EIS Volume 1 Chapter 9

Land Use and Tenure

JBS&G

project energy connect

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9. Land Use and Tenure

This chapter discusses how construction and operation of the Project has the potential to impact existing land uses within the transmission line corridor. The current land uses, existing categories of land tenure (including native title) and other land-based agreements are also described.

9.1. Key Findings

- Disruption to landholder operations during the construction phase will be limited to the short period when construction is undertaken at each tower location along the alignment. Timing and location of construction activities will be planned in consultation with landholders.
- The transmission line corridor has been selected to follow existing road reserves, existing infrastructure and / or property boundaries wherever possible to limit the impact on properties and to ensure access to land is retained.
- Land to be cleared for temporary construction purposes will be reinstated within 3 months after construction activities have concluded and will be undertaken in accordance with the agreement with the affected landholder and the Project CEMP.
- Disruption to land uses from the increased presence of construction crews and equipment will be short term and localised and will be managed in consultation with landholders.
- Compensation is payable to landholders for use of their land for easement purposes. Consultation with landholders in determining the location of the easement and the micro-siting of the towers will take into consideration potential long-term impacts on landholder activities.
- Lasting economic disadvantage is not expected for landowners directly affected by the Project and no impacts to the value of affected properties are expected.
- The risk of tower / conductor strike by low flying aircraft will be mitigated through marker balls, consultation with CASA and operation of air safety regulations as appropriate.
- Interference to communication networks is expected to be limited to within the easement line and will be momentary while passing underneath the transmission line.
- The cumulative impact of renewable energy generation facilities enabled by the Project on the availability of land for primary production purposes is expected to be negligible. This is due to the significant extent of land available for agricultural purposes in the broader region (when compared to the area of land potentially taken out of production by future infrastructure project developments). Positive economic benefits for landholders and communities from the resulting investment in appropriately sited renewable energy projects facilitated by Project EnergyConnect are expected to offset any economic impact from loss of land for primary production.

9.2. Setting the Context

This section provides the context for the impact and risk assessment. It describes:

- the relevant EIS Guidelines
- relevant requirements in legislation and other standards
- views of stakeholders and the environmental and social outcomes they would like the Project to meet
- the assessment methodology used to identify baseline environmental values and to undertake the impact assessment.

9.2.1. EIS Guidelines

The EIS Guidelines (Table 9-1) require an assessment of the effect of the Project on the main land uses in the area of the Project, impacts to activities and landholders.

Table 9-1: EIS Guidelines relating to land use and tenure

EIS Guidelines and Assessment Requirements	Assessment level
Land Use and Economic Effects *Assessment requirement 2: The proposal will have an impact on the State's economy during construction and operation and may result in immediate and long-term effects on landowners and surrounding uses.*	
• 2.1: Identify the types and extent of land tenure in broad terms, including reference to Crown land. Outline any implications for Native Title and Native Heritage Agreements along the proposed route.	Critical
• 2.2: Identify the main land uses in the area (e.g. conservation, Bookmark Biosphere Reserve, Heritage Agreements, mining, agriculture, pastoralism, tourism, recreation, existing infrastructure).	Critical
• 2.3: Identify the level of interference to landowners, land uses and activities in the immediate and surrounding environs.	Critical
• 2.4: Describe the implications, if any, of securing any easements.	Critical
• *2.5*: Describe the potential effects on property values.	Critical
• 2.6: Outline any mitigation measures to alleviate or avoid impacts on landowners and land uses and refer to any compensation programmes.	Critical
• 2.7: Assess any cumulative impacts of the proposal in relation to other infrastructure projects proposed for the region (such as the increase in renewable energy generation anticipated) and discuss the effect of loss of land for primary production purposes.	Critical
Effect on Cultural Heritage Values *Assessment Requirement 6:* The proposed development has the potential to impact on sites / locations of Indigenous or Non-indigenous heritage through disturbance during construction.	
• 6.3*:* Outline measures adopted to avoid or minimise impacts on Aboriginal and European sites of archaeological or anthropological significance.	Critical
Effect on Communities *Assessment Requirement 9:* The proposed development has the potential to affect the local community during construction and through the establishment of a large linear structure.	
• 9.6: Identify any potential effects on TV and radio reception, telecommunication, broadband and mobile phone networks.	Medium
• 9.7: Identify any potential effects on airfields and aircraft movements and consult with the Civil Aviation Safety Authority Australia, the Renmark Paringa Council (Renmark Aerodrome) and Loxton Waikerie Council (Waikerie and Loxton Aerodromes) about the requirements for structures within the vicinity of airfields.	Medium
Hazard Risk *Assessment Requirement 10:* The construction and operation of a high voltage powerline involves a range of general and specific risks.	
• 10.4: Outline any risks to farming and horticultural practices, including those arising from irrigation, aerial spraying and night operations.	Medium
Introduction / spread of exotic plant and animal species *Assessment Requirement 13*: The proposed development has the potential to establish a corridor for the spread of introduced nuisance plants and animals.	
• 13.2: Identify the potential for the introduction or dispersal of new exotic plant and animal species and the associated implications for native species, habitat and agricultural land	Medium

Aspects of assessment requirements identified in Table 9-1 which are not addressed in this chapter are listed in Table 9-2 together with the applicable chapter.

Table 9-2: Aspects of assessment requirements addressed in other chapters

Assessment requirement	Chapter
2.6 Mitigation measures for air quality impacts to landowners	Chapter 14 Air Quality
2.6 Mitigation measures for noise impacts to landowners	Chapter 15 Noise and Vibration
2.6 Mitigation measures for traffic impacts to landowners	Chapter 16 Traffic and Transport
6.3 Outline measures adopted to avoid or minimize impacts on Aboriginal and European sites of archaeological or anthropological significance	Chapter 12 Cultural Heritage
13.2 Implications for native species and habitat of introduction of exotic plant and animal species	Chapter 11 Flora and Fauna

9.2.2. Requirements in legislation and other standards

An easement typically 80 m wide within the transmission line corridor will be acquired under the *Land Acquisition Act 1969* over the affected freehold properties. The *Crown Land Management Act 2009* allows the Crown to issue easements over pastoral leases and other Crown land. This is discussed further in Sections 9.3.5 and 9.3.7.

Calperum and Taylorville Stations within the transmission line corridor are subject to Native Vegetation Heritage Agreements under section 23 of the *Native Vegetation Act 1991*. Native vegetation heritage agreements are for conservation areas on private land which are established between a landholder and the Minister for Environment and Water. Under the Act, the registered VHAs will need to be varied to remove the area required for the proposed transmission line easement (see Section 9.3.3).

The area of the Project comprises four separate native title areas as provided for under the *Native Title Act 1993* (Cth) and *Native Title (South Australia) Act 1994.* The Commonwealth Act also provides for Indigenous Land Use Agreements (ILUA), which are voluntary agreements made between native title parties and other parties, including Government, in relation to the use and management of land and waters. There is a registered ILUA in place between the Crown of South Australia and the First Peoples of the River Murray and Mallee Region which is discussed further in Section 9.3.4.

The State Planning Policies which apply to the Project are described in Table 5-7 in Chapter 5 Legislative and Planning Framework.

A range of legislation including the *Civil Aviation Act 1988*, *Civil Aviation Safety Regulations 1998, Airspace Act 2007* and *Airspace Regulations 2007* regulate airfield operations and aircraft safety. There are two registered airfields and two private unregistered airstrips in the vicinity. Aircraft undertaking agricultural (e.g. spraying), firefighting or other aerial activities may be present in the vicinity of the transmission line during construction and operation.

Other South Australian and Commonwealth Government legislation and other standards relate to land use and tenure in the transmission line corridor are identified and described in Table 5-2 and Table 5-3 in Chapter 5 Legislative and Planning Framework.

9.2.3. Views of stakeholders

Stakeholder and community engagement for the Project, including consultation with impacted landholders and Traditional Owners, commenced in late 2018 and continued throughout 2019 and 2020. Comments on land use and tenure related to:

- reduction of impacts to land wherever possible by locating the corridor close to existing roads and infrastructure
- reduction of impacts to towns and productive land by keeping the alignment north of the River Murray

- avoiding impacts to areas of Aboriginal heritage significance
- avoiding areas currently used, or earmarked for use, by landholders for development (e.g. airstrips, buildings / structures)
- impacts to existing land uses including agricultural activities and conservation areas
- disruption to property access points and potential damage to access roads
- unauthorised access to land by construction workers
- environmental impacts to native vegetation, including large intact stands of old-growth mallee vegetation
- environmental impacts to birdlife, particularly the Black-eared Miner
- potential impacts to local endangered wildlife during construction, particularly malleefowl and their habitats.

Details of community consultation are set out further in Chapter 6 Stakeholder Engagement.

9.2.4. Assessment method

An initial desktop review was undertaken which considered the EIS Guidelines, legislative requirements and an assessment of publicly available information from the following sources:

- Department of Environment and Water (DEW), NatureMaps Version 3.4.1, viewed online via https://data.environment.sa.gov.au/NatureMaps
- Location SA MapViewer, viewed online via https://location.sa.gov.au/viewer/
- South Australian Property and Planning Atlas, viewed online via https://maps.sa.gov.au/SAPPA/
- South Australian Resources Information Gateway, viewed online via https://map.sarig.sa.gov.au/
- Bureau of Meteorology, viewed online via http://www.bom.gov.au/climate/

Following desktop assessment, a number of field surveys were conducted, mainly relating to the ecology of the transmission line corridor (focusing on threatened and migratory species and their habitats), cultural heritage and visual amenity. Detailed information on the results of those surveys are set out in Chapter 11 Flora and Fauna, Chapter 12 Cultural Heritage and Chapter 13 Visual Amenity respectively.

Site visits to the transmission line corridor by ElectraNet staff, Project consultants and contractors were also valuable in obtaining relevant information to supplement and ground-truth the desktop assessment. Stakeholder engagement undertaken with the local community provided the opportunity for landholders, Traditional Owners and other stakeholders to share information on existing land uses and activities with potential to be affected by the construction and operation of the Project.

9.3. Description of Existing Environment

This section provides a general description of the existing land uses and land tenure categories in the broader region of the Project.

Land uses in townships and settled areas on the southern banks of the River Murray (e.g. Morgan, Cadell and Waikerie) and the towns of Barmera, Berri and Renmark (which are more than 7 km from the proposed transmission line corridor) will not be impacted by Project construction and operation activities. Accordingly they have not been specifically included in the description of land uses in this section. Socio-economic impacts of the Project on the broader region (including local towns) are described in Chapter 17 Socio-economic Environment.

9.3.1. Land uses in the Project region

Primary production

The broader region is recognised for producing high quality fruit and nuts, vegetables, grains, wine grapes and livestock such as sheep, cattle and pigs. Primary production is the major economic activity, accounting for one in five jobs and 34% of gross regional product (RDAMR 2018).

Grazing of modified pastures and dryland cereal cropping (primarily wheat and barley) occurs mainly in the region at the western end of the transmission line corridor (SAMDBNRM 2015). Pastoral activity on pastoral leases in the rangelands region (i.e. north of the transmission line corridor) generally comprises grazing of domestic stock on almost exclusively native vegetation.

In recent times, changes to agricultural land uses have been introduced by landholders to counter lower than average rainfall and higher mean maximum temperatures (coupled with cold, dry conditions during winter) across the region. As a result, there has been a reduction in the number of crops being sown and while grazing continues, a lack of pasture feed has required farmers to supplement the feeding of their livestock. Some landholders have reduced the number of livestock held to ensure sufficient feed is available to maintain their livestock in adequate condition while other farmers have needed to sell or seek agistment due to the ongoing costs which have exhausted financial resources (PIRSA 2020).

The Riverland area of the broader region has substantial acreage utilised for irrigated horticulture and is a major producer of South Australia's grapes, citrus fruit, stone fruit, almonds, cherries, olives and vegetables. These areas of high value intensive horticulture are generally located well south of the transmission line corridor (with the exception of Cooltong) and will not be impacted by Project construction and operation.

Conservation areas / Riverland Biosphere Reserve and Ramsar wetland

The Riverland Biosphere Reserve[1], formerly known as the Bookmark Biosphere Reserve, comprises 18,000 hectares of wetlands and floodplains which are an important refuge for waterbird populations. Part of the Biosphere Reserve overlaps with the Riverland wetland complex which is a Wetland of International Importance, recognised and declared under the Ramsar convention (DAWE 2020a). The Biosphere Reserve hosts one of the largest remaining continuous stands of ancient mallee left in Australia and comprises critical habitat for the nationally threatened Black-eared Miner.

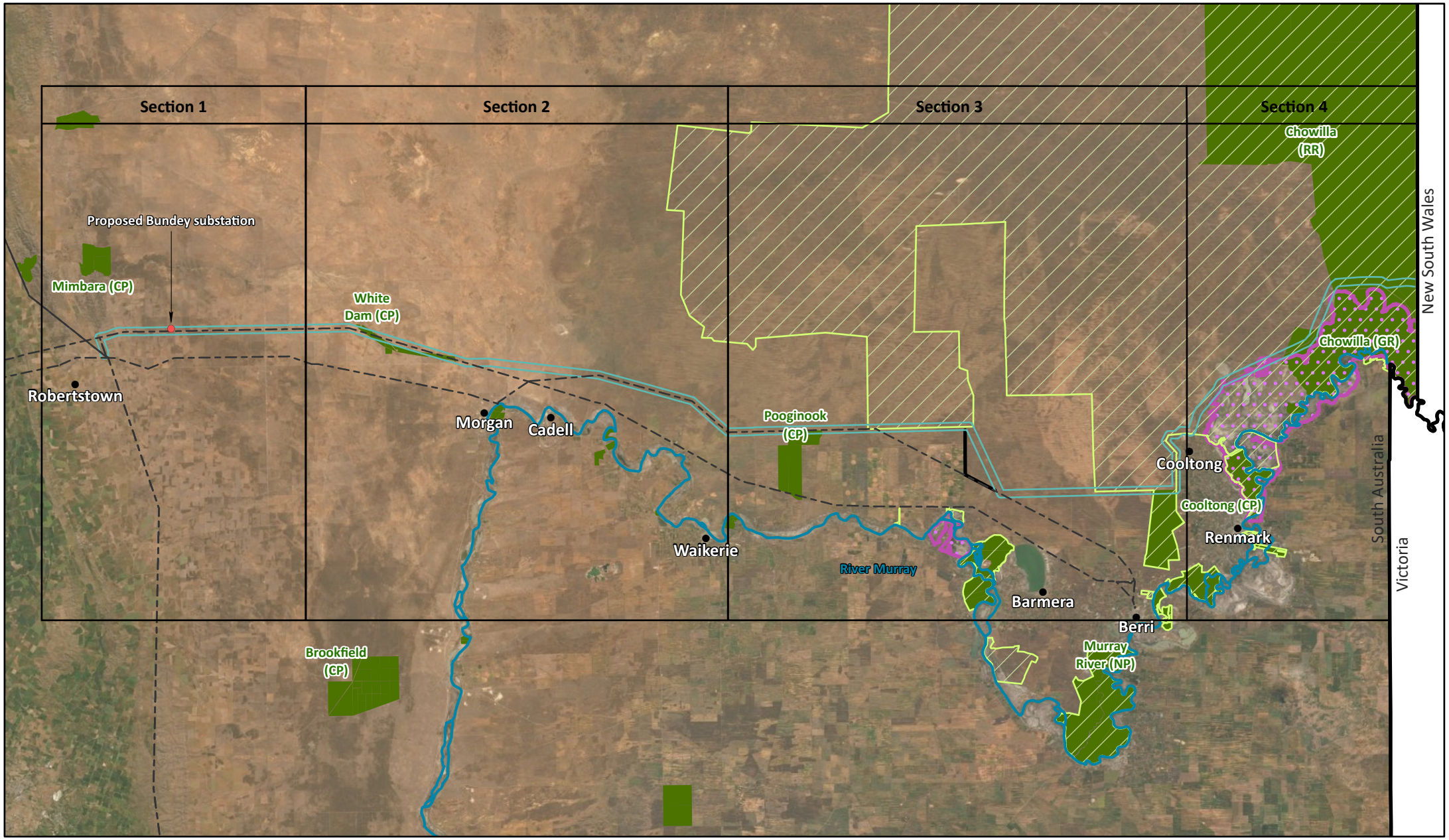
The Biosphere Reserve spans several pastoral leases including Calperum and Taylorville Stations which are privately managed for conservation by Australian Landscape Trust (ALT), and these properties also include critical habitat for the Black-eared Miner (DAWE 2020b).

There are several smaller areas in the region of the Project for reserved conservation purposes including White Dam Conservation Park, Pooginook Conservation Park and Cooltong Conservation Park.

Areas reserved for conservation purposes, the Riverland Biosphere Reserve and Ramsar wetland are shown in Figure 9-1. Further detail on conservation areas and threatened species in the region of the Project is provided in Chapter 11 Flora and Fauna.

The region also contains important Aboriginal cultural landscapes associated with historical occupation by the Traditional Owners of the River Murray floodplain in the eastern sections of the alignment and the Ngadjuri Nation in the western section (refer Chapter 12 Cultural Heritage).

[1] A biosphere reserve is an international designation made by the United Nations Educational, Scientific and Cultural Organisation (UNESCO) based on nominations by countries. A biosphere reserve incorporates one or more protected areas and surrounding lands that are managed to combine both conservation and sustainable use of natural resources.



Transmission line corridor
Parks and reserves
Riverland Biosphere Reserve
Ramsar wetland
Cultural heritage avoidance alignment
Existing ElectraNet transmission line
River Murray
Proposed Bundey substation

Figure 9-1
Conservation and game reserves and the Riverland Biosphere Reserve

0 20
Kilometres
N

ElectraNet
energy connect
JBS&G

Data sourced from: Ramsar - https://data.sa.gov.au/data/dataset/ramsar-wetland-areas-south-australia; Parks and reserves - https://data.sa.gov.au/data/dataset/conservation-reserve-parcels; Conservation Biosphere - http://location.sa.gov.au/lms/Reports/ReportMetadata.aspx?p_no=981&pa=dewnr

Tourism, recreational and research-based land uses

Tourism and recreation-based land uses in the region of the Project are largely centred on appreciation of and recreation in the natural environment, particularly the River Murray and associated conservation reserves. Recreational and tourism-based land uses include utilising waterways and bushland for activities such as walking trails, bird watching areas, boat hire and launch facilities, campgrounds, golf clubs and go-karts. Other emerging tourist related land uses in the Project region include wineries, heritage tours, farmers markets and farm stays.

The Chowilla Game Reserve (which is part of the Riverland Biosphere Reserve) is popular with tourists for camping and recreational purposes, including canoeing, kayaking, bushwalking, fishing, mountain biking and bird watching. Other areas reserved for recreation purposes include Loch Luna and Moorook Game Reserves near Barmera (DEW 2018).

The general Riverland region is a tourist destination with many businesses offering houseboat holidays, riverboat cruises, fishing trips and camping experiences. The region offers numerous accommodation options including hotels, caravan parks, houseboats and camping grounds.

The parks and reserves also provide opportunities for scientific research and educational programs on the natural environment and indigenous cultural heritage. Locations of particular importance to the scientific and educational objectives within Calperum Station have been identified through consultation with ALT and DEW.

Further information on the economic significance of tourism in the region is provided in Chapter 17 Socio-Economic Environment.

Renewable energy

One of the drivers for Project EnergyConnect is the need to improve network capability in the existing Renewable Energy Zones[2] (REZ) in the region of the Project.

The western end of the transmission line corridor falls within the Mid North South Australia REZ which supports major wind farms including Hallett, Hornsdale, North Brown Hill and Waterloo (AEMO 2020a). The Goyder Renewables Zone is a large hybrid renewable energy project proposed for an area extending north of Robertstown and Burra which will combine existing and proposed wind and solar generation with battery storage. The plan proposes a total of 1,200MW of wind energy, 600MW of solar PV, and 900 MW / 1800 MWh of battery storage, delivered in three stages, each with 400MW wind, 200 MW solar and 300 MW / 600 MWh of battery storage. The first stage (the Goyder South Renewable Energy Facility) will be designed and sited to complement Project EnergyConnect (GHD 2020). The second and third stages are likely to be contingent on the completion of the Project.

Other approved projects proposed in the Mid North REZ include the Solar River Project Phase 1 and 2 (200MW PV array and 100MW battery) located 30 km from Robertstown, and the 500MW Robertstown Solar project located approximately 5 km north-east of Robertstown.

The eastern end of the Project is located in the Riverland REZ, which has a greater focus on the potential for solar generation. There is no existing or committed wind generation in this REZ and currently limited existing renewable generation in the zone overall, however there is a significant projection for solar generation in the REZ which will be enabled by Project EnergyConnect (AEMO 2020a). Potential projects include the 330 MW Riverland Solar Storage Project (approved) and the

[2] A Renewable Energy Zone is a geographic area with high quality variable renewable energy resources, such as wind and solar, suitable topography and land use designations for development, and demonstrated interest from project developers. These areas can be used to identify new transmission lines that enable the development of cost-effective, grid-connected renewable energy. (Greening the Grid 2020).

Morgan Solar Farm Project (120 MW) located 8 km east of Morgan, and the Monash Solar Farm (100MW) located 3.5 km east of Monash which are both currently undergoing planning assessment.

Further discussion of renewable energy and the REZs is provided in Chapter 2 Project Justification and Chapter 17 Socio-Economic Environment.

Existing infrastructure

Existing infrastructure within the vicinity of the Project includes electricity substations, high voltage overhead transmission lines, State and Council-maintained roads, regional aerodromes, telecommunications lines, water pipelines and gas pipelines.

With the exception of Robertstown (which hosts the existing Robertstown substation and is the commencement point for the Project), the Project is not in close proximity to any towns or other settlements.

The main State roads in the region are World's End Road, Goyder Highway and the Wentworth-Renmark Road. The transmission line corridor crosses the Goyder Highway (B64) north of Morgan. A number of smaller, sealed and unsealed locally maintained roads occur in the area of the Project including Lower Bright Road, Powerline Road and Pooginook Boundary Track. Various unsealed roads and tracks are located on and maintained within private land and pastoral stations.

The bulk of rural traffic movements in the region are for freight transport and commuter travel. The region has a low population density resulting in low traffic volumes (well below road capacity thresholds) even on some rural highways. Other users of the road network include tourists, goods and service providers and other non-agricultural industries.

Airfields

Two airfields are located in the vicinity of the transmission line corridor. Renmark Aerodrome is CASA registered and located approximately 7 km to the south and operated by Renmark Paringa Council. The airfield is used by private users and the Royal Flying Doctor Service (RFDS). Waikerie Aerodrome is located approximately 13 km south of the transmission line corridor and is operated by the Loxton Waikerie District Council, and is primarily used by RFDS, other powered aircraft and gliders.

Two private unregistered airfields have been identified through desktop review located within 5 km of the transmission line corridor (refer Section 9.4.2 for further discussion).

Mining and energy resources

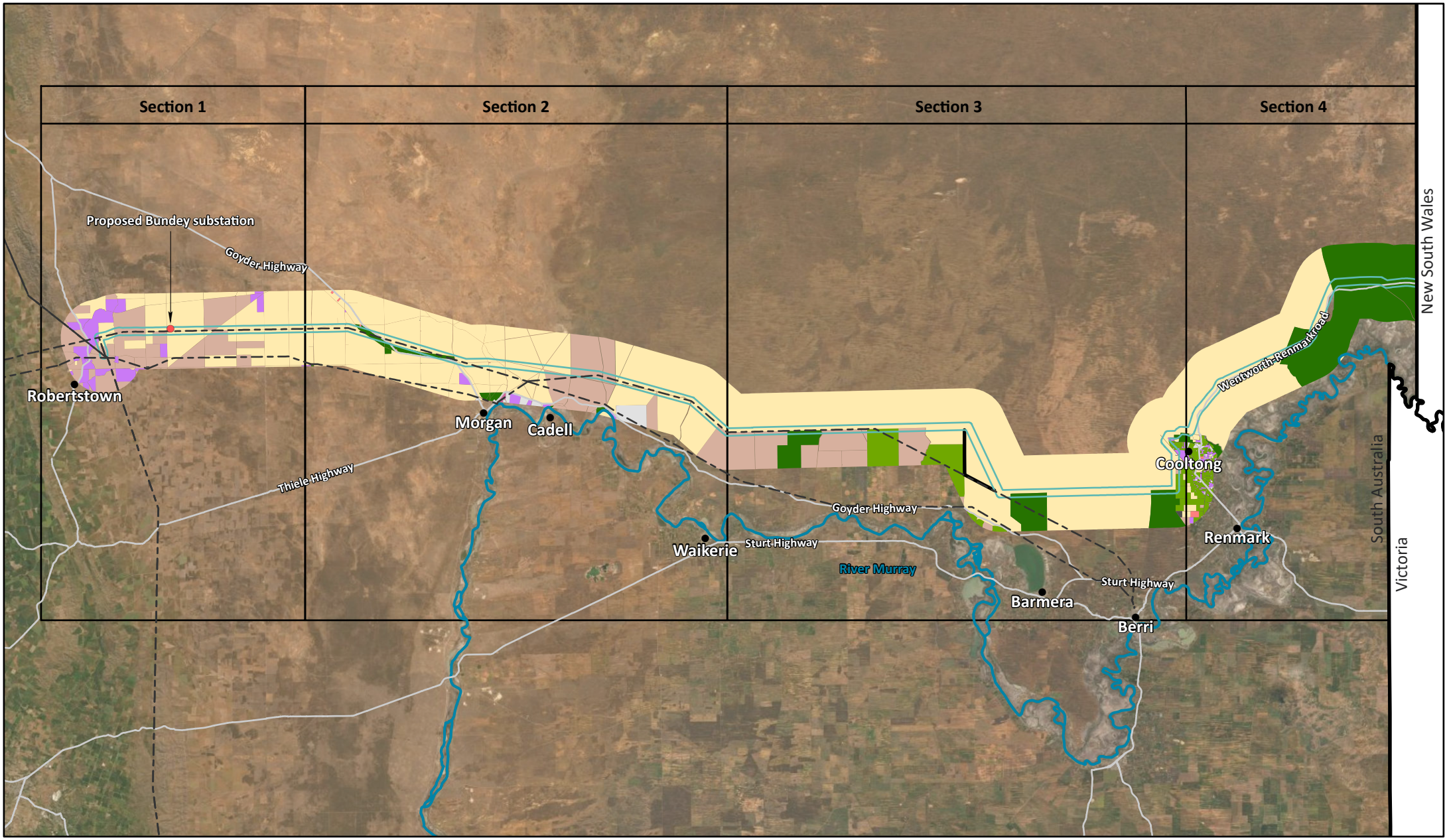
Land within the transmission line corridor and in the general vicinity is also utilised for mineral exploration and extractive minerals production. There are several Exploration Licences issued under the *Mining Act 1971* within 10 km of the corridor (refer Table 9-3), however, there are no active mining leases within the transmission line corridor. There are no registered petroleum or geothermal interests in the area.

9.3.2. Land uses on the transmission line corridor

Land use along the transmission line corridor can be described in terms of the four corridor sections shown in Figure 4-17 in Chapter 4 Route Selection:

- Corridor Section 1 – Robertstown substation – Powerline Road – Goyder Highway
- Corridor Section 2 – Goyder Highway to Taylorville Station
- Corridor Section 3 – Taylorville Station to Wentworth-Renmark Road
- Corridor Section 4 Wentworth – Wentworth-Renmark Road to SA-NSW border.

Land use categories mapped within the corridor sections are shown in Figure 9-2. A 5 km buffer for the transmission line corridor has been mapped to assist in the land use descriptions.



Transmission line corridor
Cultural heritage avoidance alignment
Main road
Existing ElectraNet transmission line
River Murray
Proposed Bundey substation

Land use generalised
Utilities industry
Mine / quarry
Public institution
Livestock
Education
Agriculture
Golf
Horticulture
Reserve
Retail commercial
Vacant
Rural residential
Vacant residential

Figure 9-2
Land uses along the transmission line corridor

0 20
Kilometres
N

ElectraNet
energy connect
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Data sourced from: Land Use Generalised - https://data.sa.gov.au/data/dataset/land-use-generalised/resource/98a4aae3-54df-4381-8f98-a39fa4f30b4e

Section 1 Robertstown substation Powerline Road – Goyder Highway

The transmission line corridor commences at the existing Robertstown substation before heading north, then east towards the Goyder Highway. In this corridor section, significant clearing for agricultural purposes (primarily cropping) has confined remnant native vegetation primarily to hills, watercourses and roadsides. Paddocks are generally open and semi cleared / sparsely vegetated due to grazing and the impacts of drought. Land use is primarily agricultural with scattered farm residences. Plate 9-1 to Plate 9-4 show the Robertstown substation, existing electricity infrastructure and surrounding agricultural land uses in this section.

As discussed in detail in Chapter 4 Route Selection, the proposed alignment in corridor Section 1 largely has been located to follow the existing 132 kV transmission line along Powerline Road in order to reduce impacts to sensitive social and environmental receptors and existing land uses.

Plate 9-1: Robertstown substation and surrounding land uses (looking south-east)

Plate 9-2: Transmission line (existing 132 kV) north of Robertstown substation (looking north-east)

Plate 9-3: Powerline Road and existing ElectraNet transmission line (132 kV) (looking east)

Plate 9-4: Existing transmission line along Powerline Road

Section 2 Goyder Highway to Taylorville Station

The transmission line corridor continues to follow the existing 132 kV transmission line easement towards the south-east corner of Taylorville Station.

Land uses in this section transition from cropping to the pastoral and grazing land uses typical of the rangelands of this part of the region. The terrain is generally flat with no significant waterbodies present. The proposed transmission line corridor traverses a section of the western end of the White Dam Conservation Park, utilising the existing track through the park (refer Plate 9-5) wherever possible to reduce impacts to the surrounding environment. The conservation park was historically part of a stock route and functions as a wildlife corridor being on average less than 1 km wide.

The transmission line corridor crosses the Goyder Highway (refer Plate 9-6) and continues in a south-easterly direction, traversing the eastern end of White Dam Conservation Park, deviating to the north of existing 132 kv transmission lines across pastoral land for approximately 18 km before returning to that alignment to Taylorville Station (refer Plate 9-7 and Plate 9-8).

Plate 9-5: Existing track and transmission line within the White Dam Conservation Park west of crossing of Goyder Highway

Plate 9-6: Existing transmission line on Goyder Highway (looking south-east)

Plate 9-7: Existing transmission line traversing pastoral land north of boundary of White Dam Conservation Park (looking south-east)

Plate 9-8: Existing transmission line and easement approximately 6 km west of Taylorville Station (looking south-east)

Section 3 Taylorville to Wentworth-Renmark Road

Conservation is the dominant land use in Section 3 as this portion of the transmission line corridor primarily traverses the boundaries of the two Riverland Biosphere Reserve properties – Taylorville and Calperum Stations. These properties are largely managed for conservation and scientific research. The Pooginook and Cooltong Conservation Parks are also in this section of the corridor.

The transmission line corridor follows the existing track and 132 kV transmission line easement along the southern boundary of Taylorville Station. Approximately halfway along the boundary, the existing 132 kV transmission line easement deviates to the south-east towards Monash, while the proposed Project corridor continues east along the existing Taylorville Station boundary track for approximately 12 km. The Pooginook Conservation Park is located on the southern boundary of the existing transmission line easement in this area (refer Plate 9-10). The northern section of the conservation park comprises dense mallee scrub providing habitat for a range of wildlife and will be avoided by the transmission line alignment (refer Chapter 11 Flora and Fauna).

At the intersection of the southern boundary of Taylorville Station and the western boundary of Hawks Nest Station, the proposed alignment turns south following the property boundary to the point it intersects with the existing 132 kV transmission line easement, and following the easement to the south-east for approximately 5 km before turning east along the southern boundary of Hawks Nest Station and approaching the southern boundary of Calperum Station. The main land uses on Hawks Nest Station are grazing and recreational hunting.

The proposed alignment in this section is an adjustment to the January 2021 alignment to avoid Aboriginal cultural heritage sites identified on Hawks Nest Station during cultural heritage surveys. The adjusted alignment maximises the use of previously disturbed areas along the station boundary and the existing 132kV transmission line easement, and has the advantage of further minimising impacts to areas of higher quality habitat on the property identified in ecological surveys for the Project (refer Chapter 11 Flora and Fauna).

The transmission line corridor continues along the southern boundary of Calperum Station and the northern boundary of the Cooltong Conservation Park (the ‘Cooltong Track’) avoiding impacts to critical habitat of the Black-eared Miner, and other mallee bird species that frequent the area on these adjoining properties (refer Plate 9-12). The corridor then turns north to follow the eastern boundary of Calperum Station to the intersection with the Wentworth-Renmark Road. In this portion the transmission line corridor passes through the irrigated horticulture area of Cooltong, which is characterised by irrigated orchards of citrus and other fruits and grapevines, and associated rural residential properties (refer Plate 9-13).

Plate 9-9: Existing transmission line on southern boundary of Taylorville Station

Plate 9-10: Existing transmission line easement on boundaries of Taylorville Station and Pooginook Conservation Park (looking east)

Plate 9-11: 132 kV line easement on Hawks Nest Station (looking south-east)

Plate 9-12: Boundary tack between Calperum Station and Cooltong Conservation Park (looking east)

Plate 9-13: Boundary track between Calperum Station and Cooltong horticultural area (looking south)

Section 4 Wentworth-Renmark Road to SA-NSW

Section 4 of the transmission line corridor follows the existing Wentworth-Renmark Road to the SA-NSW border, through Calperum Station and the Chowilla Game Reserve and passing to the north and west of the Riverland Ramsar wetland (refer Plate 9-14 to Plate 9-17).

The corridor runs adjacent to (north and west) of the Wentworth-Renmark Road to avoid the introduction of new impacts in previously undisturbed areas. A short portion of the corridor has been deviated slightly further north of the Wentworth-Renmark Road to avoid the potential for cultural heritage impacts and a DEW revegetation trial area.

Plate 9-14: Proposed transmission line corridor – Calperum Station off Wentworth-Renmark Road

Plate 9-15: Wentworth-Renmark Road (looking north)

Plate 9-16: Wentworth-Renmark Road looking north-east at Chowilla Game Reserve

Plate 9-17: Wentworth-Renmark Road SA-NSW border (looking east)

9.3.3. Land tenure

The transmission line corridor and surrounds are subject to several categories of land tenure and registered agreements including freehold title, pastoral leases, mining tenements, and Crown Record (managed for conservation purposes). Native vegetation heritage agreements are also in place along the eastern sections of the transmission line corridor.

The categories of land tenure traversed by the transmission line corridor are shown in Figure 9-4 with a 5 km buffer. A complete list and copies of all Certificates of Title, Crown Leases and other tenure documents is provided in Volume Two Appendix F.

Freehold title

The majority of the land parcels traversed by the transmission line corridor are held in freehold. Fifty-nine individual land parcels are held by twenty-one individual landholders. Cropping, grazing and irrigated horticulture are the primary land uses on these properties.

Pastoral leases

Seven pastoral leases vested under the *Pastoral Land Management and Conservation Act 1989* are located along the eastern end of the transmission line corridor including Calperum, Taylorville and Hawks Nest Stations. These properties are largely utilised for conservation purposes including native vegetation management and the protection of flora and fauna (refer Chapter 11 Flora and Fauna). Taylorville Station is also subject to two separate underleases for easements to ElectraNet and Transmission Lessor Corporation, with current expiry dates of 29 June 2023 and 16 November 2024 respectively.

Mineral and petroleum tenements

The proposed transmission line corridor traverses five mineral Exploration Licences as at (March 2021) (refer Table 9-3). There are no petroleum tenements in the corridor.

Table 9-3: Mineral Exploration Licences and applications across the area of the Project

Tenement	Holder and commodity sough	Expiry Date
Exploration Licence 5744 (ELA2020/00212)	SeeSaw Resources Pty Ltd Gold; Rare Earths; Zinc; Copper; Lead	21 February 2021 (subsequent EL in progress)
Exploration Licence 5881	Ausmex SA Pty Ltd Gold; Industrial Minerals: Copper; Phosphate	3 November 2021
Exploration Licence 6101	Ausmex SA Pty Ltd Gold; Industrial Minerals: Copper; Phosphate	24 January 2023
Exploration Licence 6201	Ausmex SA Pty Ltd Cobalt; Gold; Copper	19 July 2020 (renewal application submitted 16 May 2020)
Exploration Licence 6276	Murray Zircon Pty Ltd Rutile, Ilmenite; Zircon	3 July 2022
ELA2020/00187	Sheer Gold Pty Ltd	N / A

ElectraNet will contact each of the Exploration Licence holders prior to the commencement of construction activities to advise of upcoming works and ensure that the location of the towers and associated facilities will not sterilise any known or potential deposits of mineral resources.

Crown Record

Crown Record is land owned and managed by the State Government. Crown Record land traversed by the transmission line corridor is vested in the Minister for Environment and Water for conservation or other purposes. Five Crown Records are traversed by the transmission line corridor, covering White

Dam Conservation Park, Chowilla Game Reserve, Chowilla Recreation Reserve and Chaffey Irrigation Area.

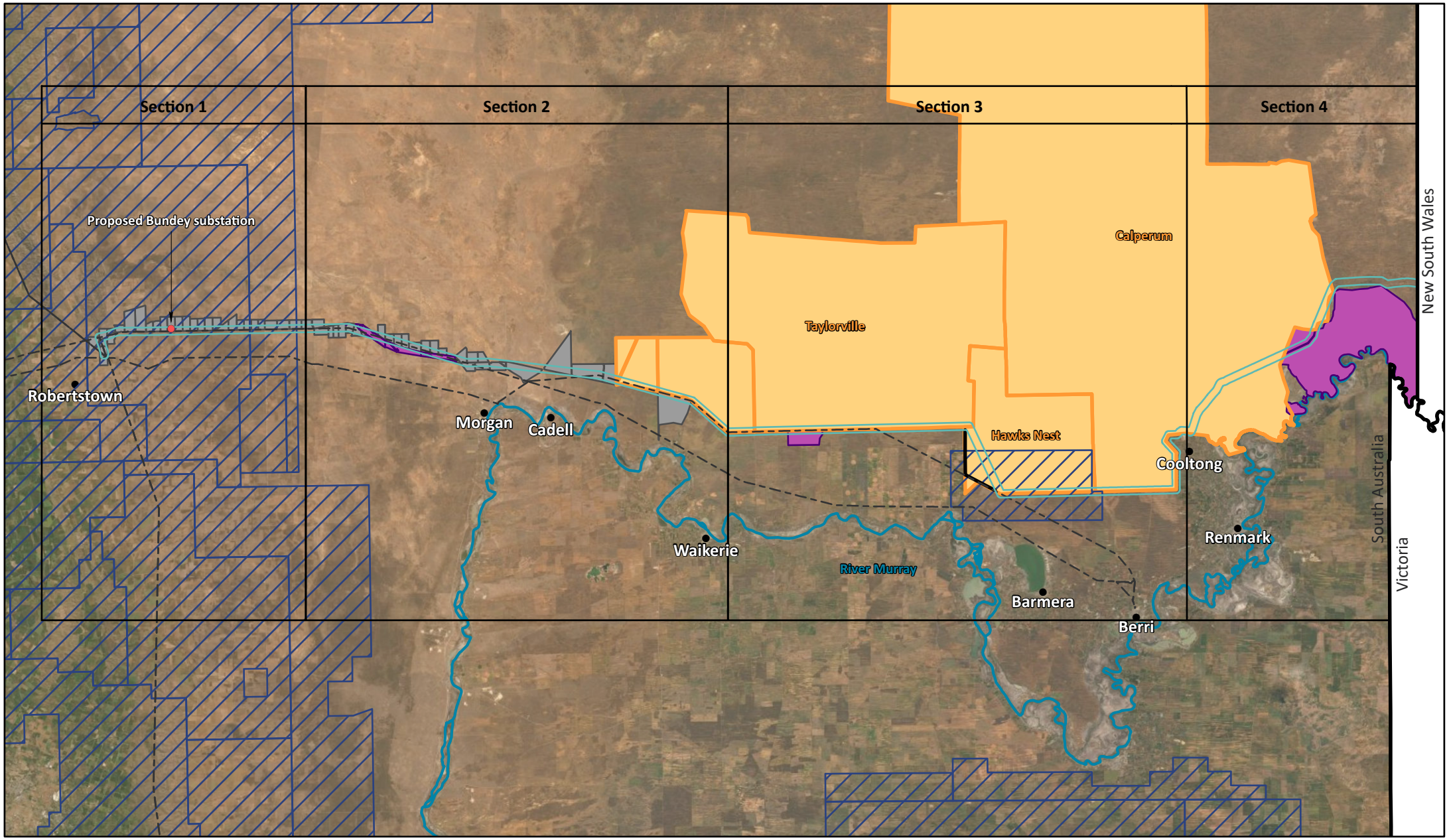
Native Vegetation Heritage Agreements

Vegetation Heritage Agreements (VHAs) may be entered into if the Minister considers that native vegetation should be preserved or enhanced, or land has been revegetated with plants or other species indigenous to the area. VHAs are attached to the land (i.e. registered on the land title) and binding on the current landholder, irrespective of whether that landholder was the person with whom the agreement was originally made.

Both Calperum and Taylorville Stations within the transmission line corridor, have registered VHAs which must be varied in order to remove the area required for the proposed transmission line (refer Figure 9-4). This would require the VHAs to be varied the exclude the impacted areas, which would need the approval of the Minister, with the consent of the NVC and the agreement of the landholder.

The process to vary the existing VHAs is progressing in parallel to the environmental approval process. The variations will only include the area required for an easement from the relevant VHAs.

Chapter 11 Flora and Fauna provides further detail on the potential impact of the proposal on VHAs and native vegetation generally.



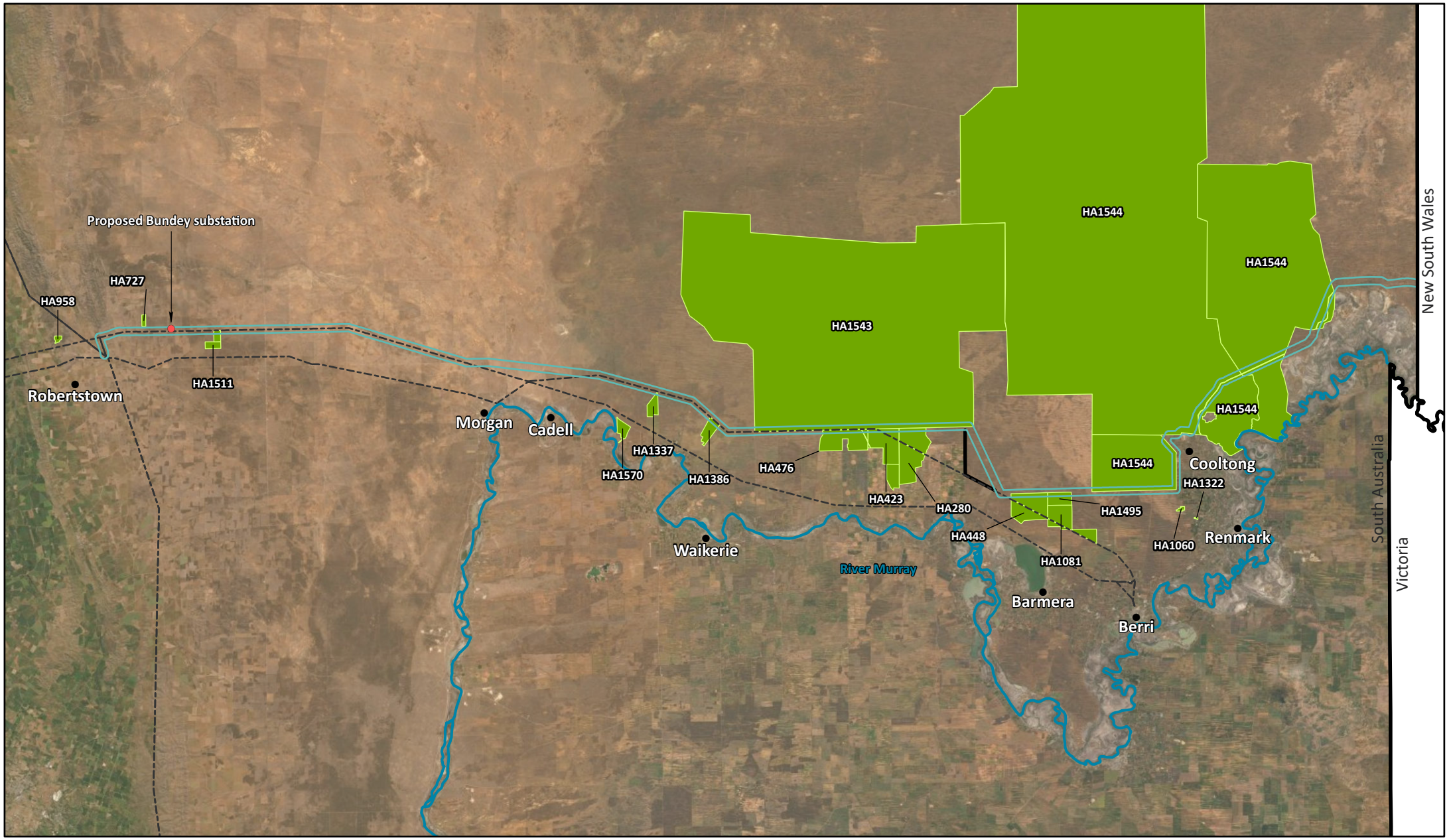
Transmission line corridor
Crown land
Freehold land
Mineral exploration licence
Pastoral Leases
Cultural heritage avoidance alignment
Existing ElectraNet transmission line
River Murray
Proposed Bundey substation

Figure 9-3
Land tenure on the transmission line corridor

0 20
Kilometres

N

ElectraNet
energy connect
JBS&G



Transmission line corridor
Vegetation heritage agreement
Cultural heritage avoidance alignment
Existing ElectraNet transmission line
River Murray
Proposed Bundey substation

Figure 9-4
Vegetation Heritage Agreements on the transmission line corridor

0 20
Kilometres

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9.3.4. Native title and agreements with traditional owners

Native title

The area of the Project comprises four separate native title areas as listed in Table 9-4 and shown in Figure 9-5.

Table 9-4: Native title interests in the Project region

Native title claim / determination / ILUA	Native title party
Native title consent determination (SCD2011/002)	The River Murray and Mallee Aboriginal Corporation RNTBC
The River Murray and Crown Lands Indigenous Land Use Agreement (SI2011/025)	The Crown of South Australia and the First Peoples of the River Murray and Mallee
Ngadjuri Nation #2 Native Title Claim (SC2011/002)	Ngadjuri Nation #2
First Peoples of the River Murray and Mallee Region #2 (SC2019/001)	First Peoples of the River Murray and Mallee

Native title consent determination

At a hearing at Lake Bonney on 18 November 2011, the Federal Court of Australia determined that native title exists in parts of the native title claim area submitted by the First Peoples of the River Murray and Mallee Region (FPRMM). The native title determination was made by consent agreement and has general limitations, for example, the native title rights and interests do not include commercial use or the resources from the land, and do not confer possession, occupation etc to the exclusion of other parties (National Native Title Tribunal 2011).

The consent determination recognised the First Peoples non-exclusive rights and interests to parts of the traditional land in areas of the River Murray including around Renmark, Berri, Barmera, Waikerie and Morgan. It recognises the First Peoples' right to undertake cultural activities, conduct ceremonies and meetings, protect places of cultural and religious significance and to access, hunt, fish, camp, gather and use natural resources (PBC n.d.). The registered native title body corporate is the River Murray and Mallee Aboriginal Corporation.

River Murray and Crown Lands ILUA

The National Native Title Tribunal (NNTT) registered an ILUA between the Crown of South Australia and the FPRMM on 16 May 2012. The ILUA sets out procedures in relation to community, access, co-management and a consultation protocol (National Native Title Tribunal 2012a). The ILUA extends over an area from the SA-NSW border west through to an area north of Morgan.

Ngadjuri Nation #2 Native Title Claim

The NNTT registered the Ngadjuri Nation #2 native title claim (SC2011/002) on 20 January 2012. This claim, which includes a small portion of the western-most part of the proposed alignment (National Native Title Tribunal 2012b), is yet to be determined.

First Peoples of the River Murray and Mallee #2 Native Title Claim

The NNTT registered native title claim SC2019/001, known as the First Peoples of the River Murray and Mallee Region #2, on 1 November 2019. The claim covers the 'gap' between the First Peoples ILUA and area of interest and the Ngadjuri Nation #2 claim (refer Figure 9-5).

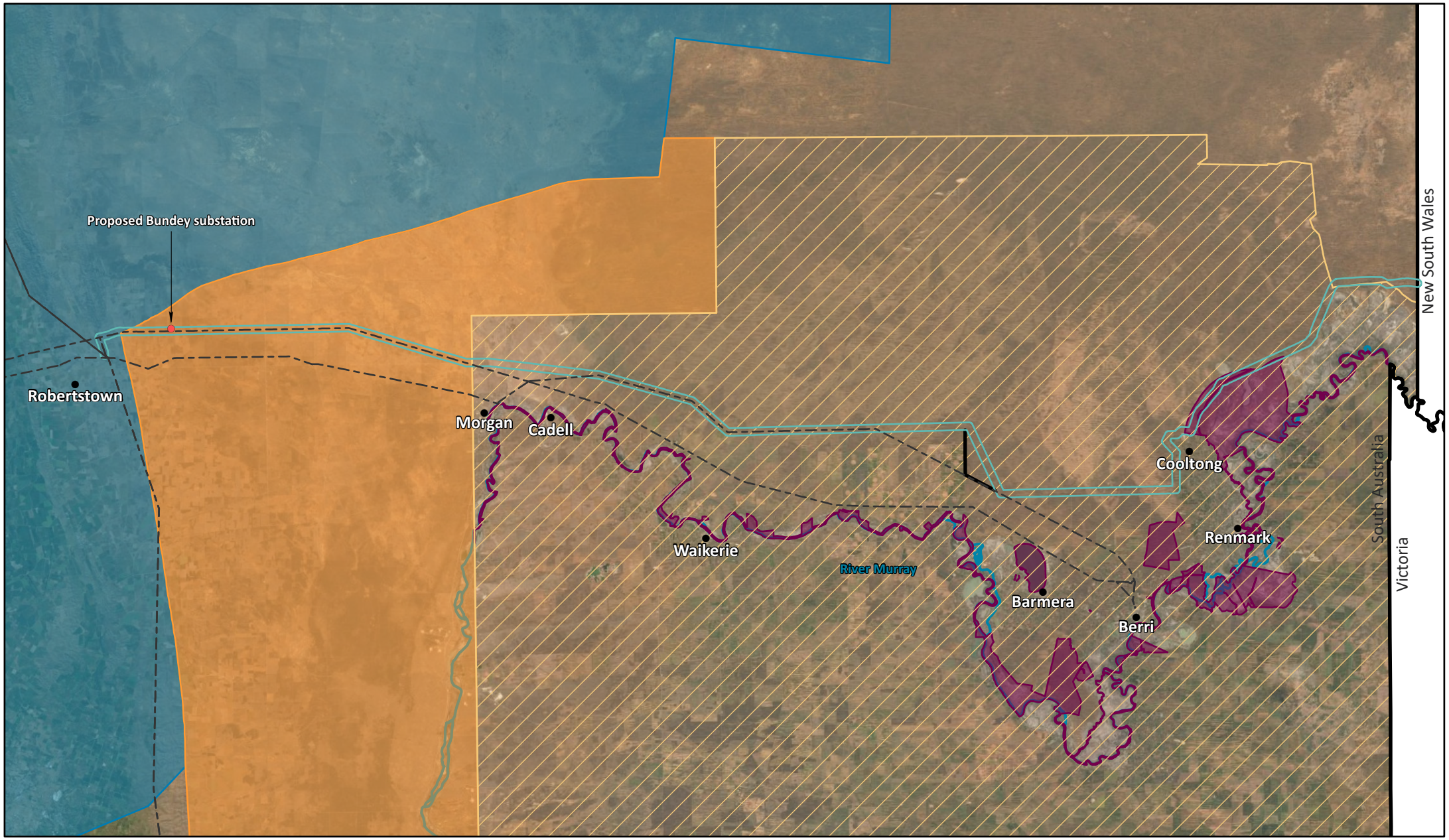
The majority of the transmission line corridor is located within existing road reserves or within portions of freehold land, both of which have extinguished native title rights and interests.

The remainder of the proposed transmission line corridor traverses seven pastoral leases and five Crown Record parcels, all of which may be considered 'native title land'. However, as the proposed Project is a 'facility for services to the public', Section 24KA of the *Native Title Act 1993* (Cth) applies,

thereby the construction of the transmission line is a valid 'future act' and a native title agreement or ILUA is not required to enable the development to proceed.

Aboriginal heritage agreements

Aboriginal heritage surveys have been undertaken with the relevant Traditional Owners to ensure that no element of the Project will damage, disturb or interfere with sites, objects or remains of Aboriginal significance. ElectraNet is in the process of negotiating appropriate agreements with each of the relevant Traditional Owners that will be impacted by the Project. Further information is provided in Chapter 12 Cultural Heritage, including a summary of topics included in the heritage agreements.



The River Murray and Crown lands Indigenous land use agreement
First Peoples of the River Murray and Mallee Region #2 - Native title claim
Ngadjuri Nation #2 - Native title claim
First Peoples of the River Murray & Mallee Region - Native title consent determination area

Transmission line corridor
Cultural heritage avoidance alignment
Existing ElectraNet transmission line
River Murray
Proposed Bundey substation

Figure 9-5
Native Title in the region of the Project

0 20
Kilometres

N

ElectraNet
energy connect
JBS&G

Data sourced from: National Native Title Tribunal - http://www.nntt.gov.au/assistance/Geospatial/Pages/DataDownload.aspx

9.3.5. Acquisition of transmission line easement

The transmission line easement provides a safety clearance margin between the high-voltage transmission lines and surrounding structures and vegetation, and access for ElectraNet for ground-based inspections and transmission tower repairs and maintenance. The loss of land to the easement is considered during the valuation process and reflected in the offer of compensation made to landholders during easement acquisition negotiations.

The transmission line will be situated within an easement typically 80 m wide that allows for the construction, operation and maintenance of the transmission line. The easement is a permanent legal right to use and access land which is registered on the land title and remains part of the title regardless of changes in ownership. Where possible, the easement will be aligned with existing infrastructure easements, road reserves, existing tracks and disturbed areas to minimise the need for new disturbance.

There may also be a requirement for 'overhang' easements over properties on which the transmission line is not physically located which provide for conductor blowout[3] onto neighbouring properties. Discussions with landholders are ongoing and agreements will be in place to enable those overhang easements to be put in place prior to construction, where appropriate.

While existing land uses will be able to continue across much of the easement, and most existing vegetation will remain undisturbed, the easement will also restrict certain landholder activities. The following activities are permitted within easements are based on ElectraNet (2013) and applicable legislation:

Table 9-5: Permitted activities within transmission line easements

Activity	Permitted / not permitted
Grazing	• Permitted
Fences and gates	• Fences and gates may be constructed or maintained across transmission line easements, provided they are not greater than 2 m in height and do not prevent access for transmission line inspection / maintenance
Access tracks	• Permitted
Vegetation	• Vegetation is required to be cleared to a height of 3 m within 12.5 m of the centreline and cleared to a height of 6 m between 12.5 and 25 m of the centreline of the transmission line
Permanent annual plantings	• Orchards, vineyards and vegetable growing are permitted provided they meet the clearance restrictions. Irrigation and chemical spraying activities are required to be controlled through management guidelines to avoid exposure of transmission lines to water or chemicals
Buildings and structures	• Sheds, yards, pump houses and housing are permitted outside minimum clearance distances of the transmission lines (i.e. the easements) and must not prevent access to infrastructure for maintenance or inspection
Storage of materials	• Not permitted within easement
Excavation / filling of land	• Excavation which impacts on the footings of transmission lines is not permitted

The exact location of easements will be determined following detailed design, micro-siting and survey activities. Compensation payable to landholders for acquisition of their land for easement purposes is discussed in Section 9.3.7.

[3] Conductor blowout is the horizontal sag in a transmission line conductor (wire) due to wind forces and is an important consideration in determining easement width.

ElectraNet and its Project consultants have been working with each of the affected landholders for more than 12 months, discussing land uses, locations of sensitive receptors and landholder priorities. The formal process for securing easements by negotiation commenced with freehold landholders in late 2019, with Option deeds prepared and provided to each landholder for discussion. The deeds included a plan of the land required by ElectraNet for an easement, details of an Option fee payable, the amount of compensation payable to the landholder and timelines for completion.

The Option deeds remain valid until either 31 December 2021 or 22 February 2022, depending on the time they were entered into with the respective freehold landholders. The option must be triggered by ElectraNet on or before those dates to enable acquisition of the land subject to the easement to progress.

The pastoral leases and Crown Record properties are subject to a slightly different process to secure an 80 m wide easement. Pastoral leases require preparation of an Easement deed, which is registered against the pastoral lease and compensation paid to the pastoral lessee. Crown Record requires issue of a construction licence based on survey plans which will be approved by DEW before the licence is issued.

9.3.6. Acquisition of land for Bundey substation

ElectraNet is finalising the acquisition and subdivision of a land parcel on Powerline Road Bundey, for the proposed 330 – 275 kV substation.

The site measures approximately 80 ha, however only 400 m by 250 m (9 ha) is required for the development of the Bundey substation, allowing room for future expansion. The final area required for the Project will be confirmed during detailed design. As described in 9.3.2, the land in this area has been significantly cleared of vegetation and has been long used for cropping and grazing purposes.

9.3.7. Compensation to landholders

Compensation is payable to landholders for use of their land for easement purposes. In order to achieve this, valuations of each required parcel of land were undertaken by an independent, licenced valuer and an estimate of compensation made in relation to the 80 m wide easements.

The determination of compensation was made with reference to the *Land Acquisition Act 1969* which sets out the various principles of compensation including the following:

- number of towers per property
- impact of the proposed easement on the remaining use of the land
- loss of privacy due to easement access by ElectraNet and its contactors to construct and maintain the transmission line
- negative perception about electro-magnetic field generated by transmission lines and potential bias by potential purchasers of land with transmission line easements
- market value, based on a review of land sales in the general area
- loss of land by reason of severance, disturbance or injurious affection[4].

The compensation amount has been provided to each of the impacted landholders in the relevant agreement (e.g. Option deed) with an explanation as to how it was calculated. Compensation will be payable to the landholders following ElectraNet triggering the Option deeds.

[4] Injurious affection is defined as those losses suffered as a consequence of what is constructed on the acquired land. This includes consideration of the potential long-term impacts on landholder activities.

9.4. Impact Assessment

The following aspects of the Project have been identified as sources of impacts to land use:

Construction

- timing and location of construction activities
- use of property access tracks
- establishment of new access tracks, temporary construction camp and staging / laydown areas
- presence of construction crews, vehicles and equipment
- movement of Project vehicles through the area of the Project.

Operations

- the presence of the transmission line (including changes to land use, and effects on airfields and aircraft movements and communication networks)
- other infrastructure projects proposed for the region as a result of the Project.

The potential impact events resulting from these aspects of the Project are discussed below.

9.4.1. Construction

Disruption to usual landholder operations

Prior consultation with landholder will ensure minimise the potential for disruption to landholder operations during the construction phase.

If not adequately planned for, there is potential for day-to-day operations of landholders to be temporarily disrupted by the location and timing of construction activities.

As detailed in Chapter 7 Project Description, construction duration at each tower location will be short-term and restricted to defined locations. Landholders will be consulted regarding the location, timing and management of proposed activities and notified in advance of planned construction activities with the aim of minimising disturbance to property operations. Timely prior notification will assist landholders to adjust regular or seasonal activities (e.g. harvesting, seeding, mustering, spraying) in the vicinity of the easement before construction commences. This equally applies to consideration of tourism, recreation, scientific and other activities within Calperum and Taylorville Stations.

Discussions with landholders will ensure Project design and construction activities avoid primary locations such as residences, buildings, water tanks and other facilities which are required to continue primary production activities.

The process for notification of landholders will be detailed in the Construction Environmental Management Plan (CEMP). Timely negotiation and cooperation with landholders, and the short-term nature of construction activities is expected to result in only minor and temporary disruption of landholder activities from Project construction.

The predicted impacts are in the **Minor** category. Uncertainty in the predicted impact (based on uncertainty in location and timing of construction activities) has been evaluated in Appendix O and the level of risk is **Low.**

Disruption to landholder amenity

Ongoing engagement with affected landholders will seek to minimise impacts to lifestyle amenity of landholders as a result of construction activities.

A loss of amenity may be experienced by some landholders whose normal lifestyle and usually private property will be subject to construction activities. These effects are expected to result from exposure to construction activities, vehicles and workforce, including temporary construction camps.

Requirements for property access for construction activities and the presence of temporary construction camps on some properties may raise concerns for those landholders about their personal safety and property security, and the potential for crime / anti-social behaviour and misuse of alcohol and drugs. Landholders may also have concerns relating to their personal privacy and the ability to run their business without interruption / interference (Department of Regional Development and Lands 2011).

ElectraNet is consulting with directly affected landowners throughout the planning of the Project to discuss the potential effect of the transmission line on the use and enjoyment of their properties, possible design alternatives and options, management issues, continuity of current operations, access arrangements and compensation.

Consultation undertaken with landholders along the alignment has identified a willingness to host temporary construction camps on properties. Temporary camp site locations on private property will be determined in consultation with affected landholder and will take into account landholder concerns around access, property security, privacy and other matters. Landholders will be compensated and use of the land for the purpose of temporary construction camps will be in accordance with agreed rights and responsibilities.

All ElectraNet employees, contractors and visitors who interact with members of the local community are expected to adhere to ElectraNet policies requiring respect for the cultural environments of the communities in which ElectraNet operates. The workforce accommodated at the temporary construction camps will be provided with guidance on expected standards of behaviour and conduct which will take into account any specific requirements of the landholder.

Strict policies on the use of alcohol and other drugs affecting fitness for work will be implemented on construction sites and the temporary construction camps to ensure workplace safety. Vehicles entering and leaving the temporary camps will be subject to entry and exit policies and procedures.

The predicted impacts are in the **Minor** category. Uncertainty in the predicted impact (based on uncertainty in camp locations and implementation of control measures) has been evaluated in Appendix O and the level of risk is **Low.**

Impacts to visual amenity are discussed further Chapter 13 Visual Amenity.

Loss of access or damage to property access tracks

Property access tracks used during construction will be managed in consultation with affected landholders.

The preferred primary access to the Project easement will be via the use of existing public and private roads, and existing tracks on the properties traversed by the Project (and adjacent properties subject to landholder agreement) These will include the existing access tracks and easement used to maintain ElectraNet's 132 kV transmission lines.

Access for construction requires an approximately 5 m cleared track to access tower construction footprints and temporary stringing access corridors approximately 5 m wide between tower locations to allow stringing of the conductors. Tracks will be designed to take the shortest route with as little impact as possible to native vegetation, existing land uses and landholders. As the Project is aiming to

utilise existing tracks wherever possible, there is potential for disruption to landholder activities through track closures or damage to tracks.

Impacts to property operations from delays to travel times due to short-term closure of property access tracks are generally expected to be negligible, however more extended delays may occasionally occur which may temporarily impact landholder operations. If full track closures are necessary (e.g. for safety reasons) it is possible that some sections of properties may become temporarily inaccessible if alternate routes are not available. Use of alternate routes may also result in increased travel times for the duration of construction or access track closure.

The Project also has the potential to affect the condition of unsealed access tracks on properties traversed by the proposed alignment through road wear / damage caused by additional Project construction traffic (particularly heavy loads) and through unplanned events (e.g. Project vehicle accidents or bogging). These impacts (if they occur) may result in disruption to property activities through time delays or the need to use alternative routes if access tracks become unusable / impassable or nuisance to landholders (e.g. discomfort from using tracks in poor condition).

ElectraNet will negotiate use of existing access tracks with landholders to ensure impacts to land uses and landholder operations from closure of tracks and any requirement to use alternative routes are minimised. Property access tracks which may be at risk of deterioration from Project transport activities will be identified and measures to mitigate impacts will be put in place if required. These could include identifying alternative routes, upgrading access tracks prior to Project use, repairing access tracks during and after Project use and managing driver behaviour of Project contractors.

Landholders may also benefit from the requirement for construction access which could involve the repair and upgrade of existing property tracks both before and after construction activities. Damage to existing assets or infrastructure, such as property fences and gates, is considered unlikely. Should any damage to property assets result from Project activities, this would be rectified by ElectraNet and its EPC contractors as soon as practicable and at its expense.

The predicted impacts are in the **Minor** category**.** Uncertainty in the predicted impact (based on uncertainty in location and timing of activities) has been evaluated in Appendix O and the level of risk is **Low.**

Land and vegetation disturbance

Impacts from temporary land disturbance will be minimised by reinstatement immediately after construction activities have concluded. Locations for permanent clearance will be selected to minimise impacts to landholder operations.

Construction activities will require both temporary and permanent land and vegetation disturbance which has the potential to impact short and long-term land use. There is also potential for impacts through discovery of previously unknown cultural heritage (refer Chapter 12 Cultural Heritage). Vegetation clearance impacts are also discussed further in Chapter 11 Flora and Fauna.

Temporary disturbance will be required on some properties during construction to accommodate the stringing access corridor, upgraded / new access tracks, and for temporary worker camps, laydown and staging areas. Land to be cleared for temporary construction purposes will be reinstated immediately after construction activities have concluded and will be undertaken in accordance with the agreement with the affected landholder and the Project CEMP (refer Appendix P).

Land disturbance of the stringing access corridor between tower locations will typically be undertaken using a dozer with blades raised to remove larger trees (while keeping shrubs, grasses and topsoil largely intact), or rolled where possible. Rootstock of larger trees may be left intact to allow regeneration rather than being removed where practicable.

Up to four temporary self-contained worker camps to accommodate up to approximately 250 people will be required along the transmission line corridor during the construction period. Locations for these camps will be determined during the detailed design phase of the Project and will be sited in areas already disturbed by development or with limited native vegetation, and which meet a range of other criteria (refer Section 7.5.6).

Camp site locations on private property will determined in consultation with affected landholders, taking into account landholder requirements for access, land use activities, privacy and other matters. Landholders will be compensated and use of the land for the purpose of temporary construction camps will be in accordance with agreed rights and responsibilities.

The temporary worker camps will be rehabilitated immediately after use in accordance with the Project Draft CEMP (refer Appendix P). As detailed in Chapter 7 Project Description, reinstatement of these sites would involve removal of construction material, foundation spoil and waste, surface contouring and scarifying where required, and respreading of topsoil and cleared vegetation to encourage natural recruitment of vegetation.

Up to four laydown / staging areas will be required for the construction phase, and where possible will be co-located with the temporary worker camps. These areas are used to store heavy vehicles, equipment and bulk materials needed to construct the transmission line. Location of these sites will be determined in accordance with the same criteria and under the same land access / use arrangements for compensation and reinstatement as for workers camps (refer Section 7.5.6).

Some permanent clearance of native vegetation within the transmission line easement will be required for tower pads and access tracks. Areas where native vegetation is degraded or has been previously cleared will be utilised in preference to permanently clearing vegetation wherever practicable. New access to the tower locations may be required where there are no existing tracks and will be designed to take the shortest route (potentially using short spur tracks off existing roads or access tracks) to minimise impacts. Micro-siting of towers and easement access will be the subject of consultation with landholders as part of easement negotiations.

Chapter 12 Cultural Heritage and the Cultural Heritage Management Plan Framework (Appendix R) provide information on ElectraNet's commitment to working with Traditional Owners to protect cultural heritage values during all phases of the Project, including strategies that will be utilised to avoid sites and manage heritage generally.

The predicted impacts are in the **Minor** category. Uncertainty in the predicted impact (based on uncertainty in final definition of clearance areas and the potential for excursions outside designated clearing areas) has been evaluated in Appendix O and the level of risk is **Low.**

Movement of construction workers, vehicles and equipment in local areas

Disruption to land uses from the increased presence of construction crews and equipment will be minor, short term and localised.

Construction activities will result in a temporary increased level of activity in the generally sparsely populated rural and remote areas traversed by the transmission line corridor. The presence of workers camps and laydown / staging areas and movement of equipment will lead to a short-term increase in traffic with the potential to cause delays to the usual flow of local traffic or disruption to the use of local roads for agricultural activities. Construction of access tracks or failure to secure gates may lead to unauthorised access to private land. Noise issues from the increase in the number of people in the area also have the potential to impact on land uses and landholders.

Vehicle movements will generally be scheduled outside peak periods wherever possible and it is expected that workers would typically be transported by bus from the temporary workers camp to construction sites to minimise the number of additional vehicles on local roads. Where other light vehicles are used to access these sites, parking will generally be within 30 m of each tower location on

the edge of access tracks within in cleared areas. Vehicle movements (including heavy vehicle movements) will be confirmed during detailed design and traffic management measures will be addressed in a Traffic Management Plan. Potential impacts of traffic are discussed further in Chapter 16 Traffic and Transport.

Due to the remote nature of the Project, extended construction hours are proposed. However where activities are proposed in close proximity to identified sensitive noise receptors (e.g. residences), hours of construction, including the delivery of materials to and from site will include restricted hours on Saturdays and no work on Sundays and public holidays. Engagement with sensitive residential receptors will enable early notification of activities and for input to be provided before works begin, allowing works to be scheduled in a way that minimises the nuisance to receptors. Management of potential noise impacts is discussed further in Chapter 15 Noise and Vibration.

Land access protocols will be established with each landholder where construction activities are planned. Appropriate and agreed access instructions will be set out in the CEMP and standard ElectraNet operating procedures and provided to all contractors and construction crews.

The predicted impacts are in the **Minor** category. Uncertainty in the predicted impact (based on uncertainty in the location and timing of activities and implementation of control measures) has been evaluated in Appendix O and the level of risk is **Low.**

Introduction or spread of weeds, pests and pathogens

Project activities are not expected to result in introduction or spread of weeds, pest or pathogens.

The movement of Project vehicles and personnel into and within the area of the Project and between properties has the potential to introduce or spread weed and pests or pathogens (e.g. phylloxera, fruit fly and stock diseases) in agricultural land.

Liaison with landholders will be ongoing prior to and during construction, and ElectraNet and its contractors will ensure that any specific weed, pest or pathogen requirements are communicated and implemented. As noted in Chapter 11 Flora and Fauna, standard practices in the CEMP and OEMP will be implemented to manage potential impacts during construction and operation. Pre-construction inspections would be undertaken to identify any areas of weed infestation requiring specific management measures. Any weed or pest management would be carried out in consultation with landowners and the Landscape Board or relevant government agency (e.g. PIRSA). Restrictions on movement of fruit and vegetable material (e.g. by the construction workforce) would be in accordance with PIRSA requirements at the time.

The predicted impacts are in the **Negligible** category. Uncertainty in the predicted impact (based on uncertainty the presence of weeds, pests and pathogens at the time of construction and implementation of control measures) has been evaluated in Appendix O and the level of risk is **Low.**

9.4.2. Operations

Restriction on land use and property activities due to the presence of the transmission line

Consultation with landholders in determining the location of the easement and the micro-siting of the towers will take into consideration potential long-term impacts on landholder activities and property values.

The presence of the transmission towers and access tracks on affected properties has the potential to impact:

- permitted current and future land uses (particularly on the transmission line easement) including fragmentation of land
- transmission line clearance requirements which may disrupt landholder operations by limiting vehicle access below the transmission line

- conservation values, tourism and recreation experiences in areas managed for conservation purposes and other tourist locations
- property values through exclusion of land on the easement.

Current land uses

Agricultural or horticultural land uses within the transmission line easement are not expected to be significantly impacted by the Project, as a wide range of activities and infrastructure are generally compatible with transmission line easements. These include grazing, permanent and annual plantings (e.g. orchards and vegetables) and native vegetation which meet height clearance restrictions, and access tracks, fences and gates (refer Table 9-5).

Design of the transmission line is planned to span across areas of mature native vegetation to minimise the requirement for clearance or lopping where possible (i.e. vegetation potentially up to a height of 8 m). As mallee in areas surveyed on the transmission line corridor is rarely greater than 8 – 9 m height, clearance or trimming requirements are likely to be very limited along most of the alignment. Native vegetation clearance is discussed further in Chapter 11 Flora and Fauna.

As grazing is permitted on the easement it is not anticipated that the Project will cause a reduction in stocking rates on affected properties. There are no permanent orchard plantings on the proposed alignment.

Management of irrigation and chemical spraying activities will be agreed with landholders to avoid exposure of transmission towers and conductors to excessive water or chemicals. Restrictions may be required on location of infrastructure (e.g. sheds or yards) or activities which would impede access to the easement or transmission line for maintenance or inspection. Storage of materials and excavations which impact on the footings of transmission lines will not be permitted. Land management requirements within the easement will be agreed with landholders as part of easement negotiations.

The transmission line easement has the potential to bisect paddocks or other infrastructure which may restrict access or otherwise constrain landholder activities. This potential impact will be addressed through the consultation process with each landholder in relation micro-siting of towers and the location of the easement. Fragmentation of land uses will be further mitigated where possible based on Project studies and engagement with stakeholders.

There is also potential for increased or unauthorised public access to properties facilitated by the presence of access tracks to the easement for maintenance purposes. Uncontrolled public access to the easement by the public will be restricted via locked gates to prevent potential impacts on land use, property security and landholder amenity. Land access protocols will be established with each landholder during the acquisition of property or easement interests, including landholder access requirements where necessary.

Future land uses

As discussed above, the Project may lead to restriction of some landholder activities for some properties within the Project transmission line corridor, leading to an actual or perceived constraint on future developments by landholder enterprises.

The majority of potential landholder development restrictions are only required in the Project easement (a width of 80 m). This relatively small Project footprint within each property reduces the likelihood of actual development constraints occurring and, although consultation with affected landholders is still in progress, it is estimated that the majority of potential development restrictions would apply to less than 0.6% per property within the Project transmission line corridor (BDO EconSearch 2020).

The transmission line corridor largely utilises existing transmission lines, roads and other cleared areas, and material changes or additions to existing levels of fragmentation and access are not expected to result from the Project for the majority of the properties along the proposed alignment.

Alignment of the transmission line corridor with property boundaries and existing roads and tracks where possible, and consultation with landholders in determining the location of the easement within properties will minimise potential long-term impacts on landholder activities and property values. It is considered unlikely that constraints on future land uses will be result from the Project.

Non primary-production land uses

The transmission line corridor has been selected to follow existing infrastructure corridors, avoid areas of high value conservation and cultural significance, and is located away from scenic tourism locations as far as possible. For most of the proposed alignment, the Project will be constructed alongside an existing transmission line which will result in only a minor additional impact on visual amenity values and remote landscape experiences for the small number of visitors to the area.

Impacts to tourism and conservation land uses are expected to be minimal due to the effects of vegetation height and topographic variation at most locations used for camping, fishing, hunting and other recreational activities, shielding views of the transmission line from receptors.

Due to the nature of their visitation, the low number of visitors to Calperum and Taylorville Stations are potentially sensitive to the presence of the transmission line on the southern boundaries of these properties. Views of the Project infrastructure will only be possible from the far southern extent of the stations, will be infrequent and will be mitigated by the height of the vegetation. Alignment of the transmission line on the station boundaries has been selected to minimise impact to their high conservation values and the presence of the transmission line is not predicted to significantly impact scientific and recreational land uses on the properties.

Overall the predicted impacts of the permanent presence of the transmission line infrastructure on landholder operations are in the **Minor** category. Uncertainty in the predicted impact (based on uncertainty in the final location of infrastructure) has been evaluated in Appendix O and the level of risk is **Low.**

Effect on property value

The requirement for an approximately 80 m wide easement for the full length of the proposed alignment has the potential to negatively impact the land value of affected properties.

As noted above, current land uses will largely be able to continue along the easement and permanent economic impacts from a loss of productivity are not expected.

All landholders whose properties will be accessed by the transmission line easement have been extensively engaged with as part of easement and compensation negotiations. The loss of land to the easement is considered during the valuation process and reflected in the offer of compensation made to landholders during easement acquisition negotiations.

ElectraNet operates from the position that compensation is awarded on the basis that no directly affected property owners are financially disadvantaged as a result of having the transmission line on their property. Option deeds for an easement have been signed over multiple properties and all landholders will be compensated in accordance with an independent valuation and appropriate market value.

The predicted impact of permanent exclusion of areas along the proposed transmission line on property value is in the **Negligible** category.

The presence of the transmission line in low-flying air space

The potential for wire strike or other collision with transmission lines by low flying aircraft will be mitigated through marking of transmission line conductors, consultation with CASA and operation of air safety regulations.

The construction and presence of the transmission towers and conductors has the potential to impact the conduct of aerial activities such as mustering, baiting, spraying, firefighting or other activities. Transmission line conductors have low visibility from the air (i.e. with a land background) when compared to conductors viewed from the ground with a sky background. Night flying and low cloud also create the potential for collision with either towers or conductors.

There are two airfields in the vicinity (Renmark Aerodrome and Waikerie Aerodrome) which are managed by the local councils, and two private unregistered airstrips within 5 km of the transmission line corridor, one north of the White Dam Conservation Park and one south of Taylorville Station and west of Hawks Nest Station.

ElectraNet will undertake ongoing consultation with the Civil Aviation Safety Authority Australia, the Renmark Paringa Council and the Loxton Waikerie Council about their requirements for structures within the vicinity of airfields (refer Chapter 6 Stakeholder Engagement). Relevant authorities will be advised of the commencement of construction of the transmission line, and the final GPS coordinates of towers will be provided.

Pilots undertaking aerial operations are generally specialists trained in low-level flying and must be appropriately licenced by the Civil Aviation Safety Authority (CASA). Pilots also undertake risk assessments prior to flight which would include ascertaining the location of powerline structures. Pilots using local and private airfields in and around the transmission line corridor are required to adhere to aviation rules and regulations which would mitigate against potential collision with new and existing infrastructure.

Transmission line markers, which are typically made of fibreglass, will be attached to the conductors in areas of the transmission line corridor that are close to known airstrips to provide visual warning to aircraft of the location of the conductors.

It is noted that there is an unregistered airstrip on the property west of Hawks Nest Station and within approximately 500 m of the proposed alignment. ElectraNet have engaged with the landholder and are working to ensure potential impacts on the use of the unregistered airstrip are suitably managed.

The predicted impacts of the permanent presence of the transmission line infrastructure on aerial activities and local airfields are in the **Minor** category. Uncertainty in the predicted impact (based on uncertainty in the final location and design of infrastructure) has been evaluated in Appendix O and the level of risk is **Low.**

Interference with communication networks and radio frequencies

Interference to communication networks is expected to be limited to within the easement line and will be momentary while passing underneath the transmission line.

Disruption to UHF radio and mobile phone reception could potentially impact communications and safety measures for farming businesses, and disrupt access to entertainment during long hours of farm equipment operation.

The SNI EIS (SKM 2002) indicates that interference with UHF and AM / FM radios may occur within 20 – 30 m of the transmission line. As the transmission line will have an 80 m wide easement, interference is therefore most likely to occur when users are located within that easement. Most radio usage on farms or other locations in the vicinity of the transmission line would be expected to occur outside of this area, with only minor and brief interference occurring while the user passes underneath the transmission line or is in the immediate vicinity of a crossing point beneath the transmission line.

Corona discharge produces an audible noise and can affect television, radio, CB, broadband and mobile phone reception. It is possible that momentary fading of radio reception in a motor vehicle may occur in areas immediately below a transmission line, particularly if the radio signal is weak to begin with (SKM 2002). Corona discharge effects are further discussed in Chapter 15 Noise and Vibration.

Telecommunications for operation of the transmission line will be provided by an optical ground wire, consisting of an optical fibre core within the earth wire, and by radio links. A radio tower of approximately 50 m high will be constructed at the site of the Bundey substation to connect into the existing network boost telecommunications and reduce negative impacts that may otherwise be experienced.

ElectraNet will ensure that the transmission line is designed in accordance with all national standards for electromagnetic interference. Regular patrols of the transmission line will occur and any damaged insulators or other hardware which have the potential to cause interference will be repaired or replaced.

Any disruption to communication networks from the transmission line is expected to be transitory and limited to specific locations (i.e. within the easement). The predicted impacts of presence of the transmission line on the communication network and devices are in the **Negligible** category. Uncertainty in the predicted impact (based on uncertainty in final location of infrastructure) has been evaluated in Appendix O and the level of risk is **Low.**

Cumulative impacts on availability of land for primary production

Cumulative impact of other infrastructure projects (e.g. renewable energy generation facilities enabled by the Project) on land available for primary production purposes is expected to be negligible.

The encouragement of renewable energy generation in the area of the Project (which is one of the stated objectives of Project EnergyConnect), has the potential to impact the availability of land for primary production purposes through the change in land use. Recent renewable energy projects proposed within the Renewable Energy Zones that are traversed by Project EnergyConnect have considered the compatibility of these projects with existing land uses and the potential impacts of power generation on land use.

The Robertstown Solar project is expected to convert around 1,800 hectares of agricultural land from dry cropping and grazing to solar energy generation (Robertstown Solar 2019). As grazing is considered as a possibility once the project is operational, there is potential for the land to continue to be used for primary production, although with some constraints on possible uses.

The Goyder South project (GHD 2020) which is being designed and sited to complement Project EnergyConnect, also proposes controlled sheep grazing by landowners to assist with vegetation management. The project proposal notes that land under solar panels typically retains at least 80% of its pre-solar carrying capacity in dry sheep equivalent (DSE) and that the wind, solar and transmission components of the project are compatible with shared land use arrangements, including ongoing grazing (GHD 2020).

Other proposed renewable energy projects in the region (e.g. the Riverland Solar and Storage project (Lyon Group 2019) located south of the transmission line corridor near Morgan) have indicated that grazing would not be possible during operation of the solar farm due to potential damage to equipment from stock. However it was noted that the change in land use for the solar farm is reversible and that current pastoral land use activities could resume at the end of the project (or other land uses could be considered) once all above ground infrastructure is removed as part of project decommissioning.

The change in land use from primary production to renewable energy land uses should also be balanced against the other positive impacts such projects can have on farm diversification and the local economy. These infrastructure projects in the area of the Project will tend to be located on grazing properties (rather than irrigated agriculture) where the cost of foregone agricultural production is likely to be lower. These landowners may also benefit financially from a second source of income which is not dependent on agricultural commodity markets and seasonal weather variations, and which can supplement farm income on a more sustainable basis.

The Infrastructure and Renewable Energy Facilities provisions of the Planning and Design Code encourage the efficient provision of infrastructure to support renewable energy facilities in a manner that minimises hazard, is environmentally and culturally sensitive and manages adverse visual impacts. These objectives are also consistent with State-wide initiatives to support renewable energy facilities and associated infrastructure, as highlighted in the relevant Region Plans (refer Table 5 11), and the zone and policy provisions within the Code which generally also envisage or accommodate energy generation from renewable sources. (refer Table 5 13).

Ultimately the extent of the cumulative impact of these projects on the availability of primary production land over time, will be dependent on the number and success of renewable energy generation projects, the rigour of the planning assessment and approvals process, ongoing policies of the State government which facilitate appropriate development in the Renewable Energy Zones, and the support of local landowners and communities most directly affected by the resulting changes in land use.

A **Negligible** impact is expected from the loss of land for primary production (or constrained activities) due to investment in renewable energy in the area of the Project. This is considered in the context of the vast amount of land used for grazing in the broader region, when compared to the area of land potentially taken out of production or where activities are constrained (potentially temporarily) by future infrastructure project developments.

9.4.3. Summary of key mitigation measures

Table 9-6: Key mitigation measures – land use

Mitigation measure	Construction	Operation
Implementation of principal design controls that seek to reduce impacts as a result of Project activities including: • follow existing infrastructure corridors • avoid areas of high cultural significance • avoid high value conservation areas and wetlands • avoid important habitat for threatened species • minimise the potential for disturbance	✓	✓
Investigation through technical studies and landholder discussions will confirm the exact placement of infrastructure to mitigate impacts and risks associated with land access	✓	✓
Implement fruit fly management protocols in accordance with PIRSA requirements	✓	✓
Implement weed hygiene procedures such as vehicle wash-downs and inspections in consultation with landholders, where appropriate	✓	✓
Control weeds on ElectraNet owned land in accordance with the Landscape South Australia Act	✓	✓
Undertake adaptive weed management, monitoring and control where required if weeds are detected, particularly following rainfall events and disturbance events.	✓	✓
Monitor stockpiles for weed outbreaks	✓	
Appropriately dispose of any declared weeds cleared as part of the Project (with any necessary notification/permits under the Landscape South Australia Act in place for moving / relocating vegetation containing declared plants).	✓	✓

Mitigation measure	Construction	Operation
Maintain property / landholder database with details of special access requirements including weeds, biosecurity, washdown etc.		✓
ElectraNet is consulting with directly affected landowners (including neighbouring properties or where properties affected by access) throughout the planning of the Project to discuss the effect the transmission line will have on their properties, design alternatives and options, management issues, continuity of current operations, access arrangement and compensation.	✓	✓
ElectraNet will undertake measures to mitigate deterioration of access tracks (for example, but not limited to, identifying alternative routes, upgrading access tracks prior to Project use, repairing access tracks during and after Project use, managing driver behaviour of Project contractors).	✓	✓
If full closures of access tracks are required, ElectraNet would communicate this with potentially affected landholders to allow access through construction areas where possible or arrange alternate routes.	✓	✓
Install locked gates on easement where required and appropriate signage once construction is completed.		✓
Ongoing consultation to determine micro-siting of the towers, easement access and location, and management of temporary workers camps and laydown / staging areas (where this has been agreed). Location of the easement, towers and associated access, and management of land uses within the easement will take into consideration potential long-term impacts on landholder activities.	✓	✓
Register any complaints in ElectraNet's IMS and implement any necessary corrective action program.	✓	✓

9.5. Conclusion

Impact to properties, land uses and landholders will be limited due to designing the transmission line corridor to follow existing road reserves, existing infrastructure and / or property boundaries wherever possible.

All landholders whose properties will be accessed by the transmission line easement have been extensively engaged with as part of easement and compensation negotiations and there will be ongoing consultation with landholders to determine micro-siting of the towers, easement access and location and management of temporary workers camps and laydown / staging areas (where this has been agreed). Location of the easement, towers and associated access, and management of land uses within the easement has taken into consideration potential long-term impacts on landholder activities.

Overall, during the construction phase, disruption to landholder operations is expected to be limited to the short period when construction is undertaken at each tower location. Timing and location of construction activities will be planned in consultation with landholders and land cleared for temporary construction purposes will be reinstated immediately after construction activities have concluded and will be undertaken in accordance with the agreement with the affected landholder and the Project CEMP.

Impacts on activities at local airfields and airstrips and risks to aerial activities are not expected. The risk of conductor strike or other collision with transmission towers by low flying aircraft will be mitigated through consultation with CASA and operation of air safety regulations. Interference to communication networks is expected to be limited to within the easement line and will be momentary while passing underneath the transmission line.

Impacts from the loss of land for primary production due to investment in renewable energy are expected to be negligible when considering the amount of land available for grazing in the broader region, compared to the small area of land potentially taken wholly or partly out of production.