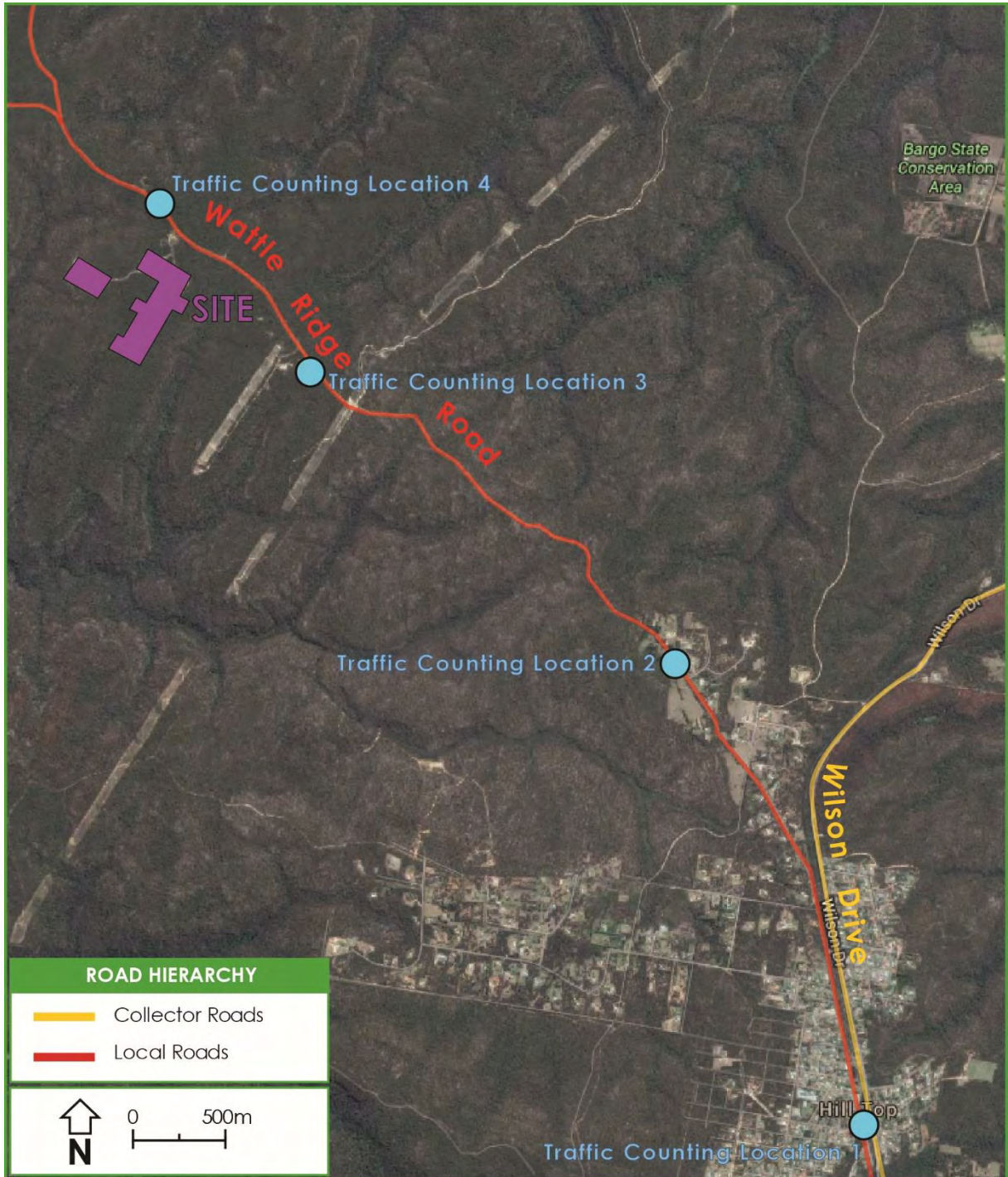
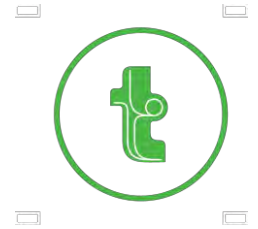


Figure 2: Road Hierarchy



3.2 Existing Traffic Volumes

Tube count surveys have been undertaken along the West Parade / Wattle Ridge Road corridor in the locations indicated in Figure 2. These locations are described as follows:

- Counter 1: West Parade, between Rosina Street and Vera Street.
- Counter 2: Wattle Ridge Road, about 300 metres northwest of Lyrebird Close
- Counter 3: Wattle Ridge Road, about 2.75 kilometres northwest of Lyrebird Close and 500 metres northwest of The Westbreak
- Counter 4: Wattle Ridge Road, about 1.3 kilometres from Counter 3.

The traffic volume at these locations has been collected over a week and are summarised in **Table 1**.

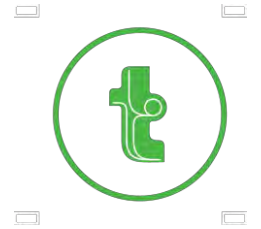
Table 1: Traffic Volume Summary

Counter	Weekday ADT (vpd)	Weekend ADT (vpd)	Weekly ADT (vpd)	Weekend Peak Hourly (vph)
1	2146	1657	2006	159
2	37	78	48	12
3	18	53	28	10
4	13	21	15	4

As discussed, West Parade functions as a collector road within the Hill Top town centre and Wattle Ridge Road functions as a local road. Based on Austroads, the capacity for roads is as follows:

Table 2: Functional Classification of Roads

Type of Road	Daily Traffic Volume (vpd)	Peak Hour Volume (vph)
Arterial Road	>20,000	>2,000
Sub-arterial Road	10,000 - 20,000	1,000 - 2,000
Collector Road	2,000 - 10,000	200 - 1,000
Local Road	<2,000	0 - 200



It can be seen that both West Parade and Wattle Ridge Road are operating within their design capacities. The impact of the proposed development on these roads are discussed in Section 5 of this report.

3.3 Existing Site Generation

The existing Hill Top Rifle Range comprises an 800 metre rifle range and a club house. Based on the tube count surveys undertaken and the current usage patterns, the traffic generation of the site under the current use has been determined to be as follows:

- 📍 Weekday Peak: 9 vehicles per day
- 📍 Weekend Peak: 38 vehicles per day
- 📍 Weekly Average: 11 vehicles per day



4. Description of Proposed Development

4.1 Proposed Development

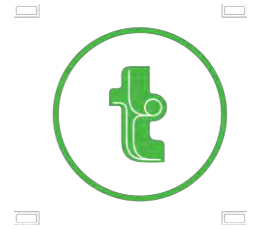
A detailed description of the proposed development is provided in the Environmental Assessment prepared separately. In summary, the development for which approval has been granted includes the following components:

- An additional rifle range (500m x 100m)
- An additional range for rifles and pistol shooting (200m x 85m)
- A pistol range (50m x 140m)
- A shotgun range
- An indoor air range (21m x 17m x 6.5m)
- Clubhouse and toilet facilities
- Access roads connecting to Wattle Ridge Road and between the Clubhouse and ranges
- Informal parking for 180 cars.

4.2 Site Operations

Based on information provided in the Conditions of Approval, the site will operate 4 days a week, between 10am and 5pm. The number of vehicle arrivals per day throughout the year expected as follows:

- 120-160 vpd for 3 days (weekend/public holiday)
- 80-120 vpd for 7 days (weekend/public holiday)

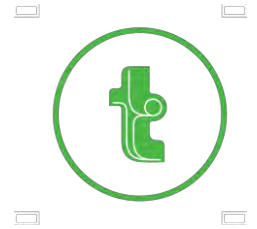


- 40-80 vpd for 97 days
- <40 vpd for 258 days

Vehicular arrivals and departures at the site is outlined as follows:

- 50% expected to arrive between 10am and 11.30am
- 50% expected to arrive between 11:30am and 1:30pm
- Departures evenly spaces over the day

The traffic and parking impacts arising from the development are discussed in Sections 5 and 6.



5. Parking Requirements

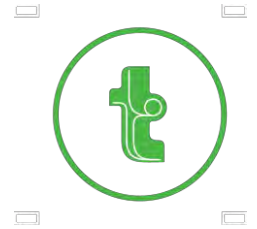
5.1 Parking Demands

Wingecarribee Shire Council's Rural Lands DCP, Part B requires adequate parking to be provided for commercial developments, without stating a specific parking rate.

It is expected that a maximum of 160 vehicles are expected to arrive at the site. In response, the development will provide 180 parking spaces, ensuring that all demands can be accommodated on site.

5.2 Servicing

Garbage collection and servicing for the site will continue to be undertaken by private contractors from within the site as existing.



6. Traffic Impacts

6.1 Trip Generation

The Roads and Maritime Services “*Guide to Traffic Generating Developments*” does not provide a trip generation rate for a similar development. Accordingly, the trip generation for the site has been derived on the basis of the site operation information provided.

Daily:

Based on the site operation information provided, the proposed site will generate the following traffic demands:

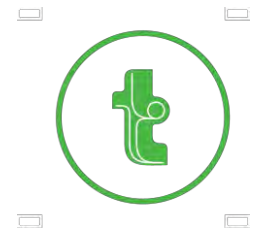
- Maximum of 40 trips per day during the weekdays (20 arrivals, 20 departures)
- Maximum of 160 trips per day during the weekends (80 arrivals, 80 departures) three times per year
- Average of 53 trips per day during the year (26.5 arrivals, 26.5 departures)

However, the existing traffic volumes generated by the site are as follows:

- Maximum of 23 trips per day during the weekdays (11.5 arrivals, 11.5 departures).
- Maximum of 38 trips per day during the weekends (18 arrivals, 18 departures)
- Average of 13 trips per day during the year (6.5 arrivals, 6.5 departures)

Accordingly, the net increase of daily traffic resulting from the proposed development is as follows:

- Maximum of 17 trips per day during the weekdays (8.5 arrivals, 8.5 departures).
- Maximum of 122 trips per day during the weekends (61 arrivals, 61 departures)
- Average of 40 trips per day during the year (20 arrivals, 20 departures)



Hourly:

Furthermore, it is known that 50% of these vehicles are expected to arrive between 11:30am and 1:30pm. It is assumed that vehicles depart the site evenly between 10am to 5pm.

Based on the site operation information provided, the proposed site will generate the following peak hourly volumes:

- 7 trips per hour during the weekdays (5 arrivals, 2 departures)
- 27 trips per hour during the weekends (20 arrivals, 7 departures).

However, the existing traffic volumes generated by the site are as follows:

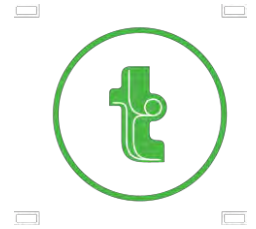
- 4 trips per hour during the weekdays (3 arrival, 1 departure)
- 7 trips per hour during the weekends (5 arrivals, 2 departures).

Accordingly, the net increase of hourly traffic resulting from the proposed development is as follows:

- 3 trips per hour during the weekdays (2 arrivals, 1 departures)
- 20 trips per hour during the weekends (15 arrivals, 5 departures).

6.2 Trip Distribution

About 90% of the vehicles are expected to arrive to the site via Hume Highway via Colo Vale. The remaining 10% of vehicles are expected to originate from the Picton and Thirlmere areas, therefore, arriving/departing via Wilson Drive north of Hill Top. Therefore, all traffic to the site will arrive / depart from the southeast, via the Hill Top town centre.



6.3 Road Capacity

Based on the traffic generation derived above, the average daily traffic volumes along the surveyed sections of West Parade and Wattle Ridge Road are expected to be as follows:

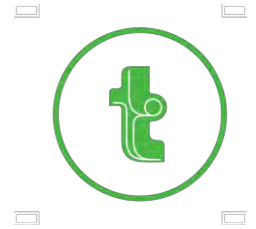
Table 3: Existing and Future Average Daily Volumes

Location	Road	Existing Volumes (vpd)	Proposed Increase (vpd)	Future Volume (vpd)
1	West Parade	2006	40	2047
2	Wattle Ridge Road	48	40	89
3	Wattle Ridge Road	28	40	68
4	Wattle Ridge Road	15	0	15

It can be seen from **Table 3** that the volumes along West Parade will still be within the 2,000 to 10,000 vehicles per day allowable for a collector road. Traffic volumes along Wattle Ridge Road will also be well below the 2,000 vehicle per day threshold allowed for a local road. Accordingly, the existing road network in the area can easily accommodate additional traffic due to the proposed development.

6.4 Residential Amenity

The potential impacts of the development on the amenity of existing residents is most appropriately assessed having regard to traffic volumes on affected road sections, based upon the concept of 'environmental capacity'. In doing so, it must be acknowledged that the concept of the 'environmental capacity' of a road is not an exact science. It is dependent upon many factors, including the function (classification) of the road, historic traffic levels, traffic composition (notably the percentage of heavy vehicles), vehicle speeds, road widths, road gradients, road surface conditions, distances to building façades and type of building construction. In addition, individual people have different responses to the prevailing conditions so that circumstances that one person finds unacceptable may be acceptable to another. These variables are set out in Section 4.3 of the RMS *Guide to Traffic Generating Developments*.



Nevertheless, the RMS has formulated design criteria for local and collector residential streets that take due account of amenity and safety considerations. These include an environmental goal and a maximum goal for a collector road as follows:

Table 4: RMS Environmental Goals

Road Class	Environmental Goal (veh/hr)	Maximum Volume (Veh/hr)
Collector Street	300	500
Local Street	200	300

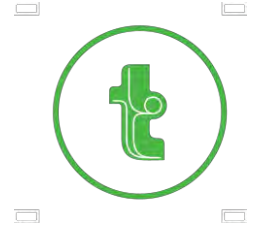
In this regard, it will be noted that West Parade functions as a collector road and Wattle Ridge Road as a local road. The peak hourly traffic volumes during the weekend, along the road network can be expressed as follows:

Table 5: Existing and Future Hourly Volumes during Weekends

Location	Road	Existing Volumes (vph)	Proposed Increase (vph)	Future Volume (vph)	Environmental Goal
1	West Parade	159	16	175	Achieved
2	Wattle Ridge Road	12	16	28	Achieved
3	Wattle Ridge Road	10	16	25	Achieved
4	Wattle Ridge Road	4	0	4	Achieved

It can be seen from **Table 5** that the future volumes along West Parade and Wattle Ridge Road, following the operation of the expanded Shooting Complex, will still meet the Environmental Goals set by RMS for the collector and local roads.

As such, the residential amenity of West Parade and Wattle Ridge Road will not be adversely affected and the road will continue to operate with a local road function, with volumes that are commensurate with this function. As discussed in Section 6.2, volumes to the northwest of the proposed site access will not be impacted.



7. Access & Internal Design Aspects

West Parade

The determination approval from the Minister of Planning included the following Condition of Approval:

D3 (a)(ii) line marking along the length of West Street and the sealed section of Wattle Ridge Road;

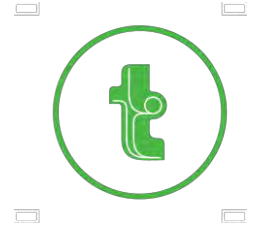
The Australian Design Standards for line marking, AS1742.2 (2009) recommends dividing line markings should generally be used on sealed pavements 5.5m or more wide but may not be required if the traffic volume is less than 300 vehicles, AADT on rural roads.

According to the traffic volumes recorded during the survey period it is recommended West Parade be marked with centre dividing lines to improve safety and comply with the aforementioned condition of approval.

Wattle Ridge Road

The access to site is provided via the unsealed section of Wattle Ridge Road. In accordance with the *Unsealed Roads Manual – Guidance to Good Practice (2000)* an unsealed local road requires sealing when the average daily traffic exceeds 500 vehicles per day. As the average daily traffic volume on this section of road is expected to be in the order of 70-80 vehicles per day the maintenance of the local road is considered acceptable.

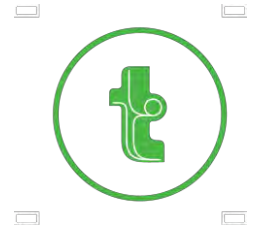
In addition, the guide recommends roads with typical volumes below 150 vehicles per day be provided with a carriageway width of 5-6m. With an existing carriageway width of 5m the road meets the requirements for the expected demand.



Site Access

To access the site the proposed development requires a Category 2 Driveway under AS 2890.1 (2004), being a combined entry-exit driveway of width 6.0 to 9.0 metres. In response, the development proposes two Category 2 combined entry-exit driveways, each with a minimum width of 6.0 metres providing access to Wattle Ridge Road, thereby satisfying the minimum requirements of AS 2890.1 (2004).

In summary, the proposed access and parking arrangements on site are considered acceptable and the site will operate satisfactorily.

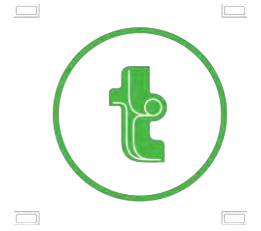


8. Conclusions

In summary:

- ② The subject development application proposed the expansion to the existing Southern Highland Shooting Complex, located along Wattle Ridge Road.
- ② The site will generate a peak parking demand of 160 vehicles at the site. The development provides 180 parking spaces at the site, thereby ensuring that all demands are accommodated on site.
- ② The development will generate up to an additional 122 trips per day and 20 trips per hour over the existing conditions. This additional traffic can easily be accommodated within the current road network.
- ② Residential amenity of West Parade and Wattle Ridge Road will continue to be maintained following the operation of the expanded shooting complex.

It is therefore concluded that the proposed development is supportable on traffic planning grounds and will operate satisfactorily.



Appendix A

Photographic Record



SHRC - Site Access 1



SHRC - Site Access 2





Wattle Ridge Road (unsealed section)



Wattle Ridge Road (sealed section)





West Parade looking west towards the intersection with Linda Street



Chalker Parade looking west towards the narrow bridge





Appendix B

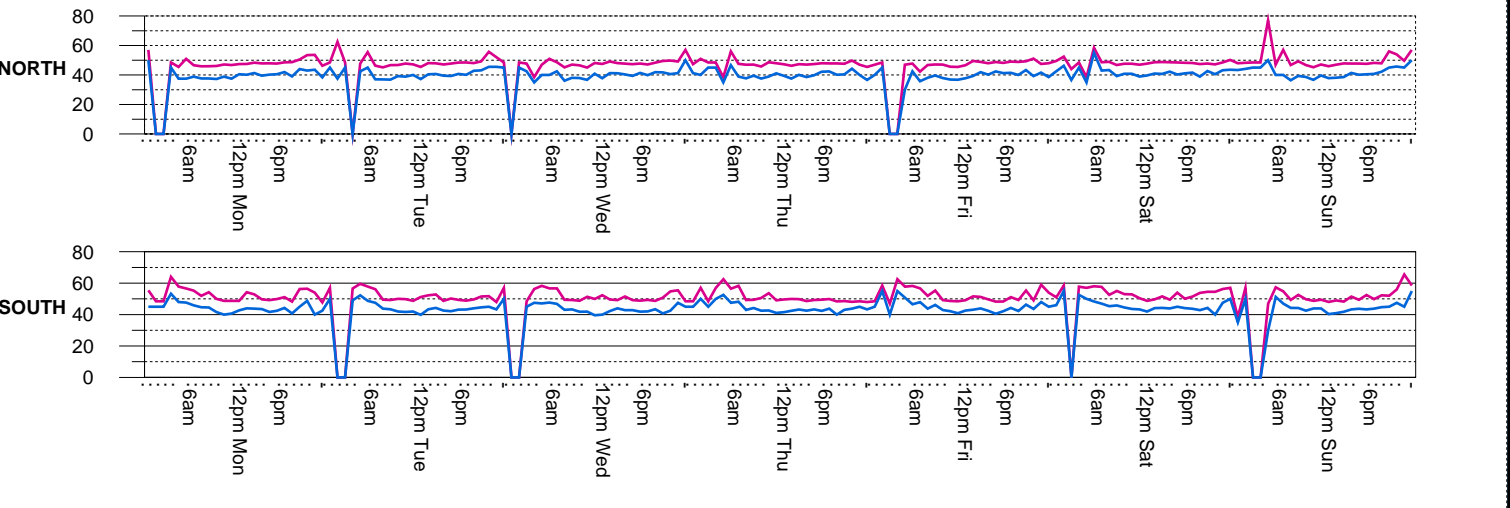
Traffic Count Surveys

Count Number 2938 **Lat/Long** : S34 21.361 / E150 29.676 **GOOGLE MAP**
Street WEST PARADE, HILL TOP : Between ROSINA STREET & WATTLE RIDGE ROAD (bidirectional)
Location Count 1, between Rosina Street and Vera Street ELP 65 - 3V0150 on 50km/h sign pole.

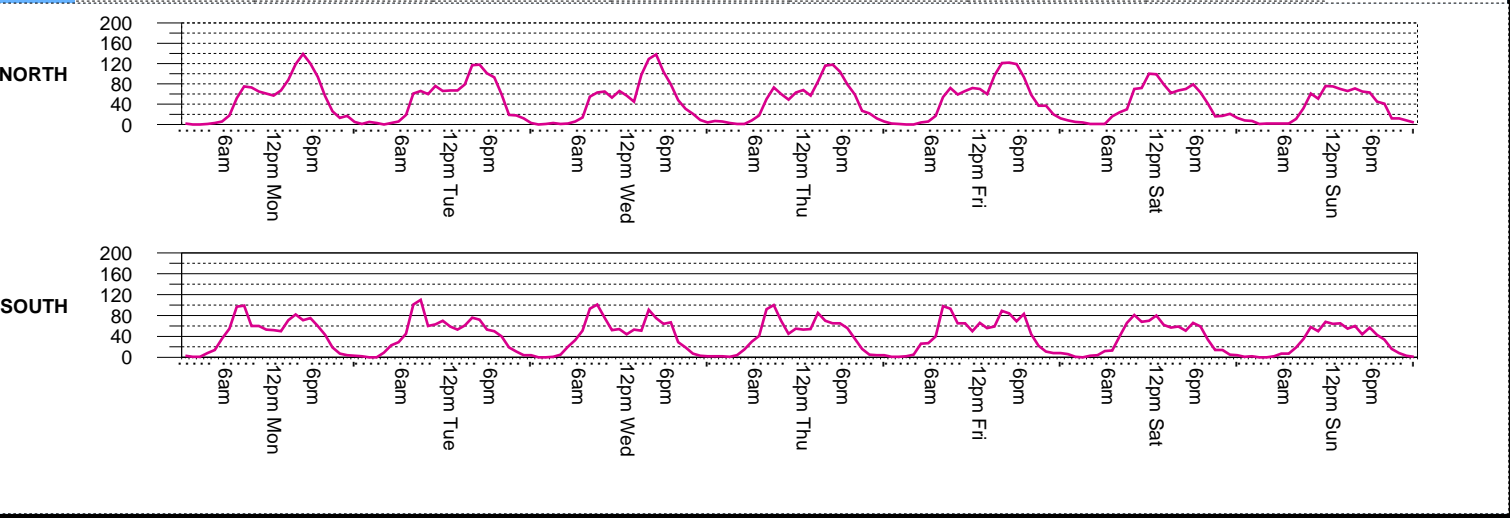
Start Date 03-NOV-15
Start Time 100
Duration 7 DAYS
Interval 1 HOUR

Speed Limit	50	NORTH	SOUTH	COMBINED
Weekly 50th Percentile Speed		40	44	42
Weekly 85th Percentile Speed		48	51	49
Five Day AADT		1132	1014	2146
Seven Day AADT		1058	948	2006

	MON 09-NOV-15			TUE 03-NOV-15			WED 04-NOV-15			THU 05-NOV-15			FRI 06-NOV-15			SAT 07-NOV-15			SUN 08-NOV-15			SEVENDAY AVERAGE		
	NORTH	SOUTH	BiDir	NORTH	SOUTH	BiDir	NORTH	SOUTH	BiDir	NORTH	SOUTH	BiDir	NORTH	SOUTH	BiDir	NORTH	SOUTH	BiDir	NORTH	SOUTH	BiDir	NORTH	SOUTH	BiDir
85%ile	47.8	52.0	49.2	47.8	51.0	49.1	47.7	50.2	48.9	47.6	50.1	48.8	48.0	51.6	49.3	48.1	52.4	49.4	47.7	49.7	48.8	47.8	51.0	49.1
50%ile	39.7	43.5	41.6	39.8	43.5	41.7	39.8	43.0	41.4	40.0	43.3	41.7	39.9	43.6	41.8	40.9	44.2	42.5	39.8	43.3	41.6	40.0	43.5	41.8
> 60 k	4	14	18	8	14	22	4	14	18	0	15	15	5	12	17	2	15	17	4	9	13	3.857	13.29	17.14
%age	.3	1.4	.8	.7	1.4	1.0	.4	1.4	.9	.0	1.5	.7	.4	1.1	.7	.2	1.7	.9	.5	1.3	.9	.4	1.4	.9
> 70 k	0	1	1	1	1	2	0	0	0	0	0	0	1	0	1	0	1	1	1	1	0	1	4286	.8571
%age	.0	.1	.0	.1	.1	.1	.0	.0	.0	.0	.0	.0	.1	.0	.0	.0	.1	.1	.1	.0	.1	.0	.0	.0



	MON	TUE	WED	THU	FRI	SAT	SUN	Average																
Short %	93.6	89.5	91.7	93.5	89.8	91.7	93.6	89.5	91.6	95.4	92.4	94.0	95.1	91.3	93.3	97.5	93.1	95.4	97.8	93.8	96.0	95.0	91.2	93.2
Med %	6.1	10.0	7.9	6.2	9.7	7.8	6.1	10.2	8.1	4.5	7.5	5.9	4.8	8.1	6.4	2.4	6.2	4.2	2.0	5.7	3.8	4.8	8.4	6.5
Long %	.3	.6	.5	.4	.5	.4	.3	.3	.3	.1	.1	.1	.1	.6	.3	.1	.7	.4	.1	.4	.3	.2	.5	.3
AM Pk Vo	75	99	174	76	110	176	66	101	164	73	100	173	72	98	165	100	81	170	76	68	144	77	94	167
PM Pk Vo	139	82	210	118	76	193	138	91	220	118	85	186	122	89	210	99	80	179	75	65	139	116	81	191
7-7pm 24Hr Tot	1010	830	1840	971	828	1799	952	821	1773	922	810	1732	1005	877	1882	815	759	1574	686	618	1304	909	792	1701
Class 0	29	23	52	17	12	29	18	9	27	17	13	30	18	14	32	23	15	38	13	8	21	19	13	33
Class 1	1035	877	1912	1015	886	1901	995	871	1866	1020	878	1898	1107	953	2060	892	777	1669	731	629	1360	971	839	1809
Class 2	19	16	35	14	13	27	9	7	16	5	5	10	15	12	27	20	17	37	26	19	45	15	13	28
Class 3	51	82	133	49	77	126	51	88	139	42	68	110	49	80	129	21	54	75	15	39	54	40	70	109
Class 4	18	20	38	19	20	39	14	13	27	7	4	11	9	7	16	2	2	1	0	1	1	10	9	19
Class 5	1	0	1	1	1	2	2	0	0	0	1	0	0	0	0	0	0	0	0	1	1	1	1	1
Class 6	3	3	6	0	1	2	2	2	2	2	4	2	3	3	6	1	4	4	0	1	1	1	2	3
Class 7	1	1	2	1	2	0	0	0	0	0	1	1	0	2	0	0	3	3	0	1	1	1	2	1
Class 8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Class 9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Class 10	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Class 11	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Class 12	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Class 13	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0



Count Number 2939

Lat/Long : S34 19.870 / E150 28.951

GOOGLE MAP

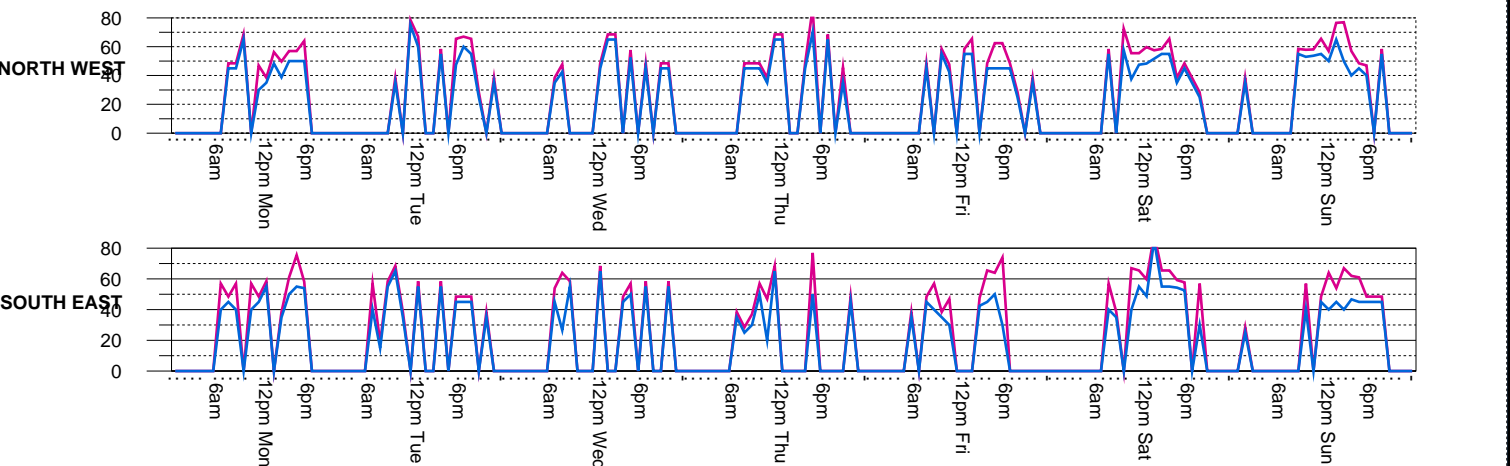
Street WATTLE RIDGE ROAD, HILL TOP : Between WEST PARADE & WATTLE RIDGE (bidirectional)

Location Count 2, about 300 Mtrs northwest of Lyrebird Close. ELP 8244288

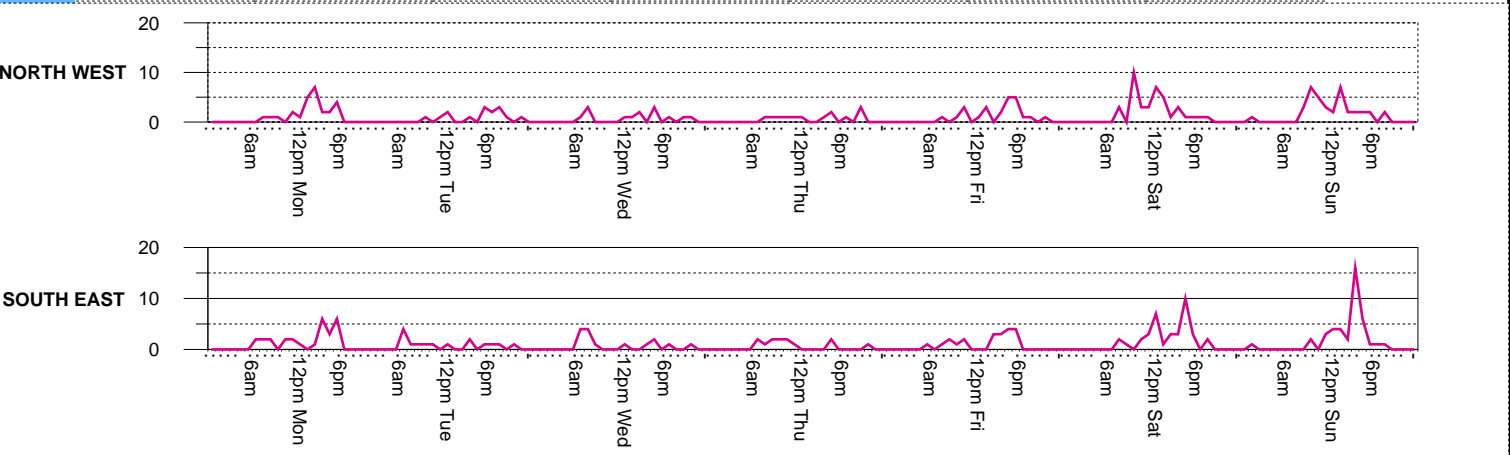
Start Date 03-NOV-15
 Start Time 100
 Duration 7 DAYS
 Interval 1 HOUR

Speed Limit	60	NORTH WEST	SOUTH EAST	COMBINED
Weekly 50th Percentile Speed		49	47	48
Weekly 85th Percentile Speed		62	60	61
Five Day AADT		18	18	37
Seven Day AADT		24	24	48

	MON 09-NOV-15			TUE 03-NOV-15			WED 04-NOV-15			THU 05-NOV-15			FRI 06-NOV-15			SAT 07-NOV-15			SUN 08-NOV-15			SEVENDAY AVERAGE		
	NORTH	SOUTH	BiDir	NORTH	SOUTH	BiDir	NORTH	SOUTH	BiDir	NORTH	SOUTH	BiDir	NORTH	SOUTH	BiDir	NORTH	SOUTH	BiDir	NORTH	SOUTH	BiDir	NORTH	SOUTH	BiDir
85%ile	56.8	58.3	57.8	66.9	57.9	63.0	63.0	59.5	61.3	67.6	60.5	66.2	58.5	59.5	58.9	60.4	62.4	61.6	61.5	59.8	60.2	62.1	59.7	61.3
50%ile	45.8	50.4	47.8	53.8	48.3	51.0	46.7	48.8	47.5	47.0	41.3	44.4	45.5	42.5	44.4	51.6	52.8	52.2	52.8	44.7	48.7	49.0	47.0	48.0
> 70 k	0	1	1	1	0	1	0	0	0	1	1	2	0	1	1	2	1	3	4	0	4	1.143	.5714	1.714
%age	.0	3.7	1.9	6.6	.0	3.3	.0	.0	.0	7.6	7.6	7.6	0	4.7	2.2	5.1	2.7	3.9	10.5	0	5.0	4.2	2.7	3.4
> 80 k	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	1	1	0	0	0	1.429	.1429	.2857
%age	.0	.0	.0	.0	.0	.0	.0	.0	.0	7.6	.0	3.8	.0	.0	.0	.0	2.7	1.3	.0	.0	.0	1.1	.4	.7



	MON 09-NOV-15			TUE 03-NOV-15			WED 04-NOV-15			THU 05-NOV-15			FRI 06-NOV-15			SAT 07-NOV-15			SUN 08-NOV-15			SEVENDAY AVERAGE		
	NORTH	SOUTH	BiDir	NORTH	SOUTH	BiDir	NORTH	SOUTH	BiDir	NORTH	SOUTH	BiDir	NORTH	SOUTH	BiDir	NORTH	SOUTH	BiDir	NORTH	SOUTH	BiDir	NORTH	SOUTH	BiDir
Short %	84.6	96.3	90.6	100.0	93.3	96.7	92.9	93.3	93.1	69.2	92.3	80.8	79.2	100.0	88.9	89.7	97.3	93.4	84.2	97.6	91.1	85.8	96.4	91.1
Med %	15.4	3.7	9.4	.0	6.7	3.3	7.1	6.7	6.9	30.8	7.7	19.2	20.8	.0	11.1	7.7	2.7	5.3	13.2	.0	6.3	13.0	3.0	8.0
Long %	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	1.3	2.6	2.4	2.5	1.2	.6	.9
AM Pk Vo	2	2	4	1	4	4	3	4	7	1	2	3	3	2	5	10	3	10	7	3	9	4	3	6
PM Pk Vo	7	6	10	3	2	4	3	2	5	3	2	4	5	4	9	7	10	14	7	16	18	5	6	9
7-7pm 24Hr Tot	26	25	51	10	9	19	11	10	21	10	10	20	22	20	42	38	35	73	35	39	74	22	21	43
	26	27	53	15	15	30	14	15	29	13	13	26	24	21	45	39	37	76	38	41	79	24	24	48
Class 0	1	2	3	1	0	1	6	3	9	3	2	5	3	3	8	2	1	3	2	1	3	3	2	5
Class 1	21	24	45	14	13	27	7	11	18	6	10	19	14	18	32	32	33	65	27	36	63	17	21	38
Class 2	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1
Class 3	4	1	5	0	1	1	1	1	2	2	2	5	0	0	0	3	1	4	5	0	5	3	1	3
Class 4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Class 5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Class 6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Class 7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Class 8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Class 9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Class 10	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Class 11	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Class 12	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Class 13	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0



Count Number 2940

Lat/Long : S34 19.070 / E150 27.687

GOOGLE MAP

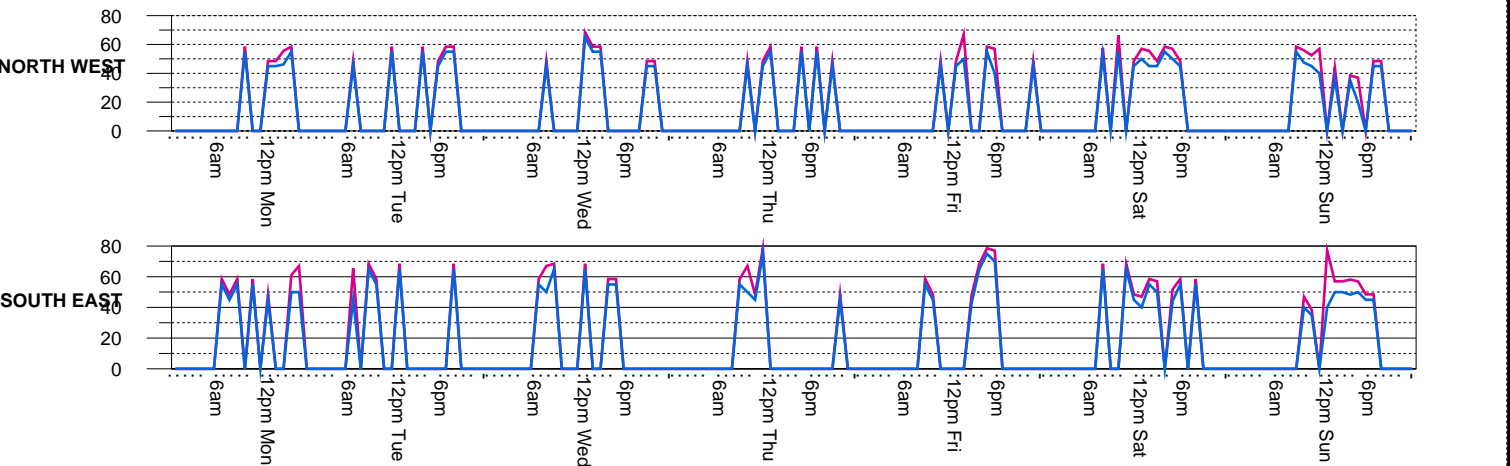
Street WATTLE RIDGE ROAD, HILL TOP : Between WEST PARADE & WATTLE RIDGE (bidirectional)

Location Count 3, about 2.75 Kms northwest of Lyrebird Close and 500 Mts northwest of The Westbreak, on tree.

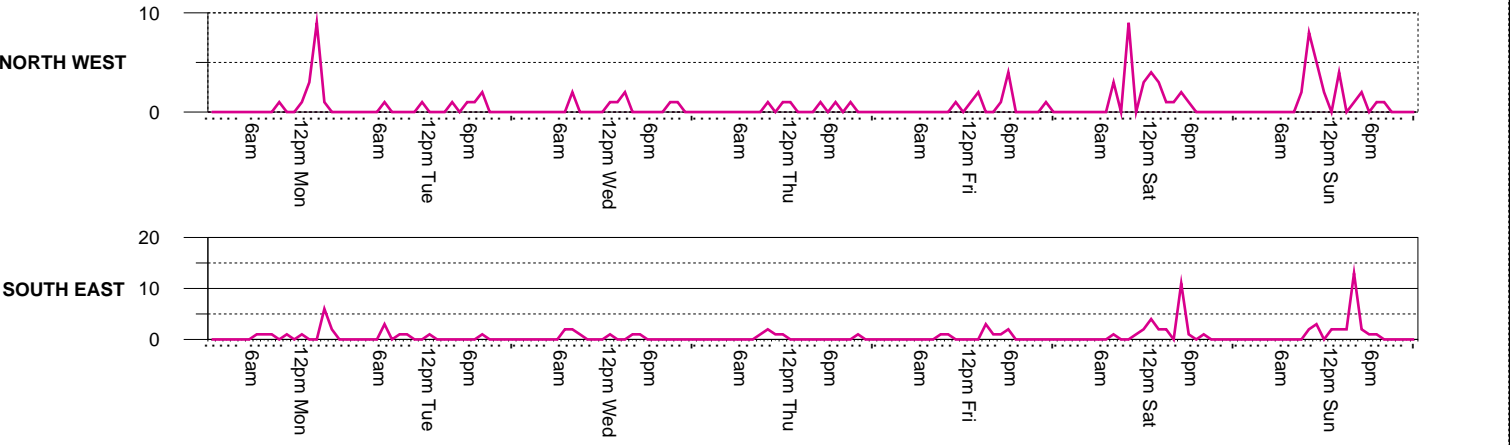
Start Date 03-NOV-15
 Start Time 100
 Duration 7 DAYS
 Interval 1 HOUR

Speed Limit	60	NORTH WEST	SOUTH EAST	COMBINED
Weekly 50th Percentile Speed		48	49	49
Weekly 85th Percentile Speed		57	63	59
Five Day AADT		9	9	18
Seven Day AADT		14	14	28

	MON 09-NOV-15			TUE 03-NOV-15			WED 04-NOV-15			THU 05-NOV-15			FRI 06-NOV-15			SAT 07-NOV-15			SUN 08-NOV-15			SEVENDAY AVERAGE		
	NORTH	SOUTH	BiDir	NORTH	SOUTH	BiDir	NORTH	SOUTH	BiDir	NORTH	SOUTH	BiDir	NORTH	SOUTH	BiDir	NORTH	SOUTH	BiDir	NORTH	SOUTH	BiDir	NORTH	SOUTH	BiDir
85%ile	55.5	60.3	57.8	57.9	67.4	64.8	59.3	66.0	64.0	57.0	71.0	62.0	58.3	73.3	67.2	58.3	57.5	58.0	54.4	57.3	55.9	57.3	64.7	61.4
50%ile	46.9	51.0	48.6	53.0	61.3	55.0	50.0	57.5	54.3	50.0	50.0	50.0	47.5	55.0	49.3	50.4	46.8	48.7	44.0	45.6	44.7	48.8	52.4	50.1
> 70 k	0	0	0	0	0	0	0	0	0	0	1	1	0	2	2	1	0	1	0	1	1	1429	5714	7143
%age	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	16.0	8.0	.0	21.6	10.3	3.7	0	1.9	.0	3.5	1.8	.5	5.9	3.1
> 80 k	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
%age	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0



	MON 09-NOV-15			TUE 03-NOV-15			WED 04-NOV-15			THU 05-NOV-15			FRI 06-NOV-15			SAT 07-NOV-15			SUN 08-NOV-15			SEVENDAY AVERAGE		
	NORTH	SOUTH	BiDir	NORTH	SOUTH	BiDir	NORTH	SOUTH	BiDir	NORTH	SOUTH	BiDir	NORTH	SOUTH	BiDir	NORTH	SOUTH	BiDir	NORTH	SOUTH	BiDir	NORTH	SOUTH	BiDir
Short %	100.0	92.3	96.4	100.0	85.7	92.9	87.5	87.5	87.5	100.0	83.3	91.7	90.0	88.9	89.5	92.6	96.0	94.2	96.2	89.3	92.6	94.9	90.6	92.8
Med %	.0	7.7	3.6	.0	14.3	7.1	12.5	12.5	12.5	.0	16.7	8.3	.0	11.1	5.3	7.4	4.0	5.8	.0	7.1	3.7	3.0	8.3	5.6
Long %	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	10.0	.0	.0	5.3	.0	.0	3.8	3.6	.0	3.7	2.0	1.0	1.5
AM Pk Vo	1	1	1	1	3	4	2	2	4	1	2	3	1	1	1	9	2	9	8	3	10	3	2	5
PM Pk Vo	9	6	9	2	1	3	2	1	2	1	1	4	3	3	6	4	11	13	4	13	14	4	5	7
7-7pm 24Hr Tot	15	12	27	4	3	6	6	6	12	5	5	10	9	9	18	27	24	51	25	28	53	13	12	25
Class 0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Class 1	15	12	27	7	7	14	7	7	14	6	5	11	9	8	17	25	24	49	23	23	46	13	12	25
Class 2	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Class 3	0	1	1	0	1	1	1	1	1	0	1	1	0	1	1	1	1	3	2	2	2	0	1	2
Class 4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Class 5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Class 6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Class 7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Class 8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Class 9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Class 10	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Class 11	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Class 12	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Class 13	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0



Count Number 2941

Lat/Long : S34 18.464 / E150 27.001

GOOGLE MAP

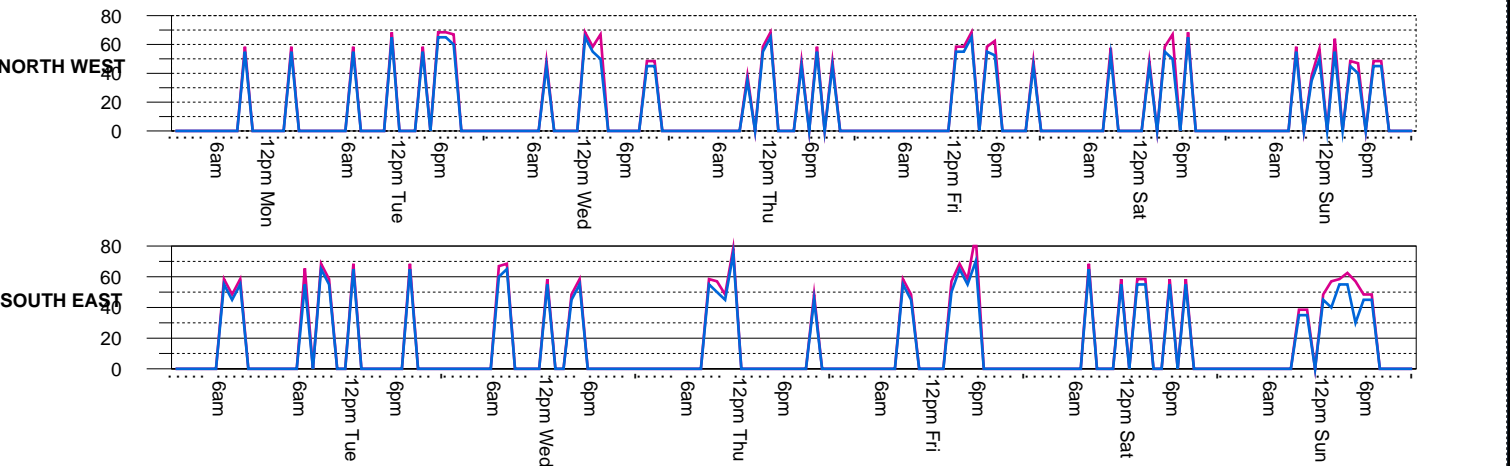
Street WATTLE RIDGE ROAD, HILL TOP : Between WEST PARADE & WATTLE RIDGE (bidirectional)

Location Count 4, about 1.5 Kms northwest of The Westbreak and about 1.3 KMS from Count 3, on tree.

Start Date 03-NOV-15
 Start Time 100
 Duration 7 DAYS
 Interval 1 HOUR

Speed Limit	60	NORTH WEST	SOUTH EAST	COMBINED
Weekly 50th Percentile Speed		53	54	54
Weekly 85th Percentile Speed		63	65	64
Five Day AADT		6	6	13
Seven Day AADT		8	7	15

	MON 09-NOV-15			TUE 03-NOV-15			WED 04-NOV-15			THU 05-NOV-15			FRI 06-NOV-15			SAT 07-NOV-15			SUN 08-NOV-15			SEVENDAY AVERAGE			
	NORTH	SOUTH	BiDir	NORTH	SOUTH	BiDir	NORTH	SOUTH	BiDir	NORTH	SOUTH	BiDir	NORTH	SOUTH	BiDir	NORTH	SOUTH	BiDir	NORTH	SOUTH	BiDir	NORTH	SOUTH	BiDir	
85%ile	58.5	57.8	58.1	67.4	67.4	67.4	64.8	66.5	65.8	61.0	71.0	62.0	62.5	69.0	65.8	64.0	61.0	63.0	57.6	57.9	57.8	62.3	64.4	62.8	
50%ile	55.0	52.5	53.8	61.3	61.3	61.3	48.8	58.3	55.0	50.0	50.0	50.0	54.0	56.7	55.0	53.3	56.0	55.0	47.5	48.8	48.0	52.8	54.8	54.0	
> 70 k	0	0	0	0	0	0	0	0	0	0	1	1	0	1	1	0	0	0	0	0	0	0	0	0	0
%age	0	0	0	0	0	0	0	0	0	0	16.0	8.0	0	12.1	5.4	0	0	0	0	0	0	0	0	0	0
> 80 k	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0
%age	0	0	0	0	0	0	0	0	0	0	0	0	0	12.1	5.4	0	0	0	0	0	0	0	0	0	0



	MON 09-NOV-15			TUE 03-NOV-15			WED 04-NOV-15			THU 05-NOV-15			FRI 06-NOV-15			SAT 07-NOV-15			SUN 08-NOV-15			SEVENDAY AVERAGE			
	NORTH	SOUTH	BiDir	NORTH	SOUTH	BiDir	NORTH	SOUTH	BiDir	NORTH	SOUTH	BiDir	NORTH	SOUTH	BiDir	NORTH	SOUTH	BiDir	NORTH	SOUTH	BiDir	NORTH	SOUTH	BiDir	
Short %	100.0	66.7	80.0	100.0	100.0	100.0	71.4	85.7	78.6	100.0	100.0	100.0	90.0	100.0	94.4	87.5	100.0	92.9	76.9	80.0	78.6	86.8	90.4	88.6	
Med %	0	33.3	20.0	0	0	0	28.6	14.3	21.4	0	0	0	0	0	0	0	12.5	0	7.1	15.4	13.3	14.3	9.4	7.7	8.6
Long %	0	0	0	0	0	0	0	0	0	0	0	0	10.0	0	5.6	0	0	0	7.7	6.7	7.1	3.8	1.9	2.9	
AM Pk Vo	1	1	1	1	1	1	1	2	1	1	2	1	1	1	1	1	3	1	3	1	2	1	1	2	2
PM Pk Vo	1	1	1	2	1	1	2	1	2	1	1	1	5	2	7	2	2	1	2	4	5	6	2	2	3
7-7pm 24Hr Tot	2	2	4	4	7	14	7	7	10	5	5	10	10	8	17	18	5	13	12	15	27	6	6	13	15
Class 0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0
Class 1	2	2	4	7	10	11	5	6	11	6	6	12	8	8	16	7	6	13	9	11	20	6	6	13	13
Class 2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Class 3	0	1	1	0	0	0	2	1	0	0	0	0	0	0	0	1	0	1	2	2	4	1	1	1	1
Class 4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Class 5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Class 6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Class 7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Class 8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Class 9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Class 10	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Class 11	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Class 12	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Class 13	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

