Appendix J

Draft MNES Management Plan

Calvale to Calliope River Transmission Line Reinforcement Project

Matters of National Environmental Significance (MNES) Management Plan

Draft

February 2026

Calvale to Calliope River Transmission Line Reinforcement Project

Matters of National Environmental Significance (MNES) Management Plan

Draft

Prepared by
Umwelt (Australia) Pty Limited

On behalf of
Queensland Electricity Transmission Corporation Limited trading as Powerlink Queensland under ABN 82 078 849 233

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V2				

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1.0 Introduction

This management plan has been prepared for the Calvale to Calliope River Transmission Line Reinforcement Project (the Project). The primary purpose of the Project is the reinforcement of the Gladstone transmission network to support decarbonisation in the region. The Project also seeks to increase network capacity and reliability to service the growing renewable energy industry in this area. The Project extends from the Calvale Substation, 10 kilometres (km) east of Biloela to the Calliope River Substation, 2 km north of Clinton, near Gladstone, Queensland.

A referral for the Project was made under the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) on 6 January 2025. Following a period of public consultation between 6 January 2025 and 20 January 2025, on 4 February 2025, a delegate of the Commonwealth Minister for the Environment and Water determined that under the EPBC Act, the Project was a controlled action requiring assessment by Public Environment Report (PER) for several Matters of National Environmental Significance (MNES). As part of PER guidance, species specific management is required to support the assessment of impacts and this management plan details these management measures for all MNES potentially impacted by the Project.

1.1 Purpose and Scope

This MNES Management Plan (MMP) outlines how potential impacts to MNES will be avoided, minimised, managed, and monitored, and sets out clear, auditable commitments in line with the Environmental Management Plan Guidelines (Department of Climate Change Energy, Environment and Water 2024).

Species and communities with a likely significant impact covered in this MMP are:

- Semi-evergreen vine thickets of the Brigalow Belt (North and South) and Nandewar Bioregions (SEVT) TEC
- Subtropical eucalypt floodplain forest and woodland of the New South Wales North Coast and South East Queensland bioregions TEC
- *Cycas megacarpa*
- *Samadera bidwillii*
- koala (*Phascolarctos cinereus*)
- greater glider (southern and central) (*Petauroides volans*)
- yellow-bellied glider (south-eastern) (*Petaurus australis australis*)
- collared delma (*Delma torquata*).

In addition, MNES species which are unlikely to be significantly impacted but require species specific mitigations are also detailed in this document. Species include:

- Australian painted snipe (*Rostratula australis*)
- black-breasted button quail (*Turnix melanogaster*)

- grey-headed flying-fox (*Pteropus poliocephalus*)
- Latham's snipe (*Gallinago hardwickii*)
- migratory shorebirds
- northern quoll (*Dasyurus hallucatus*)
- painted honeyeater (*Grantiella picta*)
- squatter pigeon (southern) (*Geophaps scripta scripta*)
- water mouse (*Xeromys myoides*)
- white-throated needletail (*Hirundapus caudacutus*).

1.2 Project Description

A summary of the Project is provided in **Table 1.1** and displayed on **Figure 1.1**. For a detailed description of the Project and associated activities refer to Chapter 2 of the draft Public Environment Report.

Table 1.1 Project Description Summarised

Aspect	Detail
Project Name	Calvale to Calliope River Transmission Line Reinforcement Project
Proponent	Powerlink Queensland (Powerlink)
Purpose	Reinforcement of the Gladstone transmission network to support decarbonisation and increase network capacity
Location	From Calvale Substation (10 km east of Biloela) to Calliope River Substation (2 km north of Clinton, Gladstone), QLD
Length	87 km
Corridor Width	60 m
Project Area	~14,321 ha (800 m each side of line in Sections A–D, 100 m around Section E and laydown area)
Sections	A: 3.5 km (Calvale Substation); B: 51.5 km; C: 16 km; D: 13.5 km; E: 2 km (Calliope River Substation)
Key Components	• Double circuit 275 kV transmission line • Expansion of Calliope River Substation • Grid connection at both substations
Transmission Towers	188 self-supporting lattice steel towers
Tower Pads	40 m x 40 m (low risk), 50 m x 50 m to 60 m x 70 m (high risk/sites with significant cut/fill)
Access Tracks	Max. 20 m wide; pull-up bays (8 x 25 m) in steep areas
Laydown Areas	Up to 150 m x 300 m, located adjacent to substations and along alignment
Batching Plants	Up to 4, located strategically along alignment

Aspect	Detail
Easements	Mostly within existing easements, new/widened easements in some sections (notably Section C)
Construction Activities	• Site prep, boundary set-out • Site office, amenities, washdown • Pre-clearance and vegetation clearing • Access track upgrade/construction • Gates, cattle grids, fencing • Earthworks for pads, brake/winch sites • Laydown/batch plant setup • Drilling, tower foundation set/pour • Tower assembly/erection • Stringing (conventional/aerial) • Rehabilitation
Substation Works	Expansion of Calliope River Substation (civil works, drainage, cable trenches, earthing, new diameters, busbar extension, OPGW reconfiguration, up to 2 synchronous condensers, helipad relocation)
Materials	Water (dust suppression, batching), quarry materials (tracks, foundations), concrete, diesel/unleaded petrol
Ancillary Infrastructure	Mobile batching plants, water extraction sites, brake/winch sites, mobile site office
Operation & Maintenance	• Scheduled inspections (every 2–4 years) • Vegetation management (mechanical, hand, chemical) • Access track maintenance • Substation maintenance/refurbishment (every 15 years)
Decommissioning	• Removal/dismantling of line and substations at end of life (50 years typical) • Rehabilitation/remediation of disturbed areas • Decommissioning Management Plan to be prepared prior to works
Timing	• Construction start: June 2026 • Operations: End 2028 • Operational life: Up to 50 years
Alternatives Considered	• No alternatives (not feasible due to load shedding risk) • Alternative routes (northern option in Section C selected for lower network risk and environmental impact) • Co-location with existing easements preferred to minimise new disturbance
Environmental Design Features	Erosion/sediment control, stormwater management, minimised clearing, spanning of sensitive areas, progressive rehabilitation

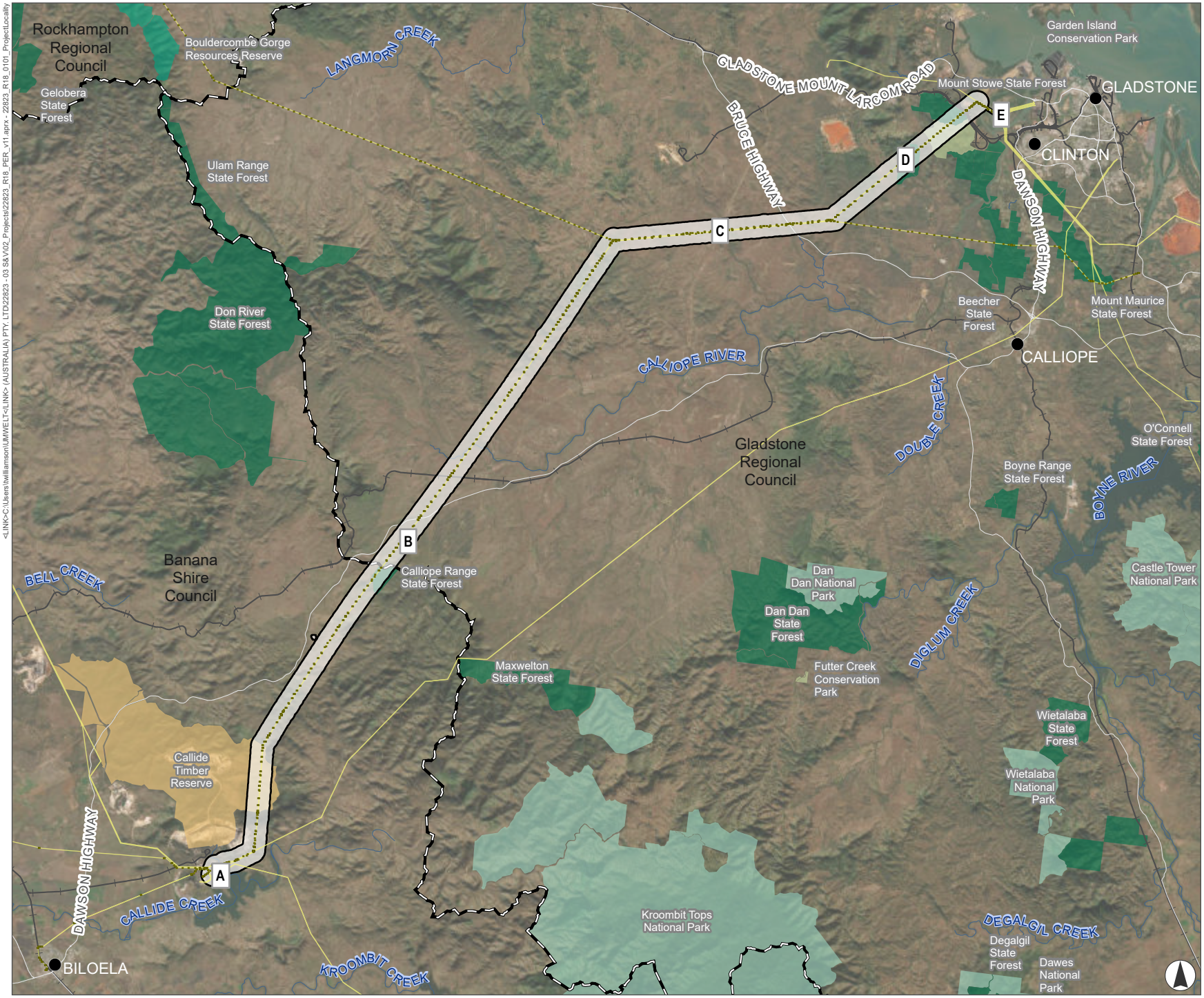


FIGURE 1.1
Project Locality

Legend

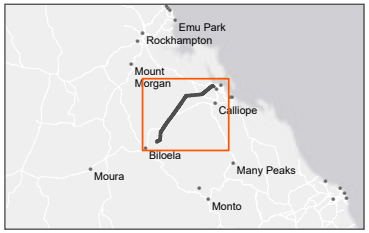
- Town
- Roads
- Railway
- Watercourses
- Local Government Area (LGA)
- Project Area

Protected Areas

- Conservation Park
- National Park
- Resources Reserve
- State Forest
- Timber Reserve

Existing Transmission Line and Association Infrastructure

- Existing Tower
- Existing Feeder



0 5 10

Kilometres

Scale 1:375,000 at A4
GDA 1994 MGA Zone 56

umwelt

Image Source: ESRI Basemap (2025) | **Data Source:** Queensland D of Resources (2025)

1.3 Relationship to Other Plans

The MMP is one of several plans that outline mitigation measures and controls for the Project. Additional documents that should be read in conjunction with this MMP include:

- Powerlink's overarching Environmental Management Plan (EMP) which includes actions to limit and reduce the potential impacts on MNES and biodiversity across the life of the Project.
- Environmental annexure prepared by Powerlink to support the Construction phase.
- Environmental Work Plan (EWP) prepared by Powerlink and updated as a live spatial document to inform the Construction Environmental Management Plan (CEMP) (to be developed by the contractor). This document will establish the baseline requirements for environmental management during construction of the Project.
- Draft *Cycas megacarpa* Translocation Management Plan (CTMP) has been prepared that outlines the proposed translocation and associated management measures necessary to achieve successful translocation of *Cycas megacarpa*.
- Bushfire Management Plan (BMP) will be prepared based on the Powerlink EMP and will be implemented to minimise the risk of unexpected fire as a result of construction activities. This plan will be managed in accordance with the EWP and environmental annexure being prepared by Powerlink.
- Rehabilitation Management Plan (RMP) based on the Powerlink EMP detailing rehabilitation specifications that provide a framework outlining how the rehabilitation will be managed during the construction phase, will be prepared.
- Draft Water Quality Management Plan (WQMP) has been prepared to protect surrounding waterways from indirect impacts of the Project.
- Erosion and Sediment Control Plan (ESCP) will be prepared based on the Powerlink EMP and standards within the International Erosion Control Association (IECA) as part of the CEMP to establish a framework for the management of drainage, erosion and sedimentation through the development of the Project's detailed design and construction phases.
- Offset Management Plan (OMP) will be prepared based on the Offset Strategy, to establish how the designated offset areas will be protected, managed and enhanced, in accordance with Project approvals.

1.4 Structure of the MMP

This MMP includes:

- **Section 2.0**: Legislative Context
- **Section 3.0**: MNES Values and Impact Summary
- **Section 4.0**: Management Framework
- **Section 5.0**: Avoidance, Mitigation and Construction Monitoring Measures
- **Section 6.0**: Monitoring
- **Section 7.0**: Risk Management Framework
- **Section 8.0**: Responsibilities, Training and Reporting
- **Appendix A**: Unexpected Finds Protocol.

2.0 Legislative Context

2.1 Commonwealth Legislation

2.1.1 Environment Protection and Biodiversity Conservation Act 1999

The Project has been referred and assessed under the EPBC Act due to its potential impacts on MNES, including listed threatened species, ecological communities and Great Barrier Reef values. The Project was determined to be a controlled action on 4 February 2025 and is subject to approval conditions issued by the Commonwealth Minister for the Environment and Water.

This MMP has been developed in accordance with the Department of Climate Change, Energy, the Environment and Water (DCCEEW) Environmental Management Plan Guidelines (Department of Climate Change Energy, Environment and Water 2024b). The MMP must be approved by the Minister prior to construction and be implemented for the duration of the approval.

Key requirements under the EPBC Act include:

- Avoidance, minimisation, and management of direct and indirect impacts to MNES during all phases of the Project (construction, operation, decommissioning).
- Implementation of monitoring, reporting, and adaptive management to ensure compliance with approval conditions and achievement of environmental outcomes.
- Notification and reporting of any non-compliance, incidents, or exceedance of approved disturbance limits to DCCEEW within specified timeframes.
- Incorporation of relevant MNES Conservation Advice, recovery plans, and threat abatement plans for listed threatened species and ecological communities.

2.2 State Legislation

2.2.1 Queensland Nature Conservation Act 1992

The Project must comply with the *Nature Conservation Act 1992* (NC Act), which provides for the protection of native wildlife and their habitats in Queensland. This includes requirements for protected plant permits, fauna spotter-catcher protocols, and compliance with relevant conservation plans (e.g., Koala Conservation Plan).

2.2.2 Queensland Environmental Protection Act 1994

The *Environmental Protection Act 1994* (EP Act) regulates activities that may cause environmental harm, including requirements for environmental authorities, management of contaminated land, and implementation of environmental protection policies.

2.2.3 *Biosecurity Act 2014*

The *Biosecurity Act 2014* requires the management of declared weeds and pest animals, implementation of weed hygiene protocols, and prevention of the spread of invasive species during all Project phases.

2.2.4 *Vegetation Management Act 1999*

The Project must comply with the *Vegetation Management Act 1999* (VM Act), which regulates the clearing of native vegetation in Queensland, including requirements for permits, offsets, and adherence to regional ecosystem mapping.

2.3 Local Government

The Project traverses the Gladstone Regional and Banana Shire Local Government Areas. Where relevant, the Project will comply with local planning schemes, development approvals, and local environmental requirements.

2.4 Other Relevant Approvals and Guidelines

- **Environmental Management Plan Guidelines (Commonwealth of Australia 2014):** This MMP has been prepared in accordance with these guidelines, ensuring that management measures are specific, measurable, achievable, relevant, and time-bound (SMART), and that adaptive management principles are applied.
- **Relevant Recovery Plans and Conservation Advice:** The MMP incorporates requirements and recommendations from approved MNES Conservation Advice, recovery plans, and threat abatement plans for all listed threatened species and ecological communities potentially impacted by the Project.
- **Other Approvals:** The Project may require additional approvals or permits under Commonwealth and State legislation, or local plans, including waterway barrier works, cultural heritage management, and landholder agreements.

3.0 MNES Values and Impact Summary

Significant Impact Assessments (SIA) have been undertaken in accordance with the *Significant Impact Guidelines 1.1 – MNES* (Department of the Environment 2013) for listed TECs, threatened and migratory species that were identified as known, or having a high or moderate potential of occurring within the Project Area. As part of the SIA assessment relevant information from Approved MNES Conservation Advice, MNES Listing Advice, the SPRAT database, National Recovery Plans and peer reviewed journal articles have been utilised to establish conclusions.

As part of the assessment, Significant Residual Impacts (SRIs) were noted for a number of MNES due to direct and indirect impacts that are associated with Project activities. These species are the focus of the MMP and are listed in **Table 3.1**. The species that were impact assessed but did not result in an SRI are outlined in **Table 3.2**. Mitigation measures relevant to these species are addressed in **Section 5.3** for each management objective, where relevant.

Significant impacts were not identified for the Great Barrier Reef World Heritage Area, Great Barrier Reef National Heritage Place and the environment of the Greater Barrier Reef Marine Park through the application of management and mitigation measures identified in Chapter 7 and the MMP particularly those related to water quality.

Table 3.1 MNES Values: Significant Residual Impact

Value	EPBC Act Status
Threatened Ecological Community	
Semi-evergreen vine thicket of the Brigalow Belt (North and South) and Nandewar Bioregions threatened ecological community (SEVT)	Endangered
Subtropical Eucalypt Floodplain Forest and Woodland of the New South Wales North Coast and South East Queensland Bioregions threatened ecological community (Subtropical Eucalypt Floodplain Forest and Woodland)	Endangered
Flora	
Cycas megacarpa	Endangered
Samadera bidwillii	Vulnerable
Fauna	
Koala (*Phascolarctos cinereus*)	Endangered
Greater glider (southern and central) (*Petauroides volans*)	Endangered
Yellow-bellied glider (south-eastern) (*Petaurus australis australis*)	Vulnerable
Collared delma (*Delma torquata*)	Vulnerable

Table 3.2 MNES Values: No Significant Residual Impact

Value	EPBC Act Status
Threatened Ecological Community	
Subtropical and Temperate Coastal Saltmarsh (Coastal Saltmarsh TEC)	Vulnerable
Flora	
Atalaya collina	Endangered
Bertya opponens	Vulnerable
Cossinia australiana	Endangered
Polianthion minutiflorum	Vulnerable
Fauna	
Australian painted snipe (*Rostratula australis*)	Endangered
Loggerhead turtle (*Caretta caretta*)	Endangered
Northern quoll	Endangered
Black-breasted button quail (*Turnix melanogaster*)	Vulnerable
Flatback turtle (*Natator depressus*)	Vulnerable
Green turtle (*Chelonia mydas*)	Vulnerable
Grey-headed flying-fox	Vulnerable
Latham's snipe	Vulnerable
Painted honeyeater	Vulnerable
Squatter pigeon (southern)	Vulnerable
Water mouse	Vulnerable
White-throated needletail	Vulnerable
Threatened Migratory Shorebirds	
Common greenshank (*Tringa nebularia*)	Endangered, Migratory
Curlew sandpiper (*Calidris ferruginea*)	Critically Endangered, Migratory
Eastern curlew (*Numenius madagascariensis*)	Critically Endangered, Migratory
Lesser sand plover (*Charadrius mongolus*)	Endangered, Migratory
Nunivak bar-tailed godwit (*Limosa lapponica baueri*)	Endangered, Migratory
Great knot (*Calidris tenuirostris*)	Vulnerable, Migratory
Greater sand plover (*Anarhynchus leschenaultii*)	Vulnerable, Migratory
Red knot (*Calidris canutus*)	Vulnerable, Migratory
Ruddy turnstone (*Arenaria interpres*)	Vulnerable, Migratory
Sharp-tailed sandpiper (*Calidris acuminata*)	Vulnerable, Migratory
Terek sandpiper (*Xenus cinereus*)	Vulnerable, Migratory
Migratory Species	
Eastern osprey (*Pandion haliaetus*)	Migratory
Fork-tailed swift (*Apus pacificus*)	Migratory
Oriental cuckoo (*Cuculus optatus*)	Migratory

Value	EPBC Act Status
Bar-tailed godwit (*Limosa lapponica*)	Migratory
Common sandpiper (*Actitis hypoleucos*)	Migratory
Grey-tailed tattler (*Tringa brevipes*)	Migratory
Marsh sandpiper (*Tringa stagnatilis*)	Migratory
Pacific golden plover (*Pluvialis fulva*)	Migratory
Whimbrel (*Numenius phaeopus*)	Migratory

3.1 Significant MNES Values

3.1.1 Semi Evergreen Vine Thicket (SEVT)

Photo 3.1 SEVT Observed During Field Surveys

Status	Endangered (EPBC Act)
Description	SEVT is a dry subtropical rainforest community with high plant diversity, including microphyll (small-leaved) trees and emergent bottle trees
Habitat	Occurs on slopes, gullies, and undulating terrain, often on fertile soils; dense canopy with sparse ground cover
Distribution	SEVT TEC extends from north-west of Townsville in Queensland to central northern New South Wales, mostly within the Brigalow Belt North and South IBRA bioregion (Department of the Environment 2001). The Distribution of this TEC overlaps with the Project Area
Key Threats	Clearing, fragmentation, fire, weed invasion (especially Lantana), and grazing
Project Findings	14 patches of RE 11.11.18 (remnant/regrowth) confirmed in the Field Survey Extent

3.1.2 Subtropical Eucalypt Floodplain Forest and Woodland

Photo 3.2 **Subtropical Eucalypt Floodplain Forest and Woodland Observed During Field Surveys**

Status	Endangered (EPBC Act)
Description	Tall eucalypt woodland or open forest on alluvial floodplains, with a canopy dominated by Eucalyptus, Corymbia, Angophora, or Lophostemon species
Habitat	Alluvial landforms (floodplains, riparian zones, flats, terraces); canopy cover >20%; often with a sparse to dense shrub layer
Distribution	This TEC comprises floodplain forest and woodland of the NSW North Coast and SEQ IBRA bioregions, extending onto Curtis Island in the Brigalow Belt North IBRA bioregion. It stretches from near Raymond Terrace (north of Newcastle, NSW) in the south to just north of Gladstone, Queensland (Department of Climate Change, Energy, the Environment and Water 2022). The Distribution of this TEC overlaps with the Project Area
Key Threats	Clearing, fragmentation, altered hydrology, weed invasion, and fire
Project Findings	9 patches of RE 12.3.3 confirmed in the Field Survey Extent

3.1.3 *Cycas megacarpa*

Photo 3.3 *Cycas megacarpa*: Identified During the Umwelt Field Survey Program

Status	Endangered (EPBC Act)
Description	*Cycas megacarpa* is a slow-growing cycad endemic to Queensland. It is dioecious (separate male and female plants) and produces large seeds
Habitat	Eucalypt woodland, vine thicket, and pasture; prefers well-drained, often stony soils on undulating or hilly terrain
Distribution	South-east Queensland, from Woolooga to Bouldercombe
Key Threats	Land clearing, illegal collection, altered fire regimes, and weed invasion
Project Findings	~5,296 individuals mapped in the Project Area; 1,032 within the Disturbance Footprint, and 400 directly impacted

3.1.4 *Samadera bidwillii*

Photo 3.4 ***Samadera bidwillii*: Identified During the Umwelt Field Survey Program**

Status	Vulnerable (EPBC Act)
Description	*Samadera bidwillii* is a rare, root-suckering shrub or small tree endemic to Queensland. It is slow-growing, with low seed production, and propagates mainly via root suckering
Habitat	Eucalypt woodland, often in ecotones and adjacent to watercourses; prefers a range of soils and can occur in both remnant and regrowth vegetation
Distribution	Endemic to Queensland, with scattered populations
Key Threats	Clearing, fire, weed invasion, low genetic diversity, and habitat fragmentation
Project Findings	541 stems recorded the Disturbance Footprint in Section B (Callide Timber Reserve); all individuals in remnant RE 11.10.13

3.1.5 Koala (*Phascolarctos cinereus*)

Photo 3.5 Koala: Identified During the Umwelt Field Survey Program

Status	Endangered (EPBC Act)
Description	The Koala is a specialist folivore, feeding primarily on the leaves of *Eucalyptus*, *Corymbia*, and *Lophostemon* species. It is mostly solitary and spends most of its time in trees
Habitat	Eucalypt forests and woodlands, especially those with locally important food and shelter trees. Also uses riparian and climate refugia habitats
Distribution	Eastern Australia, including Queensland, New South Wales, and the ACT
Key Threats	Habitat loss, fragmentation, vehicle strike, dog attack, disease (Chlamydia, Koala Retrovirus), and fire
Project Findings	One individual observed in Section B; suitable breeding and foraging habitat present throughout the Project Area

3.1.6 Greater Glider (Southern and Central) (*Petauroides volans*)

Photo 3.6 Greater Glider: Image Provided by DCCEEW

Status	Endangered (EPBC Act)
Description	The Greater Glider is a large, nocturnal, gliding marsupial. It is highly dependent on mature eucalypt forests with abundant tree hollows for denning and a diverse canopy for foraging
Habitat	Prefers tall, moist eucalypt forests and woodlands, especially those with a high density of hollow-bearing trees
Distribution	Eastern Australia, including the Brigalow Belt and South East Queensland bioregions
Key Threats	Habitat loss, fragmentation and degradation, fire, loss of and reduced recruitment of hollow-bearing trees, reduced foraging trees, reduced forest structural complexity
Project Findings	Not detected in field surveys, but suitable habitat is present throughout the Project Area, and the species is considered highly likely to occur

3.1.7 Yellow-bellied Glider (south-eastern) (*Petaurus australis australis*)

Photo 3.7 Yellow-bellied Glider: Image Provided by iNaturalist

Status	Vulnerable (EPBC Act)
Description	The Yellow-bellied Glider is a large, nocturnal, social marsupial that glides between trees. It feeds on sap, nectar, pollen, and insects, and is highly vocal
Habitat	Prefers mature, floristically diverse eucalypt forests and woodlands, especially those with a high proportion of winter-flowering and smooth-barked eucalypts. Requires large home ranges (50–65 ha) and tree hollows for denning
Distribution	Eastern Australia, including the Brigalow Belt and South East Queensland bioregions
Key Threats	Habitat loss and fragmentation, fire, loss of hollow-bearing trees, and reduced floristic diversity
Project Findings	Not detected during field surveys, but suitable habitat is present throughout the Project Area. The species is considered highly likely to occur

3.1.8 Collared Delma (*Delma torquata*)

Photo 3.8 Collared Delma: Identified During the Umwelt Field Survey Program

Status	Vulnerable (EPBC Act)
Description	The Collared Delma is a small, cryptic, legless lizard that shelters under rocks, logs, and leaf litter. It is diurnal and ground-dwelling
Habitat	Open eucalypt woodland with abundant ground cover (rocks, logs, leaf litter), especially on land zones 3, 9, and 10
Distribution	Endemic to Queensland, with a fragmented distribution from Brisbane to the Blackdown Tablelands and Roma region
Key Threats	Clearing, ground disturbance, weed invasion (especially Lantana), fire, and predation by feral cats and foxes
Project Findings	Two individuals recorded in Section B; suitable habitat present in ironbark woodland

3.2 Potential Impacts

This section of the MMP describes the potential impacts that may occur to the prescribed MNES (listed in **Section 3.1**) as a result of Project activities as detailed in the Chapter 8 of the draft PER. This assessment summarises the direct and indirect impacts that have the potential to occur throughout the duration of the Project on MNES values, which include:

- loss of MNES habitat
- direct injury and/or mortality of MNES individuals
- degradation of MNES habitat through dust, contamination, erosion and sedimentation
- introduction and spread of invasive weeds and/or feral fauna species
- degradation of MNES habitat through fragmentation and loss of connectivity
- alteration of fire regimes
- disturbance to wildlife through increased light, noise and vibration pollution
- disturbance of surface water bodies and streams from construction activities.

These potential impacts to MNES are not universal, with some species more susceptible to the potential impacts than others. In recognition of this, the potential impacts to each MNES as identified by the relevant Conservation Advice, recovery plans and threats abatement plans is outlined in **Table 3.3**.

Table 3.3 Summary of Potential Impacts to MNES

Potential Impact	Impact Type	MNES Significantly Impacted	Impact Description	Applicable Project Phase
Loss of MNES habitat	Direct	All MNES	Removal of vegetation that provides habitat used for the life-cycle requirements of threatened species and ecological communities	Construction
Injury and mortality of MNES species by direct interaction	Direct	All MNES	Death or injury to MNES species during construction activities	Construction and Decommissioning
Habitat fragmentation	Indirect	All MNES	Reduction in ability for MNES species to disperse to adjacent habitat and move safely through the landscape	Construction, Operation and Maintenance and Decommissioning
Introduction and spread of invasive flora	Indirect	All TECs, *Cycas megacarpa*, *Samadera bidwillii*, collared delma	Habitat degradation and competition for resources	Construction, Operation and Maintenance and Decommissioning
Introduction and spread of invasive fauna	Indirect	Koala, greater glider, yellow-bellied glider, collared delma	Injury or mortality due to predation by European foxes, feral dogs and cats and cane toads	Construction, Operation and Maintenance and Decommissioning
Hydrological change	Indirect	Eucalypt floodplain forest and woodland, *Samadera bidwillii*,	Earthworks and access tracks may alter surface water flow, affecting wetland and riparian systems	Construction, Operation and Maintenance and Decommissioning
Soil erosion and sedimentation	Indirect	All TECs, *Cycas megacarpa*, *Samadera bidwillii*, collared delma	Exposed soils during construction can lead to sediment runoff into sensitive habitats	Construction, Operation and Maintenance and Decommissioning
Dust deposition	Indirect	All TECs, *Cycas megacarpa*, *Samadera bidwillii*, Koala	Machinery and vehicle movement generate dust that settles on vegetation	Construction, Operation and Maintenance and Decommissioning

Potential Impact	Impact Type	MNES Significantly Impacted	Impact Description	Applicable Project Phase
Disturbance to MNES wildlife through increased light, noise and vibration	Indirect	Koala, greater glider, yellow-bellied glider, collared delma	Disruption to behaviours and the balance of inter-species interactions	Construction, Operation and Maintenance and Decommissioning
Vehicle strike	Direct	Koala, greater glider, yellow-bellied glider, collared delma	Increased traffic raises risk of injury or mortality to mobile fauna.	Construction, Operation and Maintenance and Decommissioning
Fire risk	Indirect	All MNES values	Machinery and clearing increase ignition sources and fuel loads, raising fire susceptibility	Construction, Operation and Maintenance and Decommissioning
Pollution and chemical spills	Indirect	All TECs, *Cycas megacarpa*, *Samadera bidwillii*	Fuel, oil and chemical use during construction may contaminate soil and water	Construction
Illegal harvesting	Direct	*Cycas megacarpa*	Increased access and visibility of cycads may lead to poaching	Construction, Operation and Maintenance and Decommissioning
Loss of hollow-bearing trees	Direct	Greater glider, yellow-bellied glider	Clearing removes critical denning and nesting habitat for hollow-dependent mammals	Construction
Loss of microhabitat features	Direct	Collared delma	Ground disturbance removes rocks, logs, and leaf litter essential for shelter and thermoregulation	Construction
Insect predation	Indirect	*Cycas megacarpa*	Disturbance may increase vulnerability to insect damage, especially in translocated individuals	Construction, Operation and Maintenance and Decommissioning

4.0 Management Framework

4.1 Hierarchy of Controls

The mitigation hierarchy will be implemented to avoid, mitigate, and manage direct and indirect impacts to prescribed MNES. Management measures developed for the Project consider concepts outlined within the mitigation hierarchy (**Section 4.1.1**), SMART principals (**Section 4.1.2**), and adaptive management (**Section 4.1.3**).

4.1.1 Mitigation Hierarchy

The mitigation hierarchy is a process for reducing impacts to ecological values to ensure Ecologically Sustainable Development in consideration of the *National Strategy for Ecologically Sustainable Development 1992* and the *Offset Mitigation Hierarchy* (Department of Climate Change, Energy the Environment and Water 2023). The hierarchy of controls to be implemented in order of importance, consists of:

1. **Avoid**. Avoid is the priority mitigation measure, and the intention is to locate activities to avoid direct and indirect impacts to prescribed MNES.
2. **Minimise**. Minimise is the second step in the mitigation hierarchy. The intention is to reduce direct and indirect impacts where they cannot be completely avoided.
3. **Mitigate**. Consists of the implementation of mitigation and management measures for direct, indirect, cumulative and facilitated impacts to prescribed MNES.
4. **Remediate and rehabilitate**. Actively rehabilitate impacted areas to promote long-term recovery.
5. **Offset**. Provide suitable offsets for areas of impact that result in a SRI to prescribed MNES. Offsets are managed under an Offset Management Plan and therefore are not addressed as part of this MMP.

Proposed avoidance, mitigation and management measures will be carried out throughout the duration of the Project and will be adapted during each Project phase. These measures will be based upon the best available information and will include:

- performance criteria and performance outcomes
- applicable MNES
- the specific mitigation measure and when it will be implemented
- who is responsible for taking that action
- monitoring requirements
- trigger for corrective action
- suggested corrective action and timing of the corrective action.

4.1.2 SMART Principles

All mitigation and management measures have been developed to be consistent with the SMART principle, ensuring they are:

- **Specific –** prescriptive, with no uncertainty or ambiguity around their purpose or implementation.
- **Measurable –** the status (i.e. success or failure) and outcomes/results can be measured.
- **Achievable –** through the chosen method of implementation, by the responsible personnel and within the specified timeframe.
- **Relevant –** to the action/impact being controlled and to the protected matter.
- **Time bound –** Measures are given specific and achievable timeframes for implementation in relation to specific development activities or stages.

4.1.3 Adaptive Management

An adaptive management framework will be applied to guide the implementation of this MMP consistent with best-practice principles endorsed by DCCEEW. This framework includes:

- Establishing core components of the management system, including stakeholder engagement, development of measurable objectives and performance criteria, identification of feasible management actions, and design of monitoring protocols. These protocols will enable robust evaluation of progress and support evidence-based decision-making throughout the life of the MMP.

Implementing an iterative learning process, whereby management actions are informed by ongoing monitoring and evaluation. This process facilitates continuous improvement and refinement of strategies based on observed outcomes and emerging knowledge of the natural resource system (Williams & Brown 2016; refer to **Section 8.0** for details on the review and update process).

Where performance criteria or interim milestones are not met, corrective actions will be initiated. In cases of uncertainty regarding the cause of a management trigger (e.g. failure to meet milestones), the triggering event will be reviewed in detail. Management actions outlined in this MMP may then be revised to ensure they remain fit-for-purpose and responsive to changing conditions.

5.0 Avoidance, Mitigation and Construction Monitoring Measures

5.1 Avoid and Minimise

Avoidance of MNES values has been demonstrated through both selection of the Project corridor and the development of the Disturbance Footprint. Revisions to both have occurred throughout the progressive and iterative design and development of the Project, informed by community and landholder consultation, corridor selection process, substation locations and an understanding of on-ground constraints including the presence and distribution of MNES and habitat to support MNES.

Where impacts on MNES cannot be avoided, all reasonable efforts have been made to minimise Project impacts. The width of clearing for tracks has been minimised to that which can safely transport infrastructure components. Vegetation clearing and the subsequent construction of the Project will occur progressively and in stages. By doing this, only a small subset of the Disturbance Footprint will be impacted at one time, thereby minimising disturbance activities and allowing opportunity for fauna relocate to adjacent areas that are not subject to disturbance. This will also minimise barrier effects associated with construction such as temporary noise and lighting.

Further detail regarding avoidance and minimisation measures is presented in **Chapter 7** of the Draft PER.

5.2 Key Management Objectives

The mitigation measures proposed in **Section 5.3** are specific to prescribed MNES and are based on twelve key management objectives, consisting of:

- Vegetation clearing is limited to the Disturbance Footprint (subject to minor micro-siting within the field survey extent).
- Retention and avoidance of individuals or populations of MNES threatened flora within the Disturbance Footprint.
- Prevent and minimise mortality of MNES fauna.
- Minimise degradation of MNES Habitat through dust, contamination, erosion and sedimentation.
- No increase in weed presence and abundance within the Project Area.
- No increase in pest presence and abundance within the Project Area.
- Retain connectivity and key fauna dispersal corridors throughout the Project Area.
- Reduce the loss of high-value fauna habitat features such as hollow bearing trees/logs/surface rocks.
- Prevent any uncontrolled fire within the Project Area.
- Minimise impacts to threatened fauna from increased light, noise and vibration.

- Areas of disturbance are rehabilitated progressively to ensure they are stable (to minimise erosion).
- Minimise disruption to waterbodies through altered hydrology, disturbance to acid sulfate soils, erosion and sedimentation.

Potential impacts (as listed in **Section 3.2**) are addressed with avoidance, minimisation, mitigation or management measures specific to applicable MNES along with clear construction monitoring and corrective action responsibilities. The Contractor's Environment Manager and Powerlink representative will be responsible for the implementation of the mitigation and management measures. Refer to **Section 8.0** for further details pertaining to the roles and responsibilities related to this MMP. These measures have also been implemented with consideration of the documents listed in **Section 1.3.**

Refer to **Appendix A** for information and procedures regarding unexpected finds.

5.3 Prescribed MNES Mitigation Action Plan and Construction Monitoring

Vegetation Clearing is Limited to the Disturbance Footprint

Table 5.1 Vegetation Clearing is Limited to the Disturbance Footprint

Matter	Key Management Action	Timing	Responsible Party	Construction Monitoring	Trigger and Corrective Action
General measures – Powerlink EMP	• MNES flora populations must be identified, and the extent mapped during pre-clearance surveys. The siting of infrastructure must avoid areas of known occurrence as a priority (Powerlink EMP, VM15). • The extent of vegetation clearing areas will be nominated on Environmental Work Plan (EWP) and made available for the vegetation clearing activity (Powerlink EMP, VM5). • The EWP must nominate any areas that have specific management requirements (e.g. no-go zones, vegetation to be retained) and made available for the vegetation clearing activity (Powerlink EMP, VM6). • Prior to commencing initial vegetation clearing, the extent of clearing (work area) must be clearly delineated on site, both geospatially, as well as using high visibility barriers or taping to ensure that clearing will not occur in areas to be preserved. The delineated limits of clearing must be maintained for at least the duration of clearing and earthworks (Powerlink EMP, VM7).	Prior to commencement of any site disturbance or construction activities.	Powerlink Environmental Representative is responsible for EWP development. Contractor to undertake works in accordance with EWP and all other key management actions.	• Site Manager to check delineation of boundaries and sign off prior to clearing commencing. • Daily site inspections. • Use GPS-enabled devices to track actual clearing boundaries. • Weekly monitoring and recording of clearing extent, specifically noting any damage outside pre-defined disturbance boundaries.	**Trigger:** • Clearance of, or damage to vegetation beyond the Disturbance Footprint. • Clearance of TEC and/or habitat for listed threatened species exceeds approved clearing limits. **Corrective action:** • Clearing works are to cease immediately and DCCEEW notified of the incident in accordance with timeframes stipulated in the approval. • The incident will be recorded and an investigation undertaken. • Ensure corrective and preventative actions in place before recommencing clearing activity including reviewing barriers, examination of no-go areas, and communication with construction staff.
General measures – in addition to Powerlink EMP	• Vegetation clearing and clearing of fauna habitat features are to be kept to the minimum required to facilitate construction activities and the safe operation of the asset. • All activities including site access, laydown of plant and equipment and construction activities must be contained within the finalised Disturbance Footprint.	During clearing and access works. At all times during construction activities.	Contractor		
All TECs	• TECs must be identified, and the extent mapped during pre-clearance surveys. The siting of infrastructure must avoid areas of known occurrence as a priority (Powerlink EMP, VM17). • No-go' zone (10 m buffer) demarcation and signage will be installed where TECs occur immediately adjacent to areas of disturbance and/or earthworks, to avoid any inadvertent clearing or destruction.	Prior to commencement of any site disturbance or construction activities.			
Cycas megacarpa, Samadera bidwillii	• 'No-go' zone (10 m buffer) demarcation and signage will be installed where threatened species habitat occur immediately adjacent to areas of disturbance and/or earthworks, to avoid any inadvertent clearing or destruction. *Cycas megacarpa* outside of the clearing area will not be tampered with or used in any way. For example, individuals outside of the clearing area will not be used as signposts or markers, will not have objects tied to them and will not be interfered with or used for fencing.				

Retention and Avoidance of Individuals or Populations of MNES Threatened Flora within the Disturbance Footprint

Table 5.2 Retention and Avoidance of Individuals or Populations of MNES Threatened Flora within the Disturbance Footprint

Matter	Key Management Action	Timing	Responsible Party	Construction Monitoring	Trigger and Corrective Action
General measures – Powerlink EMP	• MNES flora populations must be identified, and the extent mapped during pre-clearance surveys. The siting of infrastructure must avoid areas of known occurrence as a priority (Powerlink EMP, VM15). • The extent of vegetation clearing areas will be nominated on EWP and made available for the vegetation clearing activity (Powerlink EMP, VM5). • The EWP must nominate any areas that have specific management requirements (e.g. no-go zones, vegetation to be retained) and made available for the vegetation clearing activity (Powerlink EMP, VM6). • Prior to commencing initial vegetation clearing, the extent of clearing (work area) must be clearly delineated on site, both geospatially, as well as using high visibility barriers or taping to ensure that clearing will not occur in areas to be preserved. The delineated limits of clearing must be maintained for at least the duration of clearing and earthworks (Powerlink EMP, VM7). • Clearing works must maintain a sufficient vegetation buffer around identified locations of threatened flora to maintain suitable micro-climatic conditions (Powerlink EMP, VM16). • Vegetation clearing activities must be undertaken in accordance with: ○ All relevant permits and approvals and/or exemptions, including 'Accepted Development Vegetation Clearing Codes'; under the applicable Commonwealth, State or local legislative requirements. ○ Approved Powerlink specifications (Powerlink EMP, VM3). ○ Any proposed vegetation clearing activities not in accordance with existing permits and approvals must be assessed against all relevant Commonwealth, State and local approvals. Assessments must be undertaken by an appropriately qualified person. Any additional required permits or approvals must be obtained prior to undertaking vegetation clearing activities. Where notifications are required prior to clearing occurring, notifications to be lodged with relevant state agency as per relevant accepted development code requirements (Powerlink EMP, VM4).	Prior to commencement of any site disturbance or construction activities.	Powerlink Environmental Representative is responsible for EWP development. Contractor to undertake works in accordance with EWP and all other key management actions.	• Preclearance surveys to map all individuals within and adjacent to the disturbance footprint. • Contractor (Environment Manager) to check delineation of boundaries and sign off prior to clearing commencing. • Daily site inspections. • Use GPS-enabled devices to track actual clearing boundaries. • Weekly monitoring of known populations, including buffers and health of individuals in active construction areas.	**Trigger:** • Unapproved removal of stems/individuals of MNES threatened flora. • Identification of new populations of MNES threatened flora. **Corrective action:** • Clearing works are to cease immediately and DCCEEW notified of the incident in accordance with timeframes stipulated in the approval. • The incident will be recorded and an investigation undertaken. • Ensure corrective and preventative actions in place before recommencing clearing activity including installation of additional barriers or buffer management. • The Unexpected Finds Protocol will be followed if new populations of MNES threatened flora are identified (**Appendix A**).
General measures – in addition to Powerlink EMP	• Pre-clearance surveys will be undertaken within suitable habitat within the Disturbance Footprint and for protected plants under the *Nature Conservation Act 1992*. If any new individuals or populations are located during the targeted surveys, a detailed account of their occurrence will be recorded including number of individuals, GPS location and extent. The plants or population area must be demarcated and avoided. No direct or indirect impacts will be permitted without prior consultation with DCCEEW and DETSI. If the permit is required, an impact management plan will be developed and implemented in accordance with the Queensland Government	At all times during construction activities			

Matter	Key Management Action	Timing	Responsible Party	Construction Monitoring	Trigger and Corrective Action
	Nature Conservation (Plants) Regulation 2020 – Protected Plants Assessment Guidelines (DES, 2021). • Where new populations of MNES threatened flora are identified, the Unexpected Finds Protocol must be followed (Appendix A). • Prior to accessing site, all personnel will undertake inductions to be familiarised with the location and characteristics of *Samadera bidwillii* and *Cycas megacarpa*. The induction will include instructions that all site personnel are to undertake if they encounter *Samadera bidwillii* and *Cycas megacarpa* in the Project Area.				
Samadera bidwillii	• A flora survey and associated reporting will be undertaken in accordance with the Flora Survey Guidelines – Protected Plants (Department of Environment, Tourism, Science and Innovation, 2025). • To mitigate indirect impacts to stems / individuals / populations outside the Disturbance Footprint (within 10 m), surveys will be conducted to demarcate these locations (including a 10 m buffer) to avoid incidental impacts. • In areas where the clearing extent may be obscured, markers will be used at shorter intervals and/or a spotter will be present to supervise the clearing activity who will guide the clearing using positive communication over two-way radio. • All personnel, unless authorised, will be restricted from accessing known habitat outside of the demarcation area to prevent trampling, crushing and/or poaching of individuals.	• Prior to construction • At all times during construction activities in known habitat.	Powerlink Environmental Representative is responsible for ensuring Protected Plants surveys and reporting is undertaken. Contractor to undertake works in accordance with EWP and all other key management actions.	• Contractor (Environment Manager) to check delineation of boundaries and sign off prior to clearing commencing.	**Trigger:** • Unapproved removal of stems/individuals of *Samadera bidwillii*. • Identification of new populations of *Samadera bidwillii*. **Corrective Action:** • Stop work immediately to avoid further impacts. • Notify Contractor (Environment Manager), and clearly demarcate areas (bunting, fencing and signage) where new populations of *Samadera bidwillii* have been identified and record GPS location. • DETSI and/or DCCEEW will be consulted in accordance with approval conditions to discuss potential implications if considered necessary by the relevant party identified by the Contractor. • If new populations or individuals are located, follow the Unexpected Finds Protocol (**Appendix A**).
Cycas megacarpa	• A flora survey and associated reporting will be undertaken in accordance with the Flora Survey Guidelines – Protected Plants (Department of Environment, Tourism, Science and Innovation 2025). This count will inform translocation requirements and facilitate the preparation of the Draft *Cycas megacarpa* Translocation Management Plan (CTMP). The survey and final report will be completed and submitted to DCCEEW prior to the commencement of construction with the Final PER. To mitigate indirect impacts to individuals / populations outside the Disturbance Footprint (within 5 m), surveys will be conducted to demarcate these to avoid incidental impacts.	• Prior to commencement of any site disturbance or construction activities. During clearing and access works. • At all times during construction activities.	Powerlink Environmental Representative is responsible for ensuring Protected Plants surveys and reporting is undertaken. Contractor to undertake works in accordance with EWP and all other key management actions	• Contractor (Environment Manager) to check delineation of boundaries and sign off prior to clearing commencing. • Daily site inspections. • Use GPS-enabled devices to track actual clearing boundaries.	**Trigger:** • Unapproved removal of individuals of *Cycas megacarpa* individuals. • Identification of new populations of *Cycas megacarpa*. **Corrective action:** • Clearing works are to cease immediately and DCCEEW notified of the incident in

Matter	Key Management Action	Timing	Responsible Party	Construction Monitoring	Trigger and Corrective Action
	• Erection of signage detailing relevant fines for taking of plants. • In areas where the clearing extent may be obscured, markers will be used at shorter intervals and/or a spotter will be present to supervise the clearing activity who will guide the clearing using positive communication over two-way radio. • All personnel, unless authorised, will be restricted from accessing known habitat outside of the demarcation area to prevent trampling, crushing and/or poaching of individuals. • *Cycas megacarpa* outside of the clearing area will not be tampered with or used in any way. For example, individuals will not be used as signposts or markers, will not have objects tied to them and will not be interfered with or used for fencing. • A DCCEEW approved CTMP will be implemented for individuals that would otherwise be removed through clearing for the Project. The plan will specify pre-translocation and post-translocation monitoring requirements, translocation and propagation methods and protocols and reporting requirements and performance criteria. The plan will follow established national guidelines, including National Multi-species Recovery Plan for Cycads (Queensland Herbarium 2007) the Guidelines for the Translocation of Threatened Plants in Australia (Commander et al., 2018). The CTMP will also incorporate lessons learned from previous translocations programs. The final CTMP will be submitted to DCCEEW for approval prior to any clearing activities within areas containing *Cycas megacarpa*.				accordance with timeframes stipulated in the approval. • The incident will be recorded and an investigation undertaken. • Ensure corrective and preventative actions in place before recommencing clearing activity including buffer management. • The Unexpected Finds Protocol will be followed if new populations of *Cycas megacarpa* are identified (**Appendix A**).

Prevent and Minimise Mortality of MNES Fauna

Table 5.3 Prevent and Minimise Mortality of MNES Fauna

Matter	Key Management Action	Timing	Responsible Party	Construction Monitoring	Trigger and Corrective Action
General measures – Powerlink EMP	• Prior to commencement of site activities where interaction with native fauna is expected (e.g. vegetation clearing), ensure appropriate measures are in place to recover and rehabilitate injured or orphaned native animals unavoidably impacted by clearing and construction activities. This includes the identification of local wildlife carers and wildlife associations in the CEMP, who may be able to provide wildlife services if required (Powerlink EMP, NF9). • Tampering with an animal breeding place may only be carried out in accordance with a Damage Mitigation Permit or an approved Species Management Program (Powerlink EMP, NF7). • Temporary or permanent 'no go zones' are to be clearly signposted and delineated (using visible marking tape or the like) to ensure that there is no unauthorised clearing or damage of fauna habitat (Powerlink EMP, NF10). • An appropriately qualified person (i.e. fauna spotter-catcher, who holds a valid Rehabilitation Permit (fauna spotter-catcher)) must be engaged to undertake pre-clearance habitat searches and be	• Prior to commencement of any site disturbance or construction activities. • During clearing and access works • At all times during construction activities.	Contractor	• Fauna spotter-catcher to supervise all vegetation clearing during construction. • Contractor (Environment Manager) to ensure exclusion zones are maintained and enforced until the fauna spotter-catcher has cleared the active breeding place. • Monitor vehicular movements in the Project Area to ensure speed limits and access protocols are adhered to.	**Trigger:** • Fauna injury from clearing activities including open excavations and vehicle strike • Vehicle speed exceeds limits. **Corrective action:** • Engage local wildlife carers immediately if injured or orphaned fauna are found. • Document the incident and notify the Environment Manager. • Review clearing methods • Install covers or exclusion fencing immediately. • Enforce speed compliance.

Matter	Key Management Action	Timing	Responsible Party	Construction Monitoring	Trigger and Corrective Action
	present during vegetation clearing activities and during any disturbance to habitat features (i.e. trees containing hollows, trees containing nests, hollow logs or during mulching of cleared vegetation if stockpiled longer than 24 hours), to minimise fauna harm (Powerlink EMP, NF11). • Where they cannot be retained, hollow-bearing trees and stags must be soft felled to minimise the chances of injury or death and inspected by a fauna spotter-catcher to identify any potentially denning individuals (e.g. gliders, microbats, birds) (Powerlink EMP, NF26). • Vegetation clearing must be staged, with non-habitat trees felled first where practicable. This gives fauna a chance to disperse on their own at night as their habitat becomes less suitable (Powerlink EMP, NF27). • An authorised carer (holding a valid Rehabilitation Permit (rehabilitate and release a protected animal)) must be engaged to care for and rehabilitate injured or orphaned native animals (Powerlink EMP, NF13). • Restrict vehicles to approved and mapped access tracks and only those vehicles required for the safe, efficient and essential construction activities will be allowed in the work area (Powerlink EMP, NF15). • Excavations must be secured (e.g. covered, provision of exclusion fencing) to prevent access from native fauna (Powerlink EMP, NF16). • Open excavations must be checked for trapped fauna in the morning and at the end of the day (Powerlink EMP, NF25). • Diverters on spans must be installed where identified as required. Spans on which diverters are installed must be recorded in SAP by Powerlink (Powerlink EMP, NF18). • Vehicle travelling speed must be restricted (<40 km/hr unless specified) on unsealed and off-road access tracks. Vehicle speeds must be further reduced on unsealed access tracks during dry, windy weather, and within the vicinity of residential properties and sensitive receptors, to a speed whereby visible dust emanating from soil type interaction is minimised (Powerlink EMP, AQ1).				
General measures – in addition to Powerlink EMP	• All site personnel to be introduced through a site induction, to protected fauna species which have the potential to occur within the Project Area. Species include koala, greater glider, yellow-bellied glider, collared delma and water mouse. • Site induction will include training in the following: ○ Penalties associated with impairment, killing or poaching of native fauna ○ Penalties associated with tampering with an animal breeding place ○ Information relating to protected fauna which may be encountered on site, including how to identify threatened				

Matter	Key Management Action	Timing	Responsible Party	Construction Monitoring	Trigger and Corrective Action
	species and what to do if a threatened fauna species is observed in the Project Area ○ Fauna handling policies – specifically that only designated and trained personnel are allowed to handle and remove fauna ○ Procedures for reporting wildlife interactions, including sightings of threatened species, and reporting incidents such as vehicle strike. • If any threatened fauna species or threatened fauna active breeding places are observed during construction, work will cease in the immediate vicinity of the sighting and the individual/breeding place will be identified and demarcated until it has relocated, or it has been removed by a suitably qualified spotter-catcher. The fauna spotter-catcher will provide a suitable record to the relevant person, as dictated by the Contractor, which will include, but not be limited to, the following: ○ number of individuals ○ GPS location (site of identification and relocation) ○ extent of habitat. • An MNES individual's presence to be communicated in daily toolbox talks to ensure heightened vigilance. This awareness will be maintained until the species individual is confirmed to have vacated the sighting location. • Trenches will be backfilled at the earliest opportunity and will be inspected by a fauna-spotter catcher immediately prior to backfilling. Backfilling and inspections will happen on the same day. • Where pits, voids or trenches are required, include appropriate cover to prevent extended water retention in these spaces and if pits or trenches are open for more than 72 hours, fauna egress points are to be established. • As far as practicable, avoid vehicular movements to/from site outside of daylight hours. Where this is unavoidable, drive to the conditions and reduce speed along vegetated stretches of road.				
	• In the unlikely event that a MNES fauna fatality occurs as a result of Project activities, DCCEEW will be notified. An incident report will be prepared, detailing the time, location, suspected cause (if known), and photographic evidence where available. Responsibility for ensuring reporting compliance will rest with the contractor's Environment Manager who will notify a suitable Powerlink representative to contact DCCEEW within a maximum of two business days following the incident.	During clearing and access works and at all times during construction activities.	Contractor Powerlink Environmental Representative	-	**Trigger:** • Mortality of MNES fauna during clearing or construction. **Corrective action:** • Stop work immediately at that location if MNES fauna mortality occurs. • DCCEEW notified of the incident in accordance with timeframes stipulated in the approval. • The incident will be recorded and an investigation undertaken. • Ensure corrective and preventative actions in place before recommencing clearing

Matter	Key Management Action	Timing	Responsible Party	Construction Monitoring	Trigger and Corrective Action
					activity including a review which includes construction staff.
Koala	• Clearing must be carried out in a way that ensures any koalas present have time to move out of the clearing site without human intervention. Koalas will not be forcibly relocated at any time (Powerlink EMP, NF30). • Clearing must be carried out in line with the Nature Conservation (Koala) Conservation Plan 2017 which prescribes the role of fauna spotter-catchers and clearing methodologies (Powerlink EMP, NF31). • All confirmed koala sightings will be reported to QWildlife, within 48 hours of sighting, to contribute to the understanding of koala activity in the region. If photo evidence of the sighting is collected, the photo will be included with the submission. Reports will be submitted by the fauna-spotter catcher and reporting compliance will be the responsibility of the contractor's Environment Manager. • Where a koala is suspected of Chlamydia infection, it will be taken to a predesignated veterinarian/wildlife care facility for treatment by a qualified fauna spotter-catcher, prior to release. • Signage in high-risk areas (e.g. riparian corridors) to notify of koala habitat to minimise potential vehicle strike.	During clearing and access works and at all times during construction activities.	Contractor	• Canopy searches by a qualified Fauna Spotter-Catcher immediately before clearing. • Daily check of marked trees until koala has moved on and clearing has occurred. • Speed limit monitoring in all Project areas.	**Trigger:** • Koala observed in a tree scheduled for clearing. • Any observation of koala within or adjacent to clearing activities. **Corrective action:** • Implement clearing protocols in accordance with the key management actions.
Greater glider (southern and central) and yellow-bellied glider	• Any new fencing used for the perimeter or within the Project Area must be constructed entirely of plain (non-barbed) wire where landholder preferences allow and where no security, safety, or insurance requirements apply. ○ The second preference for new fencing will incorporate a top strand of plain (non-barbed) wire with barbed wire only to be used where required to meet Australian safety standards, electrical security requirements, insurance conditions, or specific landholder or security restrictions. • Where new fencing incorporating barbed wire is established within the Project Area, fence visibility must be increased by affixing durable visibility tags or tape at 30 cm intervals along the top strand of the barbed wire fencing. • Pre-clearance surveys will include the identification, physical marking and mapping of: ○ Trees containing greater glider or yellow-bellied glider hollows located within the Disturbance Footprint. ○ In riparian areas, where greater glider or yellow-bellied gliders habitat is present and where vegetation clearing exceeds 20 m in width, individual trees identified as suitable gliding poles are to be selected and retained (dead or alive – e.g. the tree may be stem injected) within the easement to provide habitat connectivity for gliders. ○ If an individual is found to be present, it will be inspected for injury and if healthy, relocated to an adjacent area of mapped breeding and denning habitat after dusk.	• Prior to commencement of any site disturbance or construction activities. • During clearing and access works. • At all times during construction activities.	Contractor	• Canopy hollow searches by a qualified Fauna-spotter-catcher within 24 hours before clearing. • On ground monitoring by qualified Fauna-spotter catcher during clearing when slow felling habitat trees.	**Trigger:** • Greater glider or yellow-bellied glider observed in a tree/hollow scheduled for clearing. • Clearing or construction activity within greater glider or yellow-belied glider habitat. Corrective action: • Implement clearing protocols in accordance with the key management actions.

Matter	Key Management Action	Timing	Responsible Party	Construction Monitoring	Trigger and Corrective Action
	○ If the individual is injured it will be transported to a local wildlife carer or vet and rehabilitated prior to releasing in a suitable area adjacent to the location in which it was found.				
Collared delma	• Prior to clearing, a suitable recipient site with adjacent offset areas will be located for individuals and eggs that are removed from the Disturbance Footprint. The recipient site will be comparable to the habitat being removed from the Project Area in terms of topography, vegetation and microhabitat features (i.e. cover material, surface depressions, surrounding materials) and will be located inside the adjacent offset area to the Project Area. • A monitoring program of recipient site/s within the offset area will be undertaken to ensure the habitat is protected and maintained • Where clearing is proposed for areas of collared delma habitat, pre-clearance surveys will be conducted by a suitable qualified fauna spotter-catcher at least one week prior to vegetation clearing and will include the identification and relocation of individuals or eggs to the aforementioned suitable recipient site within 12 hours (i.e. same day).	• Prior to commencement of any site disturbance or construction activities and during clearing activities.	Contractor	• Pre-clearance surveys conducted by Fauna-spotter catcher at least one week prior to clearing occurring to detect individuals or eggs. • On ground monitoring by qualified Fauna-spotter catcher during clearing	**Trigger:** • Collared delma observed during pre-clearance surveys or during daily inspections. • Clearing activities to occur within Collared delma habitat. **Corrective action:** • Implement clearing protocols in accordance with the key management actions.
Northern quoll	• Where clearing is proposed for areas of northern quoll denning habitat, pre-clearance surveys must include den searches immediately prior to clearing to encourage the movement of individuals out of the clearing area. This may include use of burrow cams to thoroughly examine if northern quoll is present. • Should an active den be found within the Disturbance Footprint, measures will be implemented in accordance with a pre-approved high-risk species management program approved by the Queensland Government. • Construction areas that may inadvertently provide denning opportunities through stockpiling of materials will be inspected by a fauna spotter catcher prior to stockpiled materials being relocated (where stockpiled for greater than 24 hours). • In temporary/permanent washdown locations, the collection pit will be designed to minimise suitability for cane toad utilisation and breeding (e.g. steep sides with dense fringing vegetation). • Vegetation clearing required within or directly adjacent to areas of breeding and denning habitat will aim to be completed outside of the northern quoll breeding season (late July to late August).	• Prior to commencement of any site disturbance or construction activities and during clearing activities. • At all times during construction activities.	Contractor	• Pre-clearance surveys conducted by Fauna-spotter catcher at least one week prior to clearing occurring to detect individuals. • On ground monitoring by qualified Fauna-spotter catcher during clearing.	**Trigger:** • Northern quoll observed during pre-clearance surveys or during daily inspections. • Any clearing activities within or adjacent to northern quoll denning habitat. **Corrective action:** • Implement clearing protocols in accordance with the key management actions.
Black-breasted button-quail	• Where clearing is proposed for areas of black-breasted button-quail nesting and foraging habitat: ○ Pre-clearance surveys will be conducted within 24 hours prior to vegetation clearing and will include either flushing to encourage the movement of individuals out of the clearing area (Powerlink EMP, NF20) or platelet surveys, supported by ground searches for nests and juveniles.	• Prior to commencement of any site disturbance or construction activities and during clearing activities.	Contractor	• Pre-clearance surveys. • On ground monitoring by qualified Fauna-spotter catcher during clearing.	**Trigger:** • Black-breasted button-quail observed during pre-clearance surveys or during daily inspections. • Platelets observed. • Clearing activities occurring within suitable habitat.

Matter	Key Management Action	Timing	Responsible Party	Construction Monitoring	Trigger and Corrective Action
					Corrective action: • Implement clearing protocols in accordance with the key management actions.

Water mouse	• Where clearing is proposed for areas of water mouse habitat:
	  ○ Active searches conducted within 24–48 hours prior to clearing and timed to coincide with low tide periods, when mud mounds and feeding signs are more visible. Search includes identification of potential nest sites as well as identifying prey middens.
	  ○ GPS-mark and photograph any suspected nests or shelters.
	• If an active nest is recorded inside the clearing area and cannot be avoided, a trapping program will be implemented overnight and the nest will be dismantled by hand (using hand-tools if necessary) the following day. As a nest may be shared by numerous individuals, all captured individuals per nest will be released at a single location pre-selected by an appropriately qualified fauna-spotter catcher or ecologist. This may include use of an artificial structure if no suitable natural structures can be identified outside of the clearing area.
	• If an individual is found to be present during clearing, it will be inspected for injury and if healthy, relocated to an adjacent area of mapped breeding, foraging and dispersal habitat after dusk. If the individual is injured, it will be transported to a local wildlife carer or vet and rehabilitated prior to releasing in a suitable area adjacent to the location in which it was found.
	• As a nest may be used by successive generations of water mouse, micro-siting will preferentially avoid areas where active nests are identified.
	• Active nests will be recorded, demarcated, and buffered with a minimum 10 m no-go zone.
		• Prior to commencement of any site disturbance or construction activities and during clearing activities.	Contractor	• Pre-clearance surveys.
				• On ground monitoring by qualified Fauna-spotter catcher during clearing.
					Trigger:
					• Water mouse is observed during pre-clearance surveys or during daily inspections.
					• Clearing activities occurring in water mouse habitat.
					Corrective action:
					• Implement clearing protocols in accordance with the key management actions.

Squatter pigeon (southern)	• As squatter pigeon nests on the ground and is at high risk of direct mortality, nests should be identified and clearly demarcated by a spotter catcher during pre-clearance surveys (Powerlink EMP, NF21). ○ Each active nest will be recorded, demarcated, and buffered with a minimum 10 m no-go zone. Nests will be reassessed every 48 hours until vacated, with management measures maintained throughout this period in line with the High Risk SMP. • Preclearance surveys will be supported by flushing techniques to detect adult individuals (Powerlink EMP, NF20).	• Prior to commencement of any site disturbance or construction activities and during clearing activities.	Contractor	• Pre-clearance surveys. • On ground monitoring by qualified Fauna-spotter catcher during clearing.	**Trigger:** • Squatter pigeon (southern) observed during pre-clearance surveys or during daily inspections. • Clearing occurring within breeding habitat. **Corrective action:** • Implement clearing protocols in accordance with the key management actions.
Grey-headed flying-fox	• Where clearing is proposed in grey-headed flying-fox habitat, pre-clearance surveys must include canopy searches for the species. • In the unlikely event roosting grey-headed flying-fox are located in the clearing area, an exclusion zone will be established such that any tree with a grey-headed flying fox, as well as any tree with a crown that overlaps that tree, will not be cleared until the individuals	• Prior to commencement of any site disturbance or construction activities and during clearing activities.	Contractor	• Pre-clearance surveys. • On ground monitoring by qualified Fauna-spotter catcher during clearing.	**Trigger:** • Grey-headed flying-fox observed during pre-clearance surveys or during daily inspections.

Matter	Key Management Action	Timing	Responsible Party	Construction Monitoring	Trigger and Corrective Action
	have self-dispersed, or the Project has determined if the congregation could be considered a roost as per the *Interim Policy for Determining When a Flying fox Congregation is Regarding as flying fox Roost* under Section 88C of the NC Act. • If a roost is present, the Project would obtain a flying-fox roost management permit from the Queensland Government. Any flying-fox roost management would be undertaken by appropriately trained personnel in accordance with the Code of practice – ecologically sustainable management of flying-fox roosts. • Any new fencing used for the perimeter or within the Project Area must be constructed entirely of plain (non-barbed) wire where landholder preferences allow and where no security, safety, or insurance requirements apply. ○ The second preference for new fencing will incorporate a top strand of plain (non-barbed) wire with barbed wire only to be used where required to meet Australian safety standards, electrical security requirements, insurance conditions, or specific landholder or security restrictions. ○ Where new fencing incorporating barbed wire is established within the Project Area, fence visibility must be increased by affixing durable visibility tags or tape at 30 cm intervals along the top strand of the barbed wire fencing.				**Corrective action:** • Implement clearing protocols in accordance with the key management actions.
White-throated needletail	• Where canopy trees cannot be retained in areas of potential roosting habitat they will be inspected by a fauna-spotter catcher to identify any roosting white-throated needletails. If observed, these would be flushed prior to felling of trees.	• Prior to commencement of any site disturbance or construction activities and during clearing activities.	Contractor	• Pre-clearance surveys. • On ground monitoring by qualified Fauna-spotter catcher during clearing.	**Trigger**: • White-throated needletail observed during pre-clearance surveys or during daily inspections. **Corrective action**: • Implement clearing protocols in accordance with the key management actions.
Migratory Shorebirds (including those listed as threatened), Australian painted snipe and Latham's snipe	• In areas of mapped migratory shorebird habitat planned for clearing, fauna spotter-catchers will complete flushing surveys to encourage the dispersal of any individuals present out of the clearing path.	• Prior to commencement of any site disturbance or construction activities and during clearing activities.	Contractor	• Pre-clearance surveys. • On ground monitoring by qualified Fauna-spotter catcher during clearing.	**Trigger:** • Migratory shorebirds observed during pre-clearance surveys or during daily inspections. • Clearing activities within shorebird habitat. **Corrective action:** • Implement clearing protocols in accordance with the key management actions.

Minimise Degradation of MNES Habitat Through Dust, Contamination, Erosion and Sedimentation

Table 5.4 Minimise Degradation of MNES Habitat through Dust, Contamination, Erosion and Sedimentation

Matter	Key Management Action	Timing	Responsible Party	Construction Monitoring	Trigger and Corrective Action
General measures – Powerlink EMP (erosion and sediment control, hazardous materials, air quality, vegetation management, herbicide distribution)	• Soil sampling and testing must be conducted to inform both erosion and sediment control (ESC) and rehabilitation requirements. Interpretation of results, including assessment to determine level of risk and recommendations for ESC management and rehabilitation requirements must be completed by an appropriately qualified person (Powerlink EMP, SW1, SW2). • Prior to soil disturbance activities, an Erosion and Sediment Control Plan (ESCP) must be developed and kept up to date. The ESCP must developed in accordance with the IECA Best Practice Erosion and Sediment Control Guidelines 2008 (or later version if applicable) (Powerlink EMP, SW4). • Best practice ESC principals must be applied to prevent environmental harm. Erosion and sediment control for all Projects must be designed, installed, maintained and decommissioned in accordance with the IECA Best Practice Erosion and Sediment Control Guidelines 2008 (or later version if applicable). Erosion and sediment control must be designed, installed, maintained and decommissioned in accordance with the following principles: ○ Erosion and sediment controls are integrated with construction planning ○ Effective and flexible erosion and sediment control plans are developed based on soil, weather, construction conditions and the receiving environment ○ The extent and duration of soil exposure is minimised. ○ Water movement through the site is controlled – in particular, clean water is diverted around the site. ○ Soil erosion is minimised ○ Disturbed areas are promptly stabilised ○ Sediment retention on site is maximised ○ Controls are maintained in proper working order at all times ○ The site is monitored, and erosion and sediment control practices are adjusted to maintain the required performance standard (Powerlink EMP, SW3). • Minimum personnel requirements for ESCP development and verification will apply based on the erosion risk level of a Project (Powerlink EMP SW5). • Implementation of the ESCP must include monitoring of the continued effectiveness of management measures and include revision of the ESCP where required (Powerlink EMP, SW6). • Installation of erosion and sediment controls must be completed as soon as practicable and prior to initial	• Prior to construction and during clearing and access works and at all times during construction activities.	Powerlink Environmental Representative and Contractor	• Routine Site Inspections undertaken by the Contractor in accordance with the EMP. • Weekly and post-rainfall erosion control inspections (in active work areas) to check integrity and effectiveness of controls. • Weekly stockpile inspections to ensure cover and stability. • Water quality sampling monthly (where applicable) to detect sedimentation change in waterways. • Stabilisation progress – monthly for the first three months to assess germination and early growth success.	**Trigger:** • Evidence of erosion, sediment runoff, or turbid water leaving the site. • Failure or damage to erosion control structures. • Uncovered or eroding stockpiles. • Visible signs of soil erosion (e.g. rills, gullies). • Water quality monitoring exceeds sediment thresholds. • Stabilisation of disturbed areas not meeting interim milestones. **Corrective Action:** • Reinforce or redesign erosion controls (e.g. install additional sediment traps) in the event of sediment runoff. • Repair or replace damaged structures immediately in the event of failure. • Cover, stabilise, or relocate stockpiles in the event of instability (e.g. install perimeter controls). • Apply mulch or hydroseeding with visible instance of erosion or stabilisation failure. • Investigate source of water quality exceedance and implement suitable control measures.

Matter	Key Management Action	Timing	Responsible Party	Construction Monitoring	Trigger and Corrective Action
	earthworks operations (clearing and grubbing) for any stage of work (Powerlink EMP, SW7). • Topsoil must be stripped to avoid mixing with subsoil (and ameliorants applied where determined by an appropriately qualified person) and stockpiled for use in rehabilitation activities (Powerlink EMP SW8, SW9). • All erosion and sediment controls, including sediment basins must be maintained in effective working order during the construction phase, to ensure dirty water is directed into sediment controls at all times (Powerlink EMP, SW10). • Temporary erosion and sediment controls must be removed when permanent measures are in place and/or site stabilisation has occurred. Any areas used for erosion and sediment control must be rehabilitated (Powerlink EMP, SW11). • For sites determined to have a high erosion risk, an independent and appropriately qualified person must assess compliance of the ESC measures (Powerlink EMP, SW12).				
	• Hazardous materials must be stored and handled in accordance with the applicable Australian Standards and Safety Data Sheets (SDS) available (Powerlink EMP HM1, HM2). • An Emergency Response Plan must be developed for the Project and all staff and Contractors will be required to have training in the emergency management of spills (Powerlink EMP, HM3, HM4). • Materials and equipment (spill kit) required to respond to a hazardous spill must be available at all times when hazardous materials are being stored, used, transported, loaded or unloaded and monitored for restocking regularly (Powerlink EMP, HM5, HM7). • Temporary drive-in bunding may be used on site (when self-bunded or double skinned tanks are not available) when large volumes of oil are being decanted or handled outside of a permanent bunded area. A suitably sized spill kit must be available for any spills associated with hose or pipe fittings (Powerlink EMP, HM6). • All vehicle, plant, equipment and machinery carrying additional fuel/oil/diesel over 20 L must be equipped with a spill kit at all times (Powerlink EMP, HM8). • All spills must be managed as follows: ○ Full protective clothing and equipment must be worn when managing a spill ○ Assess spill (extent and potential to migrate offsite, fire hazard potential, type and volume) ○ Isolate the spill (prevent further spillage, block drains, prevent access to the area) ○ Notification of the spill ○ Clean up and remediation	At all times during construction		Routine Site Inspections including: • Weekly inspections of refuelling areas, chemical storage zones, and bunded containment systems. • Verification that spill kits are stocked and accessible at all work locations. • Weather-Responsive Checks: • Pre- and post-rainfall inspections to assess runoff risks and sediment movement. • Monitoring of stockpile stability and cover integrity during high wind or storm events. • Monitor water quality routinely and after significant rainfall to ensure effectiveness and identify areas requiring maintenance	**Trigger:** • Evidence or reports of any chemical spills or pollutant contamination of MNES Habitat due to spill or leak detection, failure of containment, evidence of runoff, unsecured stockpiles, complaints or observation of pollution impacts. • Monitoring data indicating water quality deterioration. • An extreme weather event (i.e. cyclone) is forecast to impact Project Area. **Corrective Action:** • Cease all activities in the affected area until containment is confirmed. • Utilise spill kits where practicable to isolate and contain. • Submit an incident report to Environment Manager and record incident in the Environmental Incident Register within two business days • DCCEEW notified of the incident in accordance with timeframes stipulated in the approval.

Matter	Key Management Action	Timing	Responsible Party	Construction Monitoring	Trigger and Corrective Action
	○ Restock spill kit (Powerlink EMP, HM9) ○ All wastes from the clean-up process must be disposed of safely and in accordance with legislative requirements (Powerlink EMP, HM10) ○ The refuelling of vehicles and machinery within 50 m of a watercourse, drainage line or open drain is prohibited. When possible, all refuelling must be off-site at an approved refuelling station (Powerlink EMP, HM14) ○ Any application of herbicides to be approved by Powerlink prior and where required, in consultation with landholders (Powerlink EMP, AC9). • Workers responsible for undertaking chemical distribution must complete checks to ensure equipment is in good condition and working correctly prior to use (Powerlink EMP, AC10). • Careful consideration must be given to weather conditions before commencing ground distribution. As a minimum, wind direction, wind speed, temperature, relative humidity and predicted forecast must be checked by the worker responsible for the distribution activity to determine if weather is suitable for ground distribution of herbicides (Powerlink EMP, AC11). • Weather conditions must be measured and recorded throughout the distribution activity (Powerlink EMP, AC12). • Herbicides must not be decanted, mixed or stored within 50 m of a watercourse or waterbody (Powerlink EMP, AC13). • Only targeted methods (e.g. cut stump, stem injection, low pressure basal bark) may be used in proximity to water and near sensitive areas (broadcast foliar spraying is not permitted in these areas) (Powerlink EMP, AC14). • Records must be kept for each and every ground distribution of chemicals (Powerlink EMP, AC15). • Any damage to stock or crops, or other environmental harm caused by herbicide spray drift or misuse must be reported immediately (Powerlink EMP, AC16). • A Waste Management Plan must be developed as part of the Construction Sustainability Management Plan (CSMP) or Construction Environmental Management Plan (CEMP) (Powerlink EMP, SRU4).				• The incident will be recorded and an investigation undertaken. • Ensure corrective and preventative actions in place before recommencing clearing activity including a review which includes construction staff • Prior to extreme weather event conduct weather responsive checks.
	• Restrict vehicles to approved and mapped access tracks, cover all loose loads and vehicles travelling speed must be restricted (<40 km/hr unless specified) on unsealed and off-road access tracks. Vehicle speeds must be further reduced on unsealed access tracks during dry, windy weather, and within the vicinity of residential properties and sensitive receptors, to a speed whereby visible dust emanating from soil type interaction is minimised (Powerlink EMP, AQ1, AQ5, AQ6)). • Apply dust suppressants or watering to work areas, stockpiles and access tracks as required to prevent dust nuisance	During construction of the Project.		Monitoring of dust impacts will be undertaken during routine inspections.	**Trigger:** • Excessive dust resulting in external complaints received. • Dust clouds obscuring view of people and/or vehicles. • Dust accumulation on vegetation 50 m from clearing or construction.

Matter	Key Management Action	Timing	Responsible Party	Construction Monitoring	Trigger and Corrective Action
	(Powerlink EMP, AQ4). Schedule dust generating activities in proximity to dust sensitive locations (e.g. residences or schools etc.), when possible, to minimise dust nuisance at the sensitive receptors. Limit dust inducing activities on days with high levels of bushfire smoke in the air and if wind is blowing towards receptors (Powerlink EMP, AQ7, AQ12). • In dust sensitive locations consider constructing access tracks from materials which are more stable and less likely to turn to bull dust (Powerlink EMP, AQ8). • Orientate material stockpiles in a direction that reduces exposed surfaces to prevailing winds (Powerlink EMP, AQ9). • Ensure chipping/mulching equipment has dust collection devices attached where possible (Powerlink EMP, AQ10). • Carry out regular monitoring and visual surveillance of vehicles, plant and equipment working or moving within proximity to residences or other dust sensitive locations. The surveillance is to determine when actions are required to reduce potential dust nuisance (Powerlink EMP, AQ11). • Indirect impacts due to dust generation affecting flora must be managed using dust suppression measures implemented as required i.e. on high wind days during extended dry periods (Powerlink EMP, VM19).				• Visible decline in vegetation condition due to excessive dust. **Corrective Action:** • Implement additional dust abatement measures such as watering down of dirt access roads. • As required, application of water to adjacent vegetation to remove dust from foliage. • Reduction of speed limits below 40 km/hr in problem areas where suppression measures (watering) is not sufficient to address the triggers.

No Increase in Weed Presence and Abundance within the Project Area

Table 5.5 No Increase in Weed Presence and Abundance within the Project Area

Matter	Key Management Action	Timing	Responsible Party	Construction Monitoring	Trigger and Corrective Action
General measures – Powerlink EMP (biosecurity)	• Baseline biosecurity matter surveys must be completed at an appropriate time of year (e.g. spring or following significant rainfall) in order to capture representative and relevant biosecurity data (species and distribution). The survey areas must include relevant easement areas, immediate adjoining areas and associated access track routes (Powerlink EMP, BIO4). • Data collected during landholder consultation and biosecurity matter surveys must be used to determine appropriate Project-specific biosecurity management requirements (in addition to the standard controls outlined in the Powerlink EMP) required for construction activities and ongoing maintenance and operation of the asset (Powerlink EMP, BIO5). • Staff and Contractors must comply with all land access biosecurity requirements (Powerlink EMP, BIO6). • Workers must receive a Project-specific induction that includes relevant information relating to biosecurity management requirements (Powerlink EMP, BIO7).	All Project phases for the duration of the Project.	Powerlink Environmental Representative and Contractor	• Monthly monitoring will be undertaken of easements and access tracks for introduction of new exotic species or spread of targeted weed species.	**Trigger:** • Detection of new weed species not previously recorded in the Project Area or a particular portion of the Project Area. • Non-compliance with hygiene protocols (e.g., unwashed vehicles or equipment entering the site). • Complaints or observations from landholders regarding weed proliferation. **Corrective action:** • Where the introduction of, or increase in the distribution of a biosecurity matter/s has been

Matter	Key Management Action	Timing	Responsible Party	Construction Monitoring	Trigger and Corrective Action
	• A biosecurity inspection of vehicles (including personal vehicles if relevant), machinery and plant must be completed, and if required, clean down in the following situations: ○ All vehicles, machinery and plant upon first arrival to Project site and/or having left the Project site and returned from another work location. ○ Moving between and outside Queensland Biosecurity Zones. ○ Where vehicles, plant, equipment and machinery move between any nominated Project Biosecurity Zones. ○ Where personnel, vehicles, plant, equipment and machinery exit a known pathogen or disease risk area. ○ Where assessed as reasonable to manage biosecurity risks (Powerlink EMP, BIO8). • Where a biosecurity inspection or clean down is required, the worker must: ○ Inspect vehicle, plant, equipment and machinery for biosecurity matter (including soil that may contain biosecurity matter). ○ Where the vehicle, plant, equipment or machinery are identified to be free of biosecurity matter, a 'biosecurity matter free' declaration form must be completed. ○ Where the vehicle, plant, equipment or machinery contains biosecurity matter, it must be cleaned to remove biosecurity matter, reinspected, and a 'biosecurity matter free' declaration form must be completed (Powerlink EMP, BIO9). • Where a logbook is nominated as a required control on the EWP, a vehicle movement log form must be completed from time of clean down to destination to demonstrate where the vehicle has travelled during this time (Powerlink EMP, BIO11). • Clean downs must be undertaken in accordance with the Queensland Government's biosecurity clean down requirements. Clean downs must be undertaken prior to arrival to the Project or at designated locations. Where clean downs are required to be completed at one-off locations, the site must: ○ Be selected at the edge, or nearby to any areas where weeds or pathogens need to be contained. ○ Be selected in consultation with/agreement from the landholder. ○ Ensure runoff will not enter any watercourse or waterbody. ○ Avoid sensitive vegetation. ○ Be selected in mud free locations which gently drain away from the clean down location (Powerlink EMP, BIO12). • Workers required to self-certify or certify other vehicles, plant, equipment and machinery must have the following qualification, AHCBIO201 Inspect and clean machinery for plant, animal and soil material (or an equivalent competency) (Powerlink EMP, BIO13). • Vehicle journey planning must be undertaken, as far as practicable, in order to visit biosecurity free areas first, before travelling to areas affected by biosecurity matters and avoid/minimise travel through				identified, as a result of Contractor activities, the Contractor must take appropriate action to manage and treat the biosecurity matter/s.

Matter	Key Management Action	Timing	Responsible Party	Construction Monitoring	Trigger and Corrective Action
	areas heavily affected by biosecurity matters wherever possible (Powerlink EMP, BIO14, BIO15). • Biosecurity Declarations must be accompanied with all high risk materials (e.g. sand, soil, mulch), from suppliers of these products. Quantities of soil/gravel obtained from a landholders borrow pit must have a self-certifying 'biosecurity matter free' declaration form (excluding movement of material within the same property) (Powerlink EMP, BIO18). • Transportation of loads of plant material or soil (that may contain biosecurity matter) must be covered during transport (Powerlink EMP, BIO19). • Regular monitoring of the easement and access tracks must be undertaken to identify any new outbreaks (Powerlink EMP, BIO22). • Appropriate disposal of material potentially contaminated with biosecurity matter must be undertaken in accordance with *Biosecurity Act 2014* requirements (Powerlink EMP, BIO23). • A biosecurity matter survey must be completed along the easement and established access tracks post construction and following the first wet season (Powerlink EMP, BIO24). • Temporary or Permanent clean down facility selection and site location selection must consider: ○ Clean down sites to be located in the following preferential order (in consultation with relevant stakeholders): ▪ utilise existing commercial clean down facilities ▪ on Powerlink owned land ▪ on easement ▪ on road reserve ▪ on existing and agreed access (off easement on private property). ○ Clean down sites must not be located on a clean property, but rather on the way out of a property affected by a biosecurity matter. ○ Clean down sites must not be located in environmentally sensitive areas, unless agreed to by the nominated Regulator (e.g. Temporary clean down facility in a National Park). ○ Clean down sites must be located as close as possible to the infested area to prevent further spread. ○ Runoff from clean down sites must be managed to ensure that sediment, grease, oil and viable plant material does not pollute waterways. ○ Clean down equipment must be maintained in a serviceable and usable condition. ○ Clean down sites must be recorded for monitoring of biosecurity matters (for a minimum of two maintenance cycles from the last time the site was used). ○ Temporary clean down sites must be decommissioned at the end of the Project with geofabric, and contaminated materials				

Matter	Key Management Action	Timing	Responsible Party	Construction Monitoring	Trigger and Corrective Action
	disposal of at a licensed disposal facility and the site rehabilitated to meet 70% groundcover or equivalent to pre-disturbance groundcover (as stipulated in the Environmental Annexure) (Powerlink EMP, BIO27). • As a joint land manager on easements and access tracks, Powerlink may assist with the control of biosecurity matter where: ○ It has been categorically established that their introduction or spread has been caused by Powerlink's activities ○ Property owners are undertaking integrated pest management control measures ○ Consideration has been given to the success of control: ▪ Size (smaller/isolated incursion have a higher chance of success) ▪ Species and its capacity for dispersion ▪ Biosecurity status of the surrounding area. ○ Consideration is given to surrounding landholders, and other regulatory bodies (local councils, Natural Resource Management groups) ○ Required by a regulatory body (e.g. Council eradication notice) (Powerlink EMP, BIO25).				
General measures – in addition to Powerlink EMP	• Personnel boots must be cleaned regularly, as well as between properties by removing excess mud / organic material. Clothing to be checked for weed seeds prior to moving between properties and offsite. • Equipment or material being brought into port facilities for direct transfer to the Project site is required to pass the quarantine inspections and protocols, as per by the Australian Quarantine and Inspection Service. • Use only native or certified weed free seeds in all rehabilitation works, including hydro mulch. No viable weed species are to be mulched or chipped in rehabilitation works. • Areas no longer required to remain cleared will be rehabilitated at the earliest opportunity, using appropriate non-invasive species.				
SEVT TEC, Eucalypt floodplain TEC, *Samadera bidwillii* and collared delma	• Weed inspections within the Disturbance Footprint during clearing and construction to identify and prevent new biosecurity/key weeds becoming established or an expansion of existing weed cover/density/count in patches of TEC and habitat for MNES flora and fauna within the Disturbance Footprint. Inspections will be conducted in close proximity of these areas. The following key weed species listed as threats to these MNES have established populations within the Project Area: • Lantana (*Lantana camara*) (WoNS, QLD Biosecurity) • Rubber vine (*Cryptostegia grandiflora*) (WoNS, QLD Biosecurity) • Cats claw creeper (*Dolichandra unguis-cati*) (WoNS, QLD Biosecurity)	During construction	Contractor	• Monthly monitoring will be undertaken of TEC patches and MNES flora habitat for the introduction of new exotic species or spread of targeted weed species.	**Trigger:** • An increase in cover or abundance of key weed species above baseline levels in MNES habitat or TEC based on pre-clearance survey data. **Corrective Action:** • Where the introduction of, or increase in the distribution of a biosecurity matter/s has been identified, as a result of Contractor activities, the Contractor must take appropriate

Matter	Key Management Action	Timing	Responsible Party	Construction Monitoring	Trigger and Corrective Action
	• Parthenium (*Parthenium hysterophorus*) (WoNS, QLD Biosecurity) • Groundsel bush (*Baccharis halimifolia*) (QLD biosecurity) • Creeping lantana (*Lantana montevidensis*) (QLD Biosecurity). The following key weed species listed as threats to these MNES have not yet been detected within the Field Survey Extent: • Camphor laurel (*Cinnamomum camphora*) (QLD Biosecurity) • Madeira vine (*Anredera cordifolia*) (WoNS, QLD Biosecurity) Pasture grasses (Buffel grass (*Cenchris ciliaris*) and Guinea grass (*Megathyrsus maximus*)), while also identified as key threats to these MNES and observed within the Project Area, are managed for stock fodder by individual landholders along the existing and Project alignment. As a consequence, pasture grasses are beyond the scope of weed species management for the Project.				action to manage and treat the biosecurity matter/s.

No Increase in Pest Presence and Abundance within the Project Area

Table 5.6 No Increase in Pest Presence and Abundance within the Project Area

Matter	Key Management Action	Timing	Responsible Party	Construction Monitoring	Trigger and Corrective Action
General measures – Powerlink EMP (biosecurity, sustainability and resource use)	• A Biosecurity Instrument Permit must be obtained before moving materials (e.g. soils and related equipment) out of biosecurity zones or within different biosecurity zones (Powerlink EMP, BIO20). • Waste awaiting collection is to be left in a tidy and secure manner such that it does not impact on stock, landholders, or adjacent landholder activities, minimise attracting pest animals, or have the potential to be windblown (Powerlink EMP, SRU5b). • Putrescible waste will be sorted in closed waste containers, so it is secured from pest animals and to prevent the attraction and breeding of pest and disease vectors such as flies and rodents (Powerlink EMP, SRU5b).	All Project phases for the duration of the Project.	Contractor	• Monthly audits will be undertaken of waste infrastructure in construction areas.	**Trigger:** • Increased sightings or evidence of pest fauna (e.g. feral pigs, foxes, cane toads, fire ants) in construction area. • Habitat degradation caused by pest activity (e.g. pig wallowing, nest disturbance). • Breach of biosecurity protocols or hygiene measures. **Corrective action:** • Investigate the source and extent of pest activity. • Report pest-related incidents and corrective actions in the environmental compliance system. • Review waste containment measures. • Update management plans and retrain personnel if required.
General measures – in addition to Powerlink EMP	• Educate workforce in the identification of pest fauna species present in the area via inductions before personnel access site. Given the proximity of the Project Area to fire ant biosecurity zones, the workforce will also be trained in how to recognise and report fire ants as per the National Fire Ant Eradication Program. • Avoid inclusion of any water retaining voids or pits where these are not otherwise required for the control of stormwater run-off erosion and sediment control measures or dams required to supply water for construction activities. • Soil/fill/turf and other relevant material will not be imported from areas or suppliers with known fire ant sites. Prior to importing any such material from within fire ant biosecurity zones, the National Fire Ant Eradication Program Material Movement Advice Tool will be used to assess the risk of introducing fire ants. If fire ants, or suspected fire ants, are observed in the Project Area, the sightings will be reported to the National Fire Ant Eradication Program within 24 hours. The site will not be disturbed until an investigation has been undertaken and treatment applied (if required).				

Retain Connectivity and Key Fauna Dispersal Corridors throughout the Project Area

Table 5.7 Retain Connectivity and Key Fauna Dispersal Corridors Throughout the Project Area

Matter	Key Management Action	Timing	Responsible Party	Construction Monitoring	Trigger and Corrective Action
General measures – Powerlink EMP	• Habitat features such as felled trees and logs will be relocated where possible to adjacent areas, where they will not impact on the safe and secure operation of the asset (Powerlink EMP, NF12).	During clearing and access works and at all times during construction activities.	Contractor	• Pre-clearance habitat assessments to identify key dispersal routes and microhabitat features. • As part of pre-clearance surveys – determine relocation site of salvaged habitat features.	**Trigger:** • Loss or high-value habitat features that were identified to be retained. **Corrective action:** • Review and update methods for identifying and marking high-value habitat features for retention. • Contractor to investigate reason for loss of high-value habitat features and retrain workforce if required.
General measures – in addition to Powerlink EMP	• Outside of areas needed for the safe operation of the transmission line retain habitat trees in-situ (e.g. habitat tree to be stem injected and left in easement). • Implement biosecurity controls to prevent weed spread that could degrade corridor quality for MNES species during construction. • Outside areas required for transmission line safety, retain habitat trees in-situ (e.g. habitat tree to be stem injected and left in easement) which can be utilised by for movement by gliders and for refuge by a range of taxa.	During clearing and access works and at all times during construction activities.	Contractor	• Monthly monitoring will be undertaken of easements and access tracks for introduction of new exotic species or spread of targeted weed species. • Pre-clearance surveys to confirm locations of suitable habitat trees to be retained in-situ.	**Trigger:** • Detection of new weed species not previously recorded in the Project Area or a particular portion of the Project Area. • Non-compliance with hygiene protocols (e.g., unwashed vehicles or equipment entering the site). • Complaints or observations from landholders regarding weed proliferation. **Corrective action:** • Where the introduction of, or increase in the distribution of a biosecurity matter/s has been identified, as a result of Contractor activities, the Contractor must take appropriate action to manage and treat the biosecurity matter/s.

Reduce the Loss of High-value Fauna Habitat Features Such as Hollow Bearing Trees/Logs/Surface Rocks

Table 5.8 Reduce the Loss of High-value Fauna Habitat Features Such as Hollow Bearing Trees/Logs/Surface Rocks

Matter	Key Management Action	Timing	Responsible Party	Construction Monitoring	Trigger and Corrective Action
General measures – Powerlink EMP	• Habitat features such as felled trees and logs will be relocated where possible to adjacent areas, where they will not impact on the safe and secure operation of the asset (Powerlink EMP, NF12).	• During clearing and access works.	Contractor and/or Powerlink Clearing and Access Inspector.	• Pre-clearance habitat assessments to identify key habitat features up to six months prior to clearing. • Daily inspections throughout construction by Contractor to ensure clearing activities are compliant with fauna spotter-catcher directions and relevant management plans.	**Trigger:** • Loss of high-value habitat features that were identified to be retained. **Corrective action:** • Review and update methods for identifying and marking high-value habitat features for retention. • Contractor to investigate reason for loss of high-value habitat features and retrain workforce if required.
General measures – in addition to Powerlink EMP	• During the pre-clearance survey, the fauna spotter-catcher will locate, record and mark the following specific habitat features which are to be retained in situ (e.g. habitat tree to be stem injected and left in easement) or removed, in a manner which clearly identifies and demarcates the habitat features using flagging tape. Habitat features include: ○ hollow bearing limbs ○ hollow bearing trees ○ ground timber ○ loose surface rocks (i.e. those suitable for reptiles). • As part of the pre-clearance process, habitat features to be retained in situ will be identified (e.g. loose surface rocks (i.e. those suitable for reptiles), habitat trees to be stem injected) and those to be relocated. • A Pre-clearing Survey Report will identify the habitat features present and include details on retention within the Disturbance Footprint. • The fauna-spotter catcher is to provide necessary mapping of these habitat features to support the implementation of mitigation controls during felling and clearing activities. • The habitat features are to be stored in an appropriate location until it is relocated. An appropriate location for storage includes in previously cleared areas, where it does not pose an increased risk of fire. • Where habitat trees are immediately adjacent to areas of earthworks, install tree protection demarcation to the drip line of the tree.				
Greater glider / yellow-bellied glider	• Pre-clearance surveys will include canopy searches and identification of potential suitably sized tree hollows for greater glider / yellow-bellied glider (Threatened Glider Hollows). Searches will incorporate: ○ the identification of any trees within the disturbance footprint with a DBH >30 cm ○ Where trees with a DBH >30 cm are identified, these trees will be checked for hollows with openings larger than 8 cm diameter. • Where suitable hollows are identified, these trees will be recorded as containing potential Threatened Glider Hollows and the hollow salvage protocol will apply.	During clearing and access works.	Contractor and/or Powerlink Clearing and Access Inspector Fauna spotter catcher.	• Canopy surveillance during felling of any tree >30cm DBH • Ongoing monitoring throughout construction by Contractor to ensure clearing activities are compliant with fauna spotter-catcher directions and relevant management plans.	**Trigger:** • Identification of an unmapped hollow > 8 cm during clearing. **Corrective action:** • Mark tree as potential Threatened Glider Hollow. • Review and update methods for identifying and marking Threatened Glider Hollow for retention
Northern quoll	• Large hollow logs that must be removed from areas of potential northern quoll habitat will be retained and relocated to the edge of the Disturbance Footprint or to nearby areas of suitable northern quoll habitat.	During clearing and access works.	Contractor and/or Powerlink Clearing and Access Inspector Fauna spotter catcher.	• Pre-clearance habitat assessments to identify large hollow logs up to six months prior to clearing. • Ongoing monitoring throughout construction by Contractor to	**Trigger:** • Identification of previously unmapped hollow logs or den structures during clearing.

Matter	Key Management Action	Timing	Responsible Party	Construction Monitoring	Trigger and Corrective Action
				ensure clearing activities are compliant with fauna spotter-catcher directions and relevant management plans.	• Accidental damage or destruction of a retained denning feature. **Corrective Action:** • Review and update methods for identifying and marking high-value habitat features for retention. • Contractor to investigate reason for loss of high-value habitat features and retrain workforce if required.
Painted honeyeater	• Within suitable habitat for the painted honeyeater, micrositing will aim to retain trees with heavy loads of suitable mistletoe (i.e. *Amyema* spp.).	• During clearing and access works.	Contractor and/or Powerlink Clearing and Access Inspector.	• Pre-clearance habitat assessments to identify key habitat features (trees with heavy loads of mistletoe species) within 6 months prior to clearing activities. • Ongoing monitoring throughout construction by Contractor to ensure clearing activities are compliant with fauna spotter-catcher directions and relevant management plans.	**Trigger:** • Loss of high-value habitat features that were identified to be retained. **Corrective action:** • Review and update methods for identifying and marking high-value habitat features for retention. • Contractor to investigate reason for loss of high-value habitat features and retrain workforce if required.

Prevent Any Uncontrolled Fire within the Project Area

Table 5.9 Prevent Any Uncontrolled Fire within the Project Area

Matter	Key Management Action	Timing	Responsible Party	Construction Monitoring	Trigger and Corrective Action
General measures – Powerlink EMP	• Where bushfire has been identified as a risk for the Project, a Bushfire Management Plan must be developed as part of the Emergency Preparation and Response Plan (Powerlink EMP, BF1). • Fire hazard warnings associated with weather patterns and fire risk are issued by the Bureau of Meteorology and the Queensland Rural Fire Service. Daily checking of fire hazard warnings must be undertaken and work crews made aware of the fire warnings (e.g. through pre-starts) (Powerlink EMP, BF2). • Procedures guiding the response to emergency and fire situations, and requests from emergency management authorities, must be documented and communicated where applicable to Project location (Powerlink EMP, BF3).	• Prior to construction. • At all times during the construction of the Project.	Contractor	• Daily fire hazard warning checks. • Compliance checks of firefighting equipment, including fire extinguishers on mobile plant, where practicable. • Annual review of procedures that guide response to emergency and fire situations to ensure	**Trigger:** • Uncontrolled fire resulting from project activities. • Unplanned bushfire within or adjacent to the Project Area. **Corrective action:** • Should an uncontrolled fire occur within the Project area, the Project's Emergency Response Plan will be enacted. Should any corrective actions and changes to fire management be required, they will be done

Matter	Key Management Action	Timing	Responsible Party	Construction Monitoring	Trigger and Corrective Action
	• Firefighting equipment must be kept on site when hot works are being undertaken. Personnel must be trained in the use of the equipment (Powerlink EMP, BF4). • All mobile plant must have a tested and tagged fire extinguisher available where practicable (Powerlink EMP, BF5). • Burning of vegetation is strictly prohibited, unless a permit is obtained from the local fire warden and/or local council, and Powerlink prior to any burning. Permits must be obtained and provided to Powerlink for review prior to any burning (Powerlink EMP, BF6). • Designated smoking areas are to be identified, and cigarette butt bins provided for safe disposal (Powerlink EMP, BF7). • Utilise or establish parking areas for machinery/vehicles away from fuel sources where practical (Powerlink EMP, BF8).			personnel are trained and aware.	in accordance with the BMP and consultation with local emergency services.
General measures – in addition to Powerlink EMP	• During operation, vegetation within the Disturbance Footprint will be managed in accordance with Powerlink's vegetation specification. These specifications typically include descriptions of span vegetation risk, span bushfire risk and vegetation height. These details will be used to assist in reducing potential fuel loads along the easement.				

Minimise Impacts to Threatened Fauna from Increased Light, Noise and Vibration

Table 5.10 Minimise Impacts to Threatened Fauna from Increased Light, Noise and Vibration

Matter	Key Management Action	Timing	Responsible Party	Construction Monitoring	Trigger and Corrective Action
General measures – Powerlink EMP	• Appropriate plant and equipment to be selected for each task to minimise the noise contributions (Powerlink EMP, NV4). • Ensure machinery is fitted with appropriate noise attenuation devices and is maintained in accordance with the manufacturer's recommendations (Powerlink EMP, NV5). • Shut down any equipment generating loud, extraneous (unusual) noise until the source of the noise can be identified and rectified (Powerlink EMP, NV6). • Schedule loud noise activities to occur at times to minimise noise nuisance to surrounding sensitive receptors. Physical noise barriers such as earth mounds, mobile screens, or noise attenuation devices should be used, where necessary (Powerlink EMP, NV7). • Deliver and/or remove materials and equipment to and from the site within the approved hours for construction. All transport vehicles must be in good working order and must avoid using exhaust brakes in built up areas adjacent to the work site (Powerlink EMP, NV8). • Ensure transport routes to and from the site are located, where possible, to limit the impact of traffic noise on potentially sensitive areas (Powerlink EMP, NV9).	All Project phases for the duration of the Project.	Contractor	• Ongoing monitoring of light, noise and vibration in accordance with the EMP.	**Trigger:** • Noise, light and vibration measures are not implemented in accordance with the EMP. **Corrective action:** • Review the EMP and update if necessary. Retrain workforce if necessary.

Matter	Key Management Action	Timing	Responsible Party	Construction Monitoring	Trigger and Corrective Action
	• Plant to be turned off when not in use and regularly maintained and repaired or replaced if it becomes noisier (Powerlink EMP, NV10, NV11). • Project inductions must include information on the potential adverse impact of reversing alarms and exhaust brakes and the need to minimise their use (Powerlink EMP, NV12). • Wherever feasible, turning circles are to be created at the end points of vehicle work legs, which should allow trucks to turn and avoid the need for reversing (Powerlink EMP, NV13). • Non-tonal reversing alarms to be used where practicable (Powerlink EMP, NV14).				
General measures – in addition to Powerlink EMP	• No unnecessary revving or idling of engines will occur on mobile and stationary machines and any equipment not in use during construction will be shut down to mitigate noise and vibration impacts. • No unnecessary use of horns or other audible signals on mobile plant or equipment will occur during construction and operation phases. • All construction vehicles will comply with maintenance schedules and operational restrictions designed to limit noise and vibration impacts during construction. • Staff will be trained in the correct use of machinery and equipment to minimise vibration. • Machinery and equipment will be maintained in good working condition at all times to limit unnecessary vibration.			• Ensure construction vehicles comply with maintenance schedules. • Ensure appropriate training and learnings share have been conducted at toolbox talks.	**Trigger:** • Observation or report of engines being left running or revved unnecessarily on site (e.g., during breaks, when not in use, or outside of operational need). • Audible complaints from nearby sensitive receptors or monitoring data indicating elevated noise/vibration levels attributable to idling/revving. **Corrective action:** • Immediate instruction to operators to shut down engines when not in use. • Toolbox talk or targeted training to reinforce correct engine use protocols. • Increased supervision and random spot checks to ensure compliance. • If repeated, escalate to formal warning or retraining for non-compliant personnel. • Review site signage and communication to ensure expectations are clear.
Koala, greater glider (southern and central), water mouse, yellow-bellied glider	• No night work (unless exceptional circumstances) during the construction phase.	• Construction phase of the Project.		• In exceptional circumstances as a direct result of logistical errors or otherwise that would lead to unplanned night work, lighting setups will be inspected to ensure compliance with light spill controls and nearby fauna	**Trigger:** • The commencement of any night works during construction resulting in artificial lighting spilling into adjacent MNES habitat or causing visible disturbance or disorientation to fauna. **Corrective action:**

Matter	Key Management Action	Timing	Responsible Party	Construction Monitoring	Trigger and Corrective Action
				will be observed for signs of disturbance.	• If logistics and safety permit, suspend night work and resume during daylight hours. • Adjust or reorient artificial lighting where practicable, limit lighting within sensitive nocturnal or breeding areas. • Review the cause of night work occurring and utilise as a learning at toolbox talks, if appropriate.

Areas of Disturbance Are Rehabilitated Progressively to Ensure They Are Stable (to Minimise Erosion)

Table 5.11 Areas of Disturbance Are Rehabilitated Progressively to Ensure They Are Stable (to Minimise Erosion)

Matter	Key Management Action	Timing	Responsible Party	Construction Monitoring	Trigger and Corrective Action
General measures – Powerlink EMP	• A Rehabilitation Management Plan must be developed by an appropriately qualified person (Powerlink EMP, SW13). • A Rehabilitation Specialist with a minimum of five (5) years' experience in supervising and carrying out large scale rehabilitation activities must be engaged and present on site when revegetation activities are being carried out and be available to provide advice or attend site where required during establishment and monitoring periods (Powerlink EMP, SW14). • Ground preparation works must be carried out prior to commencing any rehabilitation treatments and in accordance with the Rehabilitation Management Plan (Powerlink EMP, SW15). • Rehabilitation treatments must be undertaken in accordance with the Rehabilitation Management Plan and soil testing recommendations for the site (Powerlink EMP, SW16). • In accordance with the IECA Best Practice Erosion and Sediment Control Guidelines, a minimum 70% ground cover (or equivalent to pre-existing ground cover) must be achieved on all completed earthworks exposed to accelerated soil erosion within 30 days. ESC measures must remain in place and monitoring undertaken, until site stabilisation criteria is achieved (Powerlink EMP, SW17, SW18).	• Construction and rehabilitation phases	Contractor	• Contractor to monitor rehabilitated areas in accordance with the RMP and rehabilitation/stabilisation of landforms monitoring program as outlined in **Table 6.1**.	**Trigger:** • Soil loss and instability occur in areas that are no longer in use by the Project. • Damage (e.g. vehicle tracks) to rehabilitated areas. • Rehabilitation is dominated by weeds. • Rehabilitation fails to meet objectives or criteria of the RMP. **Corrective action:** • Contractor to organise remediation works to address erosion and sedimentation e.g. replace topsoil, install erosion controls within two weeks of issue being identified or earlier if rainfall is forecast. • Damage to rehabilitated areas to be remediated within 48 hours of being identified. Workforce to be retrained. Fencing/signage to be erected to identify the rehabilitated area as a no-go zone. • Weed treatment will be applied and re-treated as appropriate until native species are dominant. • Review and update Rehabilitation Management Plan if required.
General measures – in addition to Powerlink EMP	• Progressively rehabilitate and revegetate work areas as soon as reasonably practicable to avoid extended periods of soil exposure, as per the Rehabilitation Management Plan. • Rehabilitated areas are to be signposted and designated as no-go zones to prevent vehicular access.				

Minimise Disruption to Waterbodies Through Altered Hydrology, Disturbance to Acid Sulfate Soils, Erosion and Sedimentation

Table 5.12 Minimise Disruption to Waterbodies through Altered Hydrology, Disturbance to Acid Sulfate Soils, Erosion and Sedimentation

Matter	Key Management Action	Timing	Responsible Party	Construction Monitoring	Trigger and Corrective Action

General measures – Powerlink EMP (water, acid sulfate soils)	• A Water Quality Monitoring Plan must be developed by an appropriately qualified person and implemented to minimise the risk of sedimentation and/or contaminants from site entering waterways (Powerlink EMP, SW20).
	• Site activities must not cause environmental harm or environmental nuisance to waterways within the site or adjacent waterways into which the site discharges (Powerlink EMP, SW19).
	• Prior to dewatering activities, investigations must be undertaken to identify nearest sensitive receptors, water quality objectives of any receiving waters and site conditions, to ensure the suitability of dewatering and a Dewatering Management Plan developed (Powerlink EMP, SW21).
	• Where acid sulfate soil (ASS)/potential acid sulfate soil (PASS) has been identified, an ASS Management Plan must be developed in accordance with the Queensland Acid Sulfate Soils Technical Manual. The ASS Management Plan must contain as a minimum the following:
	  ○ Location
	  ○ Treatment method
	  ○ Amelioration application rates (e.g. lime at 25 kg per cubic metre)
	  ○ Method for containment of affected soils and any runoff
	  ○ Rehabilitation plan
	  ○ PPE required (Powerlink EMP, ASS2).
	• Where ASS/PASS is present, all soil disturbance work to occur in accordance with the ASS Management Plan (Powerlink EMP, ASS3).
	• All staff and Contractors undertaking soil disturbing work in high-risk areas must complete training/awareness on the identification and management of ASS (Powerlink EMP, ASS4).
	• Water extraction activities will be strictly controlled and monitored to ensure no waterbodies are completed drained. For each waterbody, a single access point will be utilised for water extraction to minimise areas of disturbance and allow potentially occurring MNES fauna to avoid the same area during construction (Powerlink EMP, NF38).
		• Prior to and during construction phase of the Project.	Contractor	• Weekly and post-rainfall inspections of erosion and sediment controls.
				• Water quality sampling in accordance with the Water Quality Monitoring Plan.
				• Visual inspections for sediment runoff and erosion.
					Trigger:
					• Water quality parameters exceed established thresholds during routine monitoring.
					• Visual signs of erosion, sedimentation, or pollution in nearby water bodies due to the Project.
					• Complaints or observations of aquatic habitat degradation.
					• Breach of sediment control protocols.
					Corrective action:
					• Implement additional sediment and erosion controls in affected areas as per the ESCP.
					• Conduct water sampling and ecological assessments to determine impact extent.
					• Notify regulatory bodies and follow incident reporting procedures.
					• Review and revise construction scheduling and site layout.
					• Review of adequacy of ASS Management Plan measures.

General measures – in addition to Powerlink EMP	• Best practice sediment and erosion control measures specific to tidal areas will be implemented to avoid potential contamination of surface water or adjacent habitats or allowing water and sediment runoff into potential habitat. Controls to include:
	  ○ sediment fencing and containment around construction sites (i.e. silt fences and/or sediment traps)
	  ○ dust suppression and stabilisation of exposed soils
	  ○ no earthworks during high tides in tidal areas.
	• Locate stockpiles above flood extents and ensure they are covered or stabilised.
	• Temporary site offices, stockpiling/ laydown areas, plant and equipment storage areas will be located away from waterbodies, and will be sited within already cleared or disturbed areas.
	• Maintain access tracks to prevent rutting and sediment transport.				

5.4 Effectiveness of Mitigation Measures

The effectiveness of the mitigation measures that have been identified in **Table 5.1** to **Table 5.12** re outlined in **Table 5.13**.

Table 5.13 Effectivness of Proposed Mitigation Measures

Key Objective	Key Management Action	Relevant Requirements or Procedures	Anticipated Effectiveness
Vegetation clearing is limited to the Disturbance Footprint	• Nominate vegetation clearing areas on the EWP. • Specify areas with special management requirements (i.e. no-go zones). • Clearly delineate clearing limits and minimise to what is necessary. • Disturbance activities must be contained to Disturbance Footprint. • Identify and map MNES flora populations and TEC's through pre-clearance surveys. • 10 m buffer to be maintained around MNES flora and TECs where they are directly adjacent to or within disturbance activities.	• Powerlink's overarching EMP • Environmental annexure prepared by Powerlink to support the Construction phase. • Powerlink's EWP. • CEMP. • AS 4970 2009: Protection of Trees on Development Sites.	**High** Early detection combined with spatial avoidance is the single most reliable way to prevent impact. Formalising the footprint creates a clear compliance reference for construction team. Signage, exclusion fencing and education is likely to be sufficient to prevent disturbance to sensitive areas. Minimising vegetation clearing reduces direct and indirect impacts; preserves structural diversity and microhabitats.

Key Objective	Key Management Action	Relevant Requirements or Procedures	Anticipated Effectiveness
Retention and avoidance of individuals or populations of MNES threatened flora within the Disturbance Footprint	• Identify and map MNES flora through pre-clearance surveys. • Extent of vegetation clearing clearly delineated. • No-go zones, including buffers where relevant, will be demarcated. • Vegetation clearing undertaken in accordance with relevant permits, Powerlink specifications and guidance material. • Site personnel familiarised with the locations of MNES flora individuals. Detailed counts undertaken before clearing activities. • Follow Unexpected Finds Protocol for new MNES flora population.	• Flora Survey Guidelines - Protected Plants *Nature Conservation Act 1992* (Department of Environment, Tourism, Science and Innovation 2025). • Powerlink's overarching EMP. • Environmental annexure prepared by Powerlink to support the Construction phase. • Powerlink's EWP. • CEMP.	**High** Early identification and avoidance removes the primary impact pathway and provides clear operational boundaries. Physical barriers are highly effective at preventing inadvertent clearing and buffers maintain microclimate and reduces edge effects. Detailed counts enable precise avoidance and assist in translocation planning (*Cycas megacarpa*). **Moderate** Identification material is essential for the unexpected find protocol and awareness of site-personnel of species' is required for minimising impacts.
	Implementation of CTMP.	• Draft CTMP • National Multi-species Recovery Plan for Cycads (Queensland Herbarium, 2007). • Guidelines for the Translocation of Threatened Plants in Australia (Commander et al., 2018).	**High** The successful implementation of the CTMP will result in the best chance of translocation success for *Cycas megacarpa*. This species has been successfully translocated for other Projects in the region.

Key Objective	Key Management Action	Relevant Requirements or Procedures	Anticipated Effectiveness
Prevent and minimise mortality of MNES fauna	• Staged clearing • Soft felling of hollow-bearing trees and stags. • Retention of habitat features in situ.	• Draft Queensland Code of Practice For the Welfare of Wild Animals Affected by Land Clearing and Other Habitat Impacts and Wildlife Spotter/ Catchers (Hanger and Nottidge 2009). • Accepted development vegetation clearing code clearing for infrastructure (Department of Natural Resources and Mines, Manufacturing, and Regional and Rural Development 2023). • Requirements for tampering with a protected animal breeding place in Queensland (Department of the Environment and Science 2016). • Koala-Sensitive Design Guideline: A guide to koala-sensitive design measures for planning and development activities (Queensland Government 2022).	**Moderate** Staged clearing protocols will reduce the impact of vegetation clearing at any one time across the Disturbance Footprint. Fauna movement will be maintained as sequential clearing will allow self-relocation, however, there is no guarantee that all fauna will self-re-locate between clearing stages or clearing limits or delays at any one time will be sufficient to appropriately mitigate fragmentation impacts as a result of the Project. Sedentary fauna and fauna that rely on camouflage rather than a dispersal response are unlikely to self-relocate.
	• A suitably qualified fauna-spotter catcher with a current Damage Mitigation Permit will be present during pre-clearance surveys and clearing activities.	• Draft Queensland Code of Practice For the Welfare of Wild Animals Affected by Land Clearing and Other Habitat Impacts and Wildlife Spotter/ Catchers (Hanger & Nottidge, 2009).	**Moderate** Clearing procedures will mitigate impacts to fauna and vegetation however, no net loss is not feasible due to the nature of impacts as a result of the Project. Clearing procedures that rely on pre-clearance surveys and/or fauna-spotter catcher supervision may not identify cryptic fauna (e.g. fauna that is subterranean

Key Objective	Key Management Action	Relevant Requirements or Procedures	Anticipated Effectiveness
	• An authorised carer is responsible for the care and release of injured animals. Including treatment of chlamydia in infected koalas.	• Requirements for tampering with a protected animal breeding place in Queensland (Department of the Environment and Science, 2016).	or residing in tree hollows) and therefore such fauna will be at risk.
	• Construction inductions to include species identification material, vehicle speed limits, fauna-related procedures.	• Powerlink's overarching EMP. • Environmental annexure prepared by Powerlink to support the Construction phase. • Powerlink's EWP. • CEMP. • Fauna Sensitive Transport Infrastructure Delivery manual (Department of Transport and Main Roads 2024).	**Moderate** Construction induction material is essential for familiarising personnel with potentially occurring threatened fauna species, mitigation measures and related procedures.
	• No-go zones delineated.		**Moderate** The delineation of no-go zones will prevent inadvertent clearing and reduce fauna mortality. It won't completely remove the risk as fauna can move outside of these areas into areas of impact.
	• Excavations must be secured. Open excavations to be checked twice daily.	• Fauna Sensitive Transport Infrastructure Delivery manual (Department of Transport and Main Roads 2024). • Powerlink's EWP.	**High** By securing or covering excavated areas it will prevent fauna from becoming trapped in the areas. Daily checks will minimise this risk of exposure if entrapment occurs.
Minimise degradation of MNES habitat through dust, contamination, erosion and sedimentation	• Implementation of measures to prevent impacts from chemical spills (i.e. Emergency Response Plan, spill containment, hazard storage design	• Code of practice: Managing risks of hazardous chemicals in the workplace (Workplace Health and Safety Queensland 2021). • Powerlink's overarching EMP.	**Moderate** Spills can occur unexpectedly and remain unnoticeable immediately after occurring (e.g. leaking hydraulic fluid). Exclusion zones and spill management controls should prevent damage or disturbance to sensitive areas.

Key Objective	Key Management Action	Relevant Requirements or Procedures	Anticipated Effectiveness
	optimisation, refuelling protocols).		
	• Erosion and sediment controls (i.e. soil sampling and testing, development of ESCP, topsoil stripping). •	• Best Practice Erosion and Sediment Control Manual (International Erosion Control Association (IECA) 2008). • Erosion and Sediment Control - a field guide for construction site managers (Catchment and Creeks 2024).	**High** Management measures with appropriate installation and monitoring will ensure erosion and sedimentation will not increase as a result of the Project.
	• Dust suppression measures including vehicles restricted to approved tracks, cover all loose loads and set speed limits. • Dust generating activities will be limited on days with high levels of bushfire smoke, strong winds blowing towards receptors or dust sensitive locations.	• Powerlink's overarching EMP. • Management of Dust from Development Sites: Guidance for Developing a Dust Emission Control Plan (Townsville City Council, n.d.).	**High** By implementing the appropriate management measures Project activities will not lead to increased dust generation.
	• Herbicide control: herbicides must not be decanted, mixed or stored within 50 m of a water course/waterbody. Damage to stock or crops, or other environmental harm	• Powerlink's overarching EMP. • Safe and Effective Herbicide Use: A handbook for near-water applications (Environment Protection Authority, 2007).	**Moderate** Spills can occur unexpectedly and remain unnoticeable immediately after occurring. Environmental factors such as wind and heavy rainfall may lead to unexpected contamination. Exclusion zones and management controls should prevent disturbance to sensitive areas.

Key Objective	Key Management Action	Relevant Requirements or Procedures	Anticipated Effectiveness
	caused by herbicide spray drift or misuse reported immediately.		
No increase in weed presence and abundance within the Project Area	• Baseline biosecurity surveys and ongoing inspections and management will be undertaken at the appropriate time of year prior to and around Project activities. • Areas containing weed infestations will be treated progressively prior to undertaking the commencement of site disturbance and any construction activities within the vicinity. Species-specific control methods will be developed and presented in the EMP. • Land access biosecurity requirements to be adhered to. • Biosecurity project specific inductions to be organised. • A biosecurity inspection of vehicles, machinery and plant must be	• Powerlink's overarching EMP. • Banana Shire Council Biosecurity Plan 2019-24 (Banana Shire Council 2019). • Australian Weeds Strategy 2017 – 2027 (Invasive Plants and Animals Committee 2017). • Vehicle and machinery clean-down procedures (Biosecurity Queensland 2019). • General biosecurity obligation (Department of Primary Industries, 2021). • Preventing the spread of significant invasive plants (weeds) (Queensland Government, 2023). • Come clean go clean (Department of Primary Industries, 2024). • Queensland Invasive Plants and Animals Strategy 2025–2030 (Queensland Government, n.d.).	**Moderate** • Biosecurity practices will reduce the introduction and exacerbation of new and existing weeds. • Existing weeds may easily be spread by disturbances expected to occur as a result of the Project (i.e. vehicle movement, erosion, dust, human traffic). • Weeds also spread naturally as a result of processes the Project can't control, such as wind and zoochory (spread by animals).

Key Objective	Key Management Action	Relevant Requirements or Procedures	Anticipated Effectiveness
	completed in line with Project requirements. • Clean downs must be undertaken in accordance with the Queensland Government's biosecurity clean down requirements. Clean down sites to be provided and in line with Project requirements. • Biosecurity Declarations must be accompanied with all high-risk materials (eg. sand, soil, mulch), from suppliers of these products. Transportation of loads of plant material or soil must be covered during transport. • Personnel boots must be cleaned regularly, as well as between properties by removing excess mud / organic material. Clothing to be checked for weed seeds prior to moving between properties and offsite.		

Key Objective	Key Management Action	Relevant Requirements or Procedures	Anticipated Effectiveness
	• Use only native certified weed free seeds in all rehabilitation works, including hydro mulch.		
No increase in pest presence and abundance within the Project Area	• A Biosecurity Instrument Permit to be obtained before moving materials (e.g. soils and related equipment) out of biosecurity zones or within different biosecurity zones. • Store waste awaiting collection securely to minimise attracting pest animals, or have the potential to be windblown. • Putrescible waste will be sorted in closed waste containers, secured from pest animals. • Site inductions to educate workforce in the identification of pest fauna species known to the area. • Avoid inclusion of any water retaining voids or pits where these are not	• Powerlink's overarching EMP. • Biosecurity Plan 2021-25 for invasive plants and animals (Gladstone Regional Council 2020). • Banana Shire Council Biosecurity Plan 2019-24 (Banana Shire Council 2019). • Australian Pest Animal Strategy 2017 – 2027 (Commonwealth of Australia, 2017). • Queensland Invasive Plants and Animals Strategy 2025–2030 (Queensland Government, n.d.).	**High** • Biosecurity instrument ensures compliance with biosecurity laws and prevents pest spread. • Secure storage of waste reduces attraction of pests and closed containers prevents breeding of flies, rodents, and disease vectors. • Workforce education on pest fauna and fire ants improves early detection and reporting. • Avoid unnecessary water-retaining voids/pits reduces cane toad breeding and pest habitat.

Key Objective	Key Management Action	Relevant Requirements or Procedures	Anticipated Effectiveness
	otherwise required for Project activities. • Soil/fill/turf and other relevant material will not be imported from areas or suppliers with known fire ant sites.		
Retain connectivity and key fauna dispersal corridors throughout the Project Area	• Habitat features relocated where possible to adjacent areas, where they will not impact on the safe and secure operation of the asset. • Outside areas required for transmission line safety, retain habitat trees in-situ (e.g. habitat tree to be stem injected and left in easement) which can be utilised by for movement by gliders and for refuge by a range of taxa. • Implement biosecurity controls to prevent weed and pest spread that could degrade corridor quality for MNES species.	• Powerlink's overarching EMP. • CEMP. • Fauna Sensitive Transport Infrastructure Delivery manual (Department of Transport and Main Roads 2024). • Biodiversity and infrastructure handbook (Infrastructure and Energy Network Europe 2025).	**Moderate** • Relocating habitat features, preserves microhabitats (shelter, foraging, moisture retention) and structural complexity. • Retain habitat trees in-situ maintains hollows and vertical structure for fauna. • Weed measures prevents habitat degradation and competition from weeds, preserving corridor function

Key Objective	Key Management Action	Relevant Requirements or Procedures	Anticipated Effectiveness
Reduce the loss of high-value fauna habitat features such as hollow bearing trees/logs/surface rocks	• Pre-clearance surveys by fauna spotter-catcher to locate, record and mark habitat features. • Mapping of habitat features to guide mitigation during clearing. • Pre-clearing Survey Report. • Retention of habitat features in situ	• Powerlink's overarching EMP. • CEMP	**Moderate** • Clearing procedures will mitigate impacts to fauna. Clearing procedures that rely on pre-clearance surveys will identify features of high value, however, not necessarily prevent the loss of features due to other factors such as safe access / removal. • Retain habitat trees in-situ maintains hollows and vertical structure for fauna.
Prevent any uncontrolled fire within the Project Area	• Develop a BMP and document and communicate fire response procedures. • Prohibit burning of vegetation. • Manage vegetation in accordance with Powerlink vegetation specifications.	• Obligations under the *Electrical Safety Act 2002* and *Electrical Safety Regulations 2013* to manage risk to the safety of the public, people and the environment so far as reasonably practical (Powerlink Queensland n.d.). • Project BMP.	**Moderate** • Management measures will ensure the risk of bushfire will not increase as a result of the Project due to procedures guiding responses to fire situations and isolating potential ignition sources. • Future fire events and their impact are difficult to predict and likely to be exacerbated by climate change (i.e. hotter, larger fires).
Minimise impacts to threatened fauna from increased light, noise and vibration	• Artificial light suppression as a result of unplanned nightworks.	• National Light Pollution Guidelines for Wildlife (Department of Climate Change, Energy, the Environment and Water 2023).	**High** Lighting control measures (i.e. light shields, night work avoidance) will likely prevent impacts to fauna.
	• Appropriate plant and equipment with noise attenuation devices and	• Guide to Noise and Vibration Control on Construction, Demolition and Maintenance	**Moderate** • Disturbances from noise will occur during construction and cannot be fully mitigated.

Key Objective	Key Management Action	Relevant Requirements or Procedures	Anticipated Effectiveness
	only utilised when needed. • Maintain equipment to limit increases in noise and vibration. • Schedule noisy activities.	Sites (Australian Standards 2010). • Powerlink's EMP. • CEMP.	• Impacts will be short-term and the staged construction process will prevent prolonged disturbances to discrete sections of the Project Area at any one time. • Impacts from noise that occur during construction, operation and maintenance will be mitigated through noise control measures including equipment maintenance, attenuation devices and scheduling equipment shutdowns as these actions eliminate unnecessary noise and are proven to reduce operation noise.
	Construction inductions and regular toolbox talks.	• Workplace Induction for Construction Workplaces: Information Sheet (Safe Work Australia 2014).	**Moderate** • Daily communication will assist in workplace education and inform personnel of the risks of environmental harm. • Recommended procedures may not be always adhered to and fatigue may impact upon information recall during toolbox talks.
Areas of disturbance are rehabilitated progressively to ensure they are stable (to minimise erosion).	Rehabilitation management consisting of: • A RMP must be developed by an appropriately qualified person. • A Rehabilitation Specialist with a minimum of 5 years' experience must be	• Powerlink's EMP. • National standards for the practice of ecological restoration in Australia (Society for Ecological Restoration, 2021).	**High** • These measures collectively provide a robust framework for erosion control and ecological restoration via surface stabilisation. The combination of qualified oversight, strict groundcover targets, and physical protection (signage) significantly reduces risks of soil instability, weed invasion, and habitat degradation.

Key Objective	Key Management Action	Relevant Requirements or Procedures	Anticipated Effectiveness
	engaged and present on site when revegetation activities are being carried out. • Ground preparation works and rehabilitation treatment must be carried out in accordance with the Rehabilitation Management Plan.		
	• Minimum 70% ground cover (or equivalent to pre-existing ground cover) must be achieved on all completed earthworks exposed to accelerated soil erosion within 30 days.	• Powerlink's EMP. • IECA Best Practice Erosion and Sediment Control Guidelines.	
	• Rehabilitated areas are to be signposted and designated as no-go zones to prevent vehicular access.	• Powerlink's EMP.	

Key Objective	Key Management Action	Relevant Requirements or Procedures	Anticipated Effectiveness
Minimise disruption to waterbodies through altered hydrology, disturbance to acid sulfate soils, erosion and sedimentation.	• Develop and implement a Water Quality Monitoring Plan. • Control and monitor water extraction. • Where acid sulfate soils are identified, prepare an ASSMP which includes staff training. • Implement best practice sediment and erosion controls. • Locate stockpiles above flood extents and ensure they are covered or stabilised. • Site temporary offices, laydown areas, and equipment storage away from waterbodies. • Maintain access tracks to prevent rutting and sediment transport.	• Healthy Waters Management Plan Guideline (Department of Environment and Science 2020). • Powerlink's EMP. • CEMP. • ASSMP.	**High** • A water quality monitoring plan enables early detection and details corrective actions as well as provides a compliance baseline for activities. • Acid sulphate soil management and training ensures consistent application of controls as well as improves identification and responsiveness. • Location of stockpiles and other construction infrastructure reduces erosion and sediment transport as well as eliminates the direct contamination risk. • Utilising best practice erosion and sediment control ensures a consistent approach to control and prevents sediment runoff and habitat contamination.

6.0 Monitoring

Monitoring programs have been developed to support ongoing understanding of MNES within the Project Area and to monitor the potential impacts within the Disturbance Footprint. Monitoring relevant to impact mitigation will also occur in the adjacent offset areas, such as the relocation of MNES habitat features or translocating individual MNES.

Monitoring programs aim to:

- Minimise mortality of individuals
- Retain high value habitat features
- Track health and condition of retained individuals and communities
- Detect and respond to pest and weed threats
- Assess effectiveness of mitigation measures
- Enable adaptive management through performance-based triggers.

6.1 General Operation

During operation, maintenance measures will be implemented for the safe operation of the transmission line in accordance with Powerlink's asset management strategy. This will include selective clearing of incompatible vegetation species as needed for safe operation of the transmission line. This selective clearing will be within the easement cleared during construction and is substantially less invasive on MNES habitats than construction phase clearing works. The relative risk of all impacts on MNES is considerably lower during operation due to the decreased access and activity levels relative to construction.

6.2 Operational Phase Inspections

Powerlink complies with regulatory requirements such as ISO55001 – Asset Management Standard and continues to have the social and transmission network service provider licence to operate. Operational management of the transmission line is undertaken through condition assessments which provide an indication of the level of compliance of the asset. Data for condition assessments is captured by various means, including land inspections, aerial inspections, spatial analysis and LiDAR surveys. The frequency and type of condition assessments is primarily driven by the type of asset and potential risk of incompatible vegetation growth posing a threat to network assets.

Condition assessments are undertaken at least every two to four years across the length of the transmission line easement and typically include descriptions of the following:

- span vegetation risk
- span bushfire risk
- vegetation height
- vegetation density
- tower leg condition

- herbicide application
- access track condition
- washdown condition
- biosecurity matter density.

Based on the results of condition assessments, condition-based maintenance will be undertaken for locations where high risk items are identified (e.g. incompatible vegetation present, severe defects on access tracks are identified as present, resulting in unsafe conditions). Following each condition assessment, a status report will be prepared to outline maintenance issues, non-compliances and rectifications/corrective actions taken. Each status report will include any weed outbreaks identified, including density. Where high risk items are identified and attributed to project activities or pose risk to the Project, Powerlink will work in conjunction with landholders to manage these items.

Operational monitoring will also include:

- Compliance checks against approved clearing limits, as part of the annual environmental assurance program for the asset.
- Monitoring of *Cycas megacarpa* retained within the Disturbance Footprint in accordance with the CTMP.
- Monitoring of *Samadera bidwillii* within the Disturbance Footprint in areas where the species has been retained but the habitat has been cleared (e.g. removal of the canopy below transmission lines).
- Weed visual observations.

Table 6.1 details the operational monitoring measures for the Project contained within the Disturbance Footprint. Operational monitoring often incorporates or works in parallel with construction-based monitoring, and where this is the case, this has been linked back to specific MNES measures.

6.3 Monitoring within the Offset Property

6.3.1 Cycas megacarpa

The monitoring of *Cycas megacarpa* individuals translocated from the Disturbance Footprint to recipient areas. This monitoring also extends to propagated plants held in nursery. Details of this monitoring are prescribed in the CTMP.

6.3.2 Greater Glider and Yellow-bellied Glider

The monitoring of greater glider and yellow-bellied glider (referred threatened glider) hollows and/or supplementary nest boxes that are salvaged from the Disturbance Footprint and relocated into designated habitat within the Offset Area. Further information will be provided on the management and monitoring of salvaged hollows within the project OMP.

6.3.3 Collared Delma

The monitoring of translocated collared delma individuals (relocated from Disturbance Footprint) and supporting habitat within the Offset Area. Further information will be provided on the management and monitoring of collared delma habitat within the Offset Area as part of the OMP.

Whilst the corresponding management plans will provide the detailed management and monitoring measures for each of the above, **Table 6.2** provides a high level overview of the monitoring programs. Further, prescriptive detail will be provided in the OMP or CTMP.

Table 6.1 Longterm MNES Monitoring

Monitoring Program	Purpose	Key Indicators	Methods	Timing and Frequency	Trigger Thresholds	Corrective Action
Cycas megacarpa	To monitor the survival, growth, and recruitment of retained (in-situ) *Cycas megacarpa* individuals within the Disturbance Footprint. This program will evaluate the success of the mitigation measure and alert Powerlink to any decline in condition. This will enable the implementation of any corrective actions should they be required, and ensure the programme remains compliant with approval conditions.	• Growth and health condition (frond development, pest/disease presence, damage) • Cone and seed production (reproductive success) • Recruitment success • Firmness in ground (root development indicator)	• Monitoring will involve recording the survival, growth, and health of retained *Cycas megacarpa* individuals. • Permanent photo points will be used to capture visual changes in plant condition. • Surveys will assess seedling recruitment and reproductive success, including cone and seed production.	• Individuals retained in-situ will be monitored annually for the first 5 years of the program and then every second year until 15 years post salvage (2041).	• There are no trigger thresholds at this time, with individuals retained in situ.	• There are no corrective actions at this time with individuals retained in situ.
Samadera bidwillii	To ensure the protection, viability, and recovery of *Samadera bidwillii* populations affected by transmission line construction (where overspanning impacts to habitat are not possible). The program aims to monitor ecological health, reproductive success, and threats to inform adaptive management and conservation actions.	• Population structure: Plant density, height, stem diameter, leaf size. • Reproductive success: Ongoing clonal reproduction. • Threats: Weed invasion, pest damage (e.g. *Atteva albiguttata*), habitat fragmentation, fire impact. • Regeneration capacity: Root suckering, post-fire recovery.	• Ecological surveys: Transect and plot-based assessments of population metrics. • Soil and habitat analysis: pH, EC, nutrient profiling, slope, aspect, canopy cover. • Threat documentation: Weed mapping, pest damage scoring, fire impact surveys.	• Baseline survey: Pre-construction and ecological assessments 3–6 months prior to construction. • Construction phase: Quarterly monitoring of disturbance impacts (see **Section 5.2**). • Post-construction: Annually for up to 5 years.	• Weed cover increased by ≥10% compared to baseline conditions or presence of declared invasive species not present during baseline assessment where Powerlink has contributed to the introduction and/or spread. • Pest damage increased by ≥10% compared to baseline conditions.	Corrective actions to be implemented following trigger thresholds being reached include: • Weed removal, erosion control, canopy management. • Pest management: Use of neem oil, exclusion fencing, or biological controls.
Rehabilitation / stabilisation of landforms	To ensure the long-term stability and ecological recovery of landforms disturbed during transmission line construction, including tower pads, access tracks, and cleared corridors. The program aims to verify that rehabilitation measures are effective and environmental risks such as erosion and weed invasion, are managed.	• Soil stability: Evidence of erosion, sediment movement, and soil compaction. • Weed presence: Density and extent of invasive or non-target species. • Compliance with design benchmarks: Achievement of specified rehabilitation outcomes (e.g. 70% ground cover, no erosion features).	• Visual inspections: Transect walks and photo-point monitoring to assess vegetation and erosion.	• Baseline survey: Immediately post-construction and prior to rehabilitation works. • Initial monitoring: Monthly for the first 3 months to assess germination and early growth (see **Section 5.2**). • Ongoing monitoring: Quarterly for up to 2 years or until benchmark conditions are met.	• Presence of erosion features (e.g. rills, gullies, sediment plumes). • Weed cover increased by ≥10% compared to baseline conditions or presence of declared invasive species not present during baseline assessment where Powerlink has contributed to the introduction and/or spread.	Corrective actions to be implemented following trigger thresholds being reached include: • Soil amelioration: Application of lime, gypsum, or compost to improve soil health. • Weed control: Manual removal, targeted herbicide application, or mulching. • Erosion control: Maintenance of existing sediment fencing, coir logs, or reshaping and stabilising slopes.

Monitoring Program	Purpose	Key Indicators	Methods	Timing and Frequency	Trigger Thresholds	Corrective Action
					• Failure to meet benchmark conditions within 24 months.	
Weed	To monitor the presence, abundance, and spread of weeds within the Project Area and to evaluate whether control measures implemented are effective at minimising the incursion and spread of weeds. Monitoring ensures early detection of new incursions and supports compliance with biosecurity requirements.	• Construction phase: ○ **Weed presence / occurrence:** cover/density/count in proximity to MNES flora and/or TECs. • Operational phase: ○ **Weed occurrence:** species present, extent of cover, and changes in distribution ○ **Trend data:** changes in abundance or spread over time compared with baseline conditions.	• Monitoring will involve systematic field surveys across disturbed and undisturbed areas of the Disturbance Footprint. • Weed surveys will record species, percentage cover, density, and distribution using transects, quadrats, or rapid assessment plots. • All records will be mapped and entered into a monitoring database to track changes over time.	• Baseline survey: prior to construction to document pre-existing weeds. • Construction phase (see **Section 5.3**): ○ Weed inspections within the Disturbance Footprint in proximity to listed threatened species and patches of TEC during clearing and construction to identify and prevent new biosecurity weeds becoming established or an expansion of existing weed cover/density/count. • Operational phase: ○ Monitoring for weeds and pests at substations will be undertaken during operation during routine substation maintenance inspections, which occur every six months (at a minimum), with status reports recorded and corrective actions implemented through Powerlink's Asset Management System. ○ Weed monitoring along the transmission line will be undertaken during condition assessments, which occur every two to four years depending on the risk profile of the asset (urban / rural). ○ Weed monitoring during operations reflects Powerlink's strategy to integrate efforts with landholders to focus on weed prevention. Where an increase in weeds attributable to Project Activities are identified by workers or the landholder, or weeds are identified that pose a risk of spread by Project Activities, the Project Environmental Representative will with work landholders to manage weeds.	• Construction phase: ○ Increase in weed cover or density by >20% compared to previous monitoring ○ New detection of restricted invasive weeds as listed under the Queensland *Biosecurity Act 2014* ○ Non-compliance with hygiene protocols (e.g., unwashed vehicles or equipment entering the site). • Operational phase: ○ Where Powerlink activity has resulted in the introduction or spread of weeds.	Corrective actions to be implemented following trigger thresholds being reached include: • Notification and reporting of any new or restricted invasive weed species to site environmental representative. • Initiation of targeted investigations to confirm extent and source of new incursions. • Recommendation of additional weed control measures to site environmental representative. • Adaptive review of monitoring methods should trigger thresholds be consistently exceeded.

Monitoring Program	Purpose	Key Indicators	Methods	Timing and Frequency	Trigger Thresholds	Corrective Action

Water quality monitoring	To monitor and manage potential impacts on water quality in the Calliope River resulting from transmission line construction activities. The program aims to ensure compliance with environmental standards, protect aquatic ecosystems, and guide timely corrective actions.	• Physical parameters: Turbidity, temperature, total suspended solids (TSS).
		• Chemical parameters: electrical conductivity, pH, dissolved oxygen, total organic carbon (TOC), dissolved organic carbon (DOC), herbicides, pesticides, nutrients (nitrogen and phosphorus), ammonia, nitrogen oxides (NOx).
			• Water sampling: Grab samples collected upstream, at the crossing point, and downstream.
			• In-situ measurements: Use of portable meters for pH, EC, DO, and temperature.
			• Laboratory analysis: Nutrients, hydrocarbons, and TSS tested by NATA-accredited labs.
			• Visual inspections: Daily checks for sediment runoff, erosion, and spills.
				• Until the rehabilitation criteria are met, monitoring triggered by rainfall events exceeding the nominated runoff causing threshold will be conducted.
				• Sampling collecting within 24 hours of discharge event.
				  ○ Construction phase (see **Section 5.3**)
				  ○ Daily visual inspections during active works
				  ○ Event based following significant rainfall events (>25 mm in 24 hours or >50 mm over three days).
					• Trigger thresholds as outlined in Table 5.1 of the WQMP.	Corrective actions to be implemented following trigger thresholds being reached include:
						• Potential deviation from background conditions: Increase monitoring frequency and inspect controls within 24 hours of becoming aware.
						• Significant department from baseline conditions: Investigate the cause, implement corrective actions outlined in the WQMP within 48 hours of becoming aware.
						• A value indicating potential for environmental harm: Stop relevant activities, notify the regulator, and implement corrective actions outlined in the WQMP.

Table 6.2 Longterm MNES Monitoring: Offset Property

Monitoring Program	Purpose	Key Indicators	Methods	Timing and Frequency	Trigger Thresholds	Corrective Action
***Cycas megacarpa* (further information in CTMP)**	To monitor the survival, growth, and recruitment of translocated *Cycas megacarpa* individuals from the Disturbance Footprint to recipient sites. This program will aim to ensure a conservation gain is achieved for the species through the replacement at a 1:2 ratio of all *Cycas megacarpa* individuals that cannot be salvaged.	• Survival rate of translocated individuals • Growth and health condition (frond development, pest/disease presence, damage) • Cone and seed production (reproductive success) • Seedling establishment and recruitment at the translocation site • Soil stability and site condition (erosion, disturbance, weed cover).	• Monitoring will involve tagging and recording the survival, growth, and health of all translocated and propagated *Cycas megacarpa* individuals within the recipient site. • Permanent photo points will be used to capture visual changes in plant condition. • Surveys will assess seedling recruitment and reproductive success, including cone and seed production. • Site condition will also be checked at each visit, with observations of weed cover, soil stability, erosion, or other disturbance.	• The monitoring schedule of salvage and supplementary plantings at the recipient sites would be: ○ Monthly for year 1 post transplant ○ Quarterly for the following 18 months ○ Then annually up to year 7 ○ Every two years between years 8 and 14 ○ A final round in year 15. • Propagated individuals as well as salvaged seedlings and juveniles grown in nursery conditions prior to planting in recipient sites will be monitored quarterly for three years prior to planting. • Reference sites will be monitored annually.	Trigger thresholds are developed to identify when the survival, recruitment, or condition of translocated *Cycas megacarpa* individuals falls below acceptable levels. These are: • <85% survival of translocated individuals after 1 year. • <80% survival of translocated individuals after 3 years. • <70% survival of translocated individuals after 7 years. • <50% of translocated individuals health is worse than within the reference site within 7 years of translocation. • Fruiting is recorded on <2% of salvaged female individuals (or comparable to the percentage fruiting occurring at reference site) within 7 years of translocation. • Pollen cones are recorded on <5% of salvaged male individuals (or comparable to the percentage occurring at reference site) within 7 years of translocation. • <70% of required seeds collected by end of 2026. • <70% germination rate of seeds by end of year 1. • Nursery grown individuals are planted out before December 2029. • <90% of nursery grown individuals are alive by the end of first year from planting out.	Corrective actions to be implemented following trigger thresholds being reached include: • Treatment of stressed individuals with relevant insecticides, growth stimulants, the removal of rot, removal of the affected stem back to the base. • Adjustments to the frequency and intensity of the maintenance actions (such as the treatments listed above) and horticultural management period • Replacement of dead individuals with propagated seedlings • Supplementary propagation and/or seedling collection parameters if seedling recruitment and survival rates are below the relevant target • Adaptive management: review methods with suitably qualified specialist (as defined in CTMP) and update the program if thresholds repeatedly exceeded.

Monitoring Program	Purpose	Key Indicators	Methods	Timing and Frequency	Trigger Thresholds	Corrective Action
					• <80% of individuals are alive by the end of the second year from planting out. • <70% of nursery grown individuals are alive five years post maintenance.	

Greater glider / yellow-bellied glider ***(further information in OMP)***	To monitor salvaged threatened glider hollows and/or supplementary nest boxes located in the adjacent offset areas.	• Correct installation of salvaged hollows and/or supplementary nest boxes
		• Use of salvaged hollows and/or supplementary nest boxes by threatened gliders
		• Persistence of salvaged hollows and/or supplementary nest boxes for the offset period
			• Post installation inspections confirming that installation settings reflect similar to natural conditions (as per information collected during salvage) and installed within target recipient area.
			• Spotlight monitoring or remote camera monitoring of salvaged hollows and/or supplementary nest boxes targeting visual confirmation of hollow use by threatened glider.
			• Visual inspections of salvaged hollows and/or supplementary nest boxes confirming persistence over time and condition / maintenance requirements.
				• Post installation monitoring: within first 3 months of installation.
				• The timing of hollow use and persistence monitoring will be coordinated as part of broader monitoring programs and detailed in the OMP.
					• <100% of salvaged hollows and/or supplementary nest boxes installed correctly.
					• The OMP will identify trigger thresholds for:
					  ○ Threatened glider hollow use or presence
					  ○ Persistence and/or condition requirements.
						Corrective actions to be implemented following trigger thresholds being reached include
						• Re-installation: all non-conforming installations will be remedied.
						The OMP will further define corrective actions relating to:
						• Persistence and/or condition requirements.

Collared delma ***(further information in OMP)***	To monitor and mitigate potential impacts on *Delma torquata* individuals. The program aims to ensure that individuals are safely relocated from the Disturbance Footprint to recipient sites located within the adjacent offset areas.	• Species presence: relocated individuals detected within Offset Area.
		• Habitat condition: Ground cover, leaf litter depth, rock and log availability, soil compaction.
		• Threats: Weed invasion, predation (e.g. by cats, foxes), fire, and human disturbance.
		• Microhabitat integrity: Presence of shelter sites (rocks, logs), and invertebrate prey abundance.
			• Post-translocation monitoring: Methods may comprise mark-recapture, camera traps, and artificial refuges at Offset Area to assess survival and movement.
			• Habitat assessments: Quadrat-based surveys for ground cover, shelter density, and soil condition (conducted as part of OMP).
			• Threat monitoring: Feral animal surveys, weed mapping, and fire impact assessments (conducted as part of OMP).
				• Offset Area, post-relocation: twice per year, for 2 years.
				• Habitat quality indicators: As per OMP.
					• The OMP will identify triggers thresholds for:
					  • Decline in ground cover or shelter density
					  • Increased weed cover
					  • Increased feral predator activity
					  • Soil compaction or erosion affecting microhabitat quality.
						Corrective actions to be implemented following trigger thresholds being reached include:
						• Habitat enhancement: Add rocks, logs, and leaf litter to recipient site; reduce soil compaction.
						• Weed control: Manual removal or targeted herbicide application.
						• Predator management: Feral animal control (trapping, exclusion fencing).
						• Fire management.

7.0 Risk Management Assessment

This MMP has considered the risks that may inhibit achieving the management objectives for MNES, including risks outside the approval holder's control. The risks have been assessed using the template supplied by DCCEEW. This MMP and risk analysis includes management triggers and corrective actions to be implemented to manage non-achievement of the performance indicators for MNES species only. The risk analysis:

- Identifies events and threats that will, may, or are likely to impact the achievement of the expected environmental outcomes.
- Assesses threat levels both before (initial risk rating) and after (residual risk rating) risk mitigation strategies are applied.
- Identifies appropriate risk mitigation strategies, with trigger criteria for corrective actions should risks eventuate.

The risks have been assessed against the risk matrix presented within **Table 7.1** and **Table 7.2**. Risk mitigation strategies including monitoring mechanism, management trigger and corrective actions are prescribed within the risk management plan (**Table 7.3**).

Table 7.1 Risk Matrix Used within the Risk Management Assessment

Likelihood (L): A qualitative measure of likelihood how likely is it that this event/circumstances will occur both before and after management activities are implemented	
1. Rare	May occur in exceptional circumstances
2. Unlikely	Could occur but considered unlikely or doubtful
3. Possible	Might occur during the life of the project
4. Likely	Will probably occur during the life of the project
5. Highly Likely	Is expected to occur in most circumstances
Consequence (C): Qualitative measure of what will be the consequence/result if the event/circumstances occur	
1. Minor	Minor incident of environmental damage that can be reversed *(e.g. short-term delays to achieving plan objectives, implementing low-cost, well-characterised corrective actions)*
2. Moderate	Isolated but substantial instances of environmental damage that could be reversed with intensive efforts *(e.g. short-term delays to achieving plan objectives, implementing well-characterised, high cost/effort corrective actions)*

3. High	Substantial instances of environmental damage that could be reversed with intensive efforts *(e.g. medium-long term delays to achieving plan objectives, implementing uncertain, high-cost/effort corrective actions)*
4. Major	Major loss of environmental amenity and real danger of continuing *(e.g. plan objectives are unlikely to be achieved, with significant legislative, technical, ecological and/or administrative barriers to attainment that have no evidenced mitigation strategies)*
5. Critical	Severe widespread loss of environmental amenity and irrecoverable environmental damage *(e.g. plan objectives are unable to be achieved, with no evidenced mitigation strategies)*

Table 7.2 Final Risk Rating based on the Likelihood (L) and Consequence (C)

		Consequence				
		1 – Minor	**2 – Moderate**	**3 – High**	**4 – Major**	**5 – Critical**
Likelihood	**5 – Highly Likely**	Medium	High	High	Severe	Severe
	4 – Likely	Low	Medium	High	High	Severe
	3 – Possible	Low	Medium	Medium	High	Severe
	2 – Unlikely	Low	Low	Medium	High	High
	1 – Rare	Low	Low	Low	Medium	High

Table 7.3 Risk Management Assessment

Management Objective	Event	Initial Likelihood	Initial Consequence	Initial Risk Level	Management Measures	Residual Likelihood	Residual Consequence	Residual Risk Level	Corrective Action Trigger	Corrective Actions
Vegetation clearing is limited to the Disturbance Footprint	• Inadequate delineation of clearing boundaries. • Insufficient mapping or identification of MNES flora populations and TECs during pre-clearance surveys. • Equipment or personnel entering no-go zones. • Changes in site layout or construction methods without updating protection measures.	L3	C4	High	• Identify MNES flora and TEC's through pre-clearance surveys • Extent of vegetation clearing clearly delineated (EWP and onsite) • Disturbance activities must be contained to disturbance footprint • 10 m buffer to be maintained around MNES flora and TEC's where they are directly adjacent to disturbance activities • Refer to Table 5.1 of the MMP for further details on mitigation measures.	L2	C4	Medium	• Clearance of, or damage to vegetation beyond the Disturbance Footprint. • Clearance of TEC and/or habitat for listed threatened species exceeds approved clearing limits.	• Clearing works are to cease immediately and DCCEEW notified of the incident in accordance with timeframes stipulated in the approval. • The incident will be recorded and an investigation undertaken. • Ensure corrective and preventative actions in place before recommencing clearing activity including reviewing barriers, examination of no-go areas, and communication with construction staff.
Retention and avoidance of individuals or populations of MNES threatened flora within the Disturbance Footprint	• Insufficient mapping or incomplete pre-clearance surveys. • Inadequate delineation of clearing boundaries. • Failure to maintain vegetation buffers. • Changes in site layout or construction methods without updating protection measures.	L3	C4	High	• Pre-clearance surveys will be undertaken within suitable habitat within the Disturbance Footprint and for protected plants under the *Nature Conservation Act 1992* • Obtain relevant permits • Extent of vegetation clearing clearly delineated (EWP and onsite) • Clearing in proximity to retained individuals to maintain buffer where possible • Clearing in accordance with all approval conditions • Where new populations of MNES threatened flora are identified, refer to Unexpected Finds Protocol • Refer to Table 5.2 of the MMP for further details on mitigation measures, including species specific mitigation measures for *Cycas megacarpa* and *Samadera bidwillii*.	L2	C4	Medium	• Unapproved removal of stems/individuals of MNES threatened flora. • Identification of new populations of MNES threatened flora.	• Clearing works are to cease immediately and DCCEEW notified of the incident in accordance with timeframes stipulated in the approval. • The incident will be recorded and an investigation undertaken. • Ensure corrective and preventative actions in place before recommencing clearing activity including installation of additional barriers or buffer management. • The Unexpected Finds Protocol will be followed if new populations of MNES threatened flora are identified (**Appendix A**).

Management Objective	Event	Initial Likelihood	Initial Consequence	Initial Risk Level	Management Measures	Residual Likelihood	Residual Consequence	Residual Risk Level	Corrective Action Trigger	Corrective Actions
Reduce the loss of high-value fauna habitat features such as hollow bearing trees/logs/surface rocks	• Inadequate or incomplete pre-clearance surveys. • Failure to implement or maintain physical protection measures. • Changes in site layout or construction methods without updating protection measures. • Unintentional removal or damage during construction.	L3	C4	High	• Habitat features relocated to adjacent areas • During the pre-clearance survey, the fauna spotter-catcher will locate, record and mark the habitat features (including those to be retained in situ) • Install tree protection to habitat trees immediately adjacent to areas of earthworks • Refer to Table 5.8 of the MMP for further details on mitigation measures, including species specific mitigation measures for the painted honeyeater.	L2	C4	Medium	• Loss of high-value habitat features that were identified to be retained.	• Review and update methods for identifying and marking high-value habitat features for retention. • Contractor to investigate reason for loss of high-value habitat features and retrain workforce if required.
Prevent and minimise mortality of MNES fauna	• Death or injury of fauna during clearing activities (tree felling, vehicle strike) or as a direct result of clearing infrastructure (trenches/excavations).	L3	C2	Medium	• Appropriately qualified fauna spotter catcher undertake pre-clearance habitat assessment and be present during clearing and disturbance to habitat features • Staged clearing (non-habitat trees felled first) • Tampering with an animal breeding places carried out in accordance with an approved Species Management Program • Clear delineation of habitat features to be retained • Soft felling of habitat trees • Restrict vehicles to approved access tracks • Vehicle travelling speed restricted to <40 km/hr • Secure excavations (e.g. covered) • Refer to Table 5.3 of the MMP for further details on mitigation measures, including species specific mitigation measures for the koala, greater glider, collared delma, northern quoll, black-breasted button-quail, squatter pigeon, grey-headed flying-fox,	L2	C2	Medium	• Fauna injury from clearing activities including open excavations and vehicle strike. • Reports or observations of fauna near access roads or vehicle corridors. • Non-compliance with speed limits or access restrictions. • Increase in vehicle traffic beyond projected volumes. • Mortality of MNES fauna during clearing or construction.	• Engage local wildlife carers immediately if injured or orphaned fauna are found. • Stop work immediately at that location if MNES fauna mortality occurs. • Document the incident and notify the Environment Manager. • Review clearing methods • DCCEEW notified of the incident involving MNES fauna mortality in accordance with timeframes stipulated in the approval. • The incident will be recorded and an investigation undertaken. • Ensure corrective and preventative actions in place before recommencing clearing activity including a review which includes construction staff.

Management Objective	Event	Initial Likelihood	Initial Consequence	Initial Risk Level	Management Measures	Residual Likelihood	Residual Consequence	Residual Risk Level	Corrective Action Trigger	Corrective Actions
					white-throated needletail and migratory shorebirds.					
Prevent any uncontrolled fire within the Project Area	• Uncontrolled bushfire	L3	C4	High	• Bushfire Management Plan • Burning of vegetation strictly prohibited unless a permit is obtained • Designated parking areas for vehicles and machinery • During operation, vegetation within the Disturbance Footprint will be managed in accordance with Powerlink's vegetation specification • Refer to Table 5.9 of the MMP for further details on mitigation measures.	L2	C4	Medium	• An unplanned fire occurs within the Project Area. • A planned fire becomes out of control. • Coverage of non-native high-biomass grasses causes increased fuel load within the Project Area.	• Should an uncontrolled fire occur within the Project area, the Project's Emergency Response Plan will be enacted. Should any corrective actions and changes to fire management be required, they will be done in accordance with the BMP and consultation with local emergency services. • Future climatic conditions have the prospect to be highly variable with the potential for long periods of drought or several years of above average rainfall promoting unusually high vegetation growth rates. • However, following detailed Project BMP with a range of burn strategies will reduce the uncertainty in managing this risk.

Minimise degradation of MNES habitat through dust, contamination, erosion and sedimentation.	• Environmental controls are not properly planned, installed, or maintained.
	• Site activities are not responsive to changing weather or site conditions.
	• Material handling and storage practices are insufficient.
	• Monitoring and early detection systems are lacking or ineffective.
	• Project changes are not reflected in updated management plans or site practices.
	• Major flooding event
		L2	C3	Medium	• Contamination
					  ○ Hazardous materials must be stored and handled appropriately
					  ○ Emergency Response Plan
					  ○ Spill kits available
					  ○ Bunding for hazardous materials
					  ○ All waste disposed of in accordance with legislative requirements
					  ○ No refuelling within 50 m of a watercourse
					  ○ Application of herbicides in accordance with legislative requirements
					• Dust
					  ○ Dust suppression measures including vehicles restricted to approved tracks, cover all
						L1	C2	Low	• Evidence of erosion, sediment runoff, or turbid water leaving the site.
									• Failure or damage to erosion control structures.
									• Uncovered or eroding stockpiles.
									• Visible signs of soil erosion (e.g. rills, gullies).
									• Water quality monitoring exceeds sediment thresholds.
									• Stabilisation of disturbed areas
										• Cease all activities in the affected area until containment is confirmed.
										• Utilise spill kits where practicable to isolate and contain.
										• Submit an incident report to Environment Manager and record incident in the Environmental Incident Register within two business days
										• DCCEEW notified of the incident in accordance with timeframes stipulated in the approval.
										• The incident will be recorded and an investigation undertaken.
										• Ensure corrective and preventative actions in place before recommencing clearing activity including a review which includes construction staff
										• Prior to extreme weather event conduct weather responsive checks.

Management Objective	Event	Initial Likelihood	Initial Consequence	Initial Risk Level	Management Measures	Residual Likelihood	Residual Consequence	Residual Risk Level	Corrective Action Trigger	Corrective Actions
					loose loads and set speed limits (<40 km/hr) ○ Application of dust suppressants as required ○ Dust generating activities will be limited on days with strong winds blowing towards sensitive receptors or dust sensitive locations ○ Regular monitoring and visual surveillance to trigger management actions • Erosion and Sediment Control ○ Soil sampling and testing to inform both erosion and sediment control (ESC) and rehabilitation ○ Develop Erosion and Sediment Control Plan (ESCP) in accordance with the IECA Best Practice Erosion and Sediment Control Guidelines 2008 ○ Extent and duration of soil exposure is minimised ○ Disturbed areas are promptly stabilised. ○ Site is monitored and controls adjusted to maintain required performance standard ○ Personnel requirements for ESCP development and verification. • Refer to Table 5.4 of the MMP for further details on mitigation measures.				not meeting interim milestones. • Excessive dust resulting in external complaints received. • Dust clouds obscuring view of people and/or vehicles. • Dust accumulation on vegetation 50 m from clearing or construction. • Visible decline in vegetation condition due to excessive dust.	• Reinforce or redesign erosion controls (e.g. install additional sediment traps) in the event of sediment runoff. • Repair or replace damaged structures immediately in the event of failure. • Cover, stabilise, or relocate stockpiles in the event of instability (e.g. install perimeter controls). • Apply mulch or hydroseeding with visible instance of erosion or stabilisation failure. • Investigate source of water quality exceedance and implement suitable control measures. • Implement additional dust abatement measures such as watering down of dirt access roads. • As required, application of water to adjacent vegetation to remove dust from foliage. • Reduction of speed limits below 40 km/hr in problem areas where suppression measures (watering) is not sufficient to address the triggers.
No increase in weed presence and abundance within the Project Area,	• Inadequate biosecurity and hygiene protocols. • Poor material sourcing and handling. • Insufficient monitoring and early detection,	L3	C3	Medium	• Baseline biosecurity surveys and ongoing inspections and management will be undertaken • Areas containing weed infestations will be treated prior to	L2	C2	Medium	• Detection of new weed species not previously recorded in the Project Area or a particular portion	• Where the introduction of, or increase in the distribution of a biosecurity matter/s has been identified, as a result of Contractor activities, the Contractor must take appropriate

Management Objective	Event	Initial Likelihood	Initial Consequence	Initial Risk Level	Management Measures	Residual Likelihood	Residual Consequence	Residual Risk Level	Corrective Action Trigger	Corrective Actions
No increase in pest presence and abundance within the Project Area	especially during environmental changes or disturbance. • Non-compliance with access restrictions. • Improper waste management.				undertaking the commencement of site disturbance • Land access biosecurity requirements to be adhered to • Biosecurity project specific inductions • A biosecurity inspection and clean down of vehicles, machinery and plant • Clean downs must be undertaken in accordance with the Queensland Government's biosecurity clean down requirements • Biosecurity Declarations must be accompanied with all high-risk materials (e.g. sand, soil, mulch) • Use only native or certified weed free seeds in all rehabilitation works • Refer to Table 5.5 of the MMP for further details on mitigation measures.				of the Project Area. • Non-compliance with hygiene protocols (e.g., unwashed vehicles or equipment entering the site) • Complaints or observations from landholders regarding weed proliferation. • Increased sightings or evidence of pest fauna (e.g. feral pigs, foxes, cane toads, fire ants) in construction area. • Habitat degradation caused by pest activity (e.g. pig wallowing, nest disturbance). • Breach of biosecurity protocols or hygiene measures.	action to manage and treat the biosecurity matter/s.

Management Objective	Event	Initial Likelihood	Initial Consequence	Initial Risk Level	Management Measures	Residual Likelihood	Residual Consequence	Residual Risk Level	Corrective Action Trigger	Corrective Actions
Retain connectivity and key fauna dispersal corridors throughout the Project Area.	• Habitat features are not properly identified, mapped, or protected. • Physical barriers or fragmentation are introduced during construction. • Spread of weeds or pests degrades corridor quality.	L2	C4	Medium	• Habitat features relocated to adjacent areas • Retain habitat trees in-situ (e.g. habitat tree to be stem injected and left in easement) • Implement controls to prevent introduction or spread of weeds that may degrade MNES species • Retain trees (stem injected where required) in situ as suitable gliding poles in riparian areas • Refer to Table 5.7 of the MMP for further details on mitigation measures.	L1	C3	Medium	• Loss or high-value habitat features that were identified to be retained or relocated. • Detection of new weed species not previously recorded in the Project Area or a particular portion of the project Area. • Non-compliance with hygiene protocols (e.g., unwashed vehicles or equipment entering the site) • Complaints or observations from landholders regarding weed proliferation. • Evidence of glider activity near cleared edge without poles.	• Review and update methods for identifying and marking high-value habitat features for retention. • Contractor to investigate reason for loss of high-value habitat features and retrain workforce if required. • Where the introduction of, or increase in the distribution of a biosecurity matter/s has been identified, as a result of Contractor activities, the Contractor must take appropriate action to manage and treat the biosecurity matter/s. • Immediate installation of poles within 2 weeks or interim temporary rope bridges until poles installed.
Minimise disruption to waterbodies through altered hydrology, disturbance to acid sulfate soils, erosion and sedimentation	• Poor planning or implementation of drainage and water management systems. • Failure to identify or properly manage acid sulfate soils. • Inadequate sediment and erosion control measures. • Earthworks or construction activities conducted during	L2	C4	High	• A Water Quality Monitoring Plan must be developed by an appropriately qualified person. • Dewatering Management Plan. • Acid Sulphate Soil Management Plan. • Awareness training for identification and management of ASS. • Water extraction activities will be strictly controlled and monitored	L1	C3	Medium	• Water quality parameters exceed established thresholds during routine monitoring. • Visual signs of erosion, sedimentation, or pollution in nearby water bodies.	• Implement additional sediment and erosion controls in affected areas as per the ESCP. • Conduct water sampling and ecological assessments to determine impact extent. • Notify regulatory bodies and follow incident reporting procedures. • Review and revise construction scheduling and site layout. • Review of adequacy of ASS Management Plan measures.

Management Objective	Event	Initial Likelihood	Initial Consequence	Initial Risk Level	Management Measures	Residual Likelihood	Residual Consequence	Residual Risk Level	Corrective Action Trigger	Corrective Actions
	inappropriate weather conditions. • Stockpiles, site offices, or equipment placed too close to waterbodies.				to ensure no waterbodies are completed drained • Erosion and sediment control measures in accordance with IECA 2008. • Refer to Table 5.12 of the MMP for further details on mitigation measures.				• Complaints or observations of aquatic habitat degradation. • Breach of drainage design or sediment control protocols.	
Minimise impacts to threatened fauna from increased light, noise and vibration	• Inadequate planning or implementation of noise, light, and vibration controls. • Failure to adapt activities to site conditions or sensitive periods. • Lack of monitoring and early detection. • Staff are not adequately trained or informed about disturbance risks and protocols. • Unplanned or emergency works outside approved hours.	L3	C2	Medium	• Plant and equipment fitted with appropriate noise attenuation and maintained. • Deliveries and removal of material and equipment to and from site within approved hours for construction. • Plant to be turned off when not in use. • No unnecessary use of horns or other audible signals on mobile plant or equipment. • Machinery and equipment will be maintained in good working condition. • Refer to Table 5.10 of the MMP for further details on mitigation measures.	L2	C2	Medium	• Observed changes in fauna behaviour or presence (e.g., avoidance of habitat, altered movement patterns). • Monitoring data shows exceedance of noise or vibration thresholds. • Complaints or reports from ecological monitors or landholders. • Lighting observed during restricted hours.	• Review the EMP and update if necessary. Retrain workforce if necessary. • Immediate instruction to operators to shut down engines when not in use. • Toolbox talk or targeted training to reinforce correct engine use protocols. • Increased supervision and random spot checks to ensure compliance. • If repeated, escalate to formal warning or retraining for non-compliant personnel. • Review site signage and communication to ensure expectations are clear. • If logistics and safety permit, suspend night work and resume during daylight hours. • Adjust or reorient artificial lighting where practicable, limit lighting within sensitive nocturnal or breeding areas. • Review the cause of night work occurring and utilise as a learning at toolbox talks, if appropriate.

Management Objective	Event	Initial Likelihood	Initial Consequence	Initial Risk Level	Management Measures	Residual Likelihood	Residual Consequence	Residual Risk Level	Corrective Action Trigger	Corrective Actions
Areas of disturbance are rehabilitated progressively to ensure they are stable (to minimise erosion)	• Inadequate revegetation, poor maintenance, or ineffective ecological restoration may result in failure to meet offset or rehabilitation objectives for MNES. • Reduced habitat quality, population declines, and non-compliance with EPBC Act conditions.	L2	C4	High	• Rehabilitation Management Plan must be developed by an appropriately qualified person. • Rehabilitation Specialist to oversee rehabilitation activities. • Minimum 70% ground cover. • ESC measures must remain in place and monitoring undertaken, until site stabilisation criteria is achieved. • Progressively rehabilitation. • Refer to Table 5.11 of the MMP for further details on mitigation measures.	L1	C3	Medium	• Vegetation or habitat condition falls short of established targets. • Monitoring indicates poor plant translocation survival or habitat uptake by fauna MNES • Evidence of erosion, weed invasion, or pest damage in rehabilitation or offset areas.	• Contractor to organise remediation works to address erosion and sedimentation e.g. replace topsoil, install erosion controls within two weeks of issue being identified or earlier if rainfall is forecast. • Damage to rehabilitated areas to be remediated within 48 hours of being identified. Workforce to be retrained. Fencing/signage to be erected to identify the rehabilitated area as a no-go zone. • Weed treatment will be applied and re-treated as appropriate until native species are dominant. • Review and update Rehabilitation Management Plan if required.

8.0 Responsibilities, Training and Reporting

8.1 Roles and Responsibilities

All personnel involved in the Project (including Project employees, contractors and subcontractors) are required to undertake activities in accordance with this document. The key roles and responsibilities for the Project are outlined in **Table 8.1.**

Table 8.1 Project Roles and Responsibilities

Position	Responsibilities	Project Phase
Powerlink Environmental Representative	• Obtaining State and Commonwealth statutory approvals. • Reviewing contractors construction phase plans and submittals for executing works. • Monitor and inspect Contractors construction activities for environmental compliance. • Monitor progress of site work to verify that the Contractors are executing works in accordance with their contract requirements. • Undertake environmental audits to verify compliance with this MMP.	All phases including construction and operation
Contractor Environment Manager	• Confirm that all environmental obligations are met in line with project approvals, client specifications, contract conditions, and relevant legislation. • Regularly review the performance of environmental controls and report any deficiencies to the Powerlink representative for corrective action. • Oversee subcontractors and suppliers to ensure they comply with environmental requirements, based on their assessed capability to meet specified standards. • Coordinate the development of construction methodologies, ensuring that any complex or specialised processes related to safety, environment, or quality are executed in accordance with best practice, legal requirements, client standards, and in collaboration with Powerlink representative. • Ensure all personnel receive appropriate induction covering their environmental roles and responsibilities. • Maintain an up-to-date directory of key contacts and phone numbers for personnel involved in environmental management.	Pre-clearance and construction

8.2 Training and Inductions

All project personnel including staff, contractors, and sub-contractors, will receive applicable environmental training prior to commencing work on site. This training is designed to ensure all individuals are aware of their responsibilities regarding MNES, including listed species and habitats, and are equipped to implement environmental management measures effectively.

Training will include site-specific inductions covering general environmental and biosecurity awareness, as well as toolbox workshops conducted as required to address specific environmental or biosecurity issues relevant to site activities. Topics covered will include but are not limited to the identification and location of no-go zones, descriptions of fauna and flora species potentially present on site and emergency contacts and incident response procedures.

Personnel responsible for weed and pest control, monitoring, and reporting must be appropriately trained or possess relevant experience. Records of all training must be maintained in accordance with the Project's document management system and will include:

- names of individuals who completed training
- dates of training
- details of the trainer
- type and scope of training received.

Short-term visitors to the site (e.g., delivery drivers) will not be required to undergo full environmental induction but must be accompanied at all times by inducted personnel.

The MNES component of the induction will include, but is not limited to:

- An overview of the MMP, including its purpose and objectives
- Information on MNES species potentially present on site
- Conditions and requirements of relevant environmental licences, permits, and approvals
- Incident response and reporting protocols specific to MNES
- Mapping and location details of high-value MNES habitat areas.

This structured approach ensures that all personnel are informed, accountable, and capable of contributing to the protection of MNES values throughout the life of the Project.

8.3 Emergency Contacts and Procedures

A current list of emergency contacts, including key project personnel and relevant environmental authorities, will be prominently displayed on-site and incorporated into all induction materials to ensure accessibility for all workers. In the event of a significant MNES-related incident—such as the destruction of a TEC or mortality of MNES-listed flora or fauna—works must cease immediately to prevent further impact. The Environment Manager must be notified without delay, and the incident reported to the DCCEEW in accordance with regulatory requirements. This procedure ensures rapid response, compliance with legislative obligations, and minimisation of environmental harm.

8.4 Reporting Requirements

Upon approval of this MMP, annual monitoring reports will be developed to inform the Annual Compliance Reporting obligations under the EPBC Act approval conditions. These reports will provide a comprehensive overview of the implementation and effectiveness of environmental management measures.

Each MMP Monitoring Report will include the following components:

- Summary of management actions detailing an account of all environmental and biosecurity management actions undertaken during the reporting period, including timing, location, and outcomes.
- Documentation of all monitoring activities conducted, including methodologies used, frequency, and spatial coverage. Results will be presented in tabular and/or graphical format where appropriate to facilitate interpretation.
- Issues and corrective actions which include the identification of any environmental or biosecurity issues encountered during the reporting period. This section will outline the nature of the issue, its cause (if known), and the corrective actions taken, including timing and effectiveness.
- Where relevant, the report will include recommendations for adaptive management, including changes to monitoring protocols, mitigation measures, or site practices to improve environmental outcomes.

Monitoring and associated reporting will continue until all completion criteria outlined in the MMP have been demonstrably met and verified through final monitoring assessments. The cessation of monitoring will be subject to approval by the relevant regulatory authority, based on evidence of compliance and ecological recovery.

8.5 Amendment Triggers and Corrective Actions

This MMP is a dynamic document that requires review and amendment throughout the life of the Project to ensure the measures within this document remain effective. It is recommended that this document be updated:

- Where there is a significant change to the Project schedule, site layout, or a change in the construction methods that require amendment to vegetation and fauna protection measures.
- Where a corrective action is recorded, or performance criteria are not being met, and additional measures are identified for inclusion to prevent reoccurrence.
- Where a change in legislation or best practice methodology has been identified.
- Where an additional MNES is identified that is not covered by this MMP.

To ensure compliance with this MMP a schedule of obligations will be developed to outline all obligations and track how these obligations are being met.

Any non-conformance or corrective action identified during monitoring activities, such as site inspections or internal and external audits, must be reported to the Site Manager within 24 hours in accordance with the relevant requirements of the applicable approval, permit, or licence. The Site Manager's response and actions taken must be documented and communicated to management. It is suggested all incidents and non-conformances with this MMP will be reviewed by the Project's Environment Manager. Where appropriate, management and control actions will be identified and implemented to prevent future occurrence of the incident/non-conformance.

The proponent will prepare and submit an annual compliance report in accordance with the conditions of approval.

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Appendix A

Unexpected Finds Protocol

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Unexpected Finds Protocol

An adaptive management response will be implemented, if unexpected individuals of *Samadera bidwillii* or areas of TEC are observed during pre-clearance surveys or any other surveys undertaken prior to construction. Whilst the occurrence of previously unrecorded individuals is considered highly unlikely, the intent of this protocol is to ensure the appropriate adaptive management response is implemented and adverse impacts are mitigated, should they be discovered.

If a previously unrecorded threatened species is found, the unexpected finds protocol is:

1. Halt construction/clearing activities in the area (i.e. in adjacent areas within the Disturbance Footprint where suitable habitat is present – to be determined by the Environment).
2. Demarcate the area of the unexpected find with a minimum 5 m 'no-go' zone.
3. Notify the Contractor Environment representative and log an incident under the appropriate classification.
4. Contractor Environment representative is to arrange for an ecologist to conduct an assessment include revisions of:
    a. habitat mapping
    b. avoidance and mitigation strategies
    c. Significant Impact Assessments.

Cycas megacarpa individuals will be managed as per the CTMP.

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