





Appendix J

Construction Transport Plan



Mt Emerald Wind Farm

Vestas Australian Wind Technologies

Construction Transport Plan

IH104500-0001-CT-RPT-0001 | Rev 0 2 December 2016

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Mt Emerald Wind Farm

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Contents

| 1. | Introduction | 1 |
|-------|--|----|
| 1.1 | Purpose and Scope of this Document | 1 |
| 1.2 | Construction Traffic Overview | 1 |
| 1.3 | Conditions of approval | 2 |
| 1.4 | Statement of Commitments | 3 |
| 2. | Construction Methodology | 5 |
| 2.1 | Traffic Generation | 5 |
| 2.2 | Dimensions of Equipment to be Delivered to Site | 6 |
| 2.3 | Predicted Traffic Movements | 7 |
| 2.4 | Construction Schedule | 8 |
| 3. | Transport Routes | 9 |
| 3.1 | Transport Route Details | g |
| 3.2 | Upgrade of Springmount Road and Kippen Drive Intersection | 14 |
| 3.3 | Existing Condition Assessment of Hansen Road/Springmount Road/Kippen Drive | 14 |
| 3.3.1 | Objectives of this route Condition Assessment | 14 |
| 3.3.2 | Condition Assessment | 14 |
| 3.3.3 | Sight Distance Checks | 14 |
| 3.4 | Turning movements | 14 |
| 4. | Traffic Management Strategy | 16 |
| 4.1 | Mitigation and Management Measures | 16 |
| 4.2 | Training and Awareness | 17 |
| 5. | Consultation | 18 |
| 5.1 | Department of Transport and Main Roads | 18 |
| 5.2 | Cairns Regional Council | 18 |
| 5.3 | Tablelands Regional Council | 18 |
| 5.4 | Mareeba Shire Council | 19 |

Appendix A. Hansen Road/Springmount Road/Kippen Drive - Condition Inspection Report

Appendix B. Hansen Road/Springmount Road/Kippen Drive - Sight distance measurements/calculations.

Appendix C. Hansen Road/Springmount Road/Kippen Drive - Route Assessment Sketches

Appendix D. Hansen Road/Springmount Road/Kippen Drive - Turning Path Sketches

Appendix E. Hansen Road/Springmount Road/Kippen Drive - Site Photos

Appendix F. Hansen Road/Springmount Road/Kippen Drive – Route Videos (digital copy only)

Appendix G. Route Study, Port to Mt Emerald by Rex J Andrews.



Important note about your report

The sole purpose of this report and the associated services performed by the Consultants is to collate the documentation associated with the Mt Emerald Wind Farm Project at Walkamin on the Atherton Tablelands. That scope of services, was developed with the Client.

In preparing this report, the Consultants have relied upon, and presumed accurate, any information (or confirmation of the absence thereof) provided by the Client and/or from other sources. Except as otherwise stated in the report, the Consultants have not attempted to verify the accuracy or completeness of any such information. If the information is subsequently determined to be false, inaccurate or incomplete then it is possible that our observations and conclusions as expressed in this report may change.

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Due to the nature of this report being a compilation of information from various sources which do not require engineering certification, therefore there has been no requirement for involvement or approval by a Registered Professional Engineer of Queensland (RPEQ).



1. Introduction

1.1 Purpose and Scope of this Document

Jacobs has been commissioned by Vestas Australian Wind Technologies Pty Ltd to compile this document for the Mt Emerald Wind Farm (MEWF) project at Walkamin based on numerous existing reports and documentation.

The purpose of this report is to collate all of the existing reports and documentation that is related to the impact that the proposed MEWF development will have on the surrounding road network, including requirements for access to the project site.

Additionally, this report provides details on:

- · The transport related Conditions of Approval.
- The traffic generated by construction of the wind farm.
- · The mitigation and management measures.
- · The consultation with local and regional government authorities.

1.2 Construction Traffic Overview

There are three separate work streams which will generate traffic during Project construction:

- Balance of Plant (BoP) civil and electrical cabling.
- · Substation and Operations / Maintenance buildings.
- · wind turbine supply and installation.

Construction activities for these work streams will occur in distinct periods of the Project schedule, influencing the traffic to be generated along the various access routes:

- Balance of Plant (BoP) civil and electrical cabling works starting in first quarter 2017 will include site
 establishment, earthworks, WTG foundations and electrical reticulation requiring transport of heavy plant
 and machinery, aggregate deliveries and concrete deliveries and other supplies.
- Construction of the substation and Operations / Maintenance buildings starting in first quarter 2017 will generate comparatively less traffic but does require transport of a small number of over-size and overmass components for the substation.
- Wind turbine components are scheduled to be delivered to site starting in fourth quarter 2017, which is
 when the bulk of over-size and over-mass haulage will occur, including large cranes, WTG towers, nacelles
 and blade components.



1.3 Conditions of approval

Traffic Management

(a) Submit to the chief executive administering the SPA a Construction Traffic Management Plan (CTMP) prepared by an RPEQ and in consultation with the Department of Transport and Main Roads, Cairns Regional Council, Tablelands Regional Council and Mareeba Shire Council. (a) Prior to the commencement of site / operational / building work

The CTMP must relate to the roads proposed to be used in transporting material, personnel and equipment related to the construction and decommissioning of the wind farm.

The CTMP must include but not limited to:

- (i) an existing conditions survey of Hansen Road, Springmount Road and Kippen Drive including details of the suitability, design, condition and construction standard of the relevant public roads;
- (ii) the designation of all vehicle access points to the site from surrounding roads. Vehicle access points must be designed and located to ensure safe sight distances, turning movements, and avoid potential through traffic conflicts;
- (iii) the designation of appropriate pre-construction,

construction/decommissioning and transport vehicle routes to and from the site;

- (iv) engineering plans demonstrating whether, and if so how, truck movements to and from the site can be accommodated on sealed roadways and turned without encroaching onto the incorrect side of the road:
- (v) recommendations regarding the need for road and intersection upgrades to accommodate any additional traffic or site access requirements (whether temporary or ongoing). Where upgrades are required, the traffic management

plan must include:

- a) detailed engineering plans showing the required works;
- b) the timing of when the works are to be undertaken;
- a program of regular inspections to be carried out during the construction of the wind farm to identify maintenance works necessary as a result of construction traffic;
- (vi) measures to be taken to manage traffic impacts associated with the ongoing operation of the wind farm on the traffic volumes and flows on surrounding roads.

This may include, as recommended in the "Technical Note 2 - Traffic Impact Assessment Engineering Response" prepared by Jacobs dated 29/08/14:

 a) providing a 30 seat shuttle bus service for construction workers arriving and departing the site, servicing the key



Traffic Management

townships where the construction workers live;

 providing minimal or restricted on-site parking to discourage workers arriving to and departing the site via private vehicles

Table 1.1: Conditions of approval

1.4 Statement of Commitments

Traffic Management Plan (TMP) - the TMP, to be prepared in consultation with Department of Transport and Main Roads, will outline traffic movements to and from the site as well as within the construction zones. The TMP will describe measures that promote traffic safety for local and regional traffic, construction personnel and landowners who may need to access the project Site. The TMP will also establish protocols for construction deliveries, especially of large loads (e.g. cranes, turbine infrastructure);

| Item | Impact | Objectives | Mitigation Task |
|------|---|--|---|
| 5.0 | Traffic and Transport | | |
| 5.01 | Adverse impact on local and regional traffic during the construction and decommissioning phases | Minimisation of impact on local and regional traffic | Large oversize materials will be transported overnight to reduce impacts on road network (subject to DTMR approval); No oversize or large trucks associated with the construction will operate on the Kennedy Highway or Channel/Springmount Roads during the school bus hours of 7:30am and 8:50am, and between 3:20pm and 4:30pm on school days; |
| | | | Once more detail is known about the exact type of transport vehicles and routing for the delivery of turbine components to site, more detailed swept path analysis will be undertaken along the truck route to identify any road widening and road furniture relocation works that may be required. |
| 5.02 | Traffic Safety Risks from Construction Vehicles | Minimise traffic safety risks from movement of construction vehicles | Upgrade Kippin Drive and Springmount Road intersection, to oversize vehicles during the construction phase. |
| | | | Upgrade of Kippin Drive to a standard required to accommodate expected vehicle types; |
| | | | Traffic controllers on Kippin Drive and Springmount / Channel Road intersection will be provided to help assist large trucks exiting the site and manage any safety risks. Advance warning signs will be placed on each approach, 200 metres from the access road with "Prepare to stop" warnings when traffic controllers are present; |
| | | | A relatively Significant increase of traffic volume on Kippin Drive, Channel and Springmount Roads could increase the risk of accidents with vehicles. Therefore, lower speed limits will be enforced on Springmount and Channel Roads and internal access roads at all times during construction. |



| Item | Impact | Objectives | Mitigation Task |
|------|--|---|---|
| 5.03 | Damage to existing infrastructure | Protect to existing infrastructure | Road and intersection conditions will be established by the use of field surveys and regular site inspections. When required, rehabilitation of the pavement and/or edges of seal, shoulders and verges will be carried out. At the completion of the works the access roads will be in the same or superior condition than at the commencement of the works; |
| | | | Regular road dilapidation surveys will be carried out during construction and decommissioning; |
| | | | Internal roads and turns in the project site are required to be widened up to 10m in order to transport the construction materials and the large turbines to the desired location, and will require surfacing upgrade through grading; and |
| | | | A procedure will be established to ensure the ongoing maintenance of access roads during the operation phase. |
| 5.04 | Amenity impacts from construction and operation traffic. | Minimise amenity impacts from construction and operation traffic. | Procedures will be established to monitor traffic impacts on public and internal access tracks during construction, including noise, dust and travel times, and to implement modified work methods to reduce such impacts where possible |
| 5.05 | Loss of internal access roads | Retain and handover internal access roads | Internal access roads will be retained and handed over to the landowners after decommissioning. |

Table 1.2: Statement of commitments



2. Construction Methodology

2.1 Traffic Generation

Construction traffic will be present for approximately two years and will consist of:

- Over-size/over-mass vehicles for the delivery of wind turbine components (tower sections, nacelles, hubs and blades.
- Articulated semi-trailers for transporting plant and equipment, construction materials and temporary and permanent facility components.
- · Tipper trucks to bring imported quarry fill materials for the access tracks/hardstand sites.
- · Water tankers for cartage of potable water and water for dust suppression.
- · Concrete mixers to transport concrete to worksites from the (off-site) batching plant.
- Over-size/over-mass vehicles and articulated semi-trailers for mobilisation and de-mobilisation of cranes for the assembly of the wind turbines.
- Light vehicles for use by construction and the owner's personnel.



2.2 Dimensions of Equipment to be Delivered to Site

| Item Descrption | Quality | Length (m) | Width (m) | Height (m) | Weight (Tonnes) | Transport Vehicle |
|----------------------------|---------|------------|-----------|------------|-----------------|--|
| V112 Nacelle | 16 | 12.7 | 4.2 | 3.2 | 120 | Configuration. Prime mover with 12x8 Platform trailer. |
| | | | | | | Overall length: 45.0l x 4.3w x 4.9h x 198T |
| V112 Hub | 16 | 5.5 | 3.8 | 3.7 | 31.5 | Configuration. Prime mover with 4x4 Low Loader. |
| | | | | | | Overall length: 19.0l x 4.0w x 4.9h x 54.5T. |
| V112 Blade | 16 | 55 | 4.0 | 2.8 | 14.9 | Configuration. Prime mover with 1x4 dolly 4x4 Extendable Blade trailers. |
| | | | | | | Overall length: 59.0l x 4.3w x 4.3h x 52.5T |
| V112 Tower section - base | 16 | 22.8 | 4.3 | 4.3 | 79.5 | Configuration. Prime mover with 6x8 Platform trailer. |
| | | | | | | Overall length: 27.0l x 4.5w x 5.2h x 118.5T. |
| V112 Tower section - mid | 16 | 28.8 | 3.9 | 3.9 | 64.5 | Configuration. Prime mover with 7x8 Platform trailer. |
| | | | | | | Overall length: 33.0l x 4.5w x 5.2h x 113T. |
| V112 Tower section - top | 16 | 30.0 | 3.7 | 3.7 | 41.5 | Configuration. Prime mover with 3x8 Dolly 3x8 Jinker |
| | | | | | | Overall length: 45.0l x 4.3w x 5.2h x 98.5T |
| V117 Nacelle | 37 | 12.7 | 4.2 | 3.2 | 120 | Configuration. Prime mover with 12x8 Platform trailer. |
| | | | | | | Overall length: 45.0l x 4.3w x 4.9h x 198T |
| V117 Hub | 37 | 5.5 | 3.8 | 3.7 | 31.5 | Configuration. Prime mover with 4x4 Low Loader. |
| | | | | | | Overall length: 19.0l x 4.0w x 4.9h x 54.5T. |
| V117 Blade | 37 | 57 | 3.9 | 2.8 | 14.9 | Configuration. Prime mover with 1x4 dolly 4x4 Extendable Blade trailers. |
| | | | | | | Overall length: 61.0l x 4.3w x 4.3h x 52.5T |
| V117 Tower section - base | 37 | 13.9 | 4.2 | 4.2 | 60 | Configuration. Prime mover with 6x8 Platform trailer. |
| | | | | | | Overall length: 27.0l x 4.5w x 5.2h x 108.5T. |
| V117 Tower section – mid 1 | 37 | 17.1 | 4.2 | 4.2 | 47 | Configuration. Prime mover with 3x8 Dolly 3x8 Jinker |
| | | | | | | Overall length: 45.0l x 4.3w x 5.2h x 84T |
| V117 Tower section – mid 2 | 37 | 26.6 | 4.2 | 4.2 | 50 | Configuration. Prime mover with 7x8 Platform trailer. |
| | | | | | | Overall length: 33.0l x 4.5w x 5.2h x 103T. |
| V117 Tower section - top | 37 | 30.0 | 3.7 | 3.7 | 44 | Configuration. Prime mover with 3x8 Dolly 3x8 Jinker |
| | | | | | | Overall length: 45.0l x 4.3w x 5.2h x 101.5T |
| Transformer | 2 | 11 | 5.5 | 2 | 100 | Configuration. Prime mover with multi-axle trailer. |
| | | | | | | Overall length: 26.0l x 5.5w x 5.1h x 170T. |
| Control building | 2 | 18 | 4 | 3 | 22 | Configuration. Prime mover with 22m low bed trailer. |
| | | | | | | |



2.3 Predicted Traffic Movements

| | | | | | | | | | | | Vehic | cles per i | month | | | | | | | | | | |
|--|------|------|------|------|------|------|------|------|------|------|-------|------------|-------|-----|-----|-----|------|-----|-----|-----|------|-----|-----|
| Item | 2017 | | | | | | | | | | | | 2018 | | | | | | | | | | |
| | Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sept | Oct | Nov | Dec | Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sept | Oct | Nov |
| Civil Mobilisation | 25 | 5 | | | | | | | | | | | | | | | | | | | | | |
| Civil Plant Mobilisation | 20 | 5 | | | | | | | | | | | | | | | | | | | | | |
| Concrete Delivery | | | | | 516 | 688 | 688 | 688 | 688 | 688 | 602 | | | | | | | | | | | | |
| Quarry Product Delivery | | 25 | 25 | 25 | 25 | 25 | 25 | 25 | 25 | 25 | 25 | | | | | | | | | | | | |
| General Deliveries | | 12 | 15 | 12 | 15 | 12 | 12 | 15 | 12 | 12 | 15 | | | | | | | | | | | | |
| WTG Reinforcing Delivery | | | | 55 | 109 | 109 | 109 | 109 | 109 | 109 | 54 | | | | | | | | | | | | |
| Water Cartage | | 288 | 324 | 300 | 324 | 312 | 312 | 324 | 312 | 312 | 312 | | | | | | | | | | | | |
| Pipe Delivery | | | 5 | 5 | 5 | 5 | | | | | | | | | | | | | | | | | |
| Conduit Delivery | | | | | 6 | 8 | 8 | 8 | 8 | 8 | 7 | | | | | | | | | | | | |
| Crane Movements | | | | | 6 | 8 | 8 | 8 | 8 | 8 | 7 | | | | | | | | | | | | |
| Fuel Delivery | | 24 | 27 | 25 | 27 | 27 | 26 | 26 | 25 | 26 | | | | | | | | | | | | | |
| Site Facility Maintenance | 4 | 8 | 10 | 8 | 10 | 8 | 8 | 10 | 8 | 8 | 10 | 4 | | | | | | | | | | | |
| Civil Demobilisation | | | | | | | | | | | | | | | | | | | | | | 5 | 25 |
| Plant Demobilisation | | | | | | | | | | | 5 | 20 | | | | | | | | | | | |
| Electrical Site Mobilisation / De-mobilisation | | | | | 25 | 5 | | | | | | | | | | | 25 | | | | | | |
| Electrical Plant Mobilisation | | | | | 20 | 5 | | | | | | | | | | | 25 | | | | | | |
| Concrete Delivery | | | | | 60 | 60 | 60 | 60 | | | | | | | | | | | | | | | |
| General Deliveries | | | | | 15 | 12 | 12 | 15 | 4 | 4 | 5 | | | 6 | 8 | 6 | 8 | | | | | | |
| Equipment Deliveries / Cable | | | | | 10 | 8 | 8 | 8 | 8 | 8 | | | | | | | | | | | | | |
| Transformer Delivery OSOM | | | | | | | | | | 2 | | | | | | | | | | | | | |
| Transformer Equipment | | | | | | | | | | 10 | | | | | | | | | | | | | |
| Control Building OSOM | | | | | | | | | | 2 | | | | | | | | | | | | | |
| Cranage Movements | | | | | 20 | 16 | 16 | 20 | 16 | 16 | | | | | | | | | | | | | |
| Tower Sections OSOM | | | | | | | | | | 20 | 20 | 9 | 9 | 20 | 20 | 20 | 20 | 20 | 20 | 18 | | | |
| WTG Components OSOM | | | | | | | | | | 27 | 27 | 12 | 10 | 27 | 27 | 27 | 27 | 27 | 27 | 27 | | | |
| Container deliveries | | | | | 20 | 20 | 20 | | | | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 5 | | | |
| Container returns | | | | | | | 20 | 20 | 20 | | | | 5 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | |
| Tools and equipment containers | | | | | | | | | 9 | | | | | | | | | | | | | | 9 |
| Crane mobilisation and de-mobilisation – OSOM | | | | | | | | | 15 | 30 | | | | | | | 15 | | | 30 | | | 1 |
| Crane mobilisation and de-mobilisation | | | | | | | | | 3 | 3 | | | | | | | | | | | | | |
| Mini-bus | | | | | 1 | | | | | | 1 | | | | | | 1 | | | | | 1 | |
| Light vehicles | 373 | 1648 | 1854 | 1742 | 2151 | 2097 | 2097 | 2178 | 2383 | 2721 | 2721 | 888 | 588 | 904 | 952 | 897 | 1039 | 688 | 717 | 745 | 417 | 367 | 267 |



2.4 Construction Schedule

| TIME | | 2017 | | | | | | | | | | | 2018 | | | | | | | | | | | |
|------------------------------------|---|------|---|---|---|---|---|---|---|---|---|---|------|---|---|---|---|---|---|---|---|---|---|---|
| Activity | J | F | М | А | М | J | J | А | S | О | N | D | J | F | М | А | М | J | J | А | S | О | N | D |
| Load Road Upgrades | | ü | ü | | | | | | | | | | | | | | | | · | · | | | | |
| Site Mobilisation | ü | ü | ü | ü | ü | ü | | | | | | | | | | | | | | | | | | |
| Road Construction | | | | ü | ü | ü | ü | ü | ü | ü | ü | | | | | | | | | | | | | |
| Prepare Hardstands and Foundations | | | | ü | ü | ü | ü | ü | ü | ü | ü | ü | | | | | | | | | | | | |
| Install Cabling | | | | | ü | ü | ü | ü | ü | ü | ü | ü | ü | ü | ü | ü | | | | | | | | |
| Sub Station Construction | | | ü | ü | ü | ü | ü | ü | ü | ü | ü | ü | ü | ü | ü | ü | | | | | | | | |
| OandM Building Construction | | | | | | | ü | ü | ü | ü | ü | ü | | | | | | | | | | | | |
| Deliver Turbine Components | | | | | | | | | | ü | ü | ü | ü | ü | ü | ü | ü | ü | ü | ü | ü | | | |
| Erect Towers, Nacelles and Rotors | | | | | | | | | | ü | ü | ü | ü | ü | ü | ü | ü | ü | ü | ü | ü | ü | | |
| De-mobilise Site | | | | | | | | | | | | | | | | | | | | | ü | ü | ü | |



3. Transport Routes

3.1 Transport Route Details

The Transport Route assumes the wind tower components will be delivered to the coastal port of Cairns and transported south via the Bruce highway to the Palmerston Highway intersection just to the north of Innisfail before following Milla Milla - Malanda Road north through the Malanda township. Continuing in a north-west direction along Malanda - Atherton Road, the route bypasses Atherton by following Tinaroo Falls Dam Road and Kairi Road before intersecting the Kennedy Highway approximately five kilometres north of Atherton and then onto Hansen Road/Springmount Road to Kippen Drive.

Wind Turbine components will be sourced from overseas and supplied through the Port of Cairns.

Transport from Cairns will follow the route identified in the Route Study (Appendix G).

Figure 3.1 shows the proposed haulage route from Cairns to the Mt Emerald Wind Farm.

Over-size and Over-mass vehicles will exit the Kennedy Highway and access the site via Hansen Road / Springmount Road and Kippen Drive.

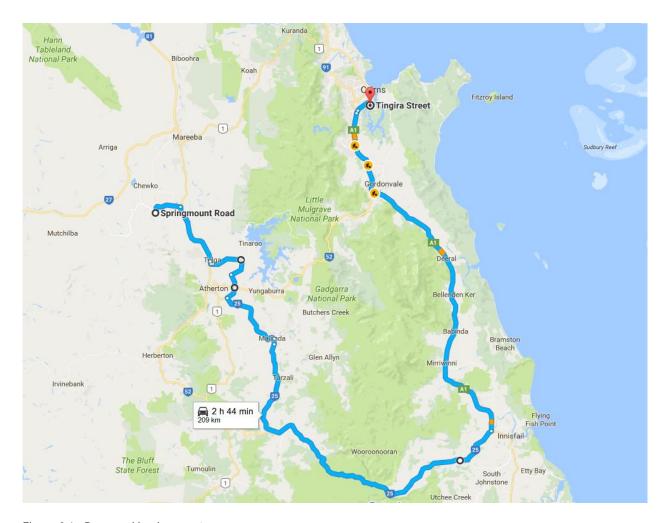


Figure 3.1 : Proposed haulage route



Plant and equipment, construction materials and temporary and permanent facility components will be sourced from local towns and major cities in Queensland.

Semi-trailers and other large trucks will travel along Kennedy Highway from the north or south and access the site via Hansen Road / Springmount Road and Kippen Drive.

Figure 3.2 shows the route details.

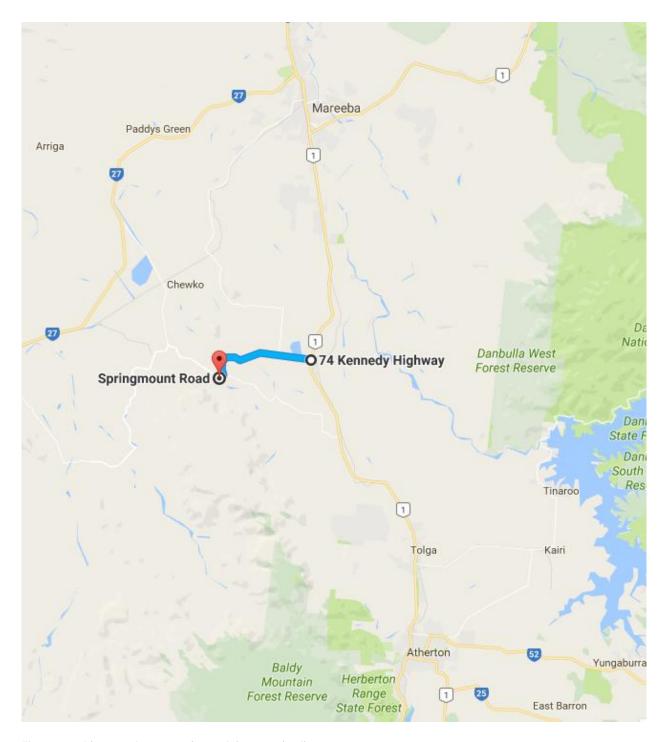


Figure 3.2: Plant, equipment and materials route details



Quarry fill materials will be sourced from a local quarry located on Springmount Road.

Concrete will be sourced from an existing batch plant at the same location.

Tipper trucks and concrete trucks will travel along Springmount Road and access the site from Kippen Drive.

Figure 3.3 shows the route details.



Figure 3.3 : Route between batch plant and site



Water will be sourced from the open channel on Springmount Road.

Water tankers will travel along Springmount Road and access the site from Kippen Drive.

Figure 3.4 shows the route details.



Figure 3.4 : Water source



It is expected that construction personnel will travel from local towns such as Atherton and Mareeba.

Construction personnel will travel along the Kennedy Highway from the north or south and access the site via Hansen Road / Springmount Road and Kippen Drive.

Figure 3.5 shows the route details.

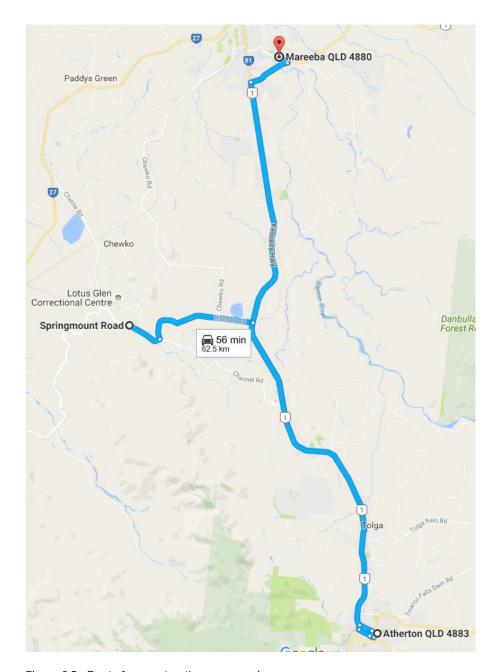


Figure 3.5 : Route for construction personnel

Refer to concept layout sketches provided by Aecom for possible Intersection Upgrade arrangements in **Appendix D.**



3.2 Upgrade of Springmount Road and Kippen Drive Intersection

The intersection of Springmount Road and Kippen Drive intersection will be upgraded to accommodate the oversize vehicle used for delivery of wind turbine and sub-station components.

A preliminary design has been developed in consultation with the Mareeba Shire Council.

The preliminary design is shown on SK-01-Layout (**Appendix D**).

The works will be carried out in Q1 2017.

3.3 Existing Condition Assessment of Hansen Road/Springmount Road/Kippen Drive

Vestas Australian Wind Technology P/L commissioned Jacobs to undertake a Road Assessment of the proposed route to be used in transporting Wind Turbine components from the Kennedy Highway at Walkamin to the proposed wind farm site at Mt Emerald on the Atherton Tablelands. The route consists of three roads, Hansen Road, Springmount Road and Kippen Drive. The total length of the assessment route is approximately 6.05km.

3.3.1 Objectives of this route Condition Assessment

- To undertake a detailed visual inspection of the road and pavement condition.
- To determine sight distance requirements and calculate sight distances achieved.

3.3.2 Condition Assessment

Detailed findings arising from the Road Condition Assessment are presented in Appendix A.

There were 2 main findings as a result of the condition assessment.

- 1) The pavement marking along the route is substantially faded and worn and requires repainting.
- 2) There are numerous locations where there are longitudinal cracks in the pavement surface.

3.3.3 Sight Distance Checks

A review of sight distances along the route revealed that there are some inadequacies at the intersections.

The Hansen Road - Kennedy Highway Intersection and the Hansen Road - Chewko Road Intersection appear to be acceptable but the sight distances achieved at the Hansen Road - Channel Road Intersection and the Springmount Road - Kippen Drive Intersection are insufficient for the design speeds of the roads.

Detailed findings arising from the Sight Distance calculations are presented in **Appendix B**.

3.4 Turning movements

Turning Movements have been assessed along the Route from the intersection with the Kennedy Highway/Hansend Road intersection to the Kippen Drive Access point.

There are several issues identified at the intersections and sections of road where the horizontal geometry is constrained.

- 1) Hansen Road Kennedy Highway Intersection Option 1.
 - Turning path encroaches onto opposing traffic lanes.
 - Conflict with intersection lighting pole.



- Widening required on the Kennedy Highway and Hansen Road.
- Conflict with the Culvert under Hansen Road.
- 2) Hansen Road Kennedy Highway Intersection Option 2.
 - Turning path encroaches onto opposing traffic lanes.
 - Turning path encroaches onto private property.
 - Significant earthworks/temporary pavement required.
- 3) Maude Creek S-Bend.
 - Turning path encroaches onto opposing traffic lanes.
- 4) Sharp bend at Channel Road Intersection.
 - Turning path encroaches onto opposing traffic lanes.
- 5) Springmount Road Kippen Drive Intersection and approaches.
 - Road widening/reconstruction/realignment required from Springmount Road to the access gate on Kippen Drive.

Turning path sketches at the locations below are located in **Appendix D.**

Jacobs' Route Assessment report of Hansen Road/Springmount Road/Kippen Drive.

Aecom's - Kippen Drive intersection option and turning path sketches.



4. Traffic Management Strategy

4.1 Mitigation and Management Measures

Mitigation and management measures will be used to:

- · Minimise adverse impacts on local and regional traffic.
- · Minimise safety risks from construction vehicles.
- Monitor, maintain and repair any damage to existing road infrastructure.
- Minimise amenity impacts from construction traffic.
- Ensure no loss of internal access tracks.

The measures are:

- · Out of hours transport of large wind turbine and sub-station components will be investigated with DTMR.
- No oversize or large articulated trucks associated with the construction will operate on the Kennedy Highway or Channel/Springmount Roads during the school bus hours of 7:30am and 8:50am, and between 3:20pm and 4:30pm on school days.
- Turning path analysis has been undertaken for the route from the Kennedy Highway to the site similar checks will be undertaken for the balance of the OSOM truck route from the Port of Cairns to identify any road widening and road furniture relocation works that may be required.
- The Kippen Drive and Springmount Road intersection will be upgraded to accommodate the oversize vehicles used for delivery of wind turbine and sub-station components.
- · Kippin Drive will be upgraded to a standard required to accommodate expected vehicle types.
- Traffic controllers on Kippen Drive and Springmount / Channel Road intersection will be provided to help assist large trucks exiting the site and manage any safety risks. Warning signs will be placed on each approach.
- The road authority will be consulted on lowering the speed limits on Springmount and Channel Roads and internal access roads during construction.
- Concrete delivery trucks will not exceed 60 kmh during deliveries of concrete from the off-site batch plant in Springmount Road.
- · Channel Road will not be used by Mt Emerald wind farm construction vehicles.
- Road and intersection conditions will be established by the use of field surveys and regular site inspections.
 When required, rehabilitation of the pavement and/or edges of seal, shoulders and verges will be carried out. At the completion of the works the access roads will be in the same or superior condition than at the commencement of the works.
- · Road dilapidation surveys will be carried out before and after construction.
- Procedures will be established to monitor traffic impacts on public and internal access tracks during construction, including noise, dust and travel times, and to implement modified work methods to reduce such impacts where possible.
- Internal access roads will be retained and handed over to the landowners after decommissioning.
- The Contractor will establish safe systems of work to manage traffic during the execution of the Project, which satisfy the relevant statutory and regulatory requirements, Construction Code of Practice and Australian standards.
- The contractor will ensure that there are relevant controls in place to manage the movement of traffic
 across the project including but not limited to the control of vehicle speeds, interaction with heavy plant and
 equipment.



4.2 Training and Awareness

The construction contractor will ensure that all personnel responsible for the implementing this Construction Transport Plan CTP are competent based on education, training and experience.

Site personnel (including sub-contractors and regular delivery drivers) will be inducted and provided with training appropriate to their scope of activity and level of responsibility. General staff and contractors will be inducted to the Project with training provided on potential traffic and access impacts. Ad-hoc deliveries to the site will undergo a Truck Driver/Maintenance Personnel Induction. Details of the traffic and access training and induction will focus on:

- Objectives of the CTP.
- · Mitigation measures required to be implemented.
- Transport and access monitoring and reporting requirements.
- · Incident investigation and response.
- Training is to be provided prior to start-up of any transport and access related management tasks and updated if task, equipment or procedures are expected to, or have changed.



5. Consultation

5.1 Department of Transport and Main Roads

| Date | Method | Issues Discussed |
|----------|-----------|---|
| 1 Dec 16 | Telephone | Project background, timing, DA requirement for consultation, DTMR requirements, contents of CTP, timing of OSOM deliveries, DTMR bridge database and SoC 5.01 re: 'transport overnight' |
| | | |

Table 5.1: Department of Transport and Main Roads

5.2 Cairns Regional Council

| Date | Method | Issues Discussed |
|-----------|---------|---|
| 10/8/2016 | Meeting | Presentation to Executive Management team |
| 9/9/2016 | Forum | Major Projects Forum – CRC CEO and Infrastructure Manager |
| | | |
| | | |

Table 5.2 : Cairns Regional Council

5.3 Tablelands Regional Council

| Date | Method | Issues Discussed |
|-------------|------------|---|
| 30/8/2016 | Meeting | Meeting with TRC planning group |
| 22/9/2016 | Meeting | General meeting with TRC Mayor Joe Paranella RE wind farm transport through TRC region, project update |
| 18 Oct 2016 | Meeting | Confirmed that Vestas would be responsible for preparation of CTMP; CTMP would include identification of intersections / junctions requiring upgrade, with broad details of proposed works Broader consultation with all stakeholders along transport routes will need to be undertaken in advance (particularly wrt long haulage routes) |
| 4/11/2016 | Site Visit | Guided tour of project site for TRC councillors |



Table 5.3 : Tablelands Regional Council

5.4 Mareeba Shire Council

| Date | Method | Issues Discussed |
|----------|---------|--|
| 1/9/2016 | Meeting | General meeting with MSC planners Brian Millard and Carl Ewin. Included discussion on transport and roads. |
| 26/10/16 | Meeting | MSC General Meeting - Informal discussion with Mayor Tom Gilmore and Councillor Nipper Brown |
| | | |

Table 5.4 : Mareeba Shire Council