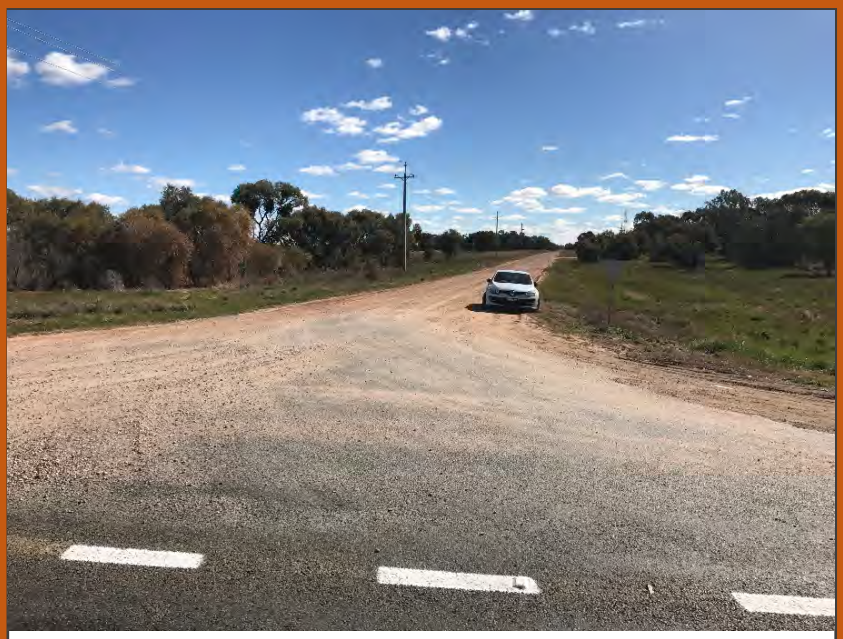

Solar Farm, Coleambally, NSW

Bouygues Construction Pty Ltd

Construction Traffic Management Plan

November 2017

SECA solution

Solar Farm Project, Coleambally NSW

Construction Traffic Management Plan

Author: Sean Morgan

Client: Bouygues Construction Pty Ltd

Issue: Ver04

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2 November 2017

Quality Review and Document History

Version	Date	Description	Prepared By	Checked By
Ver01	4/9/17	Draft	S Morgan	C.Thomas
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Ver04	31/10/17	Final	S Morgan	C Thomas
Ver05	3/11/17	Final	S Morgan	C Thomas

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Contents

1 Introduction

Bouygues Construction Pty Ltd are completing the construction of a new Solar Farm development. The project involves construction, operating and eventually decommissioning a 150 megawatt (MW AC) solar farm to the north of Coleambally in Southern NSW. The proposal consists of the following components:

- Solar arrays consisting of 560,000 solar panels supported by about 75,000 piles driven or screwed into the ground,
- Up to 80 photovoltaic boxes or skids containing inverters and a transformer;
- Onsite cabling;
- One delivery station on site;
- 66 kilovolt (KV) substation;
- Cables and trenches;
- Onsite tracks and parking for construction;
- Operational and maintenance office and staff amenities;
- Perimeter security fence;
- Landscaping around the site as required;
- Construct access across Tubbo irrigation channel from Ercildoune Road; and
- Minor works at the intersection of Ercildoune Road and Kidman Way.

Construction of the site will take approximately 9 to 12 months. The operational life is considered to be 30 years and after 30 years the site will either be decommissioned or reconditioned.

As part of the development consent and prior to work on site a Traffic Management Plan needs to be prepared to the satisfaction of the road authorities (Murrumbidgee Council and the Roads and Maritime Services (RMS)). The busiest period associated with the development with regards to traffic is during construction, with the operational phase of the project only requiring less than 10 staff on site for the majority of the time. Seca Solution have prepared this Construction Traffic Management Plan (CTMP) to ensure traffic issues can be safely and efficiently managed during the construction activities on site.

This CTMP has been developed for the construction activity for the project and the potential decommissioning element for the project, which may occur in 30 years time. The potential decommissioning of the project site will require a similar level of activity, although will probably require less staff and would be completed over a shorter timeframe. The requirements and protocols for the decommission stage of the project will be as per the construction phase, although it is acknowledged these may need to be reviewed and altered in 30 years to suit the road conditions at that time as well as the work requirements.

The site is located within the locality of Coleambally, approximately 65 kms south of Griffith and 175 kms west of Wagga Wagga.

The site is currently arable land.

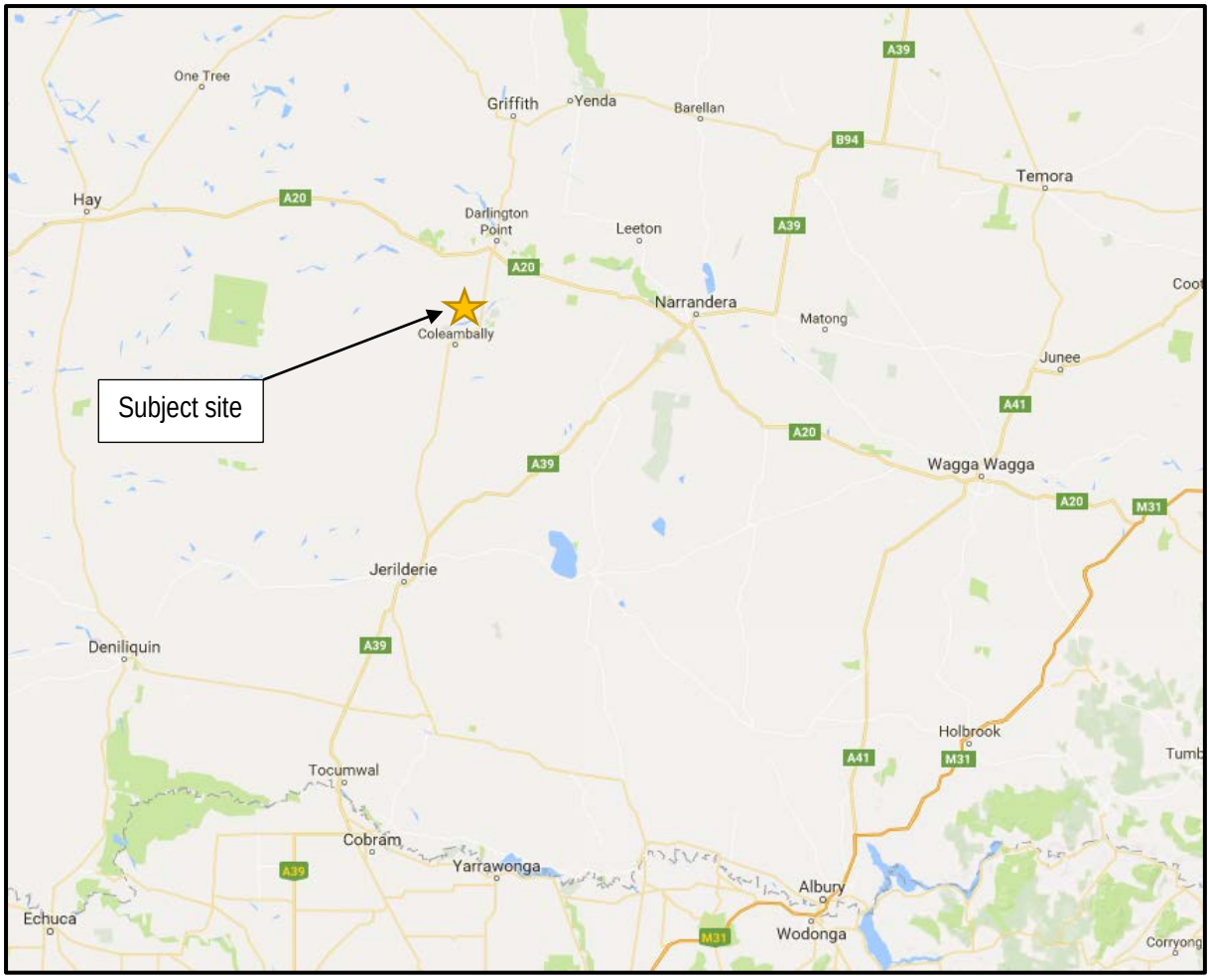


Figure 1 – Site Location within the greater road network

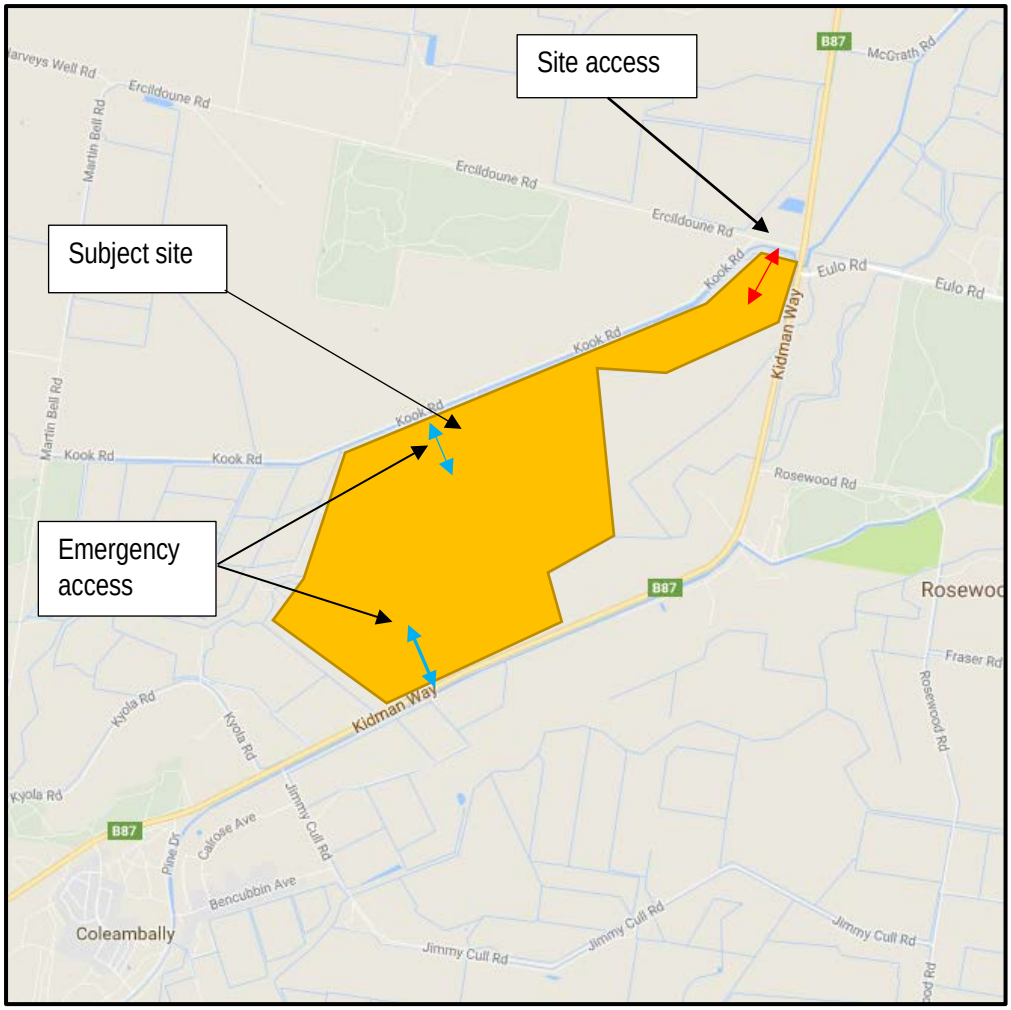


Figure 2 – site location in relation to Kidman Way

The site has road frontage to both the Kidman Way and Ercildoune Road, however ALL vehicle access will be via Ercildoune Road only with no direct vehicle access to the Kidman Way.

1.1 Existing Road Network and Local Characteristics

Kidman Way

The Kidman Way runs to the south and east of the site and forms part of the reginal road network. It provides a two lane two-way travel for much of its length and connects to Griffith to the north and to the Newell Highway to the south through to Jerilderie and beyond to the south. In the locality of the subject site the posted speed limit is 100 km/h and narrow sealed shoulders are provided along the length of the road to both sides.

The Kidman Way provides for local access as well as regional traffic movements and caters for AB-triple heavy goods vehicles (source: RMS Road Train Network Map v1.0).

The Kidman Way connects with Ercildoune Road via a simple T intersection controlled intersection, with no turn lanes on the Kidman Way, reflective of the very low traffic demands along both of these roads.

Ercildoune Road

Ercildoune Road is a local road running to the north of the project site and provides a single lane of travel in both directions. There is no change to the speed limit posted on this road and it therefore operates at 100 km/h. It provides a non-sealed road standard with a width of approximately 8 metres and allows for Modular B-triple road train combinations. It provides for local access to large rural landholdings and allows for through road connection.

1.2 Traffic Volumes and Road Operation

Traffic volumes in the immediate vicinity of the subject site are very low. Traffic data provided on the RMS web site shows that in 2017 the traffic flow on the Newell Highway to the south of the site was around 2,000 vehicles per day two-way. Traffic data from 2017 indicates that the directional split of traffic was reasonably balanced. No current data is available along the Kidman Way, although to the north just to the south of the Sturt Highway the traffic flow was 1,000 in 2011 with approximately 25% of the vehicle movements being heavy vehicles. Based upon minimal development in this area since 2011 it is considered that the current traffic movements would be similar to those from 2011.

The traffic flows on Ercildoune Road are much lower and considered to be less than 100 vehicles per day, based upon site observations.

The road network in the vicinity of the subject site currently works well with no delays and congestion. The key intersection impacted upon by the development is the Kidman Way and Ercildoune Road which operates very well and has good visibility on all approaches to assist with driver awareness for the intersection and the operational controls.

Photo 1 – View to right for drivers exiting Ercildoune Road onto the Kidman Way

Photo 2 – View to left for drivers exiting Ercildoune Road onto the Kidman Way

Photo 3 – Typical cross section for the Kidman Way at Ercildoune Road

Photo 4 – Typical cross section for the Ercildoune Road

2 Construction Activities

The construction activities will be over a number of stages and is expected to take between 9 and 12 months to construct. The order of work is:

- Establish site access on Ercildoune Road;
- Possible relocation of drainage channel;
- Construction of access bridge over Tubbo irrigation channel;
- Remove existing structures on the site;
- Remove internal fences as required for the project;
- Upgrade intersection of Ercildoune Road and Kidman Way including partial sealing of Ercildoune Road from the Kidman Way for approximately 40 metres to reduce material transport onto the Kidman Way;
- Establish site compound area and laydown area;
- Construct internal access tracks;
- Installation of environmental controls;
- Installation of steel post foundation systems for the solar panels;
- Installation of underground cabling, photovoltaic boxes or skids and delivery station and connecting communications equipment;
- Constructing the 132 kV substation and connecting to existing transmission line
- Landscaping work as required

The project work does not require any earthworks to be completed.

The project does not require any concrete footings to be provided for the solar panel construction.

A site office and compound will be established on site for the duration of the works.

All staff vehicles will be able to park within the site adjacent to the site office with no external parking demands. The car park area will allow for up to 40 vehicles to park within this compound.

Equipment used on site is minimal and would include some earth moving plant for gravel roads and site compound set up, on site trucks and a number of cranes for installing the panels. There is no requirement for large over-sized plant to access the site.

2.1 Timing

The construction of the solar farm is expected to commence in January 2018 and be completed between July 2018 and September 2018.

The first stage of the associated works requires the road upgrade work to be completed prior to commencement of construction activities on site. The road upgrade works on Kidman Way are to be completed before Christmas 2017.

2.2 Working Hours

Construction hours are in accordance with the *Interim Construction Noise Guidelines* (DECC 2009) (ICNG) with standard construction hours being

- 7:00am and 6:00pm Monday to Friday
- 8.00 AM to 1.00 PM on a Saturday
- No construction work is to be carried out on a Sunday or public holiday.

No construction work, upgrading or decommissioning activities will be undertaken outside of these hours without approval by the secretary, with the exception of:

- The delivery of material as requested by the NSW Police Force to other authorities for safety reasons; or
- Emergency work to avoid the loss of life, property and / or material harm to the environment.

2.3 Construction staff numbers

Peak demand levels for the construction work will vary with a peak of 300 people for a 4-month duration and a lower level outside of this peak period. Based on similar projects completed by the project team, staff will be shuttled in and out of the site by a mixture of mini-buses and small coaches. The parking on site is limited to 40 spaces which will allow for some staff, being local or contract management staff to drive to site individually or in shared vehicles.

The majority of the staff will be located in Griffith and will commute between the site and Griffith, a trip of approximately 1 hour. Staff will be told that they cannot access the site via private vehicles, with 40 spaces on site allocated for some specific staff and local users. The majority of the construction staff wil travel by coaches and mini-buses. Typically these mini-buses are Toyota Coasters allowing for up to 20 passengers – with 260 staff at the peak period using these mini-buses there will be some 13 buses accessing the site and parking on site. These buses do not park within the compound and once the staff have signed on for the day the buses then transport them across the site to their area of work, due to the overall size of the site.

All construction light vehicles will be able to park on site within the office compound area as required.

2.4 Heavy vehicle requirements

The level of heavy vehicles accessing the site will vary throughout the project timeframe. At the beginning of the project for the first 2 months of site work there will be less than 10 trucks per day entering (and exiting) the site. During the peak activities when the solar panels are being delivered to the site the truck numbers will increase to a maximum of 26 in (and out) per day, for 6-8 weeks. The truck numbers then decrease to zero the last 3 months of the project. It is noted that these values are well within the approved limit for the project of 50 trucks inbound and outbound per day.

The solar panels are expected to be all delivered from the Port of Melbourne (or Sydney, dependent upon the end supplier). Other specialist equipment is generally sourced from the Greater Melbourne area whilst consumables such as concrete and general material supplies will be local from the Griffith area.

The project will require minimal specialist machinery to be located on site i.e. small pilling plant and excavators for the duration of the project. There will be a requirement for a small crane towards the end of the project to allow for movement of the heavier equipment installed towards the end of the project.

All of this equipment will be transported to site and then remain on site until they are not required. They will not be transported in and out of the site each day.

Typical truck deliveries

Truck deliveries will typically be as described below.

Early Works

Gravel and Seal - 30 tonne load per 19 metre truck and dog

Additional deliveries of plant and machinery

Main Works

Piles – 18 tonne load per Taughtliner

Torque Tubes – 16 tonne load per flatbed

Trackers – 8 tonne load per 18 metre Tautliner

Modules – 25 tonne load per 26 m B double / Modules – 17 tonne load per 18 metre Tautliner

Cables – 18 tonne load per flatbed

Additional deliveries of plant and machinery

3 Traffic Management Assessment

The proposed traffic management measures allow for all access off Ercildoune Road only. The access to be used will be for the construction traffic movements as well as the future on-site operational demands. This access is to be provided in accordance with the requirements for the site operations and take into account the specific design requirements of Murrumbidgee Council.

All truck and light vehicle movements in and out of the site are as shown in Figure 3-1 below.

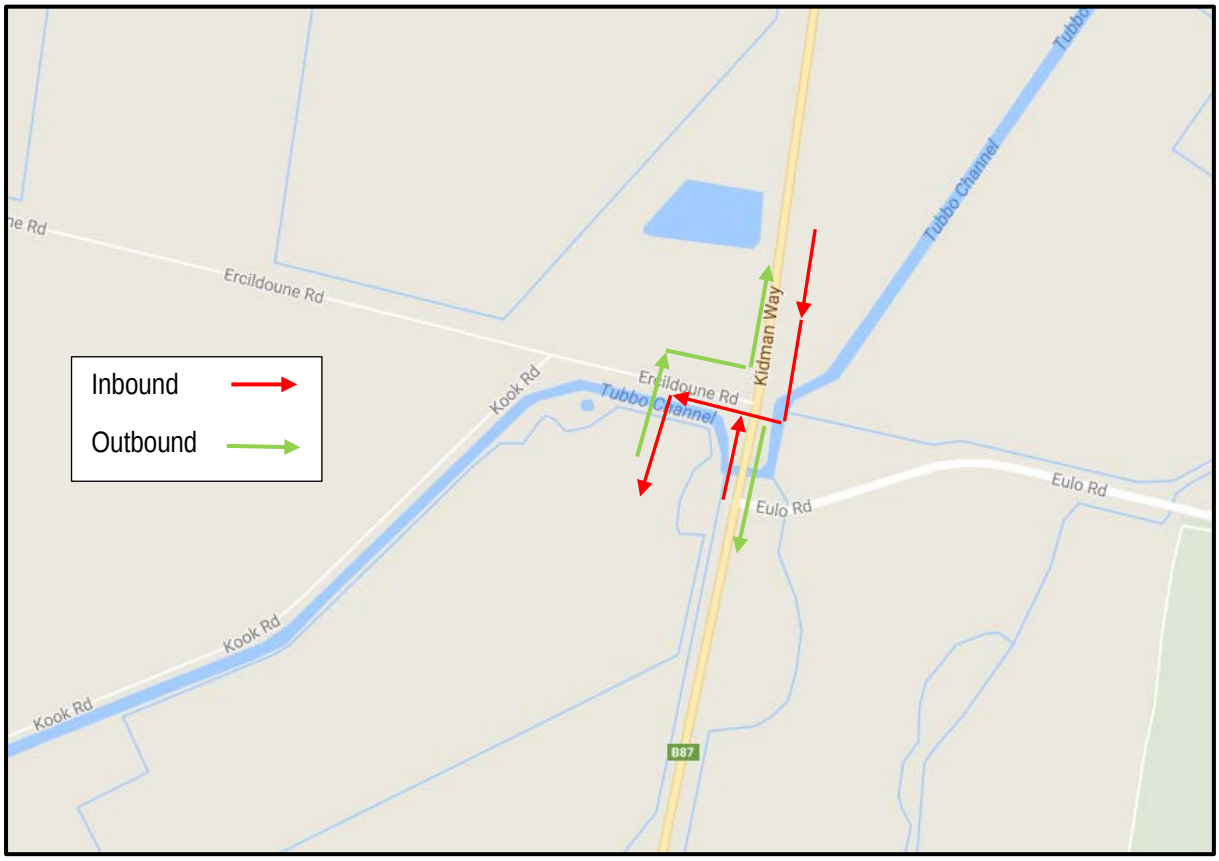


Figure 3-1– Access routes to and from the subject site

An emergency access is provided direct off Kidman Way as well as off Kook Road. These are shown in the General Layout Plan in Appendix E.

The project will require the delivery of the solar panels and other specialist equipment from Melbourne (or Sydney) with the access route via:

- Melbourne metropolitan regional road network;
- Hume Highway to Seymour;
- Goulburn Valley Freeway/ Highway Murray Valley Highway to Newell Highway;
- Newell Highway to Kidman Way; and
- Kidman Way to Ercildoune Road to site.

The solar panels may be delivered to the Port of Sydney which will require a different access route. This route would be via:

- Hume Highway
- Sturt Highway
- Kidman Way

These roads all form part of the metropolitan regional road network or rural regional road network and all currently carry heavy vehicle movements including B-double access for the full length of the routes. These routes will be documented as the Haulage Route for all delivery vehicles to enter and exit the site for the vehicles associated with haulage of the solar panels for the project site.

All deliveries for the project will be via 19 metres semi-trailers or B-double combinations (26 metres in length maximum).

The access routes for the site are all along approved B double routes and as such the use of B double trucks for deliveries to the site are considered appropriate.

Other material may be sourced locally and from Griffith and would utilise the local regional road network accordingly. For the specialist material for the solar panels there will be 2,000 standard containers delivered to the site from the port at Melbourne. Other material delivery will require gravel and sand for the access roads and these will require approximately 1,500 trucks to access the site. These movements will be spread out over the duration of the project construction work and would generate less than 25 inbound and 25 outbound truck movements per day.

For the construction work, the staffing levels will peak at 300 on site and as part of the project, staff will car pool and use mini buses will be provided to allow for shared trips from shared accommodation to the site from Griffith. There will be 40 vehicles inbound in the morning associated with on-site staff and a similar number departing at the end of the working day.

Delivery vehicles would be required throughout the project period. The travel time between the port (Melbourne or Sydney) and the site for the solar panels is approximately 5 to 8 hours and these deliveries will be spaced out over the construction period, to minimise the impact upon the road network and to reduce the need to store all of the panels on site. Other deliveries will include the metal structures for the solar panel, sand and gravel for the foundations and internal tracks and cabling. There will also be some deliveries of specialist equipment such as photovoltaic boxes or skids and delivery station.

There will be no public vehicles within the work site during the construction works, with a fence provided along the entire site boundary to restrict access. This fence will remain once the project is constructed for security purposes with a locked gate to be provided at the site access off Ercildoune Road.

There will be no pedestrian access to the site for the general public. There are no pedestrian paths or expected demands in this remote rural area so there will be no impacts for pedestrians created by the project works.

The vehicle numbers associated with the construction work are relatively low and it is considered that the movement of vehicles in and out of the site for construction works can safely occur with minimal delays to pedestrians and in a safe manner. No limitation on truck access times is considered appropriate for the project. Given the journey length between the port and the subject site, the vehicles as they are approaching the site will be spread out thereby ensuring the impact is not all occurring at the same time. With unloading of vehicles taking 30 minutes or more, it can be seen that trucks exiting the site will also be spread out.

There is no school within the general locality of the subject site.

The trucks associated with the delivery of the supplies will all travel along the regional road network. There are a number of schools located along these routes, however all have marked school zones and speed limit restrictions as per State guidelines. As these routes are all on the regional road network it can be seen that there are currently existing heavy vehicles on these roads operating safely. It is not considered that the additional truck movements associated with the construction work will have any noticeable impact upon road safety adjacent to these schools.

There is no requirement to divert traffic as part of this construction work.

There will be no impact upon public transport services with no diversions required. There are no bus stops impacted upon by the proposal. The area is not serviced by a train and is reliant upon a coach link with infrequent operation.

There will be minimal impact for emergency vehicles, heavy vehicles, cyclists with no diversions required.

There will be minimal impact upon any other development within the locality of the site.

There will be minimal impact upon adjoining Council areas. Traffic routes in and out of the locality will be along the arterial road network which will experience minimal impacts due to the works.

There are no residential dwellings in the immediate locality of the site that will be impacted upon by the project and construction work.

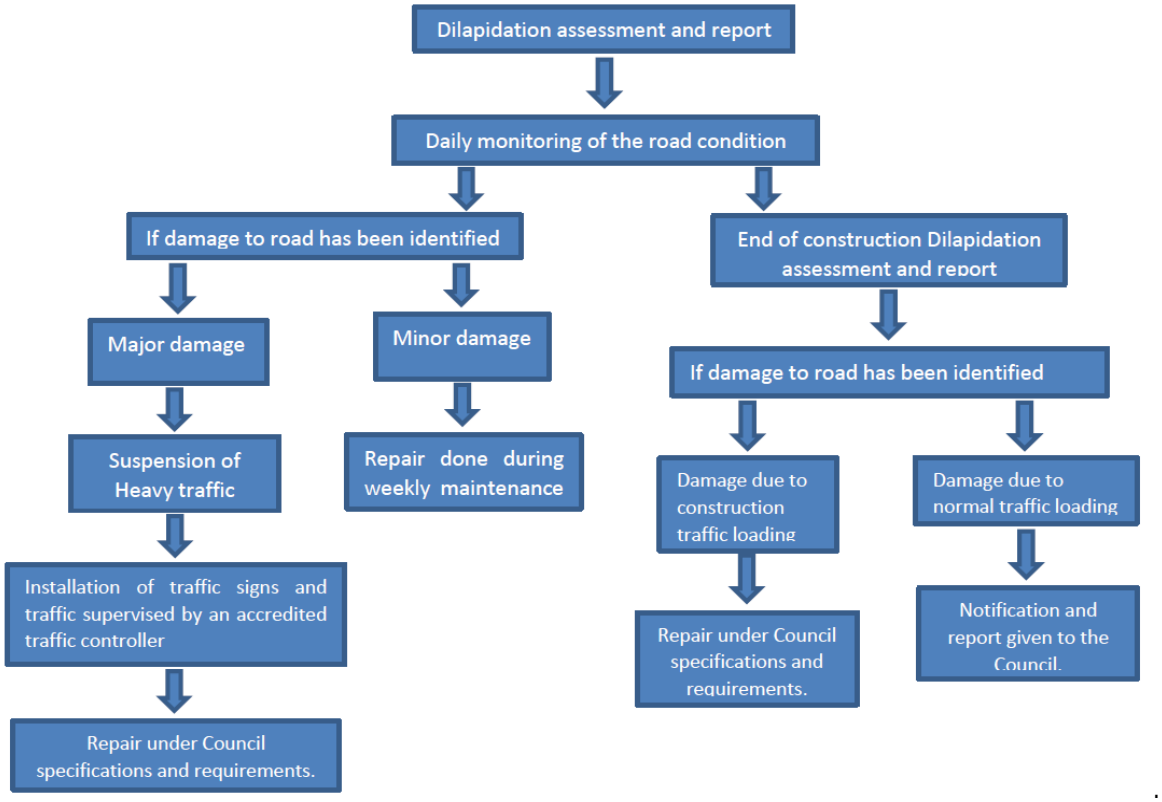
The intersection of the Kidman Way and Ercildoune Road has been identified for upgrade. The works involve:

- Providing a basic left turn and right turn treatment for the side road movements. This will allow for increased pavement area and cater for the swept path requirements for the delivery vehicles;
- Shoulder widening on the Kidman Way southbound to cater for trucks turning and through traffic movements, based upon Austroads Guidelines

The plan for the proposed road upgrade works are shown below.

BYCA will put in place the protocol for both undertaking dilapidation surveys and making any necessary repairs following construction to Ercildoune Road. The dilapidation surveys will assess the existing condition of Ercildoune Road prior to construction and the repair of Ercildoune Road should it be identified in the dilapidation surveys to have been damaged during construction.

With regards to any emergency repairs required, BYCA would contact the relevant authorities and will ensure the road is safe. Repairs will be made in accordance with the relevant authority standard.



Construction vehicle movement on roads and associated roadworks may lead to dust generation. A water truck will be used to as dust suppression to minimise the production of dust, with the amount of water spreading adjusted accordingly to reflect the conditions. Additionally, any significant deposits of dirt and other construction materials will be promptly removed from public roadways.

This Traffic Management Plan (TMP) must be in place and operational prior to commencement of construction work. One hardcopy of the TMP and associated plans will be maintained by the Project Director (document controlled revision) for the duration of the contract.

The project dedicated Senior Superintendent in conjunction with the Project Director, will ensure that the plan is monitored, reviewed, maintained and updated as necessary and kept up to date during the course of the project.

The Foreman and HSE Coordinator will ensure compliance with the TMP and TCPs at each stage of the works and conduct routine inspections as discussed in this document.

Organisational Chart (Early Works)

Marie CHUET	Project Director		
		Manon MEERSCHAUT	Cost controller
		Edris SAYYADI	Contract Administrator
	Cyrille De BARACE	Technical Manager / Design management	
		Francois Diaz	Design Engineer (EPC)
		Amy EASTHAM	Design Engineer (early works)
		Guillaume PERRIN	HV - GPS
	Damian BRANDON	HSE Senior Coordinator	
		Travis MCCARTHY	HSE coordinator
		Simon NGUYEN	Civil engineer
	Tony WOOD	Senior Superintendant	
		Chris TODD	Foreman
	Sophie LETZELTER	Senior eng - EPC procurement civil	
		Nicolas ROY	Senior Eng - EPC procurement PV
		Gary BRAY	Engineer - HV design and procurement

Daily vehicle movements will be kept by site security at the entry gate and BYCA will undertake routine monitoring using site inspection and task observation forms. These records will be maintained for the duration of the project and available for inspection as required.

Post construction, the traffic numbers generated by the project are very low, with a maximum on-site workforce of 10 people. There will not be any need for regular heavy vehicle access to the site once the solar farm is operational.


Ercildoune Road
Tubbo Channel
Kidman Way
Existing edge of seal
Existing edge line
Existing boundary's
Proposed edge of seal
Extent of proposed seal
1 In 10 taper
Proposed approximate entranceway location
Proposed entranceway constructed over Tubbo Channel
Proposed edge of seal
Existing center line
R15.0m
R20.0m
R60.0m
R50.0m
7.0m
3.5m
42.0m
40.0m
164.0m
15.0m
26.0m
30.0m
The following design details have been taken from Austroads Guide to Road Design Part 4A.
Rural Basic Right-turn Treatment (BAR) Section 7.5.1.
1: Design speed of 100km/h.
2: 3.5m Lane widths have been used.
3: Taper lengths calculate to 42m.
4: Formation/carriageway widening is 3m.
5: Storage length is 40m for one 36m design vehicle.
Rural Left-turn Treatment (BAL) Section 8.2.1.
1: Design speed of 100km/h.
2: Lane widths of 3.5m have been used.
3: Taper lengths calculate to 30m.
4: Formation/carriageway widening is 2m.
5: Minimum length of parallel widened shoulder used from Table 8.1 is 25m
Aerial Image sourced from nearmap Website
REVISION
DATE
DESCRIPTION
A 15 March 17 Concept Design
B 23 March 17 Reduce seal area and amend notes
C 3 April 17 A-Double tracking
COLEAMBALLY SOLAR FARM - ACCESS DESIGN
Proposed Intersection Layout Plan
DRAWN: AMC
DATE: 04/03/17
SCALE: 1:1000 @ A3
DWG NO:14552 N1C
TDG
1
G:\TDG PROJECTS\14,000-14,999\14552 Coleambally Solar Farm Access Design\CAD\14552 N1C.dwg

4 Traffic Control Plan

4.1 General

It is proposed to install a Traffic Control Plan (TCP) for the duration of the construction work only. Once the site is established and operational, there will be no requirement for a TCP to be provided.

When (or if) the site becomes decommissioned in 30 years' time after opening, it is considered that the staff and vehicle numbers could be similar to the construction phase and as such the TCP proposed for the construction work will need to be provided.

This TCP has been prepared to meet the requirements of the RTA Traffic Control at Work Sites Manual 2010 Edition. The plan covers the access requirements to the site and the safe passage of vehicles in and out of the subject site during the construction works.

At all times the Roads and Traffic Authority's Traffic Control at Work Sites guidelines must be adhered to. Please refer to the RMS guidelines for traffic control matters not listed in this report.

Note that the RTA has now been renamed the Roads and Maritime Authority (RMS), however the documents described herein have still retained the RTA as the author.

As part of the safety measures for the project, the Traffic Controls Plans will be reviewed with staff on site during construction work to ensure the Traffic Control Plans continue to provide a safe work environment for all staff as well as maintain safety for the member of the general public travelling on the public roads adjacent to the construction site.

An integral part of the Traffic Management Plan is the safety measures to protect staff working on site and travel to and from the site. A driver's code of conduct has been developed for the project and included in Appendix B to this report.

4.2 Existing traffic conditions

On both the Kidman Way and Ercildoune Road

- Posted speed limit of 100 km/h on both roads;
- Peak AM and PM period traffic less than 10 vehicles per hour two-way on Ercildoune Road,
- Daily traffic flows on the Kidman Way in the order of 1,000 per day, giving potentially up to 100 vehicles per hour in the peak periods;
- Work site located off Ercildoune Road with no access to the Kidman Way
- New driveway access to be constructed on Ercildoune Road
- No restrictions to access to adjacent properties are to be created by the works.

4.3 Cyclists and Pedestrians

There are no footpaths for pedestrians along any of the local rods in the locality of the project site nor any pedestrian demands. There is no requirement for pedestrians to walk through the site and a fence will be provided to delineate the site and restrict pedestrians.

Cyclist do not have a requirement to cycle through the site and a fence will be provided to delineate the site and restrict cyclists.

4.4 General Traffic Control Considerations

The factors that have been considered in preparing this TCP are:

- During the construction, all vehicle movements will access the site off Ercildoune Road only.
- All construction vehicles can park on site with no external impacts.
- All loading/delivery will be completed within the site with no external load zone required.
- The speed zone on Kidman Way will be reduced to 60 km/h during the construction works associated with the upgrade of the intersection of Kidman Way and Ercildoune Road.
- For the construction work associated with the site access and during the construction work on site there will be no change to the speed zone (100 km/h) along the Kidman Way.
- Speed reduction will be applied on Ercildoune Road at its intersect with the Kidman Way and for 220 metres west of the new access road for the duration of the construction works. During the construction of the site access on Ercildoune Road the speed will be 60 km/h and for the construction work on site the speed reduction will be 80 km/h on Ercildoune Road.
- Pedestrian and cyclist considerations – there is no change to the existing situation for pedestrians or cyclists. A fence will be provided to restrict general public access.
- Location of machines/personnel on-site relative to roadway;
- Access to/from Work Site;
- Timing of works, and
- Safety of road users and site personnel.

The RTA Traffic Control at Worksites 2010 manual recommends safety barriers are considered if:

- The location will continue to be a work area for longer than two weeks. (Applicable)
- Traffic speeds are likely to be greater than 80 km/hr. (Not applicable)
- AADT exceeds 5000 vehicles for traffic lane nearest the works. (Not Applicable)
- The work area is less than 3 metres clear of traffic on straights (less on tight curves) (Applicable)
- Personnel do not have other protection, such as operating plant. (Not Applicable)

The location and nature of the work will NOT require safety barrier to be installed.

4.5 Traffic Control – Signage and Line Marking

The TCP provides Work Site definition and sets out the extent of the Work Zone adjacent to the worksite. General signage and line marking are included due to the nature of the passing traffic and the location and nature of the works.

All signs shall be permanently mounted and shall be covered outside working hours. The signs shall be uncovered at the beginning of the working day before any trucks access the site.

A copy of this TCP must be on site at all times during the demolition and construction stages.

There are three stages for the Traffic Control Plan for the project work:

Stage One – Upgrade works on Kidman Way with the intersection of Ercildoune Road;

Stage Two – Construction of access to project site off Ercildoune Road; and

Stage Three – Construction work within the project site

4.6 Daily Checklist

In accordance with the Roads and Traffic Authority of New South Wales 'Traffic Control at Worksites' guidelines, the site foreman / manager should complete a daily traffic control checklist and this checklist should be filed for future reference. A copy of the RTA's Proforma Checklist from the guidelines is included in Appendix D.

Contractors Contact Details

Project Manager: _____

Mobile: _____

E-mail _____

4.7 TCP Approval

This TCP will be submitted to the road authority for review and approval.

Details for lodging this TCP and the Construction Traffic Management Plan are:

Murrumbidgee Council:

Council Administration
P O Box 5
Darling Point NSW 2706

Roads and Maritime Services:

Road Occupancy Unit (ROU) Wagga Wagga
Phone: 02 6923 3406

This Traffic Control Plan has been prepared and reviewed by suitable qualified professionals in accordance with the RTA Traffic Control at Work Sites Manual 2010 edition.

Sean Morgan (Orange card 3372046343, Red card 0023054829)

Director

Appendix A. Safe Construction Actvities

Bouygues Constructions Australia Pty Ltd (BYCA) is responsible for the management of all traffic in connection with its activities and the construction works conducted on the site. BYCA will provide all traffic management, safety warnings and signage including such persons as necessary to direct traffic, as required by AS 1742:2009 – Manual of uniform traffic control devices.

External traffic movements

BYCA will:

Ensure traffic management controls are established, maintained and monitored to underpin the safety of workers, other personnel and the general public

Establish traffic management controls in consultation with relevant stakeholders

Ensure traffic management controls comply with regulatory and legislative requirements

Ensure traffic management controls comply with the contract

Ensure traffic management controls maintain the flow of traffic within the site and on surrounding public roads

Reinstate any areas affected by the temporary construction access requirements to their original condition

The primary drivers for determining the traffic management controls during the construction period are:

- Safety of personnel, the general public and construction workers
- Minimising impact (if any) on operations
- Contractual requirements (including site access)
- Road traffic authority and local government requirements
- OHS requirements in relation to the movement of all vehicular traffic and pedestrians either within or adjacent to sites
- Environmental management requirements
- The impact construction traffic has on the local community in the surrounding area, and
- The need to meet construction requirements (including any schedule and cost constraints)

Seca Solution has developed a Traffic Control Layout (Appendix C—Traffic Control Layout) and BYCA operate under this TCP layout during Site establishment and all construction work. The TCP includes specific traffic management controls to mitigate risks.

The Traffic Control Plan has been developed by Sean Morgan at Seca Solution (Orange Card 336301790 and Red Card 0023054829) in accordance with the requirements of the RMS (state traffic authority).

Traffic Control Plans will be implemented, audited and in inspected in accordance with section: Inspection and Auditing of Traffic Control Plans (TCPs).

The traffic management controls will be communicated to appropriate stakeholders which will include the local community in the site vicinity via a letter box drop.

BYCA will ensure:

Any significant deposit of dirt and other materials caused by construction traffic and other operations (in relation to the works) will be promptly removed from existing public roadways

Suitable precautions are taken to ensure no rock is dislodged onto any roadway from construction vehicles

Construction plant and equipment do not park on or within the pavement or shoulders of any existing trafficked roadway

Construction vehicles (when loaded) comply with the mass, loading and access requirements of the road traffic authority

Construction traffic will cause the least possible obstruction to public and other traffic

Directional signage will be installed to direct construction traffic, and warn other motorists of construction traffic.

This signage is positioned in accordance with the approved Traffic Control Plans.

All drivers will be provided with a copy of the access routes to and from the site as part of their induction for the project;

A Vehicle Movement Strategy has been developed to eliminate the impact on local roads arising from additional construction traffic (e.g. solar panel delivery vehicles). The Vehicle Movement Strategy directs all drivers to access the site from the south via the Newell Highway to eliminate the impact on the local roads. There is no requirement to restrict the direction of flow and/or time of day for movements.

BYCA will comply with any client or Road Traffic Authority signage requirements for traffic control. Where construction work is to be undertaken either on or adjacent to a public roadway that is open to traffic, the work must be undertaken in accordance with all regulatory and legislative requirements that govern the movement of vehicles and pedestrians on any public roadway.

Within the Worksite

All employees, subcontractors, suppliers and any other persons connected with the project must adhere to all such Statutory Requirements and comply with all lawful directions. Any breach of such requirements may result in disciplinary action of the persons concerned.

The maximum speed limits within the Worksite are:

40 kph on formed roads
20 kph during foggy/dusty conditions with headlights on
10 kph when passing pedestrians

BYCA will manage access to and from the site by all employees, subcontractors, suppliers and any other persons connected with its activities and the works; and all occupants within the worksite and through each area of the site.

BYCA shall provide for safe and continuous operation of normal pedestrian and vehicular traffic along all roads, pedestrian paths and vehicular access to the worksite and must provide and maintain all necessary watchmen, lights, barriers, notices and signs.

BYCA will not unnecessarily obstruct any side road, branch track, drain or watercourse and will not break down or remove any fences or gates without prior notification to the client. If unavoidable, BYCA will remove such obstruction or repair such breakage as soon as possible, or as directed by the Client.

A Vehicle and Traffic Management Procedures briefing will be included in the Project Site Induction.

Pedestrian Traffic

BYCA may encounter pedestrian traffic at and near to the site. BYCA will ensure that sites are appropriately isolated and secured from unauthorised entry; and that the Site is appropriately sign-posted and controlled. Given the location of the site it is considered that any pedestrian activity will be negligible.

Site Construction Traffic

Traffic within the Site will be managed in accordance with the Site Management Plan. The Sites Layout Plans will indicate site access and egress points and detail any required separation of construction plant and personnel. These plans will be communicated during Tool Box Meetings and/or Daily Pre-start Meetings.

The Site Layout Plan will incorporate details of parking arrangements for the site construction workers, speed limits within the construction works or through access roads established for vehicular and plant construction traffic.

The Sites Layout Plan will detail traffic management controls that are appropriate within each site.

If required, BYCA will establish a Site Office and Designated Parking Area in accordance with the Site Management Plan.

Traffic controls shall be regularly reviewed for effectiveness and will be amended to maintain or improve a safe work environment. Traffic management controls established for sites will be inspected at ***weekly intervals*** to verify that a safe work environment is being maintained. Records of inspections shall be maintained.

Access Roads and Site Movement

Unless sign-posted otherwise, load limits on public roads adjoining the sites apply within them.

If required BYCA shall request approval from the client prior to any over-dimensional load, or load in excess of load limits entering the site, or using the roads within the site.

All workers must travel to and from the site via the nominated access roads

Parking

All workers must park in the Designated Parking Areas as specified in the Site Management Plan. BYCA shall ensure no persons (in connection with its activities) parks in any other area of the site or in any other area without prior written consent.

Monitoring, Measurement and Review

The purpose of Monitoring and Measurement is to ensure that all construction works, including subcontracted activities, are being performed in accordance with the contract requirements, statutory requirement and in a controlled and safe environment. Ongoing monitoring and audit of Traffic Management procedures and the worksite implementation of traffic control shall be conducted.

Audits of the Traffic Control measures under differing operating conditions are to be carried out including during overcast and rainy weather, at night or at any other restrictive times where conditions may change in accordance with the requirements of AS1742.3.

Results of audits, inspections and improvements are to be reported in the reporting cycle of the contract to enable assessment of the adequacy of the implementation of the Traffic Control within contract performance and system review meetings.

Inspection and Auditing of Traffic Control Plan (TCP)

Regular Site Inspections by designated supervisory and field staff of worksite protection are to be arranged on a ***daily frequency*** depending on the complexity of traffic control on the site.

Site Inspections will be carried and the following Traffic Management Forms completed:

Traffic Control Daily Checklist
Traffic Control Weekly Checklist

A daily record of the inspections should be kept. This should include:

- When traffic controls were erected
- When changes to controls occurred and why the changes were undertaken
- Any significant incidents or observations associated with the traffic controls and their impacts on road users or adjacent properties
- Where significant changes to the work or traffic environment or adverse impacts are observed, the controls should be reviewed as a matter of urgency.

The monitoring program should generally incorporate inspections:

- Before the start of work activities on site
- During the hours of work
- Closing down at the end of the shift period

The inspection program shall be adjusted to suit changing circumstances and/or risk environment such as during times of increased traffic flows or speeds, contra-flow arrangements or when changed controls are introduced.

The Audits of the implemented Traffic Management features will be undertaken following setup in accordance with the TCP and prior to the TCP being put into service.

Appendix B. Drivers Code of Conduct

1.1 General Requirements

All vehicles / drivers accessing the site must:

i) Be registered and hold a valid driver's licence for the class of vehicle being operated;
ii) Operate the vehicle in a safe and appropriate manner whilst travelling to / from the site or when operating within the site. This includes obeying all New South Wales and Victorian state road rules.
iii) ALL heavy vehicles must adhere to the designated heavy vehicle routes as far as practical;
iv) Comply with the directions of authorised personnel when operating within the site and obey any relevant signage installed along the internal roads.
v) Not use a mobile phone while operating any vehicle.
vi) Must always wear a seatbelt when operating any vehicle.

1.2 Vehicle Speeds

Drivers shall observe the posted speed limit along the designated transport route and adjust their vehicle speed as required to suit the road environment and prevailing weather conditions. Vehicle speeds must be appropriate to ensure the safe movements of the vehicle with consideration to the vehicle configuration.

Maximum speeds limits within the project site shall be as follows:

i) 40 km/hr along formed roads.
ii) 20 km/hr during foggy / dusty conditions. Headlights must be on.
iii) 10 km/hr when passing pedestrians or any plant equipment.

1.3 Driver Fatigue

Drivers shall not be permitted to operate a vehicle or plant equipment when impaired by fatigue. If you suspect that you or someone else is experiencing fatigue, please inform your supervisor.

Operators of heavy vehicles shall be aware of the requirements relating to fatigue as outlined in the Heavy Vehicle National Law. Drivers shall also be aware of their adopted fatigue management scheme (shown below) and ensure that they are operating within its requirements.

i) Standard Hours of Operation
ii) Basic Fatigue Management (BFM)
iii) Advanced Fatigue Management (AFM)

Basic Fatigue Management (single driver)

Time	Work	Rest
In any period of…	A driver must not work for more than a maximum of…	And must have the rest of that period off work with at least a minimum rest break of…
6 ¼ hours	6 hours work time	15 continuous minutes rest time
9 hours	8 1/2 hours work time	30 minutes rest time in blocks of 15 continuous minutes
12 hours	11 hours work time	60 minutes rest time in blocks of 15 continuous minutes
24 hours	14 hours work time	7 continuous hours stationary rest time*
7 days	36 hours long/night work time**	No limit has been set
14 days	144 hours work time	24 continuous hours stationary rest time taken after no more than 84 hours work time and 24 continuous hours stationary rest time and 2 x night rest breaks# and 2 x night rest breaks taken on consecutive days.

Advanced Fatigue management:

The seven principles are grouped into three categories:

Work-related rest breaks (such as short rest breaks):

1. Reduce the time spent continuously working in the work opportunity

2. The more frequent breaks from driving, the better

Recovery breaks (such as major rest breaks):

3. Ensure an adequate sleep opportunity in order to obtain sufficient sleep

4. Maximise adequate night sleep

5. Minimise shifts ending between 00:00-06:00

6. Minimise extended shifts

Reset breaks (such as long periods of rest or extended leave):

7. Prevent accumulation of fatigue with reset breaks of at least 30hrs (and include two night periods, 00:00 – 06:00) between work sequences

ALL details relating to fatigue management for delivery vehicles (especially between the Port of Melbourne and the project site) are covered by the National Heavy Vehicle Regulator

1.4 Operating Hours

Construction

Construction is to be in completed in accordance with the *Interim Construction Noise Guideline* (DECC 2009) which defined standard construction work hours as:

- Monday to Friday: 7am to 6pm
- Saturday: 8am to 1pm
- Sunday and Public holidays: No work

The following construction, upgrading and decommissioning activities may be undertaken outside these hours without the approval of the secretary:

- The delivery of materials as requested by the NSW Police Force or other authorities for safety reasons; or
- Emergency work to avoid loss of life, property and / or material harm to the environment.

Vehicle movements shall be undertaken during standard construction hours (or just before to allow workers to get to site). Oversize vehicles up to 26 metres long may require access to the site after hours however this would be subject to the requirements of Roads and Maritime, Murrumbidgee Council or NSW Police.

Normal Operations

Daily operations and maintenance by site staff would be undertaken during standard working hours:

- Monday to Friday: 7am to 6pm
- Saturday: 8am to 1pm
- Sunday and Public holidays: No work

During normal operations, all vehicle movements shall be undertaken during the standard operating hours (or just before to allow workers to get to site). There may be a requirement for vehicles to access the site after hours during an emergency however these would be infrequent.

Vehicles which arrive at the site prior to commencement of working hours shall have the engine turned off to minimise noise impacts on surrounding residences.

1.5 Transport Routes

All vehicles must travel to and from the project site via the Kidman Way and Ercildoune Road and the single entry point off Ercildoune Road as shown below.

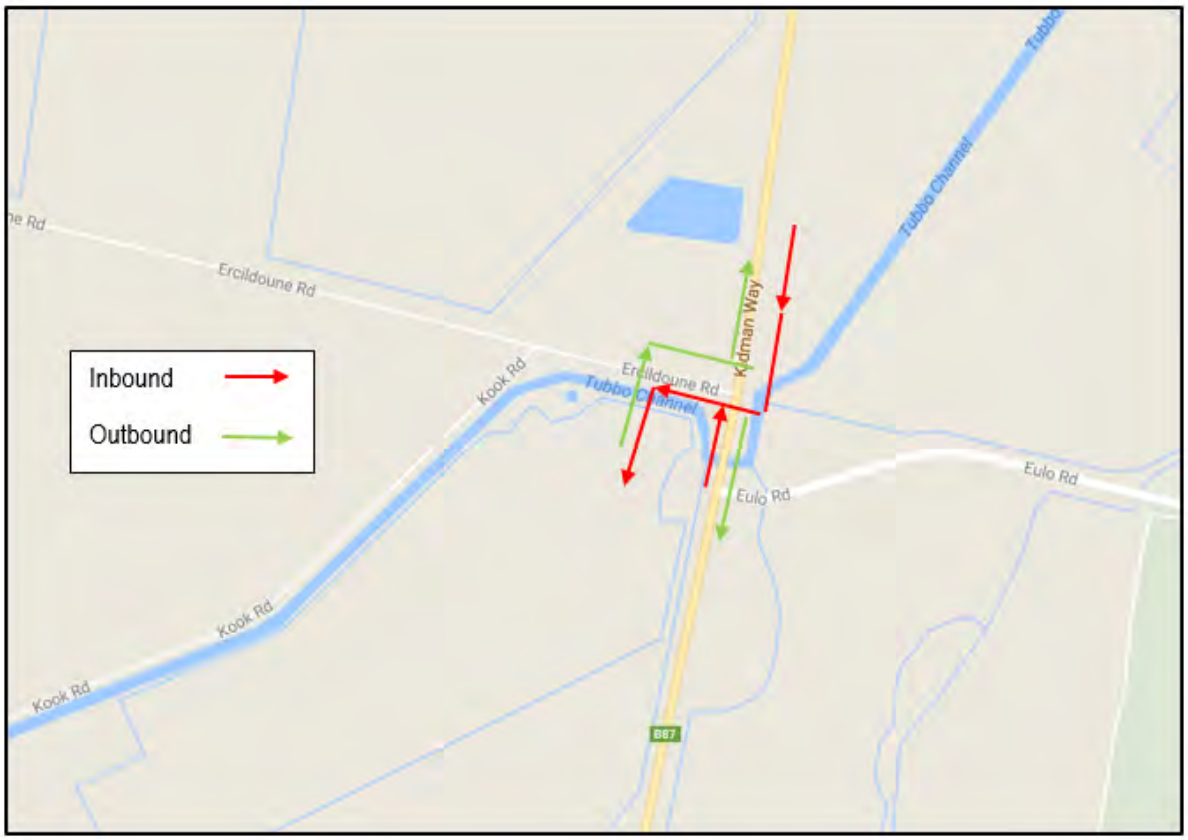


Figure 1 - Transport route to/from the site.

1.6 Vehicle Departure and Arrival

Heavy vehicles departing the site shall have a minimum 5 minute separation to reduce the impacts upon the local road network.

Always maintain a minimum separation of at least 50 metres between vehicles when travelling within the site.

Drivers must contact the site supervisor upon arrival and await further instructions or direction before proceeding.

Drivers must also report to the site supervisor prior to departure.

All vehicles must enter and exit the site in a forward direction. Vehicles are to be washed down and in a clean condition upon exiting the site to prevent dirt being tracked onto the public road network.

1.7 Overtaking

Overtaking shall not be permitted within the site unless the intention to overtake has been communicated to the driver of the leading vehicle and consent to overtake granted.

1.8 Breakdowns and Incidents

Heavy Vehicles

In the case of a breakdown, the vehicle must be towed to the nearest breakdown point as soon as possible. All breakdowns must be reported to the RMS Transport Management Centre on 131 700 and the vehicle protected in accordance with the Heavy Vehicle Drivers Handbook. The relevant shift manager on site shall also be notified.

If a breakdown occurs on-site please remain inside your vehicle, notify the shift manager of your location and await further instruction.

If you are involved in an accident, please notify the shift manager immediately and contact emergency services if required.

Light Vehicles

In the case of a breakdown, ensure that the vehicle is secure, notify the shift manager of your location and await further instruction.

If you are involved in an accident, please notify the shift manager immediately and contact emergency services if required.

1.9 Penalties and Disciplinary Action

Any driver who fails to comply with the above requirements will have their details recorded and may be subject to disciplinary action.

1.10 Emergency Contact Numbers

i)	RMS Transport Management Centre	131 700
ii)	VicRoads	131 170
iii)	Murrumbidgee Council	(02) 6960 3500
iv)	NSW Polic Service (Griffith)	(02) 6969 4299
v)	Site Office	_____
vi)	Shift Manager on Duty	_____

1.11 Driver Declaration

I, the undersigned, hereby agree to abide by this Driver Code of Conduct for the transport of equipment or personnel to / from the Coleambally Solar Farm, located off Ercildoune Road, Coleambally, NSW. I have read and understand the requirements outlined in the attached document and will, to the best of my ability, comply and assist with their implementation, requirements or ongoing administration.

The subject document to which this declaration relates is included as part of this overall document and signing of this declaration confirms that the signee has read and understood their requirements as outlined throughout.

Driver Details

Full Name	
Organisation	
Signature	
Date	

Representative of:

Full Name	
Signature	
Date	

Appendix C. Site Traffic Control Plan

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Date: 21/9/2017 **Author:** Sean Morgan (Orange Card 3363017090) **Project:** Traffic Control Plan for site access on Ercildoune Road, Coleambally
Comments: Reduction in speed limit from 100 km/h to 80 km/h on Ercildoune Road for on-site construction period ONLY Based on TCP 195 DO NOT SCALE

www.invarion.com

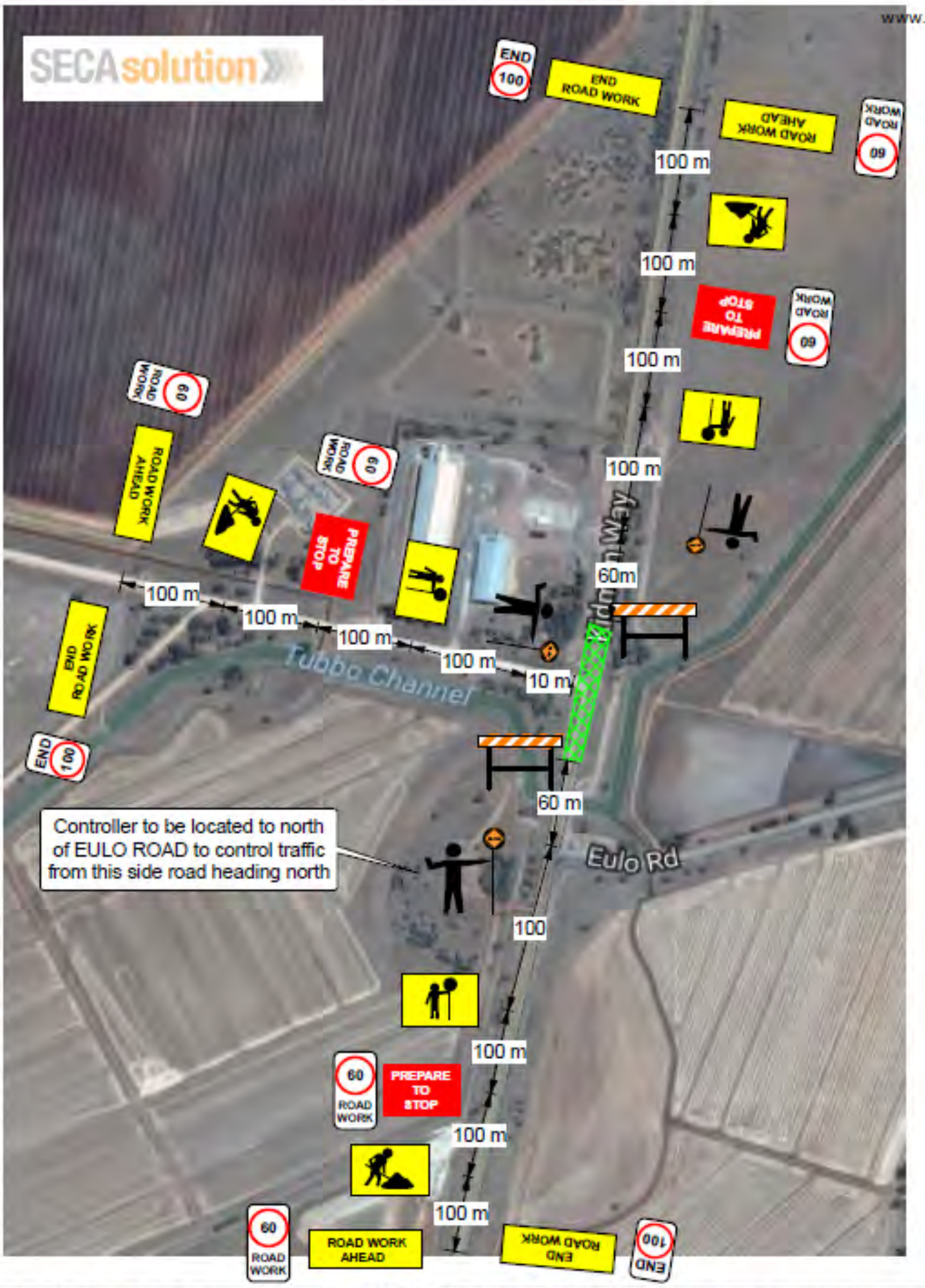
Date: 21/9/2017 **Author:** Sean Morgan (Orange Card 3363017090) **Project:** Traffic Control Plan for site access on Ercildoune Road, Coleambally

Comments:

Reduction in speed limit from 100 to 60 km/h
on Ercildoune Road for access road construction period ONLY

Based on TCP 195 and 440

DO NOT SCALE



Date: 21/9/2017 **Author:** Sean Morgan (Orange card 3363017090) **Project:** Traffic Control Plan for upgrade works on the Kidman Way

Comments:
Traffic control for upgrade works on Kidman Way
Based on TCP 440

Requires one-lane operation with Stop / Slow controllers

DO NOT SCALE

Appendix D. Appendix D of the RMS Traffic Control at Work

Appendix D Traffic control plans

Use of opposite checklist

To assist in the assessment of risk at traffic control work sites the checklist opposite has been devised and is to be used as follows:-

- a standard TCP is to be selected or a new TCP designed for the work to be undertaken
- the checklist opposite is then to be photocopied onto the back of or fixed to the TCP
- the TCP and checklist are to be taken to the work site where the checklist is to be completed
- any action considered necessary as a result of the use of the checklist is to be taken and recorded in the bottom box
- the checklist is to be signed and dated by the person responsible for making the minor modifications
- any minor modifications made are to be shown on the TCP and initialled by the person responsible for making the changes.

June 2010
Issue 1

Traffic Control at Work Sites
Location Checklist

Road No: ..... Location: .....
Type of Work: .....

Date: ..... Time: ..... Completed by: .....

The following checklist shall be completed on site with the approved TCP for the work being undertaken, prior to TCP implementation.

1	Has provision been made for any intersections, on-loading or off-loading ramps within the worksite ?	Yes/No/NA
2	Will vehicles be entering or leaving the worksite from private or commercial driveways ? Has provision been made for those vehicles ?	Yes/No Yes/No/NA
3	Is there adequate sight distance for road users to signs and traffic controllers ?	Yes/No
4	Will control measures be safe for the approach speeds of traffic ?	Yes/No
5	Has consideration been given to traffic volumes expected ?	Yes/No
6	Has provision been made for bus stops (including school) ?	Yes/No/NA
7	Has provision been made for pedestrians including those with impairments ?	Yes/No/NA
8	Has provision been made for cyclists ?	Yes/No/NA
9	Are there any overhead power lines that might be a risk to construction vehicles and plant ?	Yes/No
10	Has the time of day been adequately considered (ie night work, low setting sun) ?	Yes/No

Item No	Action taken.

Appendix E. RMS Traffic Control at Work Sites

Appendix E Inspection checklists and forms

This Appendix contains examples of inspection checklists and forms to be used at traffic control sites. The forms may be modified to suit local requirements provided that the basic information is retained.

Appendix F. Emergency Access Locations