



918 Greenbank Road, North Maclean

## Traffic Impact Assessment


Client: Roubaix Properties Pty Ltd


Project No: BE160355

Document No: BE160355-RP-TIA-00

May 2017

# Document Control Record

Prepared by:	Dale Kleimeyer
Position:	Senior Traffic Engineer
Signed:	 RPEQ 6876
Date:	02/05/2017

Approved by:	Dale Kleimeyer
Position:	Senior Traffic Engineer
Signed:	 RPEQ 6876
Date:	02/05/2017

Version No.	Description	Date	Approved By
00	First Issue – Draft	02/05/2017	Dale Kleimeyer
01	Final	08/05/2017	Dale Kleimeyer

***Recipients are responsible for eliminating all superseded documents in their possession***

**Coote Burchills Engineering Pty Ltd ACN: 166 942 365**

**Level 2, 26 Marine Parade SOUTHPORT QLD 4215**

**PO Box 3766, Australia Fair SOUTHPORT QLD 4215**

**Telephone: +61 7 5509 6400 Facsimile: +61 7 5509 6411 Email: admin@burchills.com.au**

**www.burchills.com.au**

**RELIANCE, USES and LIMITATIONS**

This report is copyright and is to be used only for its intended purpose by the intended recipient, and is not to be copied or used in any other way. The report may be relied upon for its intended purpose within the limits of the following disclaimer.

This study, report and analyses have been based on the information available to Burchills Engineering Solutions at the time of preparation. Burchills Engineering Solutions accepts responsibility for the report and its conclusions to the extent that the information was sufficient and accurate at the time of preparation. Burchills Engineering Solutions does not take responsibility for errors and omissions due to incorrect information or information not available to Burchills Engineering Solutions at the time of preparation of the study, report or analyses.

# Table of Contents

1. Introduction.....	1
1.1 Background .....	1
1.2 Pre-Lodgement Meeting .....	1
1.3 Scope .....	1
2. Site Details .....	3
2.1 Location and Context.....	3
2.2 Surrounding Road Network.....	3
2.2.1 Mount Lindesay Highway.....	3
2.2.2 Greenbank Road .....	4
2.3 Future Road Upgrades by Others .....	5
3. Proposed Development .....	7
3.1 Site Access Arrangements.....	8
4. Traffic Demands .....	10
4.1 Pre-Development Traffic.....	10
4.2 Traffic Growth .....	12
4.3 Development Traffic.....	13
4.3.1 Generation.....	13
4.3.2 Trip Distribution.....	13
4.4 Post Development Traffic.....	14
5. Operational Assessment.....	15
5.1 Intersection Capacity Analysis .....	15
5.1.1 Mount Lindesay Highway / Greenbank Road Intersection.....	15
6. Parking, Access, and Servicing.....	18
6.1 Car and Bicycle Parking.....	18
6.2 Bicycle Parking .....	18
6.3 Vehicle Driveway Crossover .....	19
6.4 Servicing.....	19
7. Conclusions and Recommendations.....	20
8. References .....	21

## Tables

Table 3.1 Development Components Zones .....	7
Table 4.1 Development Components Zones Origin / Destination .....	12
Table 4.2 Plot AADT Years 2010 to 2015 .....	12
Table 4.3 Development Trip Generation Per Hour Origin / Destination Summary .....	13

Table 4.4 Development Trip Generation per Hour Summary.....	14
Table 5.1 Mount Lindesay Highway / Greenbank Road Performance Summary – 2017 Pre Development (Existing Layout) .....	16

**Figures**

Figure 2.1 Subject Site Location .....	3
Figure 2.2 Mount Lindesay Highway .....	4
Figure 2.3 Greenbank Road Catchment (Source: Google Earth) .....	4
Figure 2.4 Mount Lindesay Highway extract from Logan City Transport Infrastructure Plan .....	5
Figure 2.5 Greenbank Road / Scott Lane proposed Intersection .....	6
Figure 3.1 Proposed Development Comprising Three Industrial Buildings .....	7
Figure 3.2 Extract from Survey Plan.....	8
Figure 3.3 Site Contours Along Greenbank Road .....	8
Figure 3.4 Scott Lane Eastern End Turnaround Arrangement.....	9
Figure 4.1 Greenbank Road and Mount Lindesay Highway Intersection Peak Hour Traffic Count 2017.....	10
Figure 4.2 Comparison Traffic Volumes at Mt Lindesay Highway Intersection (orange colour) to the Traffic Volume Past the Development Site (blue colour) in Greenbank Road.....	11
Figure 5.1 Diagrammatic Layout of Mount Lindesay Highway / Greenbank Road Intersection .....	16

**Appendices**

Appendix A – Architects Site Layout Plans
Appendix B – Traffic Count Data
Appendix C – Sidra Output Summaries
Appendix D – Turning Templates Refuse Collection, Service Vehicles and Cars
Appendix E – Logan City Council, Servicing, Access and Parking Code

## 1. Introduction

### 1.1 Background

Burchills Engineering Solution (BES, Burchills) was engaged by Roubaix Properties Pty Ltd to prepare a Traffic Impact Assessment (TIA) to accompany a Development Application for Proposed warehouse, low impact industry and service industry development at 918 - 980 Greenbank Road, North Maclean. The proposed development comprises three buildings A, B and C comprising a total building area of 7,043 m<sup>2</sup>.

### 1.2 Pre-Lodgement Meeting

The proposed development is located in the Greater Flagstone Area and a prelodgement meeting with the Department of Economic Development Queensland (EDQ), the following topics with respect to traffic and transport were requested to be included in the traffic assessment:

*A traffic report will need to be submitted and will need to address access and parking.*

*The Greater Flagstone Infrastructure Charges Offset Plans shows an internal road going through the site. This will need to be addressed, which could be through a context plan (see comments below on Context Plans)*

*The applicant also asked if Scott Lane could fulfil the function of the internal road. EDQ raised a concern that Scott Lane intersects with Greenbank Road and Beryl Parade (5 way intersection). This is not ideal.*

*The applicant asked about the requirements for a kerb and channel to be provided outside the site along Greenbank Road.*

*Important points to note:*

*A context plan is not required and hence public advertising is not required*

*Kerb and channelling is not required (however a drain at the frontage of the site may be needed)*

*Referral to DTMR is likely to be required once an application is lodged to EDQ*

### 1.3 Scope

The scope of the traffic assessment includes the traffic items covered in the briefing from EDQ and requirements from Logan City Council, Queensland Department of Transport and Main Roads (DTMR) plus completion of Logan City Council *Servicing, Access and Parking Code*. The initial scope involves a review of subject site and surrounding road network to establish the following:

- Existing roads – profile and theoretical capacity;
- Existing intersections – type and function;
- Existing traffic demand data;
- Access location; and
- Parking requirements.

Traffic Impact Assessment is prepared to the following scope:

- Establish traffic generation and distribution associated with the proposal;
- Consider proposed access arrangements to the site from the existing road network.  
Assessment will consider the following issues for the access point:
  - Geometry;
  - Safe intersection sight distances;
  - Capacity; and
  - Location relative to adjacent intersections.
- Address on site vehicle provisions:
  - Servicing;
  - Parking; and
  - Provision for car parking.
- Identify impacts of development traffic on the surrounding road network in the vicinity of the subject site of the following intersections:
  - Access driveway and Greenbank Road; and
  - Greenbank Road / Mt Lindesay Highway Intersection.
- Where assessment identifies capacity issues, mitigation measures will be recommended.

Traffic surveys have been commissioned through a specialist traffic survey company. Two surveys were completed. One at the Greenbank Road / Mt Lindesay Highway intersection and the second is a tube counter across Greenbank Road in front of the property measuring traffic volumes, vehicle types and speeds in both directions.

A copy of the Logan City Council Servicing, Access and Parking Code is contained in Appendix E.

## 2. Site Details

### 2.1 Location and Context

The subject site is located at 916 - 944 Greenbank Road, North Maclean, within the Logan City Local Government Area (Figure 2.1). As shown, the subject site is bordered to the east by the Mount Lindesay Highway and to the south by Greenbank Road. The site is described as Lot 2 on SP267252 with a total area of 2.53 ha and is not currently occupied. There is an unformed road reserve along the northern boundary for Scott Lane.

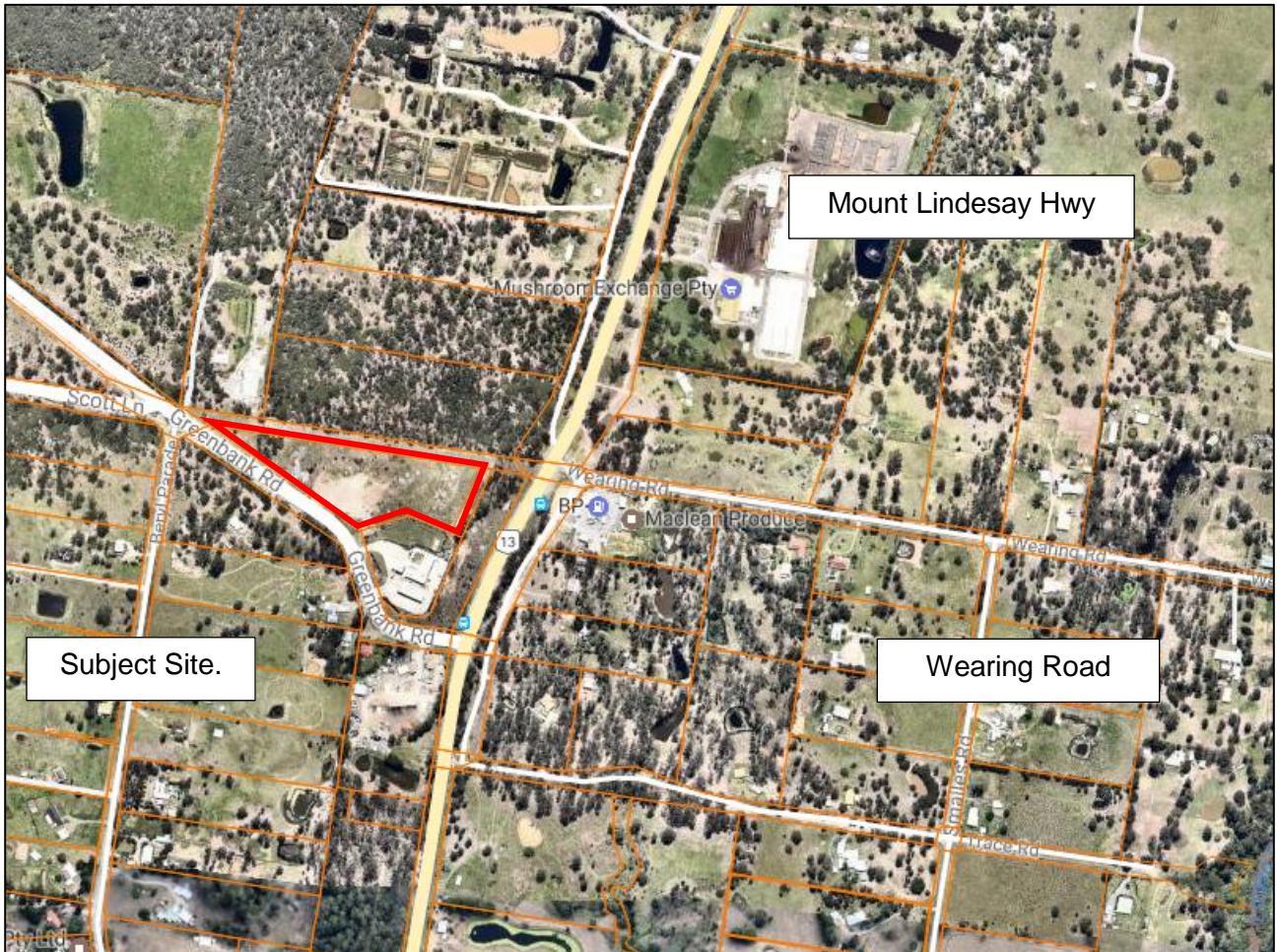


Figure 2.1 Subject Site Location

### 2.2 Surrounding Road Network

The surrounding road network in the vicinity of the subject site includes Mount Lindesay Highway, and Greenbank Road.

#### 2.2.1 Mount Lindesay Highway

Mount Lindesay Highway is a two way, two lane State-controlled roadway. In the vicinity of the subject site, it has a road reserve of approximately 60 metres and a pavement width of approximately 9.5 m. The current Annual Average Daily Traffic (AADT) of Mount Lindesay Highway is approximately 20,000 vehicles per day (vpd) in the area. Mount Lindesay Highway has sealed

shoulders and no kerb and channel. The posted speed limit of the Mount Lindesay Highway is 90 km/h in the vicinity of the subject site. Mount Lindesay Highway section is shown in Figure 2.2.



**Figure 2.2 Mount Lindesay Highway**

### **2.2.2 Greenbank Road**

Greenbank Road is a two way, two lane Council owned roadway. It has a 20 metre road reserve and a carriageway width of approximately 6 metres. Greenbank Road has no kerb and channel and no pedestrian facilities in the vicinity of the subject site. Greenbank Road intersects with Mount Lindesay Highway east of the subject site. This intersection incorporates an auxiliary left turn and a full auxiliary right turn on Mount Lindesay Highway with an acceleration lane for vehicles turning left out of Greenbank Road. The cross-section of Greenbank Road is shown in the following Figure 2.3.



**Figure 2.3 Greenbank Road Catchment (Source: Google Earth)**

The Greenbank Road / Mount Lindesay Highway intersection is a “T” intersection located approximately 240 metres east of the subject site. At the intersection of Greenbank Road and the Mount Lindesay Highway there is a Service Station and several small retail tenancies. The remainder of the Greenbank Road catchment is rural residential.

### 2.3 Future Road Upgrades by Others

The Department of Transport and Main Roads (DTMR) planning for the Mount Lindesay Highway includes, in the short term, as well as interim localised projects and leading up to ultimate longer term planning. Due to the nature of the road network along the Mount Lindesay Highway, the DTMR’s current projects are intended to ‘tidy up’ locations and/or improve safety in the interim. Some of these upgrades to the network have commenced or are intended to commence. Parallel to Mount Lindesay Highway, a service road is proposed on the western side in the future to run from Greenbank Road north of the subject site.

Works to improve the network includes in vicinity of the subject land, the intent to signalise the Mount Lindesay Highway / Greenbank Road intersection. These works are stated only as interim measures to ‘tidy up’ the network and/or improve safety and may not be integral to, or necessarily a component of the ultimate planning. Currently there is also further options planning in proximity of the land. This however is not finalised and has not gone through consultation with the Council.

DTMR have advised no current plans are available to upgrade Mount Lindesay Highway and there is no timeframe for the ultimate planning (and not envisaged for at least another 30 years) until there is some certainty about the impacts of growth areas such as Yarrabilba and Bromelton.

Logan City Council Transport Infrastructure Plan shows future upgrade works for the Mount Lindesay Highway as shown on the following extract in Figure 2.4.

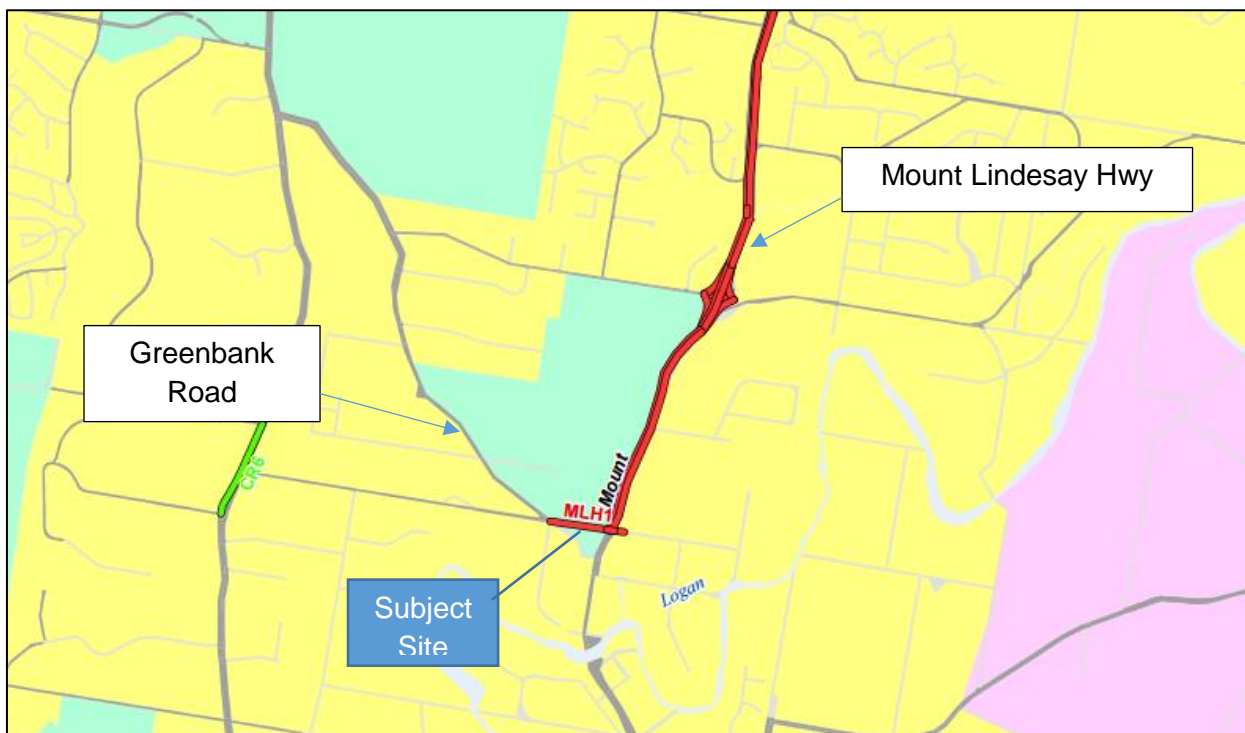


Figure 2.4 Mount Lindesay Highway extract from Logan City Transport Infrastructure Plan

MLH1 refers to the State controlled schedule of works involving the upgrade of the Mt Lindesay Highway from Rosia Road north of Greenbank Road to Scott Lane / Greenbank Road immediately north of the subject site and including Scott Lane along the northern boundary of the site. in accordance with the Logan City Council Planning Scheme, the work is scheduled for implementation 2013 to 2021 and the estimated cost is \$309,016,031. Discussions with the South Coast Department of Transport and Main Roads indicated the construction is not listed on their Department Works schedule in the immediate future due to funding priorities elsewhere.

To the west of the subject site, Greenbank Road intersects Scott Lane in an undesirable intersection arrangement involving acute intersection angles, Beryl Parade and a private driveway opposite, all in close proximity.

As part of a requirement to identify any future land requirement from the subject site for the intersection of Scott Lane and Greenbank Road, a preliminary plan was prepared for the ultimate intersection of Greenbank Road and Scott Lane. The following Figure 2.5 shows the general arrangement.



**Figure 2.5 Greenbank Road / Scott Lane proposed Intersection**

A truncation from the western corner of the proposed developments subject property is required as shown. Refer plan BE160355 SK004 A Proposed Future Intersection Arrangement in Appendix D.

Scott Lane can be constructed to service the development site only now with no affects to the Beryl Parade in its present location due to the low traffic volumes that will use Scott Lane. Should DTMR wish to have Scott Lane as the service road for the industrial estate in the future, upgrade the Scott Lane / Greenbank Road intersection by the Authorities involving the re-alignment of Beryl Parade intersection as above in Figure 2.5 is recommended.

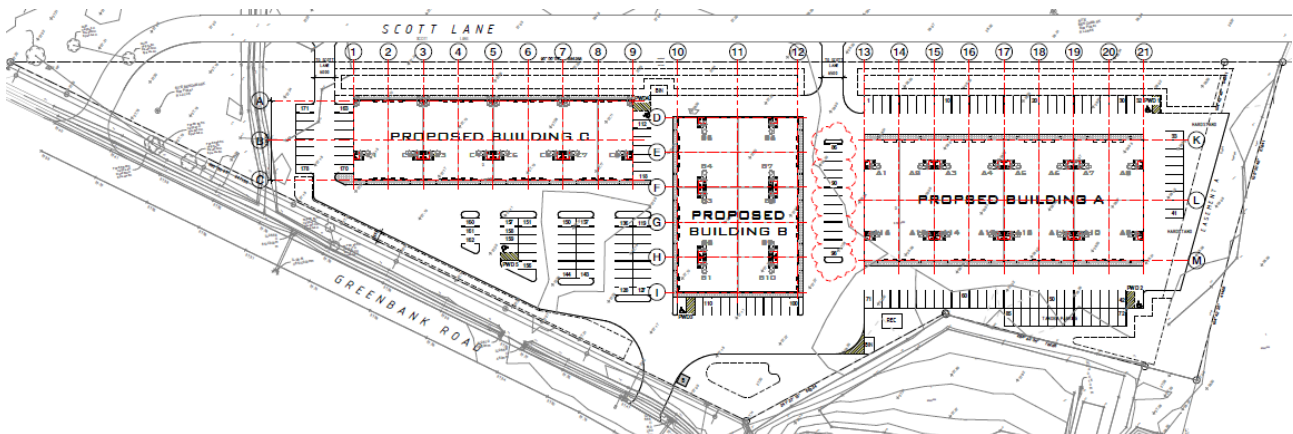
### 3. Proposed Development

The proposed development is located on Lot 2 SP267252 Parish of Maclean, County Stanley within the Logan City Council Local Authority. The site area is 2.5312 ha and incorporates three separate industrial buildings. Respective site areas of the land use components are as follows shown in Table 3.1.

**Table 3.1 Development Components Zones**

Zone	Area (m <sup>2</sup> )	%
Total landscaping	8,163	32.2%
Proposed Building Area	7,043	27.8%
Driveway Parking Area	10104	40.0%
Total Development Site Area	25,310	100%

Appendix A contains the Architects plans for the development including floor plans and elevations. The site is located in the Priority Development Area (PDA). The layout of the proposed development is shown in the following Figure 3.1.



**Figure 3.1 Proposed Development Comprising Three Industrial Buildings**

Along the eastern boundary of the property there is a drainage easement. Road widening has already occurred for the Mount Lindesay Highway and a service road adjacent to the Highway is proposed in the future. The following Figure 3.2 and shows the drainage easement and the road widening zone for the Mount Lindesay Highway.

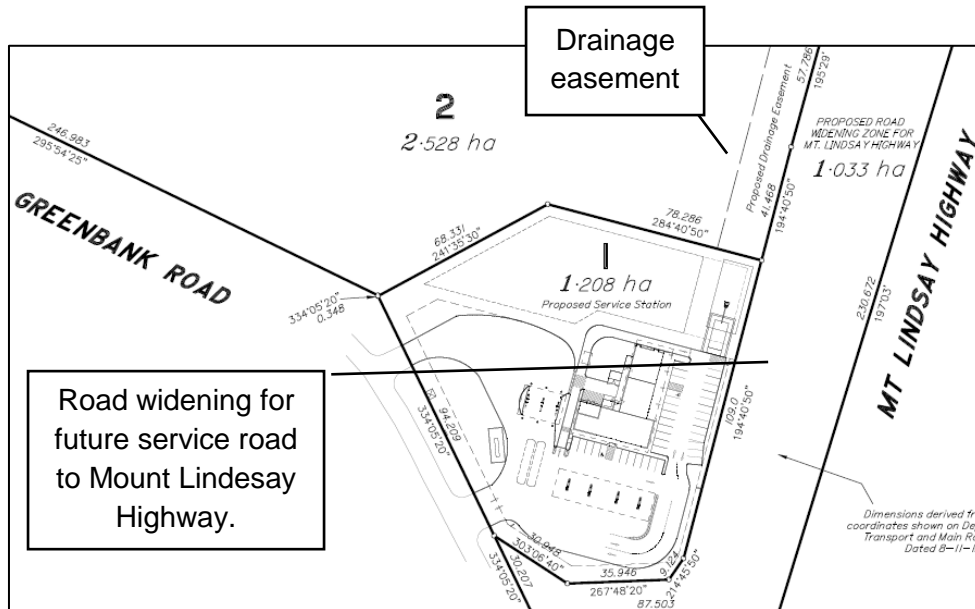


Figure 3.2 Extract from Survey Plan

### 3.1 Site Access Arrangements

Access to the subject site is to be provided via three driveways one off the eastern end of the allotment onto Greenbank Road and two at the rear onto Scott Lane. The industrial driveway onto Greenbank Road is centrally located within the proposed development and positioned on the outside of a horizontal curve in Greenbank Road. The vertical alignment of Greenbank Road is relatively flat as per the following Figure 3.3 from contours extracted from the Logan City Council Planning Scheme.

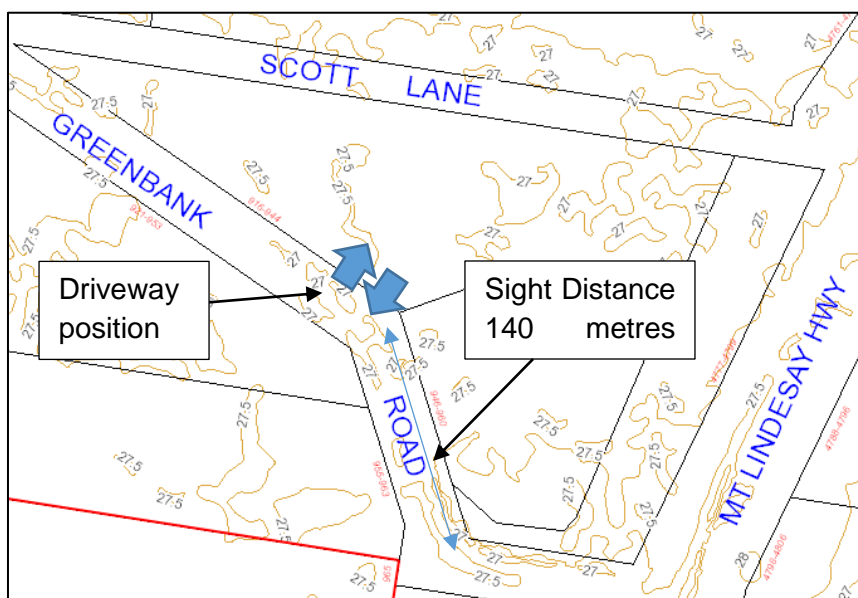
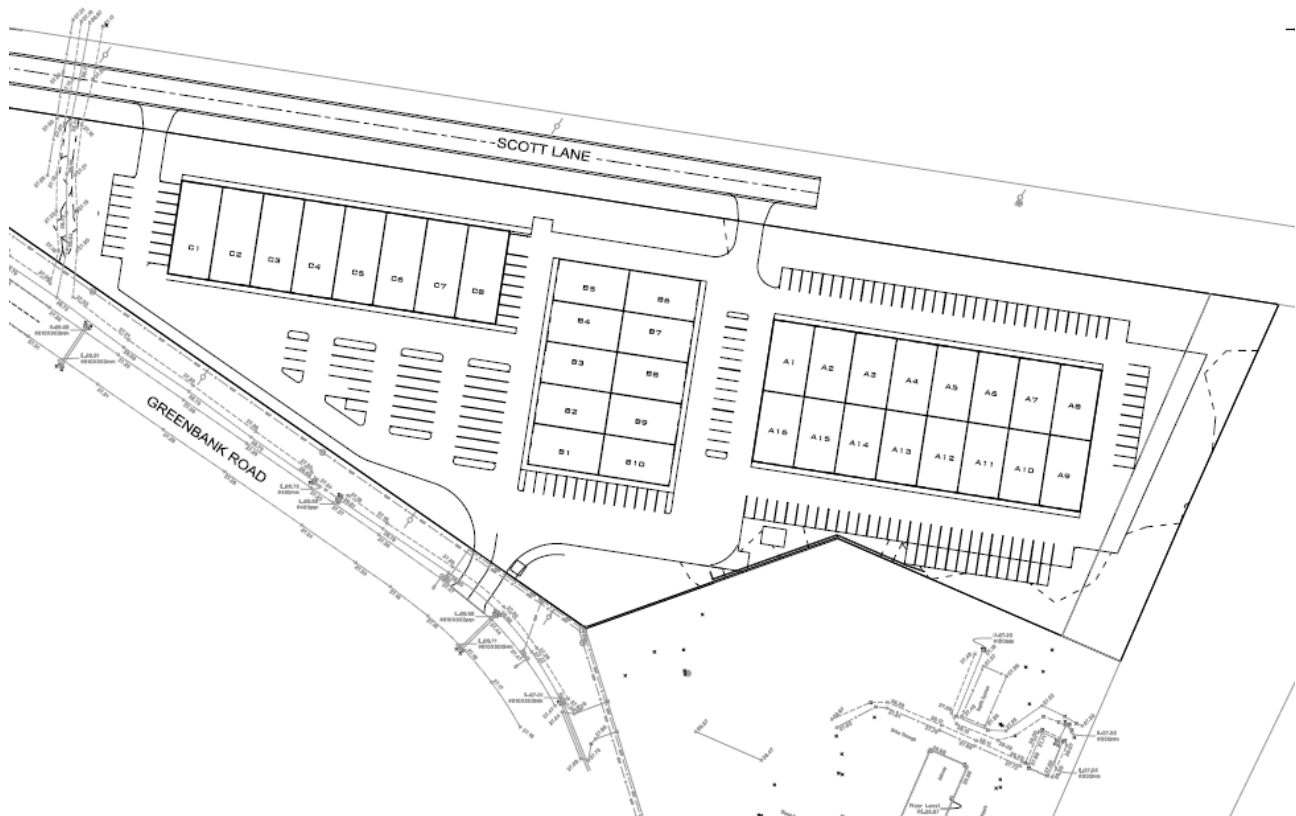


Figure 3.3 Site Contours Along Greenbank Road

As shown in the Figure the location of the access driveway onto Greenbank Road provides a sight distance of 140 metres on the eastern side. This corresponds a travel speed of 100 km / hr in accordance with AS2890 Part 1 *off street car parking code*. The surveyed travel speed past the site

was 60km/hr. Hence adequate sight distance is available for the driveway in both directions along Greenbank Road.

Scott Lane is proposed as a dead end with provision for a 'T' turn around at the eastern end, past the eastern driveway. Refer the following Figure 3.4.



**Figure 3.4 Scott Lane Eastern End Turnaround Arrangement**

At the eastern end in Scott Lane use of the driveway is proposed for vehicles requiring to do a U turn and not visiting the proposed development.

## 4. Traffic Demands

In order to assess the relative impact of the proposal on the surrounding road network, it is necessary to define the existing traffic demands on the road network and estimate future traffic demands on key intersections and roads.

This section of the report details the existing traffic demands as defined in traffic surveys and forecasts these to the future assessment years. These volumes represent the “Pre Development” background traffic scenario.

The traffic generated by the proposed development is estimated, along with its distribution across the surrounding road network. These volumes are added to the “Pre Development” scenario to provide the “Post Development” traffic scenario.

### 4.1 Pre-Development Traffic

Traffic survey data has been used to establish background traffic demands. Directional 2013 through movement counts on the Mount Lindesay Highway 5 km north and south of the subject site have been sourced from DTMR to determine existing traffic volumes on the Mount Lindesay Highway. All traffic counts used for analysis have been provided in Appendix B.

The existing traffic volumes on Greenbank Road and the Mount Lindesay Highway intersection have been determined from Traffic surveys and Traffic Census data. The following Figure 4.1 shows the traffic surveys.

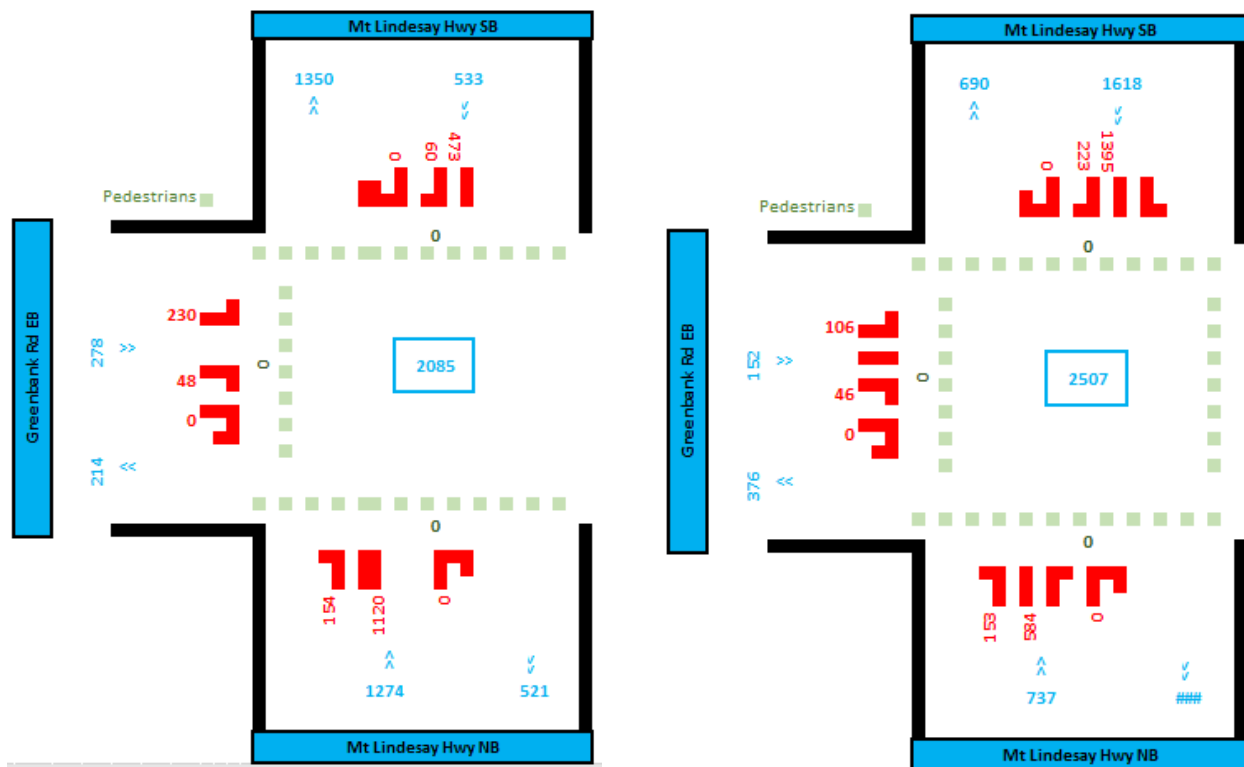


Figure 4.1 Greenbank Road and Mount Lindesay Highway Intersection Peak Hour Traffic Count 2017.

The Greenbank Road / Mount Lindesay Highway intersection survey was specifically commissioned for this study.

The traffic surveys show that there are 214 vehicles entering Greenbank Road in the morning and 278 vehicles leaving. Along the Mount Lindesay Highway, north of Greenbank Road there were 1350 vehicles travelling north and 533 south. South of Greenbank Road, 1120 travelling north and 521 south along the Mount Lindesay Highway were recorded.

For the evening peak hour, there were 376 vehicles entering and 152 leaving Greenbank Road. Along the Mount Lindesay Highway north of Greenbank Road there were 1350 vehicles travelling north and 533 south. South of Greenbank Road, 1120 travel north and 521 vehicles travel south along the Mount Lindesay Highway.

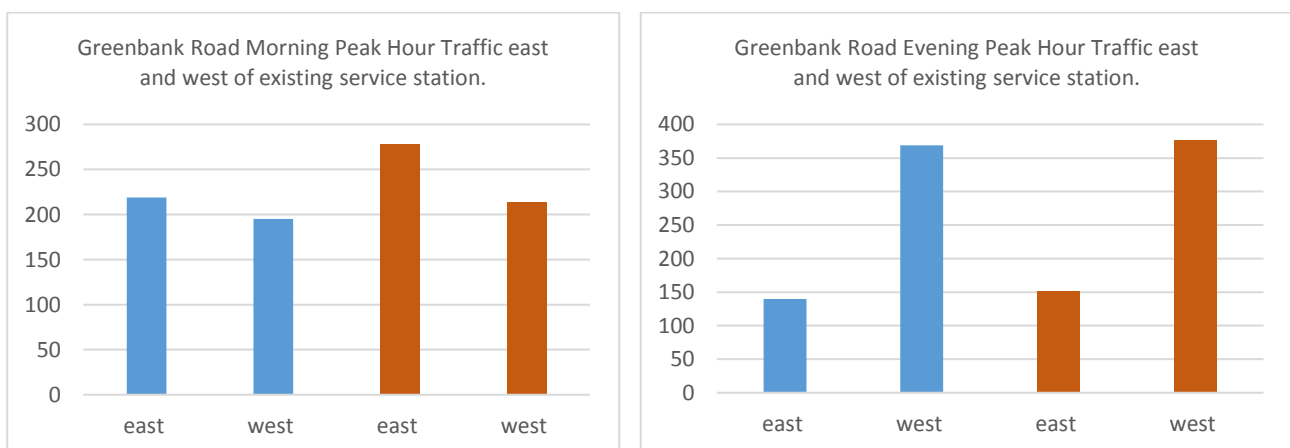
The survey also recorded travel speed along Greenbank Road in front of the subject site as follows:

- Travelling east 63km/ hr; and
- Travelling west 65km/hr.

Traffic census data from Queensland Department of Transport and Main Roads determined that the AADT along the Mount Lindesay Highway for year 2014 was 20,030 vehicles per day, 10,441 travelling south and 9,580 north. For 2015 the census AADT was 21,563; 10,804 travelling south and 10,759 north.

Traffic counters were placed further west along Greenbank Road and measured traffic for a period of one week. On the same day as the intersection survey there were 219 vehicles travelling eastbound along Greenbank Road for the morning peak hour and 195 vehicles travelling westbound for the morning peak hour.

For the evening peak hour, 140 vehicles travelled eastbound and 369 vehicles travelled west. A comparison of the results is shown as follows in Figure 4.2.



**Figure 4.2 Comparison Traffic Volumes at Mt Lindesay Highway Intersection (orange colour) to the Traffic Volume Past the Development Site (blue colour) in Greenbank Road.**

The Figure compares traffic volumes east and west of service station driveway where blue is west of the service station and orange is east of the service station entry at Greenbank Road. The traffic

volumes recorded at the proposed driveway location for the proposed development were 95% of the traffic volumes recorded in Greenbank Road at the Mount Lindesay Highway in the evening and 78% in the morning peak.

Overall non-diverted drop in trips from the Mount Lindesay Highway do not appear to be dominating the service station patronage due to the low difference in the number of trips between the Mount Lindesay Highway intersection and west of the service station entry along Greenbank Road.

Using the same proportions of traffic volumes surveyed, the following Table 4.1 shows the direction for vehicles entering and leaving the proposed development and their respective origins and destinations along the Mount Lindesay Highway i.e. north or south of Greenbank Road.

**Table 4.1 Development Components Zones Origin / Destination**

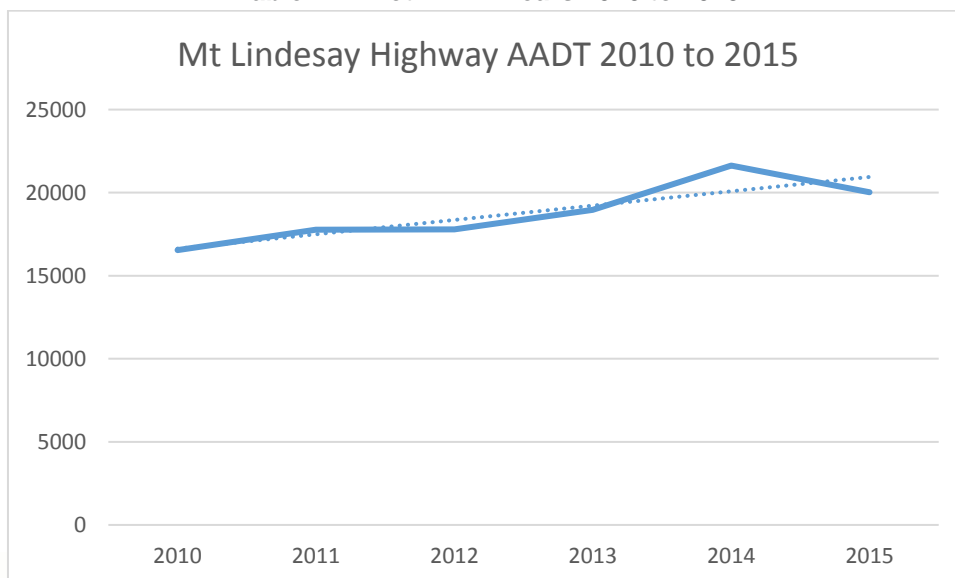
Peak Hour	Road	Greenbank Road		Mount Lindesay Highway	
		West (%)	East (%)	North (%)	South (%)
Morning	Entering the development	47 %	53 %	28%	72%
	Leaving the development	47 %	53 %	83%	17%
Evening	Entering the development	74 %	26 %	59%	41%
	Leaving the development	74 %	26 %	70%	30%

The right turns in the Mount Lindesay Highway from the development have been proportioned in accordance the existing traffic survey.

## 4.2 Traffic Growth

Traffic census data from DTMR determined that the AADT is available for the Mount Lindesay Highway for year 2010 to 2015. In 2015; 20,030 vehicles per day, 10,441 travelling south and 9,580 north used the Highway. For 2014 the census data was 21,563; 10,804 south and 10,759 north. The following Table 4.2 shows a plot of the AADT for the years 2010 to 2015.

**Table 4.2 Plot AADT Years 2010 to 2015**



The chart shows an average annual growth rate of 4.5 % and background traffic has been assumed to grow at this rate based on historic growth on the Mount Lindesay Highway. Using this growth rate, background traffic demands have been estimated for the 2018 and 2028 design years. Refer Appendix B for the traffic survey.

The distribution of background traffic has been based on the expected arrival and departure ratios and the north / south splits inherent in the Mount Lindesay Highway traffic surveys.

### 4.3 Development Traffic

#### 4.3.1 Generation

A summary of the trips generated from the proposed development is presented in Table 4.3. These trip rates have been sourced from the RTA *Guide to Traffic Generating Developments*. The guide gives the recommended trip generation rates based on factories as follows:

- Daily vehicle trips = 5 per 100 m<sup>2</sup> gross floor area.
- Evening peak hour vehicle trips = 1 per 100 m<sup>2</sup> gross floor area.

For Warehouses the rates are as follows:

- Daily vehicle trips = 4 per 100 m<sup>2</sup> gross floor area.
- Morning peak hour vehicle trips = 0.5 per 100 m<sup>2</sup> gross floor area.

Given that the land use includes service industry the trip rate for factories of 1 / 100 m<sup>2</sup> has been adopted for evening peak hours which coincides with the Greenbank Road peak hour of 4.15 PM to 5.15 PM. For the mornings, the surrounding road network peak hour at 6.15 AM to 7.15 AM occurs before normal working hours and the lower rate as applied to warehouses has been adopted for the morning peak hours. In summary trip generation rates adopted as follows:

- Morning peak hour vehicle trips = 0.5 per 100 m<sup>2</sup> gross floor area (GFA). For the 7,043m<sup>2</sup>; adopt 37 trips.
- Evening peak hour vehicle trips = 1 per 100 m<sup>2</sup> gross floor area (GFA). For the 7,043m<sup>2</sup>; adopt 74 trips in the evenings.

#### 4.3.2 Trip Distribution

The trip distribution follows the existing travel patterns as currently exist which is also influenced by delays associated with the right turning movements onto the Mount Lindesay Highway during both the peak hour periods. The following Table 4.3 shows the trip distribution from the development.

**Table 4.3 Development Trip Generation Per Hour Origin / Destination Summary**

Peak hour	Total trips	Leaving the development onto Greenbank Road			Entering the development from Greenbank Road			Entering the Mount Lindesay Highway			Leaving the Mount Lindesay Highway		
		Total Trips	Travel direction		Total Trips	Travel direction		Total Trips	Travel direction		Total Trips	Travel direction	
			To west	To east		From west	From east		To north	To south		From north	From south
AM	37	15	8	7	22	12	10	7	6	1	10	3	7
PM	74	44	32	12	30	22	8	12	8	4	8	4	4

For the morning peak hour 60% of the development trips enter the development and 40% leave and the reverse percentages were adopted for the evening peak hour. For the purpose of the analysis, all trips were assigned to Greenbank Road driveway as applicable for all trips accessing the Mount Lindesay Highway.

#### 4.4 Post Development Traffic

The development traffic has been added to the Pre-Development traffic demands to provide the Post Development traffic scenarios. The following Table 4.4 shows the % increase in trips at the Mount Lindesay Highway / Greenbank Road intersection for the peak hours.

**Table 4.4 Development Trip Generation per Hour Summary**

Peak Hour	Greenbank Road		Mount Lindesay Highway North Approach		Mount Lindesay Highway South Approach	
	Left turn	Right turn	Through lane	Right turn	Left turn	Through lane
AM existing survey 2017	230	48	473	60	154	1120
AM development traffic	6	1	3	3	7	7
% increase from development traffic	2.6%	2.1%	0.6%	5.0%	4.6%	0.6%
PM existing survey 2017	106	46	1395	223	153	584
PM development traffic	8	4	4	4	4	4
% increase from development traffic	7.5%	8.7%	0.3%	1.8%	2.6%	0.7%

The impacts on the Mount Lindesay Highway traffic vary up to 5% for the right turn lane on the north approach in the morning peak hour and up to 2.6% at the left turn in the afternoon peak hour at the south approach to Greenbank Road. The percentage in the through traffic is 0.7% in the northbound direction in the afternoon. In the Greenbank Road approach, the highest increase occurred in the right turn in the afternoon peak hour at 8.7%.

Overall the percentage increase on the Mount Lindesay Highway through and turn lanes is 5% or less.

## 5. Operational Assessment

This section addresses the surrounding road network giving consideration to turning treatments and intersection capacity. The Mount Lindesay Highway / Greenbank Road intersection has been analysed for the Pre Development and Post Development scenarios:

This intersection has been modelled for both the morning and evening peak hour periods.

### 5.1 Intersection Capacity Analysis

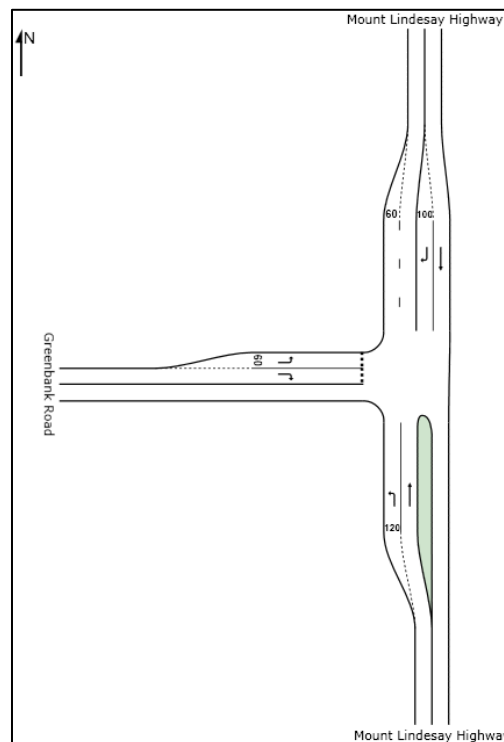
Capacity analysis of the surrounding intersections has been carried out utilising SIDRA INTERSECTION 6 traffic modelling software. This is an advanced micro-analytical traffic evaluation tool that employs lane-by-lane and vehicle drive models and has the ability to assess intersections within a network. SIDRA summaries for all modelled scenarios are provided in Appendix C.

The key performance criteria considered are Degree of Saturation (DOS), Delays and Queuing. According to the DTMR Guidelines for Assessment of Road Impacts of Developments (Chapter 6, page 7) for priority controlled intersections, a DOS in excess of 80% is considered over capacity. Above this value performance quickly deteriorates. In accordance with the RTA Guide to Traffic Generating Developments (Table 4.2), delays above 40 seconds for priority controlled intersections are considered near capacity. Acceptable queue lengths are determined on a site by site basis, taking into account of available storage and interaction with other intersections.

#### 5.1.1 Mount Lindesay Highway / Greenbank Road Intersection

The Mount Lindesay Highway / Greenbank Road intersection is a priority controlled “T” intersection where Mount Lindesay Highway is the major road. As mentioned previously in this report, this intersection incorporates an auxiliary left turn and a full auxiliary right turn on Mount Lindesay Highway with an acceleration lane for vehicles turning left out of Greenbank Road.

The diagrammatic representation of the intersection as adopted for the operational capacity analysis is shown in the following Figure 5.1.



**Figure 5.1 Diagrammatic Layout of Mount Lindesay Highway / Greenbank Road Intersection**

Performance summaries for the existing 2017 surveyed traffic volumes are presented in Table 5.1.

**Table 5.1 Mount Lindesay Highway / Greenbank Road Performance Summary – 2017 Pre Development (Existing Layout)**

Approach	Morning Peak			Evening Peak		
	DOS (%)	Delay (sec)	Queue (m)	DOS (%)	Delay (sec)	Queue (m)
Mt Lindesay Highway (S)	0.598	1.1	0.0	0.312	1.7	0.0
Mt Lindesay Highway (N)	0.367	3.9	8.7	0.745	2.4	14.2
Greenbank Road(E)	2.056	459.0	275.1	8.07	7043.1	310.4

The results show that the intersection currently exceeds acceptable operational limits prior to the addition of development trips. The Degree of Saturation (DOS) on the Greenbank Road approach is greater than 80% during both the morning and evening peak periods and the delays are well beyond acceptable limits. Increases with development and background traffic will show that the Greenbank Road queues and delays become worse. Its noted that the tube counter survey that was located at the approximate position of the driveway within the queue from the right turn lane, but travel speed recorded was not slowed during the peak hours. This indicates that the queue length calculated with the Sidra software has overestimated the queue length at the intersection in Greenbank Road in this instance.

No further analysis has been performed on the intersection with the development traffic superimposed on the background traffic. The previous table of the percentage increase in the existing traffic showed that the increase in the through traffic in Mt Lindesay Highway was 0.7 % and

the turning traffic maximum increase was 5% and no delays were experienced along the Highway. As the background Traffic grows at the 4.5% per annum the performance of the intersection will progressively deteriorate in Greenbank Road with the performance of the Highway traffic remaining within acceptable limits. The DTMR 2006, *Guidelines for Assessment of Road Impacts of Development*, considers that when a development impact is less than 5% on the state controlled road then impacts are considered insignificant.

Alternate routes are available for access to the Highway during peak periods. To the south Teviot Road is an alternate route where access is achieved to the Highway at Jimboomba via Cusack Lane and further south via traffic signals. To the north travelling along Greenbank Road leads to Crowson Lane, that accesses the Highway via a grade separated interchange.

Hence no further analysis was performed for future years and also considering that generally all turning volumes are 5% or less in the Highway than the existing volumes and hence analysis is not warranted.

The results show that the intersection is expected to fail before the addition of development related traffic by 2018. Increases in background traffic on Mount Lindesay Highway cause the vehicles turning right out of Greenbank Road to experience excessive delays.

Signalisation of the intersection is proposed by DTMR in the future to further improve capacity at the intersection. A seagull intersection configuration was considered as a means of reducing the delays in Greenbank Road by allowing a two stage turn with the vehicle parked in the centre median. However due to safety concerns this option was not pursued and is not recommended.

As demonstrated in this assessment, delays at the Greenbank Road approach to Mount Lindesay Highway are due to the background traffic and not as a result of the development traffic. As advised by DTMR, further upgrading of Mount Lindesay Highway by DTMR is to be carried out in the next 10 to 15 years involving a service road. The service road limits the access points onto the highway providing safe higher capacity intersections for the side roads. Signalization of the Greenbank Road / Mt Lindesay Highway intersection is also proposed by DTMR to alleviate the existing deficiencies in the operating performance.

## 6. Parking, Access, and Servicing

### 6.1 Car and Bicycle Parking

The parking requirements for the proposed development have been assessed considering the following uses and their intended yields:

The parking rates for the proposed land uses have been sourced from Table 9.4.7.3.2 of the *Logan Planning Scheme 2014* (LCC, 2014, pp 664-678) as follows:

Low impact industry

- 1 space per 50m<sup>2</sup> of GFA up to 500m<sup>2</sup>; plus
- 1 space per 100m<sup>2</sup> GFA thereafter;
  - Loading bays.

Using the above parking rates and proposed yields, the parking requirements for the proposed development have been calculated as follows:

- 7,043 m<sup>2</sup> GFA industrial -
  - 10 parking spaces up to 500m<sup>2</sup> GFA; plus
  - 66 parking spaces for remaining 6,543 m<sup>2</sup> GFA.

Total 76 car spaces required. Number of car spaces supplied 178 plus 5 PWD spaces.

Total 183 car spaces provided.

Hence there are sufficient car spaces provided for the development.

According to *AS/NZS 2890.1:2004 Parking facilities Part 1: Off-street car parking* (Standards Australia, 2004, tab. 1.1), the applicable classification of off-street car parking facilities for this development falls under "User Class 3". The minimum parking layout characteristics for 90° angle parking are:

- 2.6 m x 5.4 m parking bays; and
- 6.2 m aisle width. Parking aisle width determined by the requirements for service vehicle manoeuvring for the loading bay areas.

The proposed parking layout shown in the development plan prepared by Kevin R Smith in Appendix A confirms the 183 parking spaces which is more than the requirements determined above.

### 6.2 Bicycle Parking

In accordance with the Logan City Planning Scheme

- 1 space per 800m<sup>2</sup> GFA for employees.

For the 7,043m<sup>2</sup> GFA this equates to 10 bicycle spaces required.

### 6.3 Vehicle Driveway Crossover

According to AS2890.1 Table 3.1, a minimum of a Category 2 access facility is required for the proposed development. AS2890.1 Table 3.1, a Category 2 access is a combined 6 to 9 m wide entry / exit point. A minimum requirement of 9 metres width is recommended for the Greenbank road driveway as per the vehicle turn paths. As shown on the Architects Site Plan in Appendix A the driveway widths in Scott Lane are 6.0 metres at the western end and 6.5 at the eastern end.

### 6.4 Servicing

As part of the on-site operations, refuse collection will occur at common storage and servicing point where internal turning paths are available. The largest refuse collection design vehicle expected to regularly service the subject site is a front loading dual rear axle Refuse Collection Vehicle (RCV).

A swept path assessment has been carried out using AutoTurn software to determine whether a RCV can manoeuvre on-site so it is able to enter / exit the site in a forward gear. Vehicle clearance of 300 mm has been applied to the vehicle body in compliance with the requirements of the Guide to Road Design Part 4: Intersections and Crossings (Austroads, 2009, cl. 5.6.3) for swept paths at road intersection layouts. The swept path of a front Loading RCV manoeuvring on-site is provided in the following Drawings:

Drawing BE160355-SK003 B shows the RCV turning path along all the internal roads. Actual limit of the RCV is determined by the nominated position of the bin collection points due to the reversing distance required in the driveways and the gradient of the driveways. Therefore, the RCV can enter / exit the site in a forward gear. Reversing is achieved through aisles without encroachment onto any car spaces.

The service vehicle requirement for Low Impact Industry is a Heavy Rigid Vehicle. (HRV). In order to demonstrate the manoeuvrability of an HRV throughout site swept path diagrams were prepared. The layout provides for an HRV to enter the site, leave in a forward direction and manoeuvre as shown on Drawing BE160355- SK002 B HRV Service Swept Path Plan.

A check was also performed on the manoeuvrability of a car throughout. Similarly, the layout provides for an B85 car to enter the site and manoeuvre as shown on Drawing BE160355- SK001 B. Copies of the drawings are included in Appendix E.

## 7. Conclusions and Recommendations

Roubaix Properties Pty Ltd are seeking a Development Approval for a Material Change of Use for a Light Industry development. The development is expected to be completed by 2018 therefore yielding a design horizon of 2028. The development will have access via Greenbank Road that intersects the Mount Lindesay Highway and Scott lane to the north of the property.

In order to determine background traffic volumes at the Mount Lindesay Highway / Greenbank Road intersection, a traffic count was commissioned at the intersection. DTMR traffic counts on Mount Lindesay Highway were obtained from published traffic census data for the AADT. The existing AADT of Mount Lindesay Highway is approximately 20,000 vehicles per day. Background traffic has been assumed to grow at an annual rate of 4.5% as per historic AADT-DTMR counts on Mount Lindesay Highway.

The proposed development in Greenbank Road is anticipated to generate approximately 37 vehicles per hour for the morning peak hour and approximately 74 vehicles per hour for the evening peak hour. All development trips are expected to be attracted both to the Mount Lindesay Highway and also to the west along Greenbank Road. At Mount Lindesay Highway, the directional split of development trips is expected to reflect existing north / south splits inherent in the traffic surveys.

Capacity analysis has demonstrated that the Mount Lindesay Highway / Greenbank Road intersection currently fails to provide a satisfactory Level of Service at 2017 before the addition of development related trips. No further analysis was subsequently carried out for the following years with the development traffic superimposed. The impact of the proposed development traffic on the functionality of the Mount Lindesay Highway / Greenbank Road intersection in 2017 is less than 5.0% for the through and turning lanes in the Mount Lindesay Highway. The DTMR 2006, *Guidelines for Assessment of Road Impacts of Development*, considers that when a development impact is less than 5% on the state controlled road then impacts are considered insignificant. The timing of future significant upgrading proposed by DTMR is a 10 to 15 year time frame with no funds currently committed to the construction. DTMR have also advised that they propose to signalize the Greenbank Road / Mount Lindesay Highway Intersection.

Additional car parking is provided in excess of the minimum requirements and the report details the extent of bicycle parking.

Vehicle turn paths have been provided for the refuse collection vehicle, heavy rigid vehicle and car.

The Logan City Council Servicing, Access and Parking Code is contained in Appendix E.

## 8. References

Australian / New Zealand Standard 2004, *Parking Facilities Part 1: Off-Street Car Parking*, Standards Australia, Sydney.

Department of Main Roads 2004, *Road Planning and Design Manual Chapter 5: Traffic Parameters and Human Factors*, Queensland Government, Brisbane.

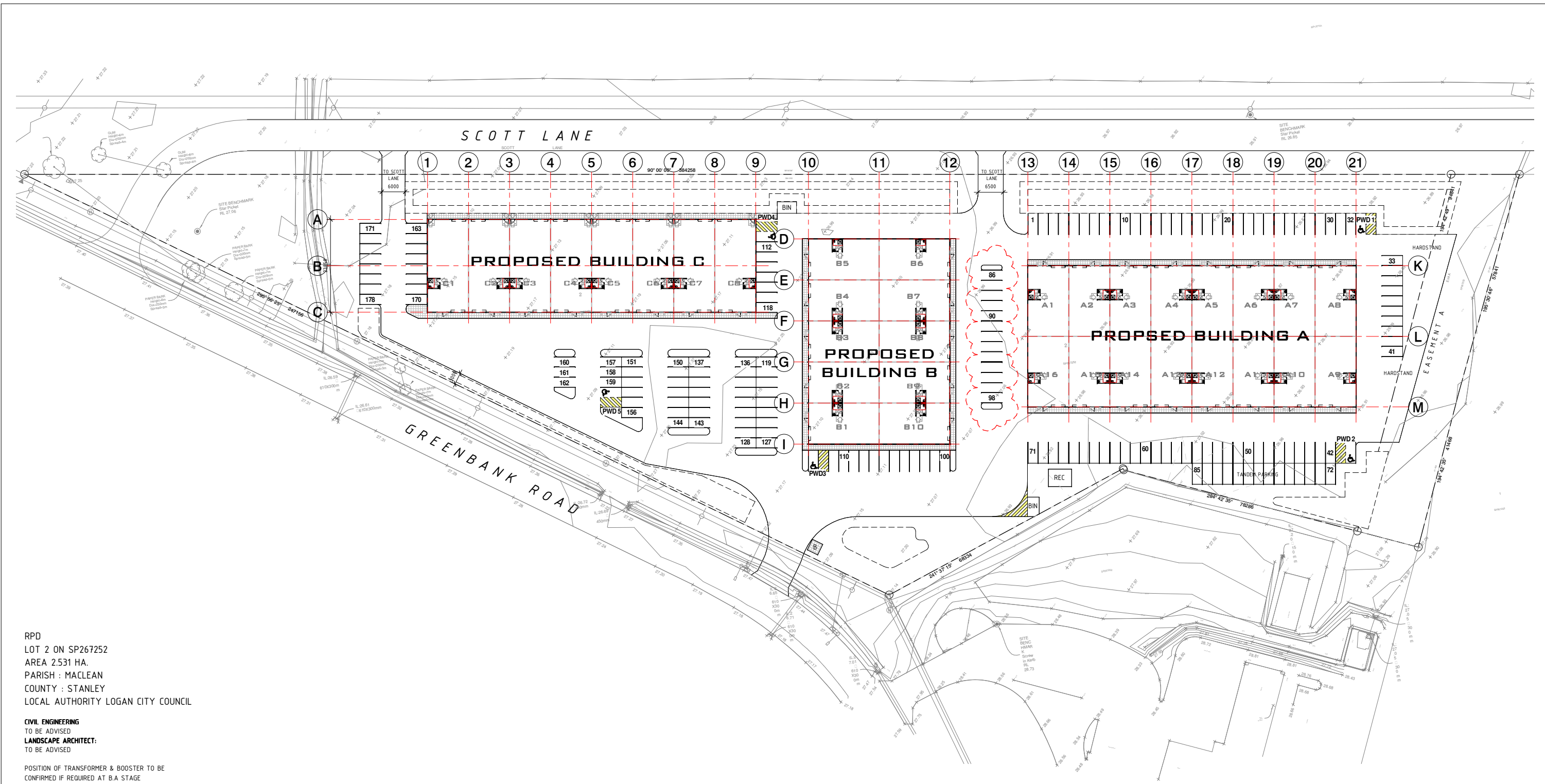
Department of Main Roads 2005, *Road Planning and Design Manual Chapter 3: Road Planning and Design Fundamentals*, Queensland Government, Brisbane.

Department of Main Roads 2006, *Road Planning and Design Manual Chapter 13: Intersections at Grade*, Queensland Government, Brisbane.

Department of Main Roads 2006, *Guidelines for Assessment of Road Impacts of Development*, Queensland Government, Brisbane.

Roads and Traffic Authority 2002, *Guide to Traffic Generating Developments*, Roads and Traffic Authority, Sydney.

## Appendix A – Architects Site Layout Plans



RPD  
 LOT 2 ON SP267252  
 AREA 2.531 HA.  
 PARISH : MACLEAN  
 COUNTY : STANLEY  
 LOCAL AUTHORITY LOGAN CITY COUNCIL

**CIVIL ENGINEERING**  
 TO BE ADVISED  
**LANDSCAPE ARCHITECT:**  
 TO BE ADVISED

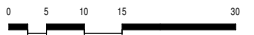
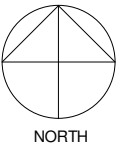
POSITION OF TRANSFORMER & BOOSTER TO BE  
 CONFIRMED IF REQUIRED AT B.A STAGE  
 DRIVEWAY CROSS OVER TO COMPLY WITH LOGAN  
 CITY COUNCIL STANDARDS

AREA CALCULATIONS		
ZONE	AREA m <sup>2</sup>	%
TOTAL LANDSCAPING	8163	32.2
PROPOSED BUILDING AREA	7043	27.8
DRIVEWAY PARKING AREA	10104	4.0
TOTAL DEVELOPMENT SITE AREA	25310	100

ADDITIONAL CALCULATIONS	
BUILDING A	3084m <sup>2</sup>
BUILDING B	1928m <sup>2</sup>
BUILDING C	2031m <sup>2</sup>
TOTAL	7043m <sup>2</sup>

CARPARKS	178
PWD CARPARKS	5
BIKE PARKS	TBA

**1 SITE LAYOUT CONCEPT**  
 004 SCALE 1 : 500



7/05/2017 7:48:58 PM C:\02\03\02\KRS\SMITH\GREENBANK\01-2017.rvt

<b>GENERAL NOTES</b> STRUCTURAL SIZES OR DESIGN IF CHANGES OR ALTERATIONS ARE MADE TO PLAN DURING OR PRIOR TO CONSTRUCTION WITHOUT WRITTEN NOTICE AND APPROVAL. DO NOT SCALE OFF PLAN. FIGURED DIMENSIONS TAKE PREFERENCE. BUILDER TO VERIFY ALL DIMENSIONS AND LEVELS ON THE PLAN BEFORE COMMENCEMENT ON THE JOB AS NO RESPONSIBILITY TAKEN AFTER STARTING.	ALL DIMENSIONS SHOWN ARE TO NOMINAL FRAME AND/OR BRICK DIMENSIONS AND DO NOT INCLUDE CLADDING THICKNESS UNLESS NOTED OTHERWISE. ELECTRONIC DRAWINGS ARE UNCONTROLLED DOCUMENTS AND ARE ISSUED FOR INFORMATION ONLY. ANY DIMENSIONS NOT NOMINATED MUST BE REFERRED TO THE BUILDING DESIGNER FOR CONFIRMATION.	revision 2 3 4	revision description GENERAL REVISION GENERAL REVISION GENERAL REVISIONS	date 22.03.17 02.05.2017 07.05.2017	<b>REAL PROPERTY DESCRIPTION</b> LOT 2 ON SP267252 PARISH MACLEAN COUNTY STANLEY SITE AREA 2.531 HA. AUTHORITY LOGAN CITY COUNCIL	<b>Kevin R. Smith</b> PO BOX 369 STONE CORNER QLD 4120 ph 0418 870 115 kevin@krsassociates.com.au QBCC Lic No - 47543	<b>PROJECT NAME</b> PROPOSED INDUSTRIAL BUILDINGS <b>PROJECT ADDRESS</b> 918-980 GREENBANK Rd. NORTH MACLEAN CLIENT ROUBAIX PROPERTIES	COMP FILE NO. DATE DRAWN 24.07.2016 DRAWN BY KRS SHEET NO	REV 4 001 PROJECT NUMBER 01-2017	DRAWING TITLE <b>SITE PLAN</b>
---	---	-------------------------	---	--	--	---	--	--	--	-----------------------------------

## Appendix B – Traffic Count Data

# Greenbank Rd Automatic Report

**Site Name** - Greenbank Rd  
**Description** - approx 250m west of Mt Lindesay Hwy  
**Direction** - Eastbound  
**Survey Dates** - 9th Feb - 15th Feb 2017



Thursday, 9 February 2017

Time	Total	Cars	Light Trucks	Heavy Trucks	Average Speed	85th %ile		
0000	4	4	0	0	59.7	-		
0015	2	2	0	0	65.6	-		
0030	3	3	0	0	69.8	-		
0045	1	1	0	0	47.8	-		
0100	1	1	0	0	57.7	-		
0115	3	3	0	0	65.5	-		
0130	3	2	1	0	65.4	-		
0145	0	0	0	0	-	-		
0200	2	2	0	0	66.5	-		
0215	4	3	1	0	65.1	-		
0230	3	3	0	0	59.2	-		
0245	0	0	0	0	-	-		
0300	3	2	1	0	60.7	-		
0315	10	9	1	0	62	-		
0330	6	5	1	0	59.6	-		
0345	11	11	0	0	62.6	66.2		
0400	7	5	2	0	61.9	-		
0415	8	8	0	0	58.4	-		
0430	18	18	0	0	63.8	68.4		
0445	29	26	3	0	59.7	64.8		
0500	35	31	3	1	60.4	65.2		
0515	49	43	5	1	61.3	65.2		
0530	53	46	7	0	62.6	67		
0545	37	31	6	0	60.8	66.2		
0600	48	44	4	0	61.8	66.6		
0615	70	64	5	1	61.5	67.3		
0630	48	43	4	1	61.3	65.9		
0645	65	63	2	0	63.1	68.4		
0700	56	48	5	3	62.9	67.3		
0715	50	43	6	1	61.8	68.4		
0730	49	42	6	1	62.8	70.9		
0745	43	34	8	1	63.1	69.8		
0800	58	54	3	1	64.1	69.8		
0815	61	55	6	0	63.1	69.8		
0830	41	37	4	0	62.6	69.5		
0845	53	51	2	0	62	65.5		
0900	50	42	6	2	58.8	67		
0915	49	40	8	1	60.3	68.8		
0930	39	34	5	0	59.1	65.5		
0945	26	24	1	1	61.7	68.8		
1000	27	23	4	0	61.6	70.6		
1015	40	34	6	0	63.5	70.2		
1030	32	26	6	0	60.8	66.6		
1045	31	28	3	0	61	67		
1100	27	20	7	0	62.4	68.4		
1115	35	31	4	0	62	67.3		
1130	41	34	7	0	62.1	69.1		

1145	31	27	3	1	62.5	69.8		
1200	34	28	6	0	62.7	69.5		
1215	31	24	6	1	62.4	72		
1230	23	20	3	0	64.3	70.9		
1245	33	25	7	1	61.5	66.2		
1300	23	16	6	1	65.2	72.7		
1315	30	24	6	0	64.2	69.8		
1330	38	34	3	1	63.7	68.8		
1345	41	34	7	0	62.5	73.4		
1400	35	30	5	0	63.9	70.2		
1415	46	44	1	1	65	70.2		
1430	35	32	1	2	64.2	72.7		
1445	37	34	3	0	65.2	69.1		
1500	40	37	2	1	61.7	69.8		
1515	46	39	5	2	62.5	69.5		
1530	30	27	3	0	62.4	68.8		
1545	45	40	4	1	63.5	68.4		
1600	30	27	3	0	61.8	68.8		
1615	30	25	3	2	63.6	68.4		
1630	35	32	2	1	64.6	69.1		
1645	31	25	6	0	61.4	68		
1700	35	33	1	1	65.7	71.3		
1715	39	38	0	1	61.5	67.3		
1730	25	21	3	1	62.9	68		
1745	24	22	2	0	62	64.8		
1800	34	29	3	2	62	68		
1815	28	26	2	0	61.6	67.3		
1830	30	29	1	0	62.9	70.9		
1845	27	24	3	0	59.5	64.8		
1900	25	23	2	0	61.5	66.2		
1915	34	34	0	0	59.9	66.6		
1930	30	27	2	1	59.2	66.6		
1945	25	24	1	0	59.4	67		
2000	18	16	2	0	60.3	67.3		
2015	22	22	0	0	61.1	68.4		
2030	26	23	3	0	59	63.7		
2045	21	20	1	0	60.5	68		
2100	13	12	1	0	60.3	66.2		
2115	21	21	0	0	65.7	70.9		
2130	12	11	1	0	58.2	63.4		
2145	7	5	2	0	66.4	-		
2200	10	9	1	0	69.3	-		
2215	5	4	1	0	61	-		
2230	5	5	0	0	64.5	-		
2245	3	3	0	0	61.5	-		
2300	4	2	2	0	65.8	-		
2315	2	2	0	0	54	-		
2330	3	2	1	0	64.6	-		
2345	6	6	0	0	68.4	-		
<b>07-09</b>	<b>411</b>	<b>364</b>	<b>40</b>	<b>7</b>	<b>62.8</b>	<b>69.1</b>		
<b>09-16</b>	<b>995</b>	<b>851</b>	<b>128</b>	<b>16</b>	<b>62.4</b>	<b>69.5</b>		
<b>16-18</b>	<b>249</b>	<b>223</b>	<b>20</b>	<b>6</b>	<b>63</b>	<b>69.1</b>		
<b>00-00</b>	<b>2589</b>	<b>2290</b>	<b>263</b>	<b>36</b>	<b>62.2</b>	<b>68.8</b>		

# Greenbank Rd Automatic Report

**Site Name** - Greenbank Rd  
**Description** - approx 250m west of Mt Lindesay Hwy  
**Direction** - Eastbound  
**Survey Dates** - 9th Feb - 15th Feb 2017



Friday, 10 February 2017

Time	Total	Cars	Light Trucks	Heavy Trucks	Average Speed	85th %ile		
0000	3	3	0	0	66.8	-		
0015	2	2	0	0	65.2	-		
0030	2	2	0	0	68.4	-		
0045	2	1	1	0	61.6	-		
0100	3	3	0	0	54.6	-		
0115	0	0	0	0	-	-		
0130	1	1	0	0	59.9	-		
0145	3	2	1	0	60.7	-		
0200	2	2	0	0	63.9	-		
0215	5	4	0	1	58.6	-		
0230	2	1	0	1	45.7	-		
0245	2	2	0	0	67.1	-		
0300	5	3	1	1	58.6	-		
0315	6	5	1	0	57	-		
0330	5	5	0	0	65.2	-		
0345	11	10	1	0	62.1	68		
0400	9	7	2	0	59.5	-		
0415	11	9	0	2	64.6	70.6		
0430	12	11	0	1	64.9	69.8		
0445	39	33	3	3	61.5	67.3		
0500	38	36	2	0	60.7	67.3		
0515	48	43	5	0	62.2	68		
0530	57	52	5	0	63.3	70.2		
0545	46	35	10	1	63.1	70.6		
0600	49	42	7	0	62.9	70.6		
0615	52	43	9	0	62.9	68		
0630	49	39	8	2	62.4	69.5		
0645	43	38	4	1	64.7	70.6		
0700	39	35	2	2	64.5	70.2		
0715	51	49	2	0	63	68.4		
0730	59	53	6	0	64.1	69.5		
0745	48	39	8	1	65.4	71.6		
0800	55	49	4	2	63.6	68.8		
0815	53	44	7	2	62.2	69.5		
0830	47	40	5	2	60.1	68.4		
0845	58	50	7	1	60.4	66.6		
0900	43	37	6	0	60	64.8		
0915	44	39	4	1	61.3	67.7		
0930	35	30	5	0	62.3	70.2		
0945	35	31	3	1	61.4	69.5		
1000	32	28	2	2	63.3	70.6		
1015	42	38	3	1	65.6	71.3		
1030	41	33	7	1	61.8	68.4		
1045	55	52	3	0	63	71.3		
1100	37	32	5	0	63.5	69.5		
1115	31	29	2	0	60.4	66.2		
1130	37	29	6	2	61.1	67.3		

1145	40	35	4	1	62.3	69.1		
1200	38	32	6	0	63.5	69.8		
1215	34	31	3	0	63.9	69.8		
1230	29	24	3	2	60.6	67.7		
1245	37	32	4	1	62.2	68.8		
1300	38	35	3	0	63	67.7		
1315	28	21	7	0	64.5	72.7		
1330	30	25	5	0	64.2	70.2		
1345	34	30	4	0	63.5	67.7		
1400	38	34	4	0	64.5	70.9		
1415	41	37	4	0	62.6	68.8		
1430	48	39	7	2	61.5	67.7		
1445	43	37	6	0	65.9	77		
1500	39	31	6	2	63.2	68.4		
1515	57	42	12	3	61.5	67.7		
1530	41	38	2	1	61.4	67.7		
1545	34	32	2	0	65.2	73.4		
1600	28	21	7	0	62.6	68		
1615	28	25	3	0	66.1	76		
1630	35	32	3	0	64.5	68.4		
1645	35	30	5	0	63.7	71.3		
1700	31	31	0	0	68	73.4		
1715	33	32	1	0	64.2	70.2		
1730	34	33	1	0	64.5	71.3		
1745	34	30	3	1	62.9	68.4		
1800	35	33	1	1	62.8	69.8		
1815	40	32	7	1	63.6	71.3		
1830	31	29	2	0	61	64.1		
1845	34	33	1	0	64.4	68.8		
1900	26	24	1	1	59.3	62.3		
1915	31	30	1	0	60.1	64.8		
1930	22	20	2	0	58.6	67.3		
1945	25	25	0	0	63.1	68		
2000	15	15	0	0	61.4	67.3		
2015	12	12	0	0	62.6	69.8		
2030	21	20	1	0	62.3	70.9		
2045	15	15	0	0	62.5	69.1		
2100	14	13	1	0	60.8	69.8		
2115	12	12	0	0	62.6	64.4		
2130	21	21	0	0	59.3	68		
2145	17	17	0	0	58.7	66.6		
2200	15	15	0	0	65.9	72.4		
2215	13	13	0	0	61.2	65.5		
2230	7	7	0	0	60.1 -			
2245	7	7	0	0	63.4 -			
2300	8	8	0	0	60.4 -			
2315	5	5	0	0	68.6 -			
2330	8	8	0	0	61.9 -			
2345	7	6	1	0	63.3 -			
<b>07-09</b>	<b>410</b>	<b>359</b>	<b>41</b>	<b>10</b>	<b>62.9</b>	<b>69.8</b>		
<b>09-16</b>	<b>1081</b>	<b>933</b>	<b>128</b>	<b>20</b>	<b>62.7</b>	<b>69.5</b>		
<b>16-18</b>	<b>258</b>	<b>234</b>	<b>23</b>	<b>1</b>	<b>64.5</b>	<b>71.3</b>		
<b>00-00</b>	<b>2697</b>	<b>2380</b>	<b>270</b>	<b>47</b>	<b>62.7</b>	<b>69.8</b>		

# Greenbank Rd Automatic Report

**Site Name** - Greenbank Rd  
**Description** - approx 250m west of Mt Lindesay Hwy  
**Direction** - Eastbound  
**Survey Dates** - 9th Feb - 15th Feb 2017



**Saturday, 11 February 2017**

Time	Total	Cars	Light Trucks	Heavy Trucks	Average Speed	85th %ile		
0000	4	4	0	0	65.7	-		
0015	5	5	0	0	68.2	-		
0030	8	8	0	0	63.3	-		
0045	3	3	0	0	64.7	-		
0100	3	3	0	0	60.8	-		
0115	2	2	0	0	66.2	-		
0130	2	2	0	0	61.4	-		
0145	3	3	0	0	69.2	-		
0200	1	1	0	0	70.2	-		
0215	5	5	0	0	59.3	-		
0230	0	0	0	0	-	-		
0245	3	3	0	0	58.2	-		
0300	4	3	1	0	62.9	-		
0315	2	2	0	0	60.3	-		
0330	2	2	0	0	68.3	-		
0345	5	3	2	0	63.6	-		
0400	6	4	2	0	65.7	-		
0415	8	7	1	0	69.1	-		
0430	11	10	0	1	61.9	64.8		
0445	16	15	1	0	65.9	75.2		
0500	16	15	1	0	60.4	67.3		
0515	17	13	3	1	62.7	71.3		
0530	18	15	2	1	65.8	71.6		
0545	24	20	4	0	68.5	75.6		
0600	23	23	0	0	66.4	73.1		
0615	31	28	3	0	66.3	70.6		
0630	26	23	2	1	67.9	71.3		
0645	29	23	4	2	66.4	70.9		
0700	28	27	1	0	63.8	67		
0715	33	32	1	0	65.3	69.5		
0730	42	40	2	0	64.4	70.9		
0745	39	35	3	1	63.1	70.6		
0800	37	34	2	1	63.8	71.6		
0815	34	30	4	0	64.3	69.5		
0830	47	45	2	0	64.9	69.8		
0845	51	44	6	1	63.9	67.7		
0900	45	42	2	1	61.9	69.5		
0915	45	43	2	0	62.4	68.4		
0930	51	45	5	1	62	68		
0945	46	42	4	0	63.4	67.3		
1000	51	44	7	0	62.7	68.8		
1015	53	47	5	1	63.8	69.1		
1030	58	56	1	1	64.6	69.1		
1045	52	48	3	1	60.1	67		
1100	46	40	5	1	64.7	70.2		
1115	41	40	1	0	63.8	68		
1130	45	40	5	0	64.6	70.6		

1145	35	33	2	0	63.8	67.7		
1200	40	35	5	0	64.1	68.8		
1215	45	44	1	0	64.2	71.6		
1230	40	36	2	2	66.1	70.6		
1245	34	31	3	0	66	72.4		
1300	42	39	3	0	64.4	70.9		
1315	45	41	4	0	62.1	70.9		
1330	34	32	2	0	65.7	70.9		
1345	39	37	2	0	63.5	70.6		
1400	36	35	1	0	66	70.9		
1415	37	26	10	1	63.9	69.5		
1430	34	31	3	0	65.9	68.8		
1445	31	29	2	0	63.5	68.8		
1500	31	30	1	0	65.2	71.6		
1515	36	34	1	1	64.5	72.4		
1530	39	33	6	0	63.9	71.3		
1545	33	29	4	0	65.4	70.2		
1600	45	42	2	1	63.5	69.5		
1615	34	34	0	0	64.1	70.2		
1630	36	31	5	0	64.4	70.9		
1645	34	31	3	0	68	73.8		
1700	26	24	2	0	62.1	69.1		
1715	40	37	2	1	63.1	69.1		
1730	34	32	2	0	63.5	70.6		
1745	37	35	1	1	61.5	67.3		
1800	37	36	1	0	60.5	65.9		
1815	33	29	4	0	59.5	65.5		
1830	20	19	1	0	59.5	66.6		
1845	23	21	1	1	60.3	66.2		
1900	19	18	1	0	61.2	62.6		
1915	15	13	2	0	62.7	72.4		
1930	21	21	0	0	60	65.5		
1945	25	25	0	0	59.5	66.2		
2000	19	18	0	1	60.2	65.2		
2015	23	22	1	0	61.1	68.8		
2030	12	12	0	0	57.2	61.2		
2045	20	17	3	0	58.6	62.6		
2100	14	12	2	0	60.5	63		
2115	16	15	1	0	59.3	65.5		
2130	22	21	1	0	59.7	65.2		
2145	18	17	1	0	60.3	67		
2200	10	9	1	0	63.6 -			
2215	11	10	1	0	65	69.1		
2230	8	6	2	0	58.1 -			
2245	11	10	1	0	63.1	69.5		
2300	13	12	1	0	58.8	64.4		
2315	4	3	1	0	59.5 -			
2330	6	5	1	0	61.5 -			
2345	10	10	0	0	60.8 -			
<b>07-09</b>	<b>311</b>	<b>287</b>	<b>21</b>	<b>3</b>	<b>64.2</b>	<b>70.2</b>		
<b>09-16</b>	<b>1164</b>	<b>1062</b>	<b>92</b>	<b>10</b>	<b>63.9</b>	<b>70.2</b>		
<b>16-18</b>	<b>286</b>	<b>266</b>	<b>17</b>	<b>3</b>	<b>63.8</b>	<b>70.2</b>		
<b>00-00</b>	<b>2448</b>	<b>2241</b>	<b>183</b>	<b>24</b>	<b>63.5</b>	<b>69.8</b>		

# Greenbank Rd Automatic Report

**Site Name** - Greenbank Rd  
**Description** - approx 250m west of Mt Lindesay Hwy  
**Direction** - Eastbound  
**Survey Dates** - 9th Feb - 15th Feb 2017



**Sunday, 12 February 2017**

Time	Total	Cars	Light Trucks	Heavy Trucks	Average Speed	85th %ile		
0000	11	11	0	0	63.7	68.4		
0015	4	4	0	0	56	-		
0030	3	3	0	0	57.3	-		
0045	5	5	0	0	61.3	-		
0100	2	2	0	0	66.5	-		
0115	4	4	0	0	58.6	-		
0130	2	2	0	0	63.1	-		
0145	1	1	0	0	55	-		
0200	5	4	1	0	65	-		
0215	2	2	0	0	63.4	-		
0230	5	5	0	0	61.9	-		
0245	1	1	0	0	66.7	-		
0300	2	2	0	0	70	-		
0315	1	1	0	0	61.9	-		
0330	3	3	0	0	64.1	-		
0345	2	2	0	0	62.5	-		
0400	3	2	1	0	68	-		
0415	2	2	0	0	62.2	-		
0430	2	1	1	0	57.8	-		
0445	6	6	0	0	68.5	-		
0500	3	3	0	0	69.4	-		
0515	18	17	1	0	62.3	65.9		
0530	12	12	0	0	65.8	69.1		
0545	14	14	0	0	66.9	72.4		
0600	12	10	2	0	65	74.5		
0615	16	13	2	1	66.3	72.4		
0630	14	14	0	0	64.6	69.5		
0645	16	15	0	1	64.1	70.2		
0700	14	13	1	0	67.4	73.1		
0715	27	25	1	1	61.4	67.3		
0730	13	10	3	0	65.2	70.6		
0745	26	24	2	0	64.9	69.5		
0800	27	25	2	0	63.7	68.8		
0815	22	20	2	0	66.3	71.6		
0830	58	55	3	0	65.4	70.2		
0845	36	32	4	0	66.4	71.6		
0900	36	34	2	0	62.8	68.4		
0915	45	43	2	0	64.5	68.4		
0930	40	36	4	0	65.2	71.3		
0945	33	28	4	1	62.6	69.1		
1000	37	35	1	1	63.5	70.2		
1015	46	41	3	2	62	69.1		
1030	48	46	2	0	64.4	68.8		
1045	43	39	4	0	61.4	68.4		
1100	57	53	2	2	64.7	69.5		
1115	50	50	0	0	63.7	70.9		
1130	39	37	2	0	62.3	68.4		

1145	34	30	3	1	64.2	70.6		
1200	38	34	3	1	64.1	68.8		
1215	27	25	2	0	64.4	69.5		
1230	29	26	3	0	62	69.5		
1245	40	37	3	0	64.8	69.8		
1300	36	34	2	0	63.5	69.5		
1315	29	27	2	0	67.9	74.9		
1330	24	23	1	0	65.4	70.2		
1345	23	23	0	0	65.9	69.5		
1400	30	28	1	1	64.2	71.6		
1415	27	23	4	0	64.7	68.8		
1430	29	27	1	1	65.6	71.3		
1445	25	24	1	0	63.5	70.9		
1500	25	23	2	0	63.8	67		
1515	27	26	1	0	61.7	68.8		
1530	26	24	1	1	62.6	68.8		
1545	30	29	1	0	64.3	70.9		
1600	21	21	0	0	63.9	69.1		
1615	23	22	1	0	65.8	69.5		
1630	22	22	0	0	64.8	69.5		
1645	34	33	1	0	66.7	73.4		
1700	35	33	2	0	65.4	75.2		
1715	22	21	1	0	64	70.2		
1730	33	31	2	0	64.9	70.9		
1745	28	28	0	0	61.9	70.9		
1800	30	28	2	0	63.6	70.9		
1815	20	19	1	0	64.6	70.6		
1830	26	25	1	0	61.9	70.2		
1845	26	25	1	0	63.5	69.8		
1900	21	20	1	0	59.6	65.5		
1915	17	13	4	0	59.9	65.5		
1930	17	16	1	0	62.8	68.8		
1945	22	20	2	0	60.5	67.3		
2000	23	20	3	0	56.1	63.4		
2015	14	13	1	0	62.1	70.6		
2030	15	15	0	0	62.1	69.8		
2045	14	13	1	0	64.6	69.1		
2100	11	11	0	0	59.9	65.2		
2115	12	11	1	0	62.4	70.6		
2130	9	9	0	0	60	-		
2145	5	4	1	0	58	-		
2200	2	2	0	0	60.5	-		
2215	3	3	0	0	54.5	-		
2230	5	5	0	0	61.7	-		
2245	2	2	0	0	68.6	-		
2300	4	2	2	0	55.4	-		
2315	3	3	0	0	65.3	-		
2330	5	5	0	0	55.3	-		
2345	2	1	1	0	60.8	-		
<b>07-09</b>	<b>223</b>	<b>204</b>	<b>18</b>	<b>1</b>	<b>65</b>	<b>70.9</b>		
<b>09-16</b>	<b>973</b>	<b>905</b>	<b>57</b>	<b>11</b>	<b>63.9</b>	<b>70.2</b>		
<b>16-18</b>	<b>218</b>	<b>211</b>	<b>7</b>	<b>0</b>	<b>64.8</b>	<b>71.3</b>		
<b>00-00</b>	<b>1893</b>	<b>1766</b>	<b>113</b>	<b>14</b>	<b>63.7</b>	<b>70.6</b>		

# Greenbank Rd Automatic Report

**Site Name** - Greenbank Rd  
**Description** - approx 250m west of Mt Lindesay Hwy  
**Direction** - Eastbound  
**Survey Dates** - 9th Feb - 15th Feb 2017



**Monday, 13 February 2017**

Time	Total	Cars	Light Trucks	Heavy Trucks	Average Speed	85th %ile		
0000	1	1	0	0	67.4	-		
0015	3	2	1	0	61.1	-		
0030	1	1	0	0	63.1	-		
0045	1	1	0	0	69.9	-		
0100	1	1	0	0	42.4	-		
0115	4	3	1	0	64.2	-		
0130	2	2	0	0	63.5	-		
0145	2	2	0	0	72.7	-		
0200	0	0	0	0	-	-		
0215	5	5	0	0	62.8	-		
0230	3	3	0	0	58.9	-		
0245	4	3	0	1	61.1	-		
0300	4	4	0	0	62.3	-		
0315	3	3	0	0	53.8	-		
0330	6	5	1	0	61.6	-		
0345	4	4	0	0	60.1	-		
0400	11	11	0	0	64.4	68.8		
0415	14	13	0	1	62.4	69.8		
0430	26	25	0	1	61.4	66.6		
0445	24	20	4	0	61.4	65.2		
0500	28	25	2	1	60.8	67		
0515	42	39	3	0	63.6	67.7		
0530	55	47	5	3	62	67		
0545	44	36	8	0	65.7	72		
0600	59	49	7	3	62.8	67		
0615	61	50	10	1	65.3	73.1		
0630	60	55	4	1	65	72		
0645	52	46	4	2	66	72		
0700	50	40	8	2	61.9	68.4		
0715	52	45	7	0	61.9	67.3		
0730	51	46	4	1	61.1	67.3		
0745	47	41	6	0	62.6	69.8		
0800	53	46	5	2	62.9	68.8		
0815	58	51	5	2	61.9	69.1		
0830	45	37	8	0	60.5	67		
0845	35	30	4	1	61.2	67.7		
0900	56	49	7	0	61.5	68.4		
0915	32	29	1	2	60.9	65.5		
0930	29	26	2	1	61.2	67.3		
0945	24	19	5	0	62.9	68		
1000	33	22	10	1	58.2	66.6		
1015	33	25	8	0	60.9	67.3		
1030	36	27	9	0	62.1	69.1		
1045	31	26	5	0	61.5	69.1		
1100	34	28	6	0	62	69.1		
1115	35	26	8	1	60.7	67		
1130	23	20	2	1	62.7	69.1		

1145	25	19	5	1	61.1	66.6		
1200	35	34	1	0	64.5	68.8		
1215	38	28	9	1	62.4	69.5		
1230	36	28	8	0	63.2	69.5		
1245	19	15	3	1	62	68.8		
1300	27	25	1	1	65.2	71.6		
1315	22	16	6	0	63.3	68.8		
1330	45	39	6	0	59.1	67.7		
1345	42	36	6	0	63.1	68.8		
1400	24	23	1	0	67	73.1		
1415	34	31	3	0	63.5	69.1		
1430	31	25	6	0	62.4	70.2		
1445	35	30	4	1	64	68.8		
1500	43	34	8	1	63.5	69.5		
1515	34	31	3	0	63.2	69.5		
1530	25	25	0	0	63.3	66.6		
1545	29	24	3	2	63.7	73.4		
1600	26	23	3	0	66	72.7		
1615	29	26	2	1	62.9	73.4		
1630	34	29	5	0	64.1	71.3		
1645	30	24	5	1	64	71.3		
1700	33	30	3	0	64.9	72.4		
1715	36	34	2	0	64.2	70.6		
1730	30	24	5	1	62.5	70.2		
1745	25	24	1	0	63.3	69.5		
1800	23	21	2	0	62.4	71.6		
1815	30	28	2	0	62.9	70.6		
1830	26	23	3	0	63.5	70.2		
1845	18	16	2	0	55.5	59.4		
1900	14	14	0	0	59	61.2		
1915	22	21	0	1	60.9	65.9		
1930	18	18	0	0	59.4	63.7		
1945	15	14	1	0	62.9	69.1		
2000	15	15	0	0	60.5	66.6		
2015	18	18	0	0	59.7	63.4		
2030	9	8	1	0	60.6	-		
2045	9	9	0	0	61.1	-		
2100	13	13	0	0	61.5	67.3		
2115	11	11	0	0	62.3	71.3		
2130	6	4	2	0	65.7	-		
2145	4	4	0	0	63.7	-		
2200	2	1	0	1	55.4	-		
2215	0	0	0	0	-	-		
2230	5	4	1	0	67.2	-		
2245	5	4	1	0	67.8	-		
2300	7	6	1	0	67.7	-		
2315	1	1	0	0	63.7	-		
2330	2	1	1	0	51.7	-		
2345	3	3	0	0	67.9	-		
<b>07-09</b>	<b>391</b>	<b>336</b>	<b>47</b>	<b>8</b>	<b>61.8</b>	<b>68.4</b>		
<b>09-16</b>	<b>910</b>	<b>760</b>	<b>136</b>	<b>14</b>	<b>62.4</b>	<b>69.1</b>		
<b>16-18</b>	<b>243</b>	<b>214</b>	<b>26</b>	<b>3</b>	<b>64</b>	<b>71.6</b>		
<b>00-00</b>	<b>2340</b>	<b>2023</b>	<b>276</b>	<b>41</b>	<b>62.6</b>	<b>69.5</b>		

# Greenbank Rd Automatic Report

**Site Name** - Greenbank Rd  
**Description** - approx 250m west of Mt Lindesay Hwy  
**Direction** - Eastbound  
**Survey Dates** - 9th Feb - 15th Feb 2017



Tuesday, 14 February 2017

Time	Total	Cars	Light Trucks	Heavy Trucks	Average Speed	85th %ile		
0000	2	2	0	0	57.5	-		
0015	3	3	0	0	58.7	-		
0030	4	3	1	0	66.5	-		
0045	2	2	0	0	59.9	-		
0100	2	2	0	0	62	-		
0115	2	2	0	0	65.7	-		
0130	5	4	1	0	61.3	-		
0145	0	0	0	0	-	-		
0200	2	2	0	0	66.1	-		
0215	6	6	0	0	62.7	-		
0230	1	1	0	0	60.1	-		
0245	1	1	0	0	54.7	-		
0300	3	3	0	0	59	-		
0315	2	2	0	0	67.4	-		
0330	7	4	3	0	62.3	-		
0345	6	6	0	0	57.3	-		
0400	7	7	0	0	64	-		
0415	13	11	2	0	61	64.8		
0430	22	17	4	1	60.5	67.3		
0445	33	26	4	3	61.5	66.2		
0500	28	26	1	1	59.6	65.2		
0515	48	42	6	0	62.8	69.1		
0530	56	48	7	1	63.9	68.8		
0545	47	39	8	0	63.6	71.3		
0600	61	54	6	1	61.5	64.4		
0615	55	51	3	1	64.3	69.5		
0630	53	46	5	2	65.9	69.5		
0645	52	46	5	1	64	69.5		
0700	53	49	4	0	63.5	70.6		
0715	54	47	6	1	62.9	67.3		
0730	38	31	6	1	63.3	70.2		
0745	53	47	5	1	61.9	67.3		
0800	55	50	2	3	61.5	68		
0815	52	47	5	0	66	71.3		
0830	49	43	4	2	60.7	67		
0845	52	43	8	1	59.5	65.9		
0900	41	36	4	1	64.5	68.8		
0915	38	33	5	0	62.9	67.3		
0930	33	29	4	0	63.7	68		
0945	34	30	3	1	63.3	68.4		
1000	27	21	5	1	58.4	65.2		
1015	31	26	5	0	59.2	63		
1030	35	33	2	0	59.8	69.1		
1045	33	27	6	0	58.4	65.2		
1100	31	26	5	0	59.1	63.4		
1115	38	28	9	1	57.9	61.9		
1130	28	23	5	0	57.1	64.8		

1145	27	24	3	0	60	64.1		
1200	27	27	0	0	61.1	67.7		
1215	24	22	2	0	62.3	63.7		
1230	31	28	3	0	64.6	72.7		
1245	23	19	2	2	63.5	72		
1300	30	24	4	2	61.8	69.8		
1315	35	30	5	0	62.3	69.5		
1330	34	31	2	1	59.4	66.6		
1345	37	33	4	0	63.3	68		
1400	41	36	5	0	62.8	68		
1415	37	32	5	0	60.9	66.6		
1430	38	35	2	1	59.5	64.8		
1445	30	23	6	1	64.8	76.7		
1500	35	31	4	0	64.4	70.9		
1515	32	30	1	1	65.2	69.8		
1530	33	29	4	0	65.3	73.4		
1545	27	23	4	0	64.4	71.6		
1600	28	26	1	1	61.1	69.1		
1615	24	19	4	1	64.2	70.2		
1630	40	36	4	0	64.1	69.8		
1645	49	39	9	1	62.6	67.7		
1700	42	37	5	0	64.6	70.2		
1715	38	33	4	1	64.1	70.2		
1730	29	28	1	0	63.3	67.7		
1745	39	36	3	0	64.2	70.9		
1800	22	22	0	0	62.8	68.4		
1815	33	32	1	0	64.4	68.4		
1830	32	28	4	0	61.7	68.8		
1845	27	25	2	0	63.4	70.2		
1900	18	18	0	0	61.5	64.8		
1915	34	33	0	1	63.4	68.4		
1930	21	21	0	0	57.4	62.3		
1945	22	21	1	0	61.2	65.2		
2000	12	9	3	0	64.8	69.1		
2015	22	20	2	0	63.7	70.2		
2030	11	10	1	0	63.9	70.6		
2045	11	10	1	0	57.3	62.3		
2100	16	15	1	0	62.3	70.6		
2115	12	11	1	0	63.7	70.6		
2130	15	15	0	0	63.7	71.3		
2145	4	4	0	0	61.2 -			
2200	8	8	0	0	60.2 -			
2215	4	4	0	0	63.3 -			
2230	13	12	1	0	60.4	65.5		
2245	5	5	0	0	62.7 -			
2300	3	2	1	0	64.4 -			
2315	4	4	0	0	63.3 -			
2330	4	4	0	0	63.7 -			
2345	3	2	1	0	55.6 -			
<b>07-09</b>	<b>406</b>	<b>357</b>	<b>40</b>	<b>9</b>	<b>62.4</b>	<b>68.8</b>		
<b>09-16</b>	<b>910</b>	<b>789</b>	<b>109</b>	<b>12</b>	<b>61.8</b>	<b>68.8</b>		
<b>16-18</b>	<b>289</b>	<b>254</b>	<b>31</b>	<b>4</b>	<b>63.6</b>	<b>69.8</b>		
<b>00-00</b>	<b>2484</b>	<b>2191</b>	<b>256</b>	<b>37</b>	<b>62.4</b>	<b>69.1</b>		

# Greenbank Rd Automatic Report

**Site Name** - Greenbank Rd  
**Description** - approx 250m west of Mt Lindesay Hwy  
**Direction** - Eastbound  
**Survey Dates** - 9th Feb - 15th Feb 2017



Wednesday, 15 February 2017

Time	Total	Cars	Light Trucks	Heavy Trucks	Average Speed	85th %ile		
0000	4	4	0	0	67	-		
0015	5	4	1	0	65	-		
0030	1	1	0	0	73.6	-		
0045	1	0	1	0	78.9	-		
0100	1	0	1	0	58.8	-		
0115	2	2	0	0	62.3	-		
0130	4	4	0	0	71.7	-		
0145	2	1	1	0	57.7	-		
0200	2	2	0	0	66.2	-		
0215	3	3	0	0	65.3	-		
0230	3	3	0	0	64.2	-		
0245	4	4	0	0	69.7	-		
0300	2	2	0	0	65.1	-		
0315	4	4	0	0	64.2	-		
0330	8	8	0	0	68.6	-		
0345	7	7	0	0	60.9	-		
0400	10	7	3	0	62.3	-		
0415	17	15	2	0	62.6	68.4		
0430	23	20	3	0	60.7	65.5		
0445	27	21	5	1	60.9	66.2		
0500	36	34	2	0	60.2	67		
0515	53	48	4	1	60.9	68.4		
0530	65	59	6	0	65.3	70.9		
0545	52	46	5	1	62.8	70.6		
0600	57	50	6	1	64.4	69.5		
0615	65	58	7	0	64.4	70.9		
0630	47	43	2	2	63.8	71.3		
0645	55	49	5	1	66.2	72.7		
0700	62	54	5	3	64.1	69.1		
0715	54	49	5	0	64.2	68.4		
0730	47	44	3	0	64.8	71.6		
0745	51	45	6	0	64.5	70.6		
0800	65	57	6	2	63.6	69.8		
0815	42	37	5	0	65.3	70.2		
0830	45	38	6	1	64.3	69.1		
0845	46	41	4	1	61	65.9		
0900	49	43	6	0	63.1	71.6		
0915	32	26	3	3	59	67.7		
0930	35	25	9	1	58.8	65.5		
0945	37	32	4	1	62.1	67.3		
1000	31	25	6	0	62.6	66.6		
1015	33	30	1	2	62.2	67		
1030	47	37	9	1	61.9	69.5		
1045	27	22	4	1	60.5	67.3		
1100	31	25	6	0	63.5	69.5		
1115	30	21	9	0	59	65.2		
1130	35	30	5	0	60.3	68.8		

1145	30	28	1	1	61.7	64.4		
1200	32	25	6	1	61.3	69.8		
1215	37	28	7	2	61.7	68		
1230	35	27	7	1	61.3	68.8		
1245	26	24	1	1	61.6	67		
1300	34	28	4	2	61.8	67.3		
1315	37	28	9	0	63	68.8		
1330	34	27	7	0	58.7	65.5		
1345	36	33	2	1	63.4	70.2		
1400	33	27	6	0	60.5	68		
1415	38	35	3	0	63.6	69.5		
1430	34	30	4	0	63.4	70.2		
1445	35	31	4	0	61.1	68.4		
1500	26	21	5	0	65.6	73.4		
1515	44	41	3	0	63.9	69.8		
1530	45	38	6	1	61.3	68		
1545	30	29	1	0	66.4	73.1		
1600	23	23	0	0	65.6	73.1		
1615	37	32	4	1	62.7	66.2		
1630	36	33	3	0	64.3	69.1		
1645	47	34	13	0	62.5	69.1		
1700	25	24	1	0	66.2	71.3		
1715	31	28	1	2	63.1	67.3		
1730	32	29	2	1	63.9	67.7		
1745	30	29	1	0	63.2	69.5		
1800	34	32	2	0	60.4	66.6		
1815	23	22	1	0	60.9	68.4		
1830	27	25	2	0	63.5	73.1		
1845	18	17	1	0	63.1	68.4		
1900	31	30	1	0	59.4	66.2		
1915	16	16	0	0	60.9	65.5		
1930	18	17	1	0	61.7	66.6		
1945	25	22	2	1	64.5	71.3		
2000	10	8	2	0	67.5 -			
2015	14	14	0	0	60.9	69.8		
2030	12	12	0	0	64.2	68		
2045	26	26	0	0	62.5	68.8		
2100	16	15	1	0	59.1	64.1		
2115	21	17	3	1	59	64.4		
2130	10	10	0	0	65 -			
2145	3	2	1	0	63.8 -			
2200	7	7	0	0	66 -			
2215	8	7	1	0	54.8 -			
2230	2	2	0	0	69.1 -			
2245	3	3	0	0	64.5 -			
2300	6	5	1	0	57.6 -			
2315	1	1	0	0	65.3 -			
2330	4	2	2	0	69.2 -			
2345	1	1	0	0	61.5 -			
<b>07-09</b>	<b>412</b>	<b>365</b>	<b>40</b>	<b>7</b>	<b>63.9</b>	<b>69.8</b>		
<b>09-16</b>	<b>973</b>	<b>816</b>	<b>138</b>	<b>19</b>	<b>61.9</b>	<b>69.1</b>		
<b>16-18</b>	<b>261</b>	<b>232</b>	<b>25</b>	<b>4</b>	<b>63.7</b>	<b>70.2</b>		
<b>00-00</b>	<b>2542</b>	<b>2225</b>	<b>278</b>	<b>39</b>	<b>62.8</b>	<b>69.8</b>		

# Greenbank Rd Automatic Report

**Site Name** - Greenbank Rd  
**Description** - approx 250m west of Mt Lindesay Hwy  
**Direction** - Westbound  
**Survey Dates** - 9th Feb - 15th Feb 2017



Thursday, 9 February 2017

Time	Total	Cars	Light Trucks	Heavy Trucks	Average Speed	85th %ile		
0000	9	9	0	0	61.4	-		
0015	4	4	0	0	65.9	-		
0030	5	5	0	0	65.5	-		
0045	6	6	0	0	61.8	-		
0100	1	1	0	0	73.8	-		
0115	0	0	0	0	-	-		
0130	1	1	0	0	56.5	-		
0145	5	5	0	0	69.6	-		
0200	1	1	0	0	69	-		
0215	1	1	0	0	55.7	-		
0230	2	1	1	0	64.7	-		
0245	1	1	0	0	63.4	-		
0300	3	3	0	0	62.6	-		
0315	0	0	0	0	-	-		
0330	0	0	0	0	-	-		
0345	6	5	1	0	64.9	-		
0400	6	6	0	0	70.2	-		
0415	8	8	0	0	73	-		
0430	10	10	0	0	67.9	-		
0445	24	22	2	0	63.8	68.8		
0500	17	16	1	0	66.6	70.2		
0515	25	23	1	1	61.9	69.5		
0530	51	48	2	1	64.5	71.6		
0545	52	49	1	2	63.1	68.8		
0600	44	36	6	2	61.8	66.6		
0615	45	36	8	1	61.6	66.6		
0630	41	36	3	2	58.7	67.3		
0645	55	46	9	0	62.3	69.1		
0700	46	42	4	0	61.1	69.8		
0715	53	43	7	3	60.9	65.9		
0730	47	39	7	1	61	68		
0745	36	34	2	0	67.1	76.3		
0800	57	52	5	0	62.4	69.1		
0815	60	56	3	1	64	67.3		
0830	64	61	3	0	63.1	67.7		
0845	52	48	4	0	62.8	70.2		
0900	34	28	6	0	61.5	68		
0915	48	47	1	0	61.4	67.3		
0930	47	40	7	0	60.2	69.1		
0945	43	37	6	0	62.4	70.6		
1000	33	27	3	3	62.9	68.8		
1015	46	39	6	1	62	69.8		
1030	38	34	2	2	62.9	72.7		
1045	30	27	2	1	62.5	66.6		
1100	45	43	2	0	60.8	68.8		
1115	49	44	5	0	61.9	69.1		
1130	49	46	3	0	61.9	68		

1145	30	26	4	0	63.9	72.4		
1200	38	36	2	0	61.5	64.8		
1215	48	45	3	0	62.9	70.9		
1230	52	46	3	3	60.1	67		
1245	44	42	2	0	65.3	70.9		
1300	31	25	5	1	61.1	69.1		
1315	46	41	4	1	63.8	70.9		
1330	49	46	3	0	64.7	69.8		
1345	34	32	1	1	62.6	69.8		
1400	43	41	2	0	64	70.9		
1415	61	59	2	0	64.2	70.2		
1430	67	58	7	2	63.9	71.3		
1445	68	57	8	3	62.5	70.2		
1500	50	44	5	1	63.1	67.7		
1515	70	61	8	1	64.4	70.9		
1530	89	86	2	1	63.8	68.8		
1545	88	83	3	2	64.7	69.5		
1600	98	92	5	1	64	69.5		
1615	78	70	6	2	63.9	69.8		
1630	100	96	3	1	64.7	68.4		
1645	87	83	4	0	66.5	72		
1700	94	89	5	0	65.9	72.4		
1715	88	84	4	0	66.2	72.7		
1730	92	91	1	0	65.2	70.2		
1745	83	78	5	0	62.8	69.8		
1800	68	64	4	0	64.6	72.4		
1815	66	65	1	0	63.9	69.1		
1830	46	43	2	1	63.4	70.6		
1845	43	41	1	1	62.7	70.9		
1900	31	29	1	1	63	69.1		
1915	56	51	4	1	60.5	66.6		
1930	36	35	1	0	61.6	68.8		
1945	37	34	3	0	61.4	67.3		
2000	34	33	1	0	58.4	68.4		
2015	27	27	0	0	60.7	66.2		
2030	26	25	1	0	61.9	67		
2045	40	40	0	0	59.6	66.6		
2100	25	25	0	0	64	69.8		
2115	16	16	0	0	63.9	67.7		
2130	18	18	0	0	62.3	69.5		
2145	16	16	0	0	62.5	72		
2200	13	13	0	0	67.3	72.4		
2215	13	12	1	0	66	73.1		
2230	9	9	0	0	60.5 -			
2245	14	14	0	0	66.1	82.1		
2300	9	9	0	0	60.9 -			
2315	11	11	0	0	63.9	70.6		
2330	6	6	0	0	67.5 -			
2345	7	7	0	0	70 -			
<b>07-09</b>	<b>415</b>	<b>375</b>	<b>35</b>	<b>5</b>	<b>62.7</b>	<b>69.5</b>		
<b>09-16</b>	<b>1370</b>	<b>1240</b>	<b>107</b>	<b>23</b>	<b>62.9</b>	<b>69.8</b>		
<b>16-18</b>	<b>720</b>	<b>683</b>	<b>33</b>	<b>4</b>	<b>64.9</b>	<b>70.6</b>		
<b>00-00</b>	<b>3595</b>	<b>3320</b>	<b>230</b>	<b>45</b>	<b>63.2</b>	<b>70.2</b>		

# Greenbank Rd Automatic Report

**Site Name** - Greenbank Rd  
**Description** - approx 250m west of Mt Lindesay Hwy  
**Direction** - Westbound  
**Survey Dates** - 9th Feb - 15th Feb 2017



Friday, 10 February 2017

Time	Total	Cars	Light Trucks	Heavy Trucks	Average Speed	85th %ile		
0000	7	6	0	1	60.5	-		
0015	5	4	0	1	66.2	-		
0030	5	5	0	0	61.1	-		
0045	2	2	0	0	67.8	-		
0100	1	1	0	0	60.8	-		
0115	2	2	0	0	64.3	-		
0130	3	1	1	1	59.6	-		
0145	3	3	0	0	71	-		
0200	4	3	0	1	61.1	-		
0215	0	0	0	0	-	-		
0230	3	3	0	0	69.6	-		
0245	3	3	0	0	63.4	-		
0300	3	3	0	0	66.8	-		
0315	1	1	0	0	78.5	-		
0330	1	0	1	0	44.3	-		
0345	3	2	0	1	60.9	-		
0400	11	9	2	0	63.7	69.8		
0415	9	8	0	1	69.3	-		
0430	11	10	1	0	67.9	72.4		
0445	17	15	1	1	65.7	69.1		
0500	31	28	3	0	65	72		
0515	25	22	2	1	68.1	73.8		
0530	44	37	4	3	66.7	72		
0545	43	37	6	0	66.7	73.4		
0600	48	39	5	4	65.3	74.5		
0615	33	27	4	2	63	71.6		
0630	36	33	2	1	65.3	70.2		
0645	50	40	9	1	64.6	69.5		
0700	42	36	6	0	65.3	74.2		
0715	41	35	5	1	64.5	71.6		
0730	58	51	5	2	64.6	70.6		
0745	47	41	5	1	64.8	73.4		
0800	64	59	3	2	67	71.3		
0815	51	47	3	1	64.3	70.2		
0830	58	54	4	0	63.8	70.2		
0845	47	45	2	0	62.4	68.4		
0900	34	31	2	1	61.5	66.6		
0915	44	41	3	0	64.2	70.9		
0930	39	35	3	1	60.3	65.9		
0945	49	45	3	1	61.7	68		
1000	37	28	7	2	60.8	67.3		
1015	48	43	4	1	63.4	68.4		
1030	46	41	3	2	61.9	65.9		
1045	47	42	4	1	60.8	65.9		
1100	49	45	4	0	61.6	68.4		
1115	48	45	2	1	60.6	67.7		
1130	34	32	1	1	61.3	68.4		

1145	37	35	2	0	63.4	69.8		
1200	25	21	3	1	63	67.7		
1215	37	36	1	0	64.8	69.8		
1230	53	51	2	0	62.2	67.7		
1245	49	46	3	0	61.7	70.6		
1300	57	53	3	1	63.3	68		
1315	54	50	4	0	63.4	68.8		
1330	61	56	4	1	63.8	72.4		
1345	56	46	10	0	60.4	67.7		
1400	57	54	3	0	63.4	69.8		
1415	67	60	5	2	64.9	69.8		
1430	53	45	8	0	62.8	68.4		
1445	88	76	12	0	63.1	70.6		
1500	69	64	3	2	65	70.6		
1515	73	69	4	0	62.5	69.5		
1530	109	101	7	1	62.4	68		
1545	104	97	6	1	63.2	68.8		
1600	87	79	7	1	64.1	69.8		
1615	76	71	5	0	63.6	70.2		
1630	91	86	4	1	64.4	69.1		
1645	80	78	2	0	64.6	71.3		
1700	82	75	4	3	64.7	71.3		
1715	94	92	2	0	66	71.6		
1730	99	96	2	1	66.4	71.6		
1745	87	82	4	1	65.9	72.4		
1800	75	72	3	0	63.6	70.9		
1815	70	67	2	1	66	73.1		
1830	58	57	1	0	63.7	69.1		
1845	45	45	0	0	64.5	72.7		
1900	44	43	1	0	61.8	65.9		
1915	52	51	0	1	61.6	67.3		
1930	28	25	3	0	60.7	67		
1945	29	29	0	0	63	68		
2000	31	31	0	0	63.2	67		
2015	20	20	0	0	66.4	72.7		
2030	36	36	0	0	60	65.2		
2045	30	30	0	0	63.7	72		
2100	15	15	0	0	61	71.3		
2115	18	17	1	0	63.9	67.7		
2130	33	33	0	0	64.2	74.5		
2145	17	15	2	0	59.4	67		
2200	13	13	0	0	60.1	65.5		
2215	31	31	0	0	61.6	67.3		
2230	20	19	1	0	61.6	66.6		
2245	3	3	0	0	64.4	-		
2300	12	12	0	0	63.3	67		
2315	12	11	1	0	61.2	64.1		
2330	11	11	0	0	59.2	67.7		
2345	11	11	0	0	66.5	74.2		
<b>07-09</b>	<b>408</b>	<b>368</b>	<b>33</b>	<b>7</b>	<b>64.7</b>	<b>71.3</b>		
<b>09-16</b>	<b>1524</b>	<b>1388</b>	<b>116</b>	<b>20</b>	<b>62.7</b>	<b>69.1</b>		
<b>16-18</b>	<b>696</b>	<b>659</b>	<b>30</b>	<b>7</b>	<b>65</b>	<b>71.3</b>		
<b>00-00</b>	<b>3746</b>	<b>3456</b>	<b>235</b>	<b>55</b>	<b>63.7</b>	<b>70.6</b>		

# Greenbank Rd Automatic Report

**Site Name** - Greenbank Rd  
**Description** - approx 250m west of Mt Lindesay Hwy  
**Direction** - Westbound  
**Survey Dates** - 9th Feb - 15th Feb 2017



**Saturday, 11 February 2017**

Time	Total	Cars	Light Trucks	Heavy Trucks	Average Speed	85th %ile		
0000	11	11	0	0	66.6	69.5		
0015	15	14	1	0	66.7	69.5		
0030	1	1	0	0	68.2	-		
0045	2	2	0	0	58.8	-		
0100	6	6	0	0	67.4	-		
0115	2	2	0	0	60.8	-		
0130	3	3	0	0	58.7	-		
0145	6	6	0	0	61.4	-		
0200	3	3	0	0	60.9	-		
0215	3	3	0	0	64.2	-		
0230	3	2	1	0	63.4	-		
0245	2	2	0	0	73.2	-		
0300	4	4	0	0	55.8	-		
0315	4	4	0	0	74.1	-		
0330	2	1	1	0	56.8	-		
0345	3	3	0	0	62.8	-		
0400	5	4	1	0	62.9	-		
0415	5	5	0	0	68.9	-		
0430	7	7	0	0	70.6	-		
0445	5	5	0	0	68.2	-		
0500	5	5	0	0	68.3	-		
0515	10	10	0	0	70.1	-		
0530	13	11	1	1	65.5	71.6		
0545	21	18	3	0	66.8	73.1		
0600	19	16	2	1	64.1	73.4		
0615	10	9	1	0	63.9	-		
0630	19	18	1	0	64.4	69.5		
0645	19	19	0	0	69.7	74.9		
0700	29	28	1	0	65.4	72.7		
0715	26	25	1	0	65.3	71.3		
0730	30	28	2	0	64.8	72		
0745	29	27	2	0	66.5	74.9		
0800	25	22	3	0	60.9	69.5		
0815	45	42	3	0	62.9	70.6		
0830	36	34	2	0	62.6	70.9		
0845	44	38	5	1	63	67		
0900	50	49	1	0	61.5	68		
0915	43	41	2	0	65	71.3		
0930	44	40	4	0	63.9	69.5		
0945	55	52	3	0	61.8	69.8		
1000	51	48	1	2	64.3	72		
1015	62	61	1	0	65.2	69.5		
1030	68	67	1	0	64.2	69.5		
1045	65	61	4	0	64.7	69.5		
1100	51	48	2	1	62.8	69.8		
1115	60	53	6	1	62.3	69.1		
1130	56	53	2	1	63.9	70.2		

1145	56	50	5	1	64.1	69.5		
1200	76	74	2	0	66	71.3		
1215	71	67	4	0	63.3	68.4		
1230	52	51	1	0	65.1	73.1		
1245	66	64	2	0	63.8	69.1		
1300	59	58	1	0	65.1	70.6		
1315	67	65	2	0	65.2	71.3		
1330	56	54	2	0	64.5	71.3		
1345	54	53	1	0	64.3	73.4		
1400	47	46	0	1	63.2	67.7		
1415	48	45	2	1	62	69.8		
1430	54	54	0	0	64.1	69.1		
1445	42	40	2	0	61.5	67		
1500	43	42	1	0	65.8	73.1		
1515	65	62	3	0	64.5	69.1		
1530	43	42	1	0	66.5	70.9		
1545	60	58	2	0	64.8	69.5		
1600	54	53	1	0	64.2	69.8		
1615	54	52	2	0	62.3	68		
1630	37	37	0	0	63	69.1		
1645	54	52	1	1	65.1	70.9		
1700	51	50	1	0	63.8	70.2		
1715	57	52	4	1	64.1	68.4		
1730	36	35	1	0	60.8	69.5		
1745	44	43	1	0	56.2	60.8		
1800	40	39	1	0	61.7	68		
1815	40	39	1	0	58.9	64.8		
1830	33	31	1	1	62	69.8		
1845	35	33	1	1	62.1	67.7		
1900	24	24	0	0	64.7	69.1		
1915	37	37	0	0	60.5	65.2		
1930	30	30	0	0	60.7	67		
1945	26	25	1	0	66.4	72.4		
2000	30	28	2	0	64.6	74.5		
2015	28	28	0	0	63	70.6		
2030	27	26	1	0	60.8	69.1		
2045	25	24	1	0	64.7	70.6		
2100	21	20	1	0	61.3	68.4		
2115	29	27	2	0	60.5	67		
2130	28	27	1	0	66.1	71.6		
2145	18	17	1	0	65.5	73.8		
2200	12	12	0	0	63.9	67		
2215	19	18	0	1	66.6	77		
2230	19	19	0	0	64.3	69.8		
2245	7	7	0	0	65.7	-		
2300	14	14	0	0	62.8	68.8		
2315	15	15	0	0	62.3	70.6		
2330	14	14	0	0	64.8	71.3		
2345	6	6	0	0	62.6	-		
<b>07-09</b>	<b>264</b>	<b>244</b>	<b>19</b>	<b>1</b>	<b>63.8</b>	<b>70.9</b>		
<b>09-16</b>	<b>1564</b>	<b>1498</b>	<b>58</b>	<b>8</b>	<b>64.1</b>	<b>70.2</b>		
<b>16-18</b>	<b>387</b>	<b>374</b>	<b>11</b>	<b>2</b>	<b>62.7</b>	<b>69.1</b>		
<b>00-00</b>	<b>3000</b>	<b>2870</b>	<b>114</b>	<b>16</b>	<b>63.8</b>	<b>70.6</b>		

# Greenbank Rd Automatic Report

**Site Name** - Greenbank Rd  
**Description** - approx 250m west of Mt Lindesay Hwy  
**Direction** - Westbound  
**Survey Dates** - 9th Feb - 15th Feb 2017



**Sunday, 12 February 2017**

Time	Total	Cars	Light Trucks	Heavy Trucks	Average Speed	85th %ile		
0000	11	9	1	1	59.8	67.7		
0015	6	6	0	0	64.1	-		
0030	5	4	0	1	55.9	-		
0045	7	7	0	0	61.8	-		
0100	2	2	0	0	64.2	-		
0115	3	3	0	0	62.4	-		
0130	3	3	0	0	62.8	-		
0145	2	2	0	0	67	-		
0200	3	3	0	0	67	-		
0215	5	5	0	0	70.4	-		
0230	5	5	0	0	64.2	-		
0245	1	1	0	0	62.9	-		
0300	0	0	0	0	-	-		
0315	4	4	0	0	59.3	-		
0330	1	1	0	0	74	-		
0345	2	2	0	0	59.7	-		
0400	2	1	1	0	67.9	-		
0415	4	4	0	0	67.3	-		
0430	2	2	0	0	72.4	-		
0445	3	3	0	0	59.7	-		
0500	9	9	0	0	64.4	-		
0515	2	2	0	0	61.8	-		
0530	3	3	0	0	61.6	-		
0545	8	7	1	0	63	-		
0600	2	1	1	0	66.2	-		
0615	5	5	0	0	68.1	-		
0630	14	12	2	0	65.1	74.2		
0645	9	8	1	0	65	-		
0700	14	13	1	0	65.4	72		
0715	10	10	0	0	62.5	-		
0730	15	14	1	0	62.1	70.2		
0745	17	16	1	0	70.5	78.5		
0800	22	21	1	0	67.9	75.2		
0815	22	20	2	0	64.8	72		
0830	31	30	1	0	62.4	67.3		
0845	36	34	2	0	67.7	77		
0900	32	30	2	0	64.9	69.5		
0915	32	31	1	0	64.4	69.5		
0930	39	38	1	0	65.1	73.8		
0945	51	48	1	2	64	70.6		
1000	42	39	3	0	64.1	72		
1015	51	48	1	2	60.9	68.8		
1030	61	59	2	0	64.1	70.2		
1045	54	53	1	0	62.3	67.7		
1100	40	39	1	0	64.3	68.8		
1115	64	62	2	0	63.8	68.4		
1130	59	57	1	1	64.1	69.1		

1145	49	48	0	1	61.3	67.3		
1200	51	51	0	0	65.2	69.5		
1215	56	54	2	0	61.7	67.7		
1230	48	47	1	0	62.7	67.7		
1245	39	37	2	0	62.6	68.8		
1300	43	43	0	0	64.1	70.9		
1315	42	40	2	0	64.4	72.4		
1330	39	39	0	0	63.9	71.3		
1345	39	37	1	1	65	71.3		
1400	48	46	2	0	63.2	68.8		
1415	46	45	1	0	65.3	71.6		
1430	47	45	2	0	65.9	71.6		
1445	39	39	0	0	65.2	70.9		
1500	58	56	2	0	63.4	68		
1515	45	43	2	0	65.1	70.2		
1530	49	47	2	0	65.2	70.2		
1545	52	50	2	0	62.9	69.8		
1600	44	42	2	0	64.6	69.1		
1615	60	59	1	0	63	68.8		
1630	43	42	1	0	62	68		
1645	54	54	0	0	62.9	68.4		
1700	27	27	0	0	63.9	73.4		
1715	43	43	0	0	64	68.8		
1730	53	53	0	0	66.3	71.3		
1745	33	31	2	0	64.6	68.8		
1800	26	25	1	0	66.4	69.1		
1815	37	37	0	0	61.7	69.5		
1830	34	31	3	0	61	66.6		
1845	21	21	0	0	64	69.1		
1900	23	23	0	0	63.7	68.8		
1915	24	24	0	0	63.4	67.3		
1930	30	29	1	0	62.8	71.6		
1945	24	23	1	0	65.4	71.6		
2000	27	26	1	0	61.5	67.3		
2015	27	26	1	0	62.1	64.8		
2030	28	28	0	0	63.8	71.3		
2045	17	17	0	0	63	63		
2100	13	12	1	0	61.8	65.9		
2115	13	12	1	0	62.2	68		
2130	10	9	1	0	62.7 -			
2145	12	12	0	0	65.3	73.4		
2200	8	8	0	0	62.1 -			
2215	10	10	0	0	65.4 -			
2230	10	8	2	0	56.1 -			
2245	3	3	0	0	72.8 -			
2300	6	6	0	0	64.7 -			
2315	6	5	1	0	70.4 -			
2330	1	1	0	0	67.1 -			
2345	4	4	0	0	60 -			
<b>07-09</b>	<b>167</b>	<b>158</b>	<b>9</b>	<b>0</b>	<b>65.6</b>	<b>72.4</b>		
<b>09-16</b>	<b>1315</b>	<b>1271</b>	<b>37</b>	<b>7</b>	<b>63.8</b>	<b>70.2</b>		
<b>16-18</b>	<b>357</b>	<b>351</b>	<b>6</b>	<b>0</b>	<b>63.9</b>	<b>70.2</b>		
<b>00-00</b>	<b>2376</b>	<b>2294</b>	<b>73</b>	<b>9</b>	<b>63.8</b>	<b>70.2</b>		

# Greenbank Rd Automatic Report

**Site Name** - Greenbank Rd  
**Description** - approx 250m west of Mt Lindesay Hwy  
**Direction** - Westbound  
**Survey Dates** - 9th Feb - 15th Feb 2017



**Monday, 13 February 2017**

Time	Total	Cars	Light Trucks	Heavy Trucks	Average Speed	85th %ile		
0000	1	1	0	0	63.3	-		
0015	1	1	0	0	87.6	-		
0030	1	1	0	0	63.6	-		
0045	2	2	0	0	57.9	-		
0100	3	3	0	0	55.7	-		
0115	2	2	0	0	59.2	-		
0130	2	2	0	0	64.9	-		
0145	1	1	0	0	68.3	-		
0200	1	1	0	0	65.5	-		
0215	1	1	0	0	65.5	-		
0230	2	1	1	0	70.1	-		
0245	2	2	0	0	63.9	-		
0300	0	0	0	0	-	-		
0315	4	2	2	0	55.5	-		
0330	1	0	0	1	57.5	-		
0345	4	3	1	0	69.7	-		
0400	3	3	0	0	63.7	-		
0415	13	13	0	0	64.8	70.6		
0430	9	9	0	0	70	-		
0445	20	18	2	0	68.2	74.9		
0500	19	17	2	0	68.6	73.1		
0515	32	31	1	0	68.3	74.5		
0530	36	34	1	1	68.7	74.2		
0545	53	44	6	3	66.4	73.4		
0600	61	50	9	2	66	72		
0615	33	28	5	0	67.2	73.1		
0630	41	32	8	1	63.7	71.6		
0645	51	45	3	3	64	69.5		
0700	38	31	5	2	65.9	73.4		
0715	36	31	4	1	61.7	68.8		
0730	55	49	4	2	58.6	66.6		
0745	35	31	4	0	62.9	69.1		
0800	56	53	3	0	64.4	70.6		
0815	54	48	6	0	61.9	69.8		
0830	55	51	3	1	61.2	65.9		
0845	38	37	1	0	63.6	68		
0900	46	38	7	1	61.6	68		
0915	40	35	4	1	61.8	70.6		
0930	44	41	2	1	63.5	71.3		
0945	36	30	6	0	61.5	68.8		
1000	39	33	5	1	62.4	67.3		
1015	36	30	3	3	61.1	68.4		
1030	36	32	3	1	61.7	69.1		
1045	43	41	2	0	59.6	65.5		
1100	46	40	6	0	61.7	68.8		
1115	35	30	4	1	61	68.8		
1130	30	29	1	0	64	70.2		

1145	50	44	5	1	61.6	69.1		
1200	39	34	5	0	63.6	70.2		
1215	43	38	5	0	63.2	68.8		
1230	34	28	5	1	62.6	68.4		
1245	33	31	2	0	62	67.3		
1300	44	40	4	0	62.4	69.8		
1315	44	42	2	0	65.3	72.4		
1330	41	37	3	1	65.4	70.2		
1345	32	25	6	1	63.2	69.1		
1400	40	36	3	1	65	70.6		
1415	53	51	2	0	63.6	69.1		
1430	46	39	6	1	64	70.2		
1445	62	50	11	1	61.8	68.8		
1500	62	58	2	2	63.6	69.8		
1515	84	78	5	1	63.9	69.1		
1530	93	90	3	0	64.7	69.8		
1545	90	83	6	1	64.4	70.2		
1600	87	79	7	1	65.9	71.6		
1615	82	74	7	1	63	68.8		
1630	79	76	3	0	64.6	71.3		
1645	82	79	3	0	64.9	69.8		
1700	75	71	4	0	66.7	74.5		
1715	79	72	5	2	65.7	72.7		
1730	77	73	4	0	64.7	70.9		
1745	82	77	5	0	65.8	73.4		
1800	69	65	3	1	62.5	68.4		
1815	60	58	2	0	63.7	70.6		
1830	42	41	1	0	62.4	68.4		
1845	33	32	1	0	62	66.2		
1900	38	36	2	0	58.6	64.1		
1915	25	25	0	0	62.7	70.9		
1930	30	28	2	0	61.8	70.9		
1945	22	21	1	0	60.9	69.5		
2000	12	12	0	0	62.6	65.5		
2015	16	16	0	0	62	67.3		
2030	18	18	0	0	65	72		
2045	15	15	0	0	64	69.5		
2100	13	13	0	0	64.3	67.7		
2115	10	10	0	0	65.6	-		
2130	16	14	2	0	62.3	68.4		
2145	3	3	0	0	71.8	-		
2200	14	14	0	0	63.1	69.5		
2215	13	13	0	0	68.5	72.7		
2230	15	14	1	0	62.9	70.9		
2245	7	7	0	0	68.8	-		
2300	3	2	1	0	68.3	-		
2315	12	12	0	0	65.9	74.9		
2330	5	5	0	0	66.8	-		
2345	5	5	0	0	67.8	-		
<b>07-09</b>	<b>367</b>	<b>331</b>	<b>30</b>	<b>6</b>	<b>62.4</b>	<b>69.8</b>		
<b>09-16</b>	<b>1321</b>	<b>1183</b>	<b>118</b>	<b>20</b>	<b>63</b>	<b>69.5</b>		
<b>16-18</b>	<b>643</b>	<b>601</b>	<b>38</b>	<b>4</b>	<b>65.2</b>	<b>72</b>		
<b>00-00</b>	<b>3226</b>	<b>2941</b>	<b>243</b>	<b>42</b>	<b>63.8</b>	<b>70.6</b>		

# Greenbank Rd Automatic Report

**Site Name** - Greenbank Rd  
**Description** - approx 250m west of Mt Lindesay Hwy  
**Direction** - Westbound  
**Survey Dates** - 9th Feb - 15th Feb 2017



Tuesday, 14 February 2017

Time	Total	Cars	Light Trucks	Heavy Trucks	Average Speed	85th %ile		
0000	2	2	0	0	66.9	-		
0015	5	5	0	0	65	-		
0030	3	3	0	0	59.3	-		
0045	3	3	0	0	62.7	-		
0100	3	3	0	0	58.1	-		
0115	0	0	0	0	-	-		
0130	1	1	0	0	79.4	-		
0145	4	4	0	0	61	-		
0200	0	0	0	0	-	-		
0215	1	1	0	0	45	-		
0230	2	2	0	0	52.1	-		
0245	2	2	0	0	66	-		
0300	3	3	0	0	67	-		
0315	1	0	0	1	52.2	-		
0330	2	1	1	0	52.1	-		
0345	8	7	1	0	65.5	-		
0400	8	7	1	0	67.5	-		
0415	7	6	1	0	65.8	-		
0430	18	17	1	0	62.9	67.7		
0445	11	10	1	0	66.5	73.1		
0500	24	22	2	0	67.1	72.7		
0515	31	28	3	0	67.5	72.7		
0530	45	42	3	0	65.2	70.6		
0545	52	46	5	1	66.5	72.4		
0600	58	50	7	1	66.3	72.7		
0615	39	33	5	1	65.2	72.7		
0630	47	42	4	1	66.4	73.8		
0645	50	45	5	0	66.8	74.2		
0700	61	51	9	1	64.3	72.7		
0715	41	38	3	0	67.1	72.4		
0730	55	47	7	1	63.1	70.6		
0745	47	42	3	2	63.5	68		
0800	48	47	1	0	65.9	73.4		
0815	50	45	4	1	63.9	70.6		
0830	58	56	2	0	64.5	69.8		
0845	56	51	5	0	64	70.2		
0900	41	37	3	1	63.8	71.3		
0915	46	40	5	1	61.6	68		
0930	24	23	1	0	63.1	68		
0945	39	37	2	0	63.2	68.8		
1000	40	36	4	0	59.6	65.2		
1015	35	30	5	0	60.5	67		
1030	41	34	4	3	61	66.6		
1045	33	30	2	1	60.3	64.4		
1100	37	31	6	0	62.8	69.1		
1115	42	40	2	0	63.7	68.4		
1130	42	34	5	3	61.4	67.7		

1145	43	37	6	0	64.5	69.8		
1200	38	31	6	1	58.9	64.4		
1215	35	33	1	1	59.8	68.4		
1230	28	26	2	0	62.6	70.2		
1245	45	39	5	1	62.1	68		
1300	41	40	1	0	63.5	69.5		
1315	38	35	3	0	62.8	68		
1330	46	43	3	0	65.1	72		
1345	32	29	3	0	62.5	69.8		
1400	37	33	3	1	64.6	67		
1415	68	62	4	2	66.1	70.9		
1430	71	68	3	0	62.2	69.8		
1445	75	61	13	1	62.1	66.6		
1500	34	31	3	0	65	73.1		
1515	84	77	4	3	61	67.3		
1530	89	85	2	2	64.3	70.2		
1545	88	84	4	0	63.6	69.1		
1600	75	72	3	0	63.8	69.1		
1615	95	86	8	1	63.2	68.4		
1630	93	88	4	1	64.2	70.6		
1645	83	77	6	0	64.4	70.9		
1700	79	74	4	1	64.1	73.1		
1715	102	97	5	0	65.6	73.4		
1730	95	94	1	0	65.8	71.3		
1745	74	73	0	1	65.5	70.6		
1800	65	62	3	0	66.8	71.6		
1815	65	63	1	1	65.9	72		
1830	51	48	3	0	63.1	67.7		
1845	43	39	3	1	64.3	70.9		
1900	30	30	0	0	63.3	69.5		
1915	33	33	0	0	60.1	66.2		
1930	28	28	0	0	64.9	69.5		
1945	24	24	0	0	62.8	71.6		
2000	28	28	0	0	64.1	71.6		
2015	26	25	1	0	67.4	74.2		
2030	16	16	0	0	63.3	68		
2045	31	31	0	0	63.1	67.7		
2100	26	25	1	0	67	73.8		
2115	22	21	1	0	64.7	70.9		
2130	23	22	1	0	63.6	73.4		
2145	16	16	0	0	63.7	71.6		
2200	18	18	0	0	65.6	71.3		
2215	15	15	0	0	67.5	73.8		
2230	16	15	1	0	62.9	67.7		
2245	11	11	0	0	69	74.5		
2300	7	7	0	0	67.6 -			
2315	8	8	0	0	62.4 -			
2330	8	7	1	0	62.9 -			
2345	7	6	1	0	63.2 -			
<b>07-09</b>	<b>416</b>	<b>377</b>	<b>34</b>	<b>5</b>	<b>64.4</b>	<b>71.3</b>		
<b>09-16</b>	<b>1312</b>	<b>1186</b>	<b>105</b>	<b>21</b>	<b>62.7</b>	<b>69.1</b>		
<b>16-18</b>	<b>696</b>	<b>661</b>	<b>31</b>	<b>4</b>	<b>64.6</b>	<b>70.9</b>		
<b>00-00</b>	<b>3471</b>	<b>3207</b>	<b>227</b>	<b>37</b>	<b>64</b>	<b>70.9</b>		

# Greenbank Rd Automatic Report

**Site Name** - Greenbank Rd  
**Description** - approx 250m west of Mt Lindesay Hwy  
**Direction** - Westbound  
**Survey Dates** - 9th Feb - 15th Feb 2017



Wednesday, 15 February 2017

Time	Total	Cars	Light Trucks	Heavy Trucks	Average Speed	85th %ile		
0000	7	7	0	0	65.8	-		
0015	7	7	0	0	62.2	-		
0030	5	5	0	0	60.6	-		
0045	1	1	0	0	66.2	-		
0100	1	1	0	0	60.5	-		
0115	0	0	0	0	-	-		
0130	4	4	0	0	64.9	-		
0145	3	2	1	0	72.7	-		
0200	2	2	0	0	59.1	-		
0215	1	1	0	0	58.6	-		
0230	1	1	0	0	80.5	-		
0245	3	3	0	0	69.9	-		
0300	0	0	0	0	-	-		
0315	2	1	1	0	53.2	-		
0330	0	0	0	0	-	-		
0345	5	4	1	0	70.5	-		
0400	11	10	1	0	64.9	69.5		
0415	7	6	1	0	56.8	-		
0430	14	12	2	0	68.9	83.2		
0445	15	13	2	0	67.6	73.1		
0500	22	22	0	0	68.7	74.5		
0515	33	31	2	0	68.9	76.3		
0530	38	35	3	0	66	72		
0545	55	51	3	1	66.4	73.8		
0600	55	53	2	0	68.9	76.7		
0615	35	31	2	2	65.3	72.4		
0630	49	41	6	2	66.1	75.6		
0645	48	39	8	1	64.6	70.9		
0700	44	40	4	0	66.8	72.7		
0715	42	33	9	0	60.6	71.6		
0730	48	44	4	0	63.4	69.1		
0745	44	44	0	0	65.9	73.4		
0800	46	42	4	0	67.1	73.1		
0815	57	52	4	1	65	72.4		
0830	51	47	3	1	61.3	67.3		
0845	64	54	9	1	62.5	68.8		
0900	47	43	4	0	63.3	70.2		
0915	47	40	5	2	62.3	68.4		
0930	55	49	4	2	61.8	69.8		
0945	35	32	3	0	62.5	68		
1000	42	36	5	1	62.4	69.1		
1015	57	50	6	1	60.1	68		
1030	30	28	1	1	62.2	70.2		
1045	45	36	9	0	62.6	68.8		
1100	38	36	2	0	62.8	67.3		
1115	39	35	3	1	62.7	72		
1130	49	45	3	1	61	67.3		

1145	39	35	3	1	61.1	67.3		
1200	41	36	4	1	61.4	69.1		
1215	36	33	3	0	61.2	68		
1230	47	42	5	0	63.7	69.8		
1245	51	44	4	3	60.7	68.4		
1300	41	37	4	0	64.5	72.7		
1315	47	41	5	1	63.1	69.5		
1330	46	39	3	4	61.8	69.5		
1345	50	42	7	1	61.6	68.8		
1400	42	36	5	1	62.1	70.9		
1415	68	63	4	1	62.7	68.8		
1430	67	59	6	2	64.1	71.3		
1445	67	56	11	0	60	67		
1500	52	47	5	0	62.6	68.4		
1515	79	70	9	0	64.7	72.4		
1530	74	67	4	3	62.9	68.4		
1545	108	102	4	2	64.5	71.6		
1600	78	75	3	0	62.8	68.4		
1615	87	82	4	1	66.3	73.1		
1630	88	79	8	1	63.1	70.9		
1645	80	77	2	1	65.8	72.7		
1700	84	82	2	0	64.9	70.6		
1715	82	77	5	0	65.6	70.9		
1730	82	80	2	0	65.4	73.4		
1745	87	80	6	1	65.9	73.1		
1800	67	67	0	0	65.5	73.4		
1815	86	81	4	1	63.6	69.8		
1830	52	50	2	0	65	69.8		
1845	45	43	2	0	61.8	70.2		
1900	25	25	0	0	62	68.8		
1915	41	40	1	0	64.7	69.8		
1930	28	27	1	0	62.7	69.1		
1945	21	21	0	0	62.9	69.5		
2000	20	18	2	0	62.6	65.5		
2015	28	27	1	0	62.6	69.5		
2030	24	24	0	0	62.7	66.6		
2045	22	21	1	0	64.9	73.4		
2100	25	23	2	0	62.6	67.7		
2115	22	21	1	0	62.7	72		
2130	16	16	0	0	63.3	74.9		
2145	13	13	0	0	63.7	70.6		
2200	14	14	0	0	65.9	75.2		
2215	16	16	0	0	68.5	76.3		
2230	11	11	0	0	68.9	76		
2245	9	9	0	0	69.3 -			
2300	9	9	0	0	62.2 -			
2315	6	5	0	1	54.6 -			
2330	7	7	0	0	70 -			
2345	4	4	0	0	69.5 -			
<b>07-09</b>	<b>396</b>	<b>356</b>	<b>37</b>	<b>3</b>	<b>64</b>	<b>72</b>		
<b>09-16</b>	<b>1439</b>	<b>1279</b>	<b>131</b>	<b>29</b>	<b>62.5</b>	<b>69.5</b>		
<b>16-18</b>	<b>668</b>	<b>632</b>	<b>32</b>	<b>4</b>	<b>65</b>	<b>72</b>		
<b>00-00</b>	<b>3538</b>	<b>3242</b>	<b>252</b>	<b>44</b>	<b>63.9</b>	<b>71.3</b>		



*SURVEY INFORMATION*

*MAP*

Site ID: 1

Location: Mt Lindesay Hwy & Greenbank Rd, North Maclean

Date: 9 / Feb / 2016

Time Period 1: 06:00 to 09:00

Time Period 2: 15:30 to 18:30

**Primary Classes:**

- 1 Light Vehicles
- 2 Light Trucks (3-5)
- 3 Heavy Trucks (6-12)
- 4 Bicycles on Road
- 5 None

**Secondary Classes:**

- 1 Pedestrians
- 2 None

Weather Conditions 1: Fine Weather Conditions 2: Fine

**Intersection Legs:**

North	<input checked="" type="checkbox"/>	Ch	Mt Lindesay Hwy SB
East	<input type="checkbox"/>	Ch	
South	<input checked="" type="checkbox"/>	Ch	Mt Lindesay Hwy NB
West	<input checked="" type="checkbox"/>	Ch	Greenbank Rd EB

Output time interval: 15 mins







# Turning Movement Count Summary

Site ID: 1

Location: Mt Lindsay Hwy & Greenbank Rd, North Maclean

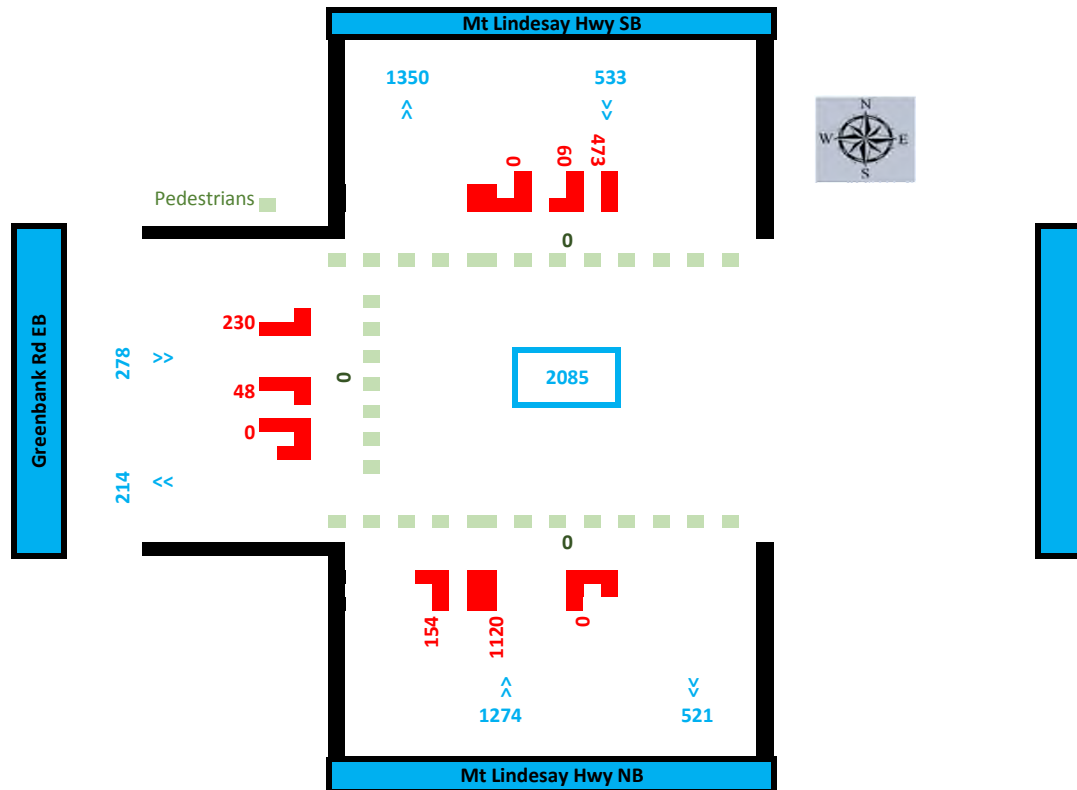
Date: 9-Feb-2016

Surveyed Time: 6:00 AM to 9:00 AM

Weather: Fine

Data for hour starting: 6:15 AM to 7:15 AM

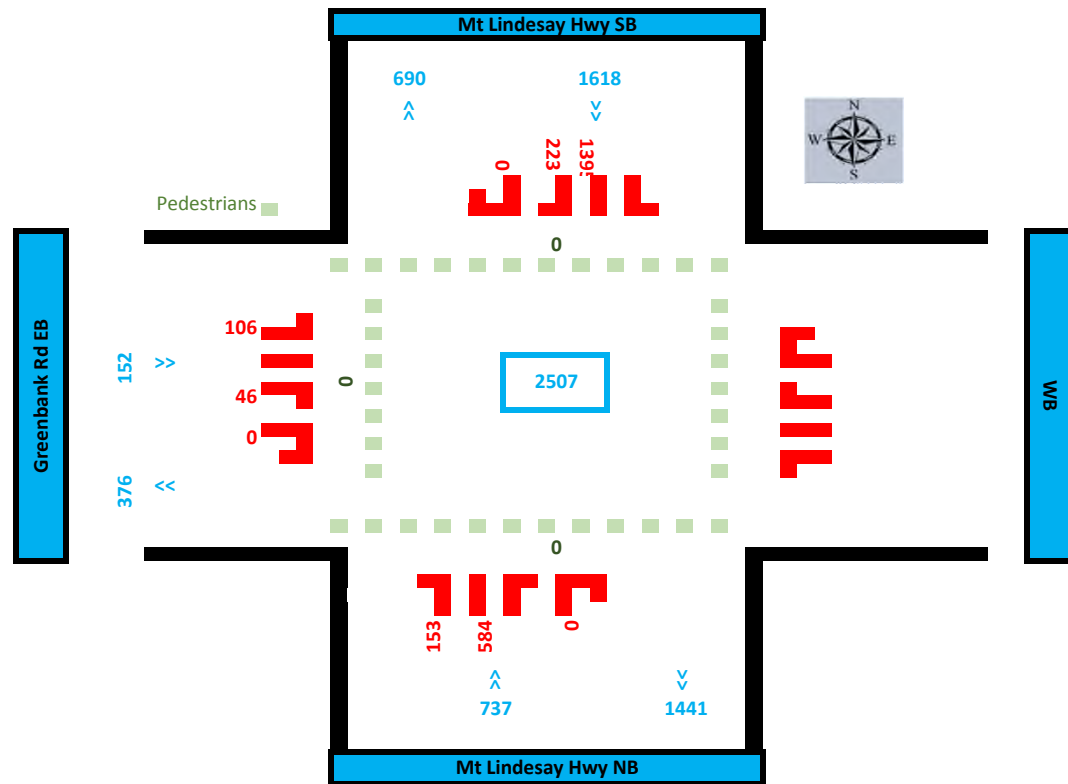
Vehicle Class: ALL VEHICLES



# Turning Movement Count Summary



Site ID:   
 Location:   
 Date:   
 Surveyed Time:  to   
 Weather:   
 Data for hour starting:  to   
 Vehicle Class:



## Appendix C – Sidra Output Summaries

## MOVEMENT SUMMARY

▽ Site: Greenbank Road / Mount Lindesay Highway 2016 AM background Traffic

New Site

Giveaway / Yield (Two-Way)

### Movement Performance - Vehicles

Mov ID	ODMo v	Demand Flows		Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue		Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
		Total veh/h	HV %				Vehicles veh	Distance m			
South: Mount Lindesay Highway											
1	L2	162	0.0	0.086	8.2	LOS A	0.0	0.0	0.00	0.67	48.9
2	T1	1179	0.0	0.598	0.1	LOS A	0.0	0.0	0.00	0.00	59.8
Approach		1341	0.0	0.598	1.1	NA	0.0	0.0	0.00	0.08	58.2
North: Mount Lindesay Highway											
8	T1	498	0.0	0.253	0.0	LOS A	0.0	0.0	0.00	0.00	59.9
9	R2	63	0.0	0.367	34.0	LOS D	1.2	8.7	0.92	1.02	31.0
Approach		561	0.0	0.367	3.9	NA	1.2	8.7	0.10	0.11	54.3
West: Greenbank Road											
10	L2	242	0.0	1.284	305.5	LOS F	39.3	275.1	1.00	3.49	6.4
12	R2	51	0.0	2.056	1194.5	LOS F	21.8	152.8	1.00	1.81	1.8
Approach		293	0.0	2.056	459.0	LOS F	39.3	275.1	1.00	3.20	4.4
All Vehicles		2195	0.0	2.056	62.9	NA	39.3	275.1	0.16	0.51	22.0

Level of Service (LOS) Method: Delay (HCM 2000).

Vehicle movement LOS values are based on average delay per movement

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

NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.

SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.

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

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

## MOVEMENT SUMMARY

▽ Site: Greenbank Road / Mount Lindesay Highway 2016 PM Background Traffic.

New Site

Giveaway / Yield (Two-Way)

### Movement Performance - Vehicles

Mov ID	ODMo v	Demand Flows		Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue		Prop. Queued	S
		Total veh/h	HV %				Vehicles veh	Distance m		
South: Mount Lindesay Highway										
1	L2	161	0.0	0.086	8.2	LOS A	0.0	0.0	0.00	
2	T1	615	0.0	0.312	0.0	LOS A	0.0	0.0	0.00	
Approach		776	0.0	0.312	1.7	NA	0.0	0.0	0.00	
North: Mount Lindesay Highway										
8	T1	1468	0.0	0.745	0.3	LOS A	0.0	0.0	0.00	
9	R2	235	0.0	0.407	15.4	LOS C	2.0	14.2	0.72	
Approach		1703	0.0	0.745	2.4	NA	2.0	14.2	0.10	
West: Greenbank Road										
10	L2	112	0.0	0.171	12.1	LOS B	0.6	4.2	0.56	
12	R2	48	0.0	8.070	7043.7	LOS F	44.3	310.4	1.00	
Approach		160	0.0	8.070	2140.1	LOS F	44.3	310.4	0.69	
All Vehicles		2639	0.0	8.070	131.8	NA	44.3	310.4	0.11	

Level of Service (LOS) Method: Delay (HCM 2000).

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.

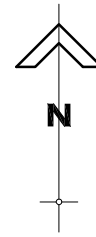
NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since is not a good LOS measure due to zero delays associated with major road movements.

SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.

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

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

## Appendix D – Turning Templates Refuse Collection, Service Vehicles and Cars



PROPOSED INDUSTRIAL DEVELOPMENT  
 AT LOT 2 SP267 252  
 GREENBANK ROAD NORTH  
 MACLEAN

FOR

ROUBAIX PROPERTIES

A1 ORIGINAL SIZE BEFORE REDUCTION

VER.	DESCRIPTION	DATE
B	LAYOUT AMENDED	28-04-17
A	ORIGINAL ISSUE	24-03-17

**COPYRIGHT ©**  
 This drawing is copyright and the property of Burchills Engineering Solutions. If not to be retained, copied or used without the authority of Burchills Engineering Solutions.

**DISCLAIMER**  
 This drawing and its contents are electronically generated, are confidential and may only be used for the purpose for which they were intended. Burchills Engineering Solutions will not accept responsibility for any consequences arising from the use of the drawing for other than its intended purpose or where the drawing has been altered, amended or changed either manually or electronically by any third party.

**NOTE**  
 This is an uncontrolled document issued for information purposes only, unless the checked sections are signed or completed. Figure dimensions take precedence over scale. Do not scale reduced size drawings. Verify dimensions prior to commencing any on-site or off-site works or fabrication.

**BURCHILLS**  
 ENGINEERING SOLUTIONS

Level 2, Connaught Centre  
 26 Marine Parade, Southport QLD 4215  
 PO Box 3766, Australia Fair, Southport QLD 4215  
 Phone: +61 7 5509 6400  
 Fax: +61 7 5509 6411  
 Email: admin@burchills.com.au  
 Coote Burchills Engineering Pty Ltd  
 ABN 76 166 942 365

PROJECT:

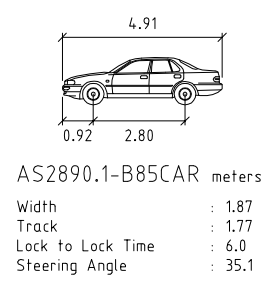
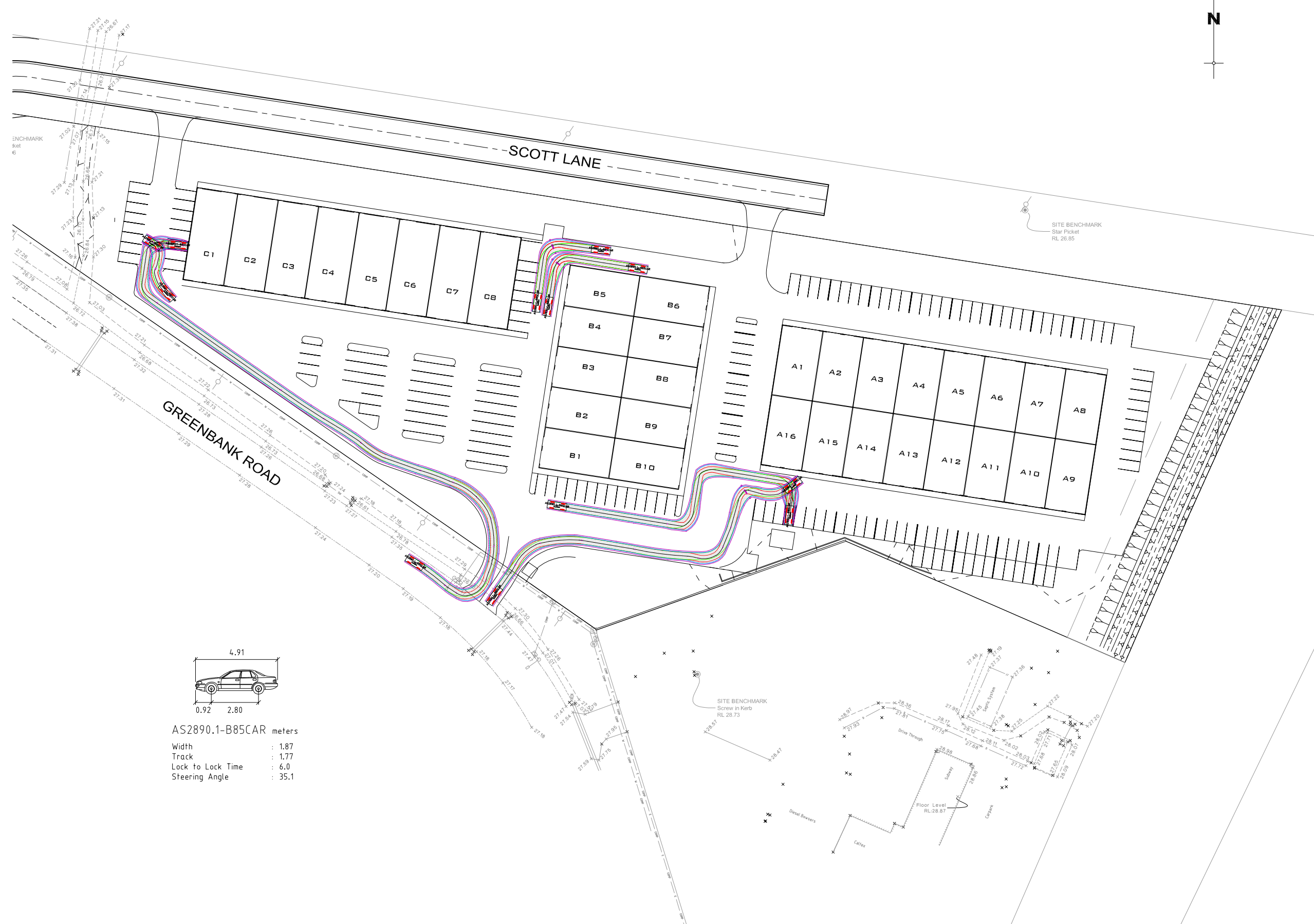
**918 GREENBANK RD,  
 NORTH MACLEAN**

DRAWING TITLE:

**CAR (B85) SWEEP  
 PATH PLAN**

DEVEL. APPLIC. No.:	DATE: 28-04-17
PROJECT LEADER:	
DESIGNER:	
DRAFTSPERSON:	YVONNE BLOOMFIELD
CHECKED:	
APPROVED FOR AND ON BEHALF OF BURCHILLS ENGINEERING SOLUTIONS ABN 76 166 942 365	
RPEQ No.:	

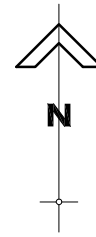
SCALE: AS NOTED	DATUM: AHD	FULL SIZE: A1
PROJECT No.: BE160355	DRAWING No.: SK001	VERSION: B



CAR (B85) SWEEP PATH PLAN

SCALE 1 : 500 (FULL SIZE) (metres)

PLOTTED: 28.04.2017 at 11:36 FILENAME: C:\Users\jfraser\Documents\918Greenbank\BENCHMKS\440\StarPick\AS2890.1-B85CAR.dwg



PROPOSED INDUSTRIAL DEVELOPMENT  
 AT LOT 2 SP267 252  
 GREENBANK ROAD NORTH MACLEAN  
 FOR  
 ROUBAIX PROPERTIES

8  
 RP137101

A1 ORIGINAL SIZE BEFORE REDUCTION

VER.	DESCRIPTION	DATE
B	LAYOUT AMENDED	28-04-17
A	ORIGINAL ISSUE	24-03-17

**COPYRIGHT ©**  
 This drawing is copyright and the property of Burchills Engineering Solutions. If not retained, copied or used without the authority of Burchills Engineering Solutions.  
**DISCLAIMER**  
 This drawing and its contents are electronically generated, are confidential and may only be used for the purpose for which they were intended. Burchills Engineering Solutions will not accept responsibility for any consequences arising from the use of the drawing for other than its intended purpose or where the drawing has been altered, amended or changed either manually or electronically by any third party.  
**NOTE**  
 This is an uncontrolled document issued for information purposes only, unless the checked sections are signed or completed. Figure dimensions take precedence over scale. Do not scale reduced size drawings. Verify dimensions prior to commencing any on-site or off-site works or fabrication.

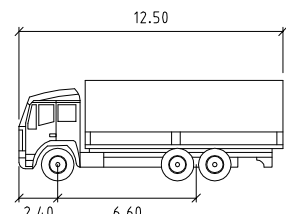
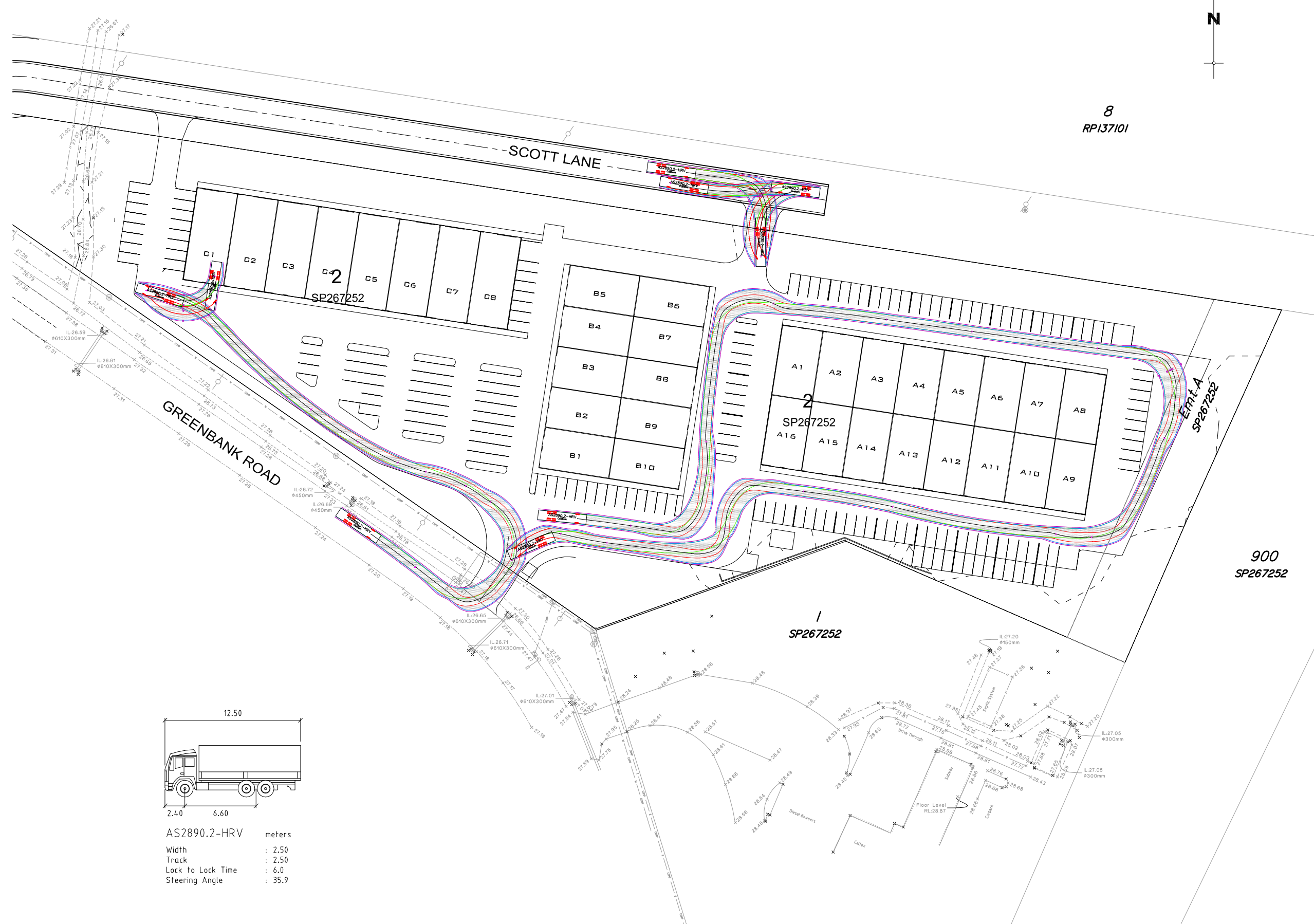
**BURCHILLS**  
 ENGINEERING SOLUTIONS

Level 2, Connaught Centre  
 26 Marine Parade, Southport QLD 4215  
 PO Box 3766, Australia Fair, Southport QLD 4215  
 Phone: +61 7 5509 6400  
 Fax: +61 7 5509 6411  
 Email: admin@burchills.com.au  
 Coote Burchills Engineering Pty Ltd  
 ABN 76 166 942 365

PROJECT:  
 918 GREENBANK RD,  
 NORTH MACLEAN

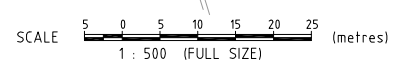
DRAWING TITLE:  
 HRV SERVICE VEHICLE  
 SWEPT PATH PLAN

DEVEL. APPLIC. No.:	DATE:	28-04-17
PROJECT LEADER:		
DESIGNER:		
DRAFTSPERSON:	YVONNE BLOOMFIELD	
CHECKED:		
APPROVED FOR AND ON BEHALF OF BURCHILLS ENGINEERING SOLUTIONS ABN 76 166 942 365		
RPEQ No.:		
SCALE: AS NOTED	DATUM: AHD	FULL SIZE: A1
PROJECT No.:	DRAWING No.:	VERSION:
BE160355	SK002	B



AS2890.2-HRV meters  
 Width : 2.50  
 Track : 2.50  
 Lock to Lock Time : 6.0  
 Steering Angle : 35.9

HRV SERVICE VEHICLE SWEPT PATH PLAN



PLOTTED: 28.04.2017 at 11:36 FILENAME: C:\Users\j\Documents\Greenbank\Greenbank\_BE160355\444\Sketch\HRV\SP267252\_SK002\_B.dwg





PROPOSED INDUSTRIAL DEVELOPMENT  
 AT LOT 2 SP267 252  
 GREENBANK ROAD NORTH MACLEAN

FOR

ROUBAIX PROPERTIES

**A1** ORIGINAL SIZE BEFORE REDUCTION

VER.	DESCRIPTION	DATE
A	ORIGINAL ISSUE	28-04-17

**COPYRIGHT** ©  
 This drawing is copyright and the property of Burchills Engineering Solutions. If must not be retained, copied or used without the authority of Burchills Engineering Solutions.

**DISCLAIMER**  
 This drawing and its contents are electronically generated, are confidential and may only be used for the purpose for which they were intended. Burchills Engineering Solutions will not accept responsibility for any consequences arising from the use of the drawing for other than its intended purpose or where the drawing has been altered, amended or changed either manually or electronically by any third party.

**NOTE**  
 This is an uncontrolled document issued for information purposes only, unless the checked sections are signed or completed. Figure dimensions take precedence over scale. Do not scale reduced size drawings. Verify dimensions prior to commencing any on-site or off-site works or fabrication.

**BURCHILLS**  
 ENGINEERING SOLUTIONS

Level 2, Connaught Centre  
 26 Marine Parade, Southport QLD 4215  
 PO Box 3766, Australia Fair, Southport QLD 4215  
 Phone: +61 7 5509 6400  
 Fax: +61 7 5509 6411  
 Email: admin@burchills.com.au  
 Coote Burchills Engineering Pty Ltd  
 ABN 76 166 942 365

PROJECT:

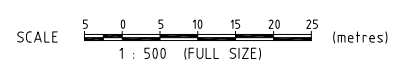
**918 GREENBANK RD,  
 NORTH MACLEAN**

DRAWING TITLE:

**PROPOSED FUTURE  
 INTERSECTION  
 ARRANGEMENT**

DEVEL. APPLIC. No.:	DATE: 28-04-17
PROJECT LEADER:	
DESIGNER:	
DRAFTSPERSON:	YVONNE BLOOMFIELD
CHECKED:	
APPROVED FOR AND ON BEHALF OF BURCHILLS ENGINEERING SOLUTIONS ABN 76 166 942 365	
RPEQ No.:	
SCALE: AS NOTED	DATUM: AHD
PROJECT No.:	VERSION:
BE160355	SK004 A

**PROPOSED FUTURE INTERSECTION ARRANGEMENT**



PRELIMINARY SUBJECT TO SURVEY, DETAILED DESIGN,  
 AUTHORITIES AND LAND OWNERS APPROVAL

PLOTTED: 28.04.2017 01:50 FILENAME: P:\3115\BE160355\_P8\_Greenbank Road, North Maclean\_ILM\Final\A4\A\_SitePlan\_BE160355\_SK004\_A.dwg

## Appendix E – Logan City Council, Servicing, Access and Parking Code

## Part 9 Development codes

### 9.4 Other development codes

#### 9.4.7 Servicing, access and parking code

##### 9.4.7.1 Application

- (1) This code applies to:
  - (a) material change of use:
    - (i) that is self-assessable or code assessable and for which the Servicing, access and parking code is identified in the assessment criteria column in a table of assessment in section 5.5–Levels of assessment-Material change of use in Part 5–Tables of assessment;
    - (ii) that is made impact assessable in a table of assessment in section 5.5–Levels of assessment-Material change of use or Section 5.9–Levels of assessment–Local plans in Part 5–Tables of assessment;
  - (b) reconfiguring a lot:
    - (i) that is code assessable and for which the Servicing, access and parking code is identified in the assessment criteria column in Table 5.6.1–Reconfiguring a lot in Part 5–Tables of assessment;
    - (ii) made impact assessable in Table 5.6.1–Reconfiguring a lot in Part 5–Tables of assessment;
  - (c) operational work being a driveway crossover or infrastructure work that is constructing a car park area that is self-assessable or code assessable and for which the Servicing, access and parking code is identified in the assessment criteria column Table 5.8.1–Operational work in Part 5–Tables of assessment.
- (2) When using this code, reference should be made to section 5.3.2–Determining the level of assessment and, where applicable, section 5.3.3–Determining the assessment criteria located in Part 5–Tables of assessment.

##### 9.4.7.2 Purpose

- (1) The purpose of the code is to ensure that development satisfies the demand for parking and provides safe, functional and legible parking, access and servicing.
- (2) The purpose of the code will be achieved through the following overall outcomes:
  - (a) parking, access and servicing areas:
    - (i) satisfy the expected demand for the number and type of vehicles, motorcycles and bicycles;
    - (ii) are safe and functional and have easy way finding;
    - (iii) protect the movement network.

### 9.4.7.3 Criteria for assessment

#### Part A—Criteria for self-assessable and assessable development

Table 9.4.7.3.1—Service, access and parking code: self-assessable and assessable development

Performance outcomes	Acceptable outcomes	Comments
<b>For self-assessable and assessable development</b>		
<b>Provision of parking spaces for vehicles</b>		
<p><b>PO1</b> Vehicle parking, loading and servicing and pick up/set down areas are provided that satisfy the expected demand for the number and type of vehicles likely to be generated by a use having regard to:</p> <p>(a) the particular circumstances of the premises including the:</p> <ul style="list-style-type: none"> <li>(i) nature, intensity and hours of operation of the use;</li> <li>(ii) desirability of providing a car park and attracting vehicles to the premises;</li> <li>(iii) maximum number of employees and customers to be on the premises at any one time;</li> <li>(iv) size, levels and dimensions of the premises;</li> </ul> <p>(b) the proximity of the premises to an existing or future Parking station, other available car park or public transport facility.</p>	<p><b>AO1</b> Vehicle parking, vehicle washing, loading and servicing and pick up/set down areas are provided:</p> <p>(a) for a use listed in <b>Error! Reference source not found.</b>, to comply with columns 2 to 5 of <b>Error! Reference source not found.</b>;</p> <p>(b) for a use not listed in <b>Error! Reference source not found.</b>, in accordance with a car parking assessment report to be provided to the local government and prepared in accordance with Part 2 of planning scheme policy 5—Infrastructure.</p> <p>Editor's note—For building work, Car parking for people with a disability is to be provided in accordance with Table D3.5—Carparking spaces for people with a disability in the Building Code of Australia.</p>	<p>(a) Complies. Refer Traffic Impact Report.</p> <p>(b) N/A</p>
<p><b>PO2</b> Development with a security gate provides accessible visitor vehicle parking in front of the security gate.</p>	<p><b>AO2</b> Development with a security gate provides visitor vehicle parking that complies with <b>Error! Reference source not found.</b></p>	<p>Complies. No security gate proposed.</p>

Performance outcomes	Acceptable outcomes	Comments
<p><b>PO3</b></p> <p>A car park not being a Parking station provides free and unobstructed access for the use by employees and visitors during the normal hours of operation of the use.</p>	<p><b>AO3</b></p> <p>A use, other than a Residential activity or a Parking station, provides vehicle parking that:</p> <p>(a) is kept, used and maintained exclusively for car parking;</p> <p>(b) is accessible to all employees and visitors during the normal hours of operation of the use with no encumbrance, fee or charge;</p> <p>(c) does not have a gate, door or similar device that restricts vehicular access by employees or visitors.</p>	<p>(a) Complies</p> <p>(b) Complies</p> <p>(c) Complies</p>
<b>Provision of motorcycle parking</b>		
<p><b>PO4</b></p> <p>Motorcycle parking is provided that is safe and functional.</p>	<p><b>AO4</b></p> <p>Motorcycle parking is provided to comply with section 2.4.7 of AS2890.1:2004–Parking facilities–Off street car parking.</p>	<p>No motorcycle parking provided.</p>
<b>Provision of bicycle parking</b>		
<p><b>PO5</b></p> <p>Bicycle parking facilities are provided that:</p> <p>(a) satisfy the likely demand for bicycle parking;</p> <p>(b) are functional;</p> <p>(c) are located close to a pedestrian entry to a building.</p>	<p><b>AO5</b></p> <p>Bicycle parking facilities comply with:</p> <p>(a) the rate specified in column 7 of <b>Error! Reference source not found.</b>;</p> <p>(b) AS2890.3–1993–Bicycle parking facilities.</p>	<p>(a) Complies. Bicycle parking facilities to be provided comply with the rate specified in column 7 of <b>Error! Reference source not found.</b></p> <p>(b) Complies.</p>
<b>Provision of vehicle manoeuvring area</b>		
<p><b>PO6</b></p> <p>Development provides a safe and functional vehicle manoeuvring area.</p>	<p><b>AO6</b></p> <p>Development provides a vehicle manoeuvring area that:</p> <p>(a) accommodates the design vehicle specified in <b>Error! Reference source not found.</b>;</p>	<p>(a) Complies. Refer Traffic Impact Report.</p> <p>(b) Complies. Refer Traffic Impact Report</p>

Performance outcomes	Acceptable outcomes	Comments
	(b) complies with section 3.4.4.10–Manoeuvring areas of planning scheme policy 5–Infrastructure.	
<b>Vehicle washing bay</b>		
<b>PO7</b> A vehicle washing bay does not cause environmental harm.	<b>AO7</b> A vehicle washing bay provides that run off is discharged to: (a) a grassed area or permeable landscape area; or (b) the sewerage system.	(a) Vehicle washing bay not required or provided. (b) N/A
<b>Car park access</b>		
<b>PO8</b> Vehicular access to a car parking area has sufficient queuing space to ensure a vehicle does not queue on a road, cycleway or footpath.	<b>AO8</b> Vehicular queuing space to a car parking area: (a) does not provide a turning movement, intersecting aisle or a speed hump in a queuing area; (b) complies with: (i) column 6 of <b>Error! Reference source not found.</b> ; (ii) <b>Error! Reference source not found..</b>	(a) Complies. No aisles or speed humps intersect queueing area. (b) (i) Complies  (ii) Complies
<b>Driveway crossover</b>		
<b>PO9</b> A driveway crossover is safe, functional and does not adversely affect infrastructure.	<b>AO9</b> A driveway crossover is designed and constructed to comply with section 3.4.5–Design standards for access and driveways of planning scheme policy 5–Infrastructure.	Complies. Three driveway crossovers are being provided onto the external roads.
<b>Design and construction of a car parking area</b>		
<b>PO10</b> A car parking area is designed to:	<b>AO10</b>	(a) Complies. (b) Complies.

Performance outcomes	Acceptable outcomes	Comments
<ul style="list-style-type: none"> <li>(a) provide easy way finding for pedestrians, cyclists and motorists;</li> <li>(b) provide appropriately sized and line marked spaces in accordance with relevant Australian standards;</li> <li>(c) provide a convenient and safe pedestrian network;</li> <li>(d) provide safe and efficient vehicle circulation;</li> <li>(e) provide a progressive reduction in the speed environment in moving between the road and a parking space;</li> <li>(f) provide a safe sight distance at a potential conflict point;</li> <li>(g) provide for efficient and simple parking space search patterns;</li> <li>(h) provide for uncongested public transport and service vehicle movements through the premises;</li> <li>(i) keeps a heavy vehicle out of a parking aisle;</li> <li>(j) ensure no heavy vehicle reverses across a pathway;</li> <li>(k) prevent parking off a circulation road;</li> <li>(l) prevent an adverse impact on the safety and efficiency of the existing or planned movement network;</li> <li>(m) prevent a motorist from reversing on a road;</li> <li>(n) prevent an unnecessary space that encourages illegal parking;</li> <li>(o) address safety of users through appropriate lighting;</li> <li>(p) be appropriately landscaped;</li> <li>(q) be surfaced so as to be useable in all weather conditions;</li> <li>(r) manage stormwater flows.</li> </ul>	<p>A car parking area is designed and constructed in accordance with section 3.4.6–Design standards for car parking of planning scheme policy 5–Infrastructure.</p>	<ul style="list-style-type: none"> <li>(c) Car spaces uniformly distributed throughout the development with spaces adjacent to individual tenancies. No requirement for pedestrians to circulate throughout the development.</li> <li>(d) Complies.</li> <li>(e) Complies.</li> <li>(f) Complies. Refer Traffic Impact report.</li> <li>(g) Complies.</li> <li>(h) No public transport enters the development site. Service vehicles can manoeuvre throughout the site. Refer Traffic Impact report.</li> <li>(i) Heavy vehicle use parking aisles to circulate throughout the site. Refer Traffic Impact Report.</li> <li>(j) Complies. Refer vehicle swept path diagrams enclosed in Traffic Impact Report.</li> <li>(k) Short circulation aisles provided at the entrances to each driveway and no parking proposed off the circulation roads.</li> <li>(l) Complies.</li> <li>(m) Complies. Adequate circulation provided throughout the proposed development to avoid reversing onto a road.</li> <li>(n) Complies. No unnecessary spaces provided plus the number of car spaces provided is greater than the code requirement.</li> <li>(o) Appropriate lighting to be provided as part of the detail design and building certification process.</li> <li>(p) Appropriate landscaping to be provided as part of the building certification and construction process.</li> </ul>

<b>Performance outcomes</b>	<b>Acceptable outcomes</b>	<b>Comments</b>
		(q) Sealed surface to car park proposed (r) Complies. Appropriate drainage to car park and buildings to be provided in accordance with stormwater management plan.