TRAFFIC MANAGEMENT PLAN

Wollar Solar Farm

August 2020

Project Number: 20-070

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ACRONYMS AND ABBREVIATIONS

BJCE	Beijing Jingneng Clean Energy (the proponent)
CoC	Conditions of Consent
CEMP	Contractors Environmental Management Plan
DPIE	Department of Planning Industry and Environment (NSW) (Formally known as Department of Planning and Infrastructure (DPI))
EIS	Environmental Impact Statement
EMS	Environmental Management Strategy
EP&A Act	*Environmental Planning and Assessment Act 1979* (NSW)
EPC	Engineering Procurement and Construction
HSEQ	Health Safety and Environment and Quality
ISEPP	*State Environmental Planning Policy (Infrastructure) 2007* (NSW)
Km	Kilometres
LGA	Local Government Area
M	Metres
MWRC	Mid-Western Regional Council (Council)
NSW	New South Wales
NHVR	National Heavy Vehicle Regulator
RMS	Roads and Maritime Services (now TfNSW)
ROL	Road Occupancy License
TCPs	Traffic Control Plans
TfNSW	Transport for NSW
TIA	Traffic Impact Assessment (Amber, 2019)
TMP	Traffic Management Plan
VPD	Vehicle per day
VPH	Vehicle per hour

1. INTRODUCTION

1.1. PURPOSE AND OBJECTIVES

Wollar Solar Farm received planning approval on 24 February 2020 for the construction and operation of a 290-megawatt (MW) capacity alternating current (AC) photovoltaic (PV) solar farm. The Wollar Solar Farm (the 'Project') will be located on a rural property approximately 7 kilometres (km) south of Wollar village.

This Traffic Management Plan (TMP) has been prepared to address the requirements of the mitigation and management measures listed in the *Wollar Solar Farm Environmental Impact Statement* (EIS) (NGH Environmental, 2019), Submissions Report (NGH Environmental, 2020), the Amendment Report (NGH Environmental, 2019) and the Conditions of Consent (CoC) from the New South Wales, Minister for Planning. Additionally, it considers legislation, policies and guidelines applicable to traffic management.

The purpose of this TMP is to provide a framework for the management of traffic issues during construction and operation of the Project. Implementing this TMP will ensure that the Project team meets the Project CoC, regulatory and policy requirements in a systematic manner and continually improves its performance. The TMP ensures requirements of the EIS are met.

In particular, the purpose of this TMP is to:

- Ensure appropriate planning for the transport of staff, supplies and equipment.
- Ensure appropriate controls and procedures are implemented during construction to avoid or minimise impacts on road traffic, including minimising traffic delays.
- Implement measures to ensure a high level of safety for all road users (employees, contractors, the general public).
- Maintain satisfactory property access.
- Minimise disturbance to road users.
- Ensure appropriate measures are implemented to address the measures detailed in the EIS, Submissions Report, Amendment Report and CoC.
- Ensure appropriate measures are implemented to comply with all relevant legislation.
- To develop the TMP in consultation with the relevant road authorities and other organisations as required.

1.2. THE PROJECT

The works approved under the planning approval includes all works necessary to design, construct, test, commission, energise, decommission, and train staff in the operation of a 290 MW AC solar farm as well as road upgrades identified in Appendix 4 of the CoC.

The scope of works consists of but is not limited to:

- Approximately 922,432 PV solar panels mounted on either fixed or tracking systems, both of which are considered feasible.
- A number of inverters, transformers and associated control equipment to convert DC energy generated by the solar panels to 33kV AC energy.
- Steel mounting frames with driven or screwed pile foundations.
- An onsite 330kV substation containing two transformers and associated switchgear to facilitate connection to the national electricity grid via the existing 330kV transmission line onsite.
- Underground power cabling to connect solar panels, combiner boxes and PCUs.
- Underground auxiliary cabling for power supplies, data services and communications.
- Buildings to accommodate a site office, indoor 33kV switchgear, protection and control facilities, maintenance facilities and staff amenities.

- An access track off Barigan Road to the site via the existing TransGrid substation access road, which would require construction of an access road between the Wollar substation and the proposed onsite substation.
- Internal access tracks for construction and maintenance activities.
- An energy storage facility with a capacity of up to 30 MWh (i.e. 30 MW power output for one hour) and comprising of lithium ion batteries with inverters.
- Perimeter security fencing up to 2.3m high.

Two main access points to the development site were identified in the EIS:

- Northern access along the existing TransGrid Wollar substation access road via Barigan Road. Barigan Road will be upgraded in accordance with the requirements in Appendix 4 of the CoC. The Northern Access would be used during construction and operation and would be suitable for all vehicles including heavy and oversized vehicles.
- Southern access to the site would be off Barigan Road via Maree Road and an unnamed track. WSD intends only to use the Southern Access for light vehicle access prior to construction of the Northern Access and for emergency egress.

The Amendment Report identified a second southern access option to be constructed in the event the Northern Access cannot be used for site access. Southern access option 2 would allow heavy vehicle construction access via Barigan Road and the (Maree Road) road reserve. This access will not be constructed as part of the initial construction works, as described in [Development Staging] below.

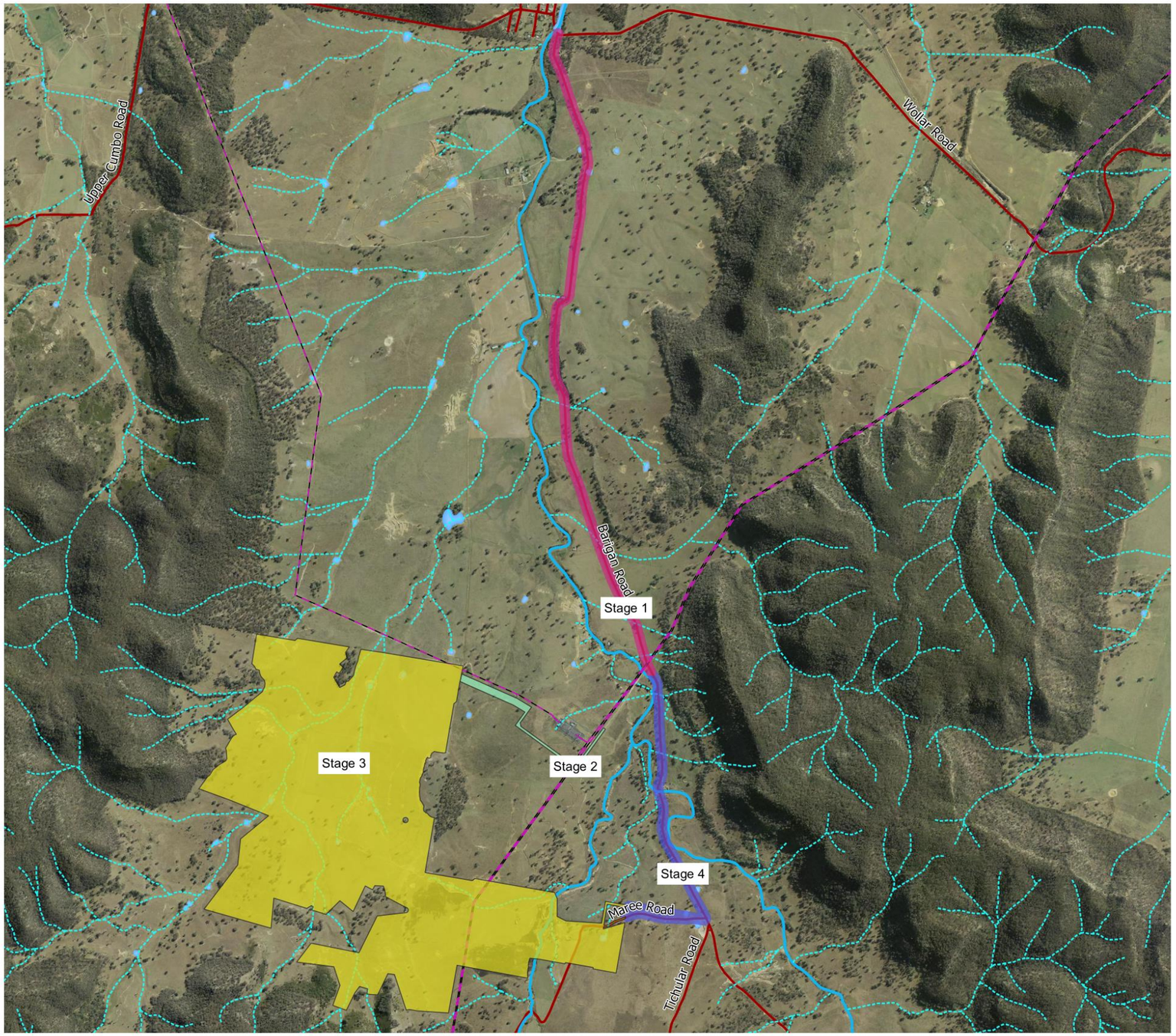
The construction period of the solar farm will last for 12 to 18 months from the commencement of site establishment work. Construction hours will be limited to Monday to Friday 7am to 6pm, and Saturday 8am to 1pm or as allowed under COC Schedule 3 Condition 15.

1.2.1. Development Staging

The Development will be staged, with public road upgrades as described by CoC Schedule 3 Condition 8 to occur as Stage 1 prior to any construction being undertaken for the Solar Farm. This TMP applies to stages 1, 2 and 3 of construction with consideration of stage 4:

1. Stage 1 – Road upgrades/maintenance works on Barigan Road as required for use of the Northern Access
2. Stage 2 – Construction of the Northern Access between Barigan Road and the Solar Farm site.
3. Stage 3 – Construction of the main Solar Farm including piled foundations, solar panels, substation and any ancillary infrastructure.
4. Stage 4 - Road upgrades/maintenance works on Barigan Road and Maree Road as required for the Southern Access Option. Note that this stage may not be required to be undertaken for the project.

The areas of each stage are shown in Figure 1-1.



EMP Project staging

Legend

Project footprint (stages)
- 1
- 2
- 3
- 4

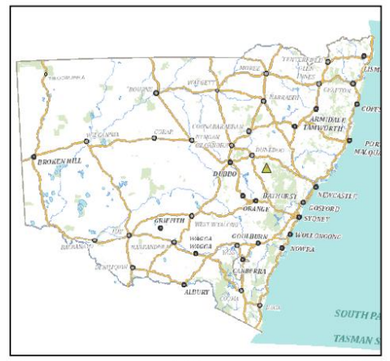
Transmission lines

Roads

Waterway
- Perennial
- Non perennial

Farm dam/other water body

LGA: Mid-Western Regional
CMA: Hunter Central Rivers
IBRA Bioregion: Sydney Basin (SB)
IBRA Subregion: Kerrabee (SB01) and Wollemi (SB04)



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Author: clancy.b
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Figure 1-1 Project Staging

1.2.2. Contracting Structure

The Wollar Solar Farm will be delivered through the following contracts:

1. Contract between WSD and MWRC or a reputable civil company for upgrades to Barigan Road in accordance with CoC schedule 3 condition 8 (the Public Road Upgrade Contract) (Stage 1). Expected award July 2020.
2. Contract between WSD and Transgrid for construction of an on-site 33/330kV substation and connection of that substation to the existing electricity network (Stage 3).
3. Contract between WSD and an EPC Contractor for the remainder of the works, including the design and construction of the solar array (the EPC Contract) (Stage 3). Expected Award September 2020.

Stage 2 works, being the construction of the Northern Access Track, will either be undertaken by Transgrid or the EPC Contractor.

1.2.3. Hours of Operation

During the construction phase of the solar farm, work would be undertaken during the following hours, unless otherwise allowed under Schedule 3, Condition 15:

- Monday – Friday: 7am – 6pm
- Saturday: 8am – 1pm

Note that per Schedule 3 Condition 15 of the CoC permits that some activities can be undertaken outside these hours without Secretary approval, including delivery of materials as requested by NSW Police Force or other authorities for safety reasons.

1.3. ENVIRONMENTAL MANAGEMENT SYSTEM

The TMP is part of the Project's overall Environmental Management Strategy (EMS). Mitigation and management measures identified in this TMP will be incorporated into the relevant plans and documentation of the contractors undertaking Works on site.

Traffic Control Plans (TCPs) are to be finalised prior to works being undertaken. TCPs will implement specific controls e.g. road signage that have been identified in this TMP. TCPs will specify the description, position, quantity, applicability, behaviour, and methodology of actions on the road network (on and off site), including speed limit alterations, road signage, junction upgrades, behaviour of drivers, control mechanisms, reporting, etc.

Used together, the EMS, TMP and other sub-plans, TCPs, procedures and relevant plans and documentation of the contractors undertaking Works on site that clearly identify required environmental management actions for reference by the proponent's personnel and contractors.

The review and document control processes for this plan are described in the EMS.

2. PLANNING

2.1. RELEVANT LEGISLATION AND GUIDELINES

2.1.1. Legislation

Legislation relevant to traffic management includes:

- Roads Act 1993.
- Road Transport (Vehicle Registration) Regulation 2007.
- Road Transport (Mass, Loading and Access) Regulation 2005.

The relevant provisions of the above legislation are explained in the EMS.

2.1.2. Guidelines and Standards

The main guidelines, specifications and policy documents relevant to this Plan include:

- NSW RTA Heavy Vehicle Mass Limits, July 2010.
- RTA Vehicle Standards Information: Revision 4, November 2007.
- RTA Operating Conditions: specific permits for oversize and overmass vehicles: version 2, August 2008.
- Austroad's Guide to Traffic Management.
- Austroad's Guide to Road Design.
- Austroad's Guide to Road Safety.
- Austroad's Guide to Traffic Engineering Practice, Part 2 – Roadway Capacity.
- AS 1742: Manual of Uniform Traffic Control devices.
- AS 1743: Road Signs – Specifications.
- AS 2890: Parking facilities.
- RMS Guide to Traffic Control at WorkSites.
- RMS Supplements for Australian Standards.
- RMS Supplements for Guide to Road design.
- RMS Supplements for Guide to Road Safety.

2.1.3. Conditions of Consent and Compliance Tracking

Preparation of a TMP prior to the commencement of road upgrades or maintenance works to the public road network and construction of the development, is a requirement of Schedule 3, condition 10 of the CoC. The condition is included below.

Prior to commencing the development, the Applicant must prepare a Traffic Management Plan for the development in consultation with Transport for NSW (TfNSW), Council, Ulan, Moolarben and Wilpinjong mines and to the satisfaction of the Secretary in writing. This plan must include:

(a) details of the transport route to be used for all development-related traffic;

(b) details of the road upgrade works required by condition 8 of Schedule 3 to this consent;

(c) a protocol for undertaking independent dilapidation surveys to assess the:

- *existing condition of Ulan-Wollar Road, Wollar Road, Phillip Street, Barigan Street, Maitland Street, Barigan Road and Maree Road prior to construction, upgrading or decommissioning activities; and*
- *condition of Ulan-Wollar Road, Wollar Road, Phillip Street, Barigan Street, Maitland Street, Barigan Road and Maree Road following construction, upgrading or decommissioning activities;*

(d) a protocol for the repair of Ulan-Wollar Road, Wollar Road, Phillip Street, Barigan Street, Maitland Street, Barigan Road and Maree Road if dilapidation surveys identify these roads to be damaged during construction, upgrading or decommissioning work(e) details of the measures that would be implemented to minimise traffic impacts during construction, upgrading or decommissioning works, including:

- *temporary traffic controls, including detours and signage;*
- *notifying the local community about project-related traffic impacts;*
- *procedures for receiving and addressing complaints from the community about development related traffic;*
- *minimising potential cumulative traffic impacts with other projects in the area, including the Ulan Coal Mine, Moolarben Coal Mine and Wilpinjong Coal Mine during construction, upgrading or decommissioning works;*
- *minimising potential for conflict with school buses, other road users and rail services as far as practicable (measures also required during operation of the project);*
- *minimising dirt tracked onto the public road network from development-related traffic;*
- *details of the employee shuttle bus service, including pick-up and drop-off points and associated parking arrangements for construction workers, and measures to ensure employee use of this service;*
- *scheduling of haulage vehicle movements to minimise convoy length or platoons;*
- *responding to local climate conditions that may affect road safety such as fog, dust and wet weather;*
- *responding to any emergency repair or maintenance requirements; and*
- *a traffic management system for managing over-dimensional vehicles;*

(f) a driver's code of conduct that addresses:

- *travelling speeds;*
- *driver fatigue;*
- *procedures to ensure that drivers adhere to the designated transport routes; and*
- *procedures to ensure that drivers implement safe driving practices;*

(g) a program to ensure drivers working on the development receive suitable training on the code of conduct and any other relevant obligations under the Traffic Management Plan; and

(h) a flood response plan detailing procedures and options for safe access to and from the site in the event of flooding.

Following the Secretary's approval, the Applicant must implement the Traffic Management Plan.

This TMP meets this requirement.

Each of the requirements of the transport conditions as well as commitments from the EIS, Submissions Report and Amendment Report and where they are addressed are detailed in Table 2-1 and

Table 2-2 below.

There are other CoC relevant to the traffic management plan, as well as commitments made in other planning documents. These conditions and commitments have also been included in Table 2-1 and Table 2-2.

Table 2-1 Compliance requirements from the CoC and where they are addressed in this plan.

Condition requirement (CoC)	Report/Section	Stage	When to implement	Responsibility
Over-Dimensional and Heavy Vehicle Restrictions				
Schedule 3 condition 1 The Applicant must ensure that the: a) development does not generate more than: ○ 26 AV/B-double vehicle movements a day during construction, upgrading and decommissioning; ○ 46 medium and/or heavy rigid vehicle movements a day during construction, upgrading and decommissioning; ○ 2 over-dimensional vehicle movements during construction, upgrading and decommissioning; and ○ 7 AV/B-Double, medium and/or heavy rigid vehicle movements a day during operations; on the public road network; **b)** length of any vehicles (excluding over-dimensional vehicles) used for the development does not exceed 19 metres, unless the Secretary agrees otherwise in writing.	Section 4.2, Section 8.1 Section 9.3.	Stage 1 Stage 2 Stage 3	Pre-construction, Construction	BJCE/EPC/Transgrid/Public Road Upgrade Contractor coordinated by BJCE and the EPC Contractor
Schedule 3 condition 2 The Applicant must keep accurate records of the number of over-dimensional vehicles, AV/B-Double vehicles, medium and/or heavy entering or leaving the site each day for the duration of the project.	Section 9.3, Appendix D.	Stage 1 Stage 2 Stage 3	Construction, Operation	BJCE will ensure each contractor keeps these records.
Access Routes				
Schedule 3 condition 3 All over-dimensional and AV/B-Double vehicles associated with the development must travel to and from the site via:	Section 4.2.	Stage 1 Stage 2 Stage 3	Pre-construction, Construction	BJCE and all Contractors

Condition requirement (CoC)	Report/Section	Stage	When to implement	Responsibility
a) Golden Highway, Ulan Road, Ulan-Wollar Road, Barigan Street, Maitland Street, Wollar Road and Barigan Road; and/or b) Castlereagh Highway, Ulan Road, Ulan-Wollar Road, Barigan Street, Maitland Street, Wollar Road and Barigan Road. *Note: The Applicant is required to obtain relevant permits under the Heavy Vehicle National Law (NSW) for the use of over-dimensional vehicles on the road network.*				
Schedule 3 condition 4 All medium and/or heavy rigid vehicles and shuttle buses associated with the development must travel to and from the site via the routes detailed in condition 3 of Schedule 3 to this consent, and/or via: a) Cope Road, Ulan Road, Ulan-Wollar Road, Barigan Street, Maitland Street, Wollar Road and Barigan Road; and/or b) Castlereagh Highway, Ulan Road, Wollar Road, Phillip Street, Maitland Street, Wollar Road and Barigan Road.	Section 4.2.	Stage 1 Stage 2 Stage 3	Pre-construction, Construction	BJCE and all contractors
Preferred Site access Points				
Schedule 3 condition 5 All over-dimensional, AV/B-Double, medium and/or heavy rigid vehicles and shuttle buses associated with the development must enter and exit the site via the approved northern site access point on Barigan Road.	Section 4.1.	Stage 2 Stage 3	Construction,	BJCE and all contractors

Condition requirement (CoC)	Report/Section	Stage	When to implement	Responsibility
Schedule 3 condition 6 All light vehicles associated with the development must enter and exit the site via the approved northern site access point and/or southern site access option 1 on Barigan Road.	Section 4.1.	Stage 3 Stage 4	Construction,	BJCE and all contractors It is currently envisaged that the southern access will be used for light vehicles and emergency egress only
Alternate Site Access Point				
Schedule 3 condition 7 If the Applicant cannot secure access to the preferred site access points detailed in conditions 5 and 6 of Schedule 3 to this consent, all vehicles associated with the development must enter and exit the site via the approved site access point on Maree Road (southern access option 2).	Section 4.1.	Stage 3 Stage 4	Construction,	It is currently envisaged that the southern access will be used for light vehicles and emergency egress only
Road Upgrades				
Schedule 3 condition 8 Prior to commencing construction, the Applicant must implement the road upgrades identified in Appendix 4 of the CoC, unless the Secretary agrees otherwise in writing. These upgrades must be carried out to the satisfaction of the relevant roads authority.	Section 7.2, Appendix F	Stage 1 Stage 2 Stage 4	Pre-construction	BJCE/Public Road Upgrade Contractor
Operating conditions				
Schedule 3 condition 9 The Applicant must ensure: a) the internal roads are constructed as all-weather roads; b) there is sufficient parking on site for all vehicles, and no parking occurs on the public road network in the vicinity of the site;	Section 4.2, Section 7.2, Section 7.3.	Stage 1 Stage 2 Stage 3	Pre-construction Construction Operation	BJCE/EPC/Transgrid

Condition requirement (CoC)	Report/Section	Stage	When to implement	Responsibility
c) the capacity of the existing roadside drainage network is not reduced; d) all vehicles are loaded and unloaded on site, and enter and leave the site in a forward direction; and e) development-related vehicles leaving the site are in a clean condition to minimise dirt being tracked onto the sealed public road network.				
Traffic Management Plan				
Schedule 3 condition 10 Prior to commencing the development, the Applicant must prepare a Traffic Management Plan for the development in consultation with RMS, Council, Ulan, Moolarben and Wilpinjong mines and to the satisfaction of the Secretary in writing. This plan must include: a) details of the transport route to be used for all development-related traffic; b) details of the road upgrade works required by condition 8 of Schedule 3 to this consent; c) a protocol for undertaking independent dilapidation surveys to assess the: o existing condition of Ulan-Wollar Road, Wollar Road, Phillip Street, Barigan Street, Maitland Street, Barigan Road and Maree Road prior to construction, upgrading or decommissioning activities; and o condition of Ulan-Wollar Road, Wollar Road, Phillip Street, Barigan Street, Maitland Street, Barigan Road and Maree Road following construction, upgrading or decommissioning activities;	This report, Section 4.2 (points a & e), Section 4.3.1 (point e), Section 5.1 (point e), Section 5.3 (point e), Section 6 (point h), Section 7.1 (point e), Section 7.2 (points b, c & d), Section 7.3 (point e), Section 7.5 (point e), Section 7.5 (point e), Section 7.7 (point e),	Stage 1 Stage 2 Stage 3 Stage 4	Pre-construction	BJCE for preparation of the plan. All contractors for adhering to the plan.

Condition requirement (CoC)	Report/Section	Stage	When to implement	Responsibility
d) a protocol for the repair of Ulan-Wollar Road, Wollar Road, Phillip Street, Barigan Street, Maitland Street, Barigan Road and Maree Road if dilapidation surveys identify these roads to be damaged during construction, upgrading or decommissioning works; e) details of the measures that would be implemented to minimise traffic impacts during construction, upgrading or decommissioning works, including: • temporary traffic controls, including detours and signage; • notifying the local community about project-related traffic impacts; • procedures for receiving and addressing complaints from the community about development- related traffic; • minimising potential cumulative traffic impacts with other projects in the area, including the Ulan Coal Mine, Moolarben Coal Mine and Wilpinjong Coal Mine during construction, upgrading or decommissioning works; • minimising potential for conflict with school buses, other road users and rail services as far as practicable (measures also required during operation of the project); • minimising dirt tracked onto the public road network from development-related traffic; • details of the employee shuttle bus service, including pick-up and drop-off points and associated parking arrangements for construction workers, and measures to ensure employee use of this service; • scheduling of haulage vehicle movements to minimise convoy length or platoons; • responding to local climate conditions that may affect road safety such as fog, dust and wet weather;	Section 7.9 (point e), Section 8.1 (point e), Section 9.2 (point g), Section 9.3 (point e), Appendix D (point f).			

Condition requirement (CoC)	Report/Section	Stage	When to implement	Responsibility
• responding to any emergency repair or maintenance requirements; and • a traffic management system for managing over-dimensional vehicles; f) a driver's code of conduct that addresses: • travelling speeds; • driver fatigue; • procedures to ensure that drivers adhere to the designated transport routes; and • procedures to ensure that drivers implement safe driving practices; g) a program to ensure drivers working on the development receive suitable training on the code of conduct and any other relevant obligations under the Traffic Management Plan; and h) a flood response plan detailing procedures and options for safe access to and from the site in the event of flooding. Following the Secretary's approval, the Applicant must implement the Traffic Management Plan.				

Table 2-2 Compliance requirements from the EIS, Submissions Report and Amendment Report and where they are addressed in this plan

Condition requirement	Report/Section	Stage	Responsibility	Report
Traffic, transport and safety				
A Haulage Plan would be developed by the haulage operator with input from the roads authority, including but not limited to: • Assessment of road routes to minimise impacts on transport infrastructure. • Scheduling of deliveries of major components to minimise safety risks (on other local traffic). • Consideration of cumulative traffic loads due to other local developments.	Section 4.2, Section 5, Section 7.	Stage 3	All Contractors	Section 8.6.3 of the EIS
Upon determining the haulage route(s) for construction vehicles associated with the project, and prior to construction, undertake a Road Dilapidation Report. The report would: • Assess the current condition of the road(s). • Describe mechanisms to restore any damage that may result due to traffic and transport related to the construction of the Project. • Be submitted to the relevant road authority for review prior to the commencement of haulage.	Section 7.2, Section 4.2	Stage 3	BJCE	Section 8.6.3 of the EIS
Develop and implement a Workforce Transport Plan in consultation with MWRC prior to construction to be incorporated within the Construction Traffic Management Plan. The plan should include: • Bus routes. • Bus pick up and drop off locations. • Bus movement frequencies. • All day parking options.	Section 7.4	Stage 3	BJCE/EPC	Section 6 of the Submissions Report

Condition requirement	Report/Section	Stage	Responsibility	Report
Development of a program to monitor and review the effectiveness of the strategy over the life of the development.				
A Road Safety Audit in consultation with TfNSW (formally RMS) focusing on the Wollar Road / Barigan Road intersection will be undertaken prior to commencement of construction.	Section 7.2, Appendix H	Stage 1	BJCE	Section 6 of the Submissions Report

3. CONSULTATION

Consultation for this TMP is to be undertaken with TfNSW, Mid-Western Regional Council (MWRC), Ulan Mine, Moolarben Mine and Wilpinjong Mine. This TMP was sent to these stakeholders on the 13/05/2020. Responses from each are documented in Appendix G and summarised below.

3.1. TRANSPORT FOR NSW (FORMALLY ROADS AND MARITIME SERVICES)

On 30th April 2020, Andrew McIntyre of TfNSW was contacted by phone call and advised that the TMP was being prepared and would be provided for comment. On 13th May 2020, the draft TMP was provided by email.

TfNSW responded by email on 25th May 2020 with comments on the draft TMP. These comments were addressed in an update to the TMP on 28/05/2020.

An updated draft of the TMP was provided on 11/06/2020. An email was received on 17/06/2020 confirming that no further issues were raised (Appendix G.1).

3.2. MID-WESTERN REGIONAL COUNCIL

On 7th May 2020, David Webster of MWRC was contacted by phone call and advised that the TMP was being prepared and would be provided for comment. On 13/05/2020 the draft TMP was provided by email. An updated version of the TMP incorporating feedback from the local mines and TfNSW was provided on the 11/06/2020.

MWRC responded by email on 19/06/2020 advising there were no comments on the TMP (Appendix G.2.).

3.3. ULAN MINE

On 24th April 2020, Robyn Stoney of Ulan coal mine was contacted by phone to introduce the project and explain that a draft TMP would be provided for consultation. On 13th May 2020 the draft TMP was provided by email.

Ulan coal mine responded by email on 15th May 2020 with comments (Appendix G.3). The comments included a request that Ulan coal mine be kept informed of the construction schedule and when oversized deliveries would use the roads near the mine. Ulan coal mine also invited WSD to participate in existing information sharing process that the Local Mines operate. Section 7.9.1 has been updated accordingly.

3.4. MOOLARBEN MINE

On 23rd April 2020, Graham Chase of Moolarben mine was contacted by phone to introduce the project and explain that a draft TMP would be provided for consultation. On 13th May 2020 the draft TMP was provided by email.

Moolarben coal mine responded by email on 28th May 2020 (Appendix G.4). The response included that Moolarben coal mine would appreciate being notified about the project so they can alert personnel about additional traffic. Section 7.9.1 provides more description of how this will be undertaken.

3.5. WILPINJONG MINE

On 6th May 2020, an email was sent to Blair Jackson and Iain Flood of Wilpinjong coal mine to explain that a draft TMP would be provided for consultation. On 13th May 2020 the draft TMP was provided by email.

Wilpinjong coal mine responded by email on 21st May 2020 with comments on the TMP (Appendix G.5). These comments are presented in Appendix G.5. The comments included a request that Wilpinjong coal mine be kept informed of the construction schedule and Haulage Plans (including when oversized vehicles will utilise Ulan Road and Ulan-Wollar Road). Section 7.9.1 has been updated accordingly.

4. CONSTRUCTION TRAFFIC ACTIVITIES

4.1. EXISTING ENVIRONMENT

The Wollar Solar Farm is accessed via the three primary access corridors that connect to Wollar Village:

1. Wollar Road from the west which connects to Ulan Road to access the Regional Centre of Mudgee to the south.
2. Wollar Road from the east which connects to Ringwood Road to access the Golden Highway or alternatively continues to access the Bylong Valley Way to access Bylong and Murrumbo.
3. Ulan-Wollar Road from the north that connects to Ulan Road and the Golden Highway to the north or alternatively to Gulgong via Cope Road in the west.

From the village, access to the site is via Barigan Road which links the proposed access roads to the site. Barigan Road is not a through road, ending at a private property. It services approximately 6 farms.

Over-dimensional, AV/B-Double, medium and/or heavy rigid vehicles and shuttle buses will access the site via the northern access point on Barigan Road outlined in section 4.2 for Stages 2 and 3 of the Development.

All light vehicles will access the site via the northern access point on Barigan Road and/or the southern access (option 1) on Barigan Road outlined in section 4.2 for Stages 2 and 3 of the Development.

In the event that access via the preferred northern access point is not secured, an alternate access point on Maree Road (southern access option 2) would be used for all vehicles associated with the development. If the alternate access point is to be used, WSD will communicate this to Contractors.

4.2. PROPOSED DELIVERY ROUTES – CONSTRUCTION

A Haulage Plan will be developed for each Stage of the development with input from MWRC to address traffic controls, heavy vehicle movements, scheduling of deliveries, minimising impacts on transport infrastructure and cumulative traffic loads. It is anticipated that Haulage Plans will be prepared by the contractors for the relevant stages as described in section 1.2.2.

- Haulage Plan for Stage 1 road upgrade works (reputable civil company or MWRC)
- TransGrid Haulage Plan
- EPC Contractor Haulage Plan

The Local Mines will be provided will a draft copy of each Haulage Plans for information at least 1 week prior to haulage operations commencing and feedback will be considered.

The haulage routes in the Haulage Plan will align with the approved access routes (per CoC Schedule 3 Conditions 3 and 4) but may include additional details of the point of origin and how vehicles will get from that point onto the approved route.

The Haulage Plan requires details of the quantity and origin of materials, such as rock from quarries, of which there are several options. The plan for each stage will be prepared for each stage after that contractor has been engaged by WSD.

The Haulage Plan will include details of school bus routes and rail crossings. The Drivers Code of Conduct will be updated with relevant details from the Haulage Plan.

This TMP will be updated to include Haulage Plans by way of an addenda and provided to DPIE at least 2 weeks prior to commencing haulage operations for the stage covered by that plan.

Highways to Barigan Road

All over-dimensional and AV/B-Double vehicles associated with the development must travel to and from the site via:

a) Golden Highway, Ulan Road, Ulan-Wollar Road, Barigan Street, Maitland Street, Wollar Road and Barigan Road; and/or
b) Castlereagh Highway, Ulan Road, Ulan-Wollar Road, Barigan Street, Maitland Street, Wollar Road and Barigan Road.

All medium and/or heavy rigid vehicles and shuttle buses associated with the development must travel to and from the site via the routes detailed in condition 3 of Schedule 3 of the COC, and/or via:

c) Cope Road, Ulan Road, Ulan-Wollar Road, Barigan Street, Maitland Street, Wollar Road and Barigan Road; and/or
d) Castlereagh Highway, Ulan Road, Wollar Road, Phillip Street, Maitland Street, Wollar Road and Barigan Road.

Between Barigan Road and Site

All over-dimensional, AV/B-Double, medium and/or heavy rigid vehicles and shuttle buses between Barigan Road and the Site will access via the Northern Access (per CoC Schedule 3 Condition 5) as shown in Figure 4-4 and Figure 4-5.

The Southern Access would only be used for light vehicle access prior to construction of the Northern Access and for emergency egress.

All vehicles must be loaded and unloaded on site and enter and leave in a forward direction. Development-related vehicles leaving the site must be in a clean condition, being brushed/washed down if required, to minimise dirt being tracked onto the sealed public road network.

Suitable traffic control plans will be implemented on the sections of Barigan Road as indicated within CoC Appendix 4 to ensure safe passage of trucks travelling in opposite directions. The traffic control plans will be agreed with MWRC.

Mining Operations Personnel

Contractor's Haulage Plans should consider that Ulan Road and Ulan-Wollar Road may have increased traffic at the change of shift times for Local Mines. These are subject to change but an example of typical shift times and the number of personnel changing for Wilpingjong mine is provided below:

- 6.00am – 7.30am (approx. 240 people enter and 170 leave)
- 4.00pm - 5.00pm (approx. 70 staff leave)
- 6.00pm -7.30pm (approx. 170 leave and 170 enter)

School Bus Route

There is an existing school bus route that provides a service operated by Ogden's Coaches between Wollar village and Mudgee as shown in Figure 4-1. This service is currently provided once during the AM commencing at 7:30am on Araluen Road and one in the PM returning to Wollar Village at 4:45pm.

As part of the Traffic Impact assessment, Ontoit (Ontoit, 2019) undertook consultation with the Department of Education and the regional Director based in Dubbo. Ontoit were advised that the local Wollar School was placed in recess (not in use) at the end of 2018.

Further consultation was undertaken with Ogden's Coaches as outlined in Appendix J. WSD will provide updates prior to commencing subsequent stages of the development.

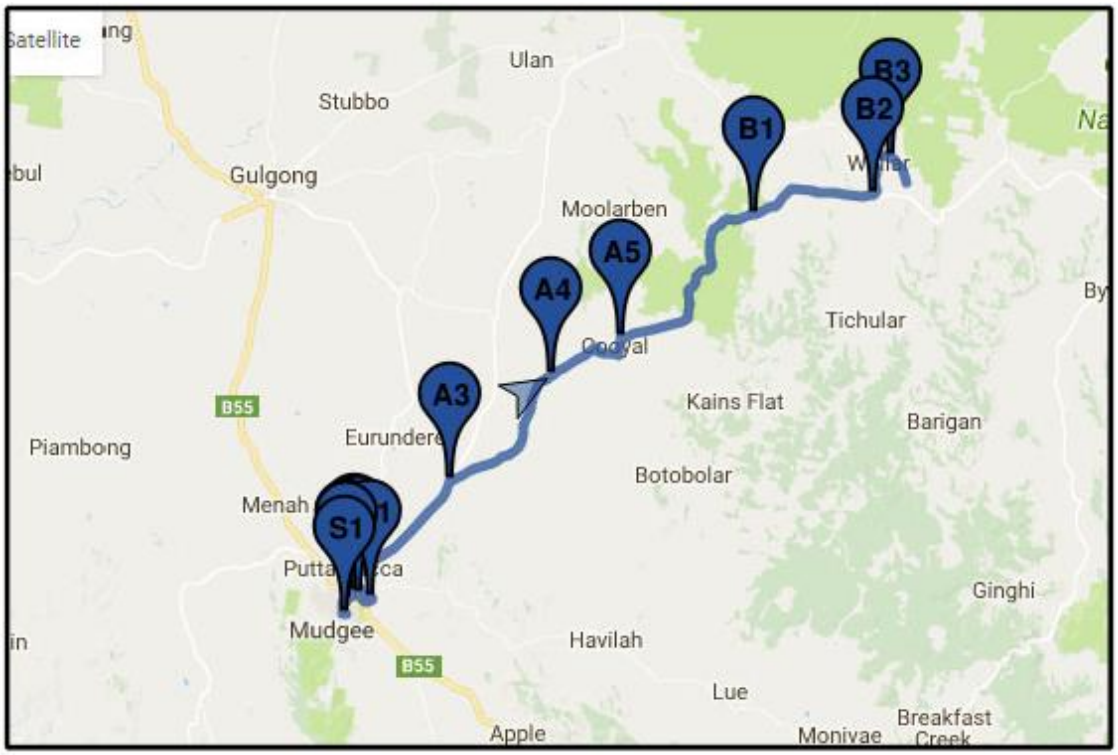


Figure 4-1 Existing School Route for service between Wollar Village and Mudgee School

Rail Crossing

There are three rail crossings along Ulan-Wollar Road as shown in Figure 4-2. The Sandy Hollow-Gulgong Rail line that services Wollar is located approximately three kilometres from the project site.

During construction, vehicles will be required to cross the rail line, abiding by the traffic rules for all vehicles e.g. giving way to rail traffic and slowing down on approach to the rail crossing before coming to a complete stop to check for rail traffic.

Consultation with ARTC (managers of the rail track and network control in this area) was undertaken on the 17/07/2020 (refer to Appendix J) to advise them of the project and ask for their input on any potential impacts to the operation of the rail corridor from the proposal. A subsequent email was sent on 20/07/2020 providing contact information and the complaints procedure for the project. To date no further respond has been received.

It is not anticipated that operational traffic from the Solar Farm would impact on rail movements, as rail traffic has right of way at all crossings.

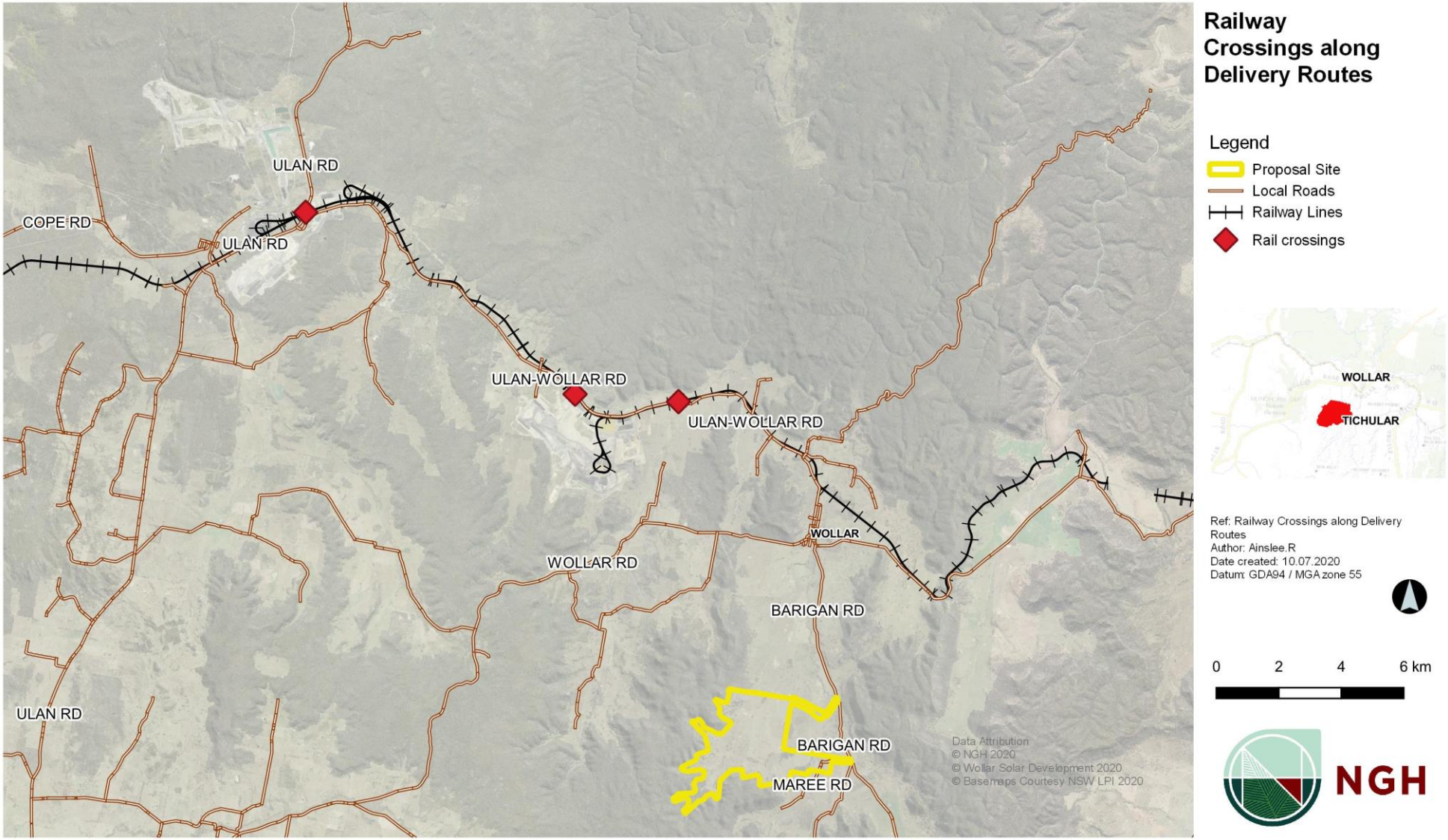


Figure 4-2 Proximity of rail crossings (red diamonds) on Ulan-Wollar Road to the proposal

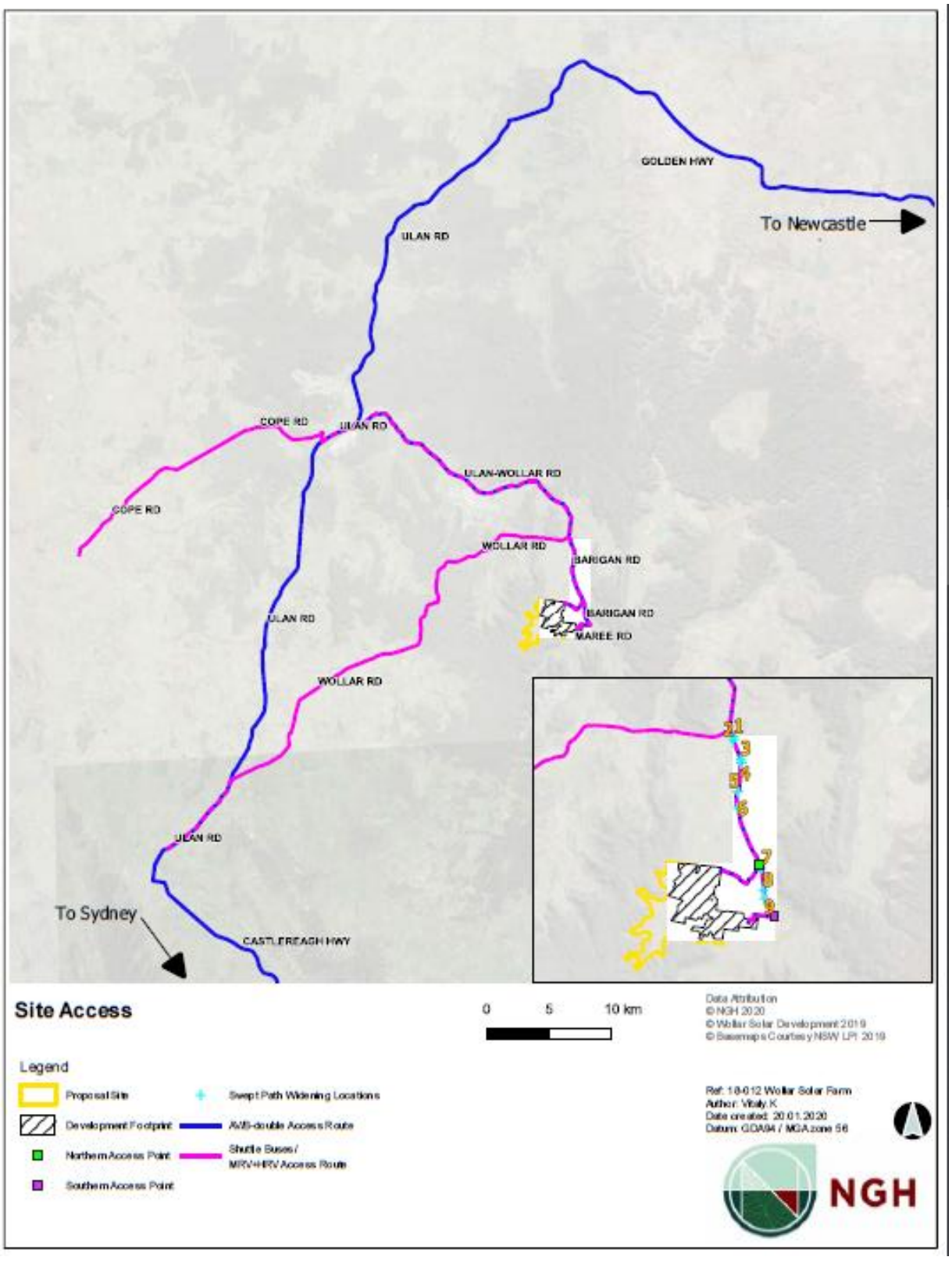


Figure 4-3 Access Routes per CoC Schedule 3 Conditions 3 and 4

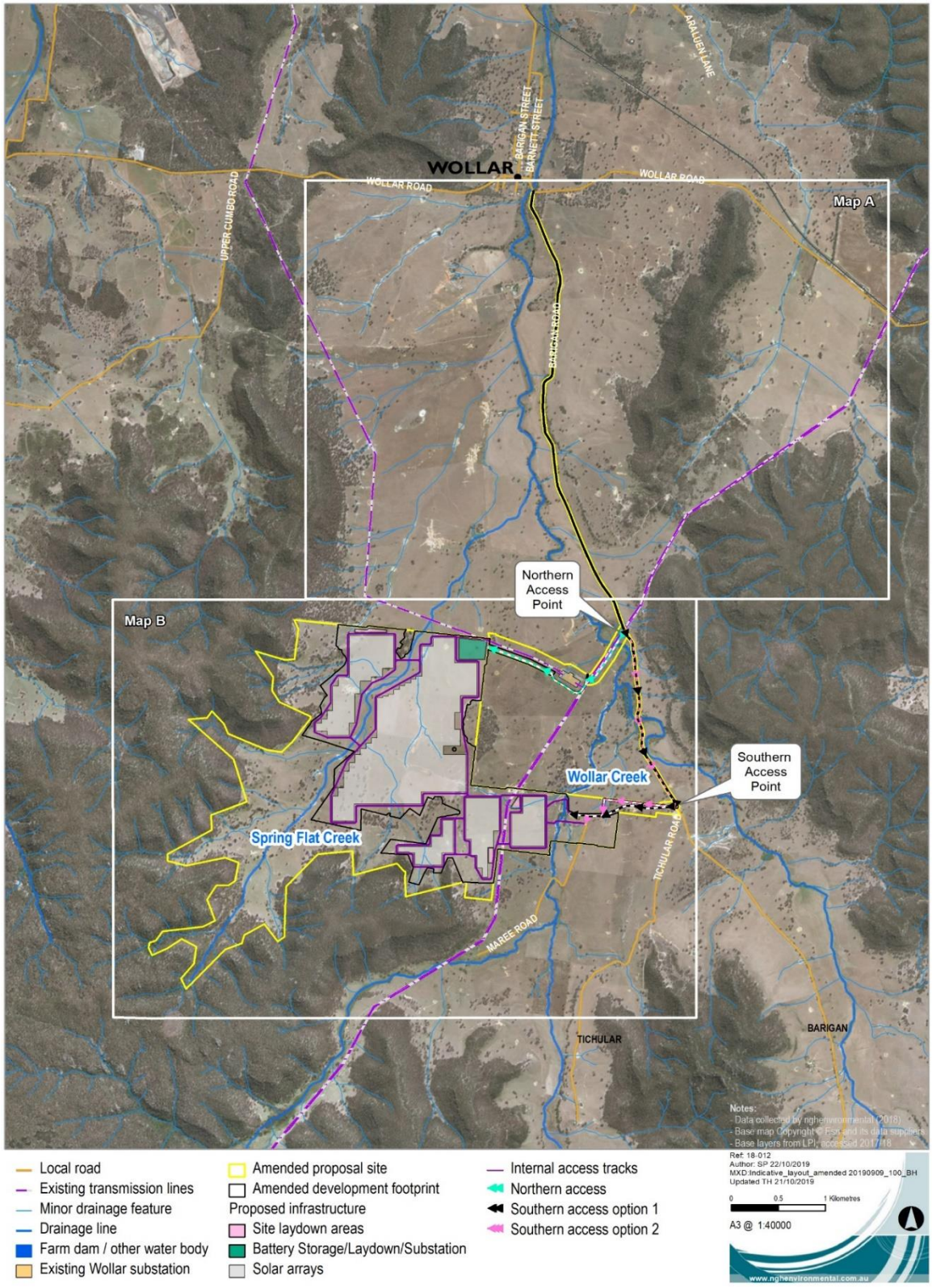


Figure 4-4 Delivery Routes – Barigan Road to Site

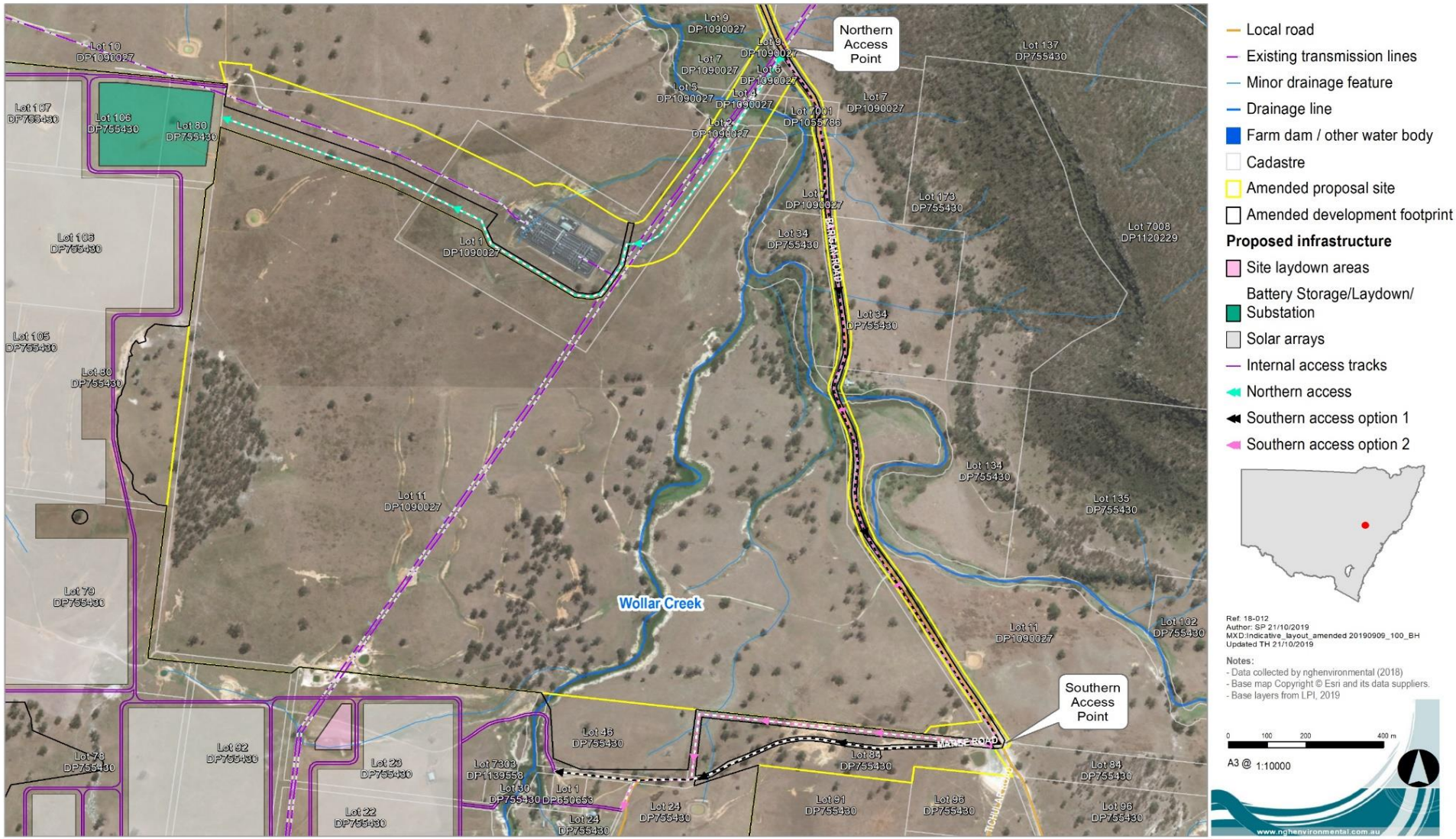


Figure 4-5 Delivery Routes – Barigan Road to Site (Close up showing access points)

4.3. TRAFFIC VOLUMES

4.3.1. Existing Traffic

Local area traffic data was sourced from two locations:

- The 2015 Wilpinjong Extension Project – Road Transport Assessment (GTA Consultants).
- A site visit conducted on 7 August 2018.

Figure 4-6 illustrates the location of survey traffic data that was collected during the 2015 counts and from a site visit in 2018.

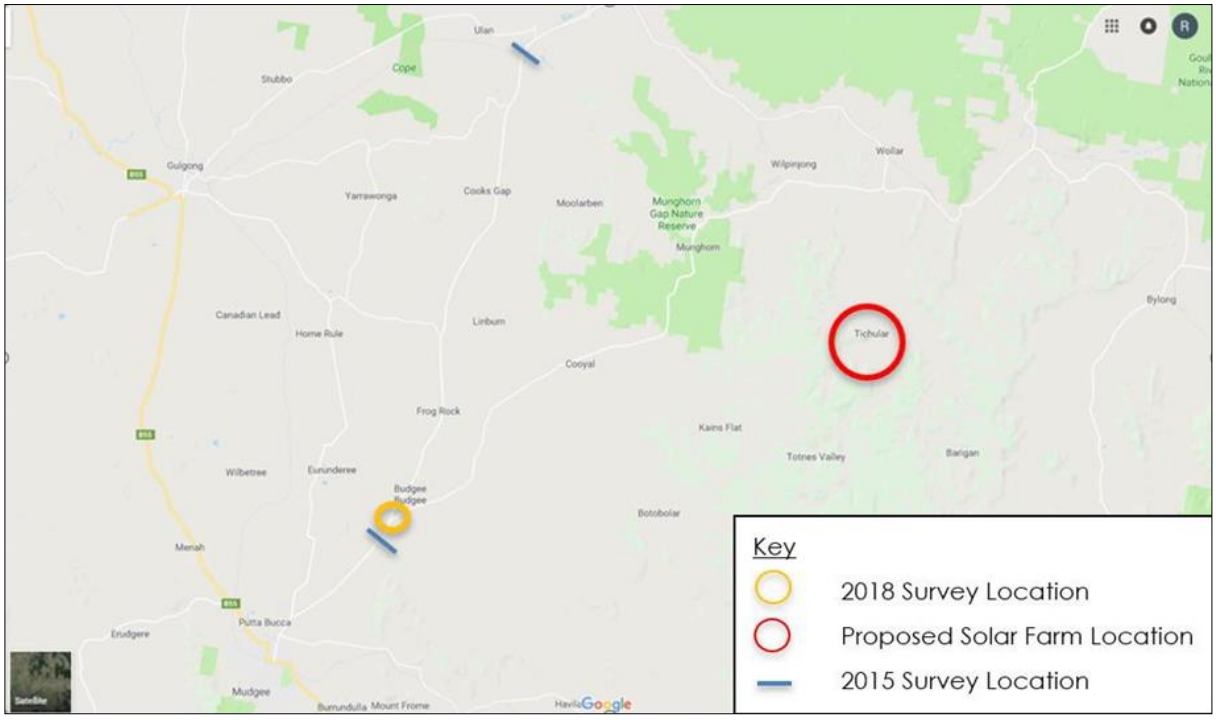


Figure 4-6 Location of survey traffic data collected in 2015 (GTA Consultants) and 2018 (Ontoit)

Traffic survey data was collected to establish a robust baseline for the primary road corridors; Ulan Road and Wollar Road. In addition, comprehensive 24-hour, 7-day data was collected in 2015 which was utilised to determine the location and timing of the 2018 surveys. As such, the 2018 surveys were focused at the Ulan Road / Wollar Road intersection; to enable a comparison between the existing 2015 data and to obtain recent movement and turning data for the Ulan Road – Wollar Road corridor. The 2018 surveys were focused on:

- The AM Peak Period – determined to be 5am-6am consistently from the 2015 traffic counts; and
- A PM Count – the 2015 traffic surveys had varying PM peak periods which were dependent on location. Therefore, the 2018 count was undertaken between 3pm and 4pm to obtain a typical weekday PM traffic volume count (this was also consistent with the southbound Ulan Road, south of Wollar Road 2015 count PM peak Period).

The results of the 2018 traffic surveys are illustrated in Figure 4-7.

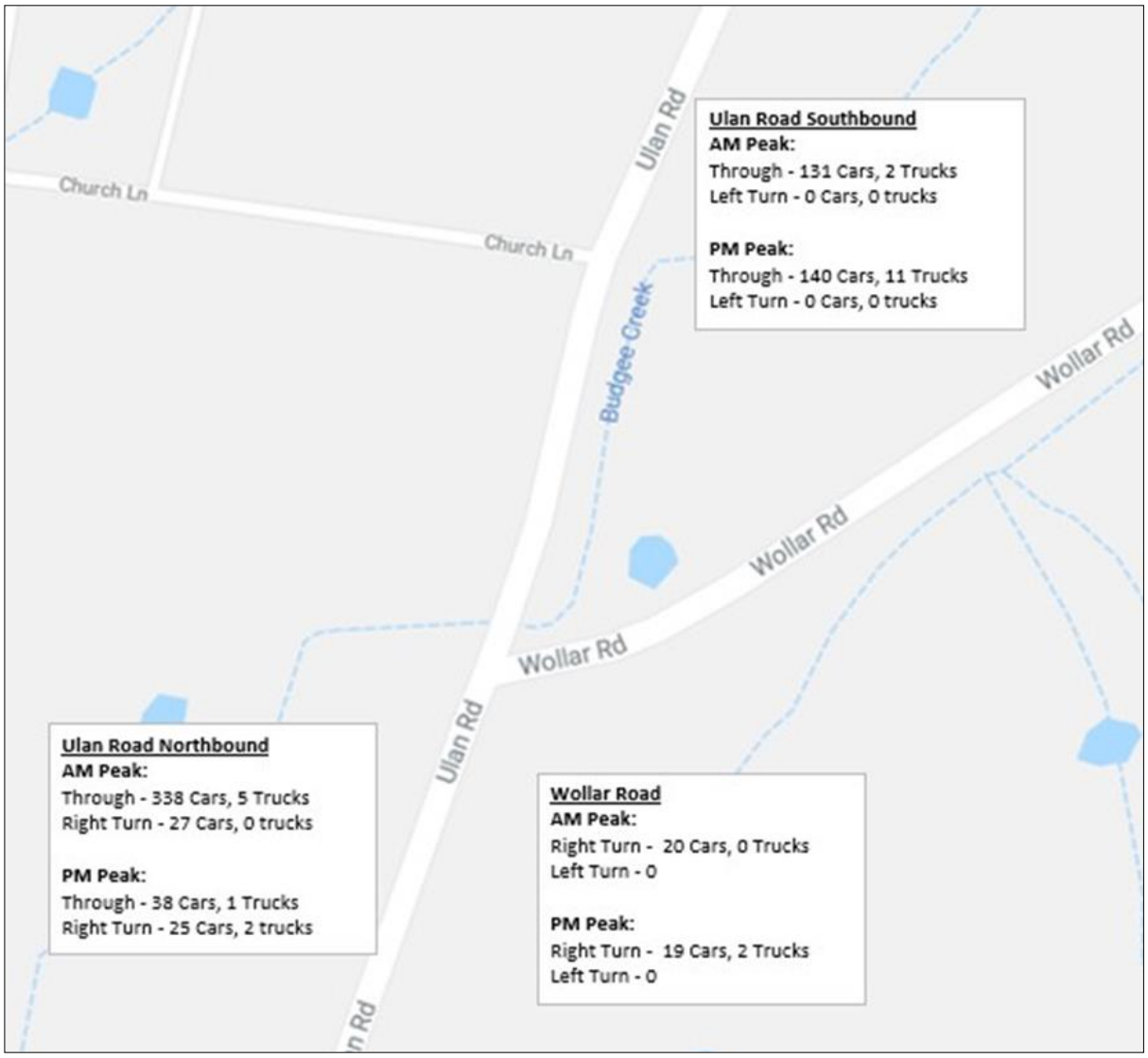


Figure 4-7 Summary of 2018 survey counts for AM and PM peak periods

In the PM peak the 'Wilpinjong Extension Project – Road Transport Assessment' identified an additional 163 vehicles. The 2018 surveys indicated a decrease of 83 vehicles northbound, approximately 60% decrease and an increase of 17 vehicles southbound, approximately 11% increase. Whilst the 2018 counts are not consistent with the WEP RTA forecasted traffic growth, it should be noted that this could be explained by our PM traffic count focusing on 3-4pm as opposed to the 6-7pm noted in the RTA. Overall, it can be concluded that the primary impact of the expansion of the mine has been on the AM peak period.

4.3.2. Construction Traffic

During the construction phase there will be a peak workforce of approximately 320 people, with up to 72 heavy goods vehicle deliveries a day (Amber, 2019). There would be up to 40 bus movements a day to transport the workforce to and from site and a further 60 light vehicle movements as a result of the workforce.

An estimate of the worst case peak hour vehicle demand during the construction phase is outlined in Table 4-1.

Table 4-1 Traffic generation during peak Construction periods (Amber, 2019)

Mode	Vehicle movements per day
Shuttle Bus (25 seats)	40
Light Vehicle	60
MRV/HRV	46
AV/B-Double	26
Total	**172**

Based on the above analysis, it is anticipated that the site will generate approximately 172 vehicle movements during peak periods.

The number of daily trips of vehicle types listed in Table 4-1 does not exceed the vehicle limitations for construction listed in Condition 1 of Schedule 3 in the CoC.

During Stage 1 of the works, pertaining to the upgrade of Barigan Road, there will be a workforce of approximately twenty people. Approximately ten heavy movements will be required to deliver and pick up the road construction equipment. Rock from a local quarry (such as a quarry at Ulan) will be delivered to the upgrades site to reinforce the pavement by semi-trailer or truck and dog configurations. Approximately 900 movements of heavy vehicles are anticipated for these works, but this figure will be updated in the Haulage Plan referred to in section 4.2. The 900 movements will be spread across an approximate eight to twelve week upgrade period, meaning an average heavy vehicle movement of 18.75 movements per day based on a six day week, assuming an 8 week construction period. Council have advised they are supportive of an average of 18.75 vehicle movements across the construction period (Appendix I). Rock will be sourced from a local quarry , reducing the impact of these movements compared to the delivery of solar panels by the EPC Contactor in Stage 3 of the works (construction of substation and solar array) which will require deliveries originating further away from the site. Operational impacts are discussed in section 8.1.

Over-dimensional vehicles

Two over-dimensional vehicle movements were approved for the project (one for each of the two electrical transformers).

4.4. SIZE OF VEHICLES

As per Table 4-1, most vehicles will be light vehicles, heavy goods vehicles and shuttle buses. The maximum length of any vehicle used for construction (excluding over-dimensional vehicles including B-doubles) will not exceed 19 metres unless approval is granted by the Secretary.

Any B-double movements outside the approved B-double network will require a permit from the National Heavy Vehicle Regulator (NHVR). Operators will check the requested route is on the approved B-double route via the NHVR Portal prior to travel. Otherwise, vehicles can operate under a gazette notice for B-double access.

Oversize vehicles require a Class 1 permit as per the NHVR.

The size of vehicles during Stage 1 of the works, pertaining to the upgrade of Barigan Road, is discussed in the previous section.

5. ROAD NETWORK IMPACTS

5.1. PUBLIC ROAD NETWORK

The major concern for traffic and transport for the Project is the additional volumes of traffic during construction. Characteristics for each of the three primary access corridors are described below:

Wollar Road (east and west of Wollar Village) is classified road under the care and control of MWRC, and whilst works on this road require TfNSW concurrence, the management and control of the road sits with MWRC and consists of:

- Sealed bitumen road with approximate carriageway width of 7m,
- Single traffic lane in each direction,
- Line marking in the form of centre lines and in some cases road edges,
- Regular property and commercial development accesses directly off the roads,
- Posted speeds on open road and in built up areas,
- Regular unsignalised priority-controlled intersections with local roads; and
- An existing roadway capacity of approximately 600-900 vehicles per hour, per lane.

Ulan-Wollar Road is not a classified road within the RMS Road Classification Hierarchy and is therefore a local council access road, key characteristics include:

- Sealed bitumen road with approximate carriageway width of 7m,
- Single traffic lane in each direction,
- No regular Line marking in the form of centre lines and in some cases road edges,
- Regular property and commercial development accesses directly off the roads,
- A number of rail crossings,
- Posted speeds 100kph on open road and 50kph in built up areas,
- Regular unsignalised priority-controlled intersections with local roads; and
- An estimated existing roadway capacity of approximately 300-500 vehicles per hour, per lane.

Barigan Road is not a classified road within the RMS Road Classification Hierarchy and is therefore a local council access road, key characteristics include:

- Unsealed road with approximate carriageway width of 6-7m (see Figure 6 and Figure 7),
- Single carriageway road with no formal line marking, requires vehicle to slow and move to one side to enable safe passing,
- Regular property and commercial development accesses directly off the roads,
- Regular unsignalised priority-controlled intersections with local roads; and
- An existing roadway capacity of approximately 300-500 vehicles per hour.

Potential traffic, transport and road safety impacts associated with construction are listed in Table 5-1

Table 5-1 Impacts associated with construction

Potential Impact	Safeguards/Mitigation Measures
Impacts to general road safety i**nclud**ing **additional vehicle movements, heavy vehicle movements, congestion with other road users, and the identification of areas which may require special consideration for upgrades**.	All Stages - Traffic control will be implemented where necessary to ensure the safety of all road users.

Potential Impact	Safeguards/Mitigation Measures
The timing of vehicle movements may impact on sensitive land uses along the travel route.	All Stages - Vehicle movements will be coordinated to reduce the impact of construction traffic on the regional and local road network. This will be documented in the Haulage Plan
Movement of over-dimensional vehicles which may cause delays to road traffic.	All Stages - Movements during selected hours to reduce impact of construction traffic on the regional road network. This will be documented in the Haulage Plan
Movement of construction staff on a daily basis increasing road traffic.	Stage 1 and 2 – The use of a shuttle bus is not practicable due to the low numbers of people involved in these stages. Ridesharing will be used to minimise staff movements. Stage 3 - The implementation of a shuttle bus to transport workers will reduce the number of vehicles on the regional road network. The EPC and Council will discuss and agree upon a target for percentage of workers utilising the shuttle bus service.
Construction phase of the project will increase the volume of traffic on local roads.	Scheduling heavy vehicle movements (all stages), and the use of a worker shuttle bus (stage 3) will minimise this impact. All stages - The implementation of community information and awareness measures will assist to manage local and regional road impacts. This will include letters sent directly to local schools, local bus companies, MWRC, and impacted landholders as well as an online website detailing the project's construction programme and its progress.
Glint and glare from the solar panels may impact on road users and become a hazard to the travelling public on the public road network.	Stage 3 - It is not envisaged that the Wollar Solar Farm will be visible from the public road due to topography and existing trees along Barigan Road [if that is true- I imagine it is because it is behind a hill]. It is possible that small portions of panels could be visible, and if feedback is received that this is the case, mitigatory measures such as planting trees will be evaluated.
Dust and mud resulting from traffic on the unsealed roads used to access the Project site.	Dust suppression measures such as water carts (all stages), entry/exit pads at site entrances as well as monitoring of mud tracking on public roads (stages 2 and 3).

Potential Impact	Safeguards/Mitigation Measures
	Barigan Road would be sealed, and site access roads would be subject to a 40km/h speed limit
Increased wear and tear of existing road infrastructure	WSD has committed to making a voluntary contribution to MWRC for the purpose of local road network maintenance during the construction period of the Wollar Solar Farm. Dilapidation surveys would capture any impacts on existing road infrastructure during construction, upgrading or decommissioning activities.

5.2. ON-SITE ROADS

Internal access tracks would be constructed between various inverter/transformers locations on the site and to the substation for use during the construction of the Project and to facilitate ongoing maintenance. The tracks would be up to 6m wide and suitable for the lifetime of the project with minimal maintenance.

The internal roads would be approximately 6m wide unsealed gravel all-weather roads (for reasonably anticipated weather conditions on the site) to facilitate transport, unloading and mounting of the inverter/transformers. The actual locations of the roads would be determined during the detailed design phase of the solar farm.

5.3. CUMULATIVE IMPACTS

Road upgrades, delivery of materials and movement of vehicles will be undertaken in such a way to minimise potential cumulative traffic impacts with other projects in the area, including the Ulan Coal Mine, Moolarben Coal Mine and Wilpinjong Coal Mine during construction, upgrading or decommissioning works.

This will be done through consultation as per section 3, traffic management as per section 7 and compliance management as per section 9.

6. FLOOD RESPONSE PLAN

An emergency flood response plan will be prepared prior to commencement of works for each stage of the development and will be implemented by the relevant contractors.

At a minimum, the emergency flood response plan will detail:

- Weather monitoring protocol.
- Alert levels (e.g. Black = flooding is possible within the next hour, Red = flooding is possible within the next 4 hours, Green = floodwaters have cleared/safe passage, White = normal operations).
- Roles and responsibilities of staff.
- Communication methods (e.g. radio, mobile phone).
- Implementation of a flood event checklist.
- Staff training for flooding events.

Results of the 'Hydrological and Hydraulic Analysis' (Footprint NSW Pty Ltd, 2018) showed parts of the site may be at risk of temporary flooding during high rainfall events and high flows within the vicinity of Spring Flat Creek and Wollar Creek during construction. Access to the proposed solar farm via the Northern Access would utilise existing crossings on Wollar Creek. The Northern Access point has an existing concrete causeway and is the access point that would be used by both light and heavy vehicles.

During operation the addition of the solar arrays and their associated infrastructure would result in a slight increase in surface roughness over the site, from grazed/cropped pasture to a regular grid of steel piers. Access roads that would be constructed from gravel and within the floodplain itself would be constructed at the existing surface level so as not to result in adverse impact on flood behaviour.

7. TRAFFIC MANAGEMENT

7.1. TRAFFIC CONTROL PLANS

Specific to the management of traffic, Traffic Control Plans (TCPs) will be prepared prior to works which may impact on traffic on public roads. The TCPs will implement specific controls that have been identified in this TMP, the EMS, the Haulage Plan and any associated plans. All Project-related traffic will comply with the controls listed within the TCPs.

The TCPs will specify the description, position, quantity, applicability, behaviour and the methodology of actions on the road network (onsite and off), including speed limit alterations, road signage (temporary or permanent), temporary road detours, junction upgrades, behaviour of drivers, control mechanisms, reporting etc. As a minimum, the following TCPs would be required:

- As part of any application for a Road Occupancy Licence from Transport for NSW for work within the classified road reserve or within 100 metres of traffic signals.
- As part of works to an intersection on any public road.
- As part of any works that would impact upon a public road.

TCPs will be developed by personnel duly qualified and certified by training in accordance with the Transport for NSW Traffic Control at Work Sites manual in consultation with Transport for NSW, local councils and the local communities, as required. TCPs will be developed by a qualified traffic controller, and documents will include their name and qualification number.

The implementation of TCPs will be monitored and assessed on a daily basis. Where subcontracted traffic control staff are required for managing vehicle movement, they will monitor TCP implementation. Where specialist traffic control staff are not required, the site manager will monitor the implementation of TCPs.

TCPs will also address the management of dust and mud resulting from traffic on the unsealed roads used to access the Project site as per Table 5-1.

The management of over-dimensional vehicles will be done in accordance with this TMP, Haulage Plan and approvals from TfNSW such as Road Occupancy Licenses (ROL) should works be undertaken on a road under the authority of TfNSW.

7.2. ROAD UPGRADES

CoC Schedule 3 Condition 8 specifies upgrades on public roads that need to be undertaken to the satisfaction of the relevant roads authority before construction can commence. For Barigan Road and Maree road the relevant roads authority is MWRC. Performing the road upgrades required under this condition form Stage 1 of the delivery of the project, as described in section 1.2.1.

Prior to commencement of these works, the proponent will discuss and agree with MWRC (as the relevant roads authority) the detailed requirements for the public road upgrades and obtain the relevant permits.

A summary of the upgrades specified in CoC Schedule 3 Condition 8 is provided below.

Barigan Road

- Road widening including:
    - Widening (per CoC Appendix 4) to achieve a 7 m wide pavement to allow for safe simultaneous two-way traffic movement in areas of Barigan Road where the pavement is less than 7m in width (Stage 1).
    - Widening to accommodate the swept path assessment provided in the Addendum TIA to allow for safe simultaneous two-way traffic movement at bends and access intersections (Stage 1).

- Sealing of Barigan Road between Wollar Road and the Northern Access (Stage 1)
- Sealing of Barigan Road between the Northern Access intersection and Maree Road (Stage 4 - only required if Southern Option Access 2 is utilised)

A 12 m wide corridor of Barigan Road has been proposed for impact to provide flexibility for traffic management and engineered designs which will be determined by the selected contractor, once appointed and pending approval.

Maree Road (road reserve)

- Only required if the Southern Access Option 2 is used (Stage 4)
- Full road construction of approximately 1 km to unsealed road standard with a recommended width of 7 m.
- Upgrades would be based on the designs shown with the Addendum Traffic Impact Assessment (Amber, 2019).

These road upgrades are shown in Figure 7-1.

Road Safety Audit - Wollar Road / Barigan Road intersection

Appendix 4 of the CoC (Figure 7-1 which is included on page 21 of the CoC) notes that the upgrades required on the Wollar Road / Barigan Road intersection are dependent on the outcome of a road safety audit (RSA). The DPIE Assessment Report (page 27) included further detail that road upgrades should be undertaken, including "*upgrading the intersection of Wollar Road and Barigan Road, including Basic Right (BAR) turn and Basic Left (BAL) treatments (unless a Road Safety Audit undertaken in consultation with RMS determines that* The proposed treatment remains as per the Development consent:

> Wollar Road / Barigan Road intersection: Basic Right (BAR) turn and Basic Left (BAL) turn treatments for the largest vehicle accessing the site (excluding over-dimensional vehicles).

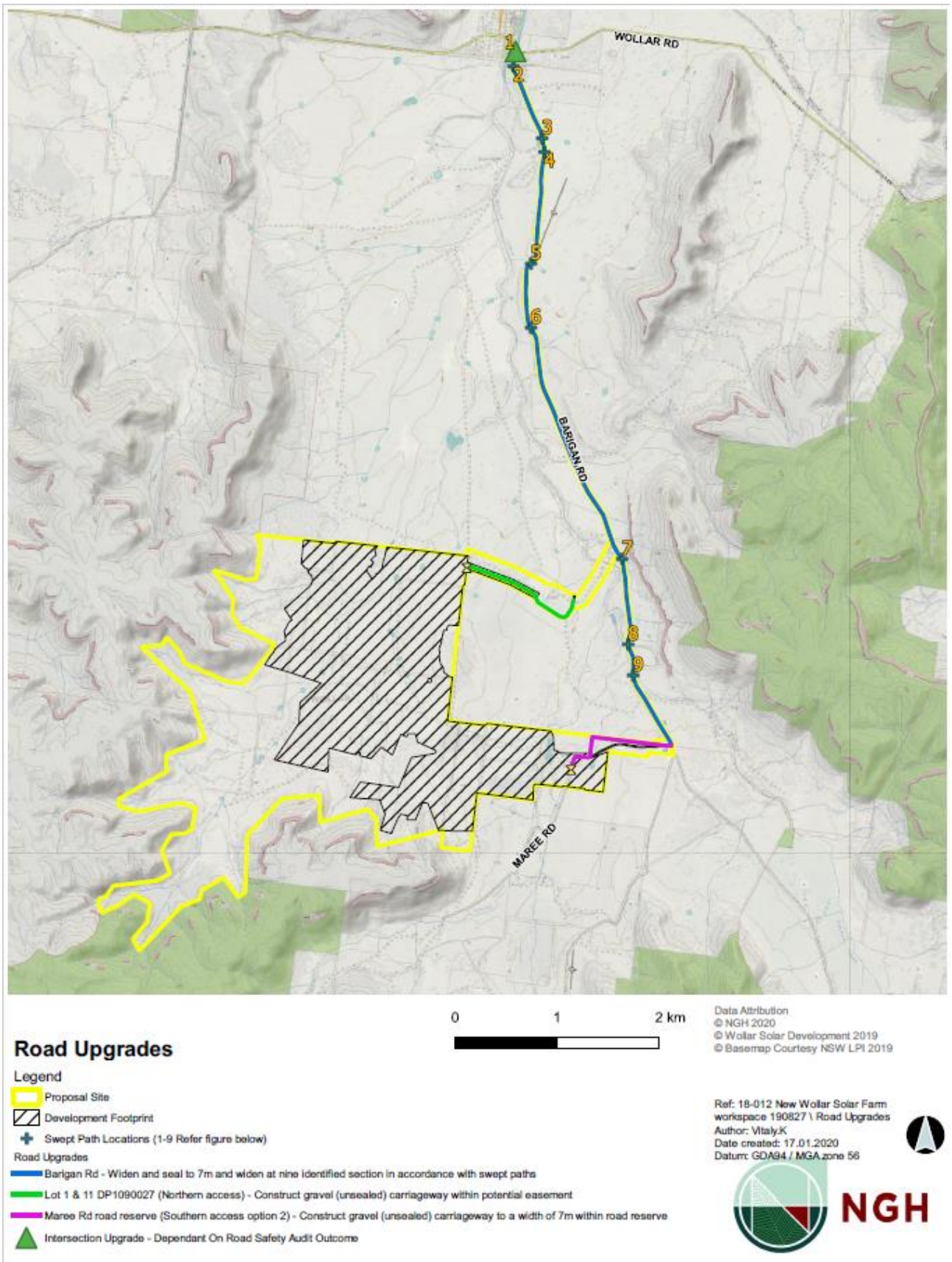


Figure 7-1 Road Upgrades

7.2.1. Road Dilapidation

Dilapidation Survey

Prior to commencement of construction, during construction and following construction, upgrading of solar panels, and ancillary infrastructure and decommissioning of the solar farm, a protocol for independent dilapidation surveys will be undertaken.

These surveys will assess the:

- Existing condition of Ulan-Wollar Road, Wollar Road, Phillip Street, Barigan Street, Maitland Street, Barigan Road and Maree Road prior to construction, upgrading or decommissioning activities; and
- Condition of Ulan-Wollar Road, Wollar Road, Phillip Street, Barigan Street, Maitland Street, Barigan Road and Maree Road following construction, upgrading, or decommissioning activities.

These surveys are generally in the form of a video with an accompanying written assessment of the road condition including structures by a Civil or Geotechnical engineer (as appropriate).

Surveys completed for Stage 1 works will focus on the route between the point of source for raw materials to be used in the upgrade. All surveys will be repeated prior to commencement of Stage 2 works.

Prior to any upgrading or decommissioning works, the proponent will consult with MWRC to agree upon an updated maintenance contribution (with the required contribution to be calculated based on the traffic movements associated with the proposed works).

Repair Protocol

The following protocol for the repair of Ulan-Wollar Road, Wollar Road, Phillip Street, Barigan Street, Maitland Street, Barigan Road and Maree Road will be implemented for the duration of construction.

WSD has agreed to pay a voluntary contribution to MWRC for the purpose of local road network maintenance during the Wollar Solar Farm construction period. The contribution will be paid upfront when construction commences and covers the entire construction period. The CoC refers to this in the definition of EIS (*email titled Voluntary Contribution from Wollar Solar Development Pty Ltd for local road network maintenance, dated 11 October 2019*)

MWRC will maintain road damage attributable to fair wear and tear of the roads from the expected traffic during this period (which includes existing traffic from local mines and public plus WSDs increased construction traffic per section 4.3.2).

If damage is identified by MWRC which they consider to be project specific damage attributable to Wollar Solar Farm that is not fair wear and tear, this will be brought to the attention of WSD. MWRC will provide information about the location and extent of the damage to assist WSD with investigating the cause of the damage with the contractors for the project. WSD commits to repair any such damage caused by traffic related to the development. Timeframes for repair of the damage will be agreed with MWRC depending on the type and extent of the damage identified.

An assessment of this damage would be undertaken, and a contractor would be engaged to undertake the repairs to the satisfaction of Council.

All works will ensure the capacity of the existing roadside drainage network is not reduced.

7.3. ON-SITE PARKING

Stage 1:

Prior to commencement of Stage 1 works, an area for the parking of equipment used to perform the public road works will be agreed with MWRC. The location and size of the area will be determined after the road works contractor has been contracted, as it depends on the type and size of the plant utilised. Cars will not be parked in unsafe locations on the edges of the public road.

Stage 2 and 3:

It is proposed that during the construction phase, temporary ancillary facilities would be established on the site including car and bus parking facilities for construction staff and no off-site vehicle parking is allowed (no parking on public roads). The contractor responsible for the stage 3 works will use shuttle buses to transport as many of the regular construction staff to the site as possible from appropriate pickup points. On-site parking shall be designed accordingly. No vehicles will be permitted to park on the public road.

Operational requirements are outlined in section 8.1

7.4. WORKFORCE TRANSPORTATION

A Workforce Transport Plan will be developed in consultation with MWRC prior to Stage 3 construction to be incorporated within this TMP. This will include details of the amount of onsite parking and the shuttle bus service for transporting workers to site.

Shuttle Bus

The Workforce Transport Plan will include details of the shuttle bus including drop-off/pick-up locations and times, number of bus trips per day, targets for number of workforce utilising the service and guidelines on how the targets will be met, such as which types of staff will utilise the service. The Workforce Transport Plan will include details of how utilisation of the shuttle bus service will ensure that the daily light vehicle limit of 60 movements is not exceeded.

The requirements for the EPC Contractor to meet the target for number of workforces utilising the shuttle bus service will be a contractual requirement in the EPC Contract.

The required shuttle bus utilisation rate may vary through construction in relation to the number of workforce on site, Stages 1 and 2 involve a relatively minimal number of workers it will be possible to comply with the daily light vehicle limits without implementing a shuttle bus service. Given the small number of workers associated with Stage 1 and Stage 2, a shuttle bus will only be utilised if a safe location for parking of vehicles cannot be agreed with MWRC. During peak construction of Stage 3 the workforce is expected to exceed 300 and it is estimated that approximately 80% of the workforce would need to ensure compliance with daily light vehicle limits.

Any relevant stakeholders (i.e. businesses and landholders) will be consulted in the process.

7.5. PLANT & EQUIPMENT MAINTENANCE AND EMERGENCY REPAIRS

A regular maintenance schedule for all plant and vehicles, including heavy vehicles, will be implemented by the contractors undertaking works. The maintenance schedule would include but is not limited to the following:

- Plant and vehicles will be maintained as per manufacturer's instructions.
- Heavy Vehicles and trailers will be maintained in accordance with the *National Heavy Vehicle Inspection Manual* to ensure roadworthiness.
- Records of fuel will be kept for each piece of plant and vehicle.
- Records of maintenance and use of any consumables, tyres, oils, batteries etc.

- Spillage kits will be provided to all vehicles.
- All operators of plant and vehicle drivers will be trained regarding their responsibilities, policies, procedures and work instructions.

An emergency repairs plan for all Plant and Vehicles will be implemented by the EPC contractors undertaking works. The plan would include but is not limited to the following:

- Procedures detailing what to do in the event of plant/vehicle breakdown.
- Temporary isolation of the broken plant/vehicle so it will not impede upon other activities occurring within the surrounding area or other road users.
- Back-up plant/vehicles to temporarily replace the broken plant/vehicle.
- Contact details of a recovery operator if a vehicle is required to be moved off the road.
- Procedures for replacement parts and equipment.
- Emergency contacts for who will be conducting the repairs.
- All operators and drivers will be trained regarding their responsibilities and procedures for handling emergency repairs.

7.6. DRIVER FATIGUE

The risk of driver fatigue will be managed by the provision of shuttle buses for daily transport of regular workers to and from the site. Information will be included in site induction training, contractors' 'Drivers Code of Conduct' (Appendix D), and toolbox talks on appropriate driving behaviour, including fatigue management. Strategies will include:

- Ensuring sufficient sleep and rest prior to each shift.
- Promote carpooling and shuttle buses.
- Avoid work scheduling which promote excessive work hours.
- Monitor fatigue in staff during work hours and prior to leaving the site, with reference to staff travelling long distances.
- Liaise with RMS western region Road Safety Unit to provide training.
- Promote regular breaks during long-distance driving.
- Promote abstinence from alcohol, medications which cause drowsiness, and other drugs that may influence fitness for work.
- Promote good exercise and diet.
- Provide assistance programs for staff suffering from stress.
- Use of Vehicle Traffic Management Systems on all regular project delivery vehicles (Stage 3).

7.7. ROAD CONDITIONS

Fog, dust and rain

Local climate and weather conditions in the Mid-western region such as fog, storms, and dust present potential safety concerns to road traffic users and local landowners throughout construction and operation. Risks will be managed by monitoring weather forecasts and including details of upcoming weather events and relevant management strategies in toolbox talks, including reduced speed on internal and site access roads and use of fog lights during periods of low visibility, dry or wet conditions. Relevant management strategies to ensure that drivers implement safe driving practices during poor weather conditions will be detailed in the contractors 'Drivers Code of Conduct' (Appendix D).

Dust suppression is to be used during dry or windy conditions to reduce impacts upon road traffic users and surrounding residences. Dust suppression will be used on the unsealed internal roads within the solar farm development area, and during road upgrades on Barigan Road if required. Vehicles are to be clean and free of mud before leaving the site and entering any classified road, particularly during wet conditions, to ensure

mud and other debris is not drag onto public roads and impedes upon the safety of road traffic users. Gravel hardstands may be established near the site entry and exit point for vehicle cleaning/inspections. These measures will be included in the contractors' 'Drivers Code of Conduct' (Appendix D) for the Project.

Speed

All road traffic associated with the Project will access the site via two main access points to the development site identified in the EIS. Northern access along the existing TransGrid Wollar substation access road via Barigan Road. Southern access to the site would be off Barigan Road via Maree Road and an unnamed track. The Amendment Report identified a second southern access option to be constructed in the event the Northern Access cannot be used for site access. Southern access option 2 would allow heavy vehicle construction access via Barigan Road and the (Maree Road) road reserve.

All vehicles will adhere to the posted speed limits of the local roads and will drive at speeds appropriate to local conditions.

The speed limit of all internal roads and access roads including the northern access will be 40km/hr. Speed signs will be posted as appropriate in compliance with relevant guidelines and standards. Risks will also be managed by including relevant management strategies in toolbox talks, including complying with posted speed limits and reducing speed to suit weather conditions.

The requirement to adhere to speed limits will also be included in the contractors 'Drivers Code of Conduct' (Appendix D) for the Project and in accordance with the National Heavy Vehicle Regulator (NHVR) chain of responsibility (Appendix E).

7.8. ROAD OCCUPANCY LICENCE

The EPC contractor will obtain Road Occupancy Licences from TfNSW prior to the commencement of haulage as transport routes will include state roads.

Approvals will be obtained for road works and the transport of over dimension loads from various authorities as relevant including:

- Transport for NSW
- NSW Police
- Essential energy
- Telstra
- ARTC
- Councils

As described in section 4.3.2 the works for Stage 1 are expected to generate around 12.5 vehicle movements per day and materials will be sourced from relatively close to the works. As such an ROL will not be required to commence Stage 1.

7.9. COMMUNITY ENGAGEMENT

A Community Consultation Strategy will be included in the EMS and will be implemented to manage impacts to community stakeholders, including but not limited to:

- Protocols to keep the community updated about road works and potential impacts through media advertisements, letter box drops, project website updates and signage around the roadworks.
- Local landholders directly impacted by roadworks will be provided with information about relevant traffic impacts, including planned work that will disrupt property access, and management strategies.

Given the isolated rural location of the Project site, there is not likely to be any need for pedestrian or cycle access. However, the local media advertisements, and warning signs along public access routes advising of construction activity will ensure the safety of any pedestrians or cyclists in the area.

The following measures will be implemented specifically for Stage 1 works to Barigan Road:

- Letter drop of all houses along Barigan Road 4 weeks prior to the works commencement and immediately prior to the works commencement. WSD will use feedback from these notices to adjust methods of work to minimise impacts where possible.
- Letter drop of all houses in Wollar prior to commencement of the works
- Notice at Wollar shop community notice board
- Notices will include the WSF 1800 number and project email address.
- Notices will include the option of setting up face to face visits at the request of the resident
- Newspaper advertisements in major newspapers two weeks prior to upgrade
- Signage advising of upcoming works placed at the northern entrance to Barigan Road 2 weeks prior to the works.
- If works are required to the junction of Wollar Road and Barigan Road (dependant on outcome of road safety audit), additional signage advising of upcoming works and potential delays will be placed both directions on Wollar Road, two weeks prior to commencement of the junction works.
- Written notification to Ulan, Wilpingong, Moolarben mines (Local Mines), although it is unlikely they will be affected due to the location of Barigan Road relative to their operations.

7.9.1. Consultation with Local Mines

During construction of the solar farm WSD will provide project updates via email to the Local Mines to make them aware of increased road usage. These will include:

- notification prior to the commencement of construction
- details of forthcoming deliveries
- notification of when oversized deliveries will utilise Ulan Road and Ulan-Wollar road for the project

WSD is also willing to participate in the existing process which the Local Mines use share information received from personnel and the community about unacceptable driver behaviour on Ulan Road with each other.

WSD and contractors as appropriate will register for Wilpinjong mine blasting email/phone call updates so that this can be considered within delivery plans.

Haulage Plans will be provided to the Local Mines per Section 4.2.

8. OPERATION REQUIREMENTS

The following requirements pertain to the operational phase of the project.

8.1. OPERATIONAL TRAFFIC

Once construction is complete the Solar Farm trip demand will significantly decrease. Once established the Solar Farm could have up to five full time employees and a number of operational and maintenance light vehicles accessing the site each day.

An estimate of the worst-case peak hour vehicle demand during the operational phase is outlined in Table 8-1.

Table 8-1 Estimated peak hour vehicle demands for the operational phase

Mode	Total Workforce/ Deliveries	Percentage of Peak Hour Trips	Estimated Peak Hour Trips
Private Vehicles	5	100%	5
Light Goods and Service Vehicles	15	20%	3
Total	N/A	N/A	8

Based on the above analysis it is anticipated that the daily peak travel demand for the operational phase of the Solar Farm is estimated to be eight vehicles.

It is not anticipated that any AV/B-Double, medium and/or heavy vehicles will be utilised during the operational phase. If any of these vehicles were required in an ad-hoc situation, the number of movements per day would not exceed 7.

8.1.1. Personnel and work hours

Up to five equivalent full-time staff will be employed onsite when the solar farm is operational. Associated work would be undertaken during the standard working hours of:

- Monday – Friday: 7am - 6pm
- Saturday: 8am – 1pm

Work undertaken outside of these hours would be kept to a minimum.

During the life of the solar farm, it may be necessary to engage contract staff to undertake specific major tasks at which time there could be greater numbers of people onsite, such as cleaning of the solar panels.

8.1.2. Conflict with existing road users and public transport

Table 8-2 outlines services that may potentially be impacted by operational traffic generated by stage 3 operational traffic, and the safeguards and mitigation measures necessary to reduce these impacts.

Table 8-2 Potential operational traffic conflicts

Transport service	Potential traffic conflict
Public transport (e.g. school buses)	Most workers would arrive on site 6:45am–7:15am and depart site 5:30pm-6:00pm which is outside the main bus running times. Their arrivals and departures would be staggered and of low volumes. Deliveries to and from site would be scheduled to avoid peak traffic times.
Public Road users	Deliveries to and from site would be scheduled to avoid peak traffic times. It is anticipated that only 5 full time staff would be employed on site during operation, which would not put a strain on the road network.
Rail Services	The Sandy Hollow-Gulgong Rail line that services Wollar is located approximately three kilometres from the project site. It is not anticipated that operational traffic from the Solar Farm would impact on rail movements, as rail traffic has right of way at all crossings.

8.2. OPERATIONAL SITE PARKING

It is proposed that during the operational phase, there will be car parking facilities for operational staff onsite. The final on-site parking design will be developed as part of the EPC Contract but will consist of approximately:

- Five permanent employee parking spaces, with additional overflow parking for fifteen vehicles for use during major maintenance.
- Two permanent visitor parking spaces.
- Two loading and unloading spaces
- Area where a heavy vehicle can be unloaded.

9. COMPLIANCE MANAGEMENT

9.1. ROLES AND RESPONSIBILITIES

The proponent's Project Team's organisational structure and overall roles and responsibilities are outlined in the EMS. For Stage 2 and 3 specific responsibilities for the implementation of environmental controls will be detailed in the Project specific Contractor's Environmental Management Plan (CEMP) provided by the EPC or TransGrid as relevant. For Stage 1 specific responsibilities for the implementation of environmental controls will be agreed between the Principal and the Contractor undertaking those works.

9.2. TRAINING

All employees, contractors, and utility staff working on site will undergo site induction training relating to traffic and transport management issues. Targeted training in the form of toolbox talks or specific training will also be provided to personnel with a key role in traffic management. All drivers will be informed of the NHVR chain of responsibility and will adhere to its principles. This training will be provided by the contracting haulage company. Further details regarding staff induction and training are outlined in the section 4.3 of the EMS.

9.3. MONITORING AND INSPECTION

Regular monitoring and inspections will be undertaken in the lead up to, during and following construction as well as operation. Monitoring and inspections will include, but not be limited to:

- During Stage 1 works, WSD will undertake monthly audits to ensure the TMP is being followed. The road upgrade contractor will record vehicle movements to the roadworks site, and they will be provided to WSD on a weekly basis.
- The EPC contractor is to ensure that an inspection and maintenance program for local road access will be established during construction and operation to ensure local road conditions are maintained in a safe state for medium and/or heavy, over-dimensional, AV/B-Double vehicles access. The EPC contractor would conduct the road inspection monthly although Barigan Road and roads in Wollar township will be inspected more frequently.
- The site Construction Manager is to ensure that all Plant and vehicles are regularly maintained to operate at optimum efficiency, and records of each piece of Plant and vehicle are maintained and available for review. This will occur on an as-used basis.
- The number of medium and/or heavy, over-dimensional, AV/B-Double vehicles entering the site each day will be recorded as they occur by the site foreman (or another employee of the contractor with appropriate responsibility) using the delivery vehicle register (Appendix C). This will be checked during monthly audits.
- The EPC contractor will ensure that delivery numbers will be checked against schedules and adjusted as required to ensure that the number of:
- Medium/heavy vehicle movements do not exceed 46 per day (construction, upgrading or decommissioning only).
- AV/B-double vehicle movements do not exceed 26 per day (construction, upgrading or decommissioning only).
- Over-dimensional vehicle movements do not exceed 2 per day (construction, upgrading or decommissioning only).
- AV/B-Double, medium and or/heavy rigid vehicle movements do not exceed 7 per day (operation only).
- The implementation of Traffic control plans will be monitored and assessed by the site engineer (or another employee of the contractor with appropriate responsibility) and or the EPC on a daily basis.
- Where subcontracted traffic control staff are required for managing vehicle movement, they will monitor TCP implementation on a daily basis.

- Where specialist traffic control staff are not required the site engineer will monitor the implementation of TCP's on a daily basis.

Additional requirements and responsibilities in relation to inspections will be documented in the CEMP.

9.4. AUDITING

A Road Safety Audit in consultation with RMS focusing on the Wollar Road / Barigan Road intersection will be undertaken prior to commencement of construction by the EPC contractor.

Vehicle Tracking Management Systems will be fitted to all regular project delivery vehicles. In the event of a complaint, this information will be interrogated.

Further Audit requirements are detailed in the EMS, section 11.1

9.5. REPORTING

Reporting requirements and responsibilities are outlined in the EMS, section 11.2

9.6. COMPLAINTS REPORTING

All general complaints will be promptly responded to in accordance with the Complaint's Procedure outlined in the EMS, section 7.16.

Specific complaints related to development traffic will follow the process outlined below:

- All complaints will be investigated and the source of the complaint determined where able.
- Where the complaint made by phone, email or via the website, an initial response will be provided by the following working day, and a resolution provided within five business days, if the complaint cannot be resolved in the initial contact.
- If the complainant feels the issue has not been resolved, they can escalate to the following offices;
    - Office of the National Wind Farm Commissioner (also covers large scale solar farms)
        - Website - https://www.nwfc.gov.au/
        - Email - nwfc@environment.gov.au
        - Post - National Wind Farm Commissioner, PO Box 24434, Melbourne VIC 3001
        - Telephone – 1800 656 395
    - NSW Department of Planning and Environment Compliance Team
        - Phone - 1300 305 695
        - Email - information@planning.nsw.gov.au
    - Environmental Protection Authority (EPA)
        - Website - http://www.epa.nsw.gov.au/
        - Environment Line phone - 131555

10. REVIEW AND IMPROVEMENT

10.1. CONTINUOUS IMPROVEMENT

Continuous improvement of this plan will be achieved by the ongoing evaluation of environmental management performance against environmental policies, objectives and targets to identify opportunities for improvement.

10.2. TMP UPDATE AND AMENDMENTS

This TMP will need to be revised whenever the construction program, scope of work, or work methods change, whenever the work methods and control structures are found to be ineffective, or if so directed by the proponent. This will occur as needed and in accordance with the process outlined in the EMS.

A copy of the updated TMP and changes will be distributed to all relevant stakeholders in accordance with the approved document control procedure identified in the EMS.

10.3. DOCUMENT CONTROL

Document control procedures are outlined in the EMS.

11. REFERENCES

Amber. (2019). *Wollar Solar Farm - Traffic Impact Assessment.*

Footprint NSW Pty Ltd. (2018). *Hydrological and Hydraulic Analysis Report.*

GTA Consultants. (2015). *Wilpinjong Extension Project - Road Transport Assessment.*

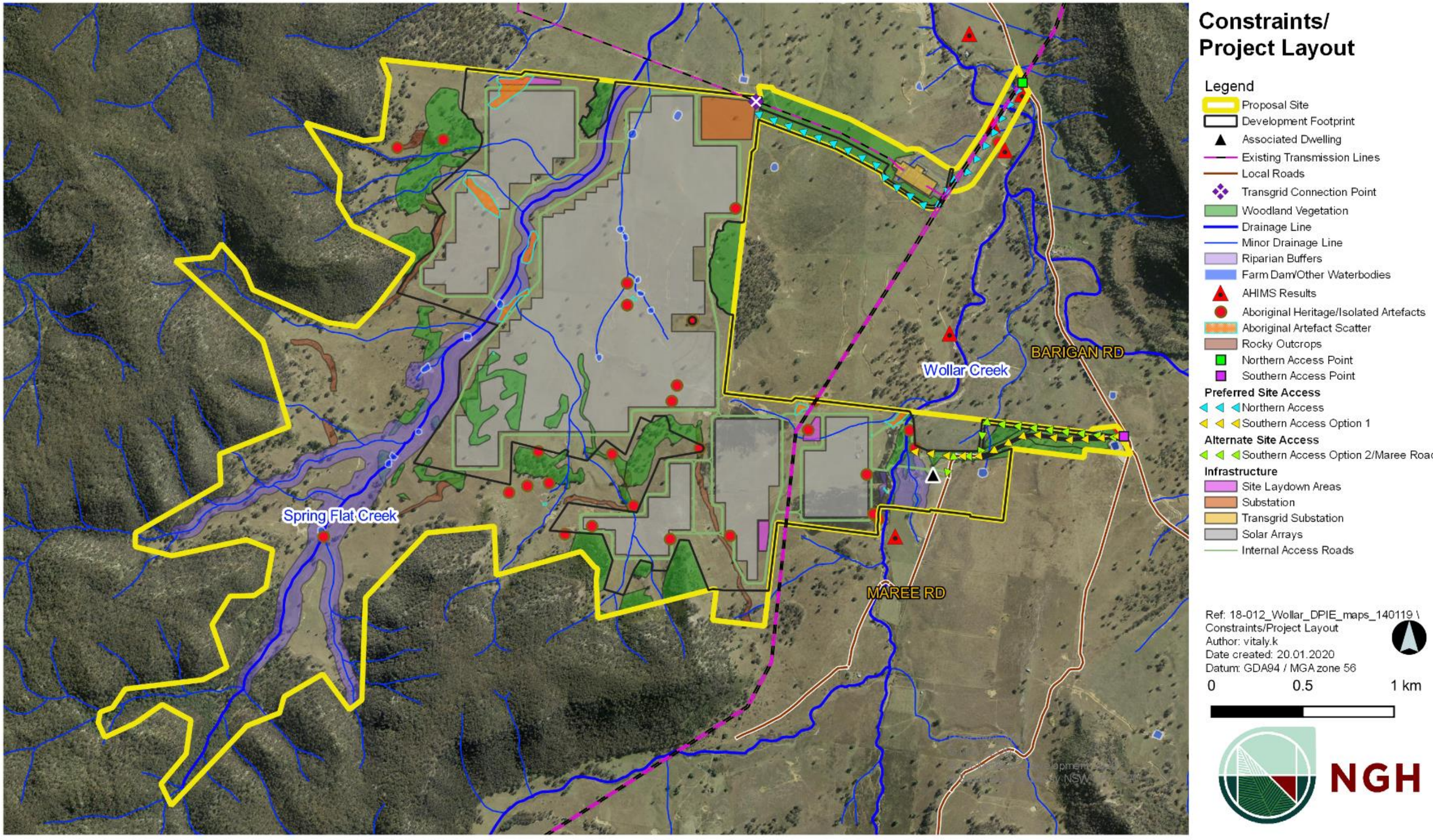
NGH Environmental. (2019). *Amendment Report - Wollar Solar Farm.*

NGH Environmental. (2019). *Environmental Impact Assessment - Wollar Solar Farm.*

NGH Environmental. (2020). *Submissions Report Wollar Solar Farm.*

Ontoit. (2019). *Wollar Solar Farm Traffic Impact Assessment.*

APPENDIX A APPROVED SITE MAP



APPENDIX B UPGRADE DESIGNS

APPENDIX C VEHICLE MOVEMENT REGISTER

Date of Entry	Time of Entry	Vehicle Reg.	Vehicle size/type	Goods Delivered	Driver Name	Time of exit

APPENDIX D DRIVERS CODE OF CONDUCT

The contractors' 'Drivers Code of Conduct' for the Project will include but is not limited to the following:

Penalties and Disciplinary Action

Failure to comply with this Driver Code of Conduct will lead to either the issue of a warning notice or disciplinary action.

Code of Conduct Induction

All contractors will be required to complete an induction of this 'Drivers Code of Conduct', and sign a declaration stating they have read and understood the requirements in the document, and will comply and assist their implementation, requirements and ongoing administration. This may be an online induction.

Safe Driving Practices

- All drivers must hold a current and valid driving licence for the class of vehicle that you operate.
- Drivers must notify their employer if they are not fit for duty prior to commencing their shift. Steps for managing driver fatigue is provided in section 7.6.
- Always adjust your driving to the existing road and climatic conditions (refer to section 7.7).
- You should always drive in a manner that will help you to avoid an accident.
- Take regular breaks on long drives. Drivers of medium/heavy vehicles, over-dimensional vehicles and AV/B-Double vehicles must adhere to the maximum work requirements and minimum rest requirements outlined in the Heavy Vehicle (Fatigue Management) National Regulation (NSW).
- All vehicles must be maintained and operated in accordance with the vehicle manufacturers recommended standards.
- Always brake with care, remembering that the truck will react differently according to the weight of the load, weight distribution of the load and road surface condition.

Speed Restriction

Always follow the posted speed limits and advisory speed signs as they provide vital clues to road conditions and characteristics. You must apply the following rules at:

- Always reduce your speed in wet or dry and dusty conditions.
- Drive cautiously in fog or heavy rain.
- Descend hills at sign-posted truck speeds, or in the lowest gear to suit the conditions.
- Always observe the special limits that apply for road works etc.
- Always observe the special speed limits that apply to internal access roads within the construction site.
- DO NOT exceed the posted maximum speed.
- DO NOT drive at speed past schools, school buses, parks, shopping areas etc.

Designated Routes

- All vehicular traffic associated with the development must travel to and from the Project site via Wollar Road and Barigan Road and the approved site entry point.
- Trucks and heavy vehicles must not use local residential streets.

Drivers must stay on the defined routes laid down unless there are exceptional circumstances. Exceptional circumstances include:

- Normal route blocked e.g. flooded.
- A revised route agreed in writing.

Vehicle Recording

All drivers will be responsible for recording when they enter the site on the Vehicle Movement Register (Appendix C).

APPENDIX E NHVR CHAIN OF RESPONSIBILITY

May 2017

Chain of Responsibility
Schedulers

About the chain of responsibility (CoR)

Our road laws generally address the actions of drivers and operators, but breaches of these laws are often caused by other parties in the transport supply chain.

The aim of CoR for a heavy vehicle is to make sure everyone in the supply chain actively prevents breaches of the Heavy Vehicle National Law (HVNL). The CoR law also extends to preventing or reducing potential harm or loss (risks) to yourself and others. Managing (controlling) these risks ensures that you always recognise and carefully consider all potential dangers and satisfactorily reduce or avoid them before they occur.

Who has a responsibility?

Under CoR laws, if you undertake specified functions that exercise, or have the capability of exercising, control or influence over *any* transport task, you are part of the chain of responsibility and have an obligation to ensure compliance with the HVNL.

What if I have multiple transport tasks?

Everyone in the supply chain has a responsibility to ensure the safety of their transport tasks related to the vehicle. If you carry out *more than one task* in the supply chain, this responsibility will extend to *all* of the tasks that you carry out. You may therefore be classified by *multiple roles* in the transport supply chain under the HVNL.

Your responsibility as a scheduler

As a 'party' in the supply chain, with influence over transport activity, a scheduler has an ongoing responsibility to prevent breaches of speed and fatigue laws under the HVNL. Although schedulers should be aware of mass, dimension and loading issues, they do not have specific HVNL obligations.

As a scheduler, you also have an ongoing responsibility to prevent or reduce potential harm or loss (risks) to yourself and others, and to ensure that you don't ask, require or direct activities you know will breach the law.

Am I carrying out a scheduler's transport tasks?

Under the HVNL, you are classified as a scheduler if you plan the transport of any goods or passengers or schedule the work and rest times of a driver.

A scheduler may also include such persons also known as a planner, roster clerk, programmer, etc. You can use the *CoR checklist* to confirm whether you are classified as an operator for road transport using a heavy vehicle under the HVNL.

Your key responsibilities as a scheduler

Some key responsibilities may include ensuring that:

- journeys and routes are suitably planned with consideration of potential traffic issues and other unexpected delays
- drivers' activities, including work and rest times, are accurately recorded
- regular scheduling reviews are carried out
- there is appropriate consultation with operators, managers, contractors and drivers concerning rosters, schedules and routes
- all necessary scheduling, journey and route information is accessible
- your delivery requirements do not require or encourage drivers to
  – exceed the speed limits
  – exceed regulated driving hours
  – fail to meet the minimum rest requirements
  – drive while impaired by fatigue.

What are the possible penalties for a breach?

As a scheduler, you could be held legally liable for breaches of the HVNL even though you have no direct role in driving or operating a heavy vehicle. If your actions, inactions or demands cause or contribute to an offence, you can be held legally accountable.

Penalties and sanctions can range from formal warnings to court imposed fines and penalties relating to the commercial benefit derived from offences.

Heavy vehicle safety. It's your business.

APPENDIX F ADDENDUM WOLLAR SOLAR FARM TIA

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Ref: 043
8 October 2019

Issued via email: louiza.r@nghconsulting.com.au

Dear Louiza

Wollar Solar Farm – Traffic Impact Assessment

Amber has been asked to assess the traffic matters of the proposed 290MW solar farm located approximately 7km south of Wollar. Vehicles accessing the site will be required to travel through the township of Wollar via Wollar Road or Ulan-Wollar Road. Vehicles will then use Barigan Road to reach one of the three access locations proposed for the site:

- Northern Access: connects directly with Barigan Road and is currently constructed to connect with the existing substation. This access is the primary access for heavy and light vehicles.
- Southern Access Option 1: utilises Maree Road, which connects with Barigan Road, to access the site. It will be utilised by light and heavy vehicles to access the site.
- Southern Access Option 2: provides a new connection with Barigan Road, just north of Maree Road, and will provide access for heavy vehicles.

It is understood the Northern Access and Southern Access Option 1 require legal access across private land. In the event that easements are unable to be established, Southern Access Option 2 would be the only access utilised during construction and operation for both heavy and light vehicles. If easements are able to be established, the Northern Access would be used for both heavy and light vehicles. Southern Access Option 1 would be used for light and heavy vehicles during construction and light vehicles during operation.

Staff will be located within the nearby regional towns, and primarily within Mudgee and Gulgong. The majority of plant is expected to be delivered from Newcastle and will access the site via Golden Highway, Ulan Road and Ulan-Wollar Road.

A Traffic Impact Assessment has previously been prepared for the solar farm by Ontoit, dated 12 June 2019. The following Traffic Assessment will form an Addendum to the existing report and will undertake a detailed review of the expected traffic generation of the solar farm during key construction phases in order to determine the required road upgrades along key sections of the access route. An assessment of the traffic impacts of the solar farm is provided below.

1. Traffic Assessment

1.1 Traffic Generation

Construction activities would be undertaken during standard daytime construction hours (7:00am to 6:00pm Monday to Friday, and 7:00am to 1:00pm on Saturdays). Any construction outside of these normal working hours would only be undertaken with prior approval from relevant authorities.

The Applicant has advised that the following number of staff will be on-site during the 18-month construction period.

Table 1: Staff On-site Per Construction Month

Month	1	2	3	4	5	6	7	8	9
Staff	26	43	84	80	102	150	180	250	260
Month	**10**	**11**	**12**	**13**	**14**	**15**	**16**	**17**	**18**
Staff	260	320	320	200	150	80	50	20	5

A maximum of 320 staff will be on-site during peak construction periods. It is understood that 20 shuttle buses will be provided that can accommodate approximately 260 staff (~80% of staff). The remaining staff will access the site using private vehicles. Assuming a vehicle occupancy rate of 2.0 for workers, the site is expected to generate 30 light vehicle movements during each of the peak periods.

Approximately 30 trucks will access the site per day during typical construction periods. The delivery trucks will predominantly be Medium and Heavy Rigid Trucks (MRV and HRV as defined within AS 2890.2:2009). Articulated Vehicles (AV as defined within AS 2890.2:2009) and B-Doubles will occasionally be used to transport larger plant such as the PV panels.

It is anticipated that during peak construction the site could generate up to 72 heavy vehicle and 100 light vehicle movements per day. Table 2 summarises the traffic movements generated during the peak construction period of the solar farm.

Table 2: Traffic Generation During Peak Construction Periods

Vehicle Type	Vehicle Movements per Day
Light Vehicle (car / 4WD)	60
Shuttle Bus	40
MRV/HRV	46
AV/B-Double	26
Total	**172**

Accordingly, the site is expected to generate approximately 172 vehicle movements per day during peak periods.

1.2 Traffic Distribution

Traffic accessing the site will do so via Wollar Road and via Ulan-Wollar Road to/from the west and north, respectively. Vehicles will then be able to utilise Ulan Road to access the wider road network. The following provides a breakdown of the access routes for each of the vehicle classifications outlined within Table 2:

- Light Vehicles: These vehicles will consist of project managers who are provided with their own vehicle and miscellaneous trips made by other contractors. It has been assumed that these trips have been distributed evenly between Wollar Road and Ulan-Wollar Road. This represents staff vehicles located in Mudgee and Gulgong, and trips made to other destinations such as Newcastle or Sydney.

- Shuttle Bus: Staff will be located predominantly within the nearby towns of Mudgee and Gulgong. Shuttles travelling to/from Mudgee will utilise Wollar Road, and shuttles travelling to/from Gulgong will utilise Ulan-Wollar Road to limit the number of vehicle movements along Wollar Road. For the purposes of this assessment it has been assumed that 70% of staff will be based in Mudgee and 30% will be based in Gulgong.

- MRV/HRV: These vehicles will predominantly be water trucks and vehicles transporting materials such as concrete and fencing supplies. These materials will be sourced within the surrounding area and as such, it has been assumed that these vehicles will be evenly distributed between Wollar Road and Ulan-Wollar Road.

- AV/B-Double: All plant will be transported from Newcastle and will utilise Ulan-Wollar Road, unless an alternative route is agreed with Council.

The peak hour for the solar farm will occur at the start and end of the day when staff are transported to/from the site. During the morning peak all vehicle movements will be towards the site and in the evening peak all vehicle movements will be away from the site. It has been assumed that 50% of general light vehicles and all shuttle buses will access/egress the site during the peak hours. The remaining light vehicle and heavy vehicle movements will be distributed throughout the day and will be split evenly between inbound and outbound movements.

1.3 Summary

The site is expected to generate 35 vehicle movements during each of the morning and evening peak hours. These vehicles will be shuttle buses and light vehicles transporting staff to/from the site. Based on the distribution of staff accommodation, the site is expected to generate an increase of 22 and 13 vehicle movements during each of the peak hours on Wollar Road and Ulan-Wollar Road, respectively. This will result in approximately one additional vehicle every 3 minutes on Wollar Road and approximately one additional vehicle every 4 minutes on Ulan-Wollar Road during each peak hour during peak construction times.

A summary of the daily and peak hour traffic volumes for each of the access routes is provided below in Table 3.

Table 3: Traffic Distribution During Peak Construction Periods

Vehicle Type	Vehicle Movements per Day		Vehicle Movements per Peak Hour	
	Wollar Road	Ulan-Wollar Road	Wollar Road	Ulan-Wollar Road
Light Vehicle (car / 4WD)	30	30	8	7
Shuttle Bus	28	12	14	6
MRV/HRV	23	23	0	0
AV/B-Double	0	26	0	0
Total	**81**	**91**	**22**	**13**

Vehicles will also be distributed throughout the day and will generate approximately 9 vehicle movements per hour. Of these vehicle movements, 3 will be light vehicles and 6 will be heavy vehicles. All AV and B-Doubles will utilise Ulan-Wollar Road, whilst the light vehicles and MRV/HRVs will be separated evenly between Wollar Road and Ulan-Wollar Road.

2. Access Route Assessment

2.1 Western Access Route

Vehicles travelling to/from the west will do so via Wollar Road and Ulan Road to reach Mudgee and the wider State Highway network. The Traffic Assessment prepared by Ontoit (Traffic Report) provides a detailed description of Wollar Road, Ulan Road and the crash history along the access route between Wollar and Mudgee. In addition to the comments made within the Traffic Report, the following provides a summary of the key traffic conditions along the western access route:

- Wollar Road is a sealed road which is typically in good condition and provides one lane of traffic in each direction.
- The section of Wollar Road that traverses the Munghorn Gap Nature Reserve has a mountainous nature creating a number of tight bends and in some locations the road condition is poor. This section extends for approximately 4-5km.
- The intersection of Wollar Road with Ulan Road is provided with dedicated right and left turn lanes from Ulan Road.
- Based on the traffic surveys undertaken by Ontoit of the intersection of Wollar Road with Ulan Road, Wollar Road accommodates approximately 40-50 vehicle movements during each of the peak hours. Assuming the peak hour represents approximately 10% of the daily traffic volume, Wollar Road is estimated to currently accommodate 400-500 vehicles per day.
- Ulan Road is an approved AV and B-Double route as outlined within the RMS Heavy Vehicles Map.

The western access route is expected to accommodate 22 light vehicle movements during each of the peak hours and approximately 3 vehicle movements per hour during construction times. The majority of the vehicles will be shuttle bus drivers who know the route well and will not be fatigued such as regular workers. Based on on-site observations, the western route is typically in good condition to accommodate the light vehicles generated during the peak hour and the small number of vehicles generated throughout the day.

Whilst it is noted that there is a section of the route that is in poor condition through the Munghorn Gap Nature Reserve, the western route is still considered appropriate for use by the solar farm for the following reasons:

- All peak hour vehicles will be light vehicles, with some MRV/HRV vehicles utilising the road during the day.
- Skilled shuttle bus drivers will form the majority of vehicle trips. These drivers will know the route well and will not be fatigued such as regular workers. As such, they are expected to be able to traverse the Munghorn Gap Nature Reserve in a safe manner.
- The low level of solar farm traffic that will utilise the western route and the current low level of traffic along the route provides a low congestion environment.

It is understood that a proposal associated with Bylong Coal may result in an increase in traffic along Wollar Road. Further to the above, and even with the increase in traffic volumes generated by the solar farm, there will remain ample road capacity along the western access route. Therefore, it is concluded that the solar farm will still provide ample road capacity along Wollar Road for an increase in traffic movements.

Overall, it is concluded that the use of Wollar Road to access Ulan Road, as outlined above, is acceptable and will not generate any safety or capacity issues. It is recommended that all staff,

including shuttle bus drivers, be made aware of the road conditions within the Munghorn Gap Nature Reserve and this form part of any future Construction Traffic Management Plan which will be prepared prior to construction of the site.

2.2 Northern Access Route

Vehicles travelling to/from the north will do so via Ulan-Wollar Road and Ulan Road to reach Newcastle, Gulgong, and the wider State Highway network. The Ontoit Traffic Report provides a detailed description of Ulan-Wollar Road along the access route. In addition to the comments made within the Traffic Report, the following provides a summary of the key traffic conditions along the northern access route:

- Ulan-Wollar Road is a sealed road which is in good condition and provides one lane of traffic in each direction. A large proportion of the road has recently or is in the process of being upgraded as part of the Wilpinjong Mine Expansion and is suitable for use by heavy vehicles.
- A school is located along Ulan-Wollar Road, within the Wollar township, which is understood to not currently be in use.
- The intersection of Ulan-Wollar Road with Ulan Road is provided with dedicated right and left turn lanes from Ulan Road.
- Based on traffic surveys outlined within the Wilpinjong Mine Expansion Traffic Report prepared by GTA, Ulan-Wollar Road is expected to accommodate approximately 130 vehicle movements during each of the peak hours north of the mine site access.
- Ulan Road is an approved AV and B-Double route as outlined within the RMS Heavy Vehicles Map.

The northern access route is expected to accommodate 13 light vehicle movements during each of the peak hours and approximately 7 vehicle movements per hour during construction times. The majority of the vehicles during regular construction hours will be larger trucks such as AV and B-Double vehicles. Even with the increase in traffic volumes generated by the solar farm there will remain ample road capacity along the northern access route.

As outlined above, the majority of the northern route has been upgraded as part of the Wilpinjong Mine Expansion and is suitable for use by larger vehicles. South of the upgraded section the road is considered to be in good condition for use by light and heavy vehicles based on on-site observations. Overall, it is concluded that the use of Ulan-Wollar Road to access Ulan Road, as outlined above, is acceptable and will not generate any safety or capacity issues.

2.3 Barigan Road / Maree Road

The *Unsealed Roads Manual: Guidelines to Good Practice*, dated March 2009, notes that the average traffic for gravel roads usually varies between 20 and 200 vehicles per day. The document also notes that roads may warrant paving when maintenance costs increase to unacceptable levels, in wet climates, or when economic or social benefits are evident.

Barigan Road is estimated to currently accommodate 60 vehicle movements per day assuming that each of the six dwellings that have access to the road generate 10 vehicle movements per day. The traffic volumes along Barigan Road would increase to 232 vehicle movements per day during peak construction periods (an increase of 172 vehicle movements generated by construction traffic). Therefore, the traffic volumes would marginally exceed the recommended loading for gravel roads.

In order to accommodate the traffic volumes generated by the development it is recommended that Barigan Road and Maree Road along the access route be upgraded to have a width of 7.0 metres to

allow two vehicles to pass. In some locations the road is proposed to be widened further to accommodate simultaneous two-way truck movement. These locations are shown within Appendix A.

It is noted that the widening required in the location highlighted within Figure 5 would be excessive and it is recommended that this section is operated as a one lane road and is controlled by either a temporary traffic signal or traffic controllers. Given the short section of one lane road, and the temporary nature of the construction of the solar farm this is considered to be a suitable arrangement.

It is recommended that water trucks or a light spray seal be used to accommodate the level of traffic generated by the construction traffic and to also act to reduce the dust impact to the nearby dwellings. The increased carriageway width will also allow two trucks to pass.

Given the expected traffic along Barigan Road during construction, it is concluded that the surface of the road with the inclusion of the proposed upgrades, is suitable to accommodate the future traffic volumes. In addition, the adoption of the above recommendations will assist to mitigate any impact to the road surface and adjacent properties.

2.4 Summary

A Construction Traffic Management Plan (CTMP) will be prepared prior to construction of the site. It is recommended that the following form part of the CTMP to minimise the impact of construction traffic along the unsealed roads:

- All staff, including shuttle bus drivers, be made aware of the road conditions within the Munghorn Gap Nature Reserve.
- Prior to construction, a pre-condition survey of the relevant sections of the existing road network be undertaken, in consultation with Council. During construction the sections of the road network utilised by the proposal are to be monitored and maintained to ensure continued safe use by all road users, and any faults attributed to construction of the solar farm would be rectified. At the end of construction, a post-condition survey would be undertaken to ensure the road network is left in the consistent condition as at the start of construction.
- Water trucks or a light spray seal be used along Barigan Road and Maree Road to accommodate the level of traffic generated by the construction traffic and to also act to reduce the dust impact to the nearby dwellings.
- Neighbours of the solar farm be consulted and notified regarding the timing of major deliveries which may require additional traffic control and disrupt access.
- Barigan Road and Maree Road be upgraded based on the designs shown within Appendix A and B, and that suitable traffic management measures be implemented in key locations.

It is noted that the proposed access routes have been determined in consultation with Council. The distribution of traffic on the road network and the use of the northern route for all vehicles travelling to/from the port has been chosen to remove heavy vehicles from the Munghorn Gap Nature Reserve. Further, the extensive use of shuttle buses will reduce the chance of driver fatigue and the number of vehicles on the road network.

It is also noted that the Ontoit Traffic Report notes that a Road Safety Audit will be undertaken in the vicinity of the Wollar Road / Barigan Road intersection in conjunction with RMS, and a structural assessment will be undertaken for the Wollar Creek culvert.

3. Access Design

3.1 Access Options

Vehicles will use Barigan Road to reach one of the three potential access locations proposed for the site:

- Northern Access: connects directly with Barigan Road and is currently constructed to connect with the existing substation. This access is the primary access for heavy and light vehicles and is currently constructed up to the existing TransGrid substation. It would require construction of an access track between the existing substation and the proposed substation.

- Southern Access Option 1: utilises Maree Road, which connects with Barigan Road, to access the site. It will be utilised by light and heavy vehicles to access the site.

- Southern Access Option 2: provides a new connection with Barigan Road, just north of Maree Road, and will provide access for heavy vehicles.

It is understood the Northern Access and Southern Access Option 1 require legal access across private land. In the event that easements are unable to be established, Southern Access Option 2 would be the only access utilised during construction and operation for both heavy and light vehicles. If easements are able to be established, the Northern Access would be used for both heavy and light vehicles. Southern Access Option 1 would be used for light and heavy vehicles during construction and light vehicles during operation.

3.2 Northern Access

The Northern Access is proposed to be used for heavy and light vehicles during construction. The access will only be used if an easement agreement is achieved. A swept path assessment (refer Appendix B) has been prepared that shows two AVs are able to pass at the Northern Access assuming Barigan Road has been widened to 7.0 metres. Vehicles exiting the access will be required to wait for vehicles to turn right into the access before proceeding onto Barigan Road. This is considered to be a suitable arrangement given the low traffic volumes expected at the access. Accordingly, the access is currently suitably designed to accommodate two-way heavy and light vehicle movements.

Clear sight distances are provided along Barigan Road in both directions for vehicles exiting the site.

3.3 Southern Access Option 1

Southern Access Option 1 will be used for light and heavy vehicles during construction and light vehicles during operation, and will only be used if an easement agreement is achieved. The access will utilise the current formation of Maree Road, which extends from Barigan Road. The access is located on private land and it is understood that the existing formation of Maree Road will be widened to 7.0 metres to accommodate two-way vehicle movement.

3.4 Southern Access Option 2

In the event that easements are unable to be established, Southern Access Option 2 would be the only access utilised during construction and operation for both heavy and light vehicles. The access will utilise Council's road reserve located at the termination of Barigan Road to access the development site. The access will be constructed to have a road width of 7.0 metres to allow for simultaneous two-way traffic movement.

The access design and a swept path assessment showing access to the site by an AV is shown within Appendix B. The swept path assessment shows that at the bends within the road reserve only one truck is able to accommodate the carriageway. Accordingly, temporary traffic management measures

such as temporary traffic signals or traffic controllers will be required. It is recommended that these be detailed within the future CTMP.

Incorporating the above recommendations, the access is able to accommodate the worst-case design vehicle expected to access the site.

4. Conclusions

Amber has assessed the traffic impacts of the solar farm located approximately 7 kilometres south of Wollar, New South Wales. Access to the site is to be provided to/from Barigan Road and Maree Road. The above assessment determined the following:

- The peak construction period of the solar farm is 9 months. The site will generate up to 172 vehicle movements per day during peak construction times, including 72 truck movements;
- The road network is able to accommodate the traffic generated by the development during the construction and operational period;
- In order to mitigate the impacts of the development during construction a CTMP will be prepared which should include the following recommendations:
  - All staff, including shuttle bus drivers, be made aware of the road conditions within the Munghorn Gap Nature Reserve.
  - Prior to construction, a pre-condition survey of the relevant sections of the existing road network be undertaken, in consultation with Council. During construction the sections of the road network utilised by the proposal are to be monitored and maintained to ensure continued safe use by all road users, and any faults attributed to construction of the solar farm would be rectified. At the end of construction, a post-condition survey would be undertaken to ensure the road network is left in the consistent condition as at the start of construction.
  - Water trucks or a light spray seal be used along Barigan Road and Maree Road to accommodate the level of traffic generated by the construction traffic and to also act to reduce the dust impact to the nearby dwellings.
  - Neighbours of the solar farm be consulted and notified regarding the timing of major deliveries which may require additional traffic control and disrupt access.
  - Barigan Road and/or Maree Road be upgraded based on the designs shown within Appendix A and B, and that suitable traffic management measures be implemented in key locations.

Accordingly, based on the assessment and recommendations above, it is considered that the proposed access arrangements for the solar farm are suitable to accommodate the expected construction vehicle types and traffic volumes during the construction and operation phase of the project.

If you have any questions please feel free to contact the undersigned.

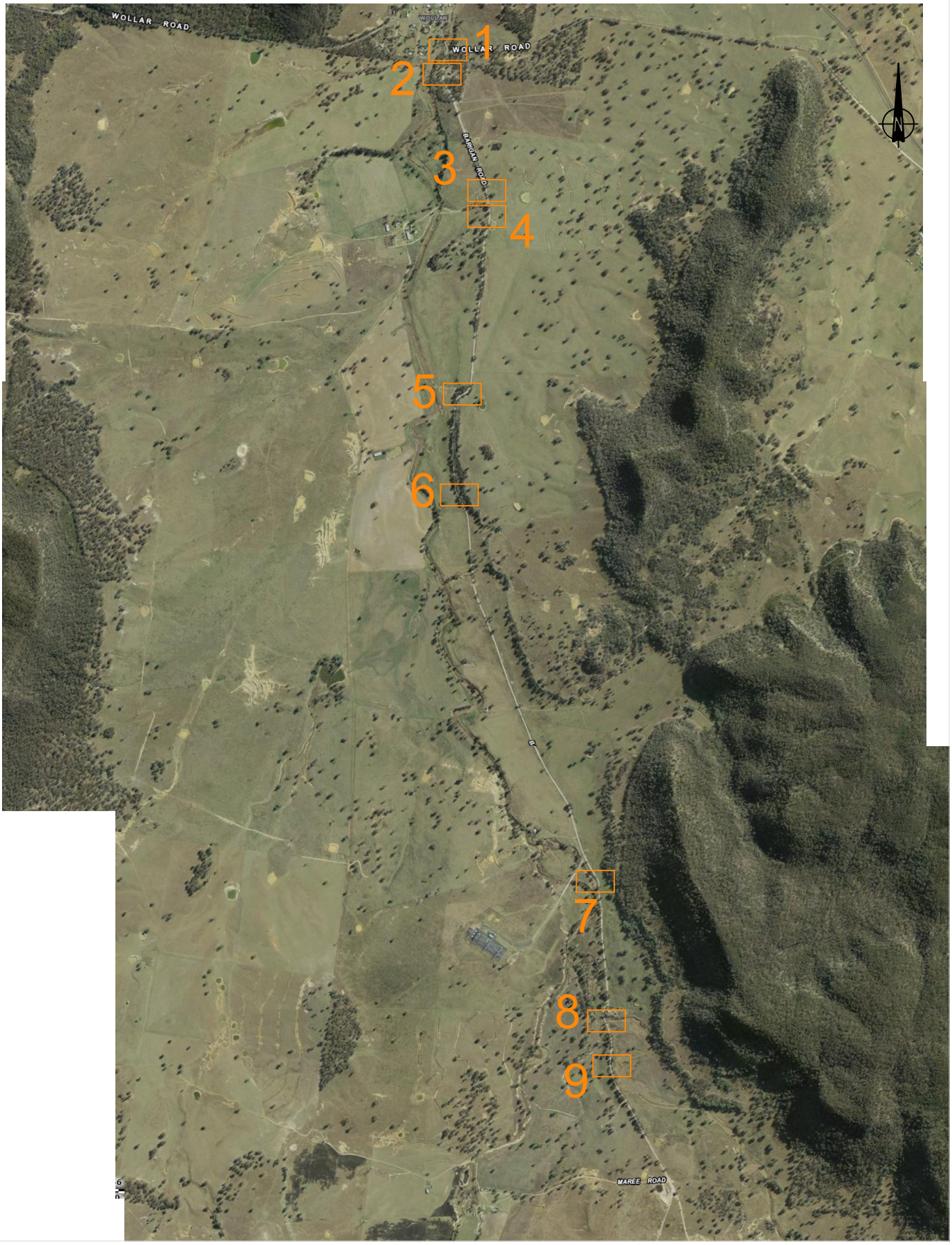
Yours sincerely
Amber Organisation

Michael Willson
Director

Attach: Appendix A – Swept Path Assessment
Appendix B – Access Design

Appendix A

Swept Path Assessment



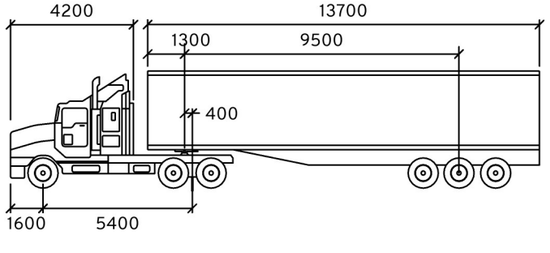
Barigan Road
Swept Path Location Map

Amber A1

Vehicle Envelope

300mm Clearance

AV



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Articulating Angle	: 70.0

Wollar Solar Farm

Road Widening

Swept Paths

DRAWN: MW
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DWG NO: 043-S01A

Amber 1

Vehicle Envelope

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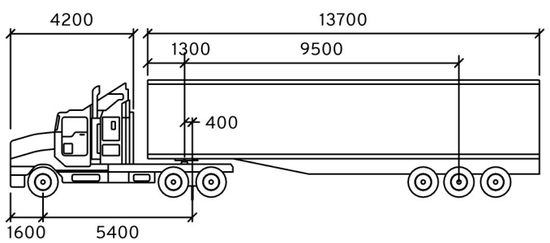

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Wollar Solar Farm

Road Widening

Swept Paths

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Amber 2

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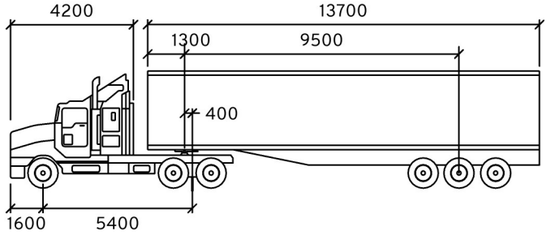

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Wollar Solar Farm

Road Widening

Swept Paths

DRAWN: MW

DATE: 03/09/2019

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Amber 3

Vehicle Envelope

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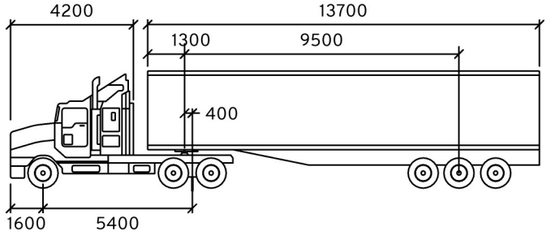
AV



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Wollar Solar Farm

Road Widening

Swept Paths

DRAWN: MW
DATE: 03/09/2019
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Amber

Provide Traffic Control for One Lane System

Vehicle Envelope

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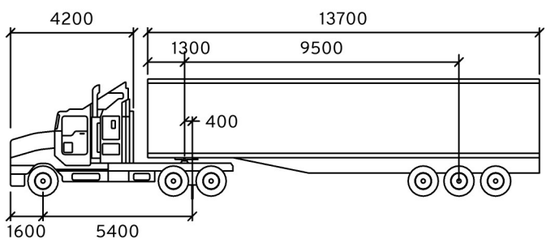

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Wollar Solar Farm

Road Widening

Swept Paths

DRAWN: MW
DATE: 03/09/2019
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DWG NO: 043-S01A

Amber

Vehicle Envelope

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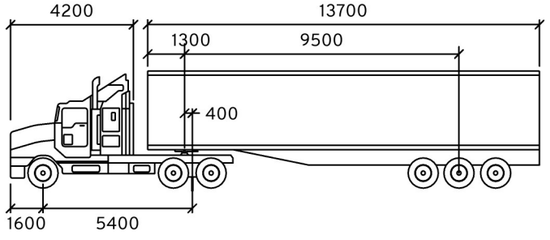

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Wollar Solar Farm

Road Widening

Swept Paths

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Amber 6

Vehicle Envelope

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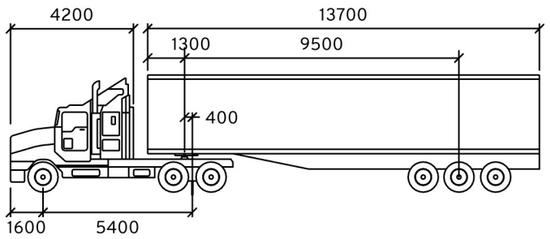

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Wollar Solar Farm

Road Widening

Swept Paths

DRAWN: MW

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Amber 7

Provide Traffic Control for One Lane System

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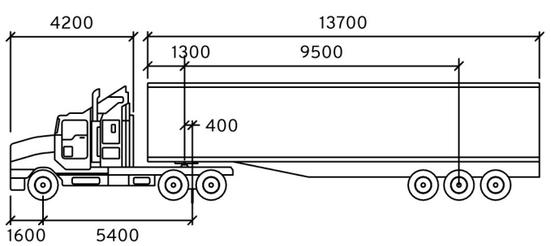

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Wollar Solar Farm

Road Widening

Swept Paths

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Amber

Vehicle Envelope

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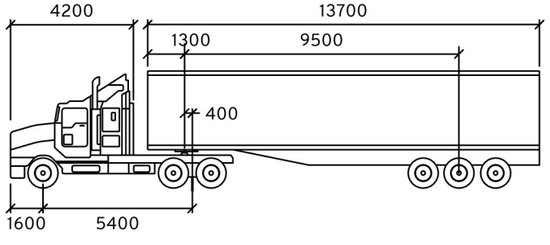

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Wollar Solar Farm

Road Widening

Swept Paths

DRAWN: MW
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Amber 9

Appendix B

Access Design

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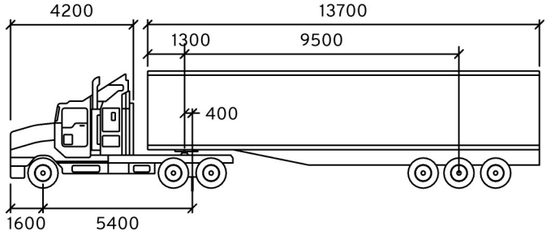

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Wollar Solar Farm

Northern Access

Swept Paths

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DATE: 04/09/2019

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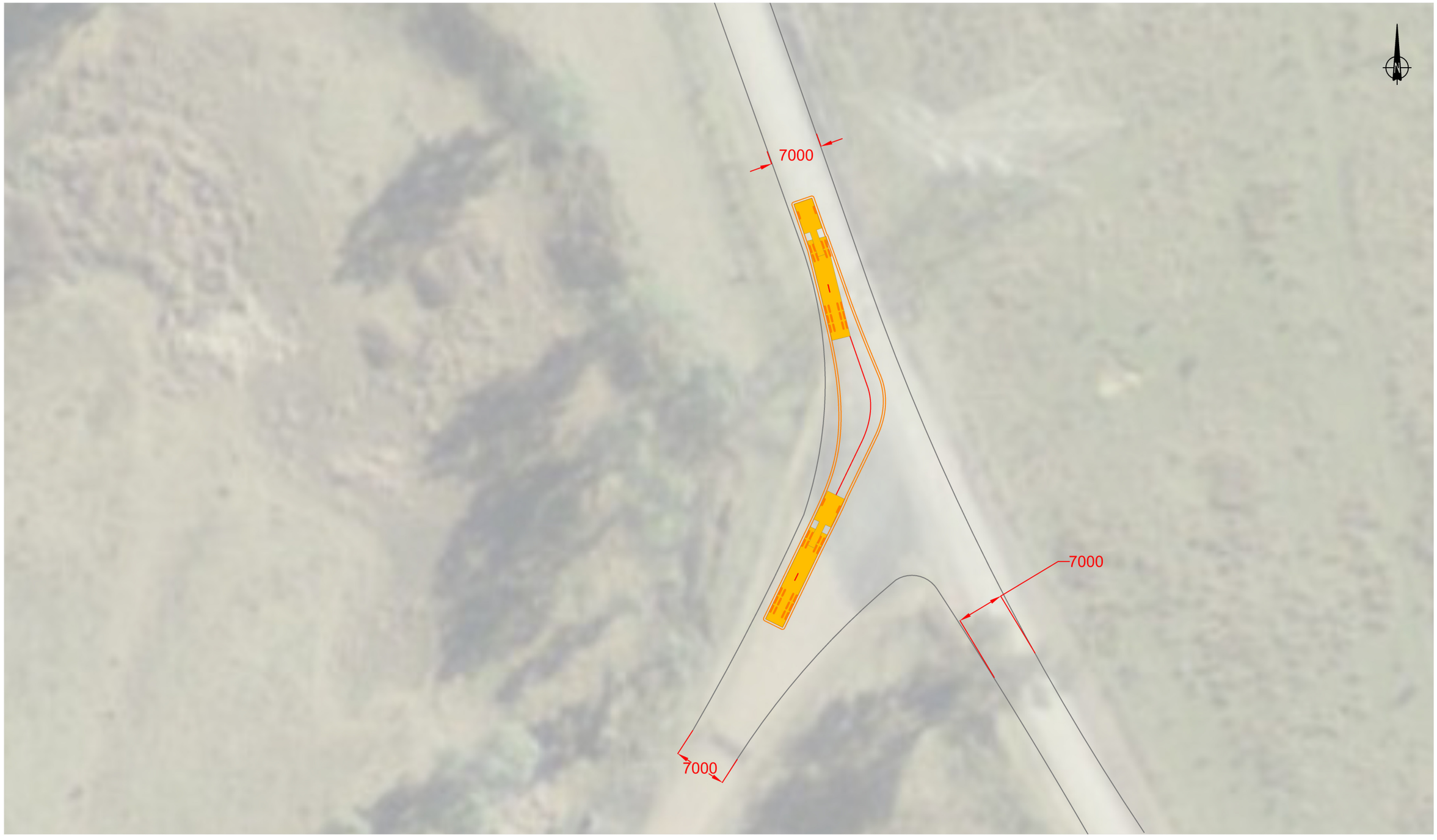

Vehicle Envelope

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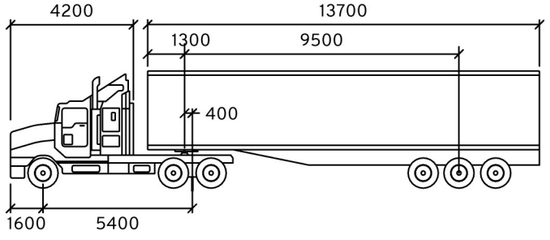

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Articulating Angle	: 70.0

Wollar Solar Farm

Northern Access

Swept Paths

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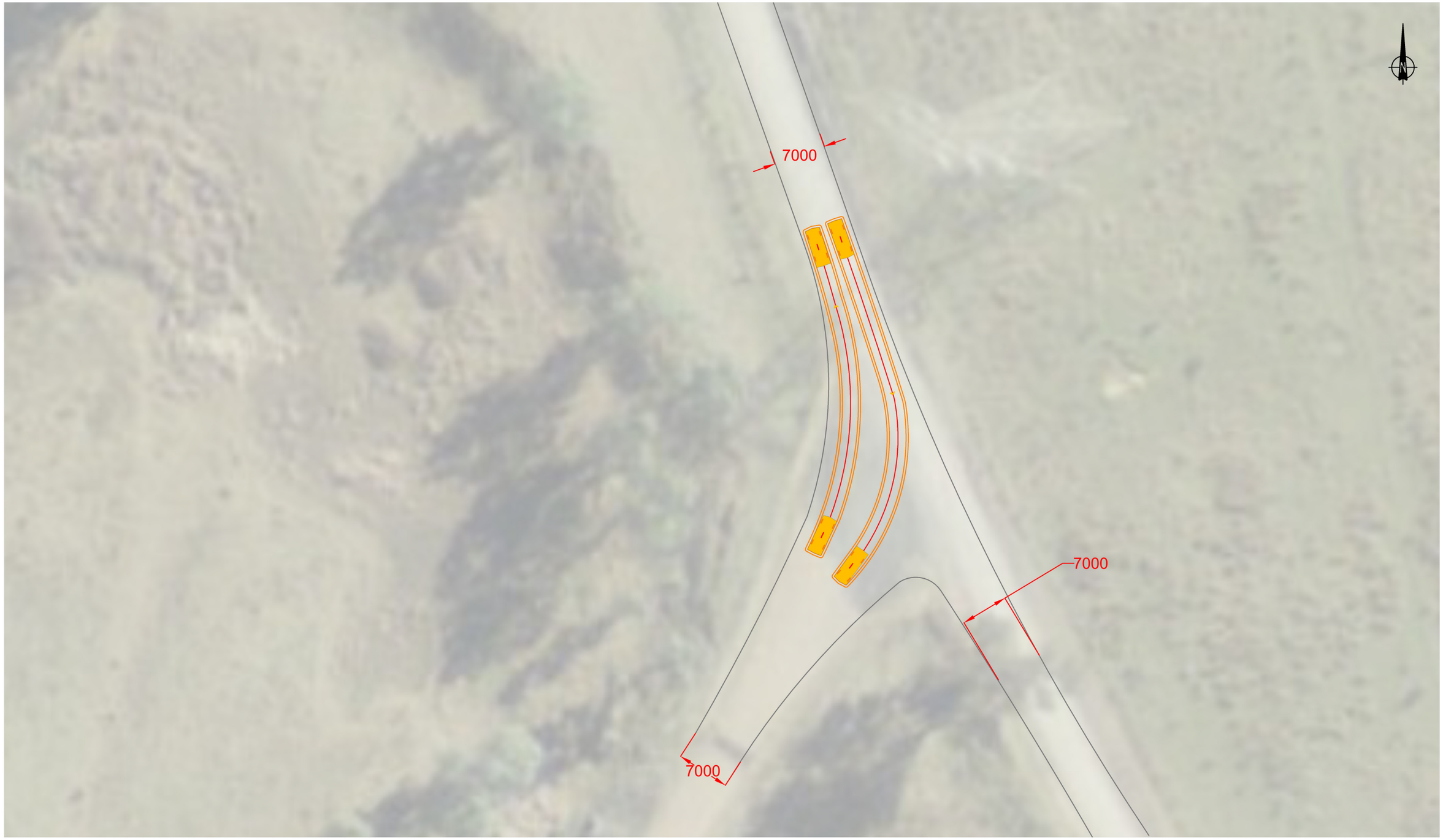

Vehicle Envelope

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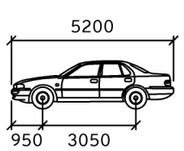

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Wollar Solar Farm

Northern Access

Swept Paths

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Amber B3

7000

R10000

7000

Site Boundry

Vehicle Envelope

300mm Clearance

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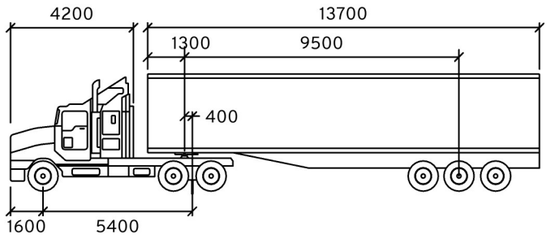

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Articulating Angle	: 70.0

Wollar Solar Farm

Southern Access Option 1

Swept Paths

DRAWN: MW
DATE: 05/09/2019
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Amber B4

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Site Boundry

Vehicle Envelope

300mm Clearance

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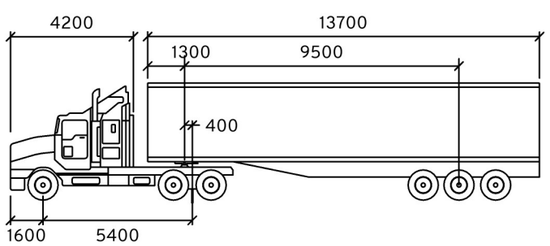

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Wollar Solar Farm

Southern Access Option 1

Swept Paths

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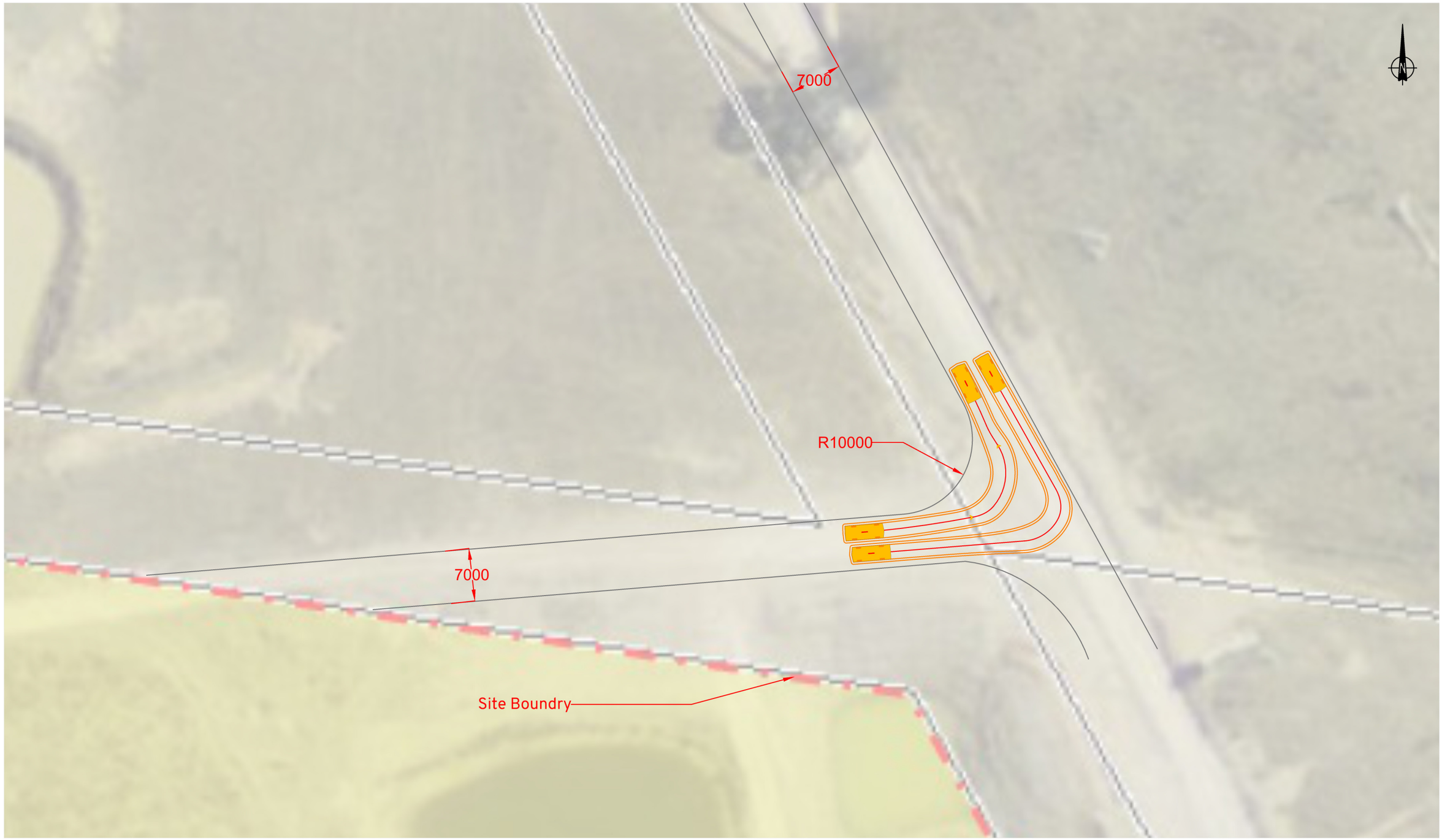

Vehicle Envelope

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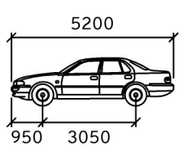

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Wollar Solar Farm

Southern Access Option 1

Swept Paths

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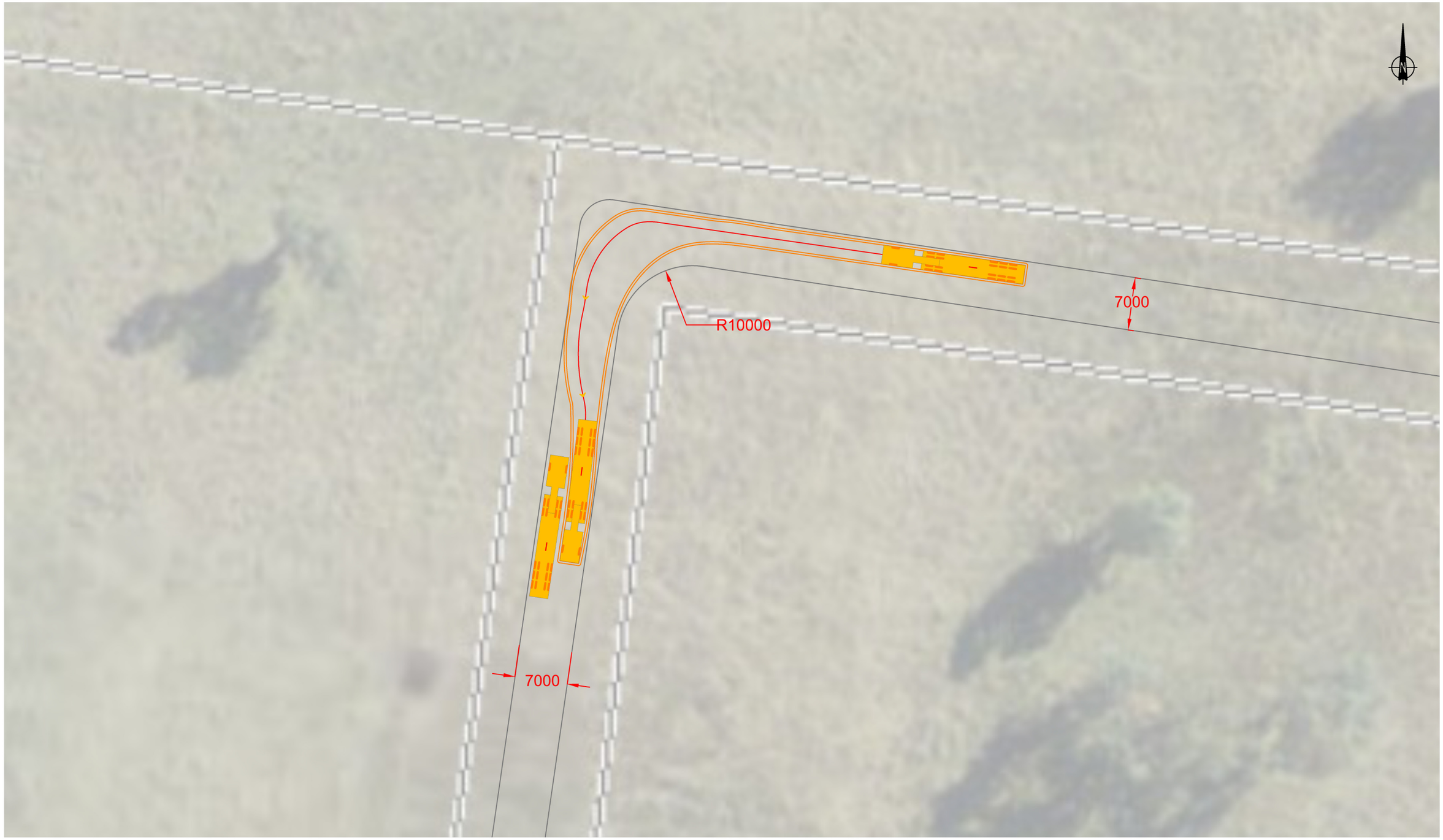

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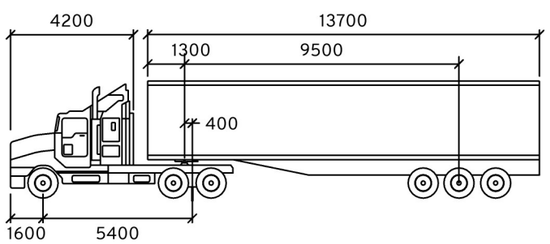

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Articulating Angle	: 70.0

Wollar Solar Farm

Southern Access Option 2

Swept Paths

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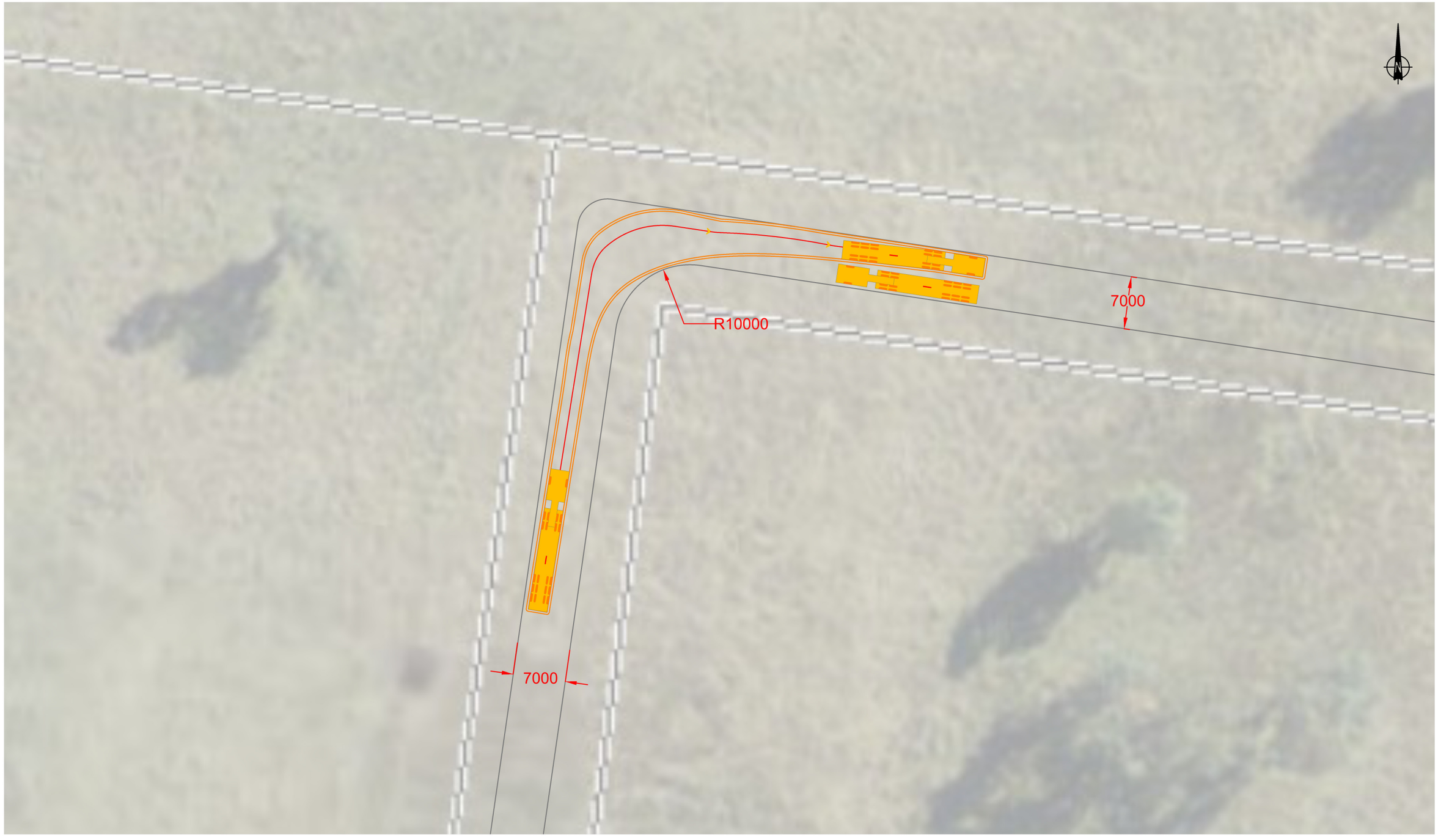

Vehicle Envelope

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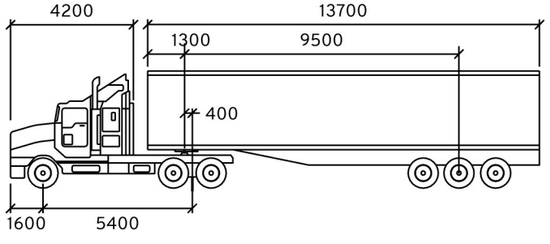

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Trailer Track	: 2500
Lock to Lock	: 6.0s
Steering Angle	: 28.3
Articulating Angle	: 70.0

Wollar Solar Farm

Southern Access Option 2

Swept Paths

DRAWN: MW
DATE: 04/09/2019
SCALE: 1:500 @ A3
DWG NO: 043-S01A

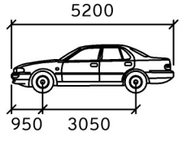
Amber

B8

Vehicle Envelope

300mm Clearance

B99



	mm
Width	: 1940
Track	: 1840
Lock to Lock	: 6.0s
Steering Angle	: 33.9

Wollar Solar Farm

Southern Access Option 3

Swept Paths

DRAWN: MW
DATE: 04/09/2019
SCALE: 1:500 @ A3
DWG NO: 043-S01A

Amber B9

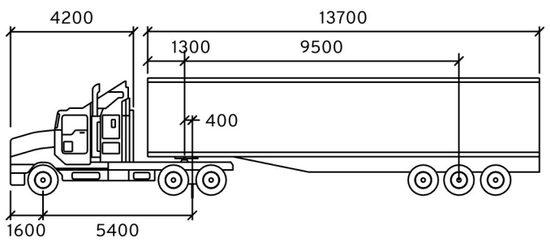
7000

Site Boundry

Vehicle Envelope

300mm Clearance

AV



	mm
Tractor Width	: 2500
Trailer Width	: 2500
Tractor Track	: 2500
Trailer Track	: 2500
Lock to Lock	: 6.0s
Steering Angle	: 28.3
Articulating Angle	: 70.0

Wollar Solar Farm

Southern Access Option 2

Swept Paths

DRAWN: MW

DATE: 04/09/2019

SCALE: 1:500 @ A3

DWG NO: 043-S01A

Amber B10

APPENDIX G CONSULTATION

G.1 TRANSPORT FOR NSW (FORMALLY ROADS AND MARITIME SERVICES)

Agency comments on specific sections of the TMP and the responses from WSD are shown in the following table.

Agency Comment	Response
Section 4.2 – Haulage routes. I note haulage routes will not be determined until the appointment of a contractor. In this regard, the TMP will need to be updated to include haulage routes prior to approval being given by DPIE to allow haulage operations.	Section 4.2 outlines the approved access routes per Schedule 3, conditions 3 and 4. Haulage Plans will be agreed between contractors and MWRC. The haulage routes in the Haulage Plan will align with the approved access routes (per CoC Schedule 3 Conditions 3 and 4) but may include additional details of the point of origin and how vehicles will get from that point onto the approved route. Section 4.2 updated to state that *TMP will be updated to include Haulage Plans by way of an addenda and provided to DPIE at least 2 weeks prior to commencing haulage operations for the stage covered by that plan.*
Sections 5.1 & 7.6 – TMP needs to include how Wollar Solar will ensure projected/assumed use of ride sharing (Stage 1) and shuttle buses (Stages 2 & 3) will be achieved. As discussed, TfNSW experience is that unless it is mandatory for staff to arrive by bus, generally, projected and assumed take up of shuttle buses and ride sharing are significantly greater than actual take up. Details of how projected ride sharing, and shuttle bus usage will be achieved is required.	Section 7.4 updated to describe that utilisation of shuttle bus service will be required to ensure the daily light vehicle limit of 60 movement is complied with. It is noted that the utilisation rate may vary in line with the workforce number through construction. It is estimated that during peak construction when the workforce is over 300, there will need to be approximately 80% utilisation of the shuttle service. During Stages 1 and 2 the workforce number will be significantly lower and it is not anticipated the shuttle service will be required. All contractors will be contractually required to comply with this TMP and the daily traffic movement limits in Table 4-1. A Workforce Transport Plan will be developed in consultation with MWRC prior to commencing Stage 3.
Section 7.1 – Wollar Road is a classified road under the care and control of Mid Wester Regional Council. Whilst works on this road requires TfNSW concurrence, the management and control of the road sits with MWRC.	An updated description has been included in section 5.1.

Agency Comment	Response
Section 7.7 – This section states: "Speed limits on public roads are 50km/h. Vehicles will adhere to the sign posted speed limit". Please clarify what this means. (ie are you proposing vehicles will only travel yup to 50km/h?). Please note the rural default speed is 100km/h, however the roads you will be using to access the site are not all designed to this speed at most curves, clear zones, etc and driver awareness of the conditions and driving to those conditions is absolutely essential.	50km/h limit has been removed in Section 7.7 and replaced with "*All vehicles will adhere to the posted speed limits of the local roads and will drive at speeds appropriate to local conditions"*. Last para in Section 7.7 also amended to clarify that this will be a requirement of the Drivers Code of Conduct. Section 4.2 has been updated to reference the sections of Barigan Road for which traffic controls will be implemented during construction (per CoC Appendix 4).

Email correspondence is presented below

From: Andrew McIntyre
To: robbie.williamson@wollarsolarfarm.com
Cc: Development Western; Angela Stewart
Subject: RE: Wollar Solar Farm TMP - TfNSW consultation
Date: Wednesday, 17 June 2020 7:28:09 PM

Dear Robbie

I have reviewed the amendments to the TMP.

NO further comment from TfNSW.

Regards

Andrew McIntyre
Manager Land Use Assessment
Community and Place
Regional and Outer Metropolitan Division
Transport for NSW
[redacted]
Level 1 51-55 Currajong Street Parkes NSW 2870

Every journey matters

From: robbie.williamson@wollarsolarfarm.com [mailto:robbie.williamson@wollarsolarfarm.com]
Sent: Monday, 15 June 2020 2:32 PM
To: Andrew McIntyre <Andrew.McIntyre@transport.nsw.gov.au>
Cc: Development Western <development.western@rms.nsw.gov.au>
Subject: RE: Wollar Solar Farm TMP - TfNSW consultation

Hi Andrew

Just following up to see if you'd lined someone up to take a look at those updates?

Best regards
Robbie

Project Development Wollar Solar Farm
robbie.williamson@wollarsolarfarm.com
[redacted]

From: robbie.williamson@wollarsolarfarm.com <robbie.williamson@wollarsolarfarm.com>

Sent: Thursday, 11 June 2020 6:10 PM
To: 'Andrew McIntyre' <Andrew.McIntyre@transport.nsw.gov.au>
Cc: 'David Webster' <David.Webster@midwestern.nsw.gov.au>; 'Development Western' <development.western@rms.nsw.gov.au>
Subject: RE: Wollar Solar Farm TMP - TfNSW consultation

Hi Andrew

Please find attached our updated TMP for Wollar Solar Farm which includes updates to address your comments as well as those of other stakeholders. The table below is a summary of our responses to your comments.

Agency Comment	**Response**
Section 4.2 – Haulage routes. I note haulage routes will not be determined until the appointment of a contractor. In this regard, the TMP will need to be updated to include haulage routes prior to approval being given by DPIE to allow haulage operations.	Section 4.2 outlines the approved access routes per Schedule 3, conditions 3 and 4. Haulage Plans will be agreed between contractors and MWRC. The haulage routes in the Haulage Plan will align with the approved access routes (per CoC Schedule 3 Conditions 3 and 4) but may include additional details of the point of origin and how vehicles will get from that point onto the approved route. Section 4.2 updated to state that *TMP will be updated to include Haulage Plans by way of an addenda and provided to DPIE at least 2 weeks prior to commencing haulage operations for the stage covered by that plan.*
Sections 5.1 & 7.6 – TMP needs to include how Wollar Solar will ensure projected/assumed use of ride sharing (Stage 1) and shuttle buses (Stages 2 & 3) will be achieved. As discussed, TfNSW experience is that unless it is mandatory for staff to arrive by bus, generally, projected and assumed take up of shuttle buses and ride sharing are significantly greater than actual take up. Details of how projected ride sharing, and shuttle bus usage will be achieved is required.	Section 7.4 updated to describe that utilisation of shuttle bus service will be required to ensure the daily light vehicle limit of 60 movement is complied with. It is noted that the utilisation rate may vary in line with the workforce number through construction. It is estimated that during peak construction when the workforce is over 300, there will need to be approximately 80% utilisation of the shuttle service. During Stages 1 and 2 the workforce number will be significantly lower and it is not anticipated the shuttle service will be required. All contractors will be contractually required to comply with this TMP and the daily traffic movement limits in Table 4-1. A Workforce Transport Plan will be developed in consultation with MWRC prior to commencing Stage 3.
Section 7.1 – Wollar Road is a classified road under the care and control of Mid Wester Regional Council. Whilst works on this road requires TfNSW concurrence, the management and control of the road sits with MWRC.	An updated description has been included in section 5.1.
Section 7.7 – This section states: "Speed limits on public roads are 50km/h. Vehicles will adhere to the sign posted speed limit". Please clarify what this means. (ie are you proposing vehicles will only travel yup to 50km/h?). Please note the rural default speed is 100km/h, however the roads you will be using to access the site are not all designed to this speed at most curves, clear zones, etc and driver awareness of the conditions and driving to those conditions is absolutely essential.	50km/h limit has been removed in Section 7.7 and replaced with *"All vehicles will adhere to the posted speed limits of the local roads and will drive at speeds appropriate to local conditions"*. Last para in Section 7.7 also amended to clarify that this will be a requirement of the Drivers Code of Conduct. Section 4.2 has been updated to reference the sections of Barigan Road for which traffic controls will be implemented during construction (per CoC Appendix 4).

In addition to the updates described above updated TMP also includes:

- Description of findings from the Road Safety Audit for the Wollar Road / Barigan Road intersection
- Description of an additional 3x over-dimensional deliveries that TransGrid have identified

they require for the project (the attached email advice from traffic consultant Amber will be added to Appendix I of the TMP)

The attached TMP has track changes to clearly show the additions from the previous version provided to you. Can you please have a look and advise if you have any further comments?

Best regards
Robbie

Project Development Wollar Solar Farm
robbie.williamson@wollarsolarfarm.com
[redacted]

From: Andrew McIntyre <Andrew.McIntyre@transport.nsw.gov.au>
Sent: Monday, 25 May 2020 1:50 PM
To: robbie.williamson@wollarsolarfarm.com
Cc: David Webster <David.Webster@midwestern.nsw.gov.au>; Development Western <development.western@rms.nsw.gov.au>
Subject: RE: Wollar Solar Farm TMP - TfNSW consultation

Dear Robbie

As requested, I have reviewed the draft TMP and provide the following comments:

- Section 4.2 – Haulage routes. I note haulage routes will not be determined until the appointment of a contractor. In this regard, the TMP will need to be updated to include haulage routes prior to approval being given by DPIE to allow haulage operations.
- Sections 5.1 & 7.6 – TMP needs to include how Wollar Solar will ensure projected/assumed use of ride sharing (Stage 1) and shuttle buses (Stages 2 & 3) will be achieved. As discussed, TfNSW experience is that unless it is mandatory for staff to arrive by bus, generally, projected and assumed take up of shuttle buses and ride sharing are significantly greater than actual take up. Details of how projected ride sharing and shuttle bus usage will be achieved is required.
- Section 7.1 – Wollar Road is a classified road under the care and control of Mid Wester Regional Council. Whilst works on this road requires TfNSW concurrence, the management and control of the road sits with MWRC.
- Section 7.7 – This section states: "Speed limits on public roads are 50km/h. Vehicles will adhere to the sign posted speed limit". Please clarify what this means. (ie are you proposing vehicles will only travel yup to 50km/h?). Please note the rural default speed is 100km/h, however the roads you will be using to access the site are not all designed to this speed at most curves, clear zones, etc and driver awareness of the conditions and driving to those conditions is absolutely essential.

Regards

Andrew McIntyre
Manager Land Use Assessment
Community and Place
Regional and Outer Metropolitan Division
Transport for NSW
[redacted]
Level 1 51-55 Currajong Street Parkes NSW 2870

Every journey matters

From: robbie.williamson@wollarsolarfarm.com [mailto:robbie.williamson@wollarsolarfarm.com]
Sent: Thursday, 21 May 2020 4:41 PM
To: Development Western <development.western@rms.nsw.gov.au>; Andrew McIntyre <Andrew.McIntyre@transport.nsw.gov.au>
Subject: RE: Wollar Solar Farm TMP - TfNSW consultation

Hi Andrew

Just following up on this. Are you able to confirm if someone if reviewing the Wollar Solar Farm TMP? We are hoping to have feedback from the consultation parties by feedback by 27th May 2020 so that we can start preparing the next version.

If you're able to give me an update that would be much appreciated.

Best regards

Robbie Williamson

Project Development Wollar Solar Farm
robbie.williamson@wollarsolarfarm.com
[redacted]

From: robbie.williamson@wollarsolarfarm.com <robbie.williamson@wollarsolarfarm.com>
Sent: Wednesday, 13 May 2020 1:04 PM
To: development.western@rms.nsw.gov.au
Cc: andrew.mcintyre@transport.nsw.gov.au
Subject: Wollar Solar Farm TMP - TfNSW consultation

Dear TfNSW / RMS Development Department

Please find attached a Traffic Management Plan prepared for the Wollar Solar Farm Development.

Schedule 3, Condition 10 of the Wollar Solar Farm Development consent requires that "*Prior to commencing the development, the Applicant must prepare a Traffic Management Plan for the development in consultation with RMS, Council, Ulan, Moolarben and Wilpinjong mines and to the satisfaction of the Secretary in writing*".

I have had some recent correspondence with Andrew McIntyre to advise that the Traffic Management Plan was being prepared and would be shared when available in order to facilitate consultation with TfNSW (formerly RMS).

Could you please arrange for review of the attached TMP and provide some feedback **by 27th May 2020** (2 weeks' time). If you are able to provide comments earlier this will be much appreciated.

I have outlined a couple of items below that I would like to draw to your attention.

Staging of Development

Section 1.2.1 describes the anticipated staging of the development. A key consideration for the project is that Stage 1 (upgrade of a ~5km length of council road near the site) needs to be completed before the subsequent stages. We are therefore targeting getting a standalone contract agreed in May for Stage 1 with a view to starting as soon as possible after that.

The TMP has been prepared to cover all stages but we would like to note that the Stage 1 works will have a considerably lower impact compared to the subsequent stages when deliveries for the solar farm components and gravel for internal tracks commence.

The project has a target of providing access to site for TransGrid to start electrical connection works (part of Stage 3) in early September. This means it's important to start the Stage 1 works as soon as possible.

We have attempted to prepare the TMP in a such a way that we may be able to request DPIE approval to commence Stage 1 prior to the other stages. As such, when raising any issues in your feedback, it would be helpful if you can give some consideration as to how that issue relates to Stage 1 specifically as well as for the subsequent stages.

If we get to a point in time where we are ready to commence Stage 1 but the TMP for the full development has not been approved, we may request TfNSW support to commence Stage 1 only whilst outstanding issues for the rest of the development are resolved.

Road Occupancy Licence

Section 7.8 discussed the requirement for an ROL. We would appreciate some feedback on whether an ROL will be required for the project and if so, which aspects of the work will require this?

Road Safety Audit

The final row of Table 2-2 discussed the requirement for an RSA for the Wollar Road / Barigan Road intersection (a request of RMS in a submission during the public exhibition stage of the project). The RSA was completed on Monday 11th of May and we will provide the associated report as soon as possible for discussion.

Shuttle Bus Service

The project has a commitment to operate a shuttle bus service for workers to cut down on traffic to the site. Andrew McIntyre mentioned that one of the things that TfNSW have requested in relation to previous projects is details around how the shuttle bus service for the construction staff will be operated (% of staff utilising the service, pick-up/drop-off locations, etc). We believe that it is best that specific details are agreed by the EPC contractor and Mid-Western Regional Council. Selection of the EPC contractor is subject to an ongoing tendering process so for now Section 7.4 contains a commitment for them to agree this information in a Workforce Transport Plan in consultation with Mid-Western Regional Council (prior to Stage 2 and 3 construction).

If you have any questions about the TMP or the Wollar Solar Farm please don't hesitate to give me a call to discuss on 0499 770 768.

Best regards

Robbie Williamson

Project Development Wollar Solar Farm

robbie.williamson@wollarsolarfarm.com

[redacted]

Roads and Maritime Services

Before printing, please consider the environment

Roads and Maritime Services

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G.2 MID-WESTERN REGIONAL COUNCIL

From:	David Webster
To:	Robbie Williamson
Cc:	Garry Hemsworth; Andrew Kearins
Subject:	SSD9254 Wollar Solar - Comment regarding Traffic Management Plan
Date:	Friday, 19 June 2020 4:16:16 PM
Attachments:	20-070 Wollar TMP Final 1.0 updated June 2020 cover.pdf

Robbie,

I refer to the TMP and other documentation submitted to Council for review, (See attached extract / cover).

I wish to advise that the documentation has been reviewed and is considered to be satisfactory. Please be advised that Council will not generally approve TMP documents.

However, it is considered sufficient to meet the requirements detailed in Condition 10 of Schedule 3 Environmental Condition – General of the above referenced State Approval.

Should you have any queries please do not hesitate to contact me further.

Regards,

David

David Webster
Manager Development Engineering, Operations
Mid-Western Regional Council
t 02 6378 2925 | f 02 6378 2815 | m [redacted]
e david.webster@midwestern.nsw.gov.au
a 86 Market Street | PO Box 156 Mudgee NSW 2850
w www.midwestern.nsw.gov.au
facebook | twitter | youtube

G.3 ULAN MINE

From: Robyn.Stoney@glencore.com.au
To: robbie.williamson@wollarsolarfarm.com
Subject: RE: Wollar Solar Farm - Traffic Management Consultation
Date: Friday, 15 May 2020 3:04:15 PM

Hi Robbie,

Thank you for the opportunity to review the proposed Traffic Management Plan for the Wollar Solar Farm. Ulan Coal are keen to ensure that traffic impacts on the local community are minimised. Under the project approval PA08_0184, Ulan Coal is required to coordinate shifts with the other mines to minimise cumulative traffic impacts. The Ulan Coal shift times will be provided for your consideration. It would be appreciated if Wollar Solar Farm can provide shift times to us and advise us when there will be significant oversize traffic on Ulan Road. The mines have no tolerance for inconsiderate driving behaviour on public roads when travelling to and from work. The mining operations share information received from personnel and the community about unacceptable driver behaviour on Ulan Road with each other. Carparks are scanned for offending vehicles and, if located, drivers are interviewed and disciplined where appropriate. Wollar Solar farm would be welcome to join this monitoring and response process when operations commence.

Please contact me if you have any questions. Thank you.

Best regards,
Robyn

Robyn Stoney
Environment and Community Manager
Ulan Coal Mines - A Glencore managed company
[redacted]
E: robyn.stoney@glencore.com.au
www.ulancoal.com.au

From: robbie.williamson@wollarsolarfarm.com <robbie.williamson@wollarsolarfarm.com>
Sent: Wednesday, 13 May 2020 2:27 PM
To: Stoney, Robyn (Ulan No 3 - AU) <Robyn.Stoney@glencore.com.au>
Subject: RE: Wollar Solar Farm - Traffic Management Consultation

External sender

Hi Robyn

As I mentioned in previous correspondence the Wollar Solar Farm has a requirement in the Development Approval to consult with the Ulan mine in relation to the development of the Traffic Management Plan (TMP) for the Wollar Solar Farm Development.

Schedule 3, Condition 10 of the Wollar Solar Farm Development consent requires that "*Prior to commencing the development, the Applicant must prepare a Traffic Management Plan for the development in consultation with RMS, Council, Ulan, Moolarben and Wilpinjong mines and to the satisfaction of the Secretary in writing*".

As such please find attached our Wollar Solar Farm TMP for consideration.

Could you please arrange for review of the attached TMP and provide some feedback **by 27th May 2020** (2 weeks' time). If you are able to provide comments earlier this will be much appreciated.

I have outlined a couple of items below that I would like to draw to your attention.

Commencement of Stage 1
Section 1.2.1 describes the anticipated staging of the development. We are proposing to commence Stage 1

which involved the upgrade of ~5km of Barigan Road (a council road near the site) as soon as possible with either Mid-western Regional Council or a local contractor undertaking the works. This could potentially start some time in the next couple of months.

The Stage 1 works will have a considerably lower impact compared to the subsequent stages when deliveries for the solar farm components and gravel for internal tracks starting accessing the site via Ulan Road and Ulan-Wollar Road.

Could you confirm in your correspondence that Ulan mine has no specific concerns about the Stage 1 public road works commencing it the next couple of months?

Community Consultation
Section 7.9 includes some if the measures proposed for community engagement and communicating information about the works for the development to people in the local area.

Given your experience operating in the area, any advice you have on consultation methods you find effective would be much appreciated.

Blasting Road Closures
I understand that occasionally blasting works are undertaken by the mine and sometimes traffic needs to be stop on roads. How much forewarning does the mine have of these kinds of activities and would we be able to set up a communication channel to share this information so we can consider within our plans?

Shift Times
Are the shift change times for the mine workers fixed? It would be useful to be able to include some key times in our TMP if possible. If these are not fixed and subject to change, would it be possible for the project to be kept updated of these?

If you have any questions about the TMP or the Wollar Solar Farm please don't hesitate to give me a call to discuss on [redacted]

Best regards

Robbie Williamson

Project Development Wollar Solar Farm
robbie.williamson@wollarsolarfarm.com
[redacted]

From: robbie.williamson@wollarsolarfarm.com <robbie.williamson@wollarsolarfarm.com>
Sent: Friday, 24 April 2020 2:10 PM
To: robyn.stoney@glencore.com.au
Subject: Wollar Solar Farm - Traffic Management Consultation

Hi Robyn

Thanks for the time on the phone earlier.

As discussed, I am working on the Wollar Solar Farm project which was granted approval by the Department of Planning, Industry and Environment (DPIE) in Feb 2020. We are now looking at preparing for the construction phase and targeting commencement of works in August 2020. One of the first activities we are likely to undertake is upgrading ~5.2km of the public road (Barigan Road) which runs south of Wollar village towards the solar farm site. This work needs to be completed to the satisfaction of Mid-western Regional

Council before works on the Solar Farm can begin..

The link to DPIE's online portal for Wollar Solar Farm is:
https://www.planningportal.nsw.gov.au/major-projects/project/9831

One of our current tasks is preparing a Traffic Management Plan (TMP) for the development which is a requirement of our Conditions of Consent (CoC) from DPIE (see extract from CoC below). This condition specifies that we should consult with a number of parties including Ulan mine.

I have included a screenshot of the approved haulage routes for the project from the CoC below. You will see that it permits the project to use Ulan-Wollar road for heavy vehicles and shuttle buses (quickest route from Gulgong). We are also permitted to use Wollar Road for shuttle buses (the quickest route from Mudgee).

We are currently working on the first draft of the TMP and can share this with you for some input once finalised (~1-2 weeks). In the meantime if you have any suggestions on things we should consider feel free to send them across and we can share with our consultants who are preparing the plan.

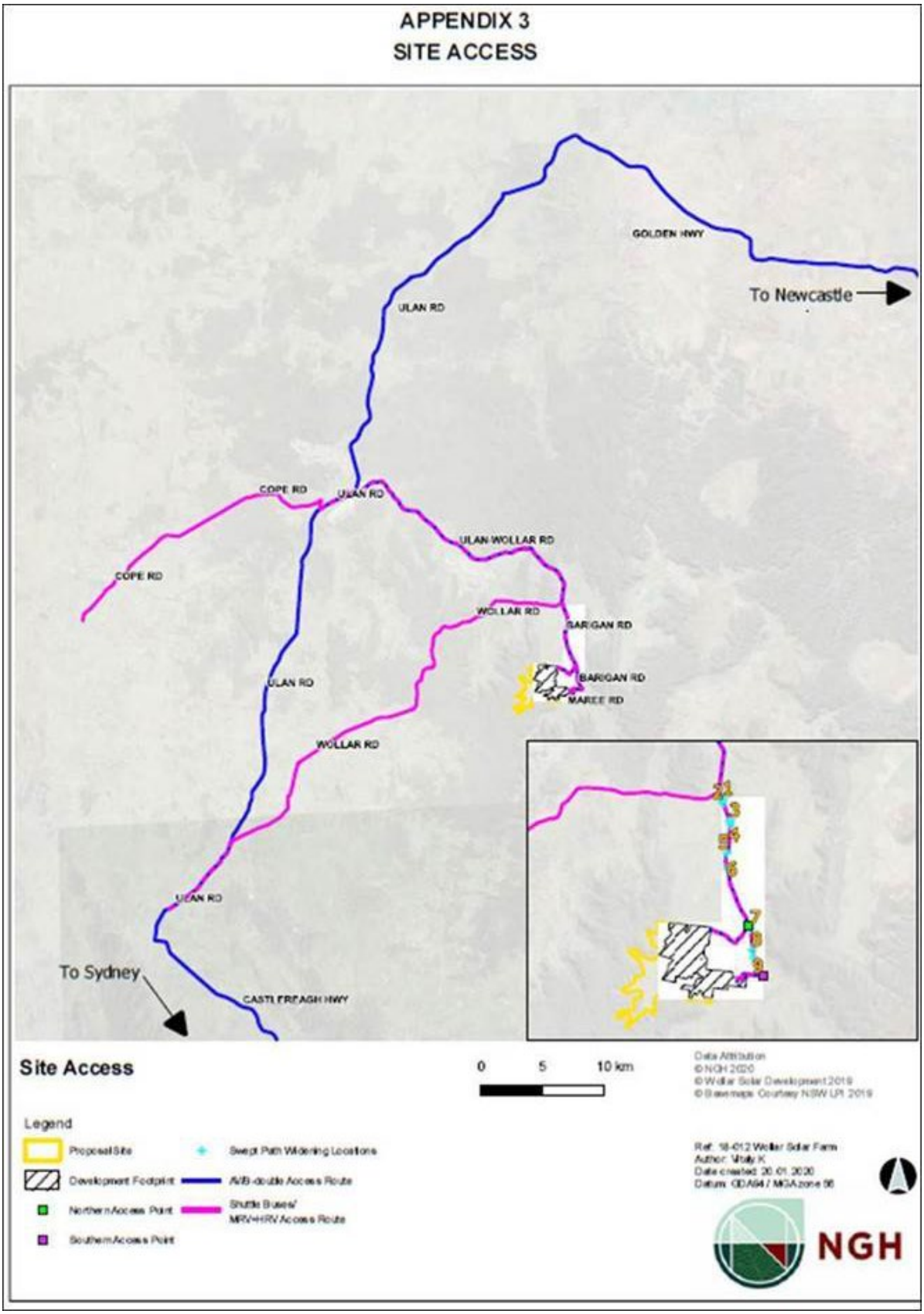
Schedule 3, Condition 10 of Wollar Solar Farm CoC

Traffic Management Plan

10. Prior to commencing the development, the Applicant must prepare a Traffic Management Plan for the development in consultation with RMS, Council, Ulan, Moolarben and Wilpinjong mines and to the satisfaction of the Secretary in writing. This plan must include:
    (a) details of the transport route to be used for all development-related traffic;
    (b) details of the road upgrade works required by condition 8 of Schedule 3 to this consent;
    (c) a protocol for undertaking independent dilapidation surveys to assess the:
        - existing condition of Ulan-Wollar Road, Wollar Road, Phillip Street, Barigan Street, Maitland Street, Barigan Road and Maree Road prior to construction, upgrading or decommissioning activities; and
        - condition of Ulan-Wollar Road, Wollar Road, Phillip Street, Barigan Street, Maitland Street, Barigan Road and Maree Road following construction, upgrading or decommissioning activities;
    (d) a protocol for the repair of Ulan-Wollar Road, Wollar Road, Phillip Street, Barigan Street, Maitland Street, Barigan Road and Maree Road if dilapidation surveys identify these roads to be damaged during construction, upgrading or decommissioning works;
    (e) details of the measures that would be implemented to minimise traffic impacts during construction, upgrading or decommissioning works, including:
        - temporary traffic controls, including detours and signage;
        - notifying the local community about project-related traffic impacts;
        - procedures for receiving and addressing complaints from the community about development-related traffic;
        - minimising potential cumulative traffic impacts with other projects in the area, including the Ulan Coal Mine, Moolarben Coal Mine and Wilpinjong Coal Mine during construction, upgrading or decommissioning works ;
        - minimising potential for conflict with school buses, other road users and rail services as far as practicable (measures also required during operation of the project);
        - minimising dirt tracked onto the public road network from development-related traffic;
        - details of the employee shuttle bus service, including pick-up and drop-off points and associated parking arrangements for construction workers, and measures to ensure employee use of this service;
        - scheduling of haulage vehicle movements to minimise convoy length or platoons;
        - responding to local climate conditions that may affect road safety such as fog, dust and wet weather;
        - responding to any emergency repair or maintenance requirements; and
        - a traffic management system for managing over-dimensional vehicles;
    (f) a driver's code of conduct that addresses:
        - travelling speeds;
        - driver fatigue;
        - procedures to ensure that drivers adhere to the designated transport routes; and
        - procedures to ensure that drivers implement safe driving practices;
    (g) a program to ensure drivers working on the development receive suitable training on the code of conduct and any other relevant obligations under the Traffic Management Plan; and
    (h) a flood response plan detailing procedures and options for safe access to and from the site in the event of flooding.

Following the Secretary's approval, the Applicant must implement the Traffic Management Plan.

Appendix 3 of Wollar Solar Farm CoC



Best regards
Robbie Williamson

Project Development Wollar Solar Farm
robbie.williamson@wollarsolarfarm.com

[redacted]

G.4 MOOLARBEN MINE

From: Graham Chase
To: robbie.williamson@wollarsolarfarm.com
Subject: RE: Wollar Solar Farm - Traffic Management Consultation
Date: Thursday, 28 May 2020 9:54:52 AM

Hi Robbie,

Thank you for consulting with Moolarben Coal Operations (MCO) in regards to the Wollar Solar Farm Traffic Management Plan. The opportunity to review the TMP is appreciated.

MCO has reviewed the TMP and shift times and have no comment. MCO has no concerns regarding Stage 1 works commencing in the next couple of months.
No additional recommendations beyond what is included in Section 7.9. MCO support being notified as alerts can be provided to our personnel about the additional traffic.
MCO has no planned road closures for blasting in the next 2 to 3 years.

Regards

Graham Chase | ENVIRONMENT & COMMUNITY MANAGER

Moolarben Coal Operations Pty Ltd

SITE: 12 Ulan-Wollar Road, Ulan NSW 2850
POSTAL: Locked Bag 2003 Mudgee NSW 2850 Australia
[redacted]
EMAIL: Graham.Chase@yancoal.com.au
WEBSITE: www.moolarbencoal.com.au

From: robbie.williamson@wollarsolarfarm.com [mailto:robbie.williamson@wollarsolarfarm.com]
Sent: Wednesday, 13 May 2020 2:30 PM
To: Graham Chase <Graham.Chase@yancoal.com.au>
Subject: RE: Wollar Solar Farm - Traffic Management Consultation

Hi Graham

As I mentioned in previous correspondence the Wollar Solar Farm has a requirement in the Development Approval to consult with the Moolarben mine in relation to the development of the Traffic Management Plan (TMP) for the Wollar Solar Farm Development.

Schedule 3, Condition 10 of the Wollar Solar Farm Development consent requires that "*Prior to commencing the development, the Applicant must prepare a Traffic Management Plan for the development in consultation with RMS, Council, Ulan, Moolarben and Wilpinjong mines and to the satisfaction of the Secretary in writing*".

As such please find attached our Wollar Solar Farm TMP for consideration.

th

Could you please arrange for review of the attached TMP and provide some feedback **by 27 May 2020** (2 weeks' time). If you are able to provide comments earlier this will be much appreciated.
I have outlined a couple of items below that I would like to draw to your attention.

Commencement of Stage 1
Section 1.2.1 describes the anticipated staging of the development. We are proposing to commence Stage 1 which involved the upgrade of ~5km of Barigan Road (a council road near the site) as soon as possible with either Mid-western Regional Council or a local contractor undertaking the works. This could start some time in the next couple of months.

The Stage 1 works will have a considerably lower impact compared to the subsequent stages when deliveries for the solar farm components and gravel for internal tracks starting accessing the site via Ulan Road and Ulan-Wollar Road.

Could you confirm in your correspondence that Moolarben mine has no specific concerns about the Stage 1 public road works commencing it the next couple of months?
Community Consultation
Section 7.9 includes some if the measures proposed for community engagement and communicating information about the works for the development to people in the local area. Given your experience operating in the area, any advice you have on consultation methods you find effective would be much appreciated.

Blasting Road Closures
I understand that occasionally blasting works are undertaken by the mine and sometimes traffic needs to be stop on roads. How much forewarning does the mine have of these kinds of activities and would we be able to set up a communication channel to share this information so we can consider within our plans?

Shift Times
Are the shift change times for the mine workers fixed? It would be useful to be able to include some key times in our TMP if possible. If these are not fixed and subject to change, would it be possible for the project to be kept updated of these?
If you have any questions about the TMP or the Wollar Solar Farm please don't hesitate to give me a call to discuss on 0499 770 768.

Best regards
Robbie Williamson

Project Development Wollar Solar Farm
robbie.williamson@wollarsolarfarm.com
[redacted]

From: robbie.williamson@wollarsolarfarm.com <robbie.williamson@wollarsolarfarm.com>
Sent: Thursday, 23 April 2020 2:08 PM
To: graham.chase@yancoal.com.au
Subject: Wollar Solar Farm - Traffic Management Consultation

Hi Graham

Thanks for the time on the phone earlier.

As discussed, I am working on the Wollar Solar Farm project which was granted approval by the Department of Planning, Industry and Environment (DPIE) in Feb 2020. We are now looking at preparing for the construction phase and targeting commencement of works in August 2020. One of the first activities we are

likely to undertake is upgrading ~5.2km of the public road (Barigan Road) which runs south of Wollar village towards the solar farm site. This work needs to be completed to the satisfaction of Mid-western Regional Council before works on the Solar Farm can begin..

The link to DPIE's online portal for Wollar Solar Farm is:
https://www.planningportal.nsw.gov.au/major-projects/project/9831

One of our current tasks is preparing a Traffic Management Plan (TMP) for the development which is a requirement of our Conditions of Consent (CoC) from DPIE (see extract from CoC below). This condition specifies that we should consult with a number of parties including Moolarben mine.

I have included a screenshot of the approved haulage routes for the project from the CoC below. You will that it permits the project to use Ulan-Wollar road for heavy vehicles and shuttle buses (quickest route from Gulgong). We are also permitted to use Wollar Road for shuttle buses (the quickest route from Mudgee).

We are currently working on the first draft of the TMP and can share this with you for some input once finalised (~1-2 weeks). In the meantime if you have any suggestions on things we should consider feel free to send them across and we can share with our consultants who are preparing the plan.

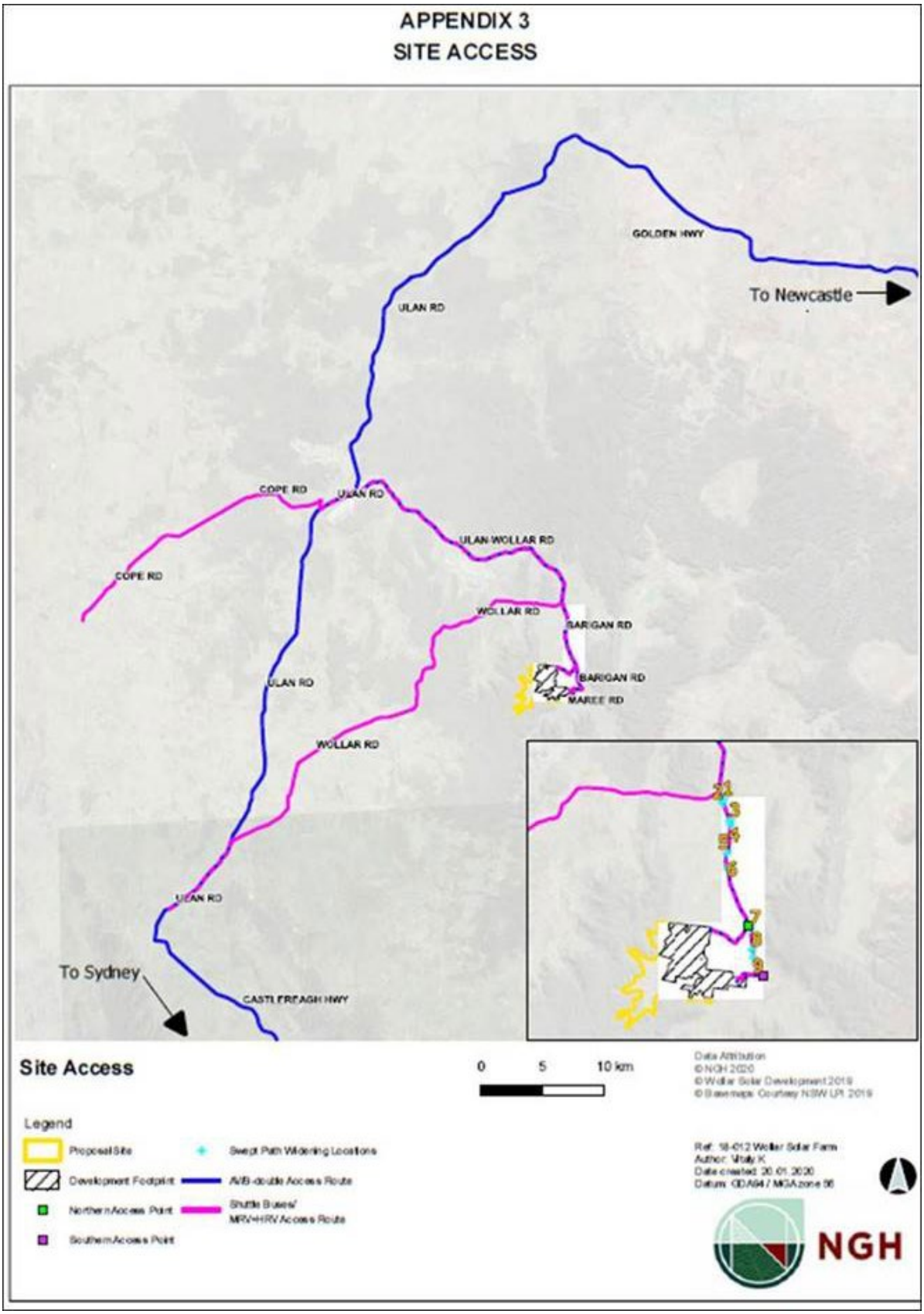
Schedule 3, Condition 10 of Wollar Solar Farm CoC

Traffic Management Plan

10. Prior to commencing the development, the Applicant must prepare a Traffic Management Plan for the development in consultation with RMS, Council, Ulan, Moolarben and Wilpinjong mines and to the satisfaction of the Secretary in writing. This plan must include:
    (a) details of the transport route to be used for all development-related traffic;
    (b) details of the road upgrade works required by condition 8 of Schedule 3 to this consent;
    (c) a protocol for undertaking independent dilapidation surveys to assess the:
        - existing condition of Ulan-Wollar Road, Wollar Road, Phillip Street, Barigan Street, Maitland Street, Barigan Road and Maree Road prior to construction, upgrading or decommissioning activities; and
        - condition of Ulan-Wollar Road, Wollar Road, Phillip Street, Barigan Street, Maitland Street, Barigan Road and Maree Road following construction, upgrading or decommissioning activities;
    (d) a protocol for the repair of Ulan-Wollar Road, Wollar Road, Phillip Street, Barigan Street, Maitland Street, Barigan Road and Maree Road if dilapidation surveys identify these roads to be damaged during construction, upgrading or decommissioning works;
    (e) details of the measures that would be implemented to minimise traffic impacts during construction, upgrading or decommissioning works, including:
        - temporary traffic controls, including detours and signage;
        - notifying the local community about project-related traffic impacts;
        - procedures for receiving and addressing complaints from the community about development-related traffic;
        - minimising potential cumulative traffic impacts with other projects in the area, including the Ulan Coal Mine, Moolarben Coal Mine and Wilpinjong Coal Mine during construction, upgrading or decommissioning works ;
        - minimising potential for conflict with school buses, other road users and rail services as far as practicable (measures also required during operation of the project);
        - minimising dirt tracked onto the public road network from development-related traffic;
        - details of the employee shuttle bus service, including pick-up and drop-off points and associated parking arrangements for construction workers, and measures to ensure employee use of this service;
        - scheduling of haulage vehicle movements to minimise convoy length or platoons;
        - responding to local climate conditions that may affect road safety such as fog, dust and wet weather;
        - responding to any emergency repair or maintenance requirements; and
        - a traffic management system for managing over-dimensional vehicles;
    (f) a driver's code of conduct that addresses:
        - travelling speeds;
        - driver fatigue;
        - procedures to ensure that drivers adhere to the designated transport routes; and
        - procedures to ensure that drivers implement safe driving practices;
    (g) a program to ensure drivers working on the development receive suitable training on the code of conduct and any other relevant obligations under the Traffic Management Plan; and
    (h) a flood response plan detailing procedures and options for safe access to and from the site in the event of flooding.

Following the Secretary's approval, the Applicant must implement the Traffic Management Plan.

Appendix 3 of Wollar Solar Farm CoC



Best regards
Robbie Williamson

Project Development Wollar Solar Farm
robbie.williamson@wollarsolarfarm.com

G.5 WILPINJONG MINE

Consultee comments on specific sections of the TMP and the responses from WSD are shown in the following table.

Consultee Comment	Response
Section 4.2 – Haulage Plan to be developed with Wilpinjong?	Haulage Plan will be agreed between contractors and MWRC. Section 4.2 has been updated to state that Haulage Plans will be provided to the Local Mines for feedback. It should be noted that the haulage routes will be per the routes outlined in section 4.2 but may include additional details relating to the entry point on those approved routes. Section 7.9.1 has also been update to outline how WSD will consult with the local mines in relation to traffic through construction.
Section 4.2 - Can the oversize deliveries get along the eastern end of Ulan-Wollar road and through to Barigan Road?	This route was assessed as part of the planning application. Contractors will be required to ensure final delivery. The route has been driven by transportation and logistics company. Contractors will confirm the final delivery configuration they propose to use is compatible with this route.
Section 4.2 - The ramp on Barigan Road for the southern access needs to be upgraded.	This refers to a location on Barigan Road near the Maree Road intersection where there is a cattle grid. This location would be upgraded as part of Stage 4 if these works are undertaken.
Section 4.3.1 - Does this survey align with the Ulan Road strategy numbers?	The existing traffic volumes along Ulan – Wollar Road are based on the Road Traffic Assessment (GTA Consultants, 2015) undertaken for Wilpinjong Coal Mine Extension, with a focus on the AM and PM peak hours of the mine. WSD understands that the Ulan Road strategy is a plan which outlines maintenance contributions from the local mines in relation to roads used for mine related activities. WSD has agreed with MWRC to make a voluntary contribution to cover local road network maintenance during the construction period. Updated in section 7.2.1 The operational traffic for the solar farm will generally be light vehicle access for up to 5 full time staff.
Section 4.3.2 - Is this movements or vehicle i.e. 40 buses is 80 bus trips (in and then out)?	This means 40 buses. Movement terminology is used in line with the definition in the CoC “One vehicle entering and leaving the site”.

Section 4.3.2 - this quarry is on WCPL land and is a limited resource you need to check if it is realistic that you will get all the material from here otherwise you TMP is based on a false assumption of impact.	This quarry was mentioned to WSD by MWRC. The language in Section 4.3.2 has been broadened to allow use of other local quarries.
Section 5.1 - Suggested that Wollar Road and Ulan-Wollar road have been upgraded and description may be outdated.	**Wollar Road** TfNSW advised Wollar Road is a classified road under the care and control of MWRC. Updated in section 5.1 **Ulan-Wollar Road** Description to be left as is unless MWRC advise otherwise
Table 5.1 - Impact to existing road infrastructure not noted	Impact to existing road infrastructure added to Table 5-1
Section 7.2 – Upgrade ramp on Barigan Road	Per comment above on section 4.2
Section 7.2.1 - Approved by MWRC - after consultation with MCO and WCPL. to the standard required by MCO and WCPL for the relevant sections	As the relevant roads authority, MWRC are responsible for determining rectification works required. MWRC may consult with others as they see appropriate.
Section 7.5 - Does not deal with requirement for protocol for road maintenance / repair as per CoC	WSD has agreed to pay a voluntary contribution to MWRC for the purpose of local road network maintenance during the Wollar Solar Farm construction period. The contribution will be paid upfront when construction commences and covers the entire construction period Section 7.2.1 updated to describe this.
Section 7.7 - Where are you using dust suppression - very non-specific.	Section 7.7 updated to specify unsealed internal roads within the solar farm development area and during road upgrades on Barigan Road if required.
Section 7.9 - Do you not have to set up a project CCC	Solar Farm Development is not required to have a CCC as a condition of consent. WSD will engage with the community by other means.
Email – Wilpinjong have system for blasting notifications. People can register for phonecall / email notifications	Section 7.9.1 updated to include this.

Email – Typical Wilpinjong shift times	Section 4.2 updated to include description of typical shift change times/personnel.

From:	Flood, Ian K.
To:	robbie.williamson@wollarsolarfarm.com
Cc:	Bruce Howard; Jackson, Blair P; Bennetts, Kieren
Subject:	RE: WOLLAR SOLAR FARM TRAFFIC MANAGEMENT PLAN UPDATE
Date:	Thursday, 21 May 2020 3:58:05 PM
Attachments:	image007.png image008.png image009.png 20-070 Wollar TMP Final 1.0 for Issue 12-05-2020 clean WCPL.pdf

Robbie,

See attached the TMP that you provided – I have reviewed and embed some comments into the document. Additionally I make the below comments;

Robbie,

Consultation -

- We are required by consent to have a Community Consultation Committee and Registered Aboriginal Parties committee that meets quarterly and we provide relevant information to as required. This our key consultation process.
- We have monthly 'have a chat' session at Wollar store
- Post notices on the Wollar store notice board

Blasting -
We blast Monday to Saturday. We have a blast notification process that includes; phone calls to registered persons, email notification to registered persons, planned blast details at the Wollar store notice board, we list the details on our website and we have the details on the road signs. We are happy to include the appropriate persons on the email or phone call list?

Shift times –
Our shift do change from time to time but not on a regular basis – we can let you know when shifts are changing in the future
The majority of our people change over between;
6.00am – 7.30am (approx 240 people enter and say 170 leave)
6.00pm -7.30pm (approx. 170 leave – there is about 70 staff that would leave generally between 4pm and 5pm. 170 enter)

There are some minor discrepancies to the above but will be insignificant in terms of road traffic generated

As stated, I am happy to discuss my comments

Thanks

Ian Flood
Manager, Project Development & Approvals
Peabody Australia
1434 Ulan-Wollar Road | Wilpinjong, New South Wales 2850
Locked Bag 2005 | Mudgee, New South Wales 2850
[redacted]
iflood@peabodyenergy.com

From: robbie.williamson@wollarsolarfarm.com <robbie.williamson@wollarsolarfarm.com>
Sent: Wednesday, May 13, 2020 2:33 PM
To: Jackson, Blair P <BJackson@peabodyenergy.com>; Flood, Ian K. <IFlood@peabodyenergy.com>
Cc: 'Rhyson Li' <rhyson.li@wollarsolarfarm.com>; 'Bruce Howard' <bruce.howard@wollarsolarfarm.com>
Subject: RE: WOLLAR SOLAR FARM TRAFFIC MANAGEMENT PLAN UPDATE

Hi Blair and Ian

Per Bruce's previous email please find attached our first draft of the Wollar Solar Farm TMP.

Wollar Solar Farm TMP
The project has a requirement in the Development Approval to consult with the Wilpinjong mine in relation to the development of the Traffic Management Plan (TMP) for the Wollar Solar Farm Development.

Schedule 3, Condition 10 of the Wollar Solar Farm Development consent requires that "*Prior to commencing the development, the Applicant must prepare a Traffic Management Plan for the development in consultation with RMS, Council, Ulan, Moolarben and Wilpinjong mines and to the satisfaction of the Secretary in writing*".

Could you please arrange for review of the attached TMP and provide some feedback from a Wilpinjong Mine operations perspective **by 27th May 2020** (2 weeks' time). If you are able to provide comments earlier this will be much appreciated.

I have outlined a couple of items below that I would like to draw to your attention.

Community Consultation
Section 7.9 includes some if the measures proposed for community engagement and communicating information about the works for the development to people in the local area. Given your experience operating in the area, any advice you have on consultation methods you find effective would be much appreciated.

Blasting Road Closures
I understand that occasionally blasting works are undertaken by the mine and sometimes traffic needs to be stop on roads. How much forewarning does the mine have of these kinds of activities and would we be able to set up a communication channel to share this information so

we can consider within our plans?

Shift Times
Are the shift change times for the mine workers fixed? It would be useful to be able to include some key times in our TMP if possible. If these are not fixed and subject to change, would it be possible for the project to be kept updated of these?

If you have any questions about the attached TMP or the Wollar Solar Farm please don't hesitate to give me a call to discuss on [redacted]

Best regards
Robbie Williamson

Project Development Wollar Solar Farm
robbie.williamson@wollarsolarfarm.com
[redacted]

From: Bruce Howard <bruce.howard@wollarsolarfarm.com>
Sent: Wednesday, 6 May 2020 11:42 AM
To: Jackson, Blair P <bjackson@peabodyenergy.com>; Flood, Ian K. <iflood@peabodyenergy.com>
Cc: Rhyson Li <rhyson.li@wollarsolarfarm.com>; Robbie Williamson <robbie.williamson@wollarsolarfarm.com>
Subject: WOLLAR SOLAR FARM TRAFFIC MANAGEMENT PLAN UPDATE

Dear Blair, Ian,

WOLLAR SOLAR FARM - TRAFFIC MANAGEMENT PLAN UPDATE

We are currently preparing some of the management plans that are required for the Wollar Solar Farm project. One of these is a Traffic Management Plan (TMP) for the development which is a requirement of our Conditions of Consent (CoC) from DPIE (see extract from CoC below). This condition specifies that we should consult with a number of parties including Wilpinjong mine.

I have included a screenshot of the approved haulage routes for the project from the CoC below. You will see that it permits the project to use Ulan-Wollar road for heavy vehicles and shuttle buses (quickest route from Gulgong). We are also permitted to use Wollar Road for shuttle buses (the quickest route from Mudgee).

We are currently working on the first draft of the TMP and can share this with you for some input once finalised (some time in the next week). In the meantime if you have any suggestions on items we should be considering feel free to send them across as soon as you are able and we can share with our consultants who are preparing the plan.

Best regards

Bruce Howard

[redacted]

Schedule 3, Condition 10 of Wollar Solar Farm CoC

Traffic Management Plan

10. Prior to commencing the development, the Applicant must prepare a Traffic Management Plan for the development in consultation with RMS, Council, Ulan, Moolarben and Wilpinjong mines and to the satisfaction of the Secretary in writing. This plan must include:
    (a) details of the transport route to be used for all development-related traffic;
    (b) details of the road upgrade works required by condition 8 of Schedule 3 to this consent;
    (c) a protocol for undertaking independent dilapidation surveys to assess the:
        - existing condition of Ulan-Wollar Road, Wollar Road, Phillip Street, Barigan Street, Maitland Street, Barigan Road and Maree Road prior to construction, upgrading or decommissioning activities; and
        - condition of Ulan-Wollar Road, Wollar Road, Phillip Street, Barigan Street, Maitland Street, Barigan Road and Maree Road following construction, upgrading or decommissioning activities;
    (d) a protocol for the repair of Ulan-Wollar Road, Wollar Road, Phillip Street, Barigan Street, Maitland Street, Barigan Road and Maree Road if dilapidation surveys identify these roads to be damaged during construction, upgrading or decommissioning works;
    (e) details of the measures that would be implemented to minimise traffic impacts during construction, upgrading or decommissioning works, including:
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        - notifying the local community about project-related traffic impacts;
        - procedures for receiving and addressing complaints from the community about development-related traffic;
        - minimising potential cumulative traffic impacts with other projects in the area, including the Ulan Coal Mine, Moolarben Coal Mine and Wilpinjong Coal Mine during construction, upgrading or decommissioning works ;
        - minimising potential for conflict with school buses, other road users and rail services as far as practicable (measures also required during operation of the project);
        - minimising dirt tracked onto the public road network from development-related traffic;
        - details of the employee shuttle bus service, including pick-up and drop-off points and associated parking arrangements for construction workers, and measures to ensure employee use of this service;
        - scheduling of haulage vehicle movements to minimise convoy length or platoons;
        - responding to local climate conditions that may affect road safety such as fog, dust and wet weather;
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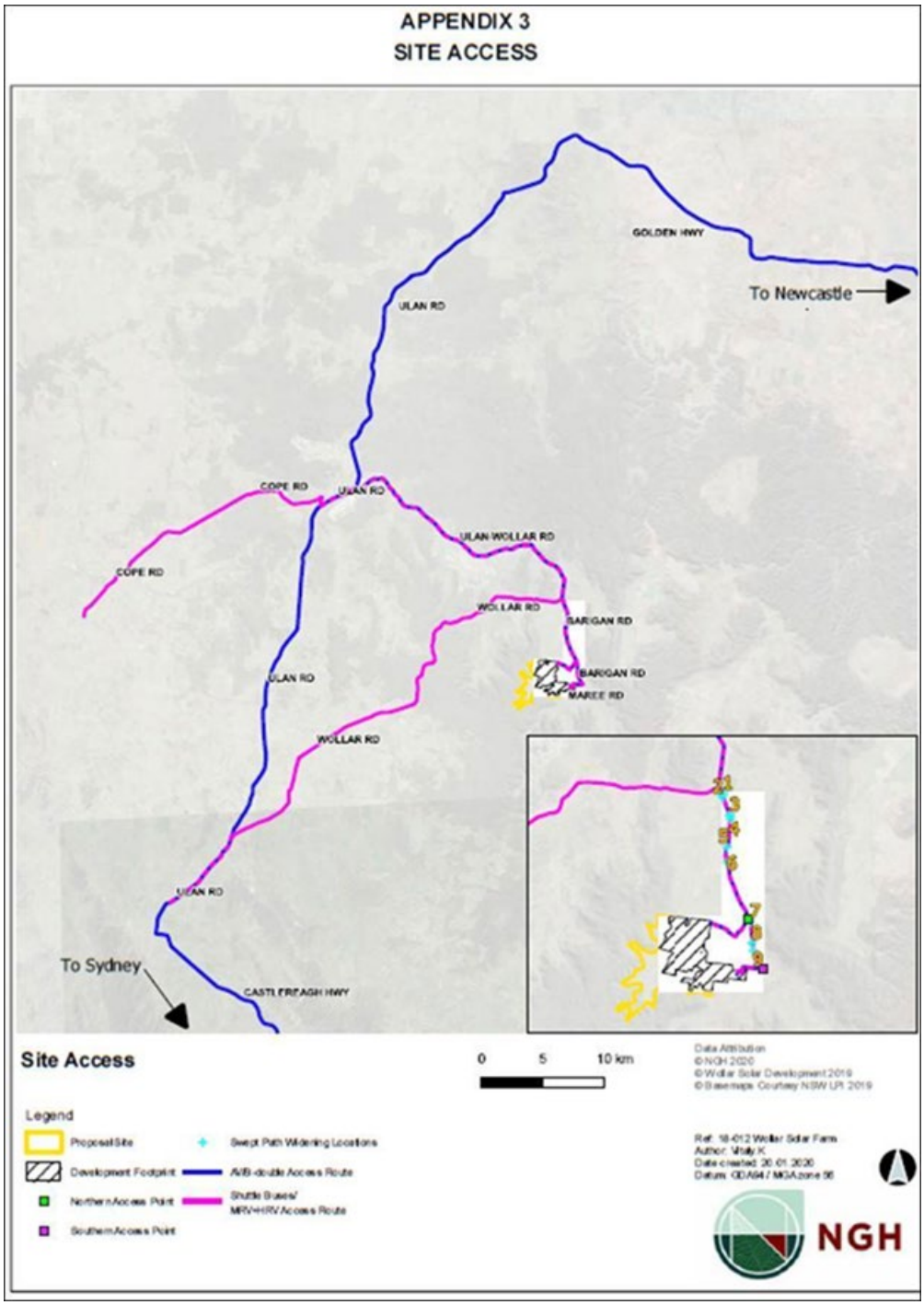
        - a traffic management system for managing over-dimensional vehicles;
    (f) a driver's code of conduct that addresses:
        - travelling speeds;
        - driver fatigue;
        - procedures to ensure that drivers adhere to the designated transport routes; and
        - procedures to ensure that drivers implement safe driving practices;
    (g) a program to ensure drivers working on the development receive suitable training on the code of conduct and any other relevant obligations under the Traffic Management Plan; and
    (h) a flood response plan detailing procedures and options for safe access to and from the site in the event of flooding.

    Following the Secretary's approval, the Applicant must implement the Traffic Management Plan.

Appendix 3 of Wollar Solar Farm CoC

APPENDIX 3
SITE ACCESS



APPENDIX H ROAD SAFETY AUDIT

Copy of Road Safety Audit - NSW200791-DOC-RSA-EC-Final_Rev_C

CONSULTANTS

THE ACOR GROUP

Road Safety Audit

Stage 7 – Existing Condition

Intersection of Wollar Road (MR208) and Barigan Road, Wollar

Prepared for: Beijing Jiangmen Clean Energy (Australia)

Project No.: NSW200791

Document no: NSW200791-DOC-RSA-EC-Final_Rev_C

Revision: C

Issue Date: 4th June 2020

REVISIONS

Revision	Date	Purpose	Prepared By	Reviewed By	Approved By
A	18/05/2020	Draft Report	T Brown	G. Carter	T Brown
B	21/05/2020	Draft Report revised	T Brown	G. Carter	T Brown
C	04/06/2020	Final Report	T Brown	G. Carter	T Brown

This document is for adoption by all legal entities which are members of the ACOR Group and is developed for Internal Use Only.

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ACOR Consultants (QLD) Pty Ltd	(ACN) 126 011 087 (ABN) 18 126 011 087
ACOR Consultants (CC) Pty Ltd ATF The ACOR CC Unit Trust	(ACN) 127 012 104 (ABN) 81 392 991 647
ACOR MCE Consultants Pty Ltd ATF The ACOR MCE Unit Trust	(ACN) 162 450 375 (ABN) 24 416 114 936
ACOR Group Services Pty Ltd	(ACN) 606 070 704 (ABN) 48 606 070 704
ACOR WSC Consultants Pty Ltd	(ACN) 605 970 241 (ABN) 38 605 970 241
ACOR Kersulting Pty Limited	(ACN) 617 134 586 (ABN) 53 617 134 586

Table of Contents

Appendices

1 Executive Summary

This report is for an Existing condition road safety audit at the Intersection of Wollar Road (MR208) and Barigan Road, Wollar (including Fitzpatrick Bridge over Wollar Creek, located 20m north of the intersection).

Wollar Road and Barigan Road form part of the approved access routes for heavy and over-dimension vehicles for the Wollar Solar Farm per the development consent for the proposal (SSD 9254). During the public exhibition of the development RMS requested that a road safety audit be performed in relation to the intersection (including the bridge on Wollar Road, located 20m north of the intersection) prior to construction of the Wollar solar farm. BJCE have therefore commissioned ACOR Consultants to undertake a Road Safety Audit in line with the request from RMS.

Positive aspects of the site have not been recorded. The purpose of this audit was to report on the defects and deficiencies of the existing road environment from a road user safety perspective only. The safety audit is not a design check, although some design issues may be raised during the audit process.

The audit is based on a site inspection, review of the supporting documentation supplied by Beijing Jingneng Clean Energy (Australia) to the audit team and Google Earth.

The comments listed under the heading “Appendix B - Other Observations” are observations noted whilst carrying out the audit and do not necessarily relate to safety issues. This list is not comprehensive, it is simply a record of some of the additional observations made by the auditors and has been provided purely as additional information for the client.

The risk ratings provided in this audit are the assessment of the auditors. Ultimately, it is the client and / or road authority’s responsibility to determine the response to risk for each road safety deficiency identified.

The client response section with each audit finding has been provided for the purpose of recording the process of attending to the specific safety issue raised, whether it be the “do nothing”, action or what action was taken to address the issue.

2 Introduction

2.1 Background

ACOR Consultants was commissioned by Beijing Jingneng Clean Energy (Australia) in May 2020 to undertake an Existing condition road safety audit for the intersection of Wollar Road (MR208) and Barigan Road, Wollar (including Fitzpatrick Bridge over Wollar Creek, located 20m north of the intersection).

Wollar Road and Barigan Road form part of the approved access routes for heavy and over-dimension vehicles for the Wollar Solar Farm per the development consent for the proposal (SSD 9254). During the public exhibition of the development RMS requested that a road safety audit be performed in relation to the intersection (including the bridge on Wollar Road, located 20m north of the intersection) prior to construction of the Wollar solar farm. BJCE have therefore commissioned ACOR Consultants to undertake a Road Safety Audit in line with the request from RMS.

This report presents the findings of the road safety audit.

2.2 Site Location

The intersection of Wollar Road (MR208) and Barigan Road, Wollar, and Fitzpatrick Bridge over Wollar Creek, located 20m north of the intersection, including approaches, at the subject location comprised the following key features:

- Wollar Road (MR208) is a sealed road with one through lane in each direction;
- Barigan Road is an unsealed road with one through lane in each direction;
- Fitzpatrick bridge contains one travel lane in each direction, with guard rail along the edge of the bridge deck.
  - Note – The RMS advice letter (refer supporting documents) mentioned the RSA is to include “An assessment, including a road safety audit, of the existing Wollar Road (MR208) and Barrigan Road intersection. Particularly, an assessment of the current geometry of the intersection, including the narrow single lane bridge in Wollar Road on approach to the intersection, and its ability to safely accommodate increased traffic volumes.”
  - During the site inspection, the auditors observed the Fitzpatrick bridge contained one travel lane in each direction (two lanes), in lieu of the single lane bridge described in the advice letter.
- A signposted speed limit of 50km/h on Wollar Road (MR208) between the town of Wollar (West of the intersection) to 190m East of the intersection with Barigan Road;
- A signposted speed limit of 100km/h on Wollar Road (MR208) from 190m East of the intersection with Barigan Road, continuing East;
- Barigan Road was not signposted with a speed limit within the vicinity of the intersection with Wollar Road (MR208) at the time of the site inspection;
- Surrounding town of Wollar, mining, rural and bushland areas

The scope of the audit undertaken included the following:

- All road users;
  - In particular, noting the future construction vehicle access route between:
    - Wollar Road (MR208) eastbound, right into Barigan Road southbound; and
    - Barigan Road northbound, left into Wollar Road (MR208) westbound
- The full width of the road corridor on Wollar Road (MR208), between 100m north of the intersection of Barigan Road (including Fitzpatrick Bridge over Wollar Creek), and 100m East of the intersection of Barigan Road. Refer Figure 2 for site location;
- The full width of the road corridor on Barigan Road, between 100m south of the intersection with Wollar Road (MR208) and Wollar Road (MR208). Refer Figure 2 for site location;
- The full width of Fitzpatrick bridge over Wollar Creek, located 20m north of the intersection of Wollar Road (MR208) and Barigan Road
- The intersection of Wollar Road (MR208) and Barigan Road. Refer Figure 2 for site location.

The site location is shown in the Figure below:

Figure 1 – Site Location

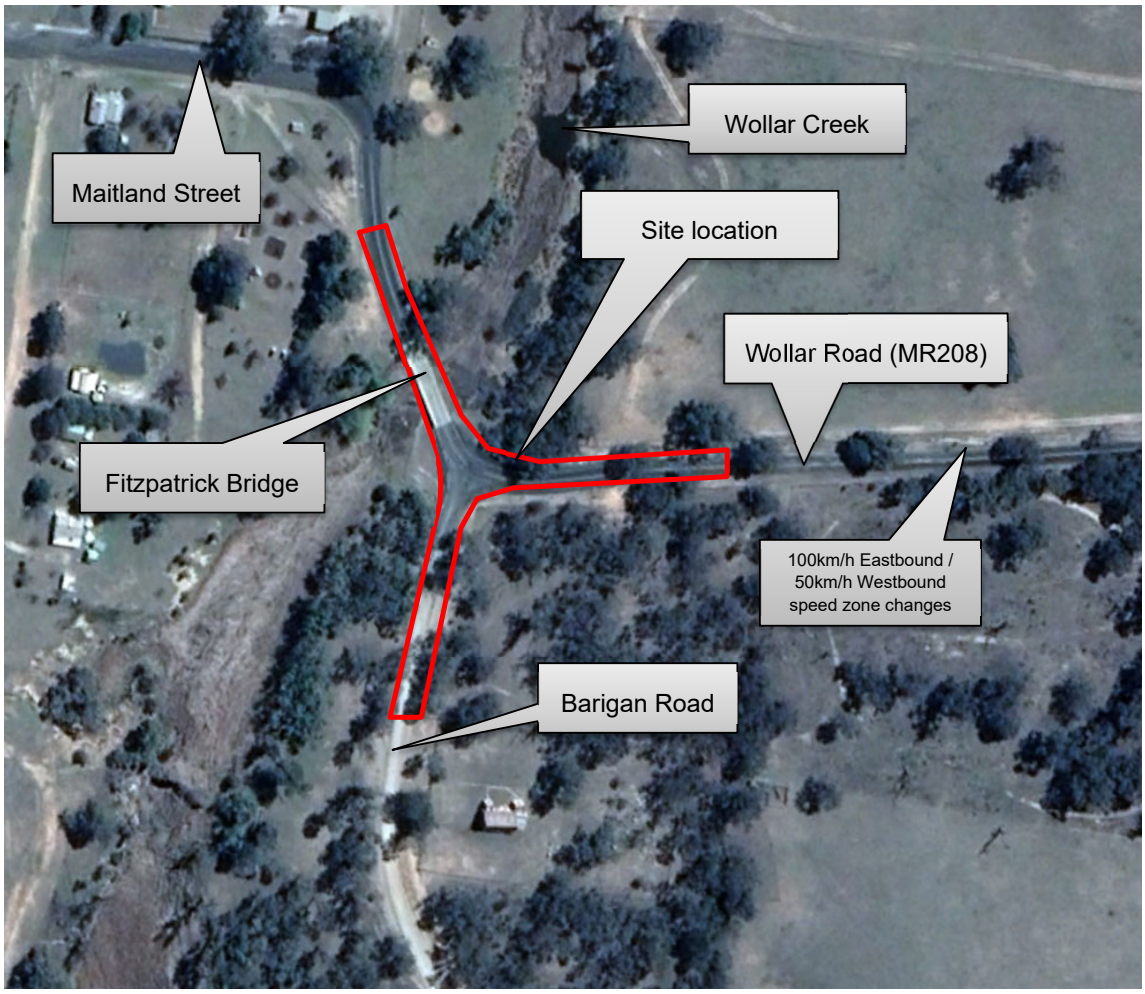


Figure 2 – Audit site extents

2.3 Client

The Project Sponsor for this Road Safety Audit is:

Name	**Robbie Williamson**
Company	**Beijing Jingneng Clean Energy (Australia)**
Position	**Project Manager**
Telephone	**02 8066 6032 / 0499 770 768**
Email	**robbie.williamson@wollarsolarfarm.com**
Address	**Suite 3, Level 21, 1 York Street, Sydney NSW 2000 Australia**

3 The Audit Process

3.1 Scope of this report

This audit comprises an Existing condition road safety audit. The audit was conducted to ascertain potential road safety issues for all road users. As an Existing condition audit, the audit is limited to consideration of elements identifiable from an appreciation of the site conditions only. Issues considered during the audit included

- Road alignment and typical cross-section;
- Auxiliary lanes;
- Intersections;
- Parking;
- Local and property access;
- Lighting;
- Pedestrians and cyclists;
- Utilities;
- Physical objects;
- Bridges and culverts;
- Drainage and floodway;
- Pavement;
- Roadside safety barriers and clear zones;
- Line marking and signage;
- Landscaping;
- Provision for heavy vehicles; and
- Animals.

The objective of the audit was to review the existing site conditions, with the intention of identifying road safety deficiencies and areas of risk that could lead to road crashes. The road safety audit team considered, for example:

- Have the permitted movements for all of the various road users been catered for in a safe way?;
- Are the appropriate operational and control mechanisms in place to promote safety?;
- Would the system operate to an acceptable level of safety in all situations, such as peak periods, poor weather and during darkness?; and
- Are there opportunities to reduce the occurrence or severity of crashes?

Although the audit reviewed and identified safety issues, the responsibility for assessing and implementing corrective action(s) lies with the client and / or road authority. It is not the role of the auditor to provide recommendations or solutions to the identified safety issues; however, identification of potential safety concerns may assist the client and / or road authority in reducing the incidence and severity of crashes.

3.2 Audit Team

Thomas Brown	Level 3 Auditor	RSA-02-1013	Accreditation Expiry: 30/04/2023
Gavin Carter	Level 2 Auditor	RSA-02-1423	Accreditation Expiry: 09/12/2022

3.3 Audit methodology

The audit team conducted a day time site inspection on the 11th May 2020, at approximately 3:45pm to 4:45pm, and a night inspection between 6:00pm and 6:15pm. The audit team captured photos and video of the site. During the inspection, the weather was mostly sunny.

3.4 Commencement Meeting

A commencement meeting was held at 12:00pm on 11th May 2020 via teleconference involving Thomas Brown (Audit Team Leader) and Robbie Williamson (Project Sponsor).

3.5 Closing Meeting

The Project sponsor did not provide client comments for inclusion as part of the Final report issue due to the Road Safety Audit Draft report being provided to TfNSW and Mid-Western Regional Council (MWRC) on 22/05/2020 for their comment and / or review. The Project Sponsor is to advise TfNSW and MWRC when final report is issued.

Authority was granted by the Project Sponsor, to issue the final road safety audit report on 4th June 2020.

3.6 Previous audits

There were no previous road safety audits provided to the auditors.

3.7 Exclusions

Exclusions are noted as followed;

- Existing underground utilities
- Drainage, including rain events;
- Flood data;
- Lighting – the closest lighting is within the township of Wollar, and located approximately 170m north of the intersection of Wollar Road (MR208) and Barigan Road.

This may lead to the Audit team not fully appreciating all site conditions for all road users along and on the approaches to the proposed road works at this location.

3.8 Information Sources

The following documents were provided to the auditors from the Project sponsor:

- Development Consent "*Wollar Solar Farm*", dated 24th February 2020 - ***16 DPIE Determination - Development Consent.pdf***;
- RMS letter titled "*SSD9254: Lots 22-25, 27, 30, 45, 49-51, 60-63, 69-80, 92, 105-107, 119 and 152-154 DP 755430, and Lot 1 DP 650653; Maree Road, Wollar; Wollar Solar Farm; Exhibition of Environmental Impact Statement*", dated 6th May 2019 - ***Wollar Solar - RMS Advice.pdf***
- Wollar Solar Farm Submissions Report - https://majorprojects.planningportal.nsw.gov.au/prweb/PRRestService/mp/01/getContent?AttachRef=SSD-9254%2120200116T025822.134%20GMT

The road safety audit was undertaken with reference to:

- Roads and Maritime Services, Guidelines for Road Safety Audit Practices, July 2011;
- Roads and Maritime Services, Technical direction 2003/RS03 Ver. 2 Aug 2005: Policy for road safety audits of construction and reconstruction projects;
- Roads and Maritime Services, Road Safety Audit Practices-L5 Road safety audit categories;
- Austroads, Guide to Road Safety Part 6: Managing Road Safety Audits; and
- Austroads, Guide to Road Safety Part 6a: Implementing Road Safety Audits.

The potential risk associated with the deficiencies identified has been based on a subjective assessment of the accident likelihood and crash consequence, as outlined in Section 4.

4 Risk classification methodology

4.1 Risk assessment system

The rating of each identified deficiency was based on the crash likelihood and consequence, in accordance with the methodology and risk matrix described in the following subsections. The crash likelihood and consequence are based on the auditor's assessment and are necessarily subjective on this basis.

Risk levels based on the criteria set out in Austroads Guide to Road Safety, Part 6: Road Safety Audit, 2009, has been assigned to each deficiency identified. The rationale behind the assignment of risk has been reproduced in Table 1, Table 2 and Table 3 from the Austroads document.

4.2 Crash likelihood

The probable frequency of crash occurrence, resulting from each safety issue identified in the audit is assessed from the options presented in Table 1 .

Table 1 Frequency

Frequency	Description
Frequent	Once or more per week
Probable	Once or more per year (but less than once a week)
Occasional	Once every five to ten years
Improbable	Less often than once every ten years

4.3 Crash consequence

The potential consequence of a crash resulting from the identified safety issue has been rated from the choices presented in Table 2.

Reference to related speed for low, medium and high speed crash types should be read in conjunction with Austroads Guide to Road Design – Part 3 (Geometric), Section 3.2.5 Vehicle speeds on roads. For road design purposes, the following definitions of high, intermediate (medium) and low vehicle speed limits apply for both urban and rural areas:

- High speed – 90km/h or greater;
- Medium speed – 70km/h to 89km/h; and
- Low speed – 69km/h or less.

Table 2

Severity	Description	Examples
Catastrophic	Likely multiple deaths	High-speed, multi-vehicle crash on freeway. Car runs into a crowded bus stop. Bus and petrol tanker collide. Collapse of a bridge or tunnel.
Serious	Likely death or serious injury	High or medium-speed vehicle/vehicle collision. High or medium-speed collision with a fixed roadside object. Pedestrian or cyclist struck by a car.
Minor	Likely minor injury	Some low-speed vehicle collisions. Cyclist falls from bicycle at low speed. Left-turn rear-end crash in a slip lane.
Limited	Likely trivial injury or property damage only	Some low speed vehicle collisions. Pedestrian walks into object (no head injury). Car reverses into post.

4.4 Risk Level

Deficiencies are rated for their importance according to a three-tiered system, based on the following matrix, summarised in Table 3.

Table 3

	Frequent	Probable	Occasional	Improbable
Catastrophic	Intolerable	Intolerable	Intolerable	High
Serious	Intolerable	Intolerable	High	Medium
Minor	Intolerable	High	Medium	Low
Limited	High	Medium	Low	Low

4.5 Suggested level of prioritisation based on risk rating

Possible suggested level of prioritisation for each road safety deficiency, are summarised in Table 4 below. As noted in the Executive Summary of this report, ultimately, it is the client and / or road authority's responsibility to determine the response and / or action to risk for each road safety deficiency identified.

Table 4

Risk Rating	Level of Prioritisation
Intolerable	Must be corrected immediately
High	Should be corrected in the very near future, even if costs are high. Temporary mitigation measures should be considered until final correction action taken.
Medium	Should be corrected in the very near future, even if costs are moderate. A delay until the routine maintenance should be justified. Temporary mitigation measures should be considered until final correction action taken.
Low	Should be corrected at a suitable time if cost is low.

It should be noted that from Table 4 above, the priority ratings are based on a combination of the Centre for Road Safety's Road Safety Audit Practices Information Sheet for Risk Assessment, and the criteria set out in Austroads Guide to Road Safety, Part 6A: Implementing Road Safety Audits, 2019. The client and / or road authority assigns a priority rating for each identified risk in road safety, which shows the importance of putting the treatment into action.

In terms of recommendations for suggested treatments for each identified risk to road safety, generally the audit team does not provide these, as this is not the responsibility of the auditors. This is in accordance with Roads and Maritime practices and guidelines. Rather it is the responsibility of the client and / or road authority to devise the appropriate corrective actions and implement them for the identified risks to road safety in the report.

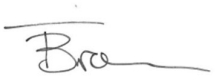
For each client response addressing each audit finding, the client and / or road authority must respond to close-out each finding. Where it is decided not to respond to an audit finding, justification should be given for the determination that no action will follow.

It is not the responsibility of the auditors to approve the client and / or road authorities response actions or the client and / or road authority responses to the findings. The auditors are however able to provide input (not recommendations) to assist the client and / or road authority, and ultimately the project, in determining appropriate responses to reach a suitable outcome for possibly addressing in future design projects.

5 Audit Statement

We, the undersigned, have undertaken an Existing condition road safety audit for the intersection of Wollar Road (MR208) and Barigan Road, Wollar (including Fitzpatrick Bridge over Wollar Creek, located 20m north of the intersection). The audit was conducted in accordance with the Guidelines for Road Safety Audit Practice, (RMS, July 2011), for the purpose of identifying any features, that potentially impacts on road safety.

While every care and diligence has been taken to identify potential safety concerns, as detailed in this report, we do not warrant that every safety issue has been identified.



Thomas Brown

Lead Auditor - Auditor Level 3

Registered No: RSA-02-1013

Date: 04/06/2020

Gavin Carter

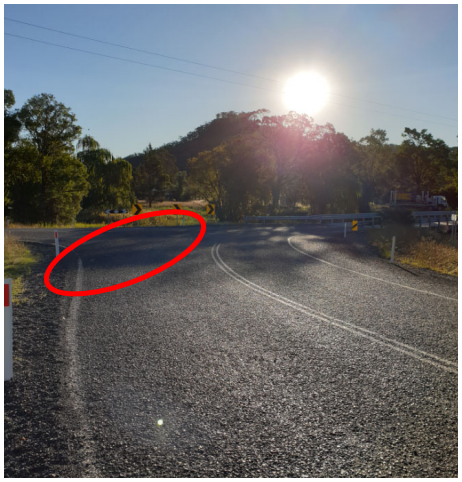
Auditor Level 2

Registered No: RSA-02-1423

Date: 04/06/2020

6 Audit Findings

The audit findings are presented in the following table. Where applicable, the findings are presented in order of road chainage and drawing number accordingly, and is not presented in order of relative importance to road safety.

CAR No	Location Category	Description of Risk to Road Safety	Photographs/ Plans / Drawing No	Risk Assessment	Client Response
1.	**Intersection of Wollar Road (MR208) and Barigan Road** **Eastbound / Northbound** **Delineation And Road alignment and cross section**	The auditors observed during the site inspection at the intersection of Wollar Road (MR208) and Barigan Road, there is a combination of the line marking on the outside of horizontal curve that is faded and worn to delineate through vehicles on Wollar Road (MR208), and delineate the give way location for vehicles on Barigan Road. This may increase the likelihood of readability issues for drivers. This may increase the risk of an eastbound vehicle on Wollar Road striking a holding northbound vehicle on Barigan Road (i.e. eastbound vehicles on Wollar Road (MR208) taking a wide vehicle path around the horizontal curve, and holding vehicles on Barigan Road encroaching into the Wollar Road (MR208) through lane.		**Likeli-hood** Improbable **Consequence** Minor **Risk Level** Low	

CAR No	Location Category	Description of Risk to Road Safety	Photographs/ Plans / Drawing No	Risk Assessment	Client Response
		The likelihood of this risk may be increased for eastbound vehicles, during adverse weather conditions (i.e. rain / storm events), at night, during peak traffic periods and at times of the day due to sun glare. This may increase the risk of vehicle crashes and result in injury to occupants of a vehicle/s.	 		

CAR No	Location Category	Description of Risk to Road Safety	Photographs/ Plans / Drawing No	Risk Assessment	Client Response
2.	**Intersection of Wollar Road (MR208) and Barigan Road** **Eastbound / Westbound / Northbound** **Road pavement**	During the site inspection, the auditors observed a combination of the outer edge of the westbound carriageway, particularly within the intersection at Barigan Road, contained a build-up of loose gravel within the road carriageway as well as a pothole within the westbound through lane on Wollar Road (MR208). This combination may reduce traction of the vehicle to the road surface and increase the risk of a vehicle becoming errant. This may be increased for westbound through vehicles and eastbound vehicles turning right from Wollar Road (MR208) into Barigan Road. The likelihood of this issue may increase during adverse weather conditions (i.e. rain). This may increase the risk of an errant vehicle to strike a vehicle holding at the intersection on Barigan Road (i.e. at the give way line), and / or objects within the clear zone. This may result in injury to occupants of a vehicle/s.	 	**Likeli-hood** Occasional **Consequence** Minor **Risk Level** Medium	

CAR No	Location Category	Description of Risk to Road Safety	Photographs/ Plans / Drawing No	Risk Assessment	Client Response
			 		

CAR No	Location Category	Description of Risk to Road Safety	Photographs/ Plans / Drawing No	Risk Assessment	Client Response
3.	**Intersection of Wollar Road (MR208) and Barigan Road** **Westbound / Northbound** **Roadside hazard**	Within the westbound verge of the intersection of Wollar Road (MR208) and Barigan Road, there is a culvert headwall located within the clear zone. An errant westbound vehicle on Wollar Road (MR208) or an errant northbound vehicle on Barigan Road at this location may have a reduced ability to regain control of their vehicle and strike the culvert headwall. The likelihood of this issue may increase during adverse weather conditions (i.e. rain). This may lead to rapid deceleration of a vehicle result in injury to occupants of a vehicle/s.		**Likeli-hood** Improbable **Consequence** Serious **Risk Level** Medium	

CAR No	Location Category	Description of Risk to Road Safety	Photographs/ Plans / Drawing No	Risk Assessment	Client Response
			Distance between edge of travel lane and culvert headwall (2.15m)  		

CAR No	Location Category	Description of Risk to Road Safety	Photographs/ Plans / Drawing No	Risk Assessment	Client Response
4.	**Wollar Road (MR208)** **50m East of Intersection of Wollar Road (MR208) and Barigan Road** **Westbound / Eastbound** **Roadside hazard**	Within the eastbound and westbound verge, approximately 50m east of the intersection of Wollar Road (MR208) and Barigan Road, there are culvert headwalls located within the clear zone. An errant vehicle at this location may have a reduced ability to regain control of their vehicle and strike the culvert headwall. The likelihood of this issue may increase during adverse weather conditions (i.e. rain). This may lead to rapid deceleration of a vehicle result in injury to occupants of a vehicle/s. Note – These culvert headwalls are located along a straight length of road alignment.	 	**Likeli-hood** Improbable **Consequence** Serious **Risk Level** Medium	

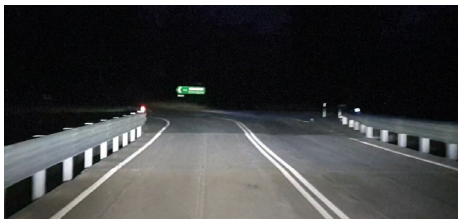
CAR No	Location Category	Description of Risk to Road Safety	Photographs/ Plans / Drawing No	Risk Assessment	Client Response
			 		

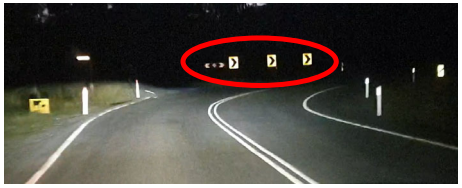
CAR No	Location Category	Description of Risk to Road Safety	Photographs/ Plans / Drawing No	Risk Assessment	Client Response
5.	**Wollar Road (MR208) and Barigan Road** **Eastbound / Westbound / Northbound / Southbound** **Roadside hazards**	The auditors observed within the audit subject location on Wollar Road (MR208) and Barigan Road, several trees with trunks in excess of 100mm diameter, located within the clear zone. Errant vehicles at these locations may have a reduced ability to regain control of their vehicle and strike the large trees. The likelihood of this issue may increase during adverse weather conditions (i.e. rain) and / or night. This may lead to rapid deceleration of a vehicle result in injury to occupants of a vehicle/s.	 	**Likeli-hood** Improbable **Consequence** Serious **Risk Level** Medium	

CAR No	Location Category	Description of Risk to Road Safety	Photographs/ Plans / Drawing No	Risk Assessment	Client Response
			 		

CAR No	Location Category	Description of Risk to Road Safety	Photographs/ Plans / Drawing No	Risk Assessment	Client Response
6.	**Wollar Road (MR208) and Barigan Road** **Eastbound / Westbound / Northbound / Southbound** **Roadside Hazard**	The auditors observed on Wollar Road (MR208) and Barigan Road, several trees with overhanging branches. These overhanging branches may cause an obstruction, and be struck by oncoming oversize (high) vehicles. If work is undertaken in the future within the root zone of the trees (i.e. pavement work), this may impact within the roots of the trees. If the root zone of the tree is impacted, this may increase the risk of the tree to die back and/or drop branches. This may strike an oncoming vehicle and cause severe damage to a vehicle, and / or rapid deceleration of a vehicle. This may cause serious injury to occupants of a vehicle.		**Likeli-hood** Improbable **Consequence** Serious **Risk Level** Medium	

CAR No	Location Category	Description of Risk to Road Safety	Photographs/ Plans / Drawing No	Risk Assessment	Client Response
					

CAR No	Location Category	Description of Risk to Road Safety	Photographs/ Plans / Drawing No	Risk Assessment	Client Response
7.	**Intersection of Wollar Road (MR208) and Barigan Road** **Eastbound / Westbound** **Road alignment and cross section**	On Wollar Road (MR208), the horizontal curve appears tight to suit the 50km/h sign posted speed limit. During the site inspection, the auditors observed that the westbound alignment approaching the bridge provides chevron alignment marker signs (CAMS) however, for the eastbound alignment, it was identified there are no CAMS present to provide sufficient delineation through this area, with only an intersection directional sign evident. This in combination with a lack of delineation (i.e. faded line marking, few guideposts and no RRPM's) may lead to an approaching eastbound vehicle not observing the change in direction of the road alignment. The likelihood of this risk may increase at night and / or during adverse weather conditions. This may lead to a vehicle becoming errant and striking objects within the clear zone, or striking an oncoming westbound vehicle. This may lead to serious injury to occupants of a vehicle/s.	 Eastbound  	**Likeli-hood** Improbable **Consequence** Minor **Risk Level** Low	

CAR No	Location Category	Description of Risk to Road Safety	Photographs/ Plans / Drawing No	Risk Assessment	Client Response
			Westbound  		

CAR No	Location Category	Description of Risk to Road Safety	Photographs/ Plans / Drawing No	Risk Assessment	Client Response
8.	**Barigan Road** **Northbound / Southbound** **Road alignment and cross section** **And** **Road pavement**	Barigan Road is an unsealed road, with narrow lane widths and no shoulder. Additionally, the auditors did not observe a sign posted speed limit along Barigan Road within the vicinity of the intersection with Wollar Road (MR208) – Note 50km/h sign posted speed limit northbound approaching the intersection with Wollar Road (MR208). Narrow carriageway widths may create lane position issues for passing drivers, in particular heavy vehicles accessing Barigan Road. Vehicles may not have sufficient space to pull over into the verge to allow a passing heavy vehicle in some locations. Additionally, the unsealed pavement surface may increase the risk of vehicles becoming errant. The likelihood of these risks may increase during adverse weather conditions, at night, an during peak traffic periods. This may result in vehicle crashes and result in serious injury to occupants of a vehicle/s. Note – Barigan Road was not signposted with a speed limit within the vicinity of the	 	**Likeli-hood** Occasional **Consequence** Serious **Risk Level** High	

CAR No	Location Category	Description of Risk to Road Safety	Photographs/ Plans / Drawing No	Risk Assessment	Client Response
		intersection with Wollar Road (MR208) at the time of the site inspection. The lack of signposted speed limit may increase the likelihood of drivers traveling at speeds in excess of the roads design speed, and increase the risk of a vehicle becoming errant.			

Appendix A - Road Safety Audit Categories

Road safety audit practices

Transport for NSW

INFORMATION SHEET: **NO: L5**

Road safety audit categories

Categories have been set up to assist in the management of corrective actions, and monitoring of trends in identified risks in road safety.

Category	Examples
Access impacts	Property, developments, traffic generators, rest areas, emergency vehicles, service vehicles, maintenance, vehicle breakdowns, etc.
Auxiliary lanes	Overtaking lanes, passing lanes, tapers, merges, etc.
Bridge structures	Road bridge, pedestrian bridge, rail bridge, etc.
Bus infrastructure	Bus lanes, bus facilities, bus stops, etc.
Cyclist infrastructure	Cycleways, on-road facilities, off-road cycle facilities, cycle routes, etc.
Delineation	Guide posts, pavement markings, reflectors, warning signs, etc.
Drainage	Ponding, aquaplaning, etc.
Heavy vehicle infrastructure	Inspection bays, facilities, provisions, routes, etc.
Intersections	Roundabouts, cross intersections, T-junctions, etc.
Landscaping	Shrubs, trees, etc.
Lighting	Street lighting, tunnel lighting, etc.
Miscellaneous	Matters not covered by categories listed.
Network effects	Road function, traffic composition, traffic volume, traffic characteristics, route choice, impact of continuity with the existing network, etc.
Special road users infrastructure	Trains, ferries, trams, equestrian, stock, etc.

Category	Examples
Pedestrian infrastructure	Pathways, pedestrian crossings, pedestrian fencing, etc.
Road alignment and cross section	Sight distance, visibility, readability by drivers, glare, widths, shoulders, crossfalls, batter slopes, drains, etc.
Road pavement	Pavement defects, skid resistance, ponding, loose stones/material, etc.
Road users	Behaviour, practices, travel patterns, interaction between different road users, etc.
Roadside activities	Roadside advertising, roadside designs, vending, etc.
Roadside hazards	Clear zones, utility poles, culverts, bridge structures, trees, etc.
Safety barriers	Concrete, guardrail, wire rope safety barriers, crash cushions, etc.
Speed zoning	Speed limits, speed zones, design speed, school zones, etc.
Traffic management and operations	Staging of works, temporary traffic control, detours, peak tidal flows, clearways, parking, etc.
Traffic management devices	Threshold treatments, road humps, kerb extensions, slow points, etc.
Traffic signals	Signal phasing, bus signals, bicycle signals, pedestrian signals, etc.
Traffic signs	Regulatory signs, warning signs, guide signs, etc.
Tunnel structures	Road tunnels, pedestrian tunnels, cycle tunnels, etc.

Appendix B - Other Observations

Below are general auditor team observations of potential road safety audit items that may be outside the scope of works, excluded from the audit findings (refer Section 2.3 Exclusions) or may require additional information linked to the observations below to determine if a road safety issue should be raised by the audit team.

These observations are not linked to the audit findings within the RSA report.

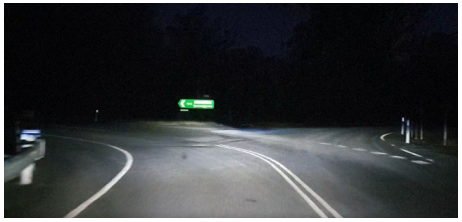
Item	Location Category	Description of Observation	Photographs/ Plans / Drawing No	Client Response
1.	**Barigan Road, approaching the intersection of Wollar Road (MR208)** **Northbound** **Traffic signs**	The auditors observed the Give Way sign on Barigan Road, approaching the intersection with Wollar Road (MR208) appears low. Refer AS1742.2, C2.3.4 Height rural – notes “the height of the sign should not normally be installed less than 1.5m above the nearest edge of the travelled way”. The auditors observed the sign has been placed 1m above the nearest edge of the road carriageway.	 	

2.	**Intersection of Wollar Road (MR208) and Barigan Road** **Eastbound / Westbound** **Road alignment and cross section** **And** **Cyclist infrastructure**	Along Wollar Road (MR208) between the western site extents (north of the bridge) and 65m east of the intersection with Barigan Road, the auditors observed a narrow shoulder (0.5m). Along Wollar Road (MR208) between 65m east of the intersection with Barigan Road and east to the site extents, the auditors observed a no shoulder along the edge of the travel lane. This narrow shoulder width does not provide sufficient room for an on-road cyclist to be passed by a vehicle in the same travel direction. Note – The auditors observed the site is a semi-rural environment, on the edge of the town of Wollar, with a low AADT at the site location, and low signposted speed limit (50km/h). This may result in a very low potential demand for on-road cyclists. The auditors did not observe cyclists within the vicinity during the site inspection.	 	

3.	**Wollar Road (MR208) and Barigan Road** **Eastbound / Westbound** **Road users**	On Wollar Road (MR208) and Barigan Road, the auditors observed during the site inspection that there is no existing available space within the road shoulder or verge suitable for a bus to pick up and drop off passengers. This includes storage and access for passengers. Note – The auditors observed the "School bus route" sign located within the eastbound carriageway, approximately 70m east of the intersection of Wollar Road (MR208) and Barigan Road. Note – There are no existing signposted bus stop locations within the audit subject location.		

4.	**Intersection of Wollar Road (MR208) and Barigan Road** **Eastbound / Westbound** **Road alignment and cross section** **And** **Road users**	The auditors observed during the site inspection the sight lines of drivers on Wollar Road (MR208) in both directions approaching the intersection with Barigan Road, are obscured due to the existing trees on the inside of the horizontal curve. Overside vehicles may approaching the bridge, north of the intersection, may be obscured to the view of oncoming vehicles in both directions. This may lead to approaching vehicles not being able to pass an oversized vehicle on the bridge and / or pull over into a safe location off the road carriageway to allow the oversized vehicle to pass. This may cause driver frustration and / or lead to vehicle damage.	Westbound  Eastbound  	

5.	**Wollar Road (MR208) and Barigan Road** **Eastbound / Westbound** **Delineation**	The auditors observed a lack of delineators on the road pavement within the auditable site location (i.e. RRPM's), along with a lack of delineators on top of the bridge safety barriers. This may create readability issues for drivers, particularly approaching the horizontal curve near the intersection of Wollar Road (MR208) and Barigan Road. The auditors observed the location has a combination of a low signposted speed limit (50km/h), is located within the vicinity of the town of Wollar, contains a low AADT, a limited amount of traffic during the audit site inspection.	 	

6.	**Wollar Road (MR208) at Fitzpatrick Bridge** **Eastbound / Westbound**	Fitzpatrick bridge contains one travel lane in each direction, with guard rail along the edge of the bridge deck. Note – The RMS advice letter (refer supporting documents) mentioned the RSA is to include "An assessment, including a road safety audit, of the existing Wollar Road (MR208) and Barrigan Road intersection. Particularly, an assessment of the current geometry of the intersection, including the narrow single lane bridge in Wollar Road on approach to the intersection, and its ability to safely accommodate increased traffic volumes." During the site inspection, the auditors observed the Fitzpatrick bridge contained one travel lane in each direction (two lanes), in lieu of the single lane bridge described in the advice letter.	 	

Email correspondence with TfNSW and MWRC

From:	Andrew Kearins
To:	Robbie Williamson; David Webster
Cc:	Derek Powell; Development Western
Subject:	Re: Wollar Solar Farm - Wollar Rd / Barigan Rd intersection RSA
Date:	Monday, 13 July 2020 5:20:37 PM

Robbie

I can confirm MWRC is satisfied with the intersection as is given that it is in a 50km/hr zone and trucks are approaching from Wollar.

Thanks
Andrew Kearins

Manager Works MWRC

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From: Robbie Williamson <robbie.williamson@bjceaustralia.com>
Sent: Friday, July 10, 2020 6:10:54 PM
To: Andrew Kearins <Andrew.Kearins@midwestern.nsw.gov.au>; David Webster <David.Webster@midwestern.nsw.gov.au>
Cc: Derek Powell <derek.powell@bjceaustralia.com>; Development Western <development.western@rms.nsw.gov.au>
Subject: RE: Wollar Solar Farm - Wollar Rd / Barigan Rd intersection RSA

Hi Andrew and David

DPIE have provided now feedback on the TMP and we are working on addressing their comments.

The TMP states that no BAL/BAR treatment is required on the Wollar Road / Barigan Road, given that:

- The bridge is two lanes rather than one lane
- The bridge is within a 50km/h zone
- The findings and risk levels described in the RSA do not require a BAL/BAR treatment to address them

I've included the email chain relating to previous discussions on this below.

Can you confirm with that MWRC do not require a BAL/BAR treatment on the Wollar Road / Barigan Road intersection?

A quick response on this would be much appreciated in order to close out this point with the Department as soon as possible.

Best regards

Robbie

Project Manager

Beijing Jingneng Clean Energy (Australia)
Suite 3, Level 21, 1 York Street, Sydney NSW 2000 Australia
Phone: 02 8066 6032
Mobile: 0499 770 768
Email: robbie.williamson@bjceaustralia.com
www.bjceaustralia.com

From: Andrew McIntyre <Andrew.McIntyre@transport.nsw.gov.au>
Sent: Tuesday, 26 May 2020 9:44 PM
To: Robbie Williamson <robbie.williamson@bjceaustralia.com>; David.Webster@midwestern.nsw.gov.au
Cc: Andrew.Kearins@midwestern.nsw.gov.au; Derek Powell <derek.powell@bjceaustralia.com>; Peter Zhang <peter.zhang@bjceaustralia.com>; Development Western <development.western@rms.nsw.gov.au>; Angela Stewart <Angela.STEWART@transport.nsw.gov.au>
Subject: RE: Wollar Solar Farm - Wollar Rd / Barigan Rd intersection RSA

Dear Robbie

Thanks for your time this afternoon.

As discussed, TfNSW notes Barigan Road, for the length the haulage route to the Solar Farm, will be upgraded to a 7m sealed formation. TfNSW further notes the other risks identified are able to be rectified as part of the Barigan Road upgrade suite of works.

TfNSW is satisfied that the risks identified in the Road Safety Audit can be ameliorated as part of the Barigan Road upgrade.

Regards

Andrew McIntyre
Manager Land Use Assessment
Community and Place
Regional and Outer Metropolitan Division
Transport for NSW
T 02 6861 1453 | **F** 02 6861 1414 | **M** 0417 431 982
Level 1 51-55 Currajong Street Parkes NSW 2870

Every journey matters

From: Robbie Williamson [mailto:robbie.williamson@bjceaustralia.com]
Sent: Friday, 22 May 2020 9:34 AM
To: Andrew McIntyre <Andrew.McIntyre@transport.nsw.gov.au>; David.Webster@midwestern.nsw.gov.au
Cc: Andrew.Kearins@midwestern.nsw.gov.au; Derek Powell <derek.powell@bjceaustralia.com>; Peter Zhang <peter.zhang@bjceaustralia.com>
Subject: Wollar Solar Farm - Wollar Rd / Barigan Rd intersection RSA

Hi Andrew and David

Please find attached the draft report from the Road Safety Audit that was undertaken by ACOR on the Wollar Road / Barigan Road intersection and adjacent bridge crossing (as requested by RMS during the public exhibition phase of the project).

I've included both RMS and Mid-Western Regional Council in this email as I understand Wollar Road is an RMS regional road that council have responsibility for and Barigan Road is a council road (so there will need to be some input from both parties on the findings).

I'll set up a teleconference invitation for next week to discuss this further.

Best regards
Robbie

Project Manager

Beijing Jingneng Clean Energy (Australia)
Suite 3, Level 21, 1 York Street, Sydney NSW 2000 Australia
Phone: 02 8066 6032
Mobile: 0499 770 768
Email: robbie.williamson@bjceaustralia.com
www.bjceaustralia.com

Roads and Maritime Services

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From:	Andrew McIntyre
To:	Robbie Williamson; David.Webster@midwestern.nsw.gov.au
Cc:	Andrew.Kearins@midwestern.nsw.gov.au; Derek Powell; Peter Zhang; Development Western; Angela Stewart
Subject:	RE: Wollar Solar Farm - Wollar Rd / Barigan Rd intersection RSA
Date:	Tuesday, 26 May 2020 9:44:49 PM
Attachments:	NSW200791-DOC-RSA-EC-Draft_Rev_B.PDF

Dear Robbie

Thanks for your time this afternoon.

As discussed, TfNSW notes Barigan Road, for the length the haulage route to the Solar Farm, will be upgraded to a 7m sealed formation. TfNSW further notes the other risks identified are able to be rectified as part of the Barigan Road upgrade suite of works.

TfNSW is satisfied that the risks identified in the Road Safety Audit can be ameliorated as part of the Barigan Road upgrade.

Regards

Andrew McIntyre
Manager Land Use Assessment
Community and Place
Regional and Outer Metropolitan Division
Transport for NSW
[redacted]
Level 1 51-55 Currajong Street Parkes NSW 2870

Every journey matters

From: Robbie Williamson [mailto:robbie.williamson@bjceaustralia.com]
Sent: Friday, 22 May 2020 9:34 AM
To: Andrew McIntyre <Andrew.McIntyre@transport.nsw.gov.au>; David.Webster@midwestern.nsw.gov.au
Cc: Andrew.Kearins@midwestern.nsw.gov.au; Derek Powell <derek.powell@bjceaustralia.com>; Peter Zhang <peter.zhang@bjceaustralia.com>
Subject: Wollar Solar Farm - Wollar Rd / Barigan Rd intersection RSA

Hi Andrew and David

Please find attached the draft report from the Road Safety Audit that was undertaken by ACOR on the Wollar Road / Barigan Road intersection and adjacent bridge crossing (as requested by

RMS during the public exhibition phase of the project).

I've included both RMS and Mid-Western Regional Council in this email as I understand Wollar Road is an RMS regional road that council have responsibility for and Barigan Road is a council road (so there will need to be some input from both parties on the findings).

I'll set up a teleconference invitation for next week to discuss this further.

Best regards
Robbie

Project Manager

Beijing Jingneng Clean Energy (Australia)

Suite 3, Level 21, 1 York Street, Sydney NSW 2000 Australia

[redacted]

Email: robbie.williamson@bjceaustralia.com

www.bjceaustralia.com

APPENDIX I MWRC CONSULTATION REGARDING VEHICLE MOVEMENTS

From: Andrew Kearins
To: Robbie Williamson
Cc: Rob Saghafi; Nick Graham-Higgs
Subject: RE: Wollar TMP - update to Barigan Road works vehicle movements
Date: Tuesday, 4 August 2020 2:27:17 PM

Robbie

As discussed Council agrees with your changes below and can work efficiently using those figures.

Thanks

Andrew

From: Robbie Williamson <robbie.williamson@bjceaustralia.com>
Sent: Tuesday, 4 August 2020 12:29 PM
To: Andrew Kearins <Andrew.Kearins@midwestern.nsw.gov.au>
Cc: Rob Saghafi <Rob.Saghafi@midwestern.nsw.gov.au>; Nick Graham-Higgs <nick.gh@nghconsulting.com.au>
Subject: Wollar TMP - update to Barigan Road works vehicle movements

Hi Andrew

Following recent discussion with Council in relation to the vehicle movements required for efficient contraction of the Barigan Road Upgrades, we have requested an update to Section 4.3.2 of the Wollar Solar Farm TMP (currently being reviewed by DPIE).

When we previously described the vehicle moments for the upgrade works we stated that there would be 'worst case' of 18.75 vehicle movements however we've now identified that this would actually be the average number of movements (as there will be some days Council require up to 30 heavy vehicle movements [5x vehicles doing 6 deliveries each] and others where you have zero).

As such we are proposing to update Section 4.3.2 of the TMP as shown below:

During Stage 1 of the works, pertaining to the upgrade of Barigan Road, there will be a workforce of approximately twenty people. Approximately ten heavy movements will be required to deliver and pick up the road construction equipment. Rock from a local quarry (such as a quarry at Ulan) will be delivered to the upgrades site to reinforce the pavement by semi-trailer or truck and dog configurations. Approximately 9600 movements of heavy vehicles are anticipated for these works, but this figure will be updated in the Haulage Plan referred to in section 4.2. The 900 movements will be spread across an approximate eight to twelve week upgrade period, meaning an average ~~worst case~~ heavy vehicle movement of 18.75 movements per day based on a six day week, assuming an 8 week construction period. Rock will be sourced from a local quarry , reducing the impact of these movements compared to the delivery of solar panels by the EPC Contactor in Stage 3 of the works (construction of substation and solar array) which will require deliveries originating further away from the site. Operational impacts are discussed in section 8.1.

Can you please confirm that this update is OK and that Council are supportive of this update to the Wollar TMP?

Best regards
Robbie

Project Manager

Beijing Jingneng Clean Energy (Australia)

Suite 3, Level 21, 1 York Street, Sydney NSW 2000 Australia

Phone: 02 8066 6032

Mobile: 0499 770 768

Email: robbie.williamson@bjceaustralia.com

www.bjceaustralia.com

APPENDIX J CORRESPONDANCE WITH OGDEN'S COACHES AND ARTC REGARDING PROPOSED DELIVERY ROUTES

An email was then sent on the 14th July 2020 (see below) to both ARTC and Ogden's Coaches providing detailed information around the planned routes and vehicle numbers and giving them the opportunity to identify any potential impacts on their operation. A subsequent email was sent to both companies on 20/07/2020 providing contact information and the complaints procedure for the project. To date no further response has been received from either ARTC or Ogden's Coaches.

From: Ainslee Roser
To: mudgee@ogdenscoaches.com.au
Subject: Wollar Solar Farm project contact information
Date: Monday, 20 July 2020 10:04:00 AM
Attachments: image001.png

Good morning,

As a follow up to my email, please find linked below contact details for the project, as well as the complaints procedure:
https://www.wollarsolarfarm.com.au/contact-us/

Wollar Solar Development will provide updates on the different stages of the project as they are due to commence.

Regards

AINSLEE ROSER
ENVIRONMENTAL CONSULTANT
B Env Sc & Mgt
T. 02 4917 3954 **M.** 0435 154 176
E. ainslee.r@nghconsulting.com.au
Unit 2, 54 Hudson St
Hamilton NSW 2303

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From: Ainslee Roser
Sent: Tuesday, 14 July 2020 10:37 AM
To: mudgee@ogdenscoaches.com.au
Subject: Feedback required for Wollar Solar Farm

Good morning,

NGH are preparing a traffic management plan (TMP) for the Wollar Solar Farm development proposed 7 kilometres south of Wollar Village.

For this TMP we would appreciate your feedback on any issues you may see that could impact the bus routes you operate.

The development will utilise the following roads:
All over-dimensional and AV/B-Double vehicles associated with the development will travel to and from the site via:
a) Golden Highway, Ulan Road, Ulan-Wollar Road, Barigan Street, Maitland Street, Wollar Road and Barigan Road; and/or
b) Castlereagh Highway, Ulan Road, Ulan-Wollar Road, Barigan Street, Maitland Street, Wollar Road and Barigan Road.

All medium and/or heavy rigid vehicles and shuttle buses associated with the development will travel to and from the site via:
c) Cope Road, Ulan Road, Ulan-Wollar Road, Barigan Street, Maitland Street, Wollar Road and Barigan Road; and/or
d) Castlereagh Highway, Ulan Road, Wollar Road, Phillip Street, Maitland Street, Wollar Road and Barigan Road.

Below are the expected number of vehicle movements for construction:

Mode	Vehicle movements per day
Shuttle Bus (25 seats)	40
Light Vehicle	60
MRV/HRV	46
AV/B-Double	26
Total	**172**

Construction for Stage 1 works are anticipated to begin in the next few weeks with the larger scale works to be undertaken later in the year.

Please advise if you see any negative impacts on bus operations arising from the use of these roads, or if impacts would be negligible.

Regards,

AINSLEE ROSER
ENVIRONMENTAL CONSULTANT
B Env Sc & Mgt
T. 02 4917 3954 **M.** 0435 154 176
E. ainslee.r@nghconsulting.com.au
Unit 2, 54 Hudson St
Hamilton NSW 2303

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WWW.NGHCONSULTING.COM.AU

From: Ainslee Roser
To: "enquiries@artc.com.au"
Subject: Wollar Solar Farm project contact information
Date: Monday, 20 July 2020 10:00:00 AM
Attachments: image001.png

Good morning,

As a follow up to my email, please find linked below contact details for the project, as well as the complaints procedure:
https://www.wollarsolarfarm.com.au/contact-us/

Wollar Solar Development will provide updates on the different stages of the project as they are due to commence.

Regards

AINSLEE ROSER
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T. 02 4917 3954 **M.** 0435 154 176
E. ainslee.r@nghconsulting.com.au
Unit 2, 54 Hudson St
Hamilton NSW 2303

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From: Ainslee Roser
Sent: Friday, 17 July 2020 12:04 PM
To: enquiries@artc.com.au
Subject: Wollar Solar Farm project

Good afternoon,

Could the following please be passed on to the Provisioning Centre responsible for managing the rail corridor at Wollar for their response regarding any potential impacts they see arising from the Wollar Solar Farm Project.

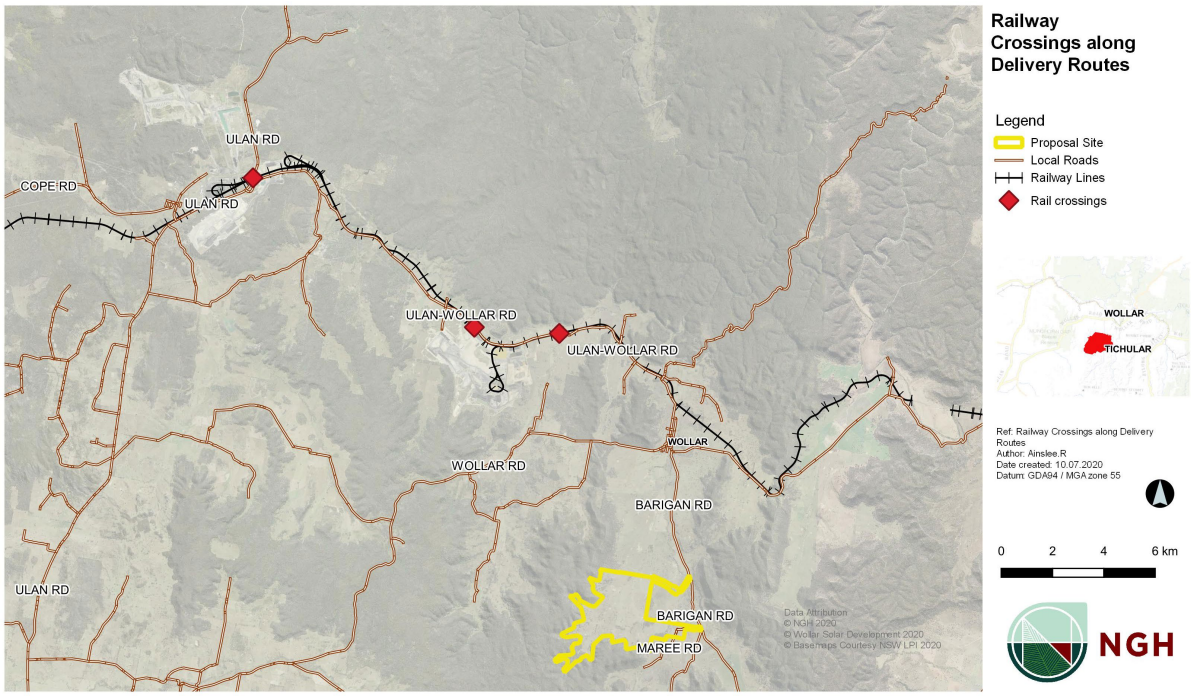
NGH are preparing a traffic management plan (TMP) for the Wollar Solar Farm development proposed 7 kilometres south of Wollar Village.

For this TMP we would appreciate your feedback on any issues you may see that could impact the rail corridors you operate.

The development will utilise the following roads:
All over-dimensional and AV/B-Double vehicles associated with the development will travel to and from the site via:
a) Golden Highway, Ulan Road, Ulan-Wollar Road, Barigan Street, Maitland Street, Wollar Road and Barigan Road; and/or
b) Castlereagh Highway, Ulan Road, Ulan-Wollar Road, Barigan Street, Maitland Street, Wollar Road and Barigan Road.

All medium and/or heavy rigid vehicles and shuttle buses associated with the development will travel to and from the site via:
c) Cope Road, Ulan Road, Ulan-Wollar Road, Barigan Street, Maitland Street, Wollar Road and Barigan Road; and/or
d) Castlereagh Highway, Ulan Road, Wollar Road, Phillip Street, Maitland Street, Wollar Road and Barigan Road.

It is anticipated that construction traffic would cross the rail corridor at the locations shown below:



Below are the expected number of vehicle movements for construction:

Mode	Vehicle movements per day
Shuttle Bus (25 seats)	40
Light Vehicle	60
MRV/HRV	46
AV/B-Double	26
Total	**172**

Construction for Stage 1 works are anticipated to begin in the next few weeks with the larger scale works to be undertaken later in the year.

Please advise if you see any negative impacts on rail operations arising from the use of these roads and crossings, or if impacts would be negligible.

Regards,

AINSLEE ROSER
ENVIRONMENTAL CONSULTANT
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