AWTM Pty Ltd ATF Witherby Family Trust (ABN 50 285 185 541) T/A Wakefield Planning

Statement of Environmental Effects and Development Application Report

Upgrade Two Turbines at Hampton Village Wind Farm
43 Hampton Road, Hampton 2790
Lot 1 in DP 1031694

For Windfarm 1 Pty Ltd

Revision 2.11

PO Box 594
MOREE NSW 2400
P 0427 257 244
E admin@wakefieldplanning.com.au
W wakefieldplanning.com.au

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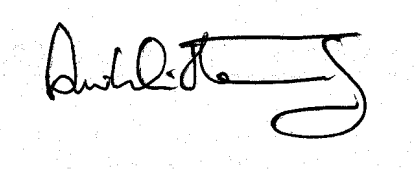

Angus Witherby
BA – Geography & Economics, Grad. Dip. Urb. & Reg. Planning, FPIA, CPP

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1 Introduction

1.1 Background

The subject site is 43 Hampton Road, Hampton - Lot 1 in DP 1031694, owned by the proponent Windfarm 1 Pty Ltd.

A consent was issued on 18 September 2000 for the construction of a wind farm (two turbines) at this location (Lithgow Council DA 96/01 refers). The wind farm consisted of two turbines which are now near the end of their economic life. The turbines now need to be replaced and upgraded to new specification turbines which are more efficient than the current ones. Turbines of the original size are now no longer available, so the replacement turbines would be larger than the current turbines.

The proposed turbines would overhang the adjacent lot 2 DP1031694 the owner of which has formally acknowledged that the proposed turbine towers "*will be close to the boundary and that the turbine blades may overhang my property at times. I acknowledge the above near-boundary impacts, and despite, this I am fully supportive of this application*".

1.2 Scope of Works

It is proposed to replace the existing two Vestas V47 660 kW wind turbines with two Vestas V80-2.0 MW platform wind turbines. The new turbines have the following general specifications:

- Height (total): - 120m (i.e. tower height plus half of rotor diameter)
- Rotor diameter – 80m
- Blade Length: - 39m
- Hub height: - 80m

The project is estimated to cost approximately $12.71 million.

Comparisons between existing and proposed turbines:

The focus of the project is on a successful upgrade of an existing two turbine wind farm, replacing the two existing turbines with two new larger turbines to extend the economic life and power output of the development.

The existing turbines are 50m hub height with 47m rotor diameter. Total height 73.5m. The replacements are proposed at 80m hub height with 80m rotor diameter. Total height 120m. The proposed turbines would therefore be approximately 1.6 times the height of the existing ones.

Table 1-1- Existing and Proposed Wind Turbines

	Specification	**Hub Height**	**Rotor Diameter**	**Overall Height**
Proposed Turbines	2 x Vestas V80-2.0 MW platform wind turbines	80m	80m	120m
Existing turbines	2 x Vestas V47 660 kW wind turbines	50m	47m	73.5m

As the proposed turbines are larger (capacity and height) than the existing ones, it is appropriate to review how any external impacts of the turbines might be affected – in particular, we have undertaken a detailed consideration of potential increases in noise impacts and what overall effect the new turbines might have on local views.

Detailed noise and visual assessment reports have been undertaken and are provided at Attachment 2 and Attachment 3 to this report. In summary, potential increased noise and visual impacts have been found to be low to moderate and within reasonable bounds for this project. See the discussions at sections 6.7 and 6.8 later in the report.

1.3 Requirements for Development Consent

The land is zoned RU1 Primary Production under the Lithgow Local Environmental Plan 2014. The proposed development is characterised as an *electricity generating works* and this is a prohibited use in the zone. This is because it is not a nominated use *permitted with consent* and would fall under the category of any development not so nominated and therefore *prohibited.* The current use is operating under existing use rights provisions; - however these cannot be relied upon for the proposed redevelopment as it represents a significant intensification which is not allowable under those provisions.

However, NSW State Environmental Planning Policy (Transport and Infrastructure) 2021 does enable the proposed construction. This is provided for in Part 2.3 Division 4 as follows:

> ***2.36 Development permitted with consent***
>
> *(1) Development for the purpose of electricity generating works may be carried out by any person with consent on the following land—*
>
> *a) in the case of electricity generating works comprising a building or place used for the purpose of making or generating electricity using waves, tides or aquatic thermal as the relevant fuel source—on any land.*

This means that notwithstanding Lithgow LEP 2014, the use can be carried out on the land, with consent, as the RU1 zone is a prescribed non-residential zone under Clause 2.35. Therefore, the permissibility of the "Electricity Generating Works" is achieved under the SEPP (Transport and Infrastructure) which is the appropriate environmental planning instrument that relates to this development.

Further, the NSW SEED mapping indicates that this site is not classified as environmentally sensitive area or land. Therefore, even though the estimated cost of development exceeds $10 million, the threshold for State Significant Development is therefore not triggered as it has been determined that the proposed development is not located in an environmentally sensitive area of state significance.

The estimate cost of the development is $12,714,000 and therefore triggers the Regionally Significant Development pathway as per Schedule 6, part 5 Private infrastructure and community facilities over $5 million under the State Environmental Planning Policy (Planning Systems) 2021.

On that basis, it is our opinion that the appropriate planning pathway for this application to be assessed as a Regionally Significant Development, via the relevant Regional Planning Panel. Accordingly, the relevant Western Regional Panel Template that forms part of the application package of information will be provided with this application.

1.4 Documents submitted with the Application

The following documents are submitted:

- This SEE and DA report
- Site Survey – Attachment 1
- Site Plan – Attachment 1a
- Noise Assessment – Attachment 2
- Visual Assessment – Attachment 3
- Haulage route study (Haulage of the two turbines from port to site) - Attachment 4

- Previous development approval by Lithgow Council – Attachment 5
- Noise management plan previously approve – Attachment 6
- Owner's consents – Attachment 7

2 Physical Context

2.1 Context for the site

The context of the site is shown on the following figures. The address is 43 Hampton Road, Hampton being Lot 1 in DP 1031694. It is located on Hampton Road, surrounded by similar rural land.

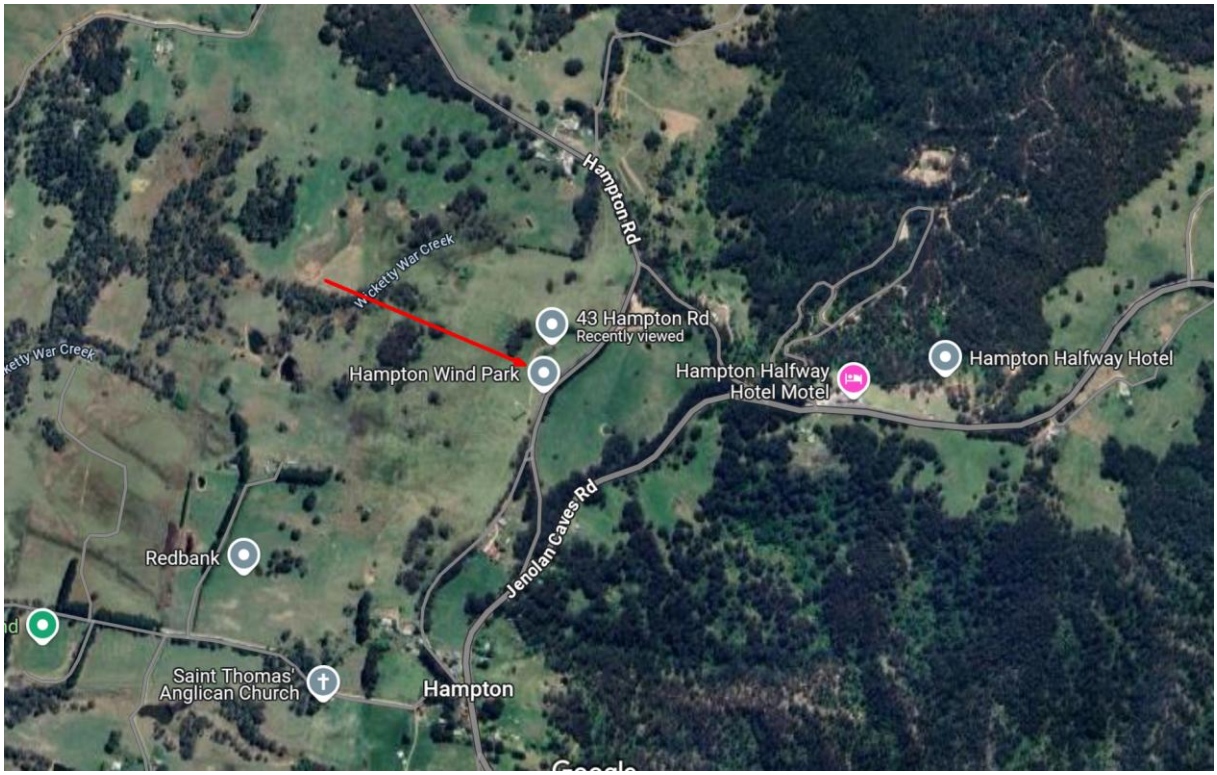

Figure 2-1 - General Site Context

This shows rural land surrounding the site with scattered dwellings and a motel. Hampton Village is to the south.

Figure 2-2 - Immediate Site Context

This shows the existing turbines and the access tracks, which are now largely overgrown.

Figure 2-3 - Frontage view from Hampton Road (looking to the west)

Figure 2-4 - View of site looking along Hampton Road to the south-west

2.2 Current Services

The land is connected to the electricity grid but is not otherwise serviced.

2.3 Planning Context

The planning context is that the land is subject to Lithgow Local Environmental Plan 2014 (LEP 2014). The relevant maps are shown below. The site is within the area of the Bathurst Aboriginal Land Council. Further detail is provided in the Statutory Assessment portion of this Statement.

The area of the site is about 3.2 hectares with boundaries being:

- Eastern (road frontage) – 340 m;
- Northern – 170m;
- Western – 290m;
- Southern – 80m.

The land is zoned RU1 – Primary Production Land. Electricity generating works is a prohibited use in this zone. However, as noted above, NSW State Environmental Planning Policy (Transport and Infrastructure) 2021 Part 2.36 (1)(a) allows for this use subject to consent.

This wind energy project is not State significant development because:

- it has a capital investment value of less than $30 million; and
- has a capital investment value of more than $10 million but is not in an environmentally sensitive area of state significance[1]

The application will need to be referred to the Regional Planning Panel for determination as it is for private infrastructure with a capital investment value in excess of $5 million.

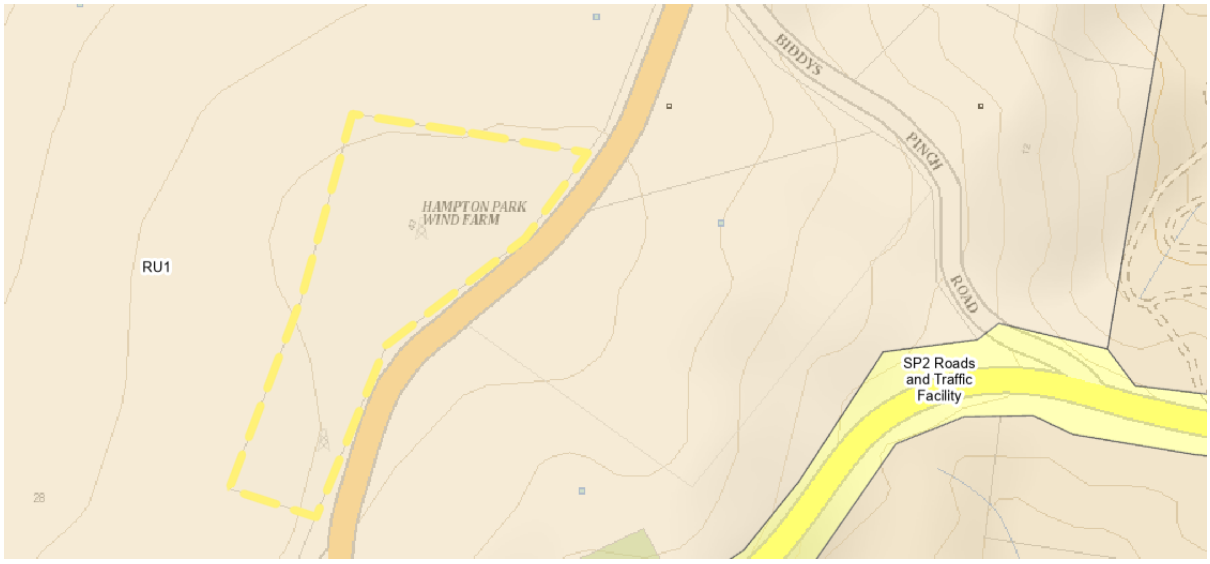

Figure 2-5 - Map depicting zoning in Lithgow LEP 2014

The land is subject to 40ha minimum lot size as shown below:

[1] As per Part 20 of Schedule 1 of State Environmental Planning Policy (State and Regional Development) 2011.

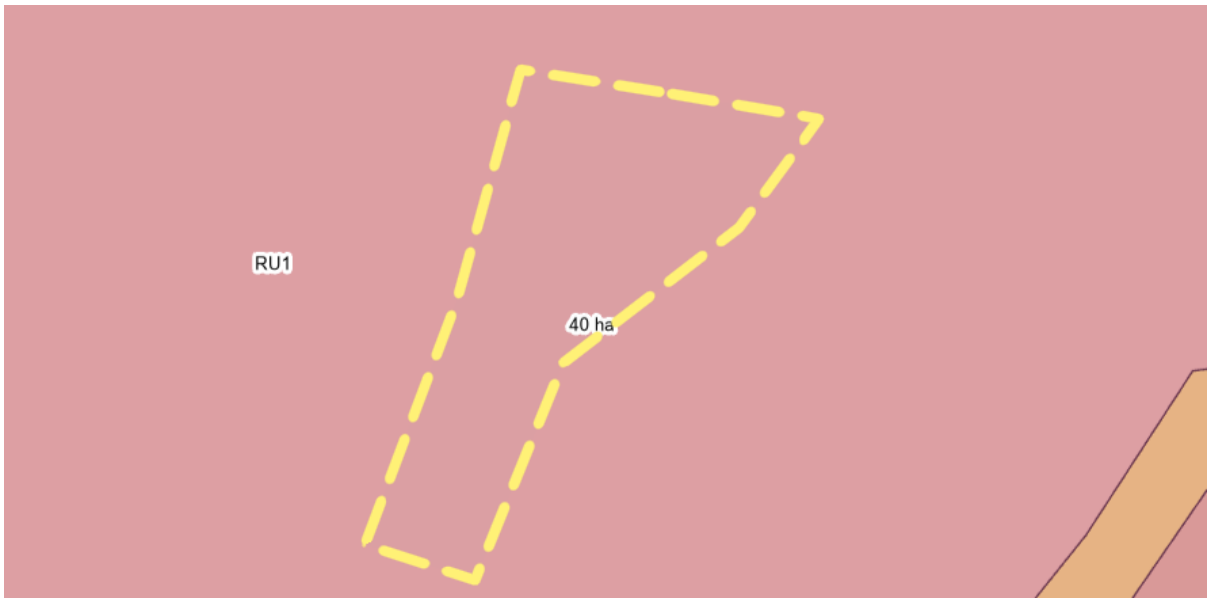

Figure 2-6 - Map depicting minimum lot size in Lithgow LEP 2014

This figure is relevant to the Biodiversity Conservation Act considerations.

Figure 2-7 - Site contour detail – Site is on a ridge-top

2.4 About this report

This report is a Statement of Environmental Effects regarding the proposal and assesses the proposal under the provisions of Section 4.15 of the *Environmental Planning and Assessment Act 1979*.

The report has been prepared by David Broyd, Senior Planner of Wakefield Planning and has been reviewed by Angus Witherby, Director of Wakefield Planning on behalf of the Company's client – Windfarm 1 Pty Ltd. Angus Witherby takes responsibility for this report.

This development is not the subject of a declaration of any reportable political donation or gift to a Councillor or staff member pursuant to the *Local Government and Planning Legislation Amendment (Political Donations) Act 2008.*

3 Details of the proposal

3.1 Use of the land

The land is currently used as an electricity generating works with two existing wind turbines approved in May 2001 (DA96/01). The proposal is for these existing turbines to be replaced and upgraded with two new turbines which are taller and more efficient.

3.2 Details of the Development

3.2.1 Layout

The positioning of the two new turbines will vary slightly from the existing ones (see Figure 3-1).This is to increase the stand-off from Hampton Road, and also to increase the spacing between the turbines. Re-use of the existing mounting system is not feasible for structural reasons. Both turbines would therefore be mounted on new systems, which are within the existing site area. The existing internal track network would be extended to serve the new pad sites. The adjoining owner has given consent for the blades to, at times, overhang his property.

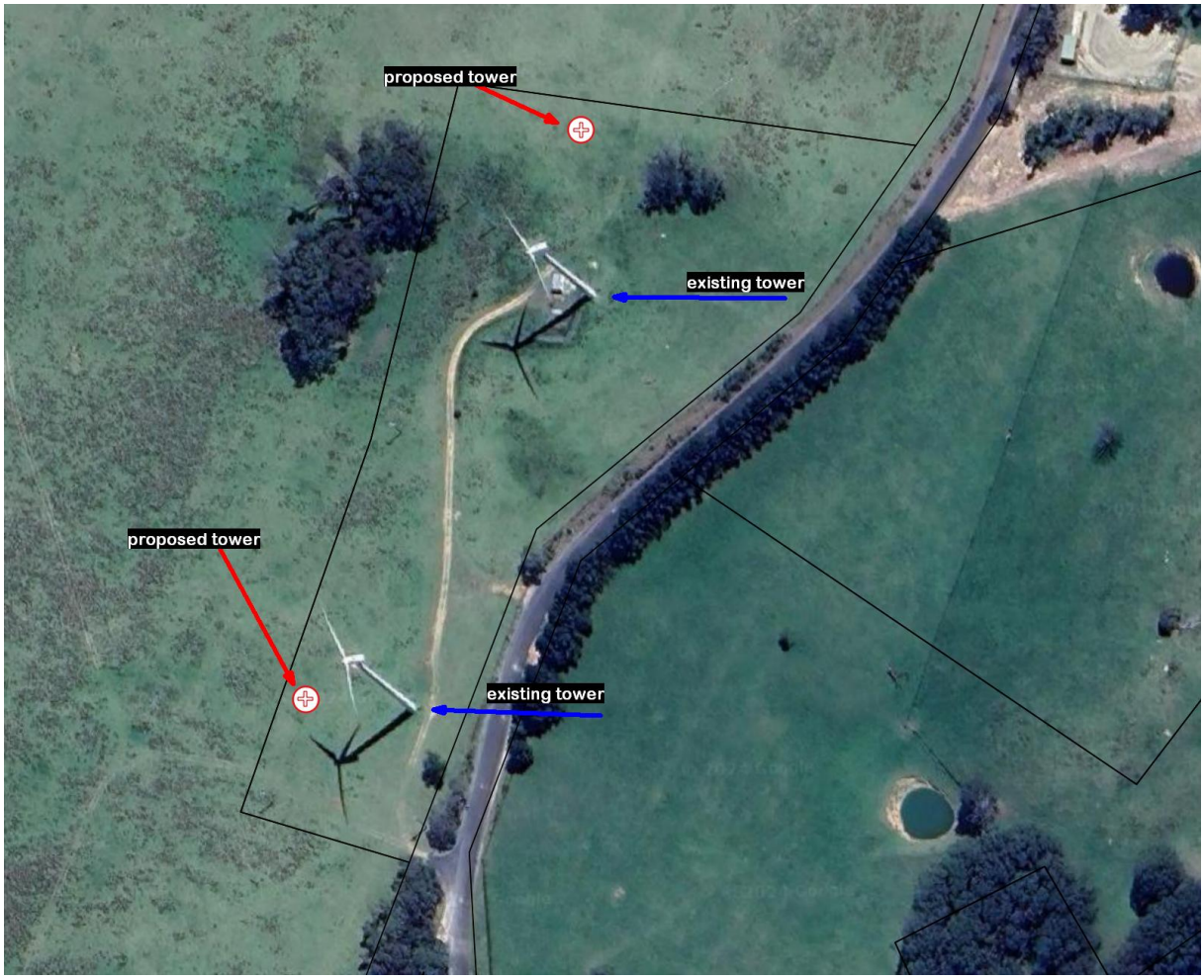

Figure 3-1 - Plan depicting existing and proposed locations of wind turbine towers

The site location and nearby sensitive receivers are shown in Figure 3-2. The site is just under 1km north of the village of Hampton, 20km to the south-west of Lithgow and 26km to the north-west of Katoomba.

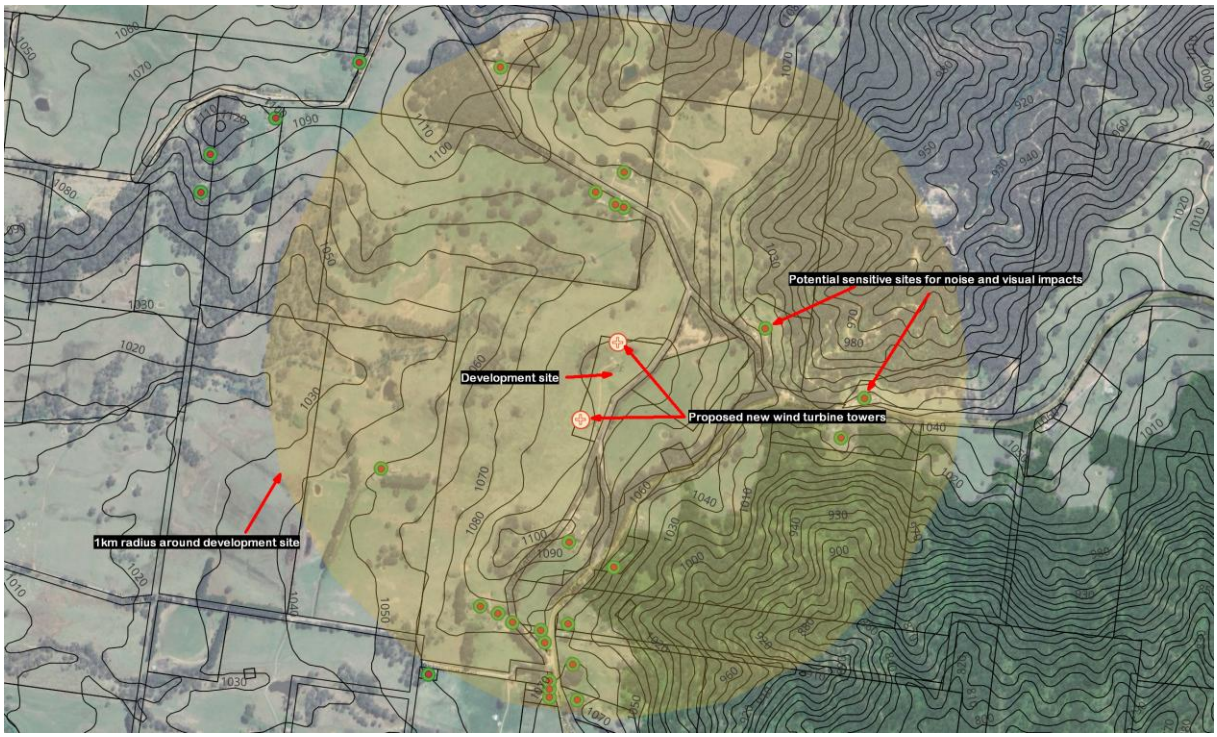

Figure 3-2 - Project Location. Note all potentially sensitive sites (red with green circle)

3.2.2 General environmental principles

In general terms the following would apply to both the deconstruction of the existing facilities and the construction of the replacement facilities:

- Erosion and sedimentation controls in accordance with the "Blue Book"
- Traffic management plans – Local road network and site access (NB State road use is subject to separate Transport for NSW approval to the selected haulage company).
- Waste disposal plans – existing infrastructure and construction and operational wastes
- Deconstruction and construction noise impacts (NB these are very similar – see attached noise and vibration report).
- Land management (operational requirement).

It is proposed that there be a separate environmental management plan for deconstruction and construction/operation. It is anticipated that relevant conditions would be applied

3.2.3 Demolition Program

The Demolition Program comprises the following works:

- Work associated with the removal of the existing turbines and site remediation
- Demolition of the existing V47 VESTAS WTG
    - Site security to be established
    - Existing hardstands from original construction will be used (currently covered in grass)
    - Existing road access and internal road to be used
    - HV termination to take 1 day including outages with Endeavour Energy
    - 600t Crane to be used to dismantle Blades, Nacelle, and tower sections
    - 6 x 19m Trucks to remove existing turbines

- Foundations are rock anchors, so the baseplates would be removed, and cables extracted
- Site remediation and topsoil spread to be completed by tractor/backhoe.
- Total deconstruction window 14 days Mon – Sat, 8am to 5pm

It is intended that the existing turbines would be dismantled and refurbished for use on another site within Australia. If this does not prove feasible they will be sent for recycling and disposal. A detailed waste management plan would be developed prior to submission of the Construction Certificate. It should be noted that while the metal components of the existing facilities can readily be recycled, at the moment commercial opportunities for blade recycling are quite limited. Contact has been made with the firm Acciona, who are pioneering recycling of turbine blades through their "Turbine Made" initiative. They have advised that they have successfully trialled the technology and are currently seeking development partners.

A detailed rehabilitation plan would be developed as part of the Construction Certificate documentation. This would involve the following key steps:

- Establish erosion control measures around the worksites as required.
- Utilise excavation areas for the new anchors or scrapings associated with access track construction to provide clean fill to refill areas affected by the removal of the rock anchors and baseplates. Set aside humic layer for topdressing.
- In the unlikely event of off-site fill being required, ensure that this is clean material, with the origin of the fill documented.
- Compact fill to a similar density to existing material.
- Topdress with humic layer materials as retained
- Establish grasses as required. Note that it may be possible to transfer grasses cleared for access track construction.
- Undertake maintenance of transplanted grasses and seed if necessary for establishment.

For efficiency reasons, the demolition of the existing turbines and construction of the new turbines would be undertaken in a continuous process utilising the same machinery and equipment. This would avoid a second site establishment/disestablishment program creating less wear and tear on the existing road network and less traffic noise.

3.2.4 Construction Program

The Construction Program comprises the following works. Note that no bulk earthworks are proposed. Accordingly a full earthworks plan is not considered to be necessary. The construction program is as follows:

- Existing Hardstands and roads to be upgraded with additional road base
- Additional construction pad(s) to be established if needed using imported road base or similar as necessary, to suit needs of head contractor.
- Scraped grass/soil cleared to provide for extension of tracks and pads to be stockpiled in stable mounds not exceeding 1m in height, and with grades not steeper than 1:5. Temporary erosion management controls to be implemented at the base of the mounds. (Note: the short construction period means that seeding and stablisation of the mounds is not considered necessary).

- Excavation of new rock anchor footings and disposal of excavated material by backfilling former anchor/footing sites.
- Installation of rock anchor base plate and drilling
- Mobilisation of towers
- Minor lopping of overhanging vegetation (traffic hazard) within the road reserve may be required to provide adequate clearance for the towers to be transported to site for erection.
- 600t Crane established to erect new sections
- Base plate and tower sections installed
- High torque rock anchor installed
- Mobilisation of Nacelle, hub and blades
- Install tower sections
- Install Nacelle
- Install hub and blades
- Installation of lead in services as required
- HV terminations and commissioning
- Tracks to remain in place for access for servicing during operation.
- Workforce of 14 for 4 days with 6 light vehicles and two heavy vehicles.

The total construction window is estimated to be 30 days working Mon – Sat, 8am to 5pm.

A detailed rehabilitation plan would be developed as part of the Construction Certificate, with key site remediation steps as follows:

  - Following contractor site decommissioning ensure that stockpiled topsoil from access track and construction pad extensions is spread to as to leave a smooth surface without ponding.
  - Supplement spread topsoil with appropriate pasture species seed
  - Ensure establishment of vegetated areas, and maintain as necessary during the maintenance period.

3.2.5 Construction Environmental Management Plan

The Construction Environmental Management Plan (CEMP) will be provided with the application for a construction certificate - incorporating the proposed staging of the project, erosion and sedimentation controls, noise management, heavy vehicle movements, site access including all service roads, substation, underground wiring, construction phase impacts including facilities, waste disposal, staff/contractor numbers etc, weed control, farm impacts and all other works.

3.2.6 Lifespan and Decommissioning

The new turbines are estimated to have a lifespan at least as long as the existing turbines. Given advances in the science and manufacture of these in the last three decades, significant lifespan improvements would be anticipated. The previous turbines lifespan was some 23 years. The future turbines may have a lifespan of 30-40 years.

A detailed decommissioning plan for the replacement towers would be developed at the time of giving notice of the intent to fully decommission the facility. It is anticipated that this would be similar to the current demolition plan proposal, noting that additional ground remediation would be needed to remove and stabilise tracks and pads as well as remove both the above and below ground

infrastructure. This plan would respond to the issues of the day and would be developed in consultation with the responsible authority. See also Section 6.3

3.2.7 Site Survey

A site survey has been undertaken and is included as Attachment 1. An extract from the survey of the development site is shown below.

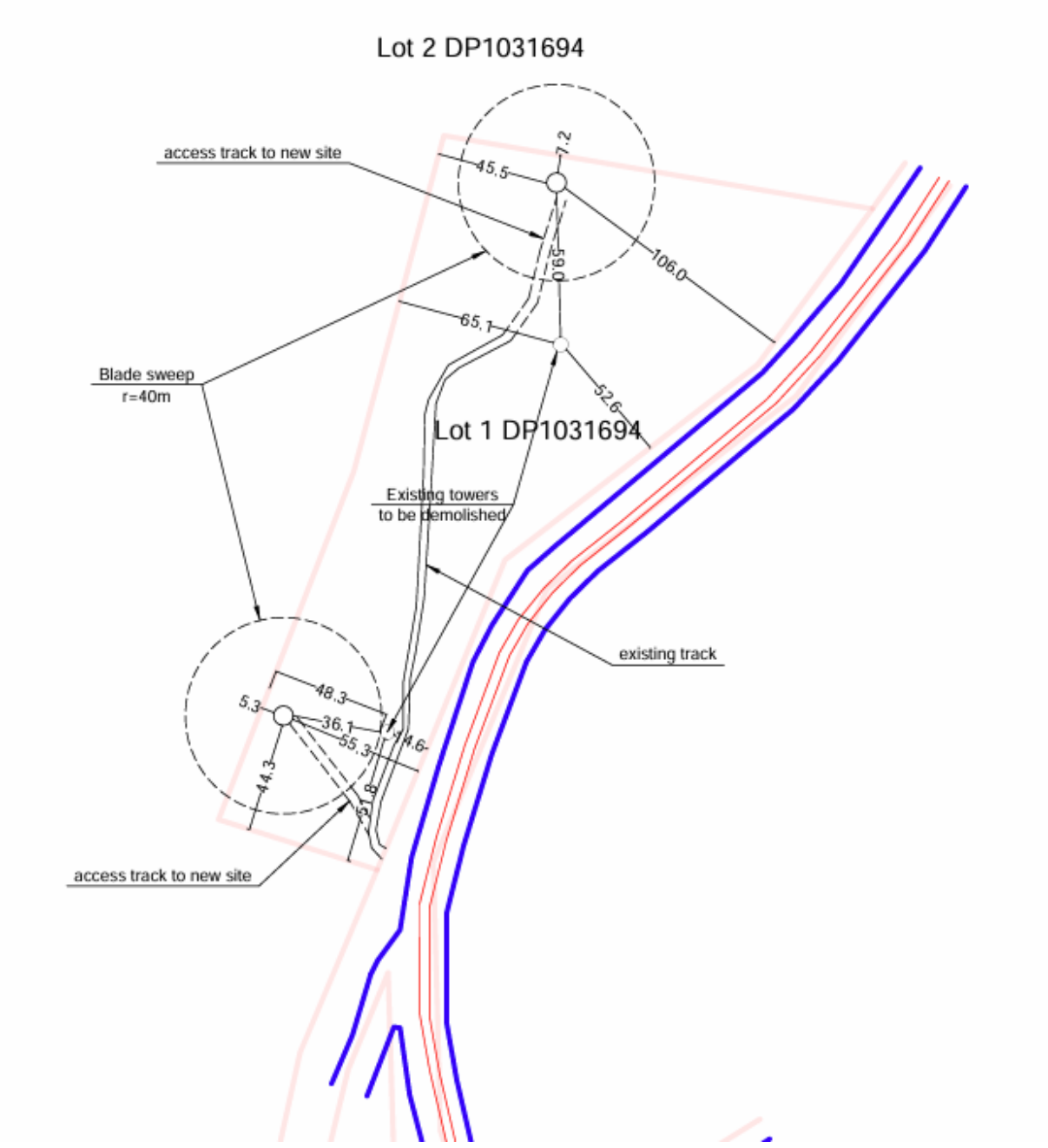

Figure 3-3 - Development Site Detail

3.2.8 Access

Access to the site will be via the existing access from Hampton Road as depicted in the Figure below.

Figure 3-4 - Plan depicting current accesses to the site

3.2.9 Water, Sewer and Power Supply

The site is not serviced by water or sewer infrastructure.

It is unnecessary to connect water supply or sewage disposal facilities to the site. Temporary toilet facilities will be installed during the period of construction.

The new turbines site will connect to electricity grid as presently connected – upgrading the cabling as needed.

3.2.10 Water Resources and Contamination

The site has no known history of contamination. The most likely sources of contamination in rural areas relate to spraying (where there is a history of orcharding) and also cattle dip site and yards. Anecdotal evidence from the current landholder did not indicate any potential history of contamination. A review was also undertaken of historical aerial photographs. This included 1958 and 1963. No evidence was detected of cattle facilities, with the land being utilised then, as now, as grazing land. Historical topographic maps also did not indicate any cattle dips or like facilities.

The current facility produces virtually no impact on runoff, and there are no contamination issues associated with the proposal in operation. While lubricating fluids and the like are present, they are fully contained within the turbine elements. Surface finishes are durable and designed to last for the lifespan of the development. This would not change with the new facility once in operation.

Construction level impacts on water quality would be addressed through a detailed Construction Environmental Management Plan which would address erosion and sedimentation through the commonly accepted methods.

No threat to groundwater is anticipated, as rock is very close to the surface, and no significant groundwater sources affect the site.

Stormwater management during operation by overland flow has worked in the past, and is considered appropriate for the future, with no operational issues being observed. In particular, due to very low levels of use, access tracks etc. naturally "grass up" assisting in stormwater management.

No negative impacts on the adjoining properties are anticipated.

3.2.11 Landscaping

The current development does not contain formal landscaping. During the process of public exhibition feedback may come forward regarding additional landscaping associated with current key viewpoints. This land is not under our control, but if mitigation is requested by individual landholders this would be negotiated to ensure a practical and beneficial outcome. The operator will ensure upkeep and maintenance of the site compatible with the rural setting of the site. Existing vegetation on the land will remain – and be maintained as needed, including noxious weed control. Minor lopping of overhanging vegetation on the road reserve may be required for access to the site to transport the infrastructure into the site. Full removal of any road vegetation is not required.

The current management approach on the site is predominantly grazing, and this is expected to continue. Apart from replacement of any landscaping near key viewpoints during an initial maintenance period, long-term maintenance is not considered to be necessary for any landscaping on lands outside the development site.

3.2.12 Appearance

The development would be more prominent in the landscape than the present development. In addition, the towers would be in slightly different locations. Accordingly, a visual impact analysis was required. This focuses on the differences between the existing and proposed development.

The Visual Impact analysis is summarised in section 6.9 below and the detailed report is provided as Attachment 3.

3.2.13 Noise and Vibration

The existing turbines have become noisier with age. The new turbines would be some 2 dB(A) louder than the existing turbines when they were new. This would be imperceptible to the average person, and quieter than the current turbines. A noise and vibration study has been undertaken and is summarised in section 6.7 below.

3.2.14 Air Quality

Air quality would not be affected by the development while in operation. Construction level impacts relate to the use of internal combustion engines during transportation of materials to site, and during the construction process. Equipment would be well-maintained to limit those impacts. During construction there may also be minor dust nuisance from unsealed access tracks. This would be mitigated under the normal provisions of a Construction Environmental Management Plan. No additional air quality issues are anticipated during deconstruction of the existing turbines.

3.2.15 Hazards and Risks

An assessment has been carried out in accordance with ISO31000. This is the standard risk assessment process. The risk management approach is shown in the figure below:

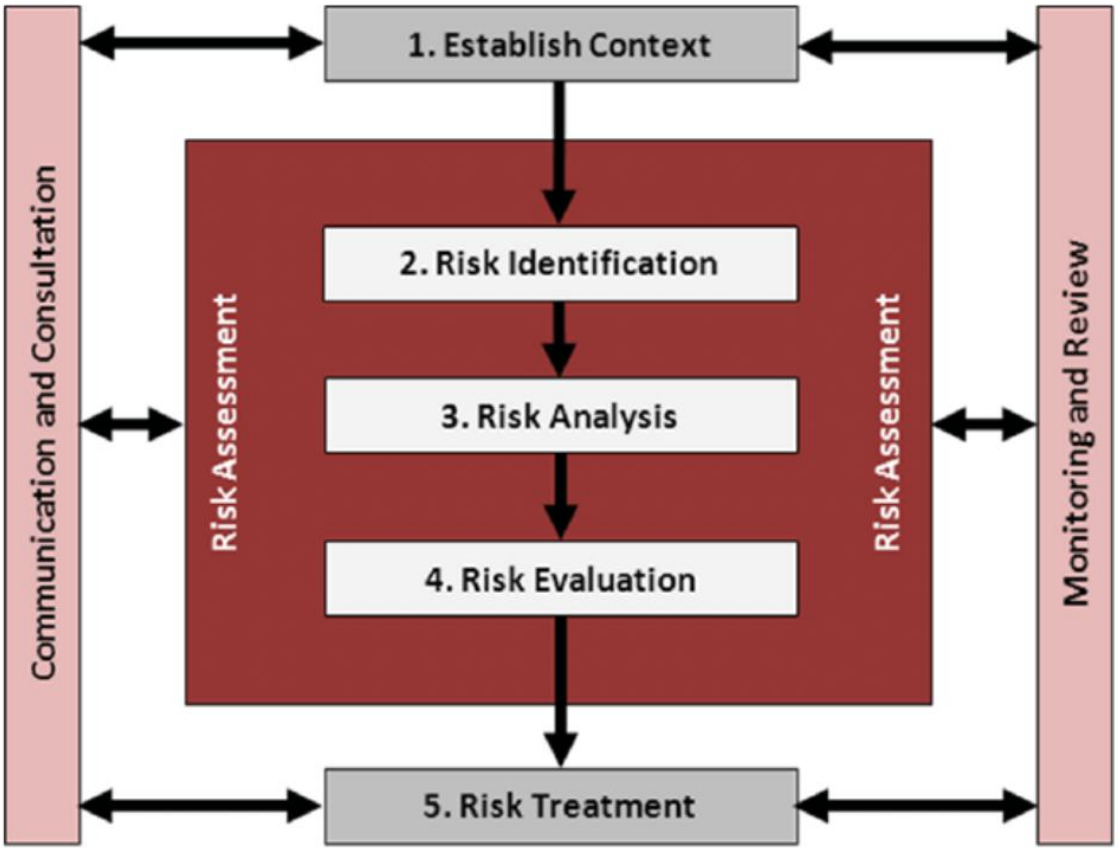

Figure 3-5 - International Standard for Risk Management ISO 31000

This report follows this overall pattern. In particular, context is described. Risks are identified in two ways. Firstly through the usual heads of consideration, including the LEP, DCP, Wind Guidelines, and secondly, normal industry good practices and technology-specific risks. General evaluation occurs throughout the body of this report, and risk treatment (mitigation) is summarised at the end of this report.

This section therefore deals with risks specific to wind turbines that have not been fully covered in the discussion of general heads of consideration. The risk matrix below is used to classify assessed and mitigated risks. Significant risks only have been identified.

IMPACT	Rare (1)	Unlikely (2)	Possible (3)	Likely (4)	Highly Likely (5)
Very Severe (5)	Medium (5)	Medium High (10)	High (15)	Very High (20)	Very High (25)
Severe (4)	Low (4)	Medium (8)	Medium High (12)	High (16)	Very High (20)
Moderate (3)	Low (3)	Medium (6)	Medium (9)	Medium High (12)	High (15)
Minor (2)	Low (2)	Low (4)	Medium (6)	Medium (8)	Medium High (10)
Negligible (1)	Low (1)	Low (2)	Low (3)	Low (4)	Medium (5)

LIKELIHOOD

Risks with very high priority level

Risks with medium/low priority level

Figure 3-6 - ISO 31000 Risk Matrix

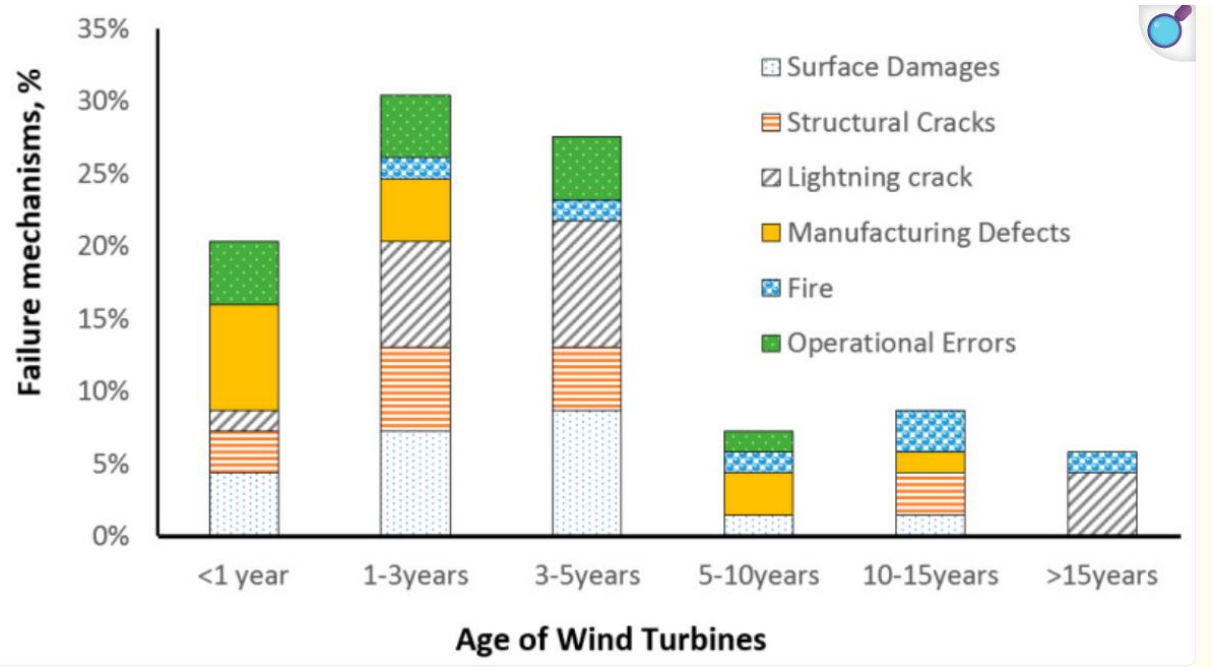

Figure 3-7 - Causes of Failure[2]

[2] Mishnaevsky, L (2022) "Root Causes and Mechanisms of Failure of Wind Turbine Blades" *Materials* April 19th.

Table 3.1 - Risk Assessment

Risk	Likelihood	Consequence	Risk Level	Mitigation	Residual Risk
Construction					
Traffic incident during transport to site	3	3	9	Full traffic management plan in accordance with accepted standards and experienced operator. Possible lopping of vegetation on the road reserve to facilitate site access.	4
Workplace incident during construction (cranes)	3	4	12	Operational work design to take advantage of rock and hardstand to minimise instability risks. All machinery to be operated within manufacturer guidelines. Full OHS management plan to be in place and fully implemented.	4
Operation					
Mechanical failure related to the turbines may lead to component failure (seizing) and overheating (and possibly fire)	1	3	3	Use of telemetry systems to record key parameters of operation. Regular maintenance inspections including preventative maintenance.	2
Mechanical failure related to the blades may lead to blade loss. (See Fig 3.7)	2	3	6	Use of telemetry systems to record key parameters of operation. Regular maintenance inspections including preventative maintenance.	4
Workplace incident during heavy maintenance (cranes)	3	4	12	Operational work design to take advantage of rock and hardstand to minimise instability risks. All machinery to be operated within manufacturer guidelines. Full OHS management plan to be in place and fully implemented.	4
Cracks – Lightening and Structural	3	4	12	Regular reviews and inspections with remedial work as required. Immediate inspection in instance of major events.	4
Operator error	3	3	9	Ensure good training and supervision of operators and technicans	3

After mitigation, all risks are categorised as "low". In considering risks, the proposed location of the pylons was moved as far as practicable from the existing public roadway. No other sensitive adjoining land uses are present.

3.3 Site zoning context

The site is subject to the RU1 – Primary Production zone in the Lithgow LEP 2014. The proposed use is permissible with consent as already discussed above.

The surrounding land is also zoned RU1 – Primary Production with RU2 – Rural Landscape zoning to the north-east of the site – as shown in the Figure below:

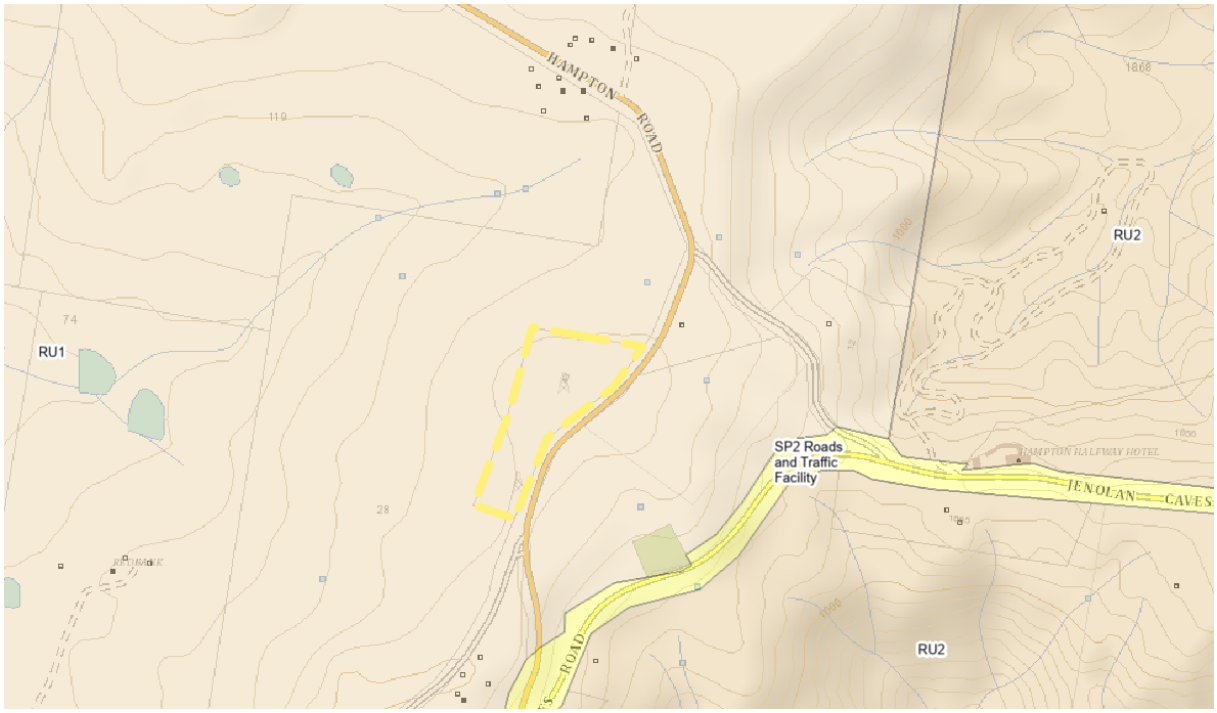

Figure 3-8 - Map depicting zonings of subject site and surrounding land

4 General Review under EPA Act 1979 (as amended)

4.1 Characterisation of the Use

The current use of the site is for electrical generating works, being the two wind turbines and associated infrastructure subject to the consent issued by Lithgow City Council (DA 96/01).

The site is predominantly cleared with small patches of vegetation as shown in Figure 3-4 above. The proposed location for the new towers is clear of existing vegetation, other than grasslands.

4.2 Part 7 of Biodiversity Conservation Act 2016 (BC Act)

The EP&A Act requires that Part 7 of the BC Act be considered for all developments. Under the BC Act, it is an offence to "significantly affect threatened species or ecological communities, or their habitats". As such, all development must be assessed to ensure that such significant effect will not take place.

4.2.1 Part 7.2 BC Act

Part 7.2 of the BC Act provides a list of developments or activities that are "likely to significantly affect threatened species". These are addressed below for the proposed development.

Table 4-1 - Part 7.2 BC Act

Criterion	Comment
(a) it is likely to significantly affect threatened species or ecological communities, or their habitats, according to the test in section 7.3, or	It is unlikely to have such an effect. See the discussion below.
(b) the development exceeds the biodiversity offsets scheme threshold if the biodiversity offsets scheme applies to the impacts of the development on biodiversity values, or	The threshold is not exceeded. See the discussion below.
(c) it is carried out in a declared area of outstanding biodiversity value.	The development site is not within a declared area.

4.2.2 Part 7.3 BC Act

(1) The following is to be taken into account for the purposes of determining whether a proposed development or activity is likely to significantly affect threatened species or ecological communities, or their habitats:

Table 4-2 - Part 7.3 BC Act

Criterion	Comment
(a) in the case of a threatened species, whether the proposed development or activity is likely to have an adverse effect on the life cycle of the species such that a viable local population of the species is likely to be placed at risk of extinction,	No threatened species are recorded on the site.
(b) in the case of an endangered ecological community or critically endangered ecological community, whether the proposed development or activity— (i) is likely to have an adverse effect on the extent of the ecological community such that its local occurrence is likely to be placed at risk of extinction, or (ii) is likely to substantially and adversely modify the composition of the ecological community such that its local occurrence is likely to be placed at risk of extinction,	No such community is recorded on the site.
(c) in relation to the habitat of a threatened species or ecological community— (i) the extent to which habitat is likely to be removed or modified as a result of the proposed development or activity, and (ii) whether an area of habitat is likely to become fragmented or isolated from other areas of habitat as a result of the proposed development or activity, and (iii) the importance of the habitat to be removed, modified, fragmented or isolated to the long-term survival of the species or ecological community in the locality,	No such species or community are recorded on the site.

Criterion	Comment
(d) whether the proposed development or activity is likely to have an adverse effect on any declared area of outstanding biodiversity value (either directly or indirectly),	None likely.
(e) whether the proposed development or activity is or is part of a key threatening process or is likely to increase the impact of a key threatening process.	Not likely.

4.2.3 Part 7.4 BC Act – Exceed Biodiversity Offsets Scheme Threshold

The thresholds are as follows:

Table 4-3 - Threshold Areas to Trigger Biodiversity Offsets Scheme

Minimum lot size associated with the property	Threshold for clearing, above which the Biodiversity Assessment Method (BAM) and offsets scheme apply
Less than 1 ha	0.25 ha or more
1 ha to less than 40 ha	0.5 ha or more
40 ha to less than 1000 ha	1 ha or more
1,000 ha or more	2 ha or more

The minimum lot size of the subject land is 40ha which triggers the clearing threshold of 1ha or more. The development will be undertaken on the site which is estimated to have an area of about 3.2ha. Clearing of the footprint of the foundations for each tower will be required. It is estimated that an area 4,000m^2 will be impacted during construction, with this being rehabilitated after construction. The long-term impact area will be the bases of the new towers (8m diameter each) noting that the existing bases are somewhat smaller but will be rehabilitated, and the access tracks. Minor lopping of overhead vegetation on the road reserve may be required if it creates a traffic hazard for access to the site. These areas are well under the threshold of 1ha, and thus this does not trigger the need for a BDAR.

4.3 Section 1.7 Application of Part 7A of Fisheries Management Act 1994 (FM Act)

The EP&A Act requires that Part 7A of the FM Act be considered for all developments. The development will not impact on any fisheries areas or waterways. No further consideration is required under the FM Act.

5 Review under Section 4.15 of the EP&A Act – Matters for Consideration

5.1 Characterisation of the Use

From a statutory position the use is characterised as electricity generating works. The site is rural in character with the two wind turbines established on the site in accordance with development consent DA 96/01.

5.2 State Environmental Planning Policies

A review was undertaken of the SEPPs with the following policies identified:

5.2.1 SEPP (Biodiversity and Conservation) 2021

Koala Habitat Protection is addressed in Chapter 4 of the SEPP. There is no Koala Habitat on the site and therefore this aspect is not triggered.

5.2.2 SEPP (Resilience and Hazards) 2021

The site is not known to be affected by any type of contamination. Removal, recycling and waste management of the existing turbines and the platforms on which they are located would be undertaken to fulfil the consent condition of the previous consent – DA96/01 (see Attachment 5).

5.2.3 State Environmental Planning Policy (Planning Systems) 2021

The appropriate planning pathway for the development has been confirmed as via the Regionally Significant Development pathway as triggered by Schedule 6, Part 5 *Private infrastructure and community facilities over $5 million.*

The State Significant Development pathway was not triggered due to the land not being identified as an Environmentally Sensitive Area of State Significance and estimated cost of development being below $30 million.

5.2.4 State Environmental Planning Policy (Transport and Infrastructure) 2021

NSW State Environmental Planning Policy (Transport and Infrastructure) 2021 enables permissibility of the proposed construction. This is provided for in Part 2.3 Division 4 as follows:

> ***2.36 Development permitted with consent***
>
> *(1) Development for the purpose of electricity generating works may be carried out by any person with consent on the following land—*
>
> *b) in the case of electricity generating works comprising a building or place used for the purpose of making or generating electricity using waves, tides or aquatic thermal as the relevant fuel source—on any land.*

5.3 Strategic Planning Documents

The following strategic planning documents have been identified as relevant to the proposed wind turbine replacements:

5.3.1 The NSW Wind Energy Guidelines (DPHI - November 2024) state that:

> *Australia has world-class wind energy resources and an established wind energy industry. Wind energy is the second largest contributor to the clean energy transition after rooftop and large-scale solar. The Australian Energy Market Operator estimates that twice the current amount of wind capacity will be needed by 2030 to support household energy consumption and industry needs.*
>
> *The NSW Government strongly supports the ongoing development of a sustainable wind energy industry in NSW. Wind energy supports our transition away from fossil fuels and helps deliver a safe, stable and reliable energy supply. This transition will help us meet our legislated emission reduction targets by driving down carbon emissions and increasing our resilience in the face of climate change.*

> *The NSW Government's Electricity Infrastructure Roadmap provides a coordinated framework for a modern electricity system for NSW and a plan to transform the electricity sector into one that is cheap, clean and reliable.*

Hence, these existing and proposed wind turbines are integral to and will contribute to these higher-level objectives for renewable energy. The proposed replacement turbines will enhance the efficiency of that contribution to the renewable energy production in the Central West, NSW and Australia as a whole.

5.3.2 Central West and Orana Regional Plan 2041

This Plan is a high-level document addressing the region. The proposed wind turbines replacement aligns with the Regional Plan Objective 2 – to support the State's transition to Net Zero by 2050.

5.4 Lithgow Local Environmental Plan 2014

The proposal is subject to Lithgow LEP 2022. Issues of permissibility and characterisation have been addressed earlier in this report and accordingly this section will address other specific clauses of the LEP.

The subject site is zoned RU1 – Primary Production and the objectives of that zone are as follows:

5.4.1 Objectives of the Zone

Following are the objectives of the zone, and how this proposal will be consistent with those objectives.

Table 5-1 - Objectives Compliance

Objective	Consistency
To encourage sustainable primary industry production by maintaining and enhancing the natural resource base.	The proposed development is not inconsistent with this objective. There will be no net loss of productive agricultural land.
To encourage diversity in primary industry enterprises and systems appropriate for the area.	Not inconsistent (not relevant).
To minimise the fragmentation and alienation of resource lands.	Not inconsistent (no change to lot layout or land use).
To minimise conflict between land uses within this zone and land uses within adjoining zones.	Not inconsistent (there have been no known land use conflicts with the existing towers, and the immediate neighbour has indicated support for the project).
To minimise the environmental and visual impact of development on the rural landscape.	Consistent. Increase in noise will be limited to 2dB (not detectable by human hearing). Visual impact of the taller towers will tend to morph into the general landscape.
To provide for recreational and tourist development and activities of an appropriate type and scale that do not detract from the economic resource, environmental or conservation value of the land.	Not inconsistent.
To maintain or improve the water quality of receiving water catchments.	Not inconsistent (sediment controls to be implemented during demolition and construction; no other impacts likely).

5.4.2 Clause 5.14 – Siding Springs Observatory – Maintaining Dark Sky

The site is more than 360kms from the observatory. The proposed wind turbines will have no impact at all therefore relative to the Observatory.

5.4.3 Clause 7.1 Terrestrial Biodiversity

The Lithgow LEP 2014 mapping for terrestrial biodiversity does not affect the subject site and therefore Clause 7.1 does not apply.

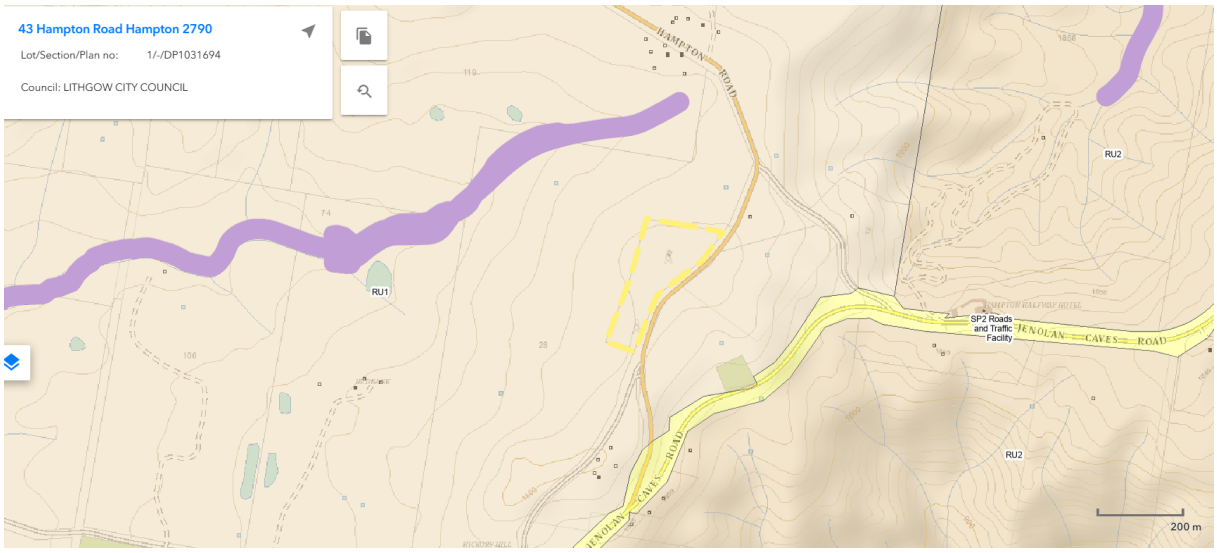

Figure 5-1 - Extract from Lithgow LEP 2014 mapping depicting site and terrestrial biodiversity

5.4.4 Clause 7.8 - Development within a designated buffer area

1) *The objective of this clause is to protect the operational environment of sewage treatment plants, waste disposal facilities and water treatment facilities, and to limit the impact of these facilities on proposed sensitive land uses.*
2) *This clause applies to land identified as "Facilities Buffer Zone" on the Facilities Buffer Zone Map.*
3) *Before granting development consent for development on land to which this clause applies, the consent authority must consider the following—*
    a. *the impact that any noise and other emissions associated with existing land uses would have on the development,*
    b. *any measures incorporated into the development that would limit the impact of noise, odour and other emissions associated with the existing land use,*
    c. *any opportunities to relocate the development outside the land to which this clause applies,*
    d. *whether the proposed development would adversely affect the operational environment of any existing development on the land to which this clause applies.*

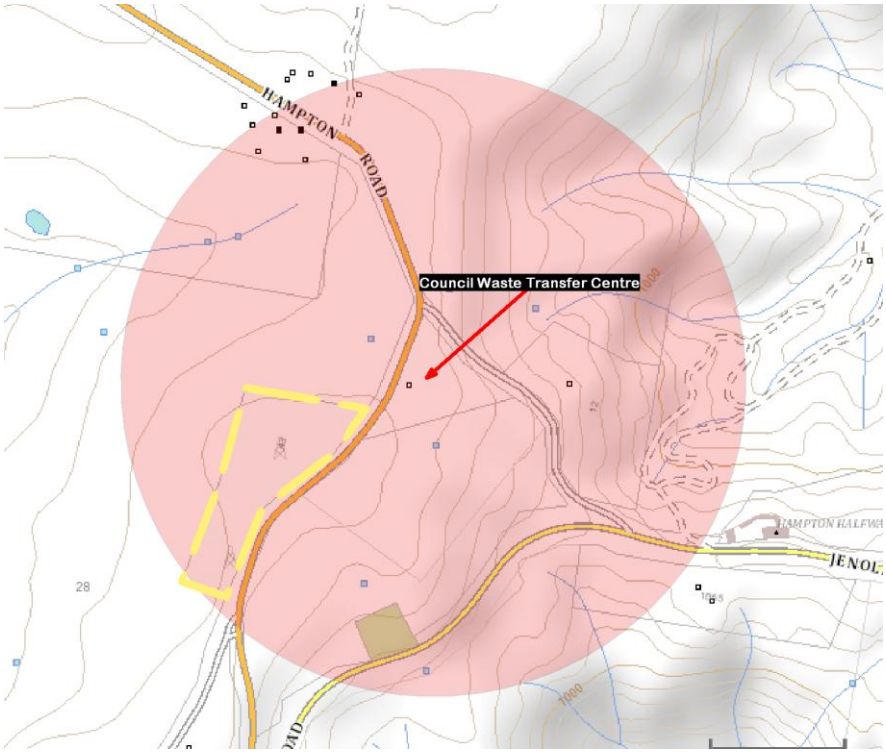

Figure 5-2 - Facilities Buffer zone map – Lithgow LEP map

In response, it is submitted that:

- The noise impacts have been extensively analysed and concluded to be acceptable relative to existing and potential future developments and land uses within the area depicted on the Facilities Buffer map and that any noise and other emissions associated with existing land uses would not have any adverse effects on the proposed development;
- It is submitted that that there are no opportunities to relocate the proposed development outside the land to which this clause applies – particularly given that two existing turbines are being replaced by two new turbines with a much higher level of efficiency; and
- The proposed development would not adversely affect the operational environment of any existing development on the land to which this clause applies.

6 Wind Energy Guideline (NSW Department of Planning Housing and Infrastructure - November 2024) and Lithgow Development Control Plan 2021 (DCP 2021)

The Wind Energy Guideline 2024 and Lithgow DCP 2021 (which applies to the land) are addressed jointly below given the similarity of objectives, policies and assessment requirements.

6.1 Lithgow DCP 2021 – Section 8.8 Solar Energy & Wind Farms

The following objectives are from Lithgow DCP 2021 Section 8.8.

Table 6-1 - Lithgow DCP Compliance

Objective	Consistency
O1. To minimise potential land use conflicts.	There is nothing about the proposal which will physically restricts or otherwise impedes adjoining land uses.

Objective	Consistency
O2. To ensure that there is no unreasonable interference with the comfort or use of adjoining land.	Noise and vibration have been assessed, and no significant additional impacts would occur to nearby sensitive receivers. In particular, the new turbines would be quieter than the aging existing ones, and not audibly different to the current ones when new. A visual assessment has been undertaken and, on balance, it was considered that the *perceived* additional visual impact of the replacement turbines will be low, and they will come to be recognised within the landscape as a local feature, just as the existing turbines appear to have been.
O3. To ensure that impacts on agricultural land, businesses and tourism are appropriately considered.	There will be no additional impact on agricultural land (2 turbines being replaced by 2 turbines on the same site). No adverse impacts on businesses or tourism have been identified.
O4. To ensure road access, visual impacts, noise, health, waste, construction management and environmental constraints are identified and sufficient information is included with each development application to enable proper assessment.	Each of these matters is considered in dedicated sections of this report.
O5. To ensure that adequate provisions are made to restore developed land at the end of the life of the development.	It is noted that the consent for the existing wind turbines was conditioned to ensure removal of all redundant works and to rehabilitate the site to its original character. It is expected that a similar condition would be placed upon the consent for the proposed when issued.

6.2 Road Upgrades and Developer Contributions

The Lithgow DCP 2021 states that:

Much of Council's Road network is generally not capable of sustaining the increase in large scale construction traffic and may require substantial upgrading to accommodate construction vehicles. Appropriate bonds will be required to ensure any road damage is repaired to Council's satisfaction. Such bonds are payable prior to commencement of any works on the site. Road sealing shall be required where appropriate on unsealed public roads utilised by the proponent. Consultation with State Government Authorities Proponents is advised to consult with public authorities that may have a role in assessing the Development Application. Council may also consult with those relevant public authorities during the application process. Developer Contributions Council will seek to negotiate voluntary planning agreements for major solar energy farm developments in accordance with Section 7.4 of the Environmental Planning and Assessment Act 1979. However, this does not exclude application of Section 7.11 or 7.12 Developer Contributions in accordance with the relevant Contributions Plan in force at the time of determination.

Appropriate and reasonable contributions would be discussed and negotiated with the Council, with the expectation that condition addressing these contributions would be imposed in the event that development consent is granted to this application. The expected process around road impacts would be a dilapidation report prior to deconstruction commencing, and another at the end of construction. The road would need to have the same effective service life post-construction, as it did prior to deconstruction, less any necessary allowance for normal wear and tear.

A report detailing a feasible haulage route for turbine components is submitted with this application (Attachment 4). The report provides a proposed route from Port of Newcastle through Dunedoo, Mudgee, Bathurst, Oberon and then via Buckmaloi Road and Jenolan Caves Road onto Hampton Road. The report identifies that some vegetation on Hampton Road may need to be lopped on one of the corners due to a traffic hazard (Figure 6-1).

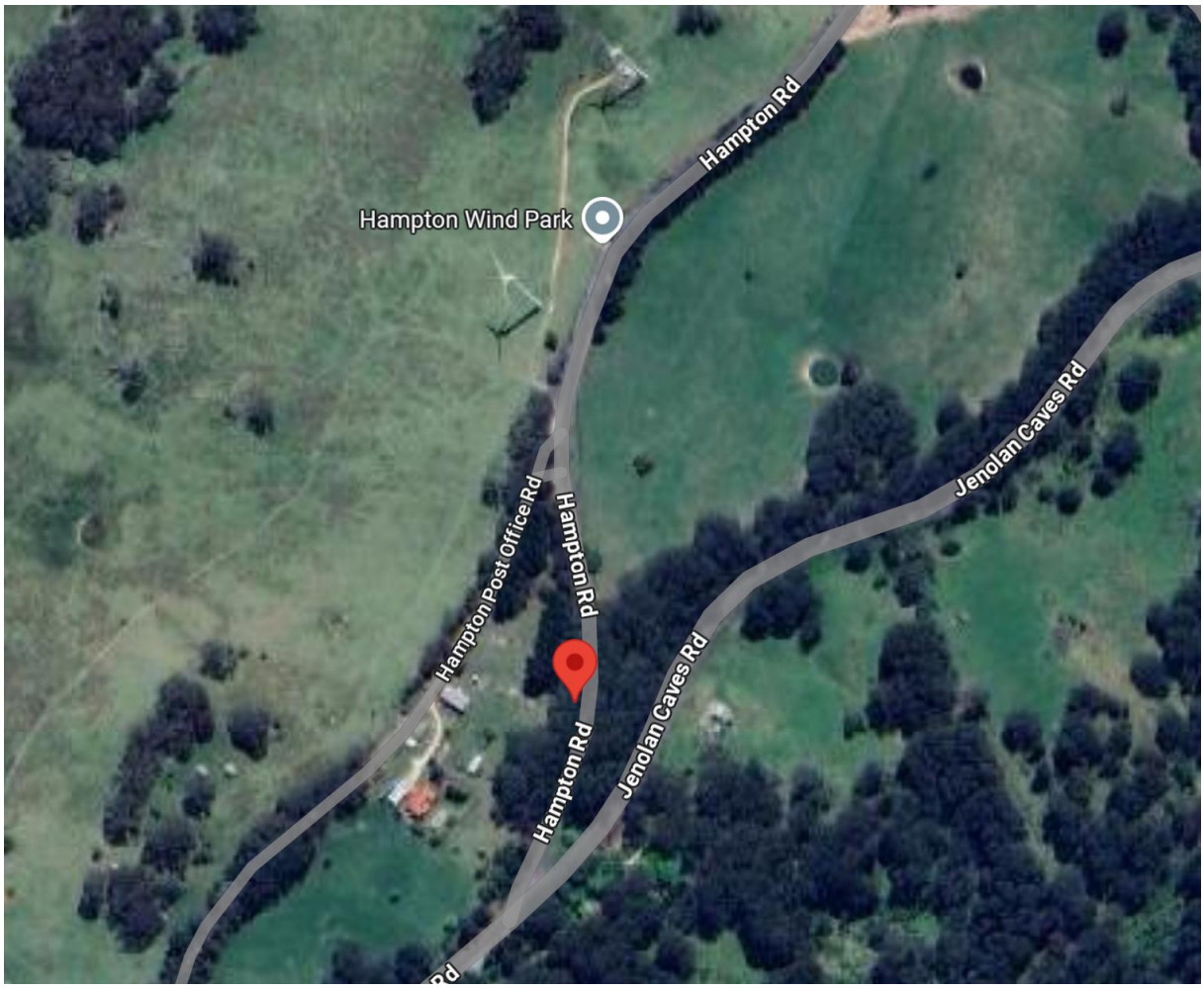

Figure 6-1 - Location where vegetation will need to be trimmed for transport access

The proposed route is shown in Figure 6-2. It is noted that this route avoids any need to turn the load around as would be required if approaching from the north-east along Jenolan Caves Road.

A detailed traffic management plan would be developed prior to issue of a construction certificate, and once any relevant conditions of consent are known. Transport for NSW has responsibility for the suitability of the proposed haulage route on state roads. Lithgow City Council as the responsible authority for local roads would need to give its separate approval for over size over mass (OSOM) movements on local roads.

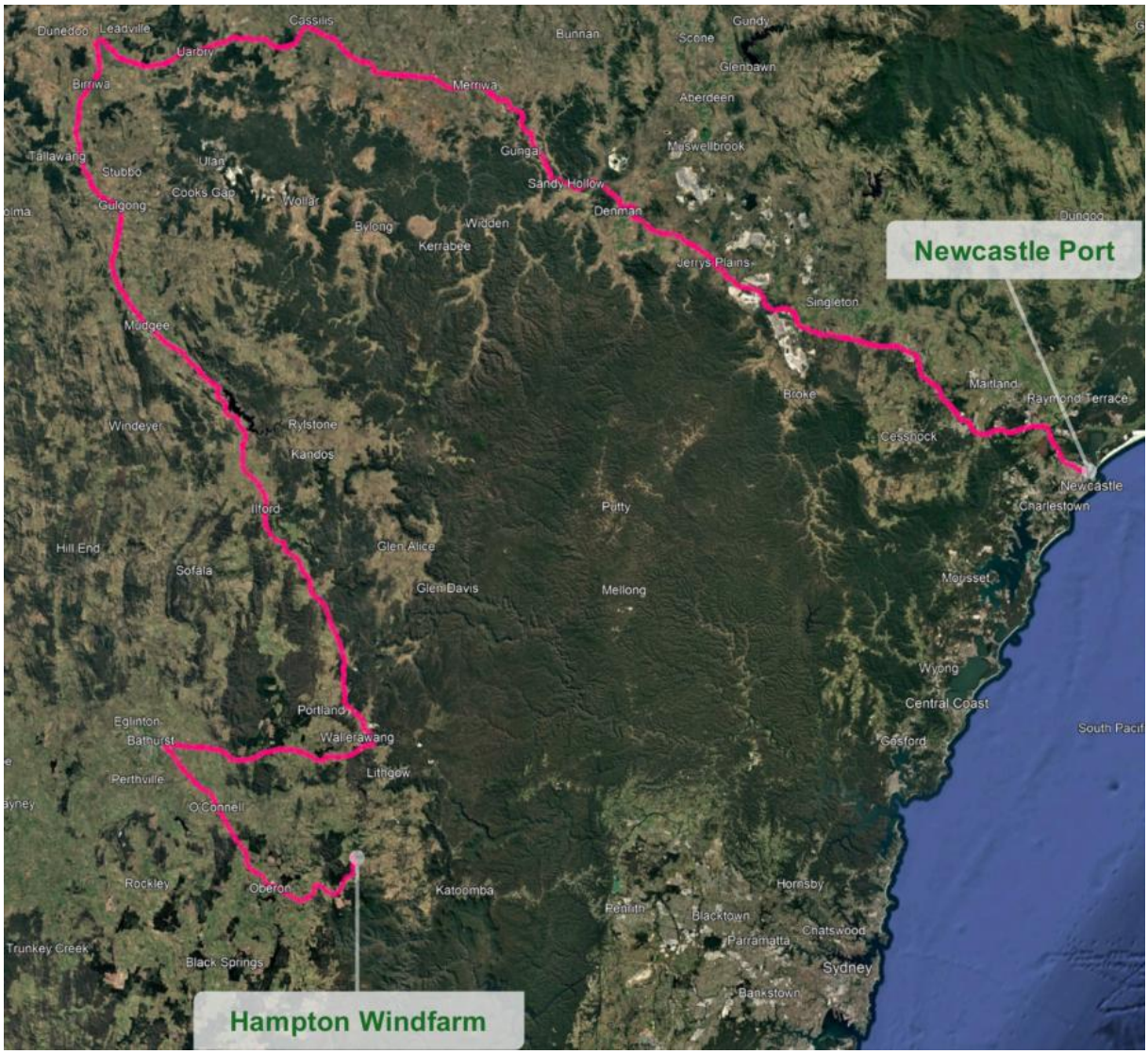

Figure 6-2 - Proposed routed for delivery of components

6.3 Remediation of Site at Closure

The existing turbines would be fully dismantled and removed from the site together with any infrastructure that becomes redundant consequent upon the decommissioning of the existing turbines.

The current consent (DA96/01) requires dismantling and this condition will be fulfilled to the extent compatible with the construction of the two new, replacement turbines. Also. a condition of consent regarding dismantling would be accepted as part of the consent to this application.

6.4 Management of Temporary Facilities

A significant number of local contractors will be engaged during the construction phases and there will be management of temporary facilities, waste, numbers of contractors/employees, etc. On-site temporary facilities are expected to be limited to site office, ablutions (self-contained) and an equipment compound (fenced). Detail design including local involvement and employee numbers would be determined on the appointment of a head contractor and would be supplied prior to the Construction Certificate.

6.5 Proposed connection to the Electricity connection Network

The proposed connection to the electricity reticulation network will require new cabling from the two new platforms to the same connection point to the electricity grid as used for the existing two turbines – (utilising existing infrastructure and cabling as much as possible).

6.6 Land Use Conflict Risk Assessment (LUCRA) and Development Rights Assessment

Essentially, there is no change in land use and no major change in the related impacts – given the replacement of two wind turbines which are at the end of efficient operational life and replacement with the two new wind turbines.

The current wind turbines have been operational for over twenty years with no history of complaint or conflicts in terms of neighbouring land uses and uses of other land in proximity. There will be additional consultation to assess the impacts on recipients of the changed turbines, however preliminary discussions with key residents suggest a level of comfort with the proposed changes.

The accompanying noise impact and visual impact analyses substantiate the very low risks of conflict. Similarly, any adverse impacts on development rights of properties in proximity are also concluded to be very low risk – acknowledging that the land is zoned RU1 – Primary Production and agricultural uses are considered to be compatible with the operation of the two wind turbines.

6.7 Noise and Vibration Assessment

The DCP requires:

- *A detailed Noise Assessment is required to demonstrate compliance with the NSW Noise Policy for Industry 2017, Noise Construction Guidelines and all other NSW Acts, Rules or Regulations applicable to wind farm noise including during construction and decommissioning (e.g., DECC (2012) NSW Wind Farm Guidelines).*
- *This also details proposed monitoring program(s) for full spectrum noise testing (including low frequency sound and infrasound) to validate predicted noise impacts on neighbouring properties. The impact of The Van Den Berg effect (i.e., the effects of the wind profile at night on wind turbine sound) is also to be specified.*

Noise is a key issue. The "Hampton Wind Park DA Noise and Vibration Impact Assessment" by specialised consultants SLR Consulting is provided at Attachment 2. This complies with the current state government guidelines. At the present time, these do not include infrasound. In the absence of any concerns over the historical facility, it is not considered that this is likely to be an issue with the new turbines.

SLR have compared the noise impacts from the existing (Vestas 47) and proposed (Vestas V80: Modes 0 to 3) wind turbines (WT) at the two nearest residential receivers (i.e. R01 – Waller and R02 – Boyd) from the Approved Noise Management Plan (NMP) prepared by PB Power (Ref: 10159-NOISE-001 dated 22 Feb 2001). The noise level change in Table 6-2 below was calculated by subtracting predicted levels for the various modes of the proposed V80 WTs from those for the existing V47 WTs (based on the supplied V47 data when new).

Nearest sensitive receivers in the area surrounding the site are shown in Figure 6-1 and Table 6-1 following.

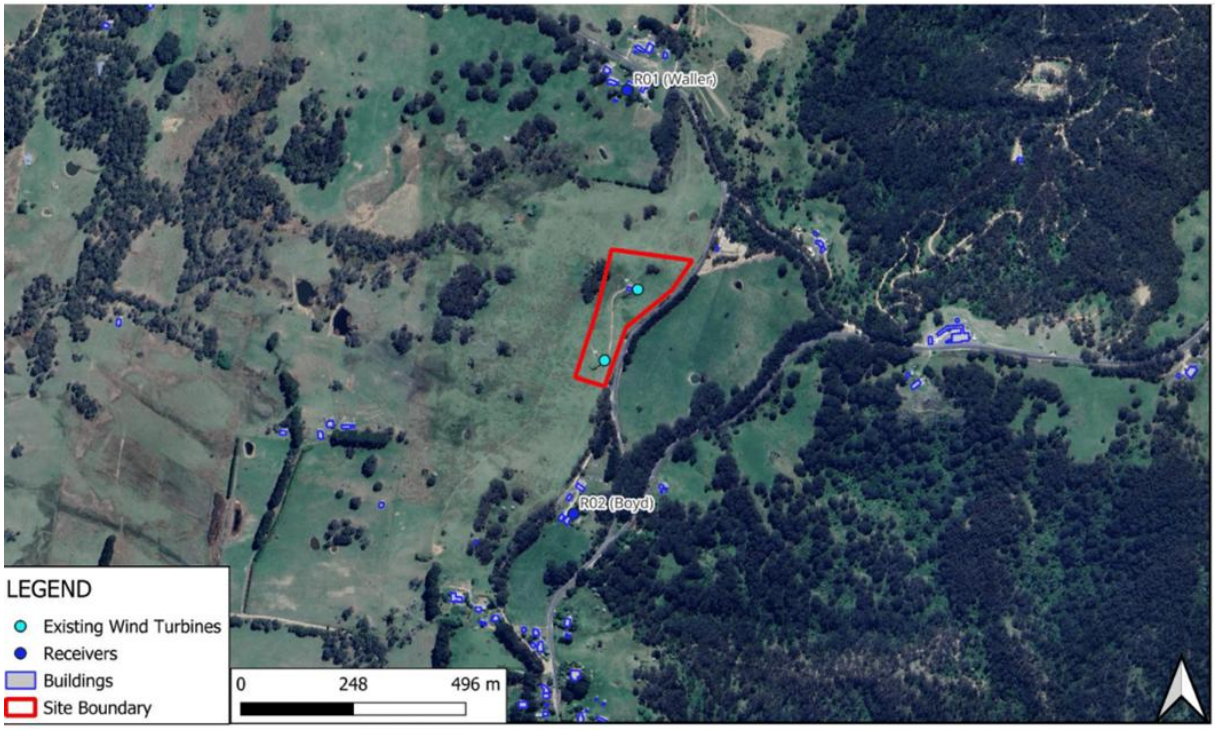

Figure 6-3 - Nearest sensitive receivers

Table 6-2 - Sensitive receivers selected for detail analysis

Receiver ID	Address	Type
R01	119 Hampton Road, Hampton (Waller Residence)	Residential
R02	Hampton Post Office Road (Boyd Residence)	Residential

The analysis (summarised in Table 6-2) shows that:

- Predictions at R01 and R02 are close to those presented in the NMP for existing WTs (within 1dB).
- A noise level change of up to 5 dB is predicted if the V80 WTs are used in Mode 0.
- If the V80 WTs are used in Mode 3, a noise level change of up to 2 dB would occur.

It is worth noting that noise level changes of up to 2 dB are not considered to be discernible by the average listener.

Table 6-3 - Summary of Analysis of Operational Noise Levels for Selected Sensitive Receivers

No	Name	Predicted Noise Levels for Existing WT (dB)		Predicted Noise Levels for Proposed WT (dB)				Noise Level Change (Proposed vs Existing as predicted by SLR – dB).			
		As per NMP	SLR	Mode 0	Mode 2	Mode 2	Mode 3	Mode 0	Mode 2	Mode 2	Mode 3
1	R01 (Waller)	39	40	45	44	43	42	5	4	3	2
2	R02 (Boyd)	42	42	46	45	43	43	4	3	1	1

Based on the noise assessment it is confirmed that Mode 3 will be selected based upon the fact that a minor noise level increase of 2 dB is not discernible and is thus acceptable.

6.7.1 Conclusions about potential noise and vibration impacts

Based on the above, and other detailed analysis of operating and construction noise and vibration, the SLR report concluded that:

> Exceedances of the construction noise management levels are predicted at the nearest receivers during a majority of the work scenarios however, this would only be expected to occur when noisy work is being completed close to the site boundary nearest to these receivers. A Construction Noise Management Plan (CNMP) should be prepared by the construction contractor before any work begins.
>
> Operational noise levels from the proposed WTGs at the nearest receivers are predicted to be up to 2 dB greater than those from the existing WTGs when operated in noise Mode 3 (intended operation) which would not be perceptible to the average listener. Operation mitigation measures have been recommended to ensure noise emissions from the replacement turbines meet the levels predicted in this assessment.

6.7.2 Mitigation and Management Measures

Construction

The impacts during the construction of the project are predicted to be typical of construction works near sensitive receivers. It is recommended that a Construction Noise Management Plan (CNMP) be prepared by the construction contractor before any work begins. This should be prepared as part of the Construction Environmental Management Plan. The CNMP should include:

- Site management roles and responsibilities regarding noise emissions.
- A process for engaging with potentially impacted receivers.
- Consideration of potential noise impacts, including night-time impacts, from construction activities to inform feasible and reasonable mitigation measures.

- Procedures for handling complaints, if they occur, detailing a follow-up and amelioration process.

Operations

Where the existing V47 WTGs are replaced with V80 noise mode 3 WTGs, it is expected that noise impacts at surrounding sensitive receivers would be maintained within 2dB of the existing approved wind farm. To ensure potential increases in noise impacts are minimized, the following mitigation measures are recommended:

- Pre-replacement noise monitoring of the existing wind farm operations to confirm existing noise levels.
- Establishment of a performance guarantee for the supply of the replacement WTGs to meet the noise emission levels presented in this assessment.
- Post-commissioning performance test program to ensure that noise emissions from the replacement WTGs are within the levels presented in this assessment, considering the special noise characteristics described in Section 3.3 of the NSW Wind Energy Guideline Technical Supplement for Noise Assessment (Nov 2024), which covers aspects such as tonal and low-frequency noise, and penalties for special characteristics.

6.8 Visual Impact Assessment

The DCP requires:

A Visual Impact Analysis which assesses:

- *the visual impact of the project including an assessment of the development on the scenic value and character of the locality; and*
- *how the proposal will maintain the unique local character of the area, all significant vistas and also examine local community values towards key elements which form the identity of the area being impacted by the proposal; and*
- *infrastructure should be located in low visual impact locations and interconnection cables/wiring and the like should be underground.*

It should be noted that there is now a history of wind turbines extending back over 20 years at this site. The visual impacts of an upgraded facility need to be compared with the current situation, not a greenfield site. Given that it is understood no complaints have been received during operation, then a degree of community acceptance is anticipated, noting an increase in visual impacts.

A detailed Visual Impact Analysis is provided (Attachment 3) and concludes that:

> The proposed replacement of two aging wind turbines with slightly larger and more modern turbines will produce some additional visual impact, however this is in the low-moderate range. On balance, it is expected that the *perceived* additional visual impact of the replacement turbines will be low, and they will come to be recognised within the landscape as a local feature, just as the existing turbines appear to have been. On this basis the proposed development is considered to be acceptable from a visual impact perspective.

6.9 Workforce Management Plan

The DCP requires:

- *A Workforce Management Plan including workforce accommodation considerations are detailed in the application for the construction and operation phases of the project.*

This Plan would be provided with the application for the Construction Certificate, and would be subject to the choice of head contractor. Construction period local employment would be generated though the dismantling of the two existing turbines, their waste disposal (including refurbishment/re-use or recycling) and construction of the new turbines.

A deconstruction/construction program of about two months is anticipated – using local contractors as much as possible. Direct employment of some 14 workers would be involved with varying numbers during the course of the deconstruction and construction.

In addition, there would be indirect employment associated with transport and manufacturing. Most of these jobs would not be local. Other indirect employment would be associated with any visiting workforce, e.g. food and accommodation services.

6.10 Flora & Fauna Assessment

This development is re-equipping an existing two turbine site, with new, albeit slightly larger turbines. Despite overall impacts being very similar to the existing development a review was undertaken of NSW Bionet, with specific attention to birds and bats.

A 10km square was identified, centred on the site, which specifically included forested lands to the south-west. It should be noted that the site itself is open grasslands.

No endangered or vulnerable bats were identified, with only one species recorded. This is for the Chocolate Wattled Bat, which is protected, but common, having very widespread distribution throughout south and eastern Australia. One sighting has been recorded. This is within the forested areas, at considerable remove from the site.

Birds were also reviewed, with 63 species in total being identified, of which only two are endangered or vulnerable. These are the Gang Gang Cockatoo and Brown Treecreeper. Again, these predominantly frequent forested areas.

The locations of the single bat species, and the two vulnerable and endangered bird species are shown on the following figures.

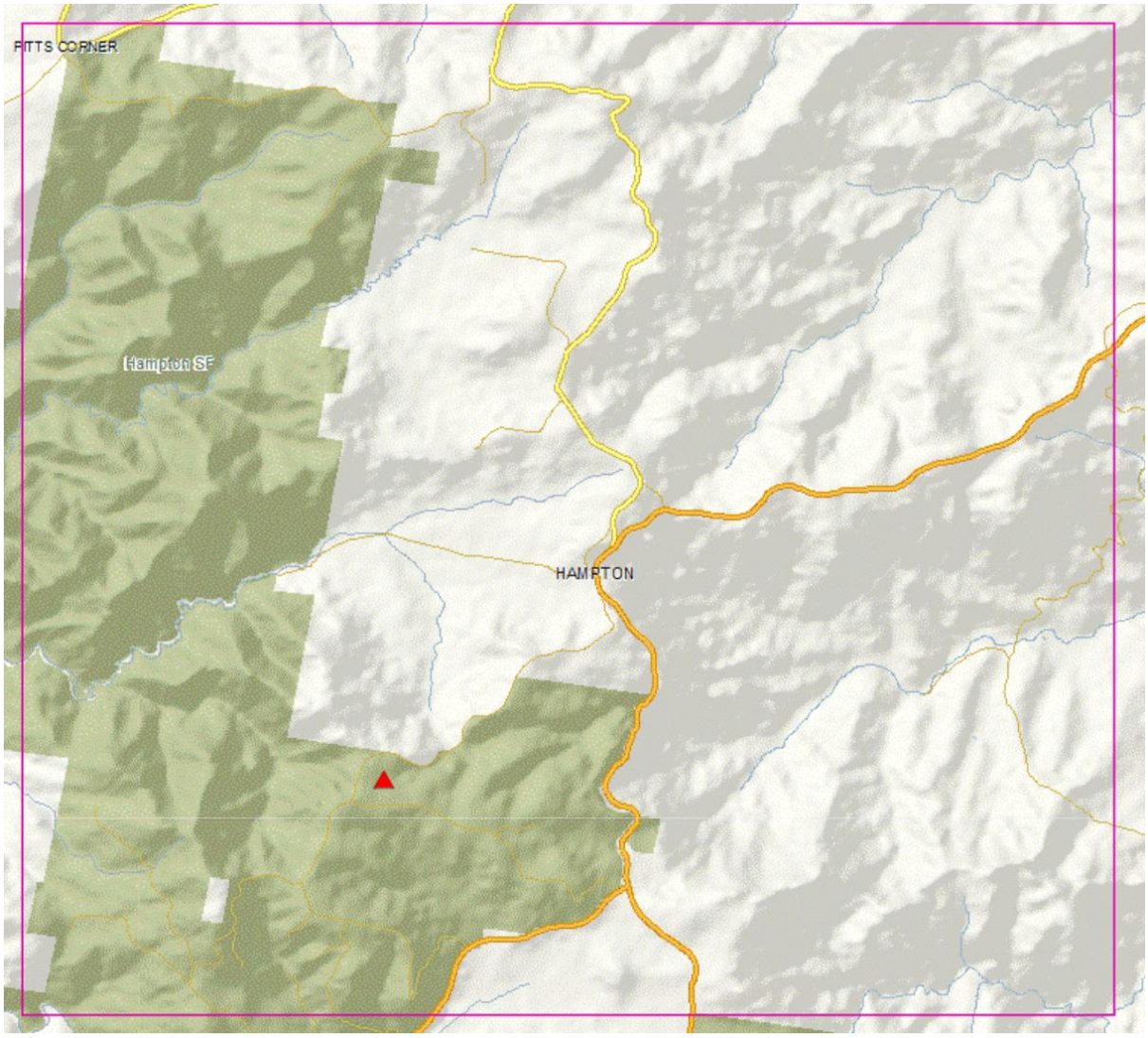

Figure 6-4 - Bats (general) – Chocolate Wattled Bat

This is the only bat recorded, and is not endangered or vulnerable. The single sighting is located at a considerable distance from the site. They are generally roost in groups mainly in hollows of old trees, but may also be found in caves or houses. Food is generally small moths. Based on the available species behaviour it is considered very unlikely that these bats would travel over or through the site, in their evening hunts for food.

Sources: Australian Museum, allaboutbats.org.au, Wildlife Victoria wildlife fact sheet – Chocolate Wattled Bat.

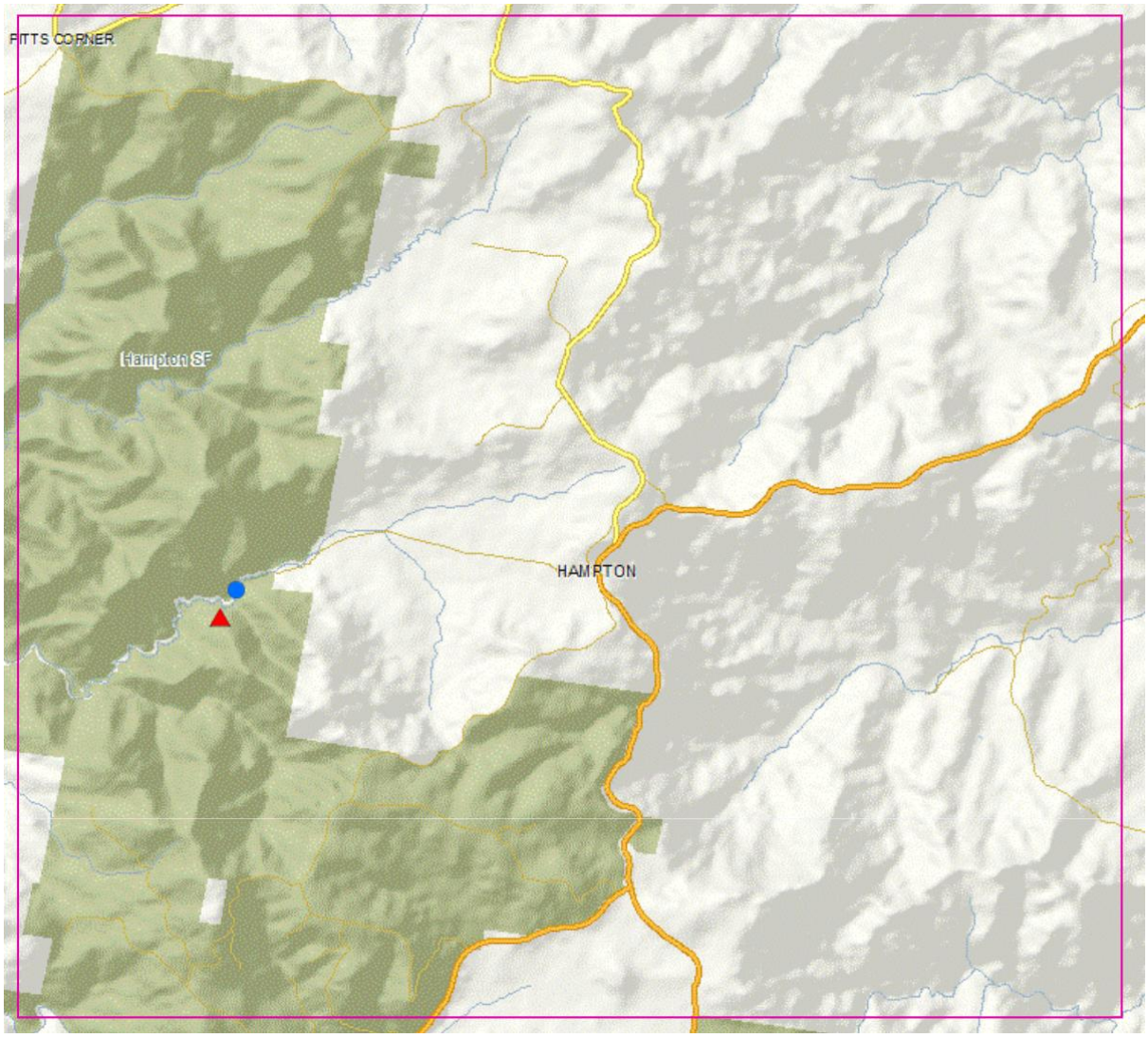

Figure 6-5 - Vulnerable and Endangered Birds

This identified two species, being Gang Gang Cockatoo and Brown Treecreeper.

The Gang Gang Cockatoo is generally found in mountain forests and woodlands during spring and summer, and in autumn or winter often move to lower altitudes in open eucalypt forests. They favour old-growth forests. While they do move about the landscape, the proposed site represents a very minor incursion into the area. Areas of habituate include mountain forests in the Australian Alps. In this case, any seasonal migration would be highly unlikely to intersect with the site.

The Brown Treekeeper occurs in eucalypt forests and woodlands. It is sedentary, and generally is resident in a specific area. Foraging is on the trees and ground, mainly for insects. Nesting is in hollows in trees. Given its sedentary behaviour, and distance from the site, it is considered very unlikely that these birds would intersect with the site.

Source: NSW Bionet – Threatened Species

A review was also conducted of migratory bird paths. This identified the primary migrational path as the East Asian-Australian Flyway. Predominantly this involves shore birds rather than flights over continental areas. The general flyway path is shown in the figure following.

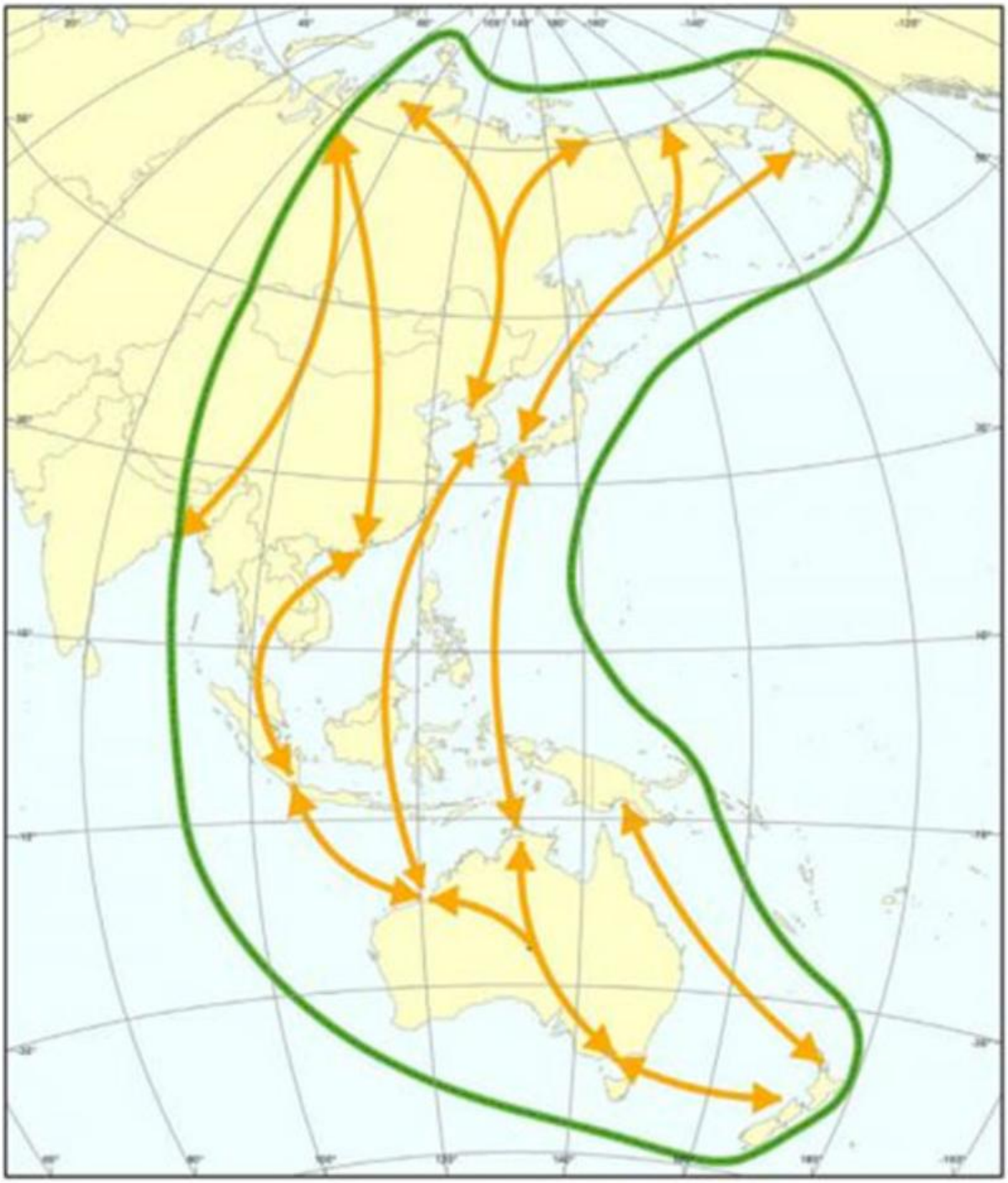

Figure 6-6 - East Asian-Australasian Flyway

Source: Commonwealth Department of Climate Change, Energy, the Environment and Water at https://www.dcceew.gov.au/water/wetlands/about/migratory-shorebirds accessed 23 September 2025.

Essentially, the international migratory pathways do not intersect NSW or the development site.

6.10.1 Summary of impacts

The site is not affected by the requirements of the Biodiversity Conservation Act 2021 or Lithgow LEP 2013 terrestrial biodiversity mapping. No specific migratory species are known to be potentially impacted by the development.

The proposed development or the two new turbines is not in close proximity to known habitats of any threatened bird or bat species and is outside the East-Asian-Australasian Flyway.

6.11 Decommissioning & Site Restoration Plan

This would be included in a Plan submitted at construction certificate stage that provides measures to remediate the land in accordance with State Environmental Planning Policy (Resilience and Hazards) 2021 along with details of appropriate disposal methods for all infrastructure.

About 90 per cent of a wind turbine can be recycled. First preference would be to refurbish/reuse the existing turbines at another Australian location. The towers of steel and other metals are recyclable but the turbine blades are more complicated. Turbine blades are mainly made of fibreglass and carbon fibre or epoxy with very limited end-of-life options for composite materials at this stage.

Measures to remediate the land are proposed in accordance with State Environmental Planning Policy (Resilience and Hazards) 2021

6.12 Details of Consultation with all State Agencies

No consultation has occurred to date with State agencies and no consultation is considered warranted with OEH, DPI, or CASA.

No issues regarding aviation safety or aerial agriculture are identified.

The haulage company responsible for transporting the new turbines to the site would consult with Transport-NSW, NSW Police and Lithgow Council to ensure safe and efficient movement of the wind turbine components to the site.

6.12.1 Aviation Safety

Although no CASA consultation is considered necessary at this stage, consideration was given to the overall height of the revised turbines and aviation guidelines. Reference is made to the CASA Advisory Circular AC 139.E-01v1.0 *Reporting of Tall Structures* which includes the wind turbine industry. The turbines are not within a Height Obstacle Limitation surface and therefore no specific approval requirement is generated. The height trigger is 100m above ground level. At 120m to blade tip, the proposed turbines are reportable. This is, however, below the 150m trigger for it to be regarded as an obstacle. Accordingly no hazard report is required. The development is not within the 15km trigger proximity of an aerodrome or airstrip. The figure below shows recorded aerodromes, airstrips and heliports.

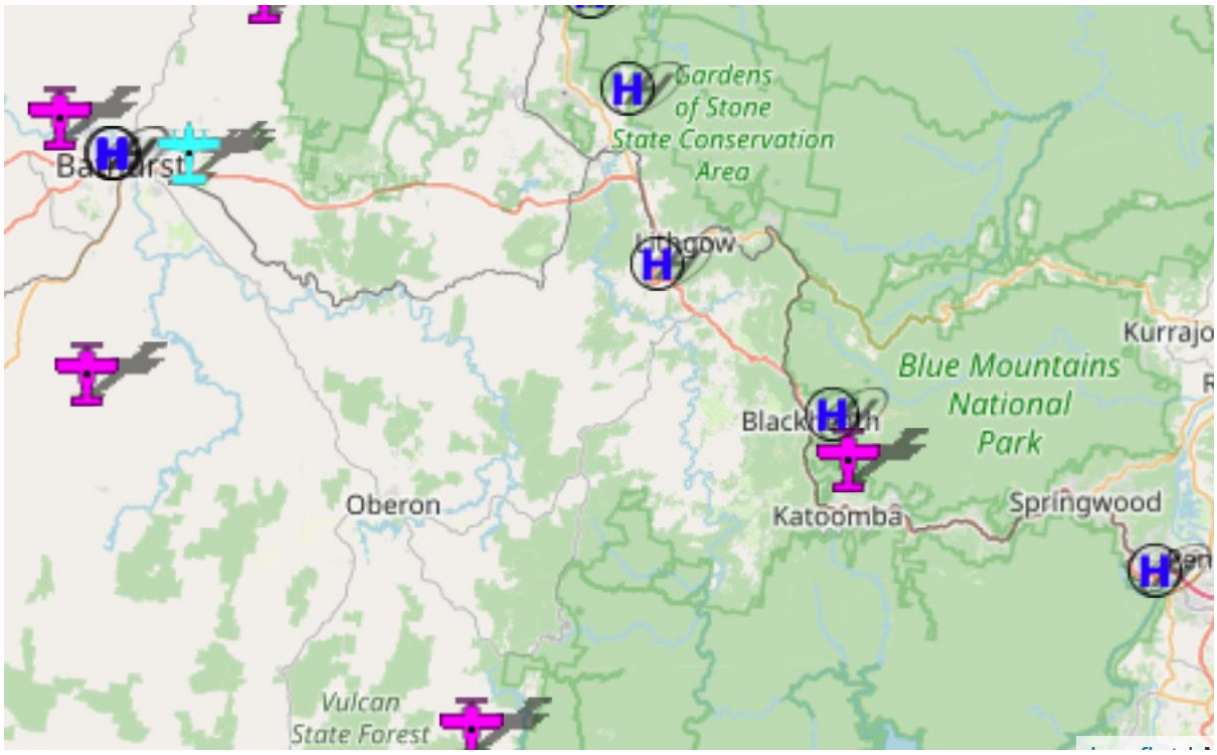

Figure 6-7 - Air facilities

6.13 Heritage

At the time of the original development, assessments were undertaken regarding heritage matters.

Set out below is an up-to-date Aboriginal Cultural Heritage and European Heritage assessment:

6.13.1 Aboriginal Cultural Heritage

The figure below shows typical potential locations for Aboriginal sites in sandstone country. The site is on a ridge, however not at the ridge top. Groundcover is relatively sparse, and it is noted that there has been no history of any sites being present within the site footprint. The site has no significant topographic features. On the basis of the existing development, and the absence of any formations where site might usually be expected, it is considered that the standard provisions of Section 90 of the NSW National Parks and Wildlife Act, 1974 would be sufficient.

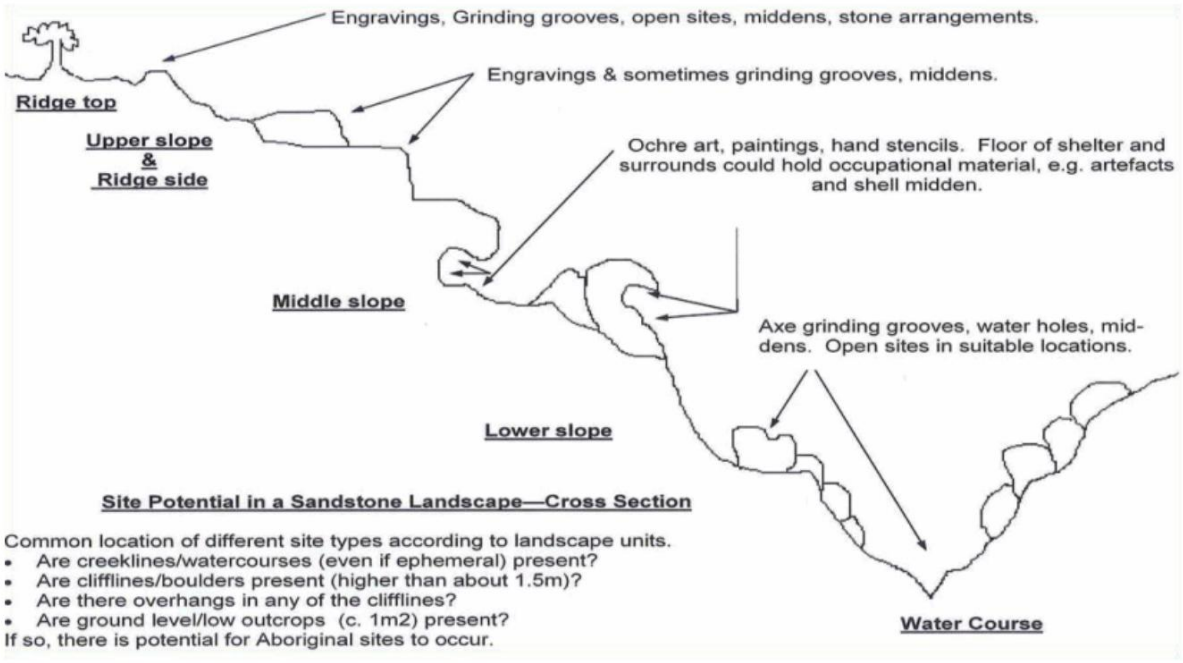

Figure 6-8 - Site potential[3]

6.13.2 European Heritage

The figure below shows the heritage overlay in the vicinity. The heritage item concerned is a small cottage at 28 Wicketty Waa Road. The curtilage of this dwelling has been identified in the overlay as the extent of the property. The dwelling location is highlighted below.

[3] Source: https://www.aboriginalheritage.org/sites/potential/

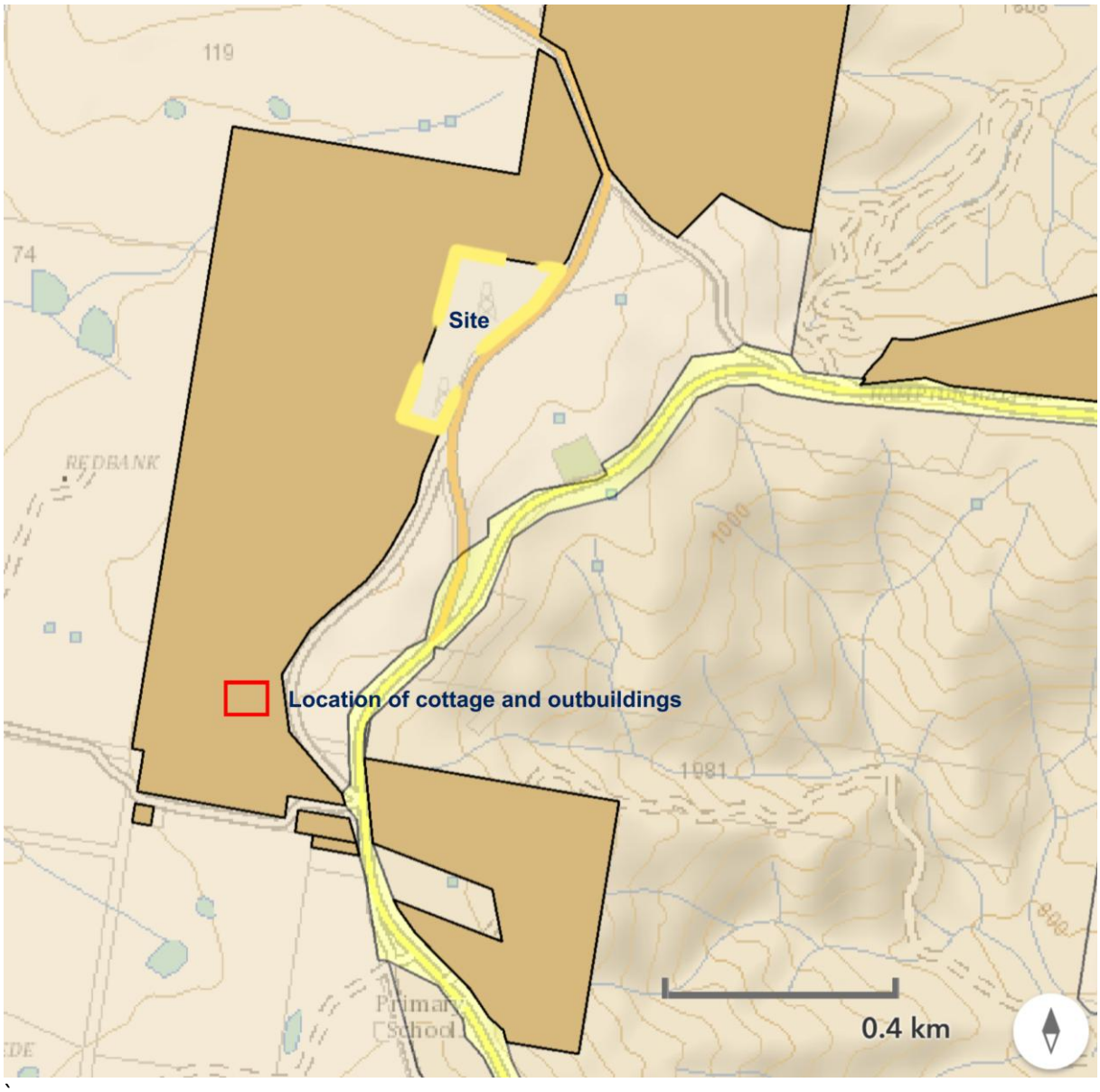

Figure 6-9 - Heritage Cottage

The location of the cottage is such that the wind turbines would not be visible from the heritage buildings. This is due to both topography and vegetation, with an intervening ridge-top. Therefore although technically the site is surrounded on three sides by a heritage item, in practice, and considering the fact that the development has been on this location for over 20 years, no heritage impact is considered to occur, and no heritage statement is considered necessary.

6.14 Electromagnetic Radiation Study

The DCP states that this Study - including interference from the wind turbines and/or transmission lines – may be required.

This was a condition of the consent issued in May 2001 as follows:

12. Prior to commencement of turbine construction an onsite management plan shall be submitted for the consideration and approval of Council incorporating the following;
    a) A monitoring plan assessing the potential effects of the development on birds. The monitoring plan shall include details of who will carry out the monitoring, the length of monitoring (not less than 4 seasons, 12 months), the proposed monitoring plan, the proposed process for dissemination and review of monitoring results and the proposed strategy should there be any impact on birds.
    b) Management of the possible impact of the proposed development by reason of electromagnetic interference with adjoining properties. The management plan shall include the following details:
        - the proposed method of recording television reception in nearby residences and the proposed method of addressing any complaints
        - in the event of any television or radio interference occurring due to the operation of the wind farm, the applicant is to undertake any modification to, or replacement of, aerials at the affected residences
        - in the event of these measures being unsatisfactory, the applicant is to undertake other measures necessary to restore reception as near as possible to the quality available prior to construction.

At the time of preparing this SEE, the applicant is not aware of any complaints or issues associated with the over twenty-years of operation of the existing turbines – noting that such a Study was to include impacts on human and animal health, emergency services, RFS, Police, Ambulance etc. and local television and radio reception and other local communications.

It is submitted that a condition could be imposed which requires a complaints mechanism to be established for monitoring any relevant impacts and for remedial action to be undertaken by the proponent at the proponent's cost.

6.15 Communications Study

The DCP states that:

> ***A Communications Study*** *is required identifying the existing status of communications and detail the proposed method of dealing with potential communication interference. The development should not detract from the reception of radio, TV, internet or other communication methods. Where necessary, it may be required to install additional services (boosters/communication towers/ re-transmission towers etc.) to maintain such services in the vicinity of the development. Where this is determined to be necessary, the work and equipment shall be at the developers cost.*

Again, at the time of preparing this SEE, the applicant is not aware of any relevant complaints and/or issues being raised.

It is submitted that a condition of consent can require the applicant to test communication impacts within a certain time period of operation and to submit that to council with proposals to resolve any issues at the proponent's cost.

Again, it is submitted that a condition could be imposed which establishes a complaints mechanism for monitoring of any relevant impacts and for remedial action to be undertaken by the proponent at the proponent's cost.

6.16 Design

The development of the two turbines will be sited and carried out to minimise impacts on, and/or not to cause any restrictions to grazing, farming, residential, tourism, business and forestry practices. The

two new turbines are replacements of the existing two turbines which have been operational for over 20 years with no known such adverse impacts.

The development of the two replacement turbines will be carried out in a way that minimises any physical adverse effects on adjoining land and the development site, including:

- Land degradation;
    - native vegetation loss (there is no major vegetation on site which will be affected; site construction footprint will be small relative to the surrounding grasslands);
    - alteration to drainage patterns (no significant alteration will occur – the site is on a ridge top and there is little opportunity to affect drainage patterns);
    - pollution of surface and ground water (appropriate sediment movement control mechanisms will be employed during construction);
    - spread of noxious plants and animals (all construction movements will be contained within the existing site, the CEMP will include procedures to reduce risk of weed contamination of the site);
    - bushfire hazard (there is nothing about the project that poses a substantial bushfire risk. The CEMP will detail stop work requirements for extreme or catastrophic fire danger days).

6.17 Cumulative Impact

It is acknowledged that Council does not favour large expanses of land being covered with solar energy or wind farms where there is significant cumulative impact, the two proposed wind farms are replacement of two existing turbines which have been operational on the subject site for over twenty years. Also, there no known commercial solar or wind farms existing or proposed within 10 km radius of the subject site.

6.18 Design (Wind Farms):

This section of the DCP sets out a number of design requirements for wind farms. Each of these is addressed in the following table.

Table 6-4 - Design requirements for wind farms

Design Requirement	Consistency
Turbines shall not be located within 5km of any dwelling not associated with the development or from any lot upon which a **dwelling** may be constructed. The 5km setback proposes utilising a precautionary principle in addressing perceived visual, noise and health concerns;	The existing turbines have been in operation for the last 20 years, proximate to the following sensitive locations: • Approx, 1098 metres to the public school - to the south; • Approx 935 metres to the Anglican Church – to the south south-west; • Approx 730m to the Motel/Hotel - to the east; • Approx 330m to the house to the north; • Approx 300m to the intersection of Hampton Road and Biddy's Pinch Road. As far as we are aware, there have been no complaints about them during this time. It is expected that the replacement turbines would be similarly received within the community.

Design Requirement	Consistency
Turbines shall not be located within a distance two times the height of the turbine (including the tip of the blade) from a formed public road. A greater distance may be required by the road authority;	The proposed turbines with heights of 120 metres have been located at increased distances to the public road than the existing turbines. The northern turbine is presently about 50m from the road reserve boundary. It is proposed to locate the replacement turbine at an increased distance of around 120m from the boundary. Similarly, the southern turbine is presently about 23m from the boundary with the road reserve, and this will be increased to about 70m with the replacement turbine. This is as much as can reasonably be accommodated within the site footprint.
Turbines shall not be located within a distance 2km from a non-related property boundary	Relocating the turbines as described above will bring both turbines closer to the boundary with the adjoining property (Lot 2 DP1031694) including some overhanging at times. It is noted that the owner of that property has provided written advice that he has no objection to this.
Existing and proposed screenings may be used to minimise visual impacts to non-related properties.	There is considerable tree vegetation in the general area. This tends to screen some locations from the towers quite effectively. No other vegetative screening is proposed, unless negotiated as part of the exhibition period
Turbine locations are to be sensitive to existing related dwellings on the subject site.	Not applicable.
Turbine locations shall not surround a non-related property.	Not applicable.

6.19 Access and Mobility

Access to the site is by the same entry points as historically.

A Haulage Study has been completed – Attachment 4. It has identified a feasible route (and alternatives) for transporting the new turbines and towers to the site. An application has also been made to Transport for NSW to consider the freight route but this has not as yet received a response. It should be noted that this should be deemed as an advisory referral, as would any referrals to other LGAs. In this regard there is no statutory role for either Transport for NSW or other councils in the DA approvals process. As stated previously, some lopping of overhead vegetation may be required on Hampton Road to reduce the traffic hazard.

6.20 Parking

No increase in intensity of use is proposed. Temporary construction parking would be provided, to be detailed in the Construction Environmental Management Plan prior to the Construction Certificate, and the occasional visitation to the site during operations would not require dedicated parking facilities. The current informal parking is therefore considered adequate during operations.

6.21 Fencing

Existing fencing would continue to prevent unauthorised entry to the site.

6.22 Social and Community Impacts

6.22.1 Social impacts

The development is not state significant, and accordingly the Social Impact Assessment Guideline does not apply. Consideration has, however, been given to the Principles, as set out in the table below:

Table 6-5 - Social Impacts

Principles	Response
Action-oriented	The specific action is the VPA for a community benefit to be administered for the direct benefit of local residents and organisations.
Adaptive	As the community benefit is a "one-off" this would not apply. The process is, however, responsive to community needs.
Distributive equity	The overall development is of general societal benefit. The visual and acoustic impacts are local. Accordingly to achieve distributive equity a community benefit is appropriate.
Impartial	This report has been prepared in accordance with unbiased research methods.
Inclusive	Initial community engagement (informal) occurred, and during the public engagement processes under the Act there will be a focus on effective listening to feedback.
Integrated	Where feasible and appropriate, the duplication of other work has been avoided. Overall decision-making operates within a triple bottom line framework.
Life-Cycle focus	This is refurbishment of a project otherwise at the end of it's lifecycle. By extending the use on the site, with turbines of higher output, broader community benefit can be increased with modest increases in overall impacts.
Material	The visual and acoustic reviews have sought to identify the potential social impacts and the risks/opportunities associated with the development.
Precautionary	It is considered that the science around this facility is "settled science" and that based on operational experience to date, the refurbished facility is not expected to introduce any additional material harm. No serious or irreversible impacts are considered to be a threat to the development.
Proportionate	The proposal is modest, and accordingly the scope of the study has looked to the difference between the impacts currently being experienced, and those predicted from the refurbished development. Social impacts in both scope and scale are considered minor.
Rigorous	The study has utilised appropriate professional input to ensure that the material presented forms a sound basis for the assessment of impacts.
Transparent	Relevant sources of material have been identified

In summary, no significant external social impact is expected – but there are potential benefits consequent upon the employment generated by the dismantling of the existing turbines and construction of the two new turbines. The existing turbines are 20 year old 660kW turbines. They are now running less efficiently than their design specification, and are certainly now much noisier than when installed.

By replacing these with 2MW units, the effective output will be tripled with very little additional environmental or social impact. In other words, the project will result in an effective increase in capacity of around 2.7 megawatts with very little negative impact. Overall, this is considered to be a reasonable way to contribute towards the state's Net Zero objective without any significant associated issues. A faster pathway to Net Zero contributes positively to the overall social well-being of the state's population.

6.22.2 Community benefits

The current Wind Guidelines are for large scale developments. This is a very small-scale replacement facility. Based on the indicative contribution rate, this would be $4,200 per annum. This is considered too small an amount to be worth the overheads of a typical scheme with funding rounds, etc. We therefore propose a single payment, of the net present value of the contribution over 20 years at an appropriate discount rate (say 5%). This would lead to a one-off contribution of, say, $31,660.00.

A voluntary planning agreement is offered for a one-off contribution in this amount. In order to best address community needs, the proponent would look to that contribution being:

- Spent within 10kms of the site
- Be a community driven process where expressions of interest were sought from community about either Council implemented projects they would like, or bids from community organisations with firm commitments that funds would be spent in this fashion.
- A scoring model against criteria (public) could be utilised to score proposals.

6.23 Bushfire Prone Land

The site is identified as bushfire prone – vegetation category three.

An Asset Protection zone is not specifically triggered by Planning for Bushfire Protection however prudently grassland management is required to respond to the grassland on-site and in the immediate vicinities of the turbine positions and above ground infrastructure.

This can be conditioned and would be implemented prior to operation of the two new turbines.

The primary method of vegetation management is anticipated to be controlled grazing, which has been the historic successful method of vegetation management.

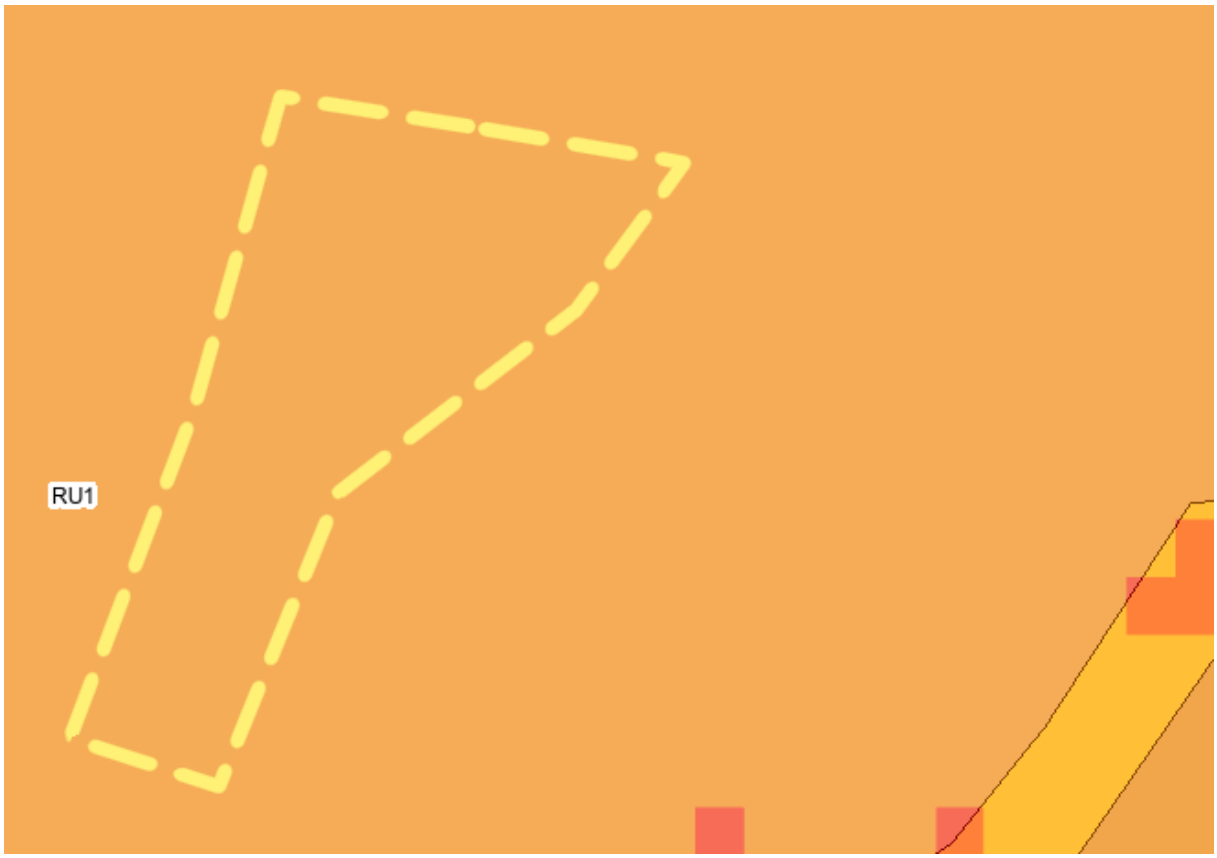

Figure 6-10 - Bushfire Prone Land

7 Suitability of the site for the development

The site is well suited for the development, noting that the site has had two operational wind turbines on the site for over twenty years with no known adverse impacts or significant issues for local residents. The two replacement turbines are to be positioned as depicted in the site plan. No adverse impacts from the existing turbines have been recorded over the more than twenty years of their operation.

8 C'wealth Environment Protection and Biodiversity Conservation Act 1999 (EPBC Act)

There are no known Threatened Ecological Communities or Listed Threatened Species in the general area. However, given that the proposed development will not require the removal of any trees, it is considered that any significant impact is highly unlikely. No further consideration for this site is considered necessary.

9 Any submissions made in accordance with this Act or the regulations

At the time of preparation of this report, no written submissions have been made. Any submissions made during exhibition would be addressed openly with strong engagement with objectors and the local community.

10 The public interest

The public interest is served by the contribution that the increased efficiency from the two new replacement turbines will contribute more effectively to the State and national renewable energy targets and schedule. The issue of height relative to the setbacks of the turbines from the public road is acknowledged and is sought to be addressed by the strength and stabilisation of the wind turbines and the platforms on which they are located. Dismantling and waste disposal/recycling of the existing turbines, associated rehabilitation of the site and construction of the two new turbines will support employment and economic activity locally and more broadly.

11 Summary – Potential Impacts and Mitigation Responses

Table 11-1 - Potential Impacts and Mitigation Responses

Potential Impacts	Mitigation Responses
Potential for State level assessment process	Cost is less than $30 million; Not on land of state environmental significance.
Adjoining land uses	Zoned RU1 - Rural; - Consistent with zone objectives; Consistent with State Government renewable energy policy and Regional Plan. Existing turbines operational for over 20 years with no evident conflicts with objectives or underlying policy intents of zoning. There is a heritage item at 28 Wicketty Waa Road but the location of the cottage is such that the wind turbines would not be visible from the heritage item. This is due to both topography and vegetation, with an intervening ridge top. Therefore, although technically the site is surrounded on three sides by a heritage item, in practice, and considering the fact that the development has been on this location for over 20 years, no heritage impact is considered to occur, and no heritage statement is considered necessary.
LEP Facilities Buffer	The noise impacts are concluded to be acceptable relative to existing and potential future developments and land uses within the area depicted on the Facilities Buffer map and that any noise and other emissions associated with existing land uses would not have any adverse effects on the proposed development. There are no opportunities to relocate the proposed development outside the land to which this clause applies – particularly given that two existing turbines are being replaced by two new turbines with a much higher level of efficiency; and The proposed development would not adversely affect the operational environment of any existing development on the land to which this clause applies.

Potential Impacts	**Mitigation Responses**
Haulage and Road conditions	Haulage on local roads is workable; Minor lopping of overhanging vegetation may be required on the road reserve. Transport for NSW would need to consider the haulage route and management on the state road network; Appropriate and reasonable conditions for road maintenance would be negotiated with Council as part of assessment process.
Increased Height of Turbines	Overhang and increased overshadowing are limited and have been formally accepted by neighbouring property owner. Net additional visual impacts are considered acceptable.
Noise	Net additional noise impact will be 2dB (Mode 3 operation) and essentially have no difference in audibility; A Construction Program and Environmental Management Plan – including consultation with neighbouring property owners – would be finalised and approved as part of the Construction Certificate process before construction works start. A complaints management process would be put in place to manage any construction or operational issues.
Vibration	SLR Consulting concluded that with the nearest vibration sensitive receivers being approximately 190 m away from the proposed work areas vibration impacts on the surrounding receivers are unlikely and were not considered further in their assessment. A complaints management process would be put in place to manage any construction issues.
Visual	Detailed visual impact analysis was carried out and concluded that the net difference of impacts was acceptable.
Bushfire Prone site	An Asset Protection zone is required to respond to the grassland on-site and in the immediate vicinities of the turbine positions. An anticipated condition of consent would be implemented prior to operation of the two new turbines.
Waste disposal and Recycling	As required by the current consent issued in May 2001 (DA96/01), the existing turbines will be fully dismantled

Potential Impacts	Mitigation Responses
	and removed from the site together with any infrastructure that becomes redundant consequent upon the decommissioning of the existing turbines and compatible with the construction of the two new turbines. The preferred approach is to refurbish and re-use the turbines at another Australian location. Recycling of materials resulting from dismantling of the existing turbines will be sought to be optimised and arrangements for recycling and disposal will be at the direction of Council's Waste Management team.
Electromagnetic radiation and Communications	See other potential impacts, below:
Other potential impacts	A condition would be accepted requiring a complaints management process. This would address acoustic, telecommunication and other potential impacts. Resolution of any complaints, including remedial measures, would be at the cost of the operators.

12 Review of Council RFI

To assist Council in their further review, the table below sets out the issues raised by Council and where in the document the response can be located.

Table 12-1 - RFI Responses

Matter Raised by Council	Location of Response
Landscaping	Section 3.2.11
Earthworks Plan	Section 3.2.4
ASICS	Separate document
Community Contribution	Section 6.22.2
Aboriginal Cultural Heritage	Section 6.13.1
European Heritage	Section 6.13.2
Social and Economic Impacts	Section 6.22
Water Resources	Section 3.2.10
Air Quality	Section 3.2.14
Site maintenance plan	Section 3.2.11
Risk assessment	Section 3.2.15
Contamination	Section 3.2.10

Matter Raised by Council	Location of Response
Amended site plan	Separate Document
Life of project	Section 3.2.6

13 Conclusions

The proposal represents an acceptable use within the area and on the site and is considered worthy of planning support.

14 Glossary of Terms and Abbreviations

DCP – Development Control Plan – Detailed local planning guidelines that work within the context of the Local Environmental Plan.

LEP – Local Environmental Plan – A series of statutory controls over land use that have the force of law. The LEP establishes the land use zones and includes a number of clauses dealing with specific development types and issues.

LGA – Local Government Area – The area controlled by a local Council, such as Murray River Council.

NML – Noise Management Level

SEPPs – State Environmental Planning Policies – These include policies relating to particular land uses, as well as establishing development standards for many development types which (generally) over-ride Council's LEP.

Zone - A coloured area on the LEP map that shows where particular groups of land uses are allowed. For example, there are a number of residential zones that permit differing types and densities of residential development.