



TRAFFIC IMPACT ASSESSMENT

PROPOSED SOLAR FARM DEVELOPMENT

344 OLD COROP ROAD, RUSHWORTH

20 AUGUST 2020

Corop Road Solar Farm

CLIENT: Leeson Group

OBT JOB NUMBER: 20489



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1 INTRODUCTION

O'Brien Traffic has been engaged by Leeson Group to provide traffic engineering services to respond to VicRoads Request for Information of Planning Application No PLN249/2019 for a proposed solar farm development at 344 Old Corop Road, Rushworth.

VicRoads required information is repeated below:

'1. A Traffic Impact Assessment Report (TIAR) prepared by a VicRoads pre-qualified consultant assessing the impact of traffic generated throughout the construction period of development on the arterial road network, particularly at the intersection of Bendigo-Murchison Road and Old Corop Road, identifying measures mitigating any impact. The TIAR must also assess the ability of the Goulburn River bridge crossing in Murchison to cater for the additional heavy vehicle loads.'

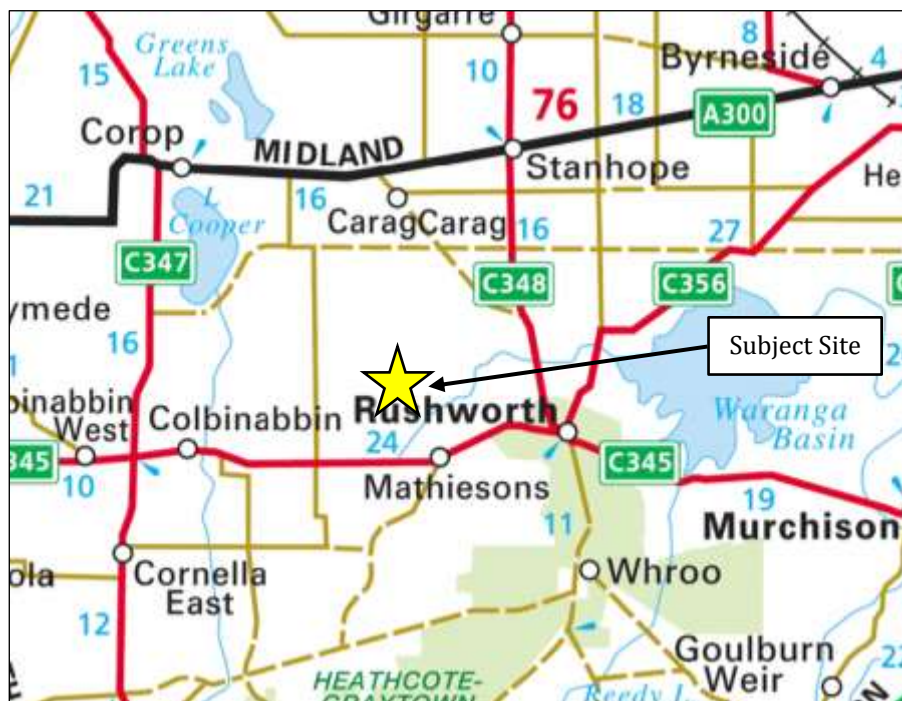
In the course of preparing this report:

- Plans and relevant documentation have been examined; and
- The traffic implications of the proposal have been assessed.

2 EXISTING CONDITIONS

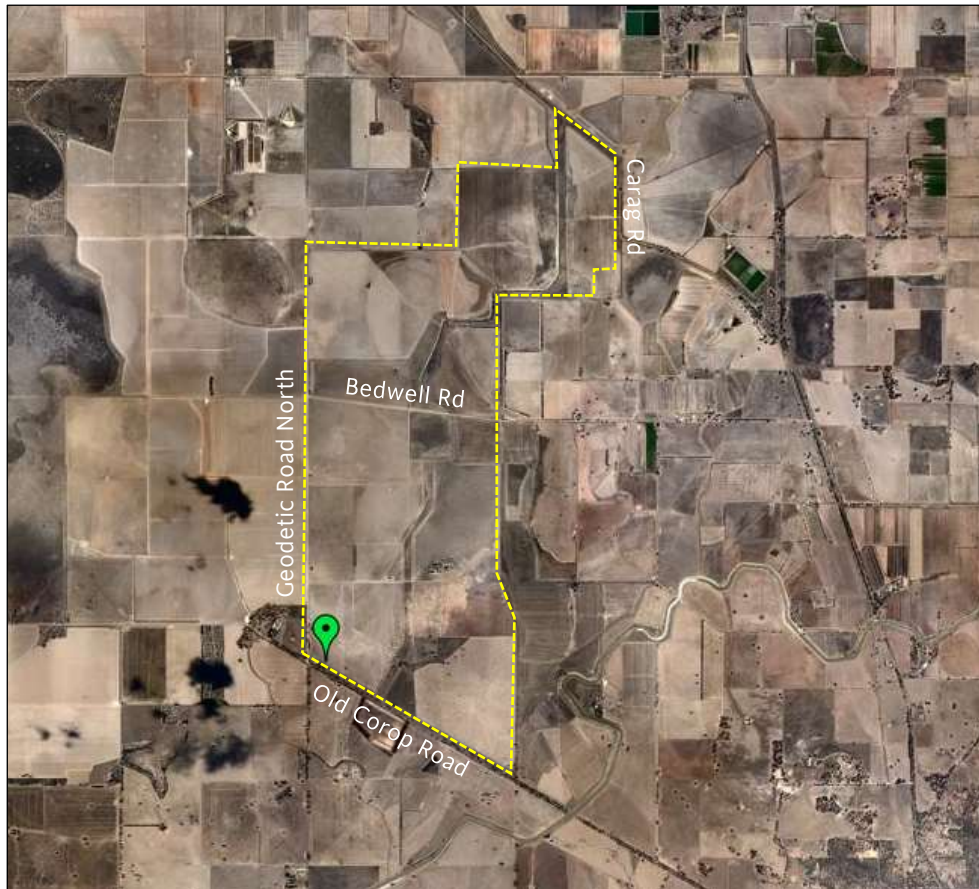
2.1 LOCATION AND LAND USE

The subject land is located on the northeast corner of Old Corop Road and Geodetic Road North, in Rushworth. The location of the subject site and surrounding area is shown in **Figure 1**. A recent aerial photograph is shown in **Figure 2**.



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FIGURE 1: LOCATION OF SUBJECT SITE



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FIGURE 2: AERIAL PHOTO OF SUBJECT SITE

The site, which is zoned *Farming Zone (FZ)*, is irregular in shape and has a frontage of approximately 2.42km to Old Corop Road, comprising 13 Titles and has a combined area of 1,099.7ha.

The land is currently occupied by large fields for agricultural use with scattered vegetation, a drainage system, a small number of dams and a small brick dwelling off Old Corop Road.

The subject land is also partly affected by the Floodway Overlay and the Land Subject to Inundation Overlay.

Access to the site is currently provided via Geodetic Road North near the southwest corner of the site. Internal vehicle tracks exist along most boundaries of the site, including entrances off Old Corop Road, Geodetic Road North and Bedwell Road.

2.2 SURROUNDING LAND USE

Surrounding land use is predominantly for agricultural purposes. The subject land is located about 5km to the west of the Rushworth township and about 6km to the south of Stanhope.

2.3 ROAD NETWORK

Old Corop Road is a local road under the management of Council. It features a sealed carriageway width of approximately 4-4.5m comprising a single two-way traffic lane. Gravel shoulders of varying widths are provided along Old Corop Road. It is subject to a default rural speed limit of 100 km/h.

It is a VicRoads pre-approved road for Performance Based Standards (PBS) Level 2A vehicles. Therefore, all PBS Level 2 compliant vehicles up to 26 metres long (including B-doubles) can operate on Old Corop Road.

A photograph of Old Corop Road near the south-west corner of the site is provided in **Figure 3**.



FIGURE 3: VIEW OF OLD COROP ROAD

Bendigo-Murchison Road is an Arterial Road under the management of Department of Transport (DoT). It features a single traffic lane in each direction with no shoulders and provides a 7m wide carriageway in the vicinity of Old Corop Road. Bendigo-Murchison Road has a posted speed limit of 100 km/h.

It is a VicRoads pre-approved road for Performance Based Standards (PBS) Level 2B vehicles. Therefore, all PBS Level 2 compliant vehicles up to 30 metres long can operate on Bendigo-Murchison Road

A photo of Bendigo-Murchison Road is provided in **Figure 4**.



FIGURE 4: BENDIGO-MURCHISON ROAD AND OLD COROP ROAD INTERSECTION

2.4 TRAFFIC VOLUMES

According to VicRoads' 2019 Traffic Volume database, Bendigo-Murchison Road in the vicinity of Old Corop Road carries in the order of 1,100 vpd, which is very low for an arterial road. Old Corop Road is anticipated to carry significantly less than 1,000 vpd.

It is apparent that Bendigo-Murchison Road, being an arterial road and a PBS Level 2A route is designed to carry much higher traffic volume than 1,100 vpd.

2.5 CASUALTY CRASH HISTORY

No Casualty crashes have been reported along Old Corop Road, its intersection with Bendigo-Murchison Road, or in the vicinity of the site during the last five years of available data (to March 2019).

3 THE PROPOSAL

It is proposed to construct a 440-Megawatt (MW) DC 320MW AC solar farm with 1,193,000 solar panels, built in two stages. The existing dwelling on the site would be demolished. Amongst other elements, the proposal will include the construction of an operations facility comprising a site office and maintenance building. A sealed car park is proposed, accessed via Old Corop Road comprising 12 spaces for staff.

The solar panel array areas will be accessed via five existing entrances to the site, as follows:

- Old Corop Road, one at the southeast corner and one the southwest corner;

- Geodetic North Road, one in the middle of the Stage 1 area and one at the northwest corner; and
- One at northeast side via Bedwell Road.

The construction phase will utilise access to the land from Old Corop Road, Geodetic North Road and Bedwell Road. The route during the construction phase will be via Bendigo-Murchison Road to Old Corop Road and Geodetic North Road.

The proposed site layout is shown in

Figure 4.

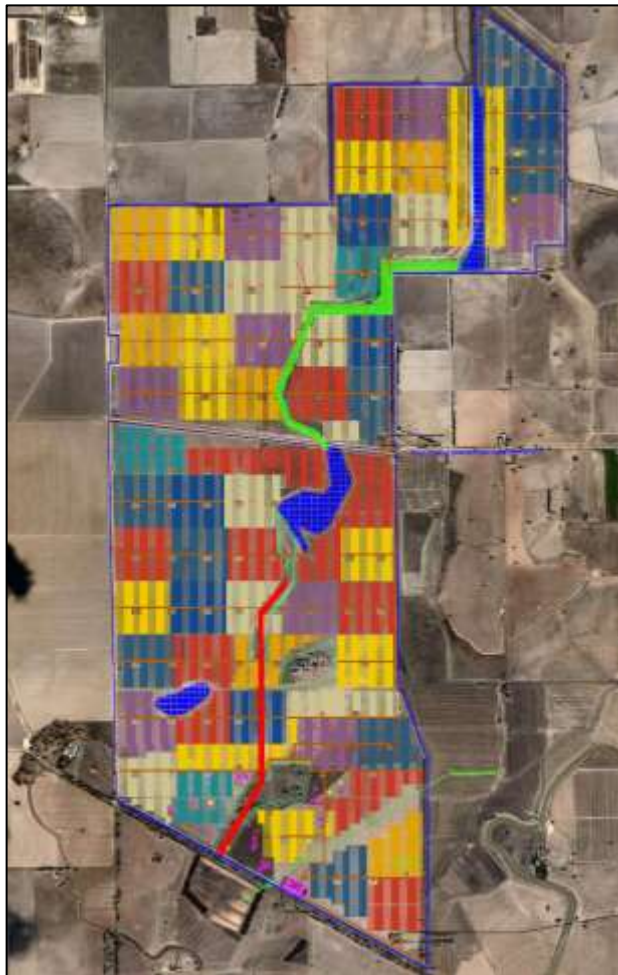


FIGURE 4: PROPOSED LAYOUT OF THE SUBJECT SITE

4 TRAFFIC GENERATION AND IMPACT

The traffic impacts generated throughout the construction period at the intersection of Old Corop Road and Bendigo-Murchison Road have been assessed.

During the construction phase several photovoltaic panels and other equipment such as mounting systems, inverters, transformers, substations and batteries will need to be delivered to the site.

The delivery of components would occur as the following:

- The components will be imported in 40-foot shipping containers, where 3,667 containers will be transported in batches to the site by semi-trailers over a 12-month period, resulting in a total of 7,334 truck movements a year (as empty shipping containers will need to return to the port yard as backloads);
- The above equates to average movements of 142 trucks per week (71 inbound and 71 outbound);
- Average daily movements would be 28 trucks per day to deliver the project components (14 inbound and 14 outbound); and
- Notwithstanding the above, maximum movements for the delivery of project components are estimated to be 70 trucks per day (35 inbound and 35 outbound) during the peak of the construction phase (likely to be the initial months).

Material and aggregate for the construction of access, buildings and internal tracks will also be required. It is estimated that a maximum of 88 truck movements would be generated during the first 3 months of construction.

On the basis of the above, a maximum truck movement total of up to 158 heavy vehicles per day (79 inbound and 79 outbound) for the first 3 months of construction is anticipated, reducing to up to 70 vehicles per day (35 inbound and 35 outbound) once the aggregate has been delivered. It is noted that these truck movements, being the maximum, are not anticipated every day of the construction phase, but rather on very few days that are to be determined by the delivery schedule.

There is an anticipated maximum construction workforce of up to 704 people which are expected to predominately car pool by mini bus. Daily vehicle movements are anticipated to be approximately 176 movements per day (88 inbound and 88 outbound).

Given the above, a maximum of up to 334 daily trips (167 inbound and 167 outbound) would be generated during the construction phase, comprising:

- 158 truck movements (approximately 79 inbound and 79 outbound) transporting solar components and aggregate; and
- 176 light vehicle trips (88 inbound and 88 outbound) associated with workers and supervisors.

It is anticipated that the peak associated with staff would not coincide with truck movements. Trucks would access the site throughout the day with no particular concentration of arrivals or departures during the AM and PM peak hours of the road network. Workers would be expected to arrive to the site before the AM peak hour and depart before the PM peak hour of the road network.

4.1 BENDIGO–MURCHISON ROAD AND OLD COROP ROAD INTERSECTION

The route during the construction phase would be via Bendigo-Murchison Road to Old Corop Road. It is anticipated that the components will be imported and delivered from Port Melbourne. Trucks would, therefore, approach from the south and access the site by turning right from Bendigo-Murchison Road into Old Corop Road and right into the site, and returning via the same route.

As mentioned earlier, Old Corop Road is a PBS Level 2A road and allows for vehicles up to 26 metres long, including B-doubles. Bendigo-Murchison is a PBS Level 2B road, allowing for vehicles up to 30 metres in length. The swept path of a semi-trailer (the largest vehicle expected to access the subject site) would be smaller than a 26-metre truck. Therefore, a semi-trailer or a truck and dog combination can be accommodated at this intersection (noting that these vehicles are 'as of right'). No further approval is needed for vehicles of this size to use Old Corop Road or Bendigo-Murchison Road.

The intersection of Bendigo-Murchison Road and Old Corop Road is provided with unobstructed views looking in either direction upon exiting Old Corop Road (i.e. no trees on the corners or high vegetation) and it is therefore noted that sight lines are considered appropriate. It is noted that no casualty crashes have been recorded at the Bendigo-Murchison Road / Old Corop Road intersection in the last 5 years.

It can therefore be seen that this intersection is designed to accommodate long vehicles including the proposed semi-trailer trucks accessing the subject site.

On the basis of the above, it is concluded that traffic generated by the site during the construction phase would have no operational or safety impacts at the Bendigo-Murchison Road and Old Corop Road intersection. Although no mitigation measures are considered necessary, consideration could be given to installing "Truck (Crossing or Entering)" warning signs (W5-22B) on Bendigo-Murchison Road on each approach of the Old Corop Road intersection to raise awareness of the increased truck traffic associated with construction. A photo of W5-22 is provided below.



FIGURE 5: W5-22 SIGN

4.2 PROPOSED TRANSPORT ROUTE

The most suitable truck route for transport of material from Hume Freeway is via the Goulburn Valley Freeway->Wahring-Murchison Road->Bendigo-Murchison Road->High Road->Robinson Street->Watson Street->Rushworth Road->Bendigo-Murchison Road->Old Corop Road route. An image of this route is shown in **Figure 6**.



FIGURE 6: PROPOSED PRIMARY TRANSPORT ROUTE

All of the above roads are a PBS Level 2A or 3A roads and allow for vehicles up to 26 metres long. The addition of up to 158 anticipated trucks attending the site per day would be expected to be readily accommodated on these roads.

In addition, given the low volumes along these roads, the moderate traffic generated by the development during the construction phase (which is temporary in nature) would be readily accommodated without causing significantly adverse impacts on the safety and operation of the surrounding road network.

4.3 GOULBURN RIVER BRIDGE CROSSING AND ALTERNATE ROUTE

It is envisaged that delivery trucks would use the Goulburn River Bridge crossing in Murchison to access the subject site during the construction phase. It is noted that similar to the surrounding arterial network, this bridge crossing is an approved PBS Level 2A road. That means these vehicles are ‘as of right’ and no further approval is needed for vehicles of up to 26 metres long to use the Goulburn River Bridge crossing.

However, it is noted that the Goulburn River Bridge is an enclosed structure and due to the unknown nature of some materials in terms of size and weight, it is possible that this bridge may not be suitable for some oversize-overmass (OSOM) deliveries.

As such, we have identified an alternate route from Port Melbourne to the site, which avoids this bridge and would be suitable for oversized deliveries to the site. The alternate route from Hume Freeway is via Northern Highway->Heathcote-Rochester Road->Bendigo-Murchison Road->Mitchell Street-> Bendigo-Murchison Road ->Old Corop Road. An image of this alternate route is shown in **Figure 7**.

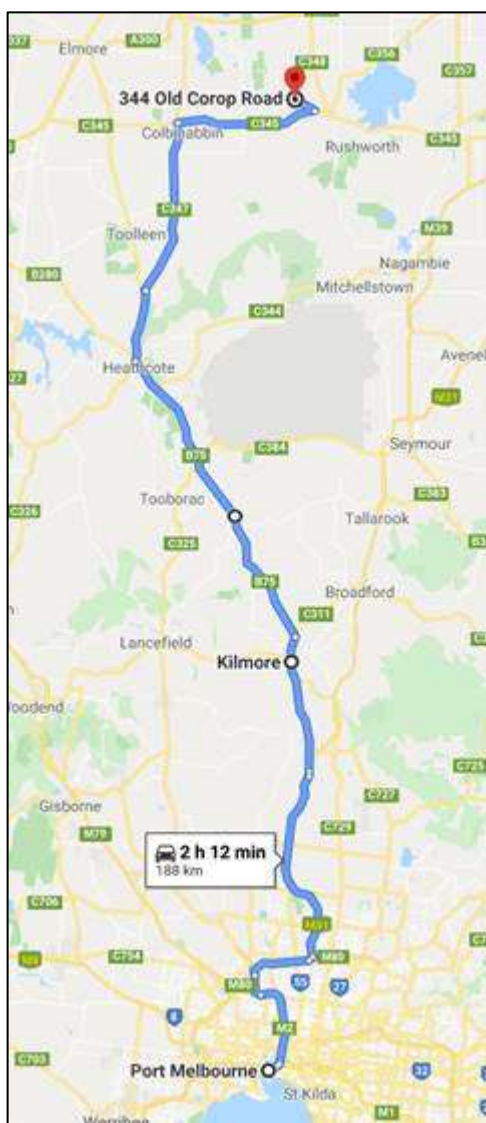
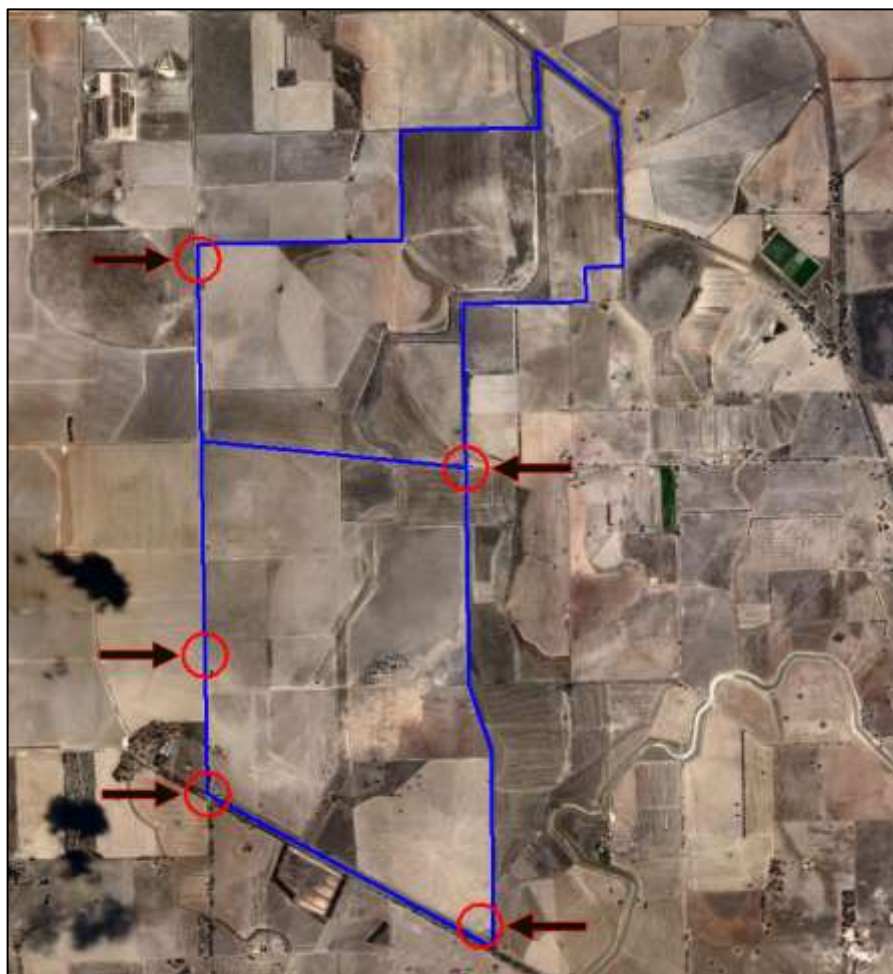


FIGURE 7: PROPOSED ALTERNATE TRANSPORT ROUTE FOR OSOM DELIVERIES

In addition, it is possible that very specific routes may be required for “special” OSOM materials. Due to the specific details of some materials being unknown at this stage, it is proposed to manage this if/when this occurs (i.e. during the construction phase) on a case-by-case basis. This would be undertaken in consultation with, and approved by DoT and Council.

5 SITE ACCESS & LAYOUT

Vehicular access to the subject site will be via five (5) existing entrances to the site on Old Corop Road, Geodetic North Road and Bedwell Road, as shown in **Figure 8**.



SOURCE: LESSON GROUP PLANNING REPORT

FIGURE 8: PROPOSED ACCESS POINTS

All access points will be designed to accommodate the relevant vehicle types (semi-trailers etc).

6 CONCLUSION

Based on the investigations made during this study, it is concluded that:

- Old Corop Road and Bendigo-Murchison Road are VicRoads pre-approved roads for performance Based Standards (PBS) Level 2A vehicles;
- A maximum of up to 334 daily trips (167 inbound and 167 outbound) would be generated during the construction phase, comprising:
 - 158 truck movements (approximately 79 inbound and 79 outbound) transporting solar components and aggregate; and
 - 176 light vehicle trips (88 inbound and 88 outbound) associated with workers and supervisors.
- Some truck deliveries may be OSOM deliveries and require an alternate route, which has been proposed;
- Some OSOM deliveries may require very specific routes. However, due to the specific details of some materials being unknown at this stage, it is proposed to manage this if/when this occurs (i.e. during the construction phase) on a case-by-case basis. This would be undertaken in consultation with, and approved by DoT and Council.
- The proposed development would not have any significant adverse impacts on Old Corop Road, Bendigo-Murchison Road and the surrounding road network.