



# Delburn Wind Farm Pty Ltd

part of the OSMI Australia group

## Planning Permit Application Report

February 2021



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Appendix D - Biodiversity Assessment by Ecology and Heritage Partners Pty Ltd (December 2020)

Appendix E - Desktop Assessment of potential geotechnical, contaminated land and hydrogeological impacts at proposed terminal stations prepared by Golder Associates (19 July 2020);

Appendix F - Landscape and Visual Impact Assessment prepared by Jacobs (10 December 2020) and Landscape and Visual Impact Assessment Addendum Report prepared by Jacobs (4 February 2021)

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Appendix M – Economic Impact Assessment prepared by Jacobs (3 August 2020)

Appendix N – Environmental Management Plan Framework prepared by OSMI Australia (11 December 2020)

Appendix O – Community and Stakeholder Engagement Report prepared by OSMI Australia (21 October 2020)



## Delburn Wind Farm Planning Permit Application Report

## EXECUTIVE SUMMARY

Delburn Wind Farm Pty Ltd (the Proponent), a member entity of OSMI Australia Pty Ltd (OSMI) group of companies, is proposing to develop a wind energy facility comprising 33 turbines and associated infrastructure (the Project) within south east Victoria, in the Strzelecki Ranges, to the south of the Latrobe Valley. The site is approximately 150 kilometres south east of the Melbourne CBD, south of Moe and south west of Morwell. It is situated within a timber plantation owned by Grand Ridge Plantations Pty Ltd (a wholly owned subsidiary of HVP Plantations) on rolling hills either side of the Strzelecki Highway.

The Project Site has a total area of 4,778 hectares and crosses into three different Local Government Areas (LGAs) of Latrobe City (28 turbines), South Gippsland Shire (4 turbines) and Baw Baw Shire (1 turbine). Refer to Figure E.1.

The Project requires a Planning Permit pursuant to the provisions of the *Planning and Environment Act 1987 (P&E Act)* within the Latrobe, South Gippsland and Baw Baw Planning Schemes. The Minister for Planning is the Responsible Authority for determining this planning permit application.

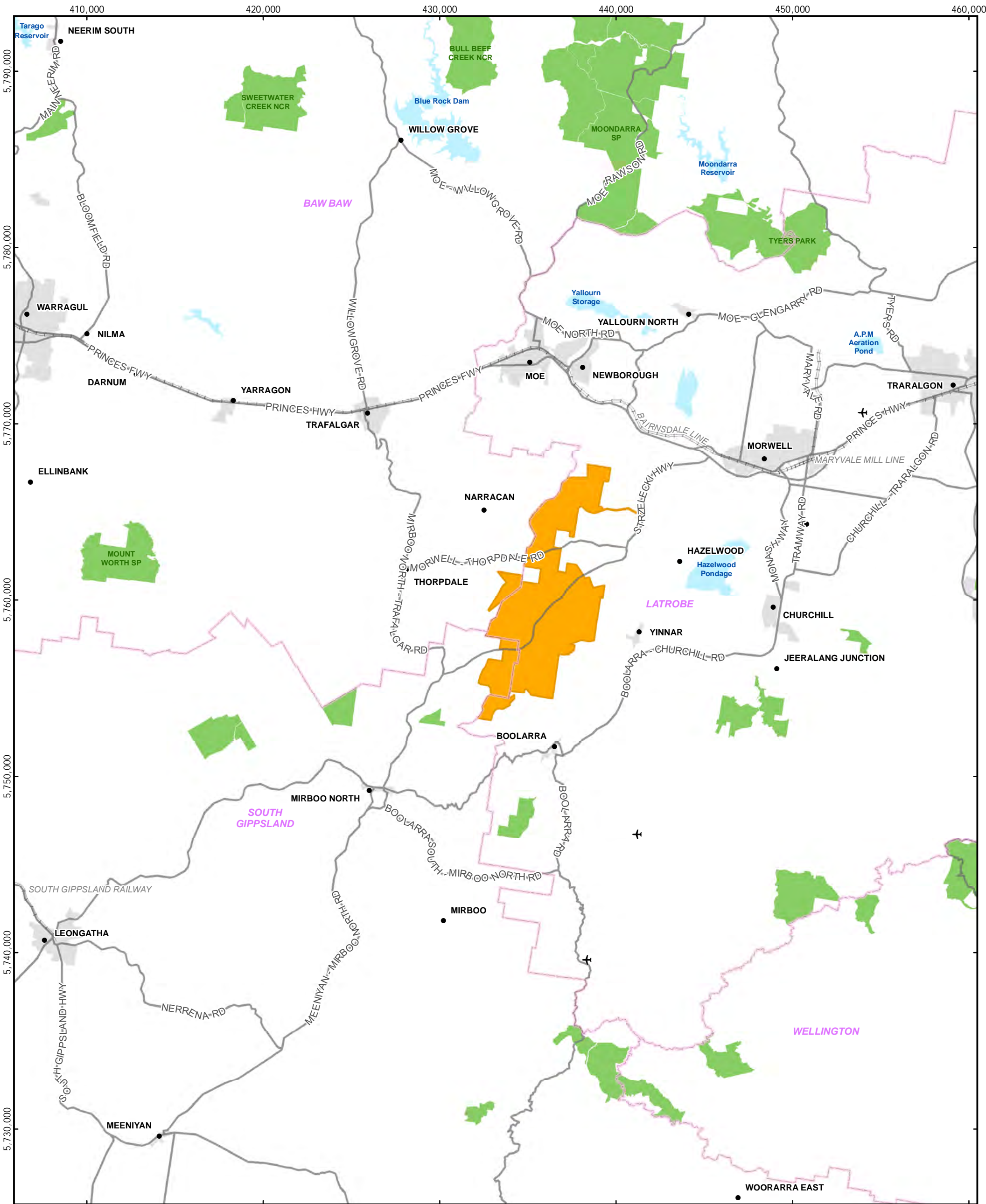
### Project Description

The Project will have a capacity of between 180 to 230 MW and an expected operational life of 25 years, with the potential for an additional 25 year operational period. The electricity generated by the Project will be distributed to the existing 220kv Hazelwood – Rowville transmission line.

The Project will consist of the following components:

- 33 wind turbines with a maximum height of 250 metres above foundation level (to the blade tip), a maximum rotor diameter of 180 metres, a lower tip sweep of not less than 40 metres above foundation level and adjacent hard stand areas;
- 33 transformer kiosks contained within the tower or nacelle of the wind turbine;
- three permanent anemometers (or wind monitoring masts) and one 'development' anemometer;
- an operations and maintenance building;
- figure
- approximately 41 kilometres of site access tracks comprising 30 kilometres of existing forestry access tracks to be upgraded and 11 kilometres of new tracks;
- approximately 120 kilometres of underground 33 kV electrical reticulation and fibre optic cabling connecting the wind turbines to the substation;
- two visitor information and viewing areas for passing traffic to park and view the turbines;
- major upgrade to one intersection off the Strzelecki Highway (Creamery Rd);
- minor upgrades to approximately 4.5 kilometres of local roads, including minor hard standing at two intersections off the Strzelecki Highway (Golden Gully Rd, Smiths Rd);
- business identification signage.

FIGURE E.1: REGIONAL CONTEXT PLAN



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- LEGEND**
- Project Boundary
  - Airport
  - Major Road
  - Railway
  - Parks and Reserves
  - Wetland
  - Built-Up Area
  - LGA Boundary



PROJECT				Delburn Wind Farm	
TITLE				Regional Context Plan	
DATE		21/10/2020		PRODUCED	
SCALE		1:200,000 at A3		CHECKED	
STATUS		Draft		APPROVED	
DRAWING No.		DWF_OVR_012C_3.5 Regional Context Plan		REV	
				3.5	

The following temporary components will also be required during the construction of the Project:

- two site construction compounds;
- turbine component lay down areas;
- two concrete batching plants;
- temporary buildings;
- water supply for construction activities;
- the use and storage of hazardous substances.

The proposed layout of the Project is shown in Figure E.2.

It is highlighted that the original proposal for the site involved the development and use of up to 53 turbines. The total scale of the project was subsequently reduced to 35 turbines, and ultimately to 33 turbines in order to address a range of matters including a reduction in biodiversity impacts, noise and electro-magnetic interference (EMI) issues in addition to community feedback

### **Project Benefits**

The Project will make a significant contribution to renewable energy generation in Victoria and achieves Commonwealth and State policy objectives. The Project is expected to generate approximately 590,000MWh of renewable energy each year, which in turn has the potential to reduce carbon emissions and produce benefits of up to approximately \$9.5 million each year or \$285.7 million over the Project's 30 year life.

In addition to delivering clean energy, the Project will deliver significant economic benefits at the broader State, regional and local level, particularly through the creation of construction employment opportunities and increased demand and support for local goods and services. As a result, the Project's impact on Gross State Product is estimated to be in the order of \$401 million (approximately \$200.7 million spent annually over a construction period of two years) assuming a 200MW capacity.

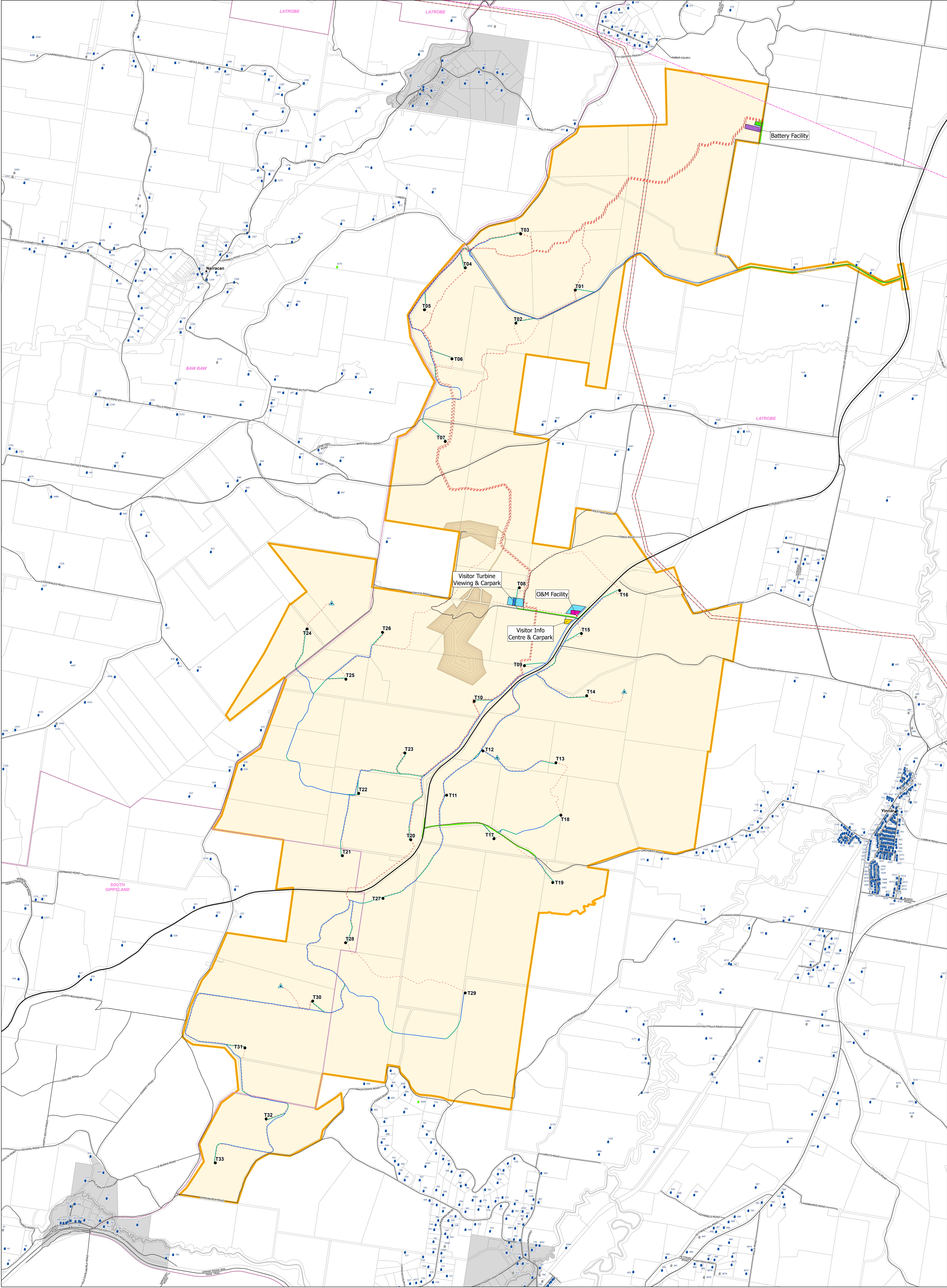
### **Locational Suitability**

The Project location is ideally suited to the development of a wind farm. Specifically:

- Environmental wind factors in relation to its viability as a wind farm site;
- The use of the land for plantations resulting in dwellings being limited to the outer boundary of the site. There are no existing dwellings within 1km of proposed turbines;
- The limited presence of National or State significant flora and fauna as a result of the use of the site for plantations;
- The Hazelwood to Rowville 220 kV transmission line that runs through the north east corner of the site. The proximity of the transmission line allows efficient connection to the existing infrastructure.
- The Strzelecki Highway, connecting Latrobe Valley to South Gippsland, transects the project site and provides principal access;



FIGURE 3.1: SITE LAYOUT PLAN





- An extensive road and track network within the plantation that allows access to and within the Project area (subject to identified upgrading works);
- The limited accessible renewable energy resources currently available in the east of the State, offering a complementary energy source to the wind farms located in western Victoria, that is subject to different weather regimes and wind patterns.
- The highly disturbed nature of the landscape surrounding the site, particularly to the east, as a result of the clearing of land for agriculture and the proximity of the coal fired power stations at Hazelwood, Yallourn and Loy Yang and their associated coal mines and transmission infrastructure, providing a 'robust' landscape setting for the Project.

### Stakeholder Consultation

Delburn Wind Farm is committed to a transparent community engagement and information sharing program. This included early engagement with the local community, a holistic benefit sharing model based on sharing the profits of the wind farm fairly with project neighbours and members of the surrounding local communities, and seeking to create a positive long-term legacy in the region.

A Community and Stakeholder Engagement Report has been prepared by OSMI Australia which outlines the consultation approach and extensive engagement activities that have been undertaken to date for the Project. The consultation strategy for the Project has been based on IAP2's Public Participation Spectrum listed in the Victorian Government Guidelines. Early engagement included:

- media announcements of project;
- preparation of and regular updates of website material;
- public survey available on website;
- employment of a local Community Engagement Officer;
- project office and information centre opened in the local community in May 2019;
- three postal mailouts to surrounding community comprising - an initial notification to all households within 3 km of the project and subsequently two to the four post codes intersecting the project;
- presentation to councils, MPs, interest groups and sustainability groups;
- publication of regular e-news for subscribers;
- media releases at key project milestones;
- technical documents published on the project website as they are completed;
- establishment of a complaints process;
- home visits to neighbours;
- five public information days held in surrounding communities;
- tours of an operating wind farm;
- visual impact assessments from individual residences.

The Report found that the key issues of concern to the community are: audible noise, health impacts from infrasound, fire risk, impact on property values, visual impacts and ecological impacts.

The report notes that, regionally, there are numerous advocates of the project who consider it a vital contributor in transitioning from Latrobe Valley's economic reliance on coal fired power. There also segments of the

community who wish to continue pursuing the economic potential of the Latrobe Valley coal reserves, some of whom are also opposed to renewable energy projects.

Delburn Wind Farm will continue to engage with local residents, neighbours and the broader regional community through face to face meetings, phone calls, email, and house visits during the planning permit application process.

### Project Approvals

#### *Planning and Environment Act (1987)*

Due to the fact that the site is located across three LGAs, three planning permit applications are required to be lodged. This Planning Report addresses all three of the applications, ensuring the Wind Farm is assessed as a whole. A separate application has been prepared for the terminal station that will be required to connect the wind farm into the Victorian transmission network.

The Zone and Overlay controls that are applicable to the Project site in the three LGAs area as follows:

- Latrobe: Farming Zone Schedule 1, Special Use Zone Schedule 1, Road Zone Category 1, Design and Development Overlay Schedule 1, Bushfire Management Overlay;
- South Gippsland: Farming Zone, Road Zone Category 1, Environmental Significance Overlay Schedule 5, Bushfire Management Overlay;
- Baw Baw: Farming Zone, Erosion Management Overlay, Bushfire Management Overlay and Development Contributions Plan Overlay Schedule 1.

Under the three Planning Schemes, planning permission is required for the following:

**Table E.1: Summary of the Planning Permit Requirements across the three Planning Schemes**

Planning Scheme	Permit Requirement
Latrobe	<i>'Development and use of land for a wind energy facility and associated buildings and works (including two permanent anemometers, a battery energy storage system facility and associated infrastructure); removal of native vegetation; alterations to a road in a Road Zone Category 1; business identification signage; and car parking to the satisfaction of the responsible authority'.</i>
South Gippsland	<i>Development and use of land for a wind energy facility and associated buildings and works (including one permanent anemometer), and removal of native vegetation.</i>
Baw Baw	<i>Development and use of land for a wind energy facility and associated buildings and works (including one permanent anemometer) and removal of native vegetation.</i>

The Minister for Planning is the Responsible Authority pursuant to Clause 72.01 of each of the three Planning Schemes.

### *Environment Protection and Biodiversity Conservation Act (EPBC Act)*

An EPBC Act referral was submitted to the Commonwealth. The proposed action was deemed 'not a controlled action' by the Minister on 17 July 2020.

### *Environment Effects Act 1978 (Vic)*

The Project was referred to the Minister for Planning for consideration as to whether an Environment Effects Statement would be required. The Minister determined that an Environment Effects Statement is not required subject to conditions. A response to these conditions has been submitted to the Minister for Planning for approval in the form of an Environment Report and Flora and Fauna Management Plan.

### *Aboriginal Heritage Act (2006)*

The Project also requires the preparation and approval of a Cultural Heritage Management Plan pursuant to the Aboriginal Heritage Act 2006. ACHMP 16429 is currently being prepared in consultation with the Gunaikurnai Land and Waters Aboriginal Corporation.

## **Project Assessment**

A series of specialist and technical assessments have been undertaken to address the requirements of the Policy and Planning Guidelines for Development of Wind Energy Facilities in Victoria, (DELWP), March 2019 and the applicable policies, zoning and overlay controls of the three Planning Schemes.

A brief summary of the findings of these specialist assessments is provided below.

**Table E.2: Summary of findings of the accompanying specialist reports**

Assessment consideration	Summary of Findings
Flora and Fauna	<p>The Biodiversity Assessment prepared by Ecology and Heritage Partners provides a detailed assessment of potential impacts to both flora and fauna.</p> <p>In terms of flora, the assessment finds that the Project responds to the Guidelines for the removal, destruction or lopping of native vegetation as it avoids impacts, minimises impacts and where impacts cannot be avoided provides appropriate offsets as compensation.</p> <p>The Project will result in total removal of 12.344 hectares (including large trees) which represents a significant reduction in the extent of removal that would have been required under earlier iterations of the Project where a greater number of turbines was proposed. A suitable offset site has been identified for the proposed vegetation removal ensuring compliance with the Guidelines.</p> <p>In terms of significant flora, fauna and ecological communities, the only significant species recorded as part of the work undertaken by EHP comprised the Strzelecki Gum and Growling Grass Frog. For both species the siting of turbines has been undertaken to avoid both direct and indirect</p>

	<p>impacts, with the exception of the road widening at Nursery Track which has the potential to impact the Growling Grass Frog. However, potential impacts to both the Strzelecki Gum and Growling Grass Frog have been addressed further via the Environment Report and Flora and Fauna Management Plan as required by the Minister's conditions associated with the determination that no EES is required.</p> <p>Other potential impacts, and associated mitigation measures identified in the Biodiversity Assessment, include the following.</p> <ul style="list-style-type: none"> <li>▪ Fauna – the potential for the construction to result in fauna injury or mortality, with the recommended mitigation measure of a Fauna Management Plan to guide salvage and translocation processes.</li> <li>▪ Loss of hollow-bearing trees – it is expected that approximately 26 hollow-bearing trees are likely to be impacted. To reduce impacts large mature trees with hollows will be avoided as much as possible as part of additional micro-siting measures that will be implemented prior to and during construction.</li> <li>▪ Bird Impact collision – the Project is not likely to significantly impact any 'species of interest' that may occupy habitats within the study area. However, the Biodiversity Assessment recommends that a Bat and Avifauna Management Plan should be prepared as a requirement of any Planning Permit issued.</li> <li>▪ Bat mortality - the potential impacts to bats during the operation of the windfarm is expected to be low due to the rotor swept height and the location of turbines within a pine plantation. Nonetheless, the Biodiversity Assessment recommends that a Bat and Avifauna Management Plan is prepared as a requirement of any Planning Permit that is issued.</li> </ul> <p>On the basis of the findings of the Biodiversity Assessment, in addition to the further work undertaken in response to the Minister for Planning's response to the EES referral, it is considered that appropriate consideration has been given to flora and fauna impacts as a result of the Project and that impacts will not be unreasonable, subject to the implementation of a series of mitigation measures outlined in the Biodiversity Assessment.</p>
Geotech, Potential Contamination and Hydrogeology	<p>The Desktop Assessment of Potential Geotechnical, Contaminated Land and Hydrogeological Impacts prepared by Golder Associates Pty Ltd considers the potential impacts of the Project in relation to erosion and landslip, surface water (including catchments, rivers and waterways), ground water, natural hazards, dry land salinity, soil and groundwater contamination and acid sulfate soils.</p>



	<p>The Assessment concludes that the Project will not have a significant impact in relation to any of these issues, subject to appropriate mitigation measures being implemented, as follows:</p> <ul style="list-style-type: none"> <li>▪ Erosion and landslip: to be managed through the normal construction and slope maintenance processes implemented in accordance with the relevant guidelines;</li> <li>▪ Surface water: impacts will be negligible subject to appropriate erosion control in accordance with the relevant guidelines;</li> <li>▪ Groundwater: if groundwater extraction is proposed, further assessment will be required at the specific well location proposed to assess the groundwater yields that could be achieved and any potential impact to groundwater systems and surface water receptors;</li> <li>▪ Natural hazards: the possibility of an earthquake to be mitigated through engineering design using the methods set out in AS1107.4-2007 'Structural design actions Part 4: Earthquake actions in Australia'.</li> <li>▪ Dry land salinity: no mitigation measures are required as the Project site has a very low susceptibility to dry land salinity;</li> <li>▪ Soil and groundwater contamination: the potential for contaminant migration, if present at all, is very low and in the unlikely event that contaminated soil is encountered, it may be disposed of off-site at a facility licensed to accept the waste;</li> <li>▪ Acid sulfate soils: there is a low to very low likelihood of acid sulfate soils so no mitigation measures are required.</li> </ul> <p>Accordingly, the Project is expected to have minimal impact on matters related to hydrogeology and soils.</p>
Landscape and Visual Impact	<p>A Landscape and Visual Impact Assessment prepared by Jacobs assesses the potential visual and landscape impacts of the Project on the public realm within the study area and private residential dwellings within 6km of a wind turbine. The Assessment concluded as follows.</p> <ul style="list-style-type: none"> <li>▪ Freeways. The Assessment considers four different locations along the Princes Freeway, with the assessed visual impact ranging from negligible-nil to low-negligible. The Assessment highlights that views from the freeway are at speeds of approximately 100 km per hour and typically oblique to the direction of travel. In addition, where turbines are visible, they will be at a distance where they are would</li> </ul>

	<p>not be visually dominant features in the view or over landscapes that are modified to include plantations, open-cut coal mines, power stations and a range of transmission lines. The Assessment concludes that the overall visual impact for freeways is negligible.</p> <ul style="list-style-type: none"> <li>▪ Tourist routes and highways. The Assessment considers 11 different locations, with the assessed visual impact ranging from negligible to low-moderate in two instances. It highlights that views toward the Project are limited by roadside vegetation, plantation areas and adjoining farming properties as well as screening afforded by nearby and surrounding properties and concludes that the overall visual impact for tourist routes and highways is low.</li> <li>▪ Major roads. The Assessment considers 15 viewpoints for analysis along main roads, with the assessed visual impact varying from negligible through to moderate. It notes that, as is also the case for tourist routes and highways, the majority of views are limited by roadside vegetation, plantation areas, and adjoining farming properties including screening afforded by nearby and surrounding topography. The Assessment concludes that the overall visual impact for major roads is considered to be low-moderate.</li> <li>▪ Local roads. The Assessment considers 24 viewpoints along local roads, with the assessed visual impact ranging from negligible-nil to low-moderate. It notes that views from local roads vary greatly depending upon location and proximity to the Project and concludes that the overall visual impact rating for local roads is considered to be low.</li> <li>▪ Townships. The Assessment considers viewpoints from the following towns as part of its assessment: Yallourn, Tyers, Traralgon, Churchill, Morwell, Yinnar, Boolarra, Mirboo North, Thorpdale, Narracan, Coalville and Moe. The visual impacts from these towns is assessed as varying from negligible-nil, to low. It identifies that from most locations within the nearby towns, views are filtered or screened by a combination of topography and vegetation or by buildings and other structures. This means that views from townships are typically limited to the edges of townships areas such as recreation areas that allow for clear views over large open areas. The Assessment finds that the overall visual impact for townships is considered to be low-negligible.</li> <li>▪ Recreational trails, parks and elevated lookouts. The Assessment looks at 13 different viewpoints in its consideration of recreation trails, parks and elevated look outs and the impacts are assessed as varying from nil to negligible. The Assessment concludes that the overall impact on parks and recreational trails is assessed to be negligible, noting that outside of towns and built-up areas, walking</li> </ul>
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	<p>trails tend to be located in heavily vegetated areas such as the Lyrebird Forest Walk, Morwell National Park and the trail to Petersons lookout.</p> <p>Accordingly, the impacts of the proposal on significant views, including visual corridors and sightlines is found to be primarily low to negligible, apart from major roads where impacts are assessed to be low to moderate.</p> <p>In terms of impacts on residential properties the Assessment considered 20 different locations where permission was given to publish the assessment from the property. The findings of these assessments, including TrueView images to show likely views once the wind farm has been constructed, concludes that impacts at the assessed dwellings range from Nil, through to high.</p> <p>For the majority of the assessed dwellings, landscape mitigation is considered to be an option to reduce visual impacts. The exceptions to this are five dwellings where impacts are expected to be high and where it is considered that landscape mitigation is unlikely to reduce impacts for various reasons.</p> <p>Whilst is acknowledged that impacts to these dwellings will be high, these impacts also need to be considered in the context of the relatively low impacts from the range of public viewpoints that have been assessed, as discussed above.</p> <p>Accordingly, the Assessment finds that the project is in an area that can accommodate the visual change that will result from the wind farm and will not be detrimental to the views, character and amenity of the area within the Project's viewshed.</p>
Aviation	<p>The Aeronautical Impact Assessment prepared by Chiron Aviation Consultants describes the potential impacts to aviation safety and risk to aviation activities in the vicinity of the Project and the mitigation measures designed to manage potential impacts on aviation safety.</p> <p>The Assessment concluded that there would be:</p> <ul style="list-style-type: none"> <li>▪ no adverse impact on the Obstacle Limitation Surface (OLS) of any registered, certified or military aerodromes;</li> <li>▪ no adverse impact on any Lowest Safe Altitudes (LSALTs) for air routes in the vicinity;</li> <li>▪ no adverse impact on the Latrobe Valley aerodrome Non-Directional Beacon (NDB) approach;</li> <li>▪ no adverse impact on the Yarram aerodrome Instrument Approach Procedure (IAP);</li> </ul>

	<ul style="list-style-type: none"> <li>▪ no adverse impact on the performance of civil surveillance radars;</li> <li>▪ no adverse impact on the performance of aviation-related communications systems; and</li> <li>▪ no adverse impacts on Defence or Airservices Australia radar systems.</li> </ul> <p>However, the Assessment found that the Project will impact on the Latrobe Valley Aerodrome and to address the issue, amendments will be required to the aerodrome's instrument approach procedure and to the missed approach decision height. Further consultation is being undertaken with the Latrobe Valley Aerodrome operator to address this.</p> <p>A Qualitative Risk Assessment was also undertaken in relation to aviation as part of the Chiron Report. The assessment found that lighting of the turbines during either the day or night is not required and that there are unlikely to be impacts to night flying, general aviation flying training, recreational and sport aviation, emergency services flying, weather and topographical issues</p> <p>In relation to fire fighting, the Assessment highlights that aerial fire fighting is conducted at low levels and that based on the experience of the consultant with rural fire fighting in multiple states, the various agencies all typically consider wind farms to be 'just another hazard' that has to be considered in the risk management process associated with aerial fire fighting, noting that aerial firefighting would take place in combination with ground based firefighting.</p> <p>The Assessment does also note that the meteorological monitoring masts proposed for the site are very difficult to see due to their slender construction and thin guy wires and because the masts are often a grey (galvanised steel) colour that readily blends with the background. As this can be a risk for aerial application activity, the Assessment recommends appropriate marking and reporting of the proposed meteorological masts.</p> <p>Based on the findings of the Assessment, it is considered that appropriate consideration has been given to aircraft safety, as required by the Decision Guidelines of Clause 52.32-6 of the three Planning Schemes.</p>
Noise	<p>Consistent with the requirements of NZS6808:2010, a Background Noise Monitoring Report and subsequent Environmental Noise Assessment was undertaken for the Project by Marshall Day Acoustics. In addition, a peer review of that report was undertaken by Sonus and an Environmental Noise Assessment Audit was also undertaken by Servensa, in accordance with the requirements Clause 52.32-4 of the Planning Scheme.</p>

	<p>The Marshall Day Assessment found that:</p> <ul style="list-style-type: none"> <li>the proposed wind turbines are predicted to comply with the operational noise requirements of NZS6808:2010, as required by the Victorian Wind Energy Guidelines;</li> <li>the noise levels from the related infrastructure (the battery storage facility and, from a cumulative basis, the terminal station) are at least 1-dB below the minimum recommended for the conservative night time period as required by the NIRV and therefore the infrastructure is unlikely to be a significant design consideration;</li> <li>construction noise associated with the wind farm can be acceptably managed on the basis of the operation and implementation of a CEMP.</li> </ul> <p>The peer review undertaken by Sonus noted that the approach in the Marshall Day Assessment is conservative compared with the New Zealand Standard, as it will result in higher predicted noise levels and concluded that the Marshall Day assessment has been conducted in accordance with the Wind Energy Guidelines and the assessed layout will achieve the objective requirements of the Project.</p> <p>An environmental audit undertaken by Senversa confirmed that the approach taken to the Noise Assessment by Marshall Day was sound and recommended additional work in the form of:</p> <ul style="list-style-type: none"> <li><i>'Measurements of the tonality of the candidate turbines (in accordance with IEC 61400-11:2012)41 should be reviewed as they become available, or verified by on-site emission testing of the first turbines commissioned on the site.</i></li> <li><i>The post-construction noise level monitoring specified under the Noise Compliance Test Plan (NCTP) should be undertaken by an independent acoustic consultant in line with recent recommendations of the Office of the National Wind Farm Commissioner'.</i></li> </ul>
Electromagnetic Interference	<p>The Electromagnetic Interference (EMI) Assessment prepared by DNV GL describes the potential EMI impacts of the Project and the proposed mitigation measures that are designed to ensure that any adverse impacts on communication services in the area are minimised. The Assessment concluded as follows.</p> <ul style="list-style-type: none"> <li>There is some potential for interference to be caused to one point to multi point link operated by Gippsland Water, however there are potential mitigation options for this and there is on-going consultation with Gippsland Water about this.</li> </ul>



- There is some potential for there to be interference to digital television broadcast signals, however mitigation options have been recommended to address this if interference is experienced.
- The NBN wireless internet signals from the Boolarra tower are not expected to be impacted however if interference is experienced the problems are expected to be able to be rectified by relocating antennas at any affected dwellings.
- There is a low risk of interference to the point to multipoint links associated with the Latrobe Valley flood warning system however if interference is experienced then mitigation measures are available.
- There is not expected to be any noticeable interference to FM radio signals from the KIDS FM broadcast tower. However, if any interference is noticed then mitigation measures are available.
- There is not expected to be any interference to mobile phone signals however, as with the other potential issues, mitigation measures are available if indeed interference is identified.
- Interference to satellite television is not expected to be an issue, as the two satellites that are potentially impacted only transmit programs are designed for international services and so it is considered unlikely that residents will be receiving signals from the satellites.
- There is some low potential for mobile radio operations of Gippsland Water to be impacted however mitigation measures are available if any interference is identified.
- There are a number of additional services also identified and discussed in the specialist report, all of which are considered unlikely to be impacted.

The Assessment highlights that Delburn Wind Farm Pty Ltd will continue to engage with relevant stakeholders in relation to EMI matters as required in relation to digital television services and in relation to point-to-multipoint services for Gippsland Water.

It is also noted that it will be a requirement of any planning permit that is issued for the Project that a survey is undertaken preconstruction to establish a baseline assessment for impacts, and highlighting that Delburn Wind Farm Pty Ltd has committed to returning any impacted services to at least pre-construction quality at its own cost if the interference is attributed to the Project after construction.

Bushfire	<p>The Project site is affected by the Bushfire Management Overlay across Latrobe City, South Gippsland Shire and Baw Baw Shire. Although planning permission is not required for buildings and works associated with a 'Wind Energy Facility' under the BMO, bushfire risk has been considered in the Bushfire Risk Assessment prepared by Fire Risk Consultants, given the site's location within a high risk area and in response to the policy requirements of Clause 13.02-1S of the three Planning Schemes.</p> <p>The Assessment concludes that the proposed use and development "<i>does not increase the bushfire risk in the landscape if recommendations during the distinct phases of development, construction and operation are implemented</i>".</p> <p>A checklist against the CFA Guidelines confirms that the intent of the Guidelines in terms of the development of utility installations, emergency management, site infrastructure, site operations, and the additional conditions specific for wind energy facilities and battery installations, has been achieved.</p> <p>The assessment includes recommendations of a series of mitigation measures to be implemented during the construction and operation phases of the Project to minimise bushfire risk. Delburn Wind Farm has committed to implementing these measures.</p>
Traffic	<p>The Traffic Impact Assessment prepared by AECOM makes the following recommendations/conclusions in relation to the construction phase of the project:</p> <ul style="list-style-type: none"> <li>Construction Access Routes: the primary delivery port for externally sourced materials / components is yet to be confirmed but the options currently being considered include the Port of Hastings, Port of Melbourne, Port of Geelong and Port of Portland.</li> </ul> <p>The Assessment notes that a high-level desktop analysis of the routes from each port delivery option was undertaken which found that there are restrictions relating to height, weight and approvals required from other landowners/authorities which will require further investigations and consultation once a route has been finalised. Any approvals required to facilitate the delivery route will be sought once the Port has been selected and will be undertaken by the contractor engaged to undertake the land transport component of the construction activities.</p> <p>Regardless of the delivery port, externally sourced materials including wind turbine components are expected to be delivered to the site via Princes Freeway, Marretts Road and Strzelecki Highway before turning off a key local intersection at Golden Gully Road, Smiths Road, or Creamery Road.</p>

- Traffic generation: The Assessment predicts the traffic volume impact on the local road network based on a conservative scenario where vehicles are predicted to both arrive and depart from the site during the AM peak period. The Assessment highlights that even at peak volume (taking into consideration an increased traffic volume during the pouring of turbine foundations), the traffic generated is significantly less than the typical one-way road capacity of 900 vehicles per hour and that traffic impacts are predicted to be negligible given the low existing rural traffic volumes.
- Site Access Points: A total of 11 vehicle access points (site entrances) are proposed to the Project site via the public roadnetwork. Modifications to the road and access tracks will be required at each of the nominated site access points to accommodate OD and articulate vehicles (AV).
- Pinch Points: A swept path analysis was undertaken for OD vehicles which identifies a total of 11 'pinch points' (either relating to potential existing pavement or native vegetation constraints) along the delivery route between Princes Freeway and the site access points. The critical turning movements along the OD route occur at the intersections between Strzelecki Highway and public roads. Temporary pavement widening is proposed to be provided at all intersections. Additional operational controls including OD escort vehicles, temporary speed reduction, delivery time restrictions and additional signage will be required (to be developed in consultation with key stakeholders). Where any of these 'pinch points' have the potential to impact on native vegetation, the impacts have been considered as part of the Biodiversity Assessment.
- Single lane / Two way roads: The Assessment notes that single-lane two-way roads such as Golden Gully Road have the potential to be safety risks. There are a range of mitigation measures that could address this including widening of the road along key routes, providing passing bays at key locations, traffic management measures, reduced speed limits, upgrade of road pavements, regular inspections and maintenance operations, installation of advanced warning signs and a driver's code of conduct. The Assessment notes that further advice from the relevant Road Authority, along with the adoption of an independent road safety audit as part of the Traffic Management Plan (TMP) will assist with determining appropriate measures.

In relation to the operational stage of the Project, the Assessment notes that vehicle movements will consist of daily maintenance activities and is

	<p>anticipated that up to 13 staff vehicles will commute per day to and from the site to undertake general maintenance activities.</p> <p>Maintenance such as the replacement of a wind turbine blade involving OD vehicle movements are expected to occur infrequently. The Assessment notes that any OD vehicle movements to accommodate these activities will be subject to DoT/VicRoads permitting requirements at that time.</p> <p>The Assessment also addresses potential traffic impacts from the eventual decommissioning of the wind farm.</p>
Blade Glint and Shadow Flicker	<p>Shadow Flicker and Blade Glint have been considered in a report prepared by K2 Management.</p> <p>The Wind Energy Guidelines state that shadow flicker experienced immediately surrounding the area of a dwelling (garden fenced area) must not exceed 30 hours per year (noting that where a fenced garden area is not evident at a dwelling, a 50 metre curtilage from the dwelling centre point is used).</p> <p>The Shadow Flicker Assessment clearly demonstrates compliance with this requirement and concludes that there are no dwellings in proximity to the site that will exceed the 30-hour annual limit on the basis of the 'worst case scenario' modelling. The Assessment also notes that shadow flicker impacts will likely be less in reality, having regard to the conservative assumptions made in the modelling.</p> <p>The Assessment also confirms that Delburn Wind Farm Pty Ltd is committed to specifying wind turbine blades that must be finished in a non-reflective coating to avoid any blade glint impacts as part of the tendering and procurement process and that, accordingly, will meet the requirements of Section 5.1.2(b) of the Wind Energy Guidelines.</p>
Environmental Management Plan (EMP) Framework	<p>The EMP Framework outlines the proposed structure for future EMPs and establishes reporting and review requirements as well as responsibilities, noting that the Delburn Wind Farm directors will have the ultimate responsibility for the implementation of the EMPs with the construction Project Manager responsible the development and implementation of the CEMPs.</p> <p>The requirement for environmental site inductions for all construction staff is identified, along with the matters to be addressed in any site induction. The approach to compliance monitoring, record keeping and reporting is also identified, to ensure that environmental controls, are maintained and that monitoring and reporting is effective.</p> <p>A key element of the EMPs, as identified in the Framework will be the environmental safeguards that will prevent or minimise potential environmental</p>

impacts associated with the Project. These are summarised in the Framework and also reflect the range of mitigation measures identified in the various specialist reports prepared in support of the Project. Specific mitigation measures are outlined for three matters in particular, reflecting key specialist report findings, these being:

- Measures to minimise impacts on waterways;
- Measures to minimise impacts on native vegetation; and
- Measures to minimise impacts on threatened species, including Growling Grass Frog, Strzelecki Gum and other iconic species including: Wedge Tailed Eagle, Yellow-tailed Black Cockatoo; Strzelecki Koala and Greater Glider.

The Framework then provides a summary of environmental monitoring methods that will be implemented for the range of matters to be addressed by the EMPs, highlighting that the general approach to each issue and associated monitoring will comprise:

- Establish a baseline monitoring program before construction commences. ·
- Prepare an inspection, monitoring and auditing program, designed to match the environmental risks for the unique site conditions. ·
- Review records regularly
- Ensure that remedial action is taken promptly when monitoring, inspections or audit results reveal a problem in environment management. ·
- Ensure that all monitoring is conducted by a NATA registered laboratory, either directly, or under supervision. ·
- Arrange for regular independent audits of environmental performance and the environmental management system.

Any planning permit that is issued for the Project will include a series of conditions requiring the preparation of EMPs as outlined in the EMP Framework, prior to the commencement of works associated with the Project.

### Conclusion

Potential impacts of the Project have been assessed in accordance with the relevant guidelines and policies. The potential impacts arising from the Project are identified in the key specialist assessments and corresponding mitigation measures (where required) have been proposed to reduce adverse impacts where avoidance has not been feasible.

Since the Project's inception, its size and impact area has been significantly reduced in response to input from the community, local government and State Government as well as specialist consultant input. The wind farm layout has been subject to an iterative design process and adjusted multiple times to ensure compliance with relevant standards including noise and vibration, ecological impacts and EMI impacts, and to minimise the overall environmental impacts.

Importantly, the Project will make a significant contribution to renewable energy generation in Victoria and achieves Commonwealth and State policy objectives. It is also expected to deliver significant economic benefits at the broader State, regional and local level, particularly through the creation of construction employment opportunities and increased demand and support for local goods and services.

In conclusion, based on a balanced assessment of key planning issues and policies, this Planning Report finds that the Project will be an appropriate planning and land use outcome that will result in the development of an additional renewable energy resource in Victoria and will result in an overall net community benefit.





## 1.0 INTRODUCTION

This report has been prepared on behalf of Delburn Wind Farm Pty Ltd, a member entity of OSMI Australia Pty Ltd (OSMI) group of companies, and accompanies an application for a planning permit for the Delburn Wind Farm (the Wind Farm). The Wind Farm is proposed to comprise 33 wind turbines, along with associated and supporting infrastructure including three permanent anemometers, one development anemometer, a battery energy storage system (BESS) facility, access tracks, underground electrical and fibre optic cabling (hereon referred to as reticulation), operation and maintenance facilities, visitor information and viewing areas and temporary construction facilities.

The Wind Farm is to be located in the Strzelecki Ranges, to the south of the Latrobe Valley. The Project Site is situated within a timber plantation owned by Grand Ridge Plantations Pty Ltd (a wholly owned subsidiary of HVP Plantations) either side of the Strzelecki Highway, to the south of Moe and south west of Morwell.

The Project Site has an area of 4,778 hectares and crosses into three different Local Government Areas (LGAs) of Latrobe City (28 turbines), South Gippsland Shire (four turbines) and Baw Baw Shire (one turbine). Accordingly, the Project is affected by three different Planning Schemes, although it is noted that the majority of the site is located within Latrobe City (approximately 4,183 hectares).

The site is primarily included in the Farming Zone (FZ) in the three Planning Schemes with the exception of the north east corner of the site which sits within the Special Use Schedule 1 – Brown Coal (SUZ1). The site is also affected by a number of different overlay controls, that vary across the three LGAs.

Under the provisions of the FZ and SUZ1, a planning permit is required for the use and development of land for a wind energy facility. Pursuant to Clause 52.32 'Wind Energy Facilities' a permit is also required for use and development. The various overlay controls also include permit 'triggers' for buildings and works permits and vegetation removal, as do some of the relevant particular provisions clauses, including Clause 52.17 Native Vegetation.

Due to the fact that the site is located across three LGAs, three planning permit applications are required to be lodged. This Planning Report addresses all three of the applications, ensuring the Wind Farm is assessed as a whole. A separate application has been prepared for the terminal station that will be required to connect the wind farm into the Victorian transmission network.

From a statutory planning perspective, approval is sought in Latrobe City for the following:

*'Development and use of land for a wind energy facility and associated buildings and works (including two permanent anemometers, a battery energy storage system facility and associated infrastructure); removal of native vegetation; alterations to a road in a Road Zone Category 1; business identification signage; and car parking to the satisfaction of the responsible authority'.*

In South Gippsland Shire approval is sought for:

*Development and use of land for a wind energy facility and associated buildings and works (including one permanent anemometer), and removal of native vegetation.*

And in Baw Baw Shire approval is sought for:

*Development and use of land for a wind energy facility and associated buildings and works (including one permanent anemometer) and removal of native vegetation.*

For all three wind farm planning permit applications, in addition to the terminal station application, the Minister for Planning is the Responsible Authority pursuant to Clause 72.01 of each of the three Planning Schemes.

The proposal to locate a wind farm within a plantation forest is one of the first of its kind in Australia, although is something that has been commonly occurring overseas. There are a number of advantages to locating within a plantation area including the typically limited environmental constraints (due to the vegetation being planted and not native), the ability to use existing access tracks thus requiring reduced clearance areas for roads and cabling, and dwellings being limited to the outer boundary of the site within a large contiguous land holding.

The Project Site also has a number of other significant locational advantages including its proximity to the thermal (coal fired and gas) power stations at Hazelwood, Yallourn, Loy Yang and their associated coal mines and transmission infrastructure, providing a 'robust' landscape setting for the Project, in addition to its proximity to the existing 220 kV transmission line which runs between Hazelwood and Rowville. The availability of suitable road access is also a significant benefit. These locational advantages are discussed further in the report and the accompanying specialist studies.

The Wind Farm offers an exciting opportunity to provide an alternative and sustainable energy source that currently isn't prevalent in eastern Victoria, with associated environmental and economic benefits.

From a planning perspective the proposed wind farm is entirely appropriate in the context of the relevant Planning Policy Framework (PPF) directions, local policy directions of each Planning Scheme, relevant zone and overlay controls, and the relevant particular provisions - including those of Clause 52.32 Wind Energy Facilities and the associated requirements of the Policy and Planning Guidelines for Development of Wind Energy Facilities in Victoria, (DELWP), March 2019.

The requirements of all these various policies and clauses have been addressed in the preparation of the permit applications, including a detailed assessment of potential biodiversity impacts, bushfire considerations, traffic matters, hydrogeological/hydrological and geotechnical assessment, as well as some of the more 'wind farm specific' considerations associated with noise, shadow flicker and blade glint, electromagnetic interference (EMI), air craft safety and visual impacts. Separate to this planning permit application a Cultural Heritage Management Plan (CHMP 16429) is also being prepared pursuant to the Aboriginal Heritage Act 2006.

The work that has been undertaken demonstrates the Project's compliance with the objectives and application requirements of the three Planning Schemes.

Clause 71.02-3 of the Planning Scheme 'Integrated Decision Making' requires Planning and responsible authorities to *'integrate the range of planning policies relevant to the issues to be determined and balance conflicting objectives in favour of net community benefit and sustainable development for the benefit of present and future generations'*.

This Planning Report, in conjunction with and utilising the findings of the suite of supporting reports, clearly demonstrates that this objective is achieved in the case of the proposed wind farm and will, based on a balanced assessment of relevant planning matters, result in a net community benefit both to the local community but also at a broader regional and State level.

This Planning Report should be read in conjunction with the following reports which are included as Appendices:

- Biodiversity Assessment by Ecology and Heritage Partners Pty Ltd (both dated December 2020);
- Environmental Noise Assessment by Marshall Day Acoustics Pty Ltd (26 January 2021) and Background Report (20 October, 2020) accompanied by a peer review prepared by Sonus (22 October, 2020) and a Section 53V Environmental Audit Report by Senversa (26 October 2020);
- Landscape and Visual Impact Assessment by Jacobs (10 December 2020);
- Bushfire Risk Assessment by Fire Risk Consultants (September, 2020);
- Traffic Impact Assessment prepared by AECOM (19 October 2020);
- Desktop Assessment of Potential Geotechnical, Contaminated Land and Hydrogeological Impacts by Golder Associates Pty Ltd (16 July, 2020);
- Shadow Flicker and Blade Glint Assessment by K2 Management Australia Pty Ltd (22 January 2021));
- EMI and Telecommunications Report by DNV GL – Energy Renewables Advisory (6 November, 2020)
- Aeronautical Impact Assessment Report by Chiron Aviation Consultants (14 July, 2020);
- Community and Stakeholder Engagement Report by OSMI Australia Pty Ltd (21 October, 2020);
- Economic Impact Assessment by Jacobs (3 August, 2020);
- Environmental Management Framework by OSMI Australia Pty Ltd (11 December, 2020)

## 2.0 PROJECT SITE AND LOCALITY

### 2.1 Introduction

This Chapter describes the Project Site and its surrounding context, including a brief overview of the land tenure, existing topography/geography, waterways and ecology.

### 2.2 Site Location

The Project Site is located in south east Victoria (approximately 150 kilometres from the Melbourne CBD). It is situated within a timber plantation owned by Grand Ridge Plantations Pty Ltd (a wholly owned subsidiary of HVP Plantations) on rolling hills either side of the Strzelecki Highway, to the south of Moe and south west of Morwell. Refer Figure 2.2 Regional Context Plan.

The Project Site is irregular in shape, has a total area of 4,778 hectares (excluding land associated with road upgrades) and is generally bound by Hernes Oak to the north, Coalville, Narracan and Thorpdale to the west, Darlimurla to the south, and Driffield, Yinnar, and Boolarra to the east. The Project Site crosses into three different LGAs of Latrobe City, South Gippsland Shire and Baw Baw Shire, however the majority of the site is located within Latrobe City (4,183 hectares).

The plantation in which the site is located is an established land use that has largely been in place since the 1960s and comprises a mixture of pine and blue gum plantations and remnant native vegetation as seen in Figures 2.1 and 2.3 below.

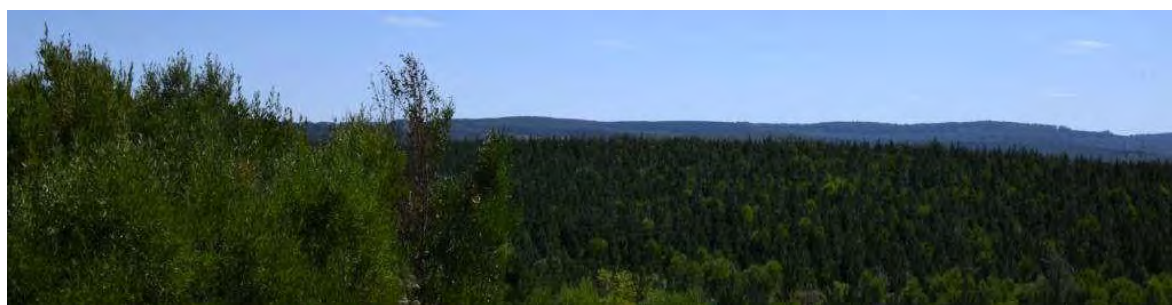
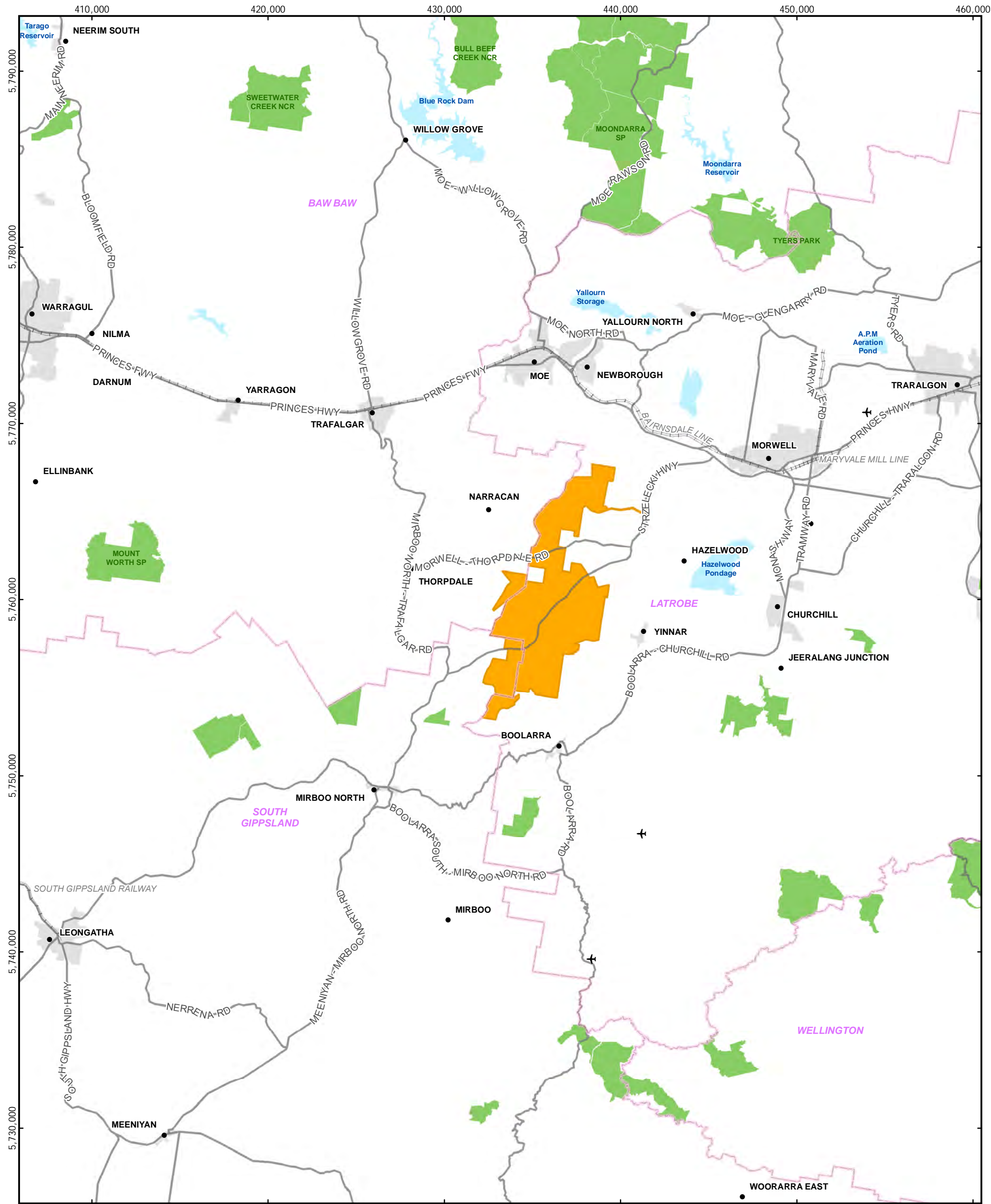


Figure 2.1: View of the plantation from Strzelecki Highway



FIGURE 2.2: REGIONAL CONTEXT PLAN



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LEGEND

- Project Boundary
- Airport
- Major Road
- Railway
- Parks and Reserves
- Wetland
- Built-Up Area
- LGA Boundary



PROJECT		Delburn Wind Farm	
TITLE		Regional Context Plan	
DATE	21/10/2020	PRODUCED	A.Curtis
SCALE	1:200,000 at A3	CHECKED	I.Mackey
STATUS	Draft	APPROVED	P.Marriott
DRAWING No.		REV	
DWF_OVR_012C_3.5 Regional Context Plan		3.5	



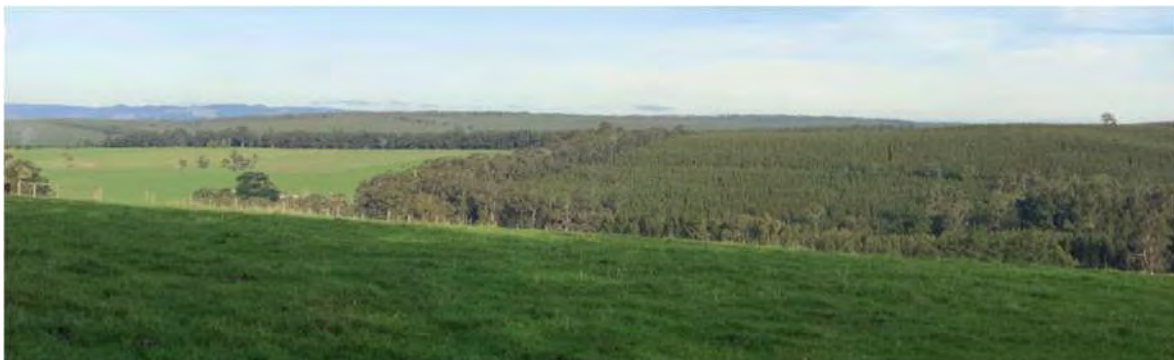


Figure 2.3: View south over farmland and plantation from Morwell Thorpdale Road

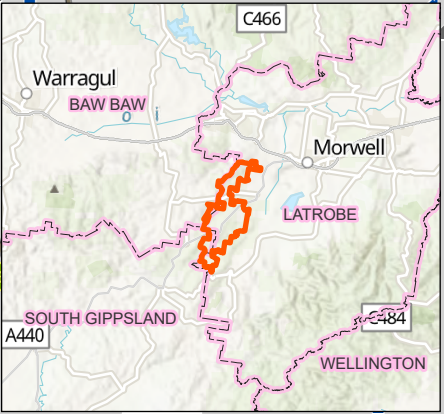
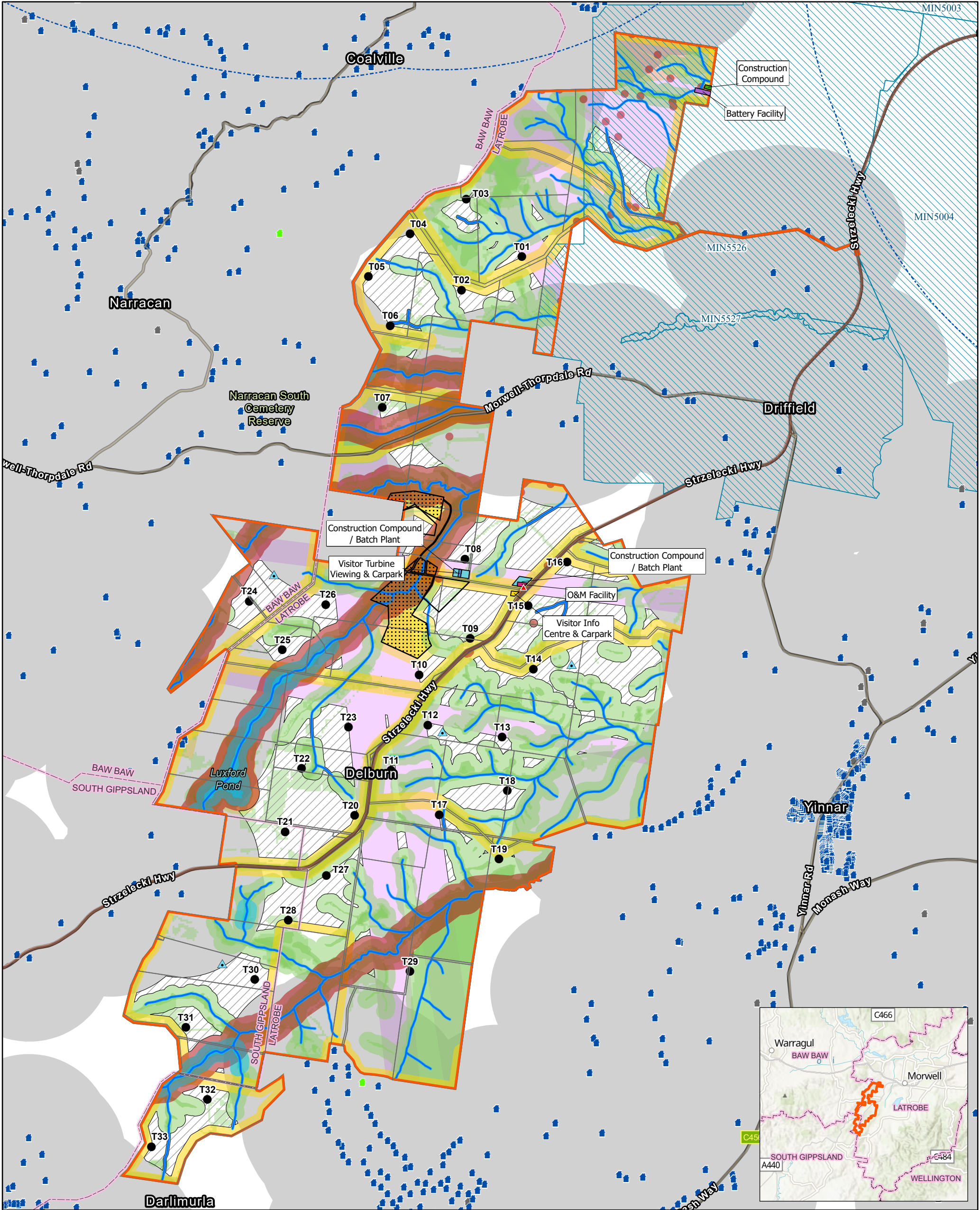
Key locational advantages of the Project Site include:

- Environmental wind factors in relation to its viability as a wind farm site;
- The use of the land for plantations resulting in dwellings being limited to the outer boundary of the site;
- The limited presence of National or State significant flora and fauna as a result of the use of the site for plantations;
- The Hazelwood to Rowville 220 kV transmission line that runs through the north east corner of the site. The proximity of the transmission line allows on-site connection to the existing infrastructure.
- The Strzelecki Highway, connecting Latrobe Valley to South Gippsland, transects the project site and provides principal access;
- An extensive road and track network within the plantation that allows access to and within the project area (subject to upgrading works required);
- The limited accessible renewable energy resources currently available in the east of the State, offering a complementary energy source to the wind farms located in western Victoria, that is subject to different weather regimes and wind patterns.
- The highly disturbed nature of the landscape surrounding the site, particularly to the east, as a result of the clearing of land for agriculture and the proximity of the coal fired power stations at Hazelwood, Yallourn and Loy Yang and their associated coal mines and transmission infrastructure, providing a 'robust' landscape setting for the Project.

Figures 2.4 and 2.5, following, shows the subject site and proposed turbine layout, along with some of the locational advantages and constraints addressed in this chapter.

There is also an existing on-site basalt quarry within the site boundary that has the stone resource capacity to supply aggregates during the construction of the project.

FIGURE 2.4: SITE ANALYSIS - WTG SITING



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LEGEND

- Project Boundary
- Wind Turbine
- Met Mast
- Business identification signage location
- O&M Facility
- Visitor Info Centre & Carpark
- Visitor Turbine Viewing & Carpark
- Battery Facility
- Construction Compound
- Construction Compound / Batch Plant

- Existing Dwelling
- Possible Future Dwelling
- Unconfirmed Dwelling
- Watercourse
- LGA Boundary
- Allowable WTG area
- Cultural Constraints
- Native Vegetation set-backs (includes mapped native vegetation patches, scattered trees and 100m EVC & watercourse set-backs)

- Hydrology set-backs (includes 100m wetland & 20m waterway set-back)
- EMI Zones
- Dwelling 1.05km set-back
- Min. set-backs set out by the Farming Zone (works within setbacks require a Planning Permit)
- Moe\Morwell Prohibited Facility Area
- Quarry lease area
- Extractive work authority extension area
- Mining Licence Area

PROJECT

Delburn Wind Farm

TITLE

Site Analysis - WTG Siting

DATE

1/02/2021

SCALE

1:45,000 @ A3

STATUS

Draft

PRODUCED

A.Curtis

CHECKED

I.Mackey

APPROVED

P.Marriott

DRAWING No.

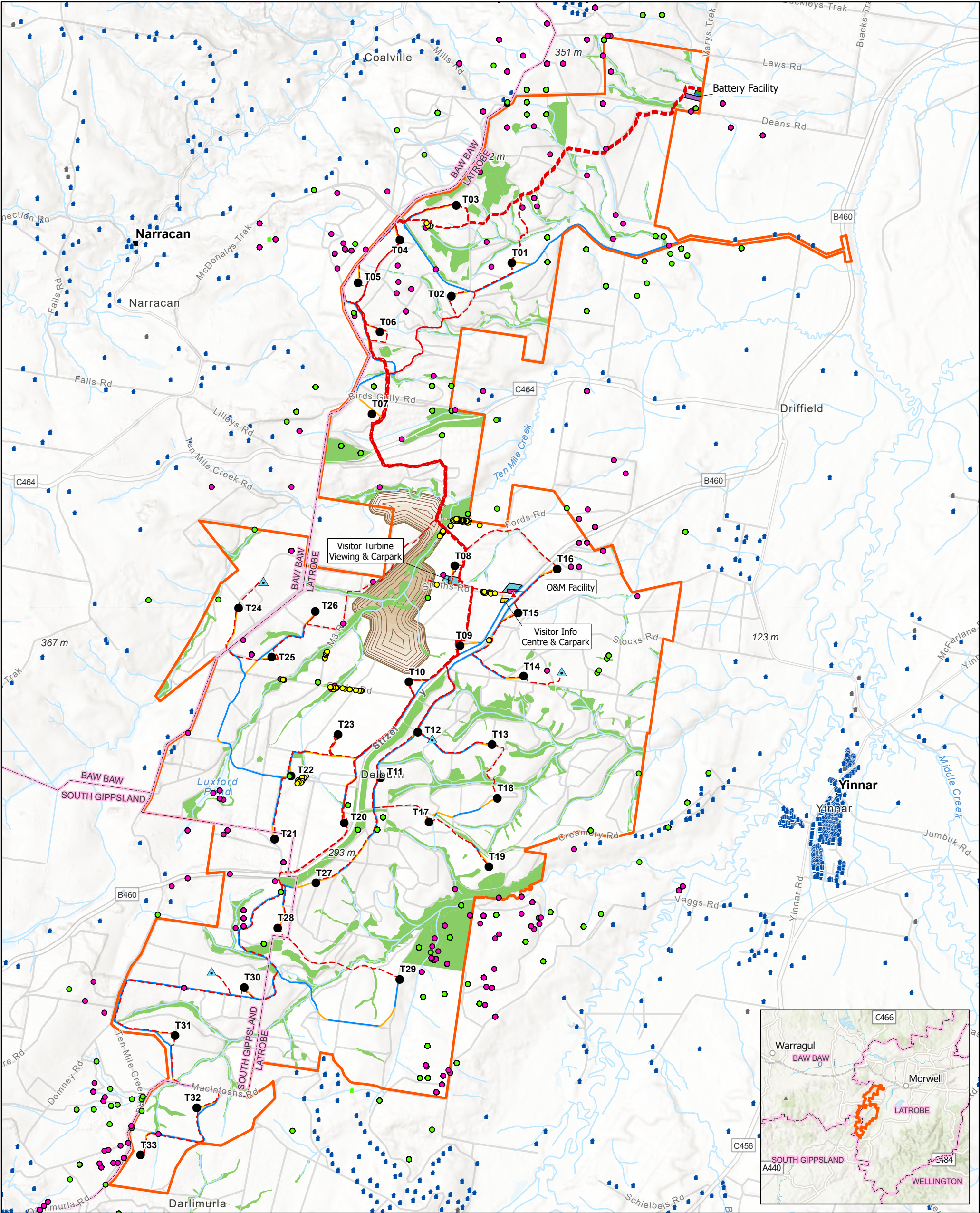
DWF\_OVR\_35-04A-SH1-v3-5 Site Analysis - Sheet 1

REV

v3.5



FIGURE 2.5: SITE ANALYSIS - ECOLOGICAL CONSTRAINTS



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LEGEND

- Project Boundary
- Wind Turbine
- Met Mast
- Business identification signage location
- Electrical Reticulation
- New Access Track
- Existing Access Track

- LGA Boundary
- O&M Facility
- Visitor Info Centre & Carpark
- Visitor Turbine Viewing & Carpark
- Battery Facility
- Construction Compound
- Construction Compound / Batch Plant

- Custodial EVCs
- Quarry Lease
- Existing Dwelling
- Possible Future Dwelling
- Unconfirmed Dwelling
- Strzelecki Gum
- Vulnerable Fauna
- Vulnerable Flora
- Watercourse

PROJECT

Delburn Wind Farm

TITLE

Site Analysis - Ecological Constraints

DATE 1/02/2021

SCALE 1:45,000 @ A3

STATUS Draft

PRODUCED A.Curtis

CHECKED I.Mackey

APPROVED P.Marriott

DRAWING No.

DWF\_OVR\_35-04A-SH2-v3-5 Site Analysis - Ecology

REV

v3.5



## 2.3 Dwellings within 1 kilometre

There are no existing dwellings within 1 kilometre of the proposed wind turbines (refer to Figure 2.6).

The existing pine plantation provides a large area of privately owned land with only two dwellings within the plantation area. These are located within the site boundary and are occupied by plantation staff however the dwellings are located more than 1 kilometre from the wind turbines. The plantation land has already been significantly disturbed resulting in generally low ecological values across the site.

It is noted that there are approximately 103 existing dwellings within 2 kilometres and 1,267 existing dwellings within 5 kilometres of the proposed wind turbines, as demonstrated in Figure 2.6.

## 2.4 Land Tenure

As previously noted, the Project Site consists predominantly of private land owned by Grand Ridge Plantations Pty Ltd (within which an area is leased to Kennedy Haulage for the Driffield Quarry), a small number of named and unnamed government roads and road reserves as well as waterways. Delburn Wind Farm Pty Ltd holds an exclusive Licence and Option for Lease with Grand Ridge Plantations Pty Ltd which is to be transferred into Hancock Victorian Plantations Pty Ltd as of 4 January 2021.

### 2.4.1 Certificates of Title

A review of the titles comprising the Project Site found that there are no Section 173 Agreements, covenants, caveats, easements or other encumbrances that would otherwise prohibit the use and development of land for the Project in the areas proposed for infrastructure development. A copy of all titles comprising the Project Site is included at Appendix A and the location of each of the Titles and associated road reserves is shown in Figure 2.7.

### 2.4.2 Roads

Relevant roads within the Project Site are outlined in Table 2.1 below.

**Table 2.1: Government Roads within the Project Site**

	Road Name
Department of Transport Regional Roads Victoria	<ul style="list-style-type: none"> <li>Strzelecki Highway</li> <li>Morwell-Thorpdale Road</li> </ul>
Council Roads	<ul style="list-style-type: none"> <li>Darlimurla Road</li> <li>Stocks Road</li> <li>Clarks Road</li> <li>Smiths Road</li> <li>Creamery Road</li> <li>Kings Road</li> <li>Birds Gully Road</li> <li>Ten Mile Creek Road</li> <li>Golden Gully Road</li> <li>Macintoshs Road</li> <li>Varys Track</li> </ul>



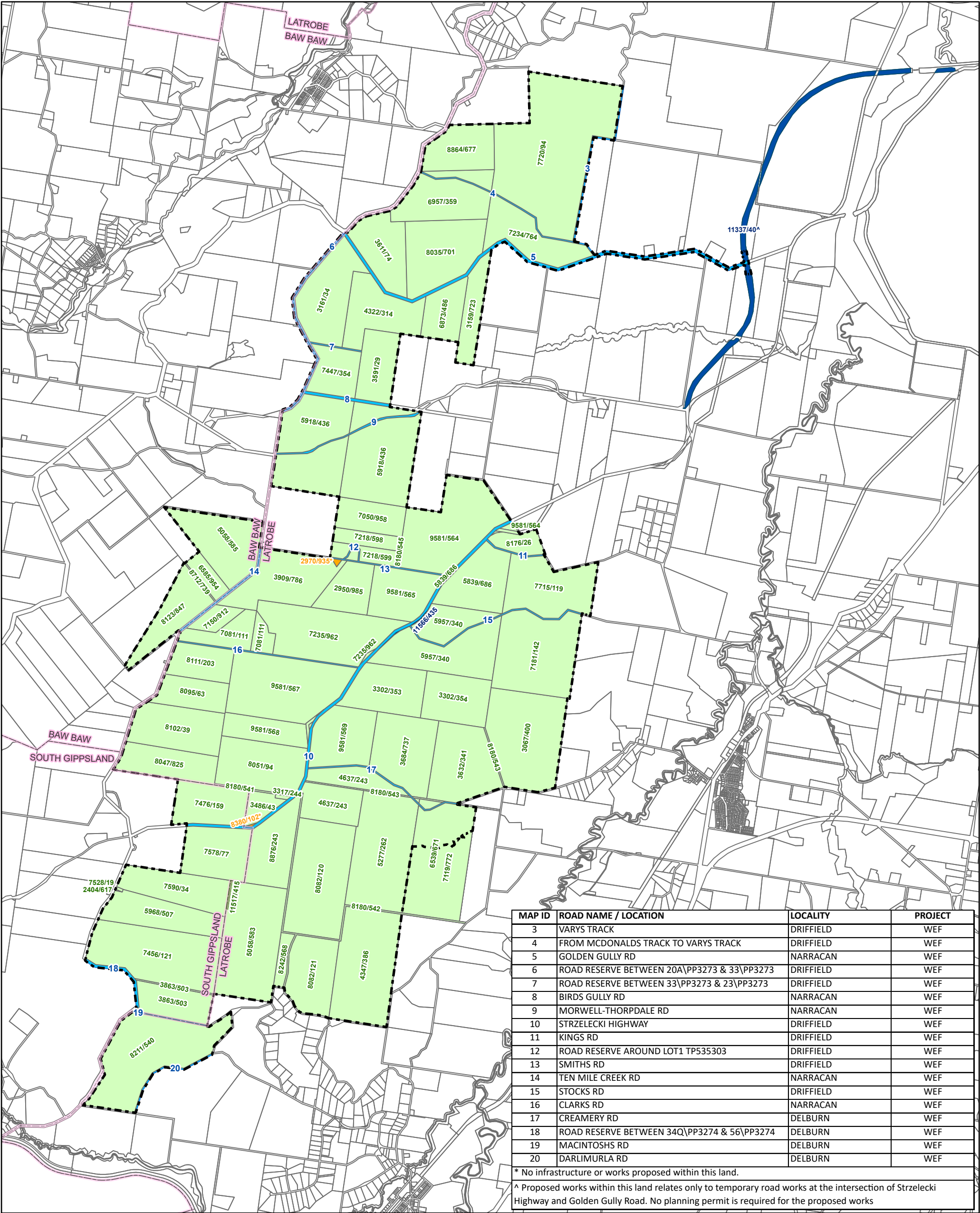
This is a detailed topographic map of the Baw Baw National Park area in Victoria, Australia. The map shows the park's boundary in orange, with various trails marked in blue and green. Key locations include Naracan, Rhinopdale, Yinnar, and Boollarra. A Battery Facility is located near the top right. The map includes numerous contour lines, roads, and place names. A legend in the bottom right corner identifies symbols for the park boundary, trails, and other features.

**Legend:**

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FIGURE 2.7: LAND TITLE INFORMATION



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**Delburn Wind Farm**

**Land Title Information**

DATE 4/02/2021	PRODUCED I.Mackey
SCALE 1:50,000 @ A3	CHECKED I.Mackey
STATUS Draft	APPROVED P.Marriott

DRAWING No.  
DWF\_OVR-037-04A-v3-5 Cadastre

REV  
3.5



The Project Site also comprises crown land in the form of unnamed roads (otherwise known as 'government' or 'paper roads'). These roads are unmarked except on title. There is no wind farm infrastructure proposed on any of the paper roads, other than underground cables and road upgrades.

## 2.4.3 Existing Quarry

The existing Driffield Quarry is owned and operated by Kennedy Haulage Pty Ltd, a private operator of quarries in the Gippsland region. Driffield Quarry was established in 1983 to supply quality basalt road base products and aggregates for Kennedy's own developments/projects, as well the local construction industry, Australian Paper (APM), and local Councils. The Quarry operates pursuant to two Works Authorities – WA293 and WA1098. An extension of these approved areas is also currently proposed and has been taken into account in the layout of the wind farm infrastructure.

Figure 2.8, below shows the existing quarry.



Figure 2.8: Driffield Quarry

## 2.4.4 Mining Licence Areas and Extractive Industry Interest Areas

A portion of the Project Site is affected by a mining licence. Mining licences are issued under the Mineral Resources (Sustainable Development) Act 1990. A mining licence holder is entitled to mine the land covered by the licence; explore for minerals and construct mining facilities related to the mining operation. Mining Licence 5526 issued to Driffield Energy Pty Ltd for black and brown coal affects the north east corner of the wind farm site.

The Project Site is also located in an area that forms part of a broader Extractive Industry Area, also pursuant to the Mineral Resources (Sustainable Development) Act 1990, and which covers a broad area extending north and south of the site.

The location of the wind farm within these two areas and any subsequent implications is addressed in Section 8.3 of this report.

## **2.5 Topography and Geology**

The geography of the Project Site consists of moderate to steep slopes with sandstone, siltstone, shales and swampy alluvial fans in depressions. Most of the terrain is an incised plateau, with low angle slopes at higher elevations and relatively steep slopes in the vicinity of water courses.

Published information indicates that the eastern part of the site is underlain by Pliocene to Miocene age dense sands and hard clays of the Latrobe Valley Group and the western side of the site is underlain by weathered Eocene age basalt of the Thorpdale Volcanics.

The surrounding landscape is mostly disturbed, having been cleared for agricultural and horticultural use, in addition to disturbance associated with the Hazelwood and Yallourn power stations and coal mines.

## **2.6 Waterways**

The Project Site is bordered by Ten Mile Creek to the west and the Morwell River, located outside the eastern boundary. The Morwell River drains north into the Latrobe River which flows east to the Gippsland Lakes Ramsar site, including Lake Wellington (approximately 95 kilometres away).

A series of tributaries and associated wetlands intersect the site including Stony Creek, Wilderness Creek, Luxford Pond, Silver Creek, and a tributary of Ten Mile Creek, which flows north from Luxford Pond. Additionally, a water body known as Wetland site E within the project area is fed by a network of creeks to the south of the project area.

A map of the surrounding waterways is found at Figure 2.9.

## **2.7 Ecology**

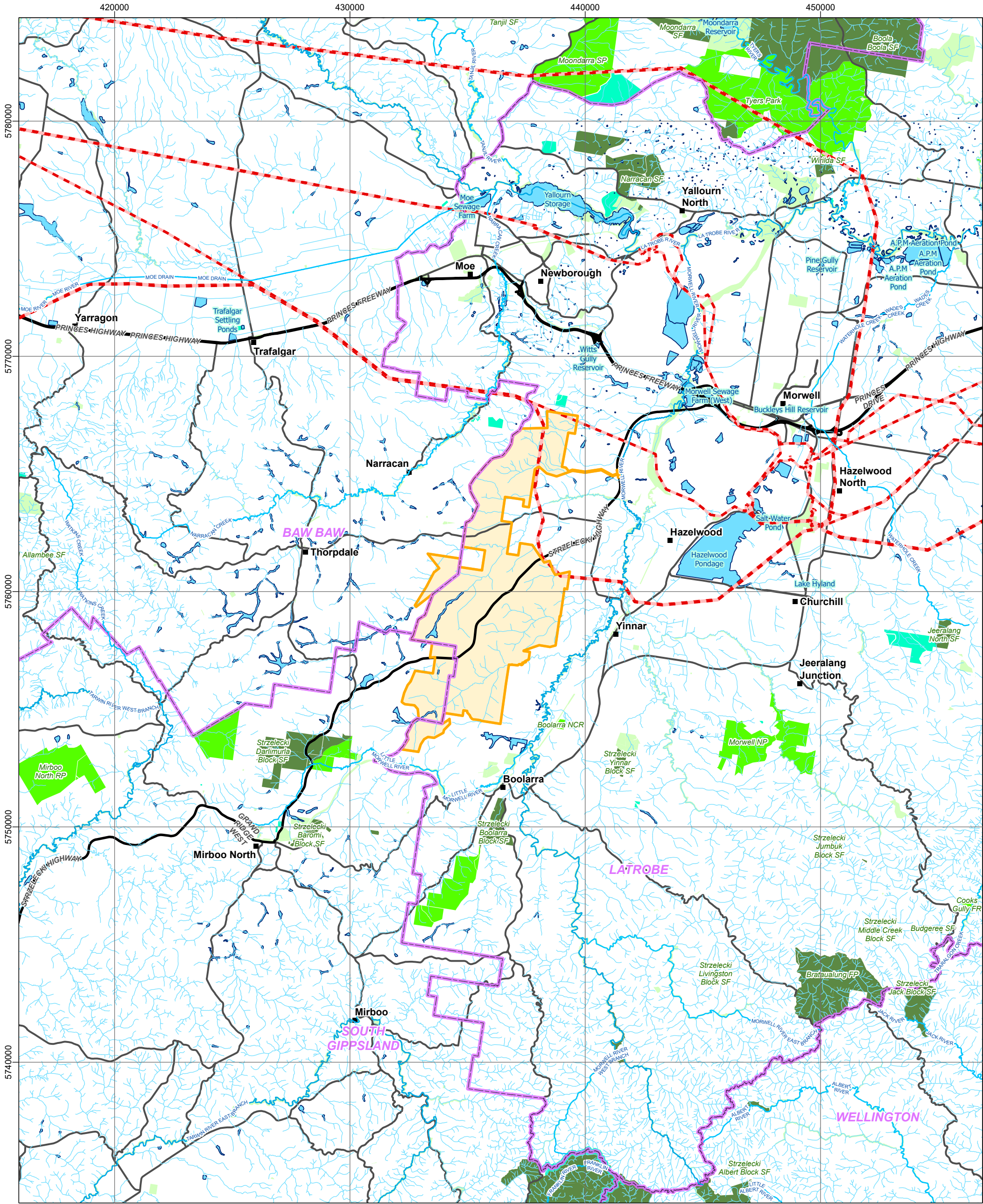
### **2.7.1 Flora**

The Project Site is located within plantation land in the Delburn area, covering the HVP Plantations Thorpdale Tree Farm. A large extent of the site therefore consists of a highly modified environment with pine and blue gum plantation, along with remnant native vegetation in the form of forest fragments, road reserves and large trees. It is noted that extensive land clearing has occurred in the surrounding area, mainly for agricultural and grazing purposes.

A Biodiversity Assessment undertaken by Ecology and Heritage Partners mapped a total of 241.04 hectares of native vegetation (excluding scattered trees) representative of seven EVCs of the Strzelecki bioregion within the study area. In addition, 49.96 hectares of DELWP modelled Current Wetland, is also within the study area (noting that the mapping focussed on areas of proposed infrastructure development within the land). The Strzelecki Gum (significant at national-level) and Yarra Gum (significant at state-level) were also detected within the Project Site. Figure 2.10 shows some of the existing Strzelecki Gums within the Project Site.



FIGURE 2.9: DRAINAGE AND RESERVES PLAN



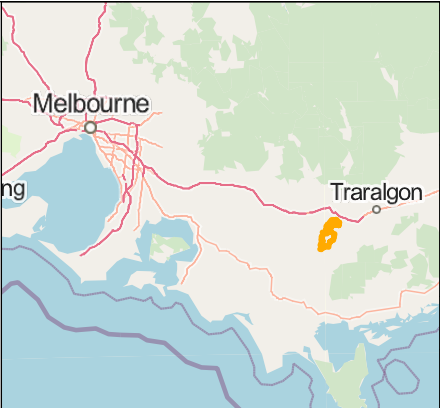


delburn  
WIND FARM

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- Project Boundary
- Watercourse
- LGA Boundary
- Existing Transmission Powerline
- Wetland
- Commonwealth Land
- National Parks and Nature Reserves
- Other Conservation Reserve
- Other Public Land
- State Forest



PROJECT	
TITLE	
Delburn Wind Farm	
TITLE	
Drainage and Reserves Plan	
DATE	4/02/2021
SCALE	1:150,000 @ A3
STATUS	Draft
PRODUCED	A. Curtis
CHECKED	I. Mackey
APPROVED	P. Marriott
DRAWING No.	DWF_EES_001-4A-v3-5 Drainage and Reserves Plan
REV	v3.5





Figure 2.10: Strzelecki Gum Scattered Tree

Table 2.2 below provides a summary of the mapped areas of Ecological Vegetation Classes. The findings and implications of the survey work are discussed in greater detail in Section 6.2 and at Appendix D.

Table 2.2: Extent of mapped EVC mapped within the surveyed area based on field surveys (source: Biodiversity Assessment, EHP, December 2020)

Ecological Vegetation Class	Area (ha) within the Project Site
Aquatic Herbland (EVC 653)	0.69
Damp Forest (EVC 29)	65.62
Herb-rich Foothill Forest (EVC 23)	115
Lowland Forest (EVC 16)	44.53
Swamp Scrub (EVC 53)	0.11
Swampy Woodland (EVC 937)	14.34
Tall Marsh (EVC 821)	0.75

Total Area	241.04
------------	--------

### 2.7.2 Fauna

The Project Site is considered to be of relatively low-quality habitat on account of the extent of land disturbance, native vegetation clearing and fragmentation. Targeted surveys identified the presence of Growling Grass Frog, a nationally significant species, at multiple locations in waterbodies within the Project Site. Other nationally significant species such as the Matted Flax-Lily, Greater Glider, Swift Parrot and Grey-headed Flying-fox were also targeted during the survey period, due to either a high likelihood of occurrence or the presence of local populations nearby, however none were recorded during these surveys. No fauna species of State significance were identified within the Project Site.

The findings and implications of the survey work are discussed in greater detail in Section 6.2 and at Appendix D.

## 2.8 Heritage

### 2.8.1 Cultural Heritage

There are 47 registered Aboriginal cultural heritage sites within the Project Site and an additional 15 within 200 metres of the project area boundary. The majority of sensitivity areas relate to artifact scatters in a disturbed context particularly along ridgeline areas dominated by sandy soils such as along areas Golden Gully Road and other sandy ridgelines.

A Cultural Heritage Management Plan (CHMP 16429) is being prepared in consultation with the Gunaikurnai Land and Waters Aboriginal Corporation (GLaWAC) and will outline the required avoidance, mitigation and management actions required during construction of the Project to manage potential impacts.

### 2.8.2 Historical Heritage

There are no known sites of historical heritage located within the boundary of the Project Site.

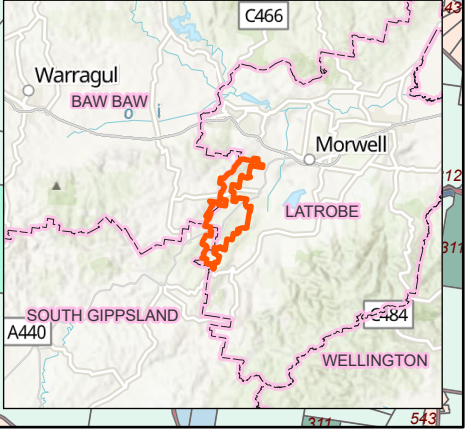
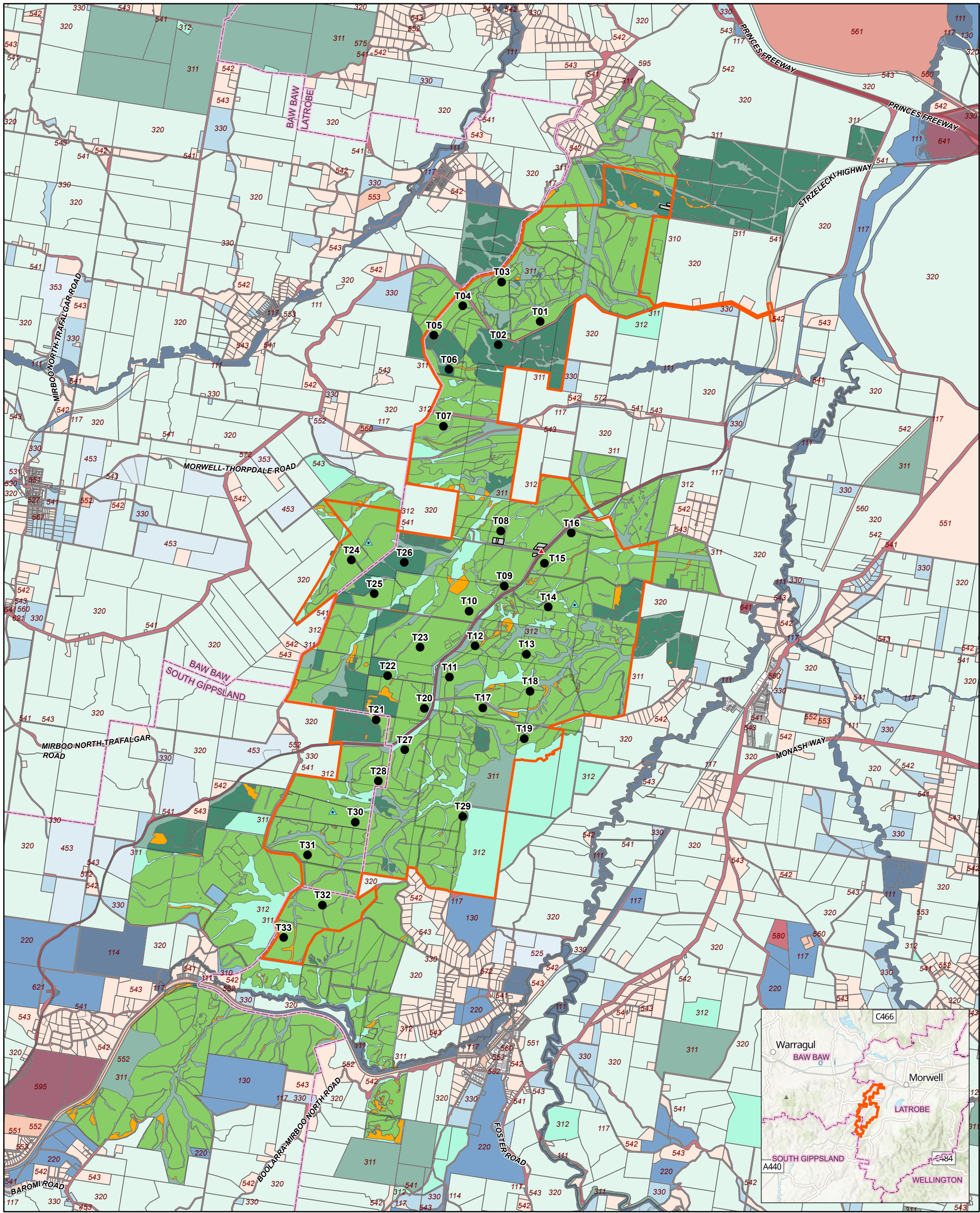
A preliminary review was also undertaken of the heritage overlays that apply within 5 kilometres of the subject site, which confirmed that there are 30 heritage overlays in total within 5 kilometers, of which 19 are in Latrobe LGA and 11 in Baw Baw. The review confirmed that none of these sites are included on the Victorian Heritage Register.


## 2.9 Surrounding Area

The landscape surrounding the site predominantly comprises cleared land used for agricultural and grazing purposes, as seen in Figure 2.11 following. It is noted that the Project Site and its surrounds within the Strzelecki Ranges are broadly identified in Latrobe Council's Strategic Framework Plan as a potential intensive agriculture area as well as the potential location for the 'Strzelecki-Alpine Biolink'. This is discussed further at Chapter 8.



FIGURE 2.11: PROJECT AREA AND SURROUNDS - LAND USE





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**LEGEND**

Project Boundary

Wind Turbine

Met Mast

Business identification signage

Facility / compound area

Cadastral Boundary

LGA Boundary

(GRP) Plantation - Bare Ground

(GRP) Plantation - Eucalypts

(GRP) Plantation - Pine

Land use (2017)\*

111, Strict nature reserves

113, National park

114, Natural feature protection

117, Other conserved area

\* Victorian Land Use Information System 2016-2017, Source: [services.land.vic.gov.au/SpatialDataMap/](https://services.land.vic.gov.au/SpatialDataMap/)

130, Other minimal use

133, Residual native cover

220, Production native forests

310, Plantation forests

311, Hardwood plantation forestry

312, Softwood plantation forestry

320, Grazing modified pastures

330, Cropping

349, Grapes

353, Seasonal vegetables and herbs

453, Irrigated seasonal vegetables and herbs

525, Aquaculture

527, Saleyards/stockyards

530, Manufacturing and industrial

531, General purpose factory

541, Urban residential

542, Rural residential with agriculture

543, Rural residential without agriculture

551, Commercial services

552, Public services

553, Recreation and culture

560, Utilities

561, Fuel powered electricity generation

566, Gas treatment, storage and transmission

567, Water extraction and transmission

572, Roads

575, Navigation and communication

580, Mining

592, Landfill

595, Sewage/sewerage

621, Reservoir

641, Supply channel/aqueduct

**PROJECT**

**Delburn Wind Farm**

**TITLE**

**Project area and surrounds - Land Use**

DATE

4/02/2021

SCALE

1:65,000 @ A3

STATUS

Draft

PRODUCED

I.Mackey

CHECKED

I.Mackey

APPROVED

P.Marriott

0

1

2

3 km

DRAWING No.

DWF\_OVR\_34\_04A-v3-5 Land use

REV

v3.5



The Project Site borders areas of remnant vegetation within the Darlimurla Forest Block to the south-east, the Sayers Trig Bushland Reserve to the north and the Mirboo North Regional Park to the south. While the native vegetation within the site is patchy, much of it is connected to road reserves, riparian corridors and surrounding vegetation within the reserves and state parks bordering the site.

Directly east and north east of the Project Site are two coal fired power stations and the associated coal mines of Hazelwood (approximately 2 kilometres to the east) and Yallourn (approximately 3 kilometres to the north-east). The Yallourn power station is currently operational however, the Hazelwood power station was closed in March 2017 and is currently being decommissioned. Some images of these areas are shown at Figures 2.12 and 2.13 below.



Figure 2.12: Photos of the existing mine and electricity related infrastructure in the surrounding area



Figure 2.13: Photos of the existing mine and electricity related infrastructure in the surrounding area

The towns closest to the Project Site are Yinnar (approximately 2 kilometres to the east) and Boolarra (approximately 2 kilometres to the south-east), each have a respective population of approximately 900 and 600.

Moe and Morwell are the closest regional towns, located just over 5 kilometres to the north-west and 6 kilometres to the east, respectively. Both towns are designated as 'key population centres' in the Latrobe Strategic Framework.

Other towns in the vicinity of the proposal include Thorpdale (approximately 5 kilometres west) and Mirboo North (approximately 7 kilometres south-west).

There are some areas of rural living land uses in the surrounding area, primarily on land included in the rural living zone to the south east of the Project Site (near Boolarra) and to the north west (south of Moe).

### 2.9.1 Airstrips / Aerodromes

Airports within proximity of the site includes:

Table 2.3: Airstrips/Aerodromes in the surrounding area (Source: Aeronautical Assessment, Chrion Aviation Consultants, 14 July 2020)

Airstrip / Aerodrome	Type of airstrip/aerodrome	Approximate distance from the Project Site	Direction from Project Site
Latrobe Valley	Registered Aerodrome	16 kilometres	North east
Leongatha Aerodrome	Uncertified	35 kilometres	South west
Yarram	Registered Aerodrome	49 kilometres	South east
West Sale	Registered Aerodrome	60 kilometres	North east
East Sale	Military Aerodrome	75 kilometres	East

## 3.0 THE PROPOSAL

### 3.1 Introduction

This Chapter describes the background to the Project, its main components, including details of the wind farm site layout, the wind turbines and their dimensions and associated infrastructure.

### 3.2 Background

The original proposal for the site involved the development and use of up to 53 turbines. The total scale of the project was subsequently reduced to 35 turbines to address a range of matters including a reduction in biodiversity impacts, noise and electro-magnetic interference (EMI) issues as well as a decrease in the number of dwellings within 2 kilometres of a turbine. A referral pursuant to the Environment Effects Act 1978 (EE Act) at a State level, and the Environment Protection and Biodiversity Conservation Act 1999 (EPBC Act) at a National level, was undertaken on the basis of the 35 turbines proposal. The outcome of these two referrals is discussed at Chapter 4. Since those referrals, the Project has been refined further to a total of 33 turbines, as per this permit application, to further reduce amenity and environmental impacts, including a significant additional reduction in the extent of native vegetation to be removed.

### 3.3 Project Overview

The Project will consist of the following permanent components:

- 33 wind turbines with a maximum height of 250 metres above foundation level (to the blade tip) and an adjacent hard stand area;
- 33 transformer kiosks contained within the tower or nacelle of the wind turbine;
- three permanent anemometers (or wind monitoring masts) with a maximum height of 180 metres above natural ground level (to be at the selected wind turbine hub-height);
- one 'development' anemometer (or wind monitoring mast) with a height of 160 metres above natural ground level, to be removed from the site during the construction phase;
- an operations and maintenance building;
- a battery energy storage system (BESS) facility;
- approximately 41 kilometres of site access tracks comprising 30 kilometres of existing forestry access tracks to be upgraded and 11 kilometres of new tracks;

- approximately 120 kilometres of underground 33 kV electrical reticulation and fibre optic cabling connecting the wind turbines to the substation, including cable junction boxes (located above or below ground level);
- two visitor information and viewing areas for passing traffic to park and view the turbines;
- major upgrade to one intersection off the Strzelecki Highway (Creamery Rd);
- minor upgrades to approximately 4.5 kilometres of local roads, including minor hard standing at two intersections off the Strzelecki Highway (Golden Gully Rd, Smiths Rd);
- business identification signage.

The Project will also comprise the following temporary components during the construction phase:

- two site construction compounds;
- turbine component lay down areas;
- two concrete batching plants;
- temporary buildings;
- water supply for construction activities (it is proposed to use on-site water for construction activities, such as dust suppression, and to transport water into the site for concrete batching);
- the use and storage of hazardous substances.

It is expected that the existing on-site Driffield Quarry will be used during construction for the supply of aggregates for road and hardstand construction and concrete batching.

A Site Layout Plan is provided in Figure 3.1.

### **3.4 Wind Farm Components**

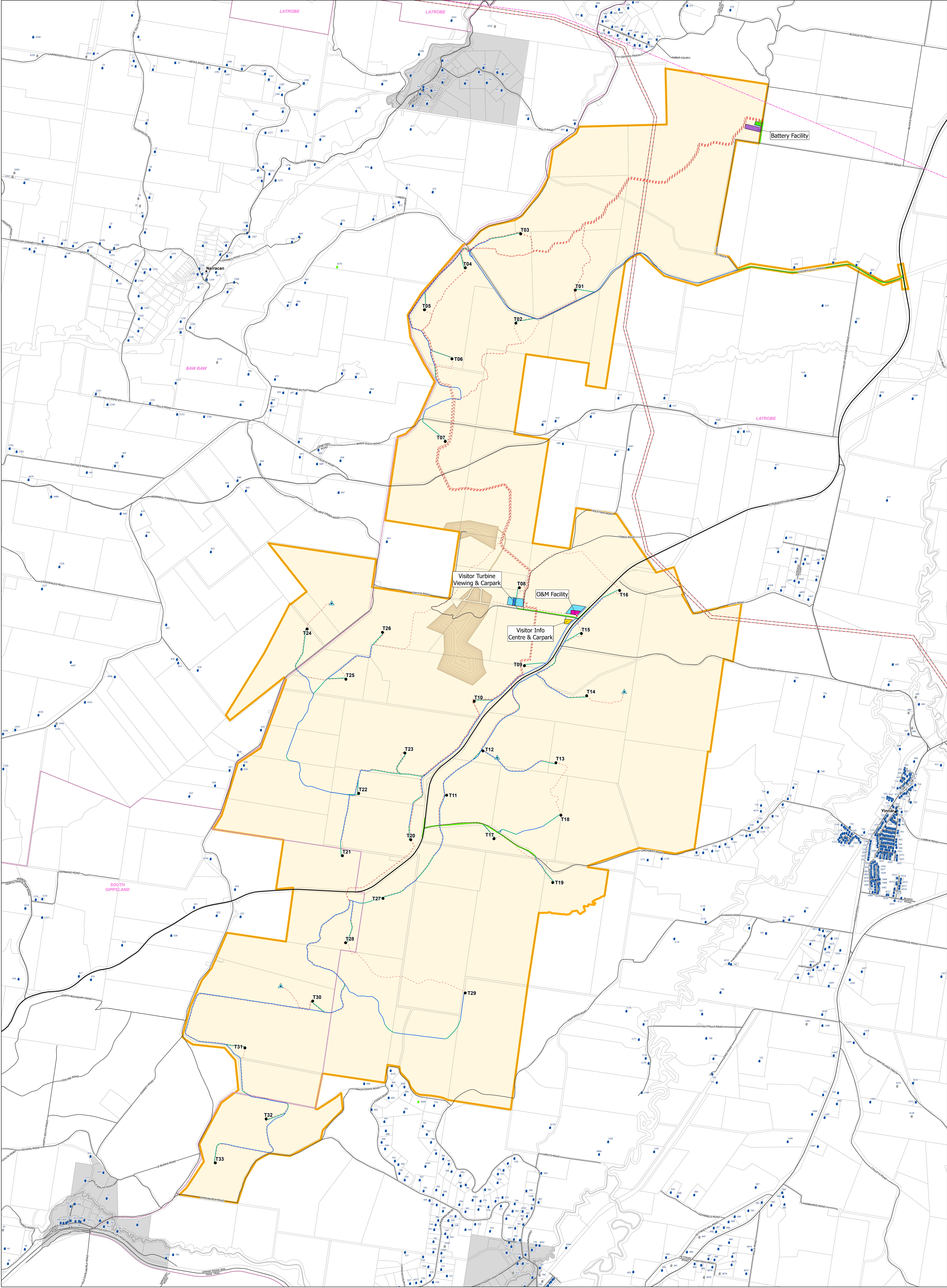
#### **3.2.1 Wind Turbines**

The Project will involve the development and use of 33 wind turbines. Each turbine will comprise a tower, nacelle, hub and rotor.

The nacelle is the housing that sits at the top of the turbine tower and accommodates the generator, control systems, pitch and yaw drives. The outer structure is typically constructed in fibreglass. Given the nature of the components housed within the nacelle, oil containment, sound insulation and a fire suppression system will be provided within each wind turbine. Access into the nacelle will be provided through an opening in the floor which leads to the tower.



FIGURE 3.1: SITE LAYOUT PLAN





The rotor, which includes the blades, is the portion of the turbine that captures the energy from the wind. The energy captured by the rotating blades is transferred to a generator housed within the nacelle. The blades are typically also made of reinforced fibre glass. The rotor is controlled by a central wind turbine control unit (described as a microprocessor). The microprocessor controls the rotational speed of the rotor and the pitch of the blades, thus enabling the rotor to maximise energy production from the wind resource and ensure the safe and reliable operation of the wind turbine. Each wind turbine will be connected to the on-site substation via a network of underground power and communication cables.

The nacelle will be supported by a tubular tower made of steel sections, reinforced concrete sections, or a hybrid solution of both steel and reinforced concrete sections. The tower will contain both a ladder and personnel lift to enable access to the nacelle by construction and maintenance staff.

For each wind turbine, a transformer is required to 'step-up' to the on-site distribution voltage of 33kV. This transformer will be located in the tower base or the nacelle.

The wind turbines will each have a maximum height of up to 250 metres above foundation level to the blade tip, with a rotor diameter of up to 180 metres and a lower tip sweep of not less than 40 metres above foundation level. The wind turbines will have a non-reflective surface. One wind turbine may include mural painting(s) at the base of the wind turbine tower up to a height of 10 metres above ground level (in collaboration with the community investment initiative for the project).

Each turbine is expected to have a capacity of between 5.5 to 6 MW, although depending upon the final turbine selection, it could be up to 7 MW. The total generation capacity for the whole of the wind farm will therefore be in the order of 180 to 230 MW.

Adjacent to each turbine will be a hard stand area of approximately 80 by 50 metres which will be constructed in compacted aggregate to a thickness of approximately 400-600 millimetres as well as an area for the temporary storage of the blades on the ground adjacent to the hard stand and access road. Hard stand sizing may vary depending on the crane solution chosen to install the wind turbine, be that a mobile boom crane (requiring space for the assembly of the crane boom on the ground) or a mobile tower crane. Conservative (worst-case) sizing for the hardstands have been adopted for the preliminary design based on review of a number of wind turbine manufacturer specifications, noting that all wind turbines are located and hardstand areas orientated to avoid impacts on native vegetation and minimise cut and fill requirements.



Each wind turbine site will be investigated to determine the depth to rock below to assess site-specific foundation conditions. However, based on the preliminary geo-technical work that has been undertaken it is anticipated that the majority of the wind turbines will be supported by a square or octagonal shallow mass concrete footing with a depth of between 2 and 5 metres and a plan dimension of approximately 20 to 25 metres. Due to the specific geological features of individual wind turbine locations, there may be some instances where the shallow mass concrete footing may not be appropriate in which case piles may be required, the dimensions of the shallow footings increased, or ground improvement works considered (such as excavation and replacement of weak grounding materials with blinding concrete or compacted crushed rock). This will be confirmed as part of the further detailed geo-technical work that will be undertaken when micro-siting the turbines prior to construction.

Each wind turbine has a setback of 100 metres or more to any external roads (including paper roads) and property boundaries of land in other ownership, and 20 metres or more to waterways/wetlands on the site (noting that these are not designated waterways/wetlands).

Figures 3.3, 3.4 and 3.5 following show a typical turbine and dimensions, and the typical layout and dimensions of a turbine and associated hard stand area for both boom crane and tower crane options.

### 3.2.3 Battery Energy Storage System Facility

A battery energy storage system facility is proposed in the north east corner of the wind farm site, adjacent to the terminal station site.

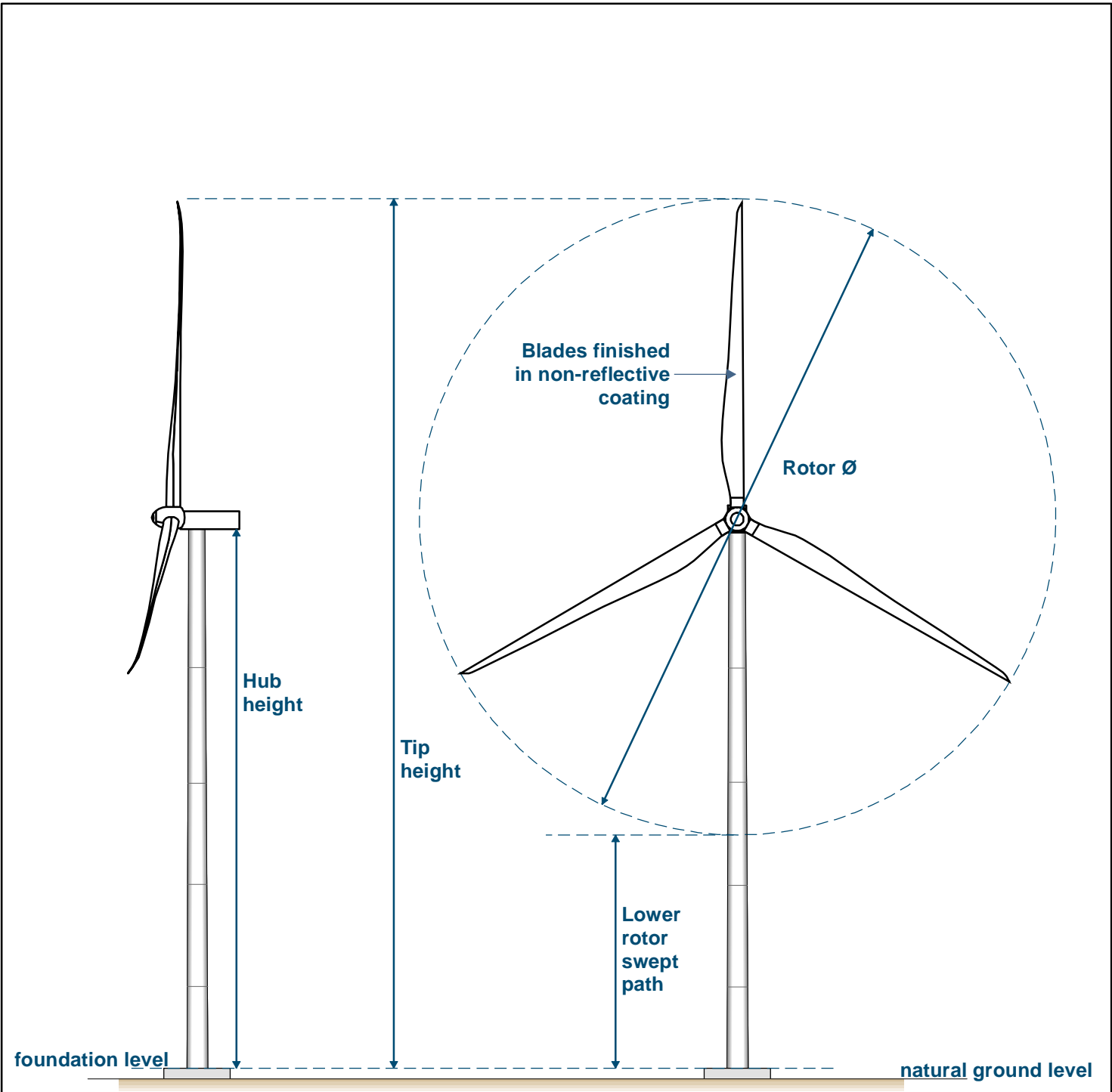
The BESS facility will occupy an area of approximately 1.2 hectares and will comprise containerised battery units with containerised inverter units, step-up transformers and ancillary plant, utilising up to 50 MW and 200 MWh capacity. The BESS facility will be used to store energy generated by the wind farm only and is not intended to operate as a standalone facility.

Figure 3.2 below provides an image of a typical battery storage facility using lithium-ion battery technology, and the proposed plan of the battery storage facility is provided in Figure 3.6.



Figure 3.2: Photo of a typical battery storage facility

FIGURE 3.3: WIND TURBINE GENERATOR TYPICAL ELEVATION



Tip height: up to 250m above foundation level  
Rotor diameter: up to 180m  
Lower rotor swept height: not less than 40m above foundation level  
Hub height: up to 168m above foundation level  
Note: foundation level shall be designed to be no more than 0.5m above natural ground level (as measured at the wind turbine tower centre-point), subject to no unforeseen geotechnical conditions

PROJECT		Delburn Wind Farm	
TITLE		WIND TURBINE GENERATOR TYPICAL ELEVATION	
DATE	8/02/2021	PRODUCED	A.Curtis
CHECKED	I.Mackey	APPROVED	P.Marriott
STATUS	Draft	REV	E

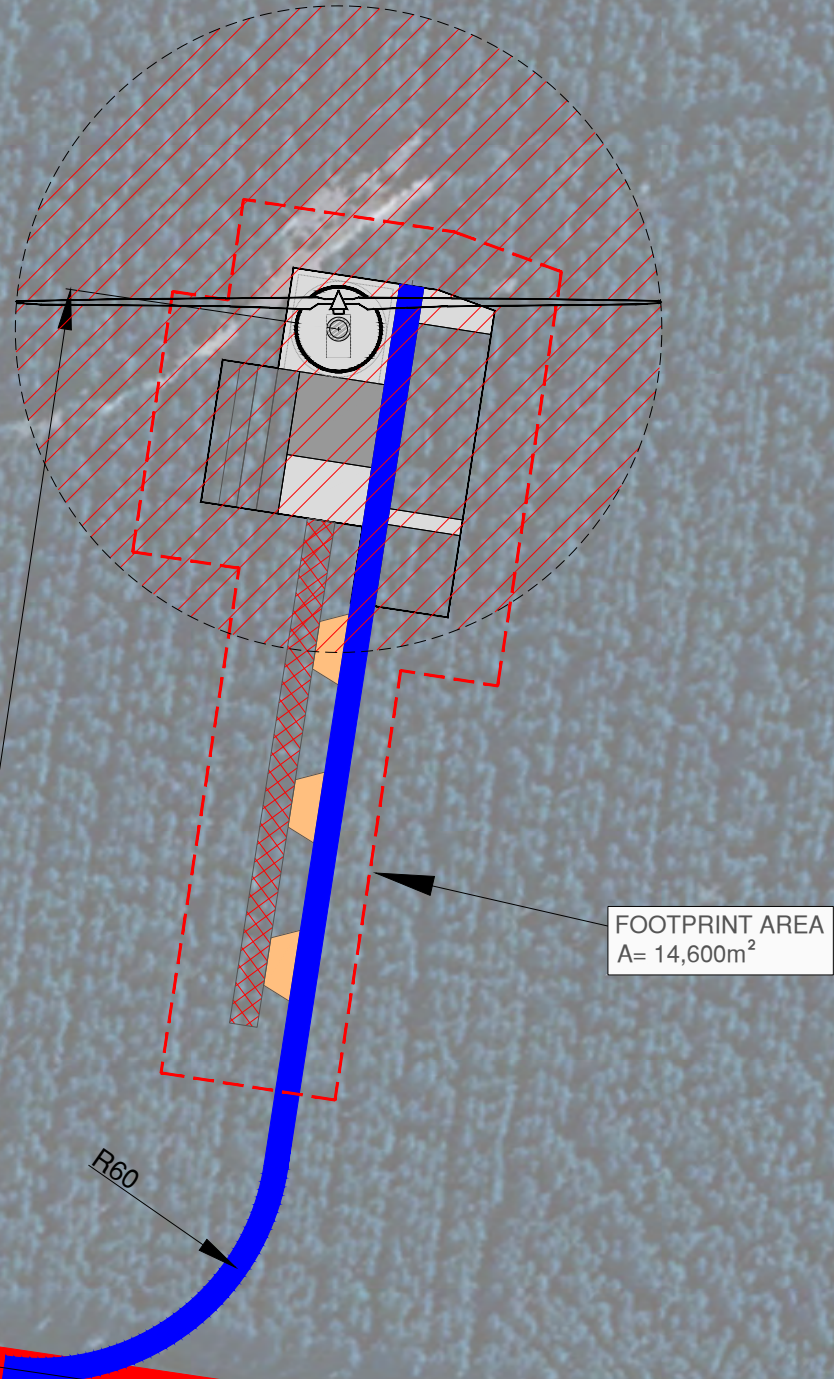
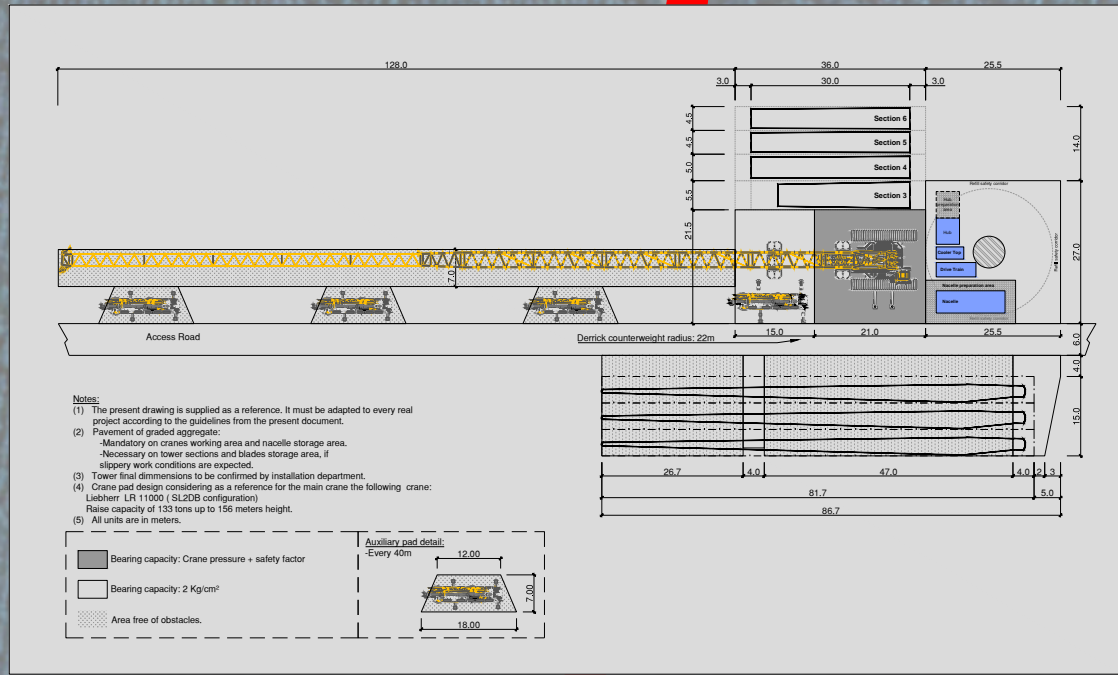


Doc: DWF Turbine Elevation rE.mxd

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AREA = 14,600m<sup>2</sup>  
Hectare = 1,6 ha





**LEGEND:**  
New Road 6m  
Forest road 7m  
Forest road 10m  
Wind Turbine Generator

NOTE:  
PRELIMINARY DRAWING  
SUBJECT TO APPROVAL OF THE CLIENT

PROJECT:

AUTHOR:

**Vestas**

SCALE:

NOT TO SCALE

DATE:

13 - 11 - 2019

DRAWING:

HARDSTAND TYPE A  
- BOOM CRANE -

DRAW UP: DCAVI

DATE:

CHECK BY: JODWY

DATE:

APPROVAL: LGB

DATE:

REVISION

Rev1

FORMAT  
A3

DRAWING N°:

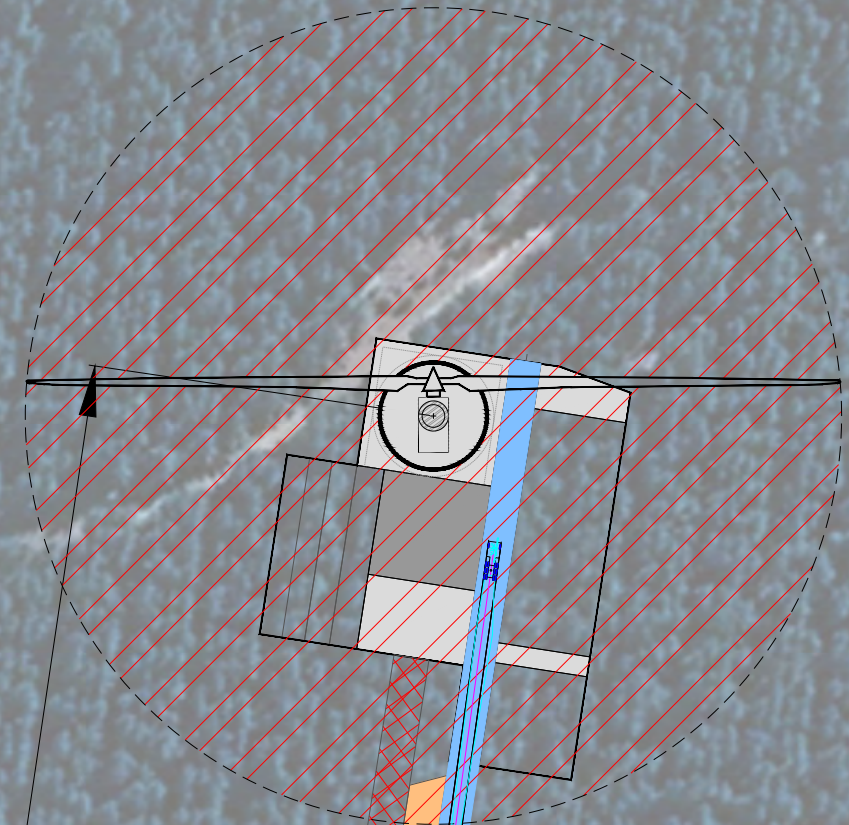
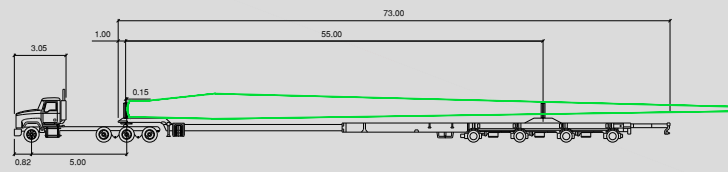
5.1

PAGE 2 OF 3





# V162 BLADE VEHICLE PROFILE



269,65

R60

BLADE OVERHANG

7,01

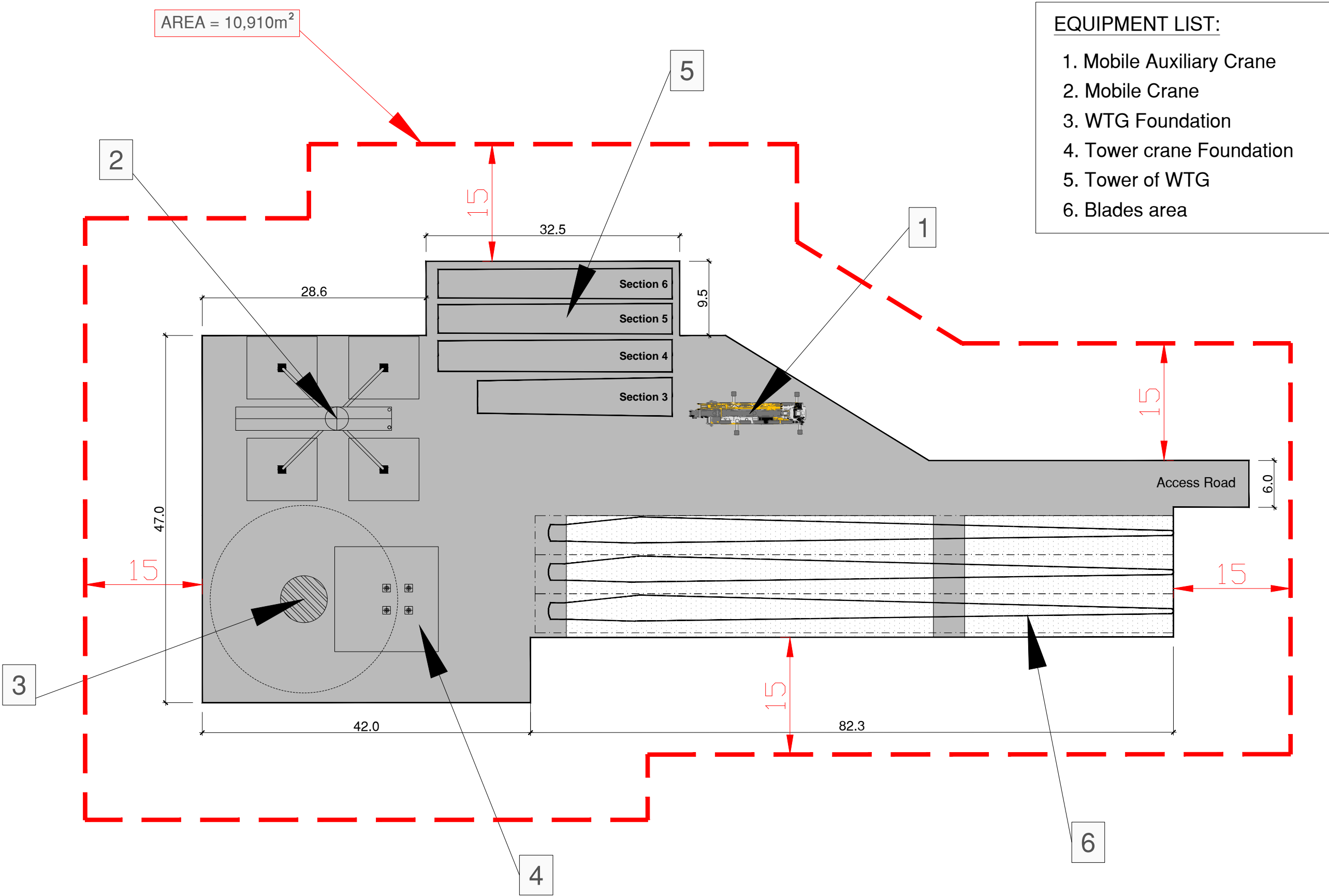
16,75

**LEGEND:**

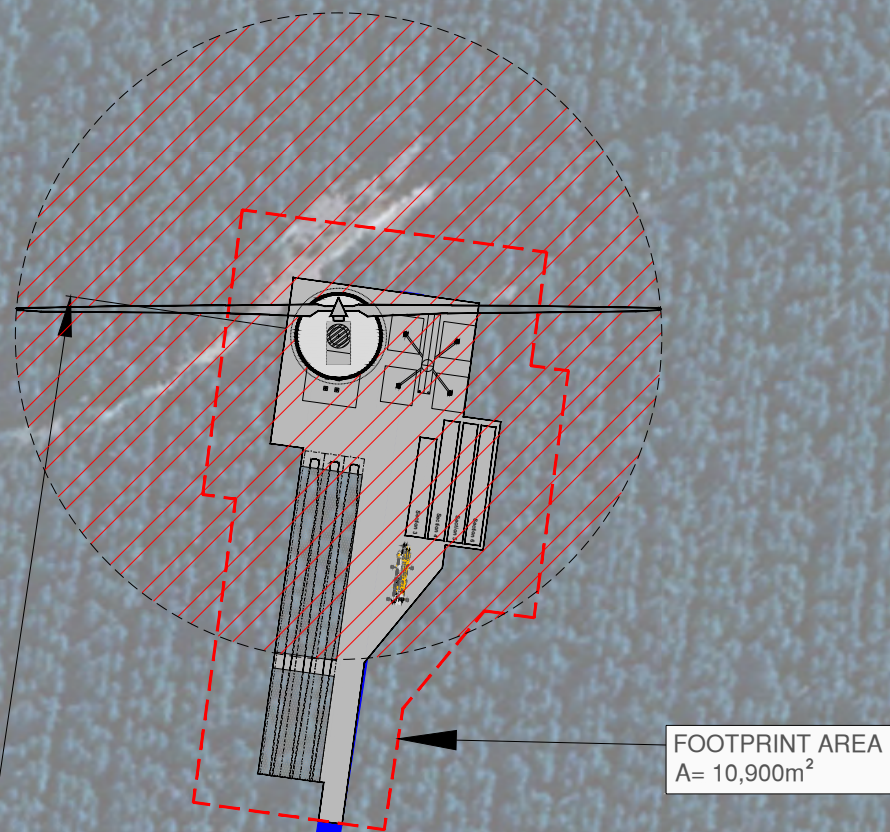
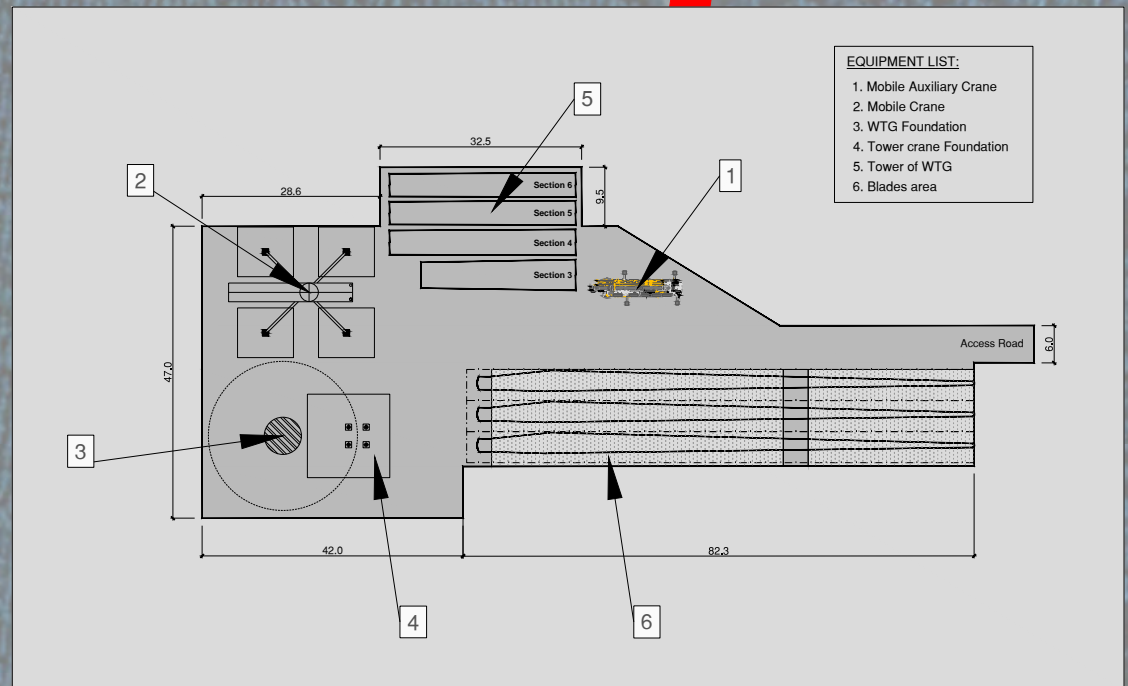
- New Road 6m
- Forest road 7m
- Forest road 10m
- Wind Turbine Generator



FIGURE 3.4 - PLAN OF HARD STAND AREA B (TOWER CRANE)







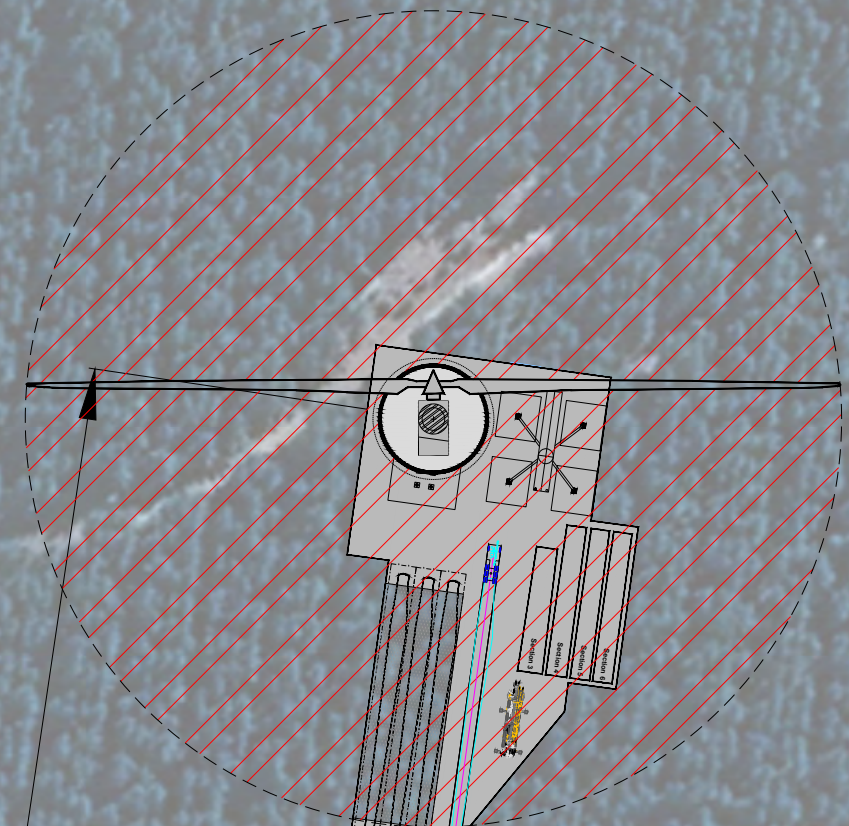
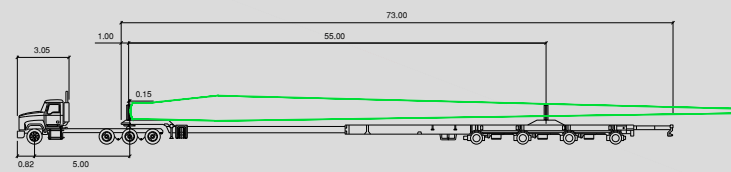
**LEGEND:**

- New Road 6m
- Forest road 7m
- Forest road 10m
- Wind Turbine Generator





# V162 BLADE VEHICLE PROFILE



269,65

R60

BLADE OVERHANG

7,01

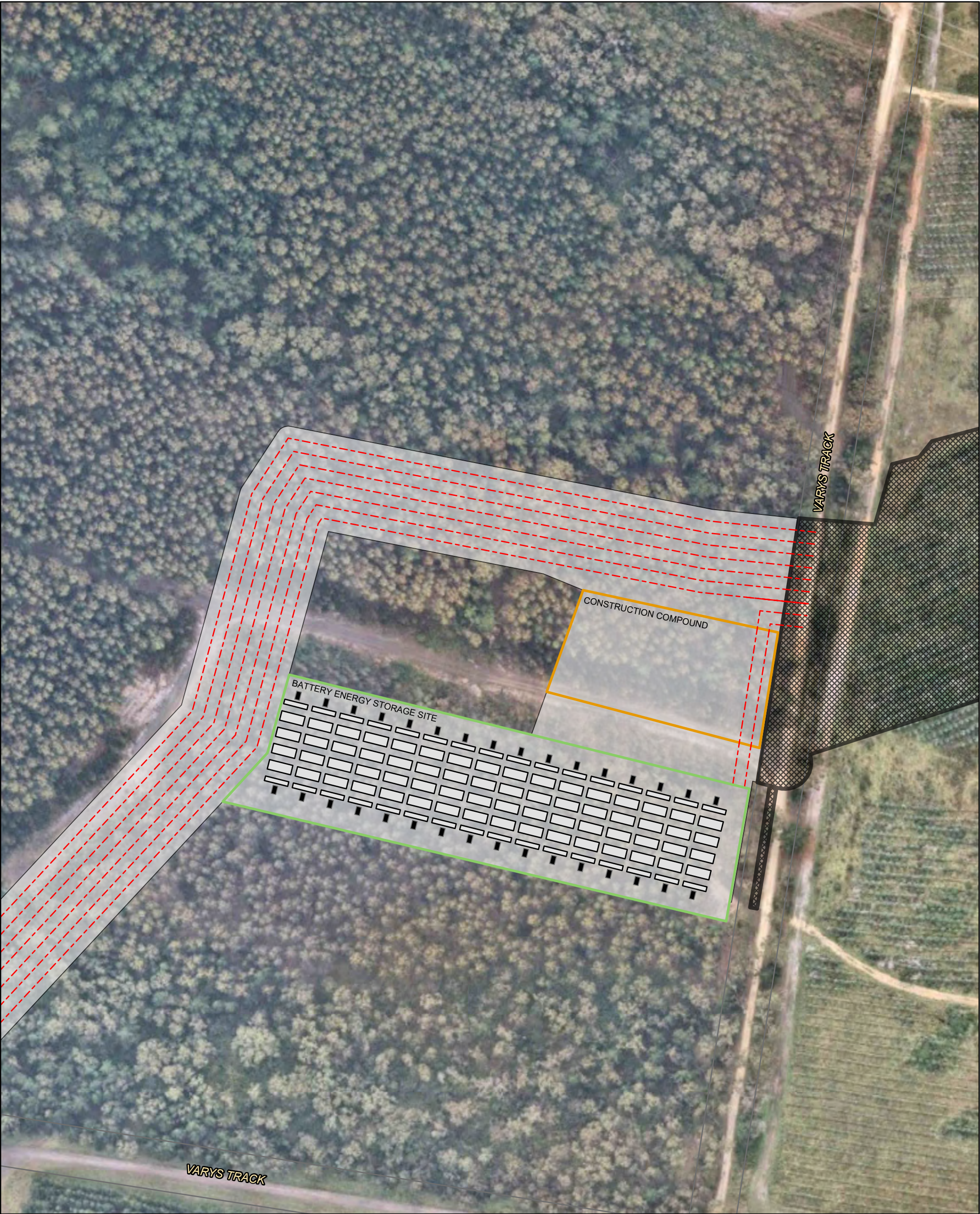
16,75


**LEGEND:**

- New Road 6m
- Forest road 7m
- Forest road 10m
- Wind Turbine Generator



FIGURE 3.6 BATTERY STORAGE CONCEPT PLAN

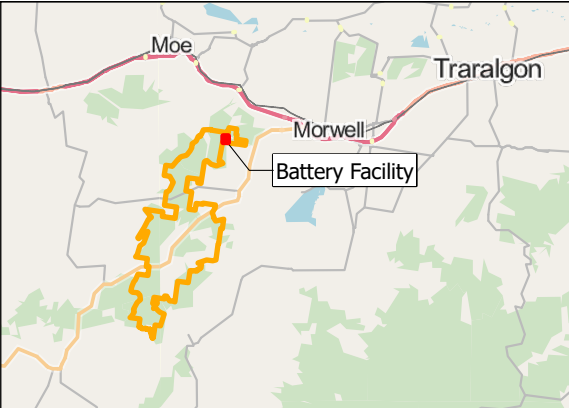




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- Electrical Reticulation
- Construction Compound
- Terminal Station Footprint
- Wind Energy Facility Footprint
- Battery Energy Storage System (200 MWh)
- Battery
- Inverter
- Battery Energy Storage Site Boundary



Moe

Traralgon

Morwell

Battery Facility

PROJECT		Delburn Wind Farm	
TITLE		Battery Storage Concept Plan	
DATE	15/12/2020	PRODUCED	I.Mackey
SCALE	1:1,500 @ A3	CHECKED	I.Mackey
STATUS	DRAFT	APPROVED	P.Marriott
DRAWING No.		DWF_OVR_024-3A-3.5 BESS	
REV		3.5	

0 10 20 40 60 80 Metres

N



#### 3.2.4 Access Tracks

The Project has been designed to maximise the use of existing access tracks that already exist within the plantation areas. Whilst these tracks will require upgrading to provide adequate width for the transportation of the wind farm infrastructure, the use of the existing tracks has resulted in a significant reduction in access track construction (and subsequent vegetation removal).

In total, approximately 30 kilometres of existing tracks will be upgraded with the need for a further 11 kilometres (approximately) of new tracks. This excludes those sections of new track construction within the wind turbine hardstands - approximately 230 metres per hardstand which are required to be new construction if a boom crane is used for the wind turbine installation.

The tracks will be upgraded or constructed to a trafficable width of 6 metres (with a heavy vehicle trafficable width of 4.5 metres) plus drainage, with an allowance made (in terms of native vegetation removal considerations) for different width overall corridors depending upon the proximity of the access track (or otherwise) to native vegetation and whether trenches for the underground electrical network are required adjacent to the access track. The widths of each corridor are discussed further in the section below, with accompanying diagrams showing the various cross-section 'scenarios'.

There will be some existing access tracks that cross waterways that will be required to be upgraded, but no new waterway crossings proposed.

The access tracks will be constructed using crushed rock, and designed to achieve the required load rating for heavy vehicles. Regular maintenance will be undertaken of the tracks as they will service the wind farm but will also continue to service the forest plantation.

#### 3.2.5 Underground electrical network

Each turbine will be connected to the terminal station via a network of underground 33kV electrical and communication cables (reticulation), comprising 4 to 5 wind turbines being connected together per reticulation string. The cables will be placed in a trench 0.8-2 metres deep that will be backfilled with suitable fill and cable marking materials.

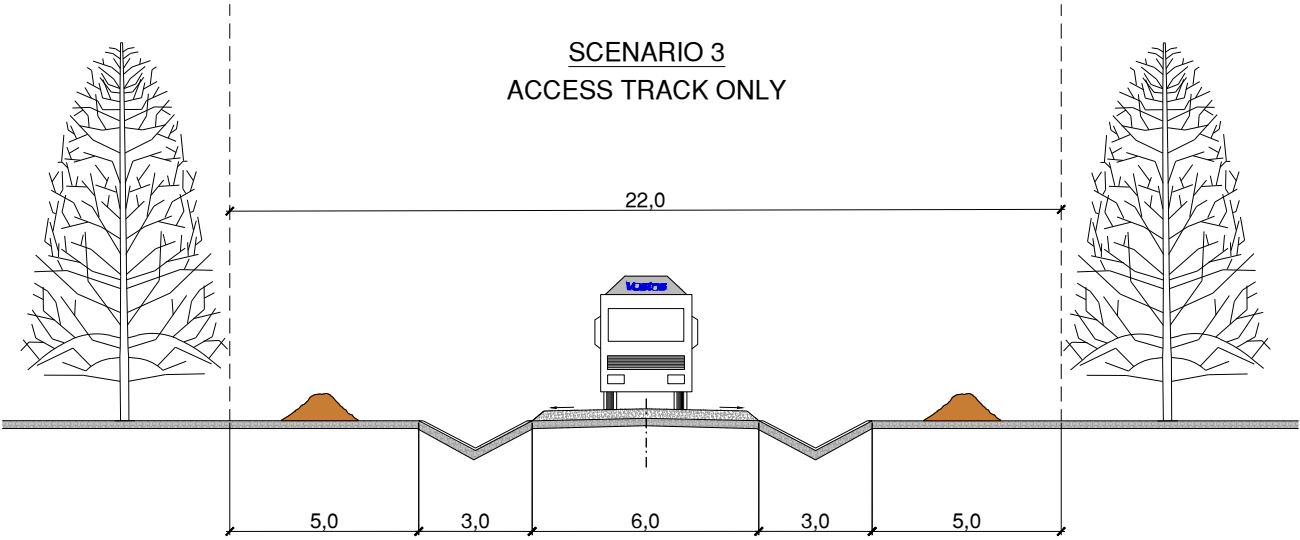
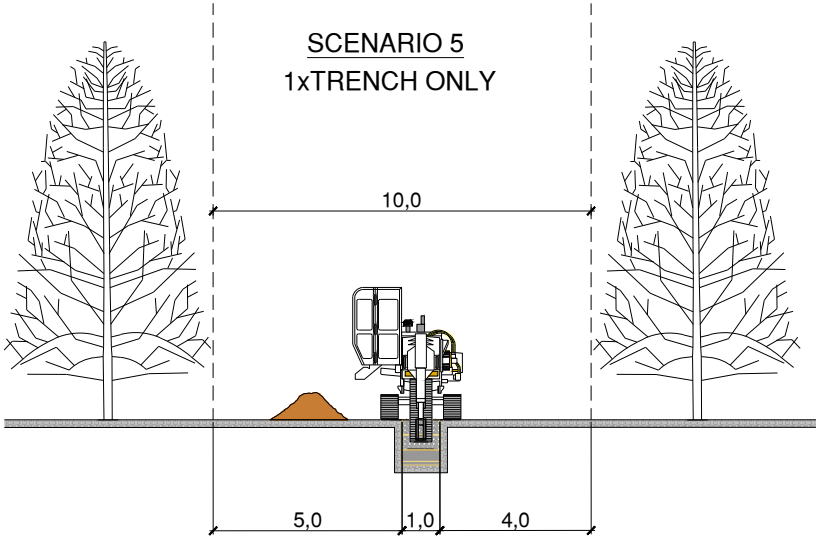
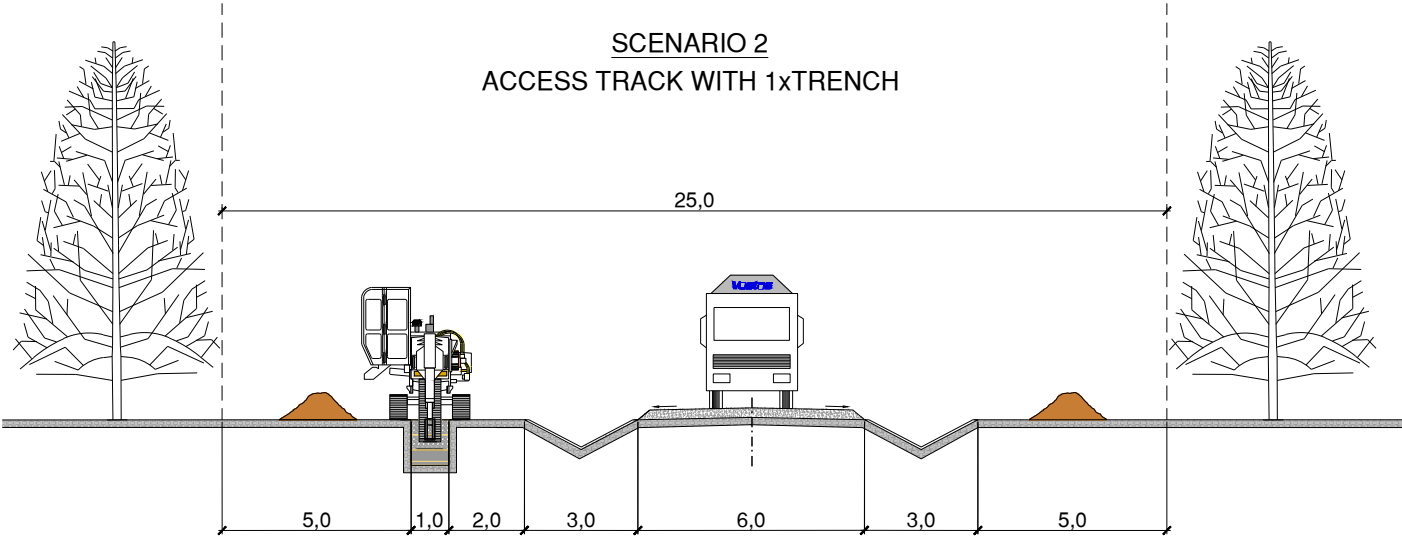
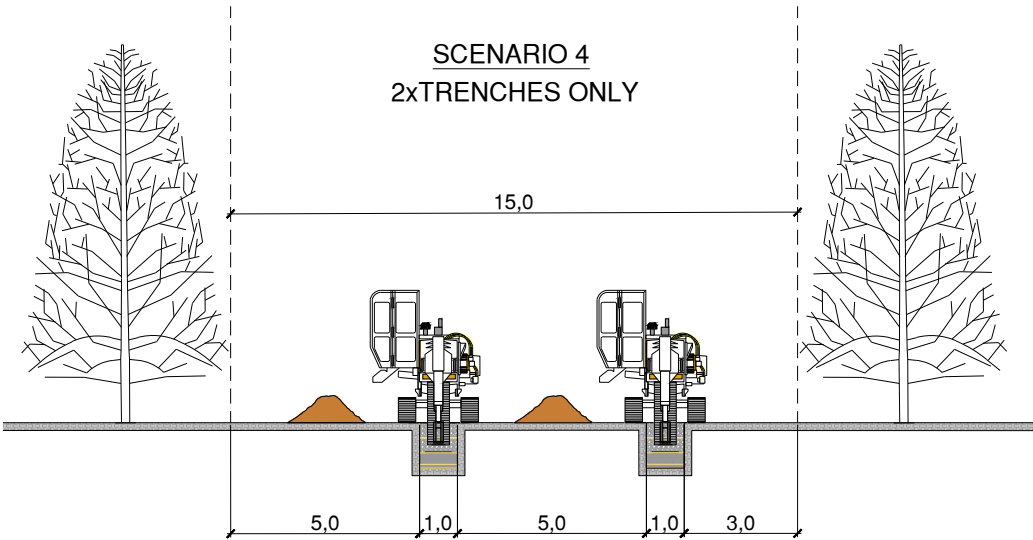
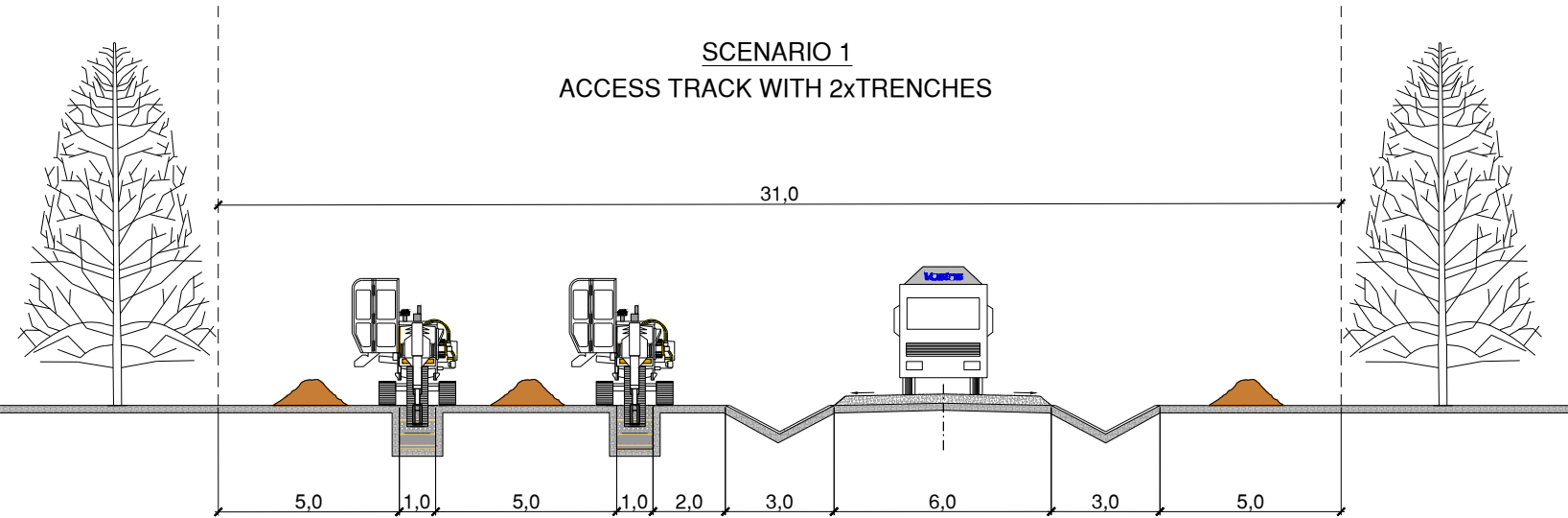
Where cable lengths exceed those available to be supplied in a single drum, joints will be required to be installed either by underground joint pits or above ground joint boxes.

As with the access tracks, the layout of the cables has been designed to minimise the removal of native vegetation by locating them, where possible, adjacent to the existing or proposed access tracks.

The cross sections in Figure 3.7 below show the different cabling scenarios, as well as the access track scenarios, and the subsequent cross sections and ground level clearance width required for both.

The way in which native vegetation removal has been assessed in the context of these different scenarios is discussed further in Section 6.2. All assessments have conservatively assumed cables will be installed via open trenching or direct burial. Horizontal directional drilling may be implemented in crossing sensitive areas (such as native vegetation patches, waterways and major roads) to further reduce impacts.

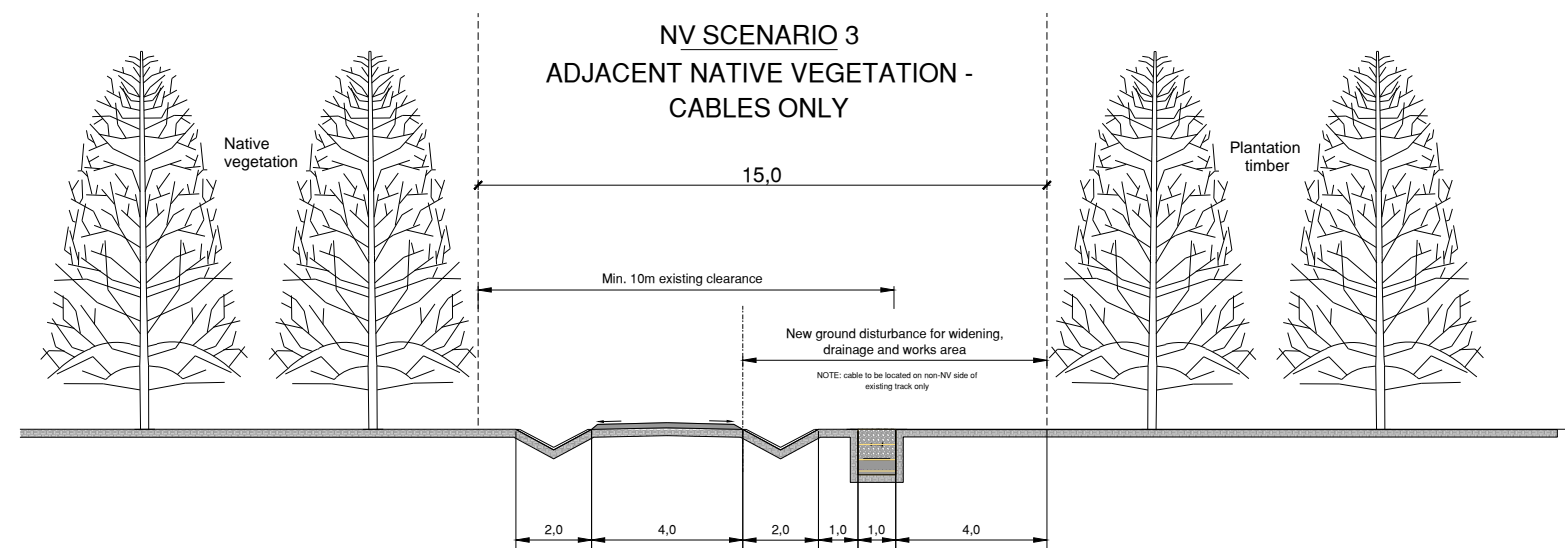
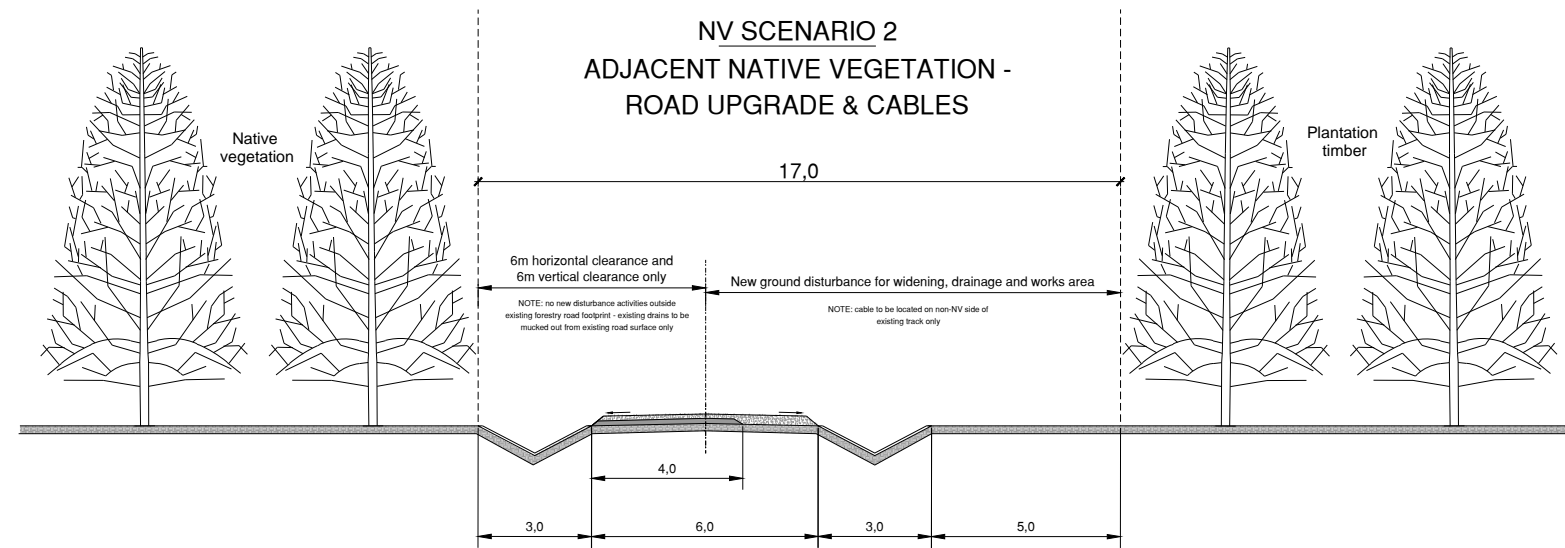
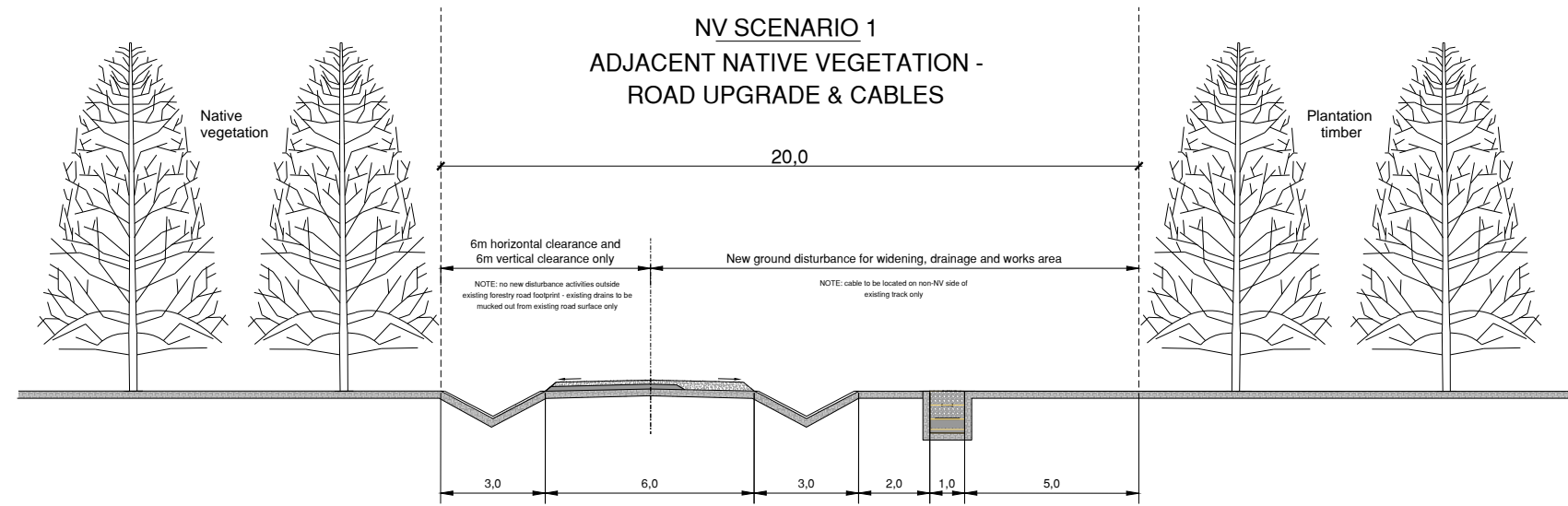
FIGURE 3.7 CORRIDOR SCENARIOS



PRELIMINARY ONLY - FOR DISCUSSION

- LEGEND:
- SCENARIO 1 ( 31m width )
  - SCENARIO 2 ( 25m width )
  - SCENARIO 3 ( 22m width )
  - SCENARIO 4 ( 15m width )
  - SCENARIO 5 ( 10m width )

- NOTES:
- STOCKPILES SHOWN ARE A GENERAL CONSTRUCTION WORKING AREA.
  - REQUIREMENT FOR TABLE DRAINS AND EARTHWORKS BATTERS WILL VARY DEPENDING ON THE SITE TERRAIN.



NOTE:  
PRELIMINARY DRAWING  
SUBJECT TO APPROVAL OF THE CLIENT

PROJECT:  
**DELBURN WF**

AUTHOR:  
**Vestas**

SCALE: 1:200  
0m 1,5 3 4,5 6 7,5

DATE:  
30 - 06 - 2020

DRAWING:  
CORRIDOR SCENARIOS

DRAW UP: DCAVI	DATE:	REVISION Rev1	DRAWING N°: 1.1
CHECK BY: JODWY	DATE:	FORMAT A3	PAGE 1 OF 1
APPROVAL: LGB	DATE:		



### **3.2.6 Operations and Maintenance Facility**

An operations and maintenance facility will be located centrally on the site near the north west corner of Smiths Road and the Strzelecki Highway. The facility will comprise an office building (with a building height of approximately 3.4 metres) and a workshop building with a building height of approximately 7 metres) as well as external storage space. A total of 12 car parking spaces are also proposed to service the facility.

A plan of the proposed operations and maintenance facility plan is provided in Figure 3.8.

### **3.2.7 Meteorological Masts**

Three permanent anemometers (or wind monitoring masts) with a maximum height of 166 metres above natural ground level are proposed with one located within each different municipality that makes up the site.

The masts are required for the ongoing monitoring of wind conditions for power performance measurements and short to long term wind energy output forecasting for the facility. Each mast will require a clearance area of approximately 0.8 hectares and requires an underground power and communications cable to be installed to be nearest wind turbine.

One existing temporary anemometer with a height of 160 metres above natural ground level is currently installed within Latrobe to facilitate monitoring of meteorological conditions during the feasibility and development stages of the project. This temporary anemometer will be removed during the construction phase of works. However, a permit is sought for it as part of this application, to accommodate a circumstance where construction is delayed and the 3 years allowed for a temporary anemometer without a planning permit is exceeded.

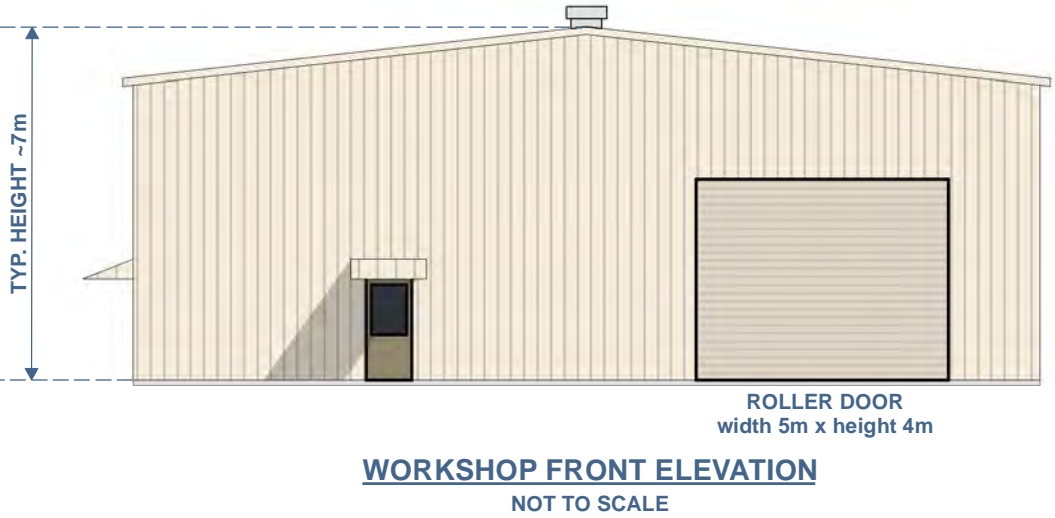
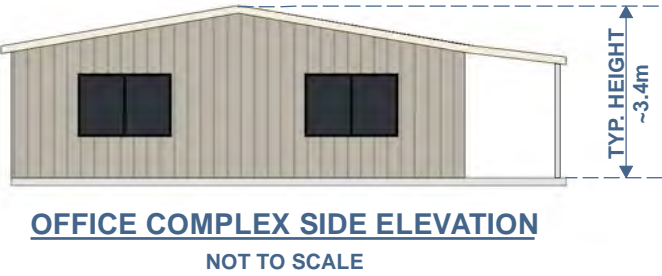
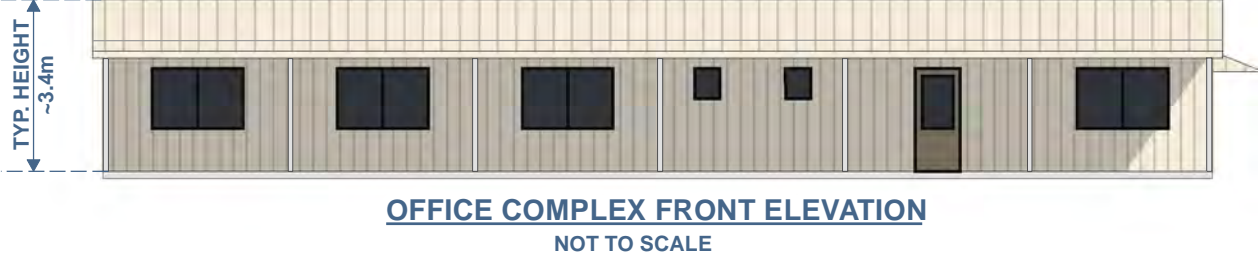
### **3.2.8 Visitor Information Area**

Two visitor information areas are proposed on Smiths Rd – the primary area is in proximity to the operations and maintenance centre and a secondary area has been selected in close proximity to an easily accessible wind turbine.

The primary visitor information area has been selected to enable viewers to pull off the Strzelecki Highway and to park safely. Facilities at the information area will comprise a gazebo structure, information boards, raised viewing mount/platform, carparking, signage, and amenities. Directional signage will also be installed to guide visitors to the nearest wind turbine(s).

A site plan of the proposed visitor centre is provided in Figure 3.9 below.

FIGURE 3.8 OPERATIONS AND MAINTENANCE FACILITY SITE PLAN



PROJECT		Delburn Wind Farm	
TITLE		Operations & Maintenance Facility - Site Plan	
DATE	16/10/2020	PRODUCED	A.Curtis
CHECKED	I.Mackey	APPROVED	P.Marriott
STATUS	Draft	REV	C



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Figure 3.9: Proposed Visitor Information Centre Site Plan

A secondary visitor area is proposed to be located on Smiths Rd, located on land temporarily used for concrete batching and adjacent to wind turbine T08. Facilities at the information area will comprise information boards, carparking, and signage. A signed walking track (within the existing disturbance footprint) will also be installed to allow all-weather visitor access to the wind turbine. A site plan of the proposed secondary visitor area is provided in Figure 3.10 below.

Directional signage is proposed at multiple locations along the Strzelecki Highway (to be agreed with Regional Roads Victoria) to direct members of the public to the visitor information area for safe viewing of the facility.

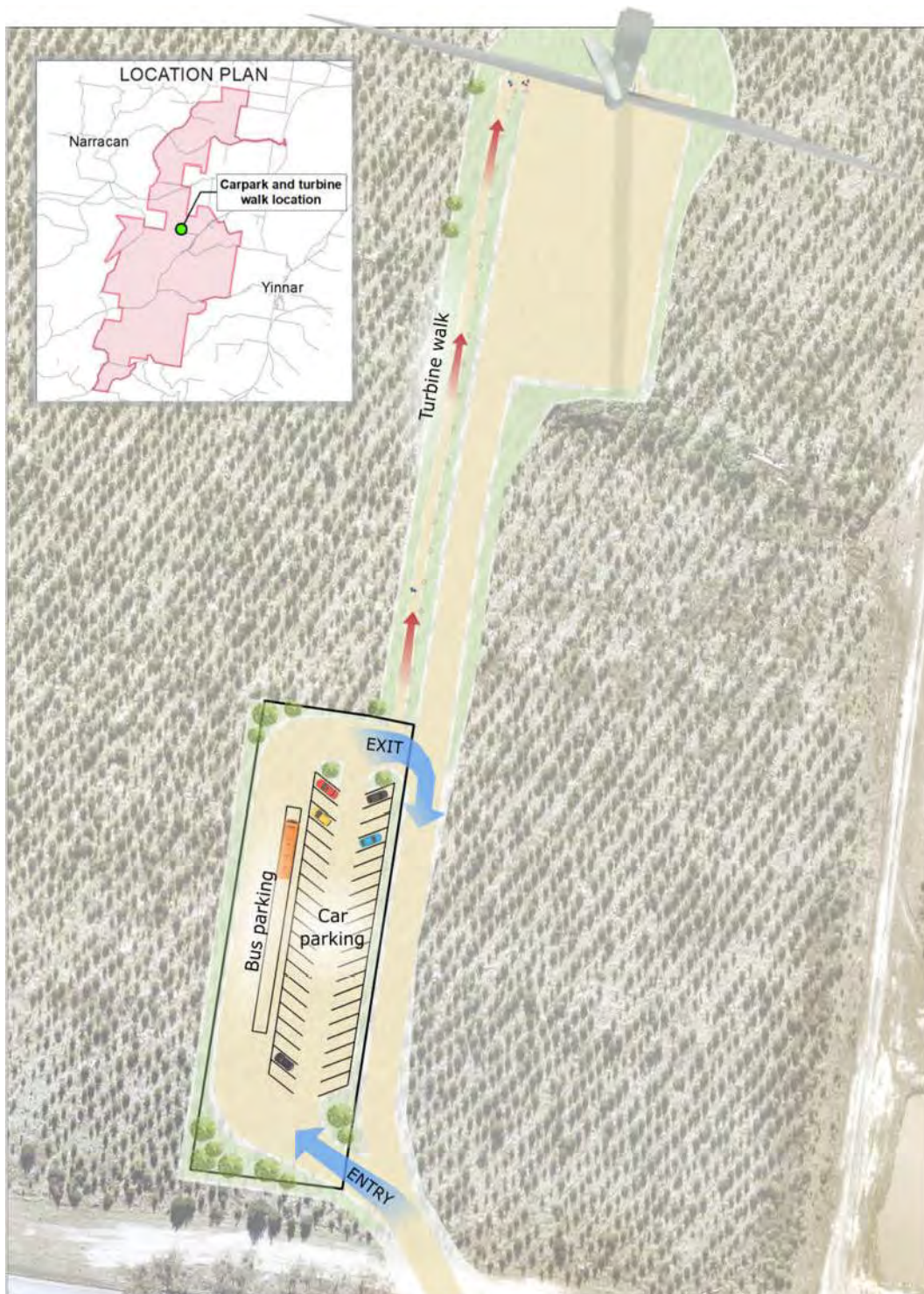


Figure 3.10: Proposed Secondary Visitor Area Site Plan



### **3.2.9 Temporary Infrastructure**

The Project will include a range of other both temporary and permanent infrastructure that is ancillary to the wind energy facility use.

Two temporary construction compounds are proposed to be built, with one located in on Smiths Rd adjacent to the Operations and Maintenance Facility to be the primary compound and assembly area for construction staff, and one to the north of the project site off Varys Track and adjacent to the battery energy storage system facility.

The compounds will both include office, amenity and toilet facilities, associated car parking, temporary lay down areas for components and other equipment, fencing and lighting. The primary construction compound is expected to be approximately 150 meters by 150 meters (2.25 hectares), while the secondary construction compound is expected to be approximately 80 meters by 50 meters (approximately 0.4 hectares)

The temporary concrete batching plants will also be located on Smiths Rd adjacent to the Driffield Quarry and primary construction compound area. The temporary concrete batching plants will comprise a slump stand, water tanks and stockpiles of gravel and sand. The batching plants will primarily be used for the construction of foundations for the wind turbines however may also provide materials for building foundations, bundings, culverts etc.

Whilst the exact detail of the facilities at the compound areas will be determined at the detailed design phase, typically the area required for plant and storage at each batching plant site will be approximately 100 metres by 100 metres (1.0 hectare) and a maximum height of approximately 10 metres. The batching plants will be bunded to contain runoff and potential contaminants.

The cement will be stored in a silo adjacent to the batching plant machinery and concrete agitators will then transfer the concrete from the batching plant to the wind turbine or other building foundation locations.

The concrete batching plants will be removed following completion of construction of the civil works, and the area they occupied rehabilitated unless requested by the landowner for it to be retained for ongoing land use activities or the area set aside for visitor carparking.

Water supply for the batching plant, dust suppression and other activities will be required on site and may be supplied from either ground water resources within the wind farm site, subject to an appropriate resource being available and appropriate approvals obtained, or off-site sources. If such a source is not available then water will be obtained from other local resources, subject to the appropriate approvals.

### **3.3 Vegetation Removal**

Vegetation removal for the project is outlined in detail in the Ecology and Heritage Partners (EHP) reports included at Appendix D and discussed in this report at Section 6.2.

The assessment of vegetation removal has taken into account all described wind farm infrastructure including: the wind turbines and associated foundations and hard stand areas; access tracks; underground cabling; the temporary construction compounds and concrete batching plants; the battery energy storage system facility, and road widening where clearance of vegetation is anticipated. The methodology used to determine

clearance areas for this infrastructure is described in detail in the EHP reports and the allowance that has been made for the clearance to access tracks and underground cabling can be seen in Figure 3.7.

The flora surveys undertaken by EHP over the approximately 5000 hectares study area, mapped a total of 241.4 hectares of native vegetation within the study area.

The area of native vegetation likely to be impacted by the proposed wind farm is 12.344 hectares broken down into the three LGAs as follows:

- Latrobe – 10.591 hectares;
- South Gippsland – 1.670 hectares;
- Baw Baw – 0.083 hectares;

Approval is also required in South Gippsland Shire and Baw Baw Shire for non-native vegetation removal in some circumstances. No non-native vegetation is anticipated to be removed in South Gippsland Shire or Baw Baw Shire (noting that this excludes plantation vegetation as this is defined separately).

As discussed in greater detail in Section 6.2, there has been extensive survey work undertaken by EHP over a period of 2 years to ensure an appropriate design response to the vegetation on the site, including a significant reduction in the number of turbines that form part of the Project, as discussed earlier in this chapter. Accordingly, the extent of vegetation removal has been minimised as much as possible through a range of methods including by utilising existing access tracks wherever possible and siting turbines within previously cleared pine plantation coupes.

### **3.4 Access Requirements**

The Project site area has the significant advantage of having an existing over-dimensional access route available and an extensive road network within the plantation which can be used subject to some upgrading, allowing access to and within the Project site with minimal disruption to local communities. These existing access arrangements mean that the Project will only require relatively minor upgrades to approximately 4.5 kilometres of local roads and one major upgrade to an intersection with the Strzelecki Highway (Creamery Rd).

The key intersections where some form of mitigation works will be required to ensure access for wind turbine blade delivery is available are as follows:

- Strzelecki Highway-Golden Gully Road intersection;
- Strzelecki Highway-Smiths Road intersection;
- Strzelecki Highway-Creamery Road intersection.

Any potential vegetation impacts from the over-dimensional access requirements into the site have been accounted for in the native vegetation assessment.

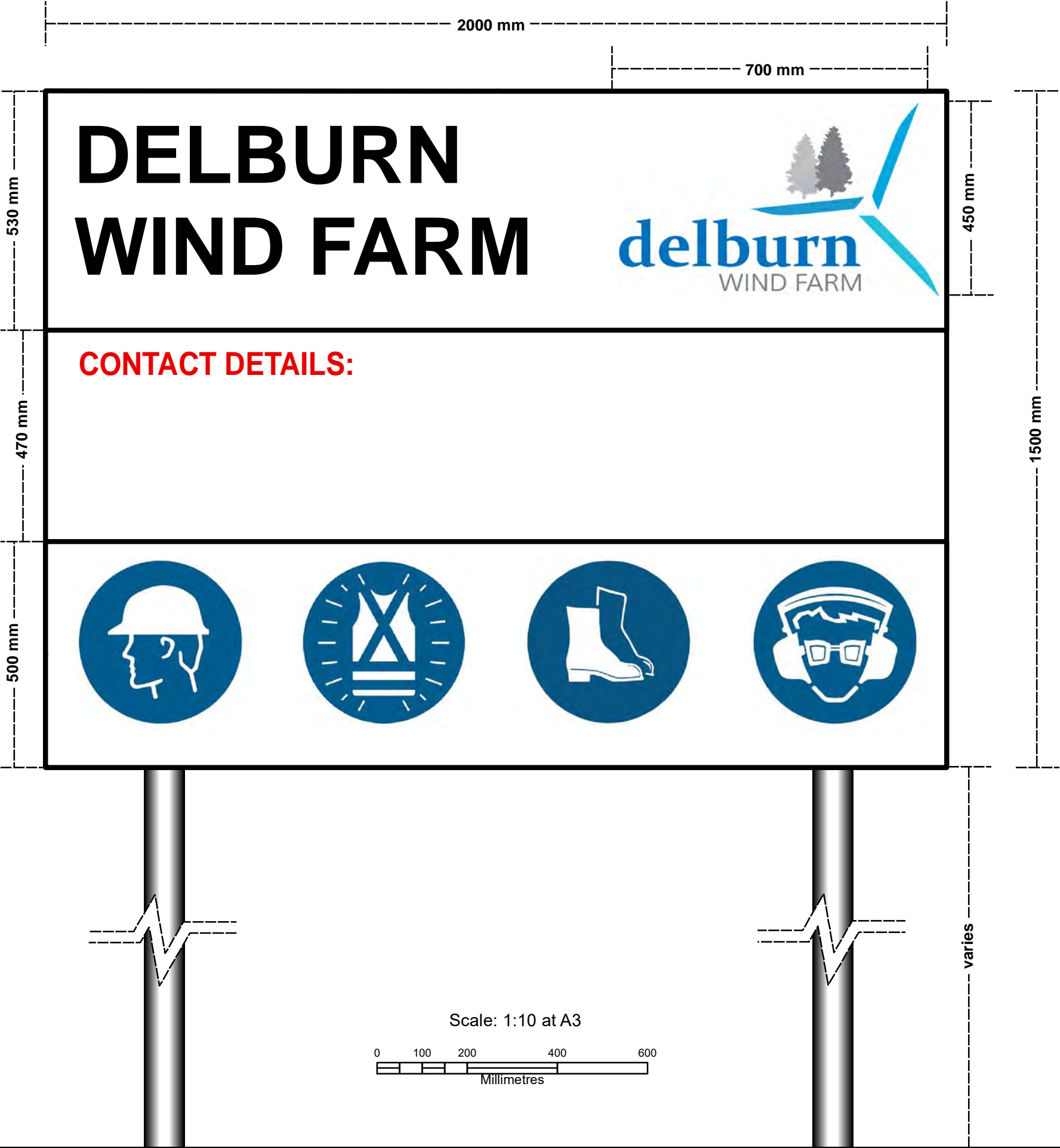
The details of the required mitigation works are discussed further at Section 6.9.

### **3.5 Signage**

Business identification and directional signage is proposed for the Project. The area of the business identification sign is proposed to be 3 square metres (refer to Figure 3.11).

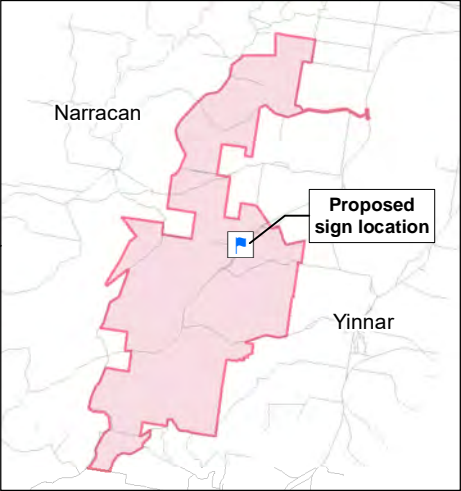


FIGURE 3.11 - INDICATIVE BUSINESS IDENTIFICATION SIGN



•PROJECT		Delburn Wind Farm	
•TITLE		INDICATIVE BUSINESS IDENTIFICATION SIGN	
•DATE	16/10/2020	•PRODUCED	A.Curtis
•CHECKED	I.Mackey	•APPROVED	P.Marriott
•STATUS	Draft	•REV	A

LOCATION PLAN



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### 3.6 Employment

During the combined construction and then operation phase of the Project local benefits to the Gippsland Region are expected to total \$106 million additional Gross Regional Product. The Project will add \$22.5 million annually to the region for the two years of construction and \$2.1 million annually for the 30 years of operation (refer Jacobs Economic Impact Assessment at Appendix M).

In addition, the Project will create approximately 186 additional regional jobs (includes direct and flow on effects) during construction and approximately 25 new on-going jobs (includes direct and flow on effects) are expected to be generated for the 30 years of operation.

There will also be benefits to the local community through payments to local properties (through the neighbour profit share initiative), the establishment of a community development fund, and road upgrades.

This is discussed further in Section 6.11 and in the Jacobs Report at Appendix M.

### 3.7 Decommissioning and Rehabilitation

As discussed in Section 2.4, the Project proponents have entered into a long-term leasing arrangement with the owners of the plantation area, Grand Ridge Plantations Pty Ltd.

The wind turbines have a typical life of 25 to 30 years at the end of which there are three main options available:

- Repair or replace any required main components and continue to use the existing wind turbines;
- Replace the wind turbines with new technology at that time and continue the wind farm use (which would be subject to new planning permit applications); or
- Decommission the Project and remove the wind turbines and infrastructure in accordance with the provisions of the landowner agreement.

A Decommissioning and Rehabilitation Plan will be prepared in accordance with the requirements of the Wind Energy Guidelines and addressed in the Environmental Management Plan that has been prepared for the Project.

### 3.8 Summary of Project Components in each LGA

The elements of the proposed wind farm that will be located within the Latrobe LGA comprise: 28 wind turbines; operations and maintenance facility; visitor information area, temporary construction compounds; temporary concrete batching plants; access tracks (both upgrades to existing tracks and new tracks); underground cabling between turbines; battery energy storage system facility; two anemometers of which one is intended to be permanent; and business identification signage.

The elements of the wind farm that are located within the South Gippsland LGA comprise four wind turbines (including hard stand area and associated access track and underground cabling) and one permanent anemometer.





## Delburn Wind Farm Planning Permit Application Report

The elements of the wind farm that will be located within the Baw Baw LGA comprise: one wind turbine (including hard stand area and associated access track and underground cabling) and one permanent anemometer.

## 4.0 RELEVANT LEGISLATION

### 4.1 Introduction

This chapter provides a brief overview of the key legislation which are relevant to the Project.

### 4.2 Commonwealth legislation

The Project has already been the subject of a referral to the Commonwealth pursuant to the Environment Protection and Biodiversity Conservation Act 1999. The Minister for the Environment determined that pursuant to this Act the Project is not a controlled action.

### 4.3 State Legislation

#### 4.3.1 Planning and Environment Act 1987

The purpose of the Planning and Environment Act 1987 (PE Act) is to establish a framework for planning the use, development and protection of land in Victoria in the present and long-term interests of all Victorians. The key objectives for planning in Victoria, identified in the PE Act are as follows:

- *'To provide for the fair, orderly, economic and sustainable use, and development of land;*
- *To provide for the protection of natural and man-made resources and the maintenance of ecological processes and genetic diversity;*
- *To secure a pleasant, efficient and safe working, living and recreational environment for all Victorians and visitors to Victoria;*
- *To conserve and enhance those buildings, areas or other places which are of scientific, aesthetic, architectural or historical interest, or otherwise of special cultural value;*
- *To protect public utilities and other assets and enable the orderly provision and coordination of public utilities and other facilities for the benefit of the community;*
- *To facilitate development in accordance with the objectives set out in paragraphs (a), (b), (c), (d) and (e);*
- *To facilitate the provision of affordable housing in Victoria; and*
- *To balance the present and future interests of all Victorians'.*



The PE Act requires the preparation and application of Planning Schemes, to set out objectives, policies and provisions relating to the use, development, protection and conservation in the area to which it applies.

As previously noted, three Planning Schemes apply to this Project and the relevant provisions of each are highlighted in the following chapter.

#### 4.3.2 Environment Effects Act 1978

Pursuant to the Environment Effects Act 1978, the Project was referred to the Minister for Planning for consideration as to whether an Environment Effects Statement would be required. The Minister determined that an Environment Effects Statement is not required subject to a number of conditions being met. These conditions are as follows.

*a) An environment report must be prepared in consultation with DELWP and completed to the satisfaction of the Minister for Planning. The report needs to examine and document:*

- i. the predicted impacts (direct and indirect), on native vegetation and biodiversity values, particularly associated with*
  - Growling Grass Frog and Strzelecki Gum and other listed flora and fauna species under the Flora and Fauna Guarantee Act 1988 and Environment Protection and Biodiversity Conservation Act 1999*
  - endangered ecological vegetation classes*
  - wetlands, waterways and waterbodies*
  - large trees and large hollow-bearing trees; and*
- ii. the assessment of alternatives, including project layout refinements and siting of infrastructure, as well as mitigation measures, to avoid and minimise adverse environmental effects on matters listed in condition (a.i).*

*b) A flora and fauna management plan must be prepared in consultation with DELWP and completed to the satisfaction of the Secretary of DELWP, prior to the commencement of any works. The flora and fauna management plan will be informed by the assessments included within the final environment report (under condition (a)) and must include specific measures to avoid, minimise and mitigate potential impacts on flora and fauna within the project site during construction and operation of the project, including but not limited to:*

- i. measures to further minimise and mitigate impacts to retained vegetation, in particular endangered ecological vegetation classes;*
- ii. measures to further minimise and mitigate the removal of large trees and large hollow-bearing trees;*
- iii. measures to further minimise and mitigate impacts on native fauna during construction and habitat clearance;*
- iv. measures to prevent and control pathogens, weeds (non-native species) and pest (non-native) animals;*
- v. a program for on-going monitoring and adaptive management of listed communities and listed species of flora and fauna within the project site; and*
- vi. measures to avoid pollutants, contaminated run-off and sediment from entering waterways and waterbodies.*

*c) If the proposal requires upgrades to Nursery Track, the design of the waterway crossing needs to be completed to the satisfaction of the Secretary of DELWP and be consistent with the design guidelines specified within the Melbourne Strategic Assessment publication Growling Grass Frog Crossing Design Standards (DELWP, 2017).*

A response to these conditions has been prepared by Ecology and Heritage Partners and is currently with the Minister for Planning for consideration.

#### 4.3.3 Aboriginal Heritage Act 2006

The Project also requires the preparation and approval of a Cultural Heritage Management Plan pursuant to the Aboriginal Heritage Act 2006. As previously noted, CHMP 16429 is currently being prepared in consultation with the Gunaikurnai Land and Waters Aboriginal Corporation.

#### 4.3.4 Other Relevant Legislation

Land use and development within Victoria is also controlled by other related legislation. Planning Schemes outline policy relating to a range of environmental, social and economic matters and refer to various legislation and approvals. This legislation includes (amongst others):

- Water Act;
- Catchment and Land Protection Act 1994;
- Crown Land (Reserves) Act 1978;
- Flora and Fauna Guarantee Act 1998;
- Heritage Act 1995;
- Road Management Act 2004; and
- Wildlife Act 1975.



## 5.0 PLANNING SCHEME CONTROLS AND POLICIES

### 5.1 Introduction

This section provides an overview of relevant planning policies and controls in each of the three Planning Schemes and confirms the permit triggers for the Project in each of the municipalities.

### 5.2 Planning Policy Framework

The PPF comprises principles that elaborate upon the objectives of planning across Victoria, as outlined in the Planning and Environment Act 1987 (the Act). As the provisions are either state-wide or regional, the same policies apply across all three municipalities.

Clauses 19.01-1S (Energy) and 19.01-2S (Renewable Energy) are the most directly relevant policies at a State level. Clause 19.01-1S seeks to facilitate the appropriate development of energy supply infrastructure. Strategies supporting this include the following.

- *'Support the development of energy facilities in appropriate locations where they can take advantage of existing infrastructure and provide benefits to industry and community.'*
- *'Support the transition to a low carbon economy with renewable energy and greenhouse emissions reductions including geothermal, clean coal processing and carbon capture and storage.'*
- *'Facilitate local energy generation to help diversify the local economy and improve sustainability outcomes'.*

Clause 19.01-2S is of most relevance and references Policy and Planning Guidelines for Development of Wind Energy Facilities in Victoria (March 2019), which is discussed later on in this chapter. Relevant strategies outlined at this clause include the following.

- *'Facilitate renewable energy development in appropriate locations;*
- *Protect energy infrastructure against competing and incompatible uses.*
- *Develop appropriate infrastructure to meet community demand for energy services.*
- *Set aside suitable land for future energy infrastructure;*
- *Consider the economic and environmental benefits to the broader community of renewable energy generation while also considering the need to minimise the effects of a proposal on the local community and environment;*

- *Recognise that economically viable wind energy facilities are dependent on locations with consistently strong winds over the year<sup>1</sup>.*

Given the nature of wind farms, there are a range of potential environmental and amenity impacts to be considered in their assessment. Accordingly, there are also a number of additional State level policies that are relevance in the consideration of the Project and that cover a broad range of issues. These are listed below, with a brief description of those elements of the policies that are relevant to the Delburn Wind Farm.

#### Clause 11 - Settlement

- Clause 11.01-1S (Settlement) seeks to ensure the sustainable growth and development of Victoria. Included as a policy document is the *Gippsland Regional Growth Plan (Victorian Government, 2014)*.
- Clause 11.01-1R (Settlement – Gippsland) identifies Latrobe as Gippsland's regional city in additional to five other regional centres. The subject site is located within the Gippsland Regional Growth Plan as an area containing brown coal reserves.
- Clause 11.02-1S (Supply of Urban Land) seeks to maintain access to productive natural resources and an adequate supply of well-located land for energy generation, infrastructure and industry.

#### Clause 12 – Environmental and Landscape Values

- Clause 12.01-1S (Protection of Biodiversity) seeks to assist the protection and conservation of Victoria's biodiversity.
- Clause 12.01-2S (Native Vegetation Management) seeks to ensure there is no net loss of biodiversity as a result of the removal, destruction or lopping of native vegetation.
- Clause 12.03-1S (River Corridors, Waterways, Lakes and Wetlands) outlines the need to protect the environmental, cultural and landscape values of all water bodies and wetlands.
- Clause 12.05-2S (Landscapes) seeks to protect and enhance significant landscapes and open spaces that contribute to character, identity and sustainable environments.

#### Clause 13 – Environmental Risks and Amenity

- Clause 13.01-1S (Natural Hazards and Climate Change) seeks to identify at risk areas and consider those risks in the planning and management decision making process.
- Clause 13.02-1S (Bushfire Planning) implements risk-based planning that prioritises the protection of human life.
- Clause 13.03-1S (Floodplain Management) seeks to avoid intensifying the impact of flooding through inappropriately located use and development.



- Clause 13.04-2S (Erosion and Landslip) seeks to prevent inappropriate development in unstable areas or areas prone to erosion.
- Clause 13.04-3S (Salinity) seeks to minimise the impact of salinity and rising water tables on land uses, buildings and infrastructure in rural and urban areas and areas of environmental significance.
- Clause 13.05-1S (Noise Abatement) seeks to ensure that noise impacts on community amenity is managed through arrange of techniques including land use separation as appropriate to the land use function and character of the area.
- Clause 13.07-1S (Land Use Compatibility) seeks to safeguard community amenity while facilitating appropriate commercial, industrial and other land uses with potential off-site effects.

### Clause 14 – Natural Resource Management

- Clause 14.01-1S (Protection of Agricultural Land) seeks to ensure that strategically important agricultural and primary production land is protected from incompatible land uses.
- Clause 14.01-3S (Forestry and Timber Production) seeks to facilitate the establishment, management and harvesting of plantations and the harvesting of timber from native forests.
- Clause 14.02-1S (Catchment Planning and Management) seeks to assist the protection and restoration of catchments, water bodies, groundwater and the marine environment including ensuring that development at or near waterways protects the environmental qualities of waterways and their instream uses. This includes the provision of appropriate setbacks from waterways.
- Clause 14.02-2S (Water Quality) seeks to ensure that land use activities are sited and designed to minimise discharge to waterways and to protect the quality of surface water and groundwater.
- Clause 14.03-1S (Resource Exploration and Extraction) seeks (amongst a range of other strategies) to protect the brown coal resource in Central Gippsland by ensuring that changes in use and development of land overlying coal resources do not compromise the winning or processing of coal.
- Clause 14.03-1R (Resource exploration and extraction – Gippsland Coal Resources) seeks to protect the Gippsland brown coal resource and associated buffer areas via a range of strategies including ensuring that development in coal resource areas does not compromise the existing or future use of the resource.

### Clause 15 – Built Environment and Heritage

- Clause 15.01-6S (Design for Rural Areas) seeks to ensure that new development respects valued areas of rural character and minimises visual impacts on surrounding natural scenery.
- Clause 15.03-1S (Heritage Conservation) seeks to ensure the conservation of places of natural and cultural heritage.

- Clause 15.03-2S (Aboriginal Cultural Heritage) aims to protect and conserve places of Aboriginal cultural heritage in accordance with the requirements of the Aboriginal Heritage Act 2006.

#### **Clause 17 – Economic Development**

- Clause 17.01-1S (Diversified Economy) seeks to facilitate growth in a range of employment sectors and support rural economies to grow and diversify.

#### **Clause 18 – Transport**

- Clause 18.01-2S (Transport System) seeks to plan or regulate for new land uses to avoid detriment to and where possible enhance the service, safety and amenity desirable for that transport route (amongst a range of other strategies).
- Clause 18.04-1S (Planning for Airports and Airfields) seeks to, amongst a range of matters, ensure that appropriate planning is put in place to ensure that new use or development does not prejudice the safety or efficiency of airfields.

### **5.3 Planning Policies, Zones and Overlay Controls relevant to each municipality**

As noted previously, the proposal includes land across the municipalities of Latrobe City Council, South Gippsland Shire Council and Baw Baw Shire Council. A map of the planning zones and overlays is provided in Figures 5.1, 5.2, 5.3, 5.4, 5.5 and 5.6.

The sections below provide a summary of the relevant planning controls and policies as they relate to the proposed use and development works within each municipality.

#### **5.3.1 Latrobe City**

##### ***Local Planning Policy Framework (LPPF)***

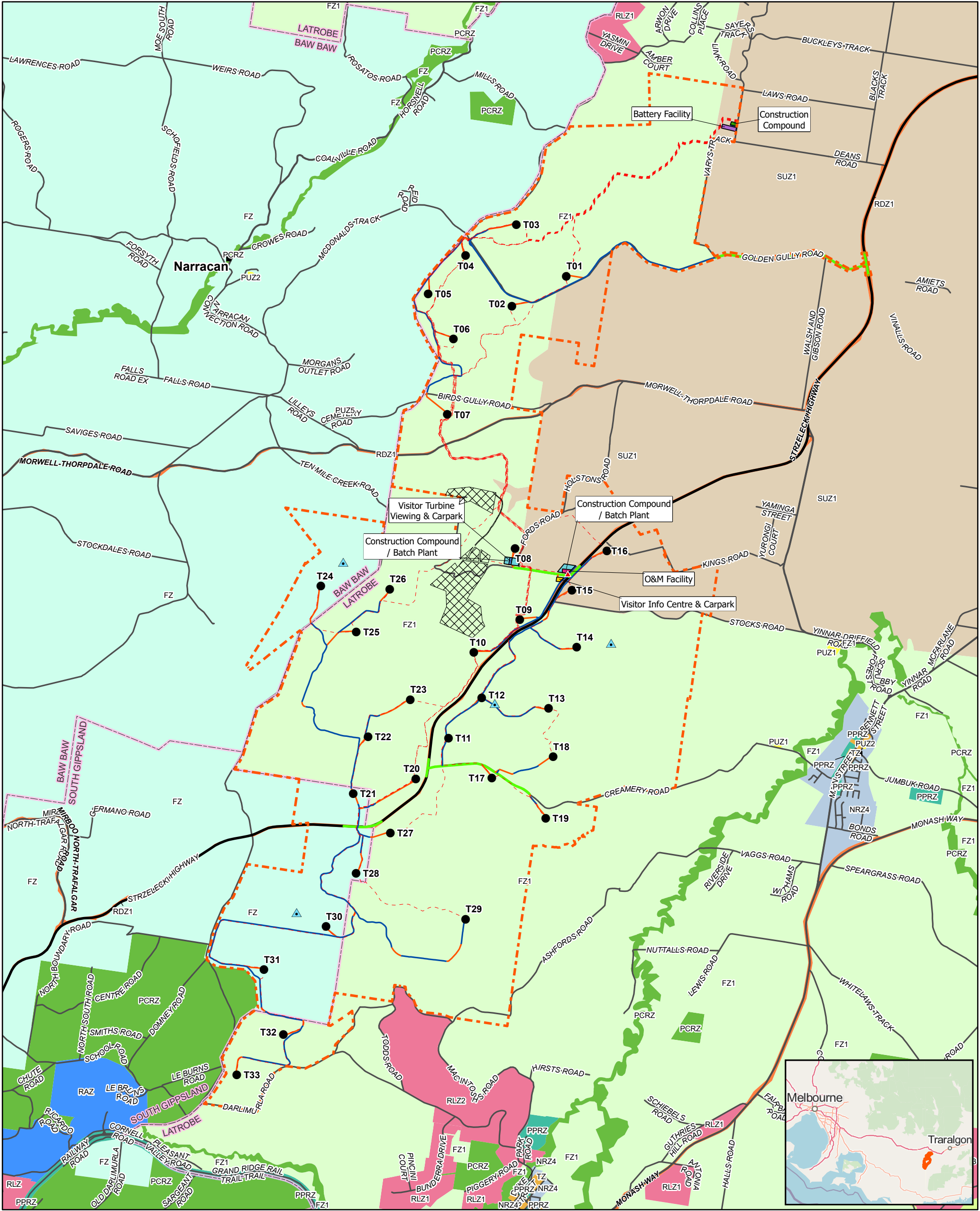
The following MSS and Local Planning Policies of the Latrobe Planning Scheme are relevant to the Project:


- Clause 21.01-1 (Introduction);
- Clause 21.02-1 (Settlement);
- Clause 21.02-15 (Land use Buffers and Constraints);
- Clause 21.02-19 (Rural living);
- Clause 21.03-1 (Sustainability);
- Clause 21.03-5 (Significant Environments and Landscapes);
- Clause 21.03-9 (Biodiversity);



- Clause 21.03-11 (Use and Development around Major Pipelines);
- Clause 21.04-1 (Greenhouse and Climate Change);

FIGURE 5.1 PLANNING ZONES





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**LEGEND**

- Wind Turbine
- ▲ Met Mast
- ▲ Business identification signage location
- - - Electrical Reticulation
- - - New Access Track
- - - Existing Access Track
- - - Public Roads for Access
- - - Upgrade
- O&M Facility
- Visitor Info Centre & Carpark
- Visitor Turbine Viewing & Carpark
- Battery Facility
- Construction Compound / Batch Plant
- Quarry Lease Area

**Planning Zones**

- COMMERCIAL ZONE
- FARMING ZONE
- FARMING ZONE - SCHEDULE 1
- FARMING ZONE - SCHEDULE 2
- GENERAL RESIDENTIAL ZONE
- INDUSTRIAL ZONE
- LOW DENSITY RESIDENTIAL ZONE
- MIXED USE ZONE
- NEIGHBOURHOOD RESIDENTIAL ZONE
- PUBLIC CONSERVATION AND RESOURCE ZONE
- PUBLIC PARK AND RECREATION ZONE
- PUBLIC USE ZONE
- RESIDENTIAL GROWTH ZONE
- ROAD ZONE
- RURAL ACTIVITY ZONE
- RURAL LIVING ZONE
- SPECIAL USE ZONE
- TOWNSHIP ZONE

**PROJECT**

**Delburn Wind Farm**

**TITLE**

**Planning Zones**

**DATE**

1/02/2021

**SCALE**

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**STATUS**

Draft

**PRODUCED**

I. Mackey

**CHECKED**

I. Mackey

**APPROVED**

P. Marriott

**DRAWING No.**

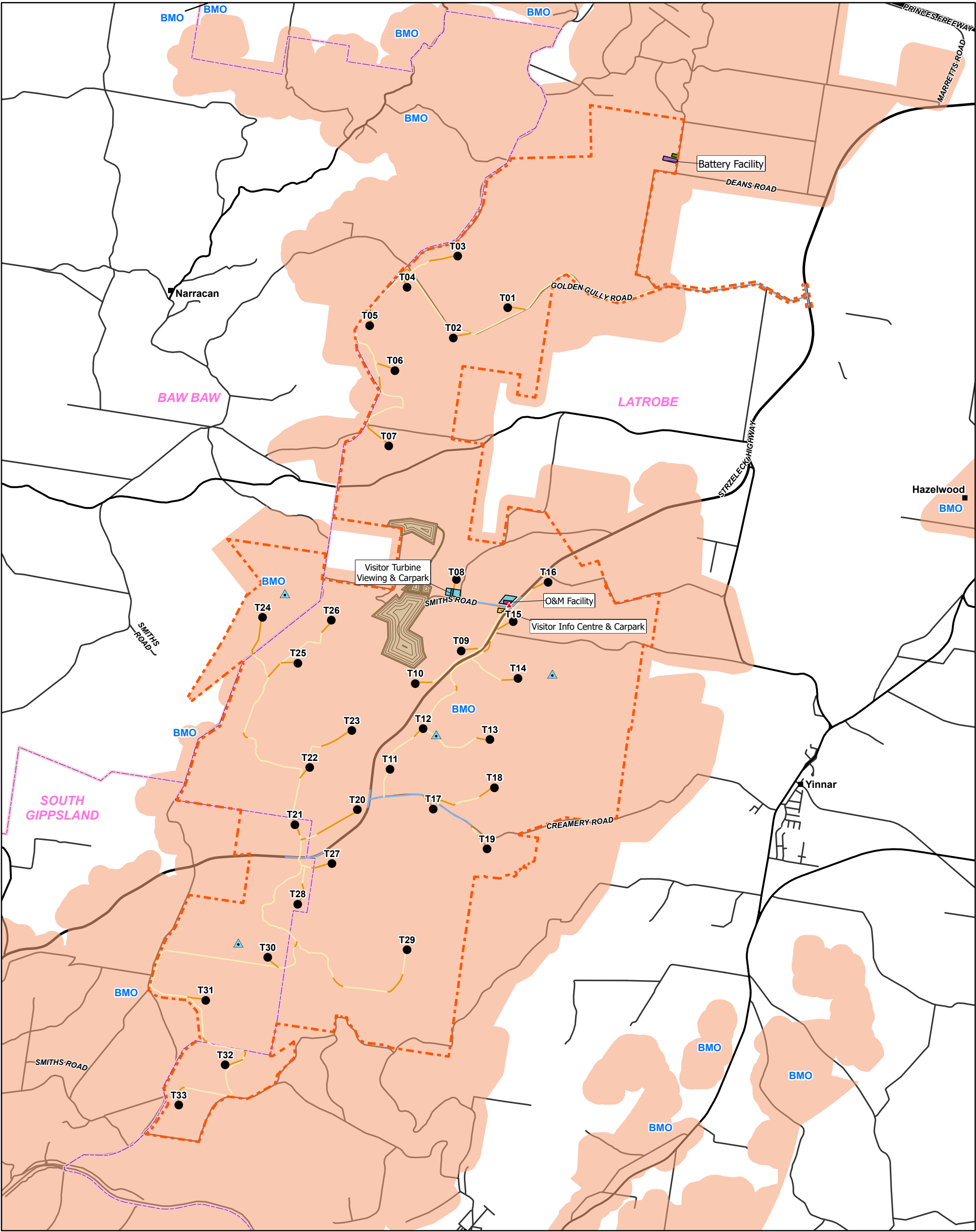
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v3.5



FIGURE 5.2 PLANNING OVERLAY MAP - BUSHFIRE MANAGEMENT OVERLAY

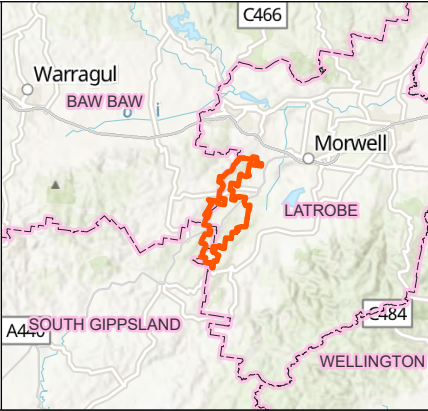




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**LEGEND**

- Wind Energy Facility Boundary (WEF)
- Wind Turbine
- Met Mast
- Business identification signage location
- New Access Track
- Existing Track Upgrade
- Public Road Upgrade
- O&M Facility
- Visitor Info Centre & Carpark
- Visitor Turbine Viewing & Carpark
- Battery Facility
- Construction Compound
- Construction Compound / Batch Plant
- Quarry Lease Area
- LGA Boundary
- BUSHFIRE MANAGEMENT OVERLAY
- BUSHFIRE MANAGEMENT OVERLAY - SCHEDULE 1



Warragul  
Morwell  
Wellington  
BAW BAW  
LATROBE  
SOUTH GIPPSLAND  
C466  
A440

**PROJECT**

**Delburn Wind Farm**

**TITLE**

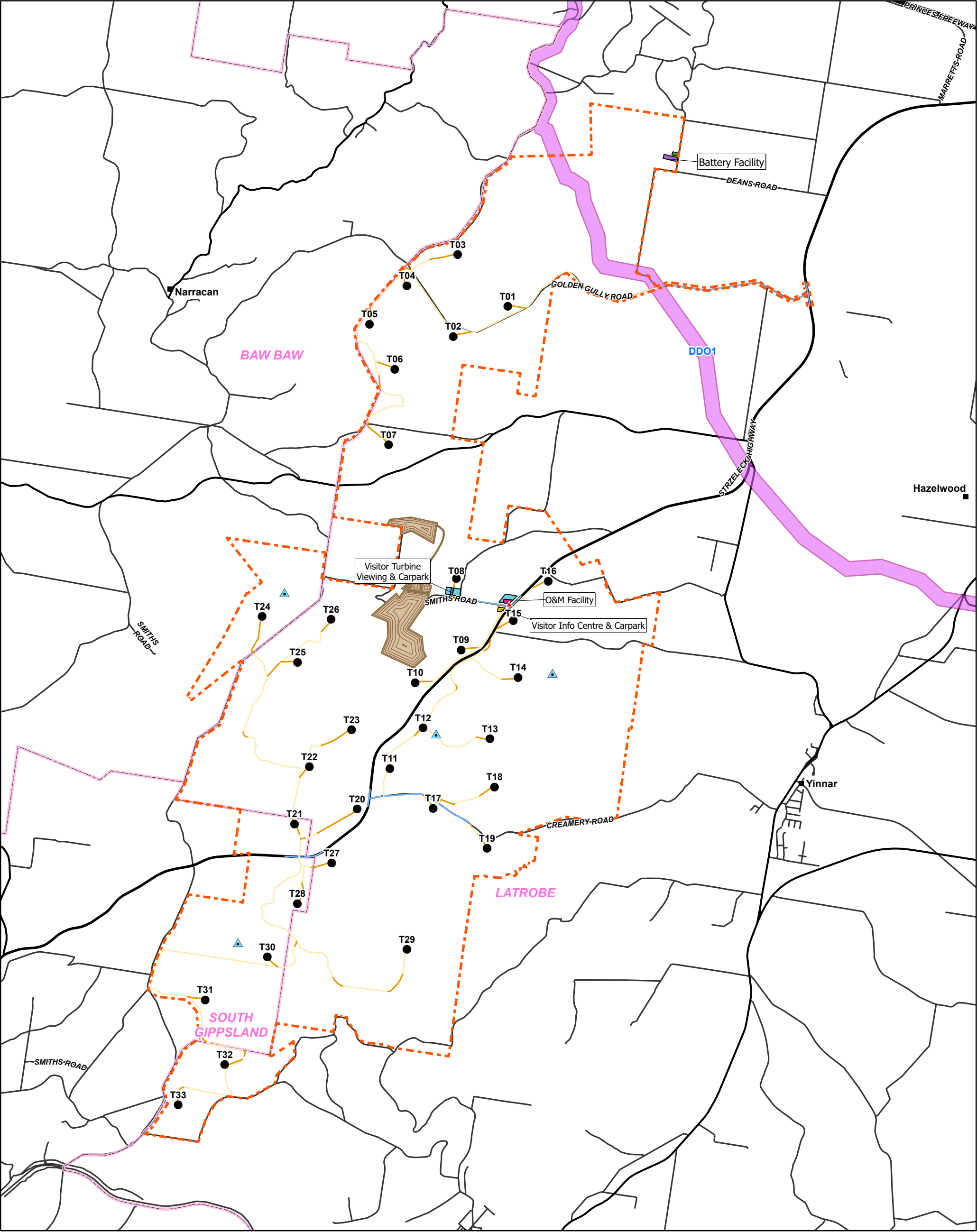
**Planning Overlay Map  
BUSHFIRE MANAGEMENT OVERLAY**

DATE	4/02/2021	PRODUCED	A.Curtis
SCALE	1:50,000 at A3	CHECKED	I.Mackey
STATUS	Draft	APPROVED	P.Marriott

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FIGURE 5.3 PLANNING OVERLAY MAP - DESIGN AND DEVELOPMENT OVERLAY



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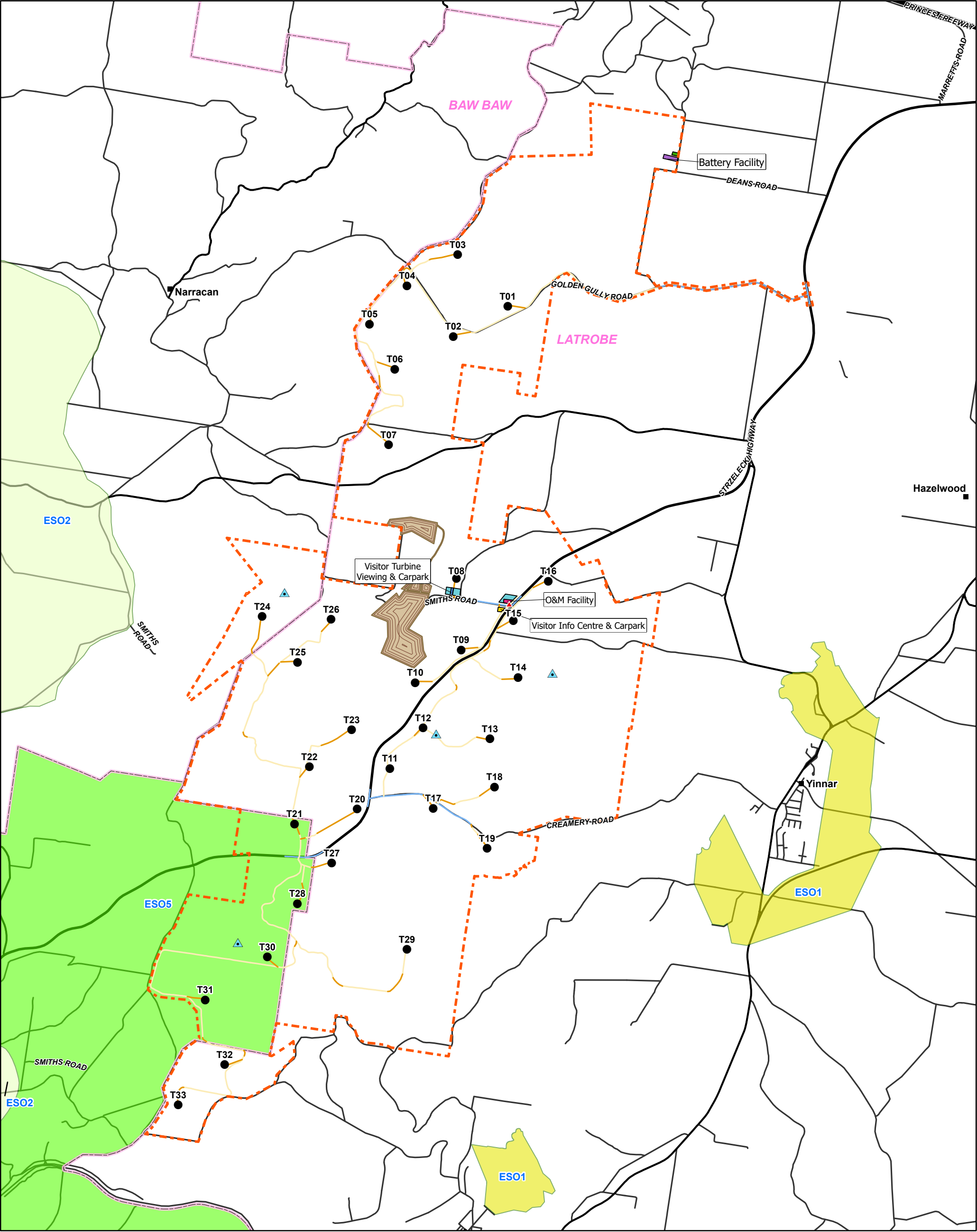
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- Wind Energy Facility Boundary (WEF)
- Wind Turbine
- Met Mast
- Business identification signage location
- New Access Track
- Existing Track Upgrade
- Public Road Upgrade
- O&M Facility
- Visitor Info Centre & Carpark
- Visitor Turbine Viewing & Carpark
- Battery Facility
- Construction Compound
- Construction Compound / Batch Plant
- Quarry Lease Area
- LGA Boundary
- DESIGN AND DEVELOPMENT OVERLAY - SCHEDULE 1

<b>PROJECT</b> <b>Delburn Wind Farm</b>	
<b>TITLE</b> <b>Planning Overlay Map</b> <b>DESIGN AND DEVELOPMENT OVERLAY</b>	
<b>DATE</b> 4/02/2021	<b>PRODUCED</b> A.Curtis
<b>SCALE</b> 1:50,000 at A3	<b>CHECKED</b> I.Mackey
<b>STATUS</b> Draft	<b>APPROVED</b> P.Marriott
<b>DRAWING No.</b> DWF_OVR_016-04A-v3-5 Planning Overlays	<b>PAGE</b> 2/16



FIGURE 5.4 PLANNING OVERLAY MAP - ENVIRONMENTAL SIGNIFICANCE OVERLAY



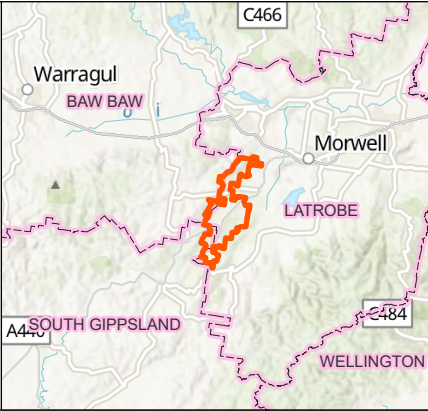


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**LEGEND**

- Wind Energy Facility Boundary (WEF)
- Wind Turbine
- Met Mast
- Business identification signage location
- New Access Track
- Existing Track Upgrade
- Public Road Upgrade
- O&M Facility
- Visitor Info Centre & Carpark
- Visitor Turbine Viewing & Carpark
- Battery Facility
- Construction Compound
- Construction Compound / Batch Plant
- Quarry Lease Area
- LGA Boundary
- ENVIRONMENTAL SIGNIFICANCE OVERLAY - SCHEDULE 1
- ENVIRONMENTAL SIGNIFICANCE OVERLAY - SCHEDULE 2
- ENVIRONMENTAL SIGNIFICANCE OVERLAY - SCHEDULE 4
- ENVIRONMENTAL SIGNIFICANCE OVERLAY - SCHEDULE 5



Warragul  
BAW BAW  
Morwell  
LATROBE  
SOUTH GIPPSLAND  
WELLINGTON

**PROJECT**  
**Delburn Wind Farm**

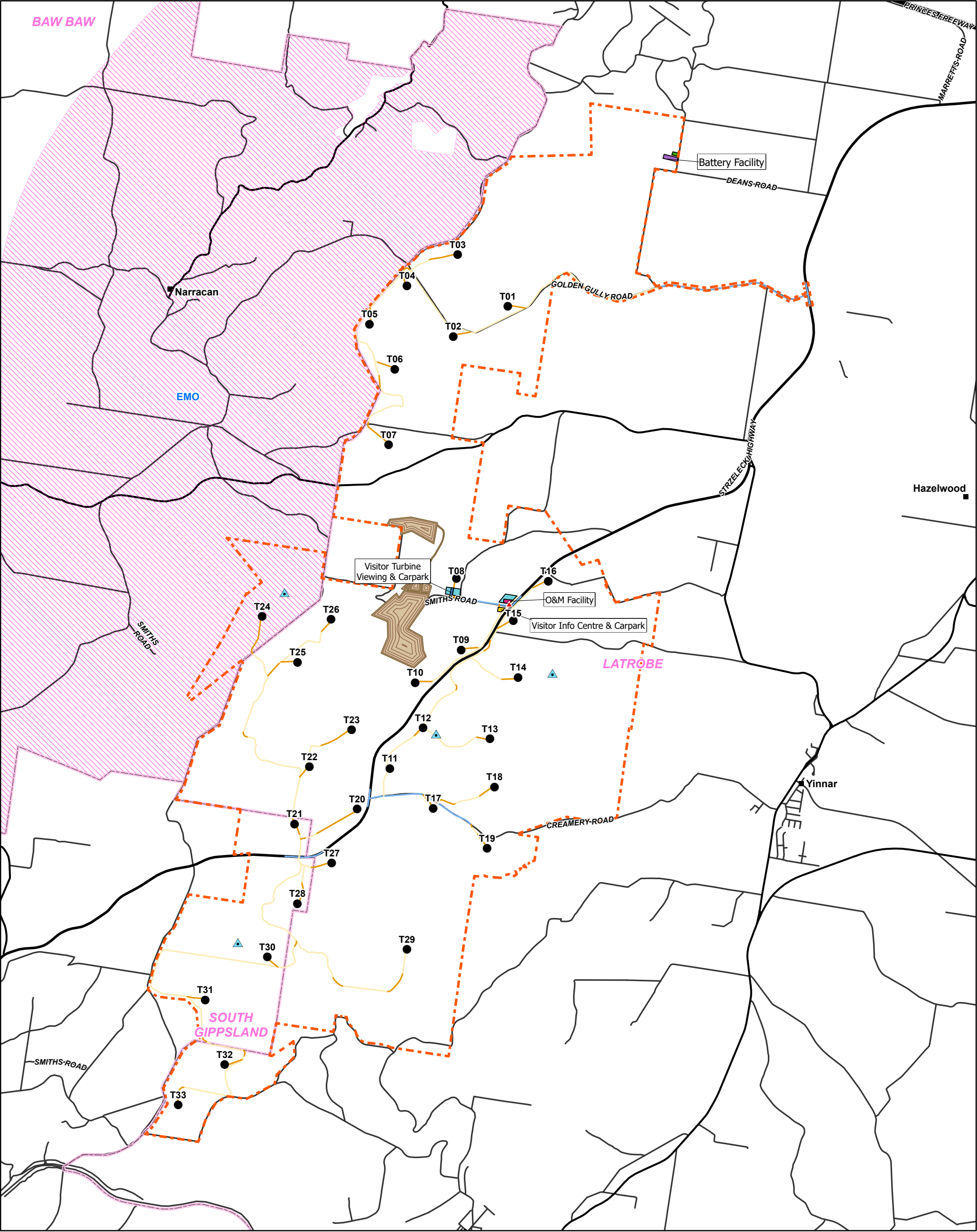
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**Planning Overlay Map**  
**ENVIRONMENTAL SIGNIFICANCE OVERLAY**


DATE	4/02/2021	PRODUCED	A.Curtis
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FIGURE 5.5 PLANNING OVERLAY MAP EROSION MANAGEMENT OVERLAY

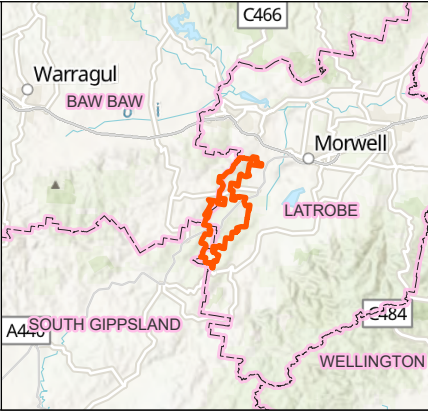




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**LEGEND**

- Wind Energy Facility Boundary (WEF)
- Wind Turbine
- Met Mast
- Business identification signage location
- New Access Track
- Existing Track Upgrade
- Public Road Upgrade
- O&M Facility
- Visitor Info Centre & Carpark
- Visitor Turbine Viewing & Carpark
- Battery Facility
- Construction Compound
- Construction Compound / Batch Plant
- Quarry Lease Area
- LGA Boundary
- EROSION MANAGEMENT OVERLAY



**PROJECT**  
**Delburn Wind Farm**

**TITLE**  
**Planning Overlay Map  
EROSION MANAGEMENT OVERLAY**

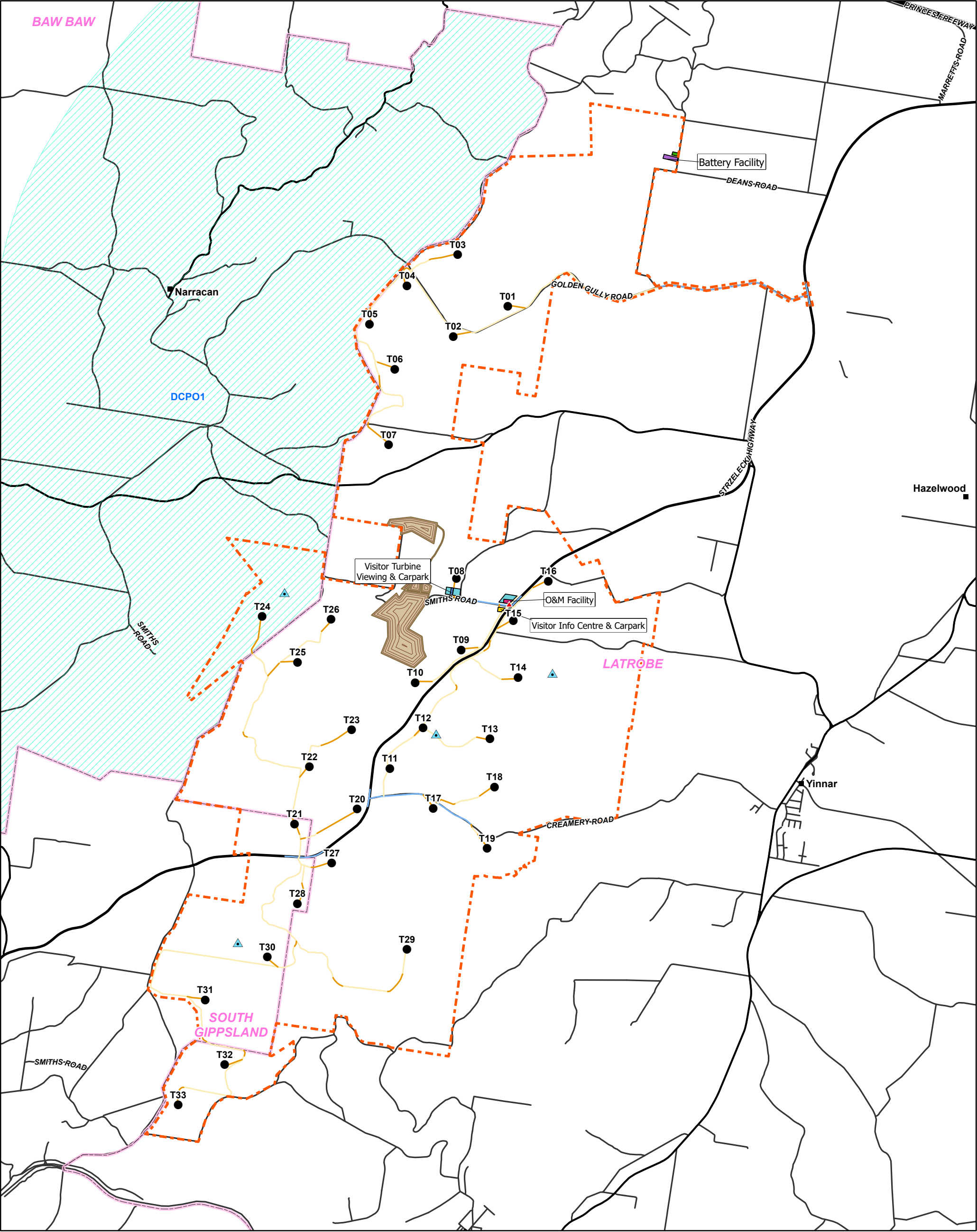
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STATUS Draft	APPROVED P.Marriott


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FIGURE 5.6 PLANNING OVERLAY MAP - DEVELOPMENT CONTRIBUTIONS PLAN OVERLAY

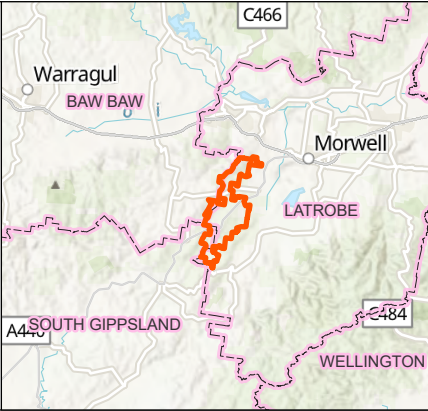




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**LEGEND**

- Wind Energy Facility Boundary (WEF)
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- Visitor Turbine Viewing & Carpark
- Battery Facility
- Construction Compound
- Construction Compound / Batch Plant
- Quarry Lease Area
- LGA Boundary
- DEVELOPMENT CONTRIBUTIONS PLAN OVERLAY - SCHEDULE 1



Warragul  
Morwell  
WELLINGTON  
SOUTH GIPPSLAND  
LATROBE  
BAW BAW

**PROJECT**

**Delburn Wind Farm**

**TITLE**

**Planning Overlay Map**  
**DEVELOPMENT CONTRIBUTIONS PLAN OVERLAY**

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STATUS	Draft	APPROVED	P.Marriott

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- Clause 21.04-7 (Floodplains);
- Clause 21.04-12 (Bushfire);
- Clause 21.04-14 (Mine Areas);
- Clause 21.05-1 (Agriculture);
- Clause 21.05-3 (Water);
- Clause 21.05-8 (Coal Resources);
- Clause 21.05-15 (Timber);
- Clause 21.05-17 (Stone Resources);
- Clause 21.06-6 (Heritage);
- Clause 21.07-1 (Economic Growth);
- Clause 21.07-8 (Latrobe Regional Airport);
- Clause 21.08-1 (Integrated transport networks);
- Clause 21.09-10 (Boolarra);
- Clause 21.09-16 (Yinnar);
- Clause 21.10-3 (Reference Documents);
- Clause 22.01 (Intensive Agriculture);
- Clause 22.02 (Rural Dwelling).

A brief outline of the relevant local planning policies is provided in Appendix B.

### ***Planning Zones and Overlays***

The Latrobe portion of the Project site is affected by the FZ1, SUZ1, Road Zone Category 1 (RDZ1), Bushfire Management Overlay (BMO) and the Design and Development Overlay – Schedule 1 'Major Pipeline Infrastructure' (DDO1). The table below provides an overview of each of these controls, their purpose and the relevant permit triggers associated with those components located in the Latrobe LGA.



Table 5.1: Planning Zones and Overlays Permit Approval Requirements in Latrobe

Applicable Zones and Overlays	Purpose	Permit Triggers
FZ1	<ul style="list-style-type: none"> <li>To provide for the use of land for agriculture.</li> <li>To encourage the retention of productive agricultural land.</li> <li>To ensure that non-agricultural uses, including dwellings, do not adversely affect the use of land for agriculture.</li> <li>To encourage the retention of employment and population to support rural communities.</li> <li>To encourage use and development of land based on comprehensive and sustainable land management practices and infrastructure provision.</li> <li>To provide for the use and development of land for the specific purposes identified in a schedule to this zone.</li> </ul>	<p>Project components located in the FZ1 include:</p> <ul style="list-style-type: none"> <li>- 26 wind turbines and associated access tracks and cabling;</li> <li>- two anemometers (one development and one new);</li> <li>- construction compound and batching plant;</li> <li>- visitor turbine viewing area and car park;</li> <li>- visitor information centre and car park.</li> </ul> <p>Pursuant to Clause 35.07-1, planning permission is required for the use of a Wind Energy Facility.</p> <p>The use of a Wind Energy Facility must meet the requirements of Clause 52.32.</p> <p>Pursuant to Clause 35.07-4, planning permission is required for buildings and works associated with a use requiring a permit under Clause 35.07-1.</p> <p>Other permit triggers include buildings and works located:</p> <ul style="list-style-type: none"> <li>- Within 100 metres of a Road Zone Category 1;</li> <li>- Within 20 metres of any other road;</li> <li>- Within 5 metres of a boundary;</li> <li>- Within 100 metres of a designated waterway/ wetland.</li> </ul> <p>All wind turbines have a setback of 100 metres or more to any external roads (including paper</p>

		<p>roads) and property boundaries of land in other ownership, and 20 metres or more to waterways/wetlands on the site (noting that that these are not designated waterways/wetlands).</p> <p>Some cabling and access tracks will be located within these setback areas.</p> <p>The Operations and Maintenance Facility and the Visitor Information Centre will be located within 100 metres of the Strzelecki Highway (RDZ1).</p>
SUZ1	<ul style="list-style-type: none"> <li>▪ <i>To provide for brown coal mining and associated uses</i></li> <li>▪ <i>To provide for electricity generation and associated uses</i></li> <li>▪ <i>To provide for interim and non-urban uses which protect brown coal resources and to discourage the use or development of land incompatible with future brown coal mining and industry</i></li> </ul>	<p>Project components located in the SUZ1 include:</p> <ul style="list-style-type: none"> <li>- two wind turbines and associated access tracks and cabling;</li> <li>- BESS facility;</li> <li>- operations and maintenance facility;</li> <li>- construction compound and batch plant.</li> </ul> <p>Pursuant to Clause 37.01-1, planning permission is required for the use of a Wind Energy Facility. As the BESS facility is to operate as an ancillary use/development to the wind energy facility no separate approval is sought for development of a utility installation (BESS facility).</p> <p>Pursuant to Clause 37.01-4, planning permission is required to construct a building or carry out works. Any application for buildings and works associated with electricity generation, transmission or distribution, is</p>



		<p>exempt from the notice, decision and appeal rights of the Act.</p> <p>All applications under Schedule 1 to Clause 37.01 (SUZ1) must be referred to the Secretary to the Department administering the <i>Minerals Resources (Sustainable Development) Act 1990</i>.</p>
RDZ1	<ul style="list-style-type: none"> <li>▪ <i>To identify significant existing roads.</i></li> <li>▪ <i>To identify land which has been acquired for a significant proposed road</i></li> </ul>	<p>The only component of the Project located within the RDZ1 is electrical cabling which crosses the Strzelecki Highway and Morwell-Thorpdale Road. In the RDZ1 a planning permit is required for the use and development of a Wind Energy Facility.</p> <p>Therefore, a permit is triggered for use and development in the RDZ1</p> <p>The provisions of Clause 52.29 are, discussed in the following section.</p>
DDO1	<ul style="list-style-type: none"> <li>▪ <i>To ensure that all buildings and works and in particular buildings designed to accommodate people are sufficiently separated from high pressure pipelines to avoid a safety hazard</i></li> </ul>	<p>The only component of the Project which crosses the DDO1 area is a 33kV underground electrical cable connecting the turbines to the BESS and terminal station.</p> <p>Pursuant to Clause 43.02-2, planning permission is required for buildings and works.</p> <p>Therefore, a buildings and works permit is triggered by this clause.</p> <p>The Schedule requires consideration of the views of the Secretary of the Department administering the <i>Pipelines Act 1967</i>.</p>

BMO	<ul style="list-style-type: none"> <li>To ensure that the development of land prioritises the protection of human life and strengthens community resilience to bushfire.</li> <li>To identify areas where the bushfire hazard warrants bushfire protection measures to be implemented.</li> <li>To ensure development is only permitted where the risk to life and property from bushfire can be reduced to an acceptable level.</li> </ul>	<p>All of the Project components are located on land affected by the BMO.</p> <p>A planning permit is not required for buildings and works associated with a Wind Energy Facility in the BMO.</p>
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### 5.3.2 South Gippsland Shire

#### Local Planning Policy Framework (LPPF)

The following sections of the MSS and Local Planning Policies of the South Gippsland Planning Scheme are relevant to the Project:

- Clause 21.01-2 (Key issues);
- Clause 21.02 (Settlement);
- Clause 21.03-2 (Biodiversity);
- Clause 21.03-3 (Overview – Coastal and Hinterland Landscapes);
- Clause 21.04-1 (Overview – Land and Catchment Management);
- Clause 21.05-1 (Overview – Agriculture);
- Clause 21.05-5 (Overview – Extractive Industry);
- Clause 21.06-1 (Overview – Heritage);
- Clause 21.06-6 (Signage and Infrastructure);
- Clause 21.07-7 (Overview – Rural Residential Development);
- Clause 21.08-1 (Overview - Processing and Manufacturing);
- Clause 21.09 (Transport);
- Clause 21.10-6 (Overview - Alternative Energy);
- Clause 21.14 -5 (Mirboo North);



- Clause 21.19-9 (Darlimurla);
- Clause 22.05 (Rural Dwellings);
- Clause 22.06 (Rural Subdivision);
- Clause 22.07 (Rural Activity Zone).

A brief outline of the relevant local planning policies is provided in Appendix B.

### Relevant Planning Zones and Overlays

The South Gippsland portion of the Project site is affected by the FZ, RDZ1, Environmental Significance Overlay – Schedule 5 'Areas Susceptible to Erosion' (ESO5) and the BMO. The table below provides an overview of each of these controls, their purpose and the relevant permit triggers associated with those components located in the South Gippsland LGA.

Table 5.2: Planning Zones and Overlays Permit Approval Requirements in South Gippsland

Applicable Zones and Overlays	Purpose	Permit triggers
FZ	<ul style="list-style-type: none"> <li>▪ <i>To provide for the use of land for agriculture.</i></li> <li>▪ <i>To encourage the retention of productive agricultural land.</i></li> <li>▪ <i>To ensure that non-agricultural uses, including dwellings, do not adversely affect the use of land for agriculture.</i></li> <li>▪ <i>To encourage the retention of employment and population to support rural communities.</i></li> <li>▪ <i>To encourage use and development of land based on comprehensive and sustainable land management practices and infrastructure provision.</i></li> <li>▪ <i>To provide for the use and development of land for the specific purposes identified in a schedule to this zone.</i></li> </ul>	<p>Project components located in the FZ include:</p> <ul style="list-style-type: none"> <li>- four wind turbines and associated access tracks and cabling;</li> <li>- one anemometer.</li> </ul> <p>Pursuant to Clause 35.07-1, planning permission is required for the use of a Wind Energy Facility. The use of a Wind Energy Facility must meet the requirements of Clause 52.32.</p> <p>Pursuant to Clause 35.07-4, planning permission is required for buildings and works associated with a use requiring a permit under Clause 35.07-1.</p> <p>Other permit triggers include buildings and works located:</p> <ul style="list-style-type: none"> <li>- Within 100 metres of a Road Zone Category 1;</li> <li>- Within 20 metres of any other road;</li> </ul>

		<ul style="list-style-type: none"> <li>- Within 5 metres of a boundary;</li> <li>- Within 100 metres of a designated waterway/ wetland.</li> </ul> <p>All wind turbines have a setback of 100 metres or more to any external roads (including paper roads) and property boundaries of land in other ownership and 20 metres or more to waterways/ wetlands on the site (noting that that these are not designated waterways/ wetlands).</p> <p>Some cabling and access tracks will be located within these setback areas.</p>
RDZ1	<ul style="list-style-type: none"> <li>▪ <i>To identify significant existing roads.</i></li> <li>▪ <i>To identify land which has been acquired for a significant proposed road</i></li> </ul>	<p>The only component of the proposal located within the RDZ1 is electrical cabling which crosses the Strzelecki Highway. In the RDZ1 a planning permit is required for the use and development of a Wind Energy Facility.</p> <p>Therefore, a permit is triggered for use and development in the RDZ1</p> <p>The provisions of Clause 52.29 are discussed in the following section.</p>
ESO5	<ul style="list-style-type: none"> <li>▪ <i>To identify areas where the development of land may be affected by environmental constraints.</i></li> <li>▪ <i>To ensure that development is compatible with identified environmental values.</i></li> <li>▪ <i>The environmental objective to be achieved is:</i></li> <li>▪ <i>To protect areas prone to erosion by minimising land disturbance and vegetation loss.</i></li> </ul>	<p>Project components located in the ESO5 include:</p> <ul style="list-style-type: none"> <li>- four wind turbines and associated access tracks and cabling;</li> <li>- one anemometer.</li> </ul> <p>Pursuant to Clause 42.01-2, a planning permit is required for buildings and works and to remove, destroy or lop any vegetation, including dead</p>



	<ul style="list-style-type: none"> <li><i>To prevent increased surface runoff or concentration of surface water runoff leading to erosion or siltation of watercourses</i></li> </ul>	<p>vegetation, other than exempt vegetation listed at Clause 42.01-3.</p> <p>Included in the exemptions is 'Vegetation that is to be removed, destroyed or lopped that was either planted or grown as a result of direct seeding for Crop raising or Grazing animal production'.</p> <p>Schedule 5 also specifies a series of exempt buildings and works including underground power lines provided they do not alter the topography of the land and powerlines that do not involve the construction of towers.</p> <p>The vegetation that is to be removed is either native vegetation or planted as part of the timber plantation (defined as 'timber production' and nested within the definition of 'crop raising'). Therefore, a permit is only required for native vegetation removal pursuant to ESO5.</p> <p>A permit is required for buildings and works pursuant to this ESO5 although it is noted that technically the underground cabling doesn't require approval pursuant to this overlay.</p>
BMO	<ul style="list-style-type: none"> <li><i>To ensure that the development of land prioritises the protection of human life and strengthens community resilience to bushfire.</i></li> <li><i>To identify areas where the bushfire hazard warrants bushfire protection measures to be implemented.</i></li> </ul>	<p>Project components located in the BMO include:</p> <ul style="list-style-type: none"> <li>- four wind turbines and associated access tracks and cabling;</li> <li>- one anemometer.</li> </ul>

	<ul style="list-style-type: none"> <li>To ensure development is only permitted where the risk to life and property from bushfire can be reduced to an acceptable level.</li> </ul>	A planning permit is not required for buildings and works associated with a Wind Energy Facility.
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### 5.3.3 Baw Baw

#### Local Planning Policy Framework (LPPF)

The following sections of the MSS and Local Planning Policies of the Baw Baw Planning Scheme are relevant to the Project:

- Clause 21.03-3 (Directions for Growth);
- Clause 21.06 (Natural Environment and Resource Management);
- Clause 21.06-7 (Forestry operations);
- Clause 21.07 (Economic activity);
- Clause 21.08 (Transport and Infrastructure);
- Clause 21.09 (Heritage);
- Clause 22.01 (Rural Zones Policy).

A brief outline of the relevant local planning policies is provided in Appendix B.

#### Relevant Planning Zones and Overlays

The Baw Baw portion of the Project site is affected by the FZ, the Erosion Management Overlay (EMO), the BMO and the Development Contributions Plan Overlay Schedule 1 – ‘Baw Baw Shire Development Contributions Plan’ (DCPO1). The table below provides an overview of each of these controls, their purpose and the relevant permit triggers associated with those components located in the Baw Baw LGA.

Table 5.3: Planning Zones and Overlays Permit Approval Requirements in Baw Baw

Applicable Zones and Overlays	Purpose	Permit triggers
FZ	<ul style="list-style-type: none"> <li>To provide for the use of land for agriculture.</li> <li>To encourage the retention of productive agricultural land.</li> <li>To ensure that non-agricultural uses, including dwellings, do not adversely affect the use of land for agriculture.</li> </ul>	Project components located in the FZ include: <ul style="list-style-type: none"> <li>one wind turbine and associated access tracks and cabling;</li> </ul>



	<ul style="list-style-type: none"> <li>▪ <i>To encourage the retention of employment and population to support rural communities.</i></li> <li>▪ <i>To encourage use and development of land based on comprehensive and sustainable land management practices and infrastructure provision.</i></li> <li>▪ <i>To provide for the use and development of land for the specific purposes identified in a schedule to this zone.</i></li> </ul>	<ul style="list-style-type: none"> <li>- one anemometer.</li> </ul> <p>Pursuant to Clause 35.07-1, planning permission is required for the use of a Wind Energy Facility. The use of a Wind Energy Facility must meet the requirements of Clause 52.32.</p> <p>Pursuant to Clause 35.07-4, planning permission is required for buildings and works associated with a use requiring a permit under Clause 35.07-1.</p> <p>Other permit triggers include buildings and works located:</p> <ul style="list-style-type: none"> <li>- Within 100 metres of a Road Zone Category 1;</li> <li>- Within 20 metres of any other road;</li> <li>- Within 5 metres of a boundary;</li> <li>- Within 100 metres of a designated waterway/ wetland;</li> <li>- Earthworks which change the rate of flow or the discharge point of water across a property boundary;</li> <li>- Earthworks which increase the discharge of saline groundwater.</li> </ul> <p>All wind turbines have a setback of 100 metres or more to any external roads (including paper roads) and property boundaries of land in other ownership and 20 metres or more to waterways/ wetlands on the site (noting that that these are not designated waterways/ wetlands).</p>
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		<p>The proposed works will not result in earthworks that change the rate of flow or the discharge point of water across a boundary or increase the discharge of saline groundwater therefore no permit is triggered in relation to earthworks.</p>
Erosion Management Overlay (EMO)	<ul style="list-style-type: none"> <li>▪ <i>To protect areas prone to erosion, landslip or other land degradation processes, by minimising land disturbance and inappropriate development.</i></li> </ul>	<p>Project components located in the EMO include:</p> <ul style="list-style-type: none"> <li>- one wind turbine and associated access tracks and cabling;</li> <li>- one anemometer.</li> </ul> <p>Pursuant to Clause 44.01-2, planning permission is required for buildings and works, including roadworks, except for works where the natural ground level has a slope less than 20% (1 in 5), where the slope is the average slope of the land measured perpendicular to the contours of the land for a distance of 50 metres either side of the area of the proposed works.</p> <p>Pursuant to Clause 44.01-3, planning permission is also required to remove, destroy or lop any vegetation (except planted). other than exempt vegetation listed at Clause 44.01-4. Included in the exemptions is '<i>Vegetation that is to be removed, destroyed or lopped that was either planted or grown as a result of direct seeding for Crop raising or Grazing animal production</i>'.</p> <p>An application proposing or involving earthworks or native vegetation removal under Clause</p>



		<p>44.01-3 must be referred to the Secretary to the Department of Environment, Land, Water and Planning.</p> <p>No permit requirement for buildings and works is triggered by the EMO as:</p> <ul style="list-style-type: none"> <li>- the turbine and associated works are located on land where the natural ground level has a slope less than 20% (1 in 5).</li> </ul> <p>A permit is triggered for native vegetation removal.</p>
BMO	<ul style="list-style-type: none"> <li>▪ <i>To ensure that the development of land prioritises the protection of human life and strengthens community resilience to bushfire.</i></li> <li>▪ <i>To identify areas where the bushfire hazard warrants bushfire protection measures to be implemented.</i></li> <li>▪ <i>To ensure development is only permitted where the risk to life and property from bushfire can be reduced to an acceptable level.</i></li> </ul>	<p>Project components located in the BMO include:</p> <ul style="list-style-type: none"> <li>- one wind turbine and associated access tracks and cabling;</li> <li>- one anemometer.</li> </ul> <p>A planning permit is not required for buildings and works associated with a Wind Energy Facility.</p>
Development Contributions Plan Overlay Schedule 1 – 'Baw Baw Shire Development Contributions Plan' (DCPO1)	<ul style="list-style-type: none"> <li>▪ <i>To identify areas which require the preparation of a development contributions plan for the purpose of levying contributions for the provision of works, services and facilities before development can commence.</i></li> </ul>	<p>The relevant development contribution must be paid to Council in accordance with the Baw Baw Shire Development Contributions Plan (2007).</p> <p>Project components located in the DCPO include:</p> <ul style="list-style-type: none"> <li>- one wind turbine and associated access tracks and cabling;</li> <li>- one anemometer.</li> </ul> <p>The DCPO is divided into residential, business and industrial land use contributions and the site is in Area 48. Given that the proposed use and</p>

		development does not fall into the 'categories', the appropriate development contribution is to be determined by Council on a case-by-case basis at the time a planning permit is applied for, or at the time a building permit is registered with Council.
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It is noted that although the Project site is not affected by the Significant Landscape Overlay – Schedule 1 'Strzelecki Ranges' (SLO1), it affects land adjacent to the north-west of the site.

### 5.4 Particular Provisions

The particular provisions that apply to the Project are generally consistent across all three LGA's, other than two of the clauses don't apply in Baw Baw due to the limited extent of development in that LGA.

**Table 5.4: Particular Provision permit approval requirements**

Applicable Particular Provisions	Permit Triggers
Clause 52.05 (Signs)	<p>Within the FZ, signage requirements are Category 4. In Category 4 a planning permit is required for a business identification sign and the total display area to each premises must not exceed 3 square metres.</p> <p>In the SUZ1, signage requirements are at Category 3. In Category 3 a business identification sign requires a permit however there is no restrictions on the area.</p> <p>Therefore, a permit is required for the business identification signage proposed for the Project at the Operations and Maintenance Facility which is in the SUZ1. As signage is only proposed in the Latrobe LGA this clause is not relevant to the South Gippsland or Baw Baw components of the Project.</p>
Clause 52.06 (Car Parking)	<p>Clause 52.06-5 includes a table that specifies the number of car parking spaces for particular land uses. Neither a wind energy facility or renewable energy facility is listed. Clause 52.06-6 states that where a car parking requirement for a use isn't listed in the table then car parking must be provided to the satisfaction of the responsible authority.</p> <p>Accordingly, car parking is required to be undertaken to the satisfaction of the responsible authority for the Project.</p>
Clause 52.17 (Native Vegetation)	A planning permit is required for the removal, destruction or lopping of native vegetation, including dead native vegetation.



	<p>A permit for native vegetation removal is required for all three LGA areas that form part of the site.</p>
<p>Clause 52.29 (Land Adjacent to a Road Zone, Category 1, or a Public Acquisition Overlay for a Category 1 Road)</p>	<p>A planning permit is required for the creation and/or alteration of access to a road in a Road Zone, Category 1. Any application to create or alter access to a Road Zone, Category 1, must be referred to the Roads Corporation.</p> <p>There are six locations where works are proposed on the Strzelecki Highway and one on Morwell-Thorpdale Rd (pertaining to either underground cable crossings, temporary alternations to existing intersections, or a major intersection upgrade). Only one of these areas of works, the intersection of Strzelecki Highway and Creamery Rd, results in an alteration of access to a road in a Road Zone. Refer to Figure 5.1 Zoning Plan.</p>
<p>Clause 52.32 (Wind Energy Facility)</p>	<p>A permit is required for the use and development of land for a Wind Energy Facility in all three LGA areas.</p> <p>If turbines are within one kilometre of a dwelling then consent of the landowner must be provided. This does not apply to the current application as all dwellings are more than 1 kilometre from any turbine. Wind energy facilities are prohibited on land included in a schedule in the National Parks Act or land declared as a Ramsar wetland. This does not apply to the proposed wind farm.</p> <p>In the case of the Latrobe Planning Scheme, wind energy facilities are also prohibited on all land within five kilometres of a residential zone, an industrial zone, a business zone or a special purposes zone in the urban areas of Moe, Morwell and Traralgon. The proposed wind farm is located outside this prohibited area. Refer Figure 2.4 Site Analysis which shows the five kilometres 'line'.</p> <p>In the case of the South Gippsland Planning Scheme, wind energy facilities are also prohibited on all land within five kilometres of the high water mark of the coast west of Wilson's Promontory. The proposed wind farm is located outside this prohibited area.</p> <p>The clause includes specific requirements for a mandatory noise assessment including an environmental audit of the pre-construction noise assessment and requirement for a condition on any planning permit issued to undertake a post-construction environmental audit. Clause 52.32-7 states that a permit may be granted to use and develop land for an anemometer for a period of more than three years.</p>

	<p>Policy and Planning Guidelines for Development of Wind Energy Facilities in Victoria, (DELWP), March 2019 are included in the Decision Guidelines of this Clause.</p> <p>The specific requirements of this Clause and the Guidelines are addressed at Section 8.10.</p>
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An assessment against the application requirements and decision guidelines for each relevant Particular Provision is provided in Section 8.11.

### 5.5 General Provisions

Clause 65 (Decision Guidelines) of all three Planning Schemes is of relevance to the Project. The Decision Guidelines are as follows.

- *The matters set out in section 60 of the Act.*
- *The Municipal Planning Strategy and the Planning Policy Framework.*
- *The purpose of the zone, overlay or other provision.*
- *Any matter required to be considered in the zone, overlay or other provision.*
- *The orderly planning of the area.*
- *The effect on the amenity of the area.*
- *The proximity of the land to any public land.*
- *Factors likely to cause or contribute to land degradation, salinity or reduce water quality.*
- *Whether the proposed development is designed to maintain or improve the quality of stormwater within and exiting the site.*
- *The extent and character of native vegetation and the likelihood of its destruction.*
- *Whether native vegetation is to be or can be protected, planted or allowed to regenerate.*
- *The degree of flood, erosion or fire hazard associated with the location of the land and the use, development or management of the land so as to minimise any such hazard.*
- *The adequacy of loading and unloading facilities and any associated amenity, traffic flow and road safety impacts.*

Clause 66 (Referral and Notice Provisions) is also of relevance as it outlines the various authorities that the application will be referred to.



## 5.6 Operational Provisions

Clause 71.02-1 of all three Planning Schemes states that:

*'The Planning Policy Framework seeks to ensure that the objectives of planning in Victoria (as set out in section 4 of the Act) are fostered through appropriate land use and development planning policies and practices that integrate relevant environmental, social and economic factors in the interests of net community benefit and sustainable development'.*

Clause 71.02-2 refers to the operation of the Planning Policy Framework of the Planning Schemes and states that the Responsible Authority must take into account relevant policy guidelines when it makes a decision.

Clause 72.02-3 Integrated Decision Making highlights the following:

*'Planning and responsible authorities should endeavour to integrate the range of planning policies relevant to the issues to be determined and balance conflicting objectives in favour of net community benefit and sustainable development for the benefit of present and future generations. However, in bushfire affected areas, planning and responsible authorities must prioritise the protection of human life over all other policy considerations'.*

Clause 72.01 of the Operating Provisions of all three Planning Schemes identifies that the Minister for Planning is the responsible authority for Renewable energy facilities with an installed capacity of 1 megawatt or greater and for utility installations used to store, transmit or distribute electricity generated by a renewable energy facility with an installed capacity of 1 megawatt or greater'.

Clause 73.03 Land Use Terms is also of relevance to the Project. Relevant Planning Scheme definitions are as follows.

- Energy generation facility (includes renewable energy facility) – *'Land used to generate energy for use off site other than Geothermal energy extraction. It includes any building or other structure or thing used in or in connection with the generation of energy'.*
- Renewable energy facility (which includes wind energy facility) – *'Land used to generate energy using resources that can be rapidly replaced by an ongoing natural process. Renewable energy resources include the sun, wind, the ocean, water flows, organic matter and the earth's heat. It includes any building or other structure or thing used in or in connection with the generation of energy by a renewable resource. It does not include a renewable energy facility principally used to supply energy for an existing use of the land'.*
- Utility installation (which includes minor utility installation) – *'Land used:*
  - a) for telecommunications;*
  - b) to transmit or distribute gas or oil;*
  - c) to transmit, distribute or store power, including battery storage;*
  - d) to collect, treat, transmit, store, or distribute water; or*
  - e) to collect, treat, or dispose of storm or flood water, sewage, or sullage.**It includes any associated flow measurement device or a structure to gauge waterway flow'.*

- *Wind energy facility – ‘Land used to generate electricity by wind force. It includes land used for:*
  - a) any turbine, building or other structure or thing used in or in connection with the generation of electricity by wind force*
  - b) an anemometer.**It does not include turbines principally used to supply electricity for domestic or rural use of the land’.*

## 5.7 Relevant Planning Documents

There are a number of documents referred to policy documents or incorporated in the Latrobe, South Gippsland and Baw Baw Planning Schemes, which are of relevance to the planning considerations of the Project. These include:

- Policy and Planning Guidelines for Development of Wind Energy Facilities in Victoria (March 2019);
- Guidelines for the removal, destruction or lopping of native vegetation (Department of Environment, Land, Water and Planning, 2017);
- West Gippsland Native Vegetation Plan 2003;
- Latrobe Regional Airport Masterplan (2019);
- Gippsland Regional Growth Plan (Department of Transport, Planning and Local Infrastructure, 2014);
- Land Over Coal Buffer Study (1988);
- Latrobe Supply Area Extractive Industry Interest Area Strategy (1999);
- Environmental Guidelines for Major Construction Sites (Environment Protection Authority, February 1996);
- Control of Erosion on Construction Sites (Soil Conservation Authority);
- Building in bushfire-prone areas – CSIRO and Standards (SAA HB36-1993) (May 1993);
- Construction Techniques for Sediment Pollution Control (Environment Protection Authority, May 1991);
- Baw Baw 2050 – Community Vision (Baw Baw Shire Council, 2010);
- Baw Baw Shire Development Contribution Plan (Baw Baw Shire Council, 23 March 2017).

In addition, there are a number of other policy documents of relevance to the Project, however these documents are not reference or incorporated documents within the Latrobe, South Gippsland or Baw Baw Planning Schemes. These documents include:



- Draft National Wind Farm Development Guidelines (Environment Protection and Heritage Council (EPHC), 2010);
- Victorian Greenhouse Strategy Action Plan (DSE, 2005);
- Natural and Environment Sustainability Strategy 2014-2019 (Latrobe City Council, 2014);
- Positioning Latrobe City for a Low Carbon Emission Future (Latrobe City Council, 2010);
- Industrial Employment Strategy (Live Work Latrobe) (Latrobe City Council, 2017)

### **5.8 Summary of Permit Triggers**

In summary, a planning permit is required for the following under the Latrobe Planning Scheme:

- Use of a Wind Energy Facility pursuant to Clause 35.07-1 (FZ1), Clause 37.01-1(SUZ1) and Clause 36.04-1 (RDZ1);
- Buildings and works pursuant to Clause 35.07-4 (FZ1), Clause 37.01-4 (SUZ1), Clause 36.04-2 (RDZ1) and Clause 43.02-2 (DDO1);
- Use and development of a Wind Energy Facility pursuant to Clause 52.32;
- Removal, destruction or lopping of native vegetation, including dead native vegetation, pursuant to Clause 52.17;
- Creation and/or alteration of access to a road in a Road Zone, Category 1, pursuant to Clause 52.29;
- Display of Business identification signage pursuant to Clause 52.05.

Under the South Gippsland Planning Scheme a planning permit is required for the following:

- Use of a Wind Energy Facility pursuant to Clause 35.07-1 (FZ) and RDZ1 (Clause 36.04-1);
- Buildings and works pursuant to Clause 35.07-4 (FZ), Clause 36.04-2 (RDZ1) and Clause 42.01-2 (ESO5);
- Use and development of a Wind Energy Facility pursuant to Clause 52.32;
- Remove, destroy or lop native vegetation including dead vegetation, pursuant to Clauses 42.01-2 (ESO5) and Clause 52.17;
- Creation and/or alteration of access to a road in a Road Zone, Category 1, pursuant to Clause 52.29.

And under the Baw Baw Planning Scheme, a planning permit is required for the following:

- Use of a Wind Energy Facility pursuant to Clause 35.07-1 (FZ);
- Buildings and works pursuant to Clause 35.07-4 (FZ) and Clause 44.01-2 (EMO);
- Use and development of a Wind Energy Facility pursuant to Clause 52.32;
- Remove, destroy or lop native vegetation, including dead vegetation pursuant to Clause 44.01-3 (EMO) and Clause 52.17;

## 5.9 Future Planning Scheme Amendments

### ***Amendment C122 to the Latrobe Planning Scheme***

Amendment C122 to the Latrobe Planning Scheme was exhibited in July 2020, a planning panel was held in November and a Panel Report issued in November 2020. The Amendment was supported by the Panel and Council, and is now with the Minister for Planning for approval.

The Amendment proposes to translate and integrate local planning policies and planning controls into the new Planning Policy Framework (PPF) as part of the Smart Planning Program and to update some zone and overlay provisions to ensure consistency with Ministerial Direction – Form and Content of Planning Schemes. It is primarily a policy neutral translation, apart from some policy changes which implement the strategic work resulting from the Victorian Government's 'Planning in the Economic Growth Zone' project.

The Amendment does not have any implications for this proposal.

### ***Amendment C139 to the Baw Baw Planning Scheme***

Amendment C139 to the Baw Baw Planning Scheme is currently on exhibition until mid-November.

The Amendment proposes to primarily translate local planning policies into the new Planning Policy Framework (PPF) format as part of the Smart Planning Program. It also seeks a limited extent of policy changes including correction of errors and updating local provisions, including planning permit triggers under the Farming Zone – Schedule 1 (FZ1), and introduces new permit exemptions/triggers under the Erosion Management Overlay (EMO).

However, the Amendment will not have any substantive implications on this application. Planning permission will continue to be required under the proposed FZ1 and EMO for the proposal.



## 6.0 SPECIALIST REPORTS - OVERVIEW OF KEY FINDINGS

### 6.1 Introduction

This Chapter provides an overview of the key findings of each of the specialist reports that have been prepared in support of the application. The full reports are included as Appendices.

### 6.2 Biodiversity

The Biodiversity Assessment prepared by Ecology and Heritage Partners Pty Ltd (EHP) describes the potential impacts of the Project on flora and fauna and the proposed mitigation measures that are designed to ensure that the Project results in minimal impacts.

The study area of the Biodiversity Assessment comprised all land within the boundary of the wind farm site, with particular focus on the impact area.

A copy of the Biodiversity Assessment prepared by EHP is contained in Appendix D.

#### 6.2.1 Methodology

The following approach was taken to establish the potential impacts on existing flora and fauna:

- Desktop assessment review of relevant literature, online resources and databases including aerial photography, DELWP NVIM and Naturekit Map tools, previous ecological assessments relevant to the study area, EVC benchmarks for descriptions of EVCs within the Strzelecki Ranges and Gippsland Plain bioregions, the Victorian Biodiversity Atlas, birdline archives, Commonwealth Department of Agriculture, Water and the Environment Protected Matters Search Tool and relevant listings under the FFG Act.
- Consultation with DELWP Gippsland, as well as local stakeholders and landowners as part of five community open days and an information centre.
- Based on the information gathered from the desktop review and consultation, targeted surveys were undertaken in 2018-2020 for significant flora and fauna species considered likely to occur within the study area. The number and type of surveys undertaken and their timeline are detailed in the Biodiversity Assessment, as is further information regarding individual methodologies employed for the specific flora or fauna assessed.

#### 6.2.2 Legislation and Policy

The relevant legislation and government policies for flora and fauna that were considered in the preparation of the assessment comprise the following:

- Environment Protection and Biodiversity Conservation Act 1999;
- Flora and Fauna Guarantee Act 1988;
- Wildlife Act 1975;
- Environment Effects Act 1978;
- Catchment and Land Protection Act 1994;
- Water Act 1989;
- Policy and Planning Guidelines for Development of Wind Energy Facilities in Victoria (March 2019);
- Guidelines for the removal, destruction or lopping of native vegetation (DELWP, 2017) and the Assessor's handbook – applications to remove, destroy or lop native vegetation (DELWP, 2018);
- Latrobe, Baw Baw and South Gippsland Planning Schemes.

### 6.2.3 Existing Conditions

#### Flora

As noted in Section 2.7, the majority of the study area has been cleared of native vegetation with only a small extent of the pre-1750 EVCs remaining within the study area and immediate surrounds.

The Biodiversity Assessment notes that the Darlimurla Forest Block, comprising approximately 320 hectares of remnant vegetation, adjoins the eastern boundary of the study area. The area does not form part of the study area, however, it is noted that there is the potential for mobile fauna (i.e.) birds and mammals, to move between the study area and the forest block via remnant vegetation links and further, while native vegetation within the site predominantly occurs as isolated patches, that some are connected to riparian corridors or vegetation within road reserves or larger areas of forest adjoining the study area.

In terms of native vegetation patches on the site, the Assessment found that a total of 241.04 hectares of native vegetation was mapped within the assessment's study area (defined as the wind farm site in conjunction with the adjoining terminal station site – refer Figure 1 of the assessment). The location of these areas is shown in the mapping contained in the Biodiversity Report at Figures 2a to 2h.

The Assessment found that the native vegetation on the site is broadly consistent with (Pre-1750s) DELWP modelled EVCs for the locality, with Damp Forest (EVC29), Herb-Rich Foothill Forest (EVC23), Lowland Forest (EVC16) and Swamp Scrub (EVC53) aligning with vegetation mapping. In addition, 46.96 hectares of modelled Current Wetland was also found within the study area.



In addition to the native vegetation patches, a total of 379 large trees in patches (excluding Strzelecki Gum) were recorded within or adjacent to proposed impact areas, along with 81 large scattered trees and 41 small scattered trees. The most common species recorded were Mountain Grey Gum, Messmate and Manna Gum.

A total of 178 Strzelecki Gums (*Eucalyptus Strzelecki*), a nationally significant flora species, were also recorded within the study area.

In addition to the native vegetation on the site, a large extent of the study area comprises introduced vegetation as a result of the existing forestry use. This introduced vegetation mostly comprises Pine and Tasmanian Blue Gum that form part of the HVP plantation. Environment weeds such as *Paspalum* and *Cocksfoot* as well as noxious weeds such as *Spear Thistle* and *Blackberry Rubus* were also found throughout the study area.

### Fauna

Looking firstly at birds, the Biodiversity Assessment notes that 75 bird species were recorded on site, comprising 1,947 individuals, during the fixed-point bird counts. The most commonly recorded species were the Australian Magpie (recorded during 62% of surveys), Crimson Rosella (60%) and Grey Fantail (67%). Three generic species (for example, raven species and honeyeater species) and three introduced species (for example blackbird, Indian mynas and starlings) were also recorded.

The Assessment highlights that none of the species recorded are of National, State or regional significance and the majority of birds observed (57%) within the study area were either on the ground or flying below the Rotor Swept Area. A further 42% did not have their height recorded as they were obscured from vision.

No raptors were observed flying in the Rotor Swept Area however raptors are known to occupy the RSA at times. Several raptor species were observed in or near the study area including Black-Shouldered Kite, Wedge-tailed Eagle and Nankeen Kestrel. The Assessment notes that in the case of Wedge-tailed Eagles, whilst not observed at RSA height, they are likely to fly at and above RSA when foraging. Based on the findings of the bird utilisation survey the Assessment states that the wind farm footprint is likely to be within the territory of at least one pair. The Assessment also notes, however, that raptors in general accounted for a low proportion of bird species (less than 1 per cent) recorded within and adjacent to the wind farm site during the bird surveys.

In terms of migratory birds, the Assessment notes that the study area is not considered to be an important habitat for migratory species as defined under the EPBC Act as it does not contain:

- Habitat utilised by a migratory species occasionally or periodically within a region that supports an ecologically significant proportion of the population of the species;
- Habitat utilised by a migratory species which is at the limit of the species range; or
- Habitat within an area where the species is declining.

The main area of suitable habitat for migratory species is located approximately 35 kilometres to the south of the study area in intertidal areas along the coast at Corner Inlet which is a Ramsar wetland site. The proposed development will not impact this Ramsar site or any other Ramsar wetlands.

The Assessment notes that a small number of Latham's Snipe may occupy the study area on an occasional basis, however there is no important or limiting habitat for this species within the study area as they do not typically congregate in large flocks or use the same habitats as many other migratory shorebird species.

The Assessment also confirms that whilst it is a possibility that small numbers of migratory birds may fly over the study area during migration, it has been well-documented that shorebirds typically fly between 0.5 and 6 kilometres in elevation during migration, well above the tip of the proposed turbines. As such, EHP considers that the likelihood of migratory bird mortality through turbine collisions is low and the proposed wind farm is unlikely to have a significant impact on any migratory species.

No significant bat species have previously been recorded within 10 kilometres of the study area and the Assessment confirms that none were detected during the Anabat survey. The Anabat survey did detect five native bat species (all common to the local area), comprising White-striped Freetail Bat, Eastern False Pipistrelle, Gould's Wattled Bat, Chocolate Wattled Bat and Little Forest Bat.

The Assessment also notes that no forest owls were detected, during nocturnal surveys and active searches for pellets, white-wash, prey remains and/or use of hollows across suitable habitats within the study area. Nonetheless, the Assessment considers that there is a moderate to high likelihood that Powerful Owl undertakes foraging and roosting activities within the study area as it is known to occur in nearby areas such as Mirboo North Regional Park.

The Growling Grass Frog (*Litoria raniformis*) is listed as vulnerable under the EPBC Act, threatened under the FFG Act, endangered under the DELWP threatened species advisory list and vulnerable under the Commonwealth Frog Action Plan. Accordingly, a number of surveys were carried out to ascertain whether they are present on the site. During nocturnal surveys, two Growling Grass Frogs were observed near a small pool/creekline in the centre of the study area. A large chorus of Growling Grass Frog was also subsequently heard in a later survey at Luxford Pond in the south west portion of the wind farm site.

The Assessment notes that common bird and mammal species were also recorded during field assessments, camera trappings and spotlighting surveys including the Swamp Wallaby, Koala, Short-beaked Echidna, Common Wombat, Common Brushtail Possum, Sugar Glider, and Common Ring-tailed Possum.

Targeted surveys for the Greater Glider were undertaken in potentially suitable habitat and under suitable survey conditions, however the species was not recorded within the study area.

The Assessment notes that the Morwell River flows south to north, to the east of the study area and a number of wetlands, formed from natural depressions, are present within and surrounding the study area. Artificial wetlands are also present, that have been created by either being dug out or by damming a section of the catchment

The Assessment confirms that the majority of the dams within the study area provide moderate to high quality habitat to a diversity of aquatic fauna, including common native fish species however have limited connectivity to downstream waterways which is likely to restrict the movement of aquatic species.

#### 6.2.4 Significant Flora / Fauna

##### National Significance

Matters of National Environmental Significance (NES) are listed and protected under the EPBC Act. The Assessment confirms that of the significant flora species that were known or predicted to occur within the locality, four were considered to have a low to moderate likelihood of occurrence within the study area:

- Strzelecki Gum (*Eucalyptus strzelecki*);
- River Swamp Wallaby-Grass (*Amphibromus fluitans*);
- Matted Flax-Lily (*Dianella amoena*);
- Dwarf Cypress-pine (*Callitris oblonga*).

Targeted surveys recorded the occurrence of Strzelecki Gum along watercourses and damp areas such as Swampy Woodland and Herb-rich Foothill Forest. None of the other nationally significant flora species were recorded within the study area.

The following nationally significant fauna species were considered to have a high or moderate likelihood of occurring within the study area:

- Growling Grass Frog (*Litoria raniformis*);
- Greater Glider (*Petauroides Volans*);
- Grey-headed Flying-fox (*Pteropus poliocephalus*);
- Southern Brown Bandicoot (*Isodon obesulus obesulus*);
- Dwarf Galaxias (*Galaxiella pusilla*).

As noted in the discussion about existing conditions, of those species, the only one that was detected was a resident Growling Grass Frog population recorded at a pool in the centre of the study area (south of Clarks Road).

The Gippsland Red Gum Grassy Woodland and associated Native Grassland, a nationally listed ecological community, were also predicted to potentially occur within the study area, however, was not found to be present.

### State Significance

One State significant flora species, Yarra Gum, was recorded during the surveys within the study area. No additional State significant flora species were detected within the study area.

The Assessment notes that eleven common flora species listed as 'protected' under the FFG Act were recorded, however they are not listed as State significant species.



Further, no State significant fauna species were recorded within the study area. However, the Assessment highlights that the following species have a moderate or high likelihood of occurrence within the study area:

- Eleven waterbird species – Australasian Shoveler (*Anas rhynchos*), Blue-billed Duck (*Oxyura australis*), Hardhead (*Aythya australis*), Musk Duck (*Bizuria lobata*), Eastern Great Egret (*Ardea modesta*), Freckled Duck (*Stictonetta naevosa*), Lewin's Rail (*Lewinia pectoralis*), Little Bittern (*Ixobrychus minutus dubius*), Intermediate Egret (*Ardea intermedia*), Gull-billed Tern (*Gelochelidon nilotica macrotarsa*) and Little Egret (*Egretta garzetta nigripes*);
- Three diurnal raptor species – White bellied Sea-eagle (*Haliaeetus leucogaster*), Black Falcon (*Falco subniger*) and Grey Goshawk (*Accipiter novaehollandiae*);
- Three nocturnal raptor species – Powerful Owl, Sooty Owl and Masked Owl;
- One swift species – White-throated Needletail (*Hirundapus caudacutus*);
- Two woodland bird species – Hooded Robin (*Melandodryas cucullata*) and White-brown Treecreeper (*Climacteris affinis*);
- Three reptile species – Lace Monitor (*Varanus varius*), Glossy Grass Skink (*Pseudomoia rawlinsoni*) and Swamp Skink (*Lissolepis coventryi*);
- One amphibian species – Southern Toadlet (*Pseudophryne semimarmorata*);
- Four freshwater crayfish species – Gippsland Burrowing Crayfish (*Engaeus hemicirratulus*), South Gippsland Spiny Crayfish (*Euastacus neodiversus*), Strzelecki Burrowing Crayfish (*Engaeus rostrigaleatus*) and Narracan Burrowing Crayfish (*Engaeus phyllocercus*).

## Regional Significance

The Azure Kingfisher (*Alcedo acurea*), Latham's Snipe and Nankeen Night Heron (*Nycticorax caledonicus hillei*), all regionally significant fauna species, were considered to have a moderate to high likelihood of occurring within the study area. There is also potential suitable habitat for other regionally significant fauna, for example the Eastern Long-necked Turtle (*Chelodina longicollis*) within the study area.

### 6.2.5 Assessment of Potential Impacts and Mitigation Measures

#### Removal of Native Vegetation

The Assessment finds that the Project responds to the Guidelines for the removal, destruction or lopping of native vegetation (DELWP, 2017) as it:

- Avoid environmental impacts;
- Minimises impacts; and

- Where impacts cannot be avoided or minimised, compensation will be provided for residual impacts using other mitigation measures such as offsets.

The Assessment notes that the Project initially comprised 53 turbines, which would have resulted in a total of 64.55 hectares of native vegetation potentially being impacted. At the EES referral stage, where 35 turbines were proposed, it was anticipated that up to 15.60 hectares of direct native vegetation loss would result. The extent of native vegetation potentially impacted has now been reduced to a total of 12.344 hectares (including large trees) (refer to Table 6.1). This is as a result of a reduction in the number of turbines (from 53 to 33), along with alternative methods of construction proposed (for example, only expanding existing roads/access tracks on the side of the road without native vegetation). Based on this assessed extent of native vegetation removal, the Project falls under the 'Detailed Assessment Pathway' of the Guidelines

**Table 6.1: Proposed Removal of Native Vegetation**

	Council		
	Baw Baw Shire	Latrobe	South Gippsland
Assessment pathway	Detailed		
Total Extent WEF (ha)	0.083	10.591	1.670
Extent of past removal (ha)	0	0	0
Total Extent of proposed removal (ha)	0.083	10.591	1.670
EVC Conservation Status of vegetation to be removed	Endangered: Aquatic Herbland, Damp Forest, Herb-rich Foothill Forest, Tall Mash, Swampy Woodland, Vulnerable: Lowland Forest		
Large Trees (no.)	0	49	0
Location Category	3		

Based on the extent of removal, the offset requirement for native vegetation removal is:

- 0.375 General Habitat Units (GHU) with a minimum strategic biodiversity value of 0.319;
- 9.492 Strzelecki Gum Species Habitat Units (SHU); and
- 49 large trees.

A summary of the offset requirements for each LGA and the combined offsets for the Project is provided in Table 6.2.

**Table 6.2: Offset Targets**

	Council		
	Baw Baw	Latrobe	South Gippsland
General Offsets Required	0	0.375	0
Vicinity (catchment)	West Gippsland Catchment Management Authority		
Minimum Strategic Biodiversity Value	0.319		
Species Offsets Required	0.067 Strzelecki Gum SHUs	8.050 Strzelecki Gum SHUs	1.375 Strzelecki Gum SHUs
Species Offsets Required (Total)	9.492 Strzelecki Gum SHUs		

Large Trees (no.)	0	49	0
Large Trees (Total)	49 Large Trees are to be protected in either general, species or a combination across all habitat units protected.		

The Assessment identifies that a suitable offset site has been identified adjacent to the Project site (south of Golden Gully Road) where it has the potential to generate approximately 8 Strzelecki Gum SHUs, and the required GHUs and large trees to offset the proposed impacts associated with the Project. Early discussion with the landowner (HVP) indicated that they would consider entering into an agreement with OSMI Australia to assess and establish a biodiversity offset on their site through a Section 69 Agreement under the Conservation, Forests and Lands Act (1987). The residue Strzelecki Gum SHUs are currently available on DELWP's Vegetation Offset Register and can be purchased to satisfy the offsets for the project, when required.

### Impacts to Significant Flora, Fauna and Ecological Communities

As previously noted, the only nationally significant species recorded as part of the targeted surveys undertaken by EHP comprised the Strzelecki Gum and Growling Grass Frog.

The Assessment notes that the siting of the turbines has been carefully located to avoid both direct and indirect impacts to Strzelecki Gum trees and Growling Grass Frog habitat (with the exception of the road widening at Nursery Track where there will be managed localised disturbance – discussed below).

Nursery Track was selected as the preferred creek crossing out of three potential locations (Clarks, Road, Nursery Track and an unnamed existing road in between these two roads) as it completely avoids all Strzelecki Gum. Although Nursery Track crosses the creek and the northern end of the Luxford Pond wetland, EHP concludes that the expansion of the existing dirt road is not likely to impact the existing Growling Grass Frog population.

No additional significant flora species were detected, and if present, any population within the project area is expected to be in very small numbers and potentially represented by only a few individuals. No National or State significant ecological communities were recorded within the study area.

In relation to fauna, the Grey-headed Flying fox and Greater Glider have a high and moderate likelihood of occurring / using habitat resources within the study area, respectively. However, none were present during targeted surveys and the likelihood of any additional significant fauna occurring is considered low due to the absence of suitable habitat. Impacts to migratory species or important habitat listed for migratory species are not expected to occur.

It is noted that the decision by the Minister for Planning in relation to the EES referral for the Project (as discussed in Chapter 4) required further consideration of flora and fauna matters including addressing both the Strzelecki Gum and Growling Grass Frog habitat at Nursery Track via the preparation of an Environment Report and a Flora and Fauna Management Plan. This work was completed and is with the Minister for Planning for approval.

### Direct Fauna Mortality

The Assessment notes that there is the potential for the construction of the Project to result in fauna injury or mortality, either through the removal of suitable habitat, fauna straying into the construction area, accidental entrapment in excavations or vehicle accidents.



Fauna most at risk are fauna that reside in habitats to be removed and that have limited mobility (such as possums, reptiles and amphibians), are dependent young or fauna that stray into a construction area during a quiet time (i.e.) overnight. It is unlikely for fauna to stray into an active construction site during the day.

The Assessment recommends that the removal of any habitat trees or shrubs (particularly hollow-bearing trees) is undertaken under the supervision of an appropriately qualified zoologist to salvage and translocate any displaced fauna. To address this issue, the Assessment suggests it may be appropriate to prepare a Fauna Management Plan to guide the salvage and translocation process.

In response to the conditions associated with the Minister for Planning's decision in relation to the EES referral, a draft Flora and Fauna Management Plan for the Minister's consideration.

### **Loss of Hollow-bearing Trees**

The Assessment highlights that hollow-bearing trees play an important role in providing a breeding / roosting area for a wide range of fauna including the Powerful Owl, Greater Glider and arboreal mammals such as possums.

Based on the proposed layout of the Project, approximately 26 hollow-bearing trees are likely to be impacted. Nonetheless, the Assessment also notes that there are a large number of hollow-bearing trees outside of the impact area across the broader study area and surrounding area.

To minimise impacts, the Assessment recommends that large mature trees with hollows are avoided as much as possible as part of additional micro-siting measures that will be implemented prior to and during construction.

### **Bird Impact Collision**

The potential for collision with wind turbines is the primary focus on the impacts on birds. The Assessment notes that the majority of observations (57%) made during the point counts were of individuals that were either on the ground or flying below the Rotor Swept Area and that all birds observed during the point count surveys were common birds in south-eastern Australia and not listed as a 'species of interest' at the National, State or regional scale.

The Assessment observes that whilst the Powerful Owl and other individuals listed as a 'species of interest' may occasionally fly over the study area (typically below the Rotor Swept Area) between patches of forest it cannot be assumed that all birds observed within the study area will collide with the wind turbines, as birds are known to adapt their behaviour to avoid an obstacle in their flight path.

Keeping that in mind, the Assessment concludes that the Project is unlikely to significantly impact any 'species of interest' that may occupy habitats within the study area. Regardless, it recommends that a Bat and Avifauna Management Plan is prepared as a requirement of any Planning Permit issued to manage/mitigate any potential bird and bat collision.

### **Bat Mortality**

The Assessment notes that bats are known to be susceptible to mortality caused by wind turbines, including being struck by wind turbines and barotrauma caused by changes in pressure produced by rotating turbines. There is also the potential for Bats to be attracted to wind turbines following vortices generated by the blade tips.

It is bat species that fly high that are at the highest risk. The White-striped Freetail Bat, which was identified as being present on the Project Site, is known to fly at heights of 50 metres or above and therefore it is this species that is considered to be at highest risk of blade collisions and barotrauma. The other species identified in the survey work are known to use more open areas and generally fly close to the ground (less than 5 metres high) when in pine plantation areas.

Accordingly, the Assessment concludes that overall, the potential impacts to bats during the operation of the windfarm is expected to be low due to the rotor swept height and the location of turbines within a pine plantation. Nonetheless, the Assessment recommends that a Bat and Avifauna Management Plan is prepared as a requirement of any Planning Permit that issues.

### Other Mitigation Measures

In addition to the above, other Best Practice mitigation measures recommended by the Biodiversity Assessment include (but are not limited to):

- The requirement for all contractors to be inducted in relation to all ecologically sensitive areas;
- The potential opportunity to further minimise impacts to native vegetation through construction and micro-siting techniques including fencing retained areas of native vegetation;
- The implementation of Tree Retention Zones (TRZ) in accordance with the detailed requirements outlined in the Assessment;
- Removal of any habitat trees or shrubs (particularly hollow bearing trees) under the supervision of an appropriately qualified zoologist to salvage and translocate any displaced fauna;
- Where practical, for construction stockpiles, machinery and other infrastructure equipment to be placed away from areas supporting native vegetation, large trees and/or wetlands;
- The requirement for an environmental audit process to be in place during construction works.

Require all chemicals on site to be correctly banded and stored and ensure that best practice sedimentation and pollution control measures are in place.

- Given indigenous flora provides habitat for indigenous fauna, to undertake any landscape plantings using indigenous species.

The Biodiversity Assessment identifies the need for a detailed Environmental Management Plan, including a Flora and Fauna Management Plan, to be prepared which is expected to be required via any planning permit that issues. In addition, a Bat and Avifauna Management Plan is also expected to be required.

### 6.2.6 Further Actions

Based on the findings of the Biodiversity Assessment, the following actions were identified under the relevant Acts:

**Table 6.3: Actions based on findings of the biodiversity assessment**

Relevant Legislation	Implications	Action
Environment Protection and Biodiversity Conservation Act 1999	Due to the presence of significant species (Strzelecki Gum and Growling Grass Grog) identified within the study area, an EPBC Act referral was submitted to the Commonwealth. The proposed action was deemed 'not a controlled action' by the Minister on 17 July 2020.	No further action required
Environment Effects Act 1978	A referral under the EE Act was submitted to determine whether the proposed development will trigger the requirement for an Environmental Effects Statement. The Minister for Planning determined that an EES is not required for the project, subject to conditions.	Address EES conditions
Flora and Fauna Guarantee Act 1988	Field surveys recorded one 'listed' flora species (Strzelecki Gum) and several species listed as 'protected' species under the FFG Act. There are no proposed impacts to Strzelecki Gum. A permit under the FFG Act will be required for 'protected' species proposed to be impacted to facilitate access and egress to the site via public roads.	Prepare and submit a FFG Act Permit application
Planning and Environment Act 1987	A Planning Permit from the Minister for Planning under Clause 52.17 to remove any native vegetation within the project footprint. A permit will also be required under Clause 42.01 (ESO5) and Clause 52.32.	Prepare and submit Planning Permit application
Catchment and Land Protection Act 1994	Several weed species listed under the CaLP Act were recorded within the study area. To meet requirements under the CaLP Act, listed noxious weeds should be appropriately controlled throughout the study area.	Manage the risk of introducing and spreading weeds/pests during construction
Wildlife Act 1975	Any persons engaged to conduct salvage and translocation or general handling of terrestrial fauna species must hold a current Management Authorisation.	Ensure wildlife specialists hold a current Management Authorisation.



### 6.3 Geotech, Potential Contamination and Hydrogeology

This section describes the potential impacts of the Project in relation to geotechnical, contamination and hydrogeological issues and any proposed mitigation measures designed to ensure any potential adverse impacts are minimised.

A copy of the Desktop Assessment of Potential Geotechnical, Contaminated Land and Hydrogeological Impacts prepared by Golder Associates Pty Ltd is contained in Appendix E.

#### 6.3.1 Methodology

The methodology for the *Desktop Assessment* included:

- Review of historical photographs;
- Review of the EPA database;
- Review of published geological information, including information on the Department of Economic Development, Jobs, Transport and Resources (DEDJTR) 'GeoVic' and the Visualising Victoria's Groundwater (VVG) websites;
- Site inspection including interviewing a representative of Kennedy Haulage quarries and site visit to the quarry to view rock and soil exposures within existing quarries; and
- Review of results of boreholes drilled as part of Kennedy Haulage's resource exploration for the quarry.

No specific testing or investigation of the properties of materials was conducted. The Assessment notes that geological and landform descriptions and assessments of the processes are either qualitative or based on previous studies sourced from literature, supplemented by non-invasive field inspection.

#### 6.3.2 Legislation and Policy

Legislation and government policies that are relevant to the desktop assessment include the following:

- Environment Protection Act 1970;
- Water Act 1989;
- EPA Victoria Publication – Construction Techniques for Sediment Pollution Control, May 1991;
- Environment Guidelines for Major Construction Sites (EPA Victoria, February 1996);
- Control of Erosion on Construction sites, Soil Conservation Authority;
- Policy and Planning Guidelines for Development of Wind Energy Facilities in Victoria (DELWP, 2019)
- Latrobe, Baw Baw and South Gippsland Planning Schemes.

### 6.3.3 Geological and Hydrological Existing Conditions

The Assessment highlights that most of the terrain on which the wind farm development is proposed is an incised plateau, with low angle slopes at higher elevations and relatively steep slopes in the vicinity of water courses. The proposed wind farm straddles a surface water divide, draining towards the north-west and south-east.

The Assessment notes that the project area is mostly used for forestry and comprises a mixture of vegetated and recently cleared forestry areas with some adjacent open paddocks. The existing quarry located near the centre of the Project area is highlighted, and the basalt materials which are mined there to produce crushed rock and select fill products. The Assessment also notes the Strzelecki Highway passing through the site and that access within the site is currently provided by unsealed logging tracks off the Strzelecki Highway. The location of several minor water courses within the area is also noted, including Silver Creek and Stony Creek which are tributaries of the Morwell River to the east of the site.

### 6.3.4 Assessment of Potential Impacts and Mitigation Measures

#### ***Erosion and Landslip***

As discussed briefly in Section 2.5, most of the proposed wind turbine locations are underlain by the Thorpdale Volcanics geological unit. The Assessment identifies that upper portions of the Thorpdale Volcanics are typically deeply weathered to a red-brown high plasticity clay (residual soils), which is characteristic of the Thorpdale area, and which is susceptible to volume changes in response to moisture changes. The Assessment considers that the clay is expected to be underlain by basalt rock, however notes that the depth to basalt can be highly variable.

The Assessment notes that none of the wind turbine locations are proposed within areas that have been identified as susceptible to landslide and that, further, based on the low prevalence of erosion observed across the site, the susceptibility of the Thorpdale Volcanics to erosion is assessed to be low. In addition, most of the area is vegetated which significantly reduces the susceptibility to erosion.

The Assessment highlights that where vegetation clearance is required as part of the wind turbine construction, it is expected that erosion can be reasonably managed through normal construction and slope maintenance processes implemented in accordance with the following guidelines:

- EPA Victoria Publication – Construction Techniques for Sediment Pollution Control, May 1991;
- Environment Guidelines for Major Construction Sites (EPA Victoria, February 1996);
- Control of Erosion on Construction sites, Soil Conservation Authority.

#### ***Surface water including catchments, rivers and waterways***

The Assessment highlights that the Narracan Creek catchment area is located within 1.2 kilometres of the western site boundary and that the proposed wind turbine layout does not appear to directly impact upon surface water drainage courses of declared water supply catchment areas. Drainage from the site is towards the north-west or south-east toward the Morwell River, generally away from the Narracan Creek catchment.

The Assessment notes that if uncontrolled erosion and sediment run-off is allowed to occur at the wind turbine sites, it is conceivable that sediment run-off could impact upon surface water. However, the Assessment highlights that the flow length for sediment to reach water courses from the proposed wind turbine locations is long, typically 100m or more. Accordingly, it concludes that with normal erosion control measures implemented in accordance with the relevant guidelines, erosion impact to surface water courses will be negligible.

#### **Groundwater**

The Assessment notes that depth to groundwater is expected to generally be more than 10 metres below ground surface. Excavations for wind turbine foundations are expected to be less than approximately 5 metres in depth and therefore are not expected to encounter groundwater, although a borehole investigation will be required at specific wind turbine locations in order to confirm this.

In addition, the Assessment notes that there are existing groundwater wells within the vicinity of the project area from which groundwater is extracted, including for agriculture and for quarrying operations at the Driffield Quarry.

It is not known at this stage whether groundwater extraction will be undertaken to provide a water source for this project. Accordingly, the Assessment identifies that if groundwater extraction is proposed, further detailed assessment will be required at the specific well location proposed to assess the groundwater yields that could be achieved and the potential impact to groundwater systems and surface water receptors.

#### **Stone resources**

As previously noted, the operations at the Driffield Quarry extract rock and soil from the Thorpdale Volcanics geological unit. The Assessment observes that exploration boreholes provided by Kennedy Quarry indicates that there are potentially stone resources underlying the location of wind turbine T08. The Assessment did not identify stone resources elsewhere within the Project site.

#### **Natural hazards**

The Assessment identifies that, other than landslide, the only natural hazard identified for the geotechnical desk top study that could feasibly impact upon the project is earthquake and that the Thorpdale area has a history of low magnitude earthquakes with earthquakes up to Magnitude 5.4 having occurred within approximately 3 kilometres of the site based on indicators on the GeoVic website.

However, the Assessment highlights that the effects on structures of earthquakes of this magnitude are typically mitigated through engineering design using the methods set out in AS1107.4-2007 'Structural design actions Part 4: Earthquake actions in Australia'.

#### **Dry land salinity**

The Assessment observes that an increase in the salt content within soils (dry land salinity) affects some areas of Australia and that it occurs as a result of groundwater rising to near surface levels. Some soils have a naturally high salt content and groundwater rise can leach salts from within the soil, depositing them at higher levels, which can impact vegetation. Evaporation of groundwater can occur where groundwater is shallow, or



discharging, which can concentrate salt in the soil if groundwater is saline. Groundwater rise can be triggered by the removal of vegetation and typically affects areas that have been cleared for agricultural purposes.

The Assessment concludes that the proposed wind farm area has a very low susceptibility to dry land salinity given the following.

- The Thorpdale Volcanics that covers most of the site is derived from volcanic eruption which has a low sodium and potassium content.
- The project does not involve widespread vegetation clearance of the type that is known to trigger groundwater rise.
- Groundwater in the areas where the wind turbines are proposed is likely to be more than 10m deep, and construction is not proposed in areas likely to receive groundwater discharge.
- The proposed wind farm is not within a designated salinity province, with the nearest salinity province located at the Moe Basin. Based on the (then) Victorian Department of Environment and Primary Industries (now Agriculture Victoria), there are no recorded instances of land salinity within the Moe Basin Salinity Province.
- Notably, no Salinity Management Overlay applies to the site.

### ***Soil and groundwater contamination***

The review of historical information as part of the Assessment has indicated that the risk of potential contamination of soil is likely to be low with a localised risk in the immediate vicinity of dwellings, farm sheds and other disturbed areas. The Assessment notes that as the wind farm development is not expected to involve construction near existing areas of residential or agricultural infrastructure, the overall risk of soil contamination to the project is considered to be low. Further, assuming the adoption of good construction practices such as erosion protection, erosion of cut and fill batters is not considered to be a significant issue for the proposed wind farm development taking into account the shallow site slopes.

Subsequently, the Assessment concludes that the potential for contaminant migration, if present at all, is very low and in the unlikely event that contaminated soil is encountered, it may be disposed of off-site at a facility licensed to accept the waste.

### ***Acid sulfate soils***

The Assessment identifies that that CSIRO Acid Sulfate Soils Probability map indicates generally a "low probability of occurrence" to "extremely low probability of occurrence" of acid sulfate soils in the vicinity of the site. Localised areas of "high probability of occurrence" are present in the vicinity of the site, but are located near waterbodies outside of the extent of the proposed development. Accordingly, as none of the wind turbine sites are located within potential acid sulfate soils, no potential acid sulfate soils are expected to be impacted by the project. The Assessment also highlights that volcanic soils such as those of the Thorpdale Volcanics are also not expected to be potential acid sulfate soils.

### 6.3.5 Further Actions

The Assessment identifies that if groundwater extraction on the site is proposed, further detailed assessment will be required at the specific well location proposed to assess the groundwater yields that could be achieved and the potential impact to groundwater systems and surface water receptors. The use of groundwater will then require application for a 'take and use' licence under the Water Act 1989.

## 6.4 Landscape and Visual Impact

The Landscape and Visual Impact Assessment prepared by Jacobs assesses the potential visual and landscape impacts on the public realm within the study area and private residential dwellings within 6 kilometres of a wind turbine.

The study area is based on the extent of viewshed (28.6 kilometres from wind turbines), which is the distance at which the proposed wind turbines (the largest component of the Project) have the potential to be readily perceptible in views. This distance is calculated based upon the horizontal and vertical parameters of the human vision. It may be possible to see the wind turbines from areas beyond the viewshed, however they would be at a distance where they would not be conspicuous.

A copy of the Landscape and Visual Impact Assessment and an addendum report prepared by Jacobs is contained in Appendix F.

### 6.4.1 Methodology

The following approach was taken to establish the potential visual impacts and impacts on the existing landscape:

- Identification of components that have the potential to contribute to views and visual impact;
- Define the Project's viewshed extent (distance at which the resulting visual changes may no longer meaningfully contribute to views based on parameters of the human vision). The viewshed is used to define the study area;
- Establishment of the Zones of Visual Influence, a measure to assess the potential visual dominance of the Project on a landscape (based on the same principles used in the viewshed study);
- Identification of relevant planning policies that apply to areas within the viewshed that may have implications on views, landscape sensitivity and visual impact;
- Assignment of landscape quality and sensitivity based on existing physical characteristics, land use, and relevant planning controls/policies to understand a particular landscape's sensitivity to visual change;
- Utilisation of Seen Area Analysis (SAA) to determine areas of theoretical visibility based only on topographical data (the SAA is a conservative model and does not take into account other factors that may affect visibility including intervening vegetation and other built form/structures);

- Preparation of photomontages, computer modelling, virtual reality and augmented reality at key public and private locations to assist with visualisation; and
- Assessment of effectiveness of potential mitigation measures such as re-siting of turbines and vegetation screening.

#### **6.4.2 Legislation and Policy**

The relevant legislation and government policies for landscape and visual impact that were considered in the preparation of the assessment comprise the following:

- Policy and Planning Guidelines for Wind Energy Facilities in Victoria (March 2019); and
- Latrobe, Baw Baw and South Gippsland Planning Schemes, in particular planning controls/policies relating to views, landscape sensitivity and visual impact.

#### **6.4.3 Existing Conditions**

The study area / viewshed forms part of the Strzelecki Ranges, comprising rolling hills ranging in elevation from 25 metres to 740 metres. Vegetation within the viewshed is varied and includes pine plantation in the immediate vicinity of the site, natural forested areas, roadside vegetation, windbreak/buffer planting within wind farm areas and garden planting around residences.

Areas of visual / landscape sensitivity within the study area / viewshed includes:

- Land within the Public Conservation and Resource Zone (PCRZ), General Residential Zone (GRZ), Rural Living Zone (RLZ), and open space areas within the Public Park and Recreation Zone (PPRZ). It is noted that the majority of land within the viewshed is zoned Farming Zone (FZ) and Special Use Zone – Schedule 1 (SUZ1) which are not considered to be sensitive areas;
- The Bull Beef Creek Nature Conservation Reserve, Moondarra State Park and Tyers Park; and
- Residential properties, including within townships and rural living.

It is noted that SLO1 within the Baw Baw Planning Scheme affects areas within the viewshed. The overlay seeks to protect the landscape of the Strzelecki Range and the rural landscape from insensitively designed development and to protect them and the surrounding landscapes from visual intrusion and inappropriate development.

SLO3 of the South Gippsland Planning Scheme and various ESOs are also within the viewshed, however there were no particular landscape / visual values identified in the purpose and objective of these overlays.

#### **6.4.4 Potential Impacts and Mitigation Measures**

##### ***Landscape Types and Sensitivity***



The Assessment identifies that there are six different landscape unit types in the area surrounding the proposed Delburn Wind Farm which have been assessed based on land use, topography and vegetation. The Assessment considers the landscape sensitivity of these units, where sensitivity is in part a measure of the ability of a landscape to absorb visual change based on attributes of a particular landscape. The Assessment highlights that sensitivity depends upon several attributes including: location, the rarity of a particular landscape and the scenic qualities of a particular landscape.

The six identified landscape units and their associated sensitivity rating are summarised in the Table below. The Assessment notes that the landscape units and sensitivity ratings then form the basis of the visual impact of views from publicly accessible locations. In addition, it highlights that landscape sensitivity from individual residential properties will always be assessed as 'high' as for a resident, their home will always be a highly sensitive location and disturbances to a resident's views must always be considered to have the highest degree of sensitivity.

**Table 6.4: Landscape Unit Sensitivities**

Landscape Unit	Sensitivity
Unit 1a - Townships	Moderate - Built form and other visual elements reduce the visual sensitivity of these areas. However, as these are urban areas with many houses, the landscape sensitivity is rated medium.
Unit 1b – Rural Residential	Moderate-High - While these areas are valued for their 'natural-appearing' or rural landscape amenity, they have modified landscapes within zones that are set aside for rural related industries such as farming or extractive resources, and thus inherently contain land uses with potential off-site amenity impacts.
Unit 2a – Cleared Flat Farmland	Low – Highly modified, contains visible infrastructure, is not topographically dramatic and does not contain large bodies of water.
Unit 2b – Cleared hilly farmland	Low to Moderate – Highly modified, by way of clearing of native vegetation. The intersection of rolling hills deeply incised valleys provides for a diversity of framing of views that are either closed and confined or reveal longer views across the valley floor and to the elevated hills in the distance.
Unit 3 – Industrial/Mining	Low - Highly modified landscape.
Unit 4a - Forested Hills (Natural)	Moderate to High - This landscape is attractive as it contains areas that appear pristine.
Unit 4b – Forested Hills (plantation)	Low to Moderate - This landscape is attractive when vegetated. This landscape is European in appearance and regularly modified through timber harvesting.
Unit 5 – Lakes and Waterways	High
Unit 6 – National and State Parks	High - This landscape is attractive as it contains areas that are and appear pristine. Encroaching development into this landscape type has increased the rarity of this landscape.

### Seen Area Analysis

The Seen Area Analysis (SAA) is a theoretical model that analyses the visibility of the wind turbines based solely on the topography of the surrounding landscape. It is a conservative model as it does not include features such as vegetation, buildings or structures that assist to screen or filter views. The results of the SAA (based on areas where the blade swept path, nacelle and above may be visible) is provided in Figure 6.1 following.

It is clear from Figure 6.1 that areas with the greatest potential for visibility of the wind turbines are to the north-east and east. Land located within these areas is predominantly zoned SUZ1 and comprises large open cut coal mines that are either operating or in the process of being decommissioned. The SAA highlights the dynamic and undulating nature of the topography to the west and south of the Project site which assists with limiting views.

The results of the SAA form the basis of the key viewpoints selection for further detailed analysis.

### Impacts on Publicly Accessible Viewpoints

The Assessment highlights that the consideration of the visual impact of a wind farm development from the public domain is based upon four criteria, namely visibility, distance, landscape character and viewer numbers. It is noted that the assessment of overall visual impact from a publicly accessible viewpoint is based on the following scale of effects:

- *Nil – The project will be screened by topography, vegetation or buildings and structures.*
- *Negligible – minute level of effect that is barely discernible over ordinary day-to-day effects. The assessment of a 'negligible' level of visual impact is usually based on distance. That is, the wind farm is at such a distance that, when visible in good weather, it would be a minute element in the view within a modified landscape or will be predominantly screened by intervening topography, vegetation or buildings and structures.*
- *Low – Visual impacts are those where the Project is noticeable but that will not cause significant adverse impacts. The assessment of a "low" level of visual impact will be arrived at if the rating of any one or more of the four criteria (visibility, distance, viewer numbers and landscape sensitivity) are assessed as low. Therefore, an additional piece of infrastructure in a landscape which is modified, and which already contains many examples of existing infrastructure may be rated as a low level of visual impact.*
- *Medium / Moderate – visual impact may occur when several of the four assessment criteria are considered as higher than "low" or the visual effects can be mitigated/remedied from an initial rating of High. This will be moderated by the context of the existing view and the modifications within the landscape.*
- *High or unacceptable adverse effect – extensive adverse effects that cannot be avoided, remedied or mitigated. The assessment of a "high or unacceptable adverse effect" from a publicly accessible viewpoint requires the assessment of all criteria to be high. For example, a highly sensitive landscape, viewed by many people, with the proposed wind farm in close proximity and largely visible would lead to an assessment of an unacceptable adverse effect.*





In the Assessment, visual and landscape impacts on the public realm have been broken down to impacts on:

- *Freeways*
- *Highways and tourist routes;*
- *Major roads;*
- *Local roads;*
- *Townships;*
- *Recreational trails, parks and elevated lookouts.*

A summary of the Assessment of each of the above elements is provided below.

## **Freeways**

Princes Freeway is located to the north of the Project site. The Assessment nominates four (4) viewpoints as representative of views from the freeway (refer to Figure 6.2), with the four selected viewpoints demonstrating the range of views afforded from the Princes Freeway.



Figure 6.2: Viewpoints from Freeways (Source: Landscape and Visual Impact Assessment, Jacobs, 10 December 2020)

A summary of the assessment of the viewpoints is provided in Table 6.5.

Table 6.5: Summary of the Visual Impact From Freeway Viewpoints (Source: Landscape and Visual Impact Assessment, Jacobs, 10 December 2020)

Viewpoint	Location	Nearest Turbine	Visual Impact
F1	Princes Freeway	10.3km SW (T01)	Negligible
F2	Princes Freeway / Tramway Road	13.6km SW (T01)	Negligible
F3	Princes Freeway / Strzelecki Highway	8.8km SW (T01)	Low-Negligible
F4	Princes Freeway / Old Gippsland Road	8.4km SE (T03)	Negligible-Nil

The overall visual impact on views from Princes Highway is considered to be negligible, as views would be generally from a distance where they would not be visually dominant or over modified landscapes with low visual value or sensitivity. Views from Princes Freeway range from clear open views over existing open-cut coal mines and those transitioning to closure, to views where breaks in topography and vegetation allow longer views beyond the roadway. The Assessment notes that views from the freeway would be at approximately 100km per hour, typically oblique to the direction of travel.

Views from locations in closer proximity to the Project site will either be filtered by roadside vegetation and vegetation on the elevated hills to the north of the wind farm or are completely screened by topography and vegetation.

### Highways and Tourist Routes

The Assessment identifies eleven (11) viewpoints for further analysis along Strzelecki Highway and Grand Ridge Road (refer to Figure 6.3).

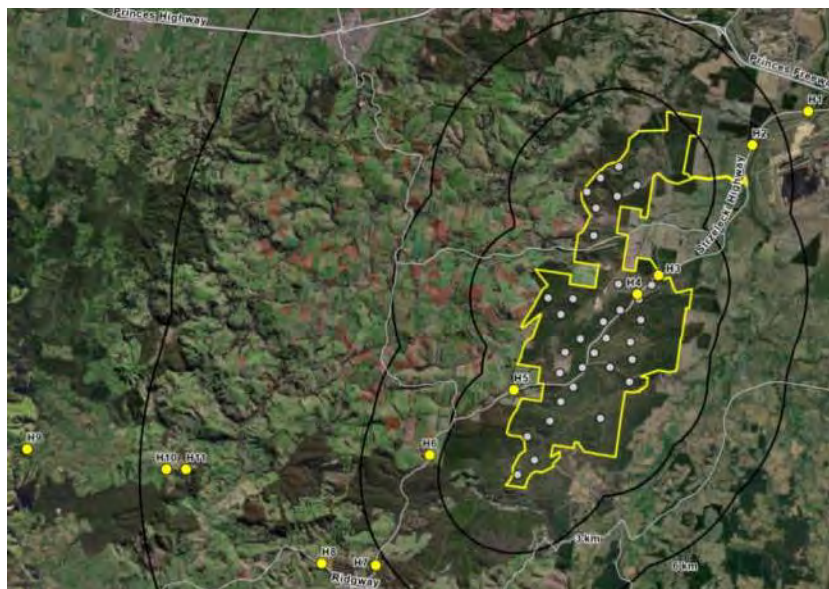


Figure 6.3: Viewpoints from Highways and Tourist Routes (Source: Landscape and Visual Impact Assessment, Jacobs, 10 December 2020)

A summary of the assessment of the viewpoints is provided in Table 6.6.

Table 6.6: Summary of the Visual Impact From Highways and Tourist Route Viewpoints (Source: Landscape and Visual Impact Assessment, Jacobs, 10 December 2020)

Viewpoint	Location	Nearest Turbine	Visual Impact
H1	Strzelecki Highway	7.1km SW (T01)	Low-Negligible
H2	Strzelecki Highway	4.7km SW (T01)	Low
H3	Strzelecki Highway	460m SW (T16)	Low-Moderate
H4	Strzelecki Highway	200m SE (T15)	Low
H5	Strzelecki Highway	1.8km SE (T28)	Low-Moderate
H6	Strzelecki Highway	3.4km E (T33)	Low
H7	Strzelecki Highway	6.5km NE (T33)	Low
H8	Strzelecki Highway	8.3km NE (T33)	Low-Negligible
H9	Grand Ridge Road	18.9km E (T33)	Negligible
H10	Grand Ridge Road	13.5km E (T33)	Negligible
H11	Grand Ridge Road	12.8km E (T33)	Negligible

Overall, the Assessment concludes that the visual impact of the Project from tourist routes and highways is considered to be low as the majority of views towards the Project is limited by roadside vegetation, plantation areas and adjoining farming properties as well as screening afforded by nearby and surrounding properties (refer to Figure 6.4 as an example).

The Assessment notes that when travelling south, views from the Strzelecki Highway will be diverse and range from open clear views which may include several turbines, to large sections encapsulated by roadside vegetation, and extensive timber plantations beyond. When travelling north, long-range views will include turbines, views of Mt Baw Baw and the national park to the north as well as high-voltage transmission lines and timber plantations.



Figure 6.4: Example of an Existing View Looking East from Viewpoint H4 (Source: Landscape and Visual Impact Assessment, Jacobs, 10 December 2020)

### Major Roads

The Assessment identifies fifteen (15) viewpoints for further analysis along major roads within the viewshed, which includes Hazelwood Road and Monash Way to the east, and the Morwell-Thorpdale Road running through part of the northern end of the site (refer to Figure 6.5).





Figure 6.5: Viewpoints from Major Roads (Source: Landscape and Visual Impact Assessment, Jacobs, 10 December 2020)

A summary of the assessment of the viewpoints is provided in Table 6.7.

Table 6.7: Summary of the Visual Impact from Major Road Viewpoints (Source: Landscape and Visual Impact Assessment, Jacobs, 10 December 2020)

Viewpoint	Location	Nearest Turbine	Visual Impact
M1	Brown-Coalmine Road	14.3km SW (T03)	Low-Negligible
M2	Hazelwood Road	19.2km SW (T01)	Negligible
M3	Monash Way	7.4km W (T18)	Low-Moderate
M4	Monash Way – Yinnar Road	3.9km NW (T19)	Low
M5	Monash Way / Budgerie Road	4.5km NW (T29)	Low-Negligible
M6	Monash Way	4.8km NW (T29)	Low
M7	Foster Road	5.9km NW (T32)	Low
M8	Foster Road	8.8km NW (T33)	Low
M9	Boolarra – Mirboo North Road	2.9km NW (T33)	Low-Moderate
M10	Boolarra South – Mirboo North Road	9.4km N (T33)	Low
M11	Mardan Road	12.1km NE (T33)	Low
M12	Mirboo North – Trafalgar Road	6.2km SE (T31)	Low-Moderate

M13	Morwell – Thorpdale Road	2.6km SE (T24)	Low-Moderate
M14	Trafalgar – Thorpdale Road	8.0km E (T05)	Low-Moderate
M15	Morwell – Thorpdale Road	1.6km NW (T01)	Moderate

Overall, the Assessment concludes that the visual impact of the Project from major roads is considered to be low-moderate as the majority of views towards the Project are limited by roadside vegetation, plantation areas, and adjoining farming properties and screening afforded by nearby and surrounding topography (refer to Figure 6.6 as one example). The Assessment notes that the roads are primarily used by local residents and have a moderate number of road users and highlights that major roads throughout the viewshed vary from open clear views to the Project site, to undulating topography that filters views towards the Project.



Figure 6.6: Example of an Existing View Looking East from Viewpoint M9 (Source: Landscape and Visual Impact Assessment, Jacobs, 10 December 2020)

### Local Roads

The Assessment identifies twenty-four (24) viewpoints for further analysis along local roads. The viewpoint locations are from a range of distances and viewing angles towards the Project (refer to Figure 6.7).



Figure 6.7: Viewpoints from Local Roads (Source: Landscape and Visual Impact Assessment, Jacobs, 10 December 2020)

A summary of the assessment of the viewpoints is provided in Table 6.8.

**Table 6.8: Summary of the Visual Impact from Local Road Viewpoints** (Source: Landscape and Visual Impact Assessment, Jacobs, 10 December 2020)

Viewpoint	Location	Nearest Turbine	Visual Impact
L1	Haunted Hills Road	6.5km SW (T03)	Low-Negligible
L2	Jeeralang North Road	17.6km W (T16)	Negligible
L3	Red Hill Road	24.4km NW (T19)	Negligible
L4	Jumbuk Road	10.4km NW (T19)	Negligible
L5	Hazelwood Estate / Walshs Road	7.3km NW (T16)	Low
L6	Yinnar-Driffield Road	2.9km SW (T16)	Low
L7	Creamery Road	2.3km W (T18)	Low-Moderate
L8	Vaggs Road	3.2km W (T29)	Low
L9	Nuttalls Road	2.9km NW (T19)	Low
L10	Bunderra Drive	2.6km NW (T32)	Low
L11	Darlimurla Road	2.7km NW (T29)	Low- Negligible
L12	Darlimurla Road	2.0km NW (T32)	Low- Negligible
L13	McIntoshs Road	2.3km NW (T29)	Low- Negligible
L14	Todds Road	1.4km W (T32)	Low
L15	Darlimurla Road	1.7km NE (T33)	Negligible- Nil
L16	Ten Mile Creek Road	1.6km E (T21)	Low
L17	McDonalds Track	5.3km NE (T24)	Low
L18	McDonalds Track	10.4km NE (T24)	Low
L19	Childers-Thorpdale Road	8.4km E (T24)	Low
L20	Narracan Connection Road	5.0km E (T05)	Low
L21	McDonalds Track	2.6km SE (T24)	Low-Moderate
L22	Sayers Track	3.0km SW (T03)	Negligible- Nil
L23	McDonalds Track	2.8km SW (T03)	Negligible
L24	Moe South Road	5.4km SE (T04)	Low-Negligible

The Assessment concludes that overall, the visual impact from local roads is considered to be low, taking into consideration the low viewer numbers, limited landscape sensitivity, as well as availability and duration of views. This is supported by imagery, photomontages and virtual reality imagery (refer to one example in Figure 6.8) which shows a still capture in the animated virtual reality scene from Viewpoint L21 (of low-moderate impact).





Figure 6.8: 78 McDonalds Track Still Capture (Source: Ignition Immersive Studios Virtual Reality Scene) (Source: Landscape and Visual Impact Assessment, Jacobs, 10 December 2020)

The Assessment notes that views and visibility of the proposed turbines from local roads vary greatly, depending on location and proximity to the Project. The local road network is located within a varying landscape ranging from views over cleared flat farmland where long views are available across the valley floor and plain, through to confined views from the folding landscape of vegetated undulating hills.

### ***Townships***

The Assessment identifies twelve (12) townships within the viewshed (refer to Figure 6.9).

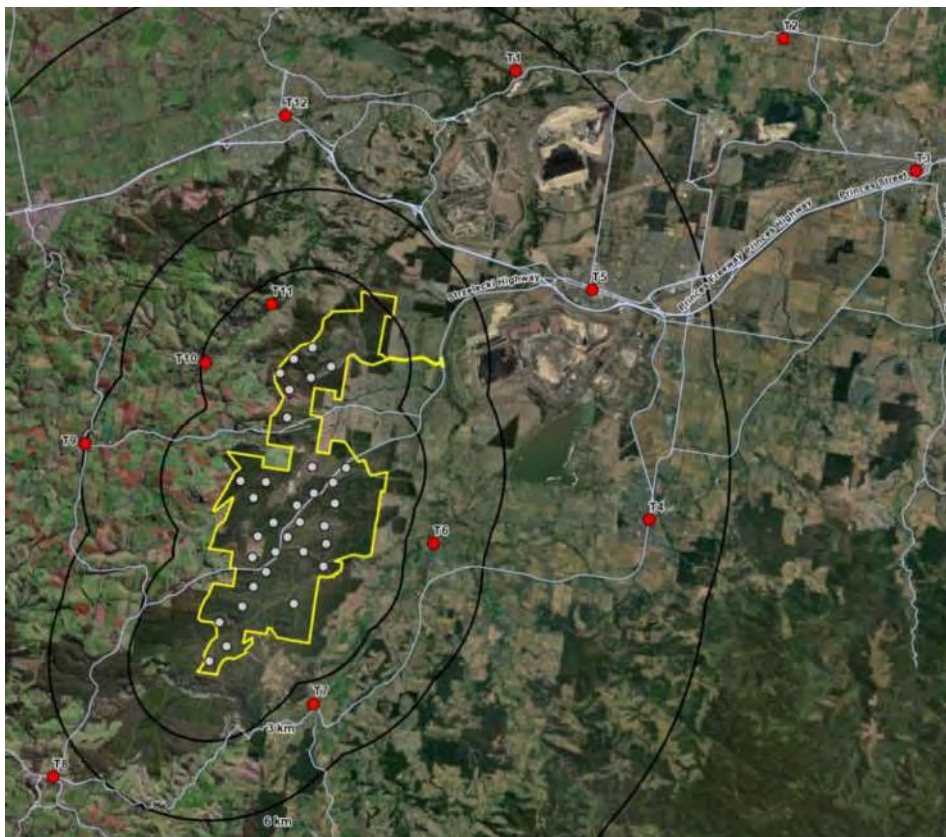


Figure 6.9: Viewpoints from Townships (Source: Landscape and Visual Impact Assessment, Jacobs, 10 December 2020)

A summary of the assessment of the viewpoints is provided in Table 6.9.

Table 6.9: Summary of the Visual Impact from Township Viewpoints (Source: Landscape and Visual Impact Assessment, Jacobs, 10 December 2020)

Viewpoint	Location	Nearest Turbine	Visual Impact
T1	Yallourn	13km SW (T03)	Negligible-Nil
T2	Tyers	21km SW (T01)	Negligible
T3	Traralgon	23km SW (T01)	Negligible
T4	Churchill	11.6km W (T16)	Negligible
T5	Morwell	10.2km SW (T01)	Negligible
T6	Yinnar	4.0km W (T14)	Low
T7	Boolarra	3.8km NW (T29)	Low-Negligible
T8	Mirboo North	7.3km NE (T33)	Low-Negligible
T9	Thorpdale	6.0km E (T24)	Negligible-Nil
T10	Narracan	2.8km E (T05)	Negligible-Nil
T11	Coalville	2.2km SE (T04)	Negligible-Nil
T12	Moe	8.8km S (T03)	Low-Negligible

The Assessment concludes that the overall visual impact on townships is considered to be low-negligible. It highlights that views from most locations within the nearby towns and locality will be filtered or screened by a combination of topography, vegetation or buildings and other structures and that views are typically limited to the edges of townships or areas such as recreation reserves that allow for clear views over large open areas. The Assessment notes that, where visible, the turbines would not be dominant features due to the scale and extent of vegetation in most views towards the Project (refer to Figure 6.10 as an example).

Figure 6.10 is a still capture from a virtual reality scene at the Yinnar Township showing the visibility of the turbines in the background. This view demonstrates the effectiveness of small trees and low shrubs at screening turbines which are at a distance of approximately 4 kilometres on elevated hills.



Figure 6.10: Yinnar Township Still Capture Example (Source; Ignition Immersive Studios Virtual Reality Scene) (Source: Landscape and Visual Impact Assessment, Jacobs, 10 December 2020)

### ***Recreational trails, parks and elevated lookouts***

The Assessment nominates eleven (11) viewpoints within surrounding recreational trails, parks and elevated lookouts (refer to Figure 6.11).



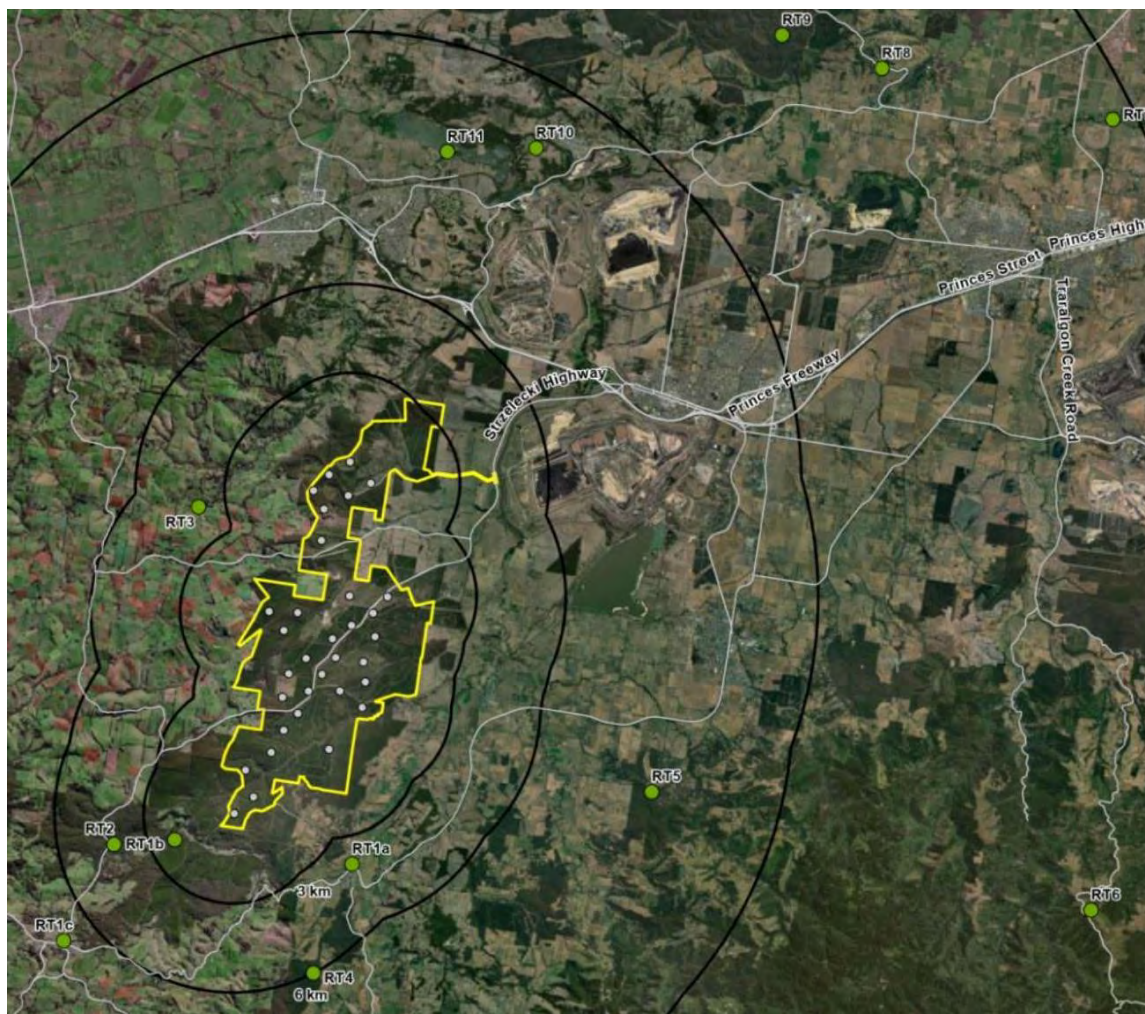


Figure 6.11: Viewpoints from Parks and Recreation Trails (Source: Landscape and Visual Impact Assessment, Jacobs, 10 December 2020)

A summary of the assessment of the viewpoints is provided in Table 6.10.

Table 6.10: Summary of the Visual Impact From Parks and Recreation Trails (Source: Landscape and Visual Impact Assessment, Jacobs, 10 December 2020)

Viewpoint	Location	Nearest Turbine	Visual Impact
RT1a	GR Trail – Boolarra	3.9km NW (T29)	Negligible-Nil
RT1b	GR Trail – Darlimurla	2.1km NE (T33)	Negligible-Nil
RT1c	GR Trail – Mirboo North	7.1km NE (T33)	Negligible-Nil
RT2	Lyrebird Forest Walk	4.1km NE (T33)	Negligible-Nil
RT3	Narracan Falls	3.9km NE (T05)	Negligible-Nil
RT4	Mirboo North Regional Park	5.9km NW (T33)	Negligible-Nil
RT5	Morwell National Park	10.1km NW (T19)	Negligible-Nil
RT6	Mt Tassie Lookout	25.4km NW (T19)	Negligible

RT7	Gippsland Plains Rail Trail	27.7km SW (T01)	Negligible-Nil
RT8	Tyers Lookout	22.1km SW (T01)	Negligible-Nil
RT9	Petersons Lookout Tyers Park	20.5km SW (T03)	Negligible
RT10	Howlett Road Lookout	12.3km SW (T03)	Negligible
RT11	Lake Narracan	10.9km S (T03)	Nil

The Assessment concludes that the overall impact on parks and recreational trails is assessed to be negligible, noting that outside of towns and built-up areas, walking trails tend to be located in heavily vegetated areas such as the Lyrebird Forest Walk, Morwell National Park and the trail to Petersons lookout.

The Assessment highlights that Rail trails typically comprise well-made paths, gentle grades and the ability to cover considerable distances for walkers, running and cycling and refers to the Grand Ridge Rail Trail which runs along part of the eastern and southern boundaries of the site between Boolarra and Mirboo North. In relation to this Trail it notes that many views from the trail are filtered or screened by topography, vegetation or a combination of both.

The Assessment also discussed the Gippsland Plains Rail Trail further to the north which provides wide, open and long-distance views over large areas of cleared flat farmland and notes that when looking towards the Project Site from the Gippsland Plains Rail trail, views include operating power stations, powerline infrastructure and many other constructed elements. Whilst the turbines would be visible, the Assessment notes that they would be at such a distance and taking into account the context, they would not be visually dominant features.

The Assessment refers to views from elevated locations such as Mt Tassie to the south-east, Tyers and Petersons lookout to the north enable long views over the Latrobe Valley. It highlights that in most directions, the views include a tapestry of cleared farmland, towns and developed areas, coal-fired power stations and the open-cut coalmines within the valley and supported by a backdrop of vegetated hills and plantation forests (refer to Figure 6.12 as an example).



Figure 6.12: Existing View Looking North-West from Viewpoint Rt6 (Mt Tassie) (Source: Landscape and Visual Impact Assessment, Jacobs, 10 December 2020)

### Impacts on Residential Properties

The Assessment highlights that views from residential dwellings have the greatest potential for visual impacts and that for residential occupiers, the view to the wind turbines may not be just a glimpse or a 5-minute experience as they drive around the local road network, but potentially a permanent view from living areas or outside entertainment spaces of their homes.

The assessment also identifies that landholders that farm the land may also be impacted as they work on their property. However, these areas are not considered as sensitive as views from places of residence or attached private open space.

There are a total of 1567 dwellings within 6 kilometres of a proposed turbine and the SAA in the Assessment shows that there is greater visibility for areas east in the clear flat plain of Hazelwood and Yinnar. For those areas to the north of the project, visibility is largely defined by topography, which has shown a large number of dwellings will have little to no visibility at all. Further, this analysis shows that although there are a number of residential dwellings within 6 kilometres of a nearest turbine, actual visibility and visual impact varies greatly across the project.

The Assessment notes that the greatest potential for visual impacts is from individual residential dwellings located in close proximity to the Project but that the range and nature of residential views will be dependent on the proximity and orientation of the dwelling towards the Project. For dwellings in the more elevated and hilly locations to the west, south and south-east of the Project, visibility will be further influenced by the orientation of the hillside and its proximity to the Project.

The Assessment notes that twenty (20) residents gave permission for their dwelling to be included within the assessment. A summary of the outcomes of that assessment for each dwelling is provided in Table 6.11.

**Table 6.11: Summary of the Visual Impacts on Residential Properties (Source: Landscape and Visual Impact Assessment, Jacobs, 10 December 2020)**

Dwelling ID	Location	Distance to nearest turbine	Visual Impact Assessment	Landscape Mitigation
#23	North-western cluster	4.4km SE (T05)	High	Unlikely to be mitigated
#596	South-eastern cluster	2.7km NW (T32)	Negligible-Nil	Not likely required
#600	South-eastern cluster	1.5km W (T32)	Moderate	Mitigation possible, however must be implemented carefully and consider the BMO
#607	North-eastern cluster	1.7km SE (T16)	High	Unlikely to be mitigated
#608	North-eastern cluster	1.6km NW (T02)	High	Views to the north unlikely to be mitigated. Mitigation possible to the south, however would need to be implemented carefully and consider the BMO
#609	North-eastern cluster	1.2km SW (T07)	Low-Moderate	Mitigation not likely required, however must be implemented carefully and consider the BMO
#686	Eastern cluster	4.0km NW (T16)	High	Mitigation may be limited due to topography and would remove views
#749	Eastern cluster	3.0km NW (T19)	Low-Moderate	Mitigation possible
#824	Western cluster	1.4km NE (T21)	Moderate-High	Mitigation possible
#832	Western cluster	1.2km NE (T25)	Moderate	Mitigation possible



#849	North-western cluster	1.6km NE (T07)	High	Unlikely to be mitigated
#857	North-western cluster	1.9km SE (T07)	Low-Moderate	Mitigation possible
#867	North-western cluster	1.5km SE (T05)	Low-Moderate	Mitigation possible
#1177	Eastern cluster	2.3km NW (T29)	Low-Negligible	Not likely required
#1266	North-western cluster	2.5km SE (T05)	Low-Negligible	Mitigation possible
#4064	South-eastern cluster	2.6km N (T29)	Low	Unlikely to be mitigated
#4533	Eastern cluster	2.5km W (T18)	Nil	Not required
#4579	Eastern cluster	2.4km NW (T18)	High	Mitigation possible, however must be implemented carefully and consider BMO
#4585	South-eastern cluster	2.1km NW (T32)	Moderate	Unlikely to be mitigated
#4587	North-eastern cluster	1.8km S (T16)	Low-Moderate	Landscape Mitigation possible

### Mitigation Measures

The Assessment highlights that landscaping is one mitigation option available for residential properties in proximity to the proposed Wind Farm. In contrast to views from roads and working areas on farms and larger properties, views from dwellings and their immediate areas of private open space is relatively fixed, allowing planting to be carefully designed to screen or reduce the visual dominance of wind turbines through filtering of views.

However, the Assessment acknowledges that not all landowners may wish to screen views of turbines either through a preference to see the turbines, the likelihood of removing other views, or for other aesthetic reasons. As such, landscape mitigation measures must be determined on a case by case basis in consultation with landholders to minimise adverse impacts.

All wind farm projects within Victoria have a requirement to provide landscape mitigation for residential dwellings within an area where a high level of visual impacts is predicted. For recent projects this distance has been established at a distance of 5 kilometres from an approved turbine (based upon the overall height of the proposed turbines). This requirement is typically incorporated as a permit condition setting out that the permit holder must implement measures to reduce the visual impact of turbines from the primary dwelling and attached outdoor areas of private open space.

Figure 6.13 provides an example from the Assessment of vegetation placement to assist with screening views to turbines and notes that alternatives include considered placement of single trees or clusters to screen views to the nearest and/or most visually noticeable turbine.



Figure 6.13: Potential Landscape Mitigation Measure (Source: Landscape and Visual Impact Assessment, Jacobs, 10 December 2020)

The Assessment highlights that vertical view angles, taking into consideration the overall height of the turbines and the distance of the dwelling to the turbine, are relevant to determining the heights that vegetation will be required to screen views. By analysing view angles for a 250 metres height it is possible to determine the approximate height that landscape mitigation would be required to achieve to ameliorate visual impacts from residential dwellings. Figure 6.14 provides an example of vegetation heights required based on the turbine being a conservative 1 kilometre away.

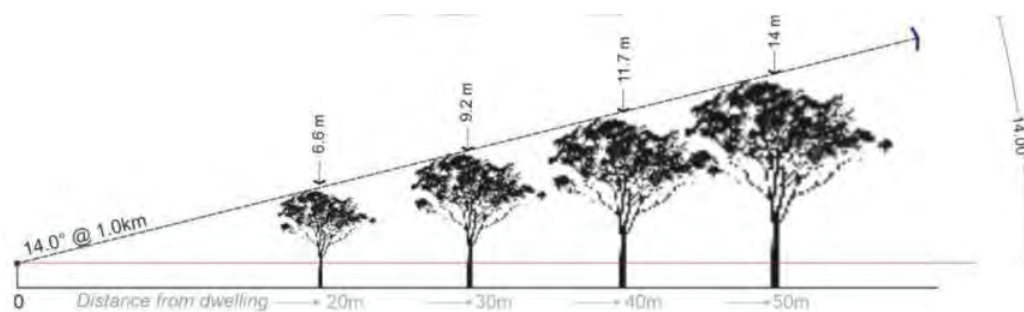


Figure 6.14: Vegetation Heights and Screening (Source: Landscape and Visual Impact Assessment, Jacobs, 10 December 2020)

The Assessment also highlights that distance, topography and elevation will vary from dwelling to dwelling, which will have an implication on the required landscaping treatment. Figure 6.15 also provides an example of how the landscaping measures might vary depending on the elevation of the dwelling and topography of the land.

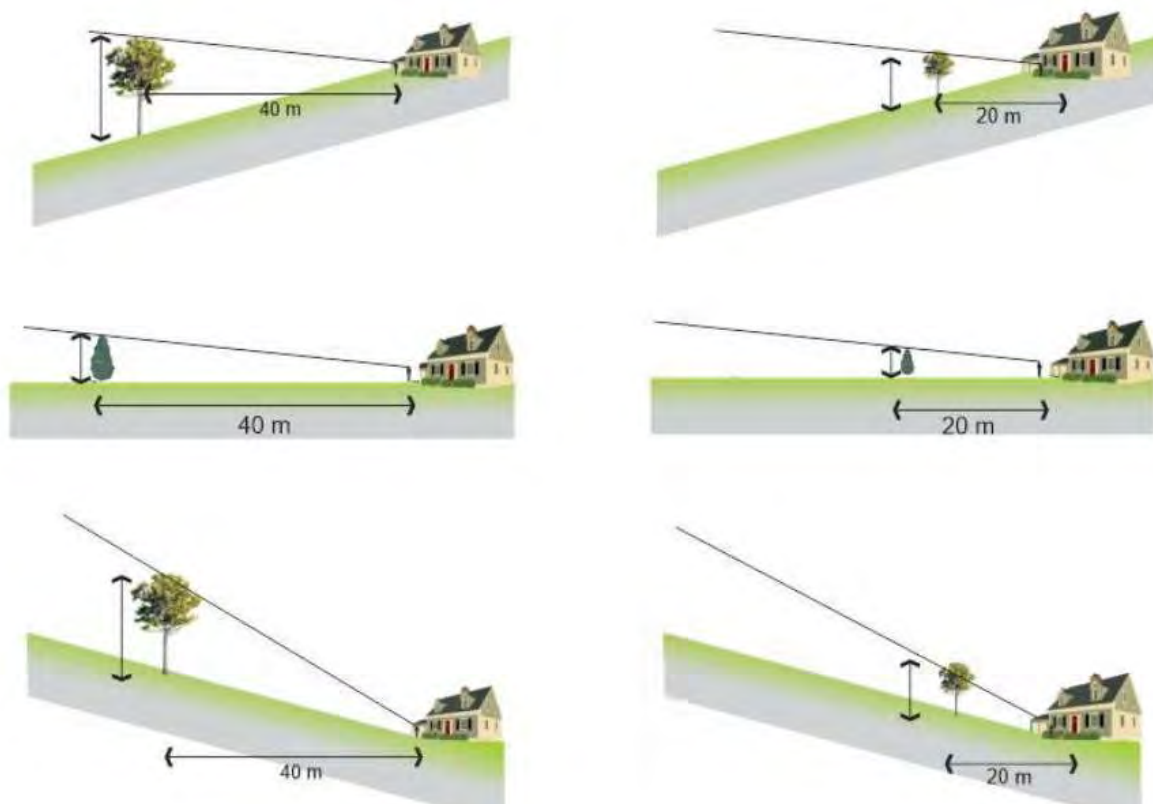


Figure 6.15: Landscape Mitigation View Angle Examples (Source: Landscape and Visual Impact Assessment, Jacobs, 10 December 2020)

One other key issue also identified in the Assessment is that for dwellings located within a Bushfire Management Overlay (BMO) it will be important to consider design requirements such as canopy separation, defendable space and distance from the dwelling. For these reasons, vegetation has been shown at varying distances from the dwelling assuming flat terrain.

### 6.4.5 Further Actions

It is expected that as part of any planning permit that is issued for the wind farm there will be a permit condition requiring an off-site landscaping program to be prepared to the satisfaction of the responsible authority, as outlined in the Wind Energy Guidelines. The condition is expected to require the provision of off-site landscaping within 6 kilometres of a wind turbine(s) subject to the establishment of an appropriate methodology determining the type of landscaping to be provided at individual properties, to be agreed with the landowner, and timing of the landscaping.



## 6.5 Aviation

This section describes the potential impacts to aviation safety and risk to aviation activities in the vicinity of the Project and the mitigation measures designed to manage potential impacts on aviation safety.

A copy of the Aeronautical Impact Assessment prepared by Chiron Aviation Consultants is contained in Appendix G.

The study area for the *Aeronautical Impact Assessment* comprises the wind farm site.

### 6.5.1 Methodology

The methodology for the Aeronautical Impact Assessment included:

- Desktop review of the proposed wind farm layout and materials;
- Review of relevant regulatory requirements and information sources;
- Preparation of an Aviation Impact Statement in accordance with Airservices Australia guidance;
- Preparation of a qualitative risk assessment;
- Consideration of the requirements for aviation obstacle lighting visibility of wind monitoring towers; and
- Consultation by writing and/or telephone interview as practicable with relevant stakeholders

Specifically, consultation was undertaken with the following stakeholders:

- Airservices Australia;
- CASA;
- Commonwealth Department of Defence;
- Latrobe Valley Regional Airport;
- Latrobe Valley Aero Club;
- Bandicoot Adventure Flights;
- Aerial Extras;
- Leongatha Aerodrome;
- Wooryal Air Services;
- Forest Fire Management Gippsland;

- Country Fire Authority District 27 (Morwell Office);
- Police Air Wing;
- Fixed Wing Ambulance (Pelair);
- Helicopter Emergency Medical Service.

The specific methodologies used to prepare the Aviation Impact Statement, the Qualitative Risk Assessment and the Obstacle Lighting Review and Wind Monitoring Tower Assessment are outlined in detail in the Assessment.

#### 6.5.2 Legislation and Policy

The relevant legislation and government policies for aviation considered in the Assessment include the following:

- Civil Aviation Safety Regulations (CASA, 1998) and Manual of Standards Part 139 – Aerodromes (CASA, 2012);
- Principles for a National Airports Safeguarding Framework – Managing the Risk to Aviation Safety of Wind Turbine Installations (Wind Farms) / Wind Monitoring Towers (Department of Infrastructure and Regional Development, 2012);
- Policy and Planning Guidelines for Development of Wind Energy facilities in Victoria (DELWP, 2019);
- Latrobe, Baw Baw and South Gippsland Planning Schemes.

#### 6.5.3 Aviation Existing Conditions

The *Aeronautical Impact Assessment* identifies two registered aerodromes with Instrument Approach Procedures (IAP) or designated Obstacle Limitations Surfaces (OLS) within 30 nautical miles(nm) (55.6 kilometres) of the proposed wind farm site boundary.

The Latrobe Valley registered aerodrome is approximately 16 kilometres to the north-east and the Yarram registered aerodrome is approximately 49 kilometres to the south-east.

The Leongatha aerodrome is approximately 35 kilometres to the south-west however, this aerodrome is uncertified and does not have an OLS or Procedures for Air Navigation Services – Operations (PAN-OPS) surfaces. The airfield is not equipped for night flying.

Although the West Sale registered aerodrome and East Sale military aerodrome are located outside the 30 nautical miles (nm) of the Project site, both aerodromes have also been included in the assessment due to their significance.

The Assessment notes that there may be other private airstrips and landing grounds located within 30nm of the proposed wind farm boundary, none of which require OLS and are not included in aeronautical charts or documents for the region. In these circumstances, Pilots operating at such private airstrips are responsible for ensuring that they are aware of the conditions on and surrounding these landing sites.

**Table 6.12: Summary of Aerodromes Detected (Source: Aeronautical Impact Assessment, Chiron Consultants, 14 July 2020)**

Aerodrome	Status	Distance to Project site	IAP available?
Latrobe Valley	Registered	8.97nm (16.62km)	Yes
Leongatha	Uncertified	19nm (35.19km)	No
Yarram	Registered	26.4nm (48.89km)	Yes
West Sale	Registered	32.5nm (60.19km)	Yes
East Sale	Military	40.75nm (75.46km)	Yes

### 6.5.4 Assessment of Impacts

#### **Aviation Impact Statement**

The Aviation Impact Statement component of the Aeronautical Assessment concluded that there would be:

- no adverse impact on OLS of any registered, certified or military aerodromes;
- no adverse impact on any Lowest Safe Altitudes (LSALTs) for air routes in the vicinity;
- no adverse impact on the Latrobe Valley aerodrome Non-Directional Beacon (NDB) approach;
- no adverse impact on the Yarram aerodrome IAP;
- no adverse impact on the performance of civil surveillance radars;
- no adverse impact on the performance of aviation-related communications systems; and
- no adverse impacts on Defence or Airservices Australia radarsystems.

However, the Assessment found that the Project will impact on the Latrobe Valley Aerodrome PAN-OPS surface for Runway (RWY) 03. It identifies that amendments will be required for the Latrobe Valley aerodrome to the instrument approach procedure and to the missed approach decision height.

The Assessment notes that changes to the RWY03 approach procedure recommended above combined with the raising of RWY21 overshoot LNAV/NAV decision altitude to 600ft (from 550ft) as recommended by Airservices Australia, will ensure the wind farm does not penetrate any associated PANS-OPS surfaces. On this basis, the proposal will be assessed as a low risk to aviation and is therefore not a hazard to aircraft safety.

Consultation is being undertaken with both the aerodrome operator and the instrument approach procedure designer to have the recommended amendments made to the approach procedures.



### **Qualitative Risk Assessment**

The Qualitative Risk component of the Assessment found that risk of the wind farm to aviation is low. The matters considered in coming to this conclusion include the following.

- **Night Flying.** Night operations at the Latrobe Valley Aerodrome will not be impacted subject to the amendments outlined above being made to the Instrument Approach Procedure and to the Missed Approach decision height. Night operations at Yarram Aerodrome will not be impacted.
- **General Aviation Flying training.** Given the visibility of wind turbines, including their size and colour, they are not considered to be an issue for students and visual flight rules during the day. In later training stages student airline pilots progress to night flying in accordance with visual flight rules 'at night' procedures and then on to instrument flight rules. Given night flying is undertaken above the Lowest Safe Altitude the wind farm will not impact night flying training. Furthermore, the Assessment confirms that whilst a flying training organisation based at Latrobe Valley Aerodrome does sometime utilise the area for training, in times of marginal visual meteorological conditions they would not approach over the hills where the wind farm is located.
- **Recreational and Sport Aviation.** The Assessment notes that these types of aircraft, including ultra-light air craft, are limited to daytime flights which require the aircraft to remain clear of clouds and minimum of 500 feet above the highest obstacle in the ground. The risk to these aircraft is therefore low.
- **Aerial Applications Activity.** The Assessment highlights that there are some aerial applications activity in the general area that is dependent on seasons (crops and pests), however there is minimal activity in the immediate area of the wind farm facility. It highlights that aerial application operators find the meteorological masts to be particularly challenging and consider they should be marked in accordance with relevant guidelines, including the outer guy wires. The marking of the anemometers on the site is discussed further below.
- **Emergency Services Flying.** The Assessment considers the risk to emergency services flying is low. It notes that Police Air Wing helicopters and Helicopter Emergency Medical Services are capable of instrument flight rules flying (which occurs at low levels and/or with limited visibility) and that the pilots in command have the final say as to whether operations need to be aborted due to the risk to the aircraft or crew. In the case of Fixed Wing Ambulances, the Assessment notes that flights are typically for patient transfer from regional to major city hospital and that wind farm will not affect operations due to the nature of the operations and the aircraft size.
- **Fire Fighting.** The Assessment highlights that fire fighting is a multi-faceted operation utilising multiple resources and equipment appropriate to circumstances and that aerial fire fighting is just one resource that is available that may or may not be appropriate to the fire ground situation. Aerial fire fighting is conducted at low levels and the Assessment notes that based on experience with rural fire fighting in multiple states, the various agencies all typically consider wind farms to be 'just another hazard' that has to be considered in the risk management process associated with aerial fire fighting. The Assessment also notes that aerial firefighting will take place in combination with ground based firefighting, which has been comprehensively discussed in the accompanying Bushfire Risk Assessment (discussed further at Section 6.8).

- **Weather and Topographical Issues.** The Assessment notes that the Latrobe Valley is known for having morning fog, low cloud and reduced visibility during the Winter. However, the Assessment highlights that flying into marginal or non visual meteorological conditions is avoidable and is something that local operators are aware of.
- **Lighting of Turbines.** The Assessment finds that lighting of turbines is not required as pilots flying using Instrument Flight Rules either cannot see the lights in some circumstances or if they can be seen the lights can be distracting due to them appearing to 'flare'.

### ***Obstacle Lighting and Marking***

The obstacle lighting risk assessment concludes that the wind farm facility does not require obstacle lighting as the risk to aviation is low and no additional mitigating strategies are required.

### ***Wind Monitoring Towers (anemometers)***

The Assessment notes that Meteorological Monitoring Masts are very difficult to see due to their slender construction and thin guy wires. The masts are often a grey (galvanised steel) colour that readily blends with the background.

Based on the feedback provided by stakeholder consultation and the requirements of the NASF Guidelines – Marking of Meteorological Monitoring Masts, the Federal Aviation Administration – Marking of Met Towers, and the Advisory Circular AC 139-08 Reporting of Tall Structures, the Assessment recommends that that future wind monitoring towers proposed as part of this application should be:

- appropriately marked as per guidelines above except strobe lighting is not required;
- reported as tall structures in accordance with AC139-08;
- notified to the Aerial Application Association of Australia;
- subject to a Notice to Airmen (NOTAM) specifying their location and height.

### **6.5.5 Further Actions**

Further consultation will be undertaken with the Latrobe Valley Aerodrome operator and the instrument approach procedure designer to have the recommended amendments made to the approach procedures.

As the wind turbines and meteorological monitoring masts are considered to be tall structures, reporting to the Vertical Obstacle Database, managed by Airservices Australia must also be undertaken, as required by Advisory Circular AC 139-08 V2.0.

Consideration should be given to ensuring a NOTAM that provides the height and location of the structures is issued.

## 6.6 Environmental Noise Assessment

This section provides a summary of the Background Noise Monitoring Report and the subsequent Environmental Noise Assessment undertaken for the Project by Marshall Day Acoustics. The assessments including consideration of potential noise impacts on nearby residential properties and identify measures to manage these potential impacts and achieve compliance with the relevant noise criteria are also provided.

This Section also provides a brief overview of the findings of a peer review undertaken of the Marshall Day assessments by Sonus and the findings of the Environmental Noise Assessment Audit, undertaken by Senversa, in accordance with the requirements Clause 52.32-4 of the Planning Scheme.

### 6.6.1 Methodology

The Noise Impact Assessment for the Project was undertaken in accordance with NZS6808:2010 as required by the Wind Energy Guidelines.

The methodology for the Assessment can be summarised as follows:

- assessing background noise levels at receivers around the project;
- assessing the land zoning of the project site and surrounding areas;
- establishing suitable noise criteria accounting for background noise levels and land zoning;
- predicting the level of noise expected to occur as a result of the proposed turbines and battery storage facility; and
- assessing whether the development can achieve the requirements of Victorian policy and guidelines by comparing the predicted noise levels to the noise criteria.

Three turbine model candidates that are under consideration for the wind farm were modelled in the Assessment, comprising:

- Vestas V162-5.6MW;
- GE Renewable Energy 5.5-158; and
- Siemens Gamesa SG 6.0-170

The Assessment notes that the final turbine model will be selected after a tender process to procure the supply of turbines. All three models are variable speed wind turbines, with the speed of rotation and the amount of power generated by the turbines regulated by control systems which vary the pitch of the turbine blades (angular orientation of the blade relative to its axis). The Assessment was therefore based on all turbine models using unconstrained generation modes, that is, no noise reduced operating modes, and with blade serrations (noting that blade serrations are now routinely used to reduce wind turbine noise emissions and their use is now the market standard for turbines offered in the Australian market).



It is noted that all noise levels in this Section are expressed as decibels (dB), which is the standard unit used to describe sound levels.

#### 6.6.2 Legislation and Guidelines

The relevant legislation and government policies used in the Assessment include the following:

- Development of Wind Energy Facilities in Victoria - Policy and Planning Guidelines (March 2019);
- New Zealand Standard 6808:2010 Acoustics – Wind farm noise (NZS 6808:2010);
- EPA publication 1411 titled Noise from Industry in Regional Victoria – Recommended maximum noise levels from commerce, industry and trade premises in regional Victoria (NIRV);
- EPA Publication 1254 Noise Control Guidelines (EPA Publication 1254).

#### 6.6.3 Overview of Noise Guidelines

The following section provides an overview of the guidance and noise criteria included in the relevant noise guidelines on which the Assessment is based.

##### ***Development of Wind Energy Facilities in Victoria - Policy and Planning Guidelines (March 2019)***

Section 5 of the Victorian Wind Energy Guidelines outlines the key criteria for evaluating the planning merits of a wind energy facility and that Section 5.1.2(a) details information relating to the amenity of areas surrounding a wind farm development, including information relating to noise levels. In particular, it requires compliance with the noise limits in the New Zealand Standard NZS 6808:2010 Acoustics – Wind Farm Noise (the Standard).

##### ***New Zealand Standard 6808:2010, Acoustics – Wind Farm Noise***

NZS6808:2010 aims to achieve an appropriate balance in terms of establishing clear noise criteria for the protection of amenity of neighbouring residences, whilst permitting the development of new wind farm infrastructure. The Standard outlines the methodology for the prediction, measurement and assessment of sound from wind farms in order to provide reasonable protection of health and amenity at noise sensitive locations.

NZS6808:2010 requires that the noise assessment be undertaken at all noise sensitive locations in the vicinity of a proposed wind farm. Noise sensitive locations are defined by NZS6808:2010 as *'the location of a noise sensitive activity, associated with a habitable space or education space in a building not on the wind farm site'*. These locations include residential dwellings, schools and hotels located outside the wind farm site. For the purposes of an assessment according to the Standard, the notional boundary is as *"a line 20 metres from any side of a dwelling or other building used for a noise sensitive activity or the legal boundary where this is closer to such a building"*.

It is noted that NZS6808:2010 was prepared to provide methods of assessment in the statutory context of New Zealand. Specifically, the Standard notes that in the context of the New Zealand *Resource Management*

*Act 1991*, application of the standard will provide reasonable protection of health and amenity at noise sensitive locations. This is an important point of context, as the New Zealand Resource Act states:

*3(a)(ii): A consent authority must not, when considering an application, have regard to any effect on a person who has given written approval to the application.*

Based on the above definitions and statutory context, noise predictions are normally prepared for stakeholder receivers irrespective of whether they are inside or outside of the boundary. However, the noise limits specified in the Standard are not applied to these locations on account of their participation with the project. Separate consideration is given to alternative guidance values (e.g. the recommendations of the Victorian Wind Energy Guidelines) for these locations, having regard to participating land owners both within and outside the site boundary.

### *Noise Limit*

NZS6808:2010 states that the noise level from a wind turbine at a noise sensitive location should not exceed the background noise level by more than 5dB or a base limit of 40dB, whichever is greater. This approach means that the wind farm noise must remain within a limited margin above background conditions, except in instances where the wind turbine noise is predicted to be sufficiently low.

It should be noted that compliance with the NZS6808:2010 criteria may result in noise from the wind turbine's being audible at some locations for some of the time.

### *High Amenity Areas*

NZS6808:2010 also provides details for high amenity noise limits and states that wind farm noise levels during evening and night-time periods should not exceed the background noise level by more than 5dB or a level of 35dB, whichever is greater. High amenity noise limits are not applicable during the daytime period. High amenity areas are discussed further in the following section in the context of applicability to the Victorian context and, specifically, the land surrounding the Project site.

### *Special Audible Characteristics*

Section 5.4.2 of NZS6808:2010 requires '*wind turbine sound levels with special audible characteristics (such as tonality, impulsiveness and amplitude modulation) shall be adjusted by arithmetically adding up to +6dB to the measured level at the noise sensitive location*'.

Notwithstanding this, the standard requires that wind farms be designed with no special audible characteristics at nearby residential properties while concurrently noting that '*..as special audible characteristics cannot always be predicted, consideration shall be given to whether there are any special audible characteristics of the wind farm sound when comparing measured levels with noise limits*'.

NZS6808:2010 emphasises assessment of special audible characteristics during the post-construction measurement phase of a project. However, an indication of the potential for tonality to be a characteristic of the noise emission from the assessed turbine model can be determined based on the results of tonality

audibility assessment commonly provided by manufacturers with their IEC61400-11 sound power level specifications.

It should be noted that the tonality assessment in accordance with IEC61400-11 is undertaken in proximity of a single tested turbine (generally within 150-200m) whereas the assessment of potential characteristics is performed during post-construction noise monitoring at receivers.

#### **EPA Publication 1411: Noise from Industry in Regional Victoria**

*EPA Publication 1411: Noise from Industry in Regional Victoria (NIRV)* provides recommended maximum noise levels for industry in regional Victoria. These Guidelines are relevant for noise generated from ancillary infrastructure, such as the battery storage facility.

#### **EPA Publication 1254: Noise Control Guidelines**

*EPA Publication 1254: Noise Control Guidelines (NCG)* provides a schedule of working hours and noise limits for construction sites. These are broken up into normal working hours, weekend/evening work hours and the night period. These guidelines make an allowance for unavoidable construction works that need to occur at night, provided that residents are notified of the intended work, its duration and times of occurrence and provides mitigation measures that need to be considered.

#### **6.6.4 Existing Conditions**

The Assessment notes that preliminary noise modelling of an earlier wind farm layout was undertaken to determine whether background noise monitoring was warranted in accordance with NZS6808:2010, and if so, the locations where noise monitoring should be undertaken.

Background noise monitoring was subsequently undertaken at nine (9) 'receivers' (dwellings identified as being in the vicinity of the Project) in the vicinity of the proposed wind farm between 6 March 2020 and 18 June 2020. The monitoring locations were selected on the basis of the following.

- A total of thirty-five (35) turbines located at the coordinates detailed in the Preliminary Noise Assessment Report. The turbine layout has since been revised to comprise thirty-three (33) turbines.
- The noise monitoring procedures outlined in NZS6808:2010.
- Upper predicted operational wind farm noise levels detailed in the Preliminary Noise Assessment Report.

The above information was used to identify the locations where background noise levels were required for the purpose of assessing the wind farm's compliance with the noise criteria established by NZS 6808:2010.

The Assessment notes that consent to undertake background noise monitoring was not granted at all preferred receivers and so prior to construction of the wind farm, background noise monitoring may be undertaken at additional receivers, should consent subsequently be provided.



Table 6.13 below summarises the background noise levels determined in accordance with NZS 6808:2010 and presents the key wind speeds relevant to the assessment of wind farm noise, noting that the results for surveyed wind speeds can be found in the Background Noise Assessment. It is noted that the location of receivers relative to the proposed turbines, including the location of the nine receivers listed in the table below, can be seen in Figures 6.16 to 6.18 on the following pages. The wind speed measurements were all undertaken at a height of 160 metres above ground level, using three different monitoring locations, as specified in the notes to the table.

**Table 6.13: Background noise levels (dB LA90) (Source: Environmental Noise Assessment, Marshall Day Acoustics, 26 January 2021)**

Receiver	Hub height wind speed, m/s											
	4	5	6	7	8	9	10	11	12	13	14	15
600 (3)	23.5	24.0	24.8	25.8	27.2	28.8	30.7	32.8	35.1	37.5	40.1	42.9
609 (2)	31.3	32.0	32.8	33.5	34.3	35.0	35.8	36.6	37.3	38.1	38.9	39.6
824 (3)	27.6	28.5	29.6	31.0	32.4	34.0	35.7	37.5	39.3	41.2	43.0	44.8
832 (1)	27.8	28.3	29.3	30.8	32.7	34.8	37.2	39.6	42.2	44.7	47.0	49.2
853 (1)	28.7	29.0	29.6	30.4	31.5	32.9	34.4	36.1	37.9	39.8	41.8	43.8
864 (2)	25.5	25.8	26.6	27.8	29.3	31.1	33.1	35.3	37.6	39.9	42.4	44.7
867 (2)	27.0	27.5	28.3	29.6	31.1	32.9	35.0	37.2	39.6	42.1	44.6	47.2
1171 (1)	25.2	25.6	26.2	27.1	28.2	29.5	31.0	32.7	34.6	36.6	38.8	41.0
4585 (3)	30.1	30.6	31.1	31.8	32.5	33.4	34.3	35.3	36.4	37.7	39.0	40.4

Notes: (1) wind speed measured by the meteorological mast on the site (DEL01) in the site's centre  
 (2) wind speed measured by the LiDAR system reference LiDAR2 located to the north of the site  
 (3) wind speed measured by the LiDAR system reference LiDAR3 located to the south of the site

### 6.6.5 Potential Impacts and Mitigation Measures – Wind Turbines

#### Noise Limits - High Amenity Areas

The Assessment notes that the applicability of a high amenity noise limit is based on a two-step approach comprising:

1. A land zoning review to determine whether the planning guidance for the area warrants consideration of a high amenity noise limit. If it does, then step 2 should be considered.
2. If the receiver location is located within 35dB<sub>LA90</sub> noise contour and after conducting an assessment, a high amenity noise limit may be justified.

The Assessment refers to the VCAT decision *Cherry Tree Wind Farm Pty Ltd v Mitchell Shire Council* where it is established that areas located within the Farming Zone do not warrant consideration of a high amenity noise limit.

The Assessment then refers to the EES Inquiry report for the Golden Plains Wind Farm which considered the subject of zones more broadly. In the case of the Golden Plains Wind Farm, the Inquiry also confirmed that the high amenity provision was not applicable to the Farming Zone. However, in relation to the Township Zone and Low Density Residential Zone, the Inquiry concluded that the high amenity provision warranted

consideration, irrespective of the planning scheme not promoting a higher degree of protection of amenity related to the sound environment. This conclusion was on the basis that those zones encouraged residential living, which correlates to a higher expectation for a greater acoustic amenity expectation.

In relation to this interpretation, the Assessment observes that as one of the purposes of the Rural Living Zone is residential then the same reasoning as that applied by the Golden Plains panel could be applied to that zone. On that basis, the Assessment notes that a high amenity limit may therefore warrant consideration for the two (2) receivers (605 and 4155) that are in the Rural Living Zone and where predicted noise levels are above 35 dB LA90 (using the worst case modelling scenario).

Recognising that the high amenity provision and the 35dB base limit may warrant consideration for the receivers in the Rural Living Zone, Table 6.14 provides predicted noise levels at the hub height wind speed of 6m/s (wind speed specified by NZS 6808:2010 as the highest wind speed for applying high amenity limits).

**Table 6.14: Rural Living Zone - predicted noise levels at 6m/s (dBLA90) Source: (Environmental Noise Assessment, Marshall Day Acoustics, 26 January 2021)**

Receiver Location	V162-5.6MW	GE5.5-158	SG6.0-170
605	27.1	26.6	25.7
4155	27.1	26.6	25.7

The results demonstrate that irrespective of whether a high amenity noise limit is justified, the predicted noise levels for the wind speed range where high amenity provision may warrant consideration, are below 35dB at all receivers in the Rural Living Zone for all candidate turbine models by at least 7.9dB.

### Applicable Noise Limits

The Assessment provides a summary of applicable noise limits, taking into the background noise assessment, the noise criteria requiring 40dB or background LA90 plus 5dB (whichever is great) and identifies the background dependant noise levels for each receiver as outlined in Table 6.15 below.

**Table 6.15: Background dependent noise limits (dB LA90) (Source: Environmental Noise Assessment, Marshall Day Acoustics, 26 January 2021)**

Receiver	Hub height wind speed, m/s											
	4	5	6	7	8	9	10	11	12	13	14	15
600 (3)	40.0	40.0	40.0	40.0	40.0	40.0	40.0	40.0	40.1	42.5	45.1	47.9
609 (2)	40.0	40.0	40.0	40.0	40.0	40.0	40.8	41.6	42.3	43.1	43.9	44.6
824 (3)	40.0	40.0	40.0	40.0	40.0	40.0	40.7	42.5	44.3	46.2	48.0	49.8
832 (1)	40.0	40.0	40.0	40.0	40.0	40.0	42.2	44.6	47.2	49.7	52.0	54.2
853 (1)	40.0	40.0	40.0	40.0	40.0	40.0	40.0	41.1	42.9	44.8	46.8	48.8
864 (2)	40.0	40.0	40.0	40.0	40.0	40.0	40.0	40.3	42.6	44.9	47.4	49.7
867 (2)	40.0	40.0	40.0	40.0	40.0	40.0	40.0	42.2	44.6	47.1	49.6	52.2
1171 (1)	40.0	40.0	40.0	40.0	40.0	40.0	40.0	40.0	40.0	41.6	43.8	46.0
4585 (3)	40.0	40.0	40.0	40.0	40.0	40.0	40.0	40.3	41.4	42.7	44.0	45.4

Notes: (1) measured by the meteorological mast on the site (DEL01) in the site's centre  
 (2) measured by the LiDAR system reference LiDAR2 located to the north of the site  
 (3) measured by the LiDAR system reference LiDAR3 located to the south of the site

### Predicted Noise Levels

The predicted noise levels are summarised in Table 6.16 for the wind speeds which result in the highest predicted noise levels (hub height wind speed greater than or equal to 9m/s).

Table 6.16: Highest predicted noise level (from highest to lowest based on GE5.5-158) at receivers with predicted noise levels over 35dBLA90 (Source: Environmental Noise Assessment, Marshall Day Acoustics, 26 January 2021)

Receiver Location	V162-5.6MW	GE5.5-158	SG6.0-170
864	35.7	37.1	36.5
853	35.3	36.6	36.0
832	35.3	36.5	35.9
606	35.1	36.4	35.8
609	35.1	36.4	35.8
4155*	34.9	36.1	35.6
875	34.7	36.1	35.5
823	34.8	36.0	35.5
610	34.6	35.8	35.2
863	34.4	35.7	35.2
1171	34.4	35.7	35.1
828 (s)	34.5	35.6	35.0
829 (s)	34.4	35.5	34.9
824	34.3	35.5	34.9
838	34.2	35.3	34.8
608	34.1	35.2	34.6
1170	34.0	35.1	34.6
873	33.8	35.1	34.5
830	33.9	35.0	34.5
605*	33.8	35.0	34.4
872	33.7	35.0	34.5

\*Receivers located within the Rural Living Zone

(S) Stakeholder receiver

The Table demonstrates that the predicted noise levels for the wind speeds which result in the highest predicted noise levels from the proposed wind turbine candidate models are below the base noise limit of 40dB LA90 at all receivers by at least 2.9dB to 4.3dB depending on the turbine model.

The locations of the predicted 35dB and 40dB noise contours are also shown visually for each candidate model (again assuming wind speed which results in the highest predicted noise levels) at Figures 6.16 to 6.18 on the following pages.

The results demonstrate that the proposed wind turbines are predicted to comply with the operational noise requirements of NZS6808:2010, as required by the Victorian Wind Energy Guidelines.



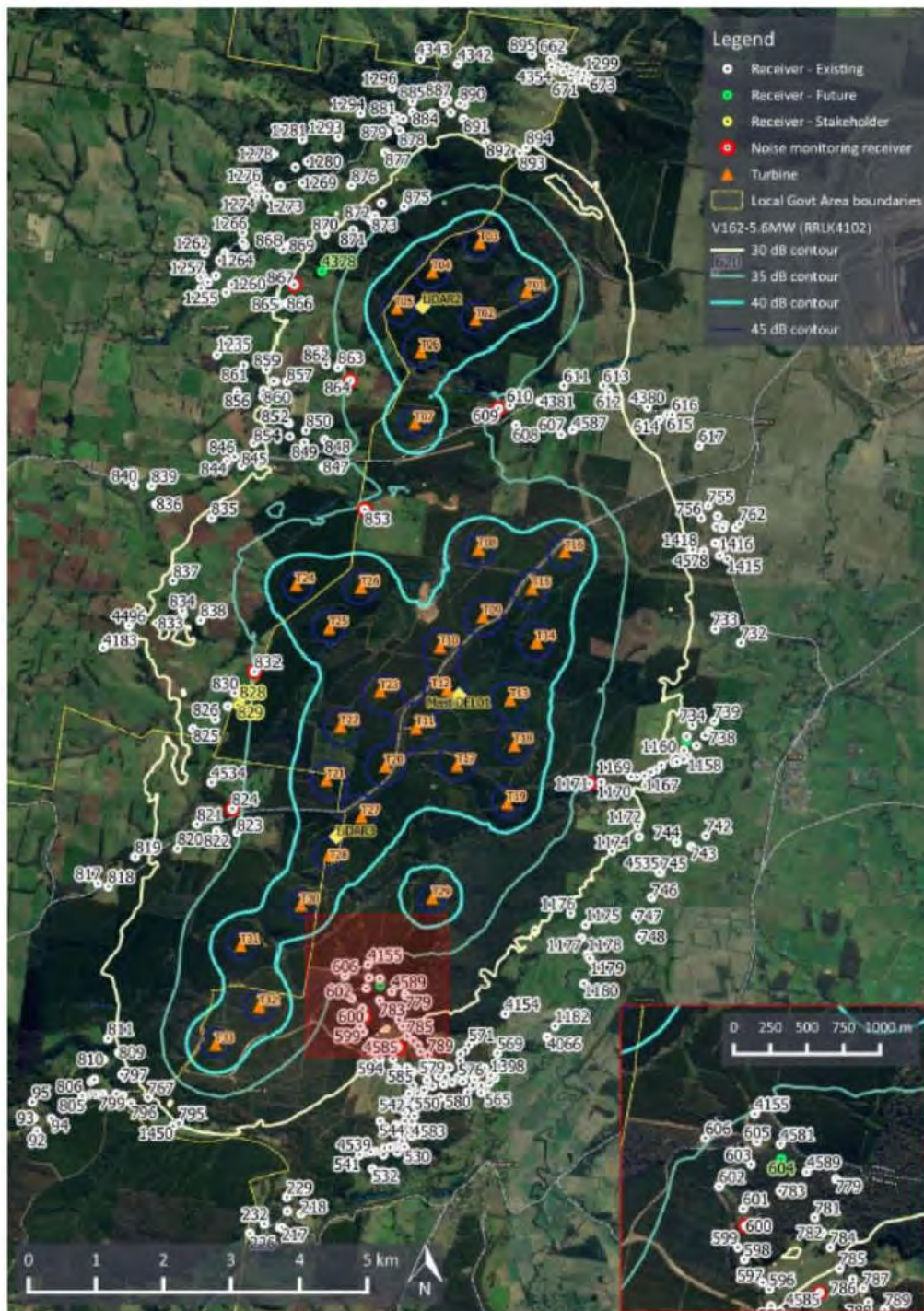


Figure 6.16: Highest predicted noise level contours, dBA90 for Turbine Model V162-5.6MW (Source: Environmental Noise Assessment, Marshall Day Acoustics, 26 January 2021)



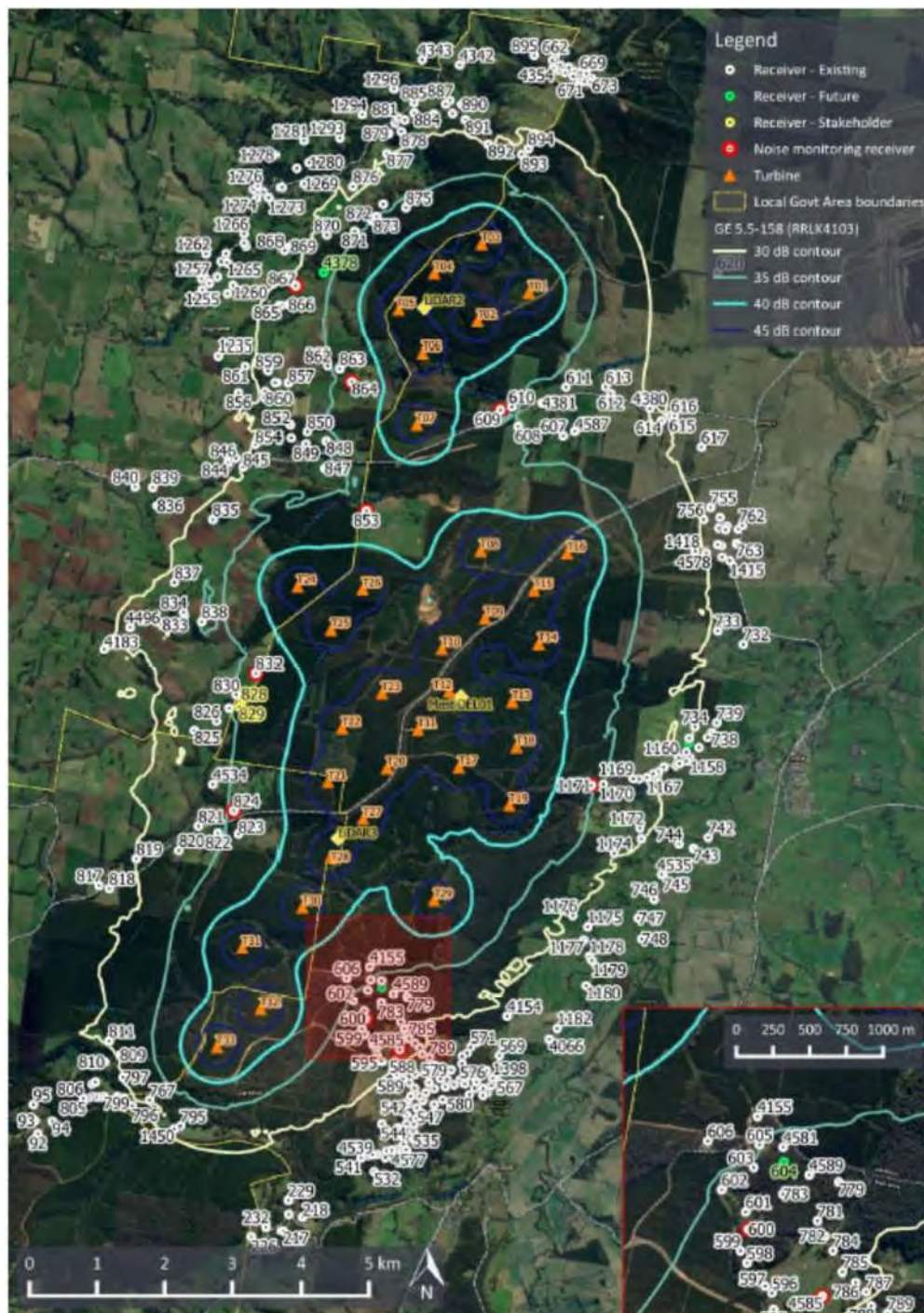


Figure 6.17: Highest predicted noise level contours, dBA90 for Turbine Model GE 5.5-158 (Source: Environmental Noise Assessment, Marshall Day Acoustics, 26 January 2021)



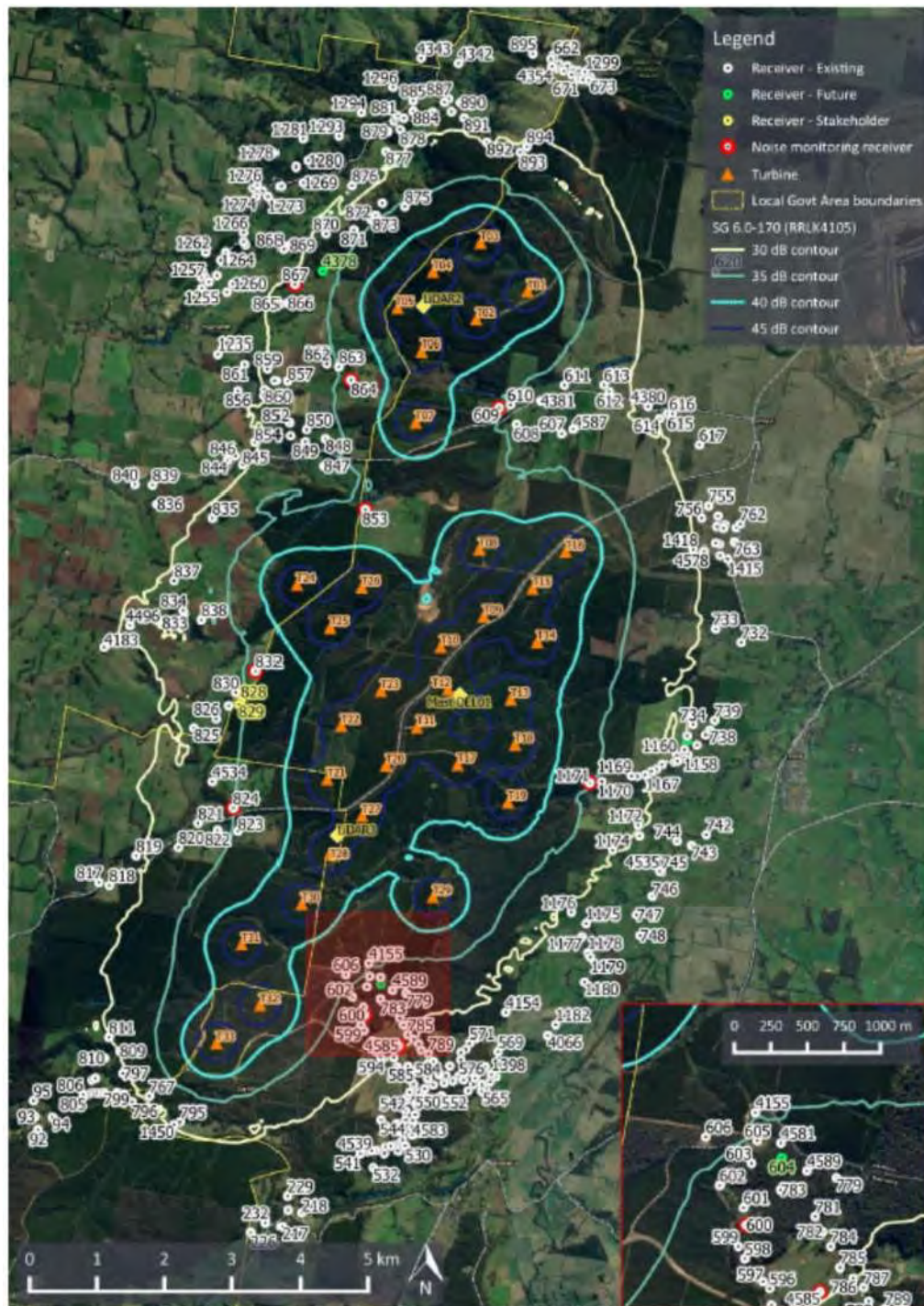


Figure 6.18: Highest predicted noise level contours, dBLA90 for Turbine Model SG 6.0-170 (Source: Environmental Noise Assessment, Marshall Day Acoustics, 26 January 2021)



#### 6.6.6 Potential Impacts and Mitigation Measures - Related Infrastructure

##### **Noise Limits**

The Assessment associated with the related infrastructure highlights that the Victorian policy requirements that apply to commercial and industrial noise, require consideration of total noise sources on a site. Accordingly, whilst it is only the battery storage facility that forms part of this planning permit application, consideration has also been given to the terminal station to meet this requirement from a cumulative basis when assessing the battery storage facility.

The Assessment notes that the recommended noise levels pursuant to the NIRV are those associated with rural areas and the noise levels then relate to the zone of the land on which the noise source and receivers are located – in this case the Special Use Zone and the Farming Zone.

The Assessment identifies two receivers of noise (receivers 674 and 676) that require consideration and outlines the applicable recommended noise levels at the two receivers, broken into the applicable noise levels which vary depending upon the day of the week, as well as the time of day (day, evening and night).

The Assessment notes that as the related infrastructure will operate 24 hours a day and 7 days a week, compliance with the most restricting of the noise levels would allow compliance during all other time periods. Accordingly, the level that applies to 'night' (which is defined as being Monday to Sunday between 2200 hours and 0700 hours) as appropriate. This means that for Receiver 674 the maximum recommended noise level is 32  $L_{\text{eff}} \text{ dB}$  and for Receiver 676 is 36  $L_{\text{eff}} \text{ dB}$ .

##### **Predicted Noise Levels**

The Assessment outlines that predicted noise levels were determined on the basis of indicative equipment noise emission data and noise prediction method ISO 9613-2:1996 *Acoustics – Attenuation of sound during propagation outdoors – Part 2: general Method of calculation*.

The predicted total noise levels at Receiver 674 were calculated to be 22-26 dB and for Receiver 676 to be 24-26 dB. This takes into account +2 dB which was applied to the predicted noise levels to account for the potential tonal characteristics of transformer noise. The relevance and magnitude of the adjustment in practice is dependent on several variables and is discussed further in the Assessment.

Accordingly, the Assessment concludes that the noise level from the proposed infrastructure are at least 10-dB below the minimum recommended for the conservative night time period and therefore the infrastructure is unlikely to be a significant design consideration.

#### 6.6.7 Construction Noise Assessment

The Assessment notes that construction of a wind farm project will generate noise and vibration as a result of activities occurring both on and off the site of the proposed development. Off-site noise generating activities primarily relate to heavy goods vehicle movements to and from the site, whilst on-site works include a range of activities such as construction of access tracks, connection infrastructure, turbine foundations and erection of the turbines.

The Assessment highlights that whilst construction of a wind farm mostly occurs at relatively large separating distances from receivers and, as proposed for the Project, the majority of the work is limited to normal working hours. The only exceptions are for unavoidable works or low-noise managed-works. Unavoidable works outside of normal hours are expected to comprise the delivery of oversized turbine components at times selected to minimise traffic disruption associated with intersection closures, and potentially turbine installation activities that are sensitive to weather conditions (e.g. installation of rotors).

The Assessment notes that the construction activity that would typically occur nearest to receivers is access road construction. This activity involves a brief period of elevated noise while work is carried out to improve existing roads (where required), create new intersections at site access points, and initiate site access tracks. During these initial works, construction noise levels of the order of 70 to 75 dB LAeq could be expected for brief periods when road and access work is carried out at distances within 100 metres from a receiver. The Assessment notes that during minor public road upgrade works, only three (3) receivers along Golden Gully Road would be located less than 500 metres from this type of construction activities. These noise levels are comparable to, and typical of, noise levels produced by general road maintenance works and activity.

The Assessment notes that once the initial work for road access is complete most of the work occurs in proximity to the turbine locations, related infrastructure and on-site cabling routes and therefore there is typically greater separating distances.

Nonetheless, the Assessment acknowledges that depending upon noise levels and wind directions, construction noise could still potentially be audible to surrounding receivers at times. Accordingly, the Assessment recommends that the majority of work should be restricted to normal working hours.

For these reasons, and consistent with the Victorian Noise Control Guidelines, the Assessment notes that noise associated with construction of a wind farm can usually be satisfactorily addressed by the adoption of general management measures and considerate working practices. These measures are normally documented and agreed in a Construction Environmental Management Plan (CEMP) which is typically required as a condition of any planning permit and prepared for review and approval by the responsible authority prior to commencement of works.

On the basis of the operation and implementation of a CEMP the Assessment concludes that it is expected that construction noise associated with the wind farm can be acceptably managed.

### 6.6.8 Further Actions

In order to ensure that operational noise is appropriately managed during subsequent stages of the development, the Assessment highlights that any planning permit that is issued for the wind farm should include conditions that specify noise control requirements which address operational wind turbine noise and operational noise of related infrastructure. The Assessment notes that an important element of these conditions would be to establish checks at different stages in the project.

Specifically, the Assessment notes that an updated assessment of the wind farm's compliance with NZS 6808:2010 should be carried out for the final turbine layout and turbine selection for the project. This assessment should be undertaken prior to commencement of development of the wind farm and should include information based on test data for the selected turbine.

In addition, the Assessment highlights that a noise management plan should also be prepared which identifies how compliance with the wind farms' operational noise limits will be demonstrated, including details of testing procedures and reporting time frames following the commencement of operation for the wind farm.

The Assessment also recommends that consideration is given to conducting indicative on-site noise emission testing for a sample of the first turbines to start generating power at the site to determine whether the turbines' noise emissions are consistent with expectations.

Finally, the Assessment identifies that any updated noise assessment prepared prior to the development of the wind farms should also include an assessment of the related infrastructure to demonstrate compliance with recommended noise levels in accordance with NIRV.

### 6.6.9 Peer Review by Sonus

Upon completion of the Marshall Day Assessment, a peer review, desktop assessment was conducted by Sonus, to compare the methodology of the Assessment against the requirements of the Wind Energy Guidelines. The peer review also involved an independent prediction of noise from the wind turbines to enable a comparison with the Marshall Day predictions.

The Peer Review notes that the approach in the Assessment is conservative compared with the New Zealand Standard, as it will result in higher predicted noise levels.

It concludes that the Marshall Day assessment has been conducted in accordance with the Wind Energy Guidelines and the assessed layout will achieve the objective requirements of the Project.

The Peer Review is included at Appendix H.

### 6.6.10 Senversa Audit Findings

An environmental audit was conducted in accordance with Section 53V of the Environment Protection Act 1970 of the assessment undertaken by Marshall Day of the proposed wind farm, as required by Clause 52.34-4 of the Planning Scheme.

The Audit is included at Appendix H and recommends the following in relation to additional work:

- *'Measurements of the tonality of the candidate turbines (in accordance with IEC 61400-11:2012)41 should be reviewed as they become available, or verified by on-site emission testing of the first turbines commissioned on the site.*
- *The post-construction noise level monitoring specified under the Noise Compliance Test Plan (NCTP) should be undertaken by an independent acoustic consultant in line with recent recommendations of the Office of the National Wind Farm Commissioner'.*



## 6.7 Electromagnetic Interference Assessment

This Section describes the potential electromagnetic interference (EMI) impacts of the Project and the proposed mitigation measures that are designed to ensure that any adverse impacts on communication services in the area are minimised.

A copy of the Electromagnetic Interference (EMI) Assessment prepared by DNV GL – Energy Renewables Advisory is contained in Appendix I.

### 6.7.1 Methodology

The methodology used for the EMI assessment included:

- A review of the radio communication licenses held by the Australian Communications and Media Authority (ACMA) within 75 kilometres of the wind farm site related to the following:
  - Fixed point-to-point links
  - Fixed point-to-multipoint links; and
  - Radio communications assets belonging to emergency services
- A review of the trigonometrical stations within 75 kilometres of the wind farm site;
- A review of the aviation and meteorological radar within 250 nautical miles (463 kilometres) of the wind farm site;
- A review of the following communications:
  - Broadcast television
  - Citizens band (CB) radio and mobile phones
  - Wireless internet
  - Broadcast radio
  - Satellite television and internet
- Liaison with organisations that have or may have communication equipment in the region (telecommunication companies, media companies, emergency services and government agencies); and
- Consideration of likely impacts in the context of the Draft National Guidelines as these are considered to meet, if not exceed, the recommendations of the Victorian Guidelines.

### 6.7.2 Legislation and Policy

The relevant legislation and government associated with EMI considered in the assessment are outlined include the following.

- Policy and Planning Guidelines for Development of Wind Energy Facilities in Victoria (March 2019 (DELWP, 2019);
- Draft National Wind Farm Development Guidelines (EPHC, 2010);

- Latrobe, Baw Baw and South Gippsland Planning Schemes.

### 6.7.3 Assessment of Impacts

#### **Radiocommunication towers**

The Assessment highlighted that Wind turbines located close to radiocommunication towers have the potential to cause interference through near-field effects or reflection or scattering of the signals. According to the Draft National Guidelines, the near-field zone for a transmission tower can vary from several metres to approximately 720 metres depending on the service type. The Draft National Guidelines therefore recommend that any radiocommunication site within 1 kilometre of a proposed turbine be considered as having the potential to be impacted by near-field effects. The Assessment notes that the potential for a turbine to cause reflection or scattering of signals may depend on a number of factors including service type, distances between the users, transmission tower and turbine. Accordingly, the Draft National Guidelines recommend consulting with the service operator for turbines within 2 kilometres of a radiocommunication site.

Keeping this in mind, the Assessment identifies that that following radiocommunication tower is located within 2 kilometres of the proposed wind turbines:

**Table 6.17: Radiocommunication towers located within 2km of turbines (Source: EMI and Telecommunications Report, DNV-FL, 6 November 2020)**

Associated Licence Type	Operator	Distance to nearest turbine
Broadcasting (narrowcasting)	BAI Communications (Kids FM, Latrobe Valley 91.9HMz)	1936m

BAI Communications have been contacted to determine the likelihood that the Project will cause interference to their services through near-fields effects or reflection or scattering of signals. BAI Communications has advised that they do not expect the Project to cause any noticeable interference to their FM radio services and has not expressed any concerns in relation to the proximity of the turbines to this tower.

The Assessment notes that there is another tower located 2001 metres from the nearest proposed turbine location, which is an NBN fixed wireless internet tower operated by NBN Co. Taking a conservative approach (as it sits just outside the 2 kilometre), consideration has also been given to this tower. NBN Co advised that there is a low risk of interference to NBN fixed wireless signals received at dwellings in the vicinity of the Project but has not expressed any concerns regarding the proximity of the turbines to the towers.

#### **Fixed Licences of point-to-point type**

The Assessment highlights that wind turbines can potentially cause interference to point-to-point microwave links and in some instances, to point-to-point ultra high frequency (UHF) links through three mechanisms: diffraction of the signal, reflection or scattering of the signal, and near-field effects. The Assessment notes that, generally, it is possible to design around these issues as the link paths and potential interference zones for these signals can be determined.

Point-to-point links are often used for line-of-sight connections for data, voice and video. These links often exist on mobile phone and television broadcast towers and the frequency of common microwave signals varies from approximately 1GHz to 30 GHz.

The Assessment notes that all operators of the point-to-point links crossing the Project site were contacted to determine the likelihood the proposed Project will cause interference to their operations and services through diffraction, reflection or scattering, or near-field effects. Table 6.18 below summarises the turbines located within the calculated diffraction, reflection/scattering and near-field interference zones for each of the point-to-point links crossing the Project site.

No concerns were raised by AusNet services, Digital Distribution Australia, Optus Mobile, or VerTel, on the condition that the proposal achieves clearances requested (as listed in the Table below).

**Table 6.18: Point-to-point links crossing the Project site within interference zones of turbines established by DNV GL and requested clearance zones (Source: EMI and Telecommunications Report, DNV-FL, 6 November 2020)**

Operator	Requested clearance zone	Turbines within potential interference zone			
		Diffraction		Reflection/ Scattering	Near-field
		Horizontal plane	Vertical plane		
AusNet Transmission Group Pty Ltd (AusNet Services)	Second Fresnel zone, or reduce turbine tip height to 180m.	None	None	Not assessed*	Not assessed*
Central Gippsland Region Water Corporation (Gippsland Water)	None requested	None	None	Not assessed*	Not assessed*
Digital Distribution Australia Pty Limited	Third Fresnel zone	None	None	Not assessed*	Not assessed*
Optus Mobile Pty limited	30m from link path in horizontal plane	None	None	Not assessed*	Not assessed*
Optus Mobile Pty Limited	30m from link path in horizontal plane	None	None	Not assessed*	Not assessed*
Vertical Telecoms Pty Limited	First Fresnel zone plus 15m buffer	T21	None, zone passes over turbines	Not assessed*	Not assessed*

\*Transmission towers are located more than 5 kilometres from the proposed turbine locations. Interference caused by reflection or scattering of signals or near-field effects is not expected for this link.



The Assessment notes that based on an earlier turbine layout, Gippsland Water had identified the potential for turbines at the Project to interfere with their point-to-point links. The layout was then modified to address these concerns. Subsequently it is the view of DNV GL that the currently proposed turbine layout addresses their concerns and is unlikely to impact these links. The Assessment notes that details of the revised turbine layout, and the conclusion that it would not impact Gippsland Water's point-to-point links, has subsequently been provided to Gippsland Water and no further concerns have been raised.

The Assessment also highlights that there are no turbines located within the requested clearance zones either in the horizontal or vertical plane for any point-to-point links, with the exception of one turbine located within the requested clearance zone in the horizontal plane for the point-to-point link operated by Vertel. However, The Assessment notes that this link passes over the Project at a height that is well above the maximum proposed turbine tip height and so the requested clearance zone is clear of the turbine blades in the vertical plane. The Assessment confirms that his advice has been provided to Vertel and that it has confirmed that the proposed turbines are not expected to interfere with their point-to-point link.

### ***Fixed licences of point-to-multipoint type***

The Assessment highlights that fixed licences of the point-to-multipoint type are a variation of the point-to-point type and that the difference between them is administrative. It highlights that point-to-point licence permits communication between two static sites where the locations of the sites are detailed in the ACMA RRL database, whereas a point-to-multipoint licence allows communication between one or more static sites and multiple points of between the points, and is usually registered for a defined operational area. Accordingly, wind turbines can cause interference to point-to-multipoint links through the same mechanisms as described for point-to-point links.

From the ACMA RRL database, DNV GL has identified in the Assessment 204 point-to-multipoint licences within 75 kilometres of the Project site and 20 point-to-multipoint base stations within 20 kilometres of the Project boundary, with several others located more than 20 kilometres.

The Assessment notes that DNV GL contacted the operators of all potentially affected point-to-multipoint base stations within 60 kilometres of the Project, with responses received from several operators. No concerns were raised by AusNet services, Aussie Broadband, Esso Australia, Speedweb Wireless Internet in relation to their point-to-multipoint licences in the vicinity of the Project Site.

The Assessment highlights that Energy Australia Yallourn has indicated that they do not expect the Project to cause interference to their point-to-multipoint links during operation, but that there may be potential for impact from radiocommunication equipment used during the construction of the Project. Accordingly, DNV GL recommends that the proponent informs Energy Australia of any relevant details regarding radiocommunication services to be used during construction, to enable a further assessment of potential impacts.

The Assessment identifies 18 point-to-multipoint links operated by Gippsland Water that pass over the Project site and notes that further investigation was undertaken into concerns raised by Gippsland Water regarding the potential of the Project to interfere with their point-to-multipoint links. For each of the 18 links, DNV GL established a diffraction exclusion zone based on the second Fresnel for lowest frequency of that link with the potential for the turbine blades to intersect with the diffraction exclusions zones in both the horizontal and vertical planes assessed.

Based on that analysis, the Assessment found that there are two turbines located within the diffraction exclusion zones of one of Gippsland Water's point to multi-point link and that accordingly the wind farm will cause interference to that link due to diffraction effects. However, the Assessment notes that whilst Gippsland Water has confirmed there may be impacts, it has advised that it considered mitigation measures exist.

The Assessment notes that it is yet to receive feedback from the Bureau of Meteorology regarding their point to multi-point links in the vicinity of the Project including one licence located within 20 kilometres of the Project boundary. However, the Assessment notes that given the frequency at which the licence operates it is likely to be associated with the Latrobe Valley Flood Warning system (discussed further below) which DNV GL considers is at low risk of interference.

### ***Latrobe Valley flood warning system***

The Assessment highlights that throughout the consultation process, Latrobe City Council advised that it operates a flood warning system in the vicinity of the Project site. The Assessment notes that this system consists of a network of monitoring stations that measure rainfall and river height data, then transmits that data in real time to the Latrobe City Council, Victorian State Emergency Service and BoM Flood Warning Service. Data collected from these stations is also made available through DELWP's Water Measurement Information System.

The Assessment highlights that the Latrobe Valley flood warning system currently uses VHF radiocommunication signals at a frequency of 151.5MHz to transmit the recorded data. Based on advice from Latrobe City Council, the flood warning system comprises approximately 20 remote monitoring stations with repeater stations at Jeeralang and Mt Tassie which are registered with ACMA as point-to-multipoint base stations. However, the exact locations of the monitoring stations and associated radiocommunication links were not confirmed by Latrobe City Council.

The Assessment notes that feedback received from Latrobe City Council is that it does not expect turbines at the Project to interfere with the operation of the flood warning system, as the signals are able to operate without a clear line of sight and do not transmit data continuously. This is consistent with the view of DNV GL, which considers that there is a relatively low risk of interference to the system.

### ***Other licence types***

The Assessment highlights that apart from point-to-point and point-to-multipoint licences, other licence types recorded in the ACMA RRL database include spectrum licences that permit a range of radiocommunications in a specific geographic area and frequency band, private mobile radio and public communications service (PTS) licences, television and radio broadcasting licences, amateur apparatus licences and aeronautical licences for ground to aircraft communications.

The Assessment identifies a number of other licences in the ACMA RRL database within 75 kilometres of the proposed Project boundary and consultation was undertaken with the licence holders. Most of the licences identified were broadly described as base to mobile station or point-to-area style communications, including commercial and private mobile telephony and radio and television broadcasting. The Assessment notes that these licence types are generally not affected by the presence of wind turbines any more than other elements such as terrain, vegetation and other forms of signal obstruction.

The Assessment highlights that Gippsland Water noted the potential for the turbines to interfere with digital mobile radio (DMR) signals from their radiocommunications tower at Moe South, noting that the Gippsland tower is approximately 3.7 kilometres from the nearest proposed turbine.

However, the Assessment finds that given the distance of the Gippsland Water tower from the Project, it is considered unlikely that the Project will interfere with DMR signals from the tower and that if interference to mobile radio signals is experienced, this can often be mitigated by the user moving a short distance to a new or higher location to receive a stronger signal or by using an external antenna to improve signal reception. The Assessment confirms that this advice was provided to Gippsland Water, who acknowledged the advice and indicated that it will not be possible to determine the extent of impacts until after construction of the Project.

The Assessment also notes that a number of aeronautical licenses and radiodetermination licences that may be used for aircraft consideration, were identified. The potential impacts to these services have been considered as part of the Aeronautical Impact Assessment.

### ***Emergency services***

The Assessment notes that licence types operated by emergency services such as state ambulance, police, fire and rescue services, typically comprise fixed point-to-point links and mobile radio communications.

The Assessment highlights that DNV GL has reviewed the ACMA RRL database to identify emergency services with licences for radiocommunication assets operating in the vicinity of the Project and that the nearest licence is associated with a tower located approximately 2 kilometres from the Project site boundary.

It is noted in the Assessment that the operators of all potentially-affected stations within approximately 60 kilometres of the Project were contacted to seek feedback regarding any potential impacts the Project may have on their operations and services. These operators comprised: Ambulance Victoria, Australian Maritime Safety Authority, Australian Radio Rescue Service Incorporated, Country Fire Authority; Department of Justice and Regulation (Corrections Victoria SandES Group and ESTA Emergency Services Telecommunications Authority), Department of Justice and Regulation (RMR Regional Mobile Radio and Visionstream Australia), Life Saving Victoria Limited, St John Ambulance Australia Incorporated, the Australia Volunteer Coast Guard Associated Inc and Victoria State Emergency Service.

Responses were received from all operators contacted and no concerns raised.

Accordingly, the Assessment concludes that any impacts to emergency services are unlikely. Nonetheless, it notes that if localised interference is subsequently experienced to mobile radio signals, this can often be mitigated by the user moving a short distance to a new or higher location to receive a stronger signal or by using an external antenna to improve signal reception.

### ***Meteorological radar***

The Assessment notes that the Bureau of Meteorology (BoM) operates a network of weather radars across Australia consisting of high resolution Doppler radars and standard weather watch or weather surveillance radars. Standard weather watch radars emit pulsed microwave radiation and use reflections or "echoes" of that radiation from water particles in the atmosphere to detect rain and storm activity. Doppler radar installations



operate in the same way but are also able to measure the speed of moving water particles, and therefore can provide information about wind speed and direction.

The Assessment highlights that the World Meteorological Organisation (WMO) currently states that wind turbines should not be located within 5 kilometres of a meteorological radar site, due to the high risk of interference to the radar signal and subsequent loss of weather data. According to the Draft National Guidelines, the operators of weather radars within 250 nautical miles (463 kilometres) of the proposed Project should be consulted.

DNV GL has identified that BoM operates eight weather radars within 250 nautical miles of the Project site, with the closest radar 'Bairnsdale' located approximately 119 kilometres northeast from the nearest proposed wind turbine. The Assessment notes that it is not expected that the Project will cause interference with BoM radar installations given the distance between the site and radar installations and the nature of the intervening terrain, highlighting that it is likely that the intervening terrain will likely intercept radar signals before they can be influenced by the Project.

Notwithstanding the above, as part of the Assessment DNV GL contacted BoM in accordance with the recommendations of the Draft National Guidelines and no concerns were raised in the response received from BoM.

### ***Trigonometrical stations***

The Assessment notes that a trigonometrical station, usually known as a trig point or trig beacon, is an observation mark used for surveying or distance measuring purposes and that some trig points may host surveying equipment such as Global Positioning System (GPS) antennas and electronic distance measuring (EDM) devices.

The Assessment highlights that according to Geoscience Australia, there are 35 trig points within 20 kilometres of the Project site boundary along with 374 permanent survey marks within 5 kilometres of the Project site boundary, noting that the closest survey mark is located 179m east of T09.

The Assessment states that whilst it was considered unlikely that the trig points in close proximity to the Project host devices that could be subject to EMI, DNV GL contacted Geoscience Australia and DELWP to inform both organisations of the Project.

Both Geoscience Australia and DELWP subsequently advised that they do not expect turbines at the Project to interfere with their operations. However, DELWP did request that any potential disturbance to survey marks be avoided during the construction of the Project. The Assessment notes that all identified survey marks are outside the proposed disturbance areas for the Project and advises that the proponent consider the locations of these marks during construction.

### ***Citizen's band radio***

The Assessment notes that Citizen's band radio, otherwise known as CB radio, is a class-licensed two-way, short distance communication service that can be used by any person in Australia for private or work purposes. It is commonly used in rural areas for emergency communications, road safety information, communication

between recreational travellers and general conversation. The class licence element implies that all users of the CB radio operate within the same frequency range on a shared basis and no individual licence is required.

The Assessment observes that since users of CB radio services do not require a licence, there is no record of users of the service and their locations and the channels are shared among the users and the repeater stations without a right of protection from interference. In any case, the Assessment considers that the likely impact of the Project on CB radio services is expected to be minimal and that, in the event of interference from wind turbines did occur, simple steps such as moving a short distance until the signal strength improves would help mitigate the impact.

#### **Mobile phones**

The Assessment notes that Mobile phone networks typically operate at frequencies of either between 700 and 900MHz, or between 1800 and 2600MHz (although some new services may operate at up to 3500MHz) and that at such frequencies, signals may be affected by physical obstructions such as buildings and wind turbines. However, the Assessment also highlights that there is little evidence in relevant literature of wind turbines interfering with mobile phone signals, noting that mobile phone networks are designed to operate in such conditions and that in most cases, if there is sufficient mobile network coverage and signal strength, the presence of wind turbines is unlikely to cause interference.

The Assessment identifies that the nearest mobile phone tower is located approximately 1.2 kilometres southeast of the Project boundary and that in relation to this tower Optus, Telstra, Vodafone were all contacted to inform them of the proposed Project and to seek feedback on any potential impact they considered the Project could have on their services.

All three operators advised that they do not have any concerns regarding potential impacts to their mobile services.

#### **Wireless internet**

The Assessment highlights that wireless internet services in Australia include wireless broadband provided by mobile phone network operators and other internet service providers, as well as fixed wireless or satellite internet services through the National Broadband Network (NBN).

With respect to wireless broadband, the Assessment notes that Aussie Broadband and Speedweb Wireless Internet hold point-to-multipoint licences in the vicinity of the Project, with the nearest base stations located 19 kilometres north-east and 10 kilometres north of the Project site, respectively. Both service providers were contacted with respect to the wind farm project and no concerns were raised.

With respect to the National Broadband Network (NBN), its website indicates that the network is currently available as a fixed wireless service and satellite internet service using the NBN Sky Muster I and II satellites in the areas surrounding the Project site. Accordingly, the Assessment observes that it is likely that some residents are currently accessing the internet via the NBN and that the network will also be available to other residents in the vicinity in future.

The Assessment identifies that NBN towers servicing the Project are located at Moe South in the north, Narracan in the northwest, Thorpdale in the east, Boolarra in the southeast and Yinnar in the east and that

given the relative positions of the NBN towers and the nearest dwellings, and the fixed wireless coverage areas nominated by NBN, there is potential for the Project to impact residents who may currently be receiving fixed wireless internet signals.

However, given the maximum range of the NBN fixed wireless signals, the intervening terrain, the locations of the NBN towers and dwellings, the Assessment considers that only signals from the Boolarra and Narracan NBN towers have the potential to experience interference to signals.

To understand better these potential impacts, for each of the signal paths between a potentially affected dwelling and the corresponding NBN tower, DNV GL established a potential interference zone based on the second Fresnel zone for the lowest frequency signal transmitted by the tower (as described for fixed point-to-point links). Each interference zone included the rotor radius for turbines with a 180m rotor diameter, and an additional buffer of 25m on either side to account for potential inaccuracies in the tower or dwelling locations.

Based on this work, the Assessment concluded that there are four dwellings in the vicinity of the Project that may experience interference to fixed wireless signals from the Boolarra NBN tower as a result of the Project and that Interference to fixed wireless internet signals from the Boolarra NBN tower may also be possible for an additional dwelling (although analysis of the signal path from the NBN tower to this dwelling suggests that the signal may already be obstructed by terrain).

The Assessment notes that NBN was contacted in relation to the proposed project and potential for interference to their services, and that NBN responded that it believes there is a low risk of interference to NBN fixed wireless internet signals received at dwellings in the vicinity of the Project. Further that there are no dwellings currently connected to the fixed wireless service for which the signal line of site would be intercepted by a turbine. NBN also advised that whilst there are a number of dwellings in the coverage area that are not yet connected, including the dwellings within the project boundaries future servicing is likely to be by a tower on the same side as the Project and so are also unlikely to be affected.

The Assessment goes on to highlight that if interference to NBN fixed wireless signals is experienced at nearby dwellings, several mitigation options may be available to improve the signal reception. These could include moving the outdoor antennas at the affected dwellings to a location not impacted by the turbines, connecting the antenna to the dwelling via cable or installing a new NBN tower to service affected dwellings. It may also be possible to avoid impact by micro-siting the turbines in some instances.

### ***Satellite television and internet***

The Assessment notes that in some rural or remote areas, television and internet access can only be provided through satellite signals. Satellite television is delivered via a communication satellite to a satellite dish connected to a set-top box and satellite television signals are typically transmitted to the user's antenna in one of two frequency bands: the C-band between 4GHz and 8GHz, or the Ku-band between 12GHz and 18GHz. The Assessment notes that signals in the C-band are susceptible to interference due to radio relay links, radar systems and other devices operating at a similar frequency whereas signals in the Ku-band are most likely to be affected by rain which acts as an excellent absorber of microwave signals at this frequency.

The Assessment highlights that due to the marginal coverage of some communication services, some residents in the vicinity of the Project site may use satellite television and internet. As part of the Assessment, DNV GL analysed the line of sight to dwellings in the vicinity of the Project for satellites which provide any television or



internet services to eastern Australia, noting that although only a small number of satellites are likely to be providing services intended for Australia, all viewable satellites were considered.

The analysis demonstrated that signals from the Eutelsat 70B, Intelsat 22, Apstar 7 and Thaicom-5 satellites to a number of nearby dwellings may be intercepted by turbines. However, DNV GL highlights that these satellites do not transmit signals designed for Australian audiences and as such it is unlikely that residents in the vicinity of the Project will be receiving their signals.

### ***Radio broadcasting***

In relation to radio stations the Assessment highlights that they typically broadcast using one of two forms of transmission: either amplitude modulation (AM) or frequency modulation (FM). In Australia, AM radio operates in the medium wave (MW) band at frequencies between 520kHz and 1610kHz, while FM radio operates in the very high frequency (VHF) band between 87.5MHz and 108MHz.

The assessment notes that as AM radio signals are able to propagate around obstructions such as turbines, it is expected that the Project will not cause significant interference for a receiver. Additionally, due to the long wavelength of the signal, interference is only likely in the immediate vicinity of a turbine. Any interference problems are therefore likely to be easily resolved through the installation of a high quality antenna or amplifier.

With respect to FM radio, the Assessment identifies that the closest broadcast transmission tower is a Kids FM broadcast tower adjacent to the proposed Project boundary, approximately 1.9 kilometres northeast of the nearest wind turbine (T03) and within 4 kilometres of six turbines (T01, T02, T03, T04, T05 and T06). The Assessment notes that it is possible that the FM radio signals from this tower could be affected given the relatively small distance to the turbines. Since the transmission tower is located to the northeast of the turbines, the potential interference is likely to extend southwest of the Project site, with residents in the townships/localities of Delburn, Boolarra, and Mirboo potentially experiencing interference to the Kids FM station.

However, following stakeholder consultation, the operator of the Kids FM broadcasting tower, BAI Communications has advised that based on previous measurements of the FM strength in the vicinity of the wind farm, it does not expect turbines at the Project will interfere with FM services in the region including signals from Kids FM broadcasting tower.

The Assessment highlights that the Proponent is committed to ensuring that FM services are maintained at pre-construction quality. Accordingly, if impacts are experienced potential mitigation options are identified including: installing high-quality antennas or amplifiers at affected residences, increasing the broadcast signal strength from the transmission tower, moving the tower to a new location further from the turbines or installing a signal repeater on the opposite side of the Project.

It is noted that digital radio is not yet available within the Project region, therefore the Assessment does not address digital radio.

### ***Terrestrial television broadcasting***

The Assessment identifies that terrestrial television is broadcast in Australia by a number of networks, both public and commercial. As of December 2013, all television broadcasts in Australia are now digital broadcasts and digital television (DTV) signals are typically more robust in the presence of interference than analogue television signals, and are generally unaffected by interference from wind turbines. The Assessment notes that DNV GL has experience in situations where dwellings were able to receive adequate DTV reception in an area of adequate signal strength where the DTV signal was passing through a wind farm.

The Assessment identifies that the main DTV transmitter used by residents in the vicinity of the Project is the Latrobe Valley transmitter at Mt Tassie. However, according to the Australian Government mySwitch website, the area around the Project is also able to receive DTV signals from the Boolarra, Churchill, Jeeralang/Yinnar South, Melbourne, Newborough and Trafalgar/Yarragon broadcast towers.

Although DTV signals are generally unlikely to be susceptible to interference from wind turbines in areas of adequate coverage, the Assessment notes that interference could be encountered in areas where coverage is marginal and antennas at dwellings may receive a reflected signal from a turbine that is of sufficient power to interfere with the signal received directly from the transmitter.

Accordingly, an analysis using a 'keyhole' approach was used to investigate areas that have an increased likelihood of signal interference. A keyhole approach is an established technique for predicting where terrestrial television interference is most likely, based on a number of assumptions regarding receiving antenna characteristics. The approach involves combining multiple keyhole shaped areas that are placed over each turbine location. The combination of these areas forms a region where there is an increased likelihood of interference to television signals occurring and the results identify the dwellings that have increased potential to receive scattered signals from a turbine, and hence have an increased likelihood of experienced interference to DTV signals.

The analysis found a large number of dwellings located within possible interference zones. In particular, dwellings to the west were considered to have an increased potential to experience DTV interference from the Latrobe Valley broadcast tower, which offers 'good to 'variable' coverage. Potential interference zones for the Latrobe Valley tower include the townships/localities of Narracan and Delburn and may extent to Thorpdale and beyond. The Assessment also noted that a number of dwellings have also been identified in potential interference zones for the Boolarra, Churchill, Jeeralang/Yinnar South, Melbourne, Newborough, and Trafalgar/Yarragon broadcast towers, but the coverage map suggested that there is little to no signal coverage from those towers in most of the potentially affected areas.

The Assessment confirms that DNV GL subsequently contacted BAI Communications and RBA Holdings, who are responsible for broadcasting of national public television services in Australia and for the Boolarra relay transmitter, respectively to advise of the Project and seek feedback on potential impacts. BAI Communications subsequently undertook an assessment of the potential for turbines to interfere with DTV signals from their Mt Tassie (Latrobe Valley) and Mills Trig (Churchill) Towers and the relay transmitters at Boolarra, Silcocks, Jeeralang/Yinnar South, Haunted Hills (Newborough) and Earls Road (Yarragon South) operated by RBA Holdings. Signals from the Melbourne tower were not considered as that transmitter is not intended to service the area around the Project. The assessment involved modelling the reflection or scattering of DTV signals from the wind turbines, and identifying locations within 10 kilometres of the Project where the resulting C/I ratio for a directional antenna oriented towards the tower of interest would be less than required for adequate signal reception.

Based on their modelling, BAI Communications advised that they do not expect the Project to cause interference to DTV signals from the Churchill tower or any of the nearby relay transmitters operated by RBA Holdings. However, the modelling predicted that the Project will cause interference to DTV signals from the Latrobe Valley Tower. Based on population density data for the area around the Project, BAI Communications concluded that 747 residents are at low risk of experiencing interference to DTV signals from the Latrobe Valley tower and 23 residents are at high risk. When the Churchill tower was considered as an alternative to the Latrobe Valley tower, BAI Communications found that 257 residents are at low risk of experiencing interference to DTV signals and 20 people are at high risk of experiencing interference.

The Assessment finds that there are limitations associated with the methodology and approach undertaken by DNV GL and BAI Communications. The method used by DNV GL is based on a simplified geometric approach (described above) and assumes that the forward scatter and back scatter regions do not extend further than 5 kilometres and 500 metres respectively from the wind turbines. The BAI Communications modelling considers potential interference caused by both forward and backward scattered signals to a distance of 10 kilometres from the turbines, and appears to take terrain effects and existing signal quality into account. However, neither modelling considers whether the dwellings in the potentially-affected areas are currently receiving signals from the Latrobe Valley tower. It is possible that the dwellings located in the interference zones modelled by BAI Communications to the east and southeast of the Project are currently receiving signals from the Jeeralang/Yinnar South and Boolarra towers, and therefore may not be affected by interference to signals from the Latrobe Valley tower. Dwellings located in other potentially-affected areas may also be able to receive alternative signals from nearby relay transmitters operated by RBA Holdings.

The Assessment recommends the preparation of a pre-construction survey of the DTV reception strength in the areas around the Project, with a particular focus on those areas identified as having potential to experience interference, to determine the average signal strength and identify which towers are most likely to be servicing those areas.

In addition, the Assessment advised that in the event that television interference is an issue during construction or after commissioning of the Project, there are several mitigation options available including:

- Realigning the user's television antenna more directly towards the existing transmitter;
- Turning the user's antenna into alternative sources of the same television signal or a substitute signal;
- Installing a more directional or higher gain antenna at the affected dwelling;
- Relocation the antenna to a less affected position;
- Installing cable or satellite television at the affected dwelling;
- Installing a television relay station.

The Assessment notes that in the event of a significant interference, a more directional antenna should also ensure a stronger signal from the transmitter. In addition, the Assessment notes that the receiver height can also affect interference and that in some instances lowering the receiver height can improve reception.



The Assessment also highlights notes that in the event terrestrial DTV reception cannot be improved, satellite television represents another potential amelioration, noting that satellite television comprises of both free to air and subscription based broadcasts and that residents in areas which are unable to receive DTV through their normal television antenna may be eligible to access the Australian Government funded Viewer Access Satellite Television.

In addition to the above, the Assessment highlights that the Victorian Guidelines include permit conditions requiring a survey to be undertaken prior to commencement of development, to determine the average television and radio reception strength within 5 kilometres of the wind farm site. If a complaint is later received regarding the effect of the wind farm on television or radio reception at a pre-existing dwelling within 5 kilometres of the site, the operator must investigate that complaint and restore the reception if the investigation finds that the wind farm had a detrimental impact on the quality of television and radio reception.

#### 6.7.4 Further Actions

Delburn Wind Farm Pty Ltd and DNV GL will continue to engage with relevant stakeholders in relation to EMI matters as required including BAI Communications in relation to DTV signals and Gippsland Water in relation to point-to-multipoint services.

As outlined above, it will also be a requirement of any planning permit that is issued for the Project that a survey is undertaken pre-construction to establish a baseline assessment for impacts, noting that Delburn Wind Farm Pty Ltd is committed to returning any impacted services to at least pre-construction quality at its own cost if the interference is attributed to the Project after construction.

### 6.8 Bushfire Risk Assessment

The Bushfire Risk Assessment prepared by Fire Risk Consultants discusses the potential bushfire risks associated with the Project and outlines the recommended management measures to mitigate potential risks. A copy of the Bushfire Risk Assessment is contained in Appendix J.

#### 6.8.1 Methodology

The methodology used for Bushfire Risk Assessment included:

- A desktop review of publicly available information relating to bushfire in the study area;
- Consideration of the Project's infrastructure layout including the wind turbine generators, quarry, concrete batching plant, access tracks and the proposed transmission line corridor;
- Consideration of relevant legislation and policy relating to bushfires, including CFA Guidelines and Municipal Fire Management Plans; and
- Bushfire risk modelling undertaken using Phoenix Rapidfire software.

#### 6.8.2 Relevant Legislation and Policy

The relevant legislation and government policies for fire management that were considered in the Assessment comprise the following:

- Policy and Planning Guidelines for Development of Wind Energy Facilities in Victoria (March 2019 (DELWP, 2019);
- Clause 13.02-1S Bushfire Planning and Clause 14.03-1R, all planning schemes;
- Clause 21.04 Environmental Risks, Latrobe Planning Scheme;
- Clause 44.06 – Bushfire Management Overlay, all planning schemes;
- CFA Guidelines for Renewable Energy Installations (February 2019);
- Latrobe Municipal Fire Management Plan;
- South Gippsland Fire Management Plan;
- Baw Baw Municipal Fire Management Plan;
- Wind Farms and Bushfire Operations (Australian Fire and Emergency Services Authorities Council, 2014);
- HVP Fire Management;
- AS 3745 – 2010 'Planning for emergencies in facilities'.

### 6.8.3 Existing Conditions

The Assessment highlights that the Project Site is located within a high-risk bushfire landscape, on account of its siting within pine plantations at various stages of maturity as well as the presence of native vegetation. It notes that there have been reports of bushfires within the surrounding area in 1898, in the 1920s and 1944, and most recently in 2009, prior to Black Saturday and that in the 2009 bushfires, 44 houses and 6,534 hectares of land primarily in and around Boolarra was destroyed, with approximately 60% of the affected area comprising commercial plantations managed by HVP. The fire impacted the southern portion of the Project Site area, causing significant plantation damage, with records showing that the fires burned mainly between 28<sup>th</sup> January and 3<sup>rd</sup> February and was at its most destructive on 30<sup>th</sup> January.

The Assessment identifies existing risk factors as outlined below:

- Access and egress – the road network throughout the HVP plantation is considered to provide effective access to most areas of the plantation, with more than one egress option available in most locations.
- Topography – the Project site is located along the ridge line of the Strzelecki Ranges. All proposed turbine locations are considered to be accessible and have been sited to enable construction and operational access. The Assessment notes that the construction vehicles would require more space

than firefighting vehicles, therefore the road network is considered to be suitable for fire fighting access and egress.

- Vegetation – the Project site currently comprises blue-gum and pine plantations with native vegetation dominating gullies and other locations throughout the plantation. It is understood that HVP is in the process of transitioning away from blue gum to 100% pine plantation, which reduces fire spotting. Blue gums have a greater spotting potential (up to 30 kilometres on code red days) than pine plantations (1 kilometre).
- Surrounding land use – The Assessment notes that in many areas of Victoria, highest fire risk typically comes from the north-west or south-west. However, due to the land to the west of the site comprising an intensive irrigated agricultural area, the land to the west remains largely non-flammable even during dry years, providing a large buffer to possible external fire threats in that direction. Accordingly, the Assessment highlights that ignitions likely to threaten the plantation are more likely to come from within the plantation or immediately adjacent (for example Mirboo North, Coalville, Hernes Oak and Darlimurla).
- Firefighting capabilities – The Assessment highlights that numerous CFA fire brigades are located throughout the Latrobe Valley and the HVP Gippsland Plantations Forest Industry Brigade also comprises over 100 employees and contractors, enabling a quick response to reports of bushfires within the Latrobe Valley.

The Assessment highlights that pursuant to Clause 13.02-1S, an assessment of landscape conditions is required along with the identification of bushfire scenarios as they can influence bushfire behaviour. Due to the scale of the Project the assessment has been undertaken to 20 kilometres, in addition to a local assessment to 1 kilometre. In relation to these matters the Assessment highlights the following potential scenarios and accompanying considerations in relation to landscape conditions.

- For 20 kilometres the likely scenario are fires burning through grassland or coming from the south west via forest on adjoining private and public land. Considerations include: early identification of fire ignitions and engagement with the Municipal Fire Management Planning Committees to ensure fuel management treatments on surrounding land and roadsides.
- For 1 kilometre the likely scenario is that a bushfire starts in the plantation estate and travels towards the turbines. Considerations include establishing effective road access that also serves as fire breaks; early identification of fire ignition and elimination of unnecessary activity on high risk fire days.

In terms of the bushfire scenarios, the Assessment highlights the influence of north westerly and subsequent south westerly changes as the key risk factors. It notes that due to the connection between the development area and the Strzelecki Ranges there is the potential for a bushfire to travel long distances before it impacts on the development area.

The Assessment highlights that a bushfire approaching from the south west will be through a bushfire front and emit high levels of radiant heat. In comparison, due to the type of vegetation to the north west, any bushfire from outside that area will likely be through embers starting small bushfires.



Notwithstanding the above, the Assessment also highlights that the Project does not change the bushfire scenarios as they represent existing circumstances that have also been experienced in the past.

#### 6.8.4 Potential Impacts and Mitigation Measures

The Assessment provides a response to each of the relevant clauses in the Planning Scheme that relate to bushfires, including a detailed assessment against Clauses 13.02-1S, and 21.04. The response to these clauses is discussed further at Section 8.9.

The Assessment also provides a checklist against the CFA Guidelines and confirms that most of the requirements in the Guidelines in terms of the development of utility installations, emergency management, site infrastructure, site operations, and the additional conditions specific for wind energy facilities and battery installations, have been achieved. The only exception is the CFA requirement to provide a perimeter road, however this is not feasible for the Project given its extensive site area. Perimeter access requirements will be provided at the Operations and Maintenance Facility and Visitors Area. Further, the widened tracks surrounding the turbines and other infrastructure will provide sufficient access for firefighting vehicles.

Discussion is also provided about the response of the Project to the BMO. As outlined in Section 5.3, the use of land for a wind energy facility does not trigger a permit requirement under the BMO. Nonetheless, the Assessment applies the provisions to the Operations and Maintenance Facility and highlights that the Facility has been designed to achieve the requirements of the BMO in the following way:

- The existing and proposed road network to be constructed / altered to enable firefighting appliances to safely access and egress from the Project area.
- Defendable space for the Facility to be provided through management of surrounding vegetation along with the installation of radiant heat barriers.
- All turbines and other infrastructure to be provided with defendable space that provides an appropriate level of protection to the infrastructure.

Following the consideration of the Planning Scheme and CFA Guidelines summarised above, the Assessment then outlines the outcomes of Bushfire modelling undertaken to model fire risk before and after fire risk reduction works (such as fuel management activities). The modelling uses Phoenix Rapidfire, to assess the potential bushfire impact of the proposal assuming the same weather conditions as the 2009 bushfires. Phoenix Rapidfire is used by the State of Victoria to model fire scenarios before and after fire risk reduction works i.e. fuel management activities, to calculate risk.

The Assessment notes that two days of simulations were conducted using weather recorded at the Latrobe Valley Aerodrome on the 29<sup>th</sup> and 30<sup>th</sup> of January 2009. Both days were severe (bordering extreme) fire danger rating days and experienced different wind changes. Three fires were ignited in the Phoenix analysis at:

- Creamery Road at 1300hrs;
- Ashfords Road at 1300hrs;
- Lyrebird Walk at 1530hrs.

This reflects the ignitions in the 2009 bushfires. Each fire is assigned resources comprising two (2) 4 x 4 slip-on units, four (4) tankers and a medium helicopter.

The Assessment notes that the 'disruption layer' was modified to change road widths, breaks and clearings and the fuel layer was also modified to include the footprint of the turbines as mineral earth/non-flammable. The Assessment notes that at low intensities and at low wind, these modifications and other barriers may be able to stop the fire. However, at higher intensities and winds, the fire and spotting may breach these non-fuel areas.

The modelling found:

- In the 29<sup>th</sup> January post development scenario, the Creamery Road fire is halted by the clearings and suppression. Suppression fails in the pre-development scenario and the fire continues to spread.
- In the 30<sup>th</sup> January post development scenario, the Creamery Road fire is not halted by the clearings but is suppressed to one side of the Strzelecki Highway. In the pre-development scenario, the fire is much harder to suppress and crosses the highway.
- In the 30<sup>th</sup> January post development scenario, the Ashfords Road fire is slowed (and occasionally stopped) by the clearings as night approaches and is assisted by topography (downhill fire run).

Accordingly, the Assessment highlights that at lower fire danger indices, the presence of the Project may reduce bushfire spread through the plantations due to an enhanced fuel management and road network that will assist in a suppression response. At elevated fire danger conditions, minimal change is experienced.

The Assessment recommends a series of mitigation measures to be implemented during the construction and operation phases, including (but not limited to) the following.

#### Construction Phase

- Ensuring all activities undertaken during the Fire Danger Period are appropriate under the Country Fire Authority Act 1958;
- Adhering to CFA's Guideline for Renewable Energy Installations (February 2019);
- Ensuring that all construction and operational works follow appropriate Work Health and Safety requirements;
- Facilitating a high standard of communication with landowners, relevant stakeholders and the community regarding daily activities via a 'steering committee' or the like and an appropriate communication plan;
- Providing appropriate bushfire training for contractors and staff;

- Establishing an APZ around each turbine and considering other zoning strategies to assist bushfire mitigation;
- Ensuring all building construction is in line with regulations and codes of building in bushfire-prone areas and AS3959;
- Ensuring appropriate bunding in areas where there is potential for flammable fuels and pools to leak and create bushfires or other environmental risks/

#### Operation Phase

- Installing fire detection systems, in-built fire protection and suppression systems, remote alarming and notification systems in turbines to report potential bushfire risks;
- Establish remote shut down procedures for turbine operations during bushfires or reported faults, or at the request of emergency services;
- Installing lighting conductors to dissipate electricity to ground and reduce turbine damage and bushfire risk;
- Undertaking regular inspections and maintain records of all turbines, substation and power lines;
- Developing a bushfire response plan and communications plan;
- Ensuring suitable firefighting equipment is available onsite or readily accessible.

The Assessment concludes that, based on the range of matters addressed in the report, the Project will not increase bushfire risk in the landscape if the recommendations during the development, construction and operation phases outlined above are implemented.

#### **6.8.5 Further Actions**

Delburn Wind Farm Pty Ltd and Fire Risk Consultants will continue to engage with relevant stakeholders in relation to Bushfire Risk including, in particular, the CFA during the construction and operational phases of the Project.

### **6.9 Traffic Impact Assessment**

The Traffic Impact Assessment prepared by AECOM discusses the traffic impacts associated with the Project. A copy of the Traffic Impact Assessment is contained in Appendix K.

This section provides a summary of the assessment.

#### **6.9.1 Methodology**



The study area for the Traffic Impact Assessment includes the public road network connecting the wind farm site to Princes Highway to the north and includes a high-level study of routes to/from four potential ports; the Port of Hastings, Port of Melbourne, Port of Geelong and Port of Portland.

The methodology used for the traffic impact assessment included:

- Collation and analysis of relevant traffic data;
- A review of proposed access to and within the wind farm site;
- A site inspection of wind farm site and surrounding road network;
- Identification and review of construction traffic transport routes from wider ports and on local routes to the Project site;
- Worst case over-dimensional swept path assessments undertaken to identify access mitigation measures and subsequent native vegetation removal requirements (subject to detailed design); and
- Consultation with Regional Roads Victoria and Latrobe City Council, South Gippsland Shire Council, and Baw Baw Shire Council.

#### 6.9.2 Relevant Legislation and Policy

The relevant legislation and government policies that were considered in the preparation of the Assessment are as follows:

- Roads Management Act 2004;
- Victoria Government Gazette – Road Management Act 2004, Code of Practice, Worksite Safety, Traffic Management 2010;
- Department of Transport (VicRoads) – General Guidance;
- Department of Transport (VicRoads) Heavy Vehicle Network Maps in Victoria;
- Department of Transport (VicRoads) Road Management Plan;
- National Heavy Vehicle Regulator (NHVR) website / journey planner;
- Policy and Planning Guidelines for Development of Wind Energy Guidelines in Victoria (March 2019);
- Latrobe, Baw Baw and South Gippsland Planning Schemes;
- Best Practice Guidelines for Implementation of Wind Energy Projects in Australia, Clean Energy Council, June 2018;
- Latrobe City Council Road Management Plan;

- South Gippsland Council Road Management Plan;
- Baw Baw Shire Council Road Management Plan;
- Infrastructure Design Manual (2020);
- Austroads Guides to Road Design and associated VicRoads supplements.

### 6.9.3 Existing Conditions

The Assessment describes the primary road network to be utilised by the Project as follows (refer to Figure 6.19).

#### ***Princes Freeway (Western Port Highway to Strzelecki Highway)***

Princes Freeway (M1) is a Department of Transport (VicRoads) controlled road that links Hastings in the west with Delburn in the east via Narre Warren, Pakenham, Warragul, Yarragon and Moe.

It is generally a two-lane, two-way road. The Princes Highway comprises of 3.5 metres wide traffic lanes with 2.5 metre wide sealed shoulders. The posted speed limit of the highway is predominantly 100 kilometres/hr.

#### ***Marretts Road***

Marretts Road is a two-way Latrobe City Council road linking Princes Highway (M1) and Strzelecki Highway. The road is sealed with an approximate width of 7 metres. There are no posted speed signs along the length of the road. Low traffic volumes were observed on the road during a site inspection.

#### ***Strzelecki Highway***

Strzelecki Highway (B460) is a Department of Transport (VicRoads) controlled road that connects the Princes Highway (M1) to the local roads accessing the wind turbine sites, including Golden Gully Road, Smiths Road and Creamery Road. The road is sealed with an approximate width of 7 metres and has one lane of traffic in either direction.

#### ***Deans Road***

Deans Road is a Latrobe City Council road that connects with Strzelecki Highway to the east and Varys Track to the west. The road is approximately 3 metres wide which restricts traffic to one way at a time on the unsealed section of the road. There are areas of unvegetated verge where opposing vehicles may slow and pass. The road is predominantly unsealed, with the exception of a 25 metres section where it forms a priority-controlled intersection with Strzelecki Highway. There is no posted speed limit along the road.

Deans Road is primarily used by local residential traffic with some traffic from the HVP plantation. Low level traffic volumes were observed on the road during a site inspection.

### ***Golden Gully Road***

Golden Gully Road is a partially sealed, Latrobe City Council road, which connects with the Strzelecki Highway to the east and McDonalds Track to the west. The road is sealed for approximately 1 kilometre from the Strzelecki Highway before becoming unsealed. There are no posted speed signs and drivers must drive to the conditions of the road.

The unsealed section of Golden Gully Road varies in width and is generally 3.5 metres wide, allowing only a single vehicle to travel on the designated unsealed section of road. There are areas of unvegetated verge where opposing vehicles can pass. Upon approach to the sealed intersection with Strzelecki Highway, the road widens to approximately 5 metres.

Traffic volumes along the road were found to be relatively low, which was supported by the on-site inspection.

### ***Smiths Road***

Smiths Road is an unsealed, Latrobe City Council road connecting Strzelecki Highway to the east and Ten Mile Creek Road to the west although access from the east is restricted at the entrance to the Driffield Quarry. A short length of Smiths Road near its intersection with Strzelecki Highway is sealed. The road is approximately 6 metres wide, allowing for two-way travel. However, the road width and vegetation on either side of the road may reduce access for two-way heavy vehicle access. There are no speed signs present along the road and drivers are encouraged to drive to the conditions of the unsealed road. No traffic data was available for Smiths Road, however low traffic volumes were observed during a site inspection.

### ***Creamery Road***

Creamery Road is an unsealed Latrobe City Council road connecting with Yinnar Road to the east and Strzelecki Highway to the west. The road is approximately 7 metres wide and accommodates two-way traffic. There are also unvegetated areas on either side of the road where larger vehicles can allow other vehicles to pass, if required. There are no speed signs and drivers are encouraged to drive to the conditions of the unsealed road. Traffic counts from Latrobe City Council indicates that Creamery Road experiences relatively low traffic volumes.

It is noted that the wind turbines located within South Gippsland Shire and Baw Baw Shire are accessed via local roads under the control of Latrobe City Council or Regional Roads Victoria and consequently there are no project impacts on South Gippsland Shire or Baw Baw Shire's respective assets.



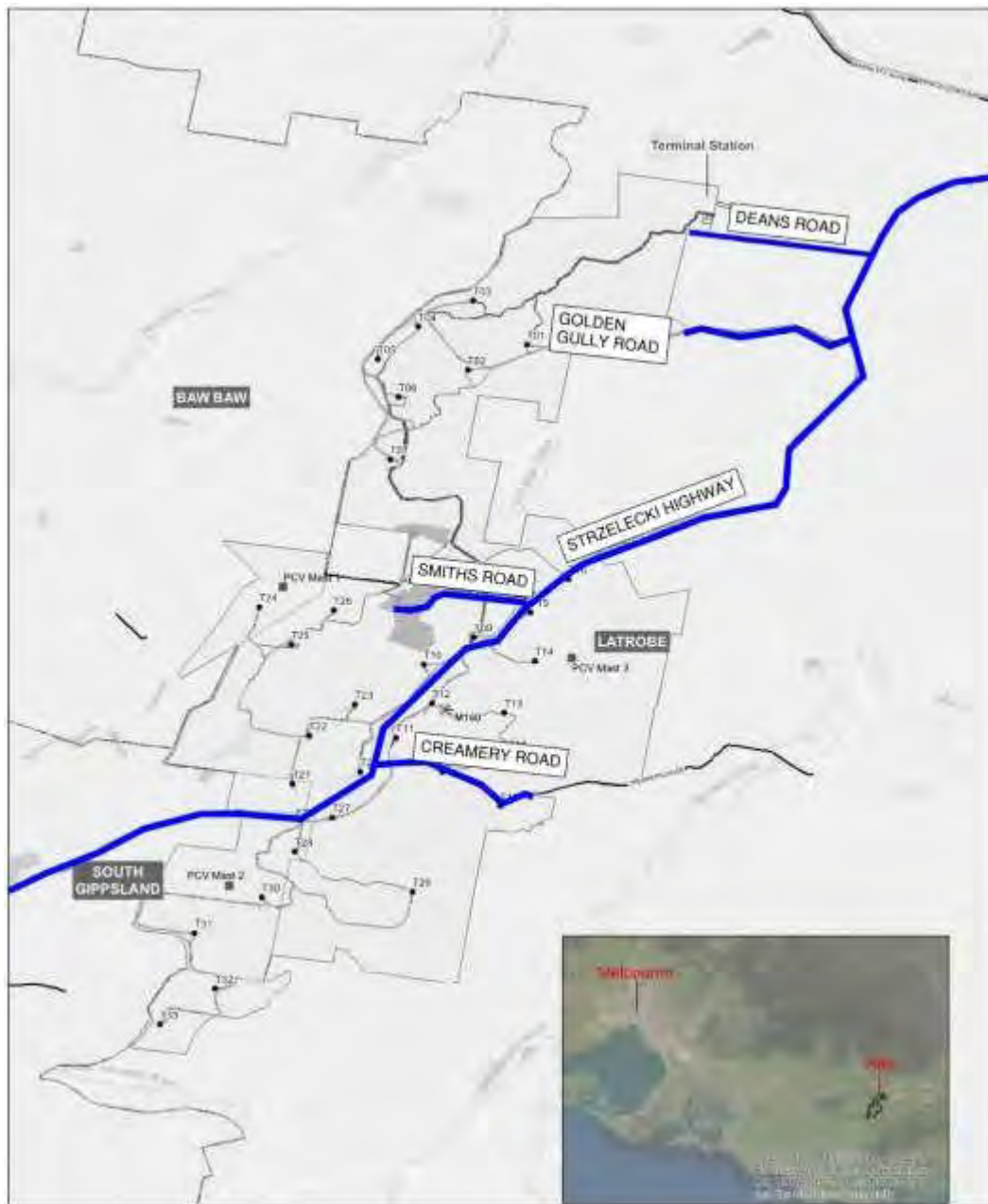


Figure 6.19: Surrounding public road network providing key access to the Project site (Source: Traffic Impact Assessment, AECOM, 19 October 2020)

## 6.9.4 Potential Impacts and Mitigation Measures

The Assessment notes that wind farm developments typically consist of three stages: construction, operation and either re-powering or decommissioning. The key impacts associated with each stage are outlined below.

### Site Establishment and Construction

The Assessment identifies that the proposed construction works will be undertaken in accordance with a Traffic Management Plan (TMP) which is typically required to be implemented via a condition of any planning permit that is issued. The Assessment notes that as the detailed construction works for the wind farm are not yet confirmed, and given the potential for changes to road and other conditions prior to commencement of works, the TMP will be required prior to commencement of works. The TMP will further develop on the assessment undertaken with respect to intersection swept path design, road safety audit and Over dimensional (OD) routes.

### Assumptions

The Assessment relied upon the following assumptions during the determination of the transport route for construction materials:

- construction timeframe of 18 - 24 months;
- temporary site offices to be located on Smiths Road along with associated car parking;
- the wind farm will utilise the existing quarry along Smiths Road to satisfy aggregate demands of the project, with concrete to be batched from two temporary plants also located on Smiths Road before being transported to the relevant wind turbine sites;
- wind turbine component sources are yet to be verified and are subject to discussions with manufacturers and port(s) for delivery logistics but, regardless of delivery ports, most components are expected to be delivered via Princes Freeway unless vertical restrictions limits cannot be achieved with certain components (i.e. base tower sections).

The Assessment notes that the primary delivery port for externally sourced materials / components is yet to be confirmed but that the options currently being considered include the Port of Hastings, Port of Melbourne, Port of Geelong and Port of Portland.

### Vehicle Types

The Assessment confirms that the vehicles to be used in the construction of the wind farm and their purposes are described in Table 6.19.

**Table 6.19: Vehicle Types (Source: Traffic Impact Assessment, AECOM, 19 October 2020)**

Vehicle Type	Use
Over-dimensional vehicles (i.e.) extendable rear-steerable trailer delivery vehicles, low load trailer systems	Delivery of high-mass items including wind turbine components (tower sections, blades, hubs and nacelle) and transformers.
Heavy vehicles (i.e.) semi-trailers, truck and dogs, tankers and cranes	Delivery of plant, rock material for access track and hardstand, concrete constituents, concrete reinforcement, transmission towers and cables and substation components.

General traffic (i.e.) vans, utility vehicles and cars	Construction staff transport
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## Construction Access Routes

As noted above, the primary delivery port for externally sourced materials / components has yet to be confirmed and could be any of the four ports previously listed. The locations of the port options and the transportation route to the site is outlined in Figure 6.20. The Assessment notes that a high-level desktop analysis of the routes from each port delivery option was undertaken which found that there are restrictions relating to height, weight and approvals required from other landowners/authorities which will require further investigations and consultation once a route has been finalised.



Figure 6.20: Potential OD transportation options from available ports (Source: Traffic Impact Assessment, AECOM, 19 October 2020)

Any approvals required to facilitate the delivery route will be sought once the Port has been selected and will be undertaken by the contractor engaged to undertake the land transport component of the construction activities.

Regardless of the delivery port, externally sourced materials including wind turbine components are expected to be delivered to the site via Princes Freeway, Marretts Road and Strzelecki Highway before turning off at a key local intersection at Golden Gully Road, Smiths Road, or Creamery Road.



The Assessment notes that the wind farm will utilise the Driffield Quarry on Smiths Road to satisfy the aggregate demands of the project, with concrete to be batched from two temporary plants also to be located on Smiths Road before being transported to the relevant wind turbine sites.

## Site Access Points

A total of 11 vehicle access points (site entrances) are proposed to the Project site via the public road network (refer to Figure 6.21). Four of the nominated access points are considered major access points as they will serve two or more wind turbines while the remaining accesses serve a single wind turbine only.

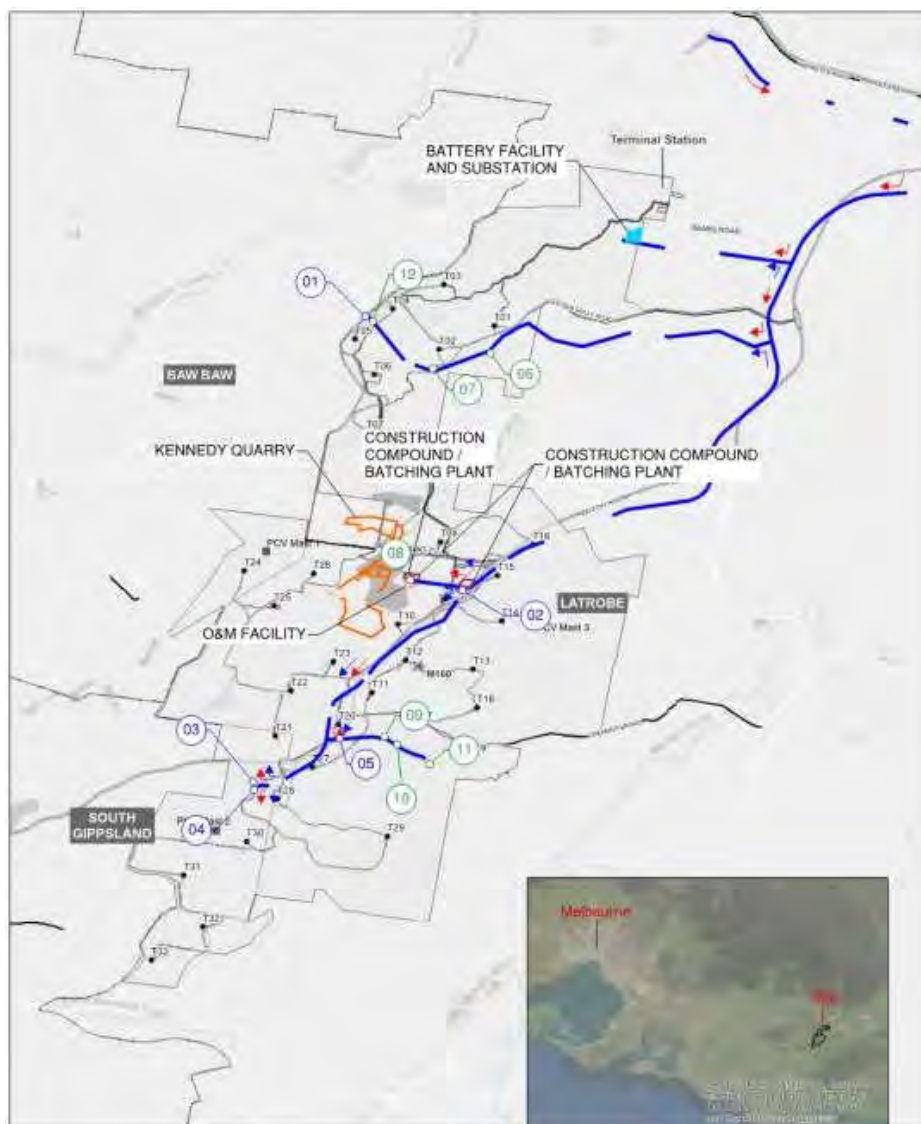


Figure 6.21: Delburn Wind Farm Local Delivery Route and Site Access Points (Source: Traffic Impact Assessment, AECOM, 19 October 2020)

### Traffic generation

The Assessment confirms that externally sourced materials including wind turbine components are expected to be delivered to the site via Princes Freeway, Marretts Road and Strzelecki Highway before turning off at a key local intersection. The anticipated total traffic volumes (across the entire estimated construction period of 18-24 months) associated with the site establishment and construction phases are summarised in Table 6.20. It is noted that the anticipated volume is a conservative estimate and is expected to be lower in practice.

**Table 6.20: Total Anticipated Traffic Volume (Source: Traffic Impact Assessment, AECOM, 19 October 2020)**

Vehicle Type	Total estimated vehicle trips (one-way)*^
External (relating to vehicles to and from the project site)	
OD Trailer	726
Heavy Vehicle	11,782
Light Vehicle	54,000
Internal (relating to vehicles within the project site, including delivery of aggregate materials from the on-site quarry and concrete produced from the batch plant)	
Heavy Vehicle	26,464

\*over the course of the estimated construction period of 18 – 24 months

^Although works associated with the terminal station is addressed in a separate application, anticipated traffic associated with the terminal station works has been conservatively assumed to occur simultaneously as part of the estimated traffic volumes.

The Assessment highlights that general vehicle traffic will likely be concentrated during the morning and afternoon peak with staff arrivals and departures, noting that 60% of construction staff are expected to approach and depart from the wind farm site along Strzelecki Highway from the north, and 40% expected to arrive and depart along Strzelecki Highway from the south. The Project is expected to employ 75 full time workers at its peak, therefore 75 light vehicle trips are expected during the AM peak.

Figure 6.22 below predicts the traffic volume impact on the local road network based on a conservative scenario where vehicles are predicted to both arrive and depart from the site during the AM peak period. The Assessment highlights that even at peak volume (taking into consideration an increased traffic volume during the pouring of foundations), the traffic generated is significantly less than the typical one-way road capacity of 900 vehicles per hour and that traffic impacts are predicted to be negligible given the low existing rural traffic volumes.

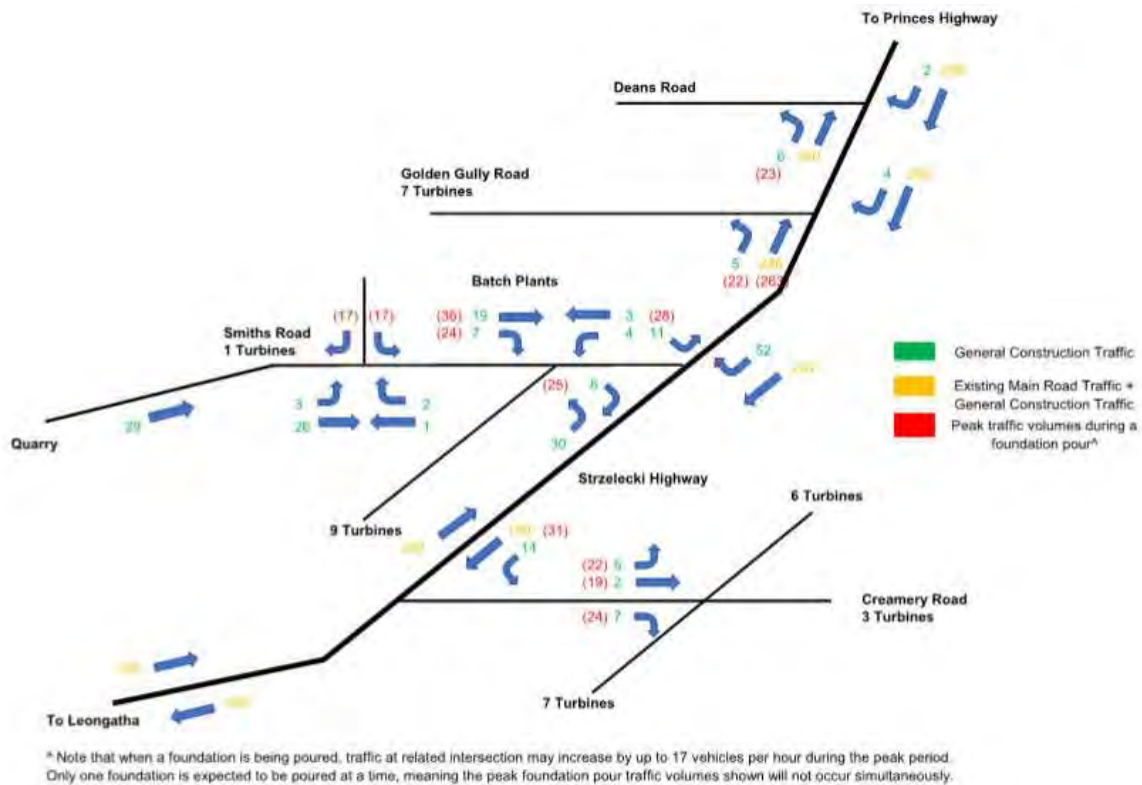


Figure 6.22: AM Peak Traffic Flow Diagram estimated during the construction period (Source: Traffic Impact Assessment, AECOM, 19 October 2020)

## Road Network Upgrades and Mitigation Measures

The Assessment includes swept path analysis of key intersections to determine the suitability of the road network to accommodate OD vehicles. On this basis, the Assessment highlights that the following road network upgrades are anticipated to be required to facilitate the Project.

- Site Access Points: modifications to the road and access tracks will be required at each of the nominated site access points to accommodate OD and articulate vehicles (AV).
- Pinch Points: a swept path analysis was undertaken for OD vehicles from identifies a total of 11 'pinch points' (either relating to potential existing pavement or native vegetation constraints) along the delivery route between Princes Freeway and the site access points (refer to Figure 6.23).

The critical turning movements along the OD route between Princes Freeway and the site access points occur at the intersections between Strzelecki Highway and public roads. Temporary pavement widening is proposed to be provided at all intersections, as required and as outlined in Table 6.21 below. Additional operational



controls including OD escort vehicles, temporary speed reduction, delivery time restrictions and additional signage will be required (to be developed in consultation with key stakeholders).

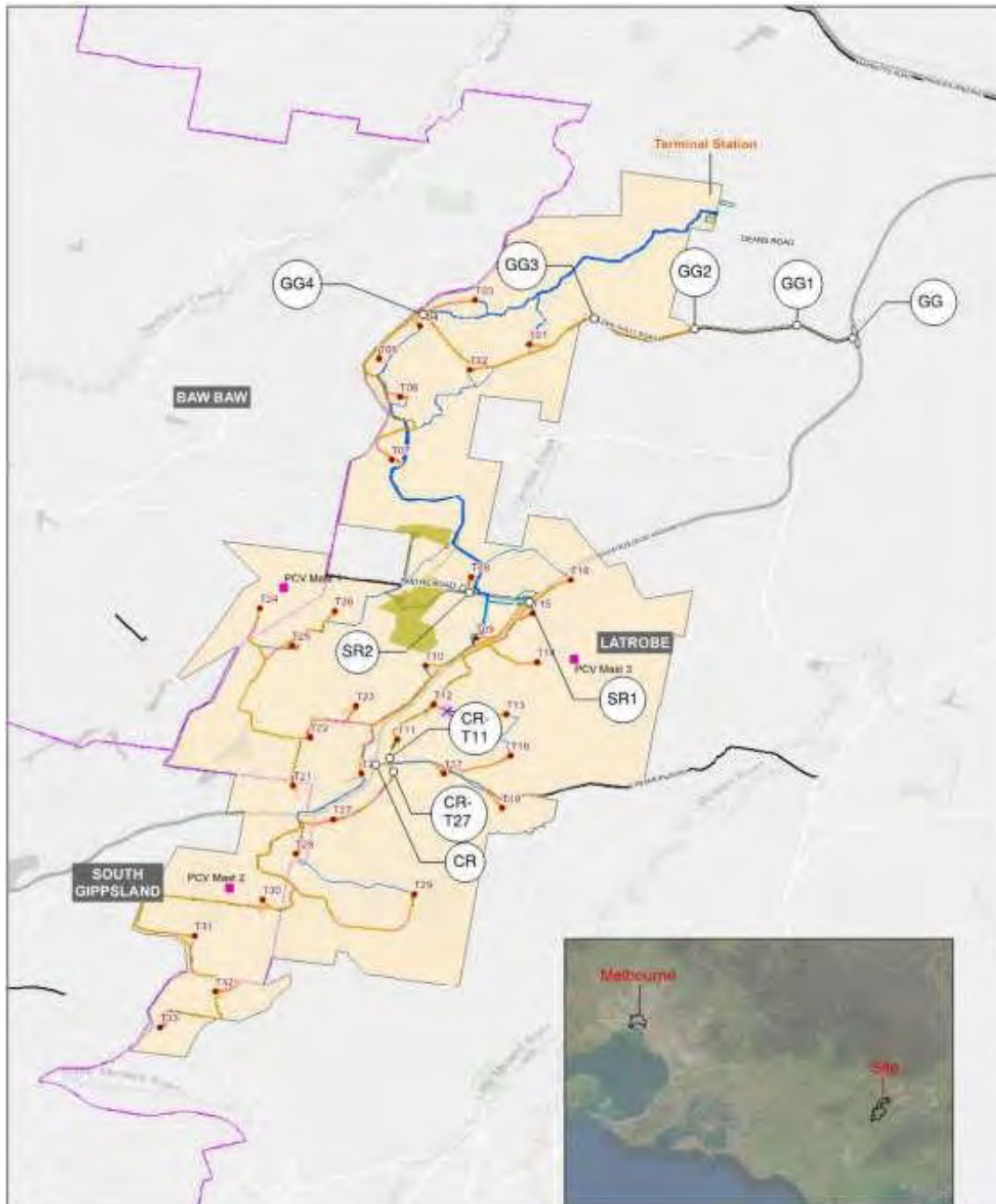


Figure 6.23: Horizontal pinch points for blade delivery vehicles (Source: Traffic Impact Assessment, AECOM, 19 October 2020)

Table 6.21 provides a summary of the road widening / mitigation works required at the pinch points.

Table 6.21: Identified road upgrades/mitigation measures proposed to the pinch points (Source: Traffic Impact Assessment, AECOM, 19 October 2020)

Pinch Point (refer Fig 6.23)	Intersection	Location	Mitigation
GG	Strzelecki Highway – Golden Gully Road Intersection	East of intersection	Temporary pavement to be constructed along OD wheel-path
		West of intersection	Vegetation (including identified native vegetation) to be cleared through vehicle swept path  Temporary pavement to be constructed along OD wheel-path  Road signs to be removed
		South of intersection	Temporary pavement to be constructed along OD wheel-path  Existing culvert / roadside drain to be protected or relocated
GG4	Golden Gully Road – McDonalds Track Intersection	East of intersection	Construction of new access suitable for OD use, including removal of native vegetation
		West of intersection	Construction of new access suitable for OD use, including removal of native vegetation
SR	Strzelecki Highway – Smiths Road Intersection	North-west of intersection	Road sign to be removed Remove native vegetation and tree at intersection  Temporary pavement to be constructed along OD wheel-path  Diversion of roadside swale  Culturally significant tree unlikely to be removed with current OD

			site access point (access point 02).
		East of intersection	Remove native vegetation within vehicle swept path  Temporary pavement to be constructed along OD wheel-path
		South-west of intersection	Remove native vegetation within swept path  Temporary pavement to be constructed along OD wheel-path
CR	Strzelecki Highway – Creamery Road Intersection	West of intersection	Remove native vegetation within swept path  Temporary pavement to be constructed along OD wheel-path  Road sign to be made removeable
		East of intersection	Remove native vegetation within swept path Temporary pavement to be constructed along OD wheel-path Road sign to be made removeable
CR-T11	Creamery Road Main Access North (T11)	East of intersection / south of intersection	Remove native vegetation within swept path  Temporary pavement to be constructed along OD wheel-path
CR-T27	Creamery Road Main Access South (T27)	North of intersection / west of intersection	Remove native vegetation within swept path  Temporary pavement to be constructed along OD wheel-path



An additional pinch point has been identified at the Princes Freeway – Marretts Road intersection. As these works are off-site, they will be undertaken as part of the later approval process associated with the other off-site access requirements once the Port selection has been confirmed and detailed design is undertaken by the logistics contractor.

A concept sketch has been developed by AECOM for the Strzelecki Highway and Creamery Road priority intersection indicating the extent of works that are typically expected to be required for intersections along the route to facilitate worst-case OD wind blade transportation vehicles (approximately 90 metres in length). Refer to Figure 6.24.

The Assessment notes that single-lane two-way roads such as Deans Road and Golden Gully Road have the potential to be safety risks. There are a range of mitigation measures that could address this including widening of the road along key routes, providing passing bays at key locations, traffic management measures, reduced speed limits, upgrade of road pavements, regular inspections and maintenance operations, installation of advanced warning signs and a driver's code of conduct. The Assessment notes that further advice from the relevant Road Authority, along with the adoption of an independent road safety audit as part of the Traffic Management Plan (TMP) could assist with determining appropriate measures.

For the purposes of the preliminary design, upgrade works along Deans Rd have been assumed as strategically placed overtaking bays to minimise impacts on native vegetation and upgrade works along Golden Gully Rd have been assumed as a 2 metres road widening on the side with least impacts on roadside vegetation. It is noted that any works required along Deans Road will form part of the terminal station development (subject to a separate planning permit application).



Figure 6.24: Strzelecki Highway - Creamery Road Intersection Upgrade Concept Sketch (Source: Traffic Impact Assessment, AECOM, 19 October 2020)

### ***Operational***

The Assessment notes that vehicle movements associated with the operation of the Project will consist of daily maintenance activities and is anticipated that up to 13 staff vehicles will commute per day to and from the site to undertake general maintenance activities.

Maintenance such as the replacement of a wind turbine blade involving OD vehicle movements are expected to occur infrequently. The Assessment notes that any OD vehicle movements to accommodate these activities will be subject to DoT/VicRoads permitting requirements at that time.

### ***Re-powering or decommissioning***

The Assessment notes that the eventual decommissioning of the wind farm site will involve the removal of all above ground structures, excluding part of the foundations, sub-surface cables and access tracks.

Re-powering the site would involve similar de-commissioning activities and the existing wind turbine components replaced with newer technology wind turbines and associated infrastructure.

Similar vehicles as those used in the construction stage is expected in both instances, however the frequency will be reduced as no concrete batching plant would be required.

### ***Other Considerations***

The Assessment takes into account various other considerations, including the following.

- Safety considerations. As noted above there are various options to deal with potential safety concerns which will be dealt with as part of a future TMP;
- Drive distraction. The Assessment notes that there are no clear conclusions from studies regarding wind turbines' impact on driver safety, and highlights other wind farm Panel Reports where this issue has been addressed. However, the Assessment highlights that in terms of potential distraction from shadow flicker, there is already a high degree of natural shadow flicker or light variation due to the roadside vegetation in this area. The Assessment also highlights that viewing areas are to be provided so people can pull off the road to view turbines.
- Access and operating speeds. The Assessment identifies that as a result of construction there will be an increase in slowing and turning vehicle on the public road network which could result in increased risk of vehicle collisions. In relation to this issue it is recommended that these potential risks are addressed as part of the TMP, with possible mitigation measures including increased signage, reduced speed limits and widening or overtaking lanes if required.
- Risk of head-on collisions. As noted in the previous section there are various options to deal with this on local roads which can also be documented as part of the TMP.
- Noise and dust. Construction traffic can generate noise and dust, which will require mitigation measures to minimise environmental impacts. This is expected to be addressed as part of a Construction Environmental Management Plan.

- OD and construction vehicle impacts. The Assessment highlights that these vehicles may impose loading profiles on the roads that may not have been accounted for when designed. The Assessment notes that road treatments and upgrade works will require consultation and approval from relevant authorities including Regional Roads Victoria (RRV) and relevant Councils with any agreed treatments to be documented in the TMP.
- Adverse weather. The Assessment notes that adverse weather conditions carry increased risk to road users during the construction period with RRV noting the area can be subject to heavy fog at times. Considerations to manage this risk might include a change in working hours and other possible measures to be included in the TMP.

### 6.9.5 Further Actions

The Assessment notes that typically on wind farm projects, any planning permit that is issued will include a condition requiring a TMP. Accordingly, a key further action in relation to traffic and transport matters will be the preparation of a TMP, which is usually developed once a contractor has been commissioned for the Project, in consultation with key stakeholders.

In parallel with the preparation of the TMP, the Assessment identifies the need for concept plans and mitigation measures to be prepared for road and intersection design development, in conjunction with RRV and Council.

### 6.10 Shadow Flicker and Blade Glint

The Shadow Flicker and Blade Glint Assessment prepared by K2 Management discusses the shadow flicker impacts associated with the Project. A copy of the Shadow Flicker and Blade Glint Assessment is contained in Appendix L.

#### 6.10.1 Methodology

Shadow flicker may occur under certain combinations of geographical position and time of day, when the sun passes behind the rotating blades of a wind turbine and casts a moving shadow over surrounding areas. The number of annual hours of shadow flicker at a given location is calculated using geometric models that incorporate:

- the sun path across the sky for the specific site latitude and longitude;
- the topography of the site and its surrounds;
- the wind turbine rotor diameter, hub number and height, and blade dimensions;
- the location of the wind turbines relative to residences.

The Draft National Guidelines determine that the optimum method of assessment is to:



- Evaluate the shadow flicker impact up to a distance of 265 x maximum blade chord (no assessment is required for dwellings beyond this distance).
- Identify all residences within the extent of shadows from proposed turbine positions.
- Use modelling software with relevant modelling parameters, to calculate the theoretical annual shadow flicker duration at each residence, accounting for topography and cumulative effects.
- If necessary, modify turbine layout and repeat calculations, or introduce mitigation measures to achieve compliance.
- Depending on jurisdictions, shadow flicker assessment may not be required for associated landowners.

It is noted that the Draft National Guidelines have been adopted as best practice for assessing shadow flicker in the absence of any Victorian planning guidance on shadow flicker.

Windpro software version 3.3 was used by K2 Management to undertake shadow flicker modelling for the Project. A detailed list of the modelling assumptions is provided in their report, which are based on the methodology recommended in the *Draft National Wind Farm Development Guidelines* (Draft National Guidelines) (EPHC, 2010).

The modelling undertaken represents the worst case scenario, which assumes, amongst other things, that the wind turbines are operating 24 hours a day and the sun is shining all daylight hours without any clouds in the sky.

#### 6.10.2 Relevant Legislation and Policy

The key documentation relied upon in the preparation of the shadow flicker and blade glint assessment were the Policy and Planning Guidelines for Development of Wind Energy Guidelines in Victoria (March 2019) and the Draft National Guidelines Draft National Wind Farm Development Guidelines, Environment Protection and Heritage Council (EPHC, 2010). Consideration was also given to Clause 52.32 of the Latrobe, Baw Baw and South Gippsland Planning Schemes.

#### 6.10.3 Assessment of Impacts

##### Shadow Flicker

A shadow flicker assessment boundary of 1192.5 metres was determined for the Project based on an assumed turbine blade chord length of 4.5 metres, which was considered reasonable for turbines with rotors up to 180 metres. Modelling was undertaken using a rotor diameter of 180 meters and a maximum tip height of 250 meters above ground level (with a corresponding hub-height of 160 meters above ground level), representing the maximum turbine dimensions being sought.

The Assessment outlines that on the basis of this boundary there are six (6) existing dwellings in the vicinity of the Project that have the potential to be affected by shadow flicker, refer to Figure 6.26 following.

The Victoria Guidelines state that shadow flicker experienced immediately surrounding the area of a dwelling (garden fenced area) must not exceed 30 hours per year. Where a fenced garden area is not evident at a dwelling, a 50 metres curtilage from the dwelling centre point is used.

The shadow flicker model results of the worst case (and therefore most conservative) outcome are presented in Figure 6.25 below.

Residence	Stakeholder/Non-Stakeholder	Shadow flicker, 180 m rotor, 160 m hub height [hours/year]
		Worst case
875	Non-Stakeholder	0:00
873	Non-Stakeholder	0:00
872	Non-Stakeholder	0:00
863	Non-Stakeholder	24:52
864	Non-Stakeholder	25:42
853	Non-Stakeholder	0:00

Figure 6.25: Shadow flicker results (Source: Shadow Flicker and Blade Glint Assessment, K2Management 22 January 2021)

The Assessment therefore clearly demonstrates that none of the 'at-risk' dwellings will exceed the 30-hour annual limit specified by the Victorian Guidelines for Wind Farm Development, on the basis of the 'worst case scenario' modelling.

### Blade Glint

The Assessment highlights that blade glint may result from the sun reflecting from turbine blades, which can occur as a result of a combination of circumstances including the orientation of the nacelle, angle of the blade and angle of the sun relative to a dwelling. The application of a surface treatment of low reflectivity is a widely accepted mitigation measure to ensure that glint is minimised.

The Assessment notes that Section 5.1.2(b) of Victorian Guidelines states:

*Blade glint can result from the sun reflecting from turbine blades. Blades should be finished with a surface treatment of low reflectivity to ensure that glint is minimised.*

The Assessment confirms that Delburn Wind Farm Pty Ltd is committed to specifying blades that must be finished in a non-reflective coating to avoid any blade glint impacts as part of the tendering and procurement process.

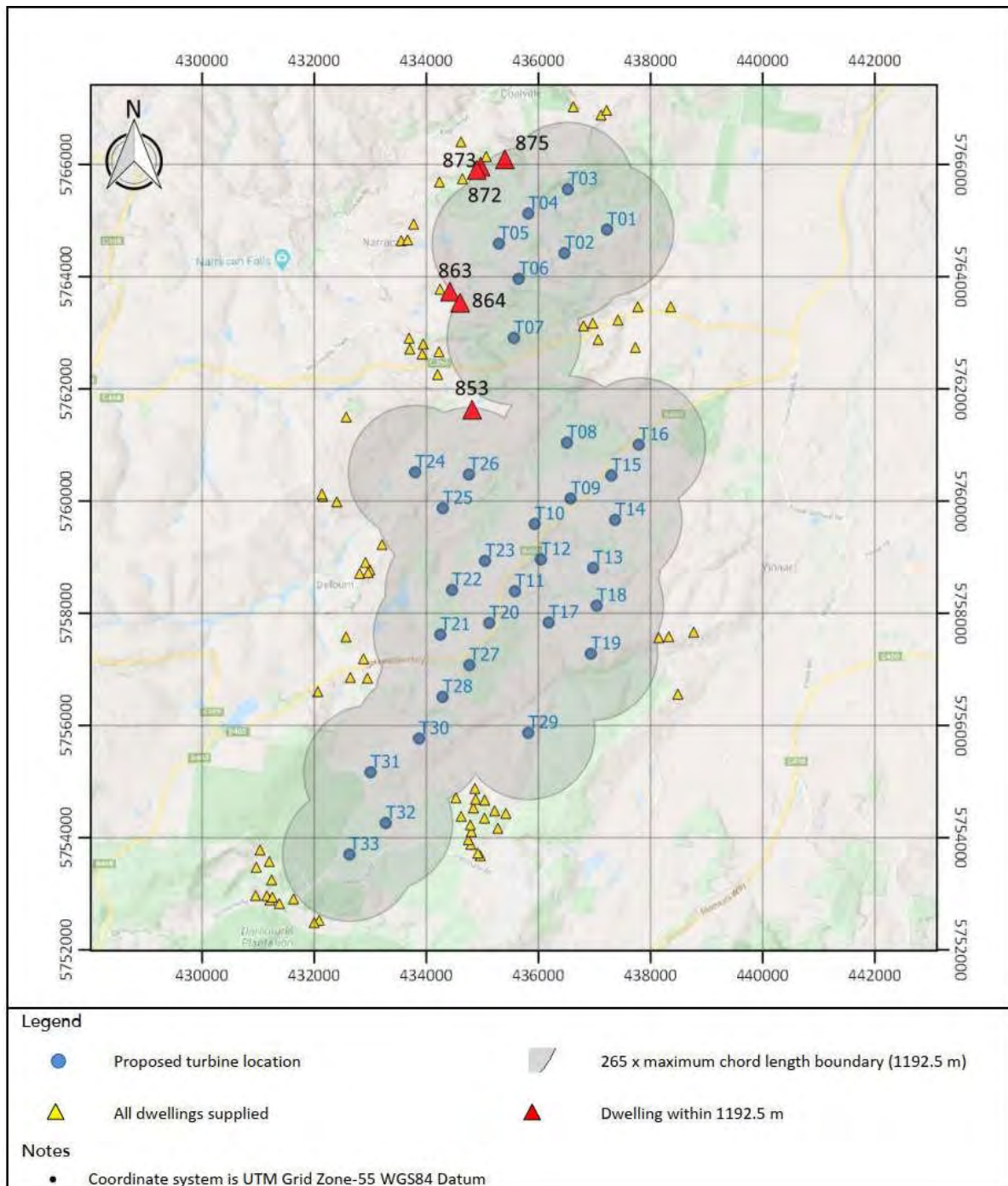


Figure 6.26: Dwellings relative to the assessment boundary (Source: Shadow Flicker and Blade Glint Assessment, K2Management, 22 January 2021)



#### 6.10.4 Mitigation Measures

No mitigation measures are required with respect to shadow flicker as the proposal is expected to fall within the annual limits set out by the Victorian Guidelines in the worst case scenario modelled. The shadow flicker impacts would be less in reality, having regard to the conservative assumptions made in the modelling.

#### 6.10.5 Further Actions

It is anticipated that it will be a condition of any planning permit that is issued specifying that shadow flicker impacts cannot exceed the 30 hours maximum as specified by the Guidelines.

### 6.11 Economic Impact

The Economic Impact Assessment prepared by Jacobs discusses the potential economic impacts associated with the Project. A copy of the Economic Impact Assessment is contained in Appendix M.

#### 6.11.1 Methodology

The methodology used for the economic assessment was as follows:

- Review of ABS data and Remplan statistics (where ABS data is unavailable) to determine the socio-economic baseline;
- Utilise Input-Output (IO) modelling using two economic impact analysis tools: an IO Tool developed at Flinders University and Clean Energy Council (CEC) method in its 'Wind Farm Investment, Employment and carbon abatement in Australia' report;

#### 6.11.2 Legislation and Policy

The Assessment was prepared to inform consideration of the Project's economic impacts in the context of relevant policies at a State, Regional and Local level of the three applicable planning schemes. The Assessment includes in its references a series of documents which were utilised in its preparation.

#### 6.11.3 Existing Conditions

The Assessment provides a summary of the regional socio-economic baseline across the Latrobe, Baw Baw and South Gippsland municipalities as outlined below.

- Population growth in Latrobe and South Gippsland is slower relative to the balance of Victoria, with Baw Baw experiencing a greater rate of growth. This trend is forecasted to continue in the future. The Assessment identifies that major projects such as Delburn may help retain population in Latrobe and South Gippsland by providing medium and long term employment and income opportunities for existing residents and businesses.
- There is a strong need for projects to support the GRP (net measure of wealth generated by a region) across Baw Baw, Latrobe and South Gippsland shires. Their economies are expected to be

significantly impacted by the COVID-19 pandemic into the next financial year. There is also a need to continue diversifying the region's economy ahead of the planned retirement of coal-fired generation within the Latrobe Valley.

- While unemployment rates have decreased over recent years, it is expected that unemployment rates will double in Baw Baw, Latrobe and South Gippsland due to the COVID-19 pandemic. The Assessment identifies that higher unemployment will increase the available workers for the Project and the need for work.
- Within these LGAs, there is a relatively high proportion of labourers, technicians and trades workers that will be needed for the Project. There are also medium sized businesses within the transport, postal and warehousing industry in South Gippsland and within the manufacturing and construction businesses across the region to support the delivery of the Project.
- Latrobe, Baw Baw and South Gippsland are relatively vulnerable to economic slowdowns as they have lower average incomes compared to the rest of Victoria and Latrobe also has a high relative level of socio-economic disadvantage.
- The project location represents an excellent opportunity for renewable generation in Victorian given it already has a high capacity transmission connection to the Victorian grid as well as a significant number of local employers with relevant skills.

#### 6.11.4 Potential Impacts

The Assessment outlines a series of assumptions that are made to inform the impact analysis, including:

- timelines;
- direct expenditure assumptions;
- industry allocation of expenditure; and
- location of expenditure.

Taking into account these assumptions and utilising the two different tools as outlined in the methodology, the Assessment then considers the likely impacts of the Project on the regional economy during construction and operation. It also considers the impact on value-added output, employment and the effects on incomes, property values, the Victorian energy market and the general community.

The Assessment finds that the Project is expected to generate substantial and ongoing economic benefits to the Latrobe, Baw Baw and South Gippsland municipalities by creating a new source of employment and inserting a significant amount of investment into the regional economies, which is expected to help offset some of the projected economic slowdown and high unemployment.

The Assessment finds that the combined construction and operation of the Project is expected to create a \$106 million increase in GRP to the three areas over a 32 year period (based on two years construction and

30 years operation). This can be broken down into \$22.5million annually to the region for the two years of construction and \$2.1million annually for the 30 years of operation.

The Project is also expected to create an additional 186 full-time equivalent jobs within the three municipalities combined during the two years of construction and an additional 25 ongoing full-time equivalent jobs over the 30-year period of operation. This will assist with alleviating the projected economic slowdown and rising unemployment partly resulting from the closure of coal-fired power stations within the Latrobe Valley, while leveraging on existing infrastructure assets and utilise local skills sets.

The Assessment finds that the Project's impact on Gross State Product is estimated to be about \$401million (approximately \$200.7million spent annually over two years), assuming the Project has a 200MW capacity. The expected total annual impact of the Project on state employment is expected to reach up to 2,016 full time equivalent jobs per year during the 24 month construction period and up to 76 full time equivalent jobs each year during operations.

The Assessment also highlights other qualitative impacts of the Project which include the following:

- **Property Value Impacts.** The Assessment notes that it is unlikely that there will be any adverse impact on property process at any stage of the Project's development.
- **Income Impacts.** The owner of the Project site will benefit from an annual lease payment of approximately \$1.5 million. Additionally, the 103 dwelling owners within 2 kilometres of the wind farm will receive a combined approximate \$500,000 per annum in neighbour contributions.
- **Community Impacts.** The Project will provide \$150,000 per annum to a Community Development Fund to support community and environmental programs, 6.2 kilometres of local road upgrades and repairs and \$403,000 per annum in municipal charges under the Electricity Act to Latrobe, Baw Baw and South Gippsland Councils.
- **Energy Impacts.** The Project will generate approximately 590,000MWh of renewable energy each year, which will assist the Victorian Government in meeting renewable energy targets and replace electricity lost from the retirement of coal-fired power stations in Victoria.
- **Environmental Impacts.** The Project has the potential to reduce carbon emissions and produce benefits of up to approximately \$9.5 million each year or \$285.7 million over the Project's 30 year life.

## 6.12 Environmental Management Plan Framework

The Environmental Management Plan Framework prepared by OSMI provides a framework for the preparation of EMPs for the Project, including management tools, protection measures and monitoring regimes for the design, construction and operation phases. A copy of the EMP Framework is contained in Appendix N

### 6.12.1 EMP Framework Objectives

The EMP framework identifies a series of objectives that will guide the development of the EMPs for the Project, as follows.



- *'Ensure that works are carried out in accordance with appropriate environmental statutory requirements and relevant non-statutory policy as detailed throughout this framework.*
- *Ensure that works are carried out in accordance with the objectives and requirements presented in this framework.*
- *Ensure that works are carried out in such a way as to minimise the likelihood of environmental degradation occurring.*
- *Ensure the project does not have a significant impact on any rare or threatened species.*
- *Ensure that the project does not exceed impact thresholds on threatening processes for any threatened species.*
- *Ensure the project does not contribute towards habitat fragmentation, degradation or modification for threatened species.*
- *Ensure that no pest or diseases which threaten species of conservation significance are introduced to the project area.*
- *Ensure that works are carried out in such a way as to manage the impact of the works on neighbouring properties (e.g. noise, dust).*
- *Ensure that all employees engaged in the works comply with the terms and conditions of the EMP.*
- *Provide clear procedures for management of environmental impacts including corrective actions.*
- *Identify management responsibilities and reporting requirements to demonstrate compliance with the EMP'.*

### 6.12.2 Legislation and Policy

The EMP Framework responds directly to the requirements of the Policy and Planning Guidelines for Development of Wind Energy Facilities in Victoria (March 2019 (DELWP, 2019) which requires the preparation of an EMP detailing how a site will be managed through construction and sets out future operational and maintenance requirements.

### 6.12.3 Overview of key elements

The EMP Framework identifies the content and structure of the EMPs that will be prepared for the site, noting that some aspects of each EMP will be generic whilst some will be issue-specific. For the generic elements of the EMPs the following matters will be addressed:

- Overall policy and management approach;
- Environmental objectives and strategies;

- Responsible personnel and defined responsibilities;
- Environmental training;
- Monitoring and auditing requirements; and
- Reporting procedures.

The issue specific management components of the EMPS will relate to the following matters:

- Protect water quality, particularly near creek crossings;
- Protect flora and fauna;
- Protect cultural heritage;
- Protect public infrastructure;
- Control air emissions, including greenhouse emission and dust;
- Control noise;
- Minimise impacts to nearby dwellings and existing land uses;
- Manage any risks to the safety of the local community;
- Minimise socio-economic impacts;
- Minimise impacts on agricultural production; and
- Rehabilitate disturbed land.

The EMP Framework outlines the proposed structure for future EMPs and establishes reporting and review requirements as well as responsibilities, noting that the DWF directors will have the ultimate responsibility for the implementation of the EMPs with the construction Project Manager responsible the development and implementation of the CEMPs.

The requirement for environmental site inductions for all construction staff is identified, along with the matters to be addressed in any site induction. The approach to compliance monitoring, record keeping and reporting is also identified, to ensure that environmental controls, are maintained and that monitoring and reporting is effective.

A key element of the EMPs, as identified in the Framework will be the environmental safeguards that will prevent or minimise potential environmental impacts associated with the Project. These are summarised in the Framework and also reflect the range of mitigation measures identified in the various specialist reports prepared

in support of the Project. Specific mitigation measures are outlined for three matters in particular, reflecting key specialist report findings, these being:

- Measures to minimise impacts on waterways;
- Measures to minimise impacts on native vegetation; and
- Measures to minimise impacts on threatened species, including Growling Grass Frog, Strzelecki Gum and other iconic species including: Wedge Tailed Eagle, Yellow-tailed Black Cockatoo; Strzelecki Koala and Greater Glider.

The Framework then provides a summary of environmental monitoring methods that will be implemented for the range of matters to be addressed by the EMPs, highlighting that the general approach to each issue and associated monitoring will comprise:

- Establish a baseline monitoring program before construction commences.
- Prepare an inspection, monitoring and auditing program, designed to match the environmental risks for the unique site conditions.
- Review records regularly
- Ensure that remedial action is taken promptly when monitoring, inspections or audit results reveal a problem in environment management.
- Ensure that all monitoring is conducted by a NATA registered laboratory, either directly, or under supervision.
- Arrange for regular independent audits of environmental performance and the environmental management system.

#### 6.12.4 Further Actions

Any planning permit that issues for the Project will include a series of conditions requiring the preparation of EMPs as outlined in the EMP Framework, prior to the commencement of works associated with the Project.



## 7.0 COMMUNITY AND STAKEHOLDER ENGAGEMENT

### 7.1 Introduction

A Community and Stakeholder Engagement Report has been prepared by OSMI Australia which outlines the consultation approach and extensive engagement activities that have been undertaken to date for the Project. The consultation strategy for the Project has been based on IAP2's Public Participation Spectrum listed in the Victorian Government Guidelines. A copy of the Community and Stakeholder Engagement Report is contained in Appendix O.

### 7.2 Consultation approach

The Report highlights that Delburn Wind Farm is committed to a transparent community engagement and information sharing program. This included early engagement with the local community, a holistic benefit sharing model based on sharing the profits of the wind farm fairly with project neighbours and members of the surrounding local communities, and seeking to create a positive long-term legacy in the region. Key components of OSMI's approach included the following.

- Early engagement, including announcing the project at concept development stage.
- Establishing a local project office and information centre in the predevelopment phase.
- Transparent information sharing.
- Co-development of a Community Benefits Scheme including:
  - neighbour profit sharing;
  - community development fund; and
  - community co-investment opportunities.
- Committing to employing local, long-term staff and local procurement processes.
- Establishing sustainable community engagement mechanisms for the operational life of the project.
- Establishing a Community and Stakeholder Consultation Committee which is intended to be responsible for facilitating the accurate and timely flow of information about the project's development to and from the community and assist in obtaining feedback and making decisions about aspects of the project which may impact on the windfarm's neighbours and wider community.
- To involve the local community in decisions around the specific nature and delivery of the community benefits scheme.

## 7.3 Overview of Consultation and Engagement Activities

The report outlines how OSMI has provided a range of different opportunities and pathways for the community immediately surrounding the project and across the broader region to engage with the project team over the past 18 months since the project announcement, allowing the community to gather information, raise questions or concerns and to express their views about the project. Early engagement included:

- media announcements of the Project;
- preparation of and regular updates of website material;
- public survey available on website;
- employment of a local Community Engagement Officer;
- project office and information centre opened in the local community in May 2019;
- three postal mailouts to surrounding community the initial notification to all households within 3 kilometres of the project and subsequently two mail outs to the four post codes intersecting the project;
- presentation to councils, MPs, interest groups and sustainability groups;
- publication of regular e-news for subscribers;
- media releases at key project milestones;
- technical documents published on the project website as they are completed;
- establishment of a complaints process;
- home visits to neighbours;
- five public information days held in surrounding communities – information days were held in:
  - Yinnar on Thursday 1st August 2019 from 1-8pm;
  - Boolarra, on Friday 2nd August 2019 from 1-8pm;
  - Narracan on Saturday 3rd August 2019, from 9am-1pm;
  - Thorpdale, on Friday 13th March 2020, from 3-7pm; and
  - Darlimurla on Saturday 14th March 2020 from 10-2pm.
- tours of an operating windfarm;

- visual impact assessments from individual residences.

#### **7.4 Overview of Key Issues Raised**

The Report highlights that on the basis of community engagement undertaken to date, the Report found that the key issues of concern to the community are:

- Audible Noise
- Health impacts from infrasound
- Fire risk
- Impact to property values
- Visual impacts
- Ecological impacts, in particular impacts on raptors and native vegetation.

The community engagement found that there are a small number of passionate local sustainable energy advocates who support the project, a small number of passionate and highly vocal local opponents to the project as well as a significant number of people who are mildly concerned or supportive of the project but very quiet about their opinion as they don't want to become involved in conflict within the community. There are also large number of people who appear undecided or neutral – many of this last group have expressed a view that the project is likely to proceed and acknowledge the benefits of a transition to more sustainable forms of energy production.

The report notes that, regionally, there are numerous advocates of the project who consider it a vital contributor in transitioning from Latrobe Valley's economic reliance on coal fired power. There also segments of the community who wish to continue pursuing the economic potential of the Latrobe Valley coal reserves, some of whom are also opposed to renewable energy projects.

#### **7.5 Ongoing Consultation**

##### **7.5.1 Planning Approvals**

The Report identifies that it is a statutory requirement of the planning permit application that OSMI provide direct notification to all adjoining properties (as directed by DELWP) and that in undertaking notice community members will be provided with information on how they can lodge submissions to the Project. In addition to fulfilling statutory requirements, the Report highlights that OSMI is committed to supporting and informing the community throughout the planning process. Accordingly, during the planning permit evaluation process, OSMI will:

- continue to engage with local residents, neighbours and the broader regional community through face to face meetings, phone calls, email, and house visits;
- offer presentations to community interest and activity groups;



- conduct further Augmented Reality visual assessments as requested;
- continue to keep local governments, residents and other stakeholder informed of progress;
- through the regular release of e-newsletters, social media posts and print media releases;
- hold stalls at local markets and community events to provide information to community members and opportunities for more conversations;
- establish the Community and Stakeholder Consultative Committee; and
- open up the pre-development fund for applications, allowing corporate involvement in positive projects in the area to commence.

### 7.5.2 Community Benefits Scheme

The Report confirms that a Community Benefit Scheme will be designed to deliver benefits to key stakeholders in the community in a way that aims to meet their needs and aspirations. The scheme was launched towards the later end of the early engagement phase, will continue for the life of the project and will be codesigned with the community.

The Community Benefits Scheme will comprise:

- Neighbour Profit Sharing to deliver ~\$500,000 per annum directly to the Project's near neighbours (2-3 kilometres from the Project);
- a Community Development Fund to deliver ~ \$150,000 per annum (\$750 per MW) via a Community Development Fund; and
- a Community Co-investment vehicle to allow the community to invest in the project and receive annual returns from the project.

It is noted that the Community Benefits Scheme does not include other economic contributions such as:

- required activities under any permit conditions such as visual screening;
- annual contributions to local council via Payment In Lieu of Rates;
- host landowner payments; and
- the value of local jobs, expenditure and investment.

### 7.5.3 Construction

The Report notes that following the granting of statutory approvals, the focus of community engagement will move to the recruitment of a local contractors and workforce for the construction of the project and establishing mechanisms to keep the community informed about key project activities.

Through the detailed design and construction phase issues such as micro siting, emergency response planning, the development of the interpretive centre (including the incorporation of stories about the local cultural heritage) and wind farm walks will be covered in community consultation forums. Further landscape assessments will be completed with individual landowners who have concerns about visual impacts and landscape screening plans developed as appropriate.

Throughout this phase the Community and Stakeholder Engagement Committee will form a key conduit for engagement with the wider community. The information centre and office will remain in operation and on-line engagement will continue.

## 8.0 PLANNING ASSESSMENT

### 8.1 Introduction

This Chapter provides an assessment of the Project against the relevant planning policies and controls outlined in Chapter 5, of the three relevant Planning Schemes. The Assessment utilises and relies upon the findings of the range of specialist reports as summarised in Chapter 6, all of which were prepared as a result of key matters required to be addressed as part of the planning process.

It is noted that due to the fact that three different sets of planning controls that apply there is some repetition that occurs in the relevant policies and planning controls. Accordingly, some elements of the policy and planning controls assessment have been included in this Chapter in an 'overview' form, with the more detailed assessment contained in tables in the Appendices.

### 8.2 Is the proposal consistent with the Planning Policy Framework?

As outlined at Section 5.2, the Planning Policy Framework is consistent across all Planning Schemes in Victoria and provides policy guidance at a State and regional level that 'frames' local policy and local planning controls.

Based on a balanced assessment of the key planning policies contained in the PPF, taking into account the findings of the specialist reports, it is considered that the Project will result in an appropriate planning and land use outcome that will provide for the fair, orderly, economic, and sustainable use and development of land as required by the Planning and Environment Act 1987. The Project is also considered to result in net community benefit that will benefit both present and future generations (Clause 71.02-3).

The key policies of most direct relevance when considering the proposal in the context of the PPF are Clauses 19.01-1S (Energy) and 19.01-2S (Renewable Energy) both of which seek to facilitate renewable energy facilities in appropriate locations. The proposal is entirely consistent with and supports the desired outcomes of these policies, highlighting the following.

- The Project site has been specifically selected based on its consistent wind speed characteristics, noting that policy identifies this is a key consideration in the siting of wind farms.
- The Project's location appropriately takes advantage of the existing significant infrastructure in the surrounding area, including its proximity to the existing 220kV transmission line which runs between Hazelwood and Rowville, as well as the suitable road access that is available to the Project site.
- The location of the Project within a plantation area results in reduced biodiversity impacts from the Project due to the reduced biodiversity values of the plantations. In addition, the extent of the plantation area results in there being limited population in the area immediately abutting the site.



- The Project has a relatively 'robust' landscape setting, due to its proximity to the two coal fired power stations at Hazelwood and Yallourn and their associated coal mines and transmission infrastructure,
- The significant environmental and economic benefits at the local, regional and State level including not just the 'big picture' benefits of a new renewable energy source in the east of the State, but also the economic benefits associated with manufacturing and construction and ongoing revenue streams once the wind farm is operational.
- The potential effects on the local community and environment are able to be appropriately managed as discussed in Chapter 6 in the specialist report overviews, as well as in Section 8.10 of this Chapter which specifically addresses Clause 52.32 of the Planning Scheme.
- The Project will make a significant contribution towards meeting the Victorian Government's renewable energy targets and the replacement of electricity that will be lost from the retirement of coal-fired power stations in Victoria.

Aside from the two energy infrastructure specific policies outlined above, there are also a range of other policies of relevance to the Project, which have also been considered as part of this policy assessment. The Project also gives appropriate consideration to the range of outcomes sought by these various policies, as outlined below.

- The Project is located within a rural area where the surrounding land use is predominantly pine plantation and agriculture and as a consequence there are limited dwellings in immediate proximity to the wind farm site. The presence of brown coal reserves in the area is also noted (and discussed further in relation to the Latrobe Local Planning Policies). In the context of Clause 11-Settlement the Project represents an appropriate land use outcome providing for appropriately located energy generation infrastructure that won't negatively impact surrounding land uses (Clause 11.01-1S – Settlement, Clause 11.02-1S Supply of Urban Land and Clause 13.07-1S Land Use Compatibility).
- The Project will contribute positively to the growth and development of regional Victoria through the expansion of renewable energy within the region and the flow-on economic effects, consistent with the Gippsland Regional Growth Plan included at Clause 11.01R - Settlement.
- The accompanying Biodiversity Assessment prepared by Ecology and Heritage Partners outlines the native vegetation required to be removed and recommends a series of mitigation and offset measures to limit impacts. It also considers potential flora and fauna impacts as part of the Assessment and identifies appropriate mitigation measures to address any potential impacts, particularly in relation to the growling grass frog. Overall, the Assessment concludes that the Project will not have an unreasonable impact on identified biodiversity values which is consistent with Clauses 12.01-1S – Protection of Biodiversity and Clause 12.01-2S – Native Vegetation Management.
- The Project is not expected to have any significant impacts on the water environment within the wind farm site and surrounding area. The management of water quality is assessed in the Desktop Assessment of Potential Geotechnical, Contaminated Land and Hydrogeological Impacts prepared by Golder Associates Pty Ltd, which concludes that the impact on surface water and groundwater is expected to be low on the basis that best practice construction methods are adopted (Clause 12.03-

1S – River Corridors, Waterways, Lakes and Wetlands, Clause 14.02-1S – Catchment Planning and Management and 14.02-2S - Water Quality).

- Potential visual impacts are addressed in the accompanying Landscape and Visual Impact Assessment prepared by Jacobs. The Assessment concludes that, overall, for freeways the visual impact is expected to be negligible; for tourist routes and highways the visual impact is expected to be low; for major roads the impact is expected to be low-moderate; for local roads the impact is expected to be low; for townships the impact is considered to be low-negligible; and for recreational trails, parks and elevated lookouts the impact is expected to be negligible.

In relation to impacts to residential dwellings the Assessment concludes that the range and nature of residential views and impacts will be dependent on the proximity and orientation of the dwelling towards the Project and that for dwellings in the more elevated and hilly locations to the west, south and south-east of the Project, visibility will be further influenced by the orientation of the hillside and its proximity to the Project. Accordingly, the Assessment proposes mitigation measures for dwellings which are likely to be impacted and notes those dwellings where mitigation is unlikely. On the basis of the findings of the Assessment, it is considered that the Project responds appropriately to the policy directions of Clauses 12.05-2S - Landscapes and 15.01-6S – Design for Rural Areas and will not result in unreasonable visual impacts. This finding is discussed in more detail in Section 6.4.

- The use and development of the Project is located within pine plantation land. Therefore, it is not expected to result in the loss or fragmentation of existing agricultural land in the immediate area (Clause 14.01-1S – Protection of Agricultural Land).
- The location and design and layout of the Project has given appropriate consideration to natural hazards and climate change. In particular, careful consideration has been given to risks associated with bushfires in the Bushfire Risk Assessment prepared by Fire Risk Consultants, given the Project's siting within a high-risk area. The Assessment concludes that the development of the proposed wind farm will not increase bushfire risk within the landscape on the basis that recommendations during the development, construction and operation stages are implemented consistent with the policy directions of Clause 13.01-1S – Natural Hazards and Climate Change and Clause 13.02-1S – Bushfire Planning.
- The location and layout and design of the Project will ensure it will not result in any intensification of flooding issues, as required by Clause 13.03-1S - Floodplain Management.
- The accompanying Desktop Geotechnical and Hydrogeology Assessment concludes that the proposed construction and operation of the windfarm will not result in unreasonable soil erosion and salinity impacts provided appropriate mitigation measures are implemented and maintained at the site (Clause 13.04-2S – Erosion and Landslip and Clause 13.04-3S - Salinity).
- Potential noise impacts associated with the construction and operation of the Project have been assessed in the accompanying Environmental Noise Assessment and Background Noise Report prepared by Marshall Day Acoustics. These reports have been undertaken in accordance with the requirements of the New Zealand Standard NZS6808:2010, as required by the Wind Energy Guidelines and the Environmental Noise Assessment concludes that the Project is expected to comply with the operational noise requirements set out by the Standard, consistent with the policy directions of Clause 13.05-1S – Noise Abatement. The Assessment also recommends the preparation of a

Construction Environmental Management Plan to reduce potential noise impacts during the construction of the Project.

- The Project will not impact the continued viability and operation of surrounding agricultural land use and is an appropriate land use in the Farming Zone (Clause 14.01-1S – Protection of Agricultural Land).
- The Project, whilst sited within a pine plantation, is not expected to significantly impact on timber production (Clause 14.01-3S – Forestry and Timber Production). The impact area of the wind turbines is minimal relative to the overall pine plantation area, and the operations of the timber plantation will continue during the wind farm's construction and operations.
- The Project is not expected to impact on the brown coal resource area given its location primarily within the Farming Zone (Clause 14.03-1S – Resource Exploration and Extraction and Clause 14.03-1R – Resource Exploration and Extraction – Gippsland Coal Resource). Whilst it is acknowledged that a small portion of the Project will be located within the brown coal resource area, the extent of infrastructure to be developed in the area is minimal. The project does overlap an existing mine licence area, however the only infrastructure is the 33 kV electrical reticulation and fibre optic cabling connecting the wind turbines to the substation, in addition to the battery storage facility and the terminal station proposed as part of a separate application. There are no turbines proposed in the mine licence area. It is noted that the SUZ1 has a different alignment to the licence areas and so in the case of the SUZ1, there are two turbines and associated infrastructure, in addition to the battery energy storage system facility and terminal station. Given the limited extent of physical infrastructure located within either the mine licence area or the SUZ1 area (noting that the SUZ1 also seeks to provide for electricity generation and associated uses), the Project is not expected to cause any unreasonable constraints on future access to brown coal resources, if it is required in that location.

The Project is also not expected to impact on identified stone resources in the area. The Driffield quarry is located centrally on the wind farm site and it is intended to use the quarry products in the construction of the Project. The Project infrastructure has been located taking into account any potential future expansion of the quarry to ensure that will not impact its future operations. This is consistent with and appropriate in the context of Clause 14.03-1S.

- There are no sites of European heritage significance within the Project site area or immediately abutting. Accordingly, no impacts are expected to the conservation of places of heritage significance (Clause 15.03-1S – Heritage Conservation).
- A 'standard' Cultural Heritage Management Plan (CHMP) has been prepared for the wind farm site and a complex CHMP is currently being prepared (Clause 15.03-1S – Heritage Conservation and 15.03-2S – Aboriginal Cultural Heritage). The preparation of the CHMP and its approval pursuant to the Aboriginal Heritage Act 2006 will ensure that cultural heritage issues are appropriately managed at the site.
- The Project is expected to generate substantial and ongoing economic benefits to the local area, broader region and the State (Clause 17.01-1S – Diversified Economy). The Project is expected to create an additional 186 full-time equivalent jobs within the three municipalities combined during the two years of construction and an additional 25 ongoing full-time equivalent jobs over the 30-year period of operation. This will assist with alleviating the projected economic slowdown and rising



unemployment partly resulting from the closure of coal-fired power stations within the Latrobe Valley, while leveraging existing infrastructure assets and utilising local skills sets. Further details of the economic benefits are outlined in the Economic Impact Assessment prepared by Jacobs and at Section 6.11.

- The Project has been designed and sited to ensure appropriate transport routes are available to the wind farm, particularly during the construction phase, to ensure there are minimal impacts on the surrounding road network (Clause 18.01-2S – Transport System). The proposed traffic routes and recommended road widening works are addressed in the Traffic Impact Assessment prepared by AECOM and at Section 6.9. The Traffic Impact Assessment recommends the implementation of a Traffic Management Plan to outline measures to minimise impacts to existing road users during and post construction.
- The Aviation Impact Assessment concludes that the Project is not expected to result in any significant risk to normal flying operations (Clause 18.04-1S – Planning for Airports and Airfields). It is noted that the Assessment recommends a minor amendment to the Instrument Approach Procedure at the Latrobe Valley Aerodrome and consultation is currently being undertaken with the aerodrome operator on the instrument approach procedures.

### 8.3 Is the proposal consistent with the Local Planning Policy Framework of each planning scheme?

The LPPF policies within the Latrobe, South Gippsland and Baw Baw Planning Schemes apply as the Project Site includes land across all three municipalities, noting that the majority of the Project site area is located within Latrobe City (4,318 hectares and 28 turbines) with 431 hectares (4 turbines) within South Gippsland Shire and 164 hectares (1 turbine) within Baw Baw Shire.

The LPPF expands on the PPF at the local level and sits within the context of the achievement of broader State and regional planning imperatives. It is considered that the Project represents an appropriate planning outcome in the context of various relevant policy directions of the LPPFs, as evidenced by the following.

- The use and development of alternative energy sources is specifically promoted within Clauses 21.08-1 and 21.10-6 - Overview – Alternative Energy of the South Gippsland Planning Scheme, along with the recognition to prioritise new and alternative clean energy industries and investments in Clause 21.04-1 of the Latrobe Planning Scheme. The Project will further these policies.
- The Project will contribute positively to the development of local employment opportunities during the construction and operation of the wind farm (Clause, 21.07-1 of the Latrobe Planning Scheme and Clause 21.07 of the Baw Baw Planning Scheme). In particular, the Project leverages existing energy infrastructure and workforce expertise within Latrobe City associated with coal resources (Clause 21.04-1 of the Latrobe Planning Scheme).
- The potential 'loss' of agricultural land and timber production land has been addressed in the context of the PPF with the conclusion reached that there will be very limited impact resulting from the Project. The subject land currently comprises pine plantation, and the forestry and timber activities within the wind farm site will continue to occur during the operation of the wind farm (Clauses 21.05-1 and 21.05-

15 of the Latrobe Planning Scheme, Clauses 21.05-1 and 21.08-1 of the South Gippsland Planning Scheme, and Clause 21.06-7 of the Baw Baw Planning Scheme).

- The land in the north east corner of the site, and abutting the site to the east, is part of a mine licence area. As discussed in the Planning Policy Framework assessment, the Project is not expected to unreasonably impede on current or future coal resource development (Clause 21.05-8 of the Latrobe Planning Scheme and Clause 21.05-5 of the South Gippsland Planning Scheme), noting again the limited infrastructure that is to be developed within the mine licence area, and within the SUZ1, again highlighting that the SUZ1 provides for both brown coal resources as well as electricity generation and associated uses.
- The Project is also located in an area identified as being within an extractive industry interest area, included at Clause 21.05-17. As discussed in the Planning Policy Framework assessment, the Project layout has been designed taking into account both the existing quarry operations at Driffield Quarry as well as a proposed extension. In addition, it is highlighted that the quarries and wind farms frequently operate side by side. Accordingly, the development and use of the wind farm is not expected to limit the ability to establish additional extractive industries in the area if, at a later date, it is determined there are additional stone resources within the Project site boundaries – noting the dispersed nature of the wind farm turbines and associated infrastructure result in minimal overall site coverage.

Further, and as discussed in relation to the PPF, detailed consideration has also been given to a range of potential impacts associated with the Project through the various technical assessments that have been prepared in relation to the following;

- Flora and fauna (Clause 21.03-2 of the Latrobe Planning Scheme, Clause 21.03-2 of the South Gippsland Planning Scheme and Clause 21.06 of the Baw Baw Planning Scheme);
- Protection of water quality and land degradation (Clause 21.05-3 of the Latrobe Planning Scheme), Clause 21.04-1 of the South Gippsland Planning Scheme and Clause 21.06 of the Baw Baw Planning Scheme);
- Landscape values (Clause 21.03-2 of the Latrobe Planning Scheme, Clause 21.06-6 of the South Gippsland Planning Scheme);
- Cultural heritage issues (Clause 21.06-6 of the Latrobe Planning Scheme, Clause 21.09 of the Baw Baw Planning Scheme);
- Fire protection management (Clauses 21.04-12 and 21.04-14 of the Latrobe Planning Scheme);
- Economic development (Clause 21.07-1 of the Latrobe Planning Scheme and Clause 21.07 of the Baw Baw Planning Scheme);
- Traffic and Transport (Clause 21.08-1 of the Latrobe Planning Scheme, Clause 21.09 of the South Gippsland Planning Scheme and Clause 21.08 of the Baw Baw Planning Scheme);
- Aviation (Clause 21.07-8 of the Latrobe Planning Scheme).

Accordingly, it is submitted that the Project is appropriate in the context of the policy directions of the LPPF of each of the three planning schemes. A more detailed assessment against the relevant LPPF clauses of each of the planning schemes is provided in Appendix B.

#### **8.4 Is the proposed use and development appropriate having regard to the Farming Zone of the Latrobe, South Gippsland and Baw Baw Planning Schemes?**

The Project site is predominantly located within the Farming Zone across the municipalities of Latrobe City, South Gippsland Shire and Baw Baw Shire. Under the zone, planning permission is required for the use and development of a wind energy facility. It is submitted that the proposal is consistent with the purpose and decision guidelines Farming Zone, based on the following:

- The Project site is considered to be an appropriate location for the proposed use and development of a wind energy facility on the basis of:
  - Environmental wind factors in relation to its viability as a wind farm site;
  - The use of the land for plantations, resulting in a limited number of dwellings in close proximity to the site;
  - Accessibility via the Strzelecki Highway which transects the site, providing principal access;
  - Limited presence of National or State significant flora and fauna as a result of the use of the site for plantations;
  - The proximity of the Hazelwood – Rowville 220 kV transmission line, allowing efficient connection to existing infrastructure; and
  - The highly disturbed nature of the surrounding landscape, comprising timber plantations and open-cut mines to the east.
- Although the proposed use and development is not for an agricultural purpose, it will not prejudice the operation of nearby agricultural uses or the operation of the timber plantation in which the Project is sited.

The Desktop Geotechnical and Hydrogeology Assessment concludes that the proposed construction and operation of the windfarm will not result in unreasonable soil erosion and salinity impacts provided appropriate mitigation measures are implemented and maintained at the site.

An overview of the Assessment's methodology, relevant legislation, modelling results and proposed mitigation measures is provided in Section 6.3 of this report. For further detail, please refer to the accompanying Desktop Assessment of Potential Geotechnical, Contaminated Land and Hydrogeological Impacts prepared by Golder Associates.

- The Biodiversity Assessment prepared by Ecology and Heritage Partners outlines the native vegetation required to be removed and recommends a series of mitigation and offset measures to limit impacts. The Assessment concludes that the Project will not have an unreasonable impact on identified biodiversity values.

An overview of the Assessment's methodology, relevant legislation, modelling results and proposed mitigation measures is provided in Section 6.2 of this report. For further detail, refer to the accompanying Biodiversity Assessment prepared by Ecology and Heritage Partners at Appendix D.



- Potential impacts of the proposed Wind Energy Facility on the surrounding landscape are addressed in the accompanying Landscape and Visual Impact Assessment prepared by Jacobs. The Assessment concludes that the Project will not result in unreasonable impacts. The findings of this Assessment are discussed in detail in Section 6.4.
- The proposed wind turbines will be painted in a non-reflective finish to minimise potential visual impacts on the surrounding area.
- The Project has been designed and sited to ensure appropriate transport routes are available to the wind farm, particularly during the construction phase to ensure there are minimal impacts on the surrounding road network. The proposed traffic routes and recommended road widening works are addressed in the Traffic Impact Assessment prepared by AECOM. The Traffic Impact Assessment recommends the implementation of a Traffic Management Plan to outline measures to minimise impacts to existing road users during and post construction.

A detailed assessment of the proposal against the Decision Guidelines of the Farming Zone is provided in Appendix C.

#### **8.5 Is the proposal appropriate having regard to the Special Use Zone – Schedule 1 (SUZ1) of the Latrobe Planning Scheme?**

Part of the Project site is located within the SUZ1 in Latrobe City, as demonstrated in Figure 5.1. Planning permission is required for the proposed use and development of a wind energy facility under Clauses 37.01-1 and 37.01-4 (SUZ1), respectively. The proposed use and development is considered to be appropriate under the SUZ1 having regard to the following considerations:

- The proposed wind energy facility will not adversely affect the amenity of surrounding residential properties or the broader neighbourhood, as evidenced in the following reports:
  - Environmental Noise Assessment and Background Noise Monitoring prepared by Marshall Day Acoustics;
  - Landscape and Visual Impact Assessment prepared by Jacobs;
  - Shadow Flicker and Blade Glint Assessment prepared by K2 Management; and
  - EMI Assessment prepared by DNV GL.

A detailed summary of each of the above reports is provided in Chapter 6.

- Notably, the proposed use and development is associated with electricity generation and takes advantage of existing energy infrastructure and distribution networks, thereby minimising the extent of additional works and infrastructure required to connect the wind energy facility to the Victorian transmission network.
- The proposal is not anticipated to have a detrimental impact on nearby existing or proposed brown coal mining and future development of brown coal resources in the area, for the following reasons:
  - The proposed works area forms only a limited area of the overall land zoned SUZ1. It does not significantly reduce the area available for future or sequential development of brown coal

resources in the area. Notably, only two wind turbines (T15 and T16) are located within the SUZ1.

- o As a portion of the SUZ1 area is overlain by mining licence MIN2256, the project team have been in discussions with the mining license holder regarding this application.
- Traffic and access matters have been addressed in the accompanying Traffic Impact Assessment prepared by AECOM, which takes into consideration the access requirements and traffic generation across the construction, operation and repowering / decommissioning stages. A detailed summary of the Assessment is provided in Section 6.9.
- Natural values relating to ecology and biodiversity have been addressed in the accompanying Biodiversity Assessment prepared by Ecology and Heritage Partners. The Assessment concludes that significant impacts on significant flora, fauna and ecological communities have been avoided through the siting and design of the infrastructure layout. A detailed summary of the Assessment is provided in Section 6.2.
- Hydrogeological, geotechnical and drainage impacts have been assessed in the Desktop Assessment Geotechnical, Contaminated Land and Hydrological Constraints undertaken by Golder Associates, which concludes that impacts on erosion, soil and groundwater can be appropriately mitigated through adoption of best practice construction practices. A detailed summary of the Assessment is provided in Section 6.3.
- Scattered artefacts have been found across the Project Site. Aboriginal cultural artefacts will be appropriately managed in accordance with the Cultural Heritage Management Plan (CHMP) prepared by Archaeology at Tardis heritage advisors.
- Landscaping is proposed to be provided as a mitigation measure to reduce visual impact to dwellings that will have views of the turbines. The proposed approach to landscaping has been appropriately considered and discussed in detail in the Landscape and Visual Impact Assessment summarised at Section 6.4. It is also expected that landscaping will be required as a condition of any permit that is issued as part of an off-site landscaping program.

A detailed assessment of the proposal against the Decision Guidelines of the SUZ1 is provided in Appendix C.

#### **8.6 Are the proposed works appropriate having regard to the Environmental Significance Overlay – Schedule 5 (ESO5) within the South Gippsland Planning Scheme?**

As shown in Figure 5.4, ESO5 within the South Gippsland Planning Scheme affects the part of the Project site located within South Gippsland Shire. The overlay seeks to protect areas prone to erosion.

Pursuant to Clause 42.01-2, planning permission is required for the proposed works (with the exception of underground cabling) and to remove native vegetation. The proposal is consistent with the purpose and decision guidelines of the ESO5, as evidenced by the following.

- The Desktop Assessment Geotechnical, Contaminated Land and Hydrological Constraints undertaken by Golder Associates confirms that none of the wind turbine locations proposed are within areas identified as susceptible to landslide and it is not expected that the proposal will change or impact on landslide risk.
- The extent of native vegetation removal in South Gippsland is limited to 1.67 hectares of native vegetation patches (of a site area of 431 hectares) and no large trees are proposed to be removed.
- The native vegetation patches that will be impacted within ESO5 are primarily located along existing watercourses. The Desktop Assessment Geotechnical, Contaminated Land and Hydrological Constraints concludes that where vegetation clearance is required as part of wind turbine construction, it is expected that erosion can be managed through normal construction and slope maintenance processes implemented in accordance with Construction Techniques for Sediment Pollution Control (EPA Victoria Publication, May 1991), Environment Guidelines for Major Construction Sites (EPA Victoria, February 1996) and Control of Erosion on Construction Sites (Soil Conservation Authority). Erosion management techniques include:
  - Sheeting of unsealed roads with material of low dispersivity (crushed rock)
  - Temporary and permanent drainage
  - Temporary silt barriers where there is a risk of erosion and sediment runoff from exposed soils
  - Mulching and revegetation of areas temporarily cleared for construction purposes.

A detailed assessment of the proposal against the Decision Guidelines of ESO5 is provided in Appendix C.

### **8.7 Are the proposed works appropriate having regard to the Erosion Management Overlay (EMO) within the Baw Baw Planning Scheme?**

The EMO within the Baw Baw Planning Scheme affects the part of the Project site located within Baw Baw Shire, as shown in Figure 5.5.

Planning permission is required pursuant to Clause 44.01-3 (EMO) for the removal of native vegetation only. Planning permission is not required for the proposed works as the turbine and associated works are located on land where the natural ground level has a slope less than 20% (1 in 5).

It is submitted that the proposed vegetation removal is appropriate having regard to the purpose and decision guidelines of the EMO, based on the following:

- The extent of native vegetation removed within the EMO, and Baw Baw Shire broadly, is limited to 0.083 hectares of native vegetation patches within an overall area of 164 hectares. Importantly, no large trees are proposed to be removed.
- As noted in relation to ESO5, the Desktop Assessment Geotechnical, Contaminated Land and Hydrological Constraints prepared by Golder Associates concludes that where vegetation clearance is required as part of wind turbine construction, it is expected that erosion can be managed through normal construction and slope maintenance processes implemented in accordance with Construction Techniques for Sediment Pollution Control (EPA Victoria Publication, May 1991), Environment Guidelines for Major Construction Sites (EPA Victoria, February 1996) and Control of Erosion on



Construction Sites (Soil Conservation Authority). The erosion management techniques identified in the ESO5 discussion apply equally to the EMO.

- Notably, the native vegetation patches within the EMO are primarily located along the existing access track or along the boundary of the Project site, with none of the proposed vegetation removal areas overlapping with areas identified as susceptible to landslides within Figure 3 of the Desktop Assessment.

An assessment of the proposal against the Decision Guidelines of the EMO is provided in Appendix C.

#### **8.8 Are the proposed works appropriate having regard to the Design and Development Overlay – Schedule 1 (DDO1) of the Latrobe Planning Scheme?**

DDO1 (within the Latrobe Planning Scheme) transects the site from south-east to north-west, as shown in Figure 5.3.

Planning permission is required pursuant to Clause 43.02-2 (DDO1) for the works associated with the 33kV underground electrical cable connecting the turbines to the terminal station. It is noted that there are no wind turbines or other infrastructure located within DDO1.

The objective of DDO1 is to “ensure that all buildings and works and in particular buildings designed to accommodate people are sufficiently separated from high pressure pipelines to avoid a safety hazard”. It is submitted that the proposed works is appropriate having regard to the purpose and decision guidelines of DDO1 as:

- No sensitive uses, including dwellings or buildings designed to accommodate 20 or more people, are proposed proximate to the pipeline as part of this application.
- This application also does not propose any fencing or building structures within 3 metres of the pipeline. All works proposed are associated with the underground cabling, which is proposed to transect the DDO1 area in only one location.

The application will be referred to the Secretary of the Department administering the Pipelines Act 1967 for their views.

A detailed assessment of the proposal against the Decision Guidelines of DDO1 is provided in Appendix C.

#### **8.9 Does the proposal appropriately manage bushfire risk?**

The Project site is affected by the Bushfire Management Overlay across Latrobe City, South Gippsland Shire and Baw Baw Shire. Although planning permission is not required for buildings and works associated with a ‘Wind Energy Facility’ under the BMO, bushfire risk has been considered in the accompanying Bushfire Risk Assessment prepared by Fire Risk Consultants, given the site’s location within a high risk area.

The Assessment concludes that the proposed use and development “does not increase the bushfire risk in the landscape if recommendations during the distinct phases of development, construction and operation are implemented”.

An overview of the Assessment's methodology, relevant legislation, modelling results and proposed mitigation measures is provided in Section 6.8 of this report. For further detail, please refer to the accompanying Bushfire Risk Assessment prepared by Fire Risk Consultants.

### **8.10 Does the proposal comply with the requirements of Clause 52.32 and the Wind Energy Guidelines?**

#### **8.10.1 Overview**

Clause 52.32 of the Planning Scheme includes as its purpose 'to facilitate the establishment and expansion of wind energy facilities, in appropriate locations, with minimal impact on the amenity of the area. Pursuant to this clause, a planning permit is required to use and develop land for a wind energy facility, unless it is in an area specified in the clause where wind energy facilities are prohibited.

The Clause includes a series of application requirements as well as mandatory requirements in relation to noise related matters. The Clause also includes Decision Guidelines which reference the Wind Energy Guidelines, which forms a policy document supporting the Planning Scheme and is also referred to at Clause 19.01-2S of the Planning Policy Framework.

This section of the Report will provide an assessment of the proposal against the requirements of Clause 52.32, addressing in particular the Decision Guidelines, and noting that a number of elements of the assessment utilise the findings of the specialist reports as summarised at Chapter 6 and attached in the Appendices.

#### **8.10.2 Use and Development of Land**

Pursuant to Clause 52.32 a permit is required to use and develop land for a Wind Energy Facility. If turbines are within one kilometre of a dwelling then consent of the landowner must be provided. This requirement does not apply to a wind energy facility on land in a residential zone, an industrial zone, a commercial zone or a special purpose zone. In the case of the current application, all dwellings are more than one kilometre from any turbine and so this requirement for consent does not apply. It is noted that part of the Project site is included in the SUZ1, including two turbines. Whilst it is arguable that the one kilometre 'rule' doesn't apply to those turbines (T15 and T16), a minimum 1.05 kilometres setback is nonetheless provided to all dwellings.

The Table to Clause 52.32 also specifies that wind energy facilities are prohibited on land included in a schedule in the National Parks Act or land declared as a Ramsar wetland. This does not apply to the proposed wind farm.

In the case of the Latrobe Planning Scheme, wind energy facilities are also prohibited on '*all land within five kilometres of a residential zone, an industrial zone, a business zone or a special purposes zone in the urban areas of Moe, Morwell and Traralgon*' (refer to the Schedule to Clause 52.32). The proposed wind farm is located outside this prohibited area and so is permissible.

In the case of the South Gippsland Planning Scheme, the Schedule to Clause 52.32 states that wind energy facilities are also prohibited on all land within five kilometres of the high water mark of the coast west of Wilson's Promontory. The proposed wind farm is also located outside this prohibited area.

In the case of the Baw Baw Planning Scheme there is no land specified in the Schedule to the Zone so no specified areas where the use and development is prohibited.

The Site Analysis - Wind Turbine Siting included as Figure 2.4 at Chapter 2 shows the 1.05 kilometres setback line from surrounding dwellings, demonstrating compliance with this clause. The same Figure shows the 5 kilometres line from Moe and Morwell, also demonstrating compliance.

### 8.10.3 Have the application requirements of Clause 52.32-4 been met?

Clause 52.32-4 includes a series of matters that must be included as part of any application. The first requirement is for a Site and Context Analysis, that includes the following information:

- in relation to the subject site; including site shape and dimensions, orientation and contours; current land use; existing use and siting of buildings or works on the land; existing vegetation types, condition and coverage; the landscape of the site; species of flora and fauna; wind characteristics and any other notable features, constraints or other characteristics;
- in relation to the surrounding area: existing land uses, above ground utilities, access to infrastructure; directions and distance to nearby dwellings/townships and other key land uses; the siting and use of buildings on adjacent properties; views to and from the site; sites of flora and fauna listed under the Flora and Fauna Guarantee Act 1988 or the EPBC Act; sites of cultural significance; National Parks, State Parks, Coastal reserves and other land subject to the National Parks Act 1975; Land declared as a Ramsar wetland, location of any land included in the schedule to Clause 52.32-2; any other notable features or characteristics of the area ; bushfire risks.

The Application material, including this report and the associated specialist reports have addressed all of these issues via a combination of mapping, photographs and reporting and a robust assessment of the characteristics of the site and its surrounds is provided.

It is also an application requirement that a Design Response is provided which includes: detailed plans and elevations of the proposal, visual simulations showing the development in the context of the surrounding area and from key public viewing points; a rehabilitation plan for the site; written reports detailing the proposal and how it responds to the site analysis, significant landscape features, visual impact on surrounding landscapes; visual impact on land subject to the National Parks Act 1975 or declared as a Ramsar wetland or coastal area; impacts on species listed under the Flora and Fauna Guarantee Act 1988 or the EPBC Act; noise impacts; impacts on Aboriginal or non-Aboriginal cultural heritage; a statement of why the site is suitable for the wind energy facility and an environmental management plan.

All of these matters have been addressed either via this Planning Report or in the supporting specialist reports, included as part of the planning permit application.

A final application requirement is for a mandatory noise assessment that addresses pre-construction (predictive) noise that demonstrates that the proposal can comply with NZS6808:2010, including whether a high amenity noise limit is applicable under Section 5.3 of the Standard. It is also a requirement that an environmental audit report is undertaken for the noise assessment to verify that the acoustic assessment has been conducted in accordance with NZS6808:2010.



Both these requirements have been met, as discussed at Section 6.6 and included in the Appendices.

#### 8.10.4 Does the proposal respond appropriately to the Decision Guidelines of Clause 52.32?

##### ***Municipal Planning Strategy and Planning Policy Framework***

An assessment of the Project's consistency with the Municipal Planning Strategy and Planning Policy Framework has already been undertaken at Sections 8.2 and 8.3 of this Planning Report. The Assessment concludes that the Project represents an appropriate planning outcome in the context of various relevant policy directions of the LPPFs.

##### ***The effect of the proposal on the surrounding area in terms of noise, blade glint, shadow flicker and electromagnetic interference.***

The effect of the proposal on the surrounding area in relation to noise, blade glint, shadow flicker and electromagnetic interference has been assessed in the accompanying specialists reports and at Chapter 6 the Specialist Reports – Overview of Key Findings. Each of these matters is discussed briefly below.

##### Noise

As outlined at Section 6.6, consistent with the requirements of NZS6808:2010, a Background Noise Monitoring Report and subsequent Environmental Noise Assessment was undertaken for the Project by Marshall Day Acoustics. In addition, a peer review of that report was undertaken by Sonus and an Environmental Noise Assessment Audit was also undertaken by Senversa, in accordance with the requirements Clause 52.32-4 of the Planning Scheme.

The Marshall Day assessments found that:

- the proposed wind turbines are predicted to comply with the operational noise requirements of NZS6808:2010, as required by the Victorian Wind Energy Guidelines;
- the noise levels from the related infrastructure (the battery storage facility and, from a cumulative basis, the terminal station) are at least 10-dB below the minimum recommended for the conservative night time period as required by the NIRV and therefore the infrastructure is unlikely to be a significant design consideration;
- construction noise associated with the wind farm can be acceptably managed on the basis of the preparation and implementation of a CEMP.

The peer review undertaken by Sonus noted that the approach in the Marshall Day Assessment is conservative compared with the New Zealand Standard, as it will result in higher predicted noise levels and concluded that the Marshall Day assessment has been conducted in accordance with the Wind Energy Guidelines and the assessed layout will achieve the objective requirements of the Project.

An environmental audit undertaken by Senversa confirmed that the approach taken to the Noise Assessment by Marshall Day was sound and recommended additional work in the form of:

- *'Measurements of the tonality of the candidate turbines (in accordance with IEC 61400-11:2012)41 should be reviewed as they become available, or verified by on-site emission testing of the first turbines commissioned on the site.*
- *The post-construction noise level monitoring specified under the Noise Compliance Test Plan (NCTP) should be undertaken by an independent acoustic consultant in line with recent recommendations of the Office of the National Wind Farm Commissioner'.*

Accordingly, it is considered that the effect of the proposal on the surrounding area in terms of noise is not unreasonable and is in compliance with the requirements of Clause 52.32 and, in particular, NZS6808:2010.

#### Shadow Flicker and Blade Glint

Shadow Flicker and Blade Glint has been discussed at Section 6.10 and is assessed in the attached report prepared by K2 Management.

The Wind Energy Guidelines state that shadow flicker experienced immediately surrounding the area of a dwelling (garden fenced area) must not exceed 30 hours per year (noting that where a fenced garden area is not evident at a dwelling, a 50 metres curtilage from the dwelling centre point is used).

The Shadow Flicker Assessment clearly demonstrates compliance with this requirement and concludes that there are no dwellings in proximity to the site that will exceed the 30-hour annual limit on the basis of the 'worst case scenario' modelling. The Assessment also notes that shadow flicker impacts will likely be less in reality, having regard to the conservative assumptions made in the modelling.

The Assessment also confirms that Delburn Wind Farm Pty Ltd is committed to specifying wind turbine blades that must be finished in a non-reflective coating to avoid any blade glint impacts as part of the tendering and procurement process and that, accordingly, the Project will meet the requirements of Section 5.1.2(b) of the Wind Energy Guidelines.

Given the predicted compliance with the requirements of the Wind Energy Guidelines it is considered that proposal meets the relevant requirements of Clause 52.32 in relation to shadow flicker and blade glint and will not have any significant effect on the surrounding area in relation to these issues.

#### Electromagnetic Interference

Section 6.7 describes the potential electromagnetic interference (EMI) impacts of the Project and the proposed mitigation measures that are designed to ensure that any adverse impacts on communication services in the area are minimised. The Assessment concluded as follows.

- There is some potential for interference to be caused to one point to multi point link operated by Gippsland Water, however there are potential mitigation options and there is on-going consultation with Gippsland Water about this potential issues.
- There is some potential for there to be interference to digital television broadcast signals, however further investigation into this issue has been recommended and mitigation options identified to address this if interference is experienced;

- The NBN wireless internet signals from the Boolarra tower are not expected to be impacted however if interference is experienced the problems are expected to be able to be rectified by relocating antennas at any affected dwellings.
- There is a low risk of interference to the point to multipoint links associated with the Latrobe Valley flood warning system however if interference is experienced then mitigation measures are available.
- There is not expected to be any noticeable interference to FM radio signals from the KIDS FM broadcast tower. However, if any interference is noticed then mitigation measures are available.
- There is not expected to be any interference to mobile phone signals however, as with the other potential issues, mitigation measures are available if indeed interference is identified.
- Interference to satellite television is not expected to be an issue, as the two satellites potentially impacted transmit programs are designed for international services and so it is considered unlikely that residents will be receiving signals from the satellites.
- There is some low potential for mobile radio operations of Gippsland Water to be impacted however mitigation measures are available if any interference is identified.
- There are a number of additional services also identified and discussed in the specialist report and Section 6.7, all of which are considered unlikely to be impacted.

The Assessment highlights that Delburn Wind Farm Pty Ltd will continue to engage with relevant stakeholders in relation to EMI matters as required i in relation to digital television services and in relation to point-to-multipoint services for Gippsland Water.

It is also noted that it will be a requirement of any planning permit that is issued for the Project that a survey is undertaken preconstruction to establish a baseline assessment for impacts, and also highlighting that Delburn Wind Farm Pty Ltd has committed to returning any impacted services to at least pre-construction quality at its own cost if the interference is attributed to the Project after construction.

Accordingly, it is considered that the Project will not have any unreasonable impact as a result of EMI.

### ***The impact of the development on significant views, including visual corridors and sightlines***

Section 6.4 describes the anticipated Landscape and Visual Impacts of the Project, as required by this Decision Guideline. The Assessment concluded as follows.

- Freeways. The Assessment considers four different locations along the Princes Freeway, with the assessed visual impact ranging from negligible-nil to low-negligible. The Assessment highlights that views from the freeway are at speeds of approximately 100 km per hour and typically oblique to the direction of travel. In addition, where turbines are visible, they will be at a distance where they are would not be visually dominant features in the view or over landscapes that are modified to include plantations, open-cut coal mines, power stations and a range of transmission lines. The Assessment concludes that the overall visual impact for freeways is negligible.



- Tourist routes and highways. The Assessment considers 11 different locations, with the assessed visual impact ranging from negligible to low-moderate in two instances. It highlights that views toward the Project are limited by roadside vegetation, plantation areas and adjoining farming properties as well as screening afforded by nearby and surrounding properties and concludes that the overall visual impact for tourist routes and highways is low.
- Major roads. The Assessment considers 15 viewpoints for analysis along main roads, with the assessed visual impact varying from negligible through to moderate. It notes that, as is also the case for tourist routes and highways, the majority of views are limited by roadside vegetation, plantation areas, and adjoining farming properties including screening afforded by nearby and surrounding topography. The Assessment concludes that the overall visual impact for major roads is considered to be low-moderate.
- Local roads. The Assessment considers 24 viewpoints along local roads, with the assessed visual impact ranging from negligible-nil to low-moderate. It notes that views from local roads vary greatly depending upon location and proximity to the Project and concludes that the overall visual impact rating for local roads is considered to be low.
- Townships. The Assessment considers viewpoints from the following towns as part of its assessment: Yallourn, Tyers, Traralgon, Churchill, Morwell, Yinnar, Boolarra, Mirboo North, Thorpdale, Narracan, Coalville and Moe. The visual impacts from these towns is assessed as varying from negligible-nil, to low. It identifies that from most locations within the nearby towns, views are filtered or screened by a combination of topography, vegetation or by buildings and other structures. This means that views from townships are typically limited to the edges of townships areas such as recreation areas that allow for clear views over large open areas. The Assessment finds that the overall visual impact for townships is considered to be below-negligible.
- Recreational trails, parks and elevated lookouts. The Assessment looks at 13 different viewpoints in its consideration of recreation trails, parks and elevated look outs and the impacts are assessed as varying from nil to negligible. The Assessment concludes that the overall impact on parks and recreational trails is assessed to be negligible, noting that outside of towns and built-up areas, walking trails tend to be located in heavily vegetated areas such as the Lyrebird Forest Walk, Morwell National Park and the trail to Petersons lookout.

Accordingly, the impacts of the proposal on significant views, including visual corridors and sightlines is considered to be primarily low to negligible, apart from major roads where impacts are assessed to be low - moderate.

In terms of impacts on residential properties the Assessment considered 20 different locations where permission was given to publish the assessment from the property. The findings of these assessments, including TrueView images to show likely views once the wind farm has been constructed, concludes that impacts at the assessed dwellings range from Nil, through to high.

For the majority of the assessed dwellings, landscape mitigation is considered to be an option to reduce visual impacts. The exceptions to this are five dwellings where impacts are expected to be high and where it is considered that landscape mitigation is unlikely to reduce impacts for various reasons.

Whilst it is acknowledged that impacts to these dwellings will be high, it is highlighted that these impacts also need to be considered in the context of the relatively low impacts from the range of public viewpoints that have been assessed, as discussed above.

Accordingly, it is considered that the anticipated level of impact on significant views, including visual corridors and sightlines, is not unreasonable, particularly when considered in the context of the broader renewable energy policy directions of the Planning Policy Framework, the findings of other key specialist assessments which confirm potential environmental impacts of the Project are acceptable and in conjunction with the range the broader community benefits the Project will generate.

### ***The impact of the facility on the natural environment and natural systems***

Careful consideration has been given to impacts on the natural environment and natural systems in the development of the layout and design of the Project.

#### Biodiversity

The Biodiversity Assessment summarised in Section 6.2 and included in Appendix D provides a detailed assessment of potential impacts to both flora and fauna.

In terms of flora, the assessment finds that the Project responds to the Guidelines for the removal, destruction or lopping of native vegetation as it avoids impacts, minimises impacts and where impacts cannot be avoided provides appropriate offsets as compensation.

As outlined at Section 6.2, the Project will result in total removal of 12.344 hectares (including large trees) which represents a significant reduction in the extent of removal that was required under earlier iterations of the Project where a greater number of turbines was proposed. A suitable offset site has been identified for the proposed vegetation removal ensuring compliance with the Guidelines.

In terms of significant flora, fauna and ecological communities, the only significant species recorded as part of the work undertaken by EHP comprised the Strzelecki Gum and Growling Grass Frog. For both species the siting of turbines has been undertaken to avoid both direct and indirect impacts, with the exception of the road widening at Nursery Track which has the potential to impact the Growling Grass Frog. However, potential impacts to both the Strzelecki Gum and Growling Grass Frog have been addressed further via the Environment Report and Flora and Fauna Management Plan as required by the Minister's conditions associated with the determination that no EES is required.

Other potential impacts, and associated mitigation measures identified in the Biodiversity Assessment, include the following.

- Fauna – the potential for the construction to result in fauna injury or mortality, with the recommended mitigation measure of a Fauna Management Plan to guide salvage and translocation processes.
- Loss of hollow-bearing trees – it is expected that approximately 26 hollow-bearing trees are likely to be impacted. To reduce impacts large mature trees with hollows will be avoided as much as possible as part of additional micro-siting measures that will be implemented prior to and during construction.

- Bird Impact collision – the Project is not likely to significantly impact any ‘species of interest’ that may occupy habitats within the study area. However, the Biodiversity Assessment recommends that a Bat and Avifauna Management Plan should be prepared as a requirement of any Planning Permit issued.
- Bat mortality - the potential impacts to bats during the operation of the windfarm is expected to be low due to the rotor swept height and the location of turbines within a pine plantation. Nonetheless, the Biodiversity Assessment recommends that a Bat and Avifauna Management Plan is prepared as a requirement of any Planning Permit that is issued.

On the basis of the findings of the Biodiversity Assessment, in addition to the further work undertaken in response to the Minister for Planning’s response to the EES referral, it is considered that appropriate consideration has been given to flora and fauna impacts as a result of the Project and that impacts will not be unreasonable, subject to the implementation of a series of mitigation measures outlined in the Biodiversity Assessment.

### Geotechnical and Hydrogeological

As previously noted, the Desktop Assessment of Potential Geotechnical, Contaminated Land and Hydrogeological Impacts prepared by Golder Associates Pty Ltd is summarised at Section 6.3 and included in Appendix E.

Of relevance to the consideration of impacts to natural systems, this Assessment considers potential impacts of the Project in relation to erosion and landslip, surface water (including catchments, rivers and waterways), ground water, natural hazards, dry land salinity, soil and groundwater contamination and acid sulfate soils.

The Assessment concludes that the Project will not have a significant impact in relation to any of these issues, subject to appropriate mitigation measures being implemented, as follows:

- Erosion and landslip: to be managed through the normal construction and slope maintenance processes implemented in accordance with the relevant guidelines;
- Surface water: impacts will be negligible subject to appropriate erosion control in accordance with the relevant guidelines;
- Groundwater: if groundwater extraction is proposed, further assessment will be required at the specific well location proposed to assess the groundwater yields that could be achieved and any potential impact to groundwater systems and surface water receptors;
- Natural hazards: the possibility of an earthquake to be mitigated through engineering design using the methods set out in AS1107.4-2007 ‘Structural design actions Part 4: Earthquake actions in Australia’.
- Dry land salinity: no mitigation measures are required as the Project site has a very low susceptibility to dry land salinity;
- Soil and groundwater contamination: the potential for contaminant migration, if present at all, is very low and in the unlikely event that contaminated soil is encountered, it may be disposed of off-site at a facility licensed to accept the waste;



- Acid sulfate soils: there is a low to very low likelihood of acid sulfate soils so no mitigation measures are required.

Accordingly, the Project is expected to have minimal impact on matters related to hydrogeology and soils.

### ***The impact of the facility on cultural heritage***

As discussed in Section 2.8 of this Report, there are 47 registered Aboriginal cultural heritage sites within the Project Site and an additional 15 within 200 metres of the project area boundary. The majority of sensitivity areas relate to artefact scatters in a disturbed context particularly along ridgeline areas dominated by sandy soils such as along areas of Deans Road, Golden Gully Road and other sandy ridgelines.

A Cultural Heritage Management Plan (CHMP 16429) is being prepared in consultation with the Gunaikurnai Land and Waters Aboriginal Corporation (GLaWAC) and will outline the required avoidance, mitigation and management actions required during construction of the Project to manage potential impacts.

Therefore, it is considered that the impacts of the Project on cultural heritage will be appropriately considered as required by the Decision Guidelines at Clause 52.32-6, as part of the CHMP process.

### ***The impact of the facility on aircraft safety***

Section 6.5 of this Report summarised the key findings of the Aeronautical Impact Assessment prepared by Chiron Aviation Consultants, which is also included in the Appendices to this Report.

In relation to the 'aviation impact statement' the Assessment concluded that there would be:

- no adverse impact on Obstacle Limitation Services of any registered, certified or military aerodromes;
- no adverse impact on any Lowest Safe Altitudes for air routes in the vicinity;
- no adverse impact on the Latrobe Valley aerodrome Non-Directional Beacon approach;
- no adverse impact on the Yarram aerodrome IAP;
- no adverse impact on the performance of civil surveillance radars;
- no adverse impact on the performance of aviation-related communications systems; and
- no adverse impacts on Defence or Airservices Australia radarsystems.

However, the Assessment found that the Project will impact on the Latrobe Valley Aerodrome and to address the issue, amendments will be required to the aerodrome's instrument approach procedure and to the missed approach decision height. Further consultation is being undertaken with the Latrobe Valley Aerodrome operator to address this.

In relation to matters considered as part of the Qualitative Risk Assessment (summarised at Section 6.5) the Assessment found that lighting of the turbines during either the day or night is not required and that there are unlikely to be impacts to night flying, general aviation flying training, recreational and sport aviation, emergency services flying, weather and topographical issues

In relation to fire fighting, the Assessment highlights that aerial fire fighting is conducted at low levels and that based on the experience of Chiron with rural fire fighting in multiple states, the various agencies all typically consider wind farms to be 'just another hazard' that has to be considered in the risk management process associated with aerial fire fighting, noting that aerial firefighting would take place in combination with ground based firefighting, discussed in the Bushfire Risk Assessment.

Finally, the Assessment notes that the meteorological monitoring masts proposed for the site are very difficult to see due to their slender construction and thin guy wires and because the masts are often a grey (galvanised steel) colour that readily blends with the background. This can be a risk for aerial application activity, as an example. Accordingly, the Assessment recommends appropriate marking and reporting of the proposed meteorological masts.

Based on the findings of the Assessment, it is considered that appropriate consideration has been given to aircraft safety, as required by the Decision Guidelines of Clause 52.32-6.

### ***Policy and Planning Guidelines for Development of Wind Energy Facilities in Victoria (March 2019 (DELWP, 2019)***

This Planning Report and accompanying plans and specialist reports have been prepared in accordance with the requirements of the Wind Energy Guidelines and respond appropriately to the applications requirements outlined at Chapter 4 of the Guidelines.

### ***The New Zealand Standard NZS6808:2010, Acoustics – Wind Farm Noise***

The way in which the Project responds to the NZS6808:2010 has already been outlined in some detail at Section 6.6 and earlier in this Assessment chapter.

## **8.11 Does the proposal respond appropriately to the relevant Particular and General Provisions of the Planning Schemes?**

### ***Clause 52.05 Signs***

The proposed business identification signage is entirely appropriate in the context of the requirements of Clause 52.05. The sign will have a maximum area of 3 square metres, and will be appropriately located adjacent to the Operations and Maintenance Facility, adjacent to the Strzelecki Highway.

### ***Clause 52.06 Car Parking***

Clause 52.05 specifies car parking requirements for particular, specified, land uses. As a wind energy facility is not specified in the clause any car parking associated with it needs to be to the satisfaction of the responsible authority.

Car parking is proposed at both the Visitor Information Centre and Visitor Turbine Viewing area. A total of 35 car spaces, in addition to bus parking, are proposed which are considered to be adequate to meet anticipated visitor numbers at the site.

In addition, a further 12 car spaces are also proposed at the Operations and Maintenance Facility. This is expected to be more than adequate based on an anticipated six to seven permanent staff plus temporary workers being on site at any one time.

#### **Clause 52.17 Native Vegetation**

The proposed Wind Farm requires approval for the removal of a total of 12.344 hectares, comprising 10.591 hectares in Latrobe, 0.083 hectares in Baw Baw and 1.67 hectares in South Gippsland.

The purpose of Clause 52.17 is as follows.

*'To ensure that there is no net loss to biodiversity as a result of the removal, destruction or lopping of native vegetation. This is achieved by applying the following three step approach in accordance with the Guidelines for the removal, destruction or lopping of native vegetation (Department of Environment, Land, Water and Planning, 2017) (the Guidelines):*

- 1. Avoid the removal, destruction or lopping of native vegetation.*
- 2. Minimise impacts from the removal, destruction or lopping of native vegetation that cannot be avoided.*
- 3. Provide an offset to compensate for the biodiversity impact if a permit is granted to remove, destroy or lop native vegetation.*

*To manage the removal, destruction or lopping of native vegetation to minimise land and water degradation'.*

The requirements of Clause 52.17 have been addressed in detail in previous sections of this Report and in the attached Biodiversity Assessment and it is clear that the purpose of Clause 52.17 has been met, through the avoidance, minimisation and offsetting that is proposed. Refer to Section 6.2 for further discussion of the Project's response to this clause.

#### **Clause 52.29 Land Adjacent to a Road Zone, Category 1 or a Public Acquisition Overlay for a Category 1 Road**

Both the Strzelecki Highway and Morwell-Thorpdale Road are in the Road Zone Category 1.

As outlined in Section 6.9 and the attached Traffic Impact Assessment and identified on the Zoning Plan at Figure 5.1, there are six locations where works are proposed on the Strzelecki Highway and one on Morwell-Thorpdale Rd (pertaining to either underground cable crossings, temporary alternations to existing intersections, or a major intersection upgrade). Only one of these areas of works, the intersection of Strzelecki Highway and Creamery Rd, results in an alteration of access to a road in a Road Zone.

There are 11 vehicle access points proposed (refer Figure 6.21 in Section 6.9) however none of these are located in the RDZ1.

Accordingly, it is considered that approval is required pursuant to Clause 52.29 for the alteration of the existing access at the intersection of Strzelecki Highway and Creamery Rd.



**Clause 65 – Decision Guidelines**

Clause 65 outlines a series of matters the Responsible Authority must take into consideration when assessing a proposal. These matters have been identified at Section 5.5 and have been addressed in this Planning Report, and in the accompanying Specialist Reports, through the preceding text and the response to the relevant policies, zones, overlays and particular provisions.

## 9.0 CONCLUSIONS

The following conclusions can be made in relation to the three planning permit applications that, combined, will facilitate approval for the Project.

- The Project is entirely appropriate in the context of State renewable energy and sustainability policies.
- The Project is appropriately located and takes advantage of land currently utilised for plantations and the benefits associated with that including limited environmental constraints (due to the vegetation being planted and not native), the ability to use existing access tracks thus requiring reduced clearance areas for roads and cabling and limited dwellings located internally within a large contiguous land holding.
- The Project Site also takes advantage of a number of other significant locational features including its proximity to the thermal (coal fired and gas) power stations at Hazelwood, Yallourn, Loy Yang and their associated coal mines and transmission infrastructure, in addition to its proximity to the existing 220kV transmission line which runs between Hazelwood and Rowville and the availability of suitable road access.
- An assessment of the Project against the State and Local Policy Frameworks of the Latrobe, South Gippsland and Baw Baw planning schemes clearly demonstrates that the Project is consistent with their strategic and statutory directions from an environmental, cultural heritage, renewable energy and economic and social benefit perspective.
- The Project responds appropriately to the requirements of the Wind Energy Guidelines and the information requirements of the Guidelines have been addressed in the permit application documentation.
- The Project is appropriate in the context of relevant zone and overlay controls in terms of each of the three planning schemes.
- The Project is not expected to have any unreasonable impacts on the amenity of surrounding landholdings by way of landscape and visual impacts, noise, blade glint or shadow flicker.
- The Project is not expected to result in any significant environmental impacts having regard to identified ecological, landscape values, water sources and traffic.
- The Project is not expected to result in any unreasonable bushfire risk or aviation risk subject to appropriate mitigation measures being implemented.

- The Project is appropriate from a land use planning perspective and will have minimal impact on existing or future land uses within and surrounding the Project area including the on-going operation of the plantation areas, farming activities, residences and public infrastructure.
- The project is not expected to impact on the future use and development of coal and stone resources if utilisation of such resources is sought in the future.
- The Project is expected to result in significant economic benefits.

In conclusion, based on a balanced assessment of key planning issues and policies, it is considered that the Project will be an appropriate planning and land use outcome that will result in the development of an additional renewable energy resource in Victoria and will result in an overall net community benefit.

DB Consulting and SJB Planning  
February 2021