

EIS Volume 3 Appendix P

# Draft Construction Environmental Management Plan



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## 1. Introduction

This Draft Construction Environmental Management Plan (CEMP) has been prepared to accompany the Environmental Impact Statement (EIS) for the South Australian (SA) portion of Project EnergyConnect (ElectraNet 2021), a proposed high voltage electricity transmission connector between Robertstown in SA and Wagga Wagga in New South Wales (NSW) with an added connection from Buronga in NSW to Red Cliffs in north-west Victoria. The South Australian section of Project EnergyConnect is referred to as ‘the Project’ for the purposes of the South Australian assessments and approvals processes.

ElectraNet, the owner and operator of the transmission network in SA, and responsible party for delivering the SA portion of Project EnergyConnect, will oversee the construction of the transmission line. Construction of the transmission line will be undertaken by a Contractor.

### 1.1. Purpose of the Draft CEMP

The purpose of the Draft CEMP is to describe the overarching principles to be implemented to avoid and/or minimise any impacts to environmental values during construction of the Project.

The Draft CEMP is structured around the environmental aspects identified for the Project as detailed throughout the EIS. It describes potential mitigation, controls and management strategies that should be implemented during Project construction to minimise and or avoid impacts to environmental values. The Draft CEMP provides the framework for achieving compliance with regulatory requirements (including the general environmental duty), environmental protection policies, standards, guidelines and codes of practice.

A final detailed CEMP will be prepared prior to construction by the construction Contractor and ElectraNet for submission to the State Commission Assessment Panel (SCAP) and any other relevant authorities.

## 2. Project Description

### 2.1. Key Project Details

The proposed Project involves the construction and operation of the South Australian portion (Robertstown to SA / NSW border) of Project EnergyConnect (refer Figure 1) which comprises:

- approximately 10 km of 275 kV transmission line supported by steel towers from the existing Robertstown substation to a proposed new substation located towards the western extent of the transmission line at Bunday, near Robertstown
- approximately 195 km of 330 kV transmission line supported by steel towers from the new Bunday substation to the SA / NSW border
- associated telecommunications infrastructure
- associated access tracks
- associated temporary facilities (i.e. temporary construction compounds, site offices, laydown areas and mobile construction camps).

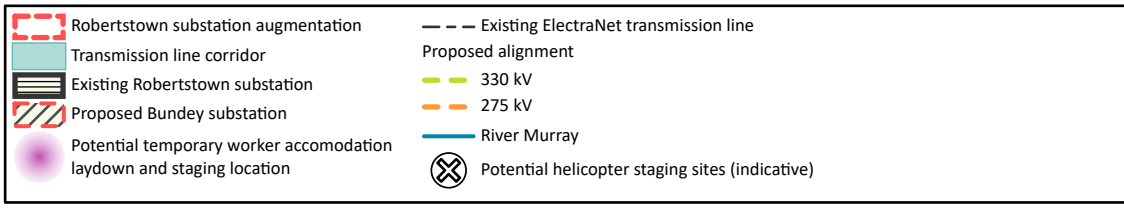
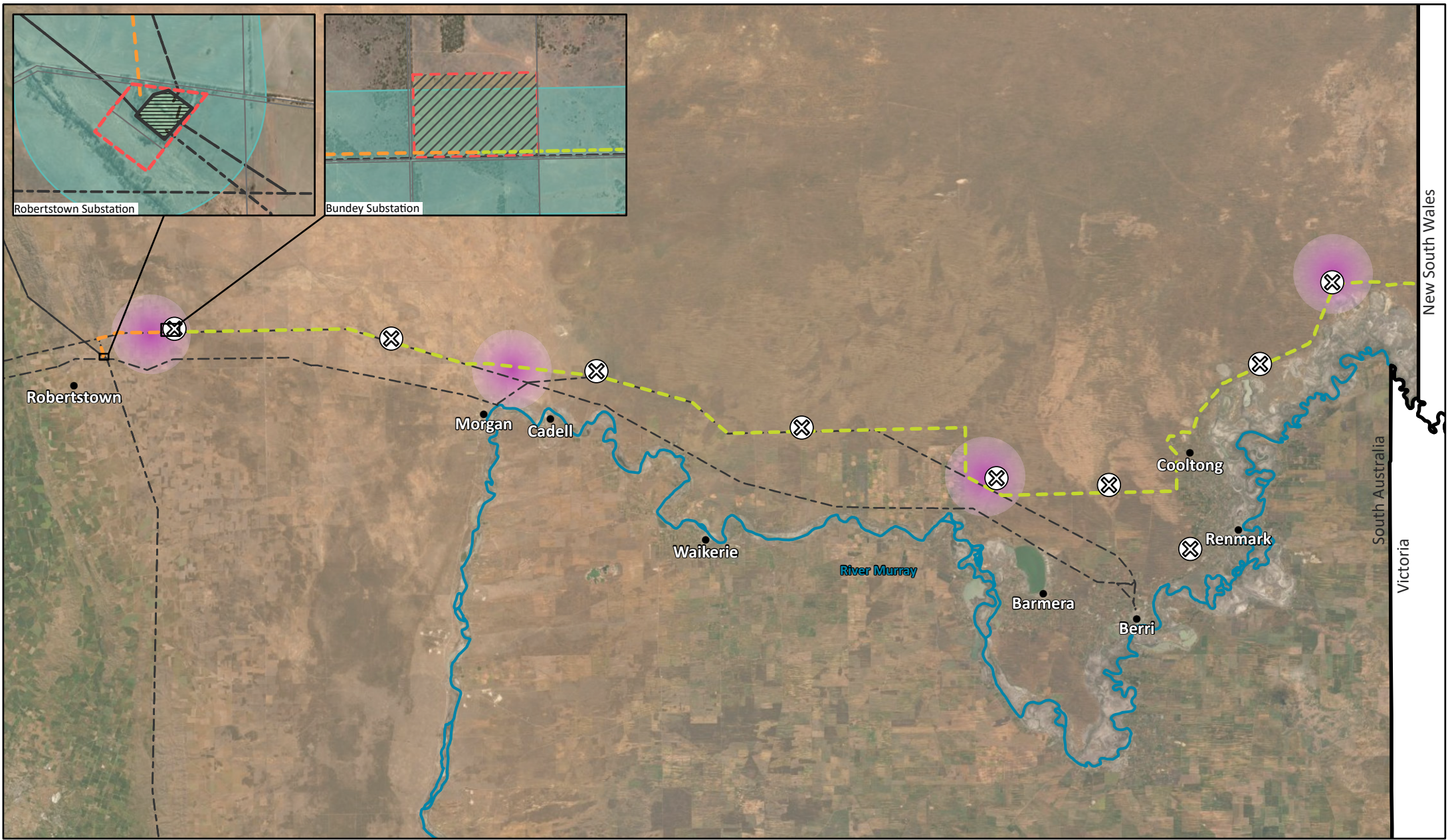
### 2.2. Project Location

The Project will traverse approximately 205 km between Robertstown in the Mid North and the SA NSW border, via the Riverland area. The transmission line corridor refers to a 1 km wide corridor (500 m buffer either side of the proposed alignment) within which the final easement and transmission line infrastructure is expected to be contained. The majority of construction activities

associated with the transmission line would be within this corridor. The final alignment and easement of the transmission line will be confirmed during detailed design.

The environment of the transmission line is described in the EIS. The key aspects of the environment relevant to this Draft CEMP are:

- Climate, topography, soils, surface water and ground water (refer Chapter 10 Physical Environment)
- Flora, fauna and weed and pest management (refer Chapter 11 Flora and Fauna)
- Air quality and greenhouse gas emissions (refer Chapter 14 Air Quality)
- Noise and vibration (refer Chapter 15 Noise and Vibration)
- Traffic (refer Chapter 16 Traffic and Transport)
- Land use and tenure (refer Chapter 9 Land Use and Tenure)
- Visual amenity (refer Chapter 13 Visual Amenity)
- Social-economic environment (refer Chapter 17 Socio-Economic Environment).



**Figure 1**  
Project location and components

<p>0 20 Kilometres</p>	<p>N</p>

## 2.3. Key Construction Activities

Construction activities are described in detail in Chapter 7 of the EIS. The key construction activities to be undertaken consist of the following:

- establishment of access tracks
- vegetation clearance and earthworks at tower locations, substation, camps and laydown areas
- temporary stockpiling of topsoils and subsoils
- establishment of associated temporary facilities (e.g. construction camps, concrete batching plants, laydown areas)
- transport of materials and equipment to construction locations
- earthworks, civil and electrical works at Bunday substation
- bore piling and pouring of concrete footings
- installation of towers
- stringing and connection of electrical conductors
- installation of permanent security fencing / gates.
- Commissioning of transmission lines
- rehabilitation of temporary areas of disturbance
- clean up of waste materials.

Helicopters may be used for tower installation and stringing, subject to health and safety, commercial and technical feasibility.

### 2.3.1. Timeframes and construction hours

The construction of the transmission line from the SA / NSW border to Robertstown is expected to commence towards the end of 2021 and take approximately 16-18 months. It is anticipated that energisation of the Project may occur in Q2 2023 to align with the NSW portion of Project EnergyConnect.

It is proposed that construction work would typically be carried out over 12-hour shifts, seven days per week from 7:00 to 19:00. The temporary workers construction camps will operate 24 hours per day, seven days per week for the duration of the construction phase. Extended construction hours are proposed given the remote nature of the Project, distance to noise sensitive receptors and compressed construction timeframes. These extended hours are considered acceptable as per Division 1 of the South Australian *Environment Protection (Noise) Policy 2007* (Noise EPP).

The Noise EPP does not apply to construction activity related to public infrastructure, as stated in Clause 22(b). However, where activities are proposed in close proximity to identified sensitive noise receptors (e.g. Coolotong), the hours of construction, including the delivery of materials to and from site will generally be as follows:

- between 7:00 am and 7:00 pm, Monday to Friday, inclusive
- between 8:00 am and 13:00 on Saturdays; and
- no work on Sundays and public holidays.

Depending on construction scheduling and weather conditions, some work may need to occasionally be undertaken outside these hours. For example, concrete pouring is restricted in high temperatures and conductor stringing in high winds.

### 3. Implementation

The roles and responsibilities, training and communication mechanisms that underpin implementation of this plan are detailed in the following sections.

#### 3.1. Role and Responsibilities

Effective management of environmental issues and promoting environmental awareness during construction of the Project is key to responsible project management. The roles and responsibilities of key personnel during the construction of the Project are outlined below in Table 1.

All personnel involved in construction of the Project are required to work in accordance with the CEMP.

**Table 1: Roles and responsibilities during Project construction**

Role	Responsibilities
<b>ElectraNet Executive Management</b>	<ul style="list-style-type: none"> <li>Overarching responsibility for the Project</li> <li>Licence holders and therefore hold overall responsibility for environmental management of the Project</li> </ul>
<b>ElectraNet Project Manager</b>	<ul style="list-style-type: none"> <li>Directly responsible for the environmental management of the Project</li> <li>Reports directly to ElectraNet Executive Management</li> </ul>
<b>ElectraNet Construction Superintendent</b>	<ul style="list-style-type: none"> <li>Field based role</li> <li>Directly responsible for overseeing and fulfilling the commitments contained in the Construction Environmental Management Plan</li> <li>Assesses compliance with the CEMP through regular inspection</li> <li>Reports regarding the Project's environmental performance and due diligence</li> <li>Reports to ElectraNet Project Manager</li> </ul>
<b>ElectraNet Land and Environment personnel</b>	<ul style="list-style-type: none"> <li>Oversees CEMP implementation</li> <li>Monitors the activities of construction contractors and assesses compliance with the CEMP</li> <li>Coordinates ElectraNet's environmental supervision of clear-and-grade and other key activities</li> <li>Coordinates the monitoring and audit program</li> <li>Represents the Project on environmental matters with stakeholders</li> <li>Reports to ElectraNet Project Manager</li> </ul>
<b>Contractor Construction Manager</b>	<ul style="list-style-type: none"> <li>Delivery of construction of the Project</li> <li>Engaging contractors to implement the construction works</li> <li>Control of site operations during construction.</li> <li>Ensuring compliance of construction activities with conditions of relevant Project licences, permits and the CEMP</li> <li>Ensuring all environmental guidelines and requirements are met</li> <li>Responsible for ensuring adequate resources are provided for constructing and maintaining environmental controls</li> <li>Environmental Incident investigation and reporting</li> <li>Reports to ElectraNet's Project Manager</li> </ul>
<b>Contractor Environmental Manager</b>	<ul style="list-style-type: none"> <li>Managing the environmental approval process</li> <li>Directly responsible for the overseeing and fulfilling the commitments contained in the CEMP</li> <li>Coordinating management reviews, external and internal audits and reporting progress against environmental targets and objectives</li> <li>Conducting incident investigations and performing environmental risk assessments</li> <li>Providing general environmental support</li> </ul>

Role	Responsibilities
	<ul style="list-style-type: none"> <li>• Environmental incident investigation and reporting</li> <li>• Reports to the Construction Manager</li> </ul>
<b>Contractors and employees</b>	<ul style="list-style-type: none"> <li>• Implement environmental controls as directed</li> <li>• Report any environmental issues</li> <li>• Reports to Construction Manager</li> </ul>

## 3.2. Induction and Training

### 3.2.1. Training and competencies

ElectraNet and the Contractor will develop, implement, monitor and review a documented process that controls and governs all aspects of the management of training and competency in accordance with all Laws and Good Industry Practice.

The process must apply to all contractors and sub-contractors engaged to work on the Project to ensure all workers are qualified, trained, certified, adequately experienced and appropriately licenced to undertake all tasks for their individual roles. The training and competencies component will address as a minimum:

- the operation of vehicles and mobile plant
- the operation of equipment and plant
- all activities that require Australian High-Risk Licences
- all specialist certification (e.g. working at heights, rescue activities, work in confined spaces or any other applicable activity).

Job-specific training relevant to roles will also be undertaken and records maintained of induction and attendees.

### 3.2.2. Site specific inductions

All Project personnel will undertake site specific induction training prior to the commencement of any construction works for the Project. Site specific inductions will address:

- background to the Project
- approval conditions and an overview of the CEMP requirements
- legislative requirements of the company and individuals
- key personnel and roles
- ElectraNet's Environmental Management System (EMS)
- emergency response procedures including fire season education and associated risks and restrictions
- environmental issues within the Project area and relevant management plans and procedures including for cultural heritage
- land access requirements and protocols for behaviour on the easement
- community issues related to the Project and relevant management plans and procedures
- penalties for non-compliance with required plans and procedures
- hazard and incident reporting and management procedures
- any other site-specific issues.



The provision for delivering site specific induction will be the responsibility of the Contractor, with records of attendees maintained.

### 3.3. Emergency Preparedness and Response

ElectraNet's Emergency Response Procedure provides the overarching framework for emergency response during operation.

An Emergency Response Management Plan specific to the Project will be developed prior to construction. The Emergency Response Management Plan will detail as a minimum:

- appropriate procedures to follow should an emergency occur during Project construction, such as fire, lightning strikes, chemical spill, explosion, flooding, wildlife injury, damage to existing infrastructure and personnel injury
- incident and corrective action records, which detail the procedures to record, document and follow up on environmental incidents and key personnel that should be involved
- bushfire and fire prevention, including the development and implementation of a Fire Hazard Management Plan for the Project in consultation with the Country Fire Service (CFS) and other relevant stakeholders.

### 3.4. Communication

ElectraNet is focused on developing the Project in a manner that generates maximum benefit for the broader South Australian community.

The potential issues and benefits raised by stakeholders have been considered by ElectraNet and the Project team and will be addressed through Project design and appropriate mitigation measures wherever possible.

During construction, there will be ongoing consultation and communication between ElectraNet and affected landholders.

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

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.

A community feedback and complaints process will be established to ensure that all feedback and complaints are appropriately recorded and addressed.

### 3.5. Monitoring

Regular inspections to assess environmental management will be undertaken and documented. Environmental inspection / monitoring results (e.g. sediment and erosion, rehabilitation of disturbed areas, weeds and pests, waste and other key audit/inspection outcomes) will be reported on a regular basis to ElectraNet project management. For any monitoring / sampling activity, the following information will be kept as a minimum:

- date(s) and times of monitoring / samples to be collected
- the point location where monitoring / samples were taken
- the name of the person conducting monitoring /sampling.

### 3.6. Reporting and Compliance

Contractors will report all Safety and Sustainability Events (including any notice received from a government agency) to the ElectraNet Project / Program Manager (or their representative) within one hour of the incident occurring, or if not reasonably practicable, as soon as possible. The relevant notification entry will be made into the ElectraNet Incident Management System (IMS) within 24 hours.

The Contractor will also report on (frequency to be determined and in accordance with regulatory requirements):

- results of inspections and formal environmental audits
- vegetation clearance undertaken (permanent or temporary disturbance; area in m<sup>2</sup>)
- any monitoring undertaken in accordance with licences, approvals or consent
- report of compliance with the CEMP
- summary of complaints received during the Project construction.

Non-compliances will be reported to the ElectraNet Project / Program Manager (or their representative) and appropriate corrective actions undertaken in line with ElectraNet's HSEMS.

ElectraNet will report to relevant government agencies as required by approval conditions and legislation.

### 3.7. Review of the CEMP

The CEMP is a working document that will be reviewed and updated as required during the construction phase of the Project to ensure that it reflects current best practice environmental management.

Review of the CEMP will include a process of adaptive management, whereby the effectiveness and performance of current controls and mitigation measures are assessed and improved to ensure robust environmental performance. The review process will examine at a minimum:

- the implemented mitigation and environmental management controls
- incident reporting and procedures for preventative actions
- complaints handling procedures
- emergency response procedures for environmental incidents.

### 3.8. ElectraNet Health, Safety and Environment Management System

The Project will be undertaken in accordance with ElectraNet's Health, Safety and Environment Management System.

ElectraNet's HSE policies and principles are implemented through their Health, Safety and Environment Management System (HSEMS) which is described in the HSE Management System Framework. The framework document defines the structure for management of HSE across ElectraNet, and the elements and expectations by which the health and safety of workers, the public, and the environment in which they work and live, are protected during conduct of ElectraNet operations.

ElectraNet's HSEMS framework identifies ElectraNet's Safety and Sustainability Standards (S&S Standards) for contractors undertaking construction works and providing asset maintenance services as part of a sustainable procurement approach. The S&S Standards are an integral part of the ElectraNet HSEMS and outline the minimum safety and sustainability requirements for ElectraNet contractors and subcontractors. The S&S Standards set out the actions which must be undertaken by

ElectraNet (e.g. provision of information on land access agreements, site contamination, significant flora and fauna) and the Contractor (e.g. undertaking site inspections, risk assessments) in the preparation of the CEMP.

Other actions covering requirements for matters such as training and site induction, inspections and audit schedules, vegetation protection and rehabilitation and cultural heritage site management are also set out in the S&S Standards.

## 4. Environmental Management

This section outlines environmental objectives and mitigation and management controls for Project construction activities. These have been developed based on the impacts and management measures identified and assessed in the EIS.

Management strategies for the following matters are addressed in this Draft CEMP:

- Soil erosion and drainage management (Section 4.1)
- Groundwater (Section 4.2)
- Flora and fauna (Section 4.1)
- Weeds and pests (Section 4.4)
- Air quality and greenhouse gas emissions (Section 4.5)
- Noise and vibration (Section 4.6)
- Traffic (Section 4.7)
- Local community (Section 4.8).

Key legislative considerations and measures to be implemented in order to avoid and / or minimise environmental impacts are highlighted for each matter. The mitigation and management controls represent the minimum requirements that should be adopted during the construction phase, noting that changes may be required based on the final methodology proposed by the chosen contractor.

In addition, specific management plans have been prepared for the following matters and are appended as drafts in the EIS:

- Cultural heritage management (EIS Appendix R)
- Fire hazard management (EIS Appendix S)
- Waste management and minimisation (EIS Appendix T).

A number of additional plans will be developed prior to construction, including an Emergency Response Plan and a Traffic Management Plan.

Environmental management of operations activities is addressed in the Draft Operations Environmental Management Plan at Appendix Q of the EIS.

### 4.1. Soil Erosion and Drainage Management

Mitigation and control measures to address potential soil erosion and drainage management are outlined below in Table 2.

**Table 2: Soil erosion and drainage management plan**

Element	Detail
Environmental objectives	Minimise soil disturbance and erosion. Minimise soil compaction and loss of soil quality. Minimise impacts to surface water.

Element	Detail
<p><b>Legislation and other guidance</b></p>	<ul style="list-style-type: none"> <li>• <i>Landscape South Australia Act 2019</i></li> <li>• <i>Environment Protection Act 1993</i></li> <li>• <i>Environment Protection (Water Quality) Policy 2015 (Water Quality EPP)</i></li> <li>• <i>The Australian and New Zealand Guidelines for Fresh and Marine Water Quality (ANZECC/ARMCANZ (2000) and revision ANZG (2018))</i></li> <li>• <i>The National Environment Protection (Assessment of Site Contamination) Measure 1999 (as amended 2013) (NEPM)</i></li> <li>• Australian Standard AS 1940 The storage and handling of flammable combustible liquids</li> <li>• SA EPA Guidelines including:               <ul style="list-style-type: none"> <li>- Stormwater Pollution Prevention Code of Practice for the Building and Construction Industry (1999)</li> <li>- EPA 080/16 Bunding and spill management</li> <li>- EPA 517/16 Stormwater management for wash bays</li> <li>- EPA 1093/18 Environmental management of dewatering during construction activities</li> <li>- EPA 1095/19 Construction Environmental Management Plan (CEMP)</li> </ul> </li> </ul>
<p><b>Potential environmental impacts</b></p>	<ul style="list-style-type: none"> <li>• Soil erosion or sedimentation of surface water</li> <li>• Soil compaction results in a reduced water infiltration capacity, increased potential for runoff and erosion and reduced vegetation growth.</li> <li>• Incorrect stockpiling of topsoil results in reduction in soil viability and quantity</li> <li>• Disturbance of existing site contamination or acid sulphate soils (ASS)</li> <li>• Alteration of drainage patterns</li> <li>• Soil or water contamination</li> </ul>
<p><b>Mitigation and control measures</b></p>	<ul style="list-style-type: none"> <li>• Incorporate existing tracks into the design as far as possible.</li> <li>• Locate and construct infrastructure such as towers, tracks and temporary facilities to minimise the potential for erosion and avoid alteration of surface water flows.</li> <li>• Ensure towers are not placed in watercourses, or on dune crests in areas of high erosion potential.</li> <li>• Locate camps and temporary facilities away from watercourses and lakes.</li> <li>• Locate towers to avoid areas of potential acid sulfate soils as far as possible (e.g. near lakes at eastern end of transmission line corridor).</li> <li>• Restrict the area and duration of soil disturbance to the minimum necessary.</li> <li>• Retain groundcover where possible (e.g. for the stringing access corridor).</li> <li>• Limit planning construction activities to minimise the time that soils are exposed.</li> <li>• Install sediment and erosion controls (e.g. berms, drainage controls, sediment fencing) where necessary.</li> <li>• Implement measures to minimise wind erosion (e.g. watering or stabilisation) where required.</li> <li>• Stockpile topsoil and cleared vegetation (separate from subsoil stockpiles) for re-spreading over areas of temporary disturbance.</li> <li>• Locate soil stockpiles to minimise the potential for off-site impacts (e.g. away from watercourses or potential flow paths).</li> <li>• Ensuring importation of clean fill (if required).</li> <li>• Limit vehicle movements to defined tracks and work areas.</li> <li>• Develop a protocol for dealing with acid sulfate soils and potentially contaminated material if encountered during construction.</li> <li>• Manage any disturbed acid sulfate soil in accordance with industry standards. This entails:               <ul style="list-style-type: none"> <li>- Avoidance - Avoiding potential areas of ASS where practicable when finalising the construction methodology and location of temporary construction areas.</li> <li>- Minimisation of disturbance - When disturbance of potential ASS cannot be avoided, including investigations into alterations to design and construction methodology</li> </ul> </li> </ul>

Element	Detail
	<ul style="list-style-type: none"> <li>- Treatment - Where required, soils will be immediately neutralised and managed, or segregated and isolated from uncontaminated soil and treated at a separate facility.</li> <li>• In the unlikely event that contaminated soils are encountered, segregate soils from the surrounding environment to prevent cross contamination and treat it on site or remove off-site for treatment or disposal at an appropriately licensed facility according to the nature of contamination.</li> <li>• Undertake hydrocarbon and chemical storage in accordance with Australian Standards and EPA bunding guidelines.</li> <li>• Undertake infield refuelling (where required) in designated areas with appropriate bunding and spill kits in place.</li> <li>• Avoid refuelling activities in close proximity to surface water features.</li> <li>• Maintain equipment to prevent spills or leaks.</li> <li>• Implement spill and emergency response procedures including containment, reporting and clean up.</li> <li>• Obtain water affecting activity permits for watercourse crossings where required.</li> <li>• Dewatering would be to land, in a location where it would not enter waters.</li> <li>• Dewatering would be undertaken with landholder consent and sediment and erosion controls would be in place.</li> <li>• Implement appropriate measures for dewatering, such as disposal on site away from surface water features if it suitable for the disposal site (with reference to relevant guidelines); water treatment; or removal offsite for treatment or disposal. Any disposal on site must have landholder consent and be in a manner that minimises sedimentation and erosion.</li> <li>• Manage camp wastewater in accordance with health regulations and Environment Protection (Water Quality) Policy 2015.</li> <li>• Ensuring camp ablutions facilities are installed in accordance with the On-site Wastewater Systems Code and the South Australian Public Health (Wastewater) Regulations 2013.</li> <li>• Use licensed chemical and waste transporters.</li> <li>• Implement progressive rehabilitation of temporary construction areas.</li> <li>• Undertake progressive rehabilitation of temporary construction areas.</li> <li>• Rehabilitate areas of temporary disturbance by scarifying or ripping to alleviate compaction and replacing any previously stripped stockpiled topsoil and vegetation (or as agreed with relevant landholders).</li> <li>• Undertake monitoring during and after construction to ensure that sediment and erosion control measures are effective and undertake remediation if required.</li> </ul>

## 4.2. Groundwater

Table 3 outlines mitigation and management controls that will be implemented to avoid or minimise impacts to groundwater.

**Table 3: Groundwater mitigation and management controls**

Element	Detail
Environmental objectives	Minimise impacts to groundwater quality and quantity.
Legislation and other guidance	<ul style="list-style-type: none"> <li>• <i>Environment Protection Act 1993</i></li> <li>• <i>Landscape South Australia Act 2019</i></li> <li>• <i>Environment Protection Regulations 2009</i></li> <li>• <i>Environment Protection (Water Quality) Policy 2015</i></li> <li>• SA EPA guidelines               <ul style="list-style-type: none"> <li>- Stormwater Pollution Prevention Code of Practice for the Building and Construction Industry (1999)</li> </ul> </li> </ul>

Element	Detail
	<ul style="list-style-type: none"> <li>- EPA 080/16 Bunding and spill management</li> <li>- EPA 517/16 Stormwater management for wash bays</li> <li>- EPA 1093/18 Environmental management of dewatering during construction activities</li> <li>- EPA 1095/19 Construction Environmental Management Plan (CEMP)</li> </ul>
<b>Potential environmental impacts</b>	<ul style="list-style-type: none"> <li>• Changes to groundwater quantity or quality.</li> </ul>
<b>Mitigation and control measures</b>	<ul style="list-style-type: none"> <li>• Ensure that groundwater abstraction rates and volumes are within limits agreed with well owner.</li> <li>• Assess any new water supply wells to ensure they will not impact existing groundwater users.</li> <li>• Obtain appropriate permits for the construction of water supply wells where required.</li> <li>• Refer to Soil Erosion and Drainage Management above.</li> </ul>

### 4.3. Flora and Fauna

Mitigation and management controls for potential environmental impacts from construction on flora and fauna are described in Table 4.

**Table 4: Flora and fauna mitigation and management controls**

Element	Detail
<b>Environmental objectives</b>	Minimise adverse impacts to flora and fauna
<b>Legislation and other guidance</b>	<ul style="list-style-type: none"> <li>• <i>Environment Protection and Biodiversity Conservation Act 1999 (Cth)</i></li> <li>• <i>National Parks and Wildlife Act 1972</i></li> <li>• <i>Native Vegetation Act 1991</i></li> <li>• <i>Native Vegetation Regulations 2017</i></li> <li>• <i>Landscape South Australia Act 2019</i></li> <li>• <i>Electricity Principles of Vegetation Clearance) Regulations 2010</i></li> </ul>
<b>Potential environmental impacts</b>	<ul style="list-style-type: none"> <li>• Impacts to fauna and flora habitat and threatened ecological species from vegetation clearance.</li> <li>• Habitat fragmentation as a result of vegetation clearance.</li> <li>• Indirect impacts to fauna (e.g. habitat degradation, edge effects, loss of diversity, soil, dust, water quality, erosion,).</li> <li>• Disturbance to fauna (e.g. lighting, noise, vehicle collisions, entrapment, bird strike).</li> <li>• Increased predation and introduction or spread of weeds</li> <li>• Uncontrolled fire.</li> </ul>
<b>Mitigation and control measures</b>	<ul style="list-style-type: none"> <li>• Undertake detailed design to avoid traversing isolated patches of vegetation where possible (e.g. at the western end of the transmission line corridor).</li> <li>• Design the line to span across mature vegetation (with minimal clearance required) where feasible.</li> <li>• Design tracks to take the shortest route (e.g. short spur tracks off existing roads / tracks) and with as little impact as possible to native vegetation, existing land uses and landholders including following existing boundaries where possible.</li> <li>• Restrict tracks to the minimum width necessary to allow safe access (typically 5 m).</li> <li>• Restrict pads for tower assembly to the minimum size necessary.</li> <li>• Undertake pre-clearance surveys to 'micro-site' tower locations and other infrastructure to avoid occurrences of threatened plants or other significant features (e.g. active Malleefowl mounds).</li> <li>• Locate temporary worker camps in disturbed / cleared areas or in areas with limited native vegetation.</li> </ul>

Element	Detail
	<ul style="list-style-type: none"> <li>• Locate other temporary facilities (e.g. temporary laydown areas / staging sites) in disturbed areas or in areas with limited native vegetation as far as practicable, avoiding areas of habitat for Black-eared Miner.</li> <li>• Place construction camps near already disturbed areas where practicable and utilise lighting type that limits illumination away from the area.</li> <li>• Provide inductions to all contractors to ensure understanding of local and regional flora and fauna significance and sensitivities, construction method and work area restrictions.</li> <li>• Minimise vegetation clearance for conductor stringing tracks where possible subject to stringing method determined during detailed design.</li> <li>• Establish no go areas (flagged/fenced where required) to protect sensitive vegetation / habitats where appropriate.</li> <li>• Restrict vegetation disturbance, clearance or trimming to approved areas (as per NVC approval).</li> <li>• Minimise clearance of vegetation, particularly dense mallee habitats.</li> <li>• Roll or trim vegetation where feasible rather than complete removal</li> <li>• Retain groundcover and rootstock where possible (e.g. for the stringing access corridors).</li> <li>• Avoid removal of larger trees (e.g. trunk diameter over 30 cm) where possible.</li> <li>• Utilise areas where native vegetation is degraded or has been previously cleared in preference to clearing vegetation wherever practicable.</li> <li>• Use existing roads, tracks, fire breaks and other existing disturbed areas to minimise habitat removal wherever possible.</li> <li>• Offset vegetation clearance with a Significant Environmental Benefit in accordance with NVC approval.</li> <li>• Use wildlife handler where appropriate (e.g. when retrieving fauna from excavations or removing nests of threatened mallee birds in critical habitat during breeding season).</li> <li>• Regularly check any open excavations for trapped fauna or provide measures to allow their escape.</li> <li>• Restrict vehicle movements to defined tracks and work areas.</li> <li>• Implement speed limits on access tracks, particularly in key areas of mallee habitat, to reduce the risk of vehicle collisions with wildlife</li> <li>• Use dust suppression measures (e.g. water tankers) where required during construction.</li> <li>• Implement protocols for management of waste during construction to avoid attracting feral pest animals.</li> <li>• Undertake weed maintenance to ensure fuel load at the base of the towers is minimised.</li> <li>• Ensure that all equipment is fitted with appropriate firefighting equipment.</li> <li>• Maintain awareness of local seasonal restrictions, particularly regarding hot works during fire ban season</li> <li>• Restrict high risk fire activities during fire ban periods.</li> <li>• Restrict unauthorised public access to Project work area access tracks.</li> <li>• Install temporary fencing to prevent stock or large fauna entrapment in excavations that are to be left open where appropriate.</li> <li>• Implement and maintain Project work area fire tracks and fire breaks, if required, in accordance with fire management plan.</li> <li>• Rehabilitate or allow natural regeneration in areas of disturbance where not required after construction.</li> </ul>

#### 4.4. Weed and Pest Management

Mitigation and management controls for potential environmental impacts from construction on weeds and pests are described in Table 5.

Table 5: Weed and pest mitigation and management controls

Element	Detail
Environmental objectives	Prevent the introduction or spread weed and pest species
Legislation and other guidance	<ul style="list-style-type: none"> <li>• <i>Environment Protection and Biodiversity Conservation Act 1999 (Cth)</i></li> <li>• <i>Native Vegetation Act 1991</i></li> <li>• <i>Native Vegetation Regulations 2017</i></li> <li>• <i>Landscape South Australia Act 2019</i></li> <li>• Weed Control Handbook for Declared Plants in South Australia, July 2018 edition, PIRSA</li> </ul>
Potential environmental impacts	<ul style="list-style-type: none"> <li>• Spread of existing weeds or pests through Project construction activities</li> <li>• Establishment of new weeds</li> <li>• Increase in feral animals or increase in predation</li> </ul>
Mitigation and control measures	<ul style="list-style-type: none"> <li>• Undertake pre-construction inspection to identify any areas of weed infestation requiring specific management measures.</li> <li>• Provide inductions to all contractors to ensure understanding of local and regional flora and fauna significance and sensitivities, construction method and work area restrictions</li> <li>• Provide awareness training and site-specific training (if applicable) for all workers on site on weed and pest identification.</li> <li>• Provide awareness about key weed threats (e.g. Buffel Grass) included in induction programs.</li> <li>• Provide awareness about key potential threats (e.g. dieback from soil pathogens) included in induction programs.</li> <li>• Implement weed hygiene procedures such as vehicle wash-downs and inspections where appropriate.</li> <li>• Control weeds within the works area in accordance with the Landscape South Australia Act</li> <li>• Undertake targeted management of key threat species (e.g. weeds of national significance or declared weeds including the declared / alert weed Buffel Grass) in consultation with Landscape Management Board staff where required.</li> <li>• Undertake adaptive weed management, monitoring and control where required if weeds are detected, particularly following rainfall events and disturbance events.</li> <li>• Undertake adaptive pest management, monitoring and control where required, in consultation with Landscape Management Board staff and with consideration of regional conservation objectives.</li> <li>• Undertake adaptive pathogen management in the unlikely event that evidence that pathogens are detected.</li> <li>• Stockpiles monitored for weed outbreaks.</li> <li>• 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).</li> <li>• No-go zones established and vegetative material containing declared weeds would not be moved from the site (unless appropriate permits are in place).</li> <li>• Implement protocols for management of waste during construction to avoid attracting feral pest animals.</li> <li>• Undertake pest animal control in the Project area if ground disturbance encourages pest animal (e.g. rabbit) activity.</li> <li>• Implement fruit fly management protocols in accordance with PIRSA requirements.</li> </ul>

#### 4.5. Air Quality and Greenhouse Gas

Table 6 outlines mitigation and management controls that will be implemented to minimise impacts to air quality.



Table 6: Air quality mitigation and management controls

Element	Detail
Environmental objectives	Minimise impacts to air quality during construction works
Legislation and other guidance	<ul style="list-style-type: none"> <li>• <i>Environment Protection Act 1993 (SA)</i></li> <li>• <i>Environment Protection (Air Quality) Policy 2016 (SA)</i></li> <li>• <i>National Environment Protection (Ambient Air Quality) Measure (Ambient Air Quality NEPM) (2016) (Cth)</i></li> <li>• SA EPA Guidelines                             <ul style="list-style-type: none"> <li>- Evaluation distances for effective air quality and noise management (2019 version)</li> </ul> </li> <li>• <i>National Greenhouse and Energy Reporting Act 2007 (NGER Act) (Cth)</i></li> <li>• <i>Climate Change and Greenhouse Emissions Reduction Act 2007 (SA)</i></li> </ul>
Potential environmental impacts	<ul style="list-style-type: none"> <li>• Increased dust generation impacting sensitive receptors</li> <li>• Generation of greenhouse gases by construction of the Project</li> </ul>
Mitigation and control measures	<ul style="list-style-type: none"> <li>• Incorporate existing tracks into the design where possible to avoid construction of new access tracks, and reduce clearance footprint and associated soil disturbance.</li> <li>• Restrict the disturbance footprint to the minimum necessary to safely carry out the activities.</li> <li>• Sourcing of materials that have minimal embodied energy and environmental impact.</li> <li>• Provide awareness training and site-specific training (if applicable) for all workers on site for air quality issues and provide information on importance of management.</li> <li>• Implement dust suppression controls on unsealed roads, when required.</li> <li>• Implement dust suppression controls on disturbed land (construction) where required.</li> <li>• Implement dust suppression controls at mobile concrete batching plant locations, where required.</li> <li>• Limit planning construction activities to minimise the time that soils are exposed.</li> <li>• Provision of water carts to apply water or other dust suppressants as and when required within areas where sensitive receptors are located.</li> <li>• Watering or stabilisation of exposed surfaces to minimise wind erosion.</li> <li>• Implement maximum speed limits on access roads and work areas.</li> <li>• Maintain equipment to ensure emissions control devices are functioning correctly.</li> <li>• Use emissions control equipment on fixed and mobile plant and equipment.</li> <li>• Reducing emissions through the sourcing of local materials where practicable.</li> <li>• Turn off vehicles/plant and machinery when not in use.</li> <li>• Develop a complaint register and corrective action program.</li> <li>• Undertake and ongoing community / landholder engagement process.</li> <li>• Community liaison and mechanism for registering and resolving complaints.</li> <li>• Visual monitoring of dust generation.</li> <li>• Implement progressive rehabilitation of temporary construction areas.</li> <li>• Rehabilitate areas of temporary disturbance by scarifying or ripping to alleviate compaction and replacing any previously stripped stockpiled topsoil and vegetation (or as agreed with relevant landholders) (also see Section 4.1).</li> <li>• Monitor rehabilitation of disturbed areas to ensure success.</li> <li>•</li> </ul>

## 4.6. Noise and Vibration

Table 7 outlines mitigation and management controls that will be implemented to minimise impacts from noise and vibration.

Table 7: Noise and vibration mitigation and management controls

Element	Detail
Environmental objectives	Minimise noise and vibration during construction
Legislation and other guidance	<ul style="list-style-type: none"> <li>• <i>Environment Protection Act 1993 (SA)</i></li> <li>• <i>Environment Protection (Noise) Policy 2007</i></li> </ul>
Potential environmental impacts	<ul style="list-style-type: none"> <li>• Increase in noise and vibration causing nuisance to residences</li> <li>• Increase in noise and vibration impacting fauna</li> </ul>
Mitigation and control measures	<ul style="list-style-type: none"> <li>• Refinement of construction methodology (i.e. selection of alternative equipment) if works need to occur within close proximity of receivers.</li> <li>• Locate noisy plant, access roads and site compounds as far as practicable from receptors.</li> <li>• Complaints register and corrective action program.</li> <li>• Community consultation process, particularly with landholders.</li> <li>• Planning of noisier construction works taking account of distance to receptor.</li> <li>• Consult with landowners if noise generating activities in the vicinity of residences are planned outside normal construction hours.</li> <li>• Affected receptors along haulage routes to be consulted in advance of works.</li> <li>• Maintain planned works in daytime hours to minimise disruption to amenity.</li> <li>• Maintain minimum distance of the helicopters from the ground surface to at least 50 m, where practical.</li> <li>• Select processes and equipment that generate lower noise levels where appropriate.</li> <li>• Regular maintenance of equipment.</li> <li>• Shutting or throttling down equipment that is used intermittently when it is not in use.</li> <li>• Construction of stand-alone accommodation camps away from existing receptors, unless otherwise agreed.</li> <li>• Truck movements limited to designated routes.</li> <li>• Truck movements along uneven surfaces will be restricted to minimum speeds near sensitive receptors and built into the traffic management plan.</li> <li>• Implement controls to minimise amenity impacts of helicopter use on identified sensitive residential receptors (e.g. at Cooltong) including: <ul style="list-style-type: none"> <li>- effective stakeholder communication with sensitive residential receptors</li> <li>- consideration of nearest receptor during planning / timing of construction works.</li> </ul> </li> </ul>

## 4.7. Traffic

During construction, there will be an increase in movements (including heavy vehicles) and volume of construction traffic which could result in potential impacts on the existing transport network, damage to road pavement and impacts on the safety and efficiency of the local road network.

ElectraNet and the contractor will develop and implement a specific Traffic Management Plan (TMP) prior to construction. General traffic mitigation and management controls for construction of the Project are described in Table 8.

Table 8: Traffic mitigation and management controls

Element	Detail
Environmental objectives	Minimise disruption to traffic movements, local roads and road users
Legislation and other guidance	<ul style="list-style-type: none"> <li>• Murray and Mallee Region Plan (2011)</li> <li>• Mid North Region Plan</li> <li>• AUSTRROADS Guide to Road Design</li> <li>• AUSTRROADS Guide to Traffic Management</li> <li>• Highway Capacity Manual (HCM) Volume 2</li> </ul>

Element	Detail
	<ul style="list-style-type: none"> <li>• Heavy Vehicle National Law</li> </ul>
<p><b>Potential environmental impacts</b></p>	<ul style="list-style-type: none"> <li>• Disruption to existing traffic movements</li> <li>• Damage to road pavements</li> <li>• Impacts to road safety</li> </ul>
<p><b>Mitigation and control measures</b></p>	<ul style="list-style-type: none"> <li>• Design and construction of transmission line at crossings of DIT roads in accordance with DIT requirements.</li> <li>• Intersections with the Goyder Highway maintained / upgraded to appropriate standards established in consultation with DIT.</li> <li>• BAR and BAL treatments (if required) designed as per <i>The Guide to Traffic Management Part 6: Intersections, Interchanges and Crossings</i>.</li> <li>• Development of a Traffic Management Plan prior to construction including:             <ul style="list-style-type: none"> <li>- driver fatigue management plan and policies.</li> <li>- objectives to increase OH&amp;S understanding in relation to fatigue, vehicle operation in public areas and obligation to the general public</li> <li>- operating standards for work and rest</li> <li>- designated speed limits and routes</li> <li>- appropriate constraints on travel at dawn and dusk</li> <li>- vehicles restricted to tracks, and</li> <li>- effective signage where potential ecological constraints exist to raise awareness and further control speeds in these areas.</li> </ul> </li> <li>• Upgrade required routes to suit restricted access vehicles, and intersections to meet the requirements of the design vehicle.</li> <li>• Implement area-specific and site inductions and training.</li> <li>• Consult prior to construction with the appropriate roads authority regarding works which may affect roads or traffic.</li> <li>• Develop a construction phase pavement management plan which will include:             <ul style="list-style-type: none"> <li>- Undertake road pre-condition surveys on construction haulage routes prior to the commencement of construction in consultation with relevant councils and road owners</li> <li>- identification of existing conditions and mechanisms to repair damage to the road network caused by construction vehicles associated with the Project; and</li> <li>- condition surveys undertaken following completion of construction. Any damage as a result of Project construction vehicles would be repaired following the completion of construction (or as needed through the construction period to maintain safe road conditions).</li> </ul> </li> <li>• Implement procedures for oversize loads including:             <ul style="list-style-type: none"> <li>- scheduling of oversize deliveries to arrive outside peak hours and potential conflict times with harvest seasons where possible</li> <li>- avoiding peak traffic periods to minimise traffic delay to the public where possible</li> <li>- liaising with local schools to discuss any impacts to bus routes due to traffic movements. Where possible, construction traffic to be timed to avoid school bus services.</li> </ul> </li> <li>• Obtain permits from the National Heavy Vehicle Regulator (NHVR) where required to provide oversized and overmass vehicles access during construction.</li> <li>• Ensure all vehicles, plant and earthmoving equipment are inspected and clear of significant soil/vegetative matter etc. prior to site mobilisation and moving between properties</li> <li>• Provide access to properties for emergency vehicles at all times</li> <li>• Maintain access to properties or consult alternative arrangements with landholders</li> </ul>

## 4.8. Local Community

Table 9 describes the mitigation and management controls that will be implemented to minimise impacts to the local community that are not already covered in Sections 4.1 to 4.7.

**Table 9: Local community impacts mitigation and management controls**

Element	Detail
<b>Environmental objectives</b>	Minimise impacts from construction activities of the Project to landowners and local community.
<b>Legislation and other guidance</b>	<ul style="list-style-type: none"> <li>• <i>Environment Protection Act 1993</i></li> <li>• <i>Native Vegetation Act 1991</i></li> <li>• <i>Landscape South Australia Act 2019</i></li> <li>• </li> </ul>
<b>Potential environmental impacts</b>	<ul style="list-style-type: none"> <li>• Disruption to usual landholder operations</li> <li>• Potential loss of amenity of landholders</li> <li>• Loss of access or damage to property access tracks</li> <li>• Injury to local community</li> <li>• Impacts to social cohesion from accommodation / presence of construction workers</li> </ul>
<b>Mitigation and control measures</b>	<ul style="list-style-type: none"> <li>• Provide access to properties for emergency vehicles at all times</li> <li>• Maintain access to properties or consult alternative arrangements with landholders.</li> <li>• Restrict unauthorised public access to Project access tracks.</li> <li>• Consult with directly affected landowners 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.</li> <li>• 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).</li> <li>• If full closures of public roads / access tracks are required, communicate this with potentially affected landholders to allow access through construction areas where possible or arrange alternate routes.</li> <li>• 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.</li> <li>• ElectraNet employees, contractors and visitors at ElectraNet workplaces and any other locations where activities are undertaken by ElectraNet representatives or on behalf of ElectraNet are subject to the ElectraNet Health, Safety, Environment &amp; Sustainability Policy. An aim of this internal policy is to 'protect and respect the natural and cultural environment in the communities in which [ElectraNet operates]' (ElectraNet 2019b).</li> <li>• Design guidelines for all construction areas will ensure that lighting impacts are contained while still meeting health and safety requirements.</li> <li>• Dewatering would be undertaken with landholder consent and sediment and erosion controls would be in place.</li> </ul>

## 5. Data Sources and References

ElectraNet (2021). *Environmental Impact Statement for the South Australian portion of Project EnergyConnect*. Prepared by ElectraNet March 2021.

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SA EPA (2018) *Water Quality Guideline. Environmental management of dewatering during construction activities*. EPA 1093/18. Accessed at [http://report.epa.sa.gov.au/files/12275\\_guide\\_dewatering.pdf](http://report.epa.sa.gov.au/files/12275_guide_dewatering.pdf)

SA EPA (2019). Evaluation distances of effective air quality and noise management. Accessed at [https://www.epa.sa.gov.au/environmental\\_info/air\\_quality/air\\_quality](https://www.epa.sa.gov.au/environmental_info/air_quality/air_quality)

State Planning Commission (2019) *Guidelines for the preparation of an Environmental Impact Statement, EnergyConnect SA-NSW Interconnector 330 kV Electricity Transmission Line Robertstown – SA/NSW Border*, State Planning Commission, Department of Planning, Transport and Infrastructure.