

A wide-angle photograph of a dry, grassy field under a clear blue sky. In the distance, there is a line of trees and a few scattered trees in the foreground on the right.

TRAFFIC IMPACT ASSESSMENT

**SOLAR PHOTOVOLTAIC (PV) POWER GENERATING FARM
& ASSOCIATED SUPPORTIVE INFRASTRUCTURE**

**LOT 3 DP1034554
742 STONEY CREEK ROAD, NARRABRI**

PREPARED FOR: YES GROUP

JULY 2025

25/045

**TRAFFIC IMPACT ASSESSMENT
YES GROUP****SOLAR PHOTVOLTAIC (PV) POWER FARM**
LOT3 DP1034554
742 STONEY CREEK ROAD, NARRABRI

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A	04/07/25	Draft	JG
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C		Final Proof	JG
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1.0 INTRODUCTION

Intersect Traffic Pty Ltd (Intersect Traffic) has been engaged by the Yes Group to prepare a traffic impact assessment report for a proposed Solar Photovoltaic (PV) Power Farm (up to 5MW) on Lot 3 DP10345544 742 Stoney Creek Road, Narrabri.

The proposed development involves installation of solar panel banks, off-load area, inverter and AC combiner area, HV switchboard area, MV power station area, direct connection to a suitable existing power line near the site, on-site car parking and temporary construction office. Vehicular access to the site will be via the existing property access and extension to the development site off Stoney Creek Road approximately 7.4 km's east of Old Cemetery Road, Narrabri. The development concept plans are shown in **Attachment A**.

This report is required to support a development application to Narrabri Shire Council and allow the Council to assess the proposal in respect of its impact on the local and state road network.

This report presents the findings of the traffic and parking assessment and includes the following:

1. An outline of the existing situation near the site.
2. Assessment of the additional traffic generated by the development identifies a preferred delivery route and the additional traffics impact on the local road network.
3. Review of the adequacy of the proposed vehicular access to the site.
4. Review of the suitability and provision of on-site car parking through assessment against Council and Australian Standards requirements.
5. Presentation of conclusions and recommendations.

2.0 SITE DESCRIPTION

The subject site is shown in **Figure 1** below. It is located on the southern side of Stoney Creek Road, Narrabri approximately 7.4 km's east of Old Cemetery Road of Kaputar Road and approximately 8.5 km's east of the Narrabri CBD. The site currently contains vacant rural pasture used for agricultural purpose.

The property has the formal title of Lot 3 DP1034554, 742 Stoney Creek Road, Narrabri with road frontage access directly off Stoney Creek Road. The development area for the proposal is approximately 10 hectares. The site is currently zoned RU1 – Primary Production pursuant to the Narrabri LEP (2012).

The development lies on the property called Clovelly and will utilise the existing vehicular access to the property as well as a new internal access road extending to the development site from the existing access. Deliveries to the site will use the identified delivery road shown on **Figure 1** being via the Kamilaroi Highway from the south from Sydney and Newcastle then via Tibbereena Street (heavy vehicle detour of Narrabri CBD), Fitzroy Street, Logan Street, Reid Street, Kuputar Street, Old Cemetery Road and Stoney Creek Road to access the site. This route bypasses the Narrabri CBD and the main residential areas which have 10 tonne vehicle load limits. **Photograph 1** below shows the existing development site from Stoney Creek Road while **Photograph 2** shows the existing vehicular access to the site, which lies on the proposed construction vehicle delivery route.

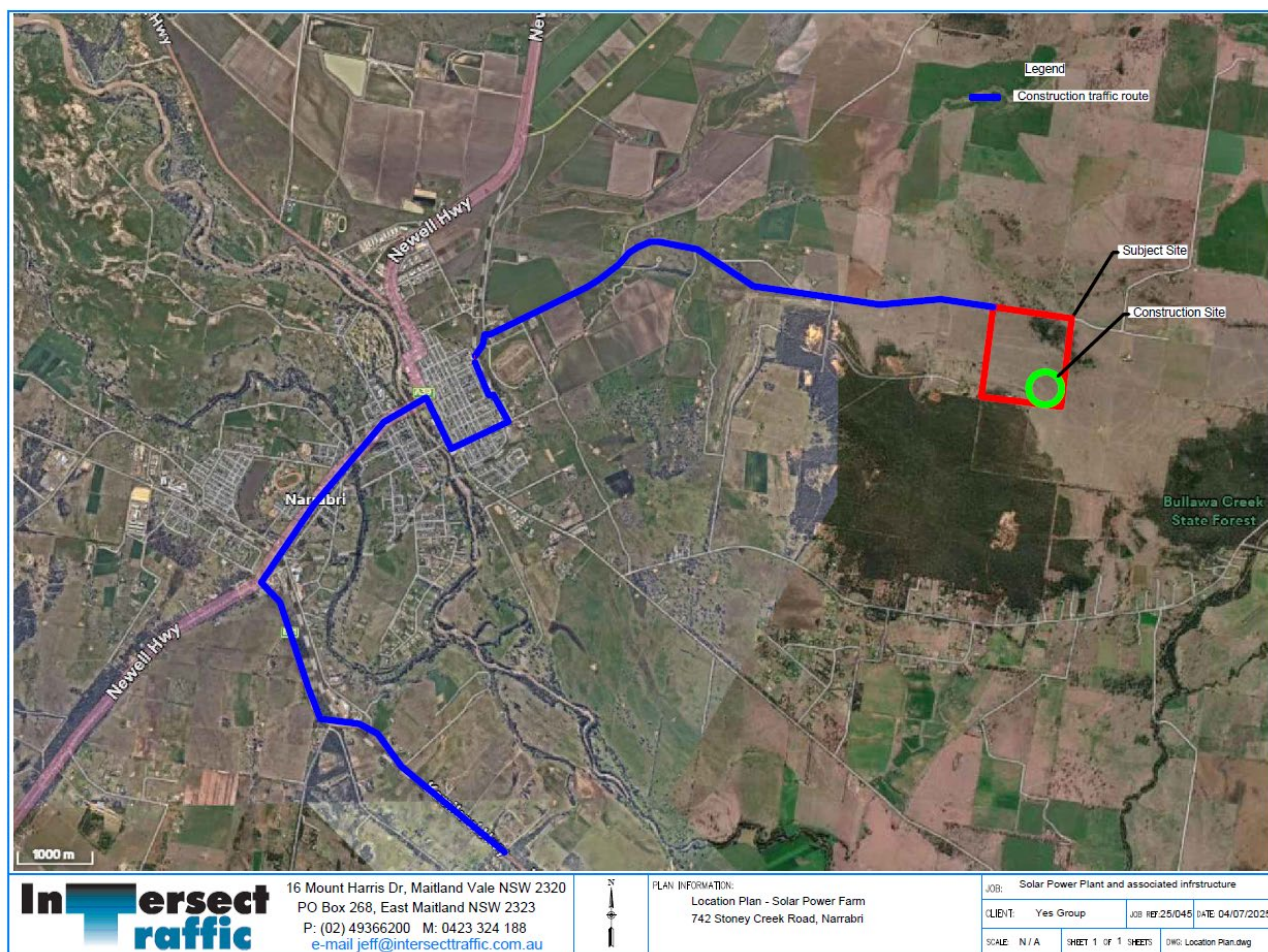


Figure 1 – Site Location and Delivery Route



Photograph 1 – Development site from Stoney Creek Road



Photograph 2 – Existing site vehicular access and internal access road.

3.0 EXISTING ROAD NETWORK

3.1 Kamilaroi Highway

The Kamilaroi Highway is a classified state highway (SH29) with its primary function to connect the New England Highway at Willow Tree to the Mitchell Highway at Bourke through Gunnedah, Boggabri, Narrabri, Wee Waa, Walgett and Brewarrina. As such, it is an arterial road and major NSW transport route from inland NSW to the NSW coastal area. As a sealed rural arterial road, the Kamilaroi Highway is under the care and control of Transport for NSW (TfNSW).

Near Narrabri the Kamilaroi Highway is a two-lane two-way sealed rural road with a 9-metre-wide sealed carriageway consisting of 3.5-metre-wide travel lanes and 1-metre-wide sealed shoulders. Additional turning lanes are provided at major intersections along its length. North and south of Narrabri, the speed zoning is 100 km/h north while a 60 km/h speed zoning exists through Narrabri. At the time of inspection, the Kamilaroi Highway was observed to be in good condition as shown in **Photograph 3** below. It is considered suitable for use by heavy vehicle traffic.



Photograph 3 – Kamilaroi Highway.

3.2 Tibbereena Street

Tibbereena Street is a local sealed rural collector road with its primary function to collect and distribute traffic around the Narrabri CBD to the arterial road network for the eastern parts of Narrabri, as well as provide vehicular access to properties along its length. As a local rural sealed road, it is under the care and control of Narrabri Shire Council, and a 50 km/h speed zoning applies to the road through to Fitzroy Street.

Tibbereena Street is a two-lane two-way sealed urban road with a 22-metre-wide sealed pavement between kerb and gutter. This comfortably allows two lanes of traffic flow, one in each direction, as well as nose to kerb angled parking along both sides of the street. At the time of inspection, Tibbereena Street was observed to be in good condition as shown in **Photograph 4** below and is suitable for heavy vehicle traffic associated with the construction of the proposed solar farm. Tibbereena Street intersects with the Kamilaroi Highway as a give way controlled channelised intersection and continues as Fitzroy Street at its eastern end where the road heads north-south.



Photograph 4 – Tibbereena Street near Fitzroy Street.

3.3 Fitzroy Street

Fitzroy Street is a local sealed rural road with its primary function to provide vehicular access to properties along its length. It does however provide a minor collector road function connecting the north-eastern parts of the Narrabri residential area and industrial areas in the north-east of Narrabri to the higher function roads of Tibbereena Street then the Kamilaroi Highway. As a local rural road, it is under the care and control of Narrabri Shire Council and a 50 km/h speed zoning would apply to Fitzroy Street.

Near the site, Fitzroy Road is a two-lane two-way sealed rural road with a 15-metre-wide sealed carriageway between kerbs which comfortably allows two-way traffic flow and a parallel parking lane on both sides of the road. It crosses Maitland Street along the delivery route via a give way-controlled cross-intersection with Maitland Street having priority. At the time of inspection, Fitzroy Street was observed to be in good condition as shown in **Photograph 5** below.



Photograph 5 – Fitzroy Street.

3.4 Logan Street

Logan Street is a local sealed urban road with its primary function to provide vehicular access to properties along its length, including a number of industrial developments. As a local urban road, it is under the care and control of Narrabri Shire Council and a 50 km/h speed zoning would apply to Logan Road.

Near the site, Logan Street is a two-lane two-way sealed urban road with a 14-metre-wide sealed carriageway which comfortably allows two-way traffic flow, including heavy vehicles traffic and some on-street car parking. At the time of inspection, Logan Street near the site was found to be in good condition as shown in **Photograph 6** below. Logan Street intersects with Fitzroy Street via a give way-controlled T-intersection.

3.5 Reid Street

Reid Street is a local sealed urban road with its primary function to provide vehicular access to properties along its length. As a local urban road, it is under the care and control of Narrabri Shire Council and a 50 km/h speed zoning would apply to Reid Street.

Near the site, Reid Street is a two-lane two-way sealed urban road with a 12-metre-wide sealed carriageway which comfortably allows two-way traffic flow, including heavy vehicles traffic and some on-street car parking. At the time of inspection, Reid Street near the site was found to be in good condition as shown in **Photograph 7** below. Reid Street intersects with Bowen Street which becomes Logan Street north of Reid Street via a give way-controlled T-intersection.



Photograph 6 – Logan Street.



Photograph 7 – Reid Street.

3.6 Old Cemetery Road

Old Cemetery Road is a local sealed urban road with its primary function to provide vehicular access to properties along its length. As a local urban road, it is under the care and control of Narrabri Shire Council and a 50 km/h speed zoning would apply to Old Cemetery Road.

Near the site, Old Cemetery Road is a two-lane two-way sealed urban road with a 12.5-metre-wide sealed carriageway which comfortably allows two-way traffic flow, including heavy vehicles traffic. At the time of inspection, Old Cemetery Road near the site was found to be in good condition as shown in **Photograph 8** below. Reid Street intersects with Kaputar Street which connects to Old Cemetery Road via a give way-controlled T-intersection. The section of Old Cemetery Road between Reid Street and Stoney Creek Road contains an at grade signalised railway crossing and a two-lane reinforced concrete bridge over a local creek. Neither had any weight limit signage therefore it is concluded that this infrastructure can also cater for the heavy vehicle traffic from the construction of the proposed solar farm.



Photograph 8 – Old Cemetery Road near Stoney Creek Road.

3.7 Stoney Creek Road

Stoney Creek Road is a local sealed and unsealed rural road with its primary function to provide vehicular access to properties along its length. As a local rural road, it is under the care and control of Narrabri Shire Council and 50 km/h and 100 km/h speed zoning applying to the urban and rural sections of Stoney Creek Road. The urban section between Old Cemetery Road and Bailey Street and the sealed rural section of Stoney Creek Road have a sealed pavement approximately 6 metres wide which is suitable two-way traffic flow for low traffic volumes, including for some heavy vehicle usage. Approximately 5 km east of Narrabri near Pistol Club Road, Stoney Creek Road becomes a gravel unsealed road with a carriageway width approximately 7 metres wide. There are two narrow concrete creek crossing causeways on Stoney Creek Road between the site and Narrabri which will require heavy vehicles to cross at a slow speed with appropriate traffic control signage in place during construction of the solar farm under an overlying Traffic

Management Plan (TMP) for the project. This TMP will need to be in place over the delivery for the duration of the construction of the solar farm for the road to be suitable for the heavy vehicle use during the construction period. At the time of the inspection both the sealed and unsealed sections of Stoney Creek Road were considered to be in good condition as shown below in **Photographs 9 & 10** below.



Photograph 9 – Stoney Creek Road near Old Cemetery Road.



Photograph 10 – Stoney Creek Road near site access.

4.0 ALTERNATE TRANSPORT MODES

Forest Coach Lines provide regular public transport (bus) services within Narrabri with their route map shown below in **Figure 2**. It is noted however that the nearest service to the site Route 457C (Narrabri Town Loop) is still some 7.5 km by road to the site and therefore not considered appropriate for the development.

As a rural area, there are no pedestrian footpaths or on / off road cycleways within the local road network. Near the site, pedestrians are generally required to utilise the grass verges and road shoulders / pavement, while cyclists are required to utilise the road shoulders or share the travel lanes with other vehicles.

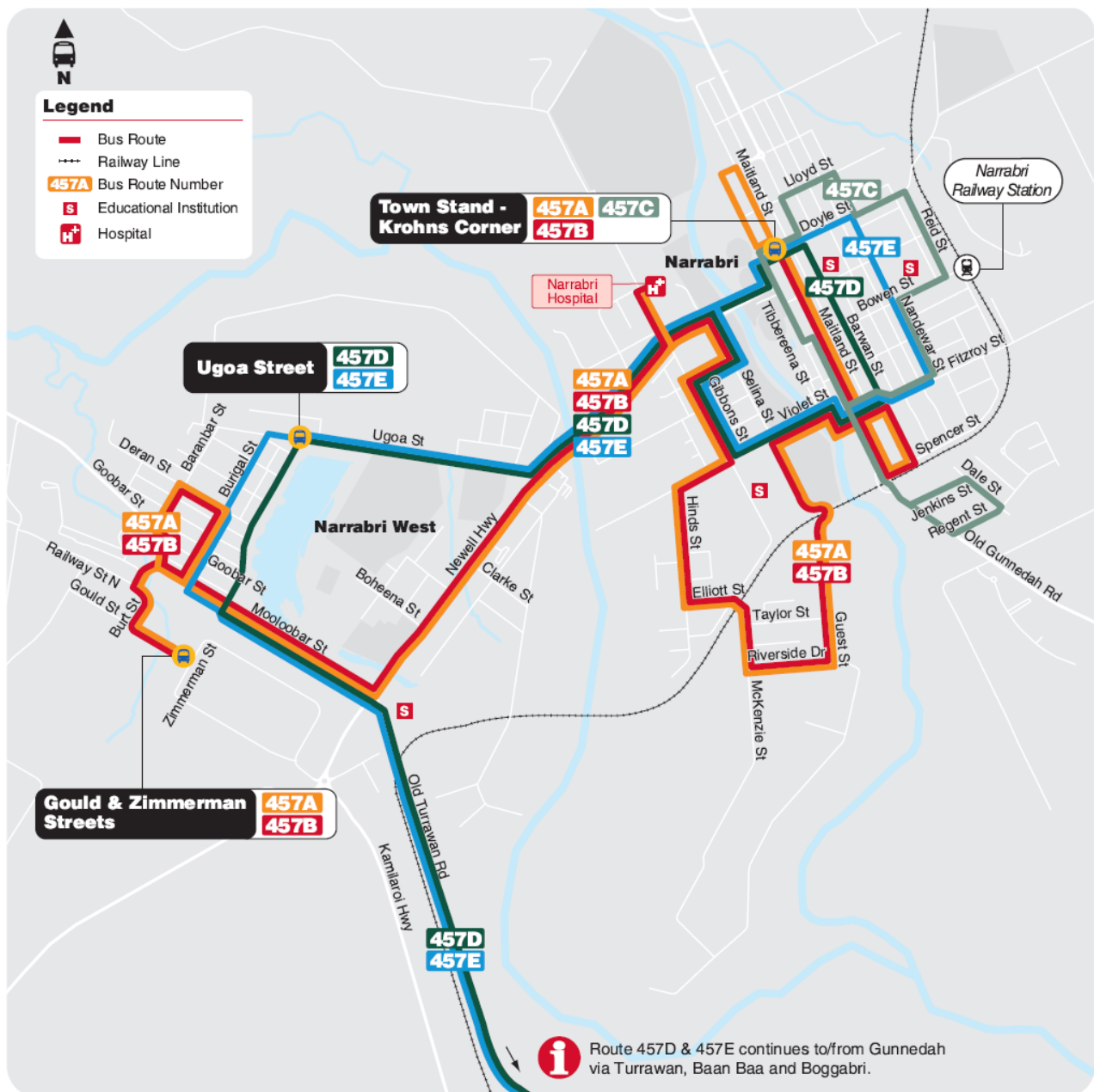


Figure 2 – Forest Coach Lines – Narrabri bus routes

5.0 DEVELOPMENT PROPOSAL

The proposed development involves the construction of a Solar Photovoltaic (PV) Power Farm on the site. The development plans are shown in **Attachment A** with the specific works involved in the development construction are listed below:

- Installation of temporary construction office and amenities.
- Installation of Solar Panel arrays.
- Earthworks for construction lay-down area, hardstand areas and internal roads.
- Installation of inverters, transformers and switchgear.
- Construction of an unsealed access road from the construction site to the existing internal access road; and
- Construction of security fence and entrance gate.

The development will require a team of 30 construction employees for a period of up to 6 months working 7 am to 5 pm Monday to Friday and 8 am – 1 pm on Saturdays. The majority of traffic movements associated with the development will occur during the construction of the solar power farm. Traffic movements generated by the operation of the development would include a single staff light vehicle movement associated with maintenance inspections as required and specific maintenance work which would be short term and infrequent. Deliveries during construction works would be expected to be within rigid and articulated vehicles. More detail on construction traffic is provided later in this report.

6.0 TRAFFIC IMPACTS

6.1 – Traffic Generation and Trip Distribution

The TfNSW publication “*Guide to Transport Impact Assessment (2024)*” provides advice on the traffic generating potential of different land uses. However, this document does not cover Solar Farms therefore determining traffic generation is reliant on advice from the applicant regarding construction and operation of the development. The advice provided by the applicant is shown in **Attachment C**.

From an operational perspective traffic generation is expected to be minimal with only regular quarter yearly maintenance inspections carried out generating up to 2 vtpm each inspection. Therefore, based on this advice an infrequent peak hour traffic generation for the solar farm of 2 vehicle trips per hour (vtpm) has been assumed in this assessment for operational traffic. There may be times when specific maintenance tasks have to be undertaken but these will be infrequent, short-term and undertaken under a construction traffic management plan for the work.

Construction traffic estimates for the development are as follows based on the information provided in **Attachment C**.

- Construction employees on-site – Maximum 15 transported in up to 5 light vehicles per day arriving between 6 am and 7 am and departing between 5 pm and 6 pm.
- Deliveries – Mainly heavy rigid vehicles and articulated vehicles (AV). Maximum – 3 per day between 10 am and 3 pm. Whilst these are likely to mostly arrive outside the peak hour traffic generation periods associated with the arrival and departure of employees, logistically there could be occurrences when due to circumstances out of the control of the contractor, a delivery arrives during the peak hour periods.
- No B-Double or OSOM vehicles will deliver materials to the site.
- Other vehicles – Some earthworks plant may be required on-site as well as concrete agitators and road base material deliveries during construction of the access and footings

for the Solar Farm infrastructure. It would be expected a maximum frequency of 1 deliveries (2 vtph) within a peak hour is assumed.

- Construction period – up to 6 months

Based on this advice, the likely peak hour traffic generation, which will occur in the AM peak coinciding with employees arriving on site and in the PM peak coinciding with employees leaving the site, is calculated below. It is also noted deliveries involve 2 trips with an inbound trip and an outbound trip.

AM peak = 5 inbound employees + 1 x 2 roadworks and other plant + 1 x 2 deliveries = 9 vtph (7 inbound and 2 outbound).

PM peak = 5 outbound employees + 1 x 2 roadworks and other plant + 1 x 2 deliveries = 9 vtph (7 outbound and 2 inbound).

It is expected that the distribution of trips will be all west towards or from Narrabri, with deliveries being via the New England Highway and Kamilaroi Highway from the south (Newcastle or Sydney) and construction employees likely to be staying in accommodation in Narrabri. The likely transportation route as envisaged for the project is shown on the location plan (**Figure 1**) in this report.

Existing traffic volumes in the area were recorded by Intersect Traffic at the Old Cemetery Road / Stoney Creek Road and Maitland Street / Fitzroy Street intersections during the likely peak AM and PM traffic periods (road network) on Thursday 19th June 2025 and Friday 20th June respectively. The data sheets for these counts are provided in **Attachment B**.

These traffic counts determined that the relevant peak hour two-way mid-block traffic volumes on the local road network in the AM and PM periods during this period were.

- Stoney Creek Road east of Old Cemetery Road - 24 vtph in the AM peak and 20 vtph in the PM peak.
- Old Cemetery Road south of Stoney Creek Road – 24 vtph in the AM peak and 22 vtph in the PM peak.
- Fitzroy Street north of Maitland Street – 153 vtph in the AM peak and 159 vtph in the PM peak; and
- Fitzroy Street south of Maitland Street – 229 vtph in the AM peak and 253 vtph in the PM peak.

Given the construction will be completed within a 6-month period and the peak operational traffic volume from the site is only 2 vtph, there is no need to undertake a 2035 (10-year horizon period) assessment for this development.

6.2 – Road Capacity

Table 4.3 and 4.5 of the TfNSW publication “*RTA’s Guide to Traffic Generating Developments*” provides some guidance on likely two-way mid-block capacity of two-lane two-way urban and rural roads, respectively. These tables are reproduced below as **Table’s 1 and 2**.

Table 1 – Rural Road Two-way Mid-Block Capacity Table

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.

Table 2 – Urban Road Two-way Mid-Block Capacity Table

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

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

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

It is assumed that the appropriate terrain level for Stoney Creek Road is level and that a satisfactory level of service (LoS) on the road network is a LoS C (note Table 4.3 values are for a LoS C). Therefore, after adopting a 5% heavy vehicle percentage on traffic volumes, the above tables suggest the relevant two-way mid-block road capacities for the local and state road network on the construction delivery route are as follows and these values have been adopted in this assessment.

- Stoney Creek Road – 970 vtpH; and
- Kamilaroi Highway, Tibbereena Street, Fitzroy Street, Logan Street, Reid Street, Old Cemetery Road – 1,800 vtpH.

As the combination of the two-way mid-block peak hour traffic data and traffic generation figures reported in **Section 6.1** in the AM and PM peak hour traffic volumes on the local and state road network during construction will be well below the existing capacity thresholds determined above, then the local and state road network has sufficient spare two-way mid-block capacity to cater for the construction and operation of the Solar Farm. The addition of up to 9 vtpH will not cause the capacity thresholds determined above to be reached. Therefore, it can be concluded that the proposed development will not adversely impact on the local and state road network mid-block traffic flows.

6.3 – Intersection Capacity

The main intersections impacted by the construction of the development will be as follows.

- Kamilaroi Highway / Newell Highway roundabout.
- Kamilaroi Highway / Tibbereena Street give way-controlled intersection.
- Maitland Street / Fitzroy Street give way-controlled intersection.
- Fitzroy Street / Logan Street give way-controlled intersection.
- Bowen Street / Reid Street give way-controlled intersection.
- Reid Street / Kaputar Road give way-controlled intersection; and
- Old Cemetery Road / Stoney Creek Road give way-controlled T-intersection.

These intersections were all observed during the AM and PM peak hour traffic periods to be operating with uninterrupted flow conditions with little if any delay for motorists and little if any queuing occurring at the intersections. Traffic counts undertaken as part of this assessment showed traffic volumes at the counted intersections being well below the thresholds sourced from Austroads *Guide to Traffic Management Part 6 – Intersections, Interchanges and Crossings* (2010), reproduced below in **Table 3** of this report. The Guide states that if traffic volumes are not above these thresholds, then uninterrupted flow conditions can be assumed and little or no delay will be experienced by motorists at these intersections. No further intersection analysis is then required.

Table 3 – Uninterrupted flow condition thresholds at an intersection

Major road type ¹	Major road flow (vph) ²	Minor road flow (vph) ³
Two-lane	400	250
	500	200
	650	100
Four-lane	1000	100
	1500	50
	2000	25

Source: - Austroads *Guide to Traffic Management – Part 6: Intersections, Interchanges and Crossings* (2010)

The addition of only 9 vtpH during the peak construction activities associated with the project will not result in these thresholds being reached or exceeded at the key intersections along the project materials delivery route. Therefore, it is reasonable to conclude that the proposed construction works associated with the solar farm does not adversely impact on the operation of these intersections or any other intersection on the local and state road network.

6.4 Access Assessment

In terms of width, the access to the development providing access to a user class 1 (long term) car parking facility with less than 25 car spaces fronting a local road is required to be a category 1 access (Table 3.1 of the Standard). Table 3.2 of the Standard then specifies a category 1 access facility as a combined entry / exit between 3.0 to 5.5 metres wide. However, the proposed entrance width at the combined entry / exit access at Stoney Creek Road will need to be a minimum 12.5 metres wide and the road edge to cater for the swept turning paths for delivery vehicles during the construction stage and satisfy the requirements of 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*.

Sight distance at the existing site access off Stoney Creek Road was observed to be in excess of 300 metres in each direction which therefore complies with the requirements of Figure 3.2 of Australian Standard AS2890.1-2004 *Parking Facilities – Part 1 Off-street car parking (160 metres minimum SSD for 100 km/h)* as well as Austroads *Guide to Road Design – Part 4A – Unsignalised and signalised intersections - Table 3.2 (248 metres for 100 km/h)* for safe intersection sight distance.

It is therefore concluded that the existing site access is suitably located and satisfactory for use for the Solar Farm as it complies with the requirements of 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 main issue with access for construction vehicles to the site, is the suitability of the local road network to safely cater for heavy vehicle deliveries. In this regard it is noted that Stoney Creek Road has a sealed pavement approximately 6 metres wide and an unsealed pavement 7 metres wide on the delivery route to the site therefore complies with Austroads Standards for Rural Roads with less than 500 vph. It allows two heavy vehicles to pass each other at normal speed. However, there are two pinch points being single lane causeways on Stoney Creek Road on the delivery route for which advance warning signage will need to be established and maintained during construction as part of an overall Construction Traffic Management and Control Plan for the project. Therefore, it is considered the proposed transportation route to the site is suitable to carry heavy vehicles and thus is suitable to cater for the construction traffic from the Solar Farm construction. However, the additional heavy vehicle loading from the construction may accelerate the deterioration in the sealed pavement along the transportation route. It is therefore recommended that a dilapidation report be prepared for the project in regard to the delivery route from the Kamilaroi Highway to the site, particularly in regard to Stoney Creek Road, caused by the construction of the Solar Farm and ensure the road network is repaired to Council's satisfaction post the construction stage of the development. This will require pre and post construction stage inspections of the road pavement along the proposed delivery routes.

Overall, with a suitable condition of consent included for the preparation of a dilapidation report covering the delivery route from the Kamilaroi Highway to the site and the satisfactory repair of the local road network post construction, it is considered the local and state road network would be suitable to cater for the expected construction traffic associated with the proposed solar farm.

7.0 ON-SITE CAR PARKING

On-site car parking for the proposal is required to comply with the Industrial Development controls of the Narrabri Shire Council's Development Control Plan – Parking Code No. 1. Adopting the factory rates for this project the relevant on-site car parking provision during the operation of the Solar Farm is.

- 1.3 spaces per 100m² GFA .

With no building proposed for the Solar Farm, the development is theoretically not required to provide any on-site car parking space under the DCP requirements. However, with a single maintenance vehicle visit to the site likely to occur at most once a week, it would be prudent to provide at least 1 on-site vehicle car park within the development. However, it is also the responsibility of the applicant to provide sufficient on-site car parking for construction employees during the construction of the development to comply with the car parking objectives of the DCP. Construction employee car parking will be provided on the hard stand area identified as the construction lay down area and is large enough to cater for the expected storage requirements during construction as well as the provision of at least 5 on-site car parks for construction employees, which is the expected traffic generation from employees to the site. This is in excess of the Industrial land use requirements of the Narrabri Shire Council Development Control Plan – Parking Code No. 1. With significant overflow parking areas also on site, it is reasonable to conclude the development provides sufficient on-site car parking that complies with the objectives and controls related to car parking required within Narrabri Shire Council's Development Control Plan – Parking Code No. 1.

The employee car parking area would need to comply with the requirements of Australian Standard *AS2890.1-2004 Parking Facilities – Part 1 Off-street car parking* with parking bay sizes 2.4 m x 5.4 m and aisle widths of 5.8 metres. There is sufficient room on-site to ensure compliance with this requirement, which could be covered by a suitable condition of consent. Overall, it is considered suitable on-site car parking can be provided for the development ensuring all vehicle movements to and from the site off Stoney Creek Road will be undertaken in a forward direction.

8.0 ALTERNATE TRANSPORT MODES

The proposed development will not generate any increase in public transport demand during both the construction and operational phases of the development particularly given the site is not currently serviced by convenient public transport. Therefore, there is no nexus for the provision of new services or improved infrastructure resulting from the development. Similarly, the development will not generate any additional pedestrian or cycle traffic during both the construction and operation phases of the development therefore no nexus exists for the provision of additional pedestrian paths or cycle ways near the site.

9.0 CONCLUSIONS

This traffic and parking assessment for the proposed Solar Photovoltaic (PV) Power Farm (up to 5MW) on Lot 3 DP10345544 742 Stoney Creek Road, Narrabri has determined the following:

- The development during construction will generate up to an additional 9 vehicle movements per hour to and from the site during the weekday AM and PM peak periods but only 2 vph once every 3 months during the operation of the Solar Farm.
- The existing peak traffic volumes on the local road network are well below the two-way mid-block capacity for the local and state road network (LoS C). Traffic volumes will remain below this threshold during the construction and operation of the development.
- The local and state road intersections along the delivery route to the site from the Kamilaroi Highway will continue to operate with uninterrupted flow conditions during and post construction of the Solar Farm with little if any impact on the operation of the intersections, resulting from the development.
- Therefore, the additional construction and operational traffic generated by this development will not adversely impact on the efficiency or effectiveness of the local and state road network.
- The existing site access is suitable for use for construction and operation of the solar farm being compliant with Australian Standard and Austroads requirements.

- With a suitable condition of consent included for the preparation of a dilapidation report covering the delivery route from the Kamilaroi Highway to the site and the satisfactory repair of the local road network post construction, it is considered the local and state road network would be suitable to cater for the expected construction traffic associated with the development.
- There is sufficient area on-site to accommodate the expected peak parking demand generated by the development during both construction and operation with the provision of an AS2890.1-2004 compliant car park within the construction laydown area for a minimum 5 spaces as well as the provision of numerous overflow parking areas on the site.
- The proposed development will not generate any increase in public transport demand therefore no nexus exists for the provision of new services or improved infrastructure resulting from the development. Similarly, the development will not generate any additional pedestrian or cycle traffic, therefore no nexus exists for the provision of additional pedestrian paths or cycle ways near the site.

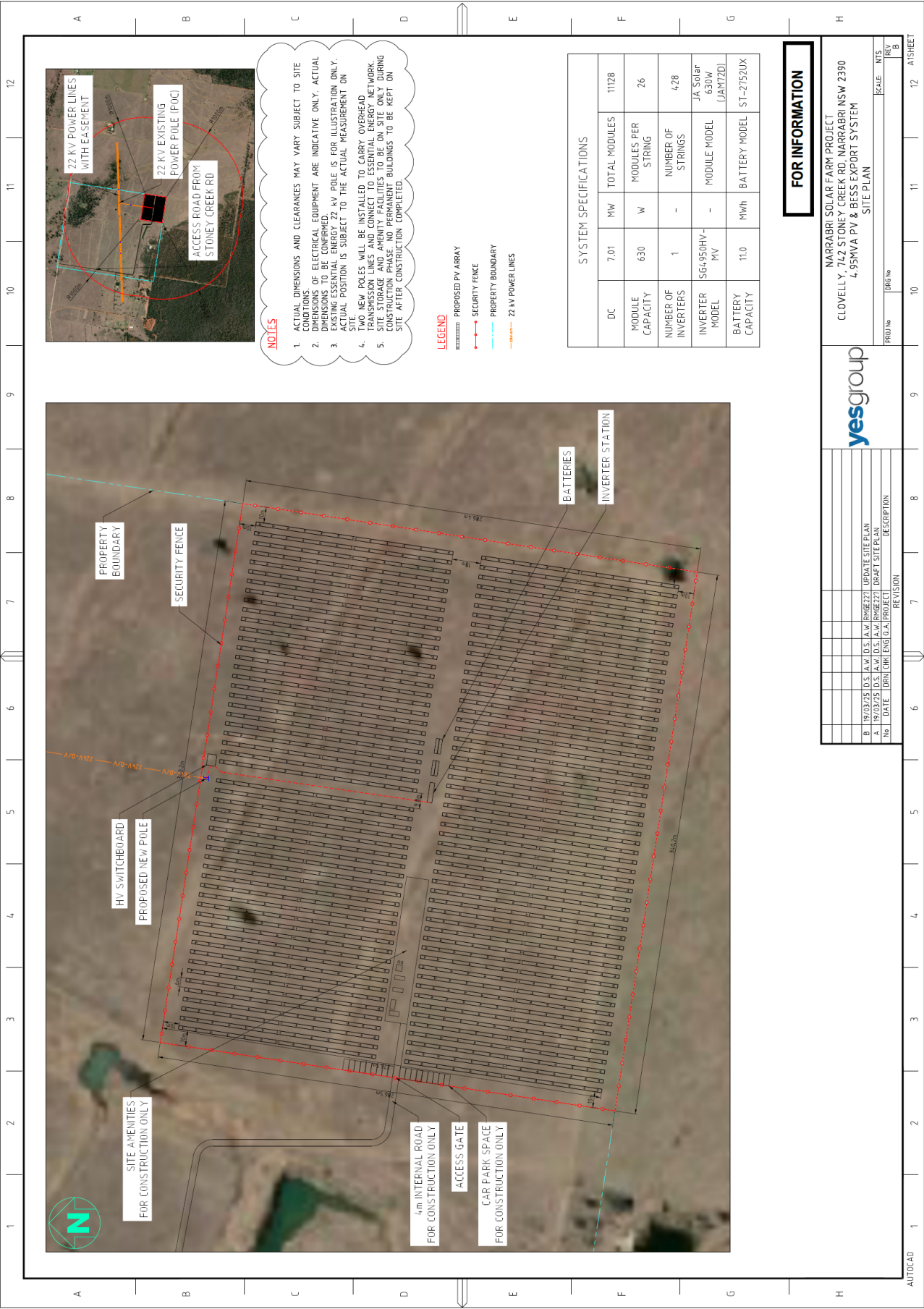
10.0 RECOMMENDATION

Having carried out this traffic and parking assessment for the proposed Solar Photovoltaic (PV) Power Farm (up to 5MW) on Lot 3 DP10345544 742 Stoney Creek Road, Narrabri, it is recommended that the proposal can be supported from a traffic perspective as the development will not adversely impact on the local and state road network and complies with all relevant requirements of Narrabri Shire Council, Austroads, Australian Standards and TfNSW.



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

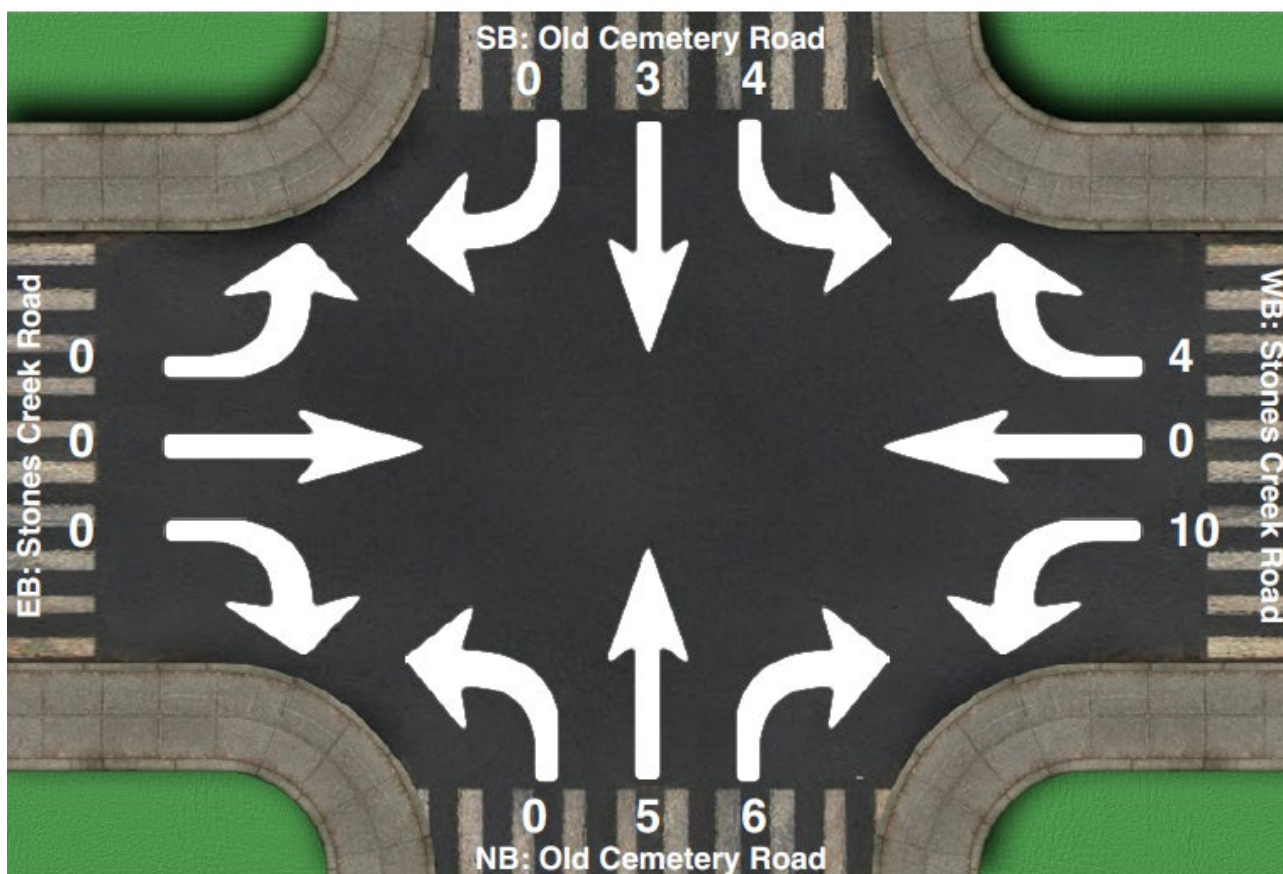
ATTACHMENT A DEVELOPMENT PLANS



ATTACHMENT B TRAFFIC COUNT DATA

Intersection Peak Hour

Location: Old Cemetery Road at Stones Creek Road, Narrabri
 GPS Coordinates:
 Date: 2025-06-19
 Day of week: Thursday
 Weather:
 Analyst: Jeff



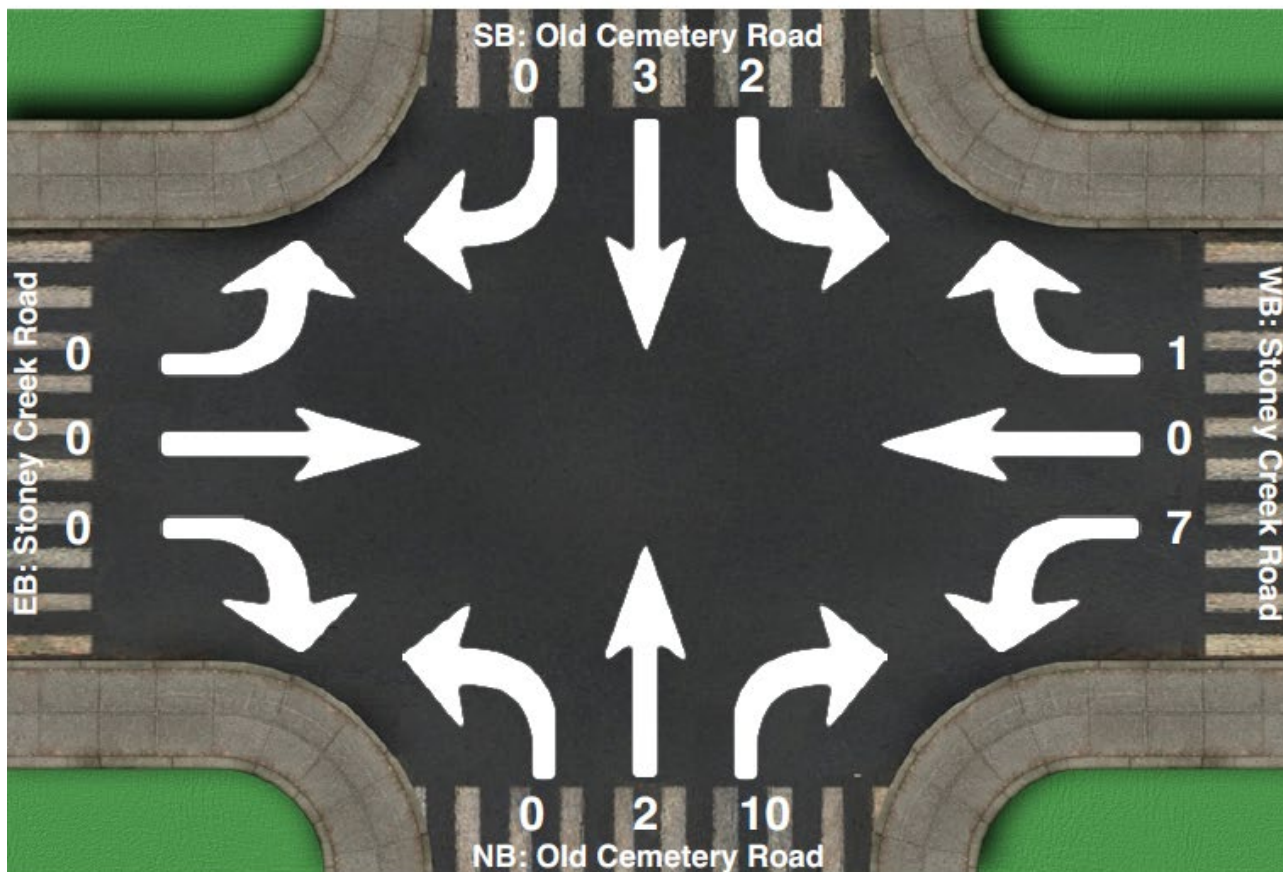
Intersection Peak Hour

08:00 - 09:00

	SouthBound			Westbound			Northbound			Eastbound			Total
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
Vehicle Total	4	3	0	10	0	4	0	5	6	0	0	0	32
Factor	0.33	0.75	0.00	0.83	0.00	0.33	0.00	0.42	0.50	0.00	0.00	0.00	0.80
Approach Factor	0.44			0.58			0.69			0.00			

Intersection Peak Hour

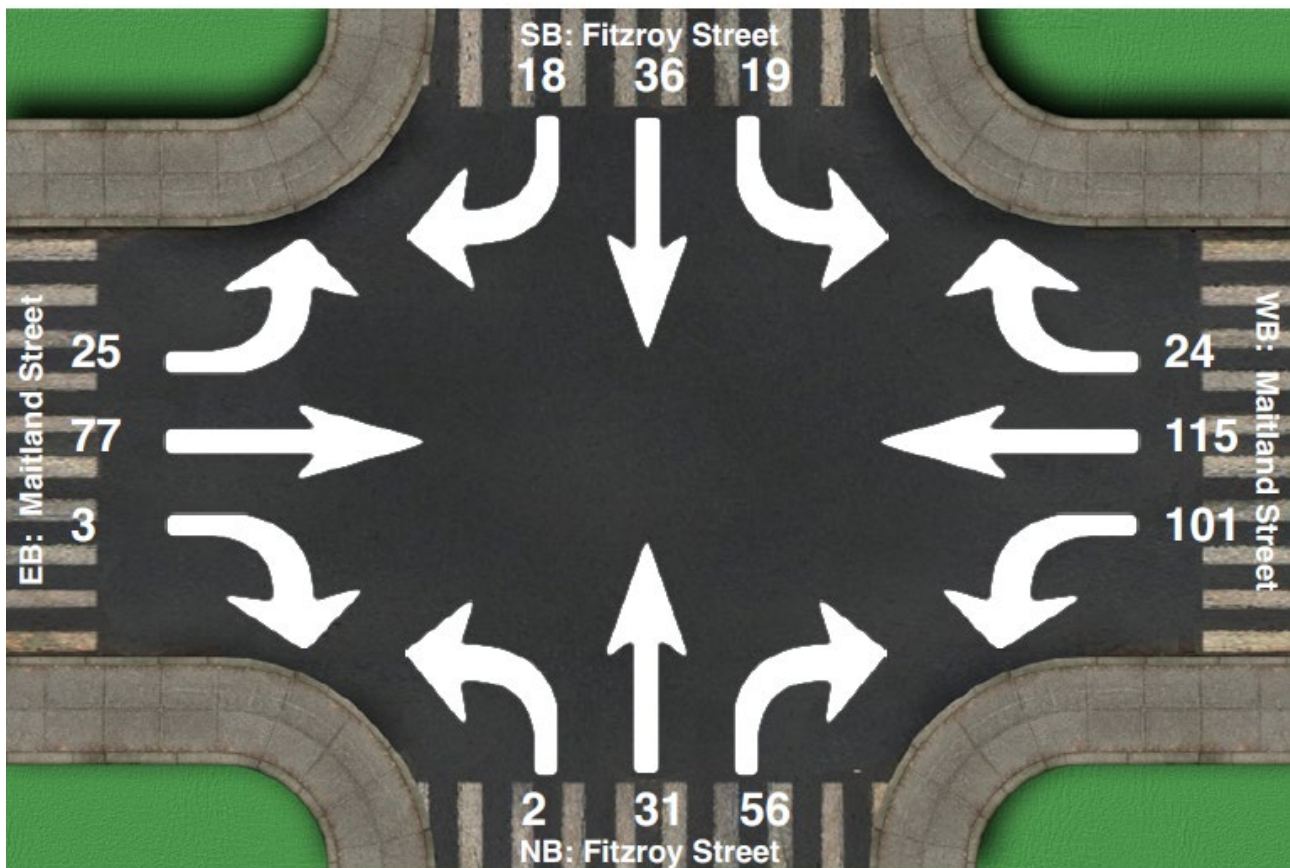
Location: Old Cemetery Road at Stoney Creek Road, Narrabri
 GPS Coordinates:
 Date: 2025-06-19
 Day of week: Thursday
 Weather:
 Analyst: Jeff



Intersection Peak Hour

15:00 - 16:00

	SouthBound			Westbound			Northbound			Eastbound			Total
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
Vehicle Total	2	3	0	7	0	1	0	2	10	0	0	0	25
Factor	0.50	0.75	0.00	0.58	0.00	0.25	0.00	0.50	0.62	0.00	0.00	0.00	0.78
Approach Factor	0.62			0.67			0.75			0.00			



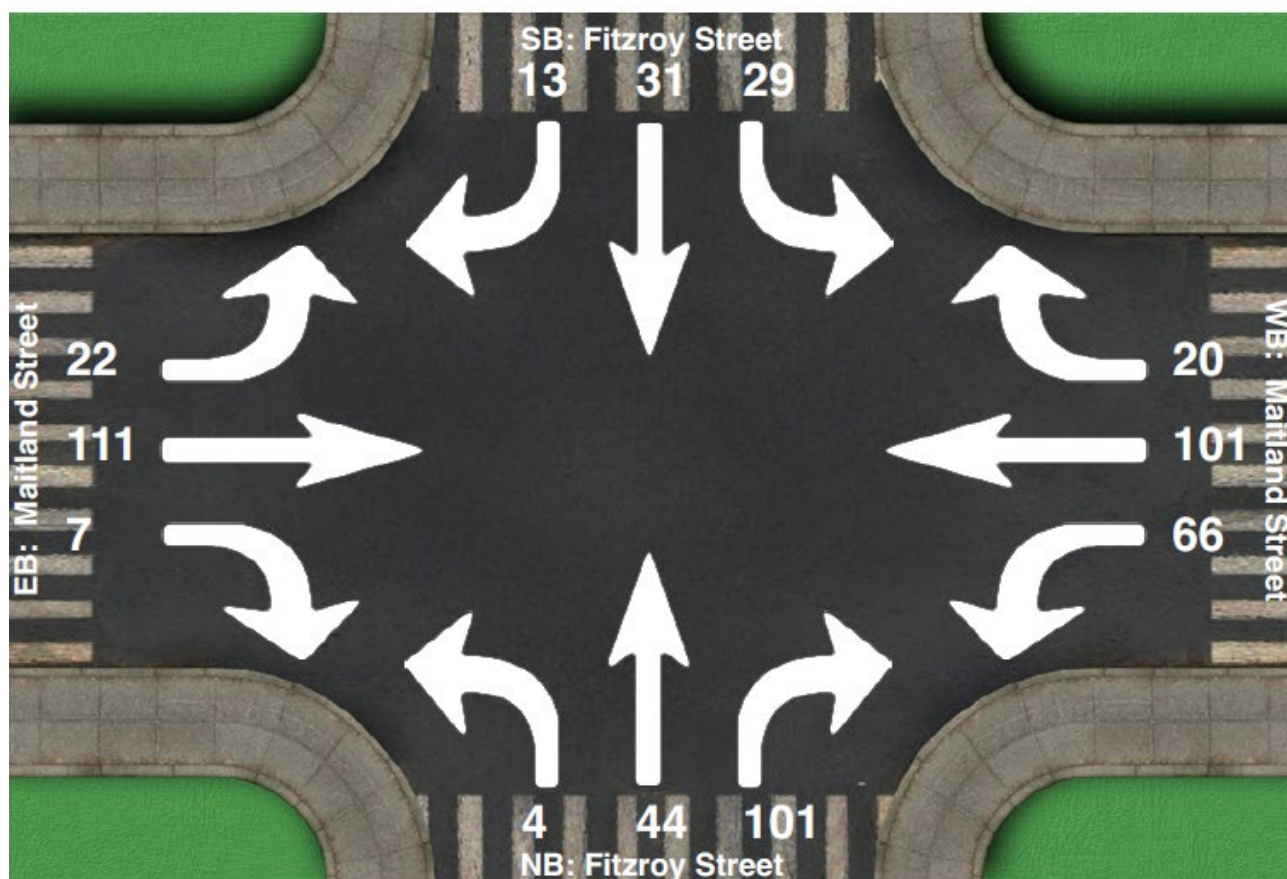
Intersection Peak Hour

08:30 - 09:30

	SouthBound			Westbound			Northbound			Eastbound			Total
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
Vehicle Total	19	36	18	101	115	24	2	31	56	25	77	3	507
Factor	0.79	0.69	0.64	0.66	0.80	0.67	0.50	0.70	0.78	0.78	0.80	0.38	0.93
Approach Factor	0.83			0.81			0.86			0.77			

Intersection Peak Hour

Location: Fitzroy Street at Maitland Street, Narrabri
 GPS Coordinates:
 Date: 2025-06-20
 Day of week: Friday
 Weather:
 Analyst: Jeff



Intersection Peak Hour

15:00 - 16:00

	SouthBound			Westbound			Northbound			Eastbound			Total
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
Vehicle Total	29	31	13	66	101	20	4	44	101	22	111	7	549
Factor	0.72	0.70	0.46	0.69	0.84	0.50	0.50	0.69	0.79	0.69	0.71	0.44	0.89
Approach Factor	0.96			0.74			0.76			0.74			

ATTACHMENT C

TRAFFIC GENERATION INFORMATION



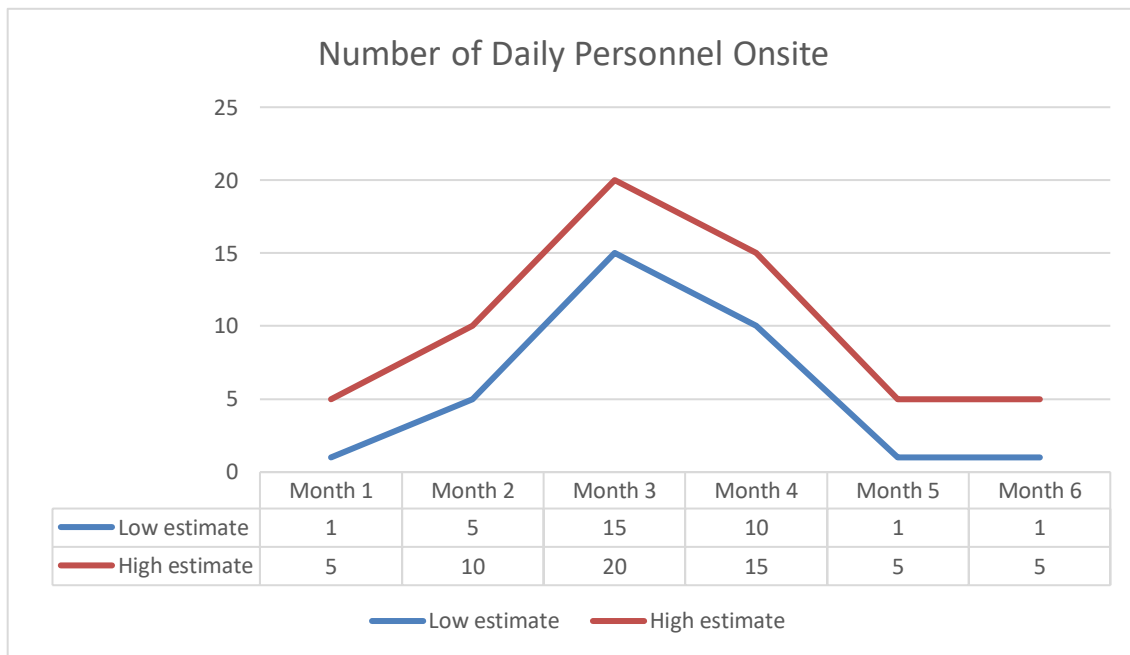
YES Group (SA) Pty Ltd
Lot 41 Sturt Highway Paringa SA 5340
ABN 97 627 710 954
T: (08) 8119 0777

To Whom It May Concern,

Subject: Construction and Operation Work Description – Solar Farm Project

We are pleased to provide the following information regarding the construction and operational activities of our proposed solar farm development, to inform the preparation of relevant technical studies.

The construction program is planned over a 6-month period, with significant activity occurring in Months 3 and 4. These two months represent the peak of construction traffic and site resource activity.



Key parameters during the peak construction period are as follows:

- **Peak daily workforce:** up to 20 personnel onsite.
- **Vehicle movements per day (peak):** approximately 3 heavy vehicle movements and 10 light vehicle movements.
- **Construction duration:** 6 months total.
- **Operational phase:** limited to infrequent maintenance visits (~1–2 light vehicle trips every 3 months).

A detailed month-by-month summary of major construction activities, vehicle requirements, and personnel is attached in below table.

Item	Month 1	Month 2	Month 3	Month 4	Month 5	Month 6
Heavy Vehicle (HV)						
tool/amenities	3					3
Piling Rig	1	1				
Mech Team		1		1		
civil	15	10	5			
Frame		15				
Panels		5	10			
Cable/electrical gear			1	1		
HVSB				1		
MVPS				1		
Crane				1		
Light Vehicle (LV)	40	240	240	60	60	60
O&M						
LV (O&M)	1 every 3 months					
Ground Maintenance	1-2 every 3 months					

Project Description

The proposed development is classified as a Class 10b building under the National Construction Code, comprising a 5MW solar farm with associated infrastructure, to be located within the southeastern portion of Lot 3 DP1034554. The site falls within the RU1 Primary Production zone and has a total area of 9.75 hectares. The proposed solar farm is expected to operate for about 20-30 years. A number of technical studies will be in preparation to support the Statement of Environmental Effects (SEE) for the Development Application (DA) lodgement.

The development includes:

- Installation of 11,128 photovoltaic (PV) modules arranged in rows, mounted on a single-axis tracker system that will follow the sun from east to west.
- A Battery Energy Storage System (BESS) consisting of four units, centrally located on the project site.
- Ancillary facilities, including inverter stations, electrical cabling, Medium Voltage Station Skids (MVSS), Auxiliary Transformer, High Voltage Switchboard (HVSB), and other infrastructure.

Primary site access will be via Stoney Creek Road, connecting through a new unsealed access track that extends from the end of an existing private track along the western boundary of the lot. This access will lead into the core project area and be supported by a 2.1-metre-high chain-link boundary fence and secured access gate positioned on the western edge of the development footprint.

Core components of the proposed development include:

- Erection of photovoltaic (PV) panels within defined array zones

- Construction of BESS facility
- Installation of associated ancillary facilities

Supporting components include:

- Construction of a new unsealed internal access track
- Earthworks for cabling trenches and solar array foundations
- Establishment of a 10m Asset Protection Zone (APZ)
- Installation of power poles and electrical connection infrastructure linking to the existing 22kV grid powerline, located mid-north of the site
- Construction of temporary hardstand areas and a laydown area with site office
- Vegetation clearance, limited to essential areas only

All cabling will be run underground inside the lease boundary wherever practicable, connecting centrally located inverters to the grid infrastructure. Grid connection will be arranged in consultation with YES Group, the Distribution Network Service Provider (DNSP), and relevant Accredited Service Providers (ASP).

Construction works description

The construction phase is scheduled over a period of 6 months. All construction activities will be undertaken during standard daytime hours, specifically:

- **Construction hours:** 7:00 AM to 6:00 PM, Mondays to Fridays, 8:00 AM to 1:00 PM Saturdays. No works on Sundays or Public Holidays.
- **Heavy vehicles:** All delivery and construction-related vehicles will be no larger than B-doubles.
- **Construction methodology:** Works will include civil preparation, mechanical assembly, panel framing, electrical cabling, and installation of supporting infrastructure such as MVPS, HVSB, and inverters.
- **Workforce and equipment:** Construction will be staged, with the most intensive activity occurring during Months 2 and 3.

Operation works description

The solar farm will operate 24 hours a day, 7 days a week, fully automated with no permanent staff onsite. The PV arrays will follow the sun via single-axis tracking, generating electricity for export to the grid.

Routine operational maintenance will occur during standard working hours only, excluding emergencies. Activities include:

Maintenance Activities:

- Equipment inspections:
 - 3 visual inspections annually (1 electrician + 1 light vehicle)
 - 1 major annual shutdown inspection (2 electricians + 2 light vehicles)
- Ground cover maintenance:
 - 4 visits per year for vegetation control
 - Equipment includes a light vehicle and tractor or zero-turn mower
- Unplanned Visits: Approximately 4 unplanned light vehicle visits per year

Total operational traffic is therefore limited to intermittent maintenance visits, typically 1–2 vehicles quarterly, and expected to generate minimal traffic or noise impact.