Solar Energy Facility

1207 Donald Ross Drive, Coleambally NSW

Traffic Impact Assessment Report

Client:

ACEnergy Pty Ltd

Project No. 200878

FINAL Report – 28/04/21

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EXECUTIVE SUMMARY

Trafficworks has been engaged by ACEnergy Pty Ltd to undertake a Traffic Impact Assessment (TIA) for the proposed Solar Energy Facility in Coleambally. The subject site falls within a Primary Production Zone (RU1) and forms part of the Murrumbidgee Council (the Council).

The site is bounded by Cockys Lane to the east and farming land within the surrounding areas. The development is proposed to have direct access onto Cockys Lane.

The proposed development in Coleambally involves constructing a Solar Energy Facility (using photovoltaic (PV) solar trackers) which is connected into the electricity grid providing a reliable power source to the local community.

Based on the information provided it is understood that the peak traffic generation from the development is likely to occur during the construction phase. Therefore, the TIA was carried out primarily focussing on the construction phase of the development.

A TIA was undertaken to:

- estimate the traffic generation and distribution to / from the proposed development
- determine the suitability of the existing access
- determine the likely traffic impacts on the existing road network
- identify any necessary mitigation works.

It has been identified that the proposed development:

- would not adversely affect traffic conditions on the adjacent road network if the recommendations in this report are implemented
- would generally comply with the relevant traffic requirements set out in Austroads and the Council Planning Scheme.

A summary for the site and the proposed development is shown below.

Address	1207 Donald Ross Drive, Coleambally
Existing Zoning	Primary Production Zone (RU1)
Proposed Development	Solar Energy Facility
Road Network	Sturt Highway • 110 km/h speed limit • carries approximately 1,200 vehicles per day Kidman Way • 100 km/h speed limit • carries approximately 700 vehicles per day
Recommendation	• **Recommendation 1:** all the conditions requested by the asset manager of Coleambally Irrigation for the two-channel crossing along Cockys Lane are complied with. • **Recommendation 2:** that the subject site access be constructed to Council satisfaction.

Referenced Documents

References used in the preparation of this report include the following:

- RTA *Guide to Traffic Generating Developments, Version 2.2, October 2002*
- Austroads:
    - *Guide to Road Design Part 3: Geometric Design, 2017*
    - *Guide to Road Design Part 4: Intersections and Crossings, 2017*
    - *Guide to Road Design - Part 4A: Unsignalised and Signalised Intersections, 2017*
- VicRoads Supplement to:
    - *Austroads Guide to Road Design Part 3: Geometric Design, 2016*
    - *Austroads Guide to Road Design Part 4: Intersections and Crossings, 2012*
    - *Austroads Guide to Road Design - Part 4A: Unsignalised and Signalised Intersections, 2011*
- Department of Environment, Land, Water and Planning:
    - *Solar Energy Facilities Design and Development Guidelines, August 2019*

The assessment is based on the following information made available by the client:

- Site Plan: by ACEnergy G-1.0_001205 (Rev B).

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1. INTRODUCTION

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- estimate the traffic generation and distribution to / from the proposed development
- determine the suitability of the existing access
- determine the likely traffic impacts on the existing road network
- identify any necessary mitigation works.

2. EXISTING CONDITIONS

2.1 Subject site

The subject site is located approximately 20 km northeast of Coleambally, and approximately 15 km southeast of Darlington Point. It falls within a Primary Production Zone (RU1) of the Council's Local Environmental Plan 2013 (LEP). The site comprises land between farming land and Cockys Lane to the east.

The subject site has an existing farmgate access onto Cockys Lane. The location of the site and its surrounding road network is shown in Figures 1 and 2.

Figure 1 - Location Plan (courtesy of the VicPlan website)

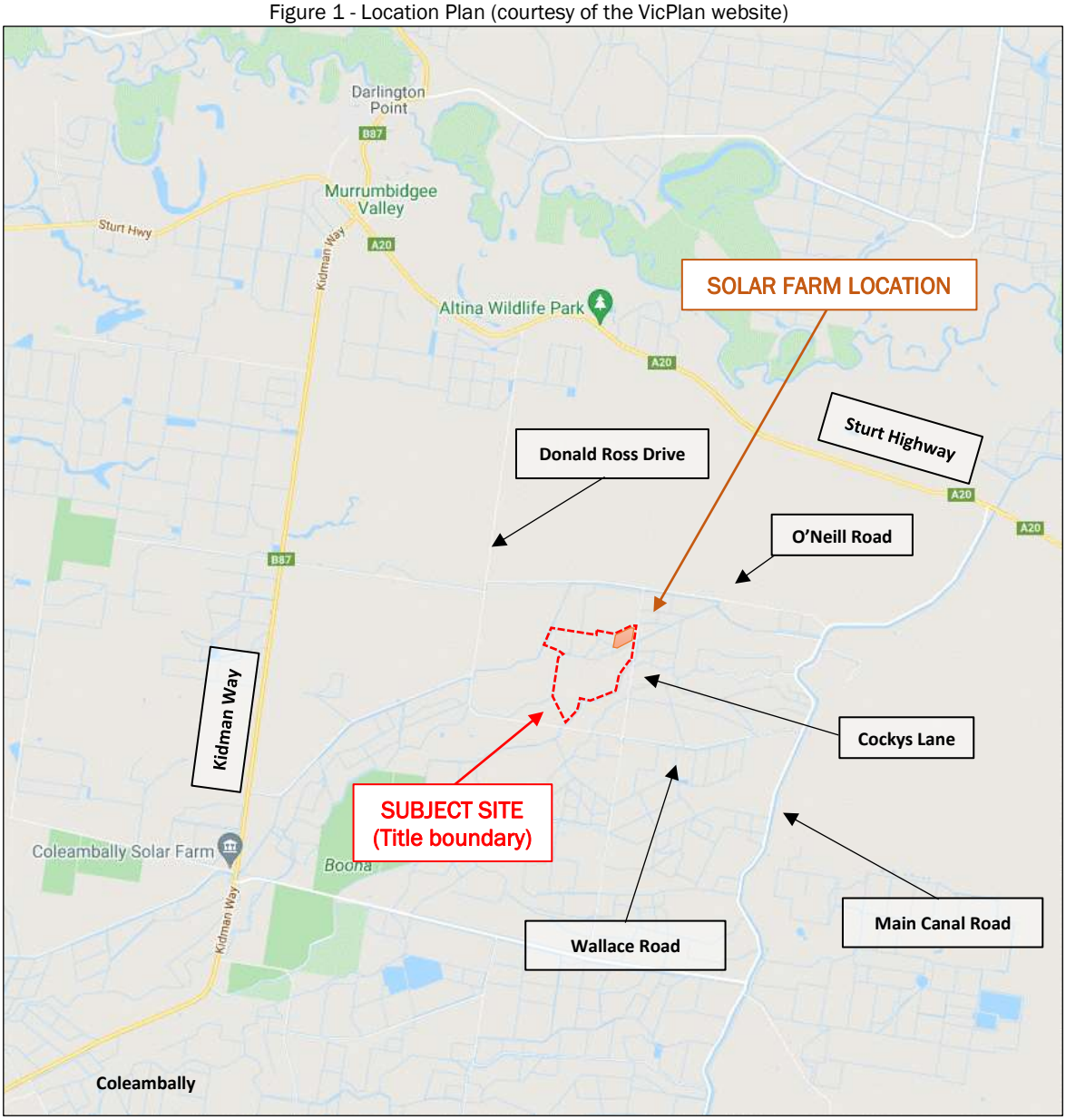
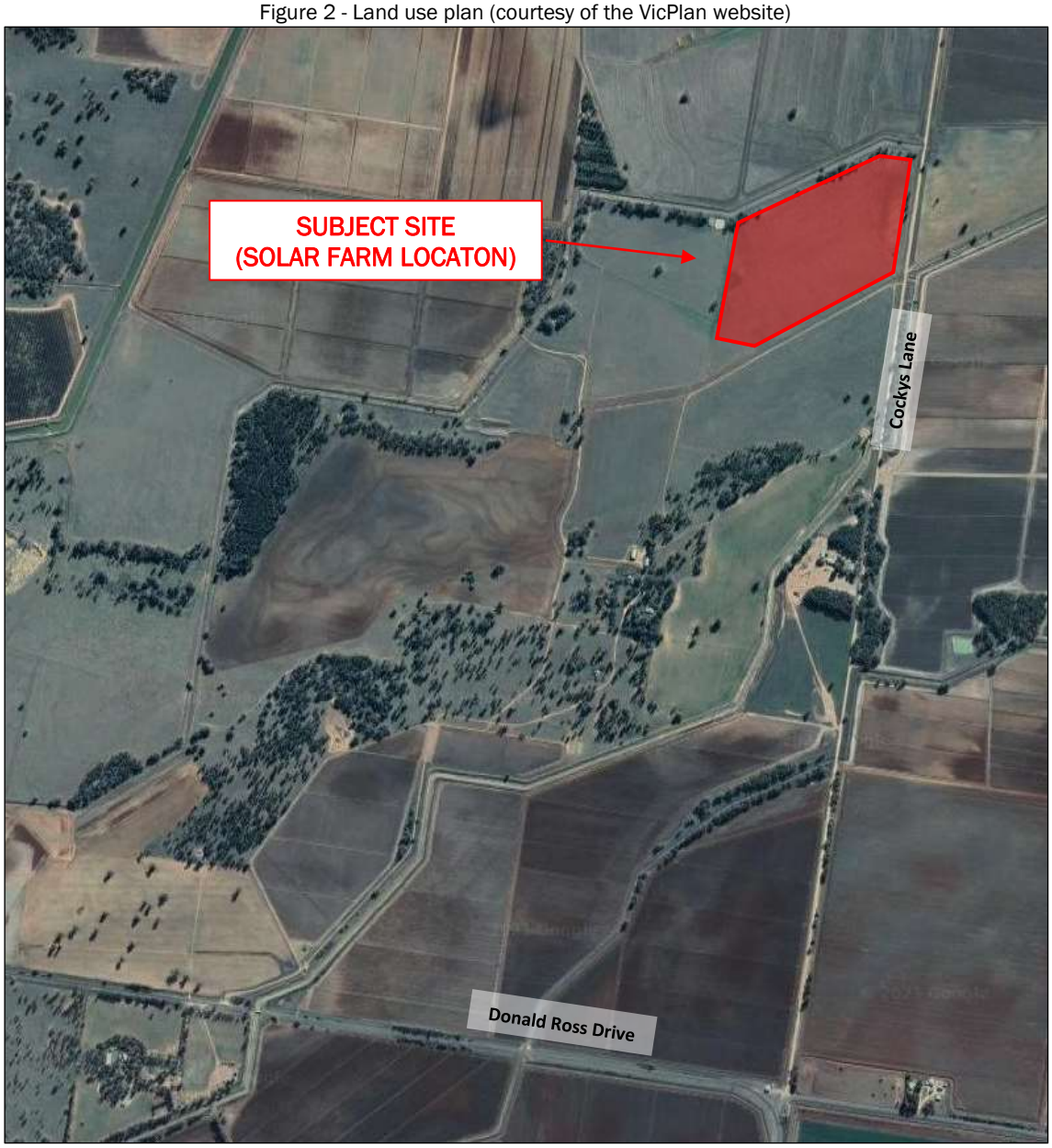


Figure 2 - Land use plan (courtesy of the VicPlan website)



2.2 Road network

2.2.1 Sturt Highway (A20)

The Sturt Highway is an arterial road managed by Transport for New South Wales. It is generally aligned in an east to west direction and provides connection between the Hume Highway to the east in Tarcutta and Buronga to the west.

In the vicinity of the Sturt Highway / Main Canal Road intersection, Sturt Highway is a two-way, two-lane road with sealed shoulders. There is no provision for bicycles and pedestrians along the road.

A posted speed limit of 110 km/h applies along the Sturt Highway.

Photo 1 – Sturt Highway, looking west over the bridge towards the intersection with Main Canal Road on the left

Photo 2 – Sturt Highway, looking towards the east, at the intersection of Main Canal Road

2.2.2 Kidman Way (B87)

Kidman Way is an arterial road managed by Transport for New South Wales. It is generally aligned in a north to south direction and provides connection between the Mitchell Highway to the north in Bourke and the Newell Highway to the south in Bundure.

Kidman Way is a two-way, two-lane road with sealed shoulders. There is no provision for bicycles and pedestrians along the road.

A posted speed limit of 100 km/h applies along Kidman Way.

Photo 3 – Kidman Way, looking towards the north, past the intersection with Ringwood Road

Photo 4 – Kidman Way, looking south at the intersection with Ringwood Road (on the left)

2.2.3 Cockys Lane

Cockys Lane is a local road managed by Council and as shown in Photos 5 and 6, is an unsealed dirt road. A default rural speed limit of 100 km/h would apply to Cockys Lane, although it is expected that the operating speed is well below this, at around 60 to 70 km/h.

There are two channel crossings on Cockys lane, one at the northern end over the Tobbo Channel and one about midway over the Boona Channel. Both crossings are managed by Coleambally Irrigation. It should be noted that the Tobbo Channel crossing has a 20 tonne weight limit.

Photo 5 – Cockys Lane, looking south adjacent the existing access gate

Photo 6 – Cockys Lane, looking north past the subject site on the left

2.2.4 Main Canal Road

Main Canal Road is a local road managed by Council and as shown in Photo 7, is a sealed road. A default rural speed limit of 100 km/h would apply and the road is frequented by heavy vehicles and farm machinery.

Photo 7 – Main Canal Road, looking west, near to the intersection with O'Neil Road

2.2.5 Donald Ross Drive

Donald Ross Drive is a local road managed by Council and as shown in Photo 8, is a sealed road. A default rural speed limit of 100 km/h would apply and the road provides access to several broiler farms and a solar energy facility.

Photo 8 – Donald Ross Drive looking south, near to the intersection with Ringwood Road

2.2.6 Ringwood Road

Ringwood Road is a local road managed by Council and as shown in Photo 9, is a sealed road. A default rural speed limit of 100 km/h would apply and the road provides access to rural properties between Donald Ross Drive and Kidman Way.

Photo 9 – Ringwood Road looking east towards the intersection with Donald Ross Drive

2.2.7 Wallace Road

Wallace Road is a local road managed by Council and as shown in Photo 10, is a sealed road. A default rural speed limit of 100 km/h would apply and the road provides access to rural properties between Donald Ross Drive and Main Canal Road.

Photo 10 – Wallace Road looking west towards the intersection with Cockys Lane

2.2.8 O'Neil Road

O'Neil Road is a local road managed by Council and as shown in Photo 11, is an unsealed dirt road. A default rural speed limit of 100 km/h would apply to O'Neil Road, although it is expected that the operating speed is well below this, at around 60 to 70 km/h.

Photo 11 – O'Neil Road looking west near the intersection with Cockys Lane

It should be noted that Main Canal Road, Donald Ross Road, Ringwood Road and Wallace Road are conditionally approved for B-Doubles, as listed on the Transport for NSW restricted access vehicle map.

2.3 Traffic volumes

Transport for New South Wales, Traffic Volume Viewer details traffic volumes for many of the arterial roads in New South Wales. Scrutiny of the records indicates that approximately 1,200 vehicles per day (vpd) are travelling along the Sturt Highway north of the subject site, split evenly in each direction (year 2021). Assuming that the peak hour volume is 10% of the daily traffic, the peak hour volume is approximately 60 vph in each direction along the Sturt Highway.

The records also indicate that there is a heavy vehicle percentage of approximately 45% of the daily traffic volume along the Sturt Highway. Traffic volumes for 2012 indicate that approximately 1,000 vpd, travel along the Sturt Highway split evenly in each direction. This indicates an annual growth rate of approximately 2% along the Sturt Highway within the area.

Volume data records show that approximately 700 vpd are travelling along Kidman Way to the west of the subject site, split evenly in each direction (year 2012). Using the estimated annual growth rate of 2% within the area, it is estimated that the projected traffic volumes for 2021 will be approximately 870 vpd along Kidman Way. Assuming that the peak hour volume is 10% of the daily traffic, the peak hour volume is approximately 44 vph in each direction.

Based on the surrounding network and local area traffic it is assumed that approximately 100 vpd travel along Cockys Lane. Assuming that the peak hour volume is 10% of the daily traffic, the peak hour volume is approximately 5 vph in each direction.

2.4 Crash history

The *NSW Government's Transport for NSW - Crash and casualty statistics* database details all injury crashes on roads throughout the state. Scrutiny of these records in the last five-year period (2015 - 2019) indicate that there were multiple casualty crashes resulting in:

- one crash resulting in moderate injury occurred along Donald Ross Drive, south of the intersection with the Sturt Highway in 2016
- two crashes resulting in serious injury occurred along Donald Ross Drive, further south of the intersection with the Sturt Highway in 2015 and 2016
- one crash resulting in moderate injury occurred along O'Neil Road, west of the intersection with Cockys Lane in 2015.

Although there were four casualty crashes within the surrounding road network, analysis of the crash type from *Transport for NSW: Definitions and notes to support road crash data* determined that no trends in crashes have been established. Hence it can be concluded that the roads near the subject site do not have a traffic safety problem that requires urgent remedial action.

Conclusion 1: no trends in crashes were observed within the vicinity of the subject site in the last five-year period, hence there are no traffic safety problems that require urgent remedial action

3 PROPOSED DEVELOPMENT

3.1 Development summary

The proposed development in Coleambally involves constructing a Solar Energy Facility to generate power to connect into the local electricity grid. The facility will provide a reliable power source to the local community. For a plan of the proposed development refer to Attachment A.

The proposed facility will be an un-manned facility, and the period that will generate the most traffic will be the construction phase of the Solar Energy Facility. The development is proposed to have direct access onto Cockys Lane.

3.1.1 Construction

On-site construction for the proposed Solar Energy Facility is largely limited to assembly and connection of components with the typical solar panels readily transportable via 12.5 m rigid trucks. For the most part, all equipment will be transported to the site via rigid trucks, with only the inverter / transformer / power station (in a 40 ft container) being required to be delivered to site by a 19 m semi-trailer.

The typical construction delivery schedule for this type of Solar Energy Facility is shown in Figure 3.

Figure 3 – Construction Delivery Schedule

	Site Works
Month 1	Civil Earthling works, fencing and landscaping
Months 2 to 4	Delivery of long lead Materials PV panel and LV cable installation
Months 4 to 5	HV station installation, testing and Commissioning
Month 6	Site Clean-up and demobilisation

In total there is a 6 month construction phase prior to full operation.

3.1.2 Heavy vehicle access to site

A route has been designated for all heavy vehicles accessing the site to / from the south on Cockys Lane.

The proposed route is as follows:

- access from the Sturt Highway via Main Canal Road through to Wallace Road onto Cockys Lane

Figure 4 indicates the proposed recommended route for all heavy vehicles.

Figure 4: Recommended route for heavy vehicles

It is expected that workers for the subject site are likely to come from the surrounding areas as follows (travel time estimate):

- Darlington Point / Coleambally (20 minute drive)
- Narrandera / Griffith (50 minutes)
- Jerilderie (1 hour)
- Wagga Wagga (1 hour 40 minutes)

All the heavy vehicle traffic will arrive to site from Sydney (to the east) and access the site via the designated route. Furthermore, it is suggested that due to the low daily volumes of heavy vehicles (up to 3 per day) that all vehicles (including light vehicles) should access the subject site along this designated route.

3.1.3 Operation / decommissioning

The proposed use is based on a thirty-year lease. Upon completion of this leasing period, if the lease is not renewed, it will be incumbent upon the operator of the facility to decommission the facility, remove all installations, and remediate the site back to its pre-existing state.

Upon approval of this application, the responsible authority may stipulate a requirement for a decommissioning and rehabilitation plan to be submitted for endorsement.

4 TRAFFIC GENERATION AND DISTRIBUTION

4.1 Traffic generation

Typically, the traffic generation for new developments is estimated using the traffic generation rates provided in the RTA Guide to Traffic Generating Developments – Version 2.2A 2002. However, traffic generation rates for solar energy storage facilities are unavailable in the RTA Guide.

Therefore, the traffic generation to / from the proposed development was estimated empirically. Traffic generation analysis was undertaken for the construction and the operational phases of the development to establish the likely peak traffic generation.

4.1.1 Construction phase traffic volumes

Based on the information provided the peak light vehicle traffic generation is likely to occur from the start of the second month of the construction phase to the completion of this phase. This is when 10 construction staff vehicles per day will access the site, which would result in a total daily traffic generation of 20 vpd (10 vpd arriving and 10 vpd departing at the end of the shift). Assuming the construction work will be undertaken during normal working hours of the day, it is anticipated that 10 vehicles will be accessing the site during a given peak hour (at the start of the morning shift).

Assessment of the heavy vehicles accessing the site during the construction phase revealed that the peak traffic generation is likely to occur from the start of the second month to the fifth month of the construction phase, when three heavy vehicles per day will access the site. This would result in a total daily traffic generation of six vpd (three vpd arriving and three vpd departing).

Assuming the construction work will be undertaken during normal working hours of the day, it is anticipated that the three vehicles will be accessing the site outside of the peak hours of operation. It is understood that not more than one heavy vehicle will access the site during the peak hour. Therefore, the impact of heavy vehicles is considered negligible. However, conservatively for this assessment it has been assumed that a single heavy vehicle will access the site during the AM or the PM peak hour.

The heavy vehicles accessing the site are likely to be 12.5 m rigid or 19 m semi-trailers (i.e. there will be no B-double trucks) accessing the site via a left turn from the Sturt Highway. It is also noted that all deliveries are expected to be delivered within a three week period.

4.1.2 Operational phase traffic volumes

The proposed Solar Energy Facility will have remote monitoring in real-time, allowing for constant surveillance and monitoring of the facility without the requirement for staffing on site.

The compound contains key infrastructure that requires a high degree of security. Upon identification of any potential issues, action can be taken indirectly from the control centre or directly using chosen contractors on-site. There will be two light vehicles to attend site every six months during the operational phase, which is for general maintenance of the site.

4.1.3 Peak traffic generation

Assessment of the likely traffic generation volumes during the construction and operational phases of the development revealed that the peak traffic generation for the site will occur during the construction phase of the development. Therefore, the TIA was undertaken to determine the traffic implications during the construction phase of the development.

Conclusion 2: The peak traffic generation is likely to occur during the construction phase of the development where ten light vehicles (generating 20 trips per day) and three heavy vehicles (generating six trips per day) will access the site on a peak construction day.

4.2 Traffic distribution

Based on the surrounding road network, it has been assumed that 90% of the light vehicle traffic will be accessing the site to / from Griffith (north) and 10% to / from the south or the east. Furthermore, it has been assumed that 100% of the heavy vehicle traffic will be accessing the site to / from the east.

It has been assumed that during the AM peak of the construction phase 100% of the light vehicles will be entering the site and 0% will be leaving the site; and 100% of the heavy vehicles will be entering the site and 0% will be leaving the site. During the PM peak of the construction phase 0% of the light vehicles will be entering the site and 100% will be leaving the site; and 00% of the heavy vehicles will be entering the site and 100% will be leaving the site.

4.3 Anticipated traffic volumes

Given the proposed Solar Energy Facility will have the peak traffic generation during the construction phase, the anticipated traffic volumes for 2021 (when the facility is under construction) are summarised in Table 1. For the purpose of this assessment it is conservatively assumed that all light vehicles and all heavy vehicles will utilise the Sturt Highway / Main Canal Road intersection for access to the site.

Table 1 - Directional split of peak traffic flow

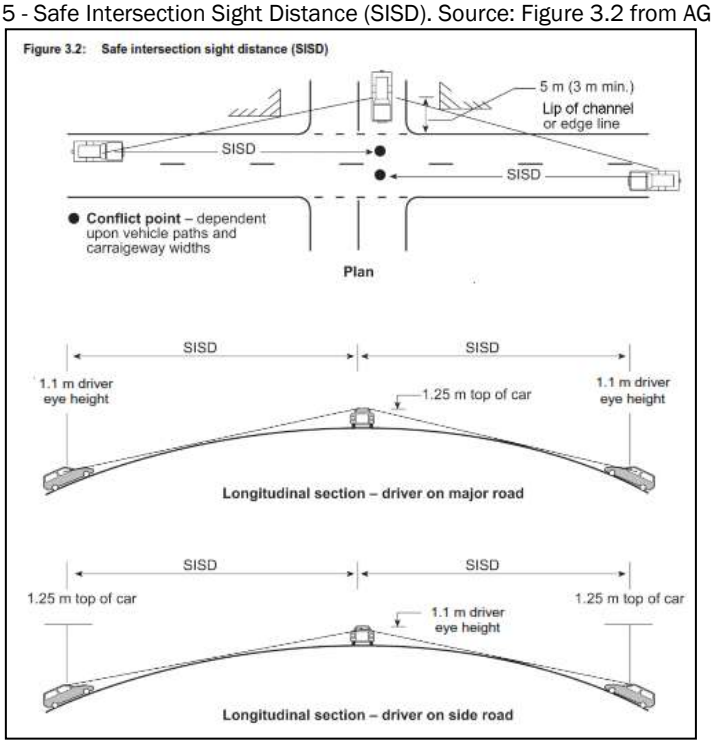
Period	Type	Left In	Right In	Left Out	Right Out	Total
AM Peak	Light	9	1	0	0	10
	Heavy	1	0	0	0	1
	TOTAL	**10**	**1**	**0**	**0**	**11**
PM Peak	Light	0	0	1	9	10
	Heavy	0	0	0	1	1
	TOTAL	**0**	**0**	**1**	**10**	**11**

5 ASSESSMENT

5.1 Sight distance

The visibility criterion normally applied to intersections is Safe Intersection Sight Distance (SISD). The minimum SISD criteria along major roads are outlined in Table 3.3 of the *Austroads Guide to Road Design Part 4A: Unsignalised and Signalised Intersections* (AGRD4A). This document provides information in relation to the minimum distance which should be provided along major road to allow sufficient distance for a driver on a major road to observe a vehicle approaching from a minor road into collision situation (e.g. in the worst case, stalling across the traffic lanes) and to decelerate to a stop before reaching the collision point (refer Figure 5).

Figure 5 - Safe Intersection Sight Distance (SISD). Source: Figure 3.2 from AGRD4A



The minimum SISD criterion specified in Table 3.2 of the AGRD4A requires clear visibility for a desirable minimum distance of 285 m, relating to the general reaction time R_T of 2 seconds and a design speed of 110 km/h (design speed = posted speed + 10km/h).

SISD for trucks should also be considered. SISD for trucks can be established from SSD (stopping sight distance) for trucks (given in Table 5.6 in the *Austroads Guide to Road Design Part 3: Geometric Design*) plus 3 seconds observation time. This equates to SISD for trucks of 274 m for a 100 km/h approach speed. The 85th percentile operating speed for trucks[1] is typically the posted speed limit for situations such as occur at the subject site.

The longitudinal formation grade of the Cockys Lane along the subject site's road frontage requires no grade corrections and the minimum SISD criterion for vehicular access to the subject site is shown in Table 2.

[1] It should be noted that the heavy vehicles are speed limited to 100 km/h

Table 2 - SISD values for cars and trucks at design speeds of 100 km/h and 110 km/h

Design Vehicle	Design Speed (km/h)	Desirable SISD (m)
Car	110	285
Truck	100	274

Clear sight lines of at least 285 m are available at the proposed gate access location (Photos 6 and 7).

Photo 6: Looking north along Cockys Lane adjacent to the subject site

Photo 7: Looking south along Cockys Lane adjacent to the subject site

Conclusion 3: Safe Intersection Sight Distance requirements would be satisfied for the proposed subject site access location.

5.2 Impact on existing road network

Prior to the commencement of this assessment the client provided the following comments provided by the asset manager of Coleambally Irrigation for the two-channel crossing along Cockys Lane.

Conditions for trucks

The road bridge about midway along Cockys Lane over the Boona Channel will handle the proposed truck loadings and movements with the following conditions:

- there is only one vehicle on the bridge at a time. "NO OVERTAKING OR PASSING" signs will be installed at this bridge. Suggest that trucks allow dust to clear from the previous truck so they can see there is no oncoming vehicle at the bridge.
- the trucks travel in the centre of the bridge deck. This is to reduce risk of damage to the edge beams.
- a 60km/hr speed limit for the trucks to reduce risk of dynamic load on the bridge beams. If the drivers notice a jump up or a pothole develop at the transition from the gravel road onto the deck that they take care to slow down to a safe speed to reduce any bounce on the deck. Site supervisor to advise if a pothole develops for the asset manager of irrigation structure to organise any necessary maintenance to bridge approach.

It is noted that the road bridge at the north end of Cockys Lane over the Tubbo Channel, near O'Neil Road, has a sign posted Gross Load Limit, due to some structural issues. No trucks should use this route.

Conditions for the Crane

The road bridge about midway along Cockys Lane over the Boona Channel will handle the proposed crane with the following conditions:

- there is only one vehicle on the bridge at a time
- the crane allows dust to clear from the previous vehicles so they can see there is no oncoming vehicle at the bridge
- the crane travels in the centre of the bridge deck. This is to reduce risk of damage to the edge beams
- crane driver will need to slow down to about 10km/hr to cross the bridge, to reduce risk of dynamic load on the bridge beams
- if the crane has removable counterweights, they be removed and transported on a separate trailer.

It is noted that the crane must not attempt to use the road bridge at the north end of Cockys Lane over the Tubbo Channel, near O'Neil Road, due to some structural issues.

Conclusion 4: the conditions from the asset manager of Coleambally Irrigation should be complied with for heavy vehicle movements along Cockys Lane, namely:

- no heavy vehicles are to access the subject site using the northern crossing over the Tubbo Channel.
- a 60 km/h speed limit applies for all heavy vehicles using the crossing over the Boona Channel
- all heavy vehicles are to cross in the centre of the Boona Channel bridge deck.

Recommendation 1: all the conditions requested by the asset manager of Coleambally Irrigation for the two-channel crossing along Cockys Lane are complied with.

5.3 Turn provisions

The traffic turning from major roads into minor roads should not delay through traffic. Turn treatments from major roads into minor roads at sign-controlled intersections are generally provided for safe and efficient operation of the intersection.

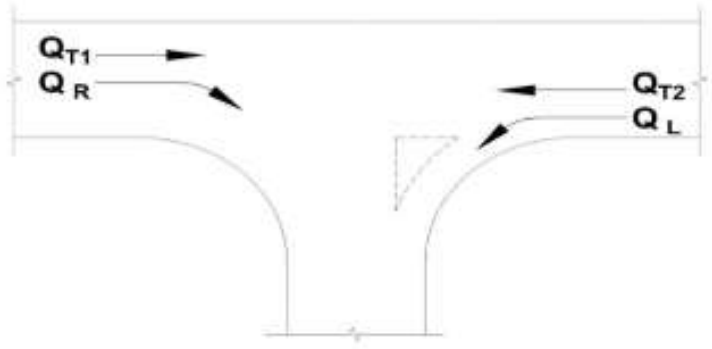
The anticipated traffic volumes during the peak hour (outlined in Table 1) were used to determine the turning warrants at key intersections near the subject site. The formulas shown in Figure A10 of the *Austroads Guide to Road Design Part 4: Intersections and Crossings* (AGRD4), reproduced in Figure 6, were used to determine the major road volume (Q_M). The results were then applied to Figure A11 of the AGRD4 (reproduced in Figures 6 and 7) to determine the turning warrants for the intersections.

It is noted that there is very low through traffic along Cockys Lane, fronting the subject site. Therefore, turn lane assessments have not been undertaken at the site access and Cockys Lane intersection, due to the low number of through vehicles.

Turn lane assessments were undertaken at the main intersection with the recommended route for heavy vehicles, discussed in Section 3.1.2.

Figure 6 - Formulas used to determine the major road traffic

Figure A 11: Calculation of the major road traffic volume parameter Q_M



Turn type	Splitter island	Q_m (veh/h)
Right	No	$= Q_{T1} + Q_{T2} + Q_L$
Right	Yes	$= Q_{T1} + Q_{T2}$
Left	No/yes	$= Q_{T2}$

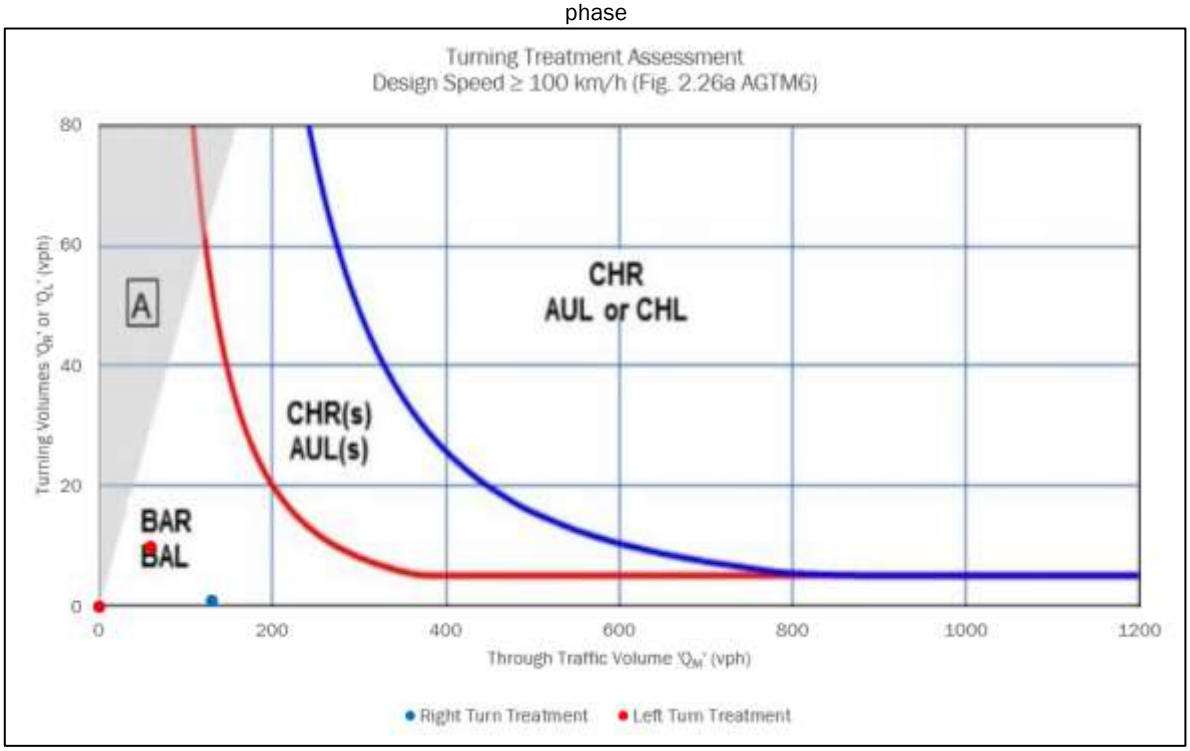
5.2.1 Sturt Highway / Main Canal Road intersection

A turning treatment assessment was undertaken for all vehicles at the Sturt Highway / Main Canal Road intersection to determine the turning warrants. Refer to Table 3 and Figure 7 for the construction phase turn warrants assessment.

Table 3 – Turn warrants at the Sturt Highway / Main Canal Road intersection – construction phase

Major	Minor Road	Peak Period	Left Turn Q_L (vph)	Right Turn Q_R (vph)	Through Q_T (vph)		Q_M Left Turn	Q_M Right Turn
Sturt Highway	Main Canal Road	AM	10	1	Q_{T1}	60	60	130
					Q_{T2}	60		
		PM	0	0	Q_{T1}	60	0	0
					Q_{T2}	60		

Figure 7 - Graph used to determine the warrants at the Sturt Highway / Main Canal Road intersection – construction phase



The assessment revealed that the Sturt Highway / Main Canal Road intersection warrants for a rural Basic Right (BAR) type treatment and a rural Basic Left (BAL) type treatment.

The existing intersection has a sealed shoulder on the westbound approach (equivalent to a Type BAL treatment) and has an Auxiliary Right turn (type AUR) lane treatment for the east bound approach.

These existing treatments meet or exceed the turning lane warrants and therefore no further works are required at the intersection.

Conclusion 5: no turn lane treatments are required at the Sturt Highway / Main Canal Road intersection for the construction phase of the development.

5.4 Access location & operation

It is recommended that the site access is constructed in accordance with Council standards with sufficient width to facilitate movements of the 19 m semi-trailers accessing the site.

Recommendation 2: that the subject site access be constructed to Council satisfaction.

5.5 Site security

The proposed development is likely to include the installation of site security to restrict access to authorised vehicles only. This will involve the provision of security gates being installed at the recommended access to Cockys Lane.

Should the development include security gates they should be installed to cater for all queuing vehicles. It is indicated that only one truck is expected to queue at any time. If the gate for the site access was setback 20 m from Cockys Lane this would allow for a 19 m semi-trailer waiting for clearance to enter the subject site.

The fencing of the subject site is approximately 40 m from the edge of the formation of Cockys Lane, therefore the setback is greater than the minimum required to store one heavy vehicle clear of the traffic lane.

Conclusion 6: the setback of the security fencing for the subject site is greater than the minimum 20 m required to allow storage of a 19 m semi-trailer clear of the traffic lane on Cockys Road.

5.6 Parking

The statutory car parking requirement for new and existing development is outlined in Clause 52.06 of the Council Planning Scheme. However, the parking requirement for solar energy storage facilities is currently unavailable. Therefore, the car parking demand for the proposed development was estimated empirically.

As discussed in Section 4 of the report, during the construction phase of the development approximately 10 light vehicles are likely to access the site. Assuming all 10 vehicles will be at the site at the same time, the subject site will have a car parking demand of 10 spaces during the construction phase of the development.

The proposed development does indicate provision of a formal off-street car parking area for the development. Furthermore, it is noted that should more parking be required, the site currently has enough space to accommodate any additional car parking demand for the proposed development. The designated car parking area will ensure safe operation of the site and employee safety, particularly during the peak construction.

Conclusion 7: the car parking demand for the site during the construction phase of the development is likely to be 10 spaces and the car parking demand for the site during the operational phase of the development is likely to be one space.

Conclusion 8: the car parking demand can be accommodated within the subject site utilising the designated formal off-street car parking area.

6 CONCLUSION

A TIA was undertaken for the proposed Solar Energy Facility in Coleambally. The following conclusions were made in the assessment.

- no trends in crashes were observed within the vicinity of the subject site in the last five-year period, hence there are no traffic safety problems that require urgent remedial action
- the peak traffic generation is likely to occur during the construction phase of the development where ten light vehicles and three heavy vehicles are estimated to access the site on a peak construction day
- Safe Intersection Sight Distance requirements would be satisfied for the proposed subject site access location
- the conditions from the asset manager of Coleambally Irrigation should be complied with for heavy vehicle movements along Cockys Lane, namely:
    - no heavy vehicles are to access the subject site using the northern crossing over the Tubbo Channel
    - a 60 km/h speed limit applies for all heavy vehicles using the crossing over the Boona Channel
    - all heavy vehicles are to cross in the centre of the Boona Channel bridge deck.
- no turn lane treatments are required at the Sturt Highway / Main Canal Road intersection for the construction phase of the development
- the setback of the security fencing for the subject site is greater than the minimum 20 m required to allow storage of a 19 m semi-trailer clear of the traffic lane on Cockys Road
- the car parking demand for the site during the construction phase of the development is likely to be 10 spaces and the car parking demand for the site during the operational phase of the development is likely to be one space
- the car parking demand can be accommodated within the subject site utilising the designated formal off-street car parking area.

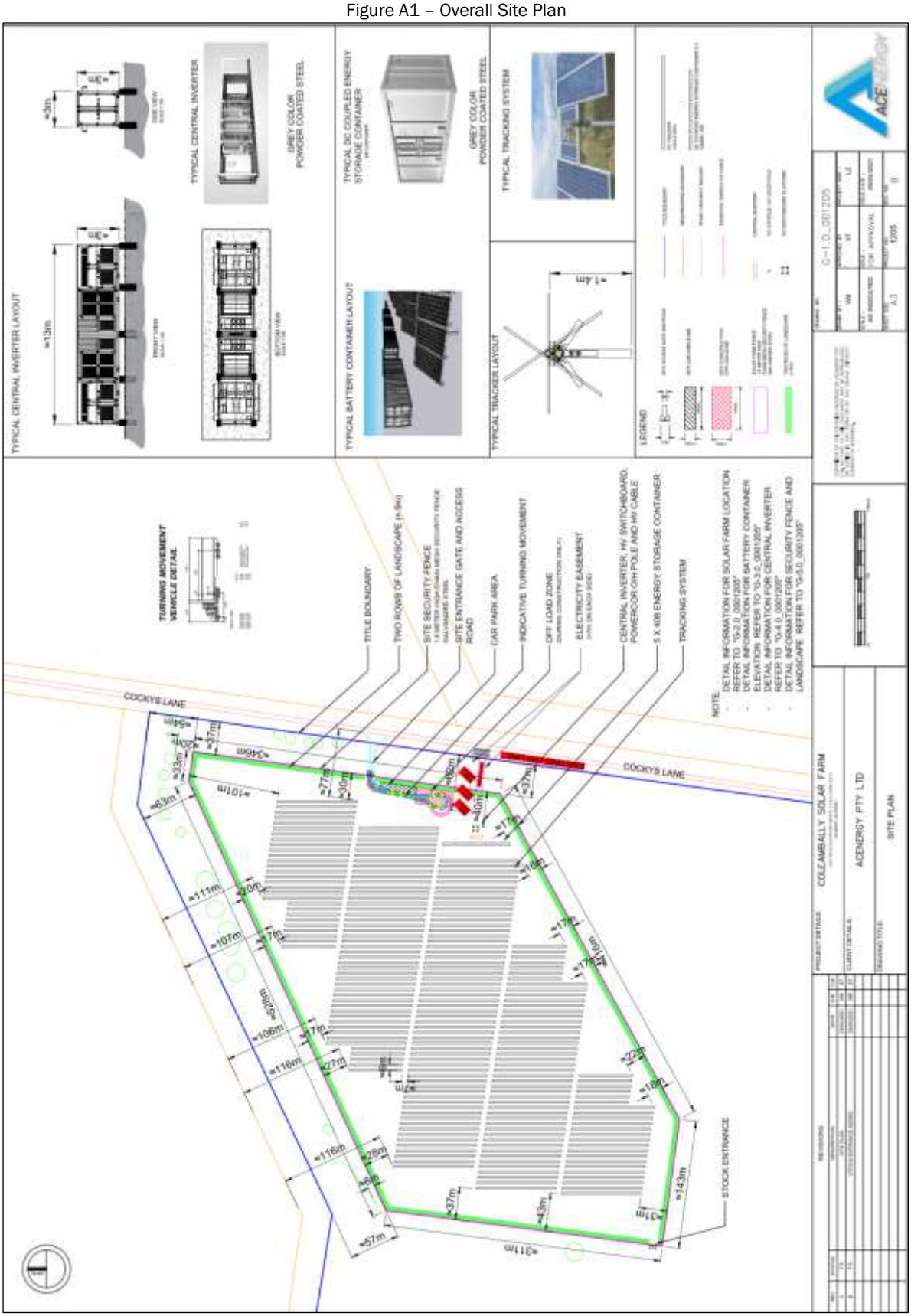
The key recommendations of the TIA are summarised below.

- **Recommendation 1:** all the conditions requested by the asset manager of Coleambally Irrigation for the two-channel crossing along Cockys Lane are complied with.
- **Recommendation 2:** that the subject site access be constructed to Council satisfaction.

The proposed development would not adversely impact on the safety or operation of the surrounding road network, provided the recommended mitigations works are undertaken.

ATTACHMENT A – PROPOSED DEVELOPMENT PLAN

Figure A1 – Overall Site Plan



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