

APPENDIX **F**

Traffic Impact Assessment (Intersect, 2015)

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TRAFFIC IMPACT ASSESSMENT

SMALL STOCK ABATTOIR & CONTINUED OPERATION OF THE BLAYNEY SEALINK COLD STORE COMPLEX

Lots 103 to 105 & 107 DP 1161062

137 Newbridge Road, Blayney

PREPARED FOR: METZIYA PTY LTD

FEBRUARY 2015

14/023

**TRAFFIC IMPACT ASSESSMENT
BLAYNEY EXPORT MEATS PTY LTD****SMALL STOCK ABATTOIR & CONTINUED OPERATION
OF THE BLAYNEY SEALINK COLD STORE COMPLEX
LOTS 103 to 105 & 107 DP 1161062
137 NEWBRIDGE ROAD, BLAYNEY**

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F	11/02/15	RMS adequacy information	JG

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Date 11th February 2015**Disclaimer**

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EXECUTIVE SUMMARY

Intersect Traffic Pty Ltd was engaged by Metziya Pty Limited (Metziya) to prepare a Traffic Impact Assessment for a proposed small stock abattoir on Lots 103 to 105 & Lot 107 DP 1161062, 137 Newbridge Road, Blayney.

Metziya Pty Limited (Metziya) intends to seek a single new development consent under Part 4 of the *Environmental Planning and Assessment Act 1979* (EP&A Act) to regulate the existing Blayney SeaLink Cold Store complex, previously approved under various development consents, and develop a small stock abattoir within the site approximately one kilometre east of the Blayney township in the Central West region of New South Wales (NSW). In summary, the project comprises the development of an abattoir with the capacity to process up to 4,500 head per day primarily rangeland goats and some lambs, along with the continuing operation and use of the existing Blayney SeaLink Cold Store Complex (owned and operated by Metziya) located within the development site. The development concept plans are shown in **Attachment A**.

This report is required to support an application to the NSW Department of Planning and Environment within an Environmental Impact Statement (EIS) and has concluded the following;

- ◆ Existing peak mid-block two way traffic volumes on the relevant sections of the local road network are in the order of 105 vehicles per hour (vph) on Newbridge Road, 481 vph on Adelaide Street and 291 vph on Church Street.
- ◆ The local road network in the vicinity of the site as a two lane two way urban and rural road network has a likely technical mid-block capacity of up to 1,800 vph in the urban sections and 1,200 vph in the rural areas based on a level of service (LoS) C being considered acceptable. As these capacity thresholds are in excess of existing traffic volumes the local road network has spare capacity to cater for development in the area.
- ◆ It is expected that the additional traffic generated by the proposed abattoir in the AM and PM peak period will be a maximum of 120 vehicle trips per hour (vtp) and 166 vtp respectively.
- ◆ The local road network has sufficient spare mid-block capacity to cater for the additional traffic generated by the proposal and other developments in the area e.g. Cadia East Dewatering facility without the need for any road upgrading works.
- ◆ SIDRA modelling (proprietary computer model) of the Adelaide Street / Burns Street stop controlled T-intersection and the Adelaide Street / Church Street give way controlled cross

intersection has shown that these intersections will continue to operate satisfactorily through to 2024 with satisfactory levels of service for all traffic movements taking into account the cumulative impacts of proposed development in the area. Therefore it is concluded the proposed abattoir will not have an adverse impact on the local road network.

- ◆ The Adelaide Street / Burns Street intersection should be upgraded to a compliant BAR/BAL intersection. However the assessment has also determined that the intersection is already deficient as the current construction should be a compliant BAR/BAL treatment and the upgrading is not as a result of the additional traffic generated by the development. Therefore the upgrading should be the responsibility of the current road authority and not the proponent of the abattoir. This upgrading could be achieved relatively inexpensively by removing the angled on-street parking on Adelaide Street opposite the site or converting this parking to parallel parking.
- ◆ The proposed new access off Newbridge Road can be constructed as a basic right turn and basic left turn (BAR / BAL) rural intersection and is suitably located providing in excess of the required vehicular sight distance as designated within Australian Standard *AS2890.1-2004 Parking facilities – Part 1 Off-street car parking* and Australian Standard *AS2890.2-2002 Parking facilities Part 2: Off-street commercial vehicle facilities*.
- ◆ The site is large enough to ensure that the peak parking demand for the site development can be accommodated on site. As such the development will not generate an on road parking demand that would adversely impact on the local road network. It is recommended that at least 110 on-site staff car parks be provided within the proposed abattoir. These parking spaces should comply with the requirements of Australian Standard *AS2890.1-2004 Parking facilities – Part 1 Off-street car parking*.
- ◆ The servicing arrangements for the abattoir are suitable for the type and quantity of traffic generated by the development.
- ◆ Some nexus may exist for this development to contribute a fair and reasonable proportion to pavement maintenance works in Newbridge Road via a Voluntary Planning Agreement that would need to be negotiated between the applicant and Blayney Shire Council.
- ◆ Construction traffic generated by the abattoir will be less than the additional traffic generated by the operation of the abattoir. Therefore as the traffic assessment determined the operational traffic will not adversely impact on the local road network it is also reasonable to conclude that the construction traffic associated with the abattoir will not adversely impact on the local road network.
- ◆ It is recommended that a construction traffic management plan be prepared and implemented prior to commencement of construction activities on the site to ensure the impacts of the construction activities on the local road network are minimised during construction.
- ◆ No additional external pedestrian infrastructure is warranted as a result of this development.
- ◆ It is recommended internal pedestrian linkages are included in the design of the on-site car park to direct employees to the staff entrances to the abattoir. .
- ◆ The applicant has investigated the possibility of transporting product from the site by rail however at this stage while the site is serviced by a rail siding, the logistics and cost of transporting a small number of containers to Port Botany does not warrant a dedicated train. The opportunity for containers to be collected by passing freight trains is not possible given the rail siding will be predominantly used by minerals concentrate trains.
- ◆ No additional public transport services or infrastructure is warranted as a result of this development.
- ◆ The abattoir is also not likely to significantly increase bicycle traffic to the site and would not warrant additional specific bicycle infrastructure either external or internal to the site being provided apart from providing a bicycle storage area for staff use within the development to complement the staff amenities already designed into the abattoir.

Having carried out this traffic impact assessment it is concluded that the proposed small stock abattoir adjacent to the existing SeaLink Cold Store complex at 137 Newbridge Road, Blayney can be supported from a traffic impact perspective as the development will not adversely impact on the local and state road network and complies with all relevant Blayney Shire Council, Australian Standard and NSW Roads and Maritime Services (RMS) requirements.

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ATTACHMENT C	SIDRA SUMMARY MOVEMENT TABLES



1.0 INTRODUCTION

Intersect Traffic Pty Ltd was engaged by Metziya Pty Limited (Metziya) to prepare a Traffic Impact Assessment for a proposed small stock abattoir on Lots 103 to 105 & Lot 107 DP 1161062, 137 Newbridge Road, Blayney.

Metziya Pty Limited (Metziya) intends to seek a single new development consent under Part 4 of the *Environmental Planning and Assessment Act 1979* (EP&A Act) to regulate the existing Blayney SeaLink Cold Store complex, previously approved under various development consents, and develop a small stock abattoir within the site approximately one kilometre east of the Blayney township in the Central West region of New South Wales (NSW). In summary, the project comprises the development of an abattoir with the capacity to process up to 4,500 head per day primarily rangeland goats and some lambs, along with the continuing operation and use of the existing Blayney SeaLink Cold Store Complex (owned and operated by Metziya) located within the development site. The development concept plans are shown in **Attachment A**.

This report is required to support a development application to the NSW Department of Planning and Environment to allow officers from the Department, Blayney Shire Council and the NSW Roads and Maritime Services (RMS) to assess the proposal in regard to its impact on the local and state road network. It is noted that the proposal is likely to require referral to the RMS under Schedule 3 of *State Environmental Planning Policy (Infrastructure) 2007*.

This report presents the findings of the traffic assessment and includes the following;

1. An outline of the existing situation in the vicinity of the site.
2. An assessment of the traffic impacts of the proposed development including the predicted traffic generation and its impact on existing road and intersection capacities.
3. Reviews parking, public transport, pedestrian and cycle way requirements for the proposed development, including assessment against Council and Australian Standards.
4. Presentation of conclusions and recommendations.

2.0 SITE LOCATION

The site is located approximately one kilometre east of the Blayney Township within the Blayney SeaLink Industrial Estate in the Central West region of NSW (see **Figure 1**). It is addressed to 137 Newbridge Road, Blayney NSW, and is identified as Lots 103 to 105 and 107 in Deposited Plan (DP) 1161062 in the Blayney Local Government Area (LGA). The combined titles comprise approximately 47 hectares. Lots 103 to 105 in DP 1161062 encompass the existing cold storage facility known as Blayney SeaLink Cold Store Complex, while Lot 107 in DP 1161062 comprises vacant land. **Photographs 1 & 2** below show existing conditions at the site.

Under the provision of the Blayney LEP 2012, the site is primarily zoned IN1 General Industrial, with the western extent (outside of the proposed development footprint) zoned RU2 Rural Landscape.

The site has frontage to Newbridge Road with a single vehicular access off Newbridge Road constructed to a BAR/BAL standard providing access to a number of at grade car parks and loading docks within the existing Cold Store complex and ancillary offices on the site (see **Photograph 3**).



Figure 1 – Site Location



Photograph 1 – Development site from Newbridge Road



Photograph 2 – Existing cold storage facility on site



Photograph 3 – Existing access – Newbridge Road.

3.0 EXISTING ROAD NETWORK

3.1 Burns Street / Newbridge Road

Burns Street connecting to Newbridge Road functions as a local urban and rural collector road under a functional road hierarchy. It collects and distributes traffic from the rural areas north of Blayney to Newbridge. It is under the care and control of Blayney Shire Council and in the vicinity of the site has a two way two lane sealed carriageway approximately 7 metres wide. It is however noted that within the Blayney town area Burns Street has a carriageway width of approximately 20 metres providing parking lanes on both sides of the street in the urban area. Burns Street is speed zoned 50 km/h while Newbridge Road is speed zoned 80 km/h in the vicinity of the site. At the time of inspection both Burns Street and Newbridge Road were observed to be in fair condition (see **Photographs 4 & 5**).



Photograph 4 – Burns Street, Blayney



Photograph 5 – Newbridge Road in the vicinity of the site.

3.2 Mid-Western Highway

The Mid-Western Highway (State Highway 6 – A41) is a major arterial road and transportation route in the central west area connecting the Great Western Highway at Bathurst to the Newell Highway and south to Hay. As a major arterial road it is under the care and control of the RMS. Through Blayney the Mid-Western Highway is locally known as Adelaide Street and is the main street of the town. Within the town centre it is an urban road 20 metres wide between kerbs providing two lane two way travel lanes with adjacent angled rear to kerb parking areas while north and south of Blayney it is a two way two lane sealed rural wide with 3.5 metre wide travel lines and wide sealed shoulders. Adelaide Street is speed zoned 60 km/h while 100 km/h speed zoning exists north and south of Blayney on the Highway. At the time of inspection the Mid-Western Highway was observed to be in good condition (see **Photograph 6**).



Photograph 6 – Adelaide Street (Mid-Western Highway), Blayney

Burns Street connects to Adelaide Street adjacent to the Blayney Post Office as a stop sign controlled urban modified BAR/BAL T-intersection with a raised concrete central median / pedestrian refuge in Burns Street (See **Photograph 7**). It is noted that due to angled on-street parking in Adelaide Street through vehicles heading north can be restricted from passing right turning vehicles into Burns Street.



Photograph 7 – Adelaide Street / Burns Street intersection Blayney

3.3 Church Street / Orange Road

Church Street which connects to Orange Road is a sub-arterial road connecting Blayney to the regional centre of Orange. It is a classified main road (MR 245) under the care and control of the RMS. Typically within Blayney it is a two way two lane urban road of varying width with parking lanes provided within the town centre area while to the south of Blayney it is a two way two lane sealed rural road with 3.5 metre travel lane widths. It is speed zoned 50 km/h within Blayney and generally between 80 km/h and 100 km/h through the rural areas to Orange. At the time of inspection Church Street and Orange Road were observed to be in good condition (see **Photograph 8**).

Church Street connects to the Mid-Western Highway adjacent to the Blayney Shire Council Chambers as a give way controlled BAR / BAL cross intersection with the Highway having the priority traffic flow. Raised concrete central medians / pedestrian refuges are located in both legs of Church Street (see **Photograph 9**).



Photograph 8 – Church Street, Blayney



Photograph 9 – Adelaide Street / Church Street intersection Blayney

4.0 ROAD NETWORK IMPROVEMENTS

There are no known major road network improvements proposed that will increase the capacity of the local road network around the site or along the major transportation routes near the site.

Recent upgrading of the Mid-Western Highway by the RMS between Blayney and Bathurst has improved the road safety environment and resulted in increased speed limits on some sections of the road.

Similarly Blayney Shire Council has recently upgraded the creek crossing bridge at the start of Newbridge Road to increase the structural capacity of the bridge and provide a wider carriageway (see **Photograph 10**).

No traffic congestion was observed on the road network around the site during two days of data collection and site inspections carried out in June 2014.



Photograph 10 – Upgraded creek crossing Newbridge Road, Blayney



5.0 TRAFFIC VOLUMES

The RMS and Blayney Shire Council were sourced for relevant existing traffic data in the area and have provided the following advice. Full data sets provided by the RMS and Council are provided in **Attachment B** with the data provided below being a general summary of peak daily and hourly traffic where available.

RMS

Adelaide Street / Mid-Western Highway (south of Martha Street) – August 2013.

- ◆ Average Annual Daily Traffic (AADT) – 4,346 vpd;
- ◆ AM peak hour traffic – 303 vph (1100 – 1200);
- ◆ AM average hourly traffic between 0700 and 0800 – 182 vph;
- ◆ AM average hourly traffic between 0800 and 0900 – 260 vph;
- ◆ PM peak hour traffic – 369 vph (1530 – 1630); and
- ◆ % heavy vehicles – approximately 12 %.

MR 245 - Orange Road (north of Limestone Lane) – January 2011

- ◆ Average Annual Daily Traffic (AADT) – 2,873 vpd;
- ◆ AM peak hour traffic – 240 vph (0800 - 0900);
- ◆ AM average hourly traffic between 0700 and 0800 – 185 vph;
- ◆ AM average hourly traffic between 0800 and 0900 – 209 vph;
- ◆ PM peak hour traffic – 310 vph (1700 - 1800); and
- ◆ % heavy vehicles – approximately 10 %.

Blayney Shire Council

Newbridge Road – 2011

- ◆ AADT – 452 vpd
- ◆ % heavy vehicles – 12 %.

Using the general rule of thumb that the peak hour traffic represents approximately 8 – 15 % of AADT and adopting the higher percentage case the peak hour traffic from this count is likely to be in the order of 68 vph.

Intersect Traffic

Intersect Traffic also carried out manual intersection counts on the Adelaide Street / Burns Street intersection on Tuesday 3rd June 2014 and Wednesday 4th June 2014 as well as the Adelaide Street / Church Street intersection on Friday 8th August 2014 for the purposes of Sidra modelling these intersections. These counts however also provide data on existing traffic volumes at the intersections during the survey periods. The survey periods were chosen to cover likely shift start and finish times for the proposed abattoir thereby representing the periods when the proposal will have the most impact on the local road network. The manual count sheets are provided in **Attachment B** while a summary of the results is provided below.

- ◆ Adelaide Street – AM peak hour traffic – 319 vph (0730 – 0830)
- ◆ Burns Street – AM peak hour traffic – 61 vph
- ◆ AM % heavy vehicles – approximately 14 %
- ◆ Adelaide Street – PM peak hour traffic – 481 vph (1545 – 1645)
- ◆ Burns Street – PM peak hour traffic – 105 vph
- ◆ PM % heavy vehicles – approximately 12 %
- ◆ Church Street – PM peak hour traffic – 291 vph (1530 – 1630)

In reviewing the data provided by Council, RMS and that collected by Intersect Traffic it is considered that good correlation exists between the data. Therefore the Intersect Traffic data is considered suitable for assessment purposes.

Therefore the existing peak hour traffic volumes adopted for assessment are shown below in **Table 1**.

Table 1 – Existing Traffic Volumes

Road	AM peak (vph)	PM peak (vph)
Adelaide Street / Mid-Western Highway	319	481
Burns Street / Newbridge Road	61	105
Church Street / Orange Road	N/A	291

6.0 ROAD CAPACITY

The capacity of urban and rural roads is generally determined by the capacity of intersections. However, Tables 4.3, 4.4 and 4.5 of the RMS document *RTA's Guide to Traffic Generating Developments* provides some guidance on mid-block capacities for urban / rural roads and likely levels of service. These tables are reproduced below.

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

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

Table 4.4
Urban road peak hour flows per direction

Level of Service	One Lane (veh/hr)	Two Lanes (veh/hr)
A	200	900
B	380	1400
C	600	1800
D	900	2200
E	1400	2800

Table 4.5
peak hour flow on two-lane rural roads (veh/hr)
(Design speed of 100km/hr)

Terrain	Level of Service	Percent of Heavy Vehicles			
		0	5	10	15
Level	B	630	590	560	530
	C	1030	970	920	870
	D	1630	1550	1480	1410
	E	2630	2500	2390	2290
Rolling	B	500	420	360	310
	C	920	760	650	570
	D	1370	1140	970	700
	E	2420	2000	1720	1510
Mountainous	B	340	230	180	150
	C	600	410	320	260
	D	1050	680	500	400
	E	2160	1400	1040	820

The data for Table 4.5 assumes the following criteria:

- *terrain level* with 20% no overtaking.
- *rolling* with 40% no overtaking.
- *mountainous* with 60% no overtaking.
- 3.7 m traffic lane width with side clearances of at least 2m.
- 60/40 directional split of traffic.

It should be noted that in regard to Table 4.5 a design speed of 80 km/h would result in capacity thresholds 85 % to 95 % of the values shown. It is also considered that the rural road network in the vicinity of the site to be a level terrain.

If a desirable level of service LoS C is adopted then based on the above tables and noting the local road network has only a two way two lane configuration then the likely road capacities for the local road network would be as follows;

- ◆ Urban roads – Adelaide Street / Burns Street / Church Street – 1,800 vph.
- ◆ Rural roads – Newbridge Road / Orange Road / Mid-Western Highway – 1,200 vph (80 km/h, 12 % heavy vehicles)

It is noted that the existing traffic volumes on the local road network determined in **Section 5** are well below the capacity thresholds determined above. It is therefore concluded that the local road network has existing spare capacity to cater for additional traffic generated by development in the area.



7.0 ALTERNATE TRANSPORT MODES

The site is currently not serviced by public transport. During data collection and site inspections the only regular public transport was provided by school bus services that collected students from a central bus stop in Blayney (Martin Street) and headed to Bathurst and Orange. No buses were observed using Newbridge Road and the school bus service would not be convenient for use by staff of the proposed small stock abattoir.

There are no on or off road cycle ways constructed or marked in the area. Cyclist accessing the site would be required to share travel lanes with other vehicles. Due to the road conditions and traffic volumes in the area this would only be suitable for experienced cyclists.

The site being in a rural area is not connected to a pedestrian footpath network though a suitable concrete footpath network with pedestrian refuges across a number of side streets exists along a significant length of Adelaide Street.

8.0 DEVELOPMENT PROPOSAL

8.1 Overview

Metziya intends to seek a single new development consent under Part 4 of the EP&A Act to regulate the existing Blayney SeaLink Cold Store Complex, which was previously approved under Development Applications 59-01-02; 29-02-03; 60-2006; 66-2005; 9-2009; 155-2008; 8-2009, and develop a small stock abattoir within the proposed development site.

In summary, the proposal comprises the development of an abattoir with the capacity to process up to 4,500 head per day, comprising primarily rangeland goats and some lambs, along with the continuing operation and use of the existing Blayney SeaLink Cold Store Complex located within the development site. **Attachment A** shows the conceptual layout of the proposed development.

Ancillary infrastructure that will support the abattoir and cold stores operations will include separate vehicular ingress and egress from/to the adjoining Newbridge Road, heavy vehicle manoeuvring and turning areas, car parking and a wastewater treatment system.

The overall development footprint, including the existing Blayney SeaLink Cold Store Complex and proposed Blayney Export Meats, will comprise approximately 9.5 hectares.

8.2 Existing Blayney SeaLink Cold Store Complex

The existing Blayney Cold Store Warehouse complex comprises six freezer rooms each 90 metres long and 30 metres wide, capable of operating at temperatures to minus 30 degrees C, two temperature controller load out marshalling rooms with loading docks, a temperature controlled food packaging facility complete with automated cardboard recycling, internal offices and staff amenities. There is also a separate 2,700 m² dry goods warehouse and an administration building, which incorporates a food services call centre. Development consent has been granted to increase the dry goods warehouse by 19,128 m².

8.3 Proposed Blayney Export Meats Abattoir

The proposed abattoir will have the capacity to process up to 4,500 head per day, comprising rangeland goats and some lambs, for export markets. The disturbance footprint for the proposed new abattoir will be relatively small at approximately 3.1 hectares, including the rooved building area, vehicle manoeuvring and parking areas and wastewater treatment plant. The commercial activities associated with the abattoir will also be largely confined to this area.

The abattoir will have two different levels, with the primary areas or components on each level being:

- ◆ Ground level – undercover stock receipt and holding area, pelt sorting area, carton room and offal packing, along with staff amenities and offices; and
- ◆ Level 1 – raised stock pens, kill floor and carcass processing room, and chillers along with staff amenities and lunch rooms.

The complex will produce three types of meat products as demanded by the serviced export markets – (i) whole bone-in carcass with skin on; (ii) whole bone-in carcass with skin off; and (iii) six way cut of carcass in cartons. A significant amount of money will be invested to ensure that the facility is designed and equipped to a high standard in order to obtain and maintain registration by the DAFF and allow effective servicing of leading export markets. It will also be designed and equipped to meet Halal requirements.

Importantly, there will be no on-site rendering of the raw animal waste products from the abattoir (offal, bone, blood, fat and trimmings) or any on-site skins processing.

8.4 Stock Holding Area

Livestock will be transported in to the development site in semi-trailers and/or B-doubles and off-loaded at ground level within the abattoir building via an undercover unloading bay. Animals will be mustered into a series of level undercover holding pens split over the two levels of the abattoir building. Mesh fencing between pens will allow for adequate ventilation and observation.

8.5 Hours of Operation

The existing Blayney SeaLink Cold Store Complex will continue to operate 24 hours a day, seven days per week.

The abattoir is proposed to operate 24 hours a day, seven days per week. However, activities during the hours of 11 pm – 6 am will generally be limited to stock delivery and wastewater treatment. Stock will generally be delivered by private contractors and the abattoir will have no control over when these deliveries will be timetabled to arrive. The ability to receive stock 24 hours per day is seen as a better outcome with less impact than to have stock delivery trucks parked on either Newbridge Road or other streets in Blayney overnight while awaiting the opening of the abattoir.

8.6 Vehicular Access and Parking

It is proposed to provide separate heavy vehicular ingress and egress from/to the adjoining Newbridge Road. Heavy vehicles will enter the site from Newbridge Road via a new access road to be constructed in front of the abattoir complex. Heavy vehicles loaded with product will exit the site via the existing access road and weighbridge constructed as part of the Blayney SeaLink Cold Store Complex.

Staff and visitor cars and service vehicles will utilise the existing and proposed new access roads for both ingress and egress.

A new car parking area will be constructed as part of the abattoir complex for all staff and visitor car parking needs. While there will generally be no requirement for heavy vehicle parking, particularly for any length of time, adequate area will be available to ensure that any heavy vehicle parking requirements can be met within the development site. At no time will it be necessary to park heavy vehicles on the adjoining Newbridge Road.

All new access roads and manoeuvring areas will be appropriately designed to carry the anticipated heavy vehicle movements and will be sealed.

9.0 TRAFFIC GENERATION

The RMS' *RTA's Guide to Traffic Generating Development's* provides specific advice on the traffic generation potential of various land uses.

However in regard to this development no specific information on traffic generation rates is provided within the guide. Specific advice provided by the applicant is as follows;

The primary operational activities that will generate traffic to and from the proposal will be:

- ◆ Delivery of livestock in semi-trailer and/or B-doubles;
- ◆ Delivery of livestock feed (as needed) in semi-trailers;
- ◆ Delivery of goods to be chilled/frozen and stored at the existing Blayney SeaLink Cold Store Complex in refrigerated semi-trailers and/or B-doubles;
- ◆ Removal of meat products from the abattoir in refrigerated containers on semi-trailers to Port Botany;
- ◆ Removal of other stored goods from the Blayney SeaLink Cold Store Complex in refrigerated semi-trailers and/or B-doubles;
- ◆ Removal of meat waste products (offal, bone, blood, fat and trimmings) in enclosed semi-trailers for off-site processing;
- ◆ Removal of skins in rigid trucks for off-site treatment;
- ◆ Removal of general garbage in rigid trucks;
- ◆ Servicing/tradesman visits in utes/vans; and
- ◆ Staff visits by cars. This element of traffic generation is difficult to accurately report due to likely car-pooling.

Table 2 summarises the anticipated traffic volumes to be generated over a typical year.

The following points should be noted in terms of the volume of traffic to be generated:

- ◆ It is estimated that close to 80 % of the total traffic will be generated by light vehicles (car/ute/van). During the seasonal packing of hampers during the two months leading up to Christmas, this percentage will increase to approximately 86 %;
- ◆ With the exception of livestock delivery, all heavy vehicle activities should generally occur between 6.30 am and 7 pm; and
- ◆ Heavy vehicle activities will be relatively evenly spread (i.e. no peak periods).

Therefore from the operational data provided by the applicant the peak hour traffic generation from the site will be on completion of the abattoir;

- ◆ 120 vtpm in the AM peak (117 inbound and 3 outbound) between 6 am and 7 am.
- ◆ 166 vtpm in the PM peak (158 outbound and 8 inbound) between 3 pm and 4 pm.

Note: - While these volumes contain some existing traffic, this traffic assessment has been carried out on these numbers thereby ensuring a conservative (worst case scenario) assessment.

Table 2 - Estimated Traffic Volumes

Activity	Vehicle Type	Daily Vehicles (Two Way Vehicle Trips)	Annual Vehicles (Two Way Vehicle Trips)	Peak period 6am-7am (Two way vehicle trips)	Peak period 3pm-4pm (Two way vehicle trips)
Heavy Vehicles					
Delivery of livestock	Semi-trailer and/or B-double	12	3000	2	2
Delivery of consumables	Semi-trailer	2	500		
Delivery of goods to Blayney SeaLink Cold Store Complex	Semi-trailer and/or B-double	12	3000	2	2
Removal of meat products from the abattoir	Semi-trailer and/or B-double	6	1500		4
Removal of other stored goods from the Blayney SeaLink Cold Store Complex	Semi-trailer and/or B-double	12	3000	2	4
Removal of meat waste products	Rigid truck	4	1000		2
Removal of skins	Rigid truck	4	1000		2
Removal of general garbage	Rigid truck	4	1000		
Maintenance	Rigid truck	2	500		
Heavy Vehicle Sub-Total		58			
Light Vehicles				One way trip	One way trip
Staff Blayney SeaLink	Car	60		4	10
Staff Abattoir	Car	200		90	90
Tradesman	Ute / Van	2	500		
Hamper King pack out	Car to 2 months	120	100	20	50
Light Vehicle Sub-Total		382			
TOTAL		440			

Maximum daily but is seasonal.



10.0 CUMULATIVE DEVELOPMENT TRAFFIC

In carrying out this traffic assessment it is important to also consider the cumulative impacts of traffic generated by other known proposed developments in the area. In this case it is known that as part of the Cadia East Project (nearby gold and zinc mine) a dewatering facility is to be constructed immediately east of the abattoir site. This is the only known future development in the area and traffic generation from this development also needs to be included in any traffic assessment carried out for the abattoir.

The Environmental Assessment document by Resource Strategies for this project states on page 4-142;

The construction of the CVO Dewatering Facility would generate up to 25 employee and 16 truck trips each day (i.e. 11 % increase in daily traffic volume on Newbridge Road) and would be constructed during Years 2 and 3. During operations, the CVO Dewatering Facility would generate up to six employee and six truck trips per day (i.e. 2% increase in daily traffic volume on Newbridge Road).

It is understood that construction of the dewatering facility is imminent with access intersection plans having been recently lodged with Blayney Shire Council for approval. On this basis for the purposes of this assessment it will be assumed the dewatering facility will be constructed concurrently with the construction of the proposed abattoir.

Considering the operational traffic as the long term peak traffic generation from the site the assumed traffic generation from the proposed dewatering facility included in this assessment is as shown in **Figure 3** below assuming 1 heavy vehicle trip occurs in the AM and PM peaks associated with employee traffic arriving at and leaving the site.

11.0 TRIP DISTRIBUTION

Before carrying out any traffic assessment the additional traffic generated by the development needs to be distributed through the adjoining road network. This involves making a number of assumptions as to distribution patterns to and from the complex. In distributing the additional traffic through the adjacent road network the following key assumptions were made;

- ◆ In terms of staff trips 80% would have an origin destination to the north and west towards Blayney, Bathurst and Orange. 20 % would have an origin destination to the south.
- ◆ The stock deliveries are via Orange.
- ◆ The product removals are to Port Botany via Bathurst.

The resulting predicted AM and PM peak hour trip distributions at the Adelaide Street / Burns Street and Adelaide Street / Church Street intersections for traffic generated by the development has been determined as shown below in **Figure 2**.

Similar assumptions have been made in regard to the Cadia East dewatering facility traffic except all heavy vehicle trips have been assumed to have an origin / destination towards Orange. The resultant trip distribution for the dewatering facility traffic is as shown below in **Figure 3**.

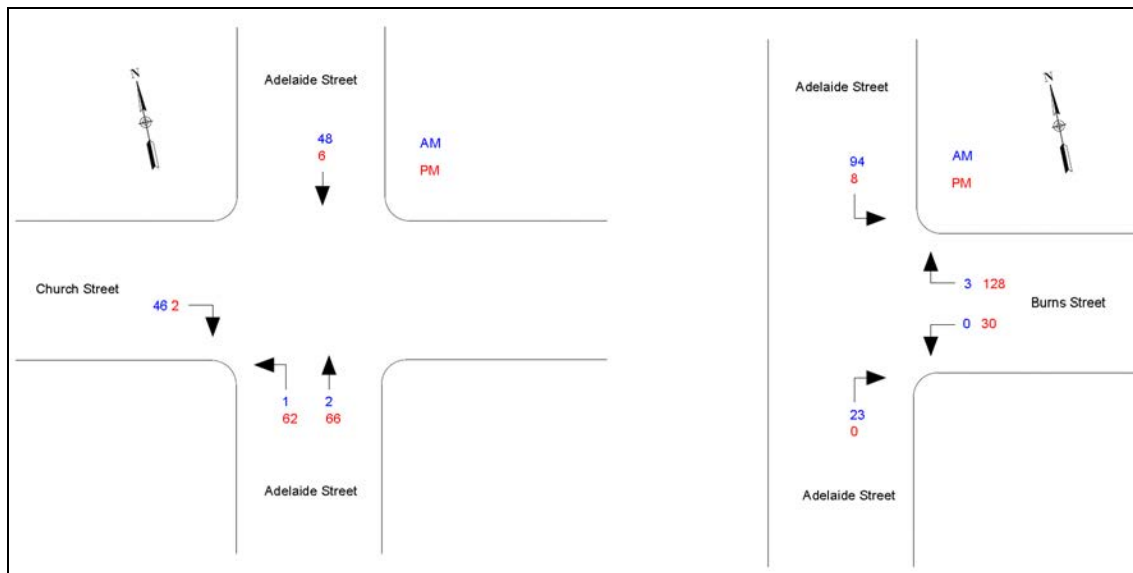


Figure 2 – Development Traffic Trip Distribution

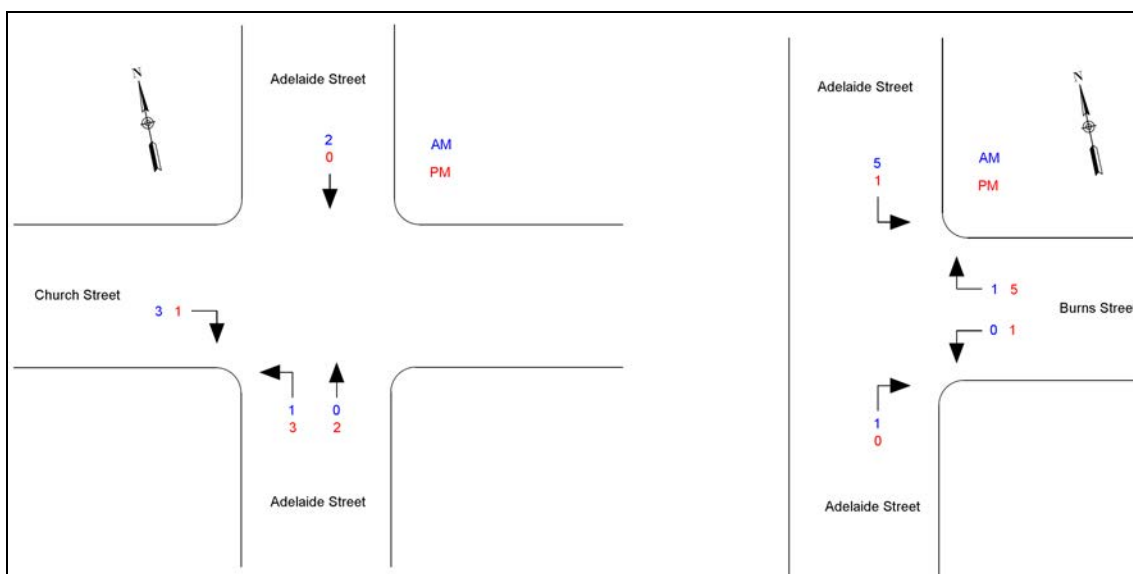


Figure 3 – Dewatering Facility Traffic Trip Distribution

12.0 TRAFFIC IMPACTS OF DEVELOPMENT

12.1 Road Network Capacity

It has previously been shown in **Section 6** of this report that the local road network is currently operating well within its technical capacity.

The proposed development and other known developments will result in the following additional two way traffic flows on the local road network (see **Figures 2 and 3**).

- ◆ Newbridge Road / Burns Street – 164 vph
- ◆ Adelaide Street, south of Burns Street – 30 vph
- ◆ Adelaide Street, between Church Street and Burns Street – 136 vph
- ◆ Adelaide Street north of Church Street – 72 vph; and
- ◆ Church Street – 64 vph.

The addition of this traffic generated by the developments on Newbridge Road will not result in the mid-block capacity thresholds for these roads being reached. The peak two way traffic volume on the road network on operation of these developments is still only likely to be in the order of up to 269 vph, 511 vph and 355 vph on Newbridge Road, Adelaide Street and Church Street respectively. These are still well below the mid-block capacities for these roads of 1,200 vph for Newbridge Road and 1,800 vph for Adelaide Street / Church Street as determined in **Section 6**. Levels of service experienced by motorists on these roads would still be high (LOS B) with little if any delay or traffic congestion being experienced.

It is therefore concluded that the local road network subject to suitable intersection controls being in place has sufficient spare capacity to cater for the proposed development.

12.2 Intersection Capacity

The intersections likely to be most affected by this development are;

- ◆ Adelaide Street / Burns Street; and
- ◆ Adelaide Street / Church Street.

To determine the impact of the development on these intersections, the intersections were modelled using the SIDRA traffic modelling software. This software package predicts likely delays, queue lengths and thus levels of service that will occur at intersections. Assessment is then based on the level of service requirements of the RMS shown below;

Table 4.2
Level of service criteria for intersections

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

It is noted that the AM peak period for the abattoir based on shift times is likely to occur in the early morning and therefore not coincide with the peak traffic flow on the road network. Based on the RMS data for Adelaide Street traffic volumes between 5 am and 7 am are only 10 % to 25 % of peak traffic flows. The shift finish time however is likely to coincide with the peak traffic flow period for the road network and is therefore considered the critical period for assessment. The modelling assumed all development traffic arrived at the intersections within a 30 minute period replicating a change of shift peak flow situation.

On this basis modelling was carried out for the PM peak period for both the post development (2014) and for ten years background traffic growth at 1 % per annum (2024) scenarios, also assuming the Cadia East dewatering facility on Newbridge Road was also operational. This then accounts for the cumulative impacts of development in the area.

The results of the modelling are shown in the following **Tables 3 & 4** while the Sidra Summary Movement Tables for each scenario modelled are provided in **Attachment B**;

Table 3 – Sidra Results for Worst Movement – Adelaide Street / Burns Street intersection

Scenario	Movement	LOS	Average Delay (s)	95 % Back of Queue Length (cars)
2014 PM peak with development	Right turn out of Burns Street	A	11.3	0.9
2024 PM peak	Right turn out of Burns Street	A	12.2	1.1

Table 4 – Sidra Results for Worst Movement – Adelaide Street / Church Street intersection

Scenario	Movement	LOS	Average Delay (s)	95 % Back of Queue Length (cars)
2014 PM peak with development	Right turn out of Church Street West	B	24.7	1.3
2024 PM peak	Right turn out of Church Street West	C	36.7	2.2

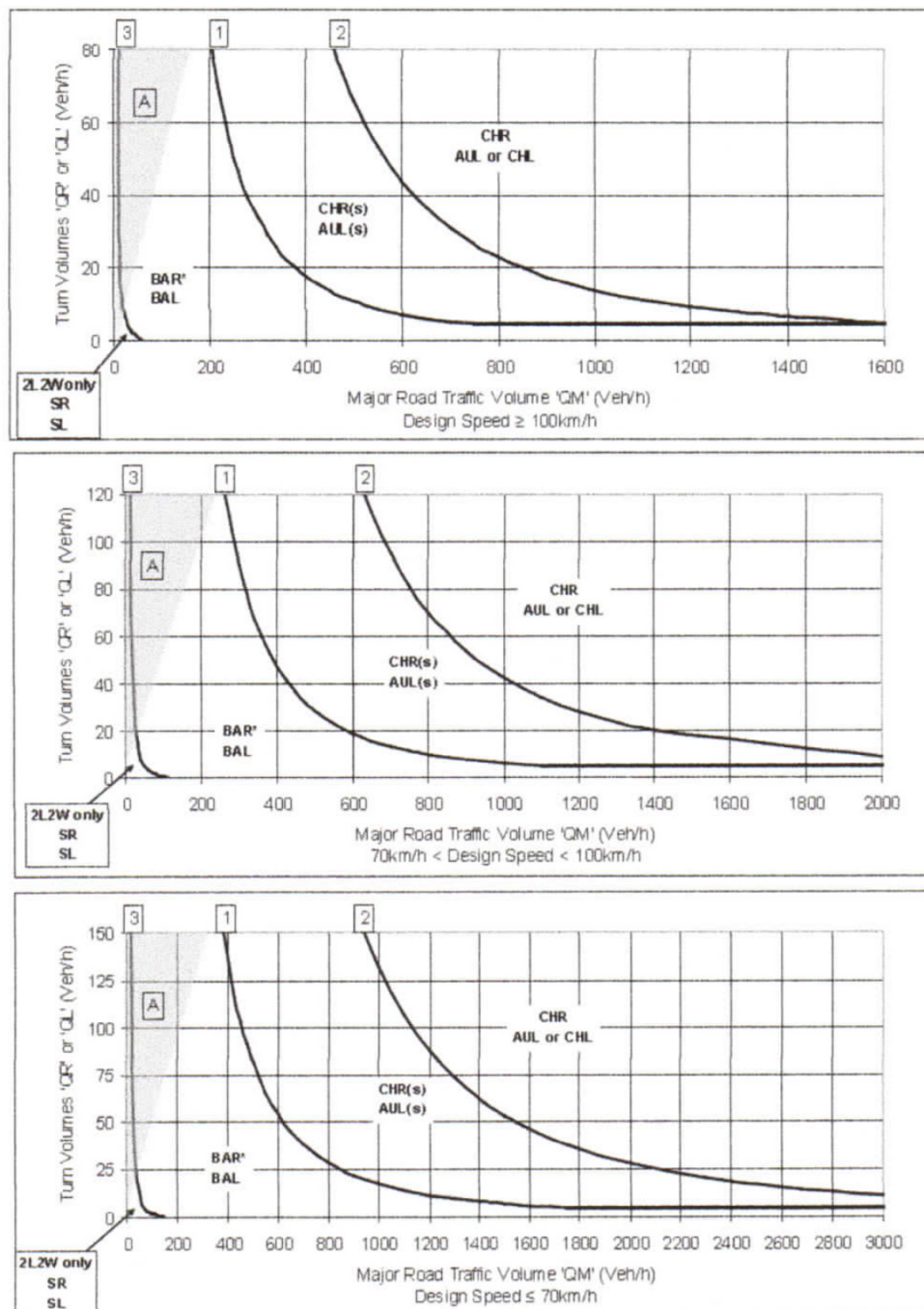
The modelling shows that these two intersections will continue to operate satisfactorily both post development and through to 2024. The LoS, 95 % back of queue lengths and average delay for all movements fall within the RMS acceptable levels.

It is therefore concluded the proposed abattoir will not adversely impact on the capacity of the local road network.

NSW RMS has requested that the Adelaide Street / Burns Street intersection configuration be assessed against Austroads *Guide to Road Design Part 4A – Unsignalised and Signalised Intersections (2009)* (the Guide). In this respect it is assumed a turn lane warrant assessment is

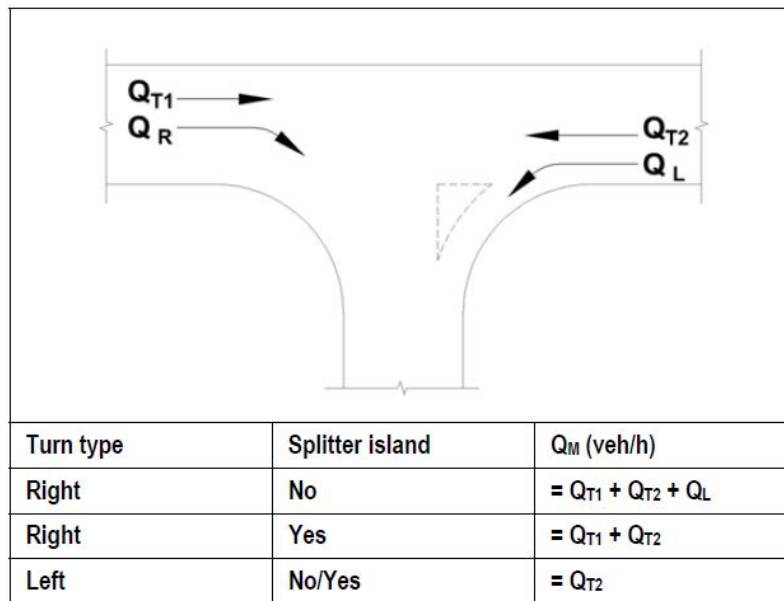
required for turning vehicles on the major road (Adelaide Street). The turn lane warrants within the Guide are provided within Figure 4.9, however more recent work by the Australian Road Research Board (ARRB) (Dr Dan Sullivan and Dr Owen Arndt) reported on at its 2014 conference has produced some extended warrant graphs including for speed zones less than 70 km/h which has a particular relevance to urban locations. The relevant graphs for brownfield sites (Figure C2) are reproduced below and have been used in this assessment. The methods for determining the major traffic volume and turn volume for use with the graphs in shown in Figure 4.10 of the Guide and this is also reproduced below.

Turn lane warrant assessments have been carried out for existing and future traffic volumes based on the traffic counts carried out by Intersect Traffic (June 2014) and traffic volume predictions contained in **Sections 9 & 10** as well as adopting a 1% per annum background traffic growth rate to 2024 as previously discussed in this section.



* - the minimum right turn treatment for multi-lane roads is a CHR(s)

Figure C2: Warrants - major road turn treatments - extended design domain.



Source: Arndt and Troutbeck (2006).

Figure 4.10: Calculation of the major road traffic volume parameter Q_M

Existing Traffic

From Figure 4.10 of the Guide and the June 2014 traffic counts by Intersect Traffic.

Right turn Adelaide Street into Burns Street

$$\begin{aligned} \text{AM } Q_R &= 12 \text{ vph} \\ \text{PM } Q_R &= 21 \text{ vph} \\ \text{AM } Q_M &= Q_{T1} + Q_{T2} + Q_L = 112 + 165 + 21 = 298 \text{ vph} \\ \text{PM } Q_M &= Q_{T1} + Q_{T2} + Q_L = 243 + 184 + 26 = 453 \text{ vph} \end{aligned}$$

Therefore the critical peak period for the right turn is the PM peak. Reading from the ≤ 70 km/h graph of Figure C2 the required right turn treatment for the PM peak is a BAR treatment.

Left turn Adelaide Street into Burns Street

$$\begin{aligned} \text{AM } Q_L &= 21 \text{ vph} \\ \text{PM } Q_L &= 26 \text{ vph} \\ \text{AM } Q_M &= Q_{T2} = 112 \text{ vph} \\ \text{PM } Q_M &= Q_{T2} = 243 \text{ vph} \end{aligned}$$

Therefore the critical peak period for the left turn is the PM peak. Reading from the ≤ 70 km/h graph of Figure C2 the required left turn treatment for the PM peak is a BAL treatment.

This assessment therefore has determined that the existing intersection should be constructed as a BAR/BAL intersection therefore the existing intersection as a modified BAR/BAL is deficient and the current road authority (RMS / Blayney Council) should be responsible for upgrading works to install a standard BAR right turn treatment at the intersection by either removing the angled on street car parking in Adelaide Street opposite the intersection or converting it to parallel parking.

Future Traffic (2024)

From Figure 4.10 of the Guide and data within **Sections 9, 10 & 12** (See Sidra Movement Summary Sheets provided within **Attachment C.**)

Right turn Adelaide Street into Burns Street

$$\text{AM } Q_R = 42 \text{ vph}$$

$$\text{PM } Q_R = 24 \text{ vph}$$

$$\text{AM } Q_M = Q_{T1} + Q_{T2} + Q_L = 191 + 130 + 139 = 460 \text{ vph}$$

$$\text{PM } Q_M = Q_{T1} + Q_{T2} + Q_L = 213 + 281 + 41 = 535 \text{ vph}$$

Reading from the $< = 70$ km/h graph of Figure C2 the required right turn treatment for the critical AM peak is a BAR treatment. Therefore this assessment has determined that in regard to the right turn treatment no upgrading of the intersection is required because of traffic generated by the proposed abattoir therefore no nexus exists for the developer funding this upgrade of the intersection. The intersection is already deficient and it is the responsibility of the current road authority to meet the minimum required standards set by Austroads.

Left turn Adelaide Street into Burns Street

$$\text{AM } Q_L = 139 \text{ vph}$$

$$\text{PM } Q_L = 41 \text{ vph}$$

$$\text{AM } Q_M = Q_{T2} = 130 \text{ vph}$$

$$\text{PM } Q_M = Q_{T2} = 281 \text{ vph}$$

Reading from the $< = 70$ km/h graph of Figure C2 the required left turn treatment for the PM peak is a BAL treatment. The assessment has therefore determined that in regard to the left turn treatment at the intersection no upgrading of the intersection is required because of traffic generated by the proposed abattoir.

Overall it is concluded that the Adelaide Street / Burns Street intersection does not need to be upgraded as a result of the proposed development. However the assessment has also determined that the intersection is already deficient as the current construction should be a compliant BAR/BAL treatment as opposed to its current configuration as a modified BAR/BAL intersection. Therefore the upgrading should be the responsibility of the current road authority and not the proponent of the abattoir. It is considered compliance could be achieved by either removing the angled parking on Adelaide Street opposite the intersection or converting it to parallel parking and therefore could be achieved relatively inexpensively.

12.3 Access

The development site is currently serviced by a typical rural access constructed as a basic right turn and basic left turn (BAR / BAL) intersection. It is proposed to construct a new access to the proposed abattoir off Newbridge Road approximately 220 metres west of the existing intersection. Operation of the abattoir will be such that heavy vehicles will enter the site via the new access and exit the site via the existing SeaLink Cold Store complex access while light vehicle's will enter and exit the site via both the new abattoir access and the existing SeaLink Cold Store access utilising a new on-site car parking area to be constructed at the front of the abattoir and existing on-site car parking areas.

In assessing the adequacy of the proposed new access it is important that sight distance and turn lane warrants are considered. The sight distance requirements contained within Figure 3.3 of Australian Standard *AS2890.2-2002 Parking facilities Part 2: Off-street commercial vehicle facilities* for an 80 km/h frontage road speed are 111 metres minimum (5 second gap) and 178 metres desirable (8 second gap). By observation the sight distance to the west of the new access is approximately 250 metres while sight distance to the east of the new access is in excess of 500 metres. It is therefore concluded sight distance along Newbridge Road at the proposed new vehicular access to the abattoir is satisfactory. The available sight distance also complies with the safe intersection sight distance (SISD) requirements within Austroads *Guide to Road Design – Part 4A – Unsignalised and Signalised Intersections*. This document requires a SISD of 180 metres to 200 metres for heavy vehicles in an 80 km/h speed zone.

Turn lane warrants as described above in **Section 12.2** are generally applicable to road intersections however can be applied to private accesses if the traffic volumes on the frontage road exceed 2,000 vpd. Whilst Newbridge Road currently does not have traffic volumes in that order a turn lane warrant assessment has been carried out due to the level of turning traffic involved with the peak hour movements into and out of the site.

It is noted that the critical period is the AM peak where Q_L will be up to 117 vph while $Q_M = 30$ vph (50 % of peak hour traffic volume on Newbridge Road). Using the graph for design speed greater than 70 km/h and less than 100 km/h, it can be seen such access conditions only requires the construction of a BAR/BAL intersection.

It is noted that there will be little if any right turning movements into the site and that the PM movements will be egress movements onto Newbridge Road. Overall it is concluded that a BAR / BAL access intersection to the abattoir would satisfy the road safety requirements of Austroads for major road intersections. As deliveries to the site will include B-Double deliveries the site access will need to be designed to accommodate the safe use of the access by these deliveries. This is considered achievable at the chosen access location and would be subject to further Blayney Council approval under S138 of the Roads Act should approval be granted for the development.

12.4 Off-Street Car Parking

With regard to on-site parking the proposal should comply with Australian Standard *AS2890.1-2004 Parking facilities – Part 1 Off-street car parking* and any requirements of Blayney Shire Council.

In the absence of any available information from Council it is considered reasonable to calculate the on-site car parking demand for the abattoir as follows;

Total number of new employees on site at any one time – 165
Car occupancy rate – 1.5 (allows for carpooling at current rates)
On-site car parking demand = $165 / 1.5 = 110$ spaces.

A review of the development plans available at the time of preparing this report indicates that whilst it is proposed to construct a new staff car park as part of this development exact parking numbers are yet to be determined though approximately 80 spaces are shown on the concept plan. The site is large enough to accommodate the amount of required parking and it is only a matter to determine what parking numbers is appropriate. In this respect a total of 110 car parks should be provided on site to accommodate staff for the abattoir.

Therefore it is concluded that the provision of 110 on-site car parks would be a suitable supply of on-site car parking for the abattoir. The important parking issue is that there is ample room on the site to cater for the on-site parking demand generated by the abattoir and no on road parking demand will be generated that would adversely impact on the local road network.

The design of the new car parking area within the site will need to comply with the requirements of Australian Standard *AS2890.1-2004 Parking facilities – Part 1 Off-street car parking*. Again there is sufficient room on site for compliance to be achieved and thus this requirement could be conditioned.

12.5 Servicing

The abattoir will be serviced through stock deliveries, product removal and waste removal. Details of the size and frequency of servicing is provided in **Section 9**. The site is large enough to ensure suitably convenient forward entry and exit heavy vehicle movements. The abattoir has been designed with adequate manoeuvring areas for heavy vehicles, separated from light vehicle movements, with separate ingress and egress roads for heavy vehicles. It is therefore concluded that the servicing arrangements for the abattoir are suitable for the type and quantity of traffic generated by the development.

Deliveries will be undertaken in vehicles up to a 25 metre B-Double size. Newbridge Road is already a designated / gazetted B-Double route and as such it is assumed that as a local road it has been assessed by the local traffic committee as suitable for use by B-Doubles. It is noted however that Blayney Shire Council's input into the Secretary's Environment Assessment Requirement for the development has raised the pavement / structure strength and alignment of Newbridge Road as an issue for consideration.

By visual inspection it is agreed Newbridge Road is only in fair condition with evidence of significant pavement deformation. It is likely that some pavement rehabilitation will be required in the near future whether this development proceeds or not. Therefore some nexus may exist for this development to contribute a fair and reasonable proportion to the pavement works via a Voluntary Planning Agreement that would need to be negotiated between the applicant and Blayney Shire Council.

None of the bridges on the haulage route were signposted with load limits so again given that Newbridge road is already a designated B-Double route, as noted above it is assumed that these bridges are able to structurally withstand the loads generated by the heavy vehicles associated with this development. In regard to Council's request for design information on the second Belubula River bridge, the following advice is provided. The bridge was designed in 1977 to the Australian Bridge Standard T44. All new concrete bridges across Australia from 1976 until 2012 were constructed to this standard. The Belubula River bridge design was approved by the then Department of Main Roads (DMR), the pile driving to the DMR standard and driving results approved by DMR before the headstocks were constructed. Deck planks to DMR bridge design. B-Double trucks have been using the bridge since 2003 with no obvious impact on the bridge's integrity.

In regard to the alignment of Newbridge Road it was observed that the existing alignment is considered appropriate for an 80 km/h speed zoning and use by heavy vehicles particularly given the gazettal of the road as a B-Double route. No requirement for realignment of Newbridge Road has previously been made within recent approvals in the area therefore it would not seem reasonable that such a requirement be imposed on this development.

12.6 Construction Traffic

The construction of the abattoir will result in additional traffic entering and exiting the site. It is estimated that during the peak construction periods up to 30 construction employees will be on-site at any one time. If a car occupancy rate of 1.1 is assumed for employee traffic this would result in an AM and PM peak traffic flow to the site of in the order of 28 vtph. This will also increase the peak parking demand at the site by a similar number during construction.

Material deliveries will add to this traffic with peak materials delivery traffic expected during the pouring of concrete slabs early on in the construction period. With a large pour and a fleet of concrete trucks sourced from nearby it is likely that a further 10 vtph could occur during the AM peak period as a result of this construction activity. Further during construction of the new access road and foundation for the car park internal roads and concrete slab there will be 4 vtph additional truck movements over a 30 day period hauling road base.

Therefore overall it is estimated that the peak construction traffic generation resulting from the construction of the abattoir will be in the order of 42 vtph during the AM peak. It is also noted that construction of the Cadia dewatering facility could occur concurrently with the abattoir. This potentially could add another 13 – 14 vtph onto the local road network during the construction stage. The total construction traffic from the two projects would then be in the order of 55 – 56 vtph during the peak traffic periods.

This assessment has already determined that the additional post development traffic generation from the site is in the order of up to 166 vtph and that this will not adversely impact on the capacity of the local road network. As this is more than four times the likely construction traffic generation

from the site it would also be reasonable to conclude that the construction traffic associated with the abattoir will not adversely impact on the local road network.

Construction traffic is a short term traffic impact that is best managed through the preparation of a construction traffic management plan prepared and implemented prior to commencement of construction activities. This plan may seek to minimise the impacts of construction activities by designating travel routes, access points, construction employee parking areas, material delivery procedures and times etc. This plan is best prepared, implemented and enforced by the head contractor. It is recommended that a construction traffic management plan be prepared and implemented prior to the commencement of construction activities.

13.0 PEDESTRIAN FACILITIES

Given the rural location of the abattoir it is unlikely to generate additional pedestrian movements as currently there is no suitable pedestrian infrastructure in the area and the site is not within convenient walking distance of local residential areas. It is considered unreasonable for such facilities to be provided with this development as it is unlikely to generate enough demand to be warranted. It is therefore concluded that no additional external pedestrian infrastructure is warranted as a result of this development.

In terms of internal pedestrian linkages within the car park area it is recommended such linkages be included in the design of the car park (construction certificate stage) to direct employees to the staff entrances to the abattoir.



14.0 ALTERNATE TRANSPORT MODE FACILITIES

In considering the transport of livestock to the site and product from the site it is noted that the site adjoins the rail network. The applicant has investigated this possibility of transporting product by rail however, given that only approximately 4 refrigerated containers are destined each day to Port Botany, it is not a viable option to use rail in the form of a dedicated train. Similarly, the collection of containers by a passing freight train is also not viable for logistical reasons. The principle use of the proposed rail siding adjacent to the site is for loading minerals concentrate from the proposed Cadia minerals dewater plant adjacent to the abattoir site.

With the lack of a public transport service to the site it is unlikely an increase in demand for such a service will result from this development. Further any increase in demand should such a service be considered is unlikely to be sufficient to make such a service viable. Therefore it is concluded

that given there are no capacity constraints with the existing road network no additional public transport services or infrastructure is warranted as a result of this development.

The abattoir is also not likely to significantly increase bicycle traffic to the site and would not warrant additional specific bicycle infrastructure either external or internal to the site being provided apart from providing a bicycle storage area for staff use within the development to complement the staff amenities already designed into the abattoir.



15.0 CONCLUSIONS

This traffic impact assessment for a proposed small stock abattoir on Lots 103 to 105 & 107 DP 1161062, 137 Newbridge Road Blayney has concluded the following;

- ◆ Existing peak mid-block two way traffic volumes on the relevant sections of the local road network are in the order of 105 vph on Newbridge Road, 481 vph on Adelaide Street and 291 vph on Church Street.
- ◆ The local road network in the vicinity of the site as a two lane two way urban and rural road network has a likely technical mid-block capacity of up to 1,800 vph in the urban sections and 1,200 vph in the rural areas based on a LoS C being considered acceptable. As these capacity thresholds are in excess of existing traffic volumes the local road network has spare capacity to cater for development in the area.
- ◆ It is expected that the additional traffic generated by the proposed abattoir in the AM and PM peak period will be a maximum of 120 vph and 166 vph respectively.
- ◆ The local road network has sufficient spare mid-block capacity to cater for the additional traffic generated by the proposal and other developments in the area e.g. Cadia East Dewatering facility without the need for any road upgrading works.
- ◆ SIDRA modelling of the Adelaide Street / Burns Street stop controlled T-intersection and the Adelaide Street / Church Street give way controlled cross intersection has shown that these intersections will continue to operate satisfactorily through to 2024 with satisfactory levels of service for all traffic movements taking into account the cumulative impacts of proposed development in the area. Therefore it is concluded the proposed abattoir will not have an adverse impact on the local road network.
- ◆ The Adelaide Street / Burns Street intersection should be upgraded to a compliant BAR/BAL intersection. However the assessment has also determined that the intersection is already

deficient as the current construction should be a compliant BAR/BAL treatment and the upgrading is not as a result of the additional traffic generated by the development. Therefore the upgrading should be the responsibility of the current road authority and not the proponent of the abattoir. This upgrading could be achieved relatively inexpensively by removing the angled on-street parking on Adelaide Street opposite the site or converting this parking to parallel parking.

- ◆ The proposed new access off Newbridge Road can be constructed as a basic right turn and basic left turn (BAR / BAL) rural intersection and is suitable located providing in excess of the required vehicular sight distance as designated within Australian Standard *AS2890.1-2004 Parking facilities – Part 1 Off-street car parking* and Australian Standard *AS2890.2-2002 Parking facilities Part 2: Off-street commercial vehicle facilities*.
- ◆ The site is large enough to ensure that the peak parking demand for the site development can be accommodated on site. As such the development will not generate an on road parking demand that would adversely impact on the local road network. It is recommended that at least 110 on-site staff car parks be provided within the proposed abattoir. These parking spaces should comply with the requirements of Australian Standard *AS2890.1-2004 Parking facilities – Part 1 Off-street car parking*.
- ◆ The servicing arrangements for the abattoir are suitable for the type and quantity of traffic generated by the development.
- ◆ Some nexus may exist for this development to contribute a fair and reasonable proportion to pavement maintenance works in Newbridge Road via a Voluntary Planning Agreement that would need to be negotiated between the applicant and Blayney Shire Council.
- ◆ Construction traffic generated by the abattoir will be less than the additional traffic generated by the operation of the abattoir. Therefore as the traffic assessment determined the operational traffic will not adversely impact on the local road network it is also reasonable to conclude that the construction traffic associated with the abattoir will not adversely impact on the local road network.
- ◆ It is recommended that a construction traffic management plan be prepared and implemented prior to commencement of construction activities on the site to ensure the impacts of the construction activities on the local road network are minimised during construction.
- ◆ No additional external pedestrian infrastructure is warranted as a result of this development.
- ◆ It is recommended internal pedestrian linkages be included in the design of the on-site car park to direct employees to the staff entrances to the abattoir.
- ◆ The applicant has investigated the possibility of transporting product from the site by rail however at this stage while the site is serviced by a rail siding, the logistics and cost of transporting a small number of containers to Port Botany does not warrant a dedicated train. The opportunity for containers to be collected by passing freight trains is not possible given the rail siding will be predominantly used by minerals concentrate trains.
- ◆ No additional public transport services or infrastructure is warranted as a result of this development.
- ◆ The abattoir is also not likely to significantly increase bicycle traffic to the site and would not warrant additional specific bicycle infrastructure either external or internal to the site being provided apart from providing a bicycle storage area for staff use within the development to complement the staff amenities already designed into the abattoir.

16.0 RECOMMENDATION

Having carried out this traffic impact assessment for a proposed small stock abattoir on Lots 103 to 105 & 107 DP 1161062, 137 Newbridge Road Blayney it is recommended that the proposal can be supported from a traffic impact perspective with appropriate conditions as it will not adversely impact on the local and state road network and complies with all relevant Blayney Shire Council, Australian Standard and NSW Roads and Maritime Services requirements.



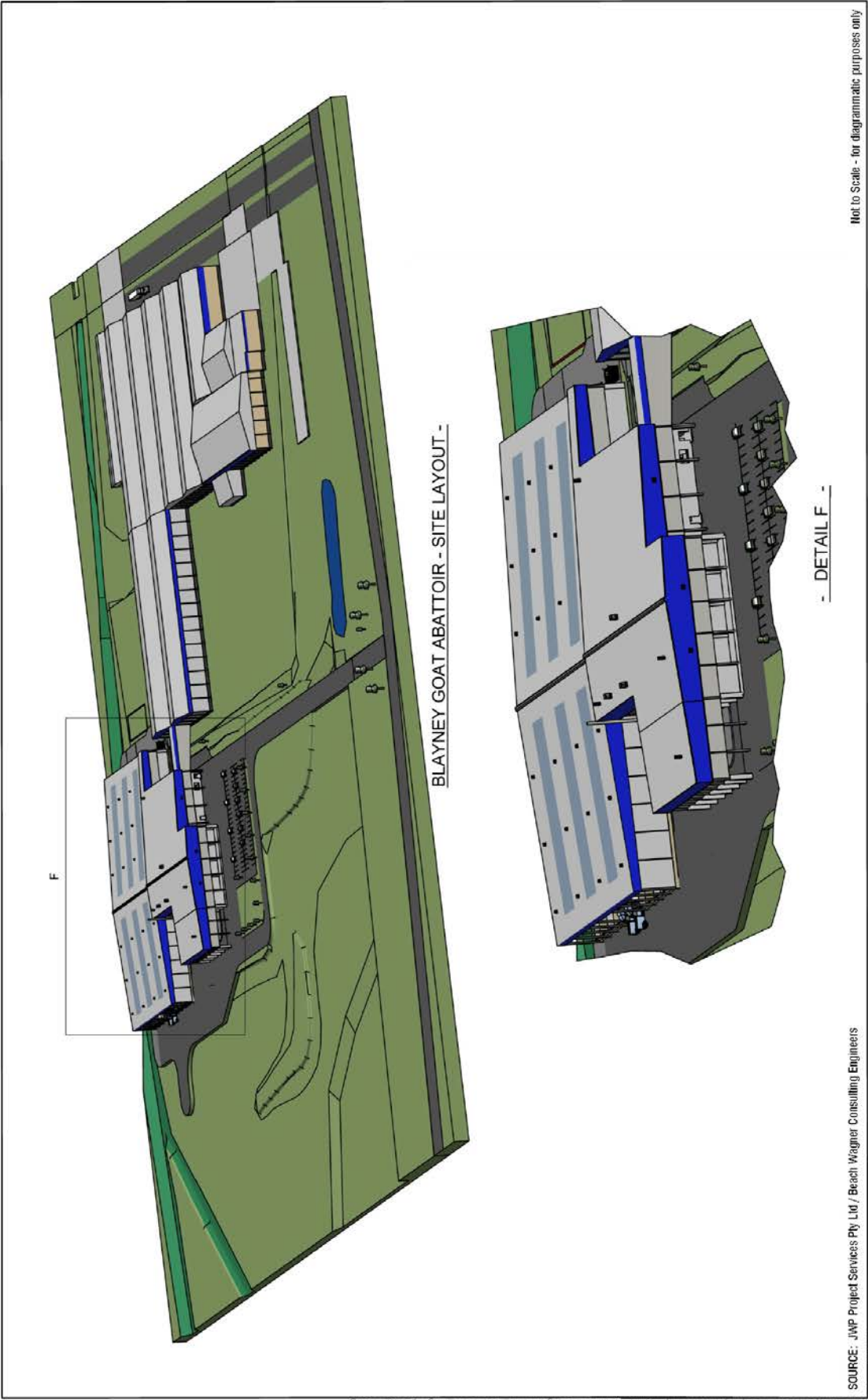
JR Garry BE (Civil), Masters of Traffic
Director
Intersect Traffic Pty Ltd

ATTACHMENT A

Development Plans




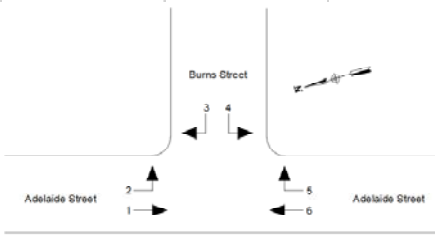
Conceptual Development Layout
FIGURE 1.3




Proposed Abattoir and Existing Sealink Cold Storage Facility
FIGURE 3.1

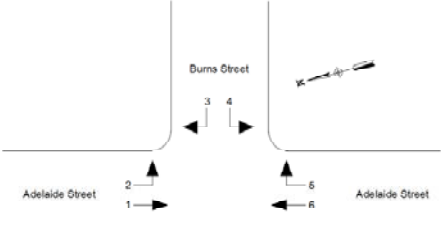
ATTACHMENT B

TRAFFIC COUNT SHEETS


Date	03/06/2014						
Day	Tuesday						
Time	3:45pm - 5:15pm						
Weather	Fine						
Conducted by:	Jeff						
MOVEMENT	1	2	3	4	5	6	Heavy Vehicles
3:45 - 4:00	60	12	7	7	8	54	7
4:00 - 4:15	72	3	9	7	3	42	13
4:15 - 4:30	60	4	10	10	7	57	10
4:30 - 4:45	51	7	2	6	3	31	5
4:45 - 5:00	59	2	7	10	5	52	8
5:00 - 5:15	62	1	3	6	1	42	10
SUM	364	29	38	46	27	278	53
PEAK	243	26	28	30	21	184	35
Leg	PHT (vph)						
Adelaide Street North	481						
Adelaide Street South	478						
Burns Street	105						
HV (%) =	6.58%						
							

Date	04/06/2014						
Day	Wednesday						
Time	6:30am - 8:30am						
Weather	Fine						
Conducted by:	Jeff						
MOVEMENT	1	2	3	4	5	6	Heavy Vehicles
6:30 - 6:45	11	2	2	0	2	29	8
6:45 - 7:00	17	2	3	0	3	29	5
7:00 - 7:15	17	8	5	1	1	27	9
7:15 - 7:30	33	4	3	1	2	39	19
7:30 - 7:45	38	2	6	1	4	43	10
7:45 - 8:00	24	7	7	4	5	56	12
8:00 - 8:15	26	4	4	3	1	37	14
8:15 - 8:30	28	4	3	2	7	50	17
SUM	194	33	33	12	25	310	94
PEAK	112	21	21	7	12	165	50
Leg	PHT (vph)						
Adelaide Street North	319						
Adelaide Street South	296						
Burns Street	61						
HV (%) =	13.66%						



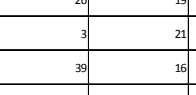


Date	08/08/2014
Day	Tuesday
Time	3:30pm - 5:30pm
Weather	Fine
Conducted by:	Daniel



MOVEMENT	1	2	3	4	5	6	a	b	c	d	e	f
3:30 - 3:45	74	11	13	26	19	63	0	3	0	0	11	3
3:45 - 4:00	63	16	13	3	21	61	3	1	0	3	13	11
4:00 - 4:15	47	18	18	39	16	69	5	7	3	1	6	10
4:15 - 4:30	47	10	12	21	16	59	3	3	2	4	10	4
4:30 - 4:45	34	8	14	11	11	50	3	2	2	2	13	8
4:45 - 5:00	35	8	14	11	12	70	3	3	2	1	12	7
5:00 - 5:15	35	1	15	9	18	52	9	1	0	5	12	4
5:15 - 5:30	44	8	11	11	5	43	6	2	2	5	7	8
SUM	379	80	110	131	118	467	32	22	11	21	84	55
PEAK	231	55	56	89	72	252	11	14	5	8	40	28

Leg	PHT (vph)
Adelaide Street North	663
Adelaide Street South	662
Church Street East	106
Church Street West	291



ATTACHMENT C

SIDRA SUMMARY MOVEMENT TABLES

MOVEMENT SUMMARY

 **Site: 2014 AM Peak**

Adelaide Street and Burns Street Intersection
Stop (Two-Way)

Movement Performance - Vehicles											
Mov ID	OD Mov	Demand Total veh/h	Flows HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
South: Adelaide Street											
11	T1	174	12.0	0.105	0.5	LOS A	0.6	4.7	0.28	0.04	58.4
12	R2	13	12.0	0.105	6.2	LOS A	0.6	4.7	0.28	0.04	52.3
Approach		186	12.0	0.105	0.9	NA	0.6	4.7	0.28	0.04	58.0
East: Burns Street											
1	L2	7	12.0	0.006	8.4	LOS A	0.0	0.2	0.23	0.87	47.5
3	R2	22	12.0	0.029	9.2	LOS A	0.1	0.7	0.38	0.90	46.7
Approach		29	12.0	0.029	9.0	LOS A	0.1	0.7	0.34	0.90	46.9
North: Adelaide Street											
4	L2	22	12.0	0.078	5.7	LOS A	0.0	0.0	0.00	0.09	57.0
5	T1	118	12.0	0.078	0.0	LOS A	0.0	0.0	0.00	0.09	59.1
Approach		140	12.0	0.078	0.9	NA	0.0	0.0	0.00	0.09	58.8
All Vehicles		356	12.0	0.105	1.6	NA	0.6	4.7	0.17	0.13	57.2

Level of Service (LOS) Method: Delay (RTA NSW).

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 (Akcelik M3D).

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

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INTERSECTION 6**

MOVEMENT SUMMARY

Site: 2014 PM Peak

Adelaide Street and Burns Street Intersection
Stop (Two-Way)

Movement Performance - Vehicles											
Mov ID	OD Mov	Demand Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Queue Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
South: Adelaide Street											
11	T1	194	12.0	0.125	1.3	LOS A	0.8	6.2	0.43	0.06	57.6
12	R2	22	12.0	0.125	6.9	LOS A	0.8	6.2	0.43	0.06	51.6
Approach		216	12.0	0.125	1.9	NA	0.8	6.2	0.43	0.06	57.0
East: Burns Street											
1	L2	32	12.0	0.031	9.1	LOS A	0.1	0.9	0.37	0.87	47.2
3	R2	29	12.0	0.048	10.6	LOS A	0.2	1.2	0.48	0.95	46.0
Approach		61	12.0	0.048	9.8	LOS A	0.2	1.2	0.42	0.91	46.6
North: Adelaide Street											
4	L2	27	12.0	0.157	5.7	LOS A	0.0	0.0	0.00	0.06	57.2
5	T1	256	12.0	0.157	0.0	LOS A	0.0	0.0	0.00	0.06	59.4
Approach		283	12.0	0.157	0.6	NA	0.0	0.0	0.00	0.06	59.2
All Vehicles		560	12.0	0.157	2.1	NA	0.8	6.2	0.21	0.15	56.7

Level of Service (LOS) Method: Delay (RTA NSW).

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 (Akcelik M3D).

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

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MOVEMENT SUMMARY

Site: 2014 PM Peak - With Development

Adelaide Street and Burns Street Intersection
Stop (Two-Way)

Movement Performance - Vehicles											
Mov ID	OD Mov	Demand Total veh/h	Flows HV %	Deg. Satn w/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
South: Adelaide Street											
11	T1	194	12.0	0.125	1.3	LOS A	0.8	6.3	0.43	0.07	57.6
12	R2	22	12.0	0.125	7.0	LOS A	0.8	6.3	0.43	0.07	51.6
Approach		216	12.0	0.125	1.9	NA	0.8	6.3	0.43	0.07	56.9
East: Burns Street											
1	L2	64	12.0	0.063	9.2	LOS A	0.2	1.9	0.37	0.89	47.2
3	R2	148	12.0	0.243	11.3	LOS A	0.9	6.9	0.53	1.02	45.6
Approach		213	12.0	0.243	10.7	LOS A	0.9	6.9	0.49	0.98	46.1
North: Adelaide Street											
4	L2	37	12.0	0.163	5.7	LOS A	0.0	0.0	0.00	0.07	57.1
5	T1	256	12.0	0.163	0.0	LOS A	0.0	0.0	0.00	0.07	59.3
Approach		293	12.0	0.163	0.7	NA	0.0	0.0	0.00	0.07	59.0
All Vehicles		721	12.0	0.243	4.0	NA	0.9	6.9	0.27	0.34	54.0

Level of Service (LOS) Method: Delay (RTANSW).

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 (Akcelik M3D).

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

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MOVEMENT SUMMARY

 **Site: 2024 AM Peak**

Adelaide Street and Burns Street Intersection
Stop (Two-Way)
Design Life Analysis (Practical Capacity): Results for 10 years

Movement Performance - Vehicles											
Mov ID	OD Mov	Demand Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Queue Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
South: Adelaide Street											
11	T1	191	12.0	0.139	1.2	LOS A	0.9	6.7	0.42	0.11	57.3
12	R2	42	12.0	0.139	6.9	LOS A	0.9	6.7	0.42	0.11	51.4
Approach		233	12.0	0.139	2.2	NA	0.9	6.7	0.42	0.11	56.1
East: Burns Street											
1	L2	8	12.0	0.007	8.4	LOS A	0.0	0.2	0.24	0.87	47.5
3	R2	29	12.0	0.044	10.1	LOS A	0.1	1.1	0.45	0.93	46.2
Approach		37	12.0	0.044	9.7	LOS A	0.1	1.1	0.40	0.92	46.5
North: Adelaide Street											
4	L2	139	12.0	0.153	5.7	LOS A	0.0	0.0	0.00	0.30	55.2
5	T1	130	12.0	0.153	0.0	LOS A	0.0	0.0	0.00	0.30	57.3
Approach		269	12.0	0.153	3.0	NA	0.0	0.0	0.00	0.30	56.2
All Vehicles		538	12.0	0.153	3.1	NA	0.9	6.7	0.21	0.26	55.4

Level of Service (LOS) Method: Delay (RTA NSW).

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.

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INTERSECTION 6

MOVEMENT SUMMARY

Site: 2024 PM Peak

Adelaide Street and Burns Street Intersection

Stop (Two-Way)

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

Movement Performance - Vehicles											
Mov ID	OD Mov	Demand Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
South: Adelaide Street											
11	T1	213	12.0	0.139	1.5	LOS A	0.9	7.2	0.46	0.07	57.5
12	R2	24	12.0	0.139	7.2	LOS A	0.9	7.2	0.46	0.07	51.5
Approach		237	12.0	0.139	2.1	NA	0.9	7.2	0.46	0.07	56.8
East: Burns Street											
1	L2	71	12.0	0.072	9.4	LOS A	0.3	2.2	0.40	0.89	47.1
3	R2	163	12.0	0.286	12.2	LOS A	1.1	8.7	0.57	1.04	45.1
Approach		234	12.0	0.286	11.4	LOS A	1.1	8.7	0.52	1.00	45.7
North: Adelaide Street											
4	L2	41	12.0	0.179	5.7	LOS A	0.0	0.0	0.00	0.07	57.1
5	T1	281	12.0	0.179	0.0	LOS A	0.0	0.0	0.00	0.07	59.3
Approach		322	12.0	0.179	0.7	NA	0.0	0.0	0.00	0.07	59.0
All Vehicles		793	12.0	0.286	4.3	NA	1.1	8.7	0.29	0.34	53.8

Level of Service (LOS) Method: Delay (RTA NSW).

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.

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INTERSECTION 6**

MOVEMENT SUMMARY

▽ Site: 2014 PM Peak - With Development

Adelaide Street & Church Street Intersection
Giveaway / Yield (Two-Way)

Movement Performance - Vehicles											
Mov ID	O/D Mov	Demand Total veh/h	Flows HV %	Deq. Satn w/c	Average Delay sec	Level of Service	95 % Back of Queue Vehicles veh	Back of Queue Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
South: Adelaide Street											
1	L2	126	12.0	0.074	5.7	LOS A	0.0	0.0	0.00	0.57	53.1
2	T1	315	12.0	0.205	1.8	LOS A	1.6	12.4	0.46	0.06	57.2
3	R2	29	12.0	0.205	7.5	LOS A	1.6	12.4	0.46	0.06	52.7
Approach		471	12.0	0.205	3.2	NA	1.6	12.4	0.34	0.20	55.7
East: Church Street											
4	L2	42	12.0	0.045	7.0	LOS A	0.2	1.2	0.36	0.61	48.0
5	T1	8	12.0	0.056	18.2	LOS B	0.2	1.5	0.77	0.89	38.8
6	R2	5	12.0	0.056	19.3	LOS B	0.2	1.5	0.77	0.89	34.6
Approach		56	12.0	0.056	9.8	LOS A	0.2	1.5	0.46	0.68	45.1
North: Adelaide Street											
7	L2	15	12.0	0.042	5.7	LOS A	0.0	0.0	0.00	0.11	53.7
8	T1	272	12.0	0.212	2.5	LOS A	1.6	12.4	0.46	0.19	55.9
9	R2	76	12.0	0.212	8.9	LOS A	1.6	12.4	0.58	0.21	52.6
Approach		362	12.0	0.212	4.0	NA	1.6	12.4	0.46	0.19	55.1
West: Church Street											
10	L2	94	12.0	0.107	7.4	LOS A	0.4	3.0	0.41	0.66	50.7
11	T1	12	12.0	0.331	23.6	LOS B	1.3	10.2	0.83	0.98	35.3
12	R2	62	12.0	0.331	24.7	LOS B	1.3	10.2	0.83	0.98	41.5
Approach		167	12.0	0.331	15.0	LOS B	1.3	10.2	0.59	0.80	45.6
All Vehicles		1056	12.0	0.331	5.7	NA	1.6	12.4	0.43	0.31	53.1

Level of Service (LOS) Method: Delay (RTANSW).

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 (Aqgelik M3D).

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

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INTERSECTION 6

MOVEMENT SUMMARY

Site: 2024 PM Peak

Adelaide Street & Church Street Intersection

Giveaway / Yield (Two-Way)

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

Movement Performance - Vehicles											
Mov ID	OD Mov	Demand Total veh/h	Flows HV %	Deg. Satn w/c	Average Delay sec	Level of Service	95 % Back of Queue Vehicles veh	Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
South: Adelaide Street											
1	L2	139	12.0	0.081	5.7	LOS A	0.0	0.0	0.00	0.57	53.1
2	T1	346	12.0	0.228	2.4	LOS A	1.9	14.9	0.52	0.06	56.9
3	R2	32	12.0	0.228	8.0	LOS A	1.9	14.9	0.52	0.06	52.3
Approach		518	12.0	0.228	3.6	NA	1.9	14.9	0.38	0.20	55.5
East: Church Street											
4	L2	51	12.0	0.058	7.4	LOS A	0.2	1.6	0.41	0.64	47.7
5	T1	10	12.0	0.087	23.1	LOS B	0.3	2.2	0.82	0.92	35.8
6	R2	6	12.0	0.087	24.2	LOS B	0.3	2.2	0.82	0.92	31.6
Approach		67	12.0	0.087	11.3	LOS A	0.3	2.2	0.51	0.71	43.8
North: Adelaide Street											
7	L2	18	12.0	0.052	5.7	LOS A	0.0	0.0	0.00	0.11	53.8
8	T1	326	12.0	0.260	3.1	LOS A	2.2	17.0	0.49	0.20	55.3
9	R2	91	12.0	0.260	9.7	LOS A	2.2	17.0	0.64	0.22	51.9
Approach		435	12.0	0.260	4.6	NA	2.2	17.0	0.51	0.20	54.5
West: Church Street											
10	L2	112	12.0	0.133	7.7	LOS A	0.5	3.8	0.44	0.68	50.4
11	T1	14	12.0	0.516	35.5	LOS C	2.2	17.1	0.90	1.07	29.7
12	R2	75	12.0	0.516	36.7	LOS C	2.2	17.1	0.90	1.07	36.5
Approach		201	12.0	0.516	20.4	LOS B	2.2	17.1	0.64	0.85	42.4
All Vehicles		1220	12.0	0.516	7.2	NA	2.2	17.1	0.47	0.33	51.8

Level of Service (LOS) Method: Delay (RTANSW).

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 (Akgelik M3D).

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

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