

TRAFFIC IMPACT STATEMENT

Dingo Lane Solar Farm, Myocum, NSW 2481
Lot 15 DP1178892

Byron Shire Council
By Planit Consulting Pty Ltd

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1 Executive Summary

This Traffic Impact Statement (TIS) has been prepared in support of Byron Shire Council's proposed solar farm at 1 Dingo Lane, Myocum, NSW 2481 which falls within the Byron Shire Council (BSC) Local Government Area. Planit was engaged by BSC to assess and report on the traffic impact associated with this development.

The proposed solar farm includes a solar array which covers approximately 11ha, supporting landscape and security screening, a solar inverter and internal access ways for maintenance purposes. An existing dwelling and its access are retained within the proposal.

The proposed solar farm is not proposed to be staffed and as such, is not anticipated to generate any notable traffic generation post-construction. However, the proposal also involves a viewing platform, providing a value adding and educational opportunity to local school groups and interested passers-by. Whilst visitors to the site are still anticipated to be sporadic, to support the viewing platform to provision of an access loop, 10x vehicle spaces (5x formal, 5x informal) and a coach space is proposed.

3 moderate crashes have occurred within the vicinity of the subject site in the last 6 years. It is recommended to make construction site personnel aware of these potential hazardous locations as it is likely the construction crew will be required to utilise the roadway whereby these crashes occurred.

Site distance for the intersection of Dingo Ln and Myocum Rd are appropriate. Ongoing maintenance of vegetation in the area will be required to ensure sight distances are maintained.

It is proposed to implement a posted speed limit of 50km per hour on Dingo Ln to make the subject site access compliant with regard to sight distances. Ongoing maintenance of vegetation in the area will be required to ensure sight distances are maintained.

The construction phase will increase traffic volumes during peak hour, accordingly, to manage traffic within the period, a Traffic Management Plan covering the entire construction period is recommended.

The operation phase of the project will promote a slight increase in traffic volumes, however, based on the trip generation counts the impact on the surrounding road network will be minimal.

2 Introduction

2.1 Project Background

This Traffic Impact Statement (TIS) has been prepared in support of Byron Shire Council's proposed solar farm at 1 Dingo Lane, Myocum, NSW 2481 which falls within the Byron Shire Council (BSC) Local Government Area. Planit was engaged by BSC to assess and report on the traffic impact associated with this development. This document should be read in conjunction with Planit's Engineering Assessment (J6558-DINGO_LN-EA01)

The proposed development involves construction of approximately 11Ha of solar panels and associated infrastructure including solar inverter, viewing platform, access roads and parking. Refer to Table 1 for additional development detail. The subject site is presented in Figure 1 Figure 1- Proposed Solar Farm Development and the Plan of Subdivision is provided in Appendix A.

Table 1 – Site Details Summary

Component	Details
Applicant	Byron Shire Council
Street Address	1 Dingo Lane, Myocum, NSW 2481
Local Government Area	Byron Shire Council (BSC)
Proposed development type	Solar Farm
Site Area	40 Ha



Figure 1- Proposed Solar Farm Development

2.2 Project Scope

This TIS reports on and presents the following:

- Development constraints including:
 - Existing site description.
 - Project description.
 - Surrounding road/intersections.
 - Existing and proposed access to the development.
 - Previous crash data.
- Trip generation calculations based on the proposed project.
- Analyses of the surrounding area traffic behaviour. This includes a field investigation for sight distance checks.
- Provide details of parking provisions.
- Provide details of the proposed access.
- Make recommendations based on results.

2.3 Site Description

The proposed development site (Figure 1) currently contains:

- General grazing farmland;
- Scattered vegetation;
- Access road; and
- Residence at the southern end of the site.

The proposed development includes the following:

- Approximately 11 Ha of solar panel arrays;
- Solar inverter;
- Access road and parking for 10 cars (5 formal, 5 informal) and 1 coach bus;
- Viewing platform; Landscape screening; and
- Security fencing; and
- Retained residence and associated access.

The surrounding areas of the site include:

- Dingo Lane (BSC owned road) bounds the site to the north;
- General grazing farmland to the west;
- Macadamia plantation to the south;
- Resource recovery to the south east;
- Quarry to the east; and
- General grazing farmland to the north east.

It should be noted that the speed limit in the surrounding area is 80km/h.

Refer to Figure 2 below for an overview of the surrounding area.



Figure 2- Subject Site Surrounding Land Usage

To identify crashes and potential serious safety issues within the vicinity of the subject site, NSW Government, Transport for NSW Crashes map was utilised. The map revealed three crashes (moderate injury) at the following locations (also shown in Figure 3 below):

- Two at the intersection of Myocum Rd and Manse Rd.
- One at the intersection of Myocum Rd and McAuleys Ln.

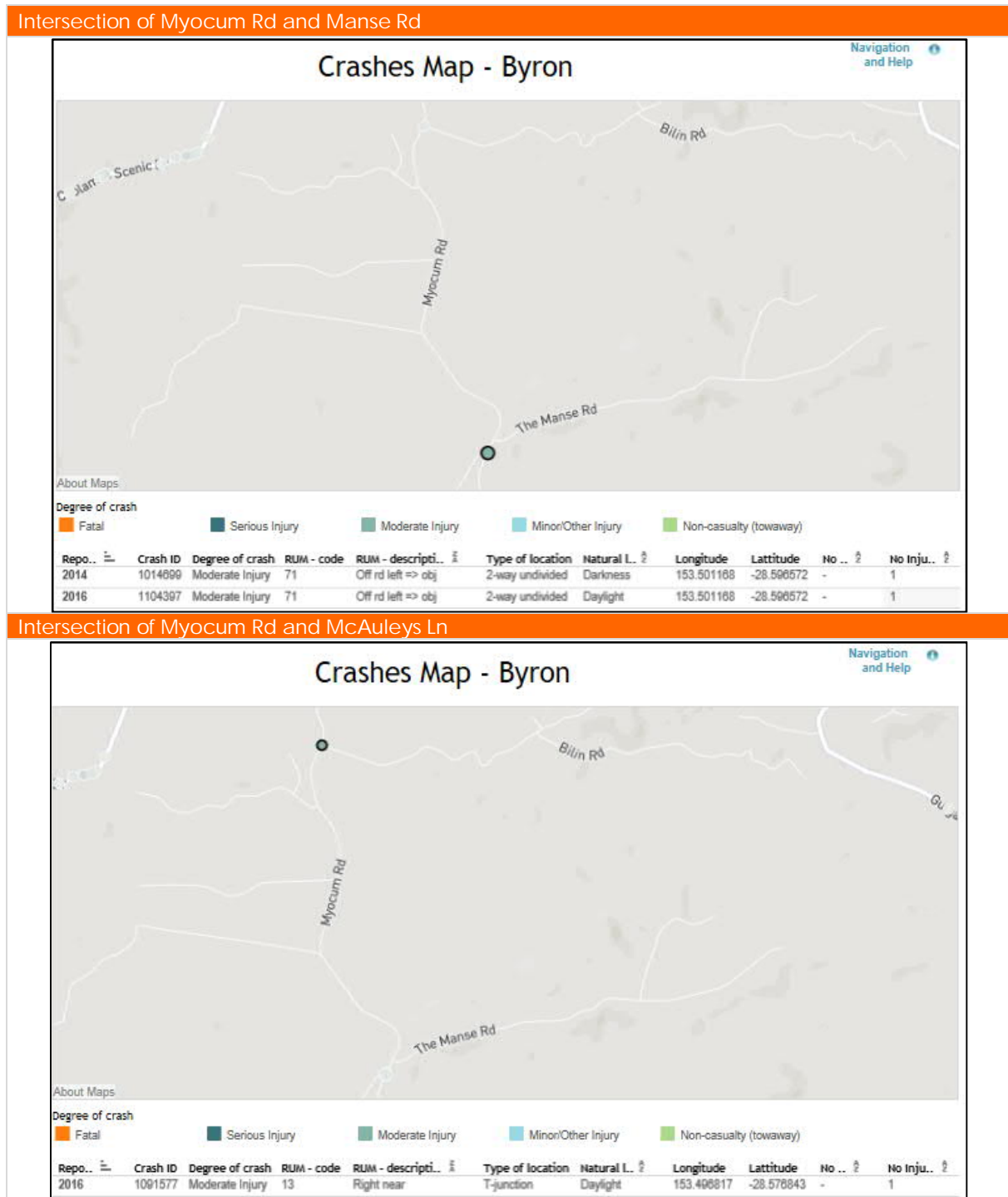


Figure 3- Byron Crashes Map (NSW Government, Transport for NSW)

It is noted that these 3 crashes were not at the location of the intersection of interest (Myocum Rd and Dingo Ln), however, the crashes were of moderate injury and accordingly are to be identified in the site traffic management plan.

3 Traffic Impact Statement

3.1 Development Trip Generation

Both the operational phase and construction phase of the project will increase the trips generated from the subject site. However, it is anticipated that the proposed solar farm will generate more traffic during the construction phase than the operational phase. Trip generation rates are estimated below for construction and operation.

Construction Phase Trip Generation

The construction phase of the solar farm is expected to generate the peak hour travel demand for the site (estimated based on project size and works required) which will result from:

- Construction workforce (estimated at 30 personnel)
- Equipment deliveries (estimated 5 per day)
- Goods and Services deliveries (estimated 10 per day)

Therefore trips are estimated as follows:

- 30 trips for workforce (assume 1 for each personnel)
- 15 trips for equipment and goods and services deliveries (assume all occur during peak hour (conservative))

Based on the above, it is anticipated that a maximum of 45 vehicle movements during the peak hour can occur. It should be noted that, it is highly unlikely that these trips will all occur during peak times but for the purposes of this assessment, a conservative approach has been undertaken.

Operation Phase Trip Generation

Roads and Maritime services do not note specific trip generation rates for solar farms, accordingly, trip generation rates from the solar farm are estimated off the maximum parking spaces provided.

Parking spaces have been provided to allow for infrequent visitors to utilise the viewing platform and allow for the occasionally school group visit for educational experiences which would be limited to one coach bus at a time.

10 carpark spaces and 1 coach space is proposed as part of the project and accordingly peak hour trips generated during the operation phase are estimated to be as follows:

- 10 x trips for private vehicles
- 1 x trips for coach
- 1 x trips for maintenance vehicle
- 1 x trips for tenant at existing residence

Therefore a maximum of 13 trips are expected during the peak hour. As per the construction trip generation estimate, it is highly unlikely that these trips will all occur during peak times but for the purposes of this assessment, a conservative approach has been undertaken. It should be noted that the 25 trips is a maximum peak hour generation only and is not expected on a day to day basis. Refer to section 3.8 of this document for further discussion regarding traffic generation.

Level of Traffic Assessment

It was determined that construction traffic generates additional trips than that in the operational phase of the project with the following peak hour trips estimated.

- 45 peak hour movements during the construction phase
- 25 peak hour movements during the operation phase

BSC's Development Control Plan 2014 Chapter B4 notes the level of traffic assessment required for projects generating certain ranges of peak hour trips. Therefore, considering 45 maximum peak hour trips, a Traffic Impact Statement is considered appropriate assessment for this project.

3.2 Existing Operational Conditions

Dingo Ln is not a through road and comes off Myocum Road approximately 1.1km to the west. Dingo Ln is an unsealed road. East of the site access Dingo Ln also service two residences and an access to the quarry.

3.3 Operation of Access and Parking

The existing site access is to be upgraded to facilitate the entry and egress requirements of a coach bus. Parking is to be provided for the coach bus and 10 car parking spaces are to be provided. A turning area around the inverter and a facility for a coach bus to turn around within the site is to be provided.

New circulation driveways and parking spaces shall be designed and constructed in accordance with AS2890 and Northern Rivers Local Government (NRLG) standards and specifications. Key design parameters include but not limited to:

- Driveways with low traffic volumes are required to be a minimum width of 3m and provide passing opportunities every 30m. It should be noted that the use of the driveway past the viewing platform will be minimum with only authorised personnel and the tenants at the existing residence will be utilising this driveway, in addition the driveway is straight meaning sightlines to approaching vehicles can be seen from over 30m away and accordingly there is opportunity to increase the passing opportunity interval.
- Maximum Grade – 1 in 6 (desirable) 1 in 4 (absolute maximum).
- Maximum carpark grade - 10%.
- Coach turn around area to ensure coach can enter and exit the site in a forward motion while tyres remain on the pavement.
- Solar inverter turn around area to ensure a Light Rigid Vehicle (assumed council maintenance vehicle) can enter and exit the site in a forward motion while tyres remain on the pavement.

3.4 Parking Demand and Supply

Infrequent visitors are expected to utilise the viewing platform. Occasionally school groups may visit for educational experiences which would be coordinated in conjunction with BSC and/or the site's final operator. Therefore, the provision of the following parks will satisfy the anticipated demand:

- 5 x Formal carparks
- 5 x non-formal carparks
- 1 x coach park

3.5 Mobility Impaired

Suitable all-weather surfaces compliant with AS1428 will be provided between the parking areas and the viewing platform.

3.6 Operation of First Intersection

The first intersection to west is the intersection with Myocum Road. This is a cross roads with Dingo Lane with a small stagger to the Dingo Lane straight through movement. Refer to SK020 in Appendix A. The visibility has been checked for 80km/h, refer to Table 2. It is noted however that there is a bend warning coupled with an advisory speed sign for 60km/h for this section of Myocum Road. There are a few interspersed trees in the farmers paddock within the SISD envelope – refer Figure 4.

Table 2 – Sight Lines for Myocum Road & Dingo Lane Intersection

Sight Line	Speed (km/h)	Rt (sec)	Distance (m)	Vertical Check
SISD	80	2	181	Yes
ASD	80	2	114	Yes



Figure 4- View across farmers paddock for SISD (Photo taken on Dingo Lane looking north)

3.7 Access Arrangement

The site access will be widened to facilitate the coach bus entry and exist turning movements. The internal road will have a loop to facilitate the coach bus turning around. Refer to SK030 in Appendix B.

Sight distance checks were carried out that the entrance to the subject site. It was revealed that there is approximately 73m of sight distance available to oncoming vehicles from both directions.

AS2890.2 (2018) Figure 3.3 (Extract shown in Figure 5 below), notes the distance required to achieved a 5s gap at site access/egress locations.

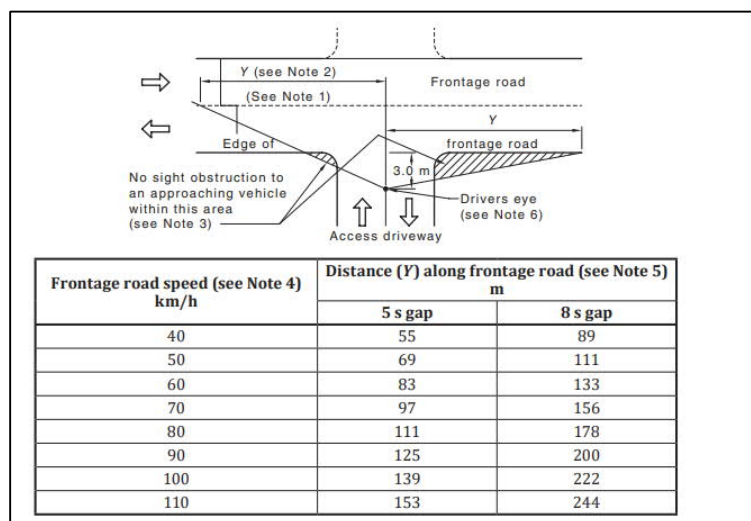


Figure 5- AS2890.2 (2018) Figure 3.3 Extract

Based on AS2890.2 for the site access to be compliant sight distances would need to be increased to a minimum of 111m or measures would need to be implemented to slow oncoming vehicles to 50km/hr. It is noted that the visibility to the east of the site access is restricted by an embankment with trees on top. Therefore, to minimise the removal of trees as part of the project, it is proposed to post a reduced speed limit of 50km/h along Dingo Lane. Trimming low branches of the trees to the north east of the access will be required to achieve the required SISD visibility (refer Figure 6).



Figure 6- Trees to be Pruned at Site Access for SISD (Photo taken at site access looking north east)

3.8 Traffic Impact

Section 3.1 of this document estimates the peak hour trips generated due to the proposed solar farm, however, these calculations were completed assuming a worst case scenario to achieve the anticipated maximum peak hour trips possible. Refer below for comments regarding the construction and operation trip generation

Construction

During the construction phase, it is estimated that the worst case peak hour demand is 45 trips, therefore, during the construction period, traffic volumes on the surrounding road will increase. As previously mentioned this is a worst case scenario and it is only in rare circumstances where this number of trips would occur during the peak hour.

Based on the assessment, it is anticipated that there will be a minor impact to the surrounding traffic network, therefore, to management the construction traffic appropriately throughout the construction phase, it is recommended to prepare a Traffic Management Plan for the entire construction period in accordance with the following documentation:

- Roads and Traffic Authority's Manual.
- Traffic Control at Work Sites Version 2.
- Australia Standards.
- Manual of Uniform Traffic Control Devices Part 3.
- Traffic Control Devices for Works on Roads.

Operational

During the operational phase the viewing platform will be open to the public. This promotes visitors to the site, however, based on estimated maximum peak hour trips (13), the proposed new circulation driveways, parks and passing bays will be appropriate, in addition, as the peak hour and daily demand is low the impact on the surrounding road network will be minimal.

4 Conclusion/Recommendations

This TIS demonstrated that the proposed solar farm will generate additional trips during the construction and operation phase, however, to address impacts that may be present due to the project, the following is recommended:

- Make construction site personnel aware of these potential hazardous locations (crashes in the area) as it is likely the construction crew will be required to utilise the roadway whereby these crashes occurred.
- Provide the following parks as part of the project:
 - o 5 x Formal carparks
 - o 5 x non-formal carparks
 - o 1 x coach park
- Ongoing maintenance of vegetation at the site entrance and at the intersection of Dingo Ln and Myocum Rd to ensure sight distances are maintained.
- Implement a posted speed limit of 50km per hour on Dingo Ln to make the subject site access compliant with regard to sight distances.
- Prepare a Traffic Management Plan covering the entire construction period is recommended.

Based on this assessment, it is anticipated that traffic during the construction and operation phase of the development can be managed appropriately.

Appendix A

Myocum Road / Dingo Lane Intersection Sight Lines

100mm AT ORIGINAL SIZE



NOT FOR CONSTRUCTION

REV	DESCRIPTION	DATE	DRAWN	DESIGN	CHECK	APPROVED
A	PRELIMINARY ISSUE	28.08.20	RD	BT	JT	JT

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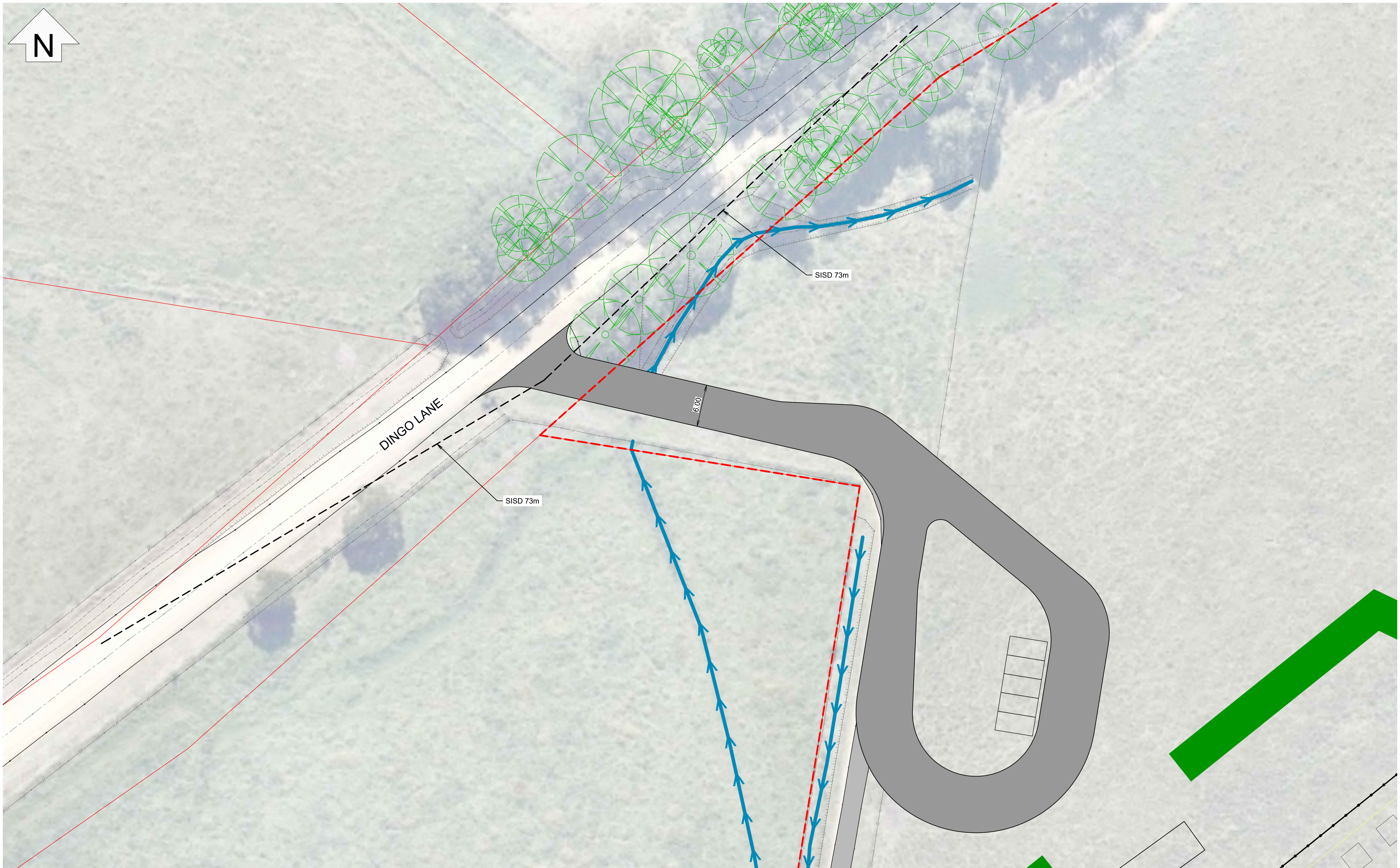
LOCAL GOVERNMENT AUTHORITY:
BYRON SHIRE COUNCIL

PROJECT: DINGO LANE SOLAR FARM			
DRAWING TITLE: MYCRUM ROAD & DINGO LANE INTERSECTION ASD & SISD			
ORIGINAL SIZE: A1	PLANIT JOB No.: J6558	DRAWING No.: 0301	REV: A

Appendix B

Site Access Arrangement

100mm AT ORIGINAL SIZE



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PROJECT: DINGO LANE SOLAR FARM			
DRAWING TITLE: SITE ACCESS ARRANGMENT			
ORIGINAL SIZE: A1	PLANIT JOB No.: J6558	DRAWING No.: 0310	REV: A