

Amendment Report – Appendix A Updated project description

Hunter Transmission Project

February 2026



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Updated project description

A Updated project description

This chapter describes the key project information for both the construction and operation of the Hunter Transmission Project (HTP, 'the project'). The design, construction, operation and decommissioning and rehabilitation of the project as described in this chapter forms the basis of the ~~environmental impact assessment (EIS)~~ **Amendment Report**. The project description is based on a concept design **and has been updated to reflect the proposed amendments and refinements to the project, as outlined in Chapter 3 (Description of amendments and refinements) of the Amendment Report**.

Considerable refinements have been made to the early design in response to environmental investigations and stakeholder engagement outcomes. The detailed design process would inform construction of the project and ongoing design refinements would further reduce the potential environmental impacts described in **the EIS and Amendment Report** ~~this EIS~~.

The **amended** project impact area has been developed to achieve a level of flexibility for future design refinement while allowing for a conservative and thorough level of impact assessment. Ongoing refinements of the project design and construction method would be carried out to:

- further avoid and minimise impacts identified in **the EIS and Amendment Report** ~~this EIS~~ and during ongoing stakeholder and community engagement, including in response to submissions received following the exhibition of ~~this the EIS~~
- consider design innovation and/or alternative construction techniques
- respond to improved technologies or materials
- improve value for money.

A.1 Project summary

The project includes the construction and operation of around 110 kilometres of new overhead 500 kilovolt (kV) double circuit transmission line, two new switching stations (Bayswater South and Olney), upgrades to the existing Bayswater and Eraring substations, adjustments and upgrades to existing transmission lines, utility adjustments, and ancillary works, including constructing and upgrading permanent and temporary access tracks, road **and intersection** upgrades, construction support sites and laydown areas.

The key components of the project would be located within a defined **amended** project impact area, which for the purpose of this ~~EIS~~ **Amendment Report** is the area that has been assessed to be directly affected by the construction and operation of the **amended** project (see Figure A-1). It is conservatively assumed that any part of the **amended** project impact area may be impacted (directly or indirectly) by the project, which allows flexibility for future design refinements while ensuring a robust impact assessment. For example, the HTP corridor is 140 metres wide to account for the final easement (70 metres wide, **except in widened areas to account for conductor swing**) plus construction works and ancillary sites (such as laydown areas

and stringing sites). The entire 140 metre corridor would not be impacted across the full 110 kilometres of the transmission line during construction. *Chapter 7 (Approach to assessment) of the EIS* provides further detail about the **exhibited** project impact area used for the environmental assessment in **the EIS** ~~this EIS~~. ***Chapter 3 (Description of amendments and refinements) of the Amendment Report provides further detail about the amendments and refinements that form part of the amended project impact area.***

The HTP corridor can be characterised into 3 distinct sections, based on topographical, environmental and land development features. The route has been developed to use disturbed land and public land wherever possible to minimise impacts on communities and sensitive environmental areas.

Most of the northern section of the HTP corridor runs through flat and undulating land containing developments such as the Bayswater Power Station operated by AGL, mining land (including Hunter Valley Operations (HVO), Bulga Coal and Mount Thorley Warkworth mines) and the Singleton Military Area owned by the Australian Government Department of Defence. Most of the central section of the HTP corridor runs through elevated sandstone escarpments containing Pokolbin State Forest, Corrabare State Forest and Watagan State Forest. The southern section of the HTP corridor is also located on an elevated sandstone escarpment that runs through Olney State Forest, avoiding the Watagans National Park and Warrawolong Flora Reserve.

The HTP is proposed within 5 local government areas (LGAs) – Muswellbrook Shire Council, Singleton Council, Cessnock City Council, Lake Macquarie City Council and Central Coast Council (see Figure A-2). Coal mining, manufacturing, electricity generation, agriculture, forestry tourism and viticulture form the economic foundations of the LGAs surrounding the **amended** project impact area.

A summary of key project elements is provided in *Chapter 1 (Introduction) of the EIS*, with further details on the construction and operational features of the **amended** project provided in Table A-1. The components of the project are shown in Figure A-1 and Figure A-2.

Table A-1 Components of the **amended** project

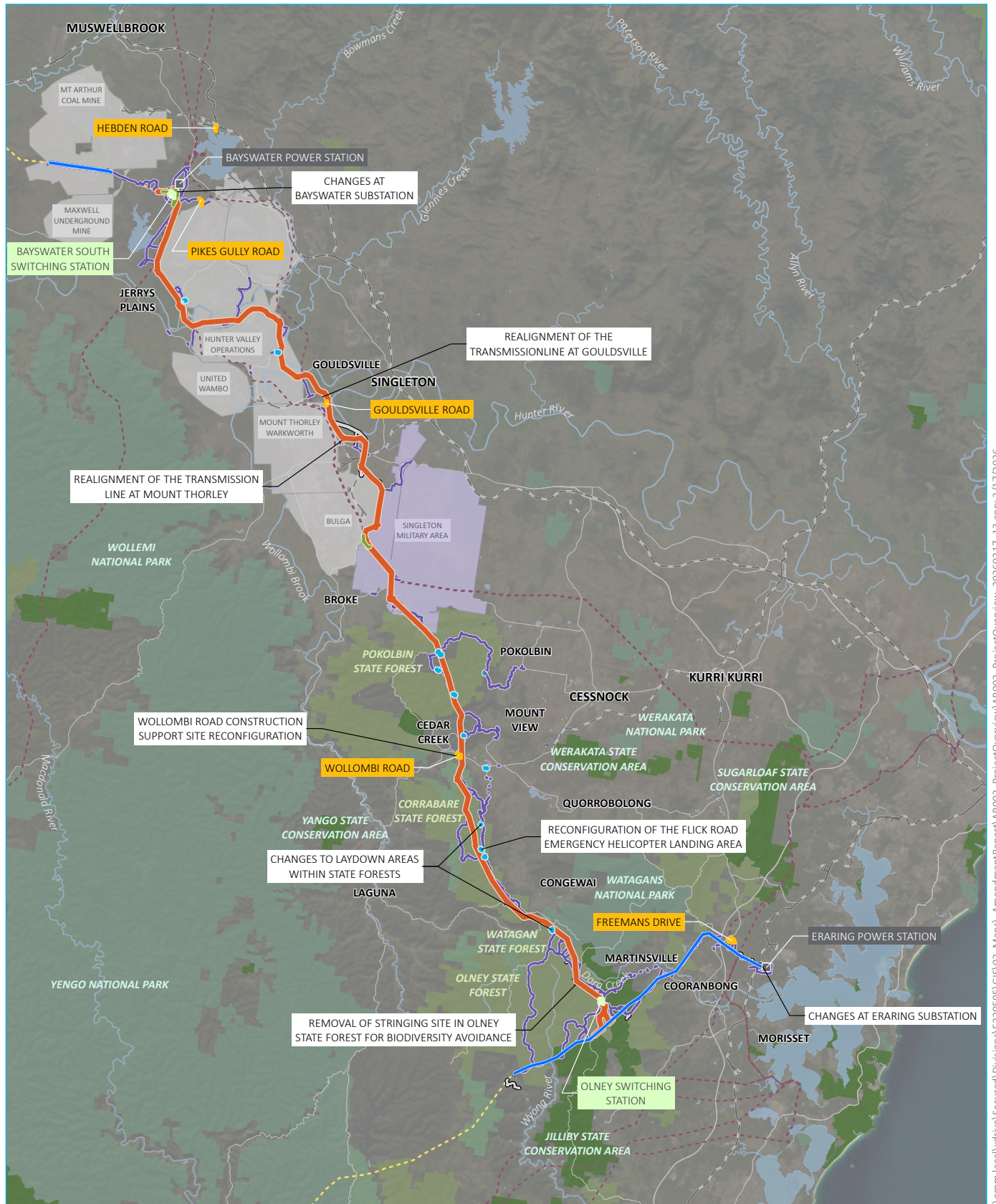
Project element	Summary of the amended project
Overview	
New transmission line and transmission towers	• Overhead 500 kV double circuit transmission line of around 110 kilometres between the Bayswater South 500 kV switching station and the Olney 500 kV switching station • Steel lattice towers up to 85 m high and that are spaced anywhere between 75 m to around 1.5 km apart depending on topography (typically between 300 and 600 m) • 500 kV transmission lines with a minimum vertical clearance of 13.5 m • Construction corridor 140 m wide
Adjustments and crossings – existing transmission lines	• Adjustments to existing 500 kV transmission lines: — Line 5A1 and 5A2: – Kemps Creek 500 kV at Ravensdale to connect to the new Olney 500 kV switching station — Line 5A3: Bayswater – Mt Piper 500 kV at Bayswater to connect to the new Bayswater South 500 kV switching station — Line 5A4: Bayswater – Wollar 500 kV at Bayswater to connect to the new Bayswater South 500 kV switching station

Project element	Summary of the amended project
	• Adjustments to existing 330 kV transmission lines: — Line 31: Bayswater – Regentville 330 kV — Line 32: Bayswater – Sydney West 330 kV — Line 81: Newcastle – Liddell 330 kV • Crossing of existing 330 kV transmission lines: — Line 31: Bayswater – Regentville 330 kV at Bayswater — Line 32: Bayswater – Sydney West 330 kV at Bayswater — Line 81: 330 kV: Newcastle – Liddell 330 kV at Lemington and again at the Singleton Military Area • Line 82: 330 kV: Tomago – Liddell 330 kV at Warkworth and again at the Singleton Military Area
Upgrades – existing transmission lines and towers	• Upgrades to overhead earth wire on existing 500 kV transmission lines including: — around 10 km of upgrades at Bayswater (Line 5A3 and Line 5A4) — around 17 km of upgrades at Martinsville, Ravensdale and Cedar Brush Creek (Line 5A1 and 5A2). • New communications infrastructure including: — new underground fibre cable connection between the existing Bayswater 500 kV/330 kV substation and the new Bayswater South 500 kV switching station — new optical fibre for the new HTP 500 kV transmission line between Bayswater South 500 kV switching station and Olney 500 kV switching station — new optical fibre on the existing and upgraded 500 kV transmission line between Olney 500 kV switching station and Eraring 500 kV/330 kV substation (Line 5A1 and 5A2). • Tower strengthening on various existing towers on Line 5A1, Line 5A2, Line 5A3 and Line 5A4
Switching stations/ substation upgrades	• New Bayswater South 500 kV switching station – amended construction impact area around 26.6 ha • Modifications at the existing Bayswater 500 kV/330 kV substation within the existing footprint • New Olney 500 kV switching station – amended construction impact area around 20 ha • Augmentation and modifications at the Eraring 500 kV/ 330 kV substation, including installation of 2 new 1500 MVA transformers, substation generator connections on the existing hardstand area, modification works on the existing bench, and new poles and adjustment of existing generator connections into Eraring Power Station • Remote work at existing substations, consisting of replacing or upgrading existing control and communication equipment

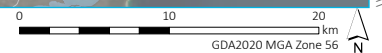
Project element	Summary of the amended project
Access roads and tracks	Access roads and tracks, including oversize/ overmass routes, for the construction of the project is described in <i>section A.3.5</i>
Construction	
Amended construction impact area	- Amended construction impact area around 23512379 ha - This is the area that would be affected by the construction of the amended project, including (but not limited to) transmission towers and lines, stringing sites, access roads, access tracks, substations, switching stations, adjustments and upgrades to existing lines, communications infrastructure, temporary worker accommodation, construction support sites, laydown areas and utility adjustments - As the larger of the construction and operation impact areas, the amended construction impact area was used to determine the extent of the overall amended project impact area.
HTP corridor	140 m wide to allow for the construction of the new transmission line - This includes areas required for stringing activities and material laydown
Vegetation clearing	Around 762945 ha of native vegetation cleared within a disturbance area of 12661269 ha
Construction support sites	- Five construction support sites: Hebden Road, Pikes Gully Road, Gouldsville Road, Wollombi Road and Freemans Drive - Helicopter pads (helipads) indicatively at: Hebden Road, Pikes Gully Road, Gouldsville Road and Freemans Drive
Temporary worker accommodation	Three temporary worker accommodation facilities catering for up to around 789007900 of the main construction workforce are located at the Hebden Road, Gouldsville Road, Wollombi Road and Freemans Drive construction support sites
Ancillary sites	Laydown areas, which would be established to allow for various construction activities and to minimise the need for vehicle movements to and from the construction support sites
Access roads and tracks	Upgrades to the existing public road network and existing access tracks and the construction of new access tracks would be required in some locations to provide access to the amended construction impact area and would be undertaken prior to and during construction. Permanent access requirements during operation of the project are described below
Land requirements	- Total permanent areas (including transmission line easement and access road easements): 926 ha1014 ha - Total temporary areas (including construction leases within the HTP corridor and other temporary locations such as construction support sites and laydown areas): 1886 ha1954 ha - Total freehold acquisition areas (including whole of property and substation acquisition areas): 305 ha.

Project element	Summary of the amended project
Utility adjustments	Third party utility works including fibre optics, electricity, gas, telecommunication, water, sewer and stormwater
Construction program	- Construction to start in 2027 - Operation by the end of 2029
Construction resource requirements	- Around 830 full-time equivalent workers during peak construction periods - Plant and equipment including dozers, excavators, graders, compactors, rollers, cranes, dump trucks, water carts, delivery trucks, stringing blocks and winches, concrete trucks, asphalt truck and sprayers, helicopters/stringing drones, mobile concrete batching plants, mulchers, spider excavators, and dewatering equipment, diesel generators, crushing and screening plant, washdown facilities and wastewater treatment plants (among others) - Materials such as concrete and steel reinforcement for tower foundations, steel for the transmission towers and substation gantry, densely graded base and crushed rocks, conductors, insulators and cabling for the transmission line, electrical components for the substations, PVC conduits, metal fencing and gates, stormwater drainage materials, diesel and petrol, pre-fabricated buildings, general building materials and fire system materials - Around 1580 ML of water (170 ML of potable water and 1410 ML of non-potable water)
Operation	
Amended operation impact area	- Amended operation impact area around 12641371 ha - This is the area that would be occupied by permanent components of the project and/or maintained during operations, including transmission line easements, transmission lines and towers, substations, switching stations, communications infrastructure, maintenance facilities, permanent access roads to substations and switching stations and access tracks to the transmission line easement
Operational transmission line easement	- Operational easement generally 70 metres wide within which the 500 kV transmission line would be located Localised easement widening beyond 70 m to account for conductor swing, typically in locations where the span of conductors between transmission towers is larger
Access roads and tracks	- Treatment works at existing public roads and intersections to support construction requirements would be permanent improvements to be maintained by the relevant road authority - New permanent access to the transmission line easement and switching stations
Land requirements	- Total permanent areas (including transmission line easement and access road easements): 926 ha 1014 ha - Total freehold acquisition areas (including whole of property and substation acquisition areas): 305 ha

Project element	Summary of the amended project
Vegetation management	• Vegetation within the easement would be maintained to achieve operational and safety requirements, including bushfire risk management (indicatively 13.5 m below the conductors under maximum operating line conditions) • Hazard trees that pose a risk to safe operation of the transmission line by falling onto tower structures, conductors and associated infrastructure would be removed to manage any future risk to the transmission infrastructure • Vegetation in the easement and in asset protection zones (APZ) would be managed as needed on a cyclical basis over the life of the project
Resource requirements	• Operational workforce of up to 10 full-time equivalent workers • Resources used during operation would be associated with, but not limited to: — maintenance of electrical components at Eraring substation and the new switching stations such as transformers, reactors, control and protection systems, electric cabling and high voltage plant such as circuit breakers as required — maintenance of the transmission line and towers — maintenance of access tracks and roads — maintenance of fences and access gates — maintenance activities and use of machinery and vehicles (e.g. fuels, lubricants and metals) — maintenance of vegetation throughout the transmission line easement and along access tracks and roads — potable and non-potable water requirements — electricity for the operation of the switching stations and communications facilities • During operation of the project, about 10,000 L of water per year would be required for maintenance activities, on-site staff facilities and testing of firefighting systems and services • Potable water would preferentially be sourced from council owned potable water supplies. Water would be purchased and transported to the switching stations as required, where it would be stored in water tanks



Source: EMM (2026); Beca (2025); DCSSS (2024); FCNSW (2022); ESRI (2026); DFSI (2017)



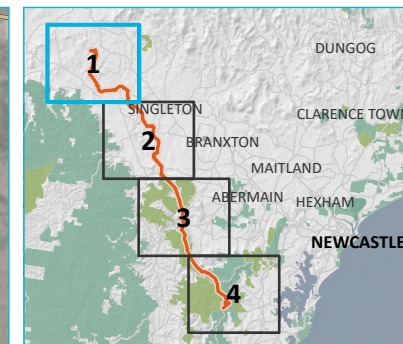
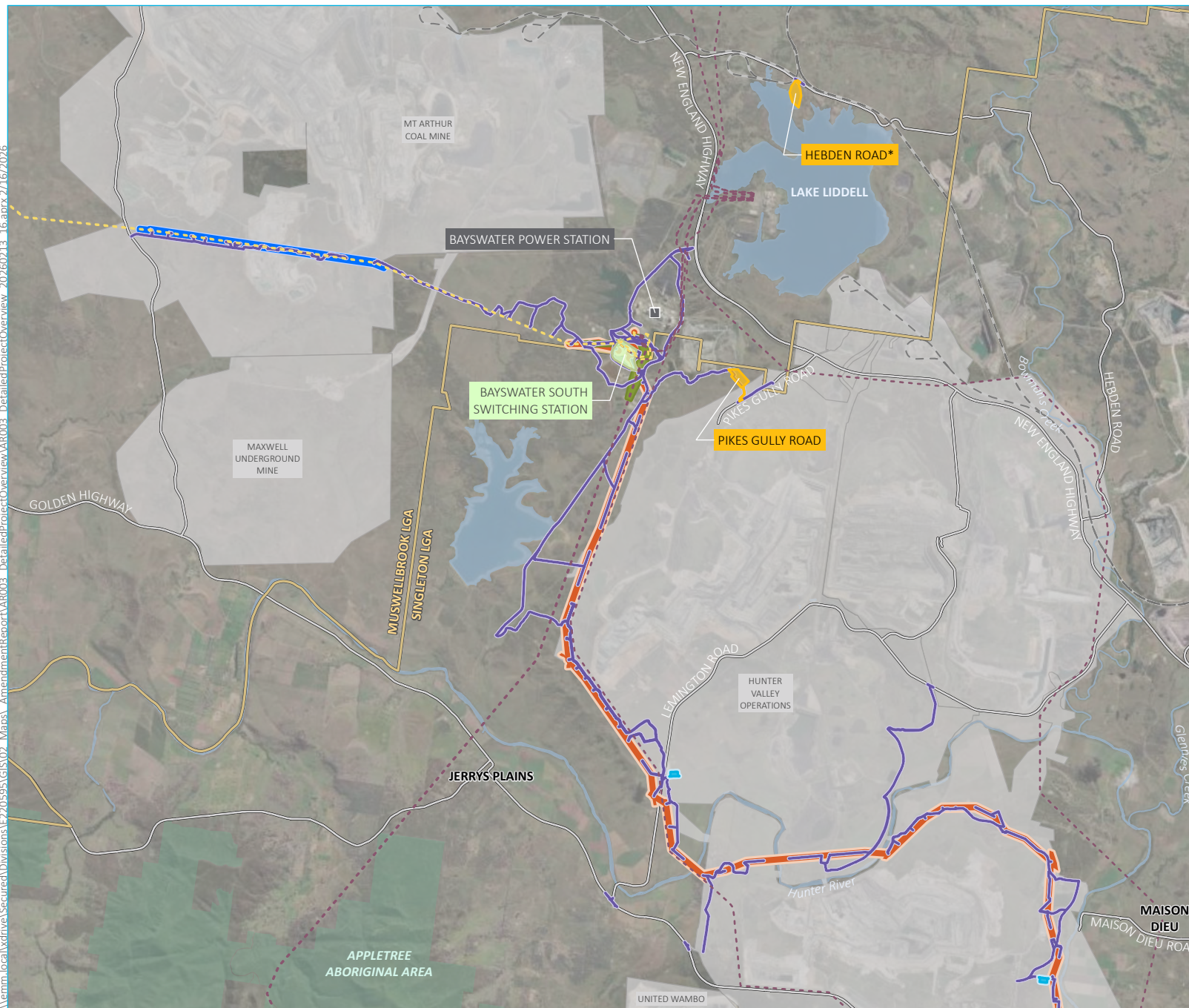
KEY

- | | | |
|--|--|---|
| Exhibited HTP project impact area | Power station | Named waterbody |
| Amended project impact area | 330 kV transmission line | State forest |
| HTP corridor | 500 kV transmission line | NPWS reserve |
| Switching station | Railway | State conservation area |
| Construction support site | Major road | Defence |
| Laydown area | Named watercourse | Energy |
| Adjustment to existing transmission line | | |
| Upgrades to existing transmission line | | |
| Access tracks, road upgrades and intersection upgrades | | |

Amended project overview

Hunter Transmission Project
Amendment Report
Figure A.1

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KEY

Amended project impact area

- HTP corridor
- Bayswater South switching station
- Construction support site (*with temporary worker accommodation)
- Laydown area
- Adjustment to existing transmission line (lines 31 and 32)
- Upgrades to existing transmission line (lines 5A3 and 5A4)
- Access tracks, road upgrades and intersection upgrades

Existing environment

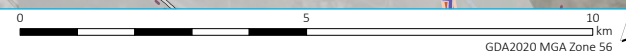
- Power station
- 330 kV transmission line
- 500 kV transmission line
- Railway
- Major road
- Named watercourse
- Named waterbody
- NPWS reserve
- Energy
- Local government area

Amended detailed project overview
Map 1 of 4

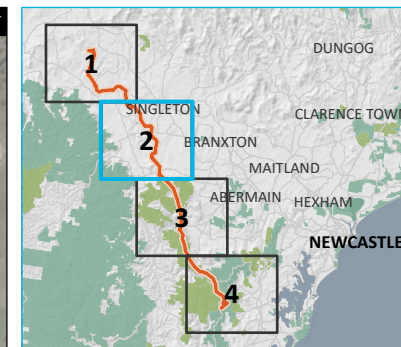
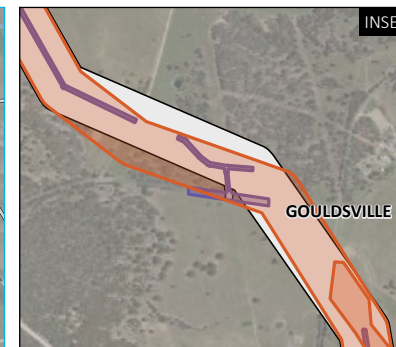
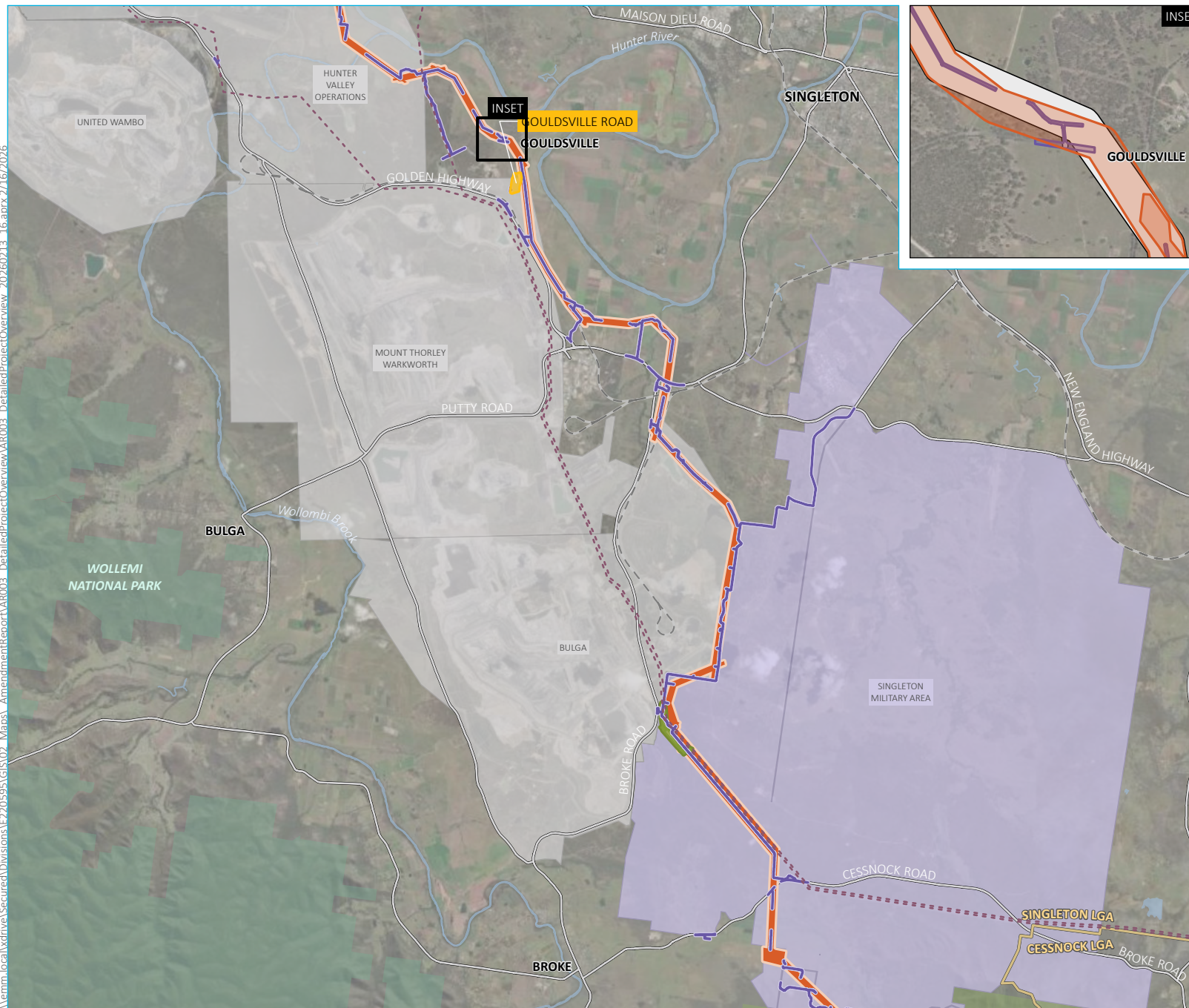
Hunter Transmission Project
Amendment Report
Figure A.2



Source: EMM (2026); Beca (2025); DCSSS (2024); ESRI (2026)



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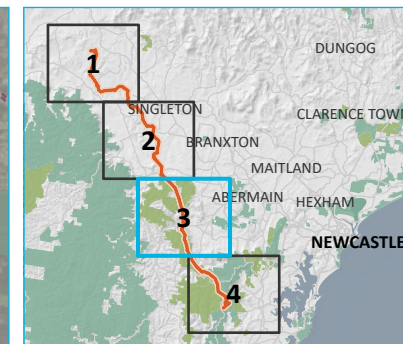
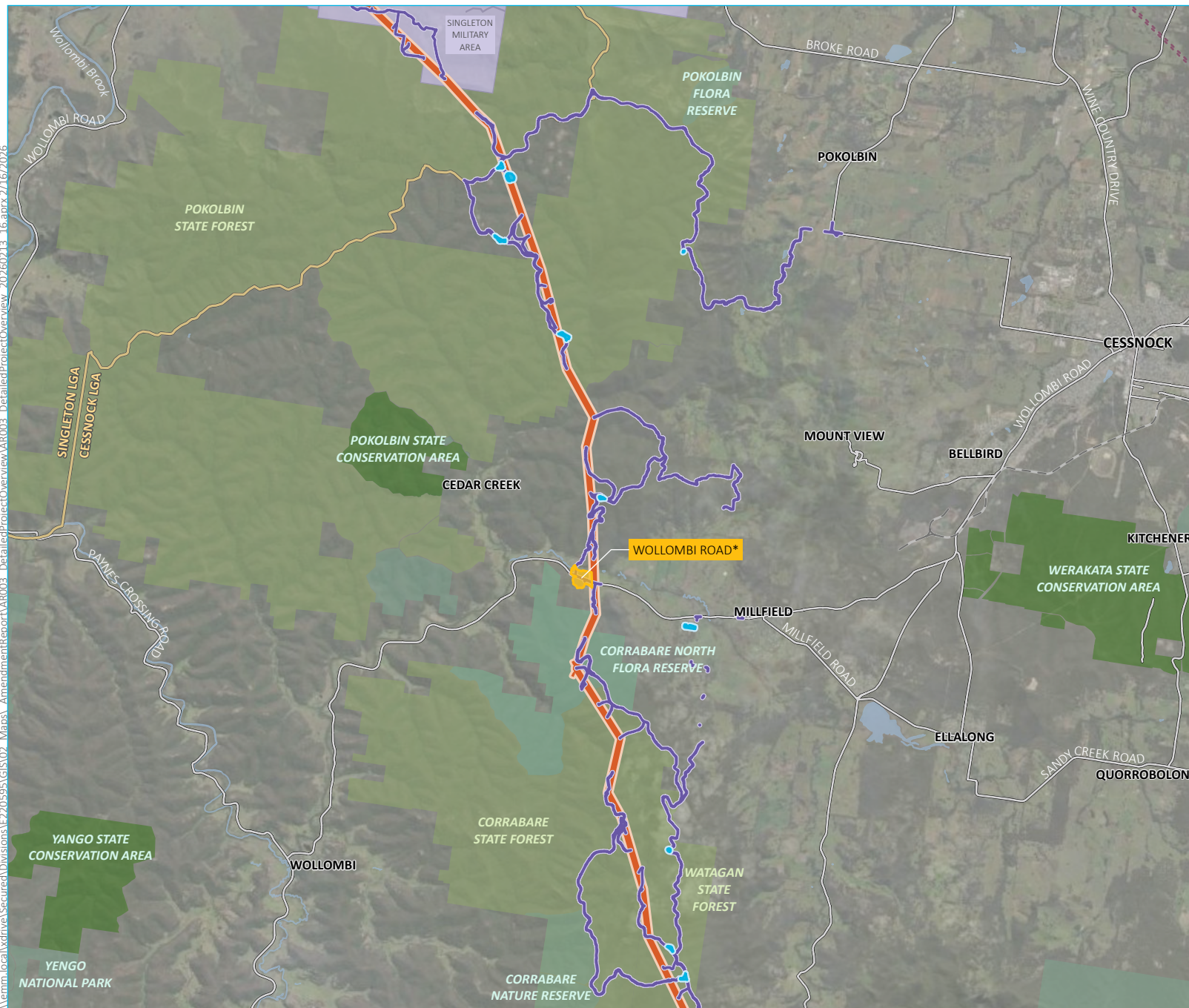
- KEY**
- Amended project impact area
 - HTP corridor
 - Construction support site (*with temporary worker accommodation)
 - Adjustment to existing transmission line (line 81)
 - Access tracks, road upgrades and intersection upgrades
 - Existing environment
 - 330 kV transmission line
 - Railway
 - Major road
 - Named watercourse
 - Named waterbody
 - NPWS reserve
 - State forest
 - Defence
 - Energy
 - Local government area

Amended detailed project overview
Map 2 of 4

Hunter Transmission Project
Amendment Report
Figure A.2



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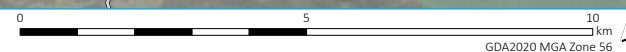
- KEY**
- Amended project impact area
 - HTP corridor
 - Construction support site (*with temporary worker accommodation)
 - Laydown area
 - Access tracks, road upgrades and intersection upgrades
 - Existing environment
 - 330 kV transmission line
 - Railway
 - Major road
 - Named watercourse
 - Named waterbody
 - NPWS reserve
 - State conservation area
 - State forest
 - Defence
 - Local government area

Amended detailed project overview
Map 3 of 4

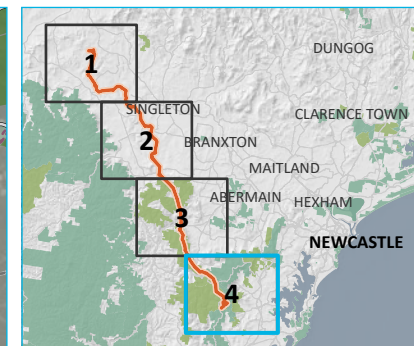
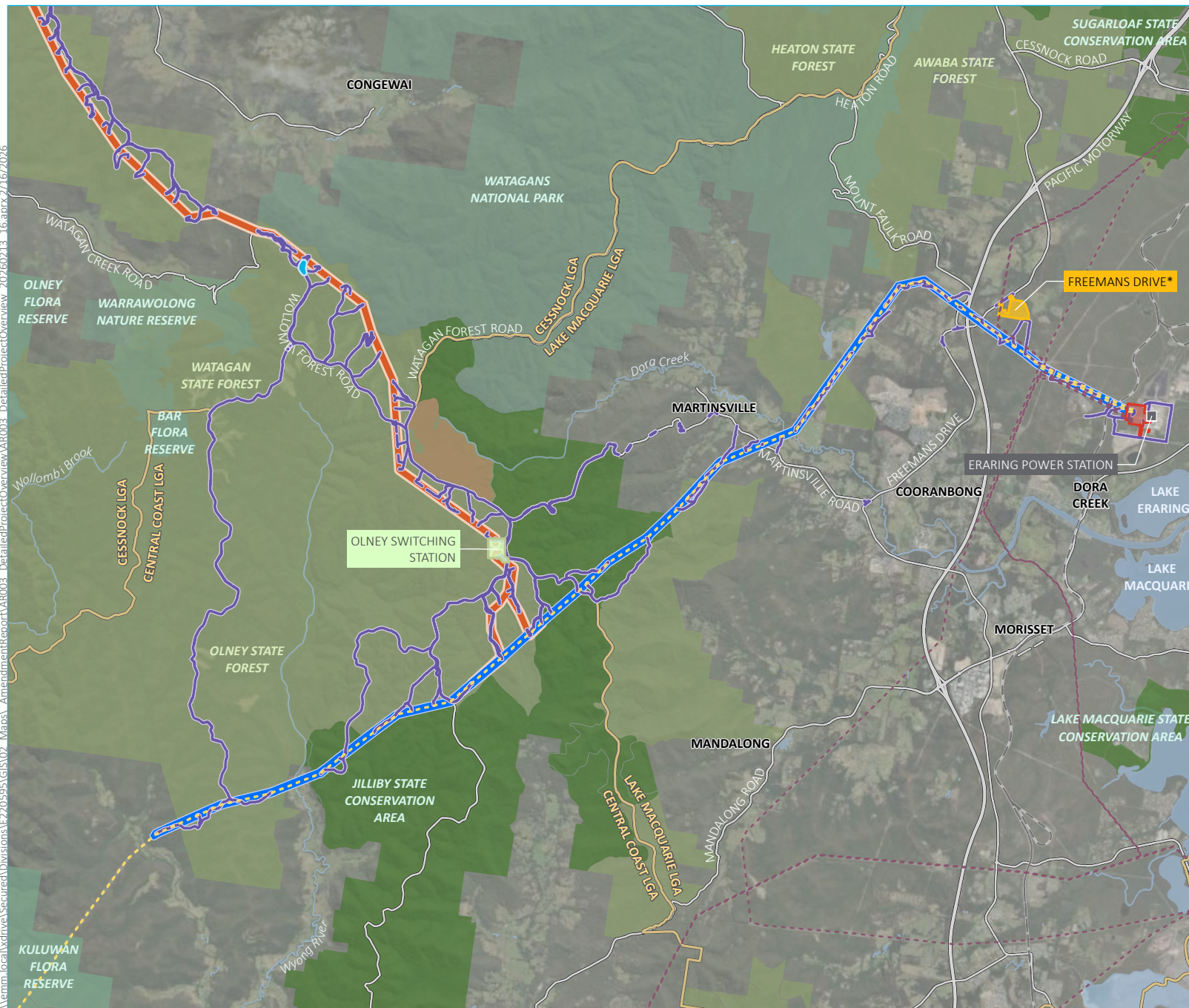
Hunter Transmission Project
Amendment Report
Figure A.2



Source: EMM (2026); Beca (2025); DCSSS (2024); ESRI (2026)



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KEY

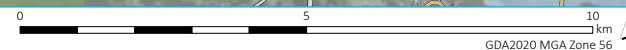
- Amended project impact area
- HTP corridor
 - Olney switching station
 - Construction support site (*with temporary worker accommodation)
 - Laydown area
 - Eraring Substation upgrade
 - Upgrades to existing transmission line (lines 5A1 and 5A2)
 - Access tracks, road upgrades and intersection upgrades
- Existing environment
- Power station
 - 330 kV transmission line
 - 500 kV transmission line
 - Railway
 - Major road
 - Named watercourse
 - Named waterbody
 - NPWS reserve
 - State conservation area
 - State forest
 - Recreation area
 - Local government area

Amended detailed project overview
Map 4 of 4

Hunter Transmission Project
Amendment Report
Figure A.2



Source: EMM (2026); Beca (2025); DCSSS (2024); ESRI (2026)



A.2 Project components

A.2.1 New transmission line

The new transmission line would consist of a 500 kV double circuit line. It would have 24 phase conductors (also known as cables or wires) with 12 phase conductors per circuit (4 conductors per phase), 2 earth wires and a minimum vertical clearance of around 13.5 metres (see Image A-1).



Image A-1 Example 500 kV double circuit transmission line and towers (Eraring to Kemps Creek)

A.2.2 Transmission towers

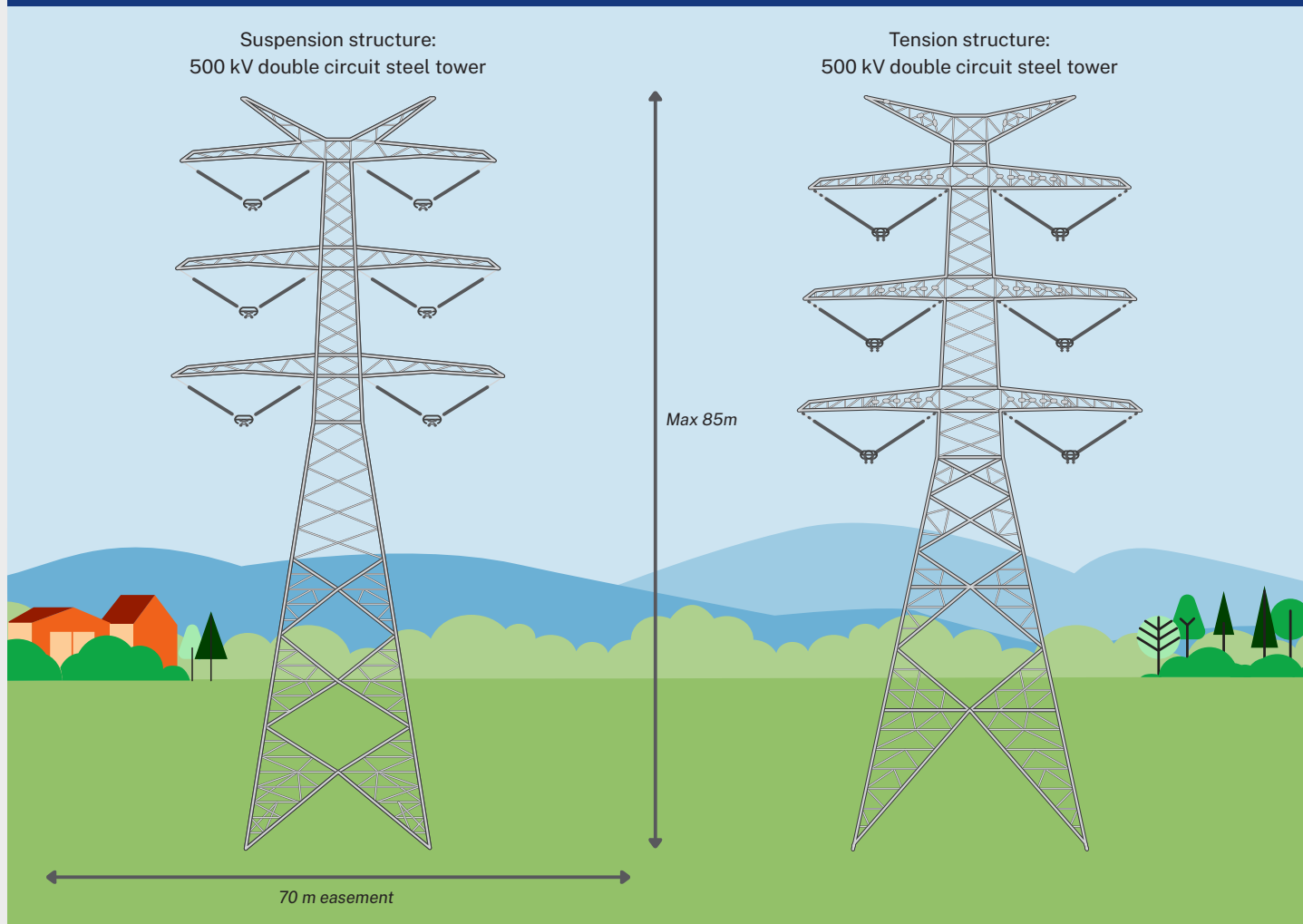
The 500 kV transmission lines would be supported on a series of transmission towers. The final location and specification of each transmission tower would be dependent on a range of factors such as distance between each structure, structure loading, required vegetation clearances, transmission line voltage, changes in direction of the transmission line route, local geotechnical conditions, topography and local environmental constraints (such as the need to avoid specific areas of biodiversity value or to span watercourses). The type and arrangement of the transmission towers would continue to be refined as part of the finalisation of the project design, with a view to further minimising environmental impacts within the identified transmission line easement, wherever practicable.

The transmission tower type for the 500 kV network infrastructure would consist of free-standing steel lattice towers, and an area of around 60 metres by 70 metres around each transmission tower (around 4200 square metres) would be permanently cleared of vegetation. Depending on local circumstances, the height of the majority of the transmission towers would be up to 75 metres with some instances up to 85 metres to minimise impacts to environmentally sensitive areas. The number, location and type(s) of tower required would be confirmed as part of detailed design. The indicative arrangement for the 500 kV transmission line and towers is provided in Figure A-3 and a summary of transmission tower design for the project is provided in Table A-2.

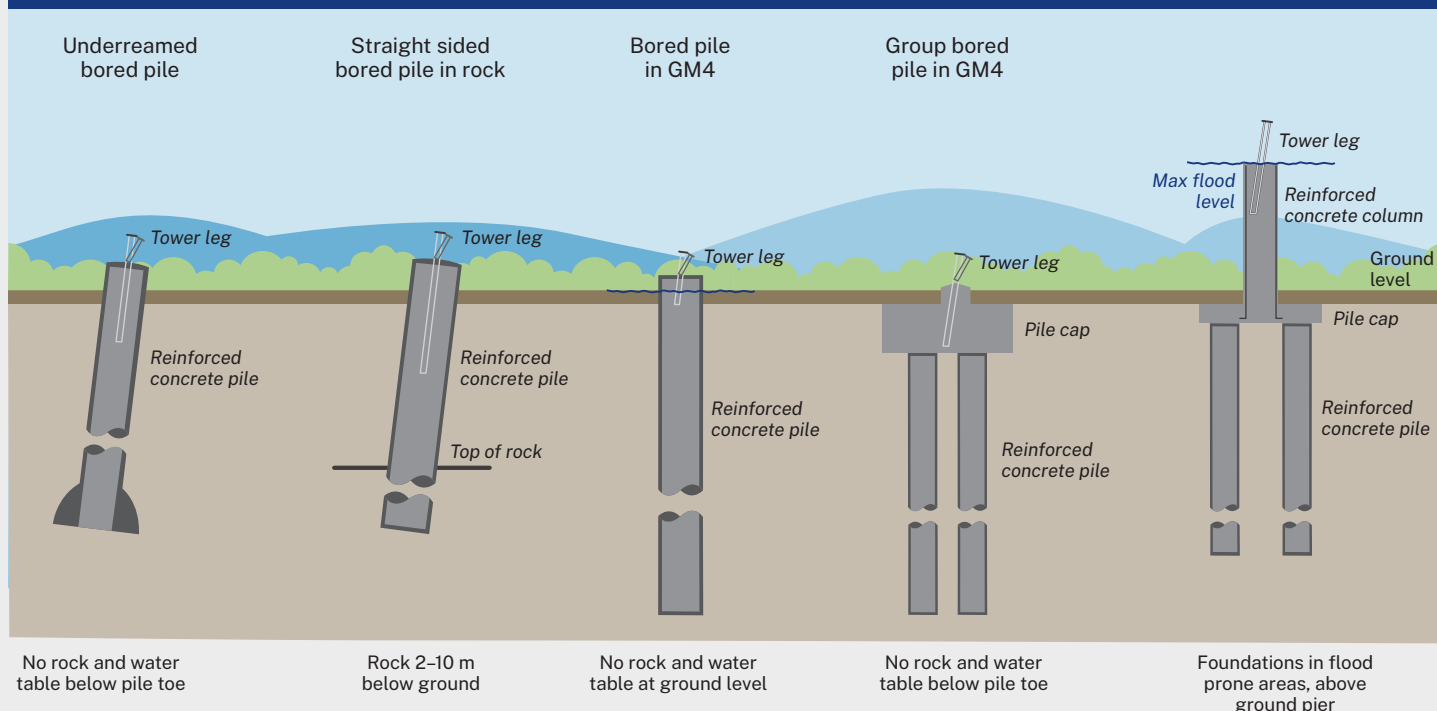
Table A-2 500 kV transmission tower design

Aspect	Description
Number of towers	Around 230
Type	Steel lattice towers, comprising: • Suspension towers: light or heavy – used to support the transmission conductors (wires/cables). Primary function is to keep the wires at a safe height above the ground and to support the weight of the cables across long spans. Typically used for straight sections of the transmission line. Towers would have a permanent base operational footprint of around 20 m by 20 m (400 m²) (see Figure A-3) • Tension towers: light, medium or heavy – used as the anchoring points to connect and apply tension to the conductors. Typically, the first and last towers of long sections of conductors. Used where there is a change in direction along the transmission line, though can also be used between long runs of suspension towers. Would have a permanent base operational footprint of around 25 m by 25 m (625 m²) (see Figure A-3)
Height	Maximum height of up to 85 m and may vary depending on engineering requirements
Foundations	Would vary with geotechnical conditions with standard pile foundations in normal soils and special pile foundations (e.g. larger diameter and deeper foundations) in poor soils, floodplains, and areas with steep slopes and mine subsidence/fill (see Figure A-3)
Communications	Transmission line towers would include communications infrastructure consisting of optical fibre
Spacing	Transmission line towers are typically spaced between 300 to 600 m apart but may be spaced at a minimum of 75 m with transmission line towers up to around 1.3 km in some cases (e.g. where there is terrain or crossing constraints - road, rail or watercourses)

Transmission line tower types



Foundation types



NOTE: Figure not to scale. Typical widths only, may vary on a case by case basis.

Figure 4.3

Indicative concept design of the 500 kV transmission line tower types

A.2.3 New switching stations and upgrades to existing substations

The new transmission line would connect into the existing electricity system at 2 new 500 kV switching stations – the Bayswater South switching station in the north and the Olney switching station in the south (see Figure A-1 and Figure A-2 (Map 1 and Map 4)).

Upgrades at the existing substations at Bayswater and Eraring power stations would also be required to enable connection into the existing electricity system and to allow operation of the HTP (see Figure A-2 (Map 1 and Map 4)).

Bayswater South switching station

Bayswater South switching station would be around 400 metres southwest of the existing substation at Bayswater Power Station on land owned by AGL. It would be accessed off the New England Highway via new and existing access roads and tracks at Bayswater Power Station (see Figure A-2 (Map 1)).

Bayswater South switching station would be around 380 by 410 metres (15.6 hectares). This includes an asset protection zone of 32 metres adjacent to woodland and 25 metres adjacent to grassland for bushfire protection. Further information on potential bushfire impacts and asset protection zone requirements is provided in *Chapter 21 (Hazards and risk) of the EIS and section 5.15 of the Amendment Report*.

The following key infrastructure would be installed at the new Bayswater South switching station:

- 500 kV switchyard to connect to the NSW transmission network
- supporting electrical components including busbars, circuit breakers, isolators
- line shunt reactors
- **underground fibre optic communication connection to the Bayswater substation within the HTP corridor**
- gantries to connect with transmission lines
- communications equipment and control and protection systems
- supporting service building for communications, control and protection systems
- maintenance facility, including a water tank and storage sheds
- oil containment system (including bunding and containment tank) and oil water separation facility
- utilities (including communications, electricity, water supply, drainage and sewer infrastructure)
- amenities for operational and maintenance staff, including a parking area
- access roads and safety and security infrastructure (gates, fencing, lighting and cameras).

Space would be provided at Bayswater South switching station to allow for additional switching station infrastructure, such as additional line shunt reactors and switching station bays, and connections for additional transmission lines in the future. Bayswater South switching station would connect to:

- HTP 500 kV transmission line
- Line 5A3: Bayswater – Mt Piper 500 kV
- Line 5A4: Bayswater – Wollar 500 kV
- Bayswater Power Station 500 kV/330 kV substation
- a new 500 kV transmission line to support the future New England REZ.

An indicative concept design for Bayswater South switching station is provided in Figure A-4.

Olney switching station

Olney switching station would be located in Olney State Forest around 1.7 kilometres northwest of the existing Eraring to Kemps Creek 500 kV transmission line. It would be accessed via Watagan Forest Road **and other forest roads** in Olney State Forest (see Figure A-2 (Map 4)).

Olney switching station would be around 350 by 400 metres (14 hectares). This includes an asset protection zone of 75 metres to the west and 55 metres to the north, east and south for bushfire protection (see *Chapter 21 (Hazards and risk) of the EIS and section 5.15 of the Amendment Report* for further information on potential bushfire impacts and asset protection zone requirements).

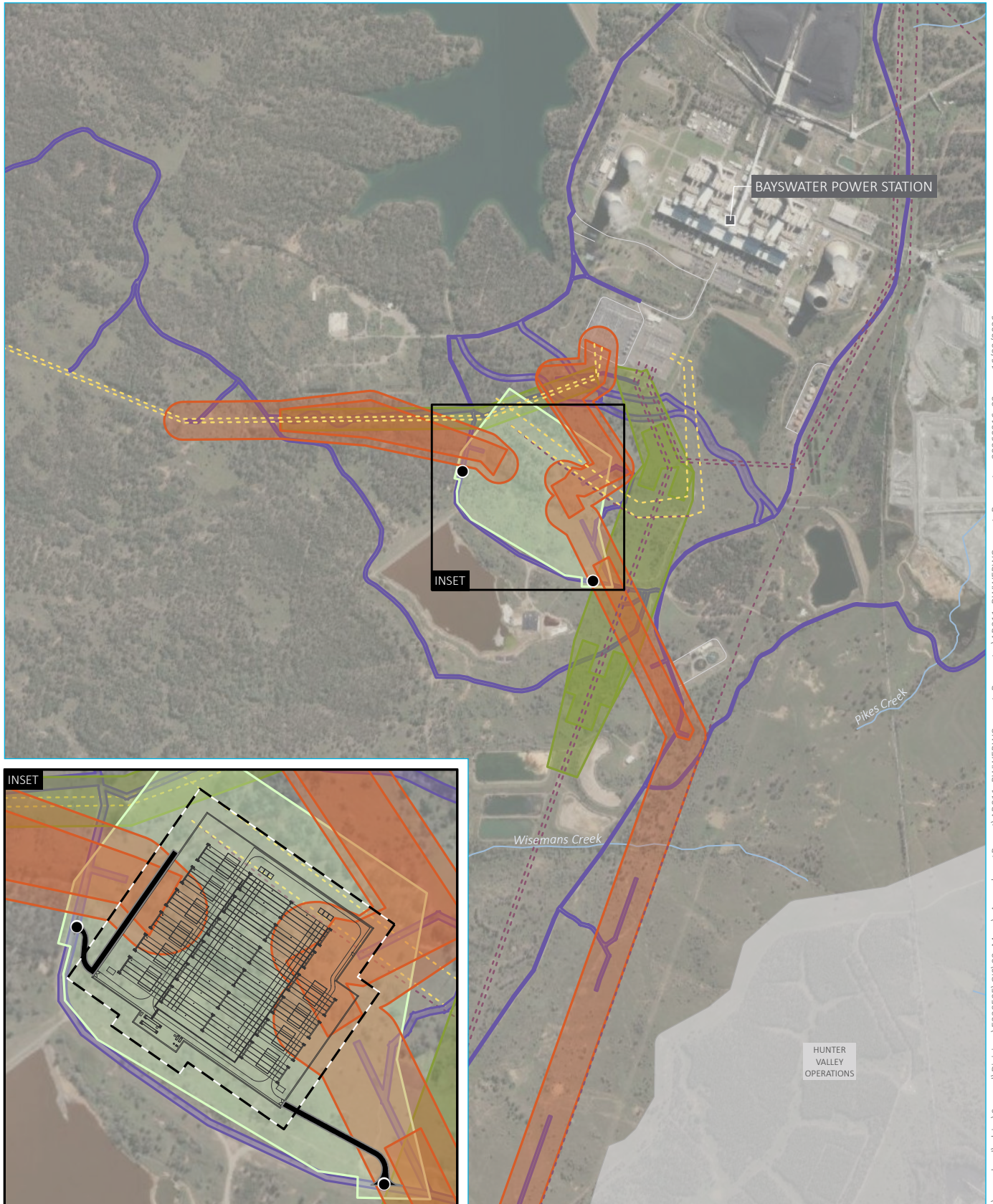
Key infrastructure that would be installed at the new Olney switching station would be the same as that installed at the Bayswater South switching station, however the Olney switching station would not feature the line shunt reactors, **underground fibre optic connections or additional switching bays**.

Like Bayswater South switching station, room would be provided at Olney switching station to allow for additional switching station infrastructure, such as line shunt reactors, and connections for additional transmission lines in the future.

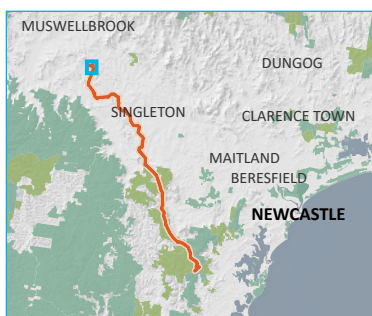
Olney switching station would connect to:

- HTP 500 kV transmission line
- Line 5A1 and 5A2: Eraring to Kemps Creek 500 kV transmission line
- Eraring Power Station substation.

A concept design of Olney switching station is provided in Figure A-5.



Source: EMM (2026); Beca (2025); ESRI (2026); DCSSS (2024); ABS (2021); DFSI (2017); GA (2009)



KEY

- Access road entry location
- Indicative switching station layout
- ▭ Asset protection zone
- ▬ Proposed access road
- Project impact area
- HTP corridor
- Bayswater South switching station
- Adjustment to existing transmission line (lines 31 and 32)

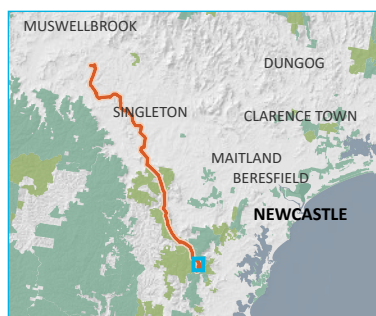
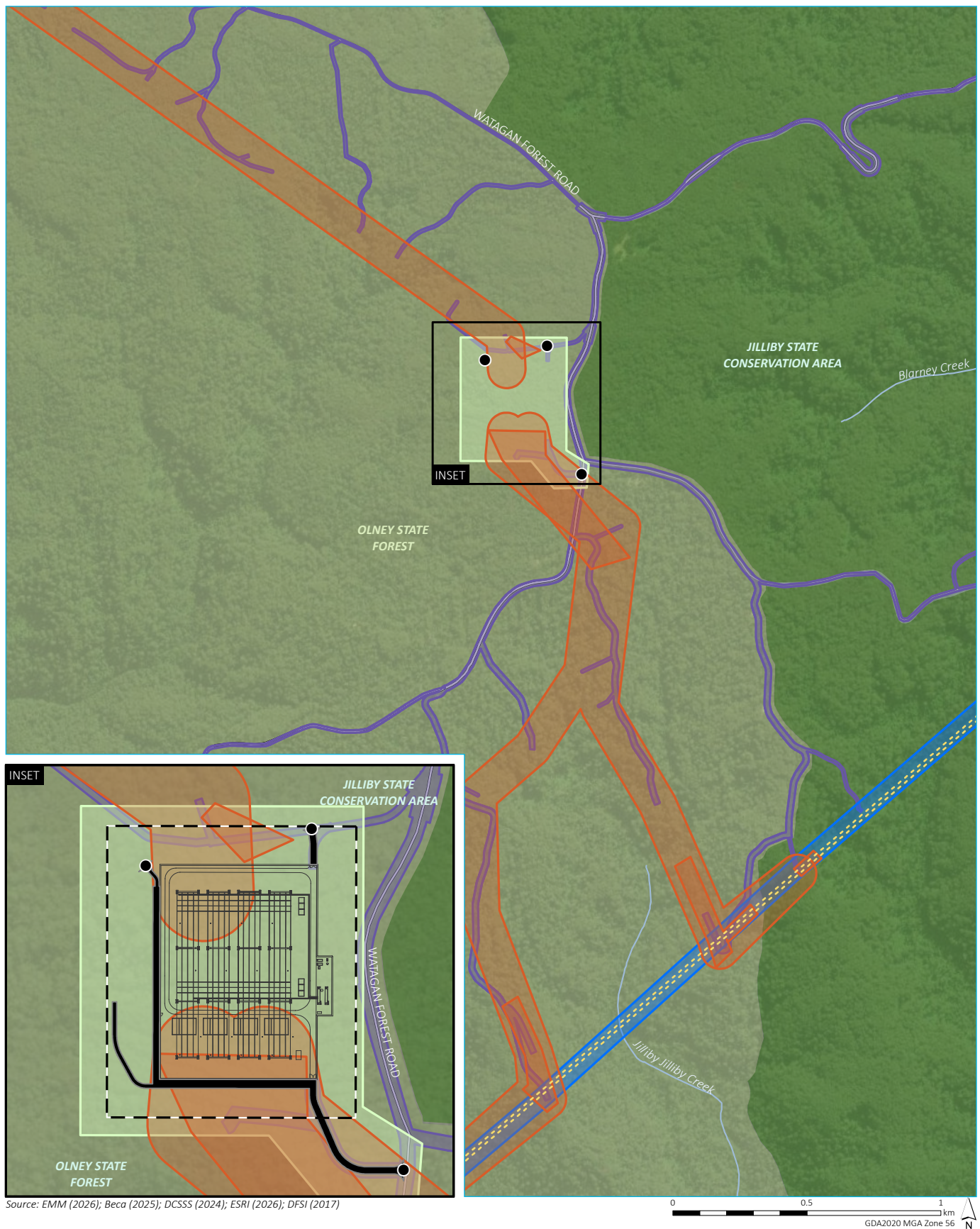
Access tracks, road upgrades and intersection upgrades

Existing environment

- Power station
- 330 kV transmission line
- 500 kV transmission line
- Minor road
- Named watercourse
- Energy

Concept design – Bayswater South switching station

Hunter Transmission Project
Amendment Report
Figure A.4



KEY

- Access road entry location
- Indicative switching station layout
- Asset protection zone
- Proposed access road
- Project impact area
- HTP corridor
- Olney switching station
- Upgrades to existing transmission line (lines 5A1 and 5A2)

Access tracks, road upgrades and intersection upgrades

Existing environment

- 500 kV transmission line
- Major road
- Minor road
- Named watercourse
- NPWS reserve
- State conservation area
- State forest

Concept design –
Olney switching station

Hunter Transmission Project
Amendment Report
Figure A.5

Upgrades to existing substations

Upgrades would be required at the existing 500 kV/330 kV substation at Bayswater Power Station and the 500 kV/330 kV substation at Eraring Power Station to accommodate the HTP.

The upgrades would include:

- Bayswater substation
 - works within the substation to trench and connect communications infrastructure to Bayswater South switching station via underground fibre cable
 - modifications and upgrades to protection, control, automation and communication equipment.
- Eraring substation
 - expansion of the substation to accommodate the installation of new transformers
 - **a larger footprint for constructability, including for parking and the adjustment of utilities**
 - **localised undergrounding of the optical fibre route**
 - relocating generator connections from Eraring Power Station and installation/replacement of associated switchgear as required
 - **inclusion of substation generator connections on the existing hardstand area**
 - **modification works on the existing bench**
 - relocation of the existing transformer spare unit
 - installation of new 500 kV/330 kV transformer units, augmentation of 500 kV/330 kV bays and associated switchgear and connections
 - adjustments to existing utilities and drainage infrastructure to accommodate the proposed substation expansion.

A.2.4 Adjustments and upgrades – existing transmission lines

Adjustments to the location of several 330 kV and 500 kV lines currently operated and maintained by Transgrid, and other lower voltage lines such as those operated and maintained by Ausgrid and mining infrastructure asset holders would be required to enable the construction of the HTP (see Figure A-2).

Upgraded overhead earth wire (to protect the line from lightning strike) and new communications systems (to enable monitoring of the network to identify faults) would be required at a number of existing 500 kV transmission lines operated by Transgrid to accommodate the operation of the HTP (see Figure A-2).

The adjustments/upgrades and new earth wire/communications infrastructure required on existing transmission lines are outlined in Table A-3.

Where possible, adjustments/upgrades to existing transmission lines would occur within existing easements.

Table A-3 Adjustment/upgrades to existing transmission lines

Existing transmission line	Adjustment/upgrade	Required adjustment/upgrade	Works to occur within existing easement	Figure reference
Line 5A3: Bayswater – Mt Piper 500 kV	Adjustment and upgrade	• Around 2 new towers to allow connection to the new transmission lines connecting to the proposed Bayswater South switching station • Earth wire upgrade	Within and outside of existing easement	Figure A-2 (Map 1)
Line 5A4: Bayswater – Wollar 500 kV	Adjustment and upgrade	• Around 2 new towers to allow connection to the new transmission lines connecting to the proposed Bayswater South switching station • Earth wire upgrade	Within and outside of existing easement	Figure A-2 (Map 1)
Line 31: Bayswater – Regentville 330 kV	Adjustment	• Around 6 new towers to shift line 31 around 50 m east to avoid a double circuit outage on Transgrid's existing transmission lines when stringing the new line over	Partially outside existing easement	Figure A-2 (Map 1)
Line 32: Bayswater – Sydney West 330 kV	Adjustment	• Around 6 new towers to shift line 32 roughly 50 m west to avoid a double circuit outage on Transgrid's existing transmission lines when stringing the new line over	Partially outside existing easement	Figure A-2 (Map 1)
Line 81: 330 kV: Newcastle – Liddell 330 kV	Adjustment	• Around 4 new towers to shift line 81 around 150 m southwest to avoid a double circuit outage on Transgrid's existing transmission lines when stringing the new line over	Partially outside existing easement	Figure A-2 (Map 2)
Line 5A1 and 5A2: Eraring – Kemps Creek 500 kV	Adjustment and upgrade	• Around 17 new towers to allow connection to the new transmission lines connecting to the proposed Olney switching station • Earth wire and communications systems installation	Within and outside of existing easement	Figure A-2 (Map 4)

The following adjustments would also be required to existing low voltage sub-transmission and distribution lines:

- Ausgrid 132 kV, 66 kV and 11 kV overhead lines
- HVO 66 kV and 11 kV overhead lines
- AGL 33 kV overhead line
- other private 11 kV overhead lines.

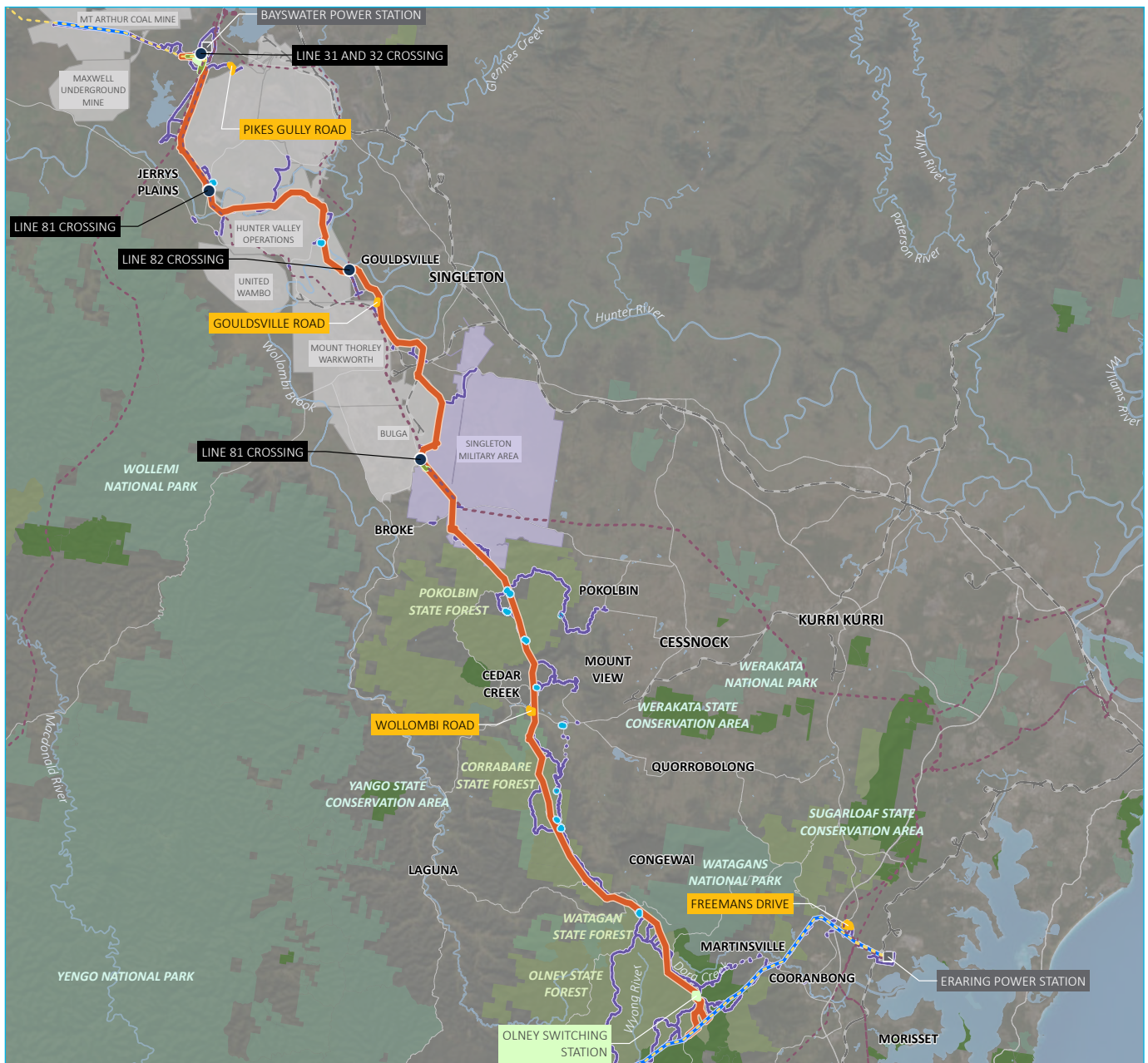
A schedule of potential utility adjustments is provided in *Appendix B (Revised utility adjustments schedule)* of this Amendment Report.

A.2.5 Crossings of existing transmission lines

Crossings required of existing transmission, sub-transmission and distribution lines include:

- Transgrid – crossing of Line 31 and Line 32 330 kV transmission line
- Transgrid – 2 crossings of Line 81 330 kV transmission line
- Transgrid – 2 crossings of Line 82 330 kV transmission line
- Ausgrid – 2 crossings of 132 kV sub-transmission lines
- Ausgrid — around 6 crossings of 66 kV sub-transmission lines
- Ausgrid — around 10 crossings of 11 kV distribution lines
- HVO - around 3 crossings of 66 kV sub-transmission lines
- HVO – around 4 crossings of 11 kV distribution lines.

The locations for crossing the existing 330 kV transmission lines listed above is shown in Figure A-6. A schedule of potential crossings is provided in *Appendix B (Revised utility adjustments schedule)* of this Amendment Report.



Source: EMM (2026); Beca (2025); ESRI (2026); DCSSS (2024); FCNSW (2022); ABS (2021); DFSI (2017); GA (2009)

KEY

- | | | |
|--|--------------------------------|-------------------------|
| ● Crossings of existing 330 kV transmission lines | Existing environment | Named waterbody |
| Amended project impact area | ■ Power station | NPWS reserve |
| HTP corridor | --- 330 kV transmission line | State conservation area |
| Switching station | - - - 500 kV transmission line | State forest |
| Construction support site | — Railway | Defence |
| Laydown area | — Major road | Energy |
| Adjustment to existing transmission line | — Named watercourse | |
| Upgrades to existing transmission line | | |
| Access tracks, road upgrades and intersection upgrades | | |

HTP crossings of existing 330 kV transmission lines

Hunter Transmission Project
Amendment Report
Figure A.6

A.3 Construction of the **amended** project

This section provides an overview of how the **amended** project would be constructed, including vegetation clearing requirements, work on the new and existing transmission lines, access requirements, construction support sites and temporary worker accommodation, and the construction program.

A.3.1 Vegetation clearing

Vegetation clearing or pruning would be required to:

- construct transmission towers
- establish the transmission line easement
- construct the switching stations
- adjust and upgrade existing transmission lines
- construct and upgrade access tracks and upgrade public roads and intersections
- establish construction support sites, including temporary worker accommodation, and other ancillary facilities
- manage hazard trees and potential bushfire risks.

The assessment of biodiversity impacts includes a disturbance area within the construction impact area to provide a more accurate estimation of the likely magnitude of vegetation clearance required, and any associated biodiversity impacts (see *section 7.3 of the EIS and section 5.2 of the Amendment Report*). The construction of different project elements would involve different levels physical disturbance and vegetation clearing requirements. A summary of these requirements is provided in Table A-4.

Based on the varying levels of vegetation impact associated with project elements, disturbance area categories have been identified to assess the potential biodiversity impacts of the project (see Figure A-7). No clearing zones have also been identified within the transmission line easement where vegetation removal is not required (e.g. gullies that can be spanned) and where no access is required during both construction and operation (see Figure A-8).

For further information on the application of the disturbance areas for the biodiversity assessment **of the amended project** see ~~Chapter 8 (Biodiversity)~~ **section 5.2** and ~~Technical Report 1~~ **Appendix E (Revised biodiversity development assessment report) of the Amendment Report.**

Vegetation clearing would be undertaken with the use of machinery, or manually where it is unsafe to operate machinery, where access is limited or where ecological constraints have been identified (see *Technical Report 1 - Biodiversity development assessment report to the EIS and Appendix E (Revised biodiversity development assessment report) of this Amendment Report*). Root balls would be retained where possible due to identified environmental and heritage constraints. The clearing method would be determined by:

- vegetation type or structure
- slope and terrain
- environmental and ecological constraints.

Some vegetation clearing and pruning may be carried out as pre-construction minor work. Such clearing would exclude vegetation that is part of a threatened ecological community or habitat for threatened species that is subject to biodiversity offsets (see *Chapter 24 (Environmental management) of the EIS and Chapter 6 (Environmental management) of the Amendment Report*).

Table A-4 Vegetation clearing requirements during construction

Project component	Requirements
Transmission towers	Construction of transmission towers would require vegetation removal for the following: • establishment of tower pads – which would require a cleared area of around 70 by 60 m (with the 70 m section placed along the length of the easement and the 60 m section across the width of the easement) for the construction of each structure in most instances, with larger construction benches of up to 100 by 70 m in steep terrain • stringing sites – which would require a cleared area of around 60 by 80 m where a direction change of the transmission line occurs • complete removal of vegetation would typically be required within these areas to facilitate safe access and use of construction vehicles, plant and equipment.
Transmission line easement	Vegetation clearing within the transmission line easement would require the removal of vegetation that exceeds vegetation clearance requirements (indicatively 13.5 m below the conductors under maximum operating line conditions). Groundcover and understorey vegetation may not need to be cleared but may be impacted during clearing of the mid-storey and upper storey vegetation. There would be no clearing required in the no clearing zones.
Hazard tree protection	The hazard tree zone encompasses land located adjacent to the transmission line easement where selective tree removal, trimming or lopping would be undertaken to manage any risk of damage to transmission lines and structures in the event of tree fall. For the purpose of the EIS, hazard trees (trees outside the easement that are of a sufficient height which, if they were to fall, would exceed the clearance requirements for the transmission line, and are considered to be a hazard structurally), have been assessed as being removed in limited areas identified through LiDAR analysis of existing tree heights and topography.
Switching stations/substations	Areas required for the construction of the proposed Bayswater South switching station and Olney switching station including associated access roads and asset protection zones (APZs) would require full vegetation clearing. No vegetation clearing is proposed as part of the upgrade works at Bayswater substation or Eraring substation.
Access tracks	Construction of new access tracks would generally require full vegetation clearing. Upgraded tracks may require vegetation clearing, to achieve the same total width as new access tracks, for widening/formation work or where vegetation may be considered a safety hazard. Existing tracks/roads of a suitable width would not require vegetation clearing.
Construction support sites (including worker accommodation)	The areas required for the construction support sites, including the worker accommodation facilities, associated access roads and APZs, would require vegetation clearing. Construction support sites were selected based on a preference for previously disturbed/cleared areas.

Project component	Requirements
Stringing sites and laydown areas	The areas required for stringing sites and laydown areas would require vegetation clearing for stringing and other ancillary activities to be carried out during construction. This includes stringing sites and laydown areas within the transmission line easement and laydown areas outside the transmission line easement.

KEY: ■ Disturbance Area A ■ Disturbance Area A (centreline) ■ Disturbance Area B

Figure A-7 Indicative construction disturbance areas and vegetation clearing requirements

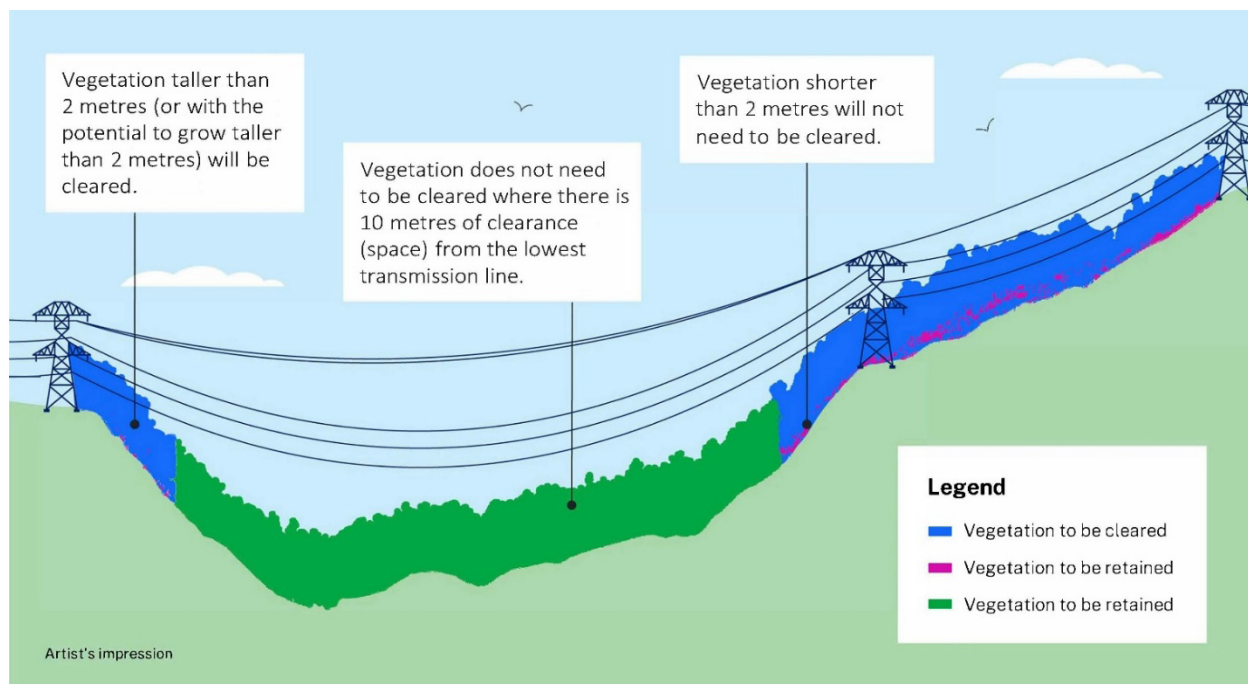


Figure A-8 Conceptual diagram of no clearing zones in the forested plateau

A.3.2 Work within the transmission corridor

New transmission lines and towers

Construction of the transmission line, including the towers and stringing sites, would largely take place within the HTP corridor (which is about 140 metres wide).

Construction of the new transmission line would include the following activities:

- vegetation clearing in line with the vegetation clearing model developed for the project
- site establishment, including building access tracks to and within the HTP corridor, construction of temporary or permanent access gates, upgrades to existing intersections, setting up laydown areas and stringing sites, and delivering equipment and materials to site
- developing the foundations of the transmission towers. Most of the towers would have standard foundations. Special foundations would be required in some areas to address geotechnical risks (such as mine subsidence and fill, floodplain and steep slopes)
- assembling and installing the transmission towers. The tower sections would be pre assembled at ground level using heavy lifting equipment, such as cranes (see Image A.2)
- stringing the transmission line between towers using tractors and helicopters/drones
- connecting the transmission line to the switching stations
- testing the transmission line
- commissioning the transmission line
- demobilising the construction site and rehabilitating temporary disturbance.



Source: Transgrid

Image A-2 Example 500 kV transmission line tower being assembled for Project EnergyConnect

Stringing sites

Stringing sites are used for the preparation, assembly and operation of stringing equipment to connect the transmission line to the towers.

To connect the transmission line, stringing sites would be positioned along the HTP corridor:

- where there are angles in the line over 30 degrees
- where there are large elevation changes
- where towers are either side of a major crossing such as a road, rail line or river
- at distances of no more than 10 kilometres.

The stringing sites are contained within the HTP corridor.

Crossings

As stated in *section A.2.5*, the new transmission line would cross existing transmission, sub transmission and distribution lines throughout the HTP corridor. Various construction methods would be used in the stringing of the new transmission line in locations where it would cross existing lines. Methodologies would include the use of cranes to support existing conductors for crossings of 330 kV transmission lines and the use of hurdles (including rope and net) to protect existing 132 kV and 66 kV sub-transmission lines.

The new transmission line would also cross several roads, rail lines and watercourses including the Hunter River. A drone or helicopter would typically be used to take a lead wire over the road/rail/watercourse to allow cables to then be pulled and strung to each tower within the stringing section (see Figure A-9).

Hurdles (including net and rope) and cranes would also be used as required in stringing activities for road and rail crossings.

The new transmission line would cross the road network in various locations throughout the **amended** project impact area, including the State road network at Putty Road near Broke Road, and regional roads such as Cessnock Road east of Broke and Wollombi Road west of Millfield. Further details on road network crossings are outlined in *Technical Report 4 – Traffic and transport impact assessment to the EIS*. During stringing work over roads, traffic management and out of hours arrangements are typically required. EnergyCo has consulted with relevant road authorities regarding these works and will continue to engage during detailed design to confirm specific arrangements and local requirements. These works are also subject to the requirements of a road occupancy licence.

Stringing of the new transmission line over rail lines would occur at 2 locations near the Putty Road / Broke Road intersection. This rail line is known as the Whittingham to Mount Thorley line and is operated by the Australian Rail Track Corporation (ARTC). This line provides coal transport to Mount Thorley Warkworth, Wambo and Bulga Coal Mines. Stringing activities across rail lines would be undertaken in consultation with the ARTC and would likely be carried out during rail maintenance periods or scheduled rail shut downs and therefore would not impact rail services.

The new transmission line would cross watercourses and riparian corridors in numerous locations throughout the HTP corridor, including 3 crossings of the Hunter River and one crossing of the Wollombi Brook (near its confluence with the Hunter River). Further details on watercourse crossings are outlined in *Chapter 17 (Surface water) of the EIS* and *Technical Report 10 – Surface water impact assessment to the EIS*, **as well as section 5.11 of the Amendment Report**.

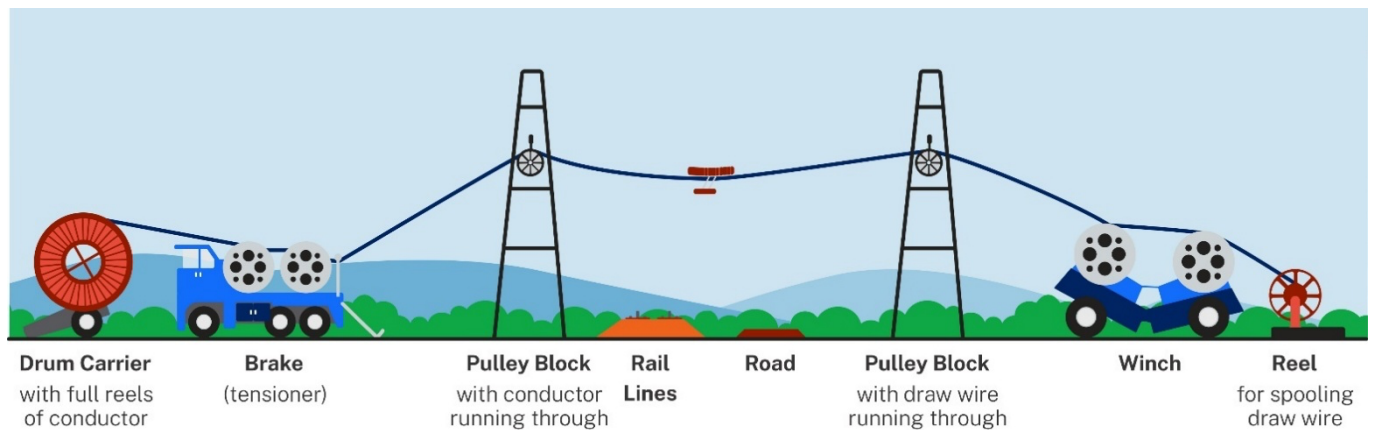


Figure A-9 Example of transmission line construction at road and railway crossings

A.3.3 Work on existing transmission lines

Adjustment to existing transmission lines

In general, existing easements would remain unchanged where work on existing transmission lines is proposed. In some instances, such as tie-in works at the Bayswater South and Olney switching stations, minor localised widening of existing easements would be required. Following construction, new permanent easements would be established as needed for transmission infrastructure that is located outside of the existing easement.

Adjustments to existing transmission lines include:

- adjustments to the existing 500 kV transmission line at Bayswater to connect to the new Bayswater South 500 kV switching station and then tie-in with the existing Bayswater 500 kV/330 kV substation
- adjustments to an existing 330 kV transmission line at Bayswater near the Bayswater South 500 kV switching station to accommodate the new HTP 500 kV double circuit transmission line
- adjustments to an existing 330 kV transmission line within the Singleton Military Area
- adjustment to the existing 500 kV transmission line at Ravensdale to connect to the new Olney 500 kV switching station.

Adjusting the existing transmission lines would include the following key steps:

- pre-construction minor works
- vegetation clearing in line with the vegetation clearing model developed for the project, including for any minor localised widening of existing easements
- site establishment, including building access tracks, upgrades to existing intersections, setting up laydown areas, construction pads and stringing sites, and delivering equipment and materials to site
- third party utility and property adjustments
- developing the foundations of the adjusted transmission towers
- assembling and installing the adjusted transmission towers
- turning the existing transmission line off and disconnecting the transmission line from the old towers (an outage of the transmission line would be required)

- stringing the transmission line between the adjusted towers using tractors and helicopters/drones
- removing redundant towers and other infrastructure
- testing the adjusted transmission line
- commissioning the adjusted transmission line
- demobilising the construction site and rehabilitating temporary disturbance.

Construction of the adjusted transmission lines would typically occur within the associated existing easements or the HTP corridor.

Upgrades to existing transmission lines and towers

Upgraded earth wire would be required on Line 5A3 and Line 5A4 in the north and upgraded earth wire and communications systems would be required on Line 5A1 and Line 5A2 in the south. This infrastructure would be strung on existing transmission line towers.

Tower strengthening would also be required on various existing structures identified above, which would involve adding more braces to these existing towers. Temporary supports for the existing towers would not be required during tower strengthening activities as the existing braces would remain in place. Details of tower strengthening, including the number of towers requiring strengthening, would be confirmed during detailed design.

All works would be restricted to the existing transmission line easement maintained by Transgrid. Existing access roads and tracks would be used to undertake these works.

Road and rail crossings

Upgrades on Line 5A1 and Line 5A2 would occur in existing easements which cross over the M1 Pacific Motorway and the Sydney to Newcastle rail line in Cooranbong. Stringing methodologies over these assets would be confirmed during detailed design. It is likely that traffic management would be required during stringing activities over the M1 Pacific Motorway and a rail possession would likely be required to carry out stringing over the Sydney to Newcastle rail line. Further information on the proposed works is provided in *Chapter 11 (Traffic and transport) of the EIS and Appendix H (Revised traffic and transport impact assessment) of this Amendment Report*.

A.3.4 New switching stations and upgrades to existing substations

New switching stations

Construction of the new switching stations at Bayswater South and Olney would include the following key steps:

- pre-construction minor works, including traffic control (if required)
- vegetation clearing with erosion and sediment control measures as required
- site establishment, including building access tracks, setting up laydown areas, and delivering equipment and materials to site
- third party utility and property adjustments
- undertaking civil works to establish the pads for the new switching stations and associated infrastructure and services

- constructing the new switching stations
- installation of perimeter fencing and other works
- connecting the new transmission line to the new switching stations, and the new switching stations to the existing transmission network
- testing the new switching stations
- commissioning the switching stations
- demobilising the construction site and rehabilitating temporary disturbance.

Upgrades to existing substations

Works at the existing Bayswater substation would be limited to those required for connection to the new transmission line and commissioning. The construction methodology for the upgrade to the existing Eraring substation would include:

- demolition and removal of redundant electrical equipment
- earthworks to form or extend the substation bench
- modifying drainage structures
- installation of foundations, electrical equipment and security
- connection to the new transmission line
- commissioning.

Remote work at existing substations, consisting of replacing or upgrading existing control and communication equipment, would be completed in preparation for operation. There would be no noise or traffic impacts associated with this work.

A.3.5 Access

Vehicle movements

Construction vehicles would transport equipment, waste, materials and spoil, as well as workers.

Larger volumes of heavy vehicles would be required during main construction work associated with the transmission line and switching stations and would mainly be associated with the delivery of materials to the HTP corridor, laydown areas and construction support sites.

Light vehicle movements would generally be associated with workers travelling from nearby towns (local workforce and early works activities) and to and from individual work sites.

Non-standard or oversize and/or overmass loads would be required for the main construction work at the switching stations and substations (e.g. for transformer and reactor transport).

Construction trips would generally start from the construction support sites at Hebden Road, Pikes Gully Road, Gouldsville Road, Wollombi Road and Freemans Drive. The trip generation estimates for all the construction support sites are similar with the exception of Freemans Drive which is expected to have higher trips generated from the site, being the largest construction support site. Indicative maximum daily vehicle movements for Freemans Drive and the other construction support sites are provided in Table A-5.

Further information on the expected construction vehicle movements for construction of the project is provided in *Chapter 11 (Traffic and transport) of the EIS* and *Technical Report 4 - Traffic and transport impact assessment to the EIS, as well as in section 5.5 of the Amendment Report and Appendix H (Revised traffic and transport impact assessment) to the Amendment Report*.

Table A-5 Indicative vehicle movements during construction

Construction support sites	Maximum daily movements (peak construction)	
	Light vehicles	Heavy vehicles
Hebden Road	434	406
Pikes Gully Road	378	335
Gouldsville Road	434	406
Wollombi Road	378 434	335
Freemans Drive	562	480

The indicative total oversize and/or overmass vehicle movements for the duration of the project include those listed in Table A-6.

The scheduling of oversize and/or overmass vehicle movements would be subject to the requirements of the local road authorities and further traffic studies during detailed design of the HTP.

Table A-6 Oversize/overmass vehicle movements during construction

Component	Origin	Destination	Movements (total during construction)
Line shunt reactors	Port of Newcastle	Bayswater South switching station	3 deliveries
Transformers	Port of Newcastle	Eraring substation	7 deliveries
Auxiliary services buildings	Interstate	Bayswater South switching station	2 deliveries
	Port of Newcastle	Olney switching station	
	Intrastate		

For further detail on traffic and transport, refer to **section 5.5 of this Amendment Report and Appendix H (Revised traffic and transport impact assessment) to the Amendment Report**.

Access requirements

Based on the concept design and early construction planning potential access routes proposed to be used during construction of the HTP were identified and are listed in Table A-7 and shown in Figure A-10.

Table A-7 Summary of proposed access routes for construction

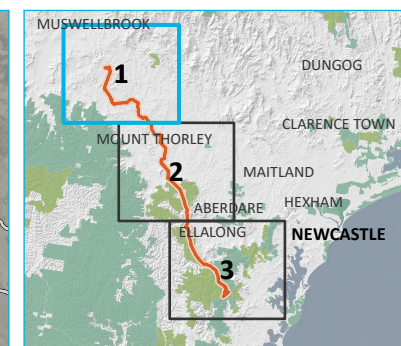
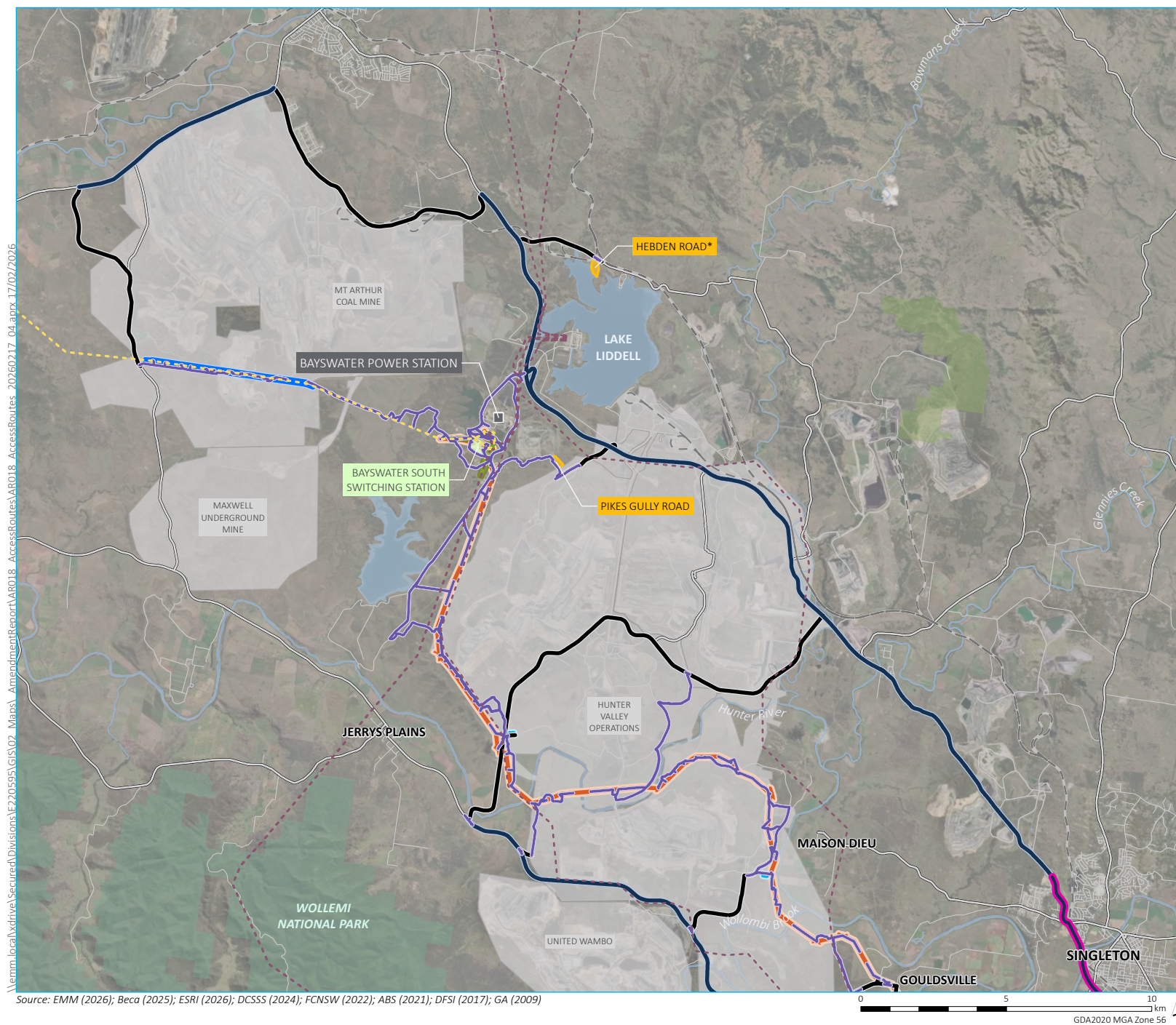
Local government area	Location (suburb)	Road name	Road classification
Muswellbrook	Muswellbrook	Denman Road	State road
	Muswellbrook	New England Highway	State road
	Edderton	Edderton Road	Local road
	Muswellbrook	Hebden Road	Local road
	Muswellbrook	Pikes Gully Road	Local road
	Muswellbrook	Thomas Mitchell Drive	Local road
	Muswellbrook	Unnamed Road to Bayswater Power Station	Local road
Singleton	Mount Thorley	Golden Highway	State road
	Warkworth	Jerrys Plains Road	State road
	Mount Thorley	Mitchell Line of Road	State road
	Mount Thorley	Broke Road (north of Broke)	Regional road
	Broke	Singleton Street	Regional road
	Broke	Wollombi Street	Regional road
	Lemington	Old Lemington Road	Local road
	Warkworth	Archerfield Road	Local road
	Broke	Cessnock Road	Local road
	Warkworth	Comleroi Road	Local road
	Gouldsville	Gouldsville Road	Local road
	Lemington	Lemington Road	Local road
	Warkworth	Long Point Road West	Local road
	Broke	Oakley Lane	Local road
	Singleton Military Area	Range Road	Local road
Cessnock	Cessnock	Allandale Road	State road
	Black Hill	John Renshaw Drive	State road
	Nulkaba	Wine Country Drive	State road
	Pokolbin	Broke Road (east of Broke)	Regional road

Local government area	Location (suburb)	Road name	Road classification
	Kurri Kurri	Cessnock Road	Regional road
	Millfield	Wollombi Road	Regional road
	Olney	Barwicks Road	Local road
	Olney	Bowmans Road	Local road
	Pokolbin	Broken Back Road	Local road
	Cedar Creek	Broken Back Trail	Local road
	Cedar Creek	Brush Creek Road	Local road
	Corrabare	Cabans Road	Local road
	Cedar Creek	Campbell Springs Trail	Local road
	Cedar Creek	Cedar Creek Road	Local road
	Corrabare	Cedar Ridge Road	Local road
	Kurri Kurri	Cessnock Road	Local road
	Corrabare	Crumps Road	Local road
	Olney	Farrells No 1 Road	Local road
	Olney	Farrells No 2 Road	Local road
	Olney	Farrells Road	Local road
	Corrabare	Fig Road	Local road
	Corrabare	Flick Road	Local road
	Olney	Halls Road	Local road
	Millfield	Hayes Road	Local road
	Corrabare	Hearns Road	Local road
	Olney	Heaton Road	Local road
	Corrabare	Langans Road	Local road
	Corrabare	Mahogany Road	Local road
	Cessnock	Maitland Road	Local road
	Pokolbin	McDonalds Road	Local road
	Olney	McGowans Road	Local road

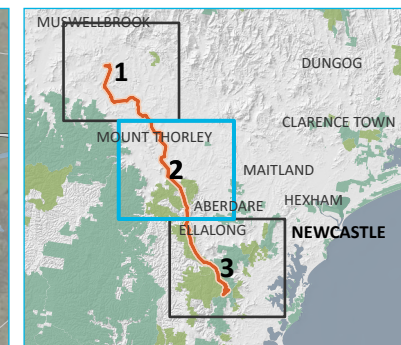
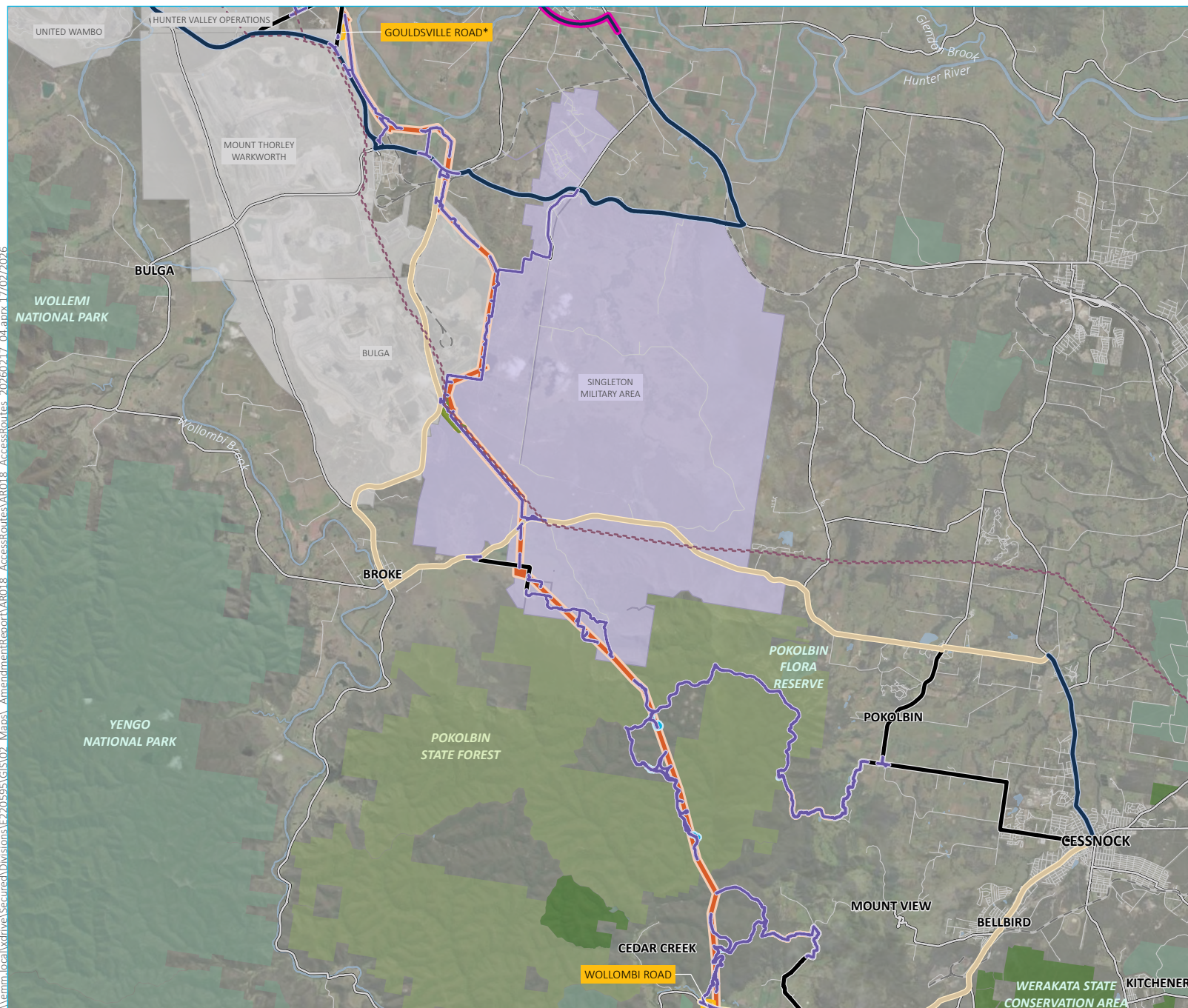
Local government area	Location (suburb)	Road name	Road classification
	Millfield	MF1 Road	Local road
	Millfield	Mount Baker Road	Local road
	Millfield	Mount View Road	Local road
	Olney	New Mill Road	Local road
	Millfield	North Road	Local road
	Pokolbin	Oakey Creek Road	Local road
	Olney	Old Mill Road	Local road
	Pokolbin	Pokolbin Mountains Road	Local road
	Cedar Creek	Sawpit Road	Local road
	Corrabare	Trig Road	Local road
	Corrabare	Turpentine Point Road	Local road
	Corrabare	Unnamed roads off Langans Road	Local road
	Olney	Watagan Creek Road	Local road
Lake Macquarie	Cooranbong	M1 Pacific Motorway	National and State road
	Cooranbong	Freemans Drive	State road
	Morisset	Mandalong Road	State road
	Morisset	Dora Street	State road
	Morisset	Main Road	State road
	Dora Creek	Wangi Road	State road
	Cooranbong	Alton Road	Local road
	Eraring	Construction Road	Local road
	Cooranbong	Freemans Drive (south of Cooranbong the M1 Pacific Highway)	Local road
	Dora Creek	Gradwells Road	Local road
	Dora Creek	Hawke Mount Road	Local road
	Martinsville	Martinsville Hill Road	Local road
	Martinsville	Martinsville Road	Local road

Local government area	Location (suburb)	Road name	Road classification
	Cooranbong	Mount Faulk Road	Local road
	Cooranbong	Mount Nelinda Road	Local road
	Dora Creek	Newport Road	Local road
	Freemans Waterhole	Palmers Road	Local road
	Martinsville	Pringles Road	Local road
	Dora Creek	Rocky Point Road	Local road
	Cooranbong	Valley Crest Road	Local road
	Martinsville	Watagan Road	Local road
Central Coast	Jilliby	Hue Hue Road	Local road
	Mardi	Old Maitland Road	Local road
	Warnervale	Sparks Road	Local road
	Ravensdale	Walkers Ridge Road	Local road
	Ravensdale	Watagan Forest Road	Local road
	Ravensdale	Wollombi Forest Road	Local road
	Wyong Creek	Yarramalong Road	Local road

Further information on key construction traffic routes from State roads, such as New England Highway, Golden Highway, Wollombi Road, Broke Road, Freemans Drive and the M1 Pacific Motorway is included in Figure A-10 to Figure A-13.



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KEY

- Pending completion of the Singleton Bypass
 - Construction route road class
 - Crown Road
 - State Road
 - Regional Road
 - Local Road
 - Amended project impact area
 - HTP corridor
 - Construction support site (*with temporary worker accommodation)
 - Laydown area
 - Adjustment to existing transmission line (line 81)
 - Access tracks, road upgrades and intersection upgrades
 - 330 kV transmission line
 - Railway
 - Major road
 - Minor road
 - Named watercourse
 - Named waterbody
 - NPWS reserve
 - State conservation area
 - State forest
 - Defence
 - Energy
- *scheduled for completion 2026

Access routes
Map 2 of 3

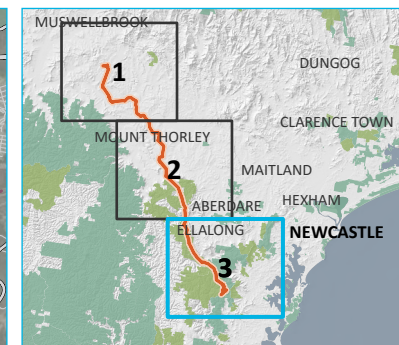
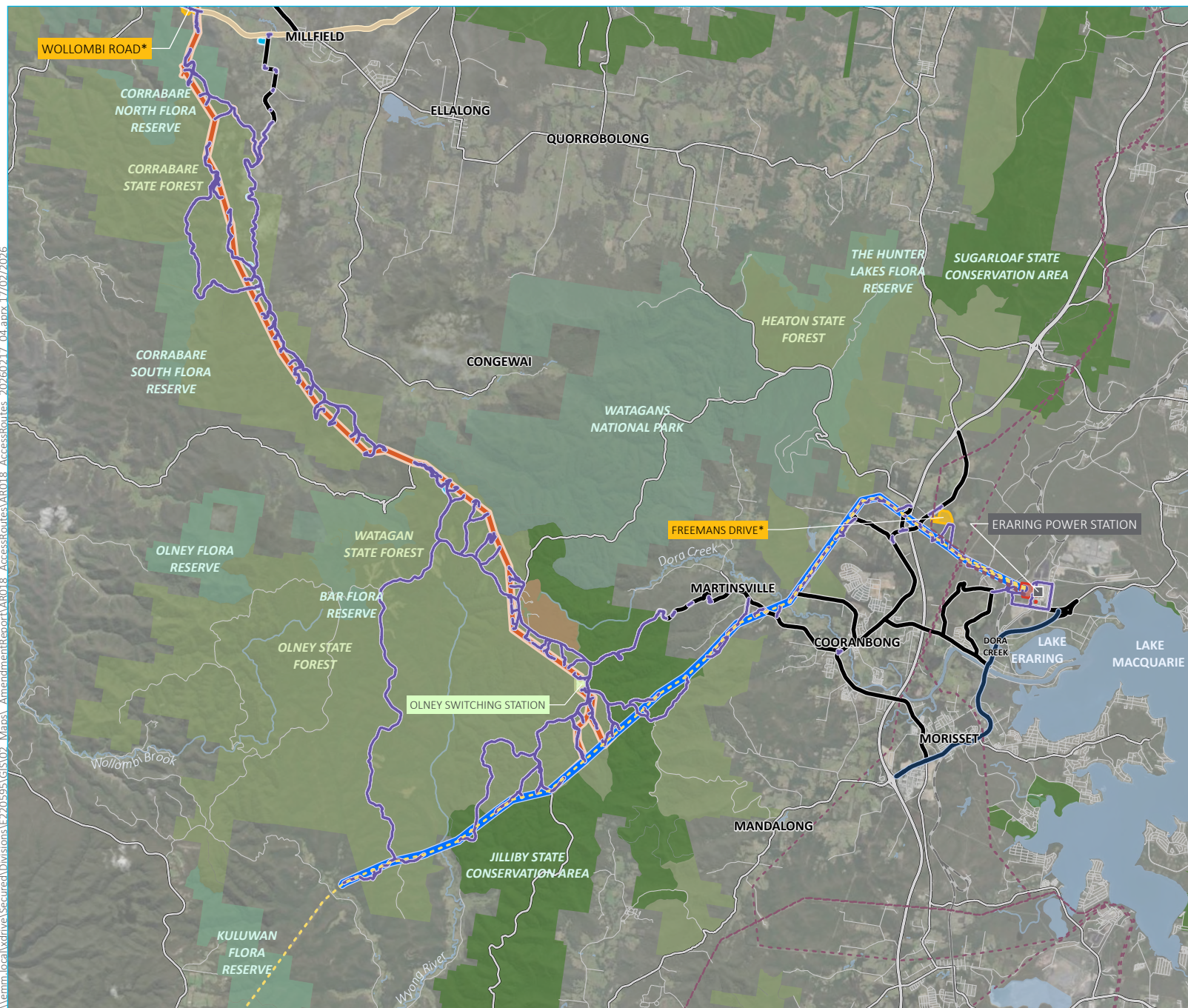
Hunter Transmission Project
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Figure A.10



Source: EMM (2026); Beca (2025); ESRI (2026); DCSSS (2024); FCNSW (2022); ABS (2021); DFSI (2017); GA (2009)



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KEY

Construction route road class

- Crown Road
- State Road
- Regional Road
- Local Road

Amended project impact area

- HTP corridor
- Olney switching station
- Construction support site (*with temporary worker accommodation)
- Laydown area
- Eraring Substation upgrade
- Upgrades to existing transmission line (lines 5A1 and 5A2)
- Access tracks, road upgrades and intersection upgrades

Existing environment

- Power station
- 330 kV transmission line
- 500 kV transmission line
- Railway
- Major road
- Minor road
- Named watercourse
- Named waterbody
- NPWS reserve
- State conservation area
- State forest
- Recreation area

Access routes
Map 3 of 3

Hunter Transmission Project
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Figure A.10

The project would require the use of a combination of new and existing access tracks on private properties and upgrades to the existing public road network. Some improvements to existing roads, intersections and access tracks would be required to provide appropriate and safe access during construction and operation. New and upgraded access tracks would be designed to accommodate the expected vehicle movements during both construction and operation. Existing public access roads and access tracks would generally be wide enough to accommodate a traffic lane in each direction, with lanes typically between 2.5 and 3.5 metres in width. Wider sections may be required during construction to accommodate passing or turning lanes for large vehicles.

Access tracks

Some of the existing access tracks proposed would require upgrades to accommodate construction vehicles and machinery. The upgrades required to existing access tracks would vary depending on the condition of individual tracks. They would generally need to be up to 6 metres wide and able to accommodate a 19 metre semi-trailer (or similar vehicle). Where there are no existing access tracks that provide appropriate access to the new transmission line corridor, and where existing conditions (such as terrain) prevent access along the transmission line corridor, new access tracks would be constructed. These new tracks would be within existing disturbed areas, wherever possible. New access tracks would be constructed to meet the same requirements as the upgrades to existing access tracks described above.

Access tracks have been chosen in consultation with landowners. Individual land use needs have been considered to enable the landowner's continued use of the land, as well as to minimise the overall environmental impacts. The requirements to retain or reinstate access tracks would be determined in consultation with landowners during property access negotiations and ahead of the commencement of project operation.

Upgrades to existing access tracks and the construction of new access tracks would generally include the following key steps:

- pre-construction dilapidation surveys
- vegetation clearing with erosion and sediment control measures as required
- site establishment, setting up laydown areas, and the delivery of equipment and materials to site
- establishing traffic control (if required)
- levelling using a grader and roller
- laying road material (crushed rock), compaction rolling and construction of drainage infrastructure as required
- demobilising the construction site and rehabilitating temporary disturbance.

As most roads in the State forests are only suitable for one-lane movement of heavy vehicles, traffic control would be required during the construction period. To reduce disturbance to recreational users of the forest, passing bays are proposed to improve road capacity and safety.

Table A-8 further describes the access track requirements for the construction of the project. The full extent of works for the upgrade of existing access tracks and the construction of new access tracks would be confirmed following further review and survey of the nominated access tracks.

Further discussion on traffic and transport is provided in *Chapter 11 (Traffic and transport) of the EIS* and *Technical Report 4 – Traffic and transport impact assessment to the EIS, as well as in section 5.5 of the Amendment Report and Appendix H (Revised traffic and transport impact assessment) to the Amendment Report*.

Table A-8 Access track requirements

Access track/road	Description
Existing tracks	Existing tracks include forest roads and tracks maintained by Forestry Corporation of NSW or Transgrid, or unsealed property access tracks, generally suitable for heavy vehicles. Some existing access tracks may require maintenance activities or upgrades along the formation, such as resurfacing or grading, or drainage work. Vegetation removal and pruning/trimming may be required in some locations where vegetation may be considered a hazard. Where pruning/trimming is required, it would be undertaken to avoid impacts on the long-term viability of the vegetation where possible. Other existing access tracks may require upgrades for safety and suitability. These tracks typically consist of unsealed property access tracks of varying conditions, from well established sections to rarely used, barely visible sections (i.e. requiring substantial upgrade). Upgraded access tracks are expected to require more substantial work to allow their use during construction compared with existing tracks/roads. Work may include earthworks to improve gradients, grading or resurfacing, formation widening or realignment, drainage work or upgrades to watercourse crossings. Vegetation clearing or pruning/trimming may be required for widening/formation work or where vegetation may be considered a roadside hazard. The total clearing width would generally be up to 10 m, with some limited areas (e.g. steep terrain, passing bays) requiring a clearing width of up to 20 m for batters and in limited areas up to 30 m.
New tracks	The locations of new access tracks have generally been selected to minimise environmental and property impacts. New tracks have been designed to include running the track along fence lines, using movement paths preferred by landowners, and going through existing property gates. Establishing the new tracks would typically include earthworks, grading, drainage work and construction of watercourse crossings. Fill material may be imported to provide a suitable capping material. To establish the new tracks, vegetation clearing or pruning/trimming may be required. The total clearing width would generally be up to 10 m, with some areas (e.g. steep terrain, passing bays) requiring a clearing width of up to 20 m and in limited areas up to 30 m.

The locations of existing access tracks, new access tracks and proposed upgrades to existing access tracks are shown in Figure A-14.

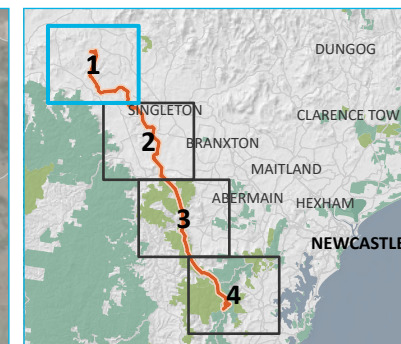
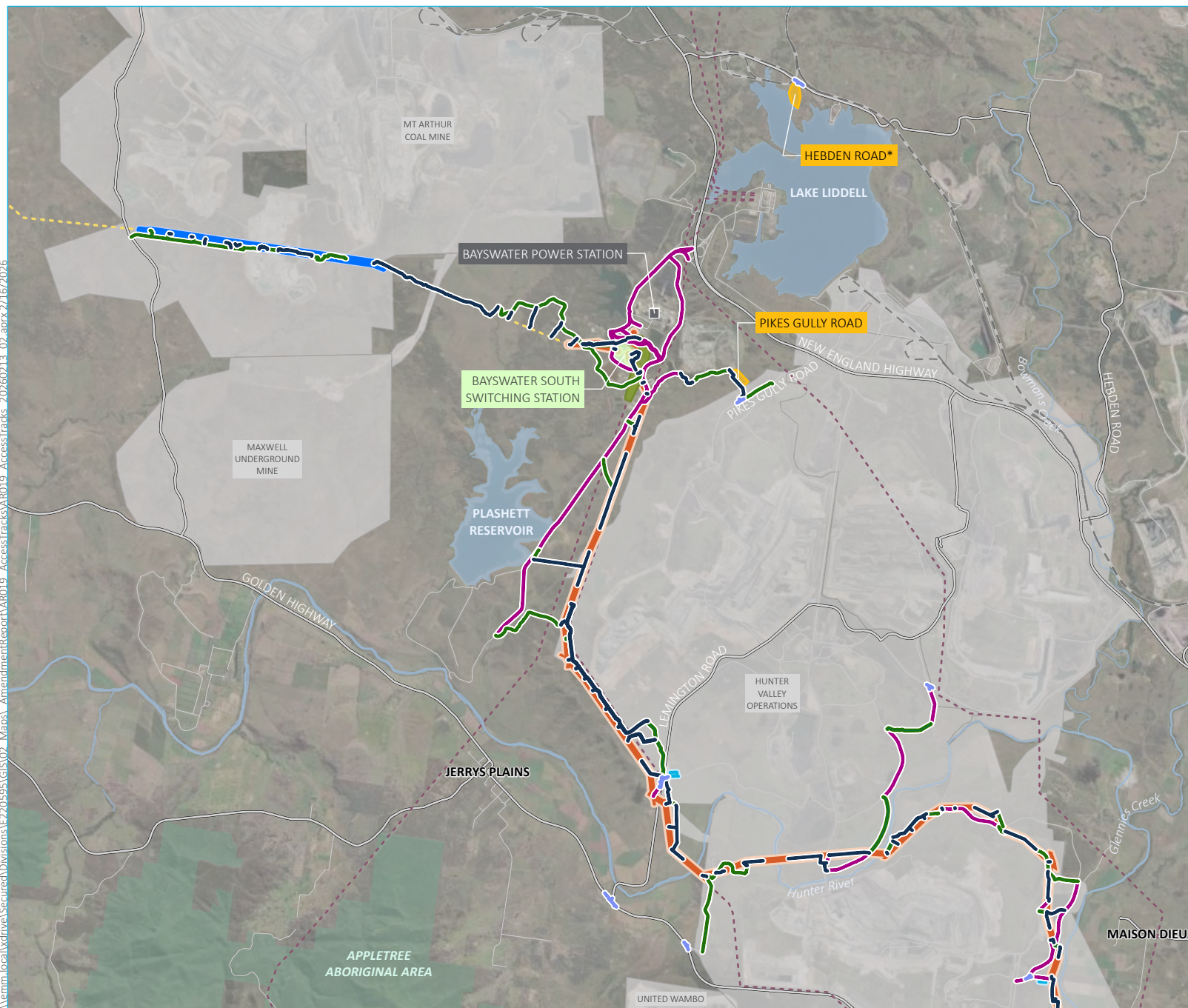
A summary of the proposed upgrades to forest roads maintained by Forestry Corporation of NSW is provided in Table A-9.

Table A-9 Proposed upgrades at existing forestry roads

Local government area	Road	Road classification (road owner)	Location	Works required
Cessnock	Broken Back Trail	Forestry	Various sections between Broken Back Road and Campbell Springs Trail in Broke	Localised widening for one lane movement for 19 m articulated heavy vehicles with operational traffic control required
	Cabans Road	Forestry	Various sections between Trig Road and Langans Road in Corrabare	Localised widening for one lane movement for 19 m articulated heavy vehicles with operational traffic control required
	Campbell Springs Trail	Forestry	Various sections between Broken Back Trail and around 4 km south of Broken Back Trail in Broke	Localised widening for one lane movement for 19 m articulated heavy vehicles with operational traffic control required
	Existing Track (adjacent Mount Baker Road in Mount View)	Forestry	Various sections between Mount Baker Road and Wollombi Road in Mount View	Localised widening for one lane movement for 19 m articulated heavy vehicles with operational traffic control required
	Langans Road	Forestry	Various sections between Cabans Road and Cedar Brush Walk in Corrabare	Localised widening for one lane movement for 19 m articulated heavy vehicles with operational traffic control required
	Trig Road	Forestry	Various sections between MF1 Road and Cabans Road in Corrabare	Localised widening for one lane movement for 19 m articulated heavy vehicles with operational traffic control required
	Watagan Creek Road	Forestry	Various sections between Wollombi Forest Road and around 2 km north of Wollombi Forest Road in Olney	Localised widening for one lane movement for 19 m articulated heavy vehicles with operational traffic control required

Local government area	Road	Road classification (road owner)	Location	Works required
Central Coast	Watagan Forest Road	Forestry	Various sections between Martinsville Road and Wollombi Forest Road in Ravensdale	Localised widening for one lane movement for 19 m articulated heavy vehicles with operational traffic control required
	Wollombi Forest Road	Forestry	Various sections between Watagan Forest Road and Watagan Creek Road in Ravensdale	Localised widening for one lane movement for 19 m articulated heavy vehicles with operational traffic control required

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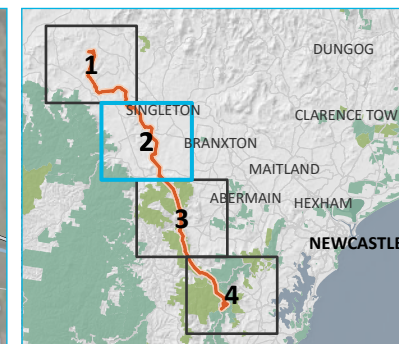
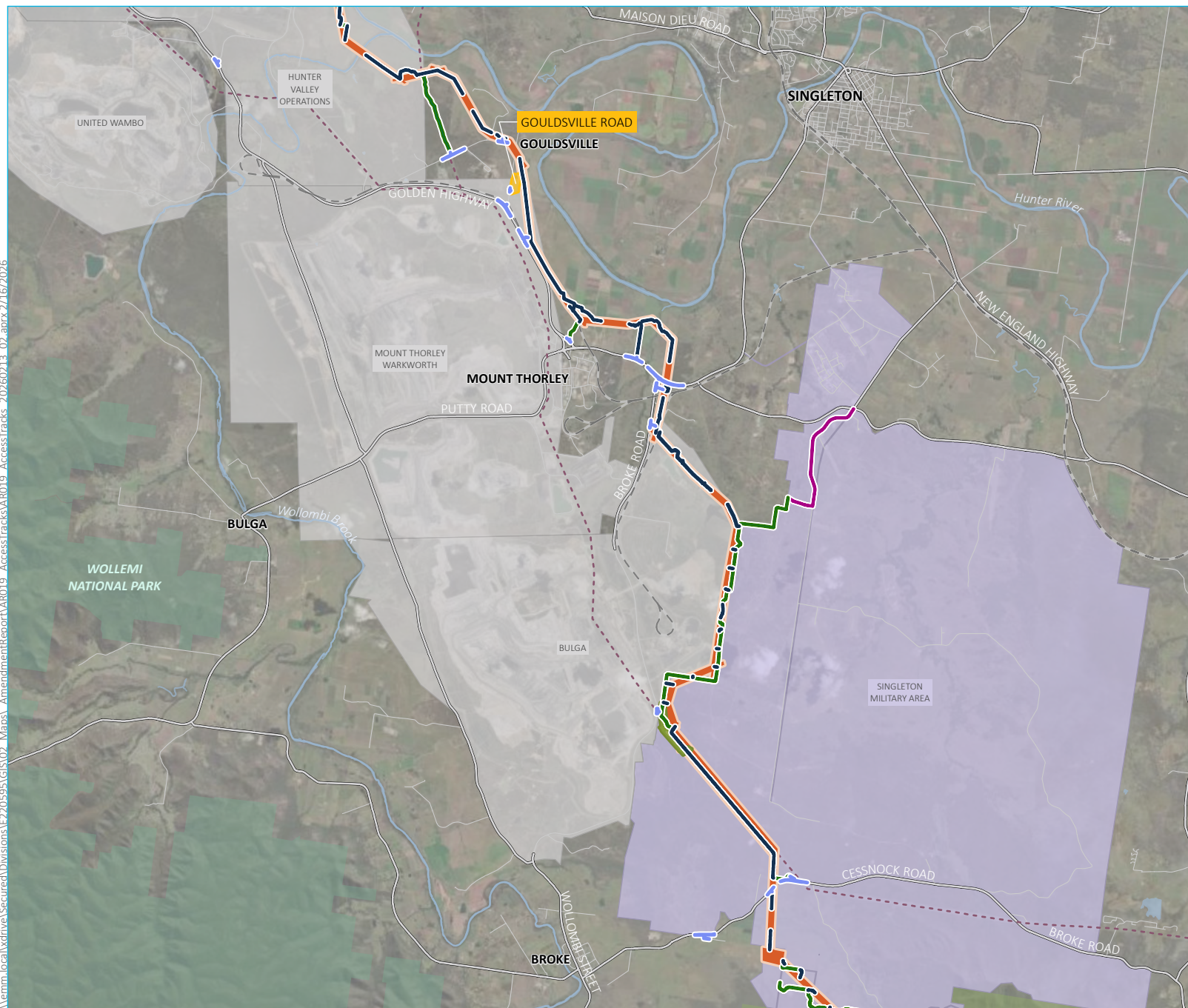
- KEY**
- New tracks
 - Existing track (upgrade)
 - Existing track (minor works)
 - Intersection upgrade
 - Amended project impact area
 - HTP corridor
 - Bayswater South switching station
 - Construction support site (*with temporary worker accommodation)
 - Laydown area
 - Adjustment to existing transmission line (lines 31 and 32)
 - Upgrades to existing transmission line (lines 5A3 and 5A4)
 - Access tracks, road upgrades and intersection upgrades
- Existing environment**
- Power station
 - 330 kV transmission line
 - 500 kV transmission line
 - Railway
 - Major road
 - Minor road
 - Named watercourse
 - Named waterbody
 - NPWS reserve
 - Mining

Access tracks
Map 1 of 4

Hunter Transmission Project
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Figure A.14



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KEY

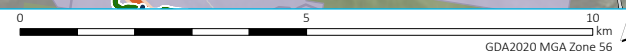
- Access road upgrade
- New tracks
- Existing track (upgrade)
- Existing track (minor works)
- Intersection upgrade
- Amended project impact area
- HTP corridor
- Construction support site (*with temporary worker accommodation)
- Adjustment to existing transmission line (line 81)
- Access tracks, road upgrades and intersection upgrades
- Existing environment
- 330 kV transmission line
- Railway
- Major road
- Minor road
- Named watercourse
- Named waterbody
- NPWS reserve
- State forest
- Defence
- Mining

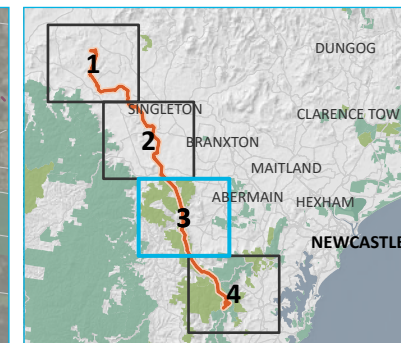
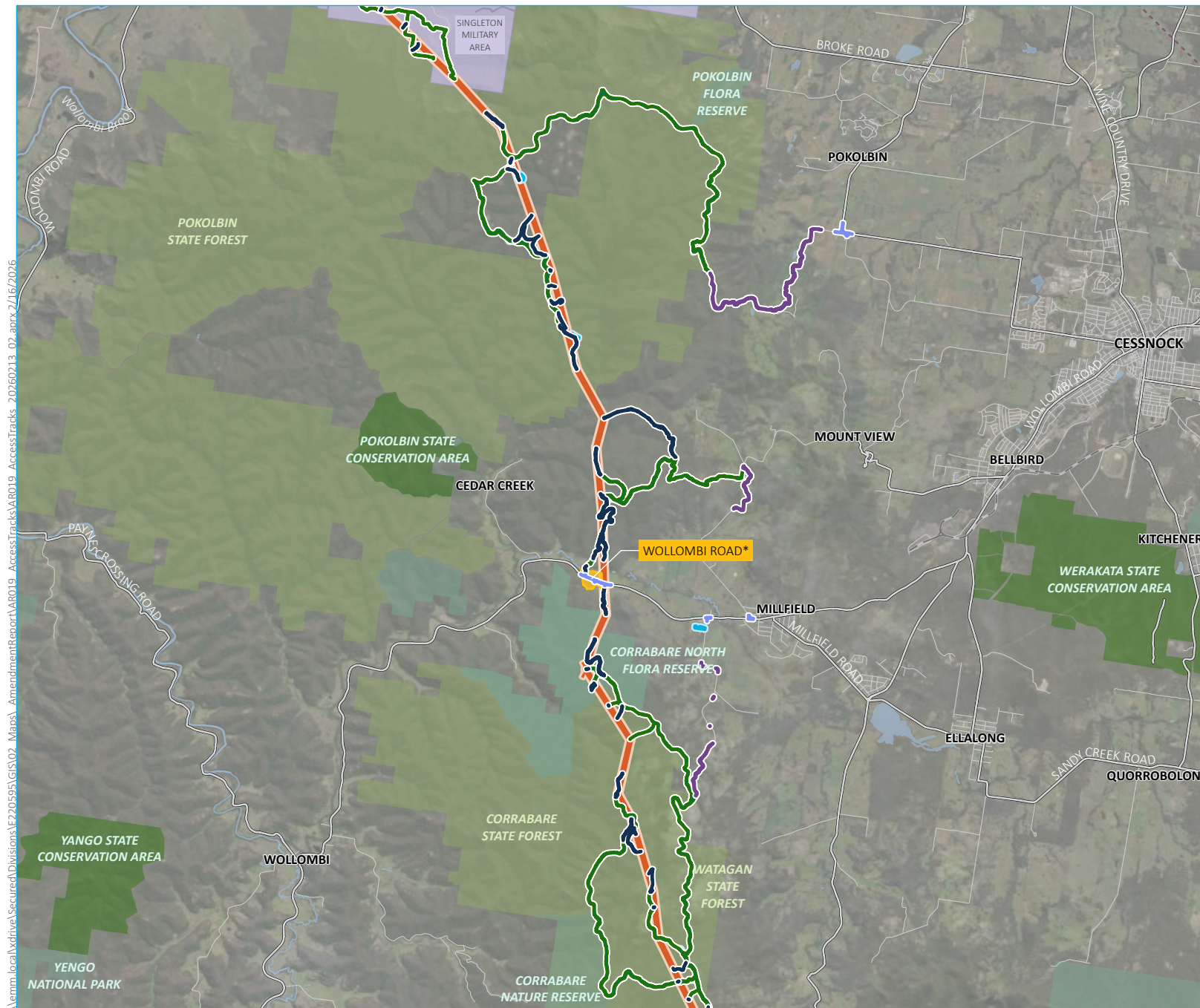
Access tracks Map 2 of 4

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Figure A.14



Source: EMM (2026); Beca (2025); ESRI (2026); DCSSS (2024); FCNSW (2022); ABS (2021); DFSI (2017); GA (2009)





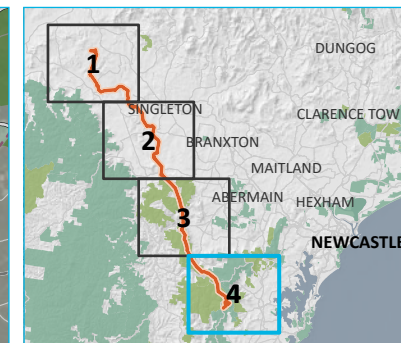
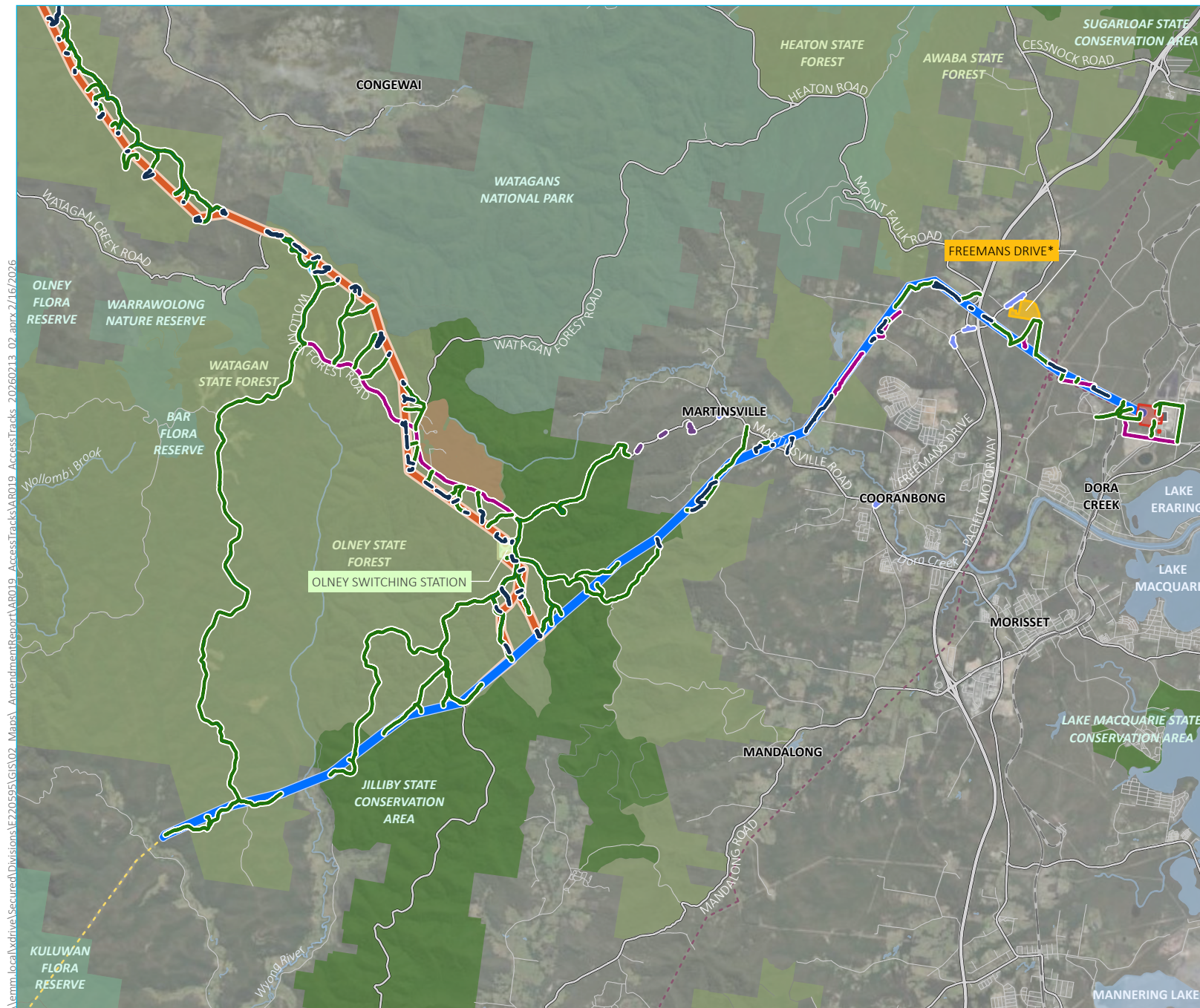
KEY

- Access road upgrade
- New tracks
- Existing track (upgrade)
- Intersection upgrade
- Amended project impact area
- HTP corridor
- Construction support site (*with temporary worker accommodation)
- Laydown area
- Access tracks, road upgrades and intersection upgrades
- Existing environment
- 330 kV transmission line
- Railway
- Major road
- Minor road
- Named watercourse
- Named waterbody
- NPWS reserve
- State conservation area
- State forest
- Defence

Access tracks Map 3 of 4

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Figure A.14





- KEY**
- Access road upgrade
 - New tracks
 - Existing track (upgrade)
 - Existing track (minor works)
 - Intersection upgrade
 - Amended project impact area
 - HTP corridor
 - Olney switching station
 - Construction support site (*with temporary worker accommodation)
 - Laydown area
 - Eraring Substation upgrade
 - Upgrades to existing transmission line (lines 5A1 and 5A2)
 - Access tracks, road upgrades and intersection upgrades
- Existing environment**
- Power station
 - 330 kV transmission line
 - 500 kV transmission line
 - Railway
 - Major road
 - Minor road
 - Named watercourse
 - Named waterbody
 - NPWS reserve
 - State conservation area
 - State forest
 - Recreation area

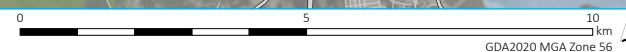
Access tracks
Map 4 of 4

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Figure A.14



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Source: EMM (2026); Beca (2025); ESRI (2026); DCSSS (2024); FCNSW (2022); ABS (2021); DFSI (2017); GA (2009)



Upgrades to the existing public road network

In several locations along the construction routes, upgrade works would be required, including at some local roads (see Table A-10) and key intersections (see Table A-11), to cater safely for the proposed construction traffic volumes and delivery of oversized equipment or construction material and ensure public road safety. Upgrades to the existing public road network would require relevant approvals under the NSW *Roads Act 1993* and would be confirmed in consultation with the relevant road authorities during the CSSI approval process.

Further details on the likely scope of the proposed upgrades are provided in ~~Chapter 11 (Traffic and transport)~~ and ~~Technical Report 4 – Traffic and transport impact assessment~~ **section 5.5 of the Amendment Report and in Appendix H (Revised traffic and transport impact assessment) to the Amendment Report.**

Table A-10 Proposed upgrades at existing public roads

Local government area	Road	Road classification (road owner)	Location	Works required
Singleton	Oakley Lane	Local (Singleton Council)	Between Cessnock Road and 60 m south of Cessnock Road in Singleton	Localised widening for one lane movement for 19 m articulated heavy vehicles with operational traffic control required
Cessnock	Hayes Road	Local (Cessnock Council)	Various sections between Wollombi Road and MF1 Road in Millfield	Localised widening for one lane movement for 19 m articulated heavy vehicles with operational traffic control required
	MF1 Road	Partial Crown Road Local (Cessnock Council)	Various sections between Trig Road and Hayes Road in Millfield	Localised widening for one lane movement for 19 m articulated heavy vehicles with operational traffic control required
	Mount Baker Road	Local (Cessnock Council)	Various sections between Mount View Road and Existing Track (Mount View) in Millfield	Localised widening for one lane movement for 19 m articulated heavy vehicles with operational traffic control required
	Mount View Road	Local (Cessnock Council)	Various sections between Mount Baker Road and Wollombi Road in Mount View	Localised widening for one lane movement for 19 m articulated vehicles with operational traffic control required
	Pokolbin Mountains Road	Local (Cessnock Council)	Various sections between McDonalds Road and Broken Back Road in Pokolbin	Localised widening for one lane movement for 19 m articulated heavy vehicles with operational traffic control required
	Broken Back Road	Crown Road Forestry	Various sections between Pokolbin Mountains Road and Broken Back Trail in Cedar Creek	Localised widening for one lane movement for 19 m articulated heavy vehicles with operational traffic control required

Local government area	Road	Road classification (road owner)	Location	Works required
	Broken Back Trail	Forestry	Various sections between Broken Back Road and Campbell Springs Trail in Broke	Localised widening for one lane movement for 19 m articulated heavy vehicles with operational traffic control required
	Cabans Road	Forestry	Various sections between Trig Road and Langans Road in Corrabare	Widening for one lane movement for 19 m heavy vehicles with traffic control required
	Campbell Springs Trail	Forestry	Various sections between Broken Back Trail and around 4 km south of Broken Back Trail in Broke	Widening for one lane movement for 19 m heavy vehicles with traffic control required
	Existing Track (adjacent Mount Baker Road in Mount View)	Forestry	Various sections between Mount Baker Road and Wollombi Road in Mount View	Widening for one lane movement for 19 m heavy vehicles with traffic control required
	Langans Road	Forestry	Various sections between Cabans Road and Cedar Brush Walk in Corrabare	Widening for one lane movement for 19 m heavy vehicles with traffic control required
	North Road	Crown Road Forestry	Various sections between MF1 Road and Wollombi Road in Millfield	Localised widening for one lane movement for 19 m articulated heavy vehicles with operational traffic control required
	Trig Road	Forestry	Various sections between MF1 Road and Cabans Road in Corrabare	Widening for one lane movement for 19 m heavy vehicles with traffic control required
	Watagan Creek Road	Forestry	Various sections between Wollombi Forest Road and around 2 km north of Wollombi Forest Road in Olney	Widening for one lane movement for 19 m heavy vehicles with traffic control required

Local government area	Road	Road classification (road owner)	Location	Works required
Lake Macquarie	Martinsville Hill Road	Local (Lake Macquarie Council)	Various sections between Watagan Road and Watagan Forest Road in Lake Macquarie	Localised widening for one lane movement for OSOM with operational traffic control required
	Watagan Road	Local (Lake Macquarie Council)	Various sections between Martinsville Road and Martinsville Hill Road in Lake Macquarie	Localised widening for one lane movement for OSOM with operational traffic control required
Central Coast	Watagan Forest Road	Forestry	Various sections between Martinsville Road and Wollombi Forest Road in Ravensdale	Widening for one lane movement for 19 m heavy vehicles and OSOM with traffic control required
	Wollombi Forest Road	Forestry	Various sections between Watagan Forest Road and Watagan Creek Road in Ravensdale	Widening for one lane movement for 19 m heavy vehicles with traffic control required

Road intersections that would be used by the **amended** project and would require upgrading, widening or modification for construction vehicle use and access are shown in Table A-11. Upgrade works are determined based on intersection performance and operation, turning capacity, and safe intersection sight distances. Intersection upgrades would be confirmed in consultation with the relevant road authorities during the CSSI approval process.

Table A-11 Potential intersections requiring upgrades

Local government area	Intersection	Road classification	Location	Treatments required
Muswellbrook	Hebden Road/access road to the Hebden Road construction support site (Intersection ID I-48)	Local/local	Muswellbrook	• This is a new access road • Localised intersection widening on the access road for turning vehicles for swept path purposes • A basic left turn and basic right turn intersection
Singleton	Golden Highway/Lemington Road (Intersection ID I-03)	State/local	Jerrys Plains	• Widening on Lemington Road for turning vehicle swept path purposes • Upgrade to a basic left turn and channelised right turn intersection
	Golden Highway/Comleroi Road (Intersection ID I-04)	State/local	Warkworth	• Upgrade to an auxiliary basic left turn and channelised right turn intersection required to comply with turn treatment warrants
	Golden Highway/Gouldsville Road (Intersection ID I-07)	State/local	Gouldsville	• Upgrade to an auxiliary left turn and channelised right turn intersection required to comply with turn treatment warrants
	Putty Road/existing access track (Intersection ID I-31)	State/local	Mount Thorley	• Widening on the existing access track for turning vehicles and a left turn lane and a merge lane on Putty Road • Upgrade to an auxiliary left turn to comply with turn treatment warrants
	Golden Highway/existing access track across rail track (Mount Thorley Warkworth mining complex) (Intersection ID I-32)	State/local	Mount Thorley	• Widening on the existing access track for turning vehicles for swept path purposes and • Relocation of railway signage required
	Golden Highway/ Woodland Road unknown road (east of Lemington Road) (Intersection ID I-33)	State/local	Warkworth	• Widening on Woodland Road the unknown road for turning vehicles and passing vehicle movements • Upgrade to a channelised right turn intersection to comply with turn treatment warrants

Local government area	Intersection	Road classification	Location	Treatments required
	Putty Road/new access track (Intersection ID I-52)	State/local	Mount Thorley	An auxiliary left turn and basic right turn intersection A reduced temporary speed limit would be required along Putty Road on approach to the intersection with the new access track
	Broke Road/existing access track (Intersection ID I-35)	Regional/local	Mount Thorley	- Localised intersection widening required on the existing access track road - Upgrade to an auxiliary left turn and basic right turn intersection to comply with turn treatment warrants In addition, this intersection does not comply with safe intersection sight distance (SISD) requirements. Reduced temporary speed limit required along Broke Road on approach to its intersection with the existing access track
	Broke Road / existing access track (Intersection ID I-36)	Regional/Local	Mount Thorley	Localised intersection widening required on the existing access track Upgrade to an auxiliary left turn and basic right turn intersection to comply with turn treatment warrants In addition, this intersection does not comply with SISD requirements. Reduced temporary speed limit required along Broke Road on approach to its intersection with the existing access track
	Broke Road / existing access track (intersection ID I-38)	Regional/Local	Mount Thorley	Localised intersection widening required on the existing access track In addition, this intersection does not comply with SISD requirements. Reduced temporary speed limit required along Broke Road on approach to its intersection with the existing access track
	Cessnock Road/new access track (Intersection ID I-37)	Regional/local	Singleton Military Area	- Road widening would be required on Cessnock Road including deceleration and acceleration lanes - In addition, this intersection does not comply with SISD requirements. A reduced temporary speed limit would be required along Cessnock Road on approach to its intersection with the new access track

Local government area	Intersection	Road classification	Location	Treatments required
	Cessnock Road/new access track (Intersection ID I-53)	Regional/local	Singleton Military Area	- Localised intersection widening on the new access track for turning vehicles - A basic left turn and basic right turn intersection
	Cessnock Road/Oakley Road Lane (Intersection ID I-21a)	Local/local	Broke	Widening on Oakley Lane for turning vehicles required
	Long Point Road West/existing easement (intersection ID I-40)	Local/local	Warkworth	- Localised intersection widening on the existing easement for turning vehicles for swept path purposes Dedicated through, left and right turn lanes
	Long Point Road West/existing easement new access (Intersection ID I-41)	Local/local	Warkworth	- This is a new access road to the existing easement - Localised intersection widening on the access road for turning vehicles - Basic left turn and basic right turn intersection
	Archerfield Road/existing access track (Intersection ID I-42)	Local/local	Warkworth	Localised intersection widening on Archerfield Road for passing vehicles and on the existing access track for turning vehicles for swept path purposes
	Lemington Road/existing access track (Intersection ID I-43)	Local/local	Ravensworth	Localised intersection widening on the existing access track for two-way simultaneous vehicle movement
	Long Point Road East/existing access track	Local/local	Gouldsville	A reduced temporary speed limit along Long Point Road East on approach to the intersection with the existing access track
	Pikes Gully Road/access road to the Pikes Gully Road	Local/local	Howick	This is a new access road - Localised intersection widening on the access road for turning vehicles for swept path purposes

Local government area	Intersection	Road classification	Location	Treatments required
	construction support site (Intersection ID I-47)			- Road widening on Pikes Gully Road - A basic left turn and basic right turn intersection
	Lemington Road/new access track (opposite Old Lemington Road) (Intersection ID I-49)	Local/local	Lemington	This is a new access track on the western side of Lemington Road - Localised intersection widening on the access track road for turning vehicles for swept path purposes
	Lemington Road/Old Lemington Road (Intersection ID I-50)	Local/local	Lemington	Widening on Old Lemington Road for turning vehicles for swept path purposes
	Gouldsville Road/access road to the Gouldsville Road construction support site (Intersection ID I-51)	Local/local	Gouldsville	This is a new access road - Widening on the access road for turning vehicles for swept path purposes - A basic left turn and basic right turn intersection In addition, this intersection does not comply with SISD requirements. A reduced temporary speed limit would be required along Gouldsville Road on approach to the access road intersection
Cessnock	Jerrys Plains Road southbound off ramp / access track (Intersection ID I-69)	State / private	Mount Thorley	Required to be an auxiliary left turn intersection
	Wollombi Road/access roads to the Wollombi Road construction support site (Intersection ID I-34)	State/local	Millfield	- Reconfigured lane layouts for new access tracks and intersections with Wollombi Road In addition, this intersection does not comply with SISD requirements. Reduced temporary speed limit required along Wollombi Road on approach to the access roads intersection

Local government area	Intersection	Road classification	Location	Treatments required
	Wollombi Road/Mount View Road (Millfield) (Intersection ID I-19)	Regional/local	Millfield	Kerb adjustments at Mount View Road to widen for turning vehicles required
	Wollombi Road/Hayes Road (Intersection ID I-20)	Regional/local	Millfield	Widening, partial land acquisition and culvert extensions on Hayes Road is required for vehicle swept path purposes
	Wollombi Road/new access track (Intersection ID I-54)	Regional/local	Millfield	This is a new access track - Localised intersection widening and culvert extensions on the access track for turning vehicles for swept path purposes - A basic left turn and basic right turn intersection upgrade to comply with turn treatment warrants In addition, this intersection does not comply with SISD requirements. A reduced temporary speed limit would be required along Wollombi Road on approach to the intersection with the new access track
	McDonalds Road/Oakey Creek Road/Pokolbin Mountains Road (Intersection ID I-15)	Local/local/local	Pokolbin	Intersection requires widening for two-way/two-lane heavy vehicle movements
Lake Macquarie	Freemans Drive/Martinsville Road (Intersection ID I-23)	Local/local	Cooranbong	- Localised widening and potential land acquisition for turning vehicles Upgrade to an auxiliary left turn and channelised right turn
	Martinsville Road/Watagan Road (Intersection ID I-25)	Local/local	Martinsville	- Widening and land acquisition on Watagan Road for turning vehicles In addition, this intersection does not comply with SISD requirements. A reduced temporary speed limit would be required along Martinsville Road on approach to the Watagan Road intersection

Local government area	Intersection	Road classification	Location	Treatments required
	Watagan Forest Road/Martinsville Hill Road	Local/local	Martinsville	• A reduced temporary speed limit would be required along Martinsville Hill Road on approach to the Watagan Forest Road intersection
	Freemans Drive/Mount Faulk Road (Intersection ID I-28)	Local/local	Cooranbong	• Upgrade to a basic left turn and channelised right turn intersection to comply with turn treatment warrants
	Freemans Drive/access road to the Freemans Drive construction support site (Intersection ID I-45)	Local/local	Cooranbong	• This is a new access road • Localised intersection widening on the access road for turning vehicles for swept path purposes • A basic left turn and channelised right turn intersection to comply with turn treatment warrants • In addition, this intersection does not comply with SISD requirements. A reduced temporary speed limit would be required along Freemans Drive on approach to the new access road intersection
	Freemans Drive/Mount Nellinda Road (Intersection ID I-58)	Local/local	Cooranbong	• Upgrade to a basic left turn and channelised right turn intersection to comply with turn treatment warrants

Watercourse crossings

Several minor watercourse crossings may be required where an access track for vehicles, plant and equipment needs to cross a small creek or drainage line. **There would be around 230 interactions with riparian corridors of minor and major watercourses, 20 of which would be with fourth order watercourses and higher. Of these 20 interactions, eight would consist of waterway crossings for access tracks.** ~~Around 135 crossings of riparian corridors of minor and major watercourses would be required for the construction of new access tracks or upgrades to existing access tracks. This would include around 5 crossings of fourth order watercourses and higher.~~ Access track crossings of watercourses would likely involve vegetation clearing, minor earthworks and installation of cross-drainage infrastructure such as culverts or pipes across flow paths where required.

Watercourse crossings would be designed, installed and maintained in accordance with relevant guidelines for watercourse crossings such as (but not limited to) *Policy and Guidelines for Fish Friendly Waterway Crossings* (DPI 2003) and *Managing Urban Stormwater: Soils and Construction – Volume 1*, 4th Edition (Landcom 2004).

Parking

Sufficient parking for light and heavy vehicles would be provided during construction of the HTP (see Table A-12).

Given the transient nature of the transmission line work, and potentially long distances required to travel, it is expected that workers would be transported by bus to and from work sites and the worker accommodation facilities at Hebden Road, ~~Gouldsville Road~~, **Wollombi Road** and Freemans Drive.

Table A-12 Indicative parking requirements during construction

Site	Light vehicle parking allowance (daily)	Heavy vehicle parking allowance (daily)
Hebden Road construction support site*	50	20
Bayswater South switching station laydown area	30	15
Pikes Gully Road construction support site	50	20
Gouldsville Road construction support site [‡]	40	15
Wollombi Road construction support site*	50	20
Freemans Drive construction support site*	60	30
Olney switching station laydown area	30	15

* Construction support site includes temporary worker accommodation

A.3.6 Construction support sites

Five construction support sites (3 with temporary worker accommodation) would be established to support the construction of the HTP.

Hebden Road construction support site would be adjacent to Lake Liddell off Hebden Road and the New England Highway in the north of the project. It would be located on greenfield land currently zoned SP2 – Infrastructure associated with the Bayswater Power Station and would have a total area of around 11 hectares. Worker accommodation and helicopter/helipad facilities would be provided at this site (see Figure A-2 (Map 1)).

Pikes Gully Road construction support site would be off Pikes Gully Road and the New England Highway southeast of Bayswater Power Station in the north of the project. It would be located on land currently zoned RU1 – Primary Production and would have a total area of around 10 hectares. Helicopter/helipad facilities would be provided at this site (see Figure A-2 (Map 1)).

Gouldsville Road construction support site would be off Gouldsville Road and the Golden Highway to the east of the Mount Thorley Warkworth mining complex also in the north of the project. It would be located on land currently zoned RU1 – Primary Production and would have a total area of around 9 hectares. ~~Worker accommodation and helicopter/helipad facilities would be provided at this site~~ (see Figure A-2 (Map 2)).

Wollombi Road (A and B) construction support site would be off Wollombi Road west of Millfield in the central part of the project. It would be located on land currently zoned RU1 – Primary Production and would have a total area of around 15 hectares (see Figure A-2 (Map 3)). Wollombi Road A and B construction support sites would be separated by Wollombi Road, with Wollombi Road A construction support site to the north and Wollombi Road B construction support site to the south. **Worker accommodation would be provided at site A.**

Freemans Drive construction support site would be off Freemans Drive northwest of Eraring Power Station in the south of the project. It would be located on land currently zoned RU2 – Rural Landscape and would have a total area of around 20 hectares. Worker accommodation and helicopter/helipad facilities would be provided at this site (see Figure A-2 (Map 4)).

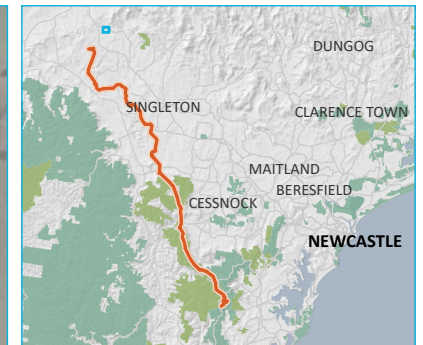
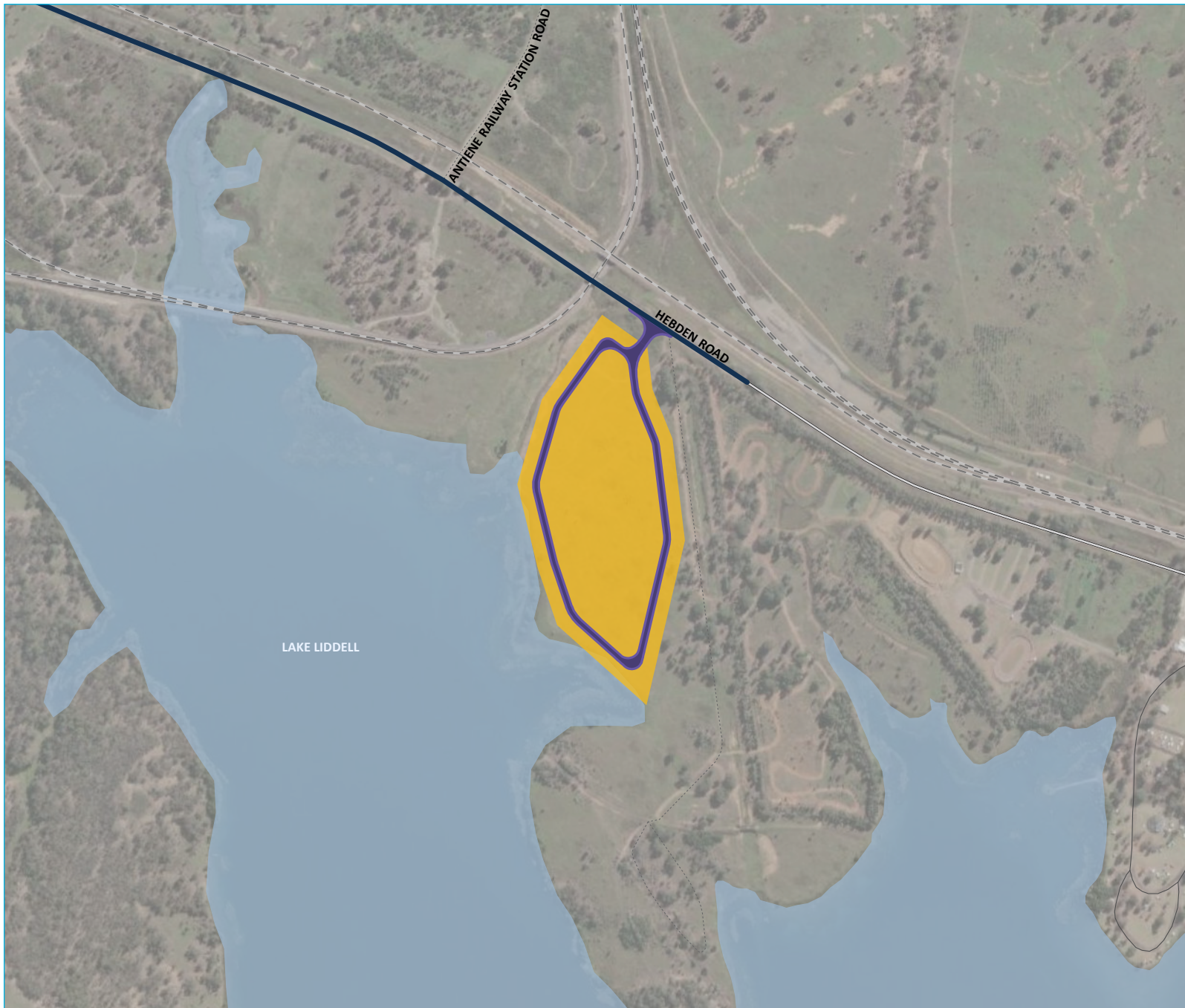
The construction support sites would indicatively include the following key components:

- material, plant/equipment, chemical/fuel and waste storage
- processing facilities (concrete batching, aggregate crushing, grinding and screening)
- maintenance facilities/workshops
- staff facilities (office, lunchroom and amenities)
- firefighting equipment
- helipad/helicopter facilities
- access and parking
- utilities
- potable water tanks
- **wastewater treatment plant**

- **diesel generators**
- **washdown facilities.**

Asset protection zones (for bushfire protection) would be established around the construction support sites. The width of the asset protection zones would vary depending on bushfire risk at each site (see *Chapter 21 (Hazards and risk)* **of the EIS and Section 5.15 (Bushfire) of the Amendment Report**) for further details on asset protection zone requirements for construction support sites, **including for temporary worker accommodation**).

The locations of the construction support sites are shown in Figure A-1. Indicative layouts of the construction support sites are provided in Figure A-15 through Figure A-19.

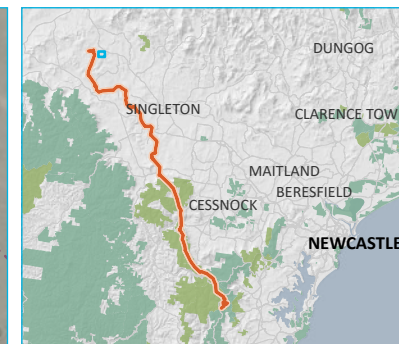
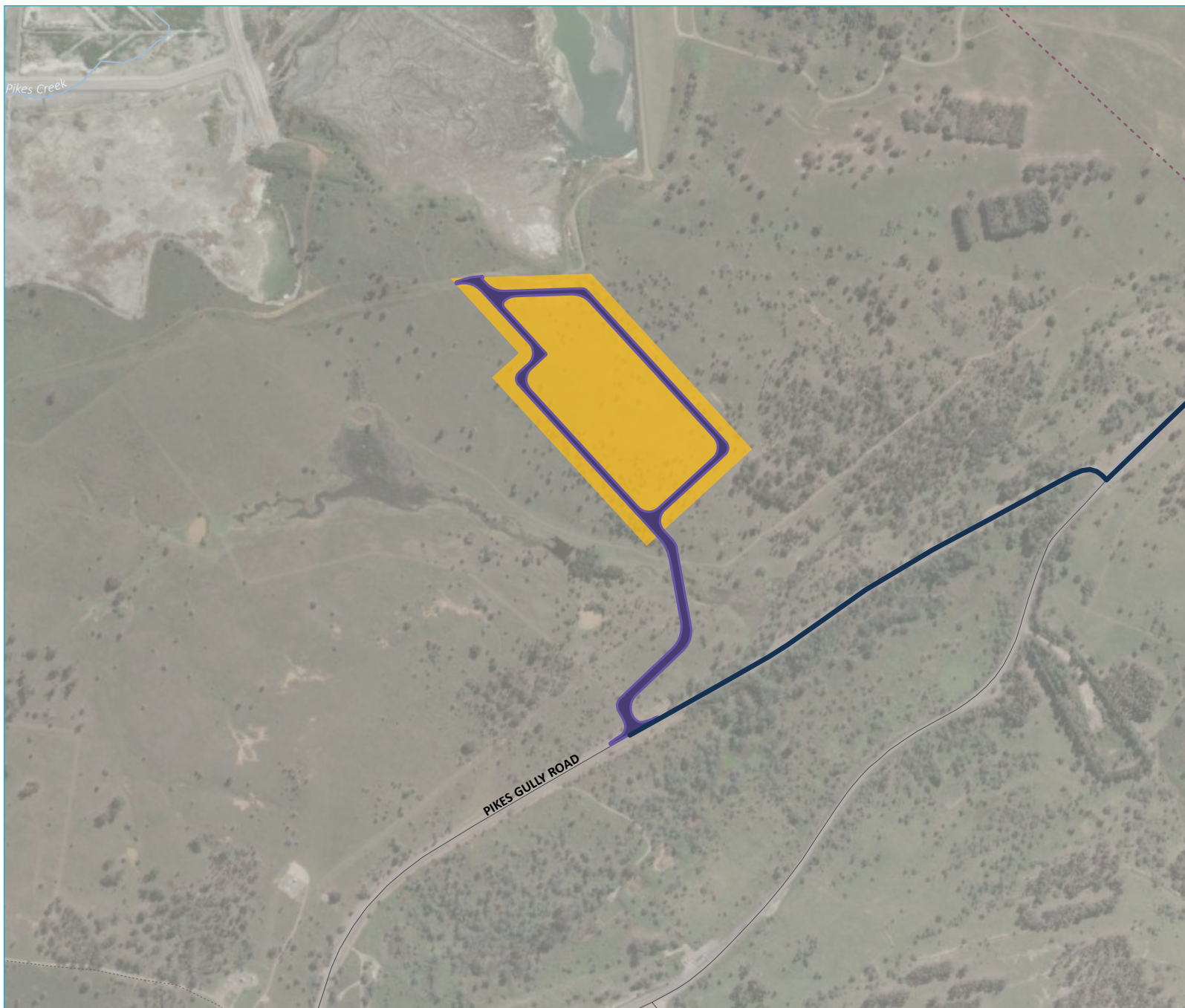


KEY

- Construction traffic route
- Project impact area
- Construction support site (includes APZ)
- Proposed access road
- Existing environment
- Railway
- Major road
- Minor road
- Vehicular track
- Named waterbody

Hebden Road
construction support site

Hunter Transmission Project
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Figure A.15



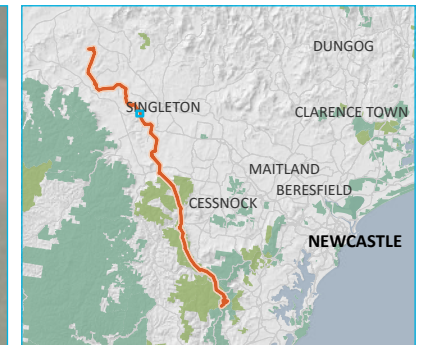
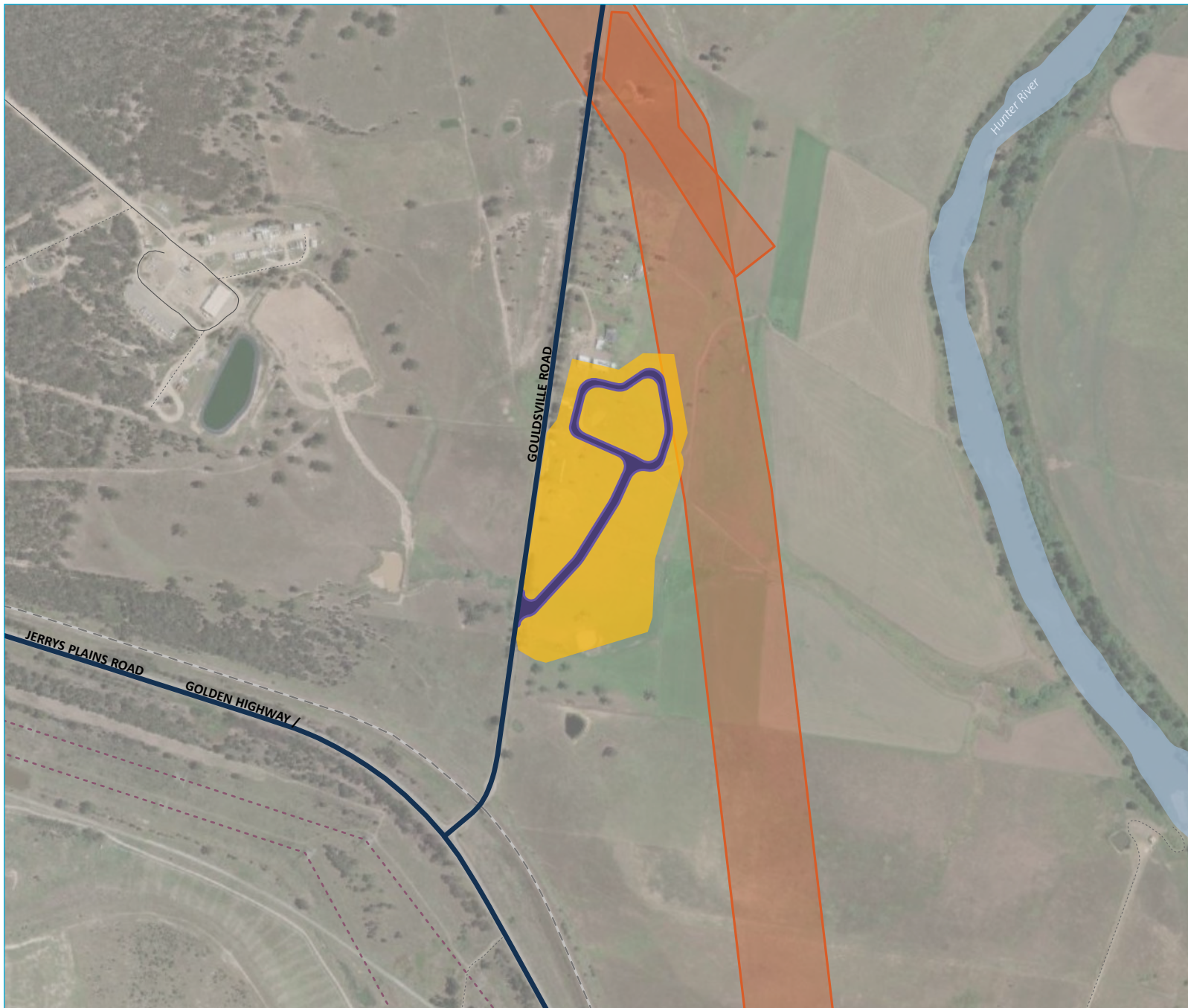
KEY

- Construction traffic route
- Project impact area
- Construction support site (includes APZ)
- Proposed access road
- Existing transmission line
- 330 kV transmission line
- Minor road
- Vehicular track
- Named watercourse

Pikes Gully Road
construction support site

Hunter Transmission Project
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Figure A.16



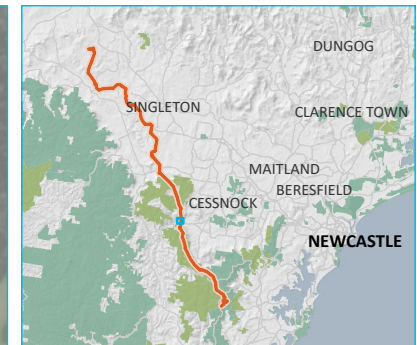


KEY

- Construction traffic route
- Project impact area
- HTP corridor
- Construction support site (includes APZ)
- Proposed access road
- Existing transmission line
- 330 kV transmission line
- Railway
- Major road
- Minor road
- Vehicular track
- Named waterbody

Gouldsville Road
construction support site

Hunter Transmission Project
Amendment Report
Figure A.17



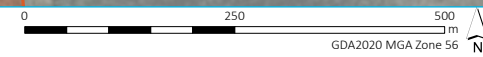
- KEY**
- Construction traffic route
 - Project impact area
 - HTP corridor
 - Construction support site (includes APZ)
 - Proposed access road
 - Existing environment
 - Major road
 - Vehicular track
 - Named watercourse
 - Named waterbody
 - NPWS reserve

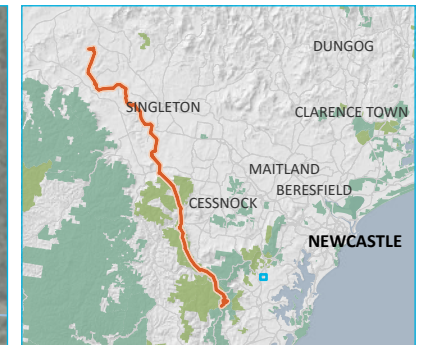
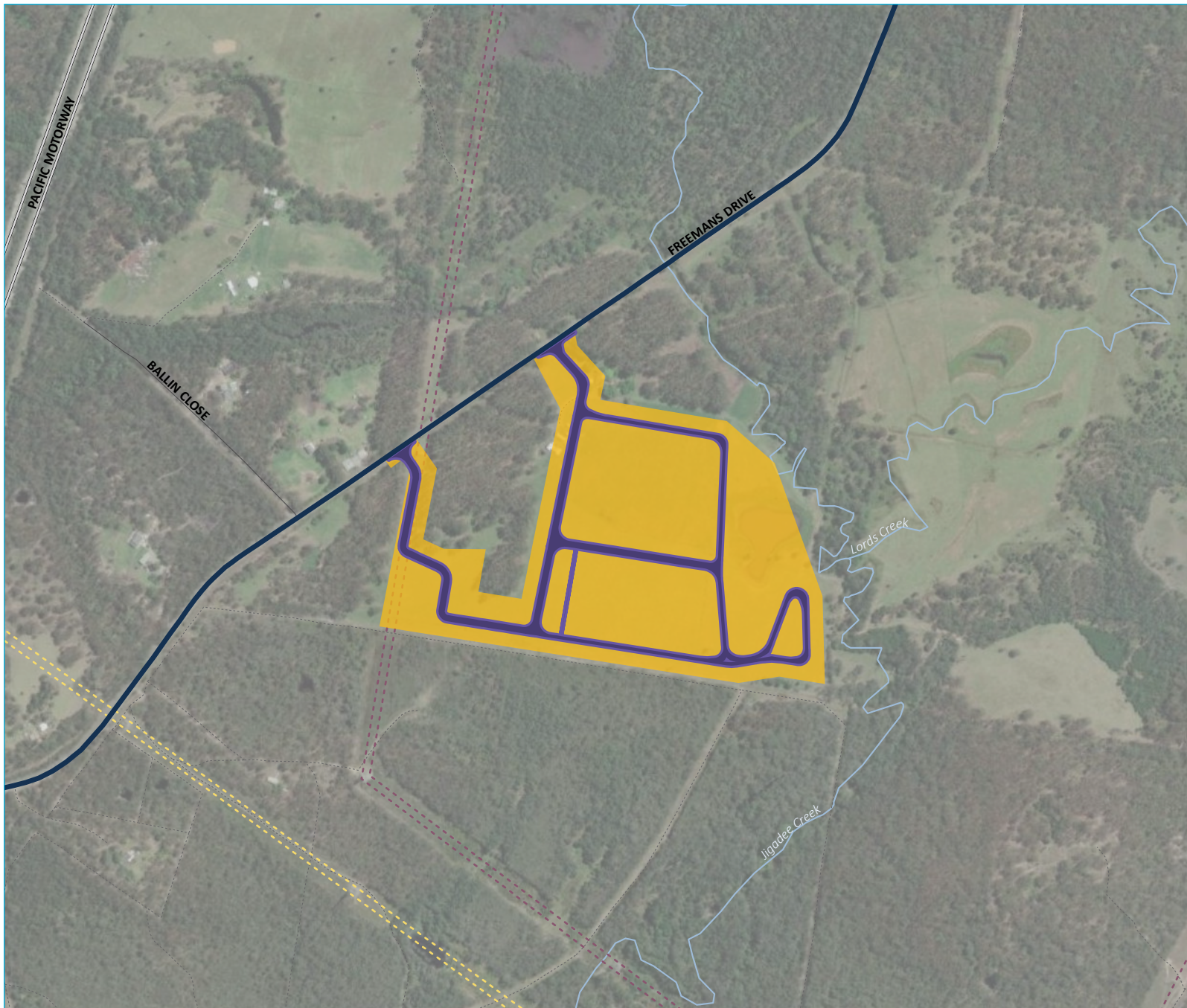
Wollombi Road
construction support site

Hunter Transmission Project
Amendment Report
Figure A.18



Source: EMM (2026); Beca (2025); ESRI (2026); DCSSS (2024); FCNSW (2022); ABS (2021); DFSI (2017); GA (2009)





KEY

- Construction traffic route
- Project impact area
- Construction support site (includes APZ)
- Proposed access road
- Existing transmission line
- - - 330 kV transmission line
- - - 500 kV transmission line
- Major road
- Minor road
- Vehicular track
- Named watercourse

Freemans Drive
construction support site

Hunter Transmission Project
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Figure A.19

A.3.7 Temporary worker accommodation

Temporary worker accommodation would be provided at the following construction support sites:

- Hebden Road – capacity for around 300 workers
- ~~Gouldsville Road – capacity for around up to 180 workers~~
- **Wollombi Road – capacity for up to 300 workers**
- Freemans Drive – capacity for ~~around~~ **up to** 300 workers.

The capacity allowance at each location is based on property lease areas, consultation with relevant landowners, **consultation with potential construction contractors** and management of other site constraints such as flooding and hazards/risks. Further feedback from relevant councils and construction specialists has been received and will be used to continue to refine the approach to temporary worker accommodation for the project.

The provision of temporary worker accommodation at these construction support sites would reduce the need for the main construction workforce to seek rental or short-term accommodation solutions in local areas with more constrained housing options, which has the potential to lead to higher rental prices ~~in~~ during the construction period. As such, temporary worker accommodation has been proposed to house the main construction workforce during peak construction periods. Some workers may be required to be housed in short-term accommodation locally prior to the establishment of temporary worker accommodation within construction support sites, however this is anticipated to be during pre-construction minor works and early works within the construction program and is not anticipated to lead to material impacts on local housing affordability or access. In addition, the project is committed to the inclusion of local construction workforce where possible so that a proportion of the total construction workforce would reside locally. Further details on temporary worker accommodation and potential impacts on the housing market are included in *Chapter 14 (Social) of the EIS and section 5.8 (social) of the Amendment Report*.

The following additional facilities would be provided at construction support sites that have worker accommodation:

- utilities, including telecommunication services, electricity and water (including water treatment plant)
- demountable accommodation and office buildings
- workforce amenities, including food and catering, laundry, bathroom and first aid facilities
- **diesel** generators.

The worker accommodation would be fully self-contained and would have sufficient capacity to cater for **up to** around ~~78900~~ workers for the duration of the construction of the HTP.

A.3.8 Laydown areas

Laydown areas would be established to support construction activities and to minimise the need for vehicle movements to and from the larger construction support sites. They would generally be at the transition from more accessible to less accessible areas (for instance, at the tops of ridges and ends of long access routes in the State forests) and would be located both within and outside of the HTP corridor.

The laydown areas would act as temporary staging, storage, and complex plant/equipment setup areas. They would also act as traffic control nodes during construction.

The laydown areas would contain the following infrastructure (as needed):

- vehicle, equipment and materials storage
- chemical and fuel storage
- mobile concrete batching plants
- waste bins/storage
- maintenance sheds
- staff facilities (office and amenities)
- parking areas
- firefighting equipment
- **diesel** generators and potable water tanks
- **crushing and screening plant (within the State forests only).**

Most of the laydown areas would be within the HTP corridor. The location of laydown areas outside the HTP corridor are shown in Figure A-2.

A.3.9 Property acquisition and easements

The HTP has been designed to avoid and minimise impacts on landowners and environmentally sensitive areas as far as possible and has prioritised the use of disturbed land like mining sites, and public land like State forests over private freehold lands. However, the acquisition of land, easements and licences from private landowners would be required for the following purposes:

- temporary construction support sites, temporary worker accommodation and laydown areas
- the operation of new switching stations and permanent access roads and tracks
- easements for transmission line infrastructure and associated access.

Property acquisition is currently underway across all sites between Bayswater and Eraring Power Stations. Personal managers have been appointed to offer landowners assistance and support throughout the acquisition process. All acquisitions of non-Commonwealth land would be conducted in consultation with the relevant landowners and in accordance with the NSW *Land Acquisition (Just Terms Compensation) Act 1991* (Land Acquisition Act), with a preference for acquisition through a negotiated agreement.

The HTP requires the temporary and permanent use of part of the Singleton Military Area which is Commonwealth-owned land. EnergyCo is negotiating an agreement with the Australian Government regarding the use of this land – including access during construction and the acquisition of permanent easements for transmission line infrastructure and associated access.

For transmission infrastructure located elsewhere in the HTP, EnergyCo would obtain a temporary construction lease, with permanent easements being acquired later subject to survey of the constructed works. The transmission line easement terms would set out how each party uses the land affected by the relevant easement. The terms would, among other things, allow ongoing access and maintenance of the transmission line to authorised entities. Landowners could continue to use the land within transmission line easements, subject to some restrictions for safety and operational reasons.

For the permanent access tracks within the transmission line easement, EnergyCo would obtain an access easement on the terms set out in Part 11 of schedule 4A of the NSW *Conveyancing Act 1919*. The new switching stations/substation upgrades would be situated on land where EnergyCo has carried out a partial freehold acquisition (due to the entire property not being required for permanent acquisition).

A summary of the property acquisition, easement and licence requirements for private landowners is included in Table A-13. Additional detail about potential impacts of the project on property during construction and operation are included in *Chapter 12 (Land use and property) of the EIS and section 5.6 of the Amendment Report*.

Table A-13 Private landowner property requirements

Property requirement	Number of affected private landowners/landholders
Full acquisition (freehold land), including for construction support sites	7
Permanent easement acquisitions for transmission lines, following temporary construction leases	12 13
Permanent easement acquisitions for access roads	2
Temporary easement acquisition for access roads	8
Temporary construction leases for access road/track upgrades (greater than that required for operation)	14
Temporary construction leases for laydown areas	2
Lessee interests	3 4

A.3.10 Utility adjustments

Various other utilities would require adjustment to allow for the construction of the HTP. These include:

- gas lines owned by Ampol, Jemena and APA
- telecommunications lines owned by NBN/Telstra, Nextgen and TPG Telecom
- water lines owned by Hunter Water Corporation and Singleton Council
- sewer lines owned by Hunter Water Corporation
- stormwater lines owned by Centennial Coal, Cessnock City Council, Muswellbrook Shire Council and Singleton Council.

A revised schedule of utility adjustments **for the amended project** is provided in *Appendix B (Revised utility adjustments schedule) of the Amendment Report*.

Consultation with utility providers has been carried out throughout the development of the concept design for the project. This has included presentations to utility providers and councils on potential impacts to gas lines, telecommunications lines, water lines and sewage lines, including any proposed relocations of utilities to minimise potential impacts. Impacts to utilities would be further investigated during detailed design and consultation with utility providers and councils is ongoing.

Utilities would be relocated as required during construction of the project to avoid or minimise impacts from earthworks and other construction activities.

Potential impacts on existing utility services would be confirmed during detailed design and further construction planning. A utilities management strategy would be prepared by the construction contractor, identifying how utility adjustments, protections and relocations would be defined and managed and how these works would be coordinated with asset owners.

Where the extent of connection work or any proposed relocation and/or protection work is to be undertaken outside of the project impact area, additional environmental investigation would be carried out and the work reviewed for consistency with the project in accordance with the process described in Chapter 6 (Environmental management) of the Amendment Report (refer to *Appendix D (Updated mitigation measures)*).

A.3.11 Emergency provisions

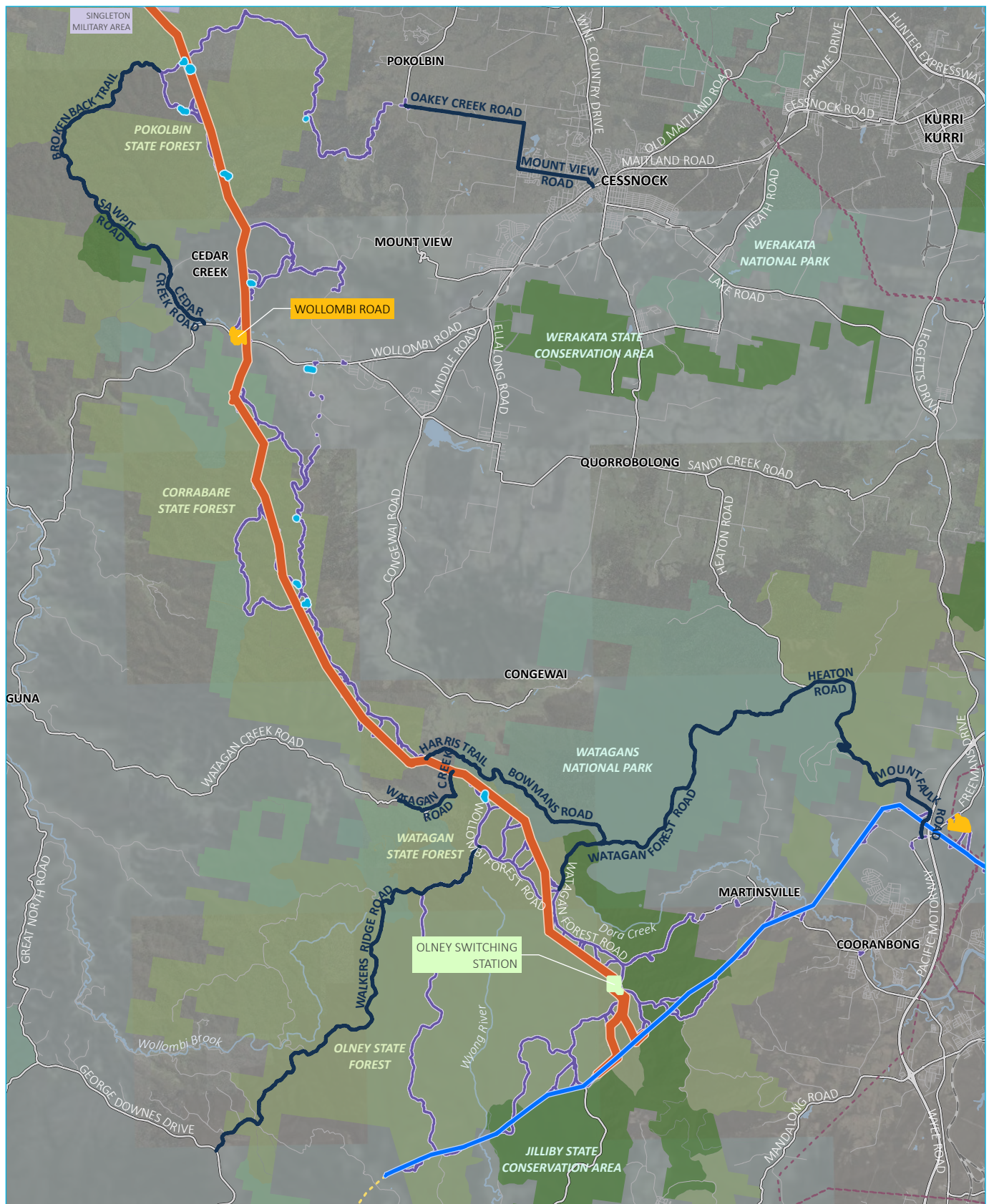
In the event of an emergency, construction workers would use emergency egress routes where evacuation is required and proposed construction access routes are unable to be used. Proposed emergency egress routes include but would not be limited to:

- Broken Back Trail, Sawpit Road, Cedar Creek Road
- Oakey Creek Road, Mount View Road
- Harris Trail, Bowmans Road, Watagan Forest Road, Heaton Road, Mount Faulk Road
- Watagan Creek Road
- Walkers Ridge Road
- Watagan Forest Road, Heaton Road, Mount Faulk Road.

Emergency egress routes are shown in Figure A-20. These routes are concentrated in HTP Central and HTP South in State forest areas rather than in HTP North due to the presence of sufficient alternative routes to be used in the event of an emergency in the north of the project impact area.

These emergency egress routes have been identified for the purposes of emergency scenario planning. As such, these do not form part of the project impact area or disturbance area and have not been assessed in the EIS (e.g. for traffic and transport, noise and vibration, etc.).

In addition, emergency helipads would be provided at laydown areas on Wollombi Forest Road and Flick Road for helicopters to land in the event of an emergency.



Source: EMM (2026); Beca (2025); ESRI (2026); DCSSS (2024); FCNSW (2022); DFSI (2017)

KEY

- Emergency egress route
- Amended project impact area
- HTP corridor
- Switching station
- Construction support site
- Laydown area
- Adjustment to existing transmission line
- Upgrades to existing transmission line
- Access tracks, road upgrades and intersection upgrades

- Existing environment
- Power station
- 330 kV transmission line
- 500 kV transmission line
- Railway
- Major road
- Minor road
- Named watercourse

- Named waterbody
- State forest
- NPWS reserve
- State conservation area

Emergency egress routes

Hunter Transmission Project
Amendment Report
Figure A.20

A.3.12 Construction and program

Construction

The potential phases of construction are described in Table A-14 and Figure A-21.

Table A-14 Construction phases

Construction phase	Description
Pre-construction minor works	Pre-construction minor works are low impact activities carried out before the start of the construction work. These activities may include: • geotechnical investigations including those that require vegetation clearing (that are not considered exempt development) • delivery of equipment to construction support sites/laydown areas (excluding oversize equipment) • installation of certain mitigation measures (e.g. erosion and sediment controls, temporary exclusion fencing for sensitive areas, monitoring equipment) • preparation of existing access roads that require minimal work such as road grading and vegetation trimming • property surveys and the installation of property fencing and security gates as required • utility investigations and identification of underground assets by excavation.
Early works	Early works are activities required to facilitate the main construction works. Early works may include: • Construction support sites (including worker accommodation) and laydown areas: — installing site environmental management and traffic controls, including drainage and erosion and sediment management controls — archaeological testing and heritage salvage and archival recording (if required) — installing temporary fencing (to ensure work areas are clearly delineated) — property adjustment (if required) — relocating, adjusting or protection of utilities (where required) — vegetation clearing in line with approved clearing areas and limits under the Biodiversity Development Assessment Report (BDAR) and Strategic Offset Delivery Agreement (SODA) — geotechnical investigations including those that require vegetation clearing (that are not considered exempt development) — contamination investigations (if required) — establishing construction support site areas and facilities (including worker accommodation facilities, where relevant) and laydown areas and facilities — delivering equipment and materials to site for storage — occupation of worker accommodation (to a worker cap aligned with road upgrades).

Construction phase	Description
	• Traffic modelling to identify need for road upgrades/access track work to facilitate early works. If road upgrades/access track work is required: — installing site environmental management and traffic controls, including drainage and erosion and sediment management controls — archaeological testing and heritage salvage and archival recording (if required) — installing temporary fencing (to ensure work areas are clearly delineated) — property adjustment (if required) — relocating, adjusting or protection of utilities (where required) — vegetation clearing in line with approved clearing areas and limits under the BDAR and SODA — geotechnical and contamination investigations (if required) — constructing access tracks: ○ adjustments to existing access tracks and construction of new access tracks (e.g. strip topsoil, install drainage crossings as required, load, haul, place and compact material; place and compact granular capping; replace cattle grids, install gates and fences) ○ construction of waterway crossings (if required) — undertaking road/intersection upgrades (if required) to enable early works. • Access tracks for brownfields work (e.g. access to OPGW and OHEW upgrades): activities as per above. • Utility works: — protecting underground and overhead utilities (where required) — relocating or adjusting existing services (as needed) involving excavation, installation of pipes and conduits, backfilling of excavation, compaction, and concreting (where required).
Main construction works – transmission line	Main construction works for the transmission line and adjustments to existing transmission lines may include: • Transmission line: — vegetation clearing in line with approved clearing areas and limits under the BDAR, the Biodiversity Management Plan and SODA — site establishment, including building access tracks to and within the transmission corridor, construction of temporary or permanent access gates, upgrades to existing intersections, setting up laydown areas and stringing sites, and delivering equipment and materials to site — developing the foundations of the transmission towers — assembling and installing the transmission towers — stringing the transmission line between towers using tractors and helicopters/drones — connecting the transmission line to the new switching stations — testing the transmission line — commissioning the transmission line — demobilising the construction site and rehabilitating temporary disturbance.

Construction phase	Description
	• Adjustments to existing transmission lines: — vegetation clearing in line approved clearing areas and limits under the BDAR, the Biodiversity Management Plan and SODA — site establishment, including building access tracks, upgrades to existing intersections, setting up laydown areas, construction pads and stringing sites, and delivering equipment and materials to site — developing the foundations of the adjusted transmission towers — assembling and installing the adjusted transmission towers — turning the existing transmission line off and disconnecting the transmission line from the old towers (an outage of the transmission line will be required) — stringing the transmission line between the adjusted towers using tractors and helicopters/drones — removing redundant towers and other infrastructure — testing the adjusted transmission line — commissioning the adjusted transmission line — demobilising the construction site and rehabilitating temporary disturbance.
Main construction works – new switching stations and substation upgrades	Main construction works for the new switching stations and substation upgrades would include: • New switching stations: — vegetation clearing with erosion and sediment control measures as required — site establishment, including building access tracks, setting up laydown areas, and delivering equipment and materials to site — undertaking civil works to establish the pads for the new switching stations and associated infrastructure and services — constructing the new switching stations — installation of perimeter fencing and other works — connecting the new transmission line to the new switching stations, and the new switching stations to the existing transmission network — testing the new switching stations — commissioning the switching stations — demobilising the construction site and rehabilitating temporary disturbance. • Existing Eraring substation augmentation: — demolishing and removing redundant electrical equipment — undertaking earthworks to form or extend the substation bench — modifying drainage structures — installing foundations, electrical equipment and security — commissioning.

Construction program

Main construction of the HTP is expected to start in **mid to** late 2027 and commence operation by the end of 2029. It is anticipated that overall construction would take around 2.5 years, subject to weather conditions. An indicative program is shown in Figure A-21. The construction program would continue to be refined throughout detailed design in consultation with the appointed construction contractors.

Construction program

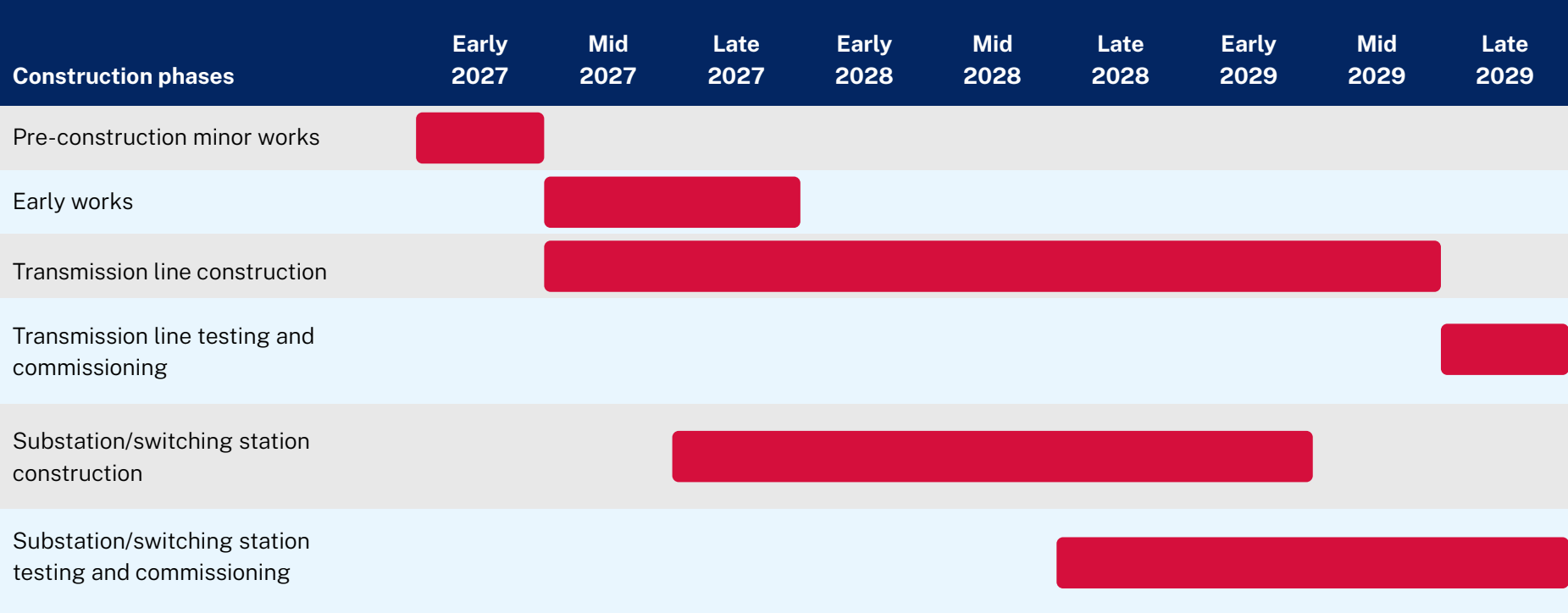


Figure 4.18

Indicative construction program



A.4 Resource requirements for construction

The resources and materials required for construction include workforce, plant and equipment, materials and water. Waste would also be produced during construction. These key inputs and outputs are outlined in Table A-15.

Table A-15 Key construction inputs and outputs

	<u>Workforce</u> Around 830 workers.
	<u>Plant and equipment</u> Such as dozers, excavators, graders, compactors, rollers, cranes, dump trucks, water carts, delivery trucks, stringing blocks and winches, concrete trucks, asphalt truck and sprayers, helicopters/stringing drones, mobile concrete batching plants, mulchers, spider excavators, diesel generators, crushing and screening equipment, washdown facilities, wastewater treatment plants and dewatering equipment (among others).
	<u>Materials</u> Concrete and steel reinforcement for tower foundations, steel for the transmission towers and substation gantry, densely graded base and crushed rocks, conductors, insulators and cabling for the transmission line, electrical components for the substations, PVC conduits, metal fencing and gates, stormwater drainage materials, diesel and petrol, pre-fabricated buildings, general building materials and fire system materials.
	<u>Water</u> Around 1410 ML of non-potable and 170 ML of potable water for workers accommodation and construction activities such as concrete batching, dust suppression, vehicle washdown, earthworks and pavement compaction.
	<u>Waste</u> Such as green waste (mulch, timber, shrubs, grasses), spoil from excavations, concrete waste, steel and other metals, conductor, earthing and tower waste, pipe and conduit, electrical cabling, hazardous waste, transportation and packaging waste (plastic, paper, cardboard, pallets, cable drums), general domestic waste (food waste, paper, plastic and glass), and wastewater.

A.4.1 Workforce

Workforce numbers would vary depending on the phase of construction and associated activities. During peak construction activities, it is expected that up to 830 full-time equivalent people would be employed to construct the HTP. An overview of the anticipated workforce for key construction activities is provided in Table A-16.

Depending on skills and availability, the construction workforce may be sourced locally, regionally, interstate or from overseas, if required. It is envisaged that most workers, not local to the area would be housed in the temporary worker accommodation provided within the construction support sites.

Table A-16 Anticipated construction workforce

Construction activity	Anticipated construction workforce (estimate)
Staff ¹	220
Civil (i.e. earthworks) ¹	210
Tower erection	200
Transmission line	120
Switching stations and substations	80

1: Includes workforce for transmission line and substations/switching stations

A.4.2 Plant and equipment

During construction the following plant and equipment would likely be required:

- dozers
- Scrapers
- excavators (various sizes)
- spider excavators
- hydraulic hammers
- graders
- dump trucks
- elevated work platforms
- cranes (various sizes)
- compactors
- rollers
- water carts
- chainsaws
- tub grinder/mulchers
- drum mulchers
- pavement laying machines
- stringing blocks and winches
- asphalt truck and sprayers
- concrete trucks
- smooth drum rollers
- **diesel** generators
- power tools
- delivery trucks
- mobile concrete batching plant
- helicopters/stringing drones
- dewatering equipment
- **crushing and screening equipment**
- **washdown facilities**
- **wastewater treatment plants.**

A.4.3 Materials

The estimated quantity and indicative sources of the materials required to construct the HTP are provided in Table A-17.

Volumes of fuels that would be used during construction include:

- around 6.6 million litres of diesel and 357,000 litres of petrol in construction equipment
- around 8,000 litres of diesel and 33,000 litres of petrol in construction vehicles.

Table A-17 Estimated quantity and source of materials used for construction

Construction materials required	Estimated quantities	Potential source
Transmission line		
Reinforcement	9000 tonnes	Newcastle and Sydney
Concrete	97,000 cubic metres	Hunter Region
Steelwork	18,000 tonnes	Overseas via Port of Newcastle
Conductors	42,500 tonnes	Overseas via Port of Newcastle
Quarry products	1,250,000 cubic metres	Hunter Region
Timber	4000 tonnes	Hunter Region
Bayswater South switching station		
Quarry products	39,000 cubic metres	Hunter Region
Concrete	8500 cubic metres	Hunter Region
Steelwork	1103 tonnes	Overseas via Port of Newcastle
Spray seal – bituminous materials	2000 square metres	Newcastle
Olney switching station		
Quarry products	24,000 cubic metres	Hunter Region
Concrete	7200 cubic metres	Hunter Region
Steelwork	935 tonnes	Overseas via Port of Newcastle
Spray seal – bituminous materials	1600 square metres	Newcastle
Construction support sites		
Quarry products	445,000 cubic metres	Hunter Region
Concrete	850 cubic metres	Hunter Region
Spray seal – bituminous materials	13,300 square metres	Newcastle

A.4.4 Water

Water requirements

It is estimated that a total of around 1580 megalitres of water would be required for the construction of the HTP. This includes 170 megalitres of potable water that would be required for amenities at the construction support sites and temporary worker accommodation facilities, as well as for concrete batching activities. Non-potable water sources would be prioritised for the remaining 1410 megalitres of water demand for construction activities.

A summary of the required water volumes and estimated water demand for key construction activities is provided in Table A-18.

Table A-18 Construction water estimates

Construction activity	Annual water demand (ML/year)	Total water demand (ML)
Non-potable water		
Dust suppression of roads and exposed areas	600	1200
Road and access track construction	60	120
Landscaping of revegetated areas	5	10
Construction support sites	5	10
Earthworks (wetting of backfill to allow for effective compaction)	35	70
Total non-potable water	705	1410
Potable water		
Accommodation facilities (within construction support sites)	60	120
Concrete batching	10	20
Construction support sites	15	30
Total potable water	85	170
Total water requirements (construction)	790	1580

Water supply

As noted above, the use of non-potable water is preferred over potable water, however this is dependent on the location and nature of the activity using the water as well as the quantity and quality of available water at the time.

The sourcing of water would be according to the following hierarchy, where feasible and reasonable, and where water quality and volume requirements are met:

- rainwater harvesting (non-potable water)
- reuse of construction water, treated wastewater and/or groundwater inflows, where practicable (non-potable water)
- recycled water from existing wastewater treatment plants (non-potable water)
- extraction of water from surface water and/or groundwater, including:
 - surface water sources via existing licences. EnergyCo is currently in negotiations to acquire 23 properties which contain existing water access licences (WALs) for surface water extraction. The entitlements from these 2 WALs (869, 870, 1282, 19171 and 19175) combined allow for 67426 megalitres per year surface water (3 megalitres per year from WAL 869, 230 megalitres per year

from WAL 870, 126 megalitres per year from WAL 1282, 50 megalitres per year from WAL 19171 and 17 megalitres per year from WAL 19175) from **the Hunter Regulated River Source in management zone 2B (Hunter River from Wollombi Brook Junction to downstream extent of the Hunter River)** and Congewai Creek in the Upper Wollombi Brook Water Source, Mid Congewai Creek Management Zone

- regulated surface water sources (non-potable water) from the Hunter River (within the Hunter Regulated River Water Source) and unregulated sources (non-potable water) from Congewai Creek (Upper Wollombi Brook Water Source)
- groundwater via existing licensed groundwater bores. It is understood that there is about 5500 megalitres per year of entitlements that may be available from existing active, non-mining licensed groundwater bores within 5 kilometres of the project impact area. The use of groundwater via existing groundwater bores would be subject to negotiations between the construction contractor (once appointed) and the licensee holder(s)
- reuse of treated mine water, if practicable (non-potable water). The potential use of treated mine water would be investigated during detailed design
- existing regulated and unregulated surface water sources (potable water). Potable water would be sourced from Council owned potable water supplies and/or from Hunter Water.

A combination of these water sources would be required to meet the total potable and non-potable water demand for the **amended** project. The feasibility of each of these water sources would be confirmed as part of detailed design and construction planning for the HTP so that there is sufficient water supply for the duration of the project. Notwithstanding this, the water volume requirements for construction would be met by the abovementioned potential water sources. A summary of the potential water supply sources for construction of the project is provided in Table A-19.

Collectively, the range of options identified demonstrates a potential water supply that is more than project water requirements. Further investigation into the feasibility of each of the water sources and preferred options would be undertaken during detailed design and construction planning, in consultation with local councils, water utility companies, licence holders and mine operators.

The preferred sources of construction water and the method of construction water storage would be confirmed prior to the start of construction. Water would be transported from water sources, water suppliers and/or groundwater extraction points via tanker truck and used immediately within the project impact area and/or stored in storage tanks within construction support sites. Traffic volumes associated with the transport of water have been considered and form part of the traffic impact assessment provided in *Chapter 11 (Traffic and transport)* and *Technical Report 4 - Traffic and transport impact assessment to the EIS and in section 5.5 of the Amendment Report and Appendix H (Revised traffic and transport impact assessment) to the Amendment Report*.

Further information regarding water supply is provided in *Chapter 17 (Surface water)* and *Technical Report 10 - Surface water impact assessment to the EIS and section 5.11 of the Amendment Report*, as well as *Chapter 18 (Groundwater)* and *Technical Report 11 – Groundwater impact assessment to the EIS and section 5.12 of the Amendment Report*.

Table A-19 Summary of potential water supply options

Water supply option	Water type	Indicative water use	Indicative supply volume (per year)	Connection type
Reuse of construction water, treated wastewater and/or groundwater inflows, where practicable	Non-potable	Dust suppression, road construction, landscaping, earthworks	Small volumes, opportunistic supply	New
Recycled water: • Cooranbong water centre (Altogether group) • Dora Creek Wastewater Treatment Works (Hunter Water) • Paxton Wastewater Treatment Works (Hunter Water) • Singleton Sewage Treatment Plant (Singleton Council)	Non-potable	Dust suppression, road construction, landscaping, earthworks	Between around 240 ML/yr and 12,000 ML/yr, limited by treatment capacity and existing uses	Existing
Groundwater supply from existing bores, in negotiation with the current license holders of these entitlements	Non-potable	Dust suppression, road construction, landscaping, earthworks	5500 ML ¹	Existing
Surface water extraction from Congewai Creek and the Hunter River , via existing WALs owned by EnergyCo (WAL 869, WAL 870, WAL 1282, WAL 19171 and WAL 19175)	Non-potable	Dust suppression, road construction, landscaping, earthworks	67 426 ML	Existing

Water supply option	Water type	Indicative water use	Indicative supply volume (per year)	Connection type
Surface water extraction from new connection locations: • Congewai Creek • Hunter River Surface water extraction from existing locations: • Plashett Reservoir (owned and operated by AGL Macquarie) • Lake Liddell (owned and operated by AGL Macquarie) • Hunter River via the Mount Thorley Joint Venture water supply scheme (operated by Singleton Council)	Non-potable	Dust suppression, road construction, landscaping, earthworks	>2000 ML/yr, depending on water availability and licensing arrangements	Existing and/or new dependent upon watercourse
Mine water reuse from nearby operating coal mines (Hunter Valley Operations, Bulga Coal, Mount Thorley Warkworth and Mandalong Mine)	Non-potable	Dust suppression, road construction, landscaping, earthworks	Unknown	Existing
Hunter Water and Singleton Council reticulated water systems	Potable	Workforce accommodation, concrete batching, amenities and site offices	As needed	New
Hunter Water and Singleton Council standpipes	Potable	Workforce accommodation, concrete batching, amenities and site offices	As needed	Existing

1: indicative volumes based on existing active, non-mining related groundwater bores within 5 kilometres of the **amended** project impact area

Wastewater treatment

Wastewater management at temporary worker accommodation facilities and construction support sites would be provided by an on-site treatment system.

The proposed treatment system would be a contained system and may include mechanical screening, biological and chemical treatment, filtration and disinfection. Waste solids produced by the treatment system would be emptied by a licensed contractor and disposed of at a nearby council operated wastewater treatment plant or other appropriately licensed facility.

Treated effluent suitable for reuse for construction purposes, which is anticipated to include dust suppression and earthworks conditioning, would be stored in sealed tanks. The project does not propose to discharge treated wastewater into receiving waterways.

Any on-site wastewater treatment plants would be subject to further design development during detailed design and would:

- consider and confirm the most appropriate system for the project based on the preferred site layout, site conditions and constraints
- be designed, constructed, operated, maintained and decommissioned in accordance with best practice and relevant guidelines and standards, such as:
 - Onsite domestic wastewater management, Designing and Installing On-Site Wastewater Systems (WaterNSW 2019)
 - AS/NZS 1547:2012 On-site domestic wastewater management (Standards Australia and Standards New Zealand 2012)
 - Australian Guidelines for Water Recycling: Managing Health and Environmental Risks (Phase 1) (Environment Protection and Heritage Council, National Resource Management Ministerial Council, and Australian Health Minister's Conference 2006).

Following completion of construction activities, all temporary wastewater management infrastructure would be decommissioned and removed from the project impact area.

A.4.5 Waste

The estimated quantity of waste generated during construction of the HTP is provided in Table A-20.

Waste generated during construction would be managed through standard waste management procedures documented in a waste management plan.

The waste management plan would identify, quantify and classify the waste streams likely to be generated during construction of the **amended** project. It would also describe the measures to be implemented to reduce waste generation and manage, reuse, recycle and safely dispose of waste during construction of the HTP.

Table A-20 Estimated quantity of waste generated during construction

Waste stream	Estimated quantity
Green waste, including timber, shrubs, grasses, leaves and weeds	3600 cubic metres
Spoil from excavations that is unsuitable for reuse	450,000 cubic metres
Concrete waste	14,000 tonnes
Asphalt, road base, concrete and gravel	Less than 150 tonnes
Vehicle/plant maintenance materials, including empty oil and other containers/drums; lubricants, waste oils, fuels, coolant, radiator fluid, hydraulic fluid; drained oil filters; electrical waste, including batteries and cables; and tyres	18 tonnes
Steel and other metals	6,750 tonnes
Timber used in forming of foundations or piles	400 tonnes
Conductor, earthing and tower waste materials, pipe and conduit, and electrical cabling	2,125 tonnes
Hazardous waste and/or contaminated waste	50 tonnes
Transportation and packaging waste, including plastic, paper, cardboard, pallets, fumigated timber cable drums	Less than 300 tonnes
General domestic waste, including food waste, paper, cardboard, plastic and glass	60 tonnes
Wastewater, including concrete washouts and sewage	70 megalitres

A.4.6 Construction hours

Project standard hours of work

Construction of the project would generally be carried out during recommended standard hours as defined by the *Interim Construction Noise Guideline* (NSW Department of Environment and Climate Change (DECC 2009)) (ICNG):

- Monday to Friday between 7:00 am and 6:00 pm
- Saturday between 8:00 am and 1:00 pm
- no work on Sundays or public holidays.

Worker accommodation facilities would be operational 24 hours per day, 7 days per week, however this will be for occupancy rather than associated with any construction related activities on site.

Out of hours work

If there are no sensitive receivers that would be impacted by the construction work in a given location, and in agreement with affected stakeholders, the construction hours could be extended beyond standard hours. Examples of this could be construction work in the vicinity of the existing Bayswater and Eraring power stations, **and** the mining complexes ~~and in the certain parts of the State forests~~. Extended work hours would increase construction productivity and therefore reduce the overall duration of the construction of the HTP.

Areas where these extended construction hours could potentially be implemented based on the distance of construction works from sensitive receivers are outlined further in *Chapter 16 (Noise and vibration) of the EIS* and *Technical Report 8 – Noise and vibration impact assessment to the EIS*.

Where sensitive receivers are noise affected during extended construction hours (that is, where construction noise is above the noise management level (see *Chapter 16 (Noise and vibration) of the EIS and section 5.10 of the Amendment Report*), and the works cannot be undertaken during standard work hours, mitigation measures would be implemented through an out of hours work protocol.

Some activities may be required outside of the project standard hours of work for safety, technical or public infrastructure operational reasons (e.g. to minimise utility or traffic disruptions).

Work outside the project standard hours of work may include (but not be limited to):

- transmission line construction at crossings of a main road or railway
- work where a road occupancy licence (or similar) is required, depending on licence conditions
- transmission line cutover and commissioning
- the delivery of equipment or materials outside standard hours requested by police or other authorities for safety reasons due to their size such as the delivery of transformer and reactor units, utility relocations
- connection of the new assets to existing assets under outage conditions
- emergency work to avoid the loss of lives and/or property and/or the prevent environmental harm
- work timed to correlate with system planning outages
- situations where agreement is reached with affected sensitive receivers
- activities that do not generate noise that exceeds the applicable noise management level at any sensitive receiver.

During detailed design and further construction planning, a program would be determined to identify the required night work periods (including dates and durations).

Except for emergencies, construction work would be carried out in accordance with an out-of-hours work protocol and would not take place without prior notification to stakeholders in accordance with the protocol, which would be documented within a noise and vibration management plan and traffic management plan.

A.5 Operation and maintenance of the asset

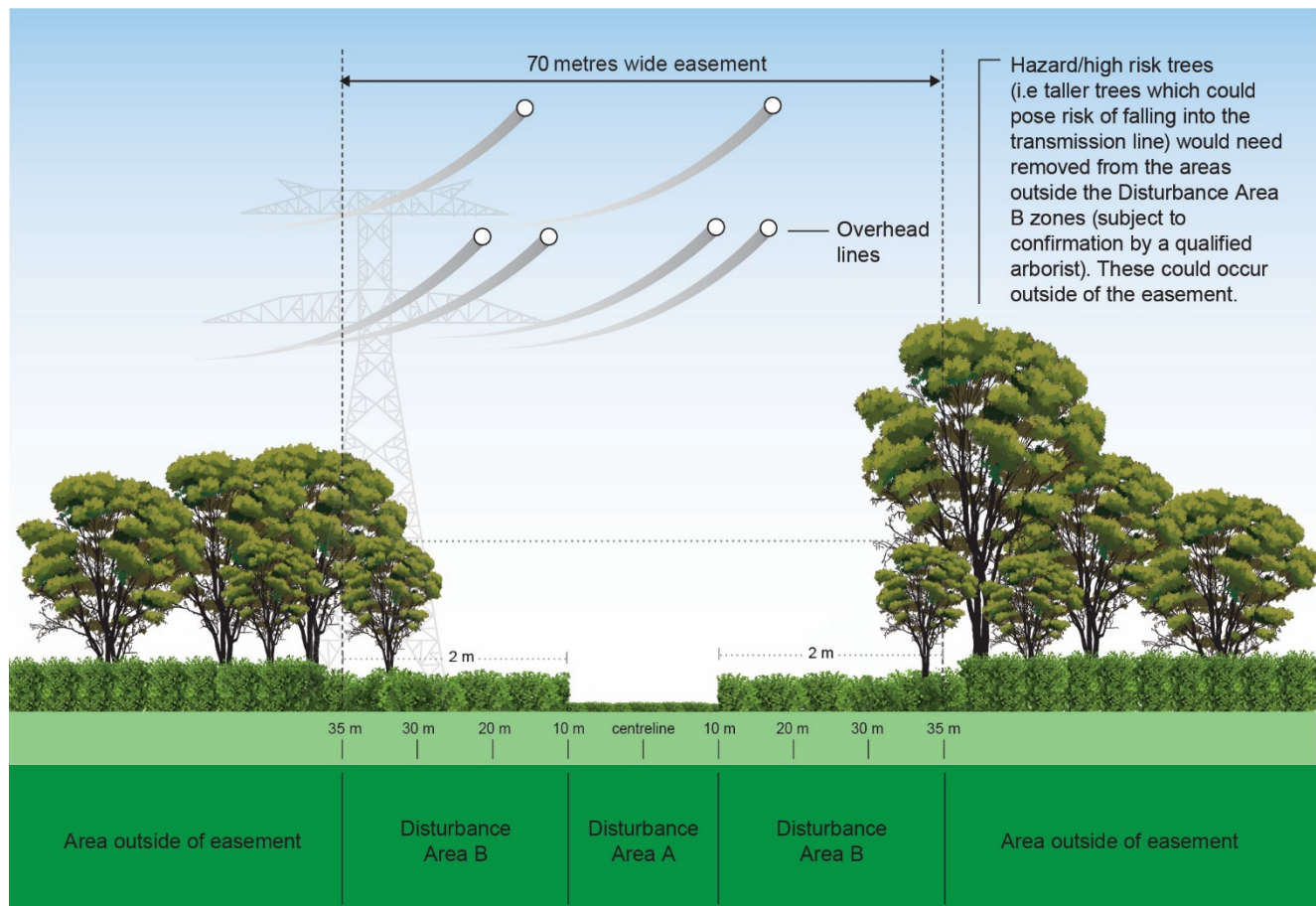
This section provides an overview of the operation and maintenance activities required for the **amended** project, including maintenance of the new transmission line, adjusted and upgraded transmission lines, switching stations and substations, and access roads and tracks.

A.5.1 New transmission line maintenance

Regular maintenance activities would be required for the transmission line during operation. Maintenance activities would include:

- managing vegetation in and around the transmission line easement to protect the transmission line from hazard trees and bushfire (see Figure A-22)
- regularly inspecting the transmission line and towers (via ground and air)
- undertaking fault and emergency response (unplanned maintenance) should an unplanned outage occur (for example through a weather event or other failure of infrastructure)
- fixing, replacing or upgrading components of the transmission line to extend its life.

Operation of the transmission line would occur in a permanent easement 70 metres wide, **except in areas of easement widening to account for conductor swing during periods of high wind. In 22 locations along the alignment, the transmission line easement would be widened to between 80 metres wide and 140 metres wide. Further information on the locations of easement widening for conductor swing are included in section 3.2.1 of the Amendment Report.**



Vegetation in the easement to be maintained to achieved minimum clearance requirements (based on growth heights). (Assessed as up to 2 metres growth heights).

Figure A-22 Indicative vegetation clearance and management within operational easement (WSP 2025)

Refinement during detailed design and construction planning may allow for some increase in vegetation height and vegetation retention to occur if vegetation clearances of 13.5 metres to the conductors are achievable.

A.5.2 New switching stations and upgraded existing substations maintenance

Regular maintenance activities would be required at the new switching stations during operation. Likely maintenance activities would include:

- maintaining vegetation around the perimeter of the switching station (the asset protection zone) to protect the switching station from bushfire
- regularly testing and servicing the electrical equipment and battery systems
- undertaking fault and emergency response (unplanned maintenance) should an unplanned outage occur
- fixing, replacing or upgrading components of the switching station to extend its life.

Maintenance activities would continue at the upgraded substations in line with the current maintenance program undertaken at the Bayswater substation and substation sites.

A.5.3 Adjusted and upgraded existing transmission lines maintenance

Regular maintenance activities would continue to be required for the adjusted/upgraded transmission lines during operation and in line with their existing maintenance activities undertaken by Transgrid, and existing distribution lines by Ausgrid and Hunter Valley Operations.

Operation of the adjusted/upgraded transmission lines would occur in an easement of up to 70 metres wide for the 330 kV adjusted/upgraded transmission lines and 70 metres wide for the 500 kV adjusted/upgraded transmission lines in accordance with existing maintenance regimes, with the exception of minor localised widening of the existing easement for tie-in works near the Bayswater South and Olney switching stations.

A.5.4 Access

Access to the transmission line easement and switching stations during operation would be via existing public and private roads and access tracks, and new access tracks established as part of the **amended** project during construction (see Figure A-10 and Figure A-14). Priority has been given to the use and upgrade of existing access tracks over the creation of new access tracks, where possible.

Ongoing use of the upgraded tracks and new tracks during operation would be required for asset maintenance activities. These general asset maintenance activities can predominantly be undertaken with light vehicle access within the easement. Repairs and upgrade works would require access for larger vehicles. The use of formed access tracks may not be required to all transmission towers. Some of the upgraded tracks and new tracks that are not required for operation would be restored with groundwater following construction. The final extent of reinstatement is uncertain given that some landowners may wish to retain access tracks which are not required for asset maintenance.

Routine vegetation maintenance would be required along permanent access tracks during operation. This would involve clearing of vegetation on the track, track sides (for mobile plant and the like), and/or trimming of trees that pose fall-in risk to the access track corridor that would prevent safe vehicle passage.

Access tracks would be left in a suitable condition in consultation with the landowner. In some cases, access easements may be required to allow operational access to the transmission line easement from the nearest public road. These access easements would be negotiated with landowners as necessary.

Access track maintenance would be carried out as required during operation and based on ongoing use. Track upgrades would be undertaken to allow for operation and maintenance activities within the transmission line easement and at switching stations and substations to be continued.

During operation, the public road network would be used where required for routine maintenance. The switching stations and transmission lines would be inspected by the network operator's operational staff and contractors on a regular basis, with other operational activities occurring in the event of an emergency.

Parking

Parking for a limited number of maintenance and operational light and heavy vehicles would be provided at the new Bayswater South and Olney switching stations. For transmission line maintenance, parking would be possible within the transmission line easement.

A.5.5 Land requirements for operation and maintenance

Property acquisition would be carried out prior to construction, with permanent acquisitions remaining in place throughout operation for the transmission line easement and switching stations.

Land permanently acquired for the transmission line easement would provide a right of access for network operator staff and contractors to maintain and operate the transmission line and other operational assets. The easement also generally identifies the zone of ongoing vegetation management to ensure safe electrical clearances during the operation of the transmission lines. Vegetation management beyond the easement may also occur where nearby hazard trees have the potential to fall and breach safety clearances, as is discussed in *section A.5.1*.

As is outlined in *section A.3.9*, permanent partial property acquisition would be required for the Bayswater South and Olney switching stations to allow for the operation and maintenance of the switching stations by network operator staff and contractors.

A.6 Decommissioning and rehabilitation

Prior to the completion of construction, temporary areas used to support the construction of the project, such as construction support sites (including temporary worker accommodation) and laydown areas, would be decommissioned and rehabilitated as required. As outlined in *Chapter 12 (Land use and property) of the EIS*, pre-condition assessments of the construction impact area would be undertaken to determine the existing condition of assets, infrastructure, utilities and the general condition of the land. This would inform requirements for rehabilitation within property management plans established with landowners.

Following construction, the life of the project is anticipated to be around 50 years and potentially beyond this with regular maintenance and upgrades. If required, decommissioning and rehabilitation would occur over 2 years.

Upon closure, the transmission line, transmission towers and switching stations would be removed and disturbed areas would be rehabilitated to pre-existing land use or other condition, in consultation with relevant stakeholders. In addition, new access tracks would, in consultation with relevant stakeholders, either be retained for their continued use or be decommissioned and disturbed areas rehabilitated to the pre-existing land use or other condition.

A detailed decommissioning and rehabilitation plan would be prepared prior to decommissioning of the HTP if and when required.

Amendment Report - Appendix B Revised utility adjustments schedule

Hunter Transmission Project

February 2026



B

Revised utility adjustments schedule

Table B1 Revised utility adjustments schedule

Utility owner	Type of utility	Overhead / underground	Location (town)	Utility description	Impacted by	Proposed treatment
AGL	Water	Above ground	Bayswater	Overland leachate treatment pipe	Bayswater switching station	Relocation / Protection
AGL	Water	Underground	Bayswater	Sludge Line	Access track/ transmission line	Protect
AGL	Water	Underground	Bayswater	Brine pipeline	Access track/ transmission line	Protect
AGL	Water	Underground	Bayswater	Water supply pipeline	Access track	Protect
AGL	Water	Underground	Bayswater	Water supply pipeline	Access track	Protect
AGL	Water	Underground	Bayswater	Water supply pipeline from river water supply system	Access track	Protect
AGL	Water	Underground	Bayswater	River water system gravity main	Transmission line	Protect
AGL	Electricity	Overhead	Howick	Future 33kV distribution line	Bayswater switching station	Relocation / Protection
AGL	Electricity	Underground	Howick	33kV underground/ overhead distribution line	Transmission line	To be confirmed
AGL	Electricity	Overhead	Howick	33kV Overhead Line	Transmission line	Relocate
AGL	Telecommunications	Underground	Bayswater	High Pressure Pumping Station Control Cables	Access Track/Transmission Line	Protect

Utility owner	Type of utility	Overhead / underground	Location (town)	Utility description	Impacted by	Proposed treatment
Ampol	Fuel	Underground	Cooranbong	High Pressure Fuel Pipeline	Optic Fibre stringing at tower immediately east of pipeline	Protect
Ausgrid	Electricity	Overhead	Rock Point Rd, Eraring	Powerline	Substation	Avoid / protect
Ausgrid	Electricity	Overhead	Rock Point Rd, Eraring	Powerline	Substation	Avoid / protect
Ausgrid	Electricity	Overhead	Millfield	11kV Overhead Line + LV	Access track	Protect / relocate
Ausgrid	Electricity	Overhead	Millfield	11kV Overhead Line + LV	Access track	Protect / relocate
Ausgrid	Electricity	Overhead	Cooranbong	LV Overhead Line	Intersection	Protect / relocate
Ausgrid	Electricity	Overhead	Cooranbong	132kV Overhead Line	Transmission line	Crane & sheaves
Ausgrid	Electricity	Overhead	Cooranbong	132kV Overhead Line	Transmission line	Crane & sheaves
Ausgrid	Electricity	Overhead	Cooranbong	132kV Overhead Line + 66kV Underbuild	Transmission Line	Crane & sheaves
Ausgrid	Electricity	Overhead	Cooranbong	11kV Overhead Line	Intersection / access track	Avoid / protect
Ausgrid	Electricity	Overhead	Cooranbong	11kV Overhead Line	Intersection / access track	Avoid
Ausgrid	Electricity	Overhead	Singleton	132kV Overhead Line	Intersection / access track	Avoid
Ausgrid	Electricity	Overhead	Singleton	11kV Overhead Line	Intersection / access track	Avoid

Utility owner	Type of utility	Overhead / underground	Location (town)	Utility description	Impacted by	Proposed treatment
Ausgrid	Electricity	Overhead	Singleton	LV Overhead Line	Intersection / access track	Avoid / protect
Ausgrid	Electricity	Overhead	Ravensworth	11kV Overhead Line	Intersection / access track	Avoid
Ausgrid	Electricity	Overhead	Warkworth, Singleton	132kV Overhead Line	Intersection / access track	Avoid
Ausgrid	Electricity	Overhead	Mount Thorley, Singleton	Sub-Transmission and 11kV Overhead Line	Intersection / access track	Avoid
Ausgrid	Electricity	Overhead	Broke Rd, Singleton	11kV distribution line	Intersection / access track	Avoid
Ausgrid	Electricity	Overhead	Broke, Singleton	11kV distribution line	Intersection / access track	Avoid / relocate
Ausgrid	Electricity	Overhead	Pokolbin, Cessnock	11kV distribution line	Intersection	Avoid / protect
Ausgrid	Electricity	Overhead	Pokolbin, Cessnock	11kV distribution line	Intersection	Avoid / protect
Ausgrid	Electricity	Overhead	Cooranbong	11kV distribution line	Construction support site	Relocate
Ausgrid	Electricity	Overhead	Cooranbong	11kV distribution line	Construction support site	Relocate
Ausgrid	Electricity	Overhead	Cooranbong	11kV distribution line	Construction support site	Avoid / protect
Ausgrid	Electricity	Overhead	Millfield	Low voltage overhead line (voltage to be confirmed)	Intersection	Avoid / protect

Utility owner	Type of utility	Overhead / underground	Location (town)	Utility description	Impacted by	Proposed treatment
Ausgrid	Electricity	Overhead	Millfield	Low voltage overhead line (voltage to be confirmed)	Intersection	Avoid / protect
Ausgrid	Electricity	Overhead	Millfield	Low voltage overhead line (voltage to be confirmed)	Intersection	Avoid / protect
Ausgrid	Electricity	Overhead	Millfield	Low voltage overhead line (voltage to be confirmed)	Intersection	Avoid / protect
Ausgrid	Electricity	Overhead	Millfield	High voltage overhead transmission line (voltage to be confirmed)	Intersection	Avoid / protect
Ausgrid	Electricity	Underground	Gouldsville	Low voltage cable possibly underground	CSS	Avoid
Ausgrid	Electricity	Overhead	Millfield	11kV distribution line	Access track	Avoid / protect
Ausgrid	Electricity	Overhead	Millfield	11kV distribution line	Access track	Avoid / protect
Ausgrid	Electricity	Overhead	Millfield	11kV distribution line	Access track	Avoid / protect
Ausgrid	Electricity	Overhead	Millfield	11kV distribution line	Access track	Avoid / protect
Ausgrid	Electricity	Overhead	Millfield	11kV distribution line	Access track	Avoid / protect
Ausgrid	Electricity	Overhead	Millfield	11kV distribution line	Access track	Avoid / protect
Ausgrid	Electricity	Overhead	Millfield	11kV distribution line	Access track	Avoid / protect
Ausgrid	Electricity	Overhead	Millfield	11kV distribution line	Access track	Avoid / protect
Ausgrid	Electricity	Overhead	Millfield	11kV distribution line	Access track	Avoid / protect
Ausgrid	Electricity	Overhead	Millfield	11kV distribution line	Access track	Avoid / protect

Utility owner	Type of utility	Overhead / underground	Location (town)	Utility description	Impacted by	Proposed treatment
Ausgrid	Electricity	Overhead	Millfield	11kV distribution line	Intersection	Relocate
Ausgrid	Electricity	Overhead	Millfield	11kV distribution line	Intersection	Relocate
Ausgrid	Electricity	Overhead	Millfield	11kV distribution line	Intersection	Relocate
Ausgrid	Electricity	Overhead	Cooranbong	11kV distribution line	Intersection	Avoid / protect
Ausgrid	Electricity	Overhead	Cooranbong	11kV distribution line	Intersection	Avoid / protect
Ausgrid	Electricity	Overhead	Martinsville	Low voltage overhead line (voltage to be confirmed)	Access track	Protect / avoid
Ausgrid	Electricity	Overhead	Martinsville	High voltage overhead transmission line (voltage to be confirmed)	Access track	Protect / relocate
Ausgrid	Electricity	Overhead	Martinsville	Low voltage overhead line (voltage to be confirmed)	Access track	Protect / relocate
Ausgrid	Electricity	Overhead	Martinsville	High voltage overhead transmission line (voltage to be confirmed)	Access track	Protect / relocate
Ausgrid	Electricity	Overhead	Martinsville	Low voltage overhead line (voltage to be confirmed)	Access track	Protect / relocate
Ausgrid	Electricity	Overhead	Martinsville	High voltage overhead transmission line (voltage to be confirmed)	Access track	Protect / relocate
Ausgrid	Electricity	Overhead	Martinsville	High voltage overhead transmission line (voltage to be confirmed)	Access track	Protect / relocate

Utility owner	Type of utility	Overhead / underground	Location (town)	Utility description	Impacted by	Proposed treatment
Ausgrid	Electricity	Overhead	Martinsville	11kV distribution line	Intersection	Protect / relocate
Ausgrid	Electricity	Overhead	Martinsville	11kV distribution line	Intersection	Protect / relocate
Ausgrid	Electricity	Overhead	Martinsville	11kV distribution line	Switching station	Protect / relocate
Ausgrid	Electricity	Overhead	Jerrys Plains	132kV Overhead line	Transmission line	Hurdle
Ausgrid	Electricity	Overhead	Lemington	11kV distribution line	Transmission line	Relocate
Ausgrid	Electricity	Overhead	Lemington	11kV distribution line	Transmission line	Relocate
Ausgrid	Electricity	Overhead	Lemington	415V LV Overhead line	Transmission line	Avoid
Ausgrid	Electricity	Overhead	Lemington	11kV distribution line	Transmission line	Relocate
Ausgrid	Electricity	Overhead	Lemington	66kV + 11kV Overhead line	Transmission line	Hurdle
Ausgrid	Electricity	Overhead	Warkworth	66kV Overhead line	Transmission line	Relocate
Ausgrid	Electricity	Overhead	Warkworth	11kV distribution line	Transmission line	Relocate
Ausgrid	Electricity	Overhead	Warkworth	11kV distribution line	Transmission line	Relocate
Ausgrid	Electricity	Overhead	Warkworth	66kV Overhead line	Transmission line	Relocate
Ausgrid	Electricity	Overhead	Warkworth	66kV Overhead line	Transmission line	N/A
Ausgrid	Electricity	Overhead	Warkworth	11kV Overhead Line	Transmission line / laydown area	Relocate / protect
Ausgrid	Electricity	Overhead	Gouldsville	11kV Overhead Line	Transmission line	Relocate
Ausgrid	Electricity	Overhead	Gouldsville	132kV Overhead Line	Transmission line	Hurdle
Ausgrid	Electricity	Overhead	Gouldsville	11kV Overhead Line	Transmission line	Relocate
Ausgrid	Electricity	Overhead	Gouldsville	11kV Overhead Line	Transmission line	Relocate

Utility owner	Type of utility	Overhead / underground	Location (town)	Utility description	Impacted by	Proposed treatment
Ausgrid	Electricity	Overhead	Gouldsville	66kV Overhead Line	Transmission line	Relocate / hurdle
Ausgrid	Electricity	Overhead	Gouldsville	11kV Overhead Line	Transmission Line / CSS Gouldsville Road	Protect
Ausgrid	Electricity	Overhead	Gouldsville	66kV Overhead Line	Transmission Line / CSS Gouldsville Road	Avoid / Relocate
Ausgrid	Electricity	Overhead	Gouldsville	11kV Overhead Line	Transmission Line	Relocate
Ausgrid	Electricity	Overhead	Gouldsville	11kV Overhead Line	Transmission Line	Relocate
Ausgrid	Electricity	Overhead	Gouldsville	11kV Overhead Line	Transmission line	Relocate
Ausgrid	Electricity	Overhead	Gouldsville	11kV Overhead Line	Transmission line	Relocate
Ausgrid	Electricity	Overhead	Mount Thorley	11kV Overhead Line	Transmission line	Relocate
Ausgrid	Electricity	Overhead	Mount Thorley	11kV Overhead Line	Transmission line	Relocate
Ausgrid	Electricity	Overhead	Mount Thorley	11kV Overhead Line	Transmission line	Relocate
Ausgrid	Electricity	Overhead	Mount Thorley	132kV Overhead Line	Transmission line	Hurdle
Ausgrid	Electricity	Overhead	Mount Thorley	66kV Overhead Line	Transmission line	Hurdle
Ausgrid	Electricity	Overhead	Mount Thorley	11kV Overhead Line	Transmission line intersection	Avoid / relocate
Ausgrid	Electricity	Overhead	Mount Thorley	11kV Overhead Line	Transmission line intersection	Relocate
Ausgrid	Electricity	Overhead	Mount Thorley	66kV Overhead Line	Transmission line	Hurdle
Ausgrid	Electricity	Overhead	Singleton Military Area	11kV Overhead Line	Transmission line	Relocate

Utility owner	Type of utility	Overhead / underground	Location (town)	Utility description	Impacted by	Proposed treatment
Ausgrid	Electricity	Overhead	Millfield	11kV Overhead Line	Transmission Line	Relocate spur to take off west side of easement. / Protection of the asset
Ausgrid	Electricity	Overhead	Millfield	11kV Overhead Line	Transmission Line / Construction support site (Wollombi Rd B)	Relocate
Centennial Coal	Electricity	Overhead	Eraring	Transmission line	Substation	Avoid / protect
Centennial Coal	Electricity	Overhead	Eraring	Transmission line	Substation	Avoid / protect
Centennial Coal	Electricity	Overhead	Eraring	Transmission line	Substation	Avoid / protect
Centennial Coal / Origin	Water	Underground	Eraring	Creek diversion pipe	Substation pad	To be confirmed
Centennial Coal / Origin	Water	Underground	Eraring	Cooranbong mine water supply	Substation pad	To be confirmed
Centennial Coal / Origin	Water	Underground	Eraring	Isolation contaminated system line	Substation pad	To be confirmed
Centennial Coal / Origin	Water	Above ground	Eraring	Four large above ground cooling water pipes, cleraly visible on Google	Substation pad	To be confirmed
Centennial Coal / Origin	Water	Underground	Eraring	Reclaimed water system	Substation pad	To be confirmed

Utility owner	Type of utility	Overhead / underground	Location (town)	Utility description	Impacted by	Proposed treatment
Centennial Coal / Origin	Water	Underground	Eraring	Domestic System water supply	Substation pad	To be confirmed
Centennial Coal / Origin	Water	Underground	Eraring	Fire service, domestic water, compressed air piping	Substation pad	To be confirmed
Centennial Coal / Origin	Water	Above ground	Eraring	Fire Service, Domestic Water, Compressed Air Pumps / motors	Substation pad	To be confirmed
Centennial Coal / Origin	Water	Underground	Eraring	Potable water main	Substation pad	To be confirmed
Centennial Coal / Origin	Water	Underground	Rock Point Rd, Eraring	Potable Water Supply	Substation	To be confirmed
Centennial Coal / Origin	Electricity	Underground	Eraring SS	Cable trench	Substation Pad	To be confirmed
Centennial Coal / Origin	Electricity	Underground	Rock Point Rd, Eraring	Optical Fibre Monitoring Cable	Substation Pad	To be confirmed
Centennial Coal / Origin	Stormwater Drainage	Underground	Eraring SS	Open channel	Substation Pad	To be confirmed
Centennial Coal / Origin	Stormwater Drainage	Underground	Rock Point Rd, Eraring	Culvert, headwall	Substation/ Access Road	To be confirmed
Cessnock City Council	Stormwater Drainage	Underground	Millfield	Pipe, pits	Intersection	Protect / adjust (if drainage confirmed)
Glencore	Railway	Onground	Mount Thorley	Railway crossing	Transmission Line	Hurdle

Utility owner	Type of utility	Overhead / underground	Location (town)	Utility description	Impacted by	Proposed treatment
Hunter Water Corporation	Water	Underground	Millfield	Water pressure main, water valves	Laydown	Protect / relocate
Hunter Water Corporation	Water	Underground	Millfield	Abandon water main	Intersection	Protect / relocate
Hunter Water Corporation	Water	Underground	Millfield	Water pressure main, water valves	Intersection	Protect / relocate
Hunter Water Corporation	Water	Underground	Millfield	Water main	Intersection	Removal / protection
Hunter Water Corporation	Water	Underground	Millfield	Water pressure main, water valves	Intersection	Relocation / protection
Hunter Water Corporation	Water	Underground	Cooranbong	Water pressure main, water valves	Intersection	Relocation / protection
Hunter Water Corporation	Sewer	Underground	Millfield	Rising main	Intersection	Relocate
Hunter Water Corporation	Sewer	Underground	Cooranbong	Rising main	Intersection	Relocation / protection

Utility owner	Type of utility	Overhead / underground	Location (town)	Utility description	Impacted by	Proposed treatment
Hunter Water Corporation	Sewer	Underground	Cooranbong	Rising main	Intersection	Relocation / protection
HVO	Water	Underground	Lemington	Watermain	Transmission line	Protect/ avoid
HVO	Water	Underground	Lemington	Watermain	Transmission line	Protect/ avoid
HVO	Water	Underground	Lemington	Watermain	Transmission line	Protect/ avoid
HVO	Water	Underground	Lemington	Watermain	Transmission line	Protect/ avoid
HVO	Water	Underground	Lemington	Watermain	Transmission line	Protect/ avoid
HVO	Water	Underground	Lemington	Watermain	Transmission line	Protect/ avoid
HVO	Water	Underground	Lemington	Watermain	Transmission line	Protect/ avoid
HVO	Water	Underground	Lemington	Watermain	Transmission line	Protect/ avoid
HVO	Water	Underground	Warkworth	Suction pipe in dam - north	Transmission line	Relocate
HVO	Water	Underground	Warkworth	Suction pipe in dam - south	Transmission line	Relocate
HVO	Water	Above ground	Warkworth	Pumping station	Transmission line	Protect / relocate
HVO	Electricity	Overhead	Lemington	11kV Overhead Line	N/A	Protect/ avoid
HVO	Electricity	Underground	Lemington	415V Underground Powerline	N/A	Protect/ avoid
HVO	Electricity	Overhead	Warkworth	11kV Overhead Line	Transmission line	Relocate/ remove
HVO	Electricity	Overhead	Lemington	66kV Overhead Line	Transmission line	Hurdle
HVO	Electricity	Overhead	Lemington	66kV Overhead Line	Transmission line	Relocate
HVO	Electricity	Overhead	Lemington	6.6kV HVO Haul Road Line	Transmission line	Hurdle / relocate

Utility owner	Type of utility	Overhead / underground	Location (town)	Utility description	Impacted by	Proposed treatment
HVO	Electricity	Overhead	Warkworth	66kV Overhead Line	Transmission line	Relocate
HVO	Electricity	Overhead	Warkworth	66kV Overhead Line	Transmission line	Relocate
HVO	Electricity	Overhead	Warkworth	66kV Overhead Line	Transmission line	Relocate
HVO	Electricity	Overhead	Warkworth	11kV Overhead Line	Transmission line	Relocate
HVO	Electricity	Overhead	Warkworth	11kV Overhead Line	Transmission line	Relocate
HVO	Electricity	Overhead	Warkworth	11kV Overhead Line	Transmission line	Relocate
HVO / Ausgrid	Electricity	Overhead	Lemington	132kV Overhead Line	Transmission line, intersection	Avoid
HVO / Ausgrid	Electricity	Overhead	Lemington	132kV Overhead Line	Transmission line	N/A
HVO / Ausgrid	Electricity	Overhead	Lemington	132kV Overhead Line	Transmission line	N/A
HVO / Ausgrid	Electricity	Overhead	Lemington	132kV Overhead Line	Transmission line	N/A
Jemena	Gas	Underground	Cooranbong	High pressure gas	Optic Fibre stringing at tower immediately east of pipeline	Protect
Jemena	Gas	Underground	Cooranbong	Medium pressure gas main	Intersection	Protect
Military	Telecommunications	Overhead	Singleton Military Area	Military communication tower at Range Control HQ	Transmission line	To be confirmed
Military	Telecommunications	Overhead	Singleton Military Area	Military communication tower at Hut Hill	Transmission line	To be confirmed

Utility owner	Type of utility	Overhead / underground	Location (town)	Utility description	Impacted by	Proposed treatment
Military	Telecommunications	Overhead	Singleton Military Area	Communication tower	Transmission line	To be confirmed
MT Raw Water	Water	Underground	Warkworth	Watermain	TBC	To be confirmed
MT Raw Water	Water	Underground	Warkworth	Watermain	To be confirmed	To be confirmed
NBN/ Telstra	Telecommunications	Underground	Millfield	Cable, conduit, pit	Intersection	Protect / relocate
NBN/ Telstra	Telecommunications	Underground	Millfield	Cable, conduit, pit	Intersection	Protect / relocate
NBN/ Telstra	Telecommunications	Underground	Millfield	Cable, conduit, pit	Intersection	Protect / relocate
Nextgen	Telecommunications	Underground	Cooranbong	Cable, conduit, pit, marker posts	Access track	Protect
Optus	Telecommunications	Underground	Cooranbong	Cable, pit	Intersection	Protect/ relocate
Optus	Telecommunications	Underground	Cooranbong	Cable, pit	Intersection	Protect/ relocate
Redbank	Water	Underground	Gouldsville	Watermain	To be confirmed	To be confirmed
Redbank	Electricity	Overhead	Gouldsville	6.6kV Overhead Line immediately south of E013A	Transmission Line	Relocate
Singleton Council	Water	Underground	Mount Thorley	Water pressure main, water valves	Intersection	Protect / relocate
Singleton Council	Water	Underground	Muswellbrook	Water pressure main, water valves	Substation / Transmission Line	Avoid / protect

Utility owner	Type of utility	Overhead / underground	Location (town)	Utility description	Impacted by	Proposed treatment
Singleton Council	Water	Underground	Muswellbrook	Water pressure main, water valves	Substation / Transmission Line	Avoid / protect
Singleton Council	Water	Underground	Mount Thorley	Water pressure main, water valves	Intersection	Avoid / protect / relocate
Singleton Council	Water	Underground	Mount Thorley	Water main	Intersection	Protect / Adjust particularly(if drainage exists / impacted)
Singleton Council	Water	Underground	Mount Thorley	Water pressure main, water valves	Transmission line	Protection
Singleton Council	Water	Underground	Mount Thorley	Water pressure main, water valves	Intersection	Avoid
Singleton Council	Stormwater drainage	Underground	Gouldsville	Culvert, headwall	Construction support site	Protect / adjust (if drainage exists / impacted)
Singleton Council	Stormwater drainage	Underground	Gouldsville	Culvert	Intersection	Protect / adjust (if drainage exists / impacted)
Singleton Council	Stormwater drainage	Underground	Lemington	Culvert, headwall	Access track	Protect / adjust
Singleton Council	Stormwater drainage	Underground	Broke	Culvert, headwall	Intersection	Protect / adjust
Singleton Council	Stormwater drainage	Underground	Mount Thorley	Culvert, headwall at driveways	Access track	Protect / adjust

Utility owner	Type of utility	Overhead / underground	Location (town)	Utility description	Impacted by	Proposed treatment
Sydney Trains	Railway	Onground	Eraring power station	Railway crossing	OPGW	Protect / hurdle
Sydney Trains	Electricity	Overhead	Rock Point Rd, Eraring	Rail powerline	Substation	Avoid / protect
TBC	Telecommunications	Overhead	Singleton Military Area	Military communication tower at retrans peak sector vere	Tranmission line	TBC
Telstra	Telecommunications	Underground	Millfield	Cable, conduit, pit, pillar	Access track	Protect / relocate
Telstra	Telecommunications	Underground	Millfield	Cable, conduit, pit, pillar	Access track	Protect / relocate
Telstra	Telecommunications	Underground	Millfield	Cable, conduit, pit, pillar	Access track	Protect / relocate
Telstra	Telecommunications	Underground	Millfield	Cable, conduit, pit, pillar	Access track	Protect / relocate
Telstra	Telecommunications	Underground	Millfield	Cable, conduit, pit, pillar	Access track	Relocate
Telstra	Telecommunications	Underground	Warkworth	Cable, conduit, pit	Intersection	Protect / relocate
Telstra	Telecommunications	Underground	Warkworth	Cable, conduit, pit	Intersection	Protect / relocate
Telstra	Telecommunications	Underground	Warkworth	Cable, conduit, pit	Intersection	Protect / relocate
Telstra	Telecommunications	Underground	Cooranbong	Cable, conduit, pit	Intersection	Protect / relocate
Telstra	Telecommunications	Underground	Cooranbong	Cable, conduit, pit	Intersection	Protect / relocate
Telstra	Telecommunications	Underground	Cooranbong	Cable, conduit, pit	Intersection	Protect / relocate
Telstra	Telecommunications	Underground	Cooranbong	Cable, conduit, pit	Intersection	Protect / relocate
Telstra	Telecommunications	Underground	Cooranbong	Cable, conduit, pit	Intersection	Protect / relocate
Telstra	Telecommunications	Underground	Cooranbong	Cable, conduit, pit	Intersection	Protect / relocate

Utility owner	Type of utility	Overhead / underground	Location (town)	Utility description	Impacted by	Proposed treatment
Telstra	Telecommunications	Underground	Mount Thorley	Cable, pit, marker posts	Intersection	Avoid / protect
Telstra	Telecommunications	Underground	Gouldsville	Cable, pit	Transmission line	Protect / relocate
Telstra	Telecommunications	Underground	Gouldsville	Cable, pit	Transmission line	Protect / relocate
Telstra	Telecommunications	Underground	Martinsville	Cable, conduit, pit	Intersection	Protect
Telstra	Telecommunications	Underground	Martinsville	Cable, conduit, pit	Intersection	Protect
Telstra	Telecommunications	Underground	Martinsville	Cable, conduit, pit	Intersection	Protect / relocate
Telstra	Telecommunications	Underground	Gouldsville	Cable, pit, marker posts	Construction support site	Avoid / protect
Telstra	Telecommunications	Underground	Gouldsville	Cable, pit, marker posts	Construction support site	Avoid / Protect
Telstra	Telecommunications	Underground	Gouldsville	Cable, pit, marker posts	Construction support site	Avoid
Telstra	Telecommunications	Underground	Gouldsville	Cable, conduit, pit	Transmission line, access tracks	Avoid/ protect
Telstra	Telecommunications	Underground	Gouldsville	Cable, conduit, pit	Transmission line	Avoid/ protect
Telstra	Telecommunications	Underground	TBC	Cable, conduit, pit	Earthwire	Avoid
Telstra	Telecommunications	Underground	Muswellbrook	Cable	Construction support site	Avoid
Telstra	Telecommunications	Underground	Muswellbrook	Cable	Construction support site	Avoid
Telstra	Telecommunications	Underground	Muswellbrook	Cable	Construction support site	Avoid

Utility owner	Type of utility	Overhead / underground	Location (town)	Utility description	Impacted by	Proposed treatment
Telstra	Telecommunications	Underground	Howick	Cable, pit	Construction support site	Protect / relocate
Telstra	Telecommunications	Underground	Howick	Cable, pit	Construction support site	Protect / relocate
Telstra	Telecommunications	Underground	Howick	Cable, pit	Construction support site	Protect
Telstra	Telecommunications	Underground	Mount Thorley	Cable, pit	Transmission line, intersection	Protect
Telstra	Telecommunications	Underground	Mount Thorley	Cable, pit	Transmission line, intersection	Protect
Telstra	Telecommunications	Underground	Mount Thorley	Cable, pit	Transmission line, intersection	Protect
Telstra	Telecommunications	Underground	Mount Thorley	Cable, pit	Transmission line, intersection	Protect
Telstra	Telecommunications	Underground	Cooranbong	Cable, conduit, pit	Construction support site	Protect / relocate
Telstra	Telecommunications	Underground	Cooranbong	Cable, conduit, pit	Construction support site	Protect / relocate
Telstra	Telecommunications	Underground	Cooranbong	Cable, conduit, pit	Construction support site	Protect / relocate
Telstra	Telecommunications	Underground	Cooranbong	Cable, conduit, pit	Construction support site	Protect / relocate
Telstra	Telecommunications	Underground	Lemington	Cable, pit	Laydown	Protect / relocate

Utility owner	Type of utility	Overhead / underground	Location (town)	Utility description	Impacted by	Proposed treatment
Telstra	Telecommunications	Underground	Muswellbrook	Cable, conduit, pit	Substation	Avoid
Telstra	Telecommunications	Underground	Muswellbrook	Cable, pit	Substation	Avoid
Telstra	Telecommunications	Underground	Muswellbrook	Cable, conduit, pit	Substation	Avoid
Telstra	Telecommunications	Underground	Eraring	Cable, pit, pillar	Substation	Avoid / protect
Telstra	Telecommunications	Overhead	Martinsville	Cable, conduit, pit, aerial cable	Access track	Avoid / protect
Telstra	Telecommunications	Overhead	Martinsville	Cable, conduit, pit, aerial cable	Access track	Avoid / protect
Telstra	Telecommunications	Underground	Martinsville	Cable, conduit, pit, aerial cable	Access track	Avoid / protect
Telstra	Telecommunications	Underground	Lemington	Cable, conduit, pit	Intersection	Protect
Telstra	Telecommunications	Underground	Lemington	Cable, conduit, pit	Intersection	Protect / relocate
Telstra	Telecommunications	Underground	Lemington	Cable, conduit, pit	Intersection	Protect
Telstra	Telecommunications	Underground	Mount Thorley	Cable, conduit, pit, marker posts	Intersection / access track	Protect
Telstra	Telecommunications	Underground	Mount Thorley	Cable, conduit, pit, marker posts	Intersection	Protect
Telstra	Telecommunications	Underground	Mount Thorley	Cable, conduit, pit, marker posts	Intersection	Protect
Telstra	Telecommunications	Underground	Mount Thorley	Cable, conduit, pit, marker posts	Intersection	Protect / relocate
Telstra	Telecommunications	Underground	Mount Thorley	marker posts, cable, pit	Intersection / access track	Avoid / protect

Utility owner	Type of utility	Overhead / underground	Location (town)	Utility description	Impacted by	Proposed treatment
Telstra	Telecommunications	Underground	Mount Thorley	marker posts, cable, pit	Intersection / access track	Avoid / protect
Telstra	Telecommunications	Underground	Mount Thorley	marker posts, cable, pit	Intersection / access track	Avoid / protect
Telstra	Telecommunications	Underground	Millfield	Cable, pit	access track	Protect / relocate
Telstra	Telecommunications	Underground	Millfield	Cable, pit	access track	Protect / relocate
Telstra	Telecommunications	Underground	Millfield	Cable, pit	access track	Protect/ avoid
Telstra	Telecommunications	Underground	Millfield	Cable, pit	access track	Protect / relocate
Telstra	Telecommunications	Underground	Millfield	Cable, pit	access track	Protect / Avoid
Telstra	Telecommunications	Underground	Millfield	Cable, pit	access track	Protect / relocate
Telstra	Telecommunications	Underground	Millfield	Cable, pit	access track	Protect / relocate
Telstra	Telecommunications	Underground	Millfield	Cable, pit	access track	Protect / relocate
Telstra	Telecommunications	Underground	Millfield	marker posts, cable, pit	Laydown	Protect / relocate
Telstra	Telecommunications	Underground	Broke	Cable, pit	Intersection	Avoid
Telstra	Telecommunications	Underground	Broke	Cable, pit	Intersection	Avoid
Telstra	Telecommunications	Underground	Pokolbin	Cable, conduit, pit	Access track	Protect / relocate
Telstra	Telecommunications	Underground	Pokolbin	Cable, conduit, pit	Access track	Protect / relocate
Telstra	Telecommunications	Underground	Pokolbin	Cable, conduit, pit	Intersection	Protect / avoid
Telstra	Telecommunications	Underground	Pokolbin	Cable, conduit, pit	Intersection	Protect / relocate
Telstra	Telecommunications	Underground	Pokolbin	Cable, conduit, pit	Intersection	Protect / relocate

Utility owner	Type of utility	Overhead / underground	Location (town)	Utility description	Impacted by	Proposed treatment
Telstra	Telecommunications	Underground	Pokolbin	Cable, conduit, pit	Intersection	Protect / relocate
Telstra	Telecommunications	Underground	Millfield	Cable, conduit, pit, marker posts	Intersection	Protect
Telstra	Telecommunications	Underground	Millfield	Cable, conduit, pit, marker posts	Intersection	Protect / relocate
Telstra	Telecommunications	Underground	Millfield	Cable, conduit, pit, marker posts	Intersection	Protect / relocate
Telstra	Telecommunications	Underground	Cooranbong	Cable, conduit, pit	Intersection	Relocate
Telstra	Telecommunications	Underground	Cooranbong	Cable, asbestos conduit, pit,	Intersection	Protect / relocate
Telstra	Telecommunications	Underground	HVO	Cable, pit	Transmission line	Avoid / protect
Telstra	Telecommunications	Underground	HVO	Cable, pit	Transmission line	Avoid / protect
Telstra	Telecommunications	Underground	HVO	Cable, pit	Transmission line	Avoid / protect
Telstra	Telecommunications	Underground	HVO	Cable, pit	Transmission line	Avoid / protect
Telstra	Telecommunications	Underground	HVO	Cable, pit	Intersection	Avoid
Telstra	Telecommunications	Underground	HVO	Cable, conduit, pit	Intersection	Avoid
Telstra	Telecommunications	Underground	Gouldsville	Cable, pit	Transmission line	Protect
Telstra	Telecommunications	Underground	Mount Thorley	marker posts, cable, pit	Access track/ transmission line	Protect / relocate
Telstra	Telecommunications	Underground	Mount Thorley	Cable, conduit, pit, marker posts	Access track/ transmission line	Protect

Utility owner	Type of utility	Overhead / underground	Location (town)	Utility description	Impacted by	Proposed treatment
Telstra	Telecommunications	Underground	Mount Thorley	Cable, conduit, pit, marker posts	Access track/ transmission line	Protect
Telstra	Telecommunications	Underground	Mount Thorley	Cable, conduit, pit, marker posts	Access Track/Transmission Line	Protect
Telstra	Telecommunications	Underground	Mount Thorley	Cable, pit, marker posts	Intersection	Protect / relocate
Telstra	Telecommunications	Underground	Mount Thorley	Cable, conduit, pit, marker posts	Intersection	Protect / relocate
Telstra	Telecommunications	Underground	Mount Thorley	Cable, conduit, pit, marker posts	Intersection / access track	Protect / relocate
Telstra	Telecommunications	Underground	Mount Thorley	Cable, pit, marker posts	access track / transmission line	Protect / relocate
Telstra	Telecommunications	Underground	Mount Thorley	Cable, conduit, pit, marker posts	access track / transmission line	Protect
Telstra	Telecommunications	Underground	Mount Thorley	Cable, conduit, pit, marker posts	transmission line	Protect
Telstra	Telecommunications	Underground	Mount Thorley	Cable, conduit, pit, marker posts	transmission line	Protect
Telstra	Telecommunications	Underground	Mount Thorley	Cable, conduit	Intersection	Avoid / protect
Telstra	Telecommunications	Underground	Mount Thorley	Cable, Conduit	Intersection	Avoid
Telstra	Telecommunications	Underground	Mount Thorley	Cable, pit	Intersection	Avoid

Utility owner	Type of utility	Overhead / underground	Location (town)	Utility description	Impacted by	Proposed treatment
Telstra	Telecommunications	Underground	Singleton Military Area	Cable, pit, marker posts	Intersection / transmission line / access track	Protect
Telstra	Telecommunications	Underground	Singleton Military Area	Cable, pit, marker posts	Transmission line	Avoid
Telstra	Telecommunications	Underground	Broke	Cable	Transmission line / access track	Protect / relocate
Telstra	Telecommunications	Underground	Broke	Cable	Transmission line / access track	Protect / relocate
Telstra	Telecommunications	Underground	Broke	Cable, pit	Transmission line / access track	Avoid
Telstra	Telecommunications	Underground	Broke	Cable, pit	Transmission line / access track	Avoid
Telstra	Telecommunications	Underground	Millfield	Cable, conduit, pit	Construction support site, Transmission line	Protect / relocate
Telstra	Telecommunications	Underground	Millfield	Marker posts	Construction support site, Transmission line	Protect / relocate
Telstra	Telecommunications	Underground	Millfield	Cable, conduit, pit, marker posts	Construction support site, Transmission line	Protect / relocate
Telstra	Telecommunications	Underground	Millfield	Cable, pit	Transmission line	Protect / relocate
TPG Telecom	Telecommunications	Underground	Eraring	AAPT / PowerTel optic fibre cable	Substation	Avoid
Transgrid	Electricity	Overhead	SCA Jiliby	500kV Overhead Line	Transmission line	Relocate

Utility owner	Type of utility	Overhead / underground	Location (town)	Utility description	Impacted by	Proposed treatment
Transgrid	Electricity	Overhead	SCA Jiliby	500kV Overhead Line	Transmission line	Relocate
Transgrid	Electricity	Overhead	SCA Jiliby	500kV Overhead Line	Transmission line	Relocate
Transgrid	Electricity	Overhead	SCA Jiliby	500kV Overhead Line	Transmission line	Relocate
Transgrid	Electricity	Underground	Muswellbrook	UPC218 - 221 cable - likely underground	Substation	Avoid
Transgrid	Electricity	Overhead	Thomas Mitchell Drive, Muswellbrook	500kV Overhead line	Substation	Relocate
Transgrid	Electricity	Overhead	Thomas Mitchell Drive, Muswellbrook	500kV Overhead line	Substation	Relocate
Transgrid	Electricity	Overhead	Howick	330kV Overhead line	Transmission line	Sheaves
Transgrid	Electricity	Overhead	Howick	330kV Overhead line	Transmission line	Relocate
Transgrid	Electricity	Overhead	Howick	330kV Overhead line	Transmission line	Sheaves
Transgrid	Electricity	Overhead	Howick	330kV Overhead line	Transmission line	Relocate
Transgrid	Electricity	Overhead	Lemington	330kV Overhead line	Transmission line, intersection, access track	Avoid
Transgrid	Electricity	Overhead	Lemington	330kV Overhead line	Transmission line	Hurdle
Transgrid	Electricity	Overhead	Gouldsville	330kV Overhead line	Transmission line	Hurdle
Transgrid	Electricity	Overhead	Broke	330kV Overhead line	Transmission line	Hurdle
Transgrid	Electricity	Overhead	Broke	330kV Overhead line	Transmission line	Hurdle

Utility owner	Type of utility	Overhead / underground	Location (town)	Utility description	Impacted by	Proposed treatment
Transgrid	Electricity	Overhead	Broke	330kV Overhead Line	Transmission line	Relocate
Wambo	Water	Underground	Warkworth	Buried river pipeline	To be confirmed	Avoid/ protect
Wambo	Water	Underground	Warkworth	Buried river pipeline	To be confirmed	Avoid/ protect
Wambo	Water	Above ground	Warkworth	Pumping Station	Tranmission line	Relocate
Wambo	Electricity	Onground	Warkworth		N/A	Avoid
Wambo	Electricity	Onground	Warkworth		N/A	Avoid
Wambo	Electricity	Onground	Warkworth		N/A	Avoid
Wambo	Electricity	Underground	Warkworth	415V Underground Line	To be confirmed	Avoid/ protect
Wambo	Electricity	Underground	Warkworth	415V Underground Line	To be confirmed	Avoid/ protect
Wambo	Telecommunications	Overhead	Warkworth	Communications Tower	Transmission line	Relocate
Yancaol	Railway	Onground	Mount Thorley	Railway Crossing	Transmission line	Hurdle

Amendment Report – Appendix C Updated statutory compliance

Hunter Transmission Project

February 2026



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Updated statutory compliance

Appendix C: Updated Statutory compliance

An updated consideration of the Hunter Transmission Project (HTP, the ‘project’) against the objects of the NSW Environmental Planning and Assessment Act 1979 (EP&A Act), including consideration of the amendments and refinements to the project is provided in Table C.1.

Table C.1 Assessment of HTP against EP&A Act objects

Object	Consideration
a. to promote the social and economic welfare of the community and a better environment by the proper management, development and conservation of the State’s natural and other resources	The amended project has considered impacts to the community and social and economic impacts of the project have been assessed (see <i>Chapter 14 (Social)</i> and <i>Chapter 22 (Economic)</i> of the EIS). Revisions to these impacts to account for the amendments and refinements to the project have been included in section 5.8 and section 5.19 of the Amendment Report. Overall, the operation of the project would deliver a more reliable and more sustainable electricity grid by increasing the amount of renewable energy that can be delivered across the electricity grid, helping Australia transition to a low carbon future. This would provide NSW households with greater access to reliable and affordable electricity. As discussed in <i>Chapter 2 (Strategic context)</i> and <i>Chapter 3 (Alternatives and options)</i> of the EIS, the selection of the preferred corridor aimed to best meet the project objectives having regard to avoiding and minimising the impacts on the environment. the updated mitigation measures (see <i>Appendix D (Updated mitigation measures)</i>) would seek to further avoid and minimise environmental, social and economic impacts of the amended project where possible.
b. to facilitate ecologically sustainable development by integrating relevant economic, environmental and social considerations in decision-making about environmental planning and assessment	The principles of ecologically sustainable development have been considered in the planning and development of the project. Further details are provided in <i>Chapter 6 (Justification of the amended project)</i>. In addition, sustainability objectives and potential initiatives to be implemented for the construction and operation of the project have been developed, and these are aligned with the Infrastructure Sustainability Council’s IS rating scheme. The project will explore the potential of an ISC rating under the rating scheme during continued development of the project’s design.

Object	Consideration
c. to promote the orderly and economic use and development of land,	The project would promote the orderly and economic use and development of land by improving the transfer of renewable energy and enhancing the security of energy supply in the National Electricity Market (NEM). Consultation with affected landowners and other key stakeholders has occurred during the option selection and refinement process for the project, enabling their views, operating practices and use of land to be considered. The project has been developed to minimise impacts on land use where possible. The transmission line easement may restrict certain agricultural activities and/or require different farming methodologies to be adopted. However, the overall impact on existing agricultural activities is expected to be relatively small and would have a minor effect on productivity, particularly as grazing and other agricultural activities would typically be able to continue under transmission lines away from transmission towers. Mitigation measures have been identified that would further minimise impacts to land use along the transmission line easement.
d. to promote the delivery and maintenance of affordable housing	The project would not affect the delivery and maintenance of affordable housing.
e. to protect the environment, including the conservation of threatened and other species of native animals and plants, ecological communities and their habitats,	The project option selection process considered a range of constraints to avoid and/or minimise the impacts on the environment (see <i>Chapter 3 (Alternatives and options)</i> of the EIS), with a particular focus on the avoidance or impact minimisation of important biodiversity values and serious and irreversible impact (SAII) entities. These constraints included a range of ecological factors such as National parks, State conservation areas, watercourses, and threatened ecological communities. The impacts on biodiversity have been assessed in <i>Section 5.2 (Biodiversity)</i> and <i>Appendix E – Revised biodiversity development assessment report</i> in accordance with the NSW Biodiversity Assessment Method (BAM). The assessment found that while the project has been refined to avoid and minimise impacts to biodiversity values where practicable, direct impacts are expected to a number of native plant community types and threatened species and their habitats identified under the <i>Biodiversity Conservation Act 2016</i> (BC Act) and <i>Environment Protection and Biodiversity Conservation Act 1999</i> (EPBC Act). These impacts would primarily be attributed to the removal of vegetation and threatened ecological communities within the project impact area. Measures to minimise impacts to native vegetation and threatened species include the implementation of a Biodiversity Management Plan. The Australian Government Department of Climate Change, Energy, the Environment and Water (DCCEEW) determined the project to be a controlled action under the EPBC Act. The assessment on the relevant matters of national environmental significance (MNES) found that the project has potential to significantly impact on threatened ecological communities (TECs), threatened species (and/or their habitats) and migratory species under the EPBC Act. <i>Section 5.2 (Biodiversity)</i> and <i>Appendix E – Revised biodiversity development assessment report</i> provide further assessment on potential impacts on MNES and recommends mitigation measures to avoid or minimise these impacts. During finalisation of the project design, opportunities to further avoid or minimise impacts would be investigated.

Object	Consideration
	Further mitigation measures have also been identified to manage any such impacts, and an offsets strategy would be implemented to address the residual impacts of the project on biodiversity.
f. to promote the sustainable management of built and cultural heritage (including Aboriginal cultural heritage)	The impacts on Aboriginal and historic heritage have been assessed (see <i>Section 5.3 (Aboriginal heritage)</i> and <i>Section 5.9 (Historic heritage)</i>), and the corresponding <i>Appendix F – Aboriginal cultural heritage addendum</i> and <i>Appendix J – Historic heritage impact statement addendum</i>. The project has been designed to avoid impacts on heritage items where possible. The amended project has the potential to directly impact up to 217 Aboriginal objects, sites and places (including five rockshelters of moderate significance, five cultural sites (primarily resource and gathering), two culturally modified trees, two grinding grooves, 29 surface and sub surface stone artefact sites of moderate to high density, and 174 low density artefact scatters and isolated finds). Opportunities to further avoid or minimise these impacts through micro-siting new transmission towers and access tracks would be considered during detailed design, where practicable. Where impacts cannot be avoided, a range of mitigation and management measures would be implemented in consultation with Registered Aboriginal Parties (RAPs). During construction, the amended project would result in direct impacts to 9 listed historic heritage items or value sites. One heritage item would be demolished – the Wishing Well due to access track upgrades to Martinsville Hill Road. The Wishing Well will be subject to archaeological excavation and recording to ensure that a record is made prior to its demolition. These works will be undertaken in accordance with an Archaeological Method Statement. A commemorative plaque will be installed in a location as close as possible/practicable to the water source of the Wishing Well, which will be determined through further consultation with National Parks and Wildlife Service, Forestry Corporation of NSW and Heritage NSW. An additional 31 activity areas were identified as holding, or possible holding heritage significance at a local level, of which 11 would potentially be directly and/or indirectly impacted by the amended project. None of the other impacts identified are significant enough to diminish cultural significance in the project impact area to a degree where it is no longer recognisable. Once operational, the project would be unlikely to have any direct impacts to historic heritage items.
g. to promote good design and amenity of the built environment,	There would be impacts on the amenity of the built environment as a result of construction and/or operational impacts, including visual amenity, noise, and air (dust). These impacts would be minimised through the mitigation measures summarised in <i>Appendix D (Updated mitigation measures)</i>.
h. to promote the proper construction and maintenance of buildings, including the protection of the health and safety of their occupants,	The design, construction and maintenance of any buildings (including substation work) would be carried out in accordance with applicable standards and the construction contractor's management systems, as applicable. The health and safety of workers would also be managed in accordance with the contractor's management systems, as applicable.

Object	Consideration
i. to promote the sharing of the responsibility for environmental planning and assessment between the different levels of government in the State,	The Energy Corporation of New South Wales (EnergyCo) is seeking approval for the project under Part 5, Division 5.2 of the EP&A Act. The project will be assessed under the bilateral agreement process between the Australian and NSW Governments. Therefore, a single environmental impact statement (EIS) has been prepared to address the requirements set out by the NSW Department of Planning, Housing and Infrastructure (DPHI) and DCCEEW. Consultation completed prior to exhibition of the project is outlined in <i>Chapter 6 (Engagement)</i> and <i>Appendix D (Community engagement outcomes)</i> of the EIS. Consultation relating to the amendments and refinements of the project is summarised in <i>Chapter 1 (introduction)</i> of this Amendment Report, and provided in more detail in the Hunter Transmission Project response to submissions report. This has included engagement with relevant Australian, NSW and local government agencies, the Energy Regulator/Operator and relevant Members of Parliament. Ongoing consultation will occur during the construction of the project.
j. to provide increased opportunity for community participation in environmental planning and assessment	Community and stakeholder consultation for the project commenced in early 2023 and is ongoing and will continue throughout construction of the project. Consultation completed prior to exhibition of the project is outlined in <i>Chapter 6 (Engagement)</i> and <i>Appendix D (Community engagement outcomes)</i> of the EIS. Consultation relating to the amendments and refinements of the project is summarised in <i>Chapter 1 (introduction)</i> of this Amendment Report, and provided in more detail in the Hunter Transmission Project response to submissions report. The EIS will be placed on public exhibition and during this time stakeholders and the community have the opportunity to review and make comment via submission to DPHI. EnergyCo will prepare a submissions report that responds to comments and feedback on the EIS. This process provides further opportunity for community participation in the planning and assessment process for this project.

A summary of the requirements of section 190 and 192 of the Environmental Planning and Assessment Regulation 2021 (EP&A Regulation) and where they were addressed in this EIS is provided in Table C.2. To the extent that any of these matters are proposed to be amended via the Amendment Report, the location of where this information is included in the Amendment Report has been added to Table C.2.

Commentary as to the Amendment Report's compliance with section 179 of the Environmental Planning and Assessment Regulation 2021 is addressed in *Chapter 4 (Statutory context)* of the Amendment Report.

Table C.3 identifies other NSW and Commonwealth legislation of potential relevance to the HTP.

Table C.2 Section 190 and 192 requirements of an EIS

Requirement	Where contained in the EIS
Section 190 – Form of EIS	
(1) An environmental impact statement must contain the following information—	
the name, address and professional qualifications of the person who prepared the statement,	Certification page at the front of the EIS
the name and address of the responsible person (the applicant),	Certification page at the front of the EIS
- the address of the land: - to which the development application relates, or - on which the activity or infrastructure to which the statement relates will be carried out,	Certification page at the front of the EIS
a description of the development, activity or infrastructure,	Certification page at the front of the EIS
an assessment by the person who prepared the statement of the environmental impact of the development, activity or infrastructure, dealing with the matters referred to in this Division.	Certification page at the front of the EIS
(2) The person preparing the statement must have regard to - for State significant development– the State Significant Development Guidelines, or - for State significant infrastructure– the State Significant Infrastructure Guidelines.	The EIS has been prepared having regard to the <i>State Significant Infrastructure Guidelines – preparing an Environmental Impact Statement</i> (Appendix B, DPE July 2022) while meeting the requirements of the Planning Secretary's environmental assessment requirements (SEARs)

Requirement	Where contained in the EIS
3) An environmental impact statement must also contain a declaration by the person who prepared the statement of the following: the statement has been prepared in accordance with this Division, and - the statement contains all available information that is relevant to the environmental assessment of the development, activity - or infrastructure, and the information contained in the statement is not false or misleading.	Certification page at the front of this EIS
Section 192 - Content of EIS	
(1) An environmental impact statement must contain the following—	
a summary of the EIS,	Executive summary
a statement of the objectives of the development, activity or infrastructure	<i>Chapter 1 (Introduction) and Chapter 2 (Strategic context) of the EIS</i>
an analysis of feasible alternatives to the carrying out the development, activity or infrastructure, having regard to its objectives, including the consequences of not carrying out the development, activity or infrastructure,	<i>Chapter 3 (Alternatives and options) of the EIS</i>
- an analysis of the development, activity or infrastructure, including: — a full description of the development, activity or infrastructure, and — a general description of the environment likely to be affected by the development, activity or infrastructure and a detailed description of the aspects of the environment that are likely to be significantly affected, and — the likely impact on the environment of the development, activity or infrastructure, and — a full description of the measures to mitigate adverse effects of the development, activity or infrastructure on the environment, and — a list of the approvals that must be obtained under another Act or law before the development, activity or infrastructure may lawfully be carried out,	<i>Chapter 1 (Introduction), Chapter 2 (Strategic context), Chapter 4 (Project description), Chapter 5 (Statutory context) and this appendix, Chapters 8 to 22 (impact assessment chapters), and Appendix E (Proposed mitigation measures) of the EIS.</i> <i>Chapter 5 (assessment of impacts) and Appendix D (updated mitigation measures) of this Amendment Report.</i>
a compilation, in a single section of the EIS, of the measures referred to in paragraph (d)(iv),	<i>Appendix D (Updated mitigation measures) of this Amendment Report</i>

Requirement	Where contained in the EIS
the reasons justifying the carrying out of the development, activity or infrastructure, considering biophysical, economic and social factors, including the principles of ecologically sustainable development set out in section 193.	<i>Chapter 8 (Justification of the project)</i> of this Amendment Report

Table C.3 List of statutory considerations

Relevant provision	Relevance/consideration	Where addressed in the EIS (EnergyCo 2025) and this amended report
NSW		
<i>Aboriginal Land Rights Act (NSW) 1983 (ALR Act)</i>	The purpose of the ALR Act includes providing land rights for Aboriginal persons and representative Aboriginal Land Councils in the State. The ALR Act applies to Crown lands that are not lawfully needed for an essential public purpose and referred to as claimable Crown land.	<i>Chapter 12 (Land use and property) of the EIS</i> <i>Section 5.6 (Land use and property) of this Amendment Report</i>
<i>Biodiversity Conservation Act 2016 (BC Act)</i>	The BC Act aims to conserve threatened species, populations and ecological communities through ensuring appropriate assessment, management and regulation of actions that may damage critical or other habitat for a listed threatened species, or may otherwise significantly affect a threatened species, population or ecological community. Under the BC Act, State significant infrastructure (SSI) projects are required to prepare a biodiversity development assessment report (BDAR) to identify and assess biodiversity impacts under the provisions of the BC Act and offset those impacts by retiring biodiversity credits, determined using the BAM.	<i>Section 5.2 (Biodiversity) of this Amendment Report</i> <i>Amendment Report Appendix E – Revised biodiversity development assessment report</i>
<i>Biosecurity Act 2015 (Biosecurity Act)</i>	The Biosecurity Act provides for the prevention, elimination, minimisation and management of biosecurity risks in NSW posed by a biosecurity matter, which is defined in section 10 of the Biosecurity Act. Under the Biosecurity Act, weeds are defined as a plant that is a pest and a biosecurity risk exists where invasive weeds, now termed priority weeds under the Biosecurity Act, have the potential to negatively impact on the environment. The Biosecurity Act introduces a responsibility for landowners or land managers to control and prevent the introduction and spread of these priority weeds, also known as a general biosecurity duty.	<i>Section 5.2 (Biodiversity) of this Amendment Report</i> <i>Amendment Report Appendix E – Revised biodiversity development assessment report</i>

Relevant provision	Relevance/consideration	Where addressed in the EIS (EnergyCo 2025) and this amended report
<i>Civil Aviation Regulation 1988 (Commonwealth) and Civil Aviation Safety Regulations 1998</i>	These regulations establish controls and requirements with respect to airspace and aerial operations. The project impact area would be wholly contained within uncontrolled airspace and would be situated outside any special use airspace that is reserved for military flying training operations. An infringement of uncertified obstacle limitation surface is expected at Warkworth aerodrome. EnergyCo will engage in further consultation to ensure proper safeguards and an obstacle limitation surface specific to transmission infrastructure are implemented. The transmission towers would not infringe certified airport obstacle limits. The use of cranes and erection of transmission towers within the project impact area during construction may result in some risks to aerial operations such as uncertified aerodromes, aerial baiting in NSW National Parks and Wildlife Services (NPWS) estate and emergency services operations. This would be appropriately managed through the implementation of the proposed environmental management measures.	<i>Chapter 21 (Hazards and risks) of the EIS</i> <i>Technical Report 16 - Aviation impact assessment of the EIS.</i> <i>Section 5.16 (Aviation) of this Amendment Report</i>
<i>Coal Mine Subsidence Compensation Act 2017 (CMSC Act)</i>	The CMSC Act includes an objective to provide for the assessment and management of risks associated with subsidence resulting from coal mine operations. Part 3 of the CMSC Act sets out provisions for development within mine subsidence districts. Sections of the proposed project which are located within a mine subsidence district will require an approval from the Subsidence Advisory NSW.	<i>Chapter 12 (Land use and property) of the EIS</i> <i>Section 5.6 (Land use and property) of this Amendment Report</i>
<i>Contaminated Land Management Act 1997 (CLM Act)</i>	The CLM Act outlines the circumstances in which notification of the NSW Environment Protection Authority (EPA) is required in relation to historically contaminated land. Potentially contaminated areas directly affected by the project would be investigated and managed in accordance with the requirements of guidance endorsed under section 105 of the CLM Act. This includes further investigations in areas of potential contamination identified in the project impact area. A contamination assessment has been prepared to determine if historic land uses have contaminated land within the project impact area.	<i>Chapter 20 (Contamination) of the EIS</i> <i>Technical Report 13 - Contamination preliminary site investigation of the EIS</i> <i>Section 5.14 (soils and contamination) of this Amendment Report.</i>
<i>Crown Land Management Act 2016</i>	This Act sets out the requirements for the management of Crown land in NSW, including where councils and other organisations can deal with Crown land. The project would pass through a number of areas of Crown Land that would be affected by the project. A licence or easement would be separately sought for the construction and operation of the HTP corridor over Crown land.	<i>Chapter 12 (Land use and property) of the EIS</i> <i>Section 5.6 (Land use and property) of this Amendment Report</i>

Relevant provision	Relevance/consideration	Where addressed in the EIS (EnergyCo 2025) and this amended report
<i>Electricity Infrastructure Investment Act 2020 (EII Act)</i>	The EII Act includes as one of its objects the need to co-ordinate investment in new generation, storage, network and related infrastructure. The EII Act prescribes the establishment of the Hunter-Central Coast renewable energy zone (REZ) and provides for the declaration of priority transmission infrastructure projects. The project is a priority transmission infrastructure project (PTIP). Under section 32 and 36 of the EII Act, the Minister for Energy may direct or authorise a network operator to carry out the project as a PTIP.	<i>Chapter 2 (Strategic context) of the EIS</i>
<i>Electricity Supply Act 1995 (ES Act)</i> <i>Electricity Supply (Safety and Network Management) Regulation 2014 (ES(S&NM) Regulation)</i>	The objectives of the ES Act is to promote the efficient and environmentally responsible production and use of electricity and to deliver a safe and reliable supply of electricity, and to confer on network operators such powers as are necessary to enable them to construct, operate, repair and maintain their electricity works. The distribution systems regulated by the ES Act do not include a transmission system. The network operator must have a detailed safety management system in place to deal with these matters that complies with Australian Standard AS 5577-2013 Electricity Network Safety Management Systems. The Independent Pricing and Regulatory Tribunal oversees the implementation of these statutory obligations. Safety has been considered throughout the design development for the project and would be critical throughout the construction and operation of the project. Safety considerations would be incorporated into post-approval management plans, including the construction environmental management plan.	<i>Chapter 5 (Statutory context) of the EIS</i> <i>Chapter 7 (Environmental management) of this Amendment Report</i>
<i>EP&A Act</i>	The EP&A Act, section 5.13, provides for development to be declared critical State significant infrastructure (CSSI). The requirement pursuant to section 5.15(2) is that the application must (a) describe the infrastructure and (b) contain any other matter required by the Planning Secretary. Section 5.16 further required that the assessment must be an EIS in a form prescribed by the regulations.	<i>Appendix A (Updated project description) of this Amendment Report</i>

Relevant provision	Relevance/consideration	Where addressed in the EIS (EnergyCo 2025) and this amended report
<i>Forestry Act 2012 (Forestry Act)</i>	The Forestry Act provides for the dedication, management and use of State forests and other Crown-timber land for forestry and other uses. The Forestry Act allows for the constitution of the Forestry Corporation of New South Wales (FCNSW) as a statutory State-owned corporation who is the land manager of State forests. The project impact area would cross 4 areas of land reserved under the Forestry Act being the Pokolbin State Forest, Corrabare State Forest, Olney State Forest and Watagan State Forest. Certain rights to occupy land that is State forest or a flora reserve may not be granted except as provided for in the Forestry Act. FCNSW is empowered to lease State forest or issue a permit authorising the use of the area for the purpose specified in certain cases. Section 34(1) of the Forestry Act also provides that the Minister may, on such terms and conditions as the Minister thinks fit, grant an easement or right of way through or over land within a State forest or flora reserve. This section would empower the Minister administering the Forestry Act to exercise a discretion to grant an easement through these forests. Under the Forestry Regulation 2022 FCNSW can also reserve a forestry area for separate or exclusive use for specific purposes and for specified periods. A licence under the Forestry Act may be required to authorise the taking and/or destruction of timber, forest materials and/or forest products within the State forest land. Extensive engagement has been undertaken with the FCNSW during design development and will continue through detailed design of the project.	<i>Chapter 12 (Land use and property) and Chapter 22 (Other matters) of the EIS</i> <i>Section 5.6 (Land use and property) of this Amendment Report.</i>
<i>Heritage Act 1977 (Heritage Act)</i>	The Heritage Council must be notified if a relic is uncovered during construction and if it is reasonable to believe that the Heritage Council is unaware of the location of the relic. The Heritage Council must also be notified if an item listed on a Government Agency's Section 170 Heritage Register is demolished. The Heritage Act specifies that a person must not disturb or excavate land knowing, or suspecting, that the action may result in the discovery, exposure, movement, damage or destruction of a relic, unless the work is undertaken in accordance with an excavation permit. Additionally, the Heritage Act requires that the discovery or location of a relic must be notified to the Heritage Council unless the Heritage Council is aware of the relic's location. Under the SSI provisions for the project, exemptions and permits that would otherwise be required under Part 4 and section 139 of the Heritage Act are not required for approved SSI projects by reason of section 5.23 of the EP&A Act. Heritage impacts associated with the project have still been assessed in accordance with the Heritage Act.	<i>Chapter 15 (Historic heritage) and Technical Report 7 – Historic heritage impact statement of the EIS</i> <i>Section 5.9 (Historic heritage) and Appendix J – Historic heritage impact statement addendum of this Amendment Report.</i>

Relevant provision	Relevance/consideration	Where addressed in the EIS (EnergyCo 2025) and this amended report
<i>Land Acquisition (Just Terms Compensation) Act 1991 (Land Acquisition Act)</i>	The Land Acquisition Act controls the acquisition of land on just terms by authorities of the State with the objective of simplifying and expediting the compulsory acquisition process while ensuring compensation on just terms for the owners of land that is acquired by an authority of the State when the land is not available for public sale. EnergyCo is an authority of the State for the purposes of the Land Acquisition Act and can acquire land by agreement or compulsory processes for the purposes of the <i>Energy and Utilities Administration Act 1987</i> or any other act administered by the Minister for Energy.	<i>Appendix A (Updated project description)</i> <i>Section 5.6 (Land use and property) of this Amendment Report</i>
<i>National Parks and Wildlife Act 1974 (NP&W Act)</i>	The NP&W Act establishes statutory provisions for the preservation and management of National parks, historic sites and certain other areas, as well as the protection of certain Aboriginal objects. The NP&W Act provides for the conservation of elements of the natural environment, as well as the conservation of objects, places or features of cultural value to Aboriginal people and the people of NSW. Under the provisions of section 86 of the NP&W Act, a person must not harm or desecrate a known Aboriginal object unless authorised by an Aboriginal heritage impact permit issued under section 90 of that Act. The project has been declared to be CSSI. Under section 5.23 of the EP&A Act, a permit that would otherwise be required under section 90 of the NP&W Act is not required for approved SSI projects. Nevertheless, a detailed assessment of potential impacts to Aboriginal heritage associated with the project has been undertaken. The project would traverse land that is part of the Jilliby State Conservation Area (SCA). The Secretary is required to cause a Plan of Management (PoM) to be prepared for each SCA. Once a PoM is adopted by the Minister no operations can be undertaken in relation to the land to which the plan relates unless in accordance with the PoM. The Watagans National Park and Jilliby SCA PoM dated April 2010 applies to the project impact areas. Section 47I of the NP&W Act relevantly provides that ‘despite anything in this or any other Act, land within a state conservation area is not to be dealt with except as provided under this Act.’. Importantly, the words ‘except as provided in this Act’ enlivens section 153, which empowers the Minister administering the NP&W Act to exercise a discretion to grant an easement to the proponent. Part 12 of the NP&W Act also authorises the Minister to grant leases and licences over land within a SCA, in limited circumstances, provided that it is subject to the provisions of the PoM.	<i>Chapter 6 (Engagement) of the EIS</i> <i>Section 5.3 (Aboriginal heritage) and Appendix F – Aboriginal cultural heritage addendum of this Amendment Report.</i> <i>Section 5.6 (Land use and property) of this Amendment Report.</i>

Relevant provision	Relevance/consideration	Where addressed in the EIS (EnergyCo 2025) and this amended report
<i>Pipelines Act 1967 (Pipelines Act)</i>	High pressure pipelines are designed, constructed, tested, operated and maintained in accordance with Australian Standard AS 2885 and licenced under the Pipelines Act. The Pipelines Regulation 2013 also ensures that licensed pipeline are designed, constructed, maintained and operated in a safe and reliable manner. In line with section 2.77 of the TI SEPP, EnergyCo has considered the impacts of the potential impacts of the project's development. These considerations have included: undertaking an initial identification assessment using Dial Before You Dig (DBYD) requirement. Additional, detailed DBYD checks would be undertaken as part of the development of detailed design; and operator consultation – consultation with the relevant pipeline operator has commenced.	<i>Chapter 12 (Land use and property) of the EIS and Section 5.6 of the Amendment Report.</i>
<i>Protection of the Environment Operations Act 1997 (POEO Act)</i>	The POEO Act establishes, amongst other things, the procedures for issuing licences for environmental protection on aspects such as waste, air, water and noise pollution control. An environment protection licence (EPL) is required under chapter 3 of the POEO Act to undertake a scheduled activity or scheduled development work. Section 5.24(e) of the EP&A Act identifies approvals or authorisations that cannot be refused if they are necessary for carrying out approved CSSI and are substantially consistent with the approval, including the need for an EPL. Activities requiring an EPL are outlined in schedule 1 of the POEO Act. It is possible that the use of helicopters during construction may result in more than 30 flight movements per week within 1 km of a dwelling (which is listed as a scheduled activity under schedule 1 of the POEO Act). If this is the case, the project will require an EPL. In addition, should crushing, screening or separating of material during construction be identified as required in quantities that exceed the thresholds in Schedule 1 an EPL would be required.	<i>Chapter 5 (Statutory context) of the EIS</i>

Relevant provision	Relevance/consideration	Where addressed in the EIS (EnergyCo 2025) and this amended report
<i>Rail Safety National Law (NSW) No 82a of 2012</i>	The principal object of the <i>Rail Safety National Law (NSW) No 82a of 2012</i> of relevance to the project is the regulation of the carrying out of various activities within railway corridors. The project would cross a rail corridor in 3 locations. Activities associated with the project that would occur across rail corridors would primarily involve stringing activities. Consultation with rail authorities (ARTC and Transport for NSW) regarding these activities is provided in <i>Chapter 6 (Engagement)</i> and <i>Appendix D - Outcomes Report</i> of this EIS. Ongoing consultation with the relevant rail authority where rail crossings are required will continue in detailed design.	<i>Section 5.5 (traffic and transport) and Appendix H – Revised traffic and transport impact assessment of this Amendment Report.</i>
<i>Roads Act 1993 (Roads Act)</i>	The principal object of the Roads Act of relevance to the project is the regulation of the carrying out of various activities on public roads. Part 9 of the Roads Act nominates the requirements for undertaking works within a public road, including the requirement to obtain consent under section 138 for carrying out works in, on or over a public road (this includes the erection of structures), and the digging up or disturbance of the surface of a public road. The project would potentially require temporary/partial closure of classified and unclassified roads for the construction of the project and may require works to connect new access points. By reason of section 5 of schedule 2 of the Roads Act, the proponent is not required to obtain consent to carry out work on unclassified roads, unless they are a Crown Road. The proponent will however require consent to undertake work where this occurs on or over classified roads. Further information on consultation to date with relevant road authorities is provided in <i>Chapter 6 (Engagement)</i> and <i>Appendix D – Outcomes Report</i>.	<i>Section 5.5 (traffic and transport) and Appendix H – Revised traffic and transport impact assessment of this Amendment Report.</i>
<i>Rural Fires Act 1997 (RF Act)</i>	The objects of the RF Act are focused on the prevention, mitigation and suppression of bush and other fires in rural fire districts, and the co-ordination of firefighting and prevention across the State. Section 100B applies to bush fire prone land and empowers the Commissioner of the NSW Rural Fire Service to issue a bush fire safety authority. The bush fire authority authorises certain types of development, subject to compliance with matters considered by the Commissioner to be necessary to protect persons, property or the environment. Under the SSI provisions for the project, a bush fire safety authority under section 100B is not required for approved SSI projects by reason of section 5.23 of the EP&A Act.	<i>Chapter 21 (Hazards and risks) and Technical Report 14 - Bushfire risk assessment of the EIS.</i> <i>Section 5.15 (Bushfire) and Appendix M – Bushfire risk assessment addendum of this Amendment Report.</i>

Relevant provision	Relevance/consideration	Where addressed in the EIS (EnergyCo 2025) and this amended report
<i>Waste Avoidance and Resource Recovery Act 2001 (WARR Act)</i>	The WARR Act aims to encourage the most efficient use of resources and to reduce environmental harm in accordance with the principles of ecologically sustainable development. The project would consume some natural resources and would produce waste. Waste and resource impacts associated with the project together with re-use and recycling opportunities and sustainability matters have been considered as part of design development. A waste management and resource recovery plan will be prepared and will include appropriate measures to manage waste generation, reuse, recycling and disposal during construction of the HTP.	<i>Chapter 22 (Other matters) of the EIS</i>
<i>Water Management Act 2000 (WM Act)</i>	The overarching objective of the WM Act is to provide for the sustainable and integrated management of the water resources of the State and including the application of the principles of ecologically sustainable development. Water use approvals, which authorise and confer a right on the holder of the approval to use water for a particular purpose at a particular location, are dealt with in section 89 of the WM Act. Section 90 of the WM Act identifies 3 kinds of water management works approvals, being a water supply work approval, a drainage work approval and a flood works approval, with all 3 of these approvals conferring a right on the holder of the approval to construct and use the specified works at a specified location. There are 2 kinds of activity approvals that are dealt with in section 91 being a controlled activity and aquifer interference, both of which confer a right on the holder to carry out the specified activity at the specified location. The requirement for aquifer interference approvals has not been “switched on”. The project is CSSI. Under section 5.23 of the EP&A Act, a water use approval pursuant to section 89 of the WM Act, a water management work approval pursuant to section 90 of the WM Act, and an activity approval (other than an aquifer interference approval) pursuant to section 91 of the WM Act are not required and do not apply to approved SSI projects. Water would be sourced from existing regulated sources, purchased from the existing water market or council facilities and accessed via existing licensed water extraction infrastructure only. Additionally, the NSW Aquifer Interference Policy (Department of Primary Industries, 2012) documents the NSW Government’s intention to implement the requirement for approval of ‘aquifer interference activities’ under the WM Act, however, the provisions for aquifer interference approvals have not been enacted.	<i>Chapter 17 (Surface water), Chapter 18 (Groundwater) and Chapter 19 (Flooding) of the EIS</i> <i>Technical Report 10 – Surface water impact assessment, Technical Report 11 – Groundwater impact assessment, and Technical Report 12 – Flooding impact assessment of the EIS.</i> <i>Section 5.11 (surface water), section 5.12 (groundwater) and section 5.13 (flooding) of this Amendment Report.</i> <i>Appendix N – Flooding impact assessment addendum of this Amendment Report.</i>

Relevant provision	Relevance/consideration	Where addressed in the EIS (EnergyCo 2025) and this amended report
	The potential for groundwater interception and water take to occur during construction from activities such as piling and shallow excavations has been assessed in accordance with the minimal impact considerations outlined in the AIP. Potential groundwater impacts have been assessed as being negligible and acceptable level 1 minimal impacts under the AIP.	
Commonwealth		
<i>Environment Protection and Biodiversity Conservation Act 1999 (EPBC Act)</i>	Proposed actions with the potential to significantly impact protected matters must be referred to the Australian Minister for the Environment and Water to determine whether they require assessment and approval under the EPBC Act. The HTP has been declared a controlled action (EPBC 2024/09874). The relevant controlling provisions are: • threatened species and ecological communities • Commonwealth land. Direct impacts associated with the HTP include disturbance of around 945.24 ha of native vegetation which contains threatened ecological communities, threatened flora and habitat for threatened fauna. A portion of the project impact area traverses through Singleton Military Area, which is Commonwealth land. The project has been assessed under the NSW bilateral agreement, which enables the project to be assessed by NSW on behalf of the Australian Government.	<i>Appendix A (Assessment requirements compliance) of the EIS</i>
<i>Native Title Act 1993</i>	The <i>Native Title Act 1993</i> provides for native title in relation to land or waters. A search of the National Native Title Tribunal on 11 November 2024 identified no known native title claims or publicly registered Indigenous Land Use Agreements which apply within the project impact area. Not all Indigenous Land Use Agreements are made publicly available; however, they only apply to signing parties to the agreement. As EnergyCo has not entered into any Indigenous Land Use Agreements, the provisions of any which may current exist across the HTP project area would not apply to the project.	<i>Chapter 12 (Land use and property) of the EIS.</i> <i>Section 5.6 (Land use and property) of this Amendment Report.</i>

Table C.4 identifies the form and content requirements of the EIS in accordance with Schedule 4 of the Environment Protection and Biodiversity Conservation Regulations 2000 as required by the supplementary SEARs and indicates where they have been addressed in the EIS. To the extent that any of these matters are proposed to be amended via the Amendment Report, the location of where this information is included in the Amendment Report has been added to Table C.2.

Table C.4 Environment Protection and Biodiversity Conservation Regulations 2000

Requirement	EIS reference
Schedule 4 Matters to be addressed by draft public environment report and environment impact statement	
5. Other approvals and conditions	
5.01 Information given under paragraph 2.01 (f) must include:	<i>Chapter 5 (Statutory context) of the EIS and Chapter 4 of this Amendment Report</i>
a. details of any local or State government planning scheme, or plan or policy under any local or State government planning system that deals with the proposed action, including:	This appendix
i. what environmental assessment of the proposed action has been, or is being, carried out under the scheme, plan or policy;	<i>Chapters 8 to 23 and technical reports 1 to 19 of the EIS.</i> <i>Section 5 and Appendix E to Appendix M of this Amendment Report</i>
ii. how the scheme provides for the prevention, minimisation and management of any relevant impacts;	<i>Chapters 8 to 23 of the EIS</i> <i>Chapter 24 (Environmental management) of the EIS and Chapter 6 (Environmental management) of the Amendment Report</i> <i>Appendix A (Assessment requirements compliance) of the EIS.</i> <i>Technical Report 1 - Biodiversity development assessment report of the EIS and Appendix E (revised Biodiversity development assessment report) of the Amendment Report</i>
b. a description of any approval that has been obtained from a State, Territory or Commonwealth agency or authority (other than an approval under the Act), including any conditions that apply to the action;	This appendix
c. a statement identifying any additional approval that is required;	This appendix
d. a description of the monitoring, enforcement and review procedures that apply, or are proposed to apply, to the action.	<i>Chapter 24 (Environmental management) of the EIS and Chapter 6 (Environmental management) of the Amendment Report</i>
6. Environmental record of person proposing to take the action	

Requirement	EIS reference
6.01 Details of any proceedings under a Commonwealth, State or Territory law for the protection of the environment or the conservation and sustainable use of natural resources against: a. the person proposing to take the action; and b. for an action for which a person has applied for a permit, the person making the application.	There are no current or previous proceedings under the Commonwealth, State or Territory law for the protection of the environment or the conservation and sustainable use of natural resources against the person (EnergyCo) proposing the action
6.02 If the person proposing to take the action is a corporation – details of the corporation’s environmental policy and planning framework.	EnergyCo is a NSW Government statutory authority established under the <i>Energy and Utilities Administration Act 1987</i>. The NSW Government has appointed EnergyCo in November 2021 as the Infrastructure Planner responsible for delivering the transmission network in REZs in NSW. EnergyCo operates under the direction of the NSW Minister for Energy. EnergyCo is in the process of finalising its Environmental Policy Statement. EnergyCo is committed to conducting its activities and services in a manner that protects the environment, prevents pollution and meets compliance obligations.

Amendment Report – Appendix D

Updated mitigation measures

Hunter Transmission Project

February 2026



D

Updated mitigation measures

Table D.1 details the mitigation measures that will be implemented to avoid or minimise potential impacts from the project. These mitigation measures include updates to measures from the exhibited project as a result of amendments and refinements to the project as well as further design development and community and stakeholder consultation. Bold and strikethrough text indicates a change to the mitigation measures as included in the exhibited project. Some environmental impacts are relevant to multiple technical aspects and therefore will share common mitigation measures (e.g. Aboriginal heritage and visual amenity, or biodiversity and agriculture). Where this occurs, the mitigation measure has not been duplicated but rather one ID number has been provided for the particular measure and a cross reference to that ID number in other related environmental aspects.

Table D.1 Summary of mitigation and management measures

Reference	Impact	Mitigation measure	Timing	Relevant location(s)
Biodiversity				
B1	Biodiversity impacts	A biodiversity management plan (BMP) will be prepared and implemented for the duration of construction. The BMP will include (as a minimum): - the location and extent of areas of vegetation clearance and habitat disturbance, and how these will be suitably demarcated on-site - the location and extent of areas to be protected (e.g. retained vegetation, hollow-bearing trees, nests, burrows and other habitat features, including applicable buffers to habitat features) located inside the construction impact area or in close proximity to clearing areas measures for retained vegetation protection, including plant types to be retained in disturbance areas B and HZ - pre-clearing survey procedures	Detailed design Construction	All locations

Reference	Impact	Mitigation measure	Timing	Relevant location(s)
		• two-phase clearing process to allow fauna to move into adjoining habitat • measures to be implemented on site to clearly demarcate areas to be retained as 'no go areas' • a threatened species unexpected finds protocol • revegetation/rehabilitation plan (including seed collection where appropriate) • monitoring vegetation integrity of partial clearance (disturbance area B) • controlling erosion (unless separate ERSED) • bushfire management • salvage of beneficial resources (vegetative and soil resources) • fauna handling and rescue procedure • education of construction teams • measures to avoid and minimise prescribed and indirect impacts • adaptive management procedures (including triggers) • monitoring, evaluation reporting and compliance. 'No go area' demarcation devices must be established prior to the commencement of clearing works in each construction area and be maintained throughout the construction phase		
B2	Avoidance of threatened species,	The locations of threatened ecological communities and habitat for threatened species	Detailed design Construction	Identified sensitive biodiversity areas

Reference	Impact	Mitigation measure	Timing	Relevant location(s)
	threatened ecological communities and SAI entities	and SAI entities will be considered, and potential impacts avoided or minimised to the greatest extent practicable during finalisation of the detailed design and construction methodology. This will include: • micro-siting of transmission line infrastructure within the HTP corridor • prioritising disturbance in areas with a Vegetation Integrity score <17 or <15 for EEC and CEECs as per section 9 of the NSW Biodiversity Assessment Method (2020) • sensitive biodiversity areas to be avoided (including species polygons, buffered threatened species locations, areas of threatened ecological communities, relevant SAI entities and matters of national environmental significance). As part of this measure a hierarchy of biodiversity constraints will be developed and mapped to provide an overarching avoidance prioritisation framework to inform detailed design and the BMP.		Avoidance micro-siting areas Regent honeyeater and Swift parrot important areas Applicable locations identified in Figure 14.21 of Technical Report 1—Biodiversity development assessment report Appendix E (Revised biodiversity development assessment report) of the Amendment Report
B3	Avoidance of threatened species and threatened ecological communities	Prior to construction activities taking place within 100 metres of rocky areas containing caves, overhangs or crevices, cliffs or escarpments and during the breeding season for the Large-eared Pied Bat, Eastern Cave Bat (November to February), Large Bent-winged Bat, Little Bent-winged Bat (December to February) and Sooty Owl (June to August), an ecologist will be engaged to determine if the species are present. If present, an	Detailed design Construction	Within 100 m of rocky areas containing caves, or overhangs or crevices, cliffs or escarpments Applicable locations identified in Figure 14.3 of Technical Report 1—Biodiversity development assessment report

Reference	Impact	Mitigation measure	Timing	Relevant location(s)
		assessment of the proposed activities will be completed to determine what, if any, activities can take place within the 100 m, and what mitigation measures need to be implemented. Measures may include cessation of certain activities, amending the construction methodology including selecting alternative plant or equipment. Any requirements for a management plan could also be determined at that time.		<i>Appendix E (Revised biodiversity development assessment report) of the Amendment Report</i>
B4	Micro-siting of associated works and access tracks	Micro-siting of temporary construction infrastructure (including construction support sites, laydowns areas and access tracks), will be undertaken to minimise vegetation clearing and disturbance of watercourses within the biodiversity study area. This will include: • prioritising areas of low biodiversity value • utilising existing access tracks, where feasible • locating watercourse crossings at narrow width locations • avoiding or minimising impact to amphibian breeding habitats • minimising the quantity of cut and fill activities.	Detailed design Construction	All locations
B5	Connectivity corridors	A connectivity strategy will be developed and implemented to avoid and minimise impacts to connectivity for threatened species. All potential corridors identified in the biodiversity development assessment report will be included in	Detailed design Construction Operation	Relevant habitat connectivity locations (Figure 14.17 and 14.18 of <i>Appendix E (Revised biodiversity development</i>

Reference	Impact	Mitigation measure	Timing	Relevant location(s)
		the strategy, with final locations to be agreed with CPHR as the detailed design progresses. The exact location and detailed design of under-transmission line glider poles, retained tall tree stumps and/or rope bridges will be nominated as part of the connectivity strategy guided by the locations of habitat connectivity identified in Figure 14.17 and 14.18 of the biodiversity development assessment report. Connectivity measures will consider corridors, in the form of installation of under-transmission line glider poles (in accordance with clearance requirements for transmission lines and infrastructure) where the construction area will impact habitat connectivity for arboreal species (see Appendix J – Examination of regional and terrestrial habitat connectivity of the biodiversity development assessment report). will be investigated and installed in appropriate locations. Key BC Act target species are Squirrel Glider, Yellow bellied Glider and Greater Glider The strategy will be developed for all relevant threatened species at each location within the disturbance area depending on the local habitats and recorded species and their connectivity requirements. This strategy will require ongoing management of connectivity corridors.		<i>assessment report</i>) of the Amendment Report)

Reference	Impact	Mitigation measure	Timing	Relevant location(s)
B6	Compensatory habitat methodology	A supplementary hollow and nest strategy will be developed and implemented for the installation of nest boxes, or other hollow creation methods, to provide alternative roosting and/or nesting habitat for threatened fauna displaced during clearing. Nest box/chainsaw-type hollows will be installed prior to commencement of clearing works in each construction area where practicable. Where supplementary hollows are proposed to be established on land adjacent to the easement, these will be subject to landowner agreement and captured in any property management plan.	Detailed design Construction	Relevant locations
B7	Biosecurity impacts	A biosecurity management plan will be prepared for the project in accordance with EIS mitigation measure AG3. This will be prepared to cover biosecurity aspects such as weed and pathogen introduction (including myrtle rust) and their management. The plan will form a sub-plan to the BMP.	Detailed design Construction	All locations
B8	Tree protection measures	Tree protection measures are to be installed and maintained for trees to be retained within the hazard zone, in accordance with AS 4970-2009 – <i>Protection of Trees in Development Sites</i> throughout construction.	Construction	Applicable trees within the hazard tree zone (Disturbance area HZ) at discrete sites (laydown areas, construction support sites, switching stations etc.)
B9	Pre-clearing surveys	Pre-clearing surveys will be guided by the biodiversity management plan and completed prior	Detailed design Construction	All locations

Reference	Impact	Mitigation measure	Timing	Relevant location(s)
		to clearing at each location by a suitability qualified ecologist. The proposed clearing extents will be marked out on-site prior to the pre-clearing surveys. Pre-clearing surveys will be carried out prior to the commencement of clearing works. During the surveys, the ecologist will: • survey the proposed clearing extent (including confirmed clearing extents within the assumed habitat of SAI entities) • identify any fauna that will require relocation prior to clearing, including inspection of any built structures and wooden fence posts to be demolished • confirm if occupied habitats need to remain until fledging/movement of young can occur • confirm that biodiversity exclusion zones are demarcated • confirm that hollow-bearing trees within and adjacent to the clearing extents are prominently marked/tagged • confirm that nest boxes are in place (where required) in suitable locations adjacent to areas to be cleared, or suitable locations for installation have been identified.		
B10	Ecology inductions, toolbox talks, targeted training	All relevant project personnel, including relevant sub-contractors will be trained on biodiversity management protocols and requirements for the project, through inductions, toolbox talks and	Construction	All locations

Reference	Impact	Mitigation measure	Timing	Relevant location(s)
		targeted training, and provided with sensitive biodiversity area maps (showing clearing boundaries and exclusion zones) and updates as required. Inductions and training will be completed prior to commencement of work for all relevant personnel.		
B11	Retention of understorey vegetation in riparian areas	Understorey vegetation will be protected within vegetated riparian zones where reasonable and feasible (within the definition of the <i>NSW Water Management Act 2000</i>). Vegetation clearing will be limited to the tree stratum and shrubs above 2 metres in height only, with root systems and trunk bases being retained in-situ.	Construction Operation	Riparian environments disturbed as part of during construction
B12	Rehabilitation of riparian areas	A riparian vegetation management plan (RVMP) will be developed and implemented for the project to manage activities within vegetated riparian zones to minimise impacts to aquatic environments. The plan will be prepared prior to and implemented during any disturbance to a riparian area. The plan will identify the measures to be implemented to minimise impacts from construction activities (such as temporary and permanent watercourse crossings) within riparian and aquatic environments. A schedule of works will be stipulated within the approved RVMP. Riparian areas subject to disturbance will be progressively stabilised and rehabilitated. The RVMP will form a sub-plan to the BMP.	Detailed design Construction	Riparian environments disturbed during construction

Reference	Impact	Mitigation measure	Timing	Relevant location(s)
B13	Installation of bird diverters	Bird diverters will be installed on transmission lines at appropriate locations to reduce impacts on aerial fauna species from collision with transmission lines and infrastructure. The exact position and diverter model will be finalised during detailed design by a qualified ecologist in consultation with CPHR. Installation of the bird diverters will occur within 2 weeks of transmission line installation or as soon as practical and will remain in place and/or replaced as required.	Detailed design Construction Operation	Relevant locations
B14	Vegetation offsets requirements	The predicted clearing of native vegetation identified in the biodiversity development assessment report will be monitored against the recorded clearing. A revised Biodiversity Assessment Method (BAM-C) calculation based on the project's final disturbance to biodiversity post construction will be completed. Any additional (or reduced) credit liability identified will be met as part of the biodiversity offset scheme requirements and secured under the SODA.	Construction	Disturbance area
B15	Unexpected finds	A species unexpected finds protocol will be implemented if threatened ecological communities or flora and fauna species, not assessed in the biodiversity assessment, are identified in the disturbance area.	Construction	Disturbance area

Reference	Impact	Mitigation measure	Timing	Relevant location(s)
B16	Water quality, watercourse geomorphology and aquatic habitat	Watercourse crossings (especially but not only to key fish habitat) will be designed to minimise disturbance and harm within riparian corridors and aquatic habitat will be rehabilitated where practicable, in accordance with the following guidelines: • <i>Guidelines for controlled activities on waterfront land</i> (NRA 2018) • <i>Why do fish need to cross the road? Fish passage requirements for waterway crossings</i> (Fairfull and Witheridge 2003) • <i>Policy and guidelines for fish habitat conservation and management</i> (DPI 2013).	Detailed design Construction	All locations
B17	Operational guidelines and procedures	Guidelines and procedures will be developed and implemented for maintenance of the project during operation as part of the network operator's environmental management system. These guidelines and procedures will cover the following: • vegetation clearing and maintenance commitments in the biodiversity development assessment report, environmental impact statement and Amendment Report • avoiding access and disturbance in areas of high biodiversity conservation significance; outside of the areas required for construction • avoiding maintenance of vegetation that does not need to be maintained during operation	Operation	Operation impact area

Reference	Impact	Mitigation measure	Timing	Relevant location(s)
		measures specific to this project, as required. An Operational Biodiversity Management Plan (or similar) will be prepared to assist with the above operational biodiversity management requirements.		
B18	Minimise indirect impacts from light spill	Lighting designs to be in accordance with the <i>National Light Pollution Guidelines for Wildlife</i> (Commonwealth DCCEW 2023).	Detailed design Operation	Operation impact area
B19	Minimise indirect impacts on threatened amphibians	Prior to impacts to threatened amphibian habitat, an amphibian management plan will be prepared for threatened amphibians and implemented for the duration of construction. The plan is to include (as a minimum): - the location and extent of areas of threatened amphibians breeding habitats, and how these will be suitably demarcated on-site areas to be protected e.g. retained vegetation and other habitat features (including applicable buffers to habitat features) located inside the construction area or in close proximity to the clearing areas, including the retained UoN breeding ponds "S14P1" and "S14P3" within Disturbance area B the location and extent of areas to be protected (e.g. retained vegetation and other habitat features, (including applicable buffers to habitat features) located inside the construction area or in close proximity to the clearing areas - measures to prevent control the spread of Chytrid Fungus to/from within the disturbance	Detailed design Construction	Identified threatened amphibian habitat within the disturbance area (Figure 14.15 Threatened Fauna – Amphibians of Appendix E (Revised biodiversity development assessment report)) Disturbance area

Reference	Impact	Mitigation measure	Timing	Relevant location(s)
		area and adjoining threatened amphibian habitat where accessible • location and design of proposed supplementary breeding ponds and/or connectivity measures within Disturbance area B and Olney switching station APZ • location and design of specific erosion and sediment control measures (ERSED) maintaining existing water quality and preventing sedimentation of potential breeding habitats during construction • monitoring requirements to ensure effective control • measures to be implemented on-site to clearly demarcate areas to be retained as 'no go areas'. 'No go area' demarcation devices will be established prior to impacts to the commencement of clearing works in the location and extent of areas of threatened amphibians breeding habitats. This plan will form a sub-plan to the BMP.		
B20	Minimise indirect impacts of Myrtle Rust on threatened plants	A Myrtle Rust procedure will be developed to ensure the project is consistent with the objectives of FCNSW and NPWS Myrtle Rust management.	Detailed design Construction	Disturbance area
B21	Minimise impacts to biodiversity as a result of vegetation clearing	Implement the clearing procedures, control measures and post- construction restoration measures to ensure biodiversity values are retained as assessed in the biodiversity development assessment report.	Detailed design Construction Operation	Disturbance area A (including centreline) Disturbance area B Disturbance area HZ

Reference	Impact	Mitigation measure	Timing	Relevant location(s)
B22	Minimise impacts to biodiversity as a result of vehicle strike	Implement the following controls during the construction and operation phases within forested areas: • detailed design of access routes to avoid areas of key habitat • implementation of road signs identifying native fauna occurrence • implementation of speed limits • driver training for the project is to include training on local fauna and awareness when driving for the project through forested areas.	Detailed design Construction Operation	All forested locations
B23	Biodiversity impact monitoring and adaptive management	A biodiversity impact monitoring program (BIMP) will be prepared and implemented for the project to consolidate the requirements for biodiversity impact monitoring, guide and report on biodiversity impacts during construction and operation phases. The BIMP will include (as a minimum): • a three-year monitoring program, including 1 year monitoring during construction and 2 years post-construction monitoring and reporting • annual reporting at the end of each of the three years • consolidated monitoring outcomes of: – amphibian presence and water quality within amphibian breeding habitats – presence of Chytrid Fungus – pests, predator and weed monitoring	Detailed design Construction Operation	All locations

Reference	Impact	Mitigation measure	Timing	Relevant location(s)
		– microbat occupation and construction noise and vibration activity at identified breeding caves within 100m of project disturbance – Brush-tailed Rock Wallaby occupation and use of identified important habitat features (caves/cliffs lines) within proximity of construction – bird collision and EMF monitoring framework and implementation – vehicle strike and native animal interactions throughout construction • adaptive management procedures to address observed issues during the monitoring program.		
B24	Minimise public access to the project impact area to minimise activities such as firewood collection, vehicle access and illegal dumping	In consultation with landowners, the network operator will investigate options to restrict public access to sensitive biodiversity areas.	Construction Operation	Sensitive biodiversity areas
B25	Minimise indirect impacts on threatened terrestrial mammals	A terrestrial mammal sub-plan will be prepared and implemented for the duration of construction. The plan is to include (as a minimum): — species including Brush-tailed Rock Wallaby, Parma Wallaby and Long-nosed Potoroo — predator monitoring, control and management — preventative measures to reduce the effects of pest and weed species within identified habitat	Detailed design Construction	Disturbance area

Reference	Impact	Mitigation measure	Timing	Relevant location(s)
		areas and construction; including rubbish controls — controls for reduced vehicle strike within construction including information signs and speed control measures — monitoring program of species occupation and use of identified important habitat features (caves/cliffs lines) within proximity of construction. This plan will form a sub-plan to the BMP.		
B26	Minimise indirect impacts on threatened Microbat breeding habitats	A Microbat sub-plan will be prepared and implemented for the duration of construction. The plan is to include (as a minimum): — species including Large-eared Pied Bat, Eastern Cave Bat, Large Bent-winged Bat and Little Bent-winged Bat — monitoring of known breeding caves occur within 100m of project disturbance — monitoring of noise and vibration within 100m buffers of identified breeding caves — where possible minimise construction activity during breeding seasons within 100m buffer of identified breeding caves — consideration of cave exclusion measures where required. <u>This plan will form a sub-plan to the BMP.</u>	Detailed design Construction	Disturbance area

Reference	Impact	Mitigation measure	Timing	Relevant location(s)
Aboriginal heritage				
AH01	Impact avoidance and minimisation	All potential impacts to Aboriginal objects, sites and places will be reviewed once a final project design is available. Any validated sites and/or cultural materials will be avoided or impacts minimised during construction planning, wherever practicable. The findings of this review will be provided to the registered Aboriginal parties and Heritage NSW. Management of these sites will be integrated into mitigation measures AH02, AH03 and AH04, with approaches and methods in broad accordance with <i>Appendix E (Post approval requirements – updated guiding principles)</i> of the ACHA addendum.	Detailed design	All Aboriginal objects, sites and places within the amended project impact area and within 55 metres of the amended project impact area
AH03-AH02	Aboriginal objects of high significance Impact avoidance and minimisation	Direct and indirect impacts to all highly significant identified Aboriginal objects, and sites and places and their immediate environment (at least 55 m) within the amended project impact area and in the vicinity within 55 metres of the amended project impact area will be avoided. Some guiding principles for avoidance of Aboriginal objects, sites and places are presented in <i>Appendix E (Post approval requirements – updated guiding principles)</i> of the ACHA addendum. Any site-specific avoidance measures developed to address this commitment would be integrated into mitigation measure AH04.	Detailed design Construction Operation	• DEEP CK MOTHER SWA (rock shelter) • Flat Rock lookout HTP-C-CP01 (cultural place) • HTP-C-CVM08 (cultural place) • HTP-C-GG03 (grinding groove) • HTP-C-GG05 (grinding groove) • TRGG GRINDING GROOVE SITE (grinding groove)

Reference	Impact	Mitigation measure	Timing	Relevant location(s)
				• Monkey Place Creek/Broken Back Trail (grinding groove) • CABANS RD CLIFF SWA (rockshelter) • SWEETMANS CK OCHRE BOULDERS SWA (rockshelter) • HTP-C-SA01 (stone arrangement) • HTP-C-SA02 (stone arrangement) • HTP-C-SA03 (stone arrangement) • HTP-C-SA04 (stone arrangement) • Corrobare State Forest, cnr of Langdans Road (grinding groove) • HTP-C-GG01 (grinding groove) • HTP-C-GG04 (grinding groove) • HTP-S-GG01 (grinding groove) • Null Road 2 (grinding groove)

Reference	Impact	Mitigation measure	Timing	Relevant location(s)
				• Olney CPT 75/76 Douglas Pt GDG (grinding groove) • Pokolbin SF_C-345 AGG (grinding groove) Identified significant sites outside the impact area referenced in Table G.2 of Technical Report 2 – Aboriginal cultural heritage assessment
AH04 AH03	Impact avoidance and minimisation	The project will investigate the micro-siting of project infrastructure and optimisation of construction activities in consultation with an Aboriginal heritage specialist and Wonnarua, Awabakal and Darkinjung Traditional Owners (as outlined in Appendix B.3 (List of key registered Aboriginal parties for the project) of the ACHA addendum) to avoid or minimise impacts to all identified Aboriginal objects, and sites and places within the project impact area. Some guiding principles for consideration of avoidance of Aboriginal objects, sites and objects places during construction of the project are outlined in Appendix E (Post approval requirements - updated guiding principles) of the ACHA addendum. Any site-specific avoidance measures developed to address this commitment will be	Detailed design Construction	All identified Aboriginal objects, sites and objects places presented in Chapter 6 (The archaeological resource) of the ACHA addendum Table 10.1 of Technical Report 2 – Aboriginal cultural heritage assessment

Reference	Impact	Mitigation measure	Timing	Relevant location(s)
		integrated into mitigation measure AH04. include (but are not limited to): • incorporation of the sites, cultural deposits, curtilages, and obligations for their protection into cultural inductions for the construction workforce • establishment of fencing and/or signage during works in and around identified sites and cultural deposits, which will be implemented in consultation with an Aboriginal heritage specialist and/or RAPs • where necessary, establishment of surface protection such as heavy duty ground protection mats, or equivalent, which will be implemented in consultation with an Aboriginal heritage specialist and/or RAPs. Any site specific avoidance measures developed to address this commitment will be integrated into AH01.		
AH01-AH04	Cultural heritage management	An ACHMP will be developed by an Aboriginal heritage specialist, co-designed with Wonnarua, Awabakal and Darkinjung Traditional Owners (as outlined in <i>Appendix B.3 (List of key registered Aboriginal parties)</i> of the ACHA addendum), and in consultation with Forestry Corporation of NSW and NSW National Parks and Wildlife Service. in consultation with the RAPs to The ACHMP will provide the post-approval framework for managing and mitigating impacts to	Detailed design Construction	All identified Aboriginal objects, sites and places within the amended project impact area as identified in Chapter 6 (The archaeological resource), and HTP-C-RS14 (#45-3-5013), HTP-C-RS02 (#37-6-4492), HTP-C-RS03 (#37-6-

Reference	Impact	Mitigation measure	Timing	Relevant location(s)
		identified, potential and unexpected Aboriginal objects, sites and places during detailed design, construction and operation of the project. The ACHMP will be developed following guiding principles in <i>Appendix E (Post approval requirements - updated guiding principles)</i> of the ACHA addendum, and will include direction on Aboriginal consultation, avoidance and impact minimisation processes, methods and mitigation measures for adversely affected cultural materials (including the wishing well [HTP-S-CS01], test excavation locations within the HTP corridor not assessed by the exhibited ACHA or ACHA addendum and predicted Warkworth Sands system deposits), unexpected find and ancestral remain protocols, and long term cultural material curation, analysis and reporting. archaeological mitigation and Aboriginal heritage within the project impact area. The ACHMP will consider guiding principles presented in the ACHA and will address the following: • processes, timing, communication methods and project involvement (e.g. on-site activities) for maintaining Aboriginal community consultation and participation through the remainder of the project. This will include a grievance mechanism that is readily available and designed for use by the local Aboriginal community • descriptions and methods to avoid any inadvertent impacts to identified Aboriginal objects and sites and areas of archaeological		4679), HTP-C-RS15 (#37-6-4557), HTP-C-RS16 (#37-6-4558), HTP-C-RS17 (#37-6-4562), HTP-C-RS44 (#37-6-4554), HTP-C-RS45 (#37-6-4674), HTP-S-RS19 (#45-3-5008), HTP-S-RS20 (#45-3-5004), Shamrock Hill (#38-4-0221), Watagan Creek ACD (#45-3-4623), Corrabare State Forest Road 2 (#45-3-3582), Corrabare State Forest Western Side of Langans Rd SWA (#45-3-3583), and Corrabare (#45-3-2140) Project impact area, and all identified Aboriginal objects, sites and deposits identified in the ACHA that will be adversely impacted by the project

Reference	Impact	Mitigation measure	Timing	Relevant location(s)
		sensitivity outside of the construction impact area. A suitable regime of monitoring these activities will also be outlined, including locations, methods, personnel and timing • descriptions and methods of any additional investigative actions that may be required prior to construction works commencing or during the project for sites that are to be adversely impacted. Activities should include suitable archival recording and cultural material recovery (e.g. relocation of key components, surface collection and/or archaeological excavations). These should include opportunity for Aboriginal participants to recover and relocate culturally important flora species at HTP-C-AR01 and HTP-C-AR02. For these activities, details of locations, methods, personnel, and timing will be included • description and methods for undertaking further Aboriginal cultural heritage assessment, investigation and mitigation of any areas of the project that have changed following completion of the ACHA or during the final design and construction of the project • description and methods of post excavation analysis and reporting of the archaeological investigations and activities implemented as part of the ACHMP. For excavations, these will include suitable collection and processing of		

Reference	Impact	Mitigation measure	Timing	Relevant location(s)
		stone artefacts, and chronological, soil, and environmental samples • reinforcement of how the cultural landscape is to be considered throughout the project's construction and detail the rehabilitation of the construction impact area. Assessment of rehabilitation of areas where infrastructure is not remaining after construction of the project will be undertaken to determine suitable ecological communities and other factors in returning the cultural landscape as close to its current state as feasible • procedures for managing the unexpected discovery of Aboriginal objects, sites and/or human ancestral remains during the project • procedures for the curation and long-term management of cultural materials recovered or relocated as part of the works outlined in the ACHMP and any preceding stages associated with the project • processes for reviewing, monitoring, and updating the ACHMP as the project progresses • procedures for the long-term management of cultural materials that remain within the operational impact area following construction activities • suitable knowledge transfer procedures for personnel changes between project planning and delivery to minimise loss or mistranslation of		

Reference	Impact	Mitigation measure	Timing	Relevant location(s)
		the intent of the information, findings and future steps for heritage management.		
AH05	Cultural heritage management	Prior to the commencement of any construction impact and with consent of relevant landowners , archaeological test excavations will be undertaken at sites of investigation areas not completed during the exhibited ACHA or ACHA addendum and presented in Figure E.1 of the ACHA addendum will be carried out, in areas where ground disturbance to areas of high cultural significance would occur during construction on the remaining sites noted in section 9.3 of the ACHA. Test excavations will adopt approaches and methods outlined in Appendix C.2.1 (Archaeological research design) of the ACHA addendum the ACHA.	Detailed design	Incomplete test pits outlined in Figure E.1 of the ACHA addendum Areas of high cultural significance, including areas predicted to contain Warkworth Sand system deposits
AH02 -AH06	Aboriginal objects outside the project impact area	Additional assessment will occur in accordance with approaches and investigative methods developed in mitigation measure AH04 the Code of Practice for Archaeological Investigations of Aboriginal Objects in NSW (DECCW 2010) for areas where ground disturbing activities are required in locations outside of the previously assessed area. Where required, additional heritage surveys will be carried out with the RAPs prior to ground disturbing activities occurring in any such areas (including areas where only visual inspection has been undertaken).	Construction Operation	Activities outside of the amended project impact area

Reference	Impact	Mitigation measure	Timing	Relevant location(s)
		If no Aboriginal objects, sites and places are found or if Aboriginal objects, sites and places are found and they would not be adversely impacted, then a letter report will be prepared by an Aboriginal heritage specialist archaeologist that documents the findings and gives clearance to proceed. This would be provided to the RAPs for their information and records. Any identified Aboriginal objects, sites and places will be integrated and managed in mitigation measure AH04 and associated guiding principles presented in Appendix E (Post approval requirements – updated guiding principles) of the ACHA addendum.		
AH06 AH07	Cultural heritage management	A cultural values mitigation strategy will be developed in consultation with the Awabakal and Wonnarua Elders and key knowledge-holders who participated in the cultural values mapping study for the project. This will be undertaken to explore mitigations for the perceived social and cultural impacts to important viewlines and viewsapes between major promontories in HTP Central, and localised cultural landscapes at Trig Road, Flat Rock, Dora Creek and the Dora pinnacles. The strategy will include, but not be limited to: • implementation of Aboriginal-led cultural inductions throughout the project impact area • support for cultural monitoring of development activities through the Trig Road cultural landscape, Flat Rock cultural landscape, and within 200 m of the Dora pinnacles and Dora	Construction	Flat Rock cultural landscape, Trig Road cultural landscape, Dora Creek, Dora pinnacles, HTP-C-RS14 (#45-3-5-5013), Corrabare State Forest Road 2 (#45-3-3582), Corrabare State Forest Western Side of Langans Rd SWA (#45-3-3583), and Corrabare (#45-3-2140)

Reference	Impact	Mitigation measure	Timing	Relevant location(s)
		Creek. This will include approaches and methods for cultural monitors to be able to relay concerns to the project for consideration and subsequent management • undertaking traditional ecological knowledge investigations through Pokolbin State Forest and Corrabare North Flora Reserve • support for an Aboriginal-led research program to investigate cultural areas of interest and associated Aboriginal sites and places at Trig Road cultural landscape and Flat Rock cultural landscape. This will include but not be limited to: HTP-C-RS14 (#45-3-5-5013), Corrabare State Forest Road 2 (#45-3-3582), Corrabare State Forest Western Side of Langans Rd SWA (#45-3-3583), and Corrabare (#45-3-2140). Some guiding principles are provided in <i>Appendix E (Post approval requirements - updated guiding principles)</i> of the ACHA addendum to provide further direction on the development of this strategy and potential methods for research activities that may adversely affect Aboriginal object, sites and places.		
AH07 AH08	Cultural heritage management	Where possible, the clearing of vegetation between significant cultural viewing locations and the project impact area will be minimised in discussion with Awabakal Traditional Owners. Where practicable, any intervening vegetation will be protected to reduce the potential for views of the project from Flat Rock lookout, including the	Detailed design Construction	Flat Rock Lookout (HTP-C-CP01 [#45-3-5504]) Other important cultural viewlines and viewsapes, including but not limited to SL5 and SL8

Reference	Impact	Mitigation measure	Timing	Relevant location(s)
		view from the top of the rock as well as the setting and access track.		
AH08 AH09	Cultural heritage management	Where practicable, project elements will be positioned to maximise the distance from and/or minimise their visibility within culturally important view-lines, notably SL5, in consultation with the Awabakal Traditional Owners.	Detailed design Construction	Important cultural viewlines and viewsapes, including but not limited to SL5
AH12 AH10	Operation Cultural heritage management	Following construction of the project, all Aboriginal sites and objects unharmed and/or partially impacted will be subject to a site condition assessment (including mapping and recording in GIS systems) by a heritage specialist in consultation with the RAPs. The site condition assessment will identify management requirements for the future conservation and protection of all documented cultural materials in the context of future operation and maintenance of the operation impact area. This will include consideration of increased access to Aboriginal sites and places as a result of the establishment and maintenance of the transmission easement.	Construction Operation	Within the amended project impact area and within 55 metres of the amended project impact area, and all identified Aboriginal objects, sites and places identified in Chapter 6 (<i>The archaeological resource</i>) of the ACHA addendum that will be adversely impacted by the project Project impact area
AH09-AH11	Heritage interpretation	A heritage interpretation strategy will be developed by a heritage specialist to identify the Aboriginal heritage values throughout the project impact area, and to provide direction for potential interpretive opportunities for the project or off-site (e.g. at Broke, Cessnock or Martinsville). This strategy will be undertaken in consultation with made available for consultation and feedback with	Detailed design Construction Operation	All locations

Reference	Impact	Mitigation measure	Timing	Relevant location(s)
		the Wonnarua, Awabakal and Darkinjung Traditional Owners (as outlined in Appendix B.3 (List of key registered Aboriginal parties) of the ACHA addendum). Following consultation and feedback on the strategy, a heritage interpretation plan will refine the strategy with content (visual and textual) and design details in order to allow the implementation of the plan. Some guiding principles are provided in Appendix E (Post approval requirements - updated guiding principles) of the ACHA addendum to provide further direction on the development and content of this strategy. The interpretation strategy and interpretation plan will be co-designed and closely developed with local Wonnarua, Awabakal and Darkinjung Traditional Owners. This includes identification of initial aims and ideas, content and structure. Content should include, but not be limited to: - the ethnographic and historical record, which includes post contact and contemporary associations with the site and immediate environs - consultation and input from the Wonnarua, Awabakal and Darkinjung Traditional Owners - information obtained from the archaeological excavations and findings undertaken for the project.		

Reference	Impact	Mitigation measure	Timing	Relevant location(s)
AH10 AH12	Consultation	The Aboriginal community consultation process for this project will continue throughout detailed design and construction.	Detailed design Construction	N/A
AH11 AH13	Consultation	A copy of the ACHA and all relevant Aboriginal heritage information management system (AHIMS) site recording forms and information for the project will be lodged with Heritage NSW and provided to each of the RAPs, as relevant.	Detailed design	N/A
Landscape character and visual				
LV1	Landscape character and visual impacts	A landscape character visual impact management plan (LCVIMP) will be prepared as part of the project environmental management strategy. The LCVIMP would include mitigation measures to manage: • potential impacts on landscape character during the day during construction and operation • potential impacts on landscape character at night during construction and operation • potential impacts on views from the public domain during construction and operation where there is a moderate or higher potential visual impact • potential impacts on views from private dwellings, that are not associated with property that is hosting project infrastructure, and that have a predicted	Detailed design Construction	All

Reference	Impact	Mitigation measure	Timing	Relevant location(s)
		moderate or higher potential visual impact during construction and operation details regarding the installation and maintenance of any proposed on-site mitigation measures such as vegetation for screening.		
LV1 LV2	Vegetation retention	Vegetation clearance for the project will be limited to the minimum extent necessary for construction and operation to maximise existing visual screening and retention of the existing landscape character. Retained vegetation will be clearly demarcated on site as 'no-go zones' prior to the commencement of construction in the area. Construction personnel will be made aware of no-go zones as part of environmental site induction(s).	Detailed design Construction Operation	All locations
LV2 LV3	Construction lighting	Lighting at construction support sites will be designed and operated in accordance with AS 4282 2019 <i>Control of the obtrusive effects of outdoor lighting</i>.	Detailed design Construction	Construction support sites
LV3 LV4	Visual changes near residences	For private properties assessed as having a moderate or higher visual impact (ID465, 466, 467, 2920 and 2928), screening options will be agreed with the landowners. Screening options may include vegetation that will be installed and established by a contractor. Any screening vegetation will be installed in accordance with a plan and specification prepared	Construction	Private dwellings assessed as having a moderate or higher visual impact

Reference	Impact	Mitigation measure	Timing	Relevant location(s)
		advice provided by a qualified Landscape Architect or designer.		
LV4 LV5	Visual changes near residences	Opportunities will be investigated to reduce the height of the transmission towers visible from those dwellings with a moderate visual impact in the vicinity of Cessnock Road, Broke.	Detailed design	Private dwellings assessed as having a moderate or higher visual impact near Cessnock Road, Broke.
LV6	Visual changes due to the temporary workers accommodation facility on Wollombi Road	The visual prominence of the temporary workers accommodation facility will be minimised, including: - Structures visible from surrounding areas (including buildings, fences storage containers etc.) will have a non-reflective and neutral grey finish (or similar) to reduce their prominence. - Signage will be limited to what is required for identification and safety purposes to avoid visual clutter. - Temporary screen planting and mounding will be investigated and implemented where appropriate, to obstruct views from the most affected residents. If appropriate, screening vegetation will incorporate fast growing natives. - Where feasible and reasonable, the elements within construction sites would be located to minimise visual impacts, for example storage and machinery would be stored behind fencing or screened by the	Construction	Wollombi temporary workers accommodation facility

Reference	Impact	Mitigation measure	Timing	Relevant location(s)
		temporary worker accommodation buildings. Where suitable, site fencing to incorporate fabric screen-printed mesh banners to obstruct views from residents and road users. A pattern to create a camouflage effect or community artwork would be considered if appropriate e.g. along Wollombi Road.		
LV7	Visual impacts	All screening vegetation will be installed in accordance with advice provided by a qualified Landscape Architect or designer. The vegetation will comprise appropriate local plant species at a suitable density and layout to achieve screening over time. This vegetation will be established by the contractor and should be self-sustaining.	Detail design Construction	Moderately and highly impacted dwellings
LV8	Visual impacts	Visual mitigation would be implemented as soon as feasible and reasonable after the commencement of construction and remain for the duration of the construction period.	Detail design Construction	All locations identified in <i>Appendix G (Landscape character and visual impact assessment addendum)</i> of the Amendment Report
-	Cultural heritage management	The clearing of vegetation between significant cultural viewing locations will be managed in accordance with Aboriginal heritage mitigation measure AH08.	Detailed design Construction	Flat Rock Lookout (HTP-C-CP01 45-3-5003) Other important cultural viewlines and viewscapes, including but not limited to SL5 and SL8

Reference	Impact	Mitigation measure	Timing	Relevant location(s)
-	Cultural heritage management	The positioning of project elements to minimise their visibility within culturally important view-lines will be managed in accordance with Aboriginal heritage mitigation measure AH08.	Detailed design Construction	Important cultural viewlines and viewsapes, including but not limited to SL5
Traffic and transport				
TT1	Construction traffic impacts	A traffic management plan (TMP) will be prepared as part of the project environmental management strategy. The TMP will be developed in consultation with the relevant road/rail authorities and will include as a minimum: • confirmation of construction routes • measures to maintain access to local roads and properties • driver safety measures, including a driver code of conduct, requirements for in-vehicle monitoring systems, a driver fatigue management plan and the locations of rest areas along construction routes • site specific traffic control measures (including signage) to manage and regulate traffic movement prepared in consultation with the relevant road authorities and implemented by licenced traffic management contractors • measures to maintain pedestrian and cyclist access	Detailed design Construction	Construction routes, access tracks, construction support sites and temporary worker accommodation accesses

Reference	Impact	Mitigation measure	Timing	Relevant location(s)
		• requirements and methods to consult and inform the local community of impacts on the local road network • coordination with TfNSW and councils for road and intersection works and road crossings • coordination with ARTC for rail line crossings • requirements to obtain relevant approvals, including road occupancy licence(s), for any potential works in the road corridor and access by restricted access vehicles or OSOM vehicles required for the project. Where feasible, temporary road closures will be planned to occur outside of the traffic peak periods to minimise impacts to the road network • access to construction sites including entry and exit locations and measures to prevent construction vehicles queueing on public roads • maintenance and safety measures required along access tracks and at access points to construction support sites, including appropriate line marking and signage and wheel cleaning facilities as required • monitoring systems and auditing processes for the implementation of traffic management controls, and mechanisms to review the effectiveness of monitoring systems, and the frequency of monitoring or auditing requirements		

Reference	Impact	Mitigation measure	Timing	Relevant location(s)
		- a response plan for any construction traffic incident, or complaints management process - requirements for routine inspections of construction routes - consideration of other developments that may be under construction to minimise cumulative impacts.		
TT2	Road and intersection upgrades	Upgrades will be carried out for roads and intersections where turn warrant assessments have determined that works are required for construction vehicles to carry out safe turning movements. Intersections will be upgraded in line with the required works outlined in Chapter 4 (Project description) Appendix A (Updated project description) of the Amendment Report. In addition, safety measures will be implemented as required at intersections assessed as being non-compliant with safe intersection sight distance criteria, including the provision of additional advance warning signs, temporary reductions in speed limits or clearing of vegetation in consultation with the relevant road authority. Safety measures will be implemented in line with the required works outlined in Chapter 4 (Project description) Appendix A (Updated project description) of the Amendment Report.	Construction	Intersections identified in Appendix A (Updated project description) Chapter 4 (Project description) as requiring upgrades for turn warrant treatment or safe intersection sight distance Roads identified in Appendix A (Updated project description)
TT3	Intersection performance impacts	Ongoing investigation will be carried out to determine appropriate measures at the New England Highway/Hebden Road intersection to	Detailed design Construction	New England Highway/Hebden Road intersection

Reference	Impact	Mitigation measure	Timing	Relevant location(s)
		minimise impacts of right turning construction traffic from Hebden Road onto the New England Highway in the AM and PM peaks. Measures to minimise intersection performance impacts as a result of construction traffic will be investigated in consultation with relevant stakeholders. To minimise intersection performance impacts as a result of construction traffic, the following restrictions will be imposed on construction vehicles during the specified times: • New England Highway / Hebden Road intersection (I-01a): No construction traffic during the HTP AM peak hour (6-7am) except for left out from Hebden Road and no construction traffic during the PM network peak (4.45-5.45pm) except for right into Hebden Road) • New England Highway/Lemington Road intersection (I-02): No construction traffic before 7am and no construction traffic during the PM network peak (4.45 and 5.45pm) • New England Highway/Pikes Gully Road (I-02a): No construction traffic during the HTP AM Peak hour (6 – 7 am) except for left out from Pikes Gully Road • Golden Highway (Putty Road) / Broke Road intersection (I-09): No construction traffic before 7am		Identified intersections

Reference	Impact	Mitigation measure	Timing	Relevant location(s)
		- Putty Road / Mitchell Line of Road intersection (I-10): No construction traffic during the PM network peak (between 4-5pm) - Golden Highway / Range Road intersection (I-10b): No construction traffic before 7am and during the PM network peak (4-5pm). - Wine Country Drive / Broke Road intersection (I-14): Minimise heavy vehicle movements during the PM network peak (3.15-4.15pm). Light vehicles directed to use alternative route (Mount View Road, Oakey Creek Road, McDonalds Road). - Freemans Drive / Martinsville Road intersection (I-23): Minimise construction traffic in the AM network peak (8.15-9.15am). Compliance with the above restrictions will be monitored and audited in accordance with the TMP. In addition to these restrictions, variable message signs to communicate possible delays will be installed at the Golden Highway / Range Road intersection (I-10b), Wine Country Drive / Broke Road intersection (I-14), and at any other location agreed with Transport for NSW. Putty Road / New site access (I-52) will not proceed.		
TT4	Intersection performance impacts	Ongoing investigation will be carried out to determine appropriate measures at the Golden Highway/Range Road intersection to minimise the	Detailed design Construction	Golden Highway/Range Road intersection

Reference	Impact	Mitigation measure	Timing	Relevant location(s)
		impacts of through and right turning movements in the AM peak. Measures to minimise intersection performance impacts as a result of construction traffic will be investigated in consultation with relevant stakeholders.		
TT4	Construction traffic impacts	Where practicable to do so, shuttle buses will be used to transport construction workers to and from work sites and temporary worker accommodation facilities.	Detailed design	Temporary worker accommodation at Hebden Road, Freemans Drive and Wollombi Road construction support sites
TT5	Road safety – design related	All accesses will be designed to accommodate the required construction vehicle(s) in line with the TTIA and in accordance with relevant Austroads guidelines (where applicable).	Detailed design	Construction routes, access tracks, construction support sites and temporary worker accommodation accesses
TT6	Road condition	Pre-construction road dilapidation surveys and routine inspections will be completed along all nominated construction routes on local roads. Where rectification works are required due to project impacts, consultation with the appropriate road authority will be undertaken to confirm the scope of the work required.	Detailed design Construction	Local roads
TT7	Access to properties	Access to properties will be maintained throughout construction where feasible. Where that is not feasible, temporary alternative access arrangements will be provided following consultation with affected landowners and in	Construction	Construction impact area

Reference	Impact	Mitigation measure	Timing	Relevant location(s)
		accordance with the requirements of the construction communication and engagement plan, or in accordance with the property access sub plan to the TMP as provided in mitigation measure TT14. Except as provided in mitigation measure TT14, disruptions to property access and traffic will be notified to landowners at least 5 business days prior and in accordance with the relevant community consultation processes outlined in the EMS.		
TT8	Pedestrian and cyclist access	Ongoing consultation will be carried out with local bicycle groups where available and with Forestry Corporation NSW for walking and biking trails in State forests. Safe pedestrian and cyclist access will be maintained where the project interacts with existing pedestrian or bicycle facilities on public roads. Where this is not feasible, temporary alternative access arrangements will be provided following consultation with affected stakeholders and the relevant roads authority.	Construction	Construction impact area
TT9	OSOM vehicle access	Ongoing consultation will be undertaken with Transport for NSW regarding the use of State roads for OSOM vehicle routes and appropriate permits will be obtained from the National Heavy Vehicle Regulator for OSOM movements.	Detailed design Construction	OSOM routes
TT10	Cumulative impact with Hunter Valley	Further analysis and Coordination with HVO will be undertaken during detailed design and	Detailed design	Lemington Road and The surrounding roads near

Reference	Impact	Mitigation measure	Timing	Relevant location(s)
	Operations (HVO) Continuation Projects	construction planning regarding works required in the vicinity of Lemington Road and any associated staging/timing to minimise adverse performance and road safety impact on the road network along on Lemington Road and at its intersections with the New England Highway and Golden Highway.	Construction	HVO in the northern section of the amended project impact area
TT11	Access interfaces with operations at HVO and Bulga mining complex	A project co-ordination group will be established with Glencore, EnergyCo, the network operator and the design and construct contractors to manage critical interfaces between construction and mine operations, such as construction access and shared use of haulage roads.	Detailed design	HVO and Bulga mining complex
TT12 TT11	Cumulative impact of the Mandalong Road upgrade works by Transport for NSW	Further analysis and Coordination with Transport for NSW will be undertaken during detailed design and construction planning on the proposed construction activities requiring access on Mandalong Road and associated staging/timing to minimise adverse performance and road safety impacts at the Mandalong Road/Freemans Drive/Wyee Road intersection. Alternative routes will be used should use of this intersection not be possible.	Detailed design Construction	Mandalong Road and surrounding areas in the southern portion of the project impact area
TT13	Interface with Lake Macquarie City Council's upgrade of the Martinsville Road/Freemans Drive intersection	The HTP intersection upgrade to Martinsville Road/Freemans Drive intersection will be delivered in coordination with Lake Macquarie City Council to ensure HTP intersection upgrade works do not preclude the ultimate delivery of Lake Macquarie	Detailed design Construction	Martinsville Road/Freemans Drive intersection

Reference	Impact	Mitigation measure	Timing	Relevant location(s)
		City Council's planned safety improvements at this intersection.		
TT14	Property access impacts	A property access sub plan to the TMP will be prepared for Pokolbin Mountains Road, parts of Mount View Road and Mount Baker Road, to manage property access impacts during construction. This sub plan will outline measures to maintain property access (unless otherwise agreed with property owner(s)) and road user safety along these roads during road upgrade works (where identified) and general use by construction vehicles. The sub plan will include but not be limited to, unless otherwise agreed with property owners: • a temporary reduction in the posted speed limit and installation of additional signage as needed • details on how access to properties is maintained during construction, including a maximum wait time under temporary traffic arrangements as per Transport for NSW 'Traffic control at work sites Technical Manual' (the maximum wait time will be 10-15 minutes) • minimum notification periods for any road works or disruptions, and a direct communication system (SMS/email) for registered residents and businesses • provision of a 24/7 contact number for access issues and emergencies	Detailed design Construction	Properties located along Pokolbin Mountains Road, parts of Mount View Road and Mount Baker Road

Reference	Impact	Mitigation measure	Timing	Relevant location(s)
		- restriction of construction traffic movements to weekdays and standard working hours, except in consultation with property owners to accommodate construction vehicle movements outside standard working hours - commitment to avoid morning and/or afternoon peak periods in consultation with property owners (e.g. school peak times of 8:00-9:30am and 2:30-4:00pm) - locations for passing bays and temporary traffic management - details of any ongoing works required to maintain a suitable level of usability of the road during construction (e.g. drainage at upgrade locations and clearing any impediments to road drainage along Pokolbin Mountains Road, where practicable). Compliance with the implemented traffic management controls will be monitored and audited in accordance with the TMP.		
TT15	Coordination of stringing activities over the Golden Highway	The methodology and program of stringing activities over the Golden Highway for HTP will be coordinated with TfNSW and Ausgrid with consideration of the Hunter-Central Coast REZ transmission project works, scheduled OSOM movements that pass this location and other scheduled road works along the Golden Highway.	Detailed design Construction	Golden Highway (Putty Road)

Reference	Impact	Mitigation measure	Timing	Relevant location(s)
Land use and property				
LP1	Direct land use impacts	The design will continue to be refined to minimise potential impacts on existing land use and properties as far as practicable.	Detailed design	All locations
LP2	Property impacts	Property management plans will be developed for directly impacted properties, including mining land leased for agriculture, in consultation with the landowner. The property management plans will outline the protocols that will be implemented to address landowner concerns during construction. This will include: • the process for rectification of any damage to property infrastructure caused by construction • the process for rehabilitation and stabilisation of disturbed areas following completion of construction • details of any access tracks or other infrastructure provided for temporary construction activities that are to be retained and not restored to the pre-existing condition (where requested by the landowner prior to the completion of construction) • pre-condition assessments to determine the existing condition of assets, infrastructure, utilities that are considered to be impacted by construction activity	Detailed design Construction	All locations

Reference	Impact	Mitigation measure	Timing	Relevant location(s)
		• measures to minimise disruption to agricultural or other practices during construction, including identification of: – existing grazing and cropping activities and farm infrastructure arrangements (e.g. Fences, access tracks) within the project impact area – any required adjustments to existing agricultural activities during construction, including adjustments to fencing or access tracks or adjustments to grazing or cropping activities as a result of the location of permanent infrastructure within agricultural land. This will be informed by ongoing consultation with landowners. – noise intensive activities during construction that would overlap with sensitive periods of the livestock production cycle (e.g. Lambing or calving) – vehicle movements and other construction activities in the vicinity of livestock – the need for the movement of livestock away from potential stressors created during construction activities • any fencing and gate requirements • specific biosecurity controls		

Reference	Impact	Mitigation measure	Timing	Relevant location(s)
		contact details for the person who will liaise with landowners to provide direct avenues of enquiry for information and issues management.		
LP3	Impacts to utilities and services	The location of all services and utilities within the construction impact area will be confirmed during detailed design, and any required protection or relocation works will be designed in consultation with utility providers and landowners.	Detailed design Construction	All locations
LP4	Indirect impacts on State forests	To minimise impacts to State forests and State forest operations (including recreational uses and forest licence holders), the Forestry Corporation of NSW will be consulted on construction methodologies and activities as part of continued design development, and prior to and during construction activities.	Detailed design Construction	- Olney State Forest - Watagan State Forest - Corrabare State Forest - Pokolbin State Forest - Corrabare North Flora Reserve
LP5	Indirect impacts on NPWS estate	To minimise disruption to the NPWS estate, EnergyCo will consult with NPWS on construction methodologies and activities as part of continued design development and prior to and during construction activities, and during operation .	Detailed design Construction Operation	- Jilliby State Conservation Area - Corrabare North Flora Reserve
LP6	Impacts to mine operations	To minimise disruption to mining activities, mine operators will be consulted on construction methodologies and activities as part of continued design development, and prior to and during construction activities, and during operation . This will include consultation relating to:	Detailed design Construction Operation	Mining complexes

Reference	Impact	Mitigation measure	Timing	Relevant location(s)
		- any adjustments to existing mining-related infrastructure (including fences, tracks, mine roads and access tracks) - the timing and location of construction works, especially where there are some restrictions on vehicle or construction equipment movements - the timing and location of construction works which have the potential to impact mine operations, such as the stringing of transmission lines over existing mine infrastructure or active mining areas.		
LP7	Impacts to mine exploration and risks from mine subsidence	To minimise disruption to mining exploration activities, the Department of Regional NSW – Mining, Exploration and Geoscience, and holders of exploration licenses will continue to be consulted as part of continued design development prior to and during construction. Additionally, to manage risks associated with mine subsidence, the Department of Regional NSW – Mining, Exploration and Geoscience and Subsidence Advisory NSW will continue to be consulted as part of detailed design and throughout construction.	Detailed design Construction	- Mine exploration lease areas - Mine subsidence districts
LP8	Impacts to energy generation or electrical transmission infrastructure	To minimise disruption to energy generators, owners of transmission infrastructure will be consulted on construction methodologies and activities as part of continued design development and prior to and during construction activities.	Detailed design Construction	- Bayswater substation - Eraring substation - Existing transmission infrastructure

Reference	Impact	Mitigation measure	Timing	Relevant location(s)
LP9	Impacts to road and rail transport corridors	To minimise disruption to road and rail corridors and operations during construction activities (stringing) impacting the M1 Pacific Motorway, and rail corridors, TfNSW and ARTC will be consulted on construction methodologies and activities as part of continued design development and prior to and during construction activities.	Detailed design Construction	Stringing locations
LP10	Land disturbance	Disturbed areas will be stabilised and appropriately reinstated back to pre-construction condition where practical, or as agreed in consultation with the relevant landowner and documented in property management plans.	Construction	All locations
Agriculture				
AG1	Property restrictions	Ongoing consultation will be carried out with impacted agricultural lease holders and landowners to better understand impacts to agricultural operations and to inform the support to be provided to the landowners. Support provided will include the development of alternative irrigation strategies where current irrigation activities are inhibited and coordination of traffic control activities on adjacent roads to avoid spraying periods.	Detailed design Construction	All locations
AG2	Agricultural resource disturbance	During construction, disturbed areas will be stabilised and appropriately reinstated to their previous condition and use as soon as feasible and reasonable following the completion of	Construction	All locations

Reference	Impact	Mitigation measure	Timing	Relevant location(s)
		construction. This will be carried out in consultation with the relevant landowner.		
AG3	Biosecurity impacts during construction	On a regional level, any import of equipment or machinery, including from overseas, will follow the standard procurement safeguards and quarantine procedures as per the <i>Biosecurity Act 2015</i>. In addition, a biosecurity management plan will be prepared to address: • weed management controls, including inspection and cleaning of vehicles, plant and equipment, and management of earthworks and clearing activities • development of specific controls where high biosecurity risks are identified (e.g. with respect to foot and mouth disease to control any risk of introduction of the pathogen as a result of project activities) • specific controls applicable to properties in consultation with landowners, which will be consistent with property biosecurity plans where they are in place. Agreed protocols will be documented in the biosecurity management plan • specific controls applicable to vineyards in consultation with vineyard owners, particularly for where construction vehicle movements would occur on adjacent roads. Agreed protocols will be documented in the biosecurity management plan	Construction	All locations

Reference	Impact	Mitigation measure	Timing	Relevant location(s)
		- a monitoring program to track the effectiveness of the controls identified in the biosecurity management plan - consultation with the owners of organic certified properties to identify the specific risks and controls required to be implemented. The biosecurity management plan will be prepared in consultation with landowners, the Forestry Corporation of NSW and relevant local council biosecurity officers and government agencies in relation to the distribution of important weeds and the location of high biosecurity risk areas. In accordance with the requirements of the NSW <i>Biosecurity Act 2015</i> and <i>Biosecurity Regulation 2017</i>, the relevant control authority will be notified if new infestations of State priority weeds started because of construction activities.		
AG4	Biosecurity Impacts during operation	The biosecurity protocols and procedures captured under the network operator's environmental management system will be implemented along the transmission line easement, at substations and switching stations, and along access tracks during operation.	Operation	All locations
Social				
S01	Social impacts and benefits identified in SIA	A Social Impact Management Plan (SIMP) will be developed to outline the proponent's integrated approach to managing social impacts, enhancing	Detailed design Construction	Corridor Local Regional

Reference	Impact	Mitigation measure	Timing	Relevant location(s)
		benefits, and delivering responsive engagement and communications. The SIMP will: • be developed in consultation with councils and relevant affected stakeholders • detail commitments and management measures, specifying the social impacts addressed, affected stakeholders, implementation timeframes, roles and responsibilities • describe how project-specific and regional social changes will be monitored to support adaptive management • provide mechanisms for community and stakeholder input to mitigation planning and evaluation of effectiveness • include a program to monitor, evaluate and publicly report on the effectiveness of the mitigation measures, including consideration of cumulative impacts • confirm the approach to respond to unanticipated impacts over the life of the project • include a trigger action response plan (TARP) to monitor, respond to and manage social impacts as they arise during project delivery. The SIMP will be implemented and monitored through quarterly data collection where possible to inform adaptive management and continuous improvement. Monitoring outcomes will be shared with the Regional Reference Group and other stakeholder forums as relevant during construction. The proponent will also host annual		

Reference	Impact	Mitigation measure	Timing	Relevant location(s)
		community surveys to seek feedback on SIMP monitoring. The SIMP will be reviewed annually and updated based on monitoring data and community and stakeholder feedback. This will include assessing the relevance of mitigation measures and identifying any new issues or initiatives requiring inclusion to ensure they meet the residual risk ratings. Review outcomes will be published on the proponent's website.		
S02	Social impacts and benefits identified in SIA	A community communication strategy will establish the approaches to facilitating communication between the proponent and the community during construction. The would include the following measures: • appoint dedicated community liaison officer(s) and ensure they receive adequate training aligned to trauma-informed care principles • ensure key stakeholders - including affected landowners, Hunter businesses, community groups, local government, Millfield Public School and Forestry Corporation of NSW - are proactively informed through regular updates using a range of communications channels • undertake proactive, targeted engagement with impacted stakeholders located near construction support sites and temporary worker accommodation — including schools (such as	Detailed design Construction	Corridor Local Regional

Millfield Public School), childcare centres, and social services in Millfield, Cooranbong and Martinsville – to develop and implement agreed mitigation measures

- undertake consultation with affected schools **(such as Millfield Public School)**, and childcare facilities and local governments on **noise, dust and** traffic impacts and management approaches
- implement real time traffic monitoring and SMS alerts for **stakeholders that may be directly affected by changed access** such as local residents, **Hunter businesses, community groups (such as Pokolbin Mountain Road Residents Group), recreational users of State forests, Hunter Valley Gliding Club, schools (such as Millfield Public School), mining companies, emergency services, childcare centres, and social services**
- establish a feedback mechanism by which the community can discuss or provide feedback to the ~~proponent~~ **project as well as communication protocols for, including** how the ~~proponent~~ **project** will respond to enquiries or feedback from the community
- implement targeted communications regarding visual, noise, and air quality impacts, road changes/closures, and emergency access coordination – ensuring timely notification ahead of disruptions (see also mitigation measures LV1–LV3, NV1, AQ1–AQ3, and TT1 **and updated mitigation measures as identified in Appendix D**

(Updated mitigation measures) of the Amendment Report)

- provide clear, accessible information on EMF, fire safety, and associated risk reduction measures to address community concerns
- offer 24/7 access to psychological services and tailored mental health support programs, with targeted confidential counselling for directly affected landowners
- continue adaptive engagement with Traditional Owners, maintaining agreed governance arrangements and supporting ongoing cultural monitoring through planning and construction (see also mitigation measure AH104 and **updated mitigation measures as identified in Appendix D (Updated mitigation measures) of the Amendment Report)**
- engage with affected **Hunter businesses (e.g. wineries)**, tourism and recreation operators **(including recreational user groups of forestry land) and Hunter Valley Gliding Club** to minimise disruptions and support continuity of operations
- set out a framework to develop a community notification processes in consultation with Forestry Corporation of NSW and councils during construction
- **prepare interface management plans with Glencore, Hunter Valley Operations and the Forestry Corporation of NSW with regards to site based operational interface**
- **establish project coordination groups with Glencore, Hunter Valley Operations and the**

Reference	Impact	Mitigation measure	Timing	Relevant location(s)
		Forestry Corporation of NSW for coordination of operations with project construction.		
S03	Decision making systems, way of life, community, accessibility, livelihoods, health and wellbeing, culture	A complaints management system will be maintained throughout the construction period and for a minimum of 12 months after the completion of construction. The complaints management system will include the following (at a minimum): • contact details for a 24-hour response line and email address for ongoing stakeholder contact throughout the project • details of all complaints received will be recorded • verbal and written responses describing what action will be taken will be provided to the complainant (or as otherwise agreed by the complainant).	Detailed design Construction	Corridor Local Regional
S04	Decision making systems, way of life, community, livelihoods, health and wellbeing	A landowner engagement strategy will be developed and implemented for the project and will include: • appointing a dedicated land acquisition manager to oversee implementation of the strategy • ensuring all land and property access and community liaison personnel are trained in community and stakeholder engagement aligned with trauma-informed care principles to support interactions with vulnerable individuals, including those with chronic illness, disability, or mental health conditions.	Detailed design Construction	Corridor Local

Reference	Impact	Mitigation measure	Timing	Relevant location(s)
		Property management plans will also be implemented to complement the landowner engagement strategy. These will be customised to address landowner concerns and property-specific needs, with a focus on respect for landowner values and expectations, co-existence principles, biosecurity, and permissible land uses (see LP2 in Appendix D (Updated mitigation measures) of the Amendment Report Chapter 12 (Land use and property)).		
S05	Community, livelihoods	A local business and employment strategy will be prepared and implemented, reflecting EnergyCo's Hunter-first commitments to the local community. It will include the following initiatives: • identify local skills gaps and workforce skills and training requirements • set targets for local employment in line with the <i>NSW Renewable Energy Sector Board's Plan</i> (NSW Office of Energy and Climate Change 2022) • set diversity and inclusion targets that align with the <i>NSW Procurement Board Direction PBD 2023-01 Skills, Training, and diversity in construction</i> (NSW Treasury 2023) • education and training partnerships, such as TAFE NSW and local high schools and the upcoming Cessnock Education Precinct to support energy transition career pathways	Detailed design Construction	Local Regional

Reference	Impact	Mitigation measure	Timing	Relevant location(s)
		• support tailored training and upskilling programs for residents, with a targeted focus on young people, Aboriginal people, candidates seeking career transition from existing local industries, and older people • providing full, fair, and reasonable access to Australian, regional and local suppliers, and including commitments to an ongoing program of engagement with regional suppliers and contractors • investment in retraining and upskilling pathways for workers transitioning into renewable energy industries (e.g. technicians, infrastructure specialists) • maintaining a local and regional supplier database to increase promotion and access to project opportunities • prioritising local procurement and contractor engagement, with clear targets for small and medium enterprises (SMEs) linked to <i>NSW Procurement Board Direction PBD-2023-03 Procurement opportunities for small and medium businesses</i> (NSW Treasury 2023) and the <i>Small and Medium Enterprise and Regional Procurement Policy</i> (Buy NSW 2021) • partnering with Business Hunter and Local Chambers of Commerce to promote procurement opportunities • outlining mechanisms to monitor cumulative competition and changes to community access		

Reference	Impact	Mitigation measure	Timing	Relevant location(s)
		to key goods and services that may be affected by the project's local procurement activities • collaboration with local governments and industry including local mining companies to understand workforce and training needs, cumulative pressures and opportunities to enhance project benefits • delivery of workforce initiatives focused on Aboriginal employment pathways and contractor engagement.		
S06	Community, livelihoods	An industry and Aboriginal participation plan, outlining tailored strategies to strengthen Aboriginal business participation, will be prepared and implemented and will include: • 'meet-the-contractor' events for local and Aboriginal businesses to learn about potential opportunities associated with project delivery • supply chain mapping, with a focus on identifying goods and services suitable for local sourcing (e.g. select civil works, catering, cleaning, transport) and identifying the capacity of local and Aboriginal business to be ready for additional demand • Aboriginal procurement commitments of 2.5% with a stretch goal of up to 10% in line with the <i>NSW Renewable Energy Sector Board's Plan</i> (NSW Office of Energy and Climate Change 2022)	Detailed design Construction	Local Regional

Reference	Impact	Mitigation measure	Timing	Relevant location(s)
		• set targets for local procurement in line with the <i>NSW Renewable Energy Sector Board's Plan</i> (NSW Office of Energy and Climate Change 2022) • monitoring of the availability and price of goods and services in the community that are locally procured This plan will be developed in consultation with local business representatives including Traditional Owners and local Aboriginal business representatives.		
S07	Way of life, community, livelihoods, health and well being	A temporary worker accommodation management plan(s) will be developed prior to construction to address requirements set out in the <i>NSW Guideline for Construction Workers Accommodation</i> (May 2025), and informed by consultation with neighbours, councils, health and emergency service stakeholders. This would include the following: • contemporary analysis of short-term and local accommodation capacity in key localities including consideration of updated workforce estimates and local accommodation facilities • principles for the siting and use of existing accommodation within towns if required to supplement temporary worker accommodation facilities • a code of conduct for workers, which will include a zero-tolerance policy relating to anti-social	Detailed design Construction	Corridor Local

Reference	Impact	Mitigation measure	Timing	Relevant location(s)
		behavior, health and safety, environmental management, community engagement and cultural awareness raising • measures to support workforce well-being and integration with the local community (e.g. internet access, promotion of participation in local events, healthy food options, wellbeing and safety programs) • dedicated health, paramedic, catering, and recreational services • specific measures to support community cohesion and safety at nearby communities including Millfield, Wollombi, Cooranbong, Martinsville, and the Lake Liddell Recreation Reserve • security protocols for each accommodation facility. The plan(s) will be reviewed on a 6-monthly basis to monitor the effectiveness of management commitments and to address emerging or unanticipated impacts.		
S08	Surroundings, community	Investigate opportunities to assist wildlife carers and organisations including Hunter Wildlife Rescue with relocating directly affected wildlife care and soft release pen facilities within the local area and to respond to increased demand in wildlife care services from construction of project.	Detailed design Construction	Corridor Local
S09	Way of life, community, health and wellbeing	Investigate and implement measures to minimise the perceived safety risk from construction	Detailed design	Local

Reference	Impact	Mitigation measure	Timing	Relevant location(s)
		vehicles in proximity to Millfield Public School (in consultation with Millfield Public School) such as: • improvements to the school car park to make it more suitable to all weather conditions • improvements to the school fencing to minimise risk of children running onto the road • traffic control measures for pedestrians near the school during pick-up and drop-off times for the duration of construction.	Construction	
Historic heritage				
HH1	Historic heritage management	An HHMP will be prepared by a suitably qualified and experienced heritage specialist to provide the post-approval framework for managing archaeological mitigation and historical heritage within the project impact area. The HHMP will include as a minimum: • measures that will be implemented to manage potential impacts on listed heritage items, historic heritage value sites in the Singleton Military Area and newly identified sites assessed to hold or possibly hold heritage significance • inclusion of heritage awareness and management training within the site induction process for relevant personnel involved in site works • identify heritage sites that will be subject to archival recording	Detailed design Construction	Project impact area, and all identified heritage items, features of heritage significance and possible heritage significance that will be adversely impacted by the project

Reference	Impact	Mitigation measure	Timing	Relevant location(s)
		• details of the management of any historic heritage artefacts recovered during construction • adherence to guidelines in the management of heritage values on NPWS estate • consultation on the HHMP will be undertaken with NPWS and Heritage NSW.		
HH2	Impacts to heritage curtilage	Prior to construction activities near the heritage item, an exclusion barrier (e.g. fence or suitable alternative) will be installed at the curtilage of heritage items, and historic heritage value sites and activity areas and features where works will be in the vicinity to reduce the risk of unintentional impacts to heritage values. Where works enter the curtilage of an item or site: • any significant elements of the heritage item or site will be fenced off, preferably with a minimum of a 5 m buffer, where possible • where not possible, the area of works will be fenced off from the remaining part of the item or site curtilage The barrier will be maintained for the duration of construction.	Detailed design Construction	• Blacksmith's shop and forge - Vere township (AA 141-F 25) • Unidentified site - Vere township (AA 142-F 26) • Vere school and Second Range Warden's Residence (AA 140-F 24) • Oakley Estate (Location 1) (AA 153-F 8, AA 155-F 8) • Warringah Stud/Old Myrtle (AA 161-F 28) • Stafford homestead and Clifford' homestead (AA 98-F 3, AA 99-F 4) • Archerfield and outbuildings

Reference	Impact	Mitigation measure	Timing	Relevant location(s)
				• Catholic Church and Cemetery • AA 70-F 12 – Dwelling • AA 90-F 1 – Greenleek homestead • AA 90-F 2 - c.1833 structure, 'Greenluk' • AA 90-F 2.1 - c.1833 'Greenluk' outbuilding • AA 93-F 16 - Greenleek dairy • AA 93-F 17 - Greenleek milking shed • AA 98-F 3 - Clifford homestead ruins • AA 100-F 19 - Former dwelling • AA 223-F 41 -Inglewood Estate homestead
HH3	Impacts to heritage curtilage	The construction impact area at tower pad areas will be remediated at the end of construction to minimise impacts to setting of the heritage curtilage.	Construction	• Belmont • Beer Homestead • 'Stafford' homestead and 'Clifford' homestead (AA 98-F 3, AA 99-F 4)

Reference	Impact	Mitigation measure	Timing	Relevant location(s)
				• Eraring Power Station • Stone house, timber slab barn and fencing
HH4	Ground disturbance at archaeological areas	Where possible, ground disturbance will be avoided within these site curtilages. Alternatives to ground disturbance for access track upgrades may include laying of protective materials, such as thick plastic and geofabric, over the ground surface followed by a layer of gravel. Materials for the upgrade of the access track can be deposited on top of this protective layer.	Detailed design Construction	• Blacksmith's shop and forge - Vere township (AA 141-F 25) • Unidentified site - Vere township (AA 142-F 26) • Vere school and Second Range Warden's Residence (AA 140-F 24) • AA 90-F 2 - c.1833 structure, 'Greenluk' • AA 127-F 7 - Oakhill homestead • AA 223-F 41 - Inglewood Estate homestead • AA 223-F 42 - Inglewood Estate outbuilding • AA 226-F 34 - Parson's dwelling
HH5	Changes to settings of item or heritage site	A review of visual impacts may be required once the final tower locations are known.	Detailed design	• Oakley Estate

Reference	Impact	Mitigation measure	Timing	Relevant location(s)
				• Stafford homestead and Clifford homestead
HH6 HH5	Changes to settings of item or heritage site	Minimise tree removal in the laydown area at Crump Street.	Construction	• Millfield General Cemetery
HH7 HH6	Disturbance or destruction of unexpected items of potential heritage significance, relics or human remains	Any items of potential heritage significance or human remains discovered during construction will be managed in accordance with an unexpected finds procedure. Work in the vicinity of the find will stop if objects such as bonded bricks, timber or stones appearing in formation indicating a wall or floor for instance are found, or if soil with artefacts concentrations, is excavated. A description of the types of finds that will stop works within the vicinity of the finds will be determined prior to construction as part of the HHMP and staff involved in excavation work will be informed about how to apply it. The unexpected finds procedure will include actions such as: • stop work procedures and exclusion buffers • using the advice of a technical specialist • consultation with Heritage NSW, Department of Climate Change, Energy, the Environment and Water (Heritage NSW) • protocols for continuing work in the area after assessment.	Detailed design Construction	• Blacksmith's shop and forge - Vere township (AA 141-F 25) • Unidentified site - Vere township (AA 142-F 26) • Vere school and Second Range Warden's Residence (AA 140-F 24) • Oakley Estate (Location 1) (AA 153-F 8, AA 155-F 8) • Warringah Stud/Old Myrtle (AA 161-F 28) • Belmont • Beer Homestead • 'Stafford' homestead and 'Clifford' homestead (AA 98-F 3, AA 99-F 4) • Brick farmhouse (AA 109-F 5, AA 109-F 6)

Reference	Impact	Mitigation measure	Timing	Relevant location(s)
				• Archerfield and outbuildings • Eraring Power Station • AA 90-F 2 - c.1833 structure, 'Greenluk' • AA 223-F 41 - Possibly Inglewood Estate homestead • AA 127-F 7 - Oakhill homestead • AA 226-F 34 - Parson's dwelling • AA 223-F 42 - Inglewood Estate outbuilding
HH8 HH7	Potential disturbance or destruction of known items of potential heritage significance, relics or human remains	Should it not be possible to avoid ground disturbance in areas of archaeological potential with heritage significance or possible heritage significance , archaeological monitoring of any ground disturbing works will be prepared at sites of archaeological potential. An Archaeological Method Statement (AMS) an Archaeological Research Design and Excavation Methodology (ARDEM) will be prepared to appropriately manage for the proposed works in these locations in accordance with the HHMP. If appropriate and relevant, exceptions under Section 139 of the <i>Heritage Act 1977</i> and Heritage NSW guidance regarding implementation of these exceptions will	Detailed design Construction	• Blacksmith's shop and forge - Vere township (AA 141-F 25) • Unidentified site - Vere township (AA 142-F 26) • Vere school and Second Range Warden's Residence (AA 140-F 24) • AA 90-F 2 - c.1833 structure, 'Greenluk'

Reference	Impact	Mitigation measure	Timing	Relevant location(s)
		be utilised (Heritage NSW 2022, Heritage NSW 2022a, Heritage NSW 2022b).		• AA 223-F 41 - Inglewood Estate homestead • AA 127-F 7 - Oakhill homestead • AA 226-F 34 - Parson's dwelling • AA 223-F 42 - Inglewood Estate outbuilding
HH9 HH8	Confirmed destruction of known items of heritage significance, relics or human remains	Direct impacts to the Wishing Well are unavoidable due to access track upgrades to Martinsville Hill Road. The Wishing Well will be subject to archaeological excavation and recording to ensure that a record is made prior to its demolition removal. An AMS The ARDEM will include specifications be prepared for these works. A commemorative plaque will be installed in a location as close as possible/practicable to the water source of the Wishing Well, and the built fabric of the Wishing Well will be relocated. The final locations of the commemorative plaque which will be determined through further consultation with NPWS, Forestry Corporation of NSW and Heritage NSW. A suitable storage location for the Wishing Well built fabric and timeframe for relocation will be determined during the development of the Historical Heritage Management Plan.	Detailed design Construction	• Wishing Well (AA 186-F 40)

Reference	Impact	Mitigation measure	Timing	Relevant location(s)
		The Wishing Well built fabric will be relocated, in accordance with the HHMP and relevant regulatory requirements, to the Sawmill site at the corner of Martinsville Hill Road and Watagan Forest Road, unless otherwise agreed upon by NPWS, Forestry Corporation of NSW and Heritage NSW. Continue consultation regarding engineering solutions for maintaining access to the water source post construction.		
Noise and vibration				
NV1	General noise and vibration	A Construction Noise and Vibration Management Plan (CNVMP) will be prepared to provide the framework and mechanisms for the management and mitigation of all potential noise and vibration construction impacts from the project. The CNVMP will include: — confirmation of nearby sensitive receivers — confirmation of work, construction equipment and hours of work will be completed and quantify resulting impacts at sensitive receivers. — criteria for the project and approval conditions — procedures and mitigation measures for potential impacts during out-of-hours work — requirements for noise and vibration monitoring	Detailed design Construction	Project impact area and sensitive receivers

Reference	Impact	Mitigation measure	Timing	Relevant location(s)
		— details of how community consultation in relation to noise and vibration will be completed — procedures for handling complaints — details on how respite will be applied where ongoing high impacts are expected at certain receivers.		
NV2	Prolonged construction noise impact from fixed work areas	Noise path control, such as hoarding or earth bunds will be investigated and implemented where required. Positioning of site structures will be considered to act as barriers between noisy work and receivers where practical.	Detailed design Construction	Construction support sites, laydown areas, substations and switching sites where receivers are predicted to be noise affected and near fixed work areas with long work durations
NV3	Out of hours construction works	Construction of the project will be carried out during standard construction hours where possible (Monday to Friday between 7.00 am and 6.00pm and Saturday between 8.00am and 1.00pm). An out of hours (OOH) work protocol that details how the project will identify, assess and approve out of hours work outside standard construction hours will be developed and implemented. The protocol will include provisions to: • carry out additional assessments for work proposed outside standard construction hours, to confirm noise levels at potentially affected	Detailed design Construction	Stringing transmission lines across main roads (M1 Pacific Motorway, Wollombi Road, Cessnock Road, Putty Road, Lemington Road) Other works that may need to be conducted out of standard construction hours

Reference	Impact	Mitigation measure	Timing	Relevant location(s)
		sensitive receivers and determine suitable mitigation measures to minimise noise levels • notify and engage with potentially noise affected receivers about upcoming work outside standard construction hours and address any associated complaints. • identify appropriate respite for noise affected receivers (where required).		
NV4	Construction noise impacts	Where construction is likely to result in exceedances of NMLs at sensitive receivers, mitigation and management measures will be implemented where practicable and appropriate. This will include (but is not limited to) the following measures: • select quieter plant and equipment and use alternative construction methods to minimise noise levels • plan and schedule concurrent noisy activities to minimise the number of items of noisy plant operating at one time and cumulative noise levels • install screens or use barriers to mitigate noise from stationary noise sources • maximise the offset distance between noisy plant and sensitive receivers • orient noisy plant and equipment away from sensitive receivers • use noise source controls, such as residential class mufflers, to reduce noise from all regularly	Construction	All locations where exceedances of the applicable construction noise criteria are predicted at sensitive receivers

Reference	Impact	Mitigation measure	Timing	Relevant location(s)
		used plant including cranes, excavators and trucks • use non-tonal reversing alarms in place of traditional beeper reversing alarms during OOH where noise impacts are predicted • turn off machinery when not in use • confirm equipment is maintained in accordance with manufacture's requirements to minimise generation of excessive noise • operate machinery in a manner which reduces occurrence of maximum noise level events, such as excavator bucket impacts, material drop heights, steel on steel impacts and dragging materials across hard surfaces • provide awareness training regarding noise mitigation measures to be implemented as part of regular toolbox meetings • notify and consult with potentially noise affected receivers about upcoming noisy activities • Confirm that noise affected receivers outside standard construction hours and highly noise affected sensitive receivers are managed with consideration to the CNVG5 additional mitigation measures such as notifications, verification, and respite where appropriate		
NV5	Construction noise validation	Monitoring will be carried out at representative locations during noise intensive activities that have the potential to cause noise exceedances at	Construction	All locations where exceedances of the applicable construction

Reference	Impact	Mitigation measure	Timing	Relevant location(s)
		sensitive receivers, to confirm that actual levels are consistent with the predictions and that appropriate mitigation measures have been implemented.		noise criteria are predicted at sensitive receivers
NV6	Noise levels from construction traffic	All construction vehicle movements will adhere to the following measures: • OOH vehicle movements will be minimised where possible • construction delivery vehicles will be fitted with straps rather than chains for unloading, wherever possible • use of engine compression brakes will be avoided at night and in residential areas • site access points and access tracks will be located as far as practical away from sensitive receivers • traffic flow, parking and loading/unloading areas will be planned to minimise reversing movements • construction inductions will include driver behaviour requirements to minimise vehicle noise emissions.	Construction	Construction routes and access tracks
NV7	Vibration	Where vibration intensive work is required within the recommended minimum working distances and is considered likely to exceed the cosmetic damage criteria:	Construction	All locations

Reference	Impact	Mitigation measure	Timing	Relevant location(s)
		- different construction methods with lower source vibration levels will be investigated and implemented, where feasible - confirm any vibration-sensitive heritage structure that could be impacted by the proposed works including confirming the structural integrity of the structure and applying appropriate vibration criteria - vibration monitoring will be undertaken at the start of work to determine actual vibration levels at the receiver - work will be ceased if the monitoring indicates vibration levels are likely to, or do, exceed the relevant criteria - direct and indirect impacts to all identified aboriginal objects and sites of high significance and their immediate environment (≥ 55 m) within the project impact area will be avoided		
NV8	Construction aircraft noise	Management measures will be implemented to minimise aircraft noise at sensitive receivers where practicable and appropriate, including: notifying nearby sensitive receivers of upcoming work involving aircraft. This will include use of helipads within construction support sites, flight paths outside of the project impact area and stringing or other work within the HTP corridor. Notification will include scheduled dates, locations, indicative hours and a description of the proposed work	Construction	HTP corridor and construction support sites

Reference	Impact	Mitigation measure	Timing	Relevant location(s)
		• prioritising use of helipad locations at the construction support sites with the maximum distance offset from sensitive receivers (Hebden Road and Pikes Gully Road support sites) • varying flight paths between helipads and the HTP corridor to avoid repeated helicopter noise at sensitive receivers. • operating aircraft in accordance with Airservices Australia <i>Environmental Principles and Procedures for Minimising the Impact of Aircraft Noise</i> (2002) and the Helicopter Association International (HAI) Fly Neighbourly Guide.		
NV9	Operational transmission line noise	Operational transmission line noise impacts will be reviewed during detailed design, once the transmission tower and line placement, conductor arrangement and any property acquisitions are known. For each residence where potential operational noise levels are predicted to exceed the PNTL, noise monitoring to confirm actual operational noise levels will be carried out at representative locations following commencement of project operation. The noise monitoring will occur during representative L50 weather/atmospheric conditions conducive to generating ‘worst case’ noise from corona discharge. For residences where the monitoring identifies corona discharge levels above PNTLs, consultation	Detailed design Operation	All locations

Reference	Impact	Mitigation measure	Timing	Relevant location(s)
		will be undertaken with the landowner of the affected residence to identify solutions. Once the appropriate solutions have been agreed with the landowner, these will be implemented as soon as reasonably practical.		
NV10	Operational switching station and substation noise	Operational switching station and substation noise impacts will be reviewed during detailed design. The design will consider the following measures with a view to minimising noise impacts: • selection of equipment with consideration of operating sound power levels, where feasible • incorporation of transformer barriers where reasonable and feasible.	Detailed design Operation	Bayswater South and Olney switching stations Eraring substation
Surface water				
SW1	Impacts to surface water	A project specific Soil and Water Management Plan (SWMP) will be prepared, which provides mitigation measures to minimise impacts on soils and water. The SWMP will be prepared in accordance with the management approach outlined in <i>Chapter 8 (Management) of Technical Report 10 (Surface water impact assessment)</i> and will: • identify foreseeable risks relating to soil erosion and water pollution during construction and describe how these risks will be managed • include a description of soil and water management approaches, methods for impact	Detailed design Construction	All locations

Reference	Impact	Mitigation measure	Timing	Relevant location(s)
		assessment and monitoring, and mitigation measures • include ESCPs • include surface water quality monitoring requirements • include stormwater management plans At the completion of construction, appropriate measures will be carried into the network operator's Environmental Management System.		
SW2	Water quality and geomorphology	Scour protection will be considered for any infrastructure within a watercourse. Design will incorporate features that minimise impact on flow conditions and natural function of the watercourse, where feasible and reasonable. Works within or near watercourses will consider and adhere to the following guidelines: • <i>Controlled activities - Guidelines for watercourse crossings on waterfront land</i> (DPE 2022b) • <i>Controlled activities - Guidelines for instream works on waterfront land</i> (DPE 2022c) • <i>Why Do Fish Need to Cross the Road? Fish Passage Requirements for Watercourse Crossings</i> (DPI 2003) • <i>Policy and Guidelines for Fish Habitat Conservation and Management</i> (DPI 2013).	Detailed design Construction	All locations
SW3	Erosion and sedimentation	Erosion and sediment control plans (ESCPs) will be developed, prior to construction, and implemented in consultation with a Certified Professional in	Detailed design Construction	All locations

Reference	Impact	Mitigation measure	Timing	Relevant location(s)
		erosion and sediment control for all disturbance activities. ESCPs will include additional considerations for areas of high risk (e.g. high slopes) and located upstream of sensitive biodiversity areas (i.e. State forest areas) including at Olney switching station. The plans will detail the processes, responsibilities and measures to manage potential soil and water quality impacts in accordance with the principles and requirements in: — Managing Urban Stormwater – Soils and Construction, Volume 1 (Landcom 2004), Volume 2A (DECC 2008a) and 2C (DECC 2008b), commonly referred to as the 'Blue Book' — Best Practice Erosion and Sediment Control (IECA 2008) — Guidelines for controlled activities (Riparian corridors (DPE Water 2022a) and Watercourse crossings (DPE Water 2022b).		
SW4	Water quality monitoring	As part of a soil and water management plan (SWMP), a water quality monitoring program will be developed and implemented to establish baseline water quality conditions in watercourses of high sensitivity that may be impacted by nearby construction and to detect changes in water quality that may be attributable to the project during construction. The frequency, location and	Detailed design Construction	All locations

Reference	Impact	Mitigation measure	Timing	Relevant location(s)
		duration of sampling will be detailed in a monitoring program. Monitoring will: • be positioned upstream and downstream of project disturbance areas, focusing on locations with sensitive receiving environments. Where upstream and downstream monitoring is not possible, pre-construction water quality conditions will be established through baseline monitoring • be carried out in accordance with water quality objectives and criteria for the project and in accordance with Australian and New Zealand Guidelines for Fresh and Marine Water Quality (ANZECC 2000).		
SW5	Stormwater management – general	General stormwater management principles within the project impact area will include: • appropriate siting of proposed infrastructure within the project impact area, which will minimise (and avoid where possible) disturbance to existing drainage lines, riparian vegetation and overland flow paths • grading of earthworks to minimise changes to existing catchments and flow paths • surface drainage infrastructure that diverts upslope runoff around infrastructure and excavations to receiving drainage lines • infrastructure areas that contain oil and/or grease will include suitable containment measures	Detailed design Construction	All locations

Reference	Impact	Mitigation measure	Timing	Relevant location(s)
		• scour protection will be considered downstream of areas that increase runoff into receiving watercourses • consideration of appropriate water quality and stormwater controls (for ancillary areas) upstream of sensitive receiving environments, such as at Olney switching station • an inspection program of installed scour protection and stormwater controls will be undertaken during construction. If protection and control works are found to be ineffective, the works will be rectified or designed as appropriate.		
SW6	Stormwater management – concrete batching plants	Stormwater management measures for concrete batching plants (both mobile and temporary) will include: • the separation of clean and potentially contaminated runoff by a bunded cementitious areas • the collection of first flush runoff from cementitious areas • offsite disposal of contaminated water not suitable for reuse to a licenced waste facility.	Detailed design Construction	All locations
SW7	Stormwater management – excavations	Stormwater management measures for excavations (particularly for transmission towers) will include bunding around excavations to prevent runoff into excavations.	Detailed design Construction	Excavations

Reference	Impact	Mitigation measure	Timing	Relevant location(s)
SW8	Stormwater management – spoil	Runoff from spoil piles, topsoil stockpiles and other excavated material will be managed through: • minimising the number of stockpiles, stockpile areas and the time they are exposed • locating stockpiles away from drainage lines and natural watercourses and from where they will be susceptible to erosion • bunding stockpiles in accordance with Managing Urban Stormwater – Soils and Construction, Volume 1, 4th Edition (Landcom 2004) • stabilising stockpiles, establishing sediment controls and suppressing dust as required.	Detailed design Construction	All locations
SW9	Water supply	Construction water supply would be sourced in accordance with the water supply hierarchy included in Section A4.4.4 in <i>Appendix A (Updated project description)</i>. Water supply management will be undertaken in accordance with agreements between the construction contractors, relevant landowners and relevant water users and suppliers. Groundwater and surface water allocations purchased from existing registered bores/users must be extracted in accordance with the conditions stated in the associated water access license(s) and water supply works approval(s). Surface water and groundwater extracted under an exemption under the <i>Water Management</i>	Detailed design Construction	Water extraction locations

Reference	Impact	Mitigation measure	Timing	Relevant location(s)
		<i>Regulation 2025 will be recorded and reported on in accordance with regulatory requirements.</i>		
SW10	Dewatering	In the event that dewatering is required: - the management of discharge water will be documented in the SWMP and will consider options for containment, reuse, application to grassed areas and transport to licensed waste facilities. In the event that discharge water is discharged to grassed areas: - application will be limited to grassed areas within the project impact area, away from watercourses. If the discharge water is highly turbid, dewatering through a filter sock (or similar) or via transportable sedimentation tanks will be considered, where appropriate, to minimise sedimentation.	Detailed design Construction	Excavations
SW11	Construction impact area – clearance (general)	Clearance practices will include: - immediate laying of mulch where ground disturbance has occurred (except in riparian corridors) - stabilisation of mulch where mobilisation by wind or runoff is possible - management of mulching activities and stockpiles to minimise tannin production and avoid discharge to watercourses - ground stabilisation using felled vegetation placed across the slope to minimise the	Construction	All locations

Reference	Impact	Mitigation measure	Timing	Relevant location(s)
		concentration of flows, especially upstream of riparian corridors.		
SW12	Construction impact area – clearance (riparian buffer areas)	Riparian buffer areas include 5 m from the top of bank of any mapped or unmapped watercourse. Clearance practices in riparian buffer areas will include: • hand clearing methods that minimise ground disturbance and disturbance of the understorey • no placement of mulch (and measures to avoid the transport of mulch into watercourses) • stabilisation of the watercourse bed and banks will be installed as soon as practical, where disturbance to the understorey or ground has occurred. Where vegetation clearance is oblique or parallel to the watercourse (i.e. not perpendicular), stabilisation works with minimal impact will be designed prior to disturbance and installed as soon as practical.	Construction	Riparian corridors
SW13	Trenching	Trenching undertaken in close proximity to (mapped) watercourses will: • be undertaken in accordance with <i>Controlled activities – Guidelines for laying pipes and cables in watercourses on waterfront land</i> • be undertaken when intercepted watercourses are dry	Construction	Trenching near mapped watercourses

Reference	Impact	Mitigation measure	Timing	Relevant location(s)
		provide appropriate erosion and sediment control measures and stabilise topsoil following disturbance.		
SW14	Construction support sites - wastewater treatment plants	Wastewater treatment plants design and operation will include: - selection of the most appropriate system for the project based on the site layout, site conditions and constraints - design, construction, operation, maintenance and decommissioning in accordance with best practice and relevant legislation, guidelines and standards.	Detailed design Construction	Construction support sites
SW15	Construction support sites – riparian corridors	Activities undertaken at construction support sites will be in accordance with the <i>Controlled Activities - Guidelines for riparian corridors on waterfront land (DCCEEW 2025)</i> .	Detailed design Construction	Hebden Road construction support site Wollombi Road construction support site Freemans Drive construction support site
SW16	Hazardous chemicals	Herbicides will not be applied within five metres of the top of a bank or any mapped or unmapped watercourse. Herbicides are not to be applied: - when greater than five millimetres of rain is forecast in the following 24 hours - in windy conditions - when overland runoff is visible.	Construction Operation	All locations

Reference	Impact	Mitigation measure	Timing	Relevant location(s)
-	Hazardous chemicals	Store chemicals, fuels and other hazardous substances in accordance with Mitigation Measure DG1, DG2, DG3 and DG4.	Construction Operation	All locations
Groundwater				
GW1	Damage and/or removal of existing landholder bores	Bores within the construction impact area will be clearly demarcated to protect the infrastructure from accidental damage. In the instance that accidental damage does occur, make good provisions will apply in accordance with the minimal impact criteria listed in the AIP. This will likely include replacement of a bore in a similar nearby location in consultation with landowners.	Construction	Construction impact area
GW2	Lowering of groundwater levels	All groundwater allocations will be extracted in accordance with the conditions of project approval and where required, associated water access licence(s). Where groundwater is encountered during excavations, any dewatered volumes will be recorded and managed in accordance with the requirements of the WM Act, WM Regulation and project consent conditions.	Construction	In locations of incidental groundwater take
Flooding				
FL1	Risk of flooding to construction support sites	Detailed construction planning will consider flood risk at construction support sites, including: reviewing construction site layouts and staging construction activities in order to avoid or	Detailed design Construction	All locations

Reference	Impact	Mitigation measure	Timing	Relevant location(s)
		minimise obstruction of overland flow paths and limiting the extent of flow diversion required • designing the layout of construction ancillary facilities and implementing stormwater management controls during their establishment in order to manage the impact of flooding on construction personnel, equipment and materials • identifying and applying measures to not worsen flood impacts on the community and on other property and infrastructure during construction up to and including the 1% AEP event where reasonable and feasible. Where warranted by the scale and nature of the proposed works this will include flood modelling and assessment to assess the extent of potential impacts and therefore the scope of mitigation measures that may be required • measures to mitigate alterations to local runoff conditions due to construction activities.		
FL2	Risk of flooding to stockpiles	Spoil stockpiles will be located in areas that are not subject to frequent inundation by floodwater, ideally outside the 10% AEP flood extent. The level of flood risk accepted at stockpile sites will depend on the duration of stockpiling operations, the type of material stored, the nature of the receiving drainage lines and also the extent to which it would impact flooding conditions in adjacent development.	Detailed design Construction	All locations

Reference	Impact	Mitigation measure	Timing	Relevant location(s)
FL3	Flood risks during construction	Construction ancillary facilities (including temporary worker accommodation offices , workshops and staff facilities) will be located to manage the risk of construction personnel and machinery being exposed to hazardous flooding conditions during floods up to 1% AEP in magnitude based on the flood hazard vulnerability thresholds set out in <i>Flood Risk Management Guideline FB03 – Flood Hazard</i> (DPE, 2023).	Detailed design Construction	All locations
FL4	Flood risks during construction	The finished floor level of new buildings that are to be used for temporary worker accommodation will be a minimum of 0.5 metres above the peak 1% AEP flood level.	Detailed design Construction	All temporary worker accommodation locations
FL4 FL5	Flood risks during construction	Flood emergency management measures for construction of the project will be prepared and incorporated into relevant environmental and/or safety management documentation. This will include: - contingency planning for construction ancillary facilities that are located in areas that are inundated by mainstream flooding or major overland flow during a 1% AEP event - for construction facilities (including temporary worker accommodation) located within the floodplain (i.e. within the PMF extent) the identification of how flood related risks to personal safety and damage to construction facilities and equipment will be managed	Detailed design Construction	All locations

Reference	Impact	Mitigation measure	Timing	Relevant location(s)
		procedures to monitor accurate and timely weather data and disseminate warnings to construction personnel of impending flood producing rain.		
FL5 FL6	Impact on existing flood behaviour	The impact of the project on flood behaviour will be confirmed during detailed design. This will include consideration of future climate change.	Detailed design	All locations
FL6 FL7	Impact on existing flood behaviour	The project will be designed to minimise changes in the frequency, depth, velocity and duration of inundation that would lead to adverse flood related impacts on: - surrounding development for storms up to 1% AEP in intensity - critical infrastructure, vulnerable development or increases in risk to life due to a significant increase in flood hazard for floods up to the PMF.	Detailed design	All locations
FL7 FL8	Impact on existing flood behaviour	The substation upgrades extension and new switching stations will be designed to manage adverse impacts on the receiving drainage lines as a result of changes in the depth, velocity, extent and duration of flow during storms up to 1% AEP event in intensity.	Detailed design	Substations and switching stations
FL8 FL9	Impact on existing flood behaviour	The impact of the Eraring substation extension on flood behaviour at the existing Eraring Power Station will be confirmed during detailed design. Consultation will continue to be carried out with Origin Energy to confirm the effect that any	Detailed design	Eraring substation extension

Reference	Impact	Mitigation measure	Timing	Relevant location(s)
		residual flood impacts could have on the operation of the Eraring Power Station for all floods up to the PMF, and to inform the scope of mitigation measures that may be required.		
FL9 FL10	Impact on existing flood behaviour	The substation and switching stations, including their access road connections to existing roads, will be designed to ensure that the existing level of flood immunity of the road network is maintained and increases in flood depths and hazards along the road network are minimised.	Detailed design	Substations and switching stations
FL10 FL11	Impact on existing flood behaviour	Localised increases in flow velocities around transmission line towers, at drainage outlets from the substation and switching stations, and at watercourse crossings along access tracks will be mitigated through the provision of scour protection and energy dissipation measures.	Detailed design	All locations
FL11 FL12	Flooding impacts at transmission corridor	Transmission towers located on the floodplain (i.e. within the PMF extent) will be designed to manage the risk of failure of the transmission line network due to damage from flooding.	Detailed design	HTP corridor
FL12 FL13	Flood impacts at access tracks	Drainage control measures will be incorporated into the upgraded access tracks and new access tracks to manage runoff and the impact it could have on scour to the tracks and surrounding areas. These drainage control measures will be implemented in accordance with the following guidelines:	Detailed design Construction	Upgraded or new access tracks

Reference	Impact	Mitigation measure	Timing	Relevant location(s)
		• <i>Guidelines for the Planning, Construction and Maintenance of Tracks</i> (Department of Land & Water Conservation, 1994) • <i>Managing Urban Stormwater: Soils and Construction – Volume 2C Unsealed Roads</i> (Department of Environment and Climate Change, 2008c). Scour protection will be provided to manage localised increases in flow velocities upstream and downstream of watercourse crossings along the upgraded or new access tracks, while the access tracks will be lined or stabilised where required to manage scour of the track and the impact this could have on the displacement of sediment into the downstream watercourse.		
FL13 FL14	Flood impacts at road and intersection upgrades	Further flood modelling will be undertaken during detailed design to assess the impact that road and intersection upgrades will have on flood behaviour. During detailed design, detailed 3-dimensional layouts of the proposed road and intersection upgrades will be developed, which will be used to inform the layout of the associated drainage measures that are aimed at controlling external catchment runoff. The detailed 3-dimensional layouts of the proposed road and intersection upgrades will also be used to undertake an assessment of the impact that the proposed works would have on flooding patterns and to identify the scope of additional	Detailed design	Road and intersection upgrades

Reference	Impact	Mitigation measure	Timing	Relevant location(s)
		drainage measures that would be required to manage any resulting adverse impacts due to changes in the depth, velocity and duration of inundation external to the road corridor.		
FL15	Impact of future climate change of flood behaviour	To manage the impact of flooding on the safe operation of the switching stations and substation extension, a 0.5 metre freeboard would be applied to the 1% AEP peak flood level when setting the minimum level of the platforms containing the switchyards, reactors, transformers, control buildings and associated infrastructure.	Detailed design	Switching stations and substation

Reference	Impact	Mitigation measure	Timing	Relevant location(s)
Soils and contamination				
SL1	Erosion and sedimentation	Undertake field assessment and laboratory testing of representative soils subject to disturbance to refine soil management and erosion and sediment control measures. A soil ground truthing program should be prepared to select representative soils and a suitable laboratory testing suite, as determined by a suitably qualified environmental consultant based on a review of the regional data presented in this report and the outcomes of site inspections. The program should cover the entire project impact area, but focus on high risk areas identified within this report (i.e. high erosion risk, mapped acid sulfate soil risk areas, regionally mapped BSAL). The program should consist of a minimum of 1 site per transmission tower, multiple sites for infrastructure areas where ground disturbance is of higher impact, and 1 site per 500m for new tracks, should be included in the program, however this should be informed by landform, risk assessment and site observations and more sites may be required.	Detailed design Construction	All locations
SL2	Disturbance of sodic soils	Implement additional measures if sodic soils are identified in SMU 2 and would be subject to ground disturbance and/or where sodic soils are stockpiled. This is anticipated to be primarily in the localities of Bayswater, Broke and Mount Thorley and may include applying gypsum as an ameliorant	Detailed design Construction	Areas mapped as SMU 2

Reference	Impact	Mitigation measure	Timing	Relevant location(s)
		to displace the sodium and provide the soil with a stronger aggregate and hold structure when wet.		
SL3	Rehabilitation of disturbed areas	A Rehabilitation Management Plan (RMP) will be prepared as part of the project's environmental management system. The RMP will detail all aspects of returning construction areas to a safe, erosionally stable and non-polluting landform consistent with surrounding terrain and land uses. The detailed Rehabilitation Plan will include a Trigger Action Response Plan (TARP) that addresses erosion and soil risks during construction rehabilitation, as per Table 16 of <i>Technical Report 9 - Soils and land impact assessment</i> .	Detailed design Construction	All locations
SL4	Rehabilitation of disturbed areas	Areas of disturbed soil will be rehabilitated promptly and progressively during construction to minimise the risk of erosion and sedimentation occurring.	Construction	All locations
SL5	Rehabilitation of disturbed areas	Temporary erosion and sediment control measures will be put in place for high risk areas (i.e. high erosion risk, mapped acid sulfate soil risk areas, regionally mapped BSAL) until a time rehabilitation objectives (as outlined in the RMP) and sufficient groundcover has been achieved.	Detailed design Construction	Areas of high erosion risk, mapped acid sulfate soils risk areas and regionally mapped BSAL
SL6	Erosion and sedimentation during operation	Limit additional soil disturbance during operation by restricting traffic to formed access tracks and roads.	Operation	All locations

Reference	Impact	Mitigation measure	Timing	Relevant location(s)
SL7	Erosion and sedimentation during operation	Standard erosion and sediment control measures will be implemented to minimise the potential for erosion within areas to be accessed during operation. These measures will be developed on a case-by-case basis and are likely to include measures such as sediment fencing, localised sediment traps, and progressive stabilisation with vegetation.	Operation	All locations
C1	Contamination exposure (human health and/or the environment)	Develop a Contamination Management Plan that: • includes measures to avoid or minimise disturbance to areas of medium to high risk of contamination where possible • ensures that prior to construction, areas of medium to high contamination risk are tested to confirm the presence/absence of contaminants of concern • includes an unexpected finds protocol to manage the discovery of previously unidentified contaminated material (including acid sulfate soils, naturally occurring asbestos and the discovery of high carbon material within mining complexes outside of areas indicated by mine operators where this occurs). Investigation and management of contamination a will be carried out in accordance with the relevant legislation, standards and guidelines, including but not limited to the <i>National Environment Protection (Assessment of Contamination) Measure 1999</i>, as amended 2013, and all relevant guidelines made or	Detailed design Construction	All locations

Reference	Impact	Mitigation measure	Timing	Relevant location(s)
		approved under the NSW <i>Contaminated Land Management Act 1997</i> and the NSW <i>Protection of the Environment Operations Act 1997</i> .		
C2	Mobilisation of saline soils	Prior to ground disturbance, a visual inspection will be undertaken to identify areas that potentially contain saline soils. Areas where evidence of salting is observed or recorded will be subject to further testing as required. If salinity is confirmed, excavated soils will be managed in accordance with Book 4 Dryland Salinity: Productive use of Saline Land and Water (NSW DECC 2008) to prevent impacts from salinity.	Construction	All locations
C3	Impacts due to spontaneous combustion from disturbance of high carbon material	Avoid disturbance of areas of active (and previously active) surface mining, underground mine access and process routes where possible. Where these areas cannot be avoided, testing of the material(s) will be undertaken to confirm if high carbon material would be disturbed and/or exposed, and appropriate safeguards implemented to make sure the risk of spontaneous combustion is adequately controlled in accordance with the <i>Industry and Investment MDG Spontaneous Combustion Management Guideline</i> (NSW 2011).	Detailed design Construction	All locations
C4	Contamination exposure to human health and/or the environment	Disturbance to areas of medium to high risk of contamination will be avoided or minimised where practicable during construction. Investigation and management of contamination will be carried out in accordance with the relevant legislation, standards and guidelines, including but	Detailed design Construction	Areas of medium to high contamination risk

Reference	Impact	Mitigation measure	Timing	Relevant location(s)
		not limited to the <i>National Environment Protection (Assessment of Contamination) Measure 1999</i> , as amended 2013, and all relevant guidelines made or approved under the <i>Contaminated Land Management Act 1997</i> and the <i>Protection of the Environment Operations Act 1997</i> .		
C5	Contamination exposure to human health and/or the environment	Prior to construction, areas subject to disturbance within the Mount Arthur, HVO, Mount Thorley Warkworth and Bulga Coal Mine lease areas will be tested to confirm the presence/absence of contaminants of concern. Interface with existing mine surface and groundwater infrastructure should be avoided to the extent practicable.	Detailed design Construction	Mount Arthur, HVO, Mount Thorley Warkworth and Bulga Coal Mine sites
C6	Contamination exposure to human health and/or the environment	Additional investigations will be undertaken to confirm the presence/absence of the contaminants of concern prior to commencing ground disturbance within 50 m of farm structures or farm dams (if applicable).	Detailed design	Ground disturbance within the construction impact area within 50 m of farm structures or farm dams
C7	Contamination impact to human health and/or the environment	An unexpected finds protocol will be developed and implemented to manage the discovery of previously unidentified contaminated material.	Construction	All locations
C8	Soil and/or water pollution	Construction materials, spoil and waste will be stored/managed in accordance with applicable EPA requirements to minimise the potential for the project to result in the contamination of soil, groundwater, and/or surface water quality.	Construction	All locations

Reference	Impact	Mitigation measure	Timing	Relevant location(s)
C9	Unexploded ordinance	Manage unexploded ordinance risks in accordance with Defence Unexploded Ordnance Management Manual and in consultation with the Department of Defence. Undertake site-specific risk assessment at locations where there is a risk of encountering unexploded ordinance. The risk assessment will be carried out prior to any activities that could interact with unexploded ordinance and include field verification to validate the historical assessment of unexploded ordinance contamination and identify appropriate mitigation practices. Ensure the risk assessment includes input from an appropriate unexploded ordinance specialist and identifies if and when an explosives engineer is required during construction activities. Ensure the management actions identified in the risk assessment are implemented prior to and during all relevant construction activities. Ensure all personnel conducting intrusive works within an identified unexploded ordinance area are provided with appropriate safety and awareness briefing(s) prior to participating in the intrusive works.	Construction	All locations
C10	Soil and/or water pollution	Incident response procedures will be implemented to avoid and manage accidental spillages of fuels, chemicals or fluids during operation and maintenance activities.	Operation	All locations

Reference	Impact	Mitigation measure	Timing	Relevant location(s)
C11	Acid sulfate soils	If soil disturbance is required in those areas mapped as containing potential acid sulfate soils, targeted soil testing will be undertaken prior to construction to confirm any acid sulfate soils risks present and acid sulfate soils management plan (ASSMP) would be prepared if required.	Detailed Design Construction	Locations mapped as containing potential acid sulfate soils
-	Erosion and sedimentation during construction	Manage erosion and sedimentation through the implementation of Erosion and Sediment Control Plans in accordance with mitigation measure SW1 and SW3.	Detailed design Construction	All locations
-	Soil and/or water pollution from the project	Store chemicals, fuels and other hazardous substances in accordance with Mitigation Measure DG1, DG2, DG3 and DG4.	Construction Operation	All
Hazards and risk				
HR1	Utilities management	Potential impacts on existing utility services would be confirmed during detailed design and further construction planning. A utilities management strategy would be prepared by the construction contractor, identifying how utility adjustments, protections and relocations would be defined and managed and how these works would be coordinated with asset owners. Where the extent of connection work or any proposed relocation and/or protection work is to be undertaken outside of the project footprint, additional environmental investigation would be carried out and the work reviewed for consistency with the approved project in accordance with the	Detailed design Construction	All

Reference	Impact	Mitigation measure	Timing	Relevant location(s)
		process described in Chapter 6 (Environmental management).		
BF1	Bushfire emergency and evacuation	A bushfire emergency management and evacuation plan (BEMEP) will be prepared and implemented in accordance with the risk management measures detailed in <i>Chapter 7 (Management) of Technical Report 14 - Bushfire risk assessment</i> and the requirements of NSW RFS. The BEMEP will outline procedures for: • monitoring forecast fire danger ratings, alerts and warnings, and any fire incidents, and communicating this information to the construction and operational workforce • evacuating the project impact area in response to fire warnings or incidents, including protocols for authorising and supervising evacuations and identifying off-site refuge locations and evacuation routes (including alternative emergency evacuation routes in forested areas) • reporting fire and smoke sightings to the NSW RFS, FCNSW, and the Singleton Military Area Range Control • determining when it is safe to return to the project impact area following an evacuation • training for emergency response and evacuation management.	Detailed design Construction Operation	All locations
BF2	Bushfire	A bushfire safety system will be prepared and implemented in accordance with the risk management measures detailed in <i>Chapter 7</i>	Detailed design Construction	All locations

Reference	Impact	Mitigation measure	Timing	Relevant location(s)
		(Management) of Technical Report 14 - Bushfire risk assessment. The bushfire safety system will detail restrictions and procedures to prevent accidental fire ignition during construction and operation, and contingency arrangements for workers to extinguish accidental fire ignitions at the source while the fire can still be controlled with portable extinguishers and on-site equipment. In particular, the bushfire safety system will include: • engagement protocols with NSW RFS and FCNSW fire teams • a hot works management system for implementation during construction • a smoking prohibition and a designated smoking area protocol • fire-safe work procedures for earthmoving and drilling works • protocols for driving and parking vehicles off established roads to minimise the potential for accidental fire ignition from vehicle exhausts • measures to minimise worker exposure to bushfire risk, including exclusion of works during elevated fire danger conditions, active fire weather and incident monitoring, and a clearly communicated bushfire evacuation plan with primary and alternative trafficable routes.	Operation	
BF3	Bushfire (fire prevention quality assurance)	A works quality auditing process will be applied to construction contractors and will incorporate audit criteria assessing the implementation of the	Construction	All locations

Reference	Impact	Mitigation measure	Timing	Relevant location(s)
		required fire prevention, preparedness and response-readiness measures detailed in <i>Chapter 7 (Management) of Technical Report 14 - Bushfire risk assessment</i> .		
BF4	Bushfire (project design, operation and maintenance)	The project will be designed, operated and maintained to reduce bushfire risk to and from project infrastructure in accordance with the applicable standards detailed in <i>Chapter 7 (Management) of Technical Report 14 - Bushfire Risk Assessment</i>, including: • transmission lines will be designed to meet or exceed design standards in Australian Standard AS/NZS 7000:2016 <i>Overhead line design</i> • easements will meet or exceed design standards in Australian Standard AS/NZS 7000:2016 <i>Overhead line design – Appendix CC</i> • switching stations will meet or exceed design standards in Australian Standard AS 2067:2008 <i>Substation and high voltage installations exceeding 1 kV AC</i> • maintenance and operation of the transmission infrastructure will be carried out in line with Australian Standard AS 5577:2013 <i>Electricity Network Safety Management Systems</i> • asset management will be carried out in line with ISO 55001:2014 <i>Asset Management – Management Systems – Requirements</i>.	Detailed design Construction Operation	All locations
BF5	Bushfire (asset protection zones)	Asset protection zones (APZs) will be established for Bayswater South and Olney switching stations,	Detailed design	Construction support sites

Reference	Impact	Mitigation measure	Timing	Relevant location(s)
		temporary worker accommodation and project office buildings at construction support sites, in accordance with the requirements of <i>Planning for Bushfire Protection 2019</i> (NSW RFS 2019) and NSW RFS standards for APZ, and as detailed in <i>Technical Report 14 - Bushfire Risk Assessment</i> . Routine inspection and control of vegetation will be carried out for APZ maintenance.	Construction Operation	Switching stations
BF6	Bushfire (Olney switching station)	A fire trail will be installed and maintained within the APZ on the western side of Olney switching station, providing connection to Watagan Forest Road.	Construction Operation	Olney switching station
BF7	Bushfire (vegetation maintenance)	Cyclic inspections and control of vegetation within transmission line easements and hazard tree zone will be carried out in accordance with Transgrid standard for <i>Maintenance of Easements and Access Tracks</i> .	Construction Operation	HTP corridor and hazard tree zone
BF8	Bushfire (firefighting water supply)	Where reticulated (mains) water supply is not available, a static water supply (tank) will be provided at in proximity to, but outside of the boundary of Bayswater South and Olney switching stations, at a location agreed with FCNSW, in accordance with the requirements of <i>Planning for Bushfire Protection 2019</i> (minimum capacity of 20,000 litres). Water supply at Bayswater South switching station will be through the utilisation of nearby non-potable open water sources in close proximity. Design details will be confirmed during detailed design. Where reticulated (mains) water	Detailed design Construction Operation	Bayswater South and Olney switching stations

Reference	Impact	Mitigation measure	Timing	Relevant location(s)
		supply is available, hydrant spacing, design and sizing is to comply with the relevant clauses of AS 2419.1:2021.		
BF9	Bushfire protection (asset protection zone)	The temporary worker accommodation within the Wollombi Road construction support site will be designed and located to ensure APZs in all directions achieve a BAL of no greater than BAL 10.	Detailed design Construction	Wollombi Road construction support site
BF10	Bushfire	Where temporary worker accommodation is proposed, a site manager is required on site who is aware of the bushfire risk and emergency response procedures during the construction phase of the project.	Construction	Temporary worker accommodation
DG1	Storage and use of dangerous goods	Dangerous goods will be stored in accordance with suppliers' instructions and relevant legislation, Australian Standards, and applicable guidelines. Dangerous goods storage may involve bulk storage tanks, chemical storage cabinets/containers or impervious bunds. Any storage areas will be designed in accordance with Australian Standard AS1940: <i>The storage and handling of flammable and combustible liquids</i> where applicable. The storage and use of dangerous goods will be carried out in line with the following: all personnel required to work with dangerous goods and other hazardous material will be trained in their safe use and handling	Construction Operation	All locations

Reference	Impact	Mitigation measure	Timing	Relevant location(s)
		- all chemicals or other dangerous goods will be stored in a bunded area and away from any drainage lines or pits. The capacity of the bunded area will be at least 130% of the largest chemical volume contained within the bunded area - no refuelling or bulk herbicide preparation will occur within 40 m of natural drainage lines - in the event that minimum distances cannot be achieved (e.g. due to land constraints or a requirement to store volumes of hazardous materials in excess of storage thresholds), a risk management strategy will be developed as required to confirm that the project would not have a significant off-site risk.		
DG2	Accidental spills of dangerous goods	Environmental spill kits containing spill response materials suitable for the works being undertaken will be kept on site at all times and be used in the event of a spill. Any spills will be contained, cleaned up promptly and immediately reported to the relevant site representative.	Construction Operation	All locations
DG3	Transport of dangerous goods	Dangerous goods and hazardous substances will be transported in accordance with relevant legislation and codes, including the <i>Dangerous Goods (Road and Rail Transport) Act 2008</i> , Road and Rail Transport (Dangerous Goods) (Road) Regulation 1998 and the Australian Code for the Transport of Dangerous Goods by Road and Rail (National Transport Commission, 2018).	Construction Operation	All locations

Reference	Impact	Mitigation measure	Timing	Relevant location(s)
DG4	Storage and transport of dangerous goods during operation	During operation, storage and transport of dangerous goods will be managed to ensure the development remains below the potentially hazardous screening criteria in Applying SEPP 33.	Operation	All locations
EMF1	Public exposure to EMF	Detailed design for the project will be developed to comply with the following criteria for public exposure to EMF: • Magnetic fields: 2000 milligauss being the ICNIRP guideline 'Reference Level' • Electric fields: 9.1 kV per metre directly under the lines and at the edge of easement, ensuring compliance with the ICNIRP guideline 'Basic Restriction', and 5 kV per metre at the boundary of switching stations (where access is unrestricted), ensuring compliance with the ICNIRP reference level.	Detailed design	Transmission line, substation modifications, new switching stations
EMF2	Occupational exposure to EMF	Detailed design for the proposed switching stations and modifications to existing substations will be developed to comply with the following criteria for occupational exposure to EMF: • Magnetic fields: 10,000 milligauss • Electric fields: 10 kV per metre.	Detailed design	Substation modifications and new switching stations
TC1	Impacts to AM radio	Investigations will be carried out during detailed design to determine the AM radio impacts to receivers within 131 m of the centre of the transmission line. The measured radio frequency interference levels at a sensitive receiver location will be investigated to determine if compliance	Detailed design	Sensitive receivers within 131 m of the centre of the transmission line

Reference	Impact	Mitigation measure	Timing	Relevant location(s)
		with the relevant limits can be achieved for at least 80% of the time with a confidence level of at least 80% (80/80 rule).		
AS1	Safety of Aircraft Movements	The final design of the HTP with coordinates and elevations will be provided to the following stakeholders prior to construction: • Airservices Australia • Commonwealth Department of Defence • Hunter Valley Gliding Club • NSW Ambulance Service • NSW National Parks and Wildlife Service • Forestry Corporation of NSW • NSW Rural Fire Service • mine complexes traversed by HTP • certified aerodromes within 30km of the HTP • uncertified aerodromes and HLS within 10km of the HTP. Further notification will occur if the finalised design, upon completion of construction, alters the details supplied to the above listed stakeholders. Complete the Vertical Obstacle Notification Form in accordance with the requirements of Airservices Australia.	Detailed design	Operation impact area
AS2	Safety of Aircraft Movements	To facilitate the flight planning of aerial application operators conducting flight operations on any property near the proposed transmission line, final design details of the project, including	Detailed design	Operation impact area

Reference	Impact	Mitigation measure	Timing	Relevant location(s)
		location and height information of the transmission line will be provided to landowners. This is so that, when asked for hazard information on their property, the landowner may provide the aerial application pilots and/or emergency services helicopter pilots with all relevant information.		
AS3	Safety of Aircraft Movements	The following stakeholders will be notified of the scheduling of the use of cranes, drones and helicopters for the construction of the project, prior to the commencement of relevant works: • Airservices Australia • Commonwealth Department of Defence • Hunter Valley Gliding Club • NSW Ambulance Service • NSW National Parks and Wildlife Service • Forestry Corporation of NSW • NSW Rural Fire Service • mine complexes traversed by HTP.	Detailed design	Operation impact area
AS4	Safety of Aircraft Movements	Helicopters and/or drones used for stringing will be operated in accordance with the applicable CASRs for their operations.	Construction	Operation impact area
AS5	Safety of Aircraft Movements	Obstacle lighting and marking of the transmission lines is not considered to be required outside of the lateral limits of certified airports' OLS. Whilst not currently a requirement, this will need to be confirmed by CASA. The provision of markers on transmission lines and towers within 3 nautical	Detailed design	Operation impact area

Reference	Impact	Mitigation measure	Timing	Relevant location(s)
		miles of an uncertified aerodrome and the Singleton Military Area should be discussed with the appropriate stakeholders during detailed design. Obstacle lighting and marking of the transmission lines in the vicinity of HLS is to be considered where requested by nearby landowners.		
AS6	Obstacle lighting	Temporary construction cranes greater than 60 m in height will have obstacle lighting fitted near the top of the crane.	Construction	All locations
Other matters				
AQ1	Air quality – general	A construction air quality management plan will be prepared by a suitably qualified and experienced person and will include appropriate measures to mitigate the risk of air quality impacts from the project during construction.	Detailed design Construction	Project impact area and impacted receivers
AQ2	Dust generation – general	Management measures to prevent or minimise dust generation and impacts on the local community and environment will include but not be limited to: • appropriate communications will be developed before construction and earthwork activities start to notify the potentially impacted residences of the project (including the duration and types of works) and relevant contact details for complaints reporting	Construction	• Bayswater South switching station • Olney switching station • Construction support sites and laydown areas • Transmission line (including access tracks)

Reference	Impact	Mitigation measure	Timing	Relevant location(s)
		• a complaints register will be maintained through construction which will include any complaints related to dust • any exceptional incidents that cause dust and/or air emissions, either on or off site, and the action taken to resolve the situation will be recorded in the register • shade cloth barriers with site fences around sensitive receiver locations close to potentially dusty activities, such as excavation and material stockpiles, will be used where practicable • proper maintenance of all equipment engines will be carried out • engines will not be left running at idle where possible • a water cart or sprays will be deployed to keep exposed areas and soil stockpiles moist, where necessary and practical • working practices will be modified by limiting activity during periods of adverse weather (hot, dry and windy conditions) and when dust is seen leaving the site • the extent of clearing of vegetation and topsoil will be limited to the designated footprint required for construction and appropriate staging of any clearing will be implemented		

Reference	Impact	Mitigation measure	Timing	Relevant location(s)
		• earthworks and exposed areas will be revegetated (where required) to stabilise surfaces as soon as practicable • imported construction materials such as sands and aggregates will be appropriately managed to maintain adequate moisture levels. This will include, but is not limited to, applying water to stockpiles, covering stockpiles and/or storing materials in bunded areas, where practical • vehicle loads entering and leaving the project impact area with potentially dusty loads will be covered to prevent escapes of materials during transport • water-assisted dust sweepers will be used to remove, as necessary, any material tracked out of the project impact area onto public roads • on-site access roads will be inspected for integrity and necessary repairs to the surface will be instigated where necessary as soon as reasonably practicable • all inspections of construction routes and any subsequent action will be recorded in a site register.		
AQ3	Dust generation specific to helicopter and drone usage	Management measures to prevent or minimise dust generation and impacts on the local community and environment from helicopter and drone activities will include but not be limited to: • vegetation will be maintained (or exposed areas will be revegetated) with groundcover (i.e. grass)	Construction	Construction support sites (Pikes Gully Road, Gouldsville Road and Freemans Drive)

Reference	Impact	Mitigation measure	Timing	Relevant location(s)
		in the immediate area surrounding helicopter pads • helicopter activities will be monitored by site personnel to implement additional management measures when required • water-assisted dust sweepers will be used to remove, as necessary, any material deposited onto helicopter pads • watering will be deployed to ensure exposed areas are kept moist, where required.		
AQ4	Dust generation specific to concrete batching plants	Management measures to prevent or minimise dust generation and impacts on the local community and environment from concrete batching plants will include but not be limited to the following: • trucks transporting aggregates and sand loads will be covered • raw aggregates and sands will be stored appropriately in storage bays or bins and materials will not exceed the height of the bays • raw materials will be kept adequately moist for both storage and transfer (e.g. via front end loader) • cement silos and hoppers will be fitted with dust filters • cement silos will be fitted with emergency pressure alerts and emergency cut-off protection systems	Construction	Construction support sites and laydown areas (with concrete batching plants)

Reference	Impact	Mitigation measure	Timing	Relevant location(s)
		transfer of cement from storage to batching will occur via closed loop system (e.g. steel augers).		
AQ5	Dust generation near vineyards	Management measures to prevent or minimise dust generation and impacts on vineyards from adjacent road upgrades and construction vehicle movements will include but not be limited to the following: - Prior to commencement of construction and road upgrade works, appropriate communications will be developed to notify the potentially impacted properties of the project (duration, types of works, etc.) and relevant contact details for environmental complaints reporting. - A complaints register will be maintained through the construction and road upgrade works phase which will include any complaints related to dust. - Any exceptional incidents that cause dust and/or air emissions, either on or off site, and the action taken to resolve the situation will be recorded in the register. - Shade cloth barriers with site fencing around vineyard fence borders close to potentially dusty activities, such as unpaved access roads and road upgrade sections, will be used where practicable. - Engines will not be left running at idle where possible.	Construction	Road upgrade locations and construction vehicle routes adjacent to vineyards

Reference	Impact	Mitigation measure	Timing	Relevant location(s)
		A water cart or sprays will be deployed to ensure that exposed areas are kept moist, where necessary and practical.		
WM1	Waste management	A waste management and resource recovery plan will be prepared and will include appropriate measures to manage waste generation, reuse, recycling and disposal during construction of the project.	Detailed design	All locations
WM2	Waste facilities	The recycling and disposal facilities to be used during construction and operation of the project will be determined based on availability/capacity, waste licensed to be accepted and confirmed waste classifications. Consultation will be carried out with local councils including Muswellbrook, Singleton, Cessnock, Lake Macquarie, Central Coast and Newcastle in relation to the disposal of project waste at licensed facilities.	Detailed design Construction	All locations
WM3	General waste management	The following general waste management actions will be implemented throughout the construction and operation of the project: - the waste hierarchy principles of avoid/reduce, reuse, or recycle with disposal as the last resort will be applied - waste will be assessed, classified, managed and disposed of in line with the <i>NSW EPA Waste Classification Guidelines (2014)</i> and the relevant requirements of the <i>Protection of the Environment Operations (Waste) Regulation 2014</i>	Construction Operation	All locations

Reference	Impact	Mitigation measure	Timing	Relevant location(s)
		- waste streams will be segregated to avoid cross contamination of materials and to maximise reuse and recycling opportunities - waste and surplus spoil will be removed and transported to an appropriately licensed waste disposal or transfer facility or other facilities lawfully able to accept materials - wastewater from construction work will be collected and transported to a licensed premise that can lawfully accept the waste.		
WM4	General waste management	The waste management measures outlined in Table 22.13 and Table 22.15 of the EIS will be implemented.	Construction Operation	All locations
E1	Local employment opportunities	Local worker participation will be promoted via the preparation of a local workforce development plan, a local industry participation plan and an Australian industry participation plan.	Detailed design Construction Operation	All locations
E2	Local business opportunities	Consultation will be carried out with local councils, economic development organisations and local chambers of commerce to: - inform local business of the goods and services required for the project, the service provision opportunities and compliance requirements of business to be able to secure contracts - encourage local businesses to meet the requirements of the project for supply contracts	Detailed design Construction	All locations

Reference	Impact	Mitigation measure	Timing	Relevant location(s)
		develop relevant networks to assist qualified local and regional businesses to tender for the provision of goods and services to support the project.		
Cumulative				
CI1	Occurrence of cumulative impacts	Consultation with construction contractors, proponents, councils and affected landowners as required to coordinate construction staging/timing with the aim of minimising and managing potential cumulative impacts. This will include: - identifying the potential for cumulative impacts associated with concurrent construction programs (e.g. shared access routes, work sites, resources) - developing mitigation measures to mitigate cumulative impacts as they arise.	Detailed design Construction	All locations