



**ACCIONA Energy Australia Global Pty Ltd**

Mortlake South Wind Farm

Traffic Management Plan

**FINAL FOR ENDORSEMENT**

November 2018

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# 1. Introduction

## 1.1 Background

GHD Pty Ltd (GHD) has been engaged by ACCIONA Energy Australia Global Pty Ltd (ACCIONA) to prepare a Traffic Management Plan for the proposed Mortlake South Wind Farm.

## 1.2 Scope and Limitations

This report has been prepared by GHD for ACCIONA Energy Australia Global Pty Ltd and may only be used and relied on by ACCIONA Energy Australia Global Pty Ltd for the purpose agreed between GHD and the ACCIONA Energy Australia Global Pty Ltd as set out in Section 1.3 of this report.

GHD otherwise disclaims responsibility to any person other than ACCIONA Energy Australia Global Pty Ltd arising in connection with this report. GHD also excludes implied warranties and conditions, to the extent legally permissible.

The services undertaken by GHD in connection with preparing this report were limited to those specifically detailed in the report and are subject to the scope limitations set out in the report.

The opinions, conclusions and any recommendations in this report are based on conditions encountered and information reviewed at the date of preparation of the report. GHD has no responsibility or obligation to update this report to account for events or changes occurring subsequent to the date that the report was prepared.

The opinions, conclusions and any recommendations in this report are based on assumptions made by GHD described in this report. GHD disclaims liability arising from any of the assumptions being incorrect.

GHD has prepared this report on the basis of information provided by ACCIONA Energy Australia Global Pty Ltd and others who provided information to GHD (including Government authorities), which GHD has not independently verified or checked beyond the agreed scope of work. GHD does not accept liability in connection with such unverified information, including errors and omissions in the report which were caused by errors or omissions in that information.

## 1.3 Purpose of This Report

This Traffic Management Plan (TMP) report is intended to be the document that sets out the commitments ACCIONA will make to ensure that the construction of the wind farm does not adversely impact on either the condition or the operation of the surrounding road network.

### 1.3.1 Planning Permit Conditions

This TMP has been prepared in response to a number of conditions on Moyne Shire Council Planning Permit No. 2008/0538/A (the Planning Permit), which are addressed in this report as shown in Table 1 below.

**Table 1 Planning Conditions Reference List**

Planning Permit Condition		TMP Ref.
10	Prior to the development of a traffic management plan, an accurate reassessment of vehicle numbers for over-dimensional, heavy duty and light vehicles must be undertaken in consultation with Moyne Shire Council, Corangamite Shire Council and VicRoads to the satisfaction of the Minister for Planning.	Section 5
12	Before the development starts, a traffic management plan must be prepared in consultation with Corangamite Shire Council and the Minister for Planning to the satisfaction of Moyne Shire Council and VicRoads. When approved, the plan will be endorsed and will then form part of this permit. The plan must include:	This TMP
12a)	An existing conditions survey of public roads that may be used for access and designated construction transport vehicle routes in the vicinity of the wind energy facility, including details of the suitability, design, condition and construction standard of the roads.	Section 2
12b)	The designation of appropriate construction and transport vehicle routes to the wind energy facility site.	Section 4
12c)	The designation of operating hours and speed limits for trucks on routes accessing the site so as to avoid school bus routes and school bus times where relevant, and to provide for resident safety.	Sections 5.4 and 6.5.12
12d)	The identification and timetabling of any required pre-construction works.	Section 6.5.4
12e)	The designation of all vehicle access points to the wind energy facility from surrounding roads. The location and detailed design of the connection between the internal access tracks and the public roads must ensure safe sight distances, turning movements, and avoid potential through traffic conflicts.	Section 6.5.13
12f)	Recommendations on the need for road and intersection upgrades to accommodate any additional traffic or site access requirements, whether temporary or on-going and the timing of when these upgrades are to be undertaken. This is to include engineering plans demonstrating how truck movements can be accommodated on sealed roadways. The plan must include details of any required road construction works, including consideration of works at Terang-Mortlake Road and Tapps Lane.	Section 6.5.4
12g)	Measures to be used to manage traffic impacts associated with the ongoing operation of the wind energy facility on the traffic volumes and flows on surrounding roads.	Section 6.5
12h)	A program of regular inspections to be carried out during the construction period to identify maintenance works necessary as a result of construction traffic.	Section 6.5.11
12i)	A program to rehabilitate roads to the condition identified by the surveys required by Condition 12a) above.	Sections 6.5.5 and 8.4

Planning Permit Condition	TMP Ref.
<p>12j) If required by Moyne Shire Council and/or Corangamite Shire Council, the payment of a security deposit or bond for a maintenance period of 12 months in respect of works covered by the traffic management plan. Such security deposit or bond is to be applied to road works not completed under the Traffic Management Plan or to be released at the end of that period.</p>	Section 8.4
<p>12k) Consideration of road sealing, the construction of gravel shoulders and associated drainage works at:</p> <ul style="list-style-type: none"> <li>(i) Tapps Lane;</li> <li>(ii) Grinters Lane;</li> <li>(iii) Chamallak Lane; and</li> <li>(iv) Depending on anticipated traffic volume and composition of vehicle movements, any other roads required for construction of the wind energy facility.</li> </ul> <p>Plans prepared under this condition must include cross-sections showing their formation, depth, drainage and surface levels to the satisfaction of the Minister for Planning. Any variation to the extent of road widening to avoid native vegetation must be indicated on the plans.</p>	Section 6.5.4
<p>12l) The scope of the expertise, duties and role of the nominated Road Quality Auditor engaged under Condition 14, including inspection frequency and reporting requirements.</p>	Section 6.5.10
<p>12m) The number and type of anticipated vehicle movements and the time of day when local roads will be used.</p>	Sections 5, and 6.5.12
<p>12n) The designation of all vehicle access points to the wind energy facility site from surrounding roads. Vehicle access points must be designed and located to ensure safe sight distances and turning movements, and to avoid potential through-traffic conflicts.</p>	Section 6.5.13
<p>12o) The designation of appropriate pre-construction, construction and transport vehicle routes to and from the wind energy facility site.</p>	Section 4
<p>12p) Provision of designated areas for loading zones.</p>	Section 6.5.2
<p>12q) Measures to be undertaken to record traffic volumes on the nominated road network during the construction of the wind energy facility.</p>	Section 6.7
<p>12r) Proposed measures to ensure workers enter and exit the wind energy facility site from the designated site entrance at Tapps Lane.</p>	Section 6.4
<p>12s) Proposed measures to ensure construction vehicles are easily identifiable.</p>	Section 6.6
<p>12t) Proposed measures to manage traffic impacts associated with the ongoing operation of the wind energy facility on the traffic volumes and flows on surrounding roads.</p>	Section 6.5

Planning Permit Condition		TMP Ref.
12u)	A program to rehabilitate existing public roads within agreed timeframes to the condition identified in the surveys carried out under Condition 12a) or to the condition to which the roads have been upgraded, whichever is relevant.	Sections 6.5.5 and 8.4

## 1.4 Report Structure

This TMP report is structured as follows:

- **Section 2** provides a description of the existing conditions including key road dimensions, traffic volumes and accident history.
- **Section 3** describes the project including the site layout and access, and an outline of the construction program.
- **Section 4** details the traffic generation expected by the site and the impact on the road network.
- **Section 5** details the traffic management measures required including the Over Dimensional (OD) haul routes, site access and the mitigation measures and upgrades that will be required to facilitate construction.
- **Section 6** contains details of the TMP administration including contact details for the responsible road authorities.
- **Section 7** is a summary of the traffic management measures required.

## 1.5 Referenced Materials

The following documents and materials were referred to during the preparation of this report:

- *Mortlake South Wind Farm Traffic Management Plan*, GHD, November 2012
- *Mortlake South Wind Farm Transport Impact Assessment*, GTA Consultants, June 2016
- *Mortlake South Planning Permit Conditions Consultation Table*, September 2017
- Planning Permit No: 2008/0538/A, issued 23 April 2017
- *Guidelines and Framework for Assessing Wind Farm Energy Projects, and Associated Traffic Management Plans*, Version 7, VicRoads, July 2017
- *CrashStats*, VicRoads, 1 January 2013 to 31 December 2017
- *VicRoads Traffic Profile Viewer, 2015 data*
- *PTV Route Timetables, Warrnambool-Mortlake*

## 2. Existing Conditions

### 2.1 Key Roads

#### 2.1.1 Princes Highway West

Princes Highway runs north-east to south-west and connects the townships of Terang at its northern end and Panmure at its southern end. The road is under the care and ownership of VicRoads and is classified as a primary arterial road, State Route A1. It is a sealed two-lane two-way single-carriageway road of approximately 9 m width. The two traffic lanes are 3.5 m wide, with generally 1 m shoulders. There are no footpaths and no street lighting. Surrounding land use is generally rural agricultural. This road has a posted speed limit of 100 km/h.

#### 2.1.2 Terang-Mortlake Road

Terang-Mortlake Road runs north-west to south-east and connects the towns of Mortlake and Terang. The road is under the care and ownership of VicRoads and is classified as Arterial – Other. It is generally a two-lane two-way single-carriageway road with a posted speed limit of 100 km/h. The carriageway is generally 7.5 m wide; there are no footpaths and no street lighting. Surrounding land use is generally rural agricultural. This road has a posted speed limit of 100 km/h.

Terang-Mortlake Road is sealed and constructed to a high standard. It is an approved VicRoads B-Double and higher mass limit route. It is considered that Terang-Mortlake Road is suitable for use by traffic associated with the construction of the wind farm. It is noted that VicRoads have identified a requirement for turn lanes to be constructed at the Tapps Lane / Terang-Mortlake Road intersection.

#### 2.1.3 Tapps Lane

Tapps Lane runs north-south between Terang-Mortlake Road at its northern end and Terang-Framlingham Road at its southern end. The road is under the care and ownership of Moyne Shire Council and is classified as a local road. It is an unsealed single-carriageway road of approximately 4.0 m width (although this varies as the edge of the road is generally not well defined) with table or swale drains on each side.

There are no footpaths or street lighting and the default rural speed limit of 100 km/h applies, although it would be difficult to achieve such a speed given the nature of the road surface. Surrounding land use is generally rural agricultural. This road has a default speed limit of 100 km/h.

A bridge is located on the section of Tapps Lane approximately 460 m south of Grinters Lane. This bridge has a concrete deck and is approximately 6.3 m wide with a 10 m span.

A transmission power line runs along the western side of Tapps Lane between Grinters Lane and Cliffords Lane.

The typical construction of Tapps Lane is shown in the following figures for:

- The section between Terang-Mortlake Road and Grinters Lane
- The section between Grinters Lane and Chamallak Lane
- The section south of Chamallak Lane



**Figure 1 Tapps Lane – looking south from Terang-Mortlake Road**



**Figure 2 Tapps Lane – looking south from Grinters Lane**



**Figure 3 Tapps Lane – looking south from Chamallak Lane**

Tapps Lane, in its current form, is considered unsuitable for the type and volume of heavy vehicle traffic that will be associated with the construction of the wind farm and therefore upgrades will be required. Road upgrades are documented in Section 6.5.4 of this TMP.

#### **2.1.4 Grinters Lane**

Grinters Lane runs east-west between Mortlake-Framlingham Road at its western end and Kolora Lane at its eastern end. It crosses both Terang-Mortlake Road and Tapps Lane. The road is under the care and ownership of Moyne Shire Council and is classified as a local road.

Within the project area, Grinters Lane is an unsealed single-carriageway road of approximately 3.5 m width (although this varies as the edge of the road is generally not well defined) with table or swale drains on each side. Part of Grinters Lane is sealed from approximately 170 m west of Terang-Mortlake Road through to Kolora Lane. There are no footpaths or street lighting and the default rural speed limit of 100 km/h applies, although it would be difficult to achieve such a speed given the nature of the road surface. Surrounding land use is generally rural agricultural. This road has a default speed limit of 100 km/h.

A transmission power line runs along the southern side of Grinters Lane between Mortlake-Framlingham Road and Tapps Lane.

The typical construction of Grinters Lane is shown in Figure 4.



**Figure 4 Grinters Lane looking west from Tapps Lane**

Grinters Lane, in its current form, is considered unsuitable for the type and volume of heavy vehicle traffic that will be associated with the construction of the wind farm and therefore upgrades will be required. Road upgrades are documented in Section 6.5.4 of this TMP.

### **2.1.5 Chamallak Lane**

Chamallak Lane runs east-west between Mortlake-Framlingham Road at its western end and Terang-Mortlake Road at its eastern end. It crosses Tapps Lane. The road is under the care and ownership of Moyne Shire Council and is classified as a local road. It is an unsealed single-carriageway road of between 3.5 m to 4.0 m width (although this varies as the edge of the road is generally not well defined) with table or swale drains on each side.

The section of road east of Tapps Lane is a Dry Weather Only Road and is in particularly poor condition, having a very uneven surface that appears to be little more than loose dirt. There are no footpaths or street lighting and the default rural speed limit of 100 km/h applies, although it would be virtually impossible to achieve such a speed given the nature of the road surface. Surrounding land use is generally rural agricultural. This road has a default speed limit of 100 km/h.

The typical construction of Chamallak Lane is shown in Figure 5.



**Figure 5 Chamallak Lane looking west from Tapps Lane**

Chamallak Lane, in its current form, is considered unsuitable for the type and volume of heavy vehicle traffic that will be associated with the construction of the wind farm and therefore upgrades will be required. Road upgrades are documented in Section 6.5.4 of this TMP.

## 2.2 Traffic Volumes

Traffic data obtained from VicRoads is summarised in Table 2. Data for local roads (Tapps Lane, Grinters Lane and Chamallak Lane) was not obtained, though on-site observations indicate that volumes on these roads are very low (likely less than 100 vehicles per day).

**Table 2 Summary of two-way traffic volume data on relevant roads**

Location	Average daily traffic (vpd)
Hamilton Highway in Mortlake town centre	3,900
Hamilton Highway east of Mortlake	2,200
Hopkins Highway south of Hamilton Highway	2,600
Terang-Mortlake Road (Boundary Road) south of Hamilton Highway	950
Terang-Mortlake Road near Tapps Lane	1,000
Princes Highway West west of Terang	5,700

Source: VicRoads Traffic Profile Viewer, 2017 estimates

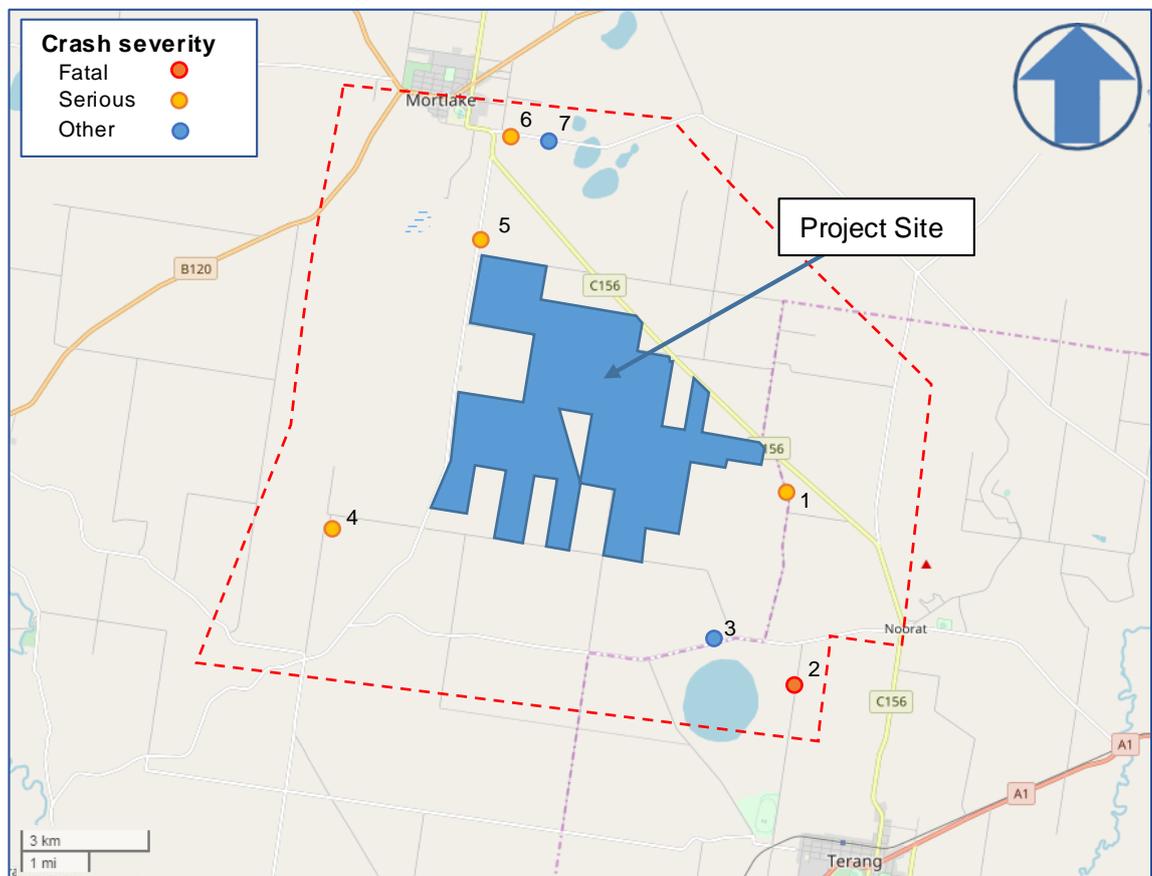
### 2.3 Crash History

VicRoads' publicly-accessible database of casualty crashes, CrashStats, has been interrogated for the period 1 January 2013 to 31 December 2017, which is the most recent complete five-year period available. The search focused on a 5 km radius of the subject site in the Shire of Moyne. A crash history assessment is reflective of the road conditions, types of driver behaviour and exposure levels on the road network. During the five-year study period, seven crashes occurred as shown in Table 3 and Figure 6.

**Table 3 Breakdown of Crash Type**

Crash Type	Number of Crashes
Cross traffic	1
Off-path on straight	2
Off-path on curve	4
Total	7

Of the seven crashes, six were single vehicle run-off road crashes. These crashes occurred on different roads and during either day or dusk conditions. Five of the seven crashes were either serious or fatal injury crashes. There are no other crash patterns to be ascertained from the crash data.

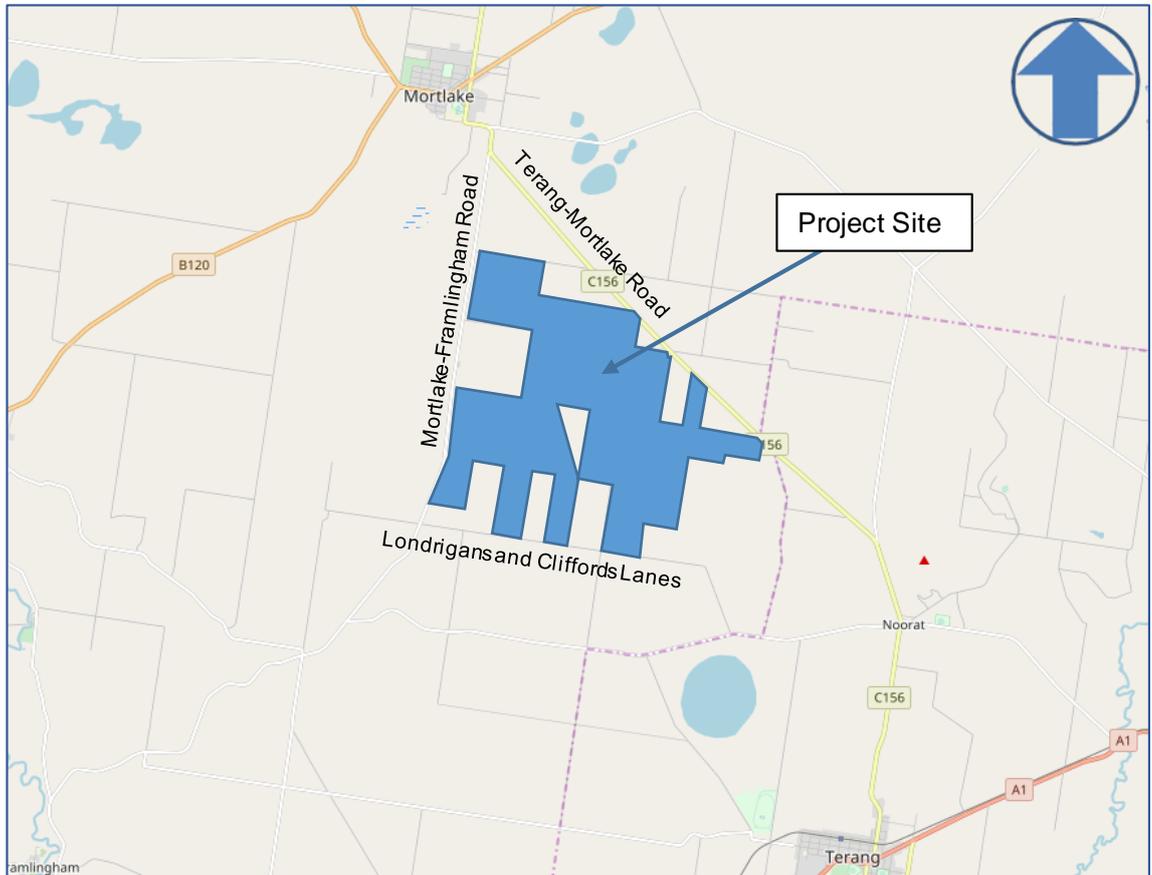


**Figure 6 Location of Casualty Crashes**

# 3. Project Information

## 3.1 Site Location

Mortlake South Wind Farm is located in the Shire of Moyne in the south-west of Victoria, approximately 240 km from Melbourne via the Hamilton Highway and approximately 50 km from Warrnambool. It is located south-east of Mortlake and is generally bounded by Mortlake-Framlingham Road to the west, Terang-Mortlake Road to the east and Londrigans and Cliffords lanes to the south. The location of the wind farm is shown in Figure 7.



**Figure 7 Extent of wind farm boundaries**

Land use in the area is predominantly rural agricultural. The boundary of the wind farm is comprised of several parcels of private land (mainly farms) and ACCIONA has licence agreements with each of the land owners to operate its infrastructure on their land. The topography of the area is generally flat.

## 3.2 Site Layout and Access

The site layout is shown in Appendix A. The development consists of 35 turbines arranged fairly evenly over the extent of the site, plus a substation and operations and management building. During the construction period a temporary construction compound and concrete batching plant will also be provided by ACCOINA on the site along the western edge of Tapps Lane, north of Grinters Lane.

Access to and from the site will be solely via Terang-Mortlake Road and Tapps Lane.

The site layout plan indicates that individual groups of turbines will be accessed directly via either Tapps Lane, Grinters Lane or Chamallak Lane. Overall, there would be around 16 public

road access points spread across the site. The access points will provide access to temporary construction tracks, which will later be converted into permanent maintenance roads. Each turbine will have a hardstand area serving multiple purposes including parking for construction vehicles, assembly areas for turbine components and other equipment, and turning areas for trucks used to transport equipment and material to each turbine.

Aside from the turbines and substation located on Tapps Lane, most other built infrastructure on site will be located near Terang-Mortlake Road, including the temporary construction compound and a permanent maintenance facility. The temporary construction compound and permanent maintenance facility will include all the parking areas required for construction, operation staff and visitors.

### **3.3 Construction Program**

Construction is proposed to commence in December 2018, with completion expected by July 2020. The overall construction program will last for approximately 20 months. The indicative construction stages are as follows:

- Public road upgrades Dec 2018 to Feb 2019
- Access track and hardstand construction Mar 2019 to Sep 2019
- Foundations and turbines Apr 2019 to Apr 2020
- Electrical and substations May 2019 to Sep 2019
- Testing and commissioning May 2020 to Jul 2020

Transport of wind turbine parts (i.e. over dimensional loads) is likely to commence in September 2019 and be completed in January 2020. Typically, turbine component deliveries to the site from the port are scheduled to minimise the time that key components sit on the site prior to turbine erection.

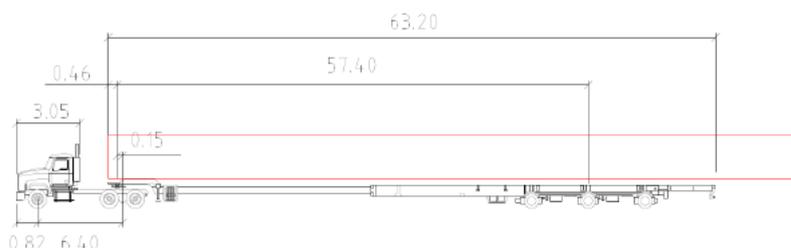
# 4. Access Routes

## 4.1 Over-Dimensioned Vehicles

### 4.1.1 Turbine Blades and Tower Sections

The Project is comprised of 35 wind turbines with a maximum tip height of 179.5 metres. Each wind turbine will be made up of 4 steel tower sections, a nacelle, turbine hub and 3 turbine blades. The blades and tower sections will be transported to the site in one piece by prime mover and extensible trailer, resulting in up to 245 over-dimension trips for blades and towers (i.e. 7 trips per turbine).

For the wind turbine blades, the longest single component to be transported to the site, the prime mover and extensible trailer combination would have a total length of up to 78.6 metres (assumed 69.8 metres + 9.2 metre rear overhang) as shown in Figure 8. Note that the extensible trailer will be retracted for the return journey, and therefore the over-dimensioned vehicle trip is considered to be one-way only (i.e. towards the site).

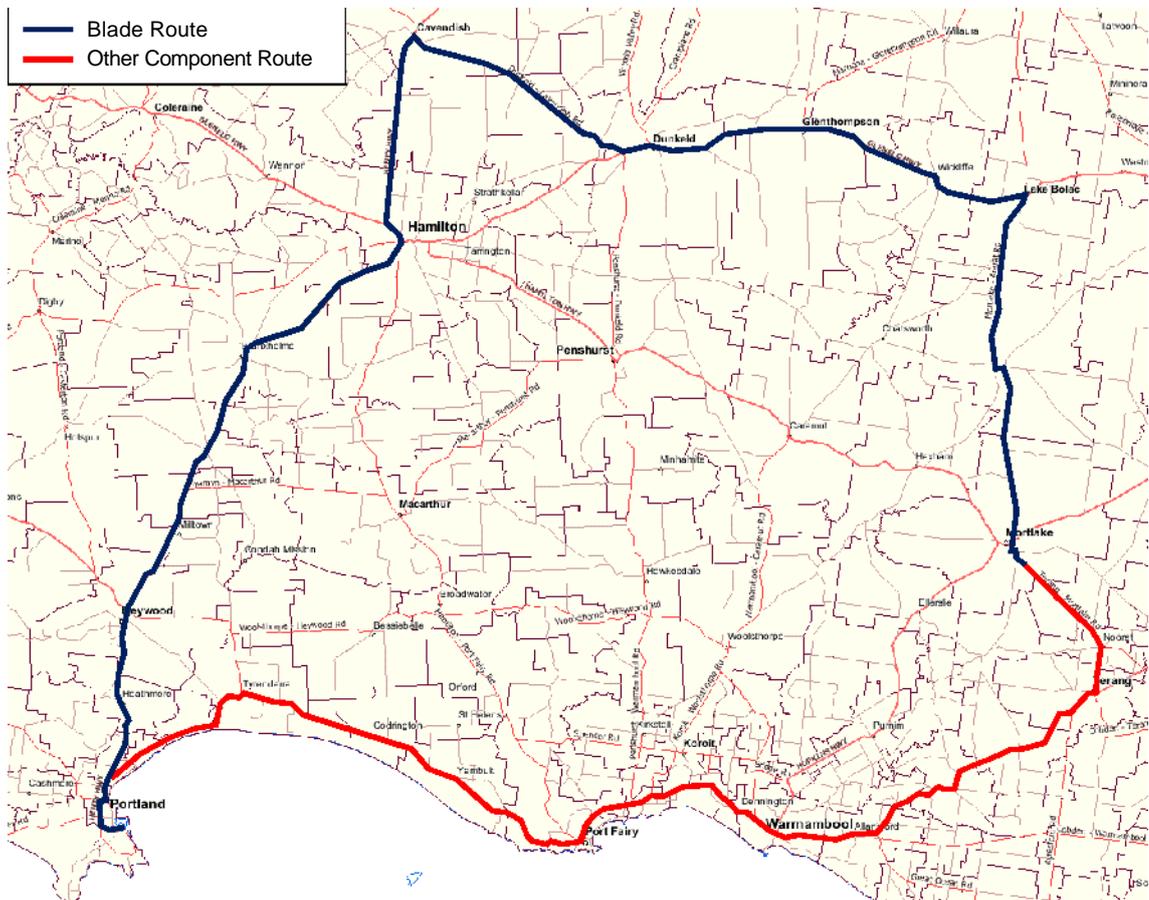


**Figure 8 Wind Turbine Transport Combination**

The haulage of wind turbine components will be from the Port of Portland and the Port of Melbourne to the site, using predominantly arterial roads, and only using local roads within the area encompassed by the wind farm site (e.g. Tapps Lane, Grinters Lane and Chamallak Lane).

The proposed turbine component routes are as follows:

WTG Component	Route	Route Details
Tower Sections (Keppel Prince)	Keppel Prince Portland to Mortlake via Lake Bolac (Northern Route).	Portland / Heathmere / Condah / Branxholme / Hamilton / Cavendish / Dunkeld / Glenthompson / Lake Bolac / Mortlake
Tower Sections (Hayward)	Port Melbourne to Mortlake via Lake Bolac.	Port Melbourne / Ballan / Beaford / Skipton / Streatham / Lake Bolac / Woorndoo / Mortlake
Turbine Blades	Port of Portland to Mortlake via Lake Bolac (Northern Route).	Portland / Heathmere / Condah / Branxholme / Hamilton / Cavendish / Dunkeld / Glenthompson / Lake Bolac / Mortlake
Nacelles	Portland to Mortlake via Warrnambool (Southern Route).	Portland / Tyrendarra / Port Fairy / Warrnambool / Allansford / Noorat East / Noorat
Hubs	Portland to Mortlake via Warrnambool (Southern Route).	Portland / Tyrendarra / Port Fairy / Warrnambool / Allansford / Noorat East / Noorat
Drivetrains	Portland to Mortlake via Warrnambool (Southern Route).	Portland / Tyrendarra / Port Fairy / Warrnambool / Allansford / Noorat East / Noorat



**Figure 9 Haulage Routes**

**Swept Path Assessment**

A preliminary swept path assessment has been undertaken for seven key locations within the immediate vicinity of the project site based on the design vehicle in Figure 8 with independent rear steering. These are provided in Appendix B of this report.

It is acknowledged that these swept paths are indicative only in nature and a more detailed assessment would need to be undertaken by the haulage contractor prior to commencing work. However the swept paths appended to this report do demonstrate that transport of wind turbine parts via the primary haulage route is generally feasible.

The findings of the preliminary swept path assessments are presented as follows:

- Bend of Terang-Mortlake Road (Boundary Road) at Hood Avenue
  - 90 degree left hand bend in road will require traffic management to hold traffic to allow transport vehicle to traverse entire width of pavement. Bend of Terang-Mortlake Road at Purcells Lane
- Intersection of Terang-Mortlake Road and Tapps Lane
  - The body sweep of the right hand turn into Tapps Lane off Terang-Mortalke Road will encroach onto private property on the inside of the curve. Note that this property is owned by a project stakeholder. New pavement will be required to allow for front and rear wheel tracking. There is a power pole on the north-east side of Terang-Mortalke Road which may be impacted.
- Intersection of Tapps Lane and Grinters Lane

- The right turn from Tapps Lane into Grinters Lane will encroach on private property on the inside of the corner. This property is owned by a project stakeholder. Both Tapps Lane and Grinters Lane are currently unsealed. New pavement will be required to allow for front and rear wheel tracking.
- Intersection of Chamallak Lane and Tapps Lane
  - The right turn from Tapps Lane into Chamallak Lane will encroach on private property on the inside of the corner. This property is owned by a project stakeholder. Both Tapps Lane and Chamallak Lane are currently unsealed. New pavement will be required to allow for front and rear wheel tracking.

Note that the combination will exceed the maximum length requirements to comply with the permit exemptions for VicRoads' approved Class 1 Oversize & Overmass (OSOM) Network, and therefore permits will be required to operate along these routes. The final dimensions of each load will determine the specific permit conditions, which may include the following:

- Pre-transport route assessment;
- Warning signs and devices;
- Pilot vehicles and escort vehicles;
- Mass and dimension limits, including rear overhang; and
- Time of operation.

The haulage contractor will ultimately be responsible for obtaining and complying with the permit for each over-size load to be transported. It is noted that over-dimensioned vehicles are not proposed to use Council owned roads for this Project with the exception of Tapps Lane, Grinters Lane and Chamallak Lane within the boundaries of the Project Site.

It is noted that the design of internal wind farm access tracks from Tapps Lane has considered the location of the transmission power line poles on the southern side of Grinters Lane and the western side of Tapps Lane. Where turning dimensions require the haulage contractor to use or overhang private land, the consent of the land owner will be required.

#### **4.1.2 Nacelles**

Nacelles and drivetrains will be transported to the site using 6x8 platform trailers. Drivetrains may be transported separately, however for the purposes of this report it is assumed that nacelles and drivetrains will be transported together. Each turbine will require one nacelle and drivetrain to be transported, resulting in a total of 35 laden trips to the site and 35 unladen return trips.

These loads will have a mass of approximately 140 tonnes and therefore will exceed the maximum load limit to comply with the permit exemptions for VicRoads' approved Class 1 OSOM Network. The haulage contractor will ultimately be responsible for obtaining and complying with the permit for each over-mass load to be transported to the site.

In addition to VicRoads requirements, the use of overmass vehicles will require a permit from the National Heavy Vehicle Regulator (NHVR).

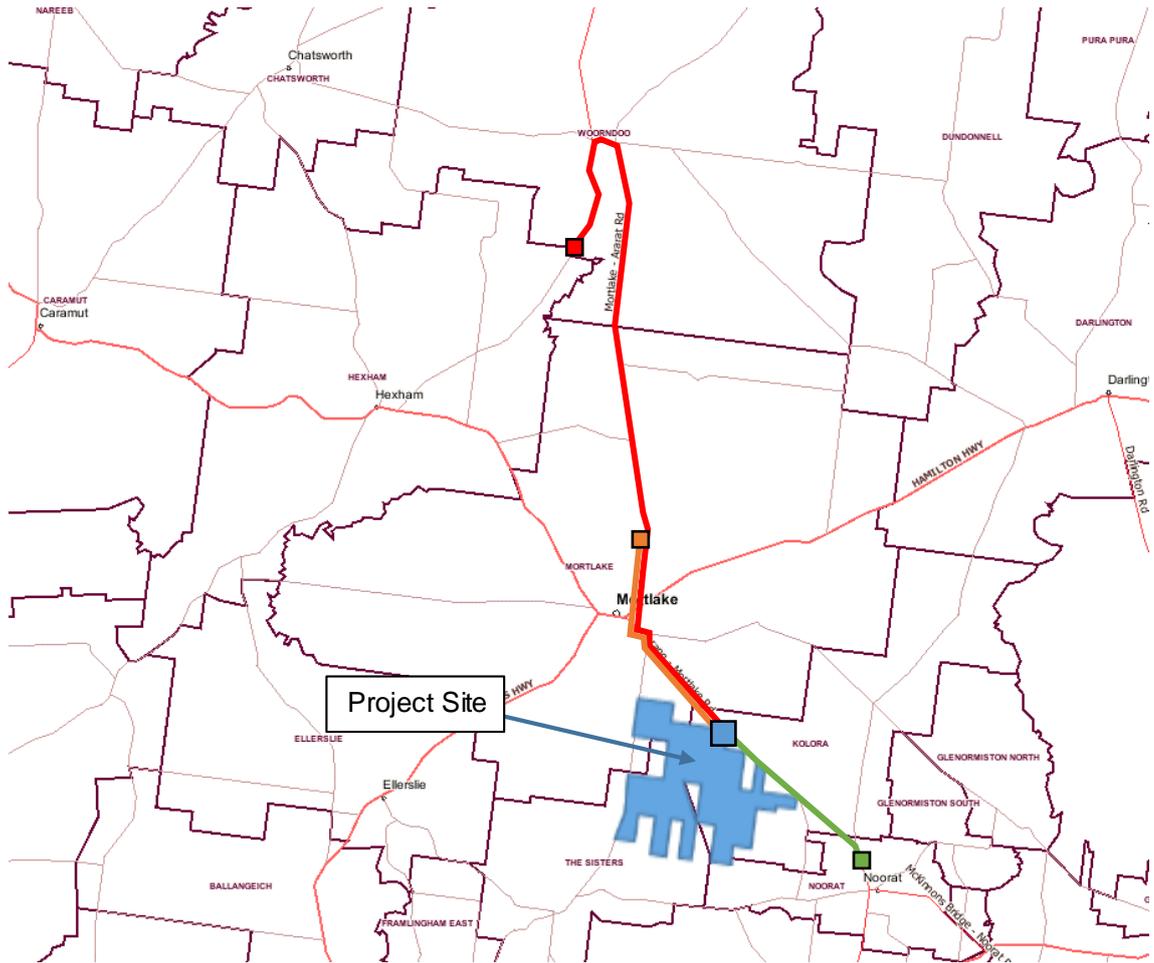
#### **4.1.3 Transformers**

One transformer will be installed at the on-site substation. This will be transported to the site using low loader trailer from Glen Waverley to access the proposed substation.

The load will likely have a mass exceeding the maximum load limit to comply with the permit exemptions for VicRoads' approved Class 1 OSOM Network. The haulage contractor will



The quarries nominated above are all accessed via the roads contained on Victoria's list of gazetted roads for Higher Mass Limit (HML) trucks, with the exception of Hexam-Woorndoo Road. The routes are presented in Figure 10.



**Figure 10 Quarry Haulage Routes**

Prior to the use of these routes for quarry haulage, a pavement condition survey will be undertaken by the Road Quality Auditor (refer to Section 6.5.11) and submitted to VicRoads and Moyne Shire Council (as relevant).

#### **4.2.2 Other Quarry Routes**

If, in the construction of the wind farm, ACCIONA or its construction contractor requires the use of quarries not listed in Section 4.2.1, a secondary Traffic Management Plan will be submitted to Moyne Shire Council, Corangamite Shire Council (if any routes utilise a local road within Corangamite) and VicRoads.

The secondary TMP would detail:

- Nominated haulage routes for quarry materials.
- The estimated start and end date for each haulage route.
- The estimated traffic volumes for each route.
- The frequency of inspection and reporting for the Road Quality Auditor (if required).
- Timeframes for repair of any damage to be in accordance with the VicRoads or Council Roads Management Plan.
- A pre-haulage pavement condition survey for nominated routes.

- A requirement for a post-haulage pavement condition survey for nominated routes.

The secondary TMP must be approved by Moyne Shire Council and VicRoads prior to the use of construction traffic routes identified in the secondary TMP.

### **4.2.3 Workforce**

The workforce required for construction will vary based on the activities being undertaken. ACCIONA have provided an indicative estimate of workforce required for each project phase and this has been incorporated into the traffic generation estimates provided in Section 5 of this report.

The construction workforce will travel to the site by private car. There will be monthly variations in traffic generation to reflect work activities.

The only restriction placed on users travelling to the site will be the requirement for site ingress and egress to be exclusively via Terang-Mortlake Road. Beyond this requirement, users will be free to travel via the most convenient route to the site including use of local roads. The likely volumes of traffic are detailed in Section 5.3.

# 5. Traffic Generation

## 5.1 Key Assumptions

The trip generation estimates and traffic distribution is based on a number of assumptions that have been made for the purposes of this assessment regarding the extent of construction activities, construction program, sources of materials and construction methodology. These assumptions include, but are not limited to, the following:

- Approximately 20 km of roads are required for internal access tracks and are assumed to be 8 m wide and have 400 mm pavement depth.
- Approximately 15 km of treatment of existing roads are required and are assumed to be 8 m wide and have 400 mm pavement depth.
- One (1) 70 m x 50 m x 500 mm deep hardstand is required to support construction activities at the location of each individual wind turbine.
- Average workforce of 100 people over the 20 month construction period based on a 6-day work week with 1.5 people per vehicle.
- General deliveries and waste disposal estimated on a daily basis over the construction period.
- On-site concrete batching is assumed and therefore trips by concrete agitators will typically consist of local trips only confined to Tapps Lane, Grinters Lane, Chamallak Lane and internal access roads.

## 5.2 Traffic Generation Estimates

Based on the assumptions outlined above, and other assumptions detailed in in Table 6, the project is estimated to generate a total of **125,237** vehicle movements (two-way) over a 20 month total construction period. Of these, there are estimated to be around **37,183** heavy vehicle (truck) movements and around **88,053** light vehicle movements (typically employee movements).

### 5.2.1 Comparison against Previous Estimates

The current traffic generation estimates have been compared against the estimates provided in the 2016 Traffic Impact Assessment prepared by GTA and are summarised in Table 5.

**Table 5 Trip Generation comparison against 2016 TIA Estimates (GTA)**

Item	2016 TIA Estimates (GTA)	2018 TMP Estimates (GHD)
Workforce (light vehicles)	60,000 trips	69,333 trips
Foundations	8,424 trips	3,417 trips (excludes local trips by concrete agitators)
Road and hardstand construction	8,948 trips	23,386 trips
Other movements (including over-dimension)	2,154 trips	29,101 trips
<b>Total</b>	<b>79,526 trips</b>	<b>125,237 trips</b>

Based on Table 5, these current traffic generation estimates represent a significant increase compared to the 2016 estimates – being around 57% higher. This is primarily due to refinement of workforce estimates, more detailed information regarding road and hardstand construction requirements and the addition of several other trip categories not considered in the TIA (deliveries, waste collection etc.).

## **5.2.2 Total Traffic Generation Estimates**

### ***External Trips***

All deliveries of plant and materials are assumed to originate from Portland or the surrounding area. Aggregate required for the project will be delivered from nearby quarries as detailed in Section 4.2.1 of this report.

The external trips also include the workforce (light vehicles). In most cases, external trips will be distributed around the site depending on the locations of wind turbines. For concrete, deliveries will be to the batching plant provided on the site at the northern end of Tapps Lane. Traffic generation estimates for external trips are provided in Table 6.

### ***Internal Trips***

The primary generators of internal trips are the concrete batching plants, which will generate trips by concrete agitators to each of the individual turbines to be constructed. Note that internal trips will generally be confined to the boundaries of the Project Site, using internal access roads, as well as Tapps Lane, Grinters Lane and Chamallak Lane within the project boundary. Traffic generation estimates for internal trips are provided in Table 7.

**Table 6 Traffic Generation Estimates (External Trips)**

Item	Quantity	Unit	Units per vehicle	Total number of vehicles	Vehicle type	Total trips	Comment
<b>Roads and Hardstands</b>							
<b>Site Establishment</b>							
Access track construction material	153,600	t	40	3,840	Truck and trailer	7,680	Based on 20 km of roads (8 m wide x 400 mm deep). 2 tonne/m <sup>3</sup> , 20% bulking factor
Treatment of existing roads	115,200	t	40	2,880	Truck and trailer	5,760	Based on 15 km of roads (8 m wide x 400 mm deep). 2 tonne/ m <sup>3</sup> , 20% bulking factor
Cabling trenches	30,000	t	40	750	Truck and trailer	1,500	Based on 50 km of trenching sand (500 mm wide x 500 mm deep). 2 tonne/ m <sup>3</sup> , 20% bulking factor
Delivery of plant for civil works	50	no	1	50	Truck	100	One-way laden
Site offices	20	no	1	20	Truck	40	One-way laden
Underground cabling drums	50	no	2	25	Truck	50	One-way laden
Hardstands	147,000	t	40	3,675	Truck and trailer	7,350	Based on 70 m long hardstands (50 m wide x 500 mm deep). 2 tonne/ m <sup>3</sup> , 20% bulking factor (1 per turbine)
<b>Operations and Management Facility</b>							
O&M compound	100	no	1	100	Truck	200	Built on-site, will consist of office and warehouse
<b>General Deliveries/ Construction Operations</b>							
Water for road building	1,248	no	1	1,248	Body truck	2,496	Based on 2 trucks, 8 months, 6 days per week, 3 trips per day
Water for dust suppression	1,872	no	1	1,872	Body truck	3,744	Based on 2 trucks, 12 months, 6 days per week, 3 trips per day
Deliveries	9,360	no	1	9,360	Van	18,720	Based on 20 deliveries per day over 18 months, 6 days per week
Waste disposal	1,872	no	1	1,872	Truck	3,744	Based on 4 trucks per day over 18 months, 6 days per week
Construction personnel	34,667	pers	1	34,667	Car	69,333	Based on 6 day work week, average workforce of 100 people over 20 month construction period. 1.5 person per vehicle.

<b>Foundations and Turbines</b>							
<b><i>Tower Footings</i></b>							
Cement	9,915	t	40	248	Truck and trailer	496	Based on 600 m <sup>3</sup> concrete per foundation, typical ratio 1 cement : 1.5 sand : 3 aggregate : 0.6 water  80 tonnes of steel per foundation
Sand	14,872	t	40	372	Truck and trailer	744	
Aggregate	29,744	t	40	744	Truck and trailer	1,487	
Water	4,957	kL	18	275	Body truck	551	
Steel	2,800	t	40	70	Truck and trailer	140	
<b><i>Wind Turbines</i></b>							
Tower sections	140	no	1	140	Extensible trailer	280	Based on 4 tower sections per turbine
Nacelles	70	no	1	70	Platform trailer	140	Nacelles and gearbox transported separately. 1 of each per turbine
Hubs	35	no	1	35	Low loader trailer	70	Based on 1 per turbine
Blades	105	no	1	105	Extensible trailer	210	Based on 3 blades per turbine
Miscellaneous	105	cont	1	105	Semi-trailer	210	Assumes 3 containers of equipment per turbine
<b><i>Equipment</i></b>							
Main cranes	20	no	1	20	Truck	40	2x main cranes, 10 loads per crane transported and assembled on site
Counterweight	20	no	1	20	Truck	40	2x main cranes, 10 loads per crane for counterweights
100 T crane	2	no	1	2	Truck	4	
20 T crane	2	no	1	2	Truck	4	
Telehandlers	2	no	1	2	Truck	4	
Met masts (pallets)	6	no	1	6	Truck	12	Based on 2 trips per mast
<b><i>Electrical and Substation</i></b>							
<b><i>On-site Substation Construction/Control Building</i></b>							
Pre-fab building	1	no	1	1	OSOM Truck	2	Prefabricated building to be transported in 1 piece

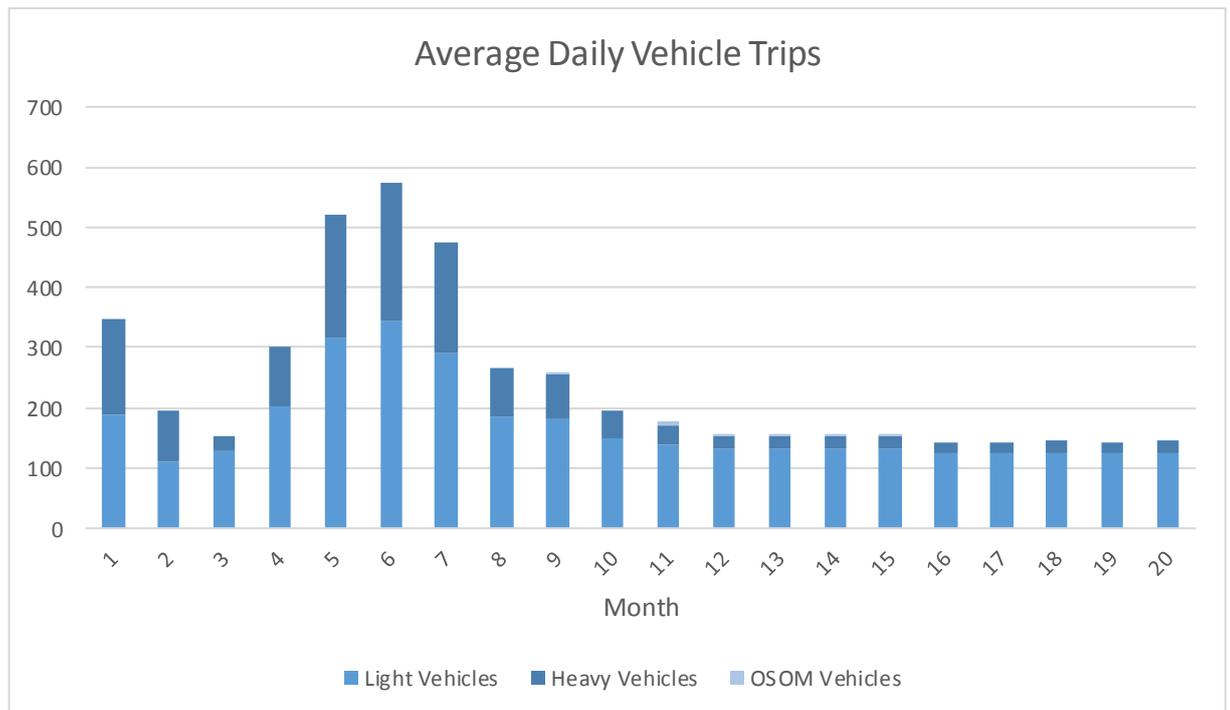
Earthgrid	1	no	1	1	Truck and trailer	2	
Equipment	10	no	1	10	Truck and trailer	20	Delivery of substation equipment
On-site Transformer	1	no	1	1	Low loader	2	
Fencing	1	no	1	1	Truck	2	
Miscellaneous electrical	10	cont	1	10	Semi-trailer	20	Electrical equipment
<b>Site Disestablishment</b>							
Site offices	20	no	1	20	Truck	40	One-way laden

**Table 7 Traffic Generation Estimates (Concrete Agitators – Internal Trips)**

Item	Quantity	Unit	Units per vehicle	Total number of vehicles	Vehicle type	Total trips	Comment
<b>Turbine Foundations</b>							
<b>Concrete Agitator Movements</b>							
Concrete for turbine foundations	21,000	m <sup>3</sup>	7.5	2,800	Concrete agitator	5,600	Based on 600 m <sup>3</sup> concrete per foundation

### 5.2.3 Summary of Traffic Generation

The traffic generation is expected to peak between Month 5 and Month 7 at around 500-600 vehicle trips per day. The trip generation will stabilise at between 100 and 200 vehicles per day from Month 10 onwards. The average daily trip profile is presented in Figure 11.



**Figure 11 Traffic Generation Summary**

The project is expected generate around 125,300 total vehicle trips (two-way) over the 20-month construction period, which equates to around 240 trips per weekday on average. Of these trips, there will be approximately 36,500 truck trips and 700 over-dimension vehicle trips. More than half of all trips will be daily entry and exit by the construction workforce.

Note that this includes external trips only. Internal trips will be confined to the Project site boundaries (e.g. Tapps Lane, Grinters Lane and Chamallak Lane) and will not generate traffic onto the external road network.

The traffic generation described in this report is an informed estimate only and based on information provided by ACCIONA and a range of assumptions made by GHD. The actual traffic volumes generated by the wind farm will be monitored over the construction period as detailed in Section 6.7 of this report.

The traffic generation during operation of the wind farm (e.g. after construction) is considered negligible compared to the construction period and has not been assessed in this report.

### 5.3 Local Trips and Trip Distribution

Within the site, trips are likely to be distributed as follows:

- Concrete raw materials, waste disposal and deliveries to the construction compound at the northern end of Tapps Lane.
- All other trips distributed around the local road network approximately according to the number of turbines to be constructed at those locations.
- Light vehicle trips assumed all via Terang-Mortlake Road and Tapps Lane (enforced during site induction).

An estimation of the local trip distribution is provided in Table 8 and Table 9.

**Table 8 Local Trip Distribution Estimates (20 months)**

Local Road	Turbines	HV Trips	LV Trips	Total Trips
<b>Total (includes agitators)</b>	<b>35</b>	<b>42,783</b>	<b>88,053</b>	<b>130,837</b>
Tapps Lane (north of Grinters Lane)	-	37,183	88,053	130,837
Grinters Lane	8	5,514	15,848	21,362
Tapps Lane (Grinters to Chamallak)	2	18,658	53,485	72,143
Chamallak Lane	13	8,960	25,752	34,712
Tapps Lane (south of Chamallak Lane)	12	8,271	23,771	32,042

**Table 9 Local Trip Distribution Estimates (average daily)**

Local Road	Turbines	HV Trips	LV Trips	Total Trips
<b>Total (includes agitators)</b>	<b>35</b>	<b>82</b>	<b>169</b>	<b>251</b>
Tapps Lane (north of Grinters Lane)	-	71	169	240
Grinters Lane	8	11	30	41
Tapps Lane (Grinters to Chamallak)	2	36	103	138
Chamallak Lane	13	17	49	67
Tapps Lane (south of Chamallak Lane)	12	16	46	62

## 5.4 Timing of Traffic Movements

Construction will occur 6 days per week over the 20 month construction period. Construction is estimated to commence in December 2018 and be completed by July 2020.

Heavy vehicle movements will typically be spread throughout the day. During peak times (e.g. Month 5 to Month 7) the frequency of truck movements might be on average around 20 to 30 trips per hour. Truck movements will be timed so as to avoid school bus times (refer Section 6.5.12 of this report).

Light vehicle movements will typically be concentrated around the start and finish of shift times in the morning and evening. These times will be subject to short periods of relatively high light vehicle movements accessing the site, however light vehicle movement will be relatively low outside at other times.

# 6. Traffic Management Measures

## 6.1 Relevant Guidelines

VicRoads is currently developing guidelines for the assessment of major energy projects. The working title of the document is *Guidelines for assessing wind farms, major energy projects and associated traffic management plans* (referred to in this report as “the VicRoads wind farm guidelines 2017”).

While these guidelines are still in draft form and have not yet been ratified, ACCIONA is committed to the general intent and spirit of the guidelines and has attempted to meet or exceed their recommendations wherever possible.

## 6.2 Primary Transport Routes

The primary haulage routes to the site are from Portland via:

- Madeira Packet Road, Henty Highway, Chrome Road, Dartmoor-Hamilton Road, Henty Highway, Dunkeld-Cavendish Road, Glenelg Highway, Mortlake-Ararat Road, Boundary Road, Terang-Mortlake Road and Tapps Lane; and
- Madeira Packet Road, Henty Highway, Princes Highway, Terang-Mortlake Road and Tapps Lane.

The roads used for turbine component haulage, until Tapps Lane, are owned and operated by VicRoads. Construction of the wind farm will involve transportation of both raw construction materials and turbine components to site, with the exception of quarried materials. Quarry haulage is discussed in Section 6.3.

The turbine components will need to be transported in over-dimensional (OD) vehicles and therefore the primary focus for the traffic management of OD loads is on the route from Portland to the site.

As well as consulting with VicRoads, Moyne Shire and Corangamite Shire, the National Heavy Vehicle Regulator Journey Planner has been used to determine the most suitable routes for the transport of raw materials and turbine components to the site.

## 6.3 Quarry Haulage Routes

Raw materials will be transported in standard vehicles which do not require permits to travel on public roads.

Quarry haulage routes have been identified in Section 4.2.1. Where possible, these haulage routes have been established on arterial roads where increased traffic would not introduce new safety risks. Prior to use of a quarry route, a pavement condition survey will be undertaken by the Road Quality Auditor (refer Section 6.5.10 of this report) and submitted to VicRoads and Moyne Shire Council.

## 6.4 Local Access Routes

Over-dimensional traffic associated with the construction of the wind farm will turn right onto Tapps Lane from Terang-Mortlake Road (for blades) and left off Terang-Mortlake Road (for other components). From there construction traffic will access the construction compound on Tapps Lane, or individual turbine sites via internal access roads off Tapps Lane Grinters Lane or Chamallak Lane.

All site traffic (OD vehicles, heavy vehicles, all staff and contractors) will enter the site through the access on Tapps Lane via Terang-Mortlake Road. This will be communicated through a mandatory induction process and managed through a daily sign-in/sign-out procedure.

These local roads are all unsealed and will need to be upgraded prior to construction commencing. All road upgrade designs will be fully integrated with the drainage designs for both the local roads and on-site drainage. The upgrades required are detailed in Section 6.5.4.

There is an existing bridge over Stony Creek on Tapps Lane, approximately 460 m south of Grinters Lane. This bridge is approximately 6.3 m wide, has a span of approximately 10 m and has a concrete deck. Council and ACCIONA have agreed that the bridge will need to be upgraded to accommodate the weight and volume of construction traffic prior to undertaking any on-site civil works south of the bridge (excluding public road upgrades). ACCIONA will undertake this work at its expense.

## **6.5 Mitigation Measures**

In order to minimise the impacts of construction traffic on the local road network, the following mitigation measures will be implemented:

- Heavy vehicles (i.e. B-doubles and above) will be restricted to the arterial road network only with the exception of Tapps Lane, Grinters Lane and Chamallak Lane
- Widening of Tapps Lane, Grinters Lane and Chamallak Lane to a minimum of 7.2 metres including two 3.1 m traffic lanes and two 0.5 m shoulders to accommodate heavy truck movements.
- Sealing of Tapps Lane between Terang-Mortlake Road and Chamallak Lane.
- Truck warning signage on all approaches to the site.
- Regular traffic monitoring and road quality auditing to assess impact. Frequency should comply with relevant road authority Road Management Plan assessment framework

In order to minimise the impacts of construction traffic on the arterial network, the following mitigation measures are recommended:

- Oversize & overmass (OSOM) vehicles should travel to the site via the routes identified in this TMP.
- The haulage contractor will be required to obtain a permit for any OSOM vehicles that do not comply with the dimension and mass limits to operate on VicRoads' gazetted OSOM transport route and to comply with any conditions attached to the permit including, but not necessarily limited to, time of day restrictions, traffic management signage and escort vehicles.
- Several locations have been identified in Section 4.1 of this report where temporary removal of road furniture may be required to accommodate transport of wind turbine blades to the site. Modifications to these intersections will be confirmed and approved during the OSOM permitting process.

### **6.5.1 Overhead Obstructions**

The bridge structure of the Bridge Water Road overpass has a minimum clearance height of 5.2 metres and a maximum clearance height of 5.5 metres. Loads that exceed 5.4 metres in height will need to undertake a detour. Investigations undertaken to date have not identified any other locations where height clearances are restricted.

There are no overhead obstructions such as power cables on Tapps Lane, Grinters Lane or Chamallak Lane. The haulage contractor will undertake a detailed assessment of the transport

route to identify any locations where clearance to overhead cables will be an issue. ACCIONA will then liaise with the utility provider to have the cables raised or relocated temporarily.

### 6.5.2 Loading Areas

Loading and unloading of materials brought to the site will be limited to the following areas:

- Areas within the construction compound, concrete batching plant and temporary laydown area all located on the western side of Tapps lane and as shown on the plan provided as Appendix A to this report; and
- A 20 x 80 metre laydown area around each wind turbine for turbine components.

There will be no loading or unloading on public roads.

### 6.5.3 Roadside Vegetation

The proposed accesses to the wind farm and upgraded road widths along Tapps Lane, Grinters Lane and Chamallak Lane will require the removal of vegetation to allow the construction vehicles to turn off the road.

ACCIONA is required to secure native vegetation offsets prior to the removal of native vegetation in accordance with its planning permits.

If the haulage contractor, in their pre-transport route assessment, identifies the removal of any vegetation that might potentially cause an obstruction, a separate planning permit may be required. ACCIONA will liaise with the relevant Responsible Authority regarding its removal and will obtain the necessary approval before the commencement of any vegetation clearance works.

### 6.5.4 Local Roads and Intersection Upgrades

The expected increase in traffic volumes on certain roads during construction, and the nature of that traffic, will require the upgrade of those roads. Generally, the provision of gravel roads with narrow shoulders will be required.

The assessment of seal and shoulder widths is based on Part 3 of the *Austroads Guide to Road Design: Geometric Design* and is summarised in Table 10.

**Table 10 Carriageway widths (m) (reproduced from Austroads Table 4.5)**

Element	Design ADT				
	1 – 50	150 – 500	500 – 1,000	1,000 – 3,000	>3,000
Traffic lanes	1 x 3.7	2 x 3.1	2 x 3.1/3.5*	2 x 3.5	2 x 3.5
Total shoulder	2 x 2.5	2 x 1.5	2 x 1.5	2 x 2.0	2 x 2.5
Min shoulder seal	0	2 x 1.5	2 x 1.5	2 x 1.0	2 x 1.5
Total Carriageway	8.7	9.2	9.2 – 10.0	11.0	12.0

\* 3.5 m lane widths should be provided when truck volumes exceed 15%

Discussions with Council indicate that a total carriageway width of 7.2 m will be required for Tapps Lane, Grinters Lane and Chamallak Lane. This comprises of two 3.1 m traffic lanes and

two 0.5 m shoulders. Due to the increase in traffic movements along Tapps Lane, Council has requested that the section between Terang-Mortlake Road and Chamallak Lane be upgraded to a sealed standard. The provision of a compacted gravel pavement rather than a full seal is generally satisfactory for the remaining local roads within the project area boundaries.

A full detailed design of the proposed upgrades (including all road-to-road intersections, but not individual access points) will be provided for approval to VicRoads and Moyne Shire Council (as relevant) and will include a complete pavement design based on the projected number of heavy vehicles. These will include cross sections showing their formation, depth, drainage and surface levels. On approval, these plans will form part of the TMP. Table 11 shows a list of identified local roads that require to be upgraded prior to commencing works.

**Table 11 Local Road Recommended Upgrades**

Road†	Existing width	Existing ADT	Expected ADT	Upgrade recommended
Tapps Lane (between Terang-Mortlake Road and Chamallak Lane)	Approx. 4.0 m unsealed	<150	<500	6.2 m sealed pavement with 0.5 m sealed shoulders plus all associated drainage works
Tapps Lane (remainder within project boundary)	Approx. 4.0 m unsealed	<150	<500	6.2 m gravel pavement with 0.5 m gravel shoulders plus all associated drainage works
Grinters Lane	3.5 m to 4.0 m unsealed	<150	<500	6.2 m gravel pavement with 0.5 m gravel shoulders plus all associated drainage works
Chamallak Lane	3.5 m to 4.0 m unsealed	<150	<500	6.2 m gravel pavement with 0.5 m gravel shoulders plus all associated drainage works

Condition 11 of the Planning Permit requires that the road works specified in Table 11 must be completed prior to commencing the construction of wind turbine footings, crane hardstands, internal access roads and substation works.

All road upgrade designs will be fully integrated with the drainage designs for both the local roads and on-site drainage as necessary. All repairs will be carried out either in accordance with, or faster than, the timeframes specified in Council's Roads Management Plan, and final repairs will be carried out within six months of the wind farm *take over date*. This is the date of issue of the last wind turbine *take over certificate*, which is issued to the wind farm owner by the engineering and construction contractor for each wind turbine. The certificate is issued upon completion of the turbine's test period and entry into operation. The initial upgrades, maintenance repairs and final repairs will be verified by to the appointed Road Quality Auditor (refer Section 6.5.10) to ensure quality. All works will be subject to a defects liability period of two years.

### 6.5.5 Arterial Roads Upgrades / Remediation

Given that many arterial roads were originally designed, constructed and maintained to cater for a relatively low heavy vehicle volume (20-50 trucks per day), a significant 'spike' in transport

patterns and in particular heavy vehicle volumes due to wind farm construction can be seen as an extraordinary event which can create additional road damage.

If a pre-construction survey establishes that any roads to be used for transport of wind farm components or quarry haulage are not to an adequate standard, ACCIONA will consult with VicRoads to establish a program of works, including pre-construction pavement testing, to upgrade the existing pavement to the appropriate standard prior to construction works impacting the road.

Prior to commencing works, ACCIONA will prepare and submit a specification of the works (i.e. area of responsibility, type of upgrades required, repair and maintenance schedules and so on) to VicRoads for approval, apply for relevant permits and meet all costs associated with detailed design assessment and the surveillance of works.

Throughout the construction period, regular condition inspections will be undertaken by the Road Quality Auditor (refer Section 6.5.11). The frequency of inspections and timing of repairs will be agreed with VicRoads and having regard to the VicRoads Road Management Plan.

Certain intersections may need to be altered to accommodate the swept paths of OD vehicles (particularly to facilitate the haulage of turbine blades) including pavement widening, hardstand construction and/or removal or modification of existing signage. These intersections have been identified in the assessments undertaken for the project and are listed as follows:

- Portland Port exit and Madeira Packet Road, Portland
- Henty Highway and New Street, Portland
- Henty Highway / Chrome Road, Branxholme
- Chrome Road / Dartmoor-Hamilton Road, Branxholme
- Dartmoor-Hamilton Road / Henty Highway, Hamilton
- Henty Highway / Glenelg Highway, Hamilton
- Henty Highway / West Boundary Road, Hamilton
- Henty Highway / Dunkeld-Cavendish Road, Cavendish
- Glenelg Highway / Mortlake-Ararat Road, Lake Bolac
- Terang-Mortlake Road / Tapps Lane, Mortlake
- Tapps Lane / Grinters Lane, Mortlake
- Tapps Lane / Chamallak Lane, Mortlake

It may be necessary for turning trucks to cross the centre line of the road for short periods of time while they negotiate corners. This is only expected to occur at intersections and tight bends. In these instances oncoming traffic will need to be halted temporarily while the truck completes its turn. The stopping of traffic will be carried out in accordance with VicRoads' requirements and will be the responsibility of the haulage contractor to identify locations along the route where traffic controllers may be required and arrange traffic management.

### **6.5.6 Temporary Removal of Signage**

To allow for the extra swept path of the OD load vehicles, it may be necessary for some road signs to be removed temporarily.

The OD load vehicles will be preceded by work crews who will remove any signage likely to obstruct the OD load vehicle's movement. Temporary signs will be provided as required until the arrival of the OD load vehicle to ensure that regulatory and warning signage remains in

place while the intersection is being used by general traffic. After the passing of the OD load vehicle, all signs will be replaced immediately.

### **6.5.7 Truck Warning Signage**

During construction, there will be an increased volume of truck activity in the area, including trucks turning into Tapps Lane, Grinters Lane and Chamallak Lane where ordinarily there would be few such movements. In order to increase awareness of the possibility of trucks turning into or out of side roads, truck warning signs (W5-22) will be installed on both approaches to the Tapps Lane intersection. These will be in addition to any other traffic control signage that might be installed by the contractor to manage traffic around or through its worksite.

ACCIONA will also install information signage (in ACCIONA branding) on approaches to the site advising of the activity, identifying that there will be additional truck activity during construction, and providing contact details for any enquiries or concerns.

'NO WIND FARM CONSTRUCTION TRAFFIC ACCESS' signs will be erected at the following locations:

- Tapps Lane, north of Sisters-Noorat Road
- Chamallak Lane, east of Mortlake-Framlingham Road
- Grinters Lane, east of Mortlake-Framlingham Road
- Grinters Lane, west of Terang-Mortlake Road

Additional signs will be provided at other locations during construction as Council's discretion.

### **6.5.8 Traffic Control at Site Access Points**

Specific controls for trucks turning into the site itself are considered to be unnecessary as they will take place from roads that currently carry very little traffic. However, at the turn-off to Tapps Lane from Terang-Mortlake Road, the increased volume of trucks will expose all road users to greater risk. Trucks generally undertake turning movements at slower speeds than light vehicles and it is therefore possible that they will create a temporary hazard while turning. As the speed limit on Terang-Mortlake Road is 100 km/h, the severity of any incident is likely to be high. Available sight distance at the intersection is well in excess of the minimum requirements at more than 1 km in each direction.

VicRoads has identified that the upgraded intersection at Terang-Mortlake Road will require left and right turn lanes from Terang-Mortlake Road into Tapps Lane.

While it would be very difficult to travel at the default speed limit of 100 km/h on Tapps Lane, Grinters Lane and Chamallak Lane due to the condition of the road surfaces, it is recommended that the speed limits be reduced to 60 km/h on these roads throughout the construction period.

### **6.5.9 Mud and Dust Control**

The proposed improvements to Tapps Lane, Grinters Lane and Chamallak Lane should minimise the potential for mud to be tracked onto Terang-Mortlake Road.

Vehicle wash-down areas will be placed at the construction compound to prevent mud being tracked onto sealed road surfaces and to allow for the removal of excess mud at the site.

All vehicles and equipment will be inspected for soil and weed material before entering and leaving the site, until such time as all internal access tracks are constructed. After this time, only vehicles and equipment that will be leaving formal tracks will require inspection. Any vehicles found to be carrying soil and/or weed material will be washed down before entering or leaving the site.

Various techniques will be used to mitigate the production of dust, including the spraying of water (potentially with wetting or binding agents added) onto road surfaces, including internal access tracks. This is likely to be especially important during summer.

ACCIONA will monitor Terang-Mortlake Road for mud or debris generated by the construction of the wind farm. If it is determined that mud is impacting on the operation or safety of the road, ACCIONA will arrange for the road to be washed down at its expense.

#### **6.5.10 Road Quality Auditor**

Addressing the significant amounts of pavement wear that can be caused by the passage of heavy vehicles is becoming increasingly important when planning wind farms. While excessive wear on sealed roads can be a problem, the amount of wear is expected to be far greater on unsealed roads, especially during periods of wet weather.

An independent Road Quality Auditor will be engaged for the duration of the project by, and at the cost of, ACCIONA to fulfil the roles and responsibilities of the Road Quality Auditor as set out in this TMP. The auditor will be a suitably qualified engineer, whose identity will be approved by Moyne Shire Council prior to the endorsement of this TMP.

The role of the Road Quality Auditor will be to:

- Undertake regular inspections of the roads and at the frequencies identified in Section 6.5.11.
- Inspect the roadworks at Tapps Lane, Grinters Lane and Chamallak Lane at construction hold points (proof rolls etc.) to ensure that the construction is in accordance with the approved engineering drawings and to the appropriate standard.
- Undertake pre-construction pavement condition surveys of any roads used by the wind farm, except Tapps Lane, Grinters Lane and Chamallak Lane, prior to that road being used by construction vehicles.
- Report the results of all condition surveys and inspections to Moyne Shire Council, Corangamite Shire Council or VicRoads (as relevant).

If the Road Quality Auditor identifies that a road has been damaged as a result of construction vehicle activity, corrective action will be undertaken in accordance with either the relevant Municipal Road Management plan or the VicRoads Road Management Plan.

Before construction of wind turbine footings, crane hardstands, internal access roads, or the substation, the road upgrade works associated with Tapps Lane, Grinters Lane and Chamallak lane (as described in Section 6.5.4 of this TMP) must be certified by the Road Quality Auditor as satisfying the requirements of this TMP and the relevant conditions of the permit, to the satisfaction of Moyne Shire Council, unless otherwise approved in writing by Moyne Shire Council.

#### **6.5.11 Infrastructure Condition Assessments**

Inspections of road conditions will be undertaken at the following frequency by the Road Quality Auditor:

- Tapps Lane, Grinters Lane and Chamallak Lane will be inspected and reported on at a frequency responsive to the types of activities, and the resulting level of traffic, generated at specific points during construction as listed in Table 12.

**Table 12 Local Roads – Inspection Frequency**

Construction Activity	Minimum inspection and reporting frequency	Tentative schedule
During public road upgrade construction activities until practical completion of the upgrade works	Weekly and at construction hold points.	Month 1 to Month 3
During site civil works until all turbine foundations have been completed	Fortnightly	Month 4 to Month 9
From the completion of turbine foundations until the completion of all construction work	Monthly	Month 10 to Month 20

- In the event any quarry haulage routes use local roads, these roads will be inspected and reported on at a frequency nominated in a secondary TMP which will form an addendum to this report.
- Arterial roads managed by VicRoads will be inspected and reported on in accordance with the relevant Road Maintenance Category (RMC) for each road (either RMC3 or RMC4). The RMC will be defined by the existing volume on the road and the volume of traffic generated by the wind farm over the road during specific periods of construction.

In the case of specific complaints or weather events, Moyne Shire Council may request the Road Quality Auditor to inspect and report on specific roads.

The frequency of inspections and reporting can be varied either at the instruction of, or with the prior written agreement from, Moyne Shire Council or VicRoads.

### 6.5.12 Timing of Truck Activity

Sections of the haulage route to be used by ACCIONA during construction contain school bus routes. ACCIONA have consulted with bus route operators in the nearby area to determine the times where buses operate along sections of roads. Based on the information provided by operators, ACCIONA will implement a curfew of Heavy Vehicles operating along the following roads/hours to avoid school bus movements:

**Table 13 School Bus Routes Curfews**

Road Section	(AM) Start	(AM) Finish	(PM) Start	(PM) Finish
Tarrone Ln (between Holcim Quarry and Penhurst-Warrnambool Rd)	7:45AM	8:15AM	3:50PM	4:00PM
Penhurst-Warrnambool Rd (between Woolsthorpe-Heywood Rd and Tarrone Ln)	7:35AM	8:45AM	3:35PM	4:45PM
Warrnambool-Caramut Road (between Minjah-Hawkesdale Road and Woolsthorpe-Heywood Road)	7:40AM	8:30AM	3:40PM	4:45PM
Mortlake-Ararat Road (between Woorndoo and Mortlake)	7:30AM	8:45AM	3:25PM	4:45PM
Terang-Mortlake Road (between Mortlake and Terang)	8:25AM	9:00AM	3:05PM	3:40PM

Sisters-Noorat Road (between Mortlake-Framlingham Road and Noorat)	8:15AM	8:30AM	3:40PM	3:55PM
Glenelg Highway (between One Mile Lane and Lake Bolac)	8:00AM	8:35AM	3:40PM	4:10PM
Mortlake-Ararat Road (between Lake Bolac and Woorndoo)	7:40AM	8:35AM	3:40PM	4:35PM

At the start of each school term, ACCIONA will consult with public and private schools and bus operators in the area to determine if any changes to bus routes or route times have occurred.

Curfew times will only apply on school days (ie. Not on Saturdays or during School Holiday periods) and may be modified with the agreement of Moyne Shire Council and VicRoads.

The curfew will apply to all nominated roads irrespective of whether they are managed by Council or VicRoads.

In addition ACCIONA is required to obtain permits for OD vehicles from NHVR. The application for permits will involve consideration of road safety which may result in haulage time restrictions.

Any light construction traffic on the road during curfew times will be required to adhere to all relevant road rules and regulations, including speed limits, in line with the Code of Conduct.

#### **6.5.13 Site Access Points**

Individual site access points will be provided on Tapps Lane, Grinters Lane and Chamallak Lane. In total, 16 site access points will be required, each providing access to groups of wind turbines. The locations of site access points are shown on the site layout plan provided in Section 4.2 this report.

A speed limit of 60 km/h will apply to Tapps Lane, Grinters Lane and Chamallak Lane throughout the duration of the construction period. The Unsealed Roads Manual Guidelines to Good Practice (2009) provides a minimum requirement of 115 m Safe Intersection Sight Distance (SISD) for a design speed of 60 km/h on level terrain.

There are no geometric sight distance restrictions on any of the roads to be used for direct access to and from groups of wind turbines. Vegetation will be maintained as required in order to ensure minimum sight distance requirements are achieved throughout the construction period.

Preliminary concept layouts for site access points are provided in Appendix B to this report.

#### **6.5.14 Road Rehabilitation**

As referenced throughout this TMP, a program of monitoring and road repairs will be established during the construction phase.

- As described in Section 4.2, the Road Quality Auditor will undertake a pre-commencement survey of all roads used for quarry haulage prior to their use by construction traffic associated with the wind farm and submit this survey to Moyne Shire Council and VicRoads.

- Any roads damaged as a result of wind farm construction traffic will be repaired either in accordance with or faster than the timeframes specified within the relevant Roads Management Plan.
- A final condition audit will be undertaken by the Road Quality Auditor once a particular section of road is no longer required. The Road Quality Auditor will assess and certify that the road has been maintained or rehabilitated to at least pre-construction levels.

# 7. Traffic Management Administration

## 7.1 Responsibilities

The implementation of this traffic management plan will ultimately be the responsibility of ACCIONA and its contractors. However day-to-day traffic management will involve a number of different stakeholders, as outlined in Table 14.

**Table 14 Traffic management plan primary stakeholders**

Role	Organisation	Contact
Client	ACCIONA Energy	Andrew Tshaikiwski Project Director
Road Authority	VicRoads	Peter Gstrein Senior Statutory Planning Officer
	Moyne Shire Council	Leah Johnston Manager Engineering and Design
	Corangamite Shire Council	John Kelly Manager Assets Planning

ACCIONA will induct all contractors into the TMP to ensure compliance with all requirements.

## 7.1 Management Reviews

The success of the traffic management plan will depend on its continued relevance and usefulness under the various conditions that will be encountered during the construction period.

A review of the TMP will be undertaken six months following commencement of construction, unless inspections raise a significant issue that requires early attention. The review will involve ACCIONA, the main construction and haulage contractors, with VicRoads, Council and other stakeholders as considered appropriate. In the event of significant traffic management issues being identified, ACCIONA will liaise with the relevant stakeholder to resolve. Supplementary documentation, or an update to this TMP, may be appropriate.

Further TMP reviews may be appropriate throughout the construction period as the situation warrants.

## 8. Summary of Traffic Management Commitments

The following list summarises the measures that will be in place prior to commencement of, and during the execution of, each stage of the construction period:

### 8.1 Pre-Construction

1. All access and egress for the site will be from Tapps Lane via Terang-Mortlake Road. No other roads will be used as alternate access routes without the approval of Moyne Shire Council or VicRoads (as appropriate) and then only in the event that the established routes are temporarily unavailable.
2. A pavement condition audit of roads to be used for quarry haulage will be undertaken by the Road Quality Auditor prior to the commencement of the construction period. The extent of the audit will be negotiated with the authorities and will reflect the source location of major traffic activity including concrete, fill material, and water deliveries. The audit will repeat at the frequencies specified in Section 6.5.11 and in any secondary Traffic Management Plan. Repairs will occur either by, or faster than, the timeframes specified in the VicRoads or Council Roads Management Plan.
3. Temporary 60 km/h speed limit signs will be provided on Tapps Lane, Grinters Lane and Chamallak Lane for the duration of the construction period.
4. The movement of heavy construction vehicles to and from the site will be restricted to times outside the agreed curfew times to eliminate interaction between heavy construction traffic and school buses.
5. ACCIONA will liaise with DELWP, VicRoads and relevant councils regarding the source of additional quarry materials and will develop a secondary Traffic Management Plan as an addendum to this report for any additional haulage routes not identified in this TMP.
6. ACCIONA or one of its sub-contractors will arrange permits from the NHVR for the movement of OD and higher mass limit vehicles as required.
7. ACCIONA will implement a Haulage Code of Conduct which will set standards for safe behaviour and practices including when travelling to and from the site, or working near roads. The code of conduct will apply in addition to other legislative and regulatory requirements that may also be in force.
8. ACCIONA will install branded information signage on approaches to the site advising of the activity, identifying that there will be additional truck activity during construction, and providing contact details for any enquiries or concerns prior to the commencement of works.
9. All construction vehicles will display a sticker identifying them as being associated with the project.

### 8.2 Road Infrastructure Upgrades

10. All access and egress for the site will be from Tapps Lane via Terang-Mortlake Road. No other roads will be used as alternate access routes without the approval of Moyne Shire Council or VicRoads (as appropriate) and then only in the event that the established routes are temporarily unavailable.

11. Heavy vehicle volumes on key roads will be monitored for the duration of the project to ensure that they do not substantially differ from the approved volumes. In the event traffic volumes exceed estimates, a revision to this traffic management plan and traffic management arrangements may be required by VicRoads or Moyne Shire Council.
12. The road quality auditor will undertake regular road condition inspections throughout the construction period.
13. Truck warning signs (W5-22) will be installed by the construction contractor on the approach to the Tapps Lane intersection. These signs will be displayed only during periods of frequent truck activity.
14. Left and right hand turn lanes are to be provided at the intersection of Terang-Mortlake Road and Tapps Lane, subject to VicRoads approval.
15. Traffic control around the worksites where the site accesses will be constructed will be undertaken in accordance with Moyne Shire Council requirements.
16. Grinters Lane, Chamallak Lane and Tapps Lane (between Chamallak Lane and Cliffords Lane) will be improved to have a compacted gravel pavement with narrow shoulders.
17. Tapps Lane will be sealed between Terang-Mortlake Road and Chamallak Lane
18. The Tapps Lane bridge will be upgraded to accommodate construction traffic volumes and weight prior to the commencement of on-site civil works south of the bridge. .
19. The movement of heavy construction vehicles to and from the site will be restricted to times outside the agreed curfew times to eliminate interaction between heavy construction traffic and school buses.
20. ACCIONA or one of its sub-contractors will arrange permits from the NHVR for the movement of OD and higher mass limit vehicles, as required.
21. A review of this traffic management plan will be undertaken by ACCIONA, the main construction and haulage contractors, VicRoads, Council and other stakeholders as appropriate. Updates will be made as needed.

### **8.3 Wind Farm Construction**

22. All access and egress for the site will be from Tapps Lane via Terang-Mortlake Road. No other roads will be used as alternate access routes without the approval of Moyne Shire Council or VicRoads (as appropriate) and then only in the event that the established routes are temporarily unavailable.
23. Heavy vehicle volumes on key roads will be monitored for the duration of the project to ensure that they do not substantially differ from the approved volumes. In the event traffic volumes exceed estimates, a revision to this traffic management plan and traffic management arrangements may be required by VicRoads or Moyne Shire Council.
24. The road quality auditor will undertake regular road condition inspections throughout the construction period.
25. Truck warning signs (W5-22) will be installed by the construction contractor on the approach to the Tapps Lane intersection. These signs will be displayed only during periods of frequent truck activity.
26. The movement of heavy construction vehicles to and from the site will be restricted to times outside the agreed curfew times to eliminate interaction between heavy construction traffic and school buses.

27. The main construction contractor will arrange permits from the NHVR for the movement of OD and higher mass limit vehicles as required.
28. A further review of this traffic management plan will be undertaken by ACCIONA, the main construction and haulage contractors, VicRoads, Council and other stakeholders as appropriate. Supplementary documentation will be provided as needed.
29. The haulage contractor will arrange permits from the NHVR for each OD load vehicle movement. Each movement will be in accordance with NHVR permit requirements, including warning signs, escort/pilot vehicles and times of operation as required.
30. The haulage contractor will undertake a detailed route assessment prior to any over-dimension vehicle movement, to ascertain any potential obstructions or impediments including overhead wires, vegetation, narrow carriageways, signage or median islands.
31. Where necessary ACCIONA and its contractors will liaise with utility providers to raise or relocate any low-hanging wires.
32. ACCIONA and its contractors will liaise with the relevant Responsible Authority regarding the procurement of any necessary permits and offset management plans required for the removal or pruning (as appropriate) of any vegetation that would obstruct vehicle movements related to the site.
33. Where necessary to accommodate the movement of over-dimensional load vehicles, roadside and/or median island signage will be temporarily removed and then reinstated by the haulage contractor immediately after the OD vehicle has passed.
34. Where over-dimensional load vehicles will encroach onto the wrong side of the road, oncoming traffic will be temporarily stopped or re-directed in accordance with VicRoads requirements.

#### **8.4 Post-construction**

35. A final pavement condition audit and repairs will be undertaken on local and VicRoads roads used for materials haulage once those roads are no longer required for material haulage.
36. An infrastructure condition audit will be undertaken by the independent road quality auditor on Tapps Lane, Grinters Lane and Chamallak Lane to identify any areas requiring rehabilitation to the VicRoads Standard Specifications for Road Works and Bridgeworks, prior to:
  - Relinquishing maintenance responsibility of local roads to Moyne Shire Council, at or before the issuing of the completion certificate; and/or
  - Sign-off of the wind farm from being under construction to being operational.

Following the date on which all of the conditions above have been satisfied, the 12-month maintenance period will commence.

37. All required repairs identified in the audit will be made within six months of the date of the wind farm completion certificate.
38. ACCIONA will provide a bond in the form of either a bank guarantee or deposit to Moyne Shire Council. Council has identified the bond will be for \$300,000 and will be returned at the end of the 12-month maintenance period.

#### **8.5 Operational Phase**

39. All staff associated with day-to-day operation of the wind farm will be required to enter and exit the site via Tapps lane and Mortlake-Terang Road.

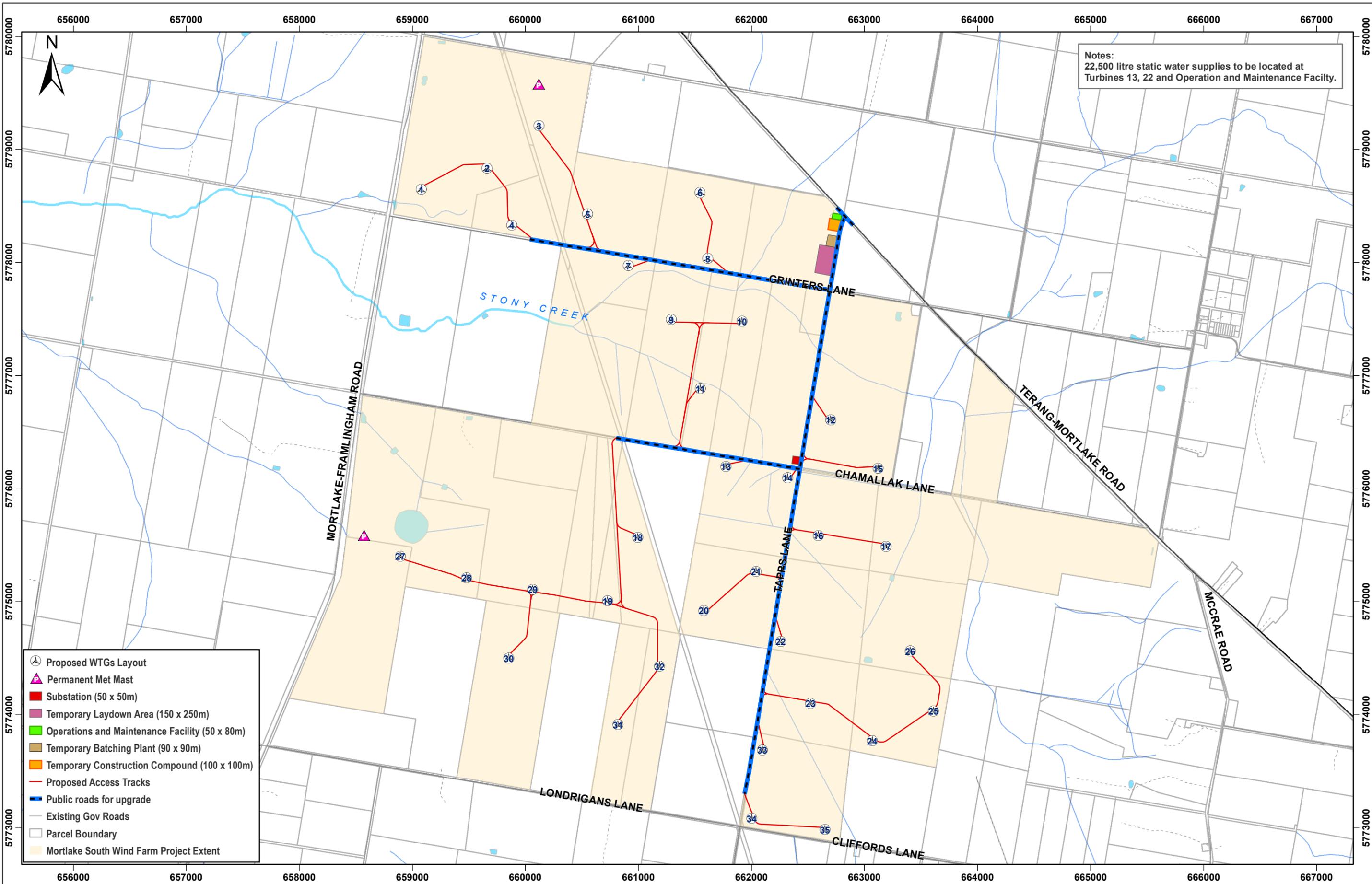
40. In the event of a major component change, a permit will be sought from the NHVR for the delivery of any over-size or over-mass plant and equipment to the site, and the conditions of this permit will be implemented.

## **8.6 Decommissioning**

41. Any traffic mitigation measures required as a result of decommissioning of any wind turbine will be managed via a separate decommissioning traffic management plan in accordance with Condition 42 of the Planning Permit.

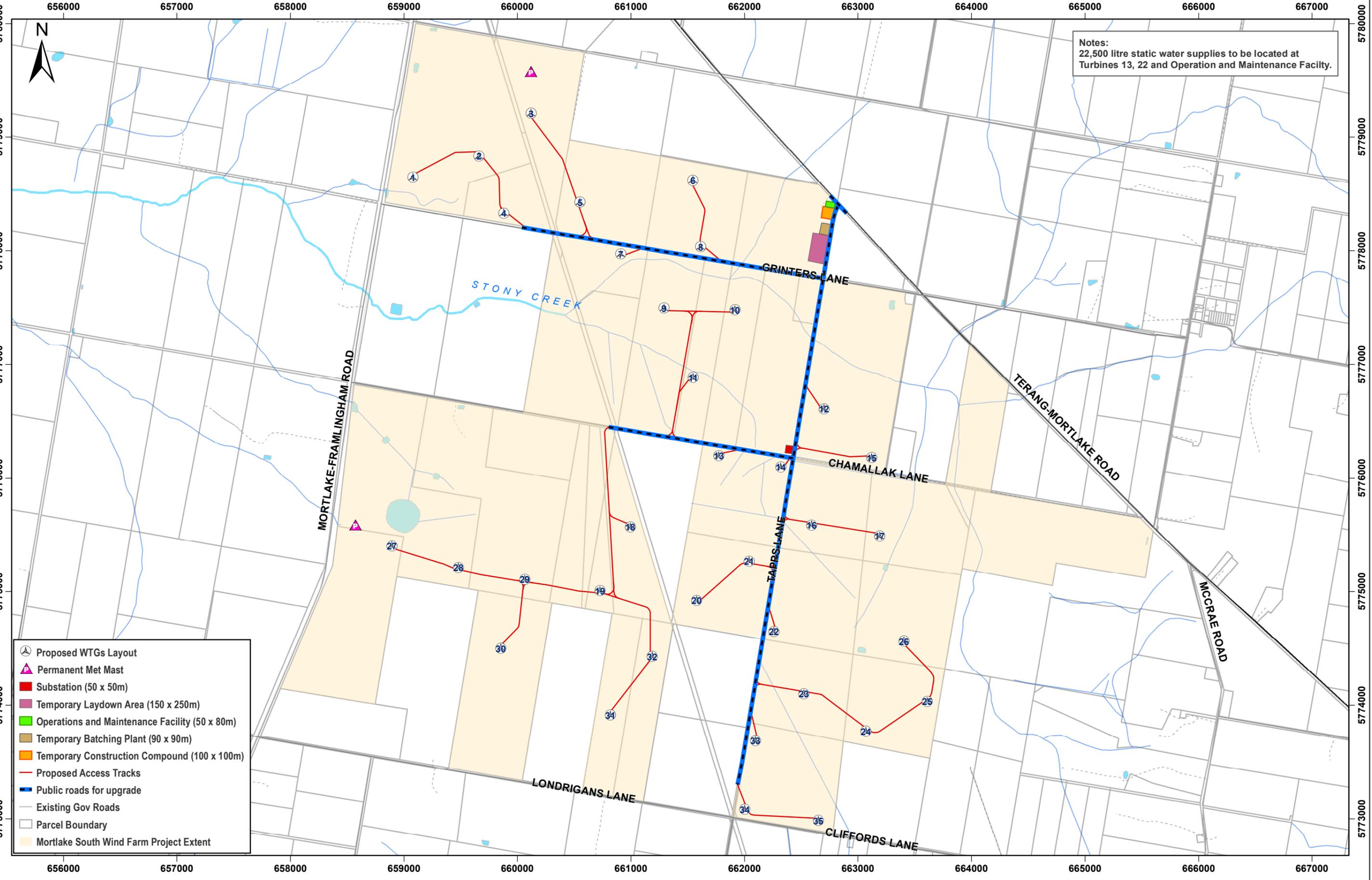
# Appendices

# **Appendix A** - Site Layout and Access



Notes:  
22,500 litre static water supplies to be located at Turbines 13, 22 and Operation and Maintenance Facility.

- Proposed WTGs Layout
- Permanent Met Mast
- Substation (50 x 50m)
- Temporary Laydown Area (150 x 250m)
- Operations and Maintenance Facility (50 x 80m)
- Temporary Batching Plant (90 x 90m)
- Temporary Construction Compound (100 x 100m)
- Proposed Access Tracks
- Public roads for upgrade
- Existing Gov Roads
- Parcel Boundary
- Mortlake South Wind Farm Project Extent

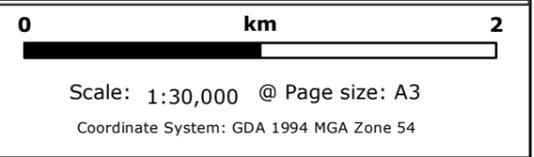


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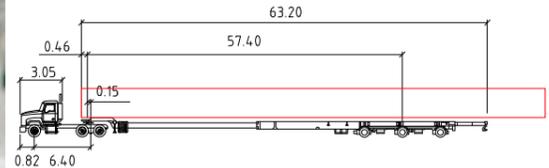
## MORTLAKE SOUTH WIND FARM

### Proposed Site Layout Plan

Date: 15/10/2018  
File: MLS\_PLP\_002\_01A  
Revision: 4  
Created by: SK



# **Appendix B – Swept Path Assessments**



72m blade

	metres		
First Unit Width	: 2.44	Lock to Lock Time	: 6.0
Trailer Width	: 0.91	Steering Angle	: 40.0
First Unit Track	: 2.44	Articulating Angle	: 70.0
Trailer Track	: 2.44		

## PRELIMINARY

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ACCIONA ENERGY OCEANIA  
MORTLAKE SOUTH WIND FARM  
SWEPT PATH DIAGRAMS  
BOUNDARY ROAD

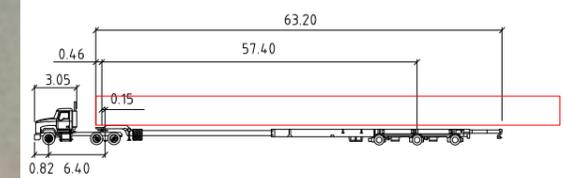


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approved (PD) ..... SK001



72m blade

	meters		
First Unit Width	: 2.44	Lock to Lock Time	: 6.0
Trailer Width	: 0.91	Steering Angle	: 40.0
First Unit Track	: 2.44	Articulating Angle	: 70.0
Trailer Track	: 2.44		

## PRELIMINARY

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ACCIONA ENERGY OCEANIA  
MORTLAKE SOUTH WIND FARM  
SWEPT PATH DIAGRAM  
TERANG-MORTLAKE ROAD

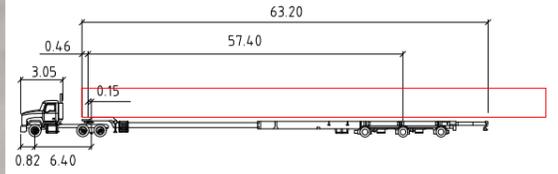


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72m blade

	metres		
First Unit Width	: 2.44	Lock to Lock Time	: 6.0
Trailer Width	: 0.91	Steering Angle	: 40.0
First Unit Track	: 2.44	Articulating Angle	: 70.0
Trailer Track	: 2.44		

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ACCIONA ENERGY OCEANIA  
MORTLAKE SOUTH WIND FARM  
**SWEPT PATH DIAGRAMS**  
**TERANG-MORTLAKE / TAPPS**

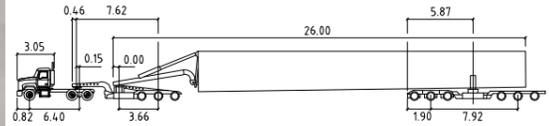


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26 m tower

	meters		
First Unit Width	: 2.44	Lock to Lock Time	: 6.0
Trailer Width	: 1.22	Steering Angle	: 40.0
First Unit Track	: 2.44	Articulating Angle	: 70.0
Trailer Track	: 3.05		

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MORTLAKE SOUTH WIND FARM  
**SWEPT PATH DIAGRAMS**  
**TERANG-MORTLAKE / TAPPS**

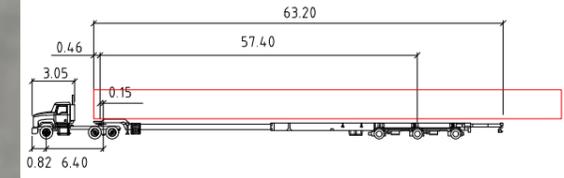


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72m blade

	meters		
First Unit Width	: 2.44	Lock to Lock Time	: 6.0
Trailer Width	: 0.91	Steering Angle	: 40.0
First Unit Track	: 2.44	Articulating Angle	: 70.0
Trailer Track	: 2.44		

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ACCIONA ENERGY OCEANIA  
MORTLAKE SOUTH WIND FARM  
SWEPT PATH DIAGRAMS  
TAPPS / CHAMALLAK

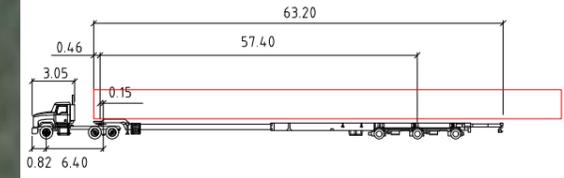


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72m blade

	meters		
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Trailer Width	: 0.91	Steering Angle	: 40.0
First Unit Track	: 2.44	Articulating Angle	: 70.0
Trailer Track	: 2.44		

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### ACCIONA ENERGY OCEANIA MORTLAKE SOUTH WIND FARM SWEEP PATH DIAGRAMS TAPPS / CHAMALLAK

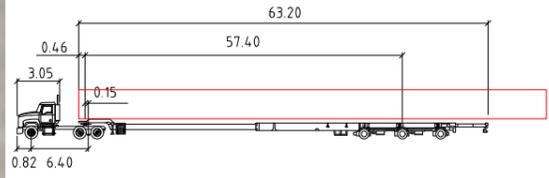


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72m blade

	meters		
First Unit Width	: 2.44	Lock to Lock Time	: 6.0
Trailer Width	: 0.91	Steering Angle	: 40.0
First Unit Track	: 2.44	Articulating Angle	: 70.0
Trailer Track	: 2.44		

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ACCIONA ENERGY OCEANIA  
MORTLAKE SOUTH WIND FARM  
SITE ACCESS POINT  
TURBINES 1 2 & 4

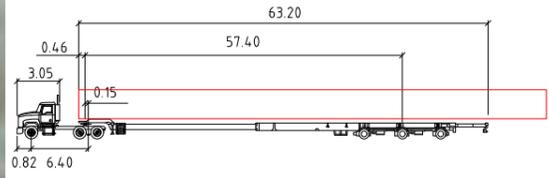


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72m blade

	meters		
First Unit Width	: 2.44	Lock to Lock Time	: 6.0
Trailer Width	: 0.91	Steering Angle	: 40.0
First Unit Track	: 2.44	Articulating Angle	: 70.0
Trailer Track	: 2.44		

**PRELIMINARY**

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A	INITIAL ISSUE		

**ACCIONA ENERGY OCEANIA  
MORTLAKE SOUTH WIND FARM  
SITE ACCESS POINT  
TURBINES 3 & 5**

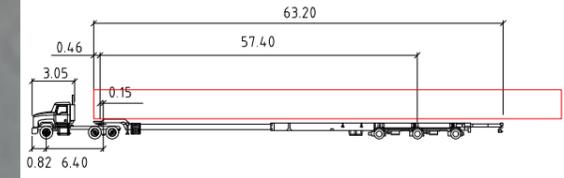


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72m blade

	meters		
First Unit Width	: 2.44	Lock to Lock Time	: 6.0
Trailer Width	: 0.91	Steering Angle	: 40.0
First Unit Track	: 2.44	Articulating Angle	: 70.0
Trailer Track	: 2.44		

**PRELIMINARY**

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MORTLAKE SOUTH WIND FARM  
SITE ACCESS POINT  
TURBINE 7

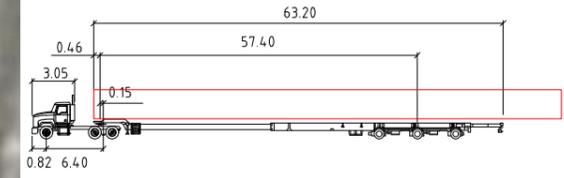


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date | OCT 2018 rev no. | A

approved (PD) ..... **SK009**



72m blade

	meters		
First Unit Width	: 2.44	Lock to Lock Time	: 6.0
Trailer Width	: 0.91	Steering Angle	: 40.0
First Unit Track	: 2.44	Articulating Angle	: 70.0
Trailer Track	: 2.44		

## PRELIMINARY

rev	description	app'd	date
A	INITIAL ISSUE		

ACCIONA ENERGY OCEANIA  
MORTLAKE SOUTH WIND FARM  
SITE ACCESS POINT  
TURBINES 6 & 8

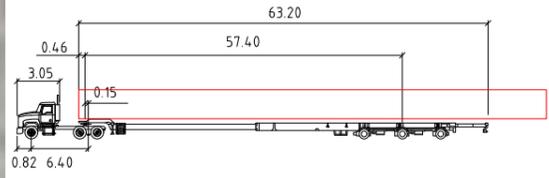


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approved (PD) ..... SK010



72m blade

	meters		
First Unit Width	: 2.44	Lock to Lock Time	: 6.0
Trailer Width	: 0.91	Steering Angle	: 40.0
First Unit Track	: 2.44	Articulating Angle	: 70.0
Trailer Track	: 2.44		

**PRELIMINARY**

rev	description	app'd	date
A	INITIAL ISSUE		

ACCIONA ENERGY OCEANIA  
MORTLAKE SOUTH WIND FARM  
SITE ACCESS POINT  
TURBINE 12

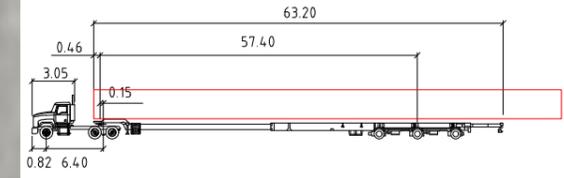


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approved (PD) ..... **SK011**



72m blade

	meters		
First Unit Width	: 2.44	Lock to Lock Time	: 6.0
Trailer Width	: 0.91	Steering Angle	: 40.0
First Unit Track	: 2.44	Articulating Angle	: 70.0
Trailer Track	: 2.44		

**PRELIMINARY**

rev	description	app'd	date
A	INITIAL ISSUE		

ACCIONA ENERGY OCEANIA  
 MORTLAKE SOUTH WIND FARM  
 SITE ACCESS POINT  
 TURBINE 13

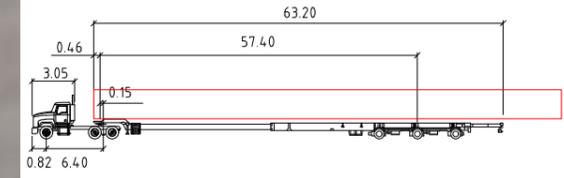


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approved (PD) ..... **SK012**



72m blade

	meters		
First Unit Width	: 2.44	Lock to Lock Time	: 6.0
Trailer Width	: 0.91	Steering Angle	: 40.0
First Unit Track	: 2.44	Articulating Angle	: 70.0
Trailer Track	: 2.44		

## PRELIMINARY

rev	description	app'd	date
A	INITIAL ISSUE		

ACCIONA ENERGY OCEANIA  
MORTLAKE SOUTH WIND FARM  
SITE ACCESS POINT  
TURBINE 14

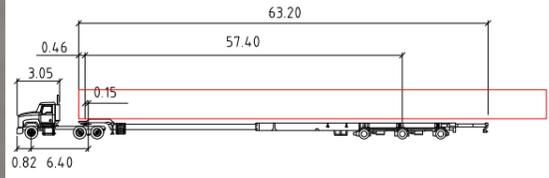


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approved (PD) ..... SK013



72m blade

	meters		
First Unit Width	: 2.44	Lock to Lock Time	: 6.0
Trailer Width	: 0.91	Steering Angle	: 40.0
First Unit Track	: 2.44	Articulating Angle	: 70.0
Trailer Track	: 2.44		

**PRELIMINARY**

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A	INITIAL ISSUE		

ACCIONA ENERGY OCEANIA  
MORTLAKE SOUTH WIND FARM  
SITE ACCESS POINT  
TURBINE 15

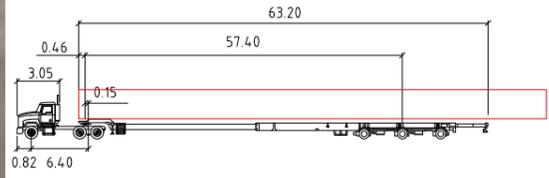


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approved (PD) ..... **SK014**



72m blade

	meters		
First Unit Width	: 2.44	Lock to Lock Time	: 6.0
Trailer Width	: 0.91	Steering Angle	: 40.0
First Unit Track	: 2.44	Articulating Angle	: 70.0
Trailer Track	: 2.44		

**PRELIMINARY**

rev	description	app'd	date
A	INITIAL ISSUE		

**ACCIONA ENERGY OCEANIA  
MORTLAKE SOUTH WIND FARM  
SITE ACCESS POINT  
TURBINES 16 & 17**

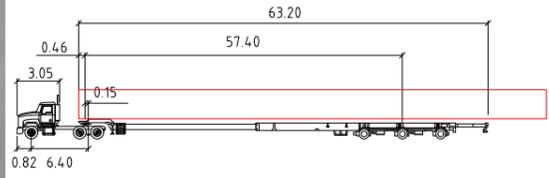


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approved (PD) ..... **SK015**



72m blade

	meters		
First Unit Width	: 2.44	Lock to Lock Time	: 6.0
Trailer Width	: 0.91	Steering Angle	: 40.0
First Unit Track	: 2.44	Articulating Angle	: 70.0
Trailer Track	: 2.44		

**PRELIMINARY**

rev	description	app'd	date
A	INITIAL ISSUE		

ACCIONA ENERGY OCEANIA  
MORTLAKE SOUTH WIND FARM  
**SITE ACCESS POINT**  
**TURBINES 18-19, 27-30, 32 & 34**

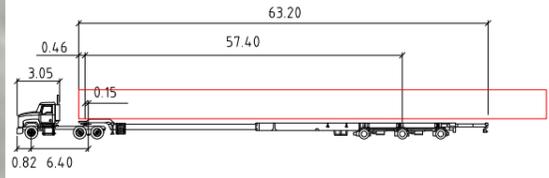


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approved (PD) ..... **SK016**



72m blade

	meters		
First Unit Width	: 2.44	Lock to Lock Time	: 6.0
Trailer Width	: 0.91	Steering Angle	: 40.0
First Unit Track	: 2.44	Articulating Angle	: 70.0
Trailer Track	: 2.44		

**PRELIMINARY**

rev	description	app'd	date
A	INITIAL ISSUE		

ACCIONA ENERGY OCEANIA  
 MORTLAKE SOUTH WIND FARM  
 SITE ACCESS POINT  
 TURBINES 9-10 & 14

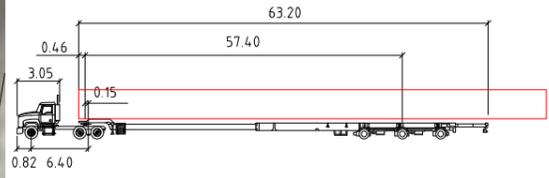


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approved (PD) ..... **SK017**



72m blade

	meters		
First Unit Width	: 2.44	Lock to Lock Time	: 6.0
Trailer Width	: 0.91	Steering Angle	: 40.0
First Unit Track	: 2.44	Articulating Angle	: 70.0
Trailer Track	: 2.44		

**PRELIMINARY**

rev	description	app'd	date
A	INITIAL ISSUE		

ACCIONA ENERGY OCEANIA  
MORTLAKE SOUTH WIND FARM  
SITE ACCESS POINT  
TURBINES 20 & 24

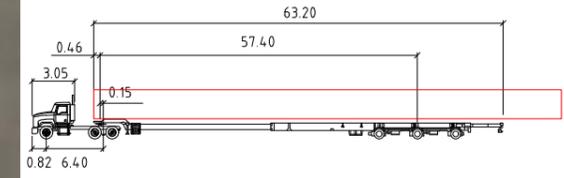


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approved (PD) ..... **SK018**



72m blade

	meters		
First Unit Width	: 2.44	Lock to Lock Time	: 6.0
Trailer Width	: 0.91	Steering Angle	: 40.0
First Unit Track	: 2.44	Articulating Angle	: 70.0
Trailer Track	: 2.44		

## PRELIMINARY

rev	description	app'd	date
A	INITIAL ISSUE		

ACCIONA ENERGY OCEANIA  
MORTLAKE SOUTH WIND FARM  
SITE ACCESS POINT  
TURBINE 22

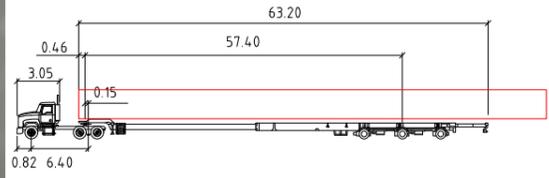


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approved (PD) ..... SK019



72m blade

	meters		
First Unit Width	: 2.44	Lock to Lock Time	: 6.0
Trailer Width	: 0.91	Steering Angle	: 40.0
First Unit Track	: 2.44	Articulating Angle	: 70.0
Trailer Track	: 2.44		

**PRELIMINARY**

rev	description	app'd	date
A	INITIAL ISSUE		

ACCIONA ENERGY OCEANIA  
MORTLAKE SOUTH WIND FARM  
SITE ACCESS POINT  
TURBINES 23-26

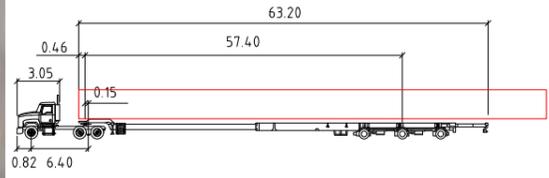


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date | OCT 2018 rev no. | A

approved (PD) ..... **SK020**



72m blade

	meters		
First Unit Width	: 2.44	Lock to Lock Time	: 6.0
Trailer Width	: 0.91	Steering Angle	: 40.0
First Unit Track	: 2.44	Articulating Angle	: 70.0
Trailer Track	: 2.44		

**PRELIMINARY**

rev	description	app'd	date
A	INITIAL ISSUE		

ACCIONA ENERGY OCEANIA  
MORTLAKE SOUTH WIND FARM  
SITE ACCESS POINT  
TURBINE 33

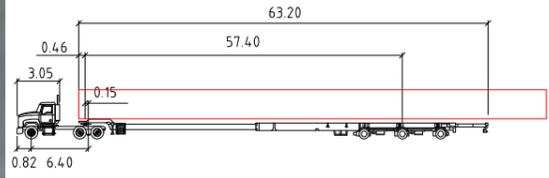


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date | OCT 2018 rev no. | A

approved (PD) ..... **SK021**



72m blade

	meters		
First Unit Width	: 2.44	Lock to Lock Time	: 6.0
Trailer Width	: 0.91	Steering Angle	: 40.0
First Unit Track	: 2.44	Articulating Angle	: 70.0
Trailer Track	: 2.44		

**PRELIMINARY**

rev	description	app'd	date
A	INITIAL ISSUE		

ACCIONA ENERGY OCEANIA  
 MORTLAKE SOUTH WIND FARM  
 SITE ACCESS POINT  
 TURBINES 34-35



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approved (PD) ..... **SK022**

# **Appendix C** – Haulage Code of Conduct



## **Mortlake South Wind Farm Haulage Code of Conduct**

### **SCOPE:**

This code of conduct will prevail in every aspect of the haulage of materials to the Mortlake South Wind Farm.

### **AIM:**

- To demonstrate to the community a very real commitment to professional, efficient, safe and responsible haulage of materials to the Mortlake South Wind Farm construction site.
- To develop and maintain community confidence in the wind farm industry.

### **OBJECTIVES:**

- Minimise impacts of trucks on all public roads.
- Professional and timely haulage planning by civil contractors.
- Endorsement of and compliance with Local and State Government regulations
- Universal commitment to enforce and abide by the Code of Conduct
- Transparent and proactive compliance to the Code of Conduct
- To maximise safety in all aspects of haulage of plantation products

### **CODE OF CONDUCT RESPONSIBILITIES**

The Civil Contractor and ACCIONA will:

- Implement the endorsed Mortlake South Wind Farm Traffic Management Plan.
- Ensure that contractors are inducted into the Mortlake South Wind Farm Traffic Management Plan prior to the commencement of any haulage operation.
- Undertake surveys of planned haul routes to identify any pre-emptive works.
- Supervise and manage all haulage operations.
- Ensure that all proposed haulage routes are maintained to an agreed satisfactory standard.
- Provide induction for all drivers to the construction site.
- Embrace fatigue management strategies by organising scheduling for drivers.



## **TRANSPORT CONTRACTORS**

- Adopt and enforce a Drug and Alcohol Policy
- Adopt and enforce a fatigue management system in accordance with State Government regulations, and the Occupational Health and Safety Regulations 1996, 'Workplace safety requirements for Driving Commercial Vehicle's, and Worksafe standards and regulations.
- Ensure that all drivers have the required licenses
- Provide personal protective equipment for all employees
- Provide appropriate safety equipment to all employees.
- Maintain all trucks and trailers in a safe and clean working condition in accordance with regulations
- Not tolerate overloading for any haulage combination
- Encourage professional and appropriate use of UHF radios and not tolerate the use of obscene language
- Promptly advise relevant road authority (such as VicRoads or the Council), of damage to roads, culverts, bridges and any encroaching road verge vegetation that limits visibility and safety
- Ensure that all trucks carry an appropriate fully operational fire extinguisher at all times
- Ensure that all signs are maintained in a clearly visible and readable state.
- Ensure that all load bindings straps conform to the appropriate Australian Standard.
- Not tolerate any littering by any employees.
- Not allow the transport of any dangerous article, explosive or firearm in any vehicle.
- Ensure drivers are inducted prior to entering processing site
- Ensure all trucks display clearly legible telephone contact numbers on sides and rear of trucks.

## **TRUCK DRIVERS WILL:**

- Hold a current appropriate licence for the vehicle they are operating
- Strictly comply with all traffic regulations
- Comply with all gazetted speed limits on all roads
- Comply with fatigue management guidelines
- Drive in a manner at all times that is accordance with road conditions
- Yield "right of way" whenever appropriate to ensure safe passage of other road users
- At all times leave adequate distance between trucks to allow safe passing by other road users
- Decrease truck speeds to minimise dust and noise around private dwellings, roadworks and stationary vehicles.



- Preferably not use engine braking where noise is likely to adversely impact residents
- switch the lights of the truck on at all times during haulage operations
- remain calm and courteous when in contact with other road users, members of the public landowners and plantation owners
- Not operate machinery whilst under the influence of drugs and/or alcohol
- Not operate machinery whilst suffering fatigue
- Not interfere with any public property, livestock or farm infrastructure in the course of haulage operations.
- Wear personal Protective Equipment supplied by their employer.
- Maintain a professional standard and do not use obscene language when using UHF radios
- Not accept overloading of trucks
- Position themselves safely outside the cab whilst being loaded; ensuring each bay is loaded correctly.
- Remain in a safe location being visible to the loader operator during the truck loading operation
- Ensure that any other person at the loading point is kept a safe distance from the loading operation
- Inspect any preloaded trailer prior to load binding and hitching up.
- Ensure the removal of all protruding limbs, loose bark or trailing debris prior to leaving the loading point or immediately when noticed enroute.
- Not secure any part of any load whilst loading is in progress
- Accurately complete required paperwork prior to departure and as necessary
- Check security of the load at least once in transit and re-secure where necessary.
- Leave all gates as found at all times.
- Maintain trucks in a clean and tidy condition.
- Ensure that there is no littering.
- Not carry any dangerous article, explosive or firearm in any truck at any time.
- Abide by the Country Fire Authority Act at all times.

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#### Document Status

Revision	Author	Reviewer		Approved for Issue		
		Name	Signature	Name	Signature	Date
0	M. Petrusma	M. Smith	On file	M. Smith	On file	26.10.2018
1	M. Petrusma	M. Smith	On file	M. Smith	On file	2.11.2018
2	M. Petrusma	M. Smith	On file	M. Smith	On file	20.11.2018

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