Calvale to Calliope River Transmission Line Reinforcement Project

MID Report

FINAL

October 2025

umwelt

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MID Report

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Prepared by
Umwelt (Australia) Pty Limited

On behalf of
Powerlink Queensland

Project Director: Gavin Elphinstone
Project Manager: Julius Frias
Report No.: 22823/R12
Date: October 2025

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Document Status

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[2] Bachelor of Urban and Environmental Planning.

[3] Bachelor of Regional and Town Planning (Hons).

[4] Bachelor of Urban and Regional Planning (Hons).

Executive Summary

This MID Proposal has been prepared by Umwelt on behalf of Powerlink Queensland (Powerlink) who are seeking a Ministerial Infrastructure Designation (MID) under Chapter 2, Part 5 of the *Planning Act 2016* (Planning Act) for a proposed transmission line.

Powerlink is proposing the Calvale to Calliope River Transmission Line Reinforcement Project (the Project) to upgrade existing transmission infrastructure in Central Queensland. The Project involves the:

- construction of a new 87 kilometre (km), 275 kilovolt (kV) double circuit transmission line within an existing transmission easement; and
- the expansion of the Calliope River Substation.

Co-location with existing transmission infrastructure and areas already designated for electricity infrastructure was prioritised to minimise environmental and social impacts. Alternatives such as underground transmission were considered but deemed unfeasible due to cost, constructability, and environmental risks. This infrastructure is considered critical to maintaining reliable electricity supply in the region to support Queensland's transition to renewable energy.

In line with pre-lodgement advice from the Department of State Development, Infrastructure and Planning (DSDIP), a new MID is sought for the entire Project alignment. However, the assessment of impacts focuses on the areas of the Project alignment that fall outside of existing and approved MIDs (the MID Proposal).

The MID Proposal is supported by a range of technical studies that address the impacts within the MPA and demonstrate that all impacts can be adequately mitigated or managed. These technical studies are:

- Ecological Assessment Report (EAR) (**Appendix F**)
- Noise Impact Assessment (NIA) (**Appendix G**)
- Traffic Impact Assessment (TIA) (**Appendix H**)
- Landscape and Visual Impact Assessment (LVIA) (**Appendix I**)
- Surface Water Impact Assessment (SWIA) (**Appendix J**)
- Environmental Management Plan (EMP) (**Appendix K**).

The key findings of the technical assessments include:

- Risks to ecological values during construction, including potential impacts from vegetation clearing, habitat fragmentation, and disturbance to threatened species will be managed through a range of mitigation measures, including the implementation of a Construction Environmental Management Plan (CEMP) which will include vegetation and fauna management measures specific to the clearing of vegetation and habitat, including no-go zones, approved widths, methods and preparation procedures.

- Potential impacts to residential sensitive receptors along the MPA that are predicted to have noise levels above the Acoustic Quality Objectives (AQO) under the Environmental Protection (Noise) Policy 2019 (EPP Noise) criteria during daytime construction activities will be managed through the implementation of a CEMP, which will include specific noise and vibration management measures and monitoring program to assess performance against relevant noise and vibration criteria and arrangements for consultation with affected sensitive receptors, including notification and complaint handling procedures.
- Potential traffic impacts on local roads during the construction period will be adequately managed through the implementation of a CEMP, which will provide specific traffic management measures including advanced signage and decreased speed limits to improve sight distances and alert drivers of turning traffic.
- Impacts on surface water conditions are minor due to the limited extent of ground disturbance and the MID proposal's location predominantly within and adjoining an existing transmission line corridor. These minor impacts can be effectively mitigated through the implementation of well-established environmental management practices and appropriate revetment design methodologies.
- Landscape and visual impacts will be experienced in the Calliope Conservation Park and Mount Alma due to the introduction of additional transmission infrastructure to a forested landscape with scenic and landscape values. However, these impacts are considered to be a minor incremental increase to the impacts already experienced within a modified environment accommodating existing transmission infrastructure.

Overall, the assessment of the MID Proposal concludes that direct impacts resulting from the construction and operation of the Project can be adequately mitigated through avoidance and minimisation of impacts through detailed design and micro-siting, rehabilitation of disturbed areas, and implementation of specific management measures.

Offsite impacts resulting from the construction of the MID proposal can be adequately mitigated through the implementation of a project-specific CEMP, to be prepared by the construction contractor in accordance with Powerlink's Environmental Management Plan (EMP), comprising the preparation of specific plans including (but not limited to) air quality, transport, waste, air quality, noise and vibration, biosecurity, and bushfire.

Extensive engagement has been undertaken with landholders, Traditional Owners, local governments, and government agencies to date for the wider project. Feedback has informed corridor selection and project design. Ongoing consultation will continue throughout the Project lifecycle in addition to the notification requirements for the MID under Schedule 4 (7) of the Ministers Guidelines and Rules (MGR), which will include community drop-in sessions and proactive communication tools such as the preparation of local advertising, updates to the Project webpage, newsletters and individual phone calls, emails and meetings on request.

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Abbreviations

Abbreviation	Definition
ADVCC	Accepted Development Vegetation Clearing Code
ALC	Agricultural Land Classification
AQO	Acoustic Quality Objectives
BGGGTBP	Bailai, Gurang, Gooreng Gooreng, Taribelang Bunda People
BSC	Banana Shire Council
CEMP	Construction Environmental Management Plan
CSR	Corridor Selection Report
DSDIP	Department of State Development, Infrastructure and Planning
EAR	Ecological Assessment Report
EMP	Environmental Management Plan
EPBC Act	*Environment Protection and Biodiversity Conservation Act 1999*
EPP (Noise)	Environmental Protection (Noise) Policy 2019
GNP	Gaangalu Nation People
GRC	Gladstone Regional Council
HAT	Highest Astronomical Tide
kV	Kilovolt
LVIA	Landscape and Visual Impact Assessment
MDA	MID Disturbance Area
MGR	Minister's Guidelines and Rules
MID	Ministerial Infrastructure Designation
MPA	MID Proposal Area
NC Act	*Nature Conservation Act 1992*
NIA	Noise Impact Assessment
OPGW	Optical Ground Wire
QFD	Queensland Fire Department
QLD	Queensland
RE	Regional Ecosystem
SDA	State Development Area
SPP	State Planning Policy
SWIA	Surface Water Impact Assessment
TIA	Traffic Impact Assessment
VM Act	*Vegetation Management Act 1999*
WHA	World Heritage Area

1.0 Introduction

Powerlink Queensland (Powerlink)[5] is proposing to upgrade an existing transmission infrastructure corridor between Calvale Substation and Calliope River Substation in Central Queensland.
The Calvale to Calliope River Transmission Line Reinforcement Project (the Project) comprises a new double-circuit 275 k transmission line proposed to be developed along the existing easement corridor as well as the expansion of the Calliope River Substation.

Powerlink is seeking a Ministerial Infrastructure Designation (MID) from the Minister of the Department of State Development, Infrastructure and Planning (DSDIP) for the Project.

This MID Proposal is made in accordance with the following:

- *Planning Act 2016* (Planning Act), Chapter 2, Part 5
- Minister's Guidelines and Rules (MGR), Version 3, Chapter 7
- Making or Amending a MID Operational Guidance.

This MID Proposal has been prepared to address the material required for the MID Proposal in accordance with Schedule 3 of the MGR. A summary of the MID Proposal details is provided in **Table 1.1.** Supporting technical assessments as part of this MID application include:

- Ecological Assessment Report (EAR) (**Appendix F**)
- Noise Impact Assessment (NIA) (**Appendix G**)
- Traffic Impact Assessment (TIA) (**Appendix H**)
- Landscape and Visual Impact Assessment (LVIA) (**Appendix I**)
- Surface Water Impact Assessment (SWIA) (**Appendix J**)
- Environmental Management Plan (EMP) (**Appendix K**).

Table 1.1 Project Details

Matter	Details
Site Address	Hanson Road, Callemondah QLD
Real Property Description(s)	See **Appendix A** for full list of Lot on Plans within the MID Proposal Area.
Infrastructure Entity	Powerlink
Owner	Powerlink
Type of Infrastructure (Planning Regulation 2017, Schedule 5)	*Electricity operating works*: means operating works under the *Electricity Act 1994* (Electricity Act), section 12(3). *Operating works are—* a. *for a generation entity—the generating plant (including battery storage devices), fuel stocks, electrical and other property (including reactive power compensation devices) used for generating electricity or connecting supply to a transmission grid or supply network; or*

[5] Powerlink Queensland is the trading name of Queensland Electricity Transmission Corporation Limited (ABN 82 078 849 233).

Matter	Details
	b. *for a transmission entity—the transmission grid and other property (including battery storage devices and reactive power compensation devices) used for operating or managing the transmission grid; or* c. *for a distribution entity—the supply network and other property (including battery storage devices and reactive power compensation devices) used for operating or managing the supply network.*
Funding Commitment	$178 million for early works approved by the Deputy Premier and the Minister for Energy
Local Government(s)	• Gladstone Regional Council (GRC) • Banana Shire Council (BSC).

1.1 Purpose

The purpose of this MID Proposal is to describe the Project and its impacts and mitigations having regard to the relevant planning instruments and technical studies undertaken to date. A large portion of the Project alignment is located within existing and approved MIDs. Works associated with the Project within these areas are therefore categorised as *accepted development* in accordance with section 44(6)(b) of the Planning Act. In line with pre-lodgement advice from DSDIP (**Section 3.3.2**), a new MID is sought for the entire Project alignment. However, the assessment of impacts focuses on the areas of the Project alignment that fall outside of existing and approved MIDs (the MID Proposal).

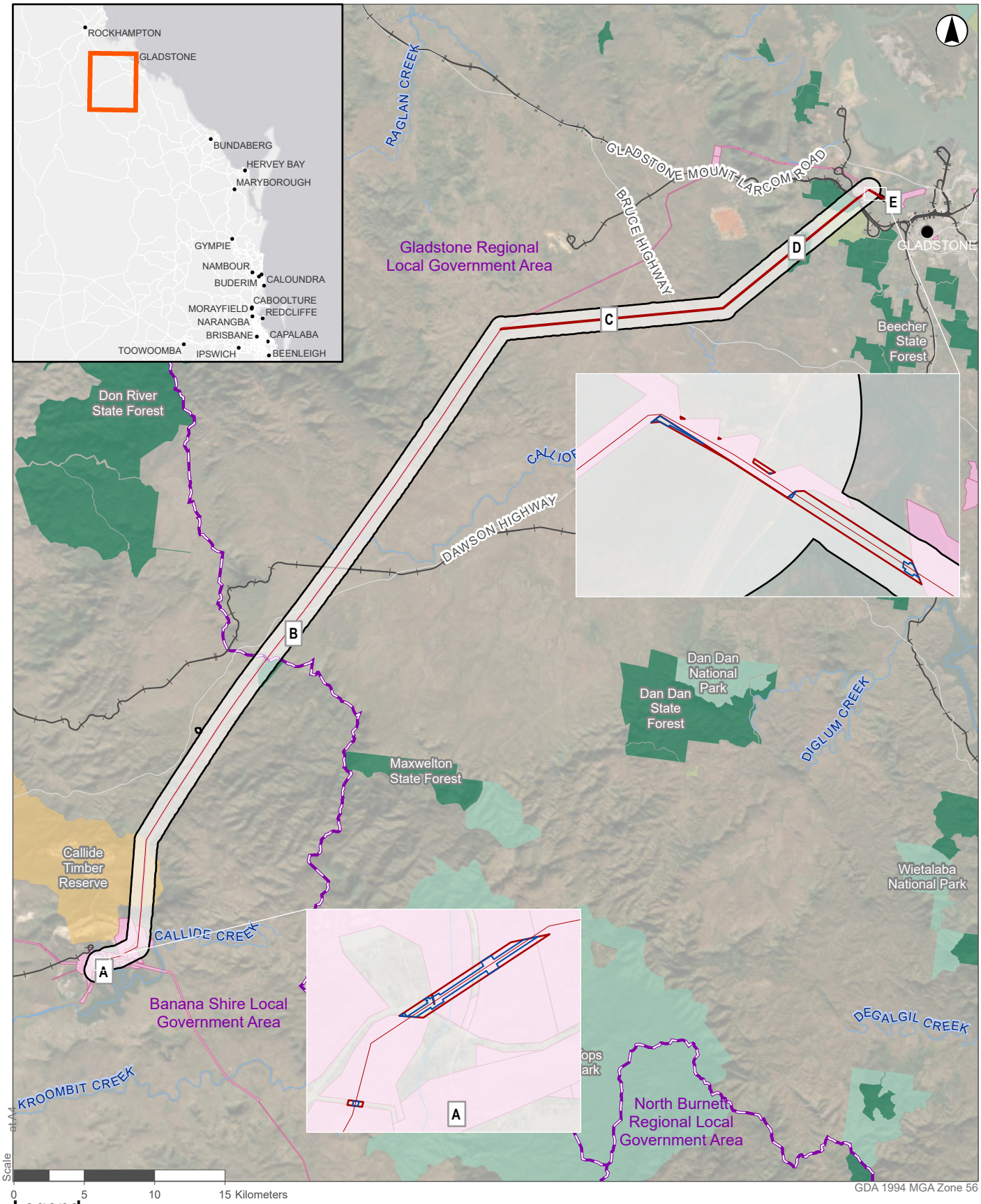
For context and transparency, **Section 2.0**, **Section 3.0**, **Section 4.0** and **Section 7.0** address the entire Project, including background, description and consultation. However, the statutory framework assessment (**Section 5.0**) and the environmental assessment (**Section 6.0**) focuses solely on the MID Proposal to ensure any additional impacts are adequately assessed and mitigated.

1.2 Existing Designations

There are a number of existing MID approvals relevant to the Project alignment, as detailed in **Table 1.2**. As shown in **Figure 1.1**, there are sections of the alignment that are not currently captured by an existing MID and therefore require assessment by DSDIP to complete the designated alignment. The gazette notices for the existing MID approvals are provided in **Appendix M**.

Table 1.2 Existing MID Approvals

MID Ref:	Designating Minister	MID Description	MID Type	Gazettal Date	Relevant Project Alignment Section
274	Minister for Energy and Minister for Aboriginal and Torres Strait Islander Policy	3.5 km of the Calvale to Larcom Creek 275 kV Transmission Line Project	(k) operating works under the *Electricity Act 1994*	28/07/2006	Section A
481	Minister for Energy and Water Utilities	101 km double circuit 275 kV transmission line between Calvale substation and Stanwell substations	(k) operating works under the *Electricity Act 1994*	02/09/2011	Section A
212	Minister for Innovation and Information Economy	Calvale to Larcom Creek 275 kV Transmission Line	(k) operating works under the *Electricity Act 1994*	16/01/2004	Section A and Section B
444	Minister Natural Resources, Mines and Energy and Minister for Trade	Calliope River Substation Establishment Project	(k) operating works under the *Electricity Act 1994*	30/04/2010	Section E



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Legend

- Study Area Boundary
- MID Proposal Area (MPA)
- Local Government Area (LGA)
- Existing Infrastructure Designations
- Town
- Major Watercourses
- Major Roads
- Railway

Protected Areas

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

POWERLINK - CALVALE TO CALLOPE RIVER

FIGURE 1.1

Existing Ministerial Infrastructure Designations

Image Source: ESRI Maps (2020) **Data source:** QSpatial (2020)

2.0 Site Context

The following section describes the Project boundaries and the associated components for the Project and is provided to give context to both the Project and the MID Proposal.

2.1 Project Boundaries

Four distinct boundaries are referred to throughout this MID Report, defined as follows:

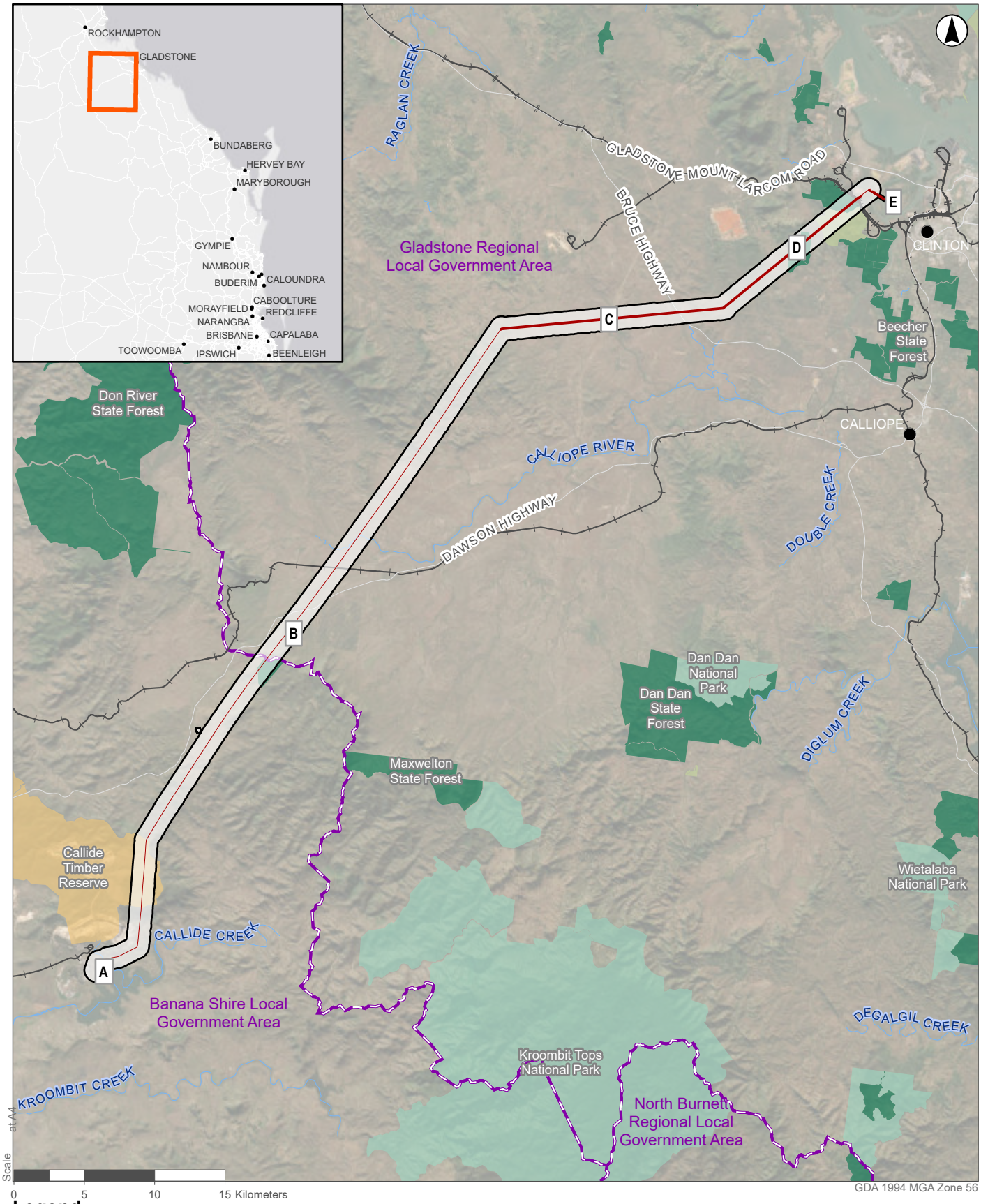
- **Study Area –** The Study Area extends from the Calvale Substation site to the Calliope River Substation site and includes the existing transmission easement with a varying buffer for each section. The Study Area covers approximately 14,293 ha and extends for 87 km (see **Section 2.1.1**).
- **Disturbance Footprint –** The area required to construct and operate the Project. This includes the transmission line, grid connection of the new transmission line to the Calvale Substation, expansion of the Calliope River substation, and other ancillary infrastructure (i.e. tower pads, access tracks, laydown areas, batch plants and brake and winch sites) (see **Section 2.1.2**).
- **MID Proposal Area (MPA) –** Refers to the areas of the Project alignment that are not captured by an existing designation and therefore are the subject of the MID Proposal (see **Section 2.1.3.1**). The MPA includes a small portion of Section A and Section E and larger areas of Section C and Section D (see **Section 2.1.1** for descriptions of study area sections).
- **MID Disturbance Area (MDA) –** Refers to the disturbance footprint within the MPA. The MDA represents the extent of direct impacts (i.e. vegetation clearing) proposed for the MID Proposal (see **Section 2.1.3.2**).

2.1.1 Study Area

The Study Area consists of the existing transmission easement between the Calvale and Calliope River Substations with a varying buffer for each section. The Study Area extends from the Calvale Substation site to the Calliope River Substation site (**Figure 2.1**) and is split into five sections as detailed in **Table 2.1**.

Table 2.1 Study Area Sections

Section	Start of Section	End of Section	Approximate Length	Existing Powerlink Infrastructure
Section A	-24.3418, 150.6270	-24.3268, 150.6560	3.5 km	132 kV and 275 kV lines Calvale Substation
Section B	-24.3268, 150.6560	-23.9344, 150.9174	51.5 km	One 275 kV line
Section C	-23.9344, 150.9174	-23.9230, 151.0733	16 km	Two 275 kV lines
Section D	-23.9230, 151.0733	-23.8484, 151.1754	13.5 km	One 275 kV line
Section E	-23.8484, 151.1754	-23.8580, 151.1943	2 km	Two 275 kV lines Calliope River Substation



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Legend

- Study Area Boundary
- MID Proposal Area (MPA)
- Local Government Area (LGA)
- Town
- Major Watercourses
- Major Roads

Protected Areas

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

POWERLINK - CALVALE TO CALLOPE RIVER

FIGURE 2.1

Study Area Boundary

Image Source: ESRI Maps (2020) **Data source:** QSpatial (2020)

2.1.2 Disturbance Footprint

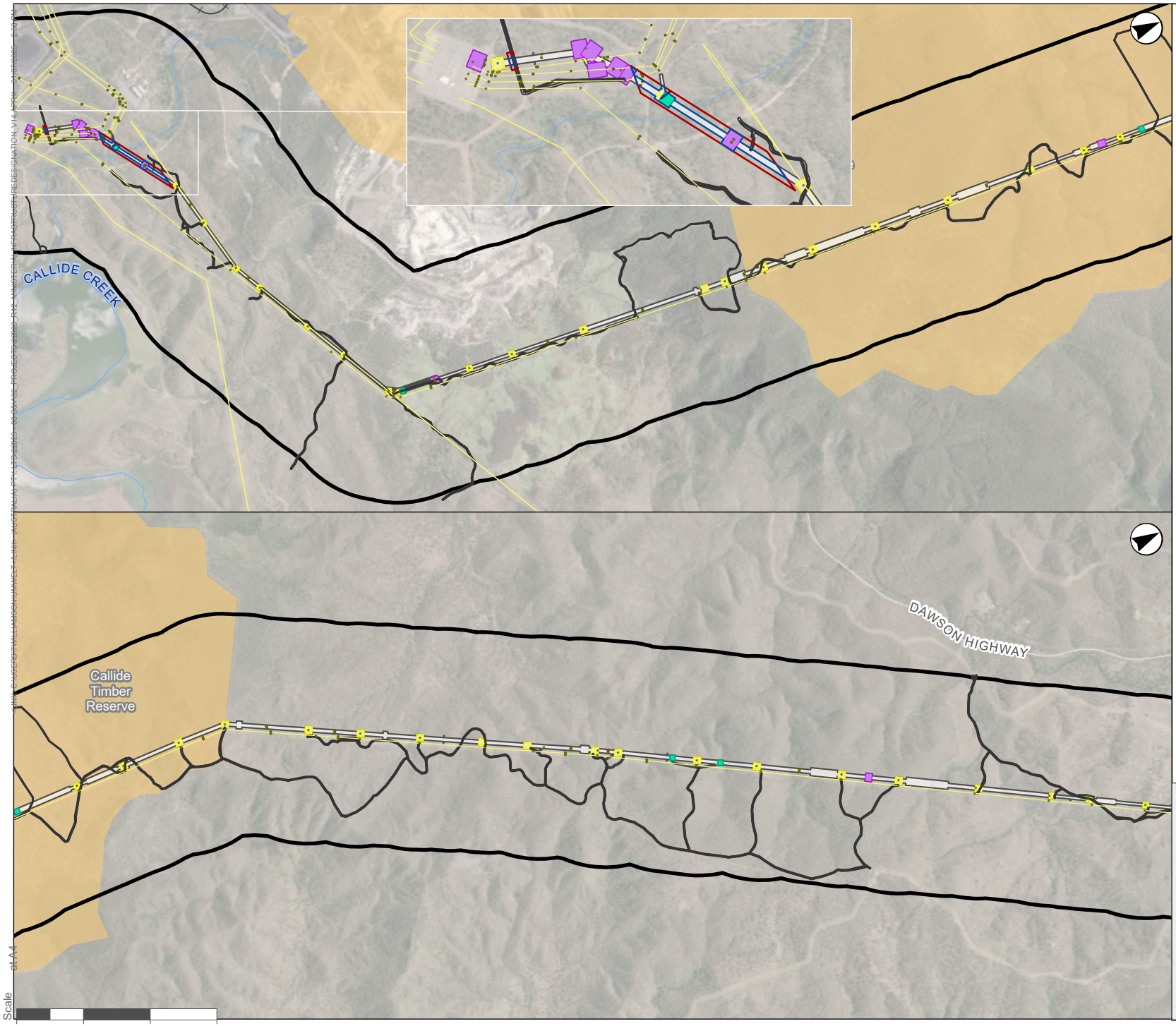
The Disturbance Footprint totals 356.66 hectares (ha) and represents the extent of direct impacts (i.e. vegetation clearing) for all Project elements, including those already approved under the existing MID approvals. This area represents a worst-case clearing scenario for the entire Project alignment. It is noted that 263.06 ha of this clearing total will either be undertaken as *exempt clearing work* under the existing MID approvals identified in **Section 1.2** in accordance with Schedule 21 of the Planning Regulation 2017 (Planning Regulation) or under the Accepted Development Vegetation Clearing Code (ADVCC).

The Project components and their clearing requirements that make up the Disturbance Footprint are outlined in **Table 2.2**. The Disturbance Footprint is displayed on **Figure 2.2a**, **Figure 2.2b** and **Figure 2.2c.**

Table 2.2 Project Components

Project Components	Clearing Requirements
Substation – Calvale	Grid connection of the new transmission line to the Calvale Substation.
Substation – Calliope River	• The existing Calliope River substation comprises of 275 kV and 132 kV switchyards. The 275 kV switchyard currently comprises of 8 diameters, and this project seeks to extend the switchyard platform to allow for ultimate expansion of up to 12 diameters in total, including all civil works and earth grid extensions. • Establish 4 new diameters within the expansion footprint to connect the new 275 kV double circuit transmission line. • Design and install busbar extension. • Modification of secondary systems as required. • Reconfiguration of optical ground wire (OPGW) fibre network to establish end-to-end connectivity between Calvale substation and Calliope River substation. • The existing 132 kV switchyard comprises 12 diameters. The Project seeks to extend the platform including all civil works and earth grid extensions. • Grid connection of the new transmission line to the Calliope River Substation.
Transmission Line	Transmission line spans will utilise 8 m vertical and 7 m horizontal clearance of conductors and are categorised into the following categories: • High risk • Low risk High risk spans: • 60 m wide clearing in the mid-span which can be determined from Power Line Systems – Computer Aided Design and Drafting (PLSCADD) and violation vegetation. • 30 m wide clearing in the areas between tower pad and mid-span clearing.

Project Components	Clearing Requirements
	• Areas of no clearing (where vegetation can be spanned) – air gap between top of vegetation and bottom of conductor must be a minimum of 1.5 times the height of the vegetation (trees must be at mature height). Low risk spans: • 50 m wide clearing in the mid-span which can be determined from PLS-CADD and violation vegetation. • 24 m wide clearing in the areas between tower pad and mid-span clearing. • Areas of no clearing (where vegetation can be spanned) – air gap of 10 m between top of vegetation and bottom of conductor (trees must be at mature height).
Tower Pads	• Low risk – 40 m x 40 m • High risk – 50 m x 50 m • High risk (Steep land) – 60 m x 60 m (where required).
Access Tracks	14 m maximum clearing width.
Laydown Areas	60 m x 60 m.
Batching Plants	60 m x 200 m.
Conductor Brake and Winch Sites	60 m x 50 m.
Optical Ground Wire (OPGW) Brake and Winch Sites	40 m x 40 m.



POWERLINK
CALVALE TO CALLOPE RIVER

Legend

- Watercourse
- Railway
- Disturbance Footprint
- MID Proposal Area (MPA)
- MID Disturbance Area (MDA)
- Study Area Boundary
- Access Tracks
- Batching Plant
- Conductors
- Laydown Areas
- Brake and Winch Sites
- Tower Pad

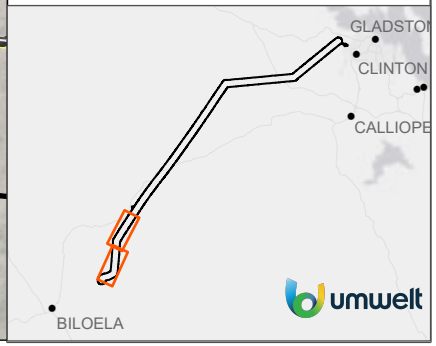
Existing Transmission Line and Association Infrastructure

- Existing Tower
- Existing Feeder

Protected Areas

- Timber Reserve

FIGURE 2.2 A
Disturbance Footprint



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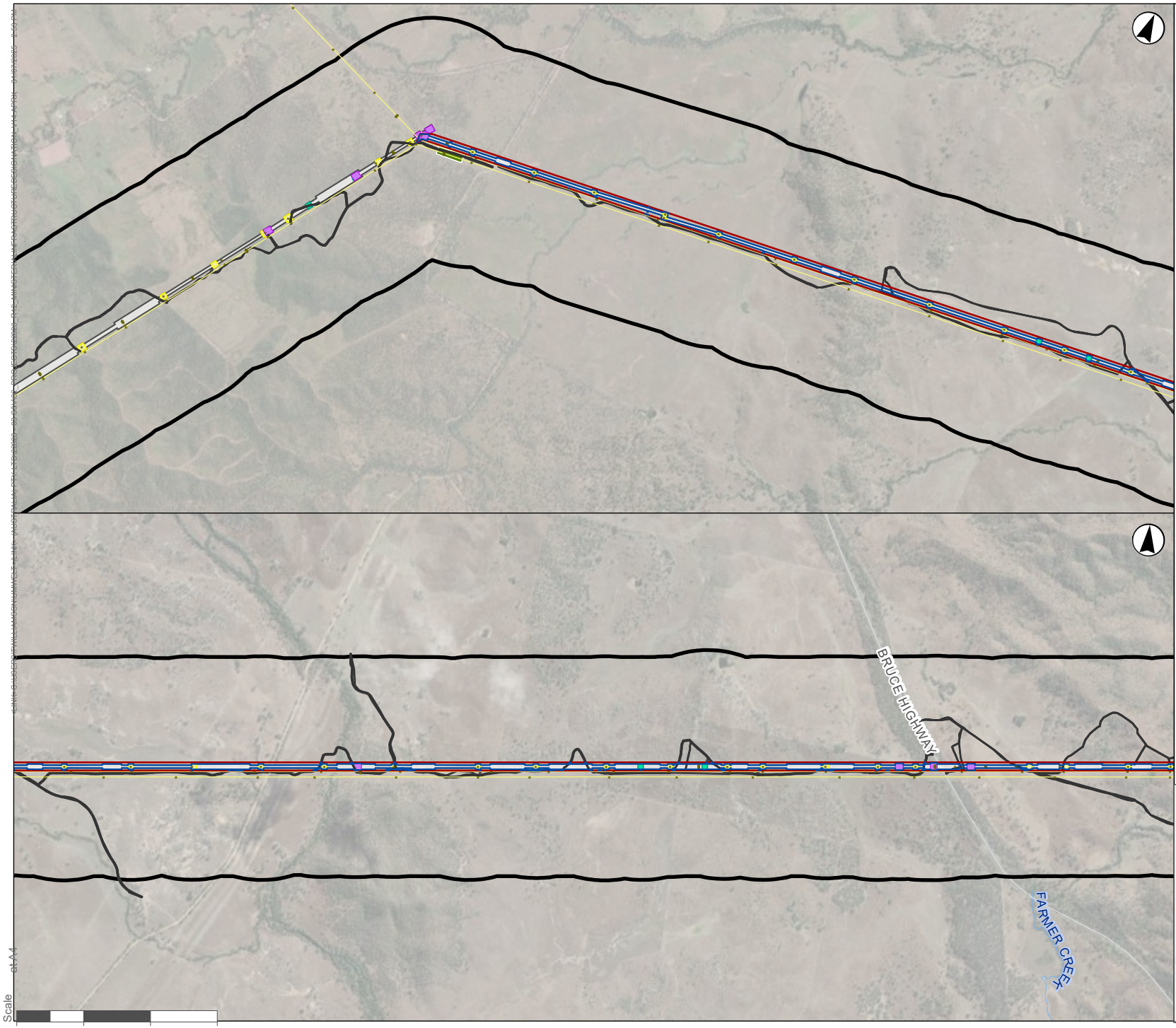
GDA 1994 MGA Zone 56

Image Source: ESRI Maps (2020) **Data source:** QSpatial (2020)



POWERLINK
CALVALE TO CALLOPE RIVER

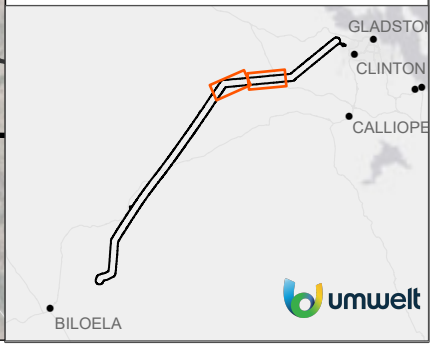
Legend

- Disturbance Footprint
- MID Proposal Area (MPA)
- MID Disturbance Area (MDA)
- Study Area Boundary
- Access Tracks
- Batching Plant
- Conductors
- Laydown Areas
- Brake and Winch Sites
- Tower Pad

Existing Transmission Line and Association Infrastructure

- Existing Tower
- Existing Feeder

FIGURE 2.2 B
Disturbance Footprint



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GDA 1994 MGA Zone 56

Image Source: ESRI Maps (2020) **Data source:** QSpatial (2020)

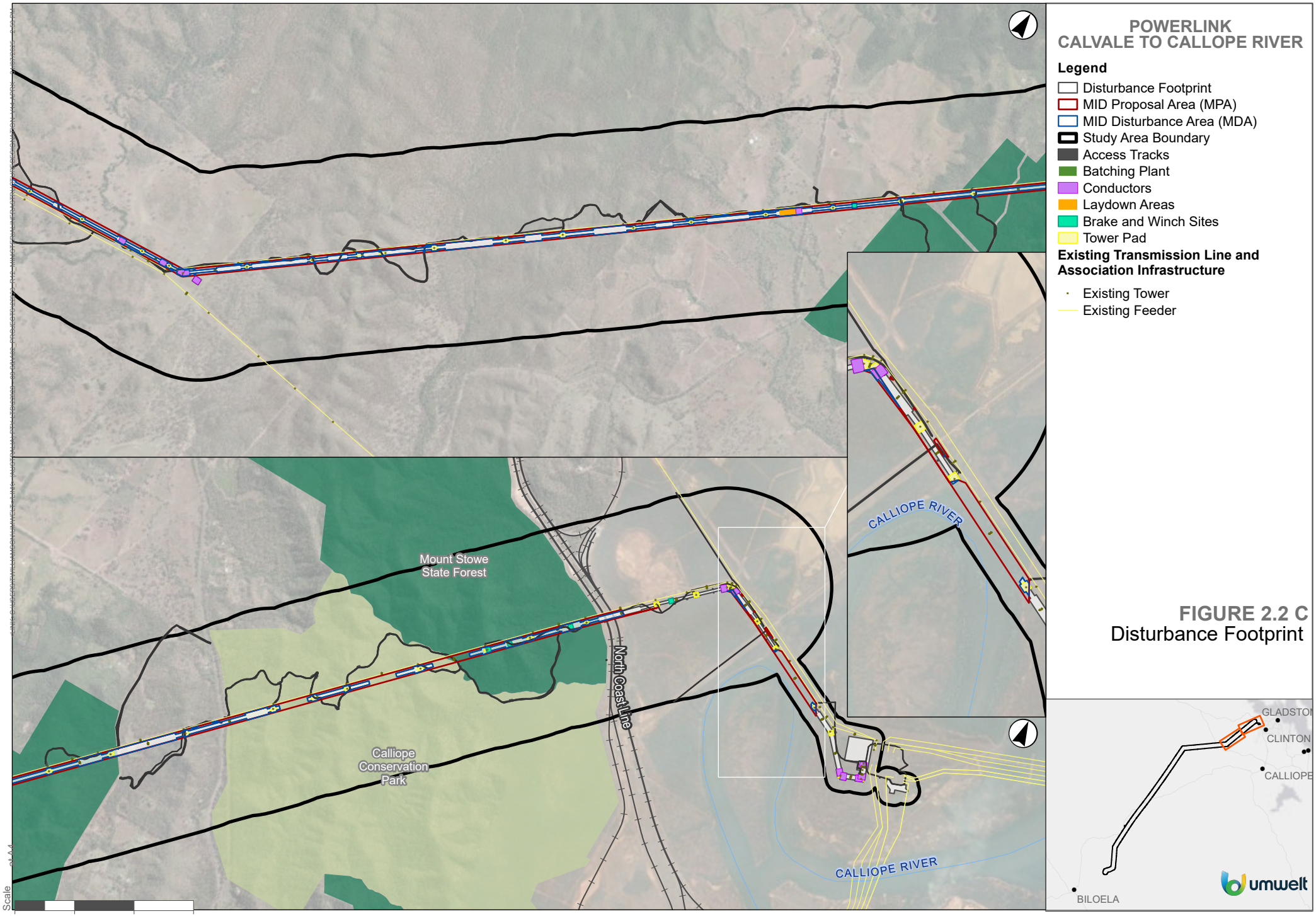

FIGURE 2.2 C
Disturbance Footprint

2.1.3 MID Proposal

2.1.3.1 MID Proposal Area (MPA)

The MPA totals 177.5 ha and refers to the areas of the Project alignment that are not captured by an existing designation and are therefore the subject of the MID Proposal. An example of the MPA is illustrated in **Figure 2.3**. The MPA includes a small portion of Section A and Section E and larger areas of Section C and Section D.

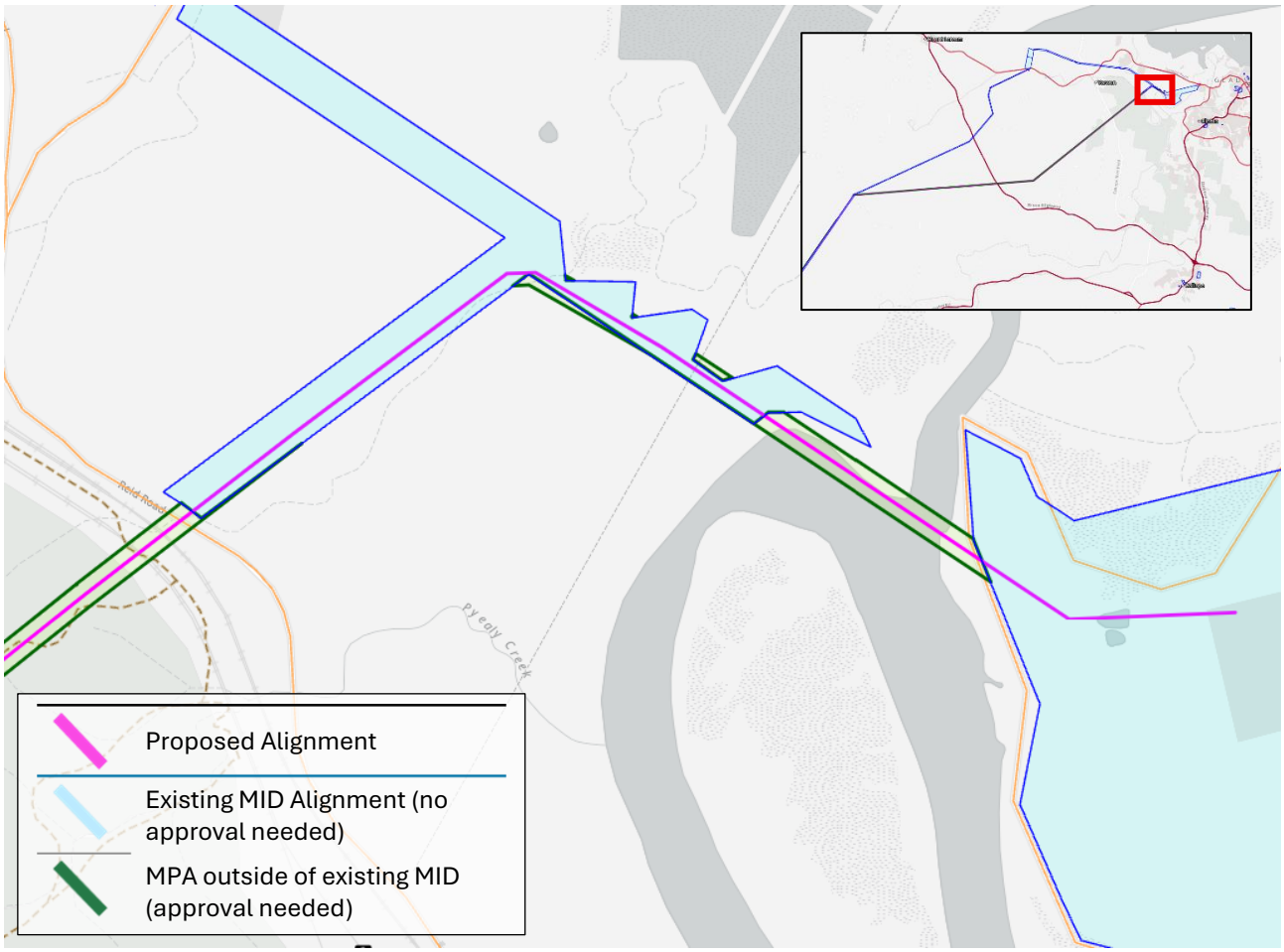

Figure 2.3 Example of MPA Outside of Existing MID

2.1.3.2 MID Disturbance Area (MDA)

The MDA totals 93.6 ha and represents the disturbance footprint within the MPA. As illustrated in **Figure 2.4** this represents the worst-case clearing scenario within the MPA. It is noted that the MDA includes areas of permanent disturbance only and excludes areas of temporary construction disturbance. Indicative Project components and their clearing requirements that are located within the MDA are outlined in **Table 2.3**.

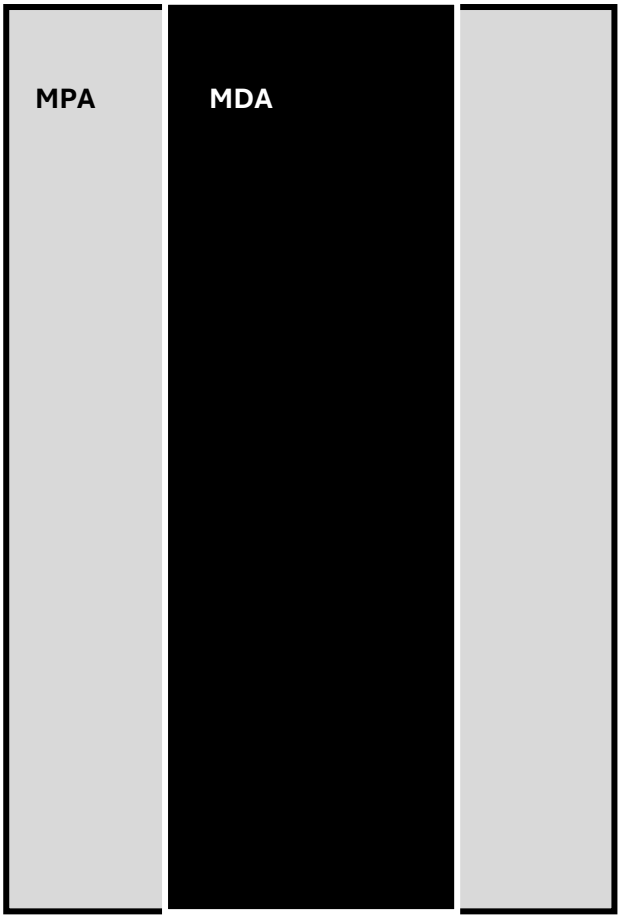

Figure 2.4 Illustration of MDA within MPA

Table 2.3 MPA Project Components and Clearing Requirements

Project Components	Clearing Requirements
Transmission line	Transmission line spans will utilise 8 m vertical and 7 m horizontal clearance of conductors and are categorised into the following categories: • High risk • Low risk High risk spans: • 60 m wide clearing in the mid-span which can be determined from Power Line Systems - Computer Aided Design and Drafting (PLS-CADD) and violation vegetation • 30 m wide clearing in the areas between tower pad and mid-span clearing • Areas of no clearing (where vegetation can be spanned) – air gap between top of vegetation and bottom of conductor must be a minimum of 1.5 times the height of the vegetation (trees must be at mature height).

Project Components	Clearing Requirements
	Low risk spans: • 50 m wide clearing in the mid-span which can be determined from PLS-CADD and violation vegetation • 24 m wide clearing in the areas between tower pad and mid-span clearing • Areas of no clearing (where vegetation can be spanned) – air gap of 10 m between top of vegetation and bottom of conductor (trees must be at mature height).
Tower pads	• Low risk – 40 m x 40 m • High risk – 50 m x 50 m • High risk (steep land) – 60 m x 60 m (where required)
Access tracks	14 m maximum clearing width.
Laydown areas / Batching plants	60 m x 200 m.
Conductor brake and winch sites	60 m x 50 m.
Optical Ground Wire (OPGW) brake and winch sites	40 m x 40 m.

2.2 Existing Land Uses

Topography, land use and vegetation are highly variable throughout the Study Area and the surrounding areas. There are several small ranges intersected by the Study Area, including the Callide and Calliope ranges as well as multiple rivers and creeks. Land uses adjacent to the Study Area include mineral extraction, agriculture (primarily grazing) and industry. The vegetation is a mosaic of remnant and regrowth forests and woodlands interspersed by cleared grassy areas with mangroves and saltmarsh at the eastern extent of the Study Area. Land uses in each section of the Study Area are detailed in **Table 2.2**.

Table 2.2 Land Use Within the Surrounding Study Area

Section	Land Use
Section A	Section A comprises land used for grazing, intensive uses (recreation and culture), conservation and natural environments and reservoir/dam. Section A includes the Calvale Substation and associated transmission infrastructure, located within Lot 1 CP890133. Other land uses surrounding Section A include: • Callide Mine (approximately 1 km to the north) • Lake Callide (located 350 m south) • Callide Dam (located 350 m south) • Callide A Power Station (located 300 m north) • Callide B Power Station (located 250 m west) • Biloela-Callide Road (located along the northern boundary of Section A).

Section	Land Use
Section B	Section B comprises land used for grazing, production forestry, plantation forestry and other minimal use (conservation). Section B includes one existing Powerlink 275 kV transmission line. Land uses surrounding Section B include: • Callide Mine (ML6993 intersects Section B) • Callide Timber Reserve (freehold) (intersecting Section B to the south) • Calliope Range State Forest (intersecting Section B in the centre) • Pipeline infrastructure operated by APA WGP Pty Ltd, Santos Limited and Australia Pacific LNG Gladstone Pipeline Pty Limited (intersecting Section B) • Dawson Highway (intersecting the centre of Section B) • Moura System Railway (intersecting the centre of Section B).
Section C	Section C primarily comprises land used for grazing with small areas of transport and communication. Two 275 kV Powerlink transmission lines exist within the Study Area, which are not designated. Land uses surrounding Section C include: • Pipeline infrastructure operated by Jemena Gas Pipelines Holdings Pty Ltd, APA WGP Pty Ltd, Santos Limited and Australia Pacific LNG Gladstone Pipeline Pty Limited (intersecting Section C) • Bruce Highway (intersecting Section C).
Section D	Section D comprises land used for grazing, production native forests, intensive uses, residential and other minimal use (conservation). Section D includes one existing Powerlink 275 kV transmission line. Land uses surrounding Section D include: • Calliope Conservation Park (intersecting Section D to the north) • Mount Stowe State Forest (intersecting Section D to the north) • Rio Tinto Yarwun Alumina Refinery (located 3 km to the north) • North Coast Line (intersecting the north of Section D).
Section E	Section E comprises land used for conservation and natural environments, mining, other minimal use (conservation) and tidal areas. Section E includes the Calliope River Substation and associated transmission infrastructure, located within Lot 113 CTN799. Land uses surrounding Section E include: • Gladstone Power Station (located 1 km south) • Wiggins Island Coal Terminal (located 2.5 km north) • Curtis Island and LNG Facility (located 8 km north).

3.0 Project Background

In preparation for transitioning the electricity network to renewable energy supply in the Gladstone region, Powerlink has identified future projects for the Gladstone transmission grid, collectively known as the 'Gladstone Project'. The Project is the foundational stage of the Gladstone Project. To ensure the future security of electricity supply to the Gladstone area, the existing transmission infrastructure corridor between the Calvale Substation and Calliope River Substation is to be strengthened with the establishment of a new transmission line. The Calliope River Substation will also be required to be expanded to accommodate this new connection.

3.1 Project Rationale

Investment in the transmission network is critical in connecting new large-scale renewable energy projects in Queensland. Decarbonising Queensland's energy system means increasing the amount of renewable energy used to meet the energy needs of households and businesses, ultimately reducing our reliance on coal-fired power generation.

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 will allow for up to 1,800 megawatts (MW) of renewable hosting capacity in the region.

As of June 2024, the Project has been confirmed as eligible for Priority Transmission Investment (PTI) under the Energy (Renewable Transformation and Jobs) Regulation 2024. This has been granted due to the Project being identified as a critical investment for the Central Queensland region, further highlighting its importance.

At a Commonwealth level, the Gladstone Project is listed on the National Renewable Energy Priority List (Priority List). The Priority List includes priority transmission, generation and storage projects that support meeting the Australian Government's commitment to achieving 82% on-grid renewable electricity by 2030. Priority List projects will receive additional support and facilitation through Commonwealth regulatory and environmental processes. They will still have the same scrutiny applied as any other project and continue to be required to meet all statutory requirements.

3.2 Corridor Selection

A Draft Corridor Selection Report (CSR) and Final CSR has been prepared for the Project. The Draft CSR was prepared to assess the suitability of using existing transmission easements and identify if any new infrastructure corridors are required. The Final CSR presents the early engagement, corridor selection and assessment processes (involving landholders, Traditional Owner groups, the community and other stakeholders) to identify a final corridor. Further information on consultation framework, including activities and outcomes can be found in **Section 7.0**. A copy of the draft CSR can be found at **Appendix B** and a copy of the final CSR can be found at **Appendix C**. A summary of the key outcomes of the corridor selection process is provided in the following sections.

Field studies and engagement with directly impacted landholders, Traditional Owner groups, the community and other stakeholders will continue through 2025 and there will be a formal community consultation period on the outcomes of this MID application.

3.2.1 Sections A, B, D and E

The assessment concluded that easement widening is not required to accommodate the Project in Sections A, B, D and E. The Draft CSR includes an opportunities and constraints assessment for these sections, which considered social, environmental and physical factors. It involved field studies, desktop research and engagement with landholders, Traditional Owner groups and other stakeholders. The Project in Sections A, B, D and E is planned to be co-located within an existing Powerlink transmission easement, beside an existing transmission line. Considerations in the Final CSR included:

- Location of nearby houses and structures, and property boundaries
- Topography, including steep terrain, watercourses and floodplains
- Presence of agricultural and cropping land
- Presence of remnant vegetation, protected areas, and State forests.

The assessment found the existing easement should be suitable for the new transmission line, and that co-location has the lowest impact across several factors. It identified some constraints to consider during environmental approvals and recommended ongoing consultation with landholders, Traditional Owner groups, the community and other stakeholders. While the easement is vacant, it is not cleared, and some vegetation removal will be required across all sections. Further information on the required vegetation clearing is provided in **Section 6.1**.

3.2.2 Section C – Easement Widening

As there is no available space in the existing easement in Section C for the new transmission line, the existing easement needs to be widened to accommodate the proposed transmission infrastructure. The widened easement is recommended to be located on the north side of the existing transmission easement. The northern corridor option reduces the level of interaction required for crossing existing transmission infrastructure and minimises the risk of complex outages on Powerlink's transmission network.

3.2.3 Section A-E – Easement Widening

Following the release of the Final CSR for the Project, further technical investigations were undertaken which identified the requirement for a small area of new easement in Section A. This was due to the complexity of transmission line entry into the Calvale Substation and the potential for network outages during construction for the previously proposed corridor.

Minor easement widening was also identified in Section E where the corridor meets with Section D due to design requirements. Relevant landholders and stakeholders have been notified of the additional easement areas required to facilitate the Project.

3.3 MID Process

The process for making or amending an infrastructure designation is outlined in the Making or Amending a Ministerial Infrastructure Designation Operational Guidance, the MGR and Section 37 of the Planning Act. An Initial Advice Request (IAR) was submitted to DSDIP seeking initial advice regarding the proposal, and preliminary stakeholder engagement has been undertaken. A request to the Minister to endorse the MID and the Project was made, and the Minister's endorsement was received on 10 February 2025. The following sections provide a response to the requirements of the MGR and the information requested during the pre-lodgement and endorsement phases of the MID assessment process.

3.3.1 Ministers Guidelines and Rules

Schedule 3 of the MGR outlines the required material to support the making of a MID under Chapter 7, Part 1. A response to schedule 3 of the MGR demonstrating that the required material has been submitted is provided in **Table 3.1**.

Table 3.1 Schedule 3 of the Ministers Guidelines and Rules

Item	MGR Requirement	Response
1.	The boundary of the entity's proposal and the cadastral description of all land affected by the proposal.	The real property descriptions of the relevant land are provided in **Appendix A**.
2.	A site and locality description of the entity's proposal.	A site and locality description is provided in **Section 2.0**.
3.	Plans, drawings, elevations, images and perspectives of the entity's proposal that are suitable for assessment and for communicating the scale, intensity and nature of the proposal to members of the public during consultation.	The LVIA report provided at **Appendix I** communicates the scale of the proposal in the context of the existing transmission line infrastructure within the alignment.
4.	Any existing uses on the premises that would be subject to the entity's proposal.	The Project is proposed to be built parallel to existing transmission infrastructure. A description of the existing uses that the Project intersects is provided in **Section 2.2.**
5.	Information about— • existing uses on adjoining sites; • the type of infrastructure proposed relative to the Planning Regulation 2017; • approval(s) history for the site; • the intended outcomes of any proposed amendment to uses on the site.	• Existing uses on adjoining land is described in **Section 2.2**. • Information on corridor selection is provided in **Section 3.2**. • The type of infrastructure being proposed is described in **Table 1.1**. • The approvals history for the Project alignment is provided in **Section 1.2**. • There are no proposed amendments to any uses within the Project alignment.

Item	MGR Requirement	Response
6.	Acknowledgement of any adverse impacts on surrounding properties and how these impacts are proposed to be managed.	The supporting technical reports consider the adverse impacts on surrounding properties and detail mitigation measures to manage the impacts where applicable. The technical reports that have been prepared to support the MID Proposal are listed in **Section 1.0**, summarised in **Section 6.0**, and provided at **Appendix G–Appendix K**.
7.	Acknowledgement of any off-site impacts such as traffic, noise, infrastructure capacity and how these impacts are proposed to be managed.	The supporting technical reports consider the off-site impacts and provide mitigation measures to manage the impact where applicable. The technical reports that have been prepared to support the MID Proposal are listed in **Section 1.0** and summarised in **Section 6.0**.
8.	Acknowledgement of any construction impacts and how these impacts are proposed to be managed.	The supporting technical reports as well as the EMP consider construction impacts and provide mitigation measures to manage the impact where applicable. Further, it is acknowledged that the preparation and lodgement of a Project-specific Construction Environment Management Plan (CEMP) will be included as a requirement of the MID decision.
9.	Any works and land affected outside the boundary of the site that would be subject to the entity's proposal.	The Project traverses a number of properties due to linear nature of the infrastructure. Works proposed within the easement area are the subject of the MID Proposal. The real property descriptions of all affected lots are provided in **Appendix A**.
10.	Acknowledgement of relevant state interests and planning instruments and how they relate to the entity's proposal.	An assessment against the relevant planning instruments is provided in **Section 5.0.**
11.	Outcomes of any initial stakeholder engagement highlighting if changes were made to the earlier proposal as a result of stakeholder feedback.	The outcomes of stakeholder engagement undertaken for the Project to date are summarised in **Section 7.0**.
12.	A proposed consultation strategy.	The proposed consultation strategy will follow the requirements of Schedule 4(7) of the MGR and is outlined in further detail in **Section 7.4**.

Item	MGR Requirement	Response
13.	Plans and technical reports to address any of the matters identified above.	The MID Proposal is supported by a number of technical assessments and reports to address the matters outlined in the pre-lodgement advice received from DSDIP. Each of the supporting technical assessments are summarised in **Section 6.0**. The full suite of technical assessments is appended to this report.
14.	If the entity does not have acquisition powers under the *Acquisition of Land Act 1967* and is proposing a MID over premises not owned by the entity, the entity must give an assurance to the Minister that the entity will have access to the premises the subject of the proposed MID in order to construct and operate the infrastructure. This may include written landowner consent or a contractual agreement. If the entity is the trustee or lessee of the premises, the entity must give an assurance to the Minister that the proposed infrastructure is consistent with the purpose of the trust or lease.	N/A
15.	Sufficient information to address the requirements of section 36(1) of the Planning Act.	A response to section 36 of the Planning Act is provided in **Section 5.1.1**.

3.3.2 Pre-lodgement Advice

Pre-lodgement advice was received from DSDIP on 30 September 2024 (**Appendix D**) with respect to the proposed development.

The key matters raised by DSDIP included transport, biodiversity, natural hazards, strategic airports and aviation facilities, emissions and hazardous facilities, fish habitat areas, priority ports, electricity infrastructure, state development areas, and agriculture. A summary of matters raised, and the proponent's response is provided in **Table 3.2**.

Table 3.2 Pre-lodgement Advice

Item	Advice	Proponent's Response
Infrastructure Entity Overview of Designation Proposal		
1.	The MID Proposal would facilitate a new transmission line from the Calvale substation to the Calliope River substation. Specifically, the project involves: • a new double circuit, 275 kilovolt (kV) transmission line (approximately 87 km in length) from the Calvale substation to the Calliope River substation • extension of the existing Calvale and Calliope River substations. The majority of the line follows the existing easement and infrastructure designation boundaries, except for: • two new sections located generally between Lot 541 on AP22498 and Lot 36 on CTN260 and being approximately 30 km in length • minor outlying area between Lot 4 on SP218648 and Lot113 on CTN799 in the north east, approximately 250 m in length • minor outlying area on Lot 6 on SP103557 in the south, approximately 600 m in length. The proponent is seeking a single MID for the new components only. DHLGPPW Feedback: • It is suggested that a new MID is lodged over the whole new line, not just the new components. • This new MID would not require the repealing of existing MIDs or the reassessment of the existing designation corridor. The purpose of a new MID is to provide greater clarity in the future of the corridor forming part of the new MID. • Consideration should be given to any of the existing MID requirements that may conflict with any new MID requirements.	In line with the advice provided by DSDIP, and for the reasons stated, a new MID is sought over the entire length of the Project alignment. Notwithstanding, the assessment provided within this report focuses on the impacts associated with works within the MPA only.

Item	Advice	Proponent's Response
Transport		
2.	The transmission line crosses both the State and local road networks. A construction traffic impact assessment should be provided in support of the MID Proposal that addresses the following: • impacts on the State and local road networks and any required upgrade/mitigation works access arrangements to the transmission line for construction and maintenance • any temporary road closures and associated impacts • impacts to public and active transport routes.	The MID Proposal is supported by a TIA (see **Appendix H**) which describes the impacts to the local and State-controlled road networks during construction and provided recommendations on the required mitigation measures.
Biodiversity		
3.	The transmission line passes through areas of Matter of State Environmental Significance (MSES) with pylon towers potentially requiring vegetation to be cleared. An ecological assessment should be provided in support of the MID that includes/addresses: • the avoid/minimise/mitigate/offset framework • areas of vegetation to be cleared • impacts to marine plants • any proposed rehabilitation/offsetting.	The MID Proposal is supported by an EAR (see **Appendix F**) which describes the ecological values within the Study Area and MPA. Assessment is provided on the impacts of the Project of ecological values within the MDA, and presents strategies to avoid, minimise and mitigate potential impacts.
Bushfire Prone Area		
4.	The transmission line is mapped in very high, high and medium bushfire intensity and potential impact buffer areas. Environmental management plans should be provided that address bushfire risks with consideration given to: • avoidance of bushfire prone areas where possible • measures to mitigate risks to a tolerable level • procedures in the event of a bushfire.	The works proposed within the MPA are limited to transmission line and tower construction only. As such, advice has been provided by a suitably qualified professional that bushfire hazard can be adequately managed through Powerlink's vegetation management specifications and environmental management measures as described in **Section 6.6**.

Item	Advice	Proponent's Response
Flood Hazard		
5.	The transmission line is mapped within both the Level 1 – Queensland floodplain assessment overlay and Flood hazard area - Local government flood mapping area. A hydrology assessment should be provided in support of the MID that considers the impacts of flooding, stormwater and coastal hazards including storm tide inundation and coastal erosion.	The MID Proposal is supported by a SWIA report (see **Appendix J**) which adequately considers the impacts from flooding, stormwater and coastal hazards.
Strategic Airport and Aviation Facilities		
6.	The transmission line is located to the north west of Gladstone Airport. Consultation should be undertaken with the Civil Aviation Safety Authority (CASA) throughout the MID process, including at the pre-engagement and formal consultation stages.	Correspondence has been sent to CASA and the Gladstone Airport during pre-engagement consultation for the Project. Further consultation will be undertaken with CASA during the formal consultation stages of the assessment process to ensure any concerns regarding aviation impacts are addressed.
Emissions and Hazardous Activities		
7.	The transmission line crosses high pressure gas pipelines in a number of locations. Consultation should be undertaken with the pipeline operators prior to lodgement to determine whether a safety management study is required.	Correspondence has been sent to each of the high-pressure gas pipeline operators in the vicinity of the Project. Further consultation will be undertaken with the operators during formal consultation stages of the assessment process to ensure any concerns regarding hazards and safety are adequately addressed. The management of hazards, health and safety matters for the Project are described in **Section 6.9**.
Fish Habitat Areas		
8.	The transmission line crosses a number of mapped waterways for waterway barrier works. If any waterway barrier works are proposed as part of the construction of the transmission line, details of any barriers should be provided with the MID Proposal, where possible.	Any waterway barrier works required for the Project will be undertaken in accordance with the *Accepted development requirements for operational works that is constructing or raising waterway barrier works* (ADR). If compliance with the ADR cannot be achieved, a separate development application will be lodged for approval once the detailed design of waterway crossings is known.

Item	Advice	Proponent's Response
Priority Ports – Gladstone Priority Port		
9.	The transmission line crosses Calliope River, a high-risk maritime development zone. Details should be provided of: • the height of the transmission line above creek water levels considering tidal patterns, seasonal changes and weather conditions • any required closure of the navigable waterway for the construction of the transmission line.	The proposed transmission lines are located parallel to existing transmission lines that cross the Calliope River. It is noted that the new lines are to be constructed higher than the existing and will therefore not impede on the navigable waterway. Either drones or helicopters will be used to string the portion of the transmission line spanning the Calliope River and as such there is no intention to close the navigable waterway. The Regional Harbour Master has been consulted and provided with design plans.
Electricity infrastructure		
10.	The transmission line is in proximity to and crosses a number of existing transmission lines of various size. The proposal should ensure the continued safe operation of this existing infrastructure. An electric and magnetic field assessment should be provided in support of the MID Proposal.	Impacts from electric and magnetic fields (EMF) are addressed in **Section 6.7**, which concludes that the Project will be designed in accordance with best practice technical specifications and provides measures to manage any residual impacts.
State Development Areas		
11.	The transmission line crosses both the Callide Infrastructure Corridor and Gladstone State Development Areas (SDAs). The assessment should include a consideration of how this project does not conflict with the intent or purpose for these areas.	An assessment against the purpose and overall objectives of the Gladstone SDA Development Scheme and Callide Infrastructure Corridor SDA and the Callide River Infrastructure Corridor SDA Development Scheme is provided in **Section 5.1.4**.
Agriculture		
12.	The transmission line crosses areas of Agricultural land – class A and B and the Stock route network. The MID Proposal should include an assessment of: • the impacts on the long-term viability and growth of the agricultural sector • the impacts on the stock route network, in the locations crossed by the transmission line.	An assessment of the impacts to the long-term viability and growth of the agricultural section and impacts on the stock route network is provided in **Section 6.8**.

Item	Advice	Proponent's Response
Recommended Technical Reporting		
13.	It is recommended that the entity consider the following matters when preparing the infrastructure designation request: • construction traffic impact assessment • ecological assessment quantifying areas to be cleared and including any proposed rehabilitation/offsetting • hydrology assessment including flooding, stormwater and coastal hazards • noise and vibration impact assessment • environmental management plans – biosecurity, acid sulphate soils, soil and water, contaminated land, waste management, hazardous materials, air quality, bushfire • cultural heritage impacts • air quality impacts • landscape and visual amenity impacts • electric and magnetic field impacts • bushfire risks • agricultural land impacts • ground and surface water impacts • coastal process impacts • hazards, health and safety • details of any proposed waterway barrier works • details of any construction camps, if proposed.	The MID Proposal is supported by the following technical reports: • Traffic Impact Assessment (**Appendix H**) • Ecological Assessment Report (**Appendix F**) • Stormwater Impact Assessment (including flooding, stormwater and coastal hazards and processes) (**Appendix J**) • Noise Impact Assessment (**Appendix G**) • Environmental Management Plan (including biosecurity, acid sulphate soils, soils and water, contaminated land, waste management, hazardous material, air quality and bushfire) (**Appendix K)** Additional matters referenced in the pre-lodgement advice are addressed in this MID Report, as follows: • Cultural heritage impacts (**Section 5.4.2.1**) • Bushfire (**Section 6.6**) • Agricultural land (**Section 6.8.1**) • Hazards, health and safety (**Section 6.9**). It is noted that there are no waterway barrier works, or construction camps proposed as part of this MID Proposal.

3.3.3 Endorsement Request

An endorsement request, seeking endorsement to proceed with the submission of a MID Proposal was made to DSDIP in late November 2024. Endorsement to seek a MID was subsequently received from DSDIP on 10 February 2025. The endorsement decision indicated that the MID Proposal must address the matters identified in **Table 3.3**.

Table 3.3 Endorsement Advice

Item	Advice	Response
1.	The required material for making a MID specified in Schedule 3 of the MGR.	The MID Proposal is made in accordance with the requirements specific in Schedule 3 of the MGR as detailed in **Section 3.3.1**.
2.	The matters raised in pre-lodgement minutes, including any specific requirements.	The MID Proposal addresses matters raised in pre-lodgement minutes as detailed in **Section 3.3.2.**
3.	Consent if an alternative contact to that identified on the land title is the contact for the landowner.	N/A

4.0 Project Description

The Project extends from 10 km east of Biloela to 2 km north of Clinton, near Gladstone, Queensland and traverses both the Gladstone Regional and Banana Shire Local Government Areas (LGA). The Project comprises of the following components:

- A new double circuit, 87 km 275 kV transmission line between the existing Calvale Substation and the Calliope River Substation within a 60 m wide corridor and will be co-located within available space within existing easements for most of its route, with a widened easement to be acquired for a portion of the alignment (Sections A, C and E). The transmission line is split into five sections (Sections A, B, C, D and E) for reporting purposes.
- Expansion of the Calliope River Substation (Section E), which may include components such as reactors, transformers, synchronous condensers, static synchronous compensation and the expansion of the existing 132 kV and 275 kV switching yards (**Figure 4.1**).
- Grid connection of the new transmission line to the Calvale and Calliope River substations.

Powerlink seeks to commence construction of the Project by June 2026 with a view to conclude construction and commence operations by the end of 2028 to ensure continued supply to the Gladstone region.

It is reiterated that although a new MID is sought for the entire Project, the assessment of this MID Proposal focusses on works proposed within the MPA. A summary of the key components and activities of the construction, operation and decommissioning and rehabilitation phases of the Project is provided in the following sections. The Project stages referenced are defined as follows:

- **Construction** – All activities up to the commencement of transmission line commissioning.
- **Operation** – All aspects from the commencement of commissioning through to and including operation of the transmission line.
- **Decommissioning** – All activities associated with dismantling and removal of the infrastructure and environmental rehabilitation.

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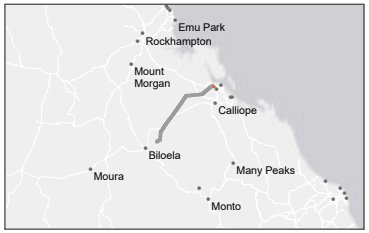
FIGURE 4.1

Calliope River Substation Expansion

Legend

- Disturbance Footprint
- Future Expansion Areas



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Metres

Scale 1:5,000 at A4
GDA 1994 MGA Zone 56

umwelt

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

4.1 Construction

4.1.1 Transmission Line

Construction of the transmission line will include the completion of the following activities:

- Site preparation, including site set out, pre-clearance surveys and vegetation clearing.
- Establishment of laydowns and offices.
- Installation of gates, grids, clean down bays and access tracks.
- Tower site benching.
- Foundation excavation and installation.
- Establishment of brake and winch sites.
- Structure assembly and erection using a large mobile crane.
- Pre-stringing activities (installation of draw wires for the installation of the conductors)
- Stringing of conductors and OPGW earth wire.

Assembly of prefabricated components is usually completed adjacent to the final site. A large mobile crane will be used to erect the towers in sections. Helicopters may also be used to lift sections of towers where required.

Conductor and OPGW stringing is carried out as either conventional or aerial stringing as further described below. The determination of methodology is based on several factors such as but not limited to:

- Structure and alignment design, terrain, environmental and cultural heritage constraints, sensitive receptors, land usage and/or landowner constraints, schedule, cost effectiveness or risk.
- Conventional stringing involves the clearing of two or more tracks directly underneath and in line with the structure crossarms. Earth moving equipment (tractor, bulldozer or similar) will then pull steel draw wire across the ground in a slack state from one structure to another down the alignment. The draw wire is then manually raised and placed into the stringing pulleys attached to the cross arms ready for running conductor.
- Aerial stringing is the method of attaching draw wire or specialised rope to either a helicopter or drone which is then flown from one structure to another lowering the draw wire or rope directly into the stringing pulleys. Aerial stringing may be carried out under tension with the assistance of a tensioner or other braking equipment (tesmec puller/tensioner) or in a slackened state where the draw wire or rope is able to be pulled at very low or no tension with the use of a heli-brake or similar and may be pulled across the ground where permitted.
- Stringing will be completed in sections of varying length of up to 10 km between termination structures, depending on constraints, terrain, and access. Specialised equipment including a powerful winch (puller), a braking device (tensioner) and pulleys (stringing sheaves) will be required.
- Site rehabilitation, including the reinstatement of pre-existing topography, topsoil, and fences where disturbed.

- Reinstatement of all disturbed areas that will not accommodate permanent infrastructure, will be undertaken progressively during construction, where practicable. The short-term goal of reinstatement is the stabilisation of soils to provide a suitable matrix for vegetation establishment to aid in preventing erosion.

4.1.2 Substation

The expansion of the Calliope River substation (in Section E) will require the following field activities:

- site preparation including infrastructure siting, pre-clearance surveys, vegetation clearing, earthworks and fencing
- civil works including the installation of security fencing, drainage, roads, cable trenches, station earthing, and foundations
- drainage works include drains, pits and culverts to control stormwater flow
- underground cable trenching within the substation includes cable trenches, cable pits and conduits as required for multicore cables
- copper electrical earthing mat will be installed across the site at a depth of approximately 600 mm
- isolated concrete plinths and foundations will be installed (bored or excavated as required)
- infrastructure assembly
- aerial, gantry and support structures
- erection of landing beams, conductors and busbars
- site rehabilitation.

The proposed works at the Calvale substation (in Section A) will be contained within the existing substation footprint and fenced compound and comprise civil works in the form of substation electrical infrastructure. Therefore, works within the existing substation footprint and fenced compound at the Calvale substation (Section A) does not form part of this MID Proposal.

4.1.3 Materials

Other than the infrastructure components, key materials required for the construction of the Project include power and fuel, concrete, quarry materials and water. This includes:

- Water is required for dust suppression, earthworks, development of access tracks and concrete batching during construction and will be sourced from local dams and existing and new bores in consultation with landholders, and only at locations where supplies are abundant. Extraction of water from local rivers and creeks will be undertaken in accordance with the requirements under the Queensland *Water Act 2000*, if required.
- Access to quarry materials during construction is required for access tracks, waterway crossings, erosion and sediment controls, foundations as well as ongoing maintenance. These materials include, but are not limited to, rock, gravel, sand and soils. Where available these materials will be sourced from local registered quarries and site won materials.
- Several concrete batching plants are anticipated to be required for construction of the Project. Concrete suppliers located in Biloela and Gladstone will be used and to supplement this supply, concrete batching plants will be located within the Disturbance Footprint. Once the batching

plants are decommissioned, the areas will be used as laydown areas during the construction phase.

- Mobile batching plants may be used for construction areas located too far from proposed batching plants and concrete supplies. Mobile batching plants will only be used when the time to travel from batching plants to the start of curing of concrete exceeds the time limits specified by engineering standards.
- Either diesel or unleaded petrol will be required for generators, machinery and vehicles. Generators are required to power site offices and will also be required at the substation locations for power generation. Fuel storage and refuelling activities will occur only in a controlled and designated location.

4.1.4 Ancillary Infrastructure

Ancillary infrastructure requirements include:

- Sites for water sourcing and extraction. Water is required for dust suppression and development of access tracks during construction and will be sourced from local dams and bores (new and existing) in consultation with landholders and will only be taken when sufficient supply exists. Extraction of water from local rivers and creeks will be undertaken in accordance with the requirements under the *Water Act 2000*.
- Brake and winch sites.
- Laydown areas.
- Two concrete batching plants are anticipated to be required for the construction of the Project. Concrete batching plants will likely be located on Lot 412 CL40158 and Lot 534 CL40257. In addition to the onsite batching plants, concrete will also be sourced from concrete suppliers in Biloela and Gladstone.
- A mobile site office located within the cleared easement will move in association with Project progression.

Temporary ancillary infrastructure is strategically sited within the Study Area where possible. However, one laydown area is located 1 km away from the Disturbance Footprint on a site previously used for the same purpose, on Lot 4 on RN903.

4.1.5 Construction Hours

Construction will generally occur during standard working hours, being 6:30 am – 6:30 pm, Monday to Saturday where possible. Where construction activities are required to occur outside of standard working hours, noise impacts will be managed in accordance with a project-specific CEMP, which will include the following measures:

- Neighbouring properties will be consulted and notified at least 48 hours prior to the commencement of works.
- Works will be conducted in accordance with an Out of Hours Guideline.
- Noise levels will not exceed the limits specified in the CEMP.
- Mitigation measures outlined in the CEMP will be implemented to minimise noise impacts on neighbouring properties.

4.2 Operation

Following the construction and commissioning of the transmission line, the amount of human activity on site will decrease substantially.

During operation, maintenance staff will carry out scheduled inspections of the line, easement and access tracks every two to four years, depending on the risk of vegetation growth. These inspections (patrols) are either by vehicle or helicopter. Maintenance staff will also carry out routine inspections of the substations and detailed maintenance of all plant and equipment at regular intervals. Additional inspections at any Project location may be required as a result of equipment failure, damage, modifications and upgrades.

A summary of the primary activities to be conducted as part of the operation and maintenance phase is detailed in the following sections.

4.2.1 Transmission Line

Inspection of the transmission line and each tower is carried out on each scheduled line patrol, with the main aim being to record the type, density and height of vegetation regrowth. Additional matters of interest include new under-crossings (e.g. distribution powerlines) or other activity or construction within the easement, which may affect operation or maintenance of the line.

Within areas of the Disturbance Footprint identified as having a high or very high bushfire risk, all incompatible vegetation and any vegetation that can grow greater than 3.5 m in height must be removed, with the exception of areas where the conductor is suspended across a valley or area of high topography, and it can be demonstrated that there will be an appropriate distance of separation between the conductor and the canopy of vegetation. Within areas identified as having a low, medium or potential bushfire risk, vegetation must be maintained so it does not encroach on 6 m from the bottom of the conductor at maximum sag. The tower pads will be retained as a cleared footprint with a 10 m buffer from the tower legs for the life of the asset.

Powerlink's policy is for the landholder to be contacted prior to any vegetation control work on a property and the landholder's agreement obtained regarding the treatment method to be employed. Easement vegetation management is important to ensure the safe operation of the transmission line and will be undertaken in accordance with Powerlink's standards and procedures.

Three techniques for vegetation management are employed:

- Mechanical
- Hand clearing
- Chemical (herbicides).

The technique adopted for each area takes into account a number of issues such as landholder requirements, type of regrowth, terrain and the local environmental conditions. Mechanical clearing is usually by a tractor driven slasher or similar vehicle and is suitable for shrubs and smaller trees. It is limited to relatively flat and accessible terrain due to the type of vehicle used.

Hand clearing is labour intensive but allows the vegetation clearing to be quite selective and ensures that disturbance to non-target species is minimised. Hand clearing can be employed in areas where vehicle access is not available. Lopping of larger trees is also an option near urban or in visually sensitive areas.

Chemical treatment may also be used for selective treatment of incompatible vegetation while minimising ground disturbance. The method may be through stump injection, cut stump or overall spray technique and is mostly suitable for regrowth vegetation.

4.2.2 Access Tracks

Maintenance of access tracks is required to ensure that vehicle access to structure sites is available for inspections and structure maintenance. The work will aim to minimise disturbance to natural groundcover, thus reducing erosion potential and subsequent maintenance requirements. Maintenance of access is undertaken in consultation with the appropriate authority and landowner.

4.2.3 Substation

During the routine inspections, the substation infrastructure and items of plant will be inspected for signs of unusual wear, corrosion or damage. Faults and defects will be reported to maintenance staff who will rectify any problems identified.

Substation equipment is designed with a service life of up to 50 years with refurbishment scheduled every 15 years and is very reliable under most conditions. Apart from the detailed visual inspections that maintenance staff undertake, routine maintenance will be carried out periodically depending on the type and make of the item of plant concerned.

Vegetation regrowth control surrounding the substation and under the incoming power supply transmission lines will be undertaken to maintain electrical safety clearances between the conductors and vegetation.

4.3 Decommissioning

Typically, the operational life of a transmission line and substation is 50 years.

At the transmission line end of life, it may:

- Be replaced with a transmission line designed for the revised environmental constraints and electrical system requirements at the time.
- If the line was no longer required, it would be de-energised, dismantled, removed and the easement may be surrendered to the property owner.

At the substation end of life, it is likely replacement or refurbishment work would occur to bring the equipment to the required level of performance and reliability. If the substation is considered no longer necessary, it would be removed, and remediation works undertaken.

Prior to decommissioning, a Decommissioning Management Plan which provides detail regarding the proposed decommissioning works, environmental risks associated with decommissioning and management and mitigation measures will be prepared. This plan will utilise environmental management strategies, practices and technologies current at the time of decommissioning to comply with or exceed regulatory requirements and to appropriately manage environmental issues which may be associated with decommissioning of the substation and or transmission line.

5.0 Statutory Framework

5.1 State Planning Framework

5.1.1 Planning Act 2016

The Planning Regulation is subordinate to the Planning Act and provides guidance on the type of infrastructure that are eligible for designation. Specifically, Schedule 5 of the Planning Regulation identifies types of infrastructure which may be subject to a designation. Schedule 5, Part 2, Item 7 identifies 'electricity operating works' as a type of infrastructure which may be subject to an MID.

Electricity operating works is defined under Section 12(3) of the Electricity Act and includes:

(3) Operating works are—

for a transmission entity—the transmission grid and other property used for operating or managing the transmission grid.

Powerlink is a transmission entity as defined under Part 4, Section 29 of the Electricity Act and as the MID Proposal is for the construction of transmission line infrastructure it is considered that the project is consistent with the definition of 'electricity operating works'.

An assessment of the proposed MID against the 'criteria for making or amending a designation' under section 36 of the Planning Act is provided in **Table 5.1**.

Table 5.1 Assessment Against Criteria for Making or Amending a MID

Item	Legislative Criteria	Assessment
1.	A designator must be satisfied that— • the infrastructure will satisfy statutory requirements, or budgetary commitments, for the supply of the infrastructure; or • there is or will be a need for the efficient and timely supply of the infrastructure.'	**Complies** The MID Proposal is for the reinforcement of electricity supply infrastructure. The MID Proposal and supporting technical assessments demonstrate compliance with the relevant statutory requirements for the delivery of the MPA. The Project will satisfy the budgetary commitment of $178 million for early works, as outlined in the investment approval issued by the Treasurer and the Minister for Energy.
2.	The Minister must also be satisfied that adequate environmental assessment, including adequate consultation, has been carried out in relation to the development that is the subject of the designation or amendment.	**Complies** **Section 6.0** and **Section 7.0** sets out the environmental assessment and consultation process undertaken to date for the proposed MID which is in exceedance of the requirements of the Planning Act. Further consultation will be undertaken in accordance with the requirements of the MGR.

Item	Legislative Criteria	Assessment
3.	The Minister may, in guidelines prescribed by regulation, set out the process for the full environmental assessment and consultation.	**Complies** The MID Proposal has been prepared in accordance with the requirements outlined in Chapter 7 of the MGR.
4.	The Minister is taken to be satisfied of the matters in subsection (2) if the process in the guidelines is followed.	**Complies** The MID Proposal has been prepared in accordance with the requirements outlined in Chapter 7 of the MGR.
5.	However, the Minister may be satisfied of the matters in another way.	**Complies** The MID Proposal has been prepared in accordance with the requirements outlined in the MGR.
6.	Section 10 and 11 apply to the making or amending of the guidelines as if the guidelines were a State planning policy.	**Not Applicable** The making or amending guidelines do not apply to the MID Proposal.
7.	A designator must have regard to a number of matters. The relevant matters for this designation are: • all planning instruments that relate to the premises.	**Complies** The MID Proposal has been assessed against the relevant planning instruments as detailed in **Section 5.0**.
	• Any assessment benchmarks, other than in planning instruments that relate to the development that is the subject of the designation or amendment.	**Not Applicable** No assessment benchmarks, other than those in planning instruments, have been identified as relevant to the MID Proposal.
	• If the premises are in a State Development Area under the *State Development and Public Works Organisation Act 1971* (SDPWO Act) – any approved development scheme for the premises under that Act.	**Complies** The MID Proposal has been assessed against the Gladstone SDA development scheme and the Callide Infrastructure Corridor SDA development scheme as detailed in **Section 5.1.4**.
	• If the premises are in a priority development area under the Economic Development Act 2012 – any development scheme for the priority development area under that Act.	**Not Applicable** The MID Proposal is not located within a Priority Development Area (PDA).
	• Any properly made submissions made as part of the consultation carried out under Section 37 (of the Planning Act).	**Complies** All properly made submissions will be considered and addressed as part of the finalisation of the MID Proposal.
	• The written submissions of any local government.	**Complies** Submissions received from both GRC and BSC will be considered and addressed as part of the finalisation of the MID Proposal.

5.1.2 State Planning Policy

The State Planning Policy (SPP) aims to ensure Queensland's interests are protected and represented in land use planning and development. The SPP identifies 17 State interests across five themes. The State interests are supported and illustrated by the SPP interactive mapping system.

When making or amending a designation, DSDIP must have regard to the relevant parts of the SPP, which are identified in **Table 5.2** and **Table 5.3**. A full response to each of the relevant guiding principles and assessment benchmarks of the SPP is provided in **Appendix E**. The assessment of the SPP relevant benchmarks concluded that the MID proposal aligns with both the guiding principles and the applicable state interests.

Table 5.2 SPP Relevant Benchmarks – Guiding Principles

SPP Guiding Principles	
Outcome Focused	Clearly focus on the delivery of outcomes
Integrated	Reinforce the role of local planning schemes as the integrated, comprehensive statement of land use policy and development intentions for a local area
Efficient	Support the efficient determination of appropriate development
Positive	Enable positive responses to change, challenges and opportunities
Accountable	Promote confidence in the planning system through plans and decisions that are transparent and accountable

Table 5.3 SPP Relevant Benchmarks – State Interests

Theme	State Interest	Relevance	Where Addressed
Liveable Communities and Housing	Housing Supply and Diversity	N/A	N/A
	Liveable Communities	N/A	N/A
Economic Growth	**Agriculture**	**Applicable**	**Addressed in Appendix E**
	Development and Construction	**Applicable**	**Addressed in Appendix E**
	Mining and Extractive Resources	N/A	N/A
	Tourism	N/A	N/A
Environment and Heritage	**Biodiversity**	**Applicable**	**Addressed in Appendix E**
	Coastal Environment	**Applicable**	**Addressed in Appendix E**
	Cultural Heritage	N/A	N/A
	Water Quality	N/A	N/A
Safety and Resilience to Hazards	**Emissions and Hazardous Activities**	**Applicable**	**Addressed in Appendix E**
	Natural Hazards, Risk and Resilience	**Applicable**	**Addressed in Appendix E**

Theme	State Interest	Relevance	Where Addressed
Infrastructure	**Energy and Water Supply**	**Applicable**	**Addressed in Appendix E**
	Infrastructure Integration	N/A	N/A
	Transport Infrastructure	N/A	N/A
	Strategic Airport and Aviation Facilities	N/A	N/A
	Strategic Ports	N/A	N/A

5.1.3 Regional Plan

The *Central Queensland Regional Plan 2013* (Regional Plan) identifies the interests in land use planning in the region and address the emerging regional issues of land use competition between the agricultural and resources sections, and the need to protect areas required for the growth of towns. The regional plan also discusses housing, liveable communities, economic growth, environment and heritage and hazards and safety.

Chapter 5 of the Regional Plan identifies priority outcomes for infrastructure that support economic growth in the region. The priority outcome sought for electricity infrastructure is for the region to grow its energy generation capabilities through public and private sector investment, specifically focussing on reinforcing electricity generation and transmission systems in response to forecasted growth and energy efficiency.

The MID Proposal will leverage and reinforce existing electricity infrastructure to boost economic growth and service anticipated population and industry growth. As such, it is considered the MID Proposal aligns with and progresses the relevant priority outcomes of the regional plan.

5.1.4 State Development Areas

The MPA traverses the Gladstone SDA (GSDA) and Callide Infrastructure Corridor SDA (CICSDA). The Minister must have regard to all planning instruments that are relevant to the premises in which the MID Proposal is located. The MPA traverses through the 'Port Related Industry Precinct' and the 'High Impact Industry Precinct' of the GSDA Development Scheme, as well as the 'Callide Infrastructure Corridor' of the CICSDA Development Scheme. An assessment against the relevant strategic vision and objectives of both Development Schemes is provided in **Table 5.4** and **Table 5.5**.

Table 5.4 Gladstone SDA Development Scheme

Item	Development Scheme Provision	Response
Strategic Vision		
(a)	Be Central Queensland's economic powerhouse, with an efficient concentration of large-scale industry of national, State and regional significance that benefit from the SDA's strategic location near the Port of Gladstone and major road and rail networks.	**Meets vision** The transmission line, proposed to integrate into the existing electricity networks within the GSDA, will enhance the region's infrastructure and existing connections to regional Queensland. The GSDA is renowned for its excellent access to infrastructure, including a robust power network. By upgrading the electricity network, this transmission line will ensure a reliable and efficient power supply to the diverse range of industries within the SDA, further promoting economic growth and industrial synergy.
(b)	Support development that aligns with the Queensland Government's strategic priorities for the region, particularly related to the hydrogen industry.	**Meets vision** The Project reinforces the supply of electricity to the Gladstone region and will therefore support and service the hydrogen industry. The Project is not located on land identified for future hydrogen development and is therefore not anticipated to compromise the growth of this critical industry.
(c)	Maintain environmental, cultural heritage and community values where possible to support wider ecological processes and provide community benefits.	**Meets vision** To maintain environmental, cultural heritage, and community values while supporting wider ecological processes and providing community benefits, the proposed transmission line has been strategically located within an existing transmission alignment to the extent possible. By following an existing alignment of a current transmission line and making necessary deviations, the Project aims to minimise impacts on these values.
Overall Objectives		
(a)	Capitalise on Gladstone SDA's strategic location and support the role and function of the Port of Gladstone.	**Meets objective** The Project ensures ongoing electricity supply for the port as well as utilise the port for imported materials.
(b)	Identify and implement opportunities for synergies and co-location between other uses, services and infrastructure to minimise waste and inefficiencies.	**Meets objective** The Project has been purposely positioned to utilise existing infrastructure and services which are currently occupying the GSDA.
(c)	Use land and infrastructure efficiently and be adequately serviced by infrastructure.	**Meets objective** The Project will utilise the existing infrastructure servicing the area to access materials and connections for the electricity grid.

Item	Development Scheme Provision	Response
(d)	Ensure the integrity and functionality of the Gladstone SDA, including infrastructure corridors and future development opportunities, is maintained and protected from incompatible land uses.	**Meets objective** The Project will utilise and enhance the existing transmission corridor and will maintain the functionality of the infrastructure available within the GSDA. The Project will not reduce any capacity for future development opportunities as the transmission line can easily coexist with various infrastructure, particularly infrastructure and services which are compatible with the GSDA Development Scheme.
(e)	Ensure new lots are appropriately sized to accommodate preferred development.	**Not Applicable** The Project does not propose any new lots.
(f)	Be designed, constructed, and operated to a high quality consistent with best practice	**Meets objective** The Project will be designed, constructed and operated to a high quality and will be consistent with best practice.
(g)	Avoid impacts on environmental, cultural heritage, and community values (including sensitive land uses), or minimise or mitigate impacts where they cannot be avoided and offset any residual impacts.	**Meets objective** Due to the linear nature of the Project, some impacts to environmental values are unavoidable. These impacts have been minimised as far as possible, and mitigation will be implemented as part of the Project. The Project is consistent with the land uses and existing infrastructure and services provided by the GSDA. Therefore, there are no sensitive land uses expected to be impacted by the Project.
(h)	Not adversely impact on the outstanding universal values of the Great Barrier Reef World Heritage Area.	**Meets objective** The Project is partly located within the Great Barrier Reef World Heritage Area and the majority of the Project is located upstream. Impacts within the WHA area are generally within existing disturbed areas. Suitable sediment and erosion control measures will be implemented to ensure the World Heritage Area values are not adversely impacted by the Project.
(i)	Manage the risks associated with the projected impacts of climate change and natural hazards to protect people and property.	**Meets objective** The Project will adequately manage the risks associated with climate change and natural hazards through appropriate design and maintenance procedures.
(j)	Manage impacts of air quality on the capacity of the Gladstone airshed.	**Meets objective** The Project will employ a range of measures to manage air quality impacts during construction through the preparation of a site-specific CEMP.

Table 5.5 Callide Infrastructure Corridor SDA Development Scheme

Item	Development Scheme Provision	Response
Objectives		
(1)	Provide, manage and plan land for the establishment of an efficient and effective infrastructure corridor of regional, state and national significance for co-located underground pipelines (principally for the transportation of gas) between Callide and the GSDA, to facilitate economic development.	**Meets objective** The MID Proposal will enable the continued operation of the existing underground pipelines. A tower and spanning transmission lines are required to be located within the CICSDA. Powerlink will work with the pipeline operators and the Office of the Coordinator General (OCG) to ensure that there will be no disruption to the existing or future operation of the underground pipelines.
(2)	Ensure the integrity and functionality of the CICSDA is maintained and protected from land uses and activities that may be incompatible with, or adversely affect, the continued use of the State development area for co-located underground pipelines (principally for the transportation of gas) of regional, state and national significance.	**Meets objective** The MID Proposal ensures the integrity and functionality of the CICSDA are maintained, a transmission tower and spanning lines will be carefully located within the CICSDA. This design allows for the uninterrupted operation of existing underground pipelines and preserves the corridor for future co-located pipelines, ensuring the continued use of the CICSDA for critical gas transportation.
(3)	Protection of the CICSDA to ensure the land resource is effectively utilised and uses are appropriately sited such that infrastructure, and distances between infrastructure, does not consume land unnecessarily or compromise future use and ensures the long-term viability of infrastructure within the CICSDA.	**Meets objective** The transmission line has been strategically designed to avoid any infrastructure within the CICSDA. This will ensure land is not consumed unnecessarily or compromises future use, ensuring long-term viability of infrastructure within CICSDA.
(4)	Ensure the impacts of land use minimises operational impediments on existing infrastructure and surrounding uses and provides orderly development of infrastructure within the CICSDA.	**Meets objective** The MID Proposal avoids infrastructure within the CICSDA and will not impact existing or future operations.

Item	Development Scheme Provision	Response
(5)	Ensure locations for infrastructure, other than gas transportation infrastructure, to intersect the CICSDA are minimised and rationalised.	**Meets objective** The MID Proposal is for development other than gas transportation. The MPA has been strategically designed with the alignment and towers to avoid gas transportation infrastructure located within the CICSDA. Therefore, the development has minimised and rationalised the intersection of the CICSDA.
(6)	Ensure the physical characteristics of land are considered in determining the suitability and location of land uses.	**Meets objective** The MID Proposal will not have an adverse impact upon the physical characteristics of land. One tower will be built within the CICSDA and transmission lines will span across the CICSDA. Powerlink will work with the gas pipeline operators and the OCG to ensure that the transmission line and existing gas pipeline infrastructure can safely operate in parallel.
(7)	Ensure land use recognises and appropriately addresses environmental, cultural heritage and community values.	**Meets objective** The MID Proposal has considered environmental, cultural heritage and community values within area of the MPA. Infrastructure located within the CICSDA will be sited carefully to ensure that there will impacts to the environmental, cultural heritage and community values within this area of the MPA will be managed and minimised to the greatest possible extent.
(8)	Ensure the impacts of land use on the environment, including cumulative impacts, are minimised to meet the requirements of applicable government policies.	**Meets objective** The MID Proposal has co-located the majority of the alignment within an existing MID as to minimise impacts on the environment, including cumulative impacts.

5.2 Local Planning Framework

The MPA traverses both the Banana Shire and Gladstone Regional LGA's. Under the Planning Act, section 44 (6)(b), development in relation to infrastructure under a designation is accepted development and is not assessable under a planning scheme. Despite this, the Minister must have regard to all planning instruments that are relevant to the premises in which the MPA is located. The relevant assessment benchmarks of the planning schemes are identified in **Section 5.2.1** and **Section 5.2.2**. An assessment against the overall outcomes of the relevant codes is provided in **Appendix E**.

5.2.1 Banana Shire Council

The Planning Scheme for the Banana Shire Council was adopted in July 2021 under the Planning Act. Although the *Banana Shire Planning Scheme 2021* (Banana Shire Planning Scheme) does not state that it appropriately integrates the SPP, correspondence from BSC confirms that in June 2021 the Minister approved the adoption of the planning scheme. As such it is considered that the State interests have been appropriately integrated into the Planning Scheme.

The Banana Shire Planning Scheme zones that the MPA crosses are 'Rural' and 'Special Industry'. The Planning Scheme defines the Project as:

"Major electricity infrastructure –

a transmission grid or supply network, or

a telecommunications facility, if the use is ancillary to the use in paragraph (a)..."

In the Rural zone, a Major Electricity Infrastructure use is 'Accepted Development, subject to requirements', provided the development is not located within the Muirs Road Precinct (which this development is not). The following benchmarks are attributed to 'Accepted Development, subject to requirements' within the Rural zone:

- Rural Zone Code – Table 5.10.2
- Development Design Code – Table 6.3.1.

In the Special Industry zone, a Major Electricity Infrastructure use is 'Accepted Development' and therefore has no assessment benchmarks under the Banana Shire Planning Scheme.

The following overlays would be applicable if the development was requiring approval under the Planning Scheme:

- Agricultural Land Overlay
- Biodiversity Overlay
- Bushfire Hazard Overlay
- Infrastructure Overlay
- Water Resources Overlay.

5.2.2 Gladstone Regional Council

The Planning Scheme for the Gladstone Region was adopted in July 2017 under the Planning Act. The *Gladstone Regional Council Planning Scheme Our Place Our Plan 2017* (Gladstone Regional Planning Scheme) states that all aspects of the State planning policy are appropriately reflected within the Planning Scheme.

The Gladstone Regional Planning Scheme zones that the MPA crosses are 'Rural', 'Special Purpose', 'Environmental Management' and 'Conservation'. The Gladstone Regional Planning Scheme defines the Project as:

"Major electricity infrastructure –

All aspects of development for either the transmission grid or electricity supply networks as defined under the Electricity Act 1994. The use may include ancillary telecommunication facilities."

In the Rural zone, Special Purpose zone, Environmental Management zone and the Conservation zone, a Major Electricity Infrastructure use requires 'Impact assessment'. Requiring assessment against the Gladstone Regional Planning Scheme.

The following overlays would be applicable if the development was requiring approval under the Gladstone Regional Planning Scheme:

- Agricultural Land Classification Overlay
- Airport Overlay
- Biodiversity Overlay
- Bushfire Hazard Overlay
- Regional Infrastructure Overlay
- Scenic Amenity Overlay
- Steep Land Overlay
- Transport Noise Corridor Overlay.

5.3 Summary of Legislative Triggers

A summary of the legislative triggers that would ordinarily apply to the Project if a development approval was sought under the Planning Act, triggering assessable development under the Planning Regulation, planning scheme or another relevant planning instrument is provided in **Table 5.6**. The State legislative requirements are discussed in **Section 5.4**.

Table 5.6 Summary of Legislative Requirements

Legislation	Authority	Activity	Assessment Benchmarks
State			
Planning Act *Vegetation Management Act 1999*	DSDIP / Department of Natural Resources and Mines, Manufacturing, and Regional and Rural	Clearing of native vegetation	State code 16: Native vegetation clearing. A response to State Code 16 is provided in **Appendix E.**

Legislation	Authority	Activity	Assessment Benchmarks
	Development (DNRMMRRD)		
Planning Act *Coastal Management and Protection Act 1995*	DSDIP / Department of the Environment, Tourism, Science and Innovation (DETSI)	Coastal development and tidal works	State code 8: Coastal development and tidal works. A response to State Code 8 is provided in **Appendix E.**
Planning Act *Fisheries Act 1994*	DSDIP / Department of Primary Industries (DPI)	Removal, destruction or damage to marine plants	State Code 11: Removal, destruction or damage of marine plants. A response to State Code 11 is provided in **Appendix E.**
Local			
Planning Act *Banana Shire Planning Scheme 2021*	BSC	**Not Assessable Development** Accepted development, subject to requirements	Rural Zone Code, Development Design Code, and relevant overlay codes. A response to the relevant code assessments is provided in **Appendix E**.
Planning Act *Gladstone Region Planning Scheme 2017*	GRC	Material Change of Use for Major Electricity Infrastructure	The planning scheme. A response to the Planning Scheme is provided in **Appendix E**.

5.4 Other Relevant Legislation

A number of Commonwealth, State and local planning and environmental approvals may be required for the Project. The following sections discuss legislation which is relevant to the Project in general.

5.4.1 Commonwealth

5.4.1.1 Environment Protection and Biodiversity Conservation Act 1999

The *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) is the principal piece of Federal environmental legislation in Australia and is administered by the Commonwealth Department of Climate Change, Energy, the Environment and Water (DCCEEW).

The EPBC Act provides for the protection of the environment by regulating activities that may impact on nine Matters of National Environmental Significance (MNES), which include:

- Listed threatened species and communities
- Listed migratory species
- Ramsar wetlands of international importance
- Commonwealth marine areas

- World heritage properties
- National heritage places
- The Great Barrier Reef Marine Park
- Nuclear actions
- A water resource, in relation to coal seam gas development and large coal mining development.

Under the EPBC Act, where a proposed action will have, or is likely to have, a significant impact on one or more MNES the proponent must refer the matter to the Commonwealth Minister for the Environment and Water (the Commonwealth Minister) for assessment of the potential impacts.

The Commonwealth Minister for the Environment will decide whether the proposed action is:

- Not a controlled action (the Project does not need to be assessed any further).
- Not a controlled action 'particular manner' (the Project does not need to be assessed any further, providing that the action is undertaken in accordance with conditions that are supplied with the decision).
- Controlled action (the Project will need to be assessed against the EPBC Act, through one of several mechanisms available depending on the type of project).

Where a controlled action is approved by the Commonwealth Minister for the Environment, the approval may include a range of conditions that seek to minimise and monitor the impact of the action on affected MNES values. This may include the provision of environmental offsets in accordance with the EPBC Act Environmental Offsets Policy to counterbalance any significant impacts that remain after the application of avoidance and mitigation measures to the Project's design.

The desktop assessment of MNES values within the Study Area indicated the potential presence of the following MNES:

- World heritage properties
- National heritage places
- Listed threatened species and communities
- Listed migratory species.

Due to the potential presence of MNES values within and proximate to the Disturbance Footprint , Powerlink submitted a EPBC Act referral to the Commonwealth in November 2024. The Commonwealth Minister determined the Project to be a controlled action on 4 February 2025, requiring assessment through a Public Environment Report (PER). The PER is currently being prepared with further ecological and heritage studies are being undertaken, including significant impact assessments on relevant MNES values.

5.4.1.2 Native Title Act 1993

The *Native Title Act 1993* (NT Act) provides for the recognition and protection of traditional rights and interests in land and waters held by the Aboriginal and Torres Strait Islander people under their traditional laws and customs. Native title rights are determined under the common law of Australia. Any acts or dealings in relation to land and waters subject to native title are only valid if they comply with the provisions of the NT Act.

Acts relating to Powerlink's electricity transmission lines are generally covered by processes under section 24KA. Section 24KA validates future acts that consist of the construction and operation of public infrastructure and supress the native rights over the land for the duration of the easement. The non-extinguishment principle applies under 24KA.

5.4.2 State

5.4.2.1 Aboriginal Cultural Heritage Act 2003

The *Aboriginal Cultural Heritage Act 2003* (ACH Act) seeks to provide effective recognition, protection and conservation of Aboriginal cultural heritage. It establishes processes for managing activities that may have the potential to cause harm to Aboriginal cultural heritage.

Powerlink abides by statutory framework and principles governing the recognition, protection and conservation of Indigenous cultural heritage within Queensland. As such, in addition to the ACH Act, Powerlink also abide by the Aboriginal Cultural Heritage Act 2003 Duty of Care Guidelines (the Guidelines).

Under Part 3, Section 23(1) of the ACHA 2003, Powerlink recognises that it carries the 'cultural heritage duty of care' for its proposed scope of works within the Powerlink Project Area. Powerlink will take all reasonable and practicable measures to ensure the activities do not harm Aboriginal cultural heritage.

In accordance with the guidelines published within the *Interim Engaging with First Nations People and Communities on Assessments and Approvals* under EPBC Act, Powerlink upholds best practice consultation with Indigenous peoples and communities through respectful and effective engagement by:

- Ensuring cultural safety
- Building and maintaining trust
- Engaging early and often
- Negotiating suitable timeframes
- Negotiating suitable submission formats.

The relevant Indigenous cultural heritage parties for the Powerlink Project area under Part 4 of the ACHA 2003, comprising the:

- Gaangalu Nation People (GNP; QUD33/2019)
- Bailai, Gurang, Gooreng Gooreng, Taribelang Bunda People (BGGGTBP; QUD6026/2001).

Powerlink commenced early engagement with both Traditional Owner groups from as early as March 2023. Since then, Powerlink has engaged in multiple meetings with both Traditional Owner groups to discuss various aspects of this project, including the design and location of the proposed transmission line easement, as well as commenced cultural heritage management activities with both groups for the sections of the Study Area within their respective traditional countries.

Powerlink also has an existing 'Whole-of-Claim' Cultural Heritage Investigation and Management Agreement (CHIMA) with the GNP which was executed in December 2015. This CHIMA is recognised as 'another agreement' under Part 3, Section 23(3) of the ACHA 2003, and sets out the agreed procedures as well as terms and conditions through which Powerlink can fulfil its 'cultural heritage duty of care'.

At present, Powerlink is engaged with ongoing discussions with the BGGGTBP, to reach a similar cultural heritage management agreement over the portion of the Project Area within their traditional country. In accordance with the ACHA 2003 and the Guidelines, Powerlink recently completed a search of the Queensland Aboriginal and Torres Straits Islander Cultural Heritage (ATSICH) Database and Register (completed on 17 February 2025) also identified that 20 cultural heritage site points are located within the Project Area.

5.4.2.2 Acquisition of Land Act 1967

The *Acquisition of Land Act 1967* (AL Act) outlines the process for both voluntary and compulsory land acquisition for public purposes by a 'constructing authority' in Queensland. Under Schedule 2 of the Act, a 'constructing authority' includes the State, local governments, or a person authorised by legislation to acquire land. In accordance with the Electricity Act, Powerlink is recognised as a 'constructing authority'.

Powerlink prioritises voluntary agreements for land acquisition wherever feasible and undertakes all reasonable efforts to negotiate easements and other tenure arrangements required for the Project. Established processes exist for acquiring land and easements through both negotiation and compulsory means, ensuring that affected landholders receive fair and reasonable support. This includes facilitating access to independent expert advice regarding compensation claims as early as possible in the acquisition process.

5.4.2.3 Biosecurity Act 2014

The *Biosecurity Act 2014* (Biosecurity Act) is the principal legislation governing biosecurity in Queensland. It provides a framework for managing the risks and impacts associated with pests, diseases, and contaminants to protect the economy, agricultural and tourism industries, environment, and community. Under the Biosecurity Act, all individuals and organisations have a general biosecurity obligation (GBO) to manage biosecurity risks under their control.

Specifically, the Biosecurity Act allows the Queensland Government to take immediate action to manage biosecurity risks. This includes issuing biosecurity emergency orders, movement control orders, and establishing biosecurity zones. Requirements for managing biosecurity risks are detailed in the Biosecurity Act and subordinate legislation, including the Biosecurity Regulation 2016.

Biosecurity for this Project is considered a low risk as Powerlink will implement best practice and standard biosecurity matters in conjunction with individual landholder requirements.

5.4.2.4 Electricity Act 1994

The *Electricity Act 1994* (Electricity Act) is the principal legislation governing Queensland's electricity industry. It provides a framework for all electricity industry participants to follow to ensure the efficient, economically and environmentally sound supply and use of electricity. Powerlink must comply with the conditions set for transmission authorities under section 31 of the Electricity Act.

Specifically, it states that the transmission entity must properly account for the environmental effects of its activities under the transmission authority. Requirements for construction and operation of the electricity network are in the Electricity Act and subordinate legislation including the Electricity Regulation 2006.

A number of activities related to the construction and operation of electricity infrastructure are exempt from approval. In particular, the clearing of native vegetation on freehold land is exempt development if the clearing is for operating works for a transmission entity on land subject to a designation for operating works under the Planning Act (see **Section 3.3** for details on the process for infrastructure designations).

The legislative requirements of the Electricity Act are standard for Powerlink processes and are a low risk to the Project.

5.4.2.5 Electricity Safety Act 2002

The *Electrical Safety Act 2002* (ES Act) seeks to prevent the potential death, injury or destruction caused by electricity. The ES Act regulates electricity works to prevent persons from being killed or injured by electricity, and to prevent property from being destroyed by electricity. The new transmission line must be designed in compliance with the requirements outlined under the ES Act.

The legislative requirements of the ES Act are standard to Powerlink processes and are a low risk to the Project.

5.4.2.6 Environmental Offsets Act 2014

The main purpose of the *Environmental Offsets Act 2014* (EO Act) is to counterbalance the significant residual impacts of activities on prescribed environmental matters through the use of environmental offsets. The EO Act is administered by the DETSI and is supported in achieving its purpose by the Environmental Offsets Regulation 2014 (EO Regulation).

Schedule 2 of the EO Regulation identifies prescribed environmental matters for which offsets may be required where it is determined that an activity will have a significant residual impact on these matters. Prescribed environmental matters under the EO Regulation include environmental matters that are protected under a range of Queensland's environmental legislation, including (but not limited to) the *Fisheries Act 1994*, NC Act and *Vegetation Management Act 1999*. Where offsets are determined to be applicable to an activity they are typically required as a condition of a development approval and must be delivered in accordance with the Queensland Environmental Offsets Policy.

Provisions exist under the EO Act to avoid the duplication of offsets conditions between government jurisdictions and State government departments.

Under these provisions:

- The State government cannot impose an offset condition for a prescribed environmental matter if the same or substantially the same impact or matter has been subject to assessment under the EPBC Act, regardless of whether an offset condition was imposed by the Commonwealth or not.
- When considering whether to apply an offset condition, a State Government agency must consider whether a relevant offset condition that has already been imposed is for substantially the same impact or matter.

Further, in the event that duplicate offset conditions are imposed by different State government departments, an applicant may apply to the relevant department to remove these offset conditions.

Matters relevant to the Project that may require environmental offsets under the Environmental Offsets Regulation 2014 include the following prescribed environmental matters:

- Regulated vegetation
- Connectivity areas
- Protected wildlife habitat
- Protected areas
- Waterways providing for fish passage.

Under the Queensland's environmental offsets framework, an environmental offset can only be imposed by an administering agency as a condition of an authority if the activity has been identified as a 'prescribed activity'.

Section 9 of the EO Act defines a 'prescribed activity' as-

a) the subject of an authority under another Act; and

b) for which an offset condition may be imposed under the other Act on the authority; and

that is prescribed under the regulation.

Schedule 1 of the EO Regulation identifies the prescribed activities that are prescribed under the regulation for the purposes of Section 9 (c) of the EO Act. A MID is not identified in the EO Regulation as a prescribed activity and as such, no offset requirement under the EO Act can be imposed on the MID.

Notwithstanding, the Project may be subject to environment offsets under other approval mechanisms, including the EPBC Act and the NC Act.

5.4.2.7 Environmental Protection Act 1994

The *Environmental Protection Act 1994* (EP Act) is administered by the DETSI and operates as the key legislative framework for environment protection and management in Queensland, through a number of mechanisms to monitor and enforce environmental compliance. Section 319 establishes a general environmental duty of care, which Powerlink are obliged to meet when undertaking works and operations of their electrical infrastructure. The duty states that an organisation undertaking an activity must not cause, or be likely to cause, environmental harm unless all reasonable and practicable measures to prevent or minimise the harm are taken.

Powerlink may exercise this duty of care through the development of preliminary studies, subsequent environmental assessment reports and project-specific environmental management plans implemented throughout the construction and operational stages of the Project.

The Environmental Protection Regulation 2019 is subordinate to the EP Act and identifies Environmentally Relevant Activities (ERAs) in schedule 2, which have the potential to release contaminates into the environment or cause environmental harm.

No ERA's are proposed for the construction and operation of the Project.

5.4.2.8 Land Act 1994

The *Land Act 1994* (Land Act) is administered by the DNRMMRRD and governs the allocation and management of non-freehold land for development. Transmission entities are entitled to take necessary action in publicly controlled places (such as unallocated State land) to provide or supply electricity under section 101 of the Electricity Act, as well as undertake works on road reserves through written agreement from the road authority under section 102.

5.4.2.9 State Development and Public Works Organisation Act 1971

The SDPWO Act is the principal legislation governing the facilitation of major projects in Queensland. The Coordinator-General has wide-ranging powers to plan, deliver, and coordinate large-scale infrastructure projects. This includes overseeing development, controlling land use, and managing development assessments within State Development Areas.

The SDPWO Act is crucial for the establishment and management of SDAs in Queensland. It provides a framework for the Coordinator-General to oversee and coordinate the planning and development of these areas to promote economic growth and infrastructure development.

SDAs which are designated for large-scale industrial and infrastructure projects, are declared under the SDPWO Act by the Coordinator-General. These specified areas are identified to streamline the approval processes and ensures that projects within SDAs are developed efficiently and sustainably.

The Project intersects the GSDA and the CICSDA and is considered low risk, as its use is suitable for the purpose of these SDAs and aligns with the objectives of the development schemes.

5.4.2.10 Transport infrastructure Act 1994

The *Transport Infrastructure Act 1994* (TI Act) regulates the management of the State-controlled Road network and rail network. It is administered by the Department of Transport and Main Roads.
The Study Area crosses a State-controlled Road, the Bruce Highway. Under section 50 of the TI Act, construction, maintenance and operation of ancillary works and encroachments within State-controlled Roads (e.g. placement of a transmission line over the road) can only be undertaken where written approval has been granted from the Department of Transport and Main Roads.

5.4.2.11 Nature Conservation Act 1992

The *Nature Conservation Act* 1992 (NC Act) is administered by the DETSI and provides the framework for the conservation of nature in Queensland. The NC Act seeks to achieve this outcome by establishing an integrated and comprehensive conservation strategy for the whole of the State that provides for the:

- Protection of native species and their habitat
- Dedication, declaration and management of protected areas
- Ecologically sustainable use of protected wildlife and areas
- Gathering of information
- Education of the community and the cooperative involvement of landholders
- Recognition of the role of Aboriginal and Torres Strait Islander peoples in nature and conservation.

The NC Act is supported by several pieces of subordinate legislation that provide for the listing of protected species, regulates the taking and keeping of native species, manages protected areas and supports the conservation of particular species.

Specific permitting and approval requirements under the NC Act and its subordinate legislation relevant to the Project are discussed in further detail in the following sections.

Species Management Program

Under the NC Act, a species management program (SMP) is required for the authorisation of activities that will impact on breeding places of animals that are classified as extinct in the wild, critically endangered, endangered, vulnerable, near threatened (EVNT), special least concern, a colonial breeder or least concern wildlife. A SMP must be registered with the DETSI prior to commencement of activities impacting on protected animal breeding places. Further, all registered entities with an SMP are required to maintain an Animal Breeding Place register.

Damage Mitigation Permit

The NC Act restricts the unlawful take, keep or use of protected wildlife in Queensland. A damage mitigation permit is required where it is necessary to take wildlife in the following circumstances:

- The lethal take of flying foxes
- The removal and relocation of wildlife
- The culling and dispersal of wildlife.

To obtain a damage mitigation permit, it must be demonstrated that the taking of wildlife is necessary and all reasonable steps have been taken to avoid the take of wildlife. Accordingly, should any of the listed activities be required within the corridor to facilitate the development of the Project a damage mitigation permit will be required.

Clearing of Protected Plants

Areas that are considered high risk for the presence of EVNT flora species are mapped on the DETSI flora survey trigger map. A flora survey prepared by a suitably qualified and experienced professional to determine the presence of EVNT flora species is required where development involves clearing work within a mapped high risk area on the flora survey trigger mapping. The Flora Survey Guidelines – Protected Plants describes the required survey and reporting requirements for the clearing of protected plants. A protected plant clearing permit must be obtained prior to the commencement of clearing works where the presence of EVNT flora species is confirmed.

Accordingly, a flora survey of the clearing impact area, including a 100 m buffer, will be required. A flora survey report, impact management plan (to monitor and control impacts associated with clearing) and clearing permit will be required if protected plants are identified within the survey area. If clearing outside of a high risk area, clearing of land must be undertaken within 12 months of obtaining the flora survey trigger map for the proposed clearing area. Therefore, a further copy of the flora survey trigger map should be requested prior to the commencement of works.

Applying for an Authority Under Sections 34, 35 or 35A

Where the construction and operation of service facilities, such as transmission lines and other infrastructure is proposed in a protected area, it is only permitted in circumstances where specific statutory criteria have been met, and an authority has been granted, made, issued or given under sections 34, 35 or 35A of the NC Act.

Part of the MPA is located within a protected area being the Calliope Conservation Park. The relevant authority (section 34) under the NC Act will be sought from DETSI to facilitate the construction and operation of the transmission line.

5.4.2.12 Fisheries Act 1994

The *Fisheries Act 1994* (Fisheries Act) establishes the framework for the management, use, development and protection of Queensland's fisheries resources and fish habitat, and is administered by the Department of Primary Industries. The Fisheries Act is supported by a range of subordinate legislation and the Planning Act which provides for the consideration of fisheries values through the assessment of development.

The Fisheries Act regulates development that may affect fisheries, which includes:

- the construction and raising of waterway barrier works
- the protection and management of marine plants
- the cultivation of fisheries resources through aquaculture
- the declaration and protection of high value fish habitat areas.

The MID Proposal does not include any development that affects fisheries. Any required waterway barrier works that trigger an approval under the Fisheries Act will be obtained separately through the State Assessment and Referral Agency (SARA).

5.4.2.13 Forestry Act 1959

The *Forestry Act 1959* (Forestry Act) is the principal legislation governing the management and protection of Queensland's State forests. It provides a framework for the reservation, management, silvicultural treatment, and protection of State forests, as well as the sale and disposal of forest products and quarry material.

Requirements for the management and protection of State forests are detailed in the Forestry Act and subordinate legislation. This includes provisions for the appointment and qualifications of forest officers, the classification and reservation of forest lands, and the powers and duties of forest officers.

A number of activities related to forest management are streamlined under the Forestry Act. For instance, certain activities such as the sale and disposal of forest products are regulated to ensure sustainable use of forest resources.

5.4.2.14 Vegetation Management Act 1999

The *Vegetation Management Act 1999* (VM Act) provides for the regulation of vegetation clearing in Queensland in a way that conserves remnant vegetation, prevents loss of biodiversity, maintains ecological processes and prevents land degradation. In achieving this purpose, the VM Act is supported by the Vegetation Management Regulation 2012 and the Planning Act. The DNRMMRRD administers the VM Act.

The proposed transmission line corridor is mapped as containing native vegetation that may need to be cleared. The VM Act and its subordinate legislation provide for the categorisation of remnant vegetation through the regulated vegetation management map. Schedule 10 of the Planning Regulation prescribes that operational work involving the clearing of native vegetation is assessable development unless the clearing is otherwise identified as exempt clearing work or accepted development.

Under section 44 of the Planning Act, where a MID is granted, the specified work would automatically be considered accepted development. Notwithstanding this, the Project's design should consider the requirements for assessable development. Construction works will also be required to comply with management and control measures identified in the MID approval requirements.

5.4.2.15 Water Act 2000

The *Water Act 2000* (Water Act) provides for the sustainable management of water resources, water supply and demand management, the management of impacts on underground water and the operation of water authorities in Queensland. The Water Act is administered by Department of Local Government, Water and Volunteers and the DETSI and is supported through the Water Regulation 2016, Water Plans for Queensland's water catchments and the Planning Act, which typically provides for the regulation of development activity interfering with water resources.

Schedule 10 of the Planning Regulation identifies the taking or interfering with water as assessable development requiring a development permit, unless it complies with exemption requirements established under the Exemption requirements for constructing authorities for the take of water without a water entitlement. Powerlink is a constructing authority (schedule 2 of the AL Act) and may take water without a permit or licence to construct or maintain infrastructure.

A riverine protection permit under the Water Act is required where development involves the excavation, placing of fill or destruction of native vegetation. The Water Act defines features that are considered to be a watercourse, whereas these features are spatially represented on the Watercourse Identification Map. Generally, under the Water Act a 'drainage feature' provides for overland flow and is not considered to be a watercourse.

Powerlink is an approved entity exempt from requiring a permit if the self-assessment guidelines under the Riverine protection permit exemption requirements are followed. A review of the Water Identification Map indicates that the MPA intersects with designated watercourses. As such the construction of a new transmission line may potentially require works disturbing a watercourse and will need to comply with the exemption requirements. Further, the construction of new maintenance tracks over designated watercourses will also need to comply with the exemption requirements. Compliance with the exemption requirements may be achieved through the implementation of a CEMP. Where compliance cannot be met, a riverine protection permit would be required for any works within affected watercourses.

5.4.3 Local Planning Instruments and Local Laws

There are two LGA's traversed by the Project, being the Gladstone Region and Banana Shire. The MPA is primarily within the Gladstone Region LGA with a small section within the Banana Shire LGA. Each LGA is subject to a Local Planning Instrument under the Planning Act and has local laws in force under the *Local Government Act 2009*. The relevant LGA, the Local Planning Instrument and Local Laws to be considered for the Project are identified in **Table 5.7**.

Table 5.7 Local Planning Instruments and Local Laws

Relevant LGA	Local Planning Instrument	Relevant Local Laws
Gladstone Regional Council	*Gladstone Regional Council Planning Scheme Out Place Our Plan 2017*	• Local Law No. 3 (Community and Environmental Management) 2011 • Local Law No. 4 (Local Government Controlled Areas, Facilities and Roads) 2011 • Local Law No. 8 (Waste Management) 2018.
Banana Shire Council	*Banana Shire Planning Scheme 2021*	• Local Law No. 3 (Community and Environmental Management) 2011.

6.0 Environmental Assessment

The following sections summarise the existing environment, potential impacts and mitigation and management strategies to reduce impacts where possible. Please note that the following environmental assessments are provided to address potential impacts and mitigations relevant to the MID Proposal and MPA only.

6.1 Ecology

An EAR (**Appendix F**) has been prepared to identify the ecological values associated with the Project's Study Area and examine the MSES relevant to the MID proposal. Although the assessment focusses on the MID proposal, for context the ecological values within the wider Study Area are described below and were determined through an assessment of desktop information (a 10 km buffer of the Study Area), field validated data and extrapolated field survey results.

6.1.1 Existing Environment

6.1.1.1 Vegetation

The Regulated Vegetation Management map (Department of Natural Resources and Mines, Manufacturing and Regional and Rural Development, 2024c) identifies four vegetation management categories present within the MPA as detailed in **Table 6.1**. Category B vegetation is mapped throughout most of the MPA with non-remnant Category X) and High-value Regrowth (HVR) (Category C) areas scattered throughout. Mapped Category R vegetation occurs in association with Strahler Stream Order one and two watercourses and/or drainage features, and there is no mapped Category A (vegetation offsets, compliance notices) vegetation mapped within the MPA.

Table 6.1 Regulated Vegetation Mapped Within the MPA

Regulated Vegetation Categories	Area (ha) within the MPA
Category B – Remnant vegetation	31.9
Category C – High-value regrowth vegetation	6.3
Category R – Regrowth within 50 m of a watercourse or drainage feature in the Great Barrier Reef catchment	6.7
Category X – Exempt clearing work on Freehold, Indigenous and Leasehold land	130.4

The Vegetation Management Regional Ecosystem Map (Version 13) was reviewed as part of the desktop assessment to understand the likely presence and extent of Regional Ecosystems (REs) across the Study Area. Within the MPA, homogenous and heterogeneous polygons were identified, comprising 21 REs. Of these REs, three are listed as Endangered, four are listed as Of Concern and 14 are listed as Least Concern under the VM Act. Within the MDA, 20 REs are mapped with three listed as Endangered, four listed as Of Concern and 13 listed as Least Concern.

Results of the field surveys confirmed the presence of 13 REs in remnant and regrowth condition within the MDA. One of the observed ground-truthed REs (RE 11.11.3c) was not previously identified in the State mapping as a vegetation community within the MPA. The extent, condition and a description of the ground-truthed REs, along with representative images are provided in **Appendix F**, Section 6.1.

Despite a wide diversity of vegetation communities, RE 11.11.15 is the dominant community across the MPA, particularly in Section D. This community is dominated by *Eucalypts crebra* (narrow-leaved ironbark), occasionally with *Corymbia erythrophloia* (red-barked bloodwood), on metamorphosed sediments and interbedded volcanics. Two other vegetation communities; RE 11.11.4 (*Eucalyptus crebra* woodland on old sedimentary rocks) and RE 12.11.6 (*Corymbia citriodora subsp. variegata, Eucalyptus crebra* woodland on metamorphic derived soils) are also present within both the MPA and MDA in Section D.

Section E is dominated by two REs being:

- RE 12.1.3 comprising mangrove shrubland of *Rhizophora stylosa* (spotted mangrove) and *Ceriops australis (smooth fruited spur mangrove)* on estuaries.
- RE 12.3.3 composed of remnant or regrowth *Eucalyptus tereticornis* over native and exotic grasses.

Section E of the MPA also comprises of large areas of cleared, non-remnant vegetation, primarily composed of exotic grasses.

6.1.1.2 Flora

Although threatened flora species were observed within the Study Area and Disturbance Footprint, none were observed within the MDA.

6.1.1.3 Marine Plants

The marine plants identified within the MPA and MDA occur within the fringing vegetation adjacent to the Calliope River below the Highest Astronomical Tide (HAT). Mangroves fringing the Calliope River are often up to 6 m in height and the dominant mangrove species are *Avicennia marina* and *Rhizophora stylosa*. Further from the Calliope River, mangrove heights decrease and are typically less than 1.5 m (**Photo 6.1**). *Sporobolus virginicus* typically dominated saltmarsh vegetation with very few bare patches of ground; however, a variety of native forbs are also present. Saltmarsh vegetation is also interspersed with native trees including *Acacia disparrima* subsp. *disparrima*, *Melaleuca quinquenervia* suggesting that vegetation has been disturbed or modified in the past, likely associated with the previous transmission line construction. Woody debris of various sizes is scattered throughout the area and often concentrated at the lowest points of the topography. Rubbish and litter are prevalent throughout the area and observations suggest that rubbish is largely deposited via tidal influence rather than direct access.

Photo 6.1 **Low Mangroves with Saltwater Couch Typical of the Disturbance Footprint (Northern Side of the Calliope River)**

The area of marine plants within the MPA as defined under the Fisheries Act, totals 3.17 ha. The marine plant types and coverage in the MDA and 251.86 m^2, which is detailed in **Table 6.2**. Excluded from the marine plant coverage within the MDA is bare ground, which totalled 2.43 m^2. The definition states that both marine and terrestrial flora species are considered marine plants under the Fisheries Act if they are recorded below the HAT.

Table 6.2 **Coverage of Marine Plant Types in the MDA**

Marine Plant Types	Coverage (m^2) in MDA
Mangroves	40.49
Native grasses (commonly found in saltmarshes)	117.71
Native forbs (commonly found in saltmarshes)	0.58
Native trees (which are not mangroves)	30.61
Woody debris	27.73
Exotic grasses and forbs	34.74
Total	**251.86**

6.1.1.4 Fauna habitat

A total of seven fauna habitat types have been identified within both the MPA and MDA as provided in **Table 6.3**.

Table 6.3 Fauna Habitat Types in the MPA and MDA

Fauna Habitat Type	Regional Ecosystem	Extent within the MDA (ha)
Corymbia citriodora open forest to woodlands	11.11.3 and 12.11.6	14.2
Eucalypt dominated open forests to woodlands on hills and ranges	11.11.3c and 11.11.4c	3.2
Ironbark woodland to open woodland on hills and ranges	11.11.4 and 11.11.15	17.2
Eucalypt dominated open forest to woodland fringing drainage lines and on floodplains	11.3.4, 11.3.25, 11.3.26 and 12.3.3	1.8
Tidal flats dominated by mangroves, sedges and grasses	12.1.2 and 12.1.3	0.04
Semi-evergreen vine thicket	11.11.18	0.6
Non-remnant paddocks and pasture	N/A	56.6

6.1.2 Potential Impacts

The greatest risk of adverse impact on ecological values and biodiversity from the Project will occur within the MDA during the construction phase. The construction activities to support the installation of transmission towers, associated lines and access tracks will involve vegetation clearing, excavation and ground reinstatement. The duration of the impact will be limited to the construction period of 2.5 years. A summary of the direct impacts within the MDA is provided in the following sections.

6.1.2.1 Regulated Vegetation

The MDA represents the maximum extent of disturbance to occur within the MPA. This will result in direct impacts to Category B, C, R and X vegetation within the MDA as per **Table 6.4**.

Table 6.4 Potential Direct Impacts to Regulated Vegetation in the MDA

Regulated Vegetation Categories	Area (ha) within the MDA
Category B – Remnant vegetation	17.9
Category C – High-value regrowth vegetation	3.9
Category R – Regrowth within 50 m of a watercourse or drainage feature in the Great Barrier Reef catchment	3.6
Category X – Exempt clearing work on Freehold, Indigenous and Leasehold land	68.1

6.1.2.2 Regional Ecosystems

Table 6.5 identifies the impacted REs that occur in remnant condition and presents the extent within the MDA.

Table 6.5 Remnant RE within the MDA

Regional Ecosystem	Condition	Extent within the MDA (ha)
VM Act Class: Endangered		
11.11.18	Remnant	0.5
	Regrowth	0.1
12.3.3	Remnant	0.4
VM Act Class: Of Concern		
11.3.4	Regrowth	0.4
VM Act Class: Least Concern		
11.11.15	Remnant	2.0
	Regrowth	6.0
11.11.3	Remnant	3.8
	Regrowth	1.8
11.11.3c	Remnant	1.2
11.11.4	Remnant	6.5
	Regrowth	2.8
11.11.4c	Remnant	1.4
	Regrowth	0.6
11.3.25	Regrowth	0.4
11.3.26	Remnant	0.6
12.1.2	Regrowth	0.01
12.1.3	Remnant	0.0
	Regrowth	0.03
12.11.6	Remnant	8.5

6.1.2.3 Marine Plants

The extent of marine plants within the MDA is 0.025 ha or 251.86 m^2. **Table 6.6** identifies the impacted composition of habitat below the HAT and presents the extent within the MDA.

Table 6.6 Marine Plants (ha) within the MDA

Composition of Habitat Below HAT	Area (ha) within the MDA
Marine plants	0.025
Intertidal zone	-
Water	-

6.1.2.4 Threatened Flora and Fauna Habitat

Vegetation clearing is a direct impact that results in the loss of vegetation values and habitat; with the severity of impacts more pronounced in habitats that provide values for threatened and migratory species and communities.

Potential impacts resulting from clearing native vegetation can include:

- Reduced patch size of vegetation communities potentially compromising the viability of the community and associated habitat.
- Loss of habitat causing a reduction of biological diversity or loss of local populations and genotypes.
- Loss of or disturbance to microhabitat features such as tree hollows, leaf litter, ground timber, rocks and dense shrubs.
- Loss of floristic diversity and the food resources this provides such as foliage, flowers, nectar, fruit and seeds.
- Fragmentation of habitats resulting in reduced dispersal opportunities for fauna.
- Destruction of abiotic features necessary to support vegetation communities and habitat types.

The maximum extent of potential direct impacts to MSES in the MDA as a result of vegetation clearing to each known to occur, moderate or high likelihood of occurring threatened species is detailed in **Table 6.7**.

Clearing will only be undertaken strictly as needed and will be minimised wherever possible and practical. It is acknowledged that where clearing and habitat loss cannot be avoided, particularly in high constraint areas (e.g. breeding or denning habitat for NC Act listed fauna), it is likely to result in permanent impacts to threatened biodiversity values.

As construction will occur in phases, direct impacts will be limited to a relatively small area within the MDA at any one time. The staging will substantially reduce the duration of the overall permanent impact by gradually and progressively undertaking the clearing. Given this, direct impacts are considered to be predictable and known.

Table 6.7 Predicted Maximum Direct Impacts on Threatened Flora and Fauna within the MDA

Species	Likelihood of Occurrence	Habitat Utilisation	Extent within MDA (ha)
Threatened Flora			
Acacia pedleyi Pedley's wattle	Known	-	1.6
Atalaya collina Yarwun whitewood	High	-	0.6
Cerbera dumicola	Moderate	-	0.6
Cossinia australiana	Moderate	-	0.6
Dansiea elliptica	High	-	0.6
Graptophyllum excelsum Scarlett fuchsia	Moderate	-	0.6
Samadera bidwillii Quassia	Known	-	21.1
Sphaeromorphaea major Spreading nut-heads	Moderate	-	0.0

Species	Likelihood of Occurrence	Habitat Utilisation	Extent within MDA (ha)
Threatened Fauna			
Australian painted snipe *Rostratula australis*	Moderate	Seasonal breeding, foraging and dispersal	0.8
Black-breasted button-quail *Turnix melanogaster*	Moderate	Nesting and foraging	0.6
Black-tailed godwit *Limosa limosa*	Moderate	Roosting and foraging	0.02
Collared delma Delma torquata	Known	Breeding and foraging	0.7
Common greenshank *Tringa nebularia*	Moderate	Roosting and foraging	0.02
Curlew sandpiper *Calidris ferruginea*	Moderate	Roosting and foraging	0.02
Eastern curlew *Numenius madagascariensis*	Moderate	Roosting and foraging	0.02
Great knot *Calidris tenuirostris*	Moderate	Roosting and foraging	0.02
Greater sand plover *Charadrius leschenaultia*	Moderate	Roosting and foraging	0.02
Grey plover *Pluvialis squatarola*	Moderate	Roosting and foraging	0.02
Latham's snipe *Gallinago hardwickii*	Moderate	Roosting and foraging	0.02
Lesser sand plover *Charadrius mongolus*	Moderate	Roosting and foraging	0.02
Nunivak bar-tailed godwit *Limosa lapponica baueri*	Moderate	Roosting and foraging	0.02
Painted honeyeater *Grantiella picta*	Moderate	Foraging and dispersal	10.7
Red knot *Calidris canutus*	Moderate	Roosting and foraging	0.02
Ruddy turnstone *Arenaria interpres*	Moderate	Roosting and foraging	0.02
Sharp-tailed sandpiper *Calidris acuminata*	Moderate	Roosting and foraging	0.02
Squatter pigeon (southern) *Geophaps scripta scripta*	Known	Breeding	1.3
		Foraging	0.0
		Dispersal	95.5

Species	Likelihood of Occurrence	Habitat Utilisation	Extent within MDA (ha)
Terek sandpiper *Xenus cinereus*	Moderate	Roosting and foraging	0.02
White-throated needletail *Hirundapus caudacutus*	High	Roosting and foraging	0.0
		Foraging and dispersal	36.9
Ghost bat *Macroderma gigas*	Moderate	Seasonal foraging and dispersal	36.9
Greater gilder (southern and central) *Petauroides volans*	High	Likely or current denning	23.8
		Potential or future denning	12.0
		Foraging and dispersal	0.0
Koala *Phascolarctos cinereus*	High	Breeding, foraging and dispersal	34.6
		Climate refugia	1.6
		Dispersal only	56.6
Water mouse *Xeromys myoides*	High	Breeding, foraging and dispersal	0.2
Yellow-bellied glider (south-eastern) *Petaurus australis australis*	High	Denning, foraging and dispersal	19.8
Special Least Concern Fauna Species			
Bar-tailed godwit *Limosa lapponica*	Moderate	Roosting and foraging	0.02
Broad-billed sandpiper *Limicola falcinellus*	Moderate	Roosting and foraging	0.02
Common sandpiper *Actitis hypoleucos*	Moderate	Roosting and foraging	0.02
Eastern osprey *Pandion haliaetus*	Known	Nesting and foraging	0.02
Fork-tailed swift *Apus pacificus*	Known	Foraging and dispersal	36.9
Grey-tailed tattler *Tringa brevipes*	Moderate	Roosting and foraging	0.02
Little curlew *Numenius minutus*	Moderate	Roosting and foraging	0.02
Marsh sandpiper *Tringa stagnatilis*	Moderate	Roosting and foraging	0.02
Oriental cuckoo *Cuculus optatus*	Moderate	Roosting and foraging	36.9

Species	Likelihood of Occurrence	Habitat Utilisation	Extent within MDA (ha)
Pacific golden plover *Pluvialis fulva*	Moderate	Roosting and foraging	0.02
Pectoral sandpiper *Calidris melanotos*	Moderate	Roosting and foraging	0.02
Red-necked stint *Calidris ruficollis*	Moderate	Roosting and foraging	0.02
Short-beaked echidna Tachyglossus aculeatus	Known	Breeding, foraging and dispersal	102.7
Whimbrel *Numenius phaeopus*	Moderate	Roosting and foraging	0.02

As the MID proposal has largely been located adjacent to an existing transmission line and many existing access tracks are present, habitat has already been subjected to low level fragmentation. Despite this, further vegetation clearing will be required for the construction of the Project. Clearing has the potential to further dissect and disconnect vegetation communities, reducing the size of patches or potentially isolating them, which can impact on the success of seed dispersal, species recruitment and ultimately the long-term viability and persistence of a vegetation community within the landscape. Fragmentation impacts may also result in reduced fauna movement opportunities, leading to reduced species recruitment, genetic flow and ultimately affect the long-term viability and persistence of fauna populations within the landscape.

Species that are considered most susceptible to fragmentation impacts as a result of the construction of the Project include threatened flora, greater glider (southern and central), yellow--bellied glider (south-eastern), collared delma (*Delma torquata*) and water mouse.

The maximum clearing width for the MPA is 60 m and as such, fragmentation impacts to koala, threatened birds and bats are considered low. All of these species are either highly mobile, adapted to fragmented landscapes or are known to still traverse cleared or modified areas without significant risk. As detailed above, infrastructure siting has maximised the use of existing cleared areas to ensure fragmentation impacts are minimised.

6.1.3 Mitigation and Management Measures

The following hierarchy of management principles has been implemented in the planning and development of the Project. These principles and the order in which they have been applied is as follows.

- **Avoid**: locating activities to avoid direct and indirect impacts on ecological values.
- **Minimise**: minimising direct and indirect impacts where they cannot be completely avoided.
- **Mitigate**: implementing mitigation and management measures to reduce direct, indirect and cumulative impacts.
- **Remediate and Rehabilitate:** actively remediate and rehabilitate impacted areas to ensure stabilisation and the regeneration of compatible species.

Further details describing how impacts on ecological values have been avoided and minimised for the Project are provided in **Section 8.0** of **Appendix F**.

The expected impacts for the Project have been listed, and suitable mitigation measures identified in **Table 6.8**. Species specific mitigation measures are provided in **Section 8.3.2** of **Appendix F**.

Table 6.8 General Mitigation Measures

Impact	Project Phase	Mitigation Measures
Vegetation Clearance	Construction	Clearing of vegetation will be undertaken in accordance with Powerlink's project specific EMP, environmental annexure and relevant management plans. The following measures specific to the clearing of vegetation and habitat, including no-go zones, approved widths, methods and preparation procedures should be considered: • Clearly demarcate vegetation clearance areas to avoid over-clearing within mapped habitat. • Clearing methodology should be specified on the EWP. Restricted clearing areas will be identified which include areas that only hand clearing can occur. • Clearly demarcate no-go zones. These areas may include threatened species habitat and marine plants that is mapped within the Disturbance Footprint and removal is not required for the Project. Areas to be cleared and no-go zones, including habitat areas to be retained should be identified on the EWP (ESRI software Field Maps). • Fauna Spotter Catchers will carry out pre-clearance surveys and be on site during all clearing activities. • Microhabitat features such as large fallen logs should be relocated to adjacent areas of undisturbed vegetation prior to vegetation clearing where practicable. • Woody debris in the Disturbance Footprint collected below the HAT is considered as marine plants and should be relocated adjacent to provide for potential fish habitat. • Stockpiling of felled vegetation, retention of vegetation for use in on-site rehabilitation, and specific requirements for clearing vegetation surrounding creek lines and watercourses. • Relevant weed, dust, erosion and sediment control. • Rehabilitation requirements for disturbed areas no longer required for active use or construction. • Site induction/education of site personnel to be familiar with the content of the plan.
Weed Disturbance	Construction and Operation	Biosecurity will be managed in accordance with Powerlink's EMP, environmental annexure and the project-specific CEMP and should consider the following: • Identifying, locating, and removing/treating restricted weeds and high-biomass grasses within the Disturbance Footprint. • Identifying the origin of, and implementing hygiene protocols for, machinery, vehicles, equipment and construction materials to avoid weed introduction.

Impact	Project Phase	Mitigation Measures
		• Keeping staff and contractors informed about the location of biosecurity threats. • Implementing management methods to control the spread of WoNS and/or weeds considered restricted matters under Queensland legislation. • Raising weed management awareness through including weed issues, pictures, and procedures into the Project's site induction. • Undertaking a weed management program to identify spread and new incidents of weeds. • Implementing reporting requirements and performance measures. To ensure its suitability, Biosecurity protocols should be developed in coordination with Traditional Owners, regional conservation groups and landholders.
Pest Fauna	Construction and Operation	Pest fauna will be managed in accordance with Powerlink's EMP, environmental annexure and the project-specific CEMP and should consider the following: • Implement a species-specific control program for pest fauna in consultation with landowner(s). This is only to be implemented if incidence of any feral species has increased during construction or operation as reasonably attributable to the Project. • Avoid inclusion of any water retaining voids or pits in the design 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. Where pits and voids are required, include appropriate cover to prevent extended water retention and subsequent breeding opportunities for cane toads. • For pits and voids where long-term presence of retained water is reasonably anticipated and covering is not practicable, fencing to exclude access by cane toads will be incorporated in the design. Sediment fencing, free standing or attached to the base of other fencing material has proven to be effective. • Wash down and laydown areas will be designed to include cane toad traps where exclusion from areas of potential water retention is not practicable and where cane toad activity is locally detected. • No alteration, or refuse left exposed, which will specifically assist breeding opportunities for cane toad, red fox, feral cat, dog, house mouse or black rat on site. • To reduce the presence of pest fauna on site, all food scraps must be placed into designated waste bins, and their lids securely closed.

Impact	Project Phase	Mitigation Measures
		• Train workforce in the identification of pest fauna species present in the area.
Erosion and Sediment	Construction	• A project – specific erosion and sediment control plan will be developed and implemented in accordance with Powerlink's EMP by the construction contractor. It is suggested the plan be developed by a Certified Professional in Erosion and Sediment Control (CPESC) or a Registered Soil Practitioner – Erosion and Sediment Control (RSP-ESC). The plan should follow the IECA Best Practice Erosion and Sediment Control Guidelines 2008 and be developed to minimise habitat degradation in areas adjacent to construction. This may include the establishment of temporary erosion and sediment control until construction is complete, or exposed areas have been rehabilitated to prevent the sedimentation of waterways within the Study Area.
Water Quality	Construction	• Appropriate spill prevention and response plans will be developed to cover Project activities and the types and quantities of fuel, oil and chemicals held. • 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. • A Water Quality Monitoring Program will be implemented at the Calliope River, to compare pre- and post-construction water quality and determine extent of Project related impacts.
Acid Sulphate Soils	Construction	• A Powerlink developed Project-specific Acid Sulfate Soils Management Plan (ASSMP) will be prepared and implemented in accordance with Queensland Acid Sulphate Soil Technical Manual Soil Management Guidelines v5.1.
Fauna Mortality / Disturbance	Construction and Operation	To mitigate fauna mortality/disturbance, works will be carried out in accordance with Powerlink's EMP, environmental annexure and the project-specific CEMP and should consider the following: • Pre-clearance searches of habitat will be undertaken prior to clearing by a qualified fauna spotter, with habitat features/trees clearly identified and searched for fauna. The EMP outlines measures, including the presence of qualified fauna spotters, to protect and recover fauna encountered during vegetation clearing. • Habitat trees within the clearing footprint that can be safely retained will be marked with flagging tape and avoided. • A qualified fauna spotter will be present at all times during clearing and where possible will inspect habitat features (including but not limited to, hollow-bearing trees and stags, caves and rocky boulder piles) for MSES prior to felling, using work platforms, inspection cameras, or other methods deemed safe and suitable. Spotters will also be present during

Impact	Project Phase	Mitigation Measures
		earthworks where exposed trenches and holes will be left for periods greater than 24 hours. • Hollow bearing trees will be 'slow felled' to minimise the chances of injury or death and will be inspected by a qualified fauna spotter to confirm no injured wildlife are present. • Fauna welfare procedures will be considered throughout the Project including operational and compliance reporting procedures for injured and/or dead wildlife. • Outline measures to replace/relocate habitat and resources that will be unavoidably lost. This will include rehabilitation procedures for the decommissioning of infrastructure if those areas are not otherwise useful to the ongoing land use. • Training/information requirements for all personnel working on the Project, including but not limited to inductions, daily toolbox talks and/or site walk overs which discuss the management measures or risks at particular locations. • Active animal breeding places will only be tampered with following the development and approval of an appropriate Species Management Program (low and/or high-risk) as per the Nature Conservation (Animals) Regulation 2020. • Outside of public areas, vehicle movement within the Study Area will be via approved access tracks only with speed limits imposed (40 km/hr on private property). The requirement to enter and traverse the Study Area will be minimised and limited to those required for essential Project activities. Changes to speed limits and access will be promptly communicated to all site personnel via email notifications, toolbox talks and notices in common areas. • On the advice of a suitably qualified ecologist, signage which includes information such as wildlife presence will be installed on private roads and tracks to mitigate potential collisions.
Other Indirect Impacts	Construction and Operation	• Dust suppression measures will be implemented as required i.e. on high wind days (winds above 20 km/hr) during dry periods. • No night works will occur for the construction of the Project. • Where approved, Powerlink or the construction contractor may extract water from select farm dams for construction purposes. Water will only be taken where available supplies provide continuity of habitat function and quality. • Chemicals and fuels stored, must be effectively contained and where relevant, meet Australian Standards. • The threat of wildfire caused by Powerlink activities will be minimised through maintenance of firebreaks around ignition sources as appropriate.

6.2 Noise and Vibration

A NIA (**Appendix G**) has been prepared to assess the noise and vibration impacts associated with the Project during both the construction and operational activities. The report identifies the necessary distances and measures required to ensure that the impacts identified remain within acceptable limits. The noise and vibration values from the Project were determined through an assessment of desktop information on the intended equipment to be utilised and noise modelling software SoundPLAN version 9.1, using the CONCAWE noise prediction algorithm.

Further details on the construction of the noise modelling are provided within the NIA (**Appendix G**). It is noted that the assessment primarily focuses on impacts from activities in Sections C, D and E, while the potential impacts in Section A of the MPA have not been considered further due to the small area and large separation distance to the nearest sensitive receptors (approximately 1,500 m and greater). The following sections provide a summary of the NIA.

6.2.1 Existing Environment

The area surrounding the MPA is predominantly rural and used for agricultural purposes and includes sparsely located sensitive receptors in the form of dwellings. In some localised areas along the MPA study area, particularly West Stowe and Callemondah, the acoustic environment also includes road, rail and air transportation noise, as well as industrial noise contribution from the various industries at Gladstone. The acoustic environment immediately along the MPA also includes noise emissions from the existing transmission infrastructure adjacent the MPA.

The ambient noise levels for Section C of the MPA would be characterised as a rural environment. Similarly, the ambient noise levels for Section D of the MPA would be characterised by a rural environment with localised increases in ambient noise levels in the vicinity of Calliope River Road and the North Coast Line. The ambient noise levels for Section E of the MPA would be characterised by an industrial environment with urban/suburban interface with the residential area of Clinton. Major industrial sources in the area include the Gladstone Power Station, Wiggins Island Coal Terminal and the Curtis Island LNG Facility.

6.2.2 Potential Impacts

6.2.2.1 Construction Assessment Noise

For the purposes of this assessment, nine indicative construction scenarios have been modelled to resemble the construction stages. Each scenario is described in the NIA (**Appendix G**, Table 6.1) and include construction activities such as clearing and grubbing, construction of access track and foundation excavation. Detailed construction methodologies will be determined following finalisation of the detailed design and construction planning. Typical sound power levels for construction noise sources associated with typical construction activities have been sourced from Umwelt's noise source database and other references.

Construction noise levels have been predicted for the indicative nine construction scenarios detailed in the NIA (**Appendix G**). It is noted that the noise level predictions are likely to be conservative as they assume that all equipment is in operation concurrently in the same work area and in the presence of enhancing downwind meteorological conditions. The indicative buffer distance to achieve the daytime noise management level (NML) of 50 dB(A) LAeq (15 min) for each construction scenario (Sc.1 to Sc.9) have been summarised in **Table 6.9**. The predicted noise level buffers are presented graphically in the NIA (**Appendix G**, Figure 6.1 to Figure 6.9).

Table 6.9 Indicative Construction Scenarios and Buffer Distances

Construction Scenario	Activity Description	Combined Sound Power Level LAeq (15 min), dB(A)	Buffer Distances (m) to achieve daytime noise management level of 50 dB(A) LAeq(15 min)
Sc. 1	Clear and Grub	124	830
Sc. 2	Construction of Access Tracks	119	750
Sc. 3	Foundation Excavation	123	870
Sc.4	Stub Set and Form	99	120
Sc.5	Batch Plant	114	470
Sc.6	Transmission Tower Assembly and Erection	106	230
Sc.7	Stringing	135	2,750
Sc.8	Laydown area	114	440
Sc.9	Rehabilitation	111	340

A number of sensitive receptors are located within the nominated buffer distances. The buffer distances for the various construction activities are as follows:

- Scenario 1 – Clear and Grub, Scenario 2 – Construction of Access Tracks, and Scenario 3 – Foundation Excavations activities had similar buffer distances ranging from 750 m to 870 m. There are approximately 16 residential sensitive receptors along the MPA that are predicted to have noise levels above 50 dB(A) LAeq (15 min).
- Scenario 4 – Stub Set and Form, and Scenario 6 – Transmission Tower Assembly and Erection activities had similar buffer distances ranging from 120 m to 230 m. There are no residential sensitive receptors along the MPA that are predicted to have noise levels above 50 dB(A) LAeq (15 min).
- Scenario 5 – Batch Plant, Scenario 8 – Laydown Areas and Scenario 9 – Rehabilitation activities had similar buffer distances ranging from 340 m to 470 m. There are approximately 4 residential sensitive receptors along the MPA that are predicted to have noise levels above 50 dB(A) LAeq (15 min).
- Scenario 7 – Stringing activity had a buffer distance of 2,750 m. There are approximately 449 residential sensitive receptors along the MPA that are predicted to have noise levels above 50 dB(A) LAeq (15 min).

With the exception of Scenario 7 – Stringing, there are approximately 16 residential sensitive receptors along the MPA that are predicted to have noise levels above 50 dB(A) LAeq (15 min). For Scenario 7 – Stringing, there are approximately 449 residential receptors along the MPA that are predicted to have noise levels above 50 dB(A) LAeq (15 min). As the predicted construction noise levels are above the nominated daytime noise management level of 50 dB(A) LAeq (15 min), consideration of reasonable and feasible noise mitigation and management strategies is necessary during times of excessive noise (daylight) to minimise the potential impacts on the receptors surrounding the MPA.

It is noted that the impacts will be experienced within standard working hours, and for a very limited period of time during the construction phase of the project.

6.2.2.2 Construction Vibration

The commercial buildings in the area are structurally similar to residential buildings, therefore the assessment for residential buildings is considered to be relevant for the commercial receptors as well.

Recommended safe working distances for vibration generating equipment from sensitive receptors (i.e. the receptor building or its occupants) are given in Table 2 of the NSW Construction Noise and Vibration Guideline (CNVG) (RMS, 2016) reproduced within the NIA (**Appendix G**, Table 6.3).

Due to the large separation distances between the MPA and the external sensitive receptors (i.e. much greater than 100 m), vibration impacts from construction activities are anticipated to be negligible.

6.2.2.3 Operational Assessment

The operation of the transmission lines and associated maintenance activities has the potential to generate noise levels. For this assessment, the primary operational noise emissions are related to potential corona discharge from the transmission lines themselves. Similarly, maintenance activities along the corridor might involve helicopter-based surveys/inspections and vegetation clearing. These maintenance tasks will occur during the daytime only.

For the purposes of this assessment, three indicative construction scenarios have been modelled to resemble the operation and maintenance activities. Each scenario is described within the NIA (**Appendix G**, Table 7.1). Typical sound power levels for these activities have been sourced from Umwelt's noise source database and other references.

The indicative buffer distance to achieve the daytime, evening and night-time noise limits for the operation (Sc.1) and maintenance scenarios (Sc.2 and Sc.3) have been summarised in **Table 6.10** and **Table 6.11** respectively.

Table 6.10 Indicative Operational Scenarios and Buffer Distances

Scenario	Activity Description	Buffer Distances (m) to Achieve Day and Evening Noise limit of 40 dB(A) LAeq(15 min)	Buffer Distances (m) to Achieve Day and Evening Noise limit of 35 dB(A) LAeq(15 min)
Sc.1	Operational – Corona Discharge	135	270

Table 6.11 Indicative Maintenance Scenarios and Buffer Distances

Scenario	Activity Description	Buffer Distances (m) to Achieve Daytime Noise Management Level of 50 dB(A) LAeq(15 min)
Sc. 2	Maintenance – Helicopter inspection	2,730
Sc. 3	Maintenance – Vegetation clearing	440

Based on the buffer distances and noise level contours for Scenario 1, the potential noise emissions related to corona discharge along the MPA are predicted to achieve the day and evening limit of 40 dB(A) LAeq (15 min) and the night-time limit of 35 dB(A) LAeq (15 min).

The buffer distance for Scenario 2 indicates that helicopter inspections have the potential to generate elevated noise levels at sensitive receptors along the MPA. Based on the prediction results there are approximately 441 residential sensitive receptors along the MPA that are predicted to have noise levels above 50 dB(A) LAeq (15 min). The helicopter inspections are anticipated to occur every two to four years, given that potential noise impacts are infrequent, temporary and limited to daytime only there is unlikely to be any residual impact on the acoustic amenity for the community.

Similarly, the buffer distance for Scenario 3 indicates that the vegetation management activities have the potential to generate elevated noise levels at sensitive receptors along the MDA. Based on the prediction results for Scenario 3, there are approximately 3 residential sensitive receptors along the MPA that are predicted to have noise levels above 50 dB(A) LAeq (15 min). These activities are anticipated to occur every two to four years, given that potential noise impacts are infrequent, temporary and limited to daytime only, there is unlikely to be any residual impact on the acoustic amenity for the community.

6.2.3 Mitigation and Management Measures

As the construction noise levels are predicted to exceed the nominated noise management levels, reasonable and feasible noise management and mitigation strategies have been considered for implementation during the construction phase of the project.

Powerlink have standard controls for managing noise and vibration emissions during the construction, maintenance and operation of the transmission line corridor which will be implemented.
These measures are provided in the NIA (**Appendix G**, Section 8.3) and will be addressed in the CEMP.

Noise and vibration mitigation measures to be provided as part of the CEMP for the Project may include:

- all potential significant noise and vibration generating activities associated with the project
- feasible and reasonable mitigation measures to be implemented
- a monitoring program to assess performance against relevant noise and vibration criteria
- arrangements for consultation with affected neighbours and sensitive receptors, including notification and complaint handling procedures
- contingency measures to be implemented in the event of non-compliance with noise and vibration criteria.

- Sensitive receptors likely to be affected will be notified prior to commencement of any works associated with the activity that may have an adverse noise or vibration impact. The notification will provide details of:
    - the Project
    - the construction period and construction hours
    - contact information for project management staff
    - complaint and incident reporting
    - how to obtain further information.
- Vibration generating plant that is required for construction activities should be assessed, with safe working distances from sensitive receptors identified and implemented.
- A dilapidation survey before and after the works.

6.3 Traffic

A TIA (**Appendix H**) has been prepared by Cambray Consulting Pty Ltd (Cambray) to assess the potential traffic and transport impacts associated with the Project during both the construction and operational phases. The report identifies the expected changes in traffic volumes, intersection performance, and road safety, and outlines the mitigation measures required to ensure that the impacts remain within acceptable limits.

Further details on the methodology and modelling assumptions are provided within the TIA (**Appendix H**) and is summarised in the following sections.

6.3.1 Existing Environment

6.3.1.1 Development Site Access Review

The MPA is to be accessed from up to 17 potential locations along State Controlled Roads, as well as GRC and BSC controlled roads which are listed in **Table 6.12** and shown in **Figure 6.1** (extracted from the TIA in **Appendix H**).

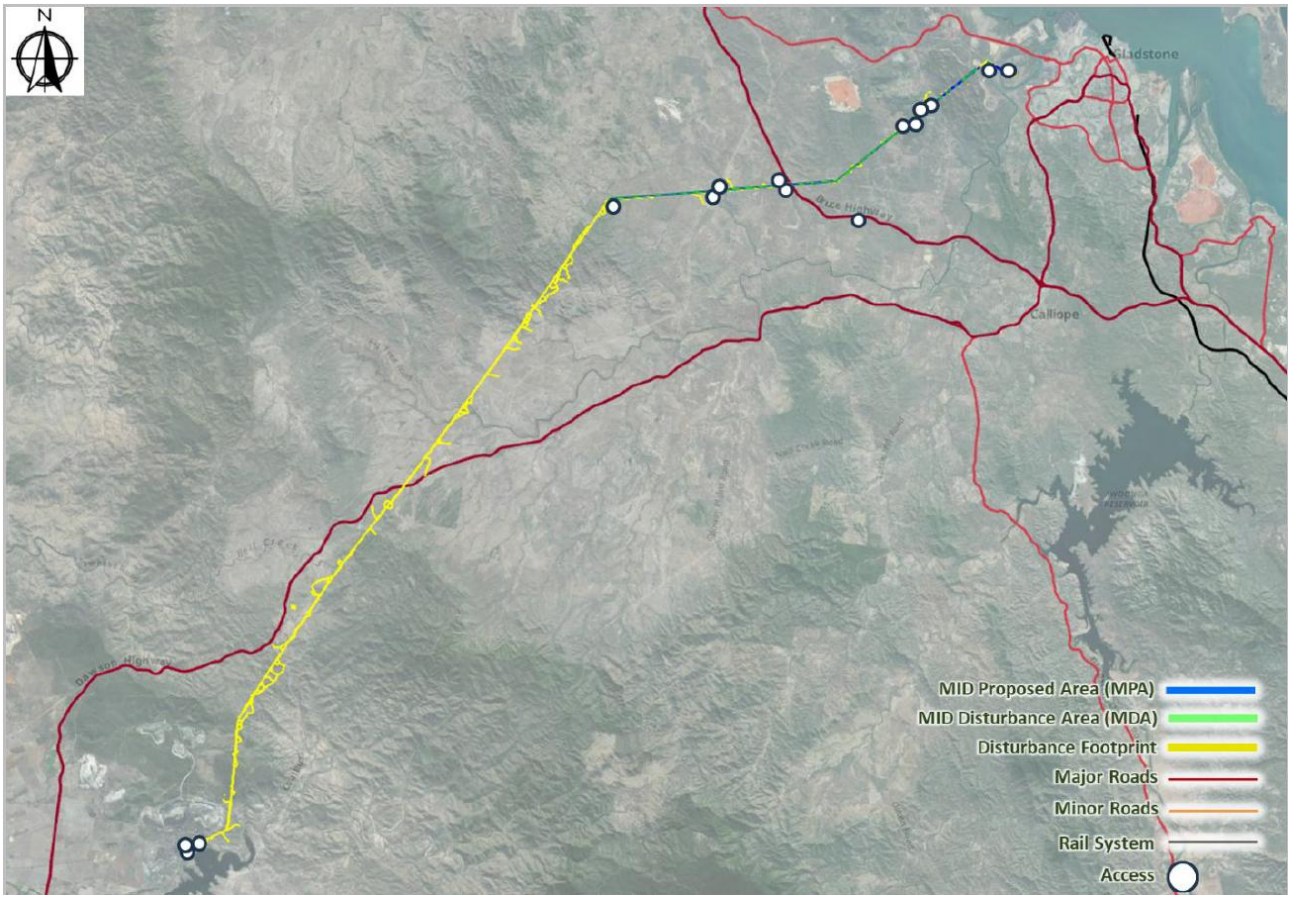


Figure 6.1 MPA Access Locations

Table 6.12 Site Access Locations

Access	Access Road	Access Type
#1	The Esplanade	Existing unsealed access.
#2		
#3	Calliope River Road	Existing unsealed access off Calliope River Road.
#4		Existing access gate off Calliope River Road.
#5	Boyles Road	Existing access gate off Boyles Road.
#6	Malahoff Road	Multiple locations accessed from Malahoff Road and Beakes Road.
#7	Boyles Road	Existing access gate on both sides of the road within the easement boundaries.
#8	Koncina Road	Existing intersection from the Bruce Highway. Requires access via Cattle Grid that is 3.6 m in width. The road is closed to public traffic about 250 m from the Bruce Highway.
#9	Bruce Highway	Existing sealed access from Bruce Highway to private property.
#10		

Access	Access Road	Access Type
#11	Mount Alma Road	Existing access gates to Powerlink transmission easements.
#12		
#13		
#14	Kaluda Road	Existing access is located on the outside of the bend for the western side and 20 m north on the eastern side of Kaluda Road.
#15	Ian Mccauley Way	Ian McCauley Way is an existing road which is accessed from Biloela Callide Road.
#16	Power Station Access	An existing sealed access for the power station which intersects with Biloela Callide Road.
#17	Pelican Point Road	Accessed from Biloela Callide Road, Pelican Point Road is flat and provides access to the northern side of the switching yard and the section north of the switching yard to coal road.

6.3.1.2 Major Intersections

There are several major road intersections that will be utilised during construction. The major intersections are summarised in **Table 6.13** and illustrated in the TIA (**Appendix H**, Figures 5.3 to Figure 5.10).

Table 6.13 Major Intersections

Int. No.	Intersecting Road	Intersection Type	TIA Figure Reference
#1	Gladstone – Mount Larcom Road / The Esplanade	Priority Controlled intersection with CHS and AUL turn lane treatments.	Figure 5.4
#2	Gladstone – Mount Larcom Road / Reid Road	Signalised intersection with CHS(s) and AUL(s) turn lane treatments.	Figure 5.5
#3	Gladstone – Mount Larcom Road / Calliope River Road	Priority Controlled intersection with CHS and AUL turn lane treatments.	Figure 5.6
#4	Calliope River Road / Bruce Highway	Priority Controlled intersection with BAR and BAL turn lane treatments (BAR not lined marked).	Figure 5.7
#5	Calliope River Road / Bruce Highway	Priority Controlled intersection with CHS and AUL turn lane treatments.	Figure 5.8
#6	Bruce Highway / Mount Alma Road		Figure 5.9
#7	Calliope Station Road / Dawson Highway	Priority Controlled intersection with BAR and BAL turn lane treatments (BAR not lined marked).	Figure 5.10
#8	Dawson Highway / Biloela Callide Road	Priority Controlled intersection with Low angle left turn lanes with CHR turn treatments from the Dawson Highway.	Figure 5.11

As summarised in **Table 6.13** and shown in the TIA (**Appendix H**, Figure 5.4 to Figure 5.11), the majority of intersections that connect to the local roads which will be utilised to access the MPA have existing turn treatments that support the turning movements free of through traffic.

6.3.2 Potential Impacts

A review of the MID proposal's traffic impacts on the existing transport network surrounding the site has been undertaken, focusing on the typical working week across the 24-month construction phase.

The MPA involves multiple transmission tower sites, each requiring access by both light and heavy vehicles. To estimate the traffic impacts, the TIA calculated the anticipated daily two-way vehicle movements (i.e. inbound and outbound trips). This included expected construction activities and a high-level Gantt chart outlining traffic generation over time.

The Gantt chart (refer to **Figure 6.2**, extracted from the TIA) presents a conservative estimate of traffic volumes. This is due to the assumption that workers and equipment would be deployed for each task as construction progresses along the transmission line. As a result, the peak traffic volumes shown at the beginning and end of each task may overstate actual conditions, as they do not account for the staggered and mobile nature of the works. A summary of the daily two-way movements (i.e. in and out movements) are summarised in **Table 6.14**.

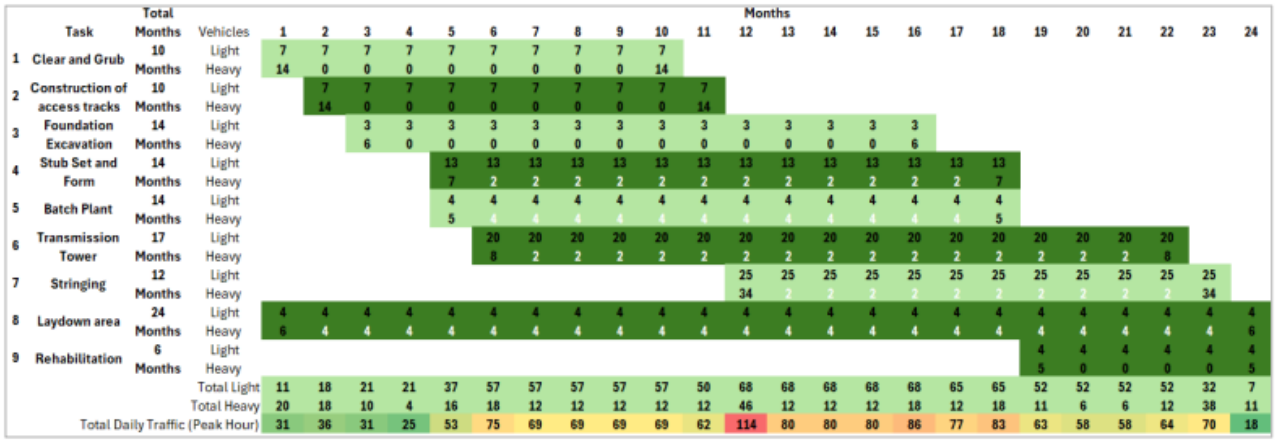


Figure 6.2 High Level Gantt Chart

Table 6.14 Anticipated Daily Movement (Two-way)

Movements	Minimum Daily	Average Daily	Peak Daily
Daily Light Vehicle	14	97	136
Daily Heavy Vehicle	8	30	46
Daily Total	**22**	**127**	**182**

6.3.2.1 Construction Traffic Generation

Light Vehicle Movement

For the purposes of this assessment, light vehicle movements of 80% of the daily volumes have been adopted to arrive during the AM and PM peak periods. The minimum, average and peak light vehicle movements are summarised in **Table 6.15**.

Table 6.15 Anticipated Light Vehicle Movements

Movements	Minimum Peak Hour	Average Peak Hour	Peak Peak Hour
Light Vehicle Movement	7	48	68
Peak Hour Proportion	80%		
Peak Hour Light Vehicle Movements	6	39	54

As summarised in **Table 6.15**, the development anticipates during peak hour the following one-way movement of light vehicles:

- Minimum – 6 vehicles per hour (VPH)
- Typical – 39 vehicles per hour (VPH)
- Peak – 54 VPH.

Heavy Vehicle Movement

For the purposes of this assessment, heavy vehicle movements of 20% of the daily volumes have been adopted to arrive during the AM and PM peak periods. The minimum, average and peak heavy vehicle movements are summarised in **Table 6.16**.

Table 6.16 Anticipated Heavy Vehicle Movements

Movements	Minimum Peak Hour	Average Peak Hour	Peak Peak Hour
Heavy Vehicle Movement	4	15	46
Peak Hour Proportion	20%		
Peak Hour Heavy Vehicle Movements	1	3	9

As summarised in **Table 6.16**, the development anticipates during the peak hour the following one-way movement of heavy vehicles:

- Minimum – 1 VPH
- Typical – 3 VPH
- Peak – 9 VPH.

6.3.2.2 MID Proposal Road Operations

The MPA is to be accessed along several roads throughout the life of the construction period.

As the construction period is short in nature in comparison to the lifetime of the transmission line, the TIA assessed the temporary increase of traffic along the utilised roads in comparison to available 2023 Annual Average Daily Traffic (AADT) data and maximum VPD from the council road hierarchy specification.

The comparison between the available AADT data, maximum VDP and the minimum, average and peak vehicle peak hour movements and the anticipated daily movements (two-way) is summarised in the TIA (**Appendix H**, Table 7.6). It is anticipated that the daily traffic volumes mostly impact on the lower order local roads as the State-Controlled Road (SCR) and higher order local roads are designed to carry higher volumes.

6.3.2.3 Summary of Impacts

The anticipated daily traffic volumes mostly impact on the lower order council roads, as the state-controlled road (SCR) and higher order local roads are designed to carry higher volumes.

Of the lower order roads, there are two that are sealed and of a higher standard than what is indicated by GRC and BSC Planning Scheme Policy (PSP) Road Hierarchy, which includes:

- Mount Miller Road is a comparable standard to Reid Road (**Figure 6.3**).
- Biloela – Callide Road which is used to access sites #15 to #17. This is sealed and of reasonable standard (**Figure 6.4**).

Figure 6.3 Street View of Mount Miller Road

Figure 6.4 Street View of Biloela-Callide Road

The increase in traffic volume over the construction period will mostly impact the unsealed GRC and BSC road networks which includes the following roads:

- Boyles Road which connects Calliope River Road to site access #5 to #7 (**Figure 6.5**).
- Malahoff Road intersects with Boyles Road and leads to site access #6 (**Figure 6.6**).

- Mount Alma Road traverses between the Bruce Highway and the Dawson Highway (**Figure 6.7**). Site access #10 to #13 are accessed directly from Mount Alma Road and intersects with Kaluda Road.
- Kaluda Road branches off Mount Alma Road to reach site access #14 (**Figure 6.8**).
- Pelican Point Road intersects with Biloela – Callide Road which connects to site access #17 (**Figure 6.9**). A short 300 m segment of this road will be utilised to access the MPA.

Figure 6.5 Street View of Boyles Road

Figure 6.6 Street View of Malahoff Road

Figure 6.7 Street View of Mount Alma Road

Figure 6.8 Street View of Kaluda Road

Figure 6.9 Street View of Pelican Point Road

The lower order unsealed roads surveyed during the site visit were in generally good condition with minimal pot holing and corrugation of the surface. Malahoff Road and Boyle Road may require vegetation to be cleared to increase sight lines around horizontal curves and improve two (2) way movements.

6.3.2.4 Key Findings

Key findings are:

- The MPA is proposed to be accessed from the state-controlled road network via existing major intersections and the existing major intersections appear to have existing turn treatments that can provide refuge for turning movements.
- The 17 identified site access locations are existing and require minor maintenance to provide construction access tracks which includes clearing of vegetation to improve sight lines, construction of tracks from the roads, and upgrades to the existing access gates.
- Rehabilitation should be undertaken where necessary at the completion of construction phase.
- When utilising each access during the construction period, a Traffic Management Plan (TMP) should be implemented to provide advanced signage on the approach to the work area as well as a decrease in the speed limit.
- MPA site accesses #8, #9 and #10 have existing access treatments and are directly accessed from the Bruce Highway (SCR).

- If MPA site accesses #8 #9 and #10 are utilised for the MID Proposal, TMP's will have to be lodged with TMR, and additional considerations required due to works on SCR.
- The other MPA site accesses typically require vegetation management in the vicinity to the site access, maintenance to the access gate and provision of an all-weather surface that is capable of carrying Heavy vehicle loads during the construction period.
- The MPA site access' locations should be maintained to retain a suitable level of ongoing access.
- There is an increase in traffic across the network for the 24-month construction period. However, this increase at each access may be only for a short period as the MID Proposal works along the sections (i.e. 3-month period per section).
- The impact of the increased traffic will be greater on the lower order roads rather than the SCR and higher order LGA roads.

6.3.3 Mitigation and Management Measures

During the construction within the MPA, an increase in traffic will be contained to a short period over the 24-month period as completion of each access track and towers accessed by each site access location identified is completed.

While the increase in daily traffic may appear significant, this increase would be for a short period of about 3–4 months for each access as the Project moves along the sections to be constructed. While the volume of traffic increase in comparison to the daily traffic appears significant, the impact over the year is negligible in the broader context of the Project.

Therefore, the MPA should implement a traffic management strategy and road maintenance plan for public roads used as summarised in **Table 6.17**.

Table 6.17 Construction Period Management Strategies

Impact	Management
Increase of vehicles accessing the existing site access locations	Produce a TMP to be implemented during the construction period which will provide advanced signage and decrease speed limits to improve sight distances and alert drivers of turning traffic.
Delivery of heavy equipment and construction materials	Avoid heavy vehicles accessing the MID Proposal during peak periods on the road network. Schedule deliveries to be undertaken outside of the peak periods.
Increased degradation of existing pavements during construction phase	Implement a monitoring and management plan to record and identify the existing, during construction and end of construction phase pavement condition to identify what extents are required to be 'made good' post construction.

Temporary road construction signage such as warning signs and/or advisory speed posting prior to the site access should be installed to alert drivers of changed road conditions during the construction phase of the MID Proposal. Temporary signage requirements are provided within the TIA (**Appendix H**, Section 8.1.1).

A temporary reduction in the speed limit at the site accesses and major movements are recommended due to the frequency of large vehicles turning into and out of the site accesses which is summarised in **Table 6.18**.

Table 6.18 Length of Temporary Speed Zone

Temporary Speed Limit	Length of Zone	Conditions
80 km/h	500 m Minimum	• Disturbance to alignment or pavement surface. • Limited sight distances from property accesses and low order, low volume intersections.
60 km/h	150 m Minimum	• Workers on foot between 1.2 m and 3 m of traffic or small plant within 3 m of traffic with no physical barrier (i.e. road safety barrier). • On approach to the traffic controller or Portable Traffic Control Device (PTCD). • Reduced visibility (e.g. dust or smoke). • Reduced standard alignment. • Degraded pavement surface. • Newly laid bituminous seal.

6.3.3.1 Summary of Recommendations

The recommendations of the TIA are:

- Preparation of a TMP to be implemented during the construction period which will provide advanced signage and decrease speed limits to improve sight distances and alert drivers of turning traffic.
- Avoidance of heavy vehicles accessing the MID proposal during peak periods on the road network. Schedule deliveries to be undertaken outside of the peak periods.
- Implementation of a monitoring and management plan to record and identify the existing scenario, during construction and end of construction phase pavement conditions to identify what extent are required to be 'made good' post construction.

6.4 Landscape and Visual

LatStudios Pty Ltd (LatStudios) was commissioned by Umwelt, on behalf of Powerlink, to prepare an LVIA to support the MID proposal (**Appendix I**).

For the purposes of the LVIA, the MPA is approximately 30 km in length and is split into four sections for ease of reference:

- MPA1, Section A: is around 0.5 km in length and is located near the junction of Biloela-Callide Road and Ian McCauley Way within the BSC LGA. It is located within the part of Section A that is already subject of an MID (which does not form part of this MID Proposal), and approximately 13 km from Biloela.
- MPA2, Section C: is approximately 16 km in length and begins 14 km west of the Calliope River Substation in the GRC LGA, with a proposed easement width of 60 m and comprises two existing 275 kilovolt (kV) transmission lines.

- MPA2, Section D: is approximately 13.5 km and located 1 km north-west of the Calliope River Substation in the GRC LGA, with a proposed MPA width of 60 m and comprises an existing 275 kV transmission line.

MPA2, Section E: is around 0.5 km in length, crossing the Calliope River within GRC LGA. It is located within part of *Section E* that is already subject of an MID (which does not form part of this MID Proposal), and adjoins the Calliope River Substation.

The focus of the LVIA is on the MPA (MPA1 and MPA2) and their immediate context. However, as views can extend well beyond site boundaries, two wider Project LVIA Study Area(s) have been defined as 10 km offset from MPA1 and MPA2 boundaries (that are located 49 km apart), as follows:

- LVIA Study Area 1: within the location of Mount Murchison, located 13 km from Biloela which includes a small portion of Section A.
- LVIA Study Area 2: in the location of Bracewell, East End, Aldoga, West Stowe, Yarwun and Callemondah, to the west of Gladstone which includes a large part of Section C and Section D and a small part of Section E.

See **Figure 6.10** series for further context on LVIA Study Area extent.

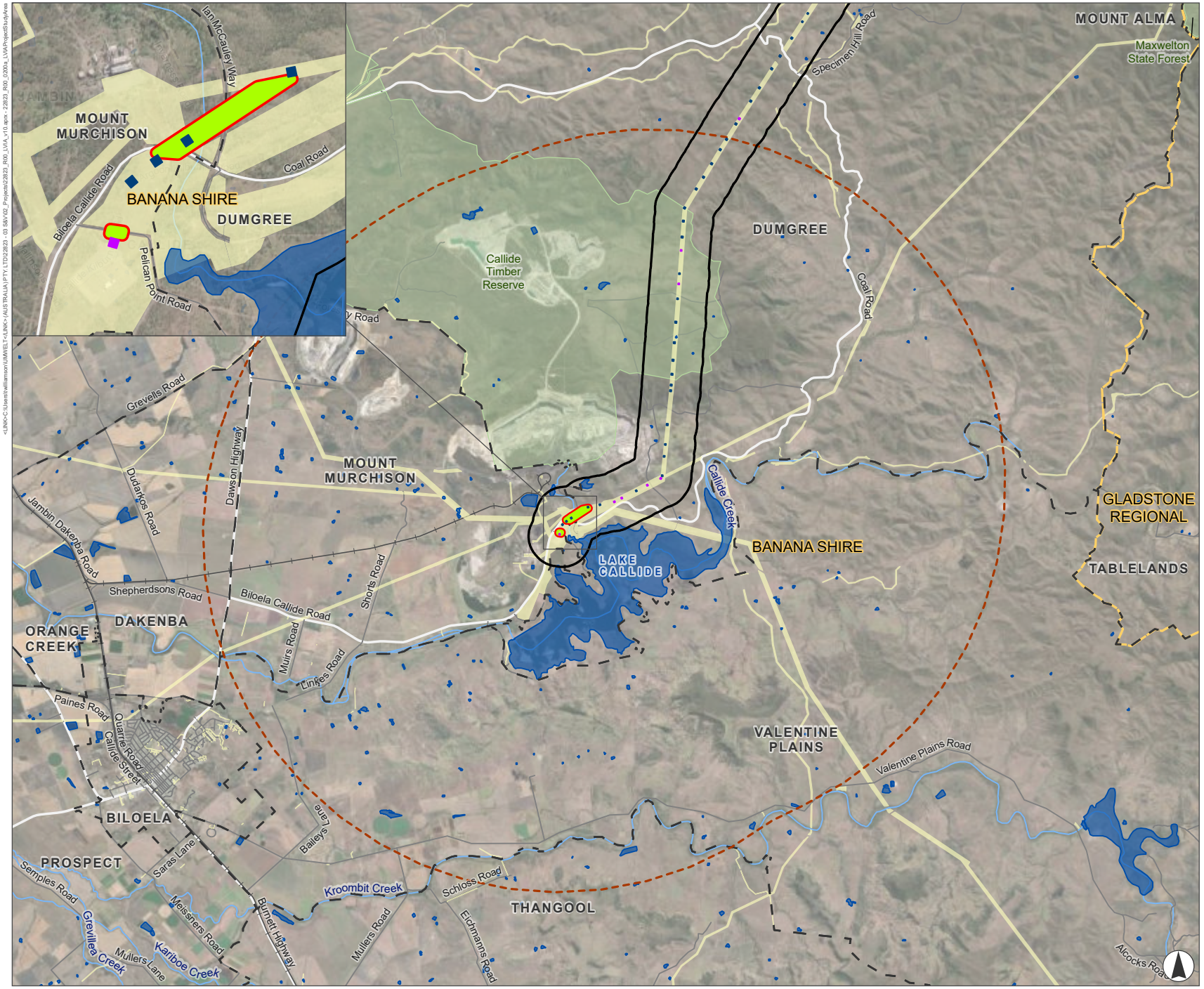
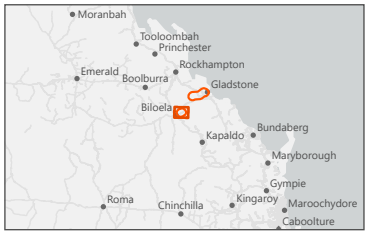


FIGURE 6.10a

LVIA Project Study Area

Legend

- Powerlink Study Area
- MID Proposal Area 1 (MPA1)
- LVIA Study Area 1
- Local Government Area
- Locality Boundary
- MPA1, Section A
- Tower Locations (40m)
- Tower Locations (>50m)
- Existing Overhead Transmission Line Corridor
- Protected Area
- Lake/Dam
- Railway
- Major Road
- Local Road/ Track
- Watercourse



0 2.5 5

Kilometres

Scale 1:150,000 at A4
GDA2020 MGA Zone 56

Image Source: ESRI Basemap (2024) | **Data Source:** QLD Government (2024), RES (2023)

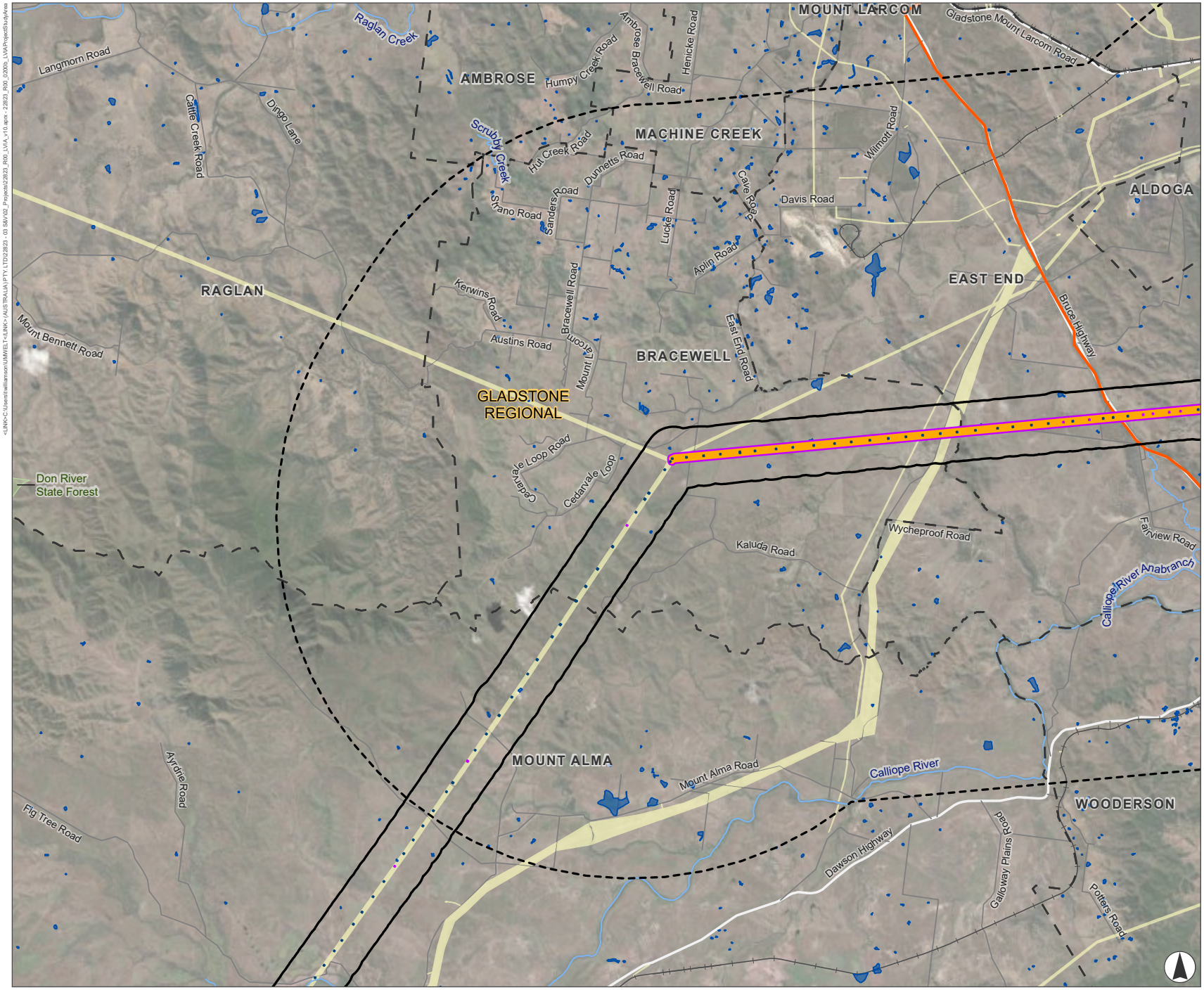
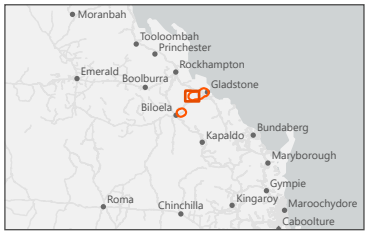


FIGURE 6.10b

LVIA Project Study Area 2

Legend

- Powerlink Study Area
- MID Proposal Area 2 (MPA2)
- Priority Port oF Gladstone
- LVIA Study Area 2
- Local Government Area
- Locality Boundary
- MPA2, Section C
- Tower Locations (40m)
- Tower Locations (>50m)
- Existing Overhead Transmission Line Corridor
- Protected Area
- Lake/Dam
- Railway
- Major Road
- Local Road/ Track
- Watercourse



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GDA2020 MGA Zone 56

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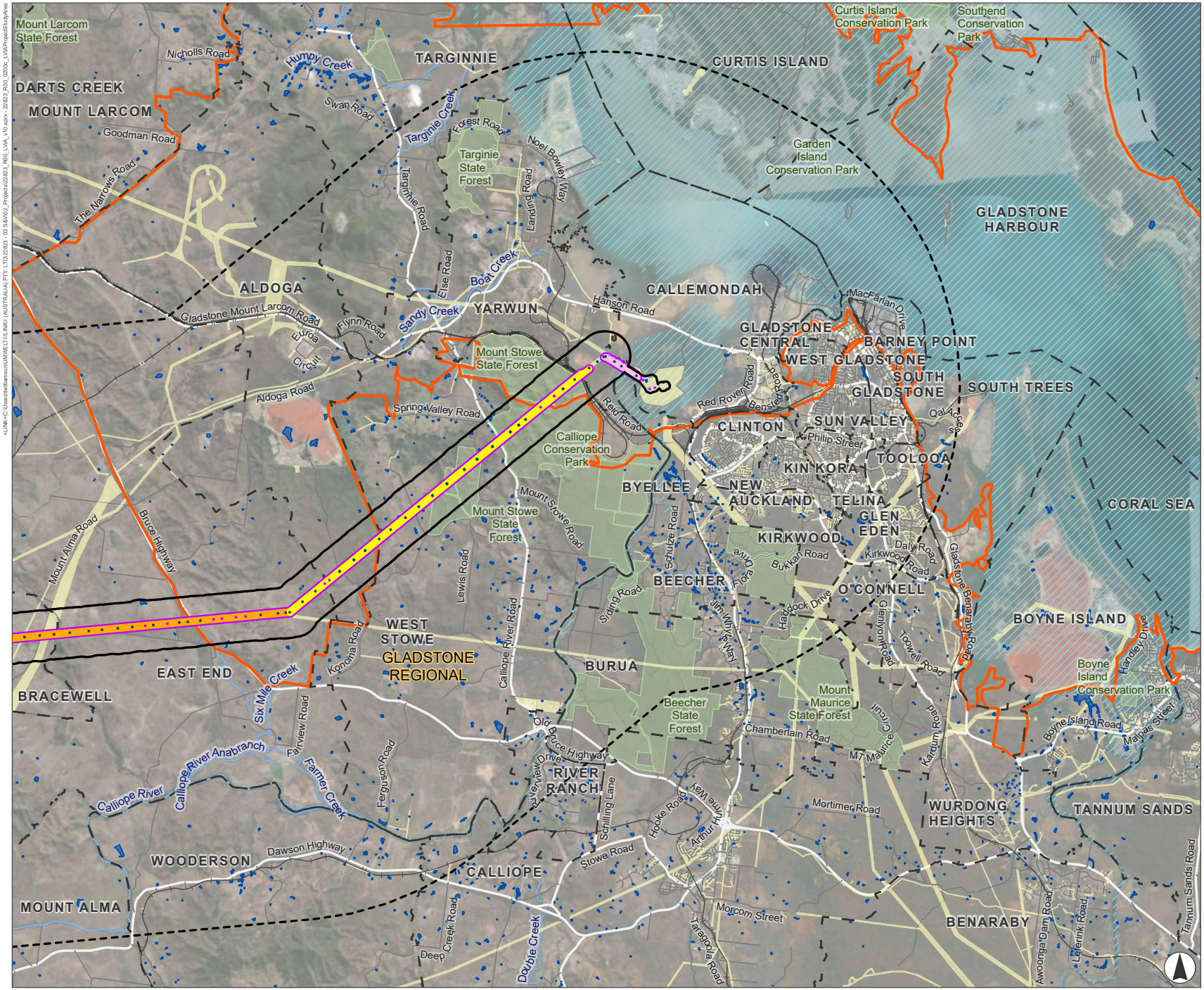


FIGURE 6.10c

LVIA Project Study Area 2

Legend

- Powerlink Study Area
- MID Proposal Area 2 (MPA2)
- Priority Port oF Gladstone
- LVIA Study Area 2
- Local Government Area
- Locality Boundary
- MPA2, Section C
- MPA2, Section D
- MPA2, Section E
- Tower Locations (40m)
- Tower Locations (>50m)
- Existing Overhead Transmission Line Corridor
- Protected Area
- Lake/Dam
- World Heritage Area - Great Barrier Reef
- Railway
- Major Road
- Local Road/ Track
- Watercourse

0 2.5 5

Kilometres

Scale 1:175,000 at A4
GDA2020 MGA Zone 56

Image Source: ESRI Basemap (2024) | **Data Source:** QLD Government (2024), RES (2023)

6.4.1 Existing Environment

6.4.1.1 LVIA Study Area 1

MPA 1 is wholly within LVIA Study Area 1 and is situated across the localities of Mount Murchison and Dumgree, 13 km northeast of Biloela, and near the Callide Power Stations B and C. The LVIA determined the area includes rural residential localities and properties located within Callide, Dakenba, Dumgree, Mount Murchison, and Valentine Plains, with a combined population of around 771 people. Key roads like the Dawson Highway and Biloela-Callide Road provide access and opportunities of scenic views for travellers, and other local roads.

The environment features several tourist drives, including the Scenic Way and Magical Mountains drives, and the Bicentennial National Trail, which traverses the LVIA Study Area 1. Lake Callide serves both operational and recreational purposes, attracting visitors for activities like boating, kayaking, and fishing. The Callide Mine Lookout offers panoramic views of the Callide Valley and power stations, while the Mount Murchison Nature Refuge provides walking trails for visitors.

Energy infrastructure in the area includes the Callide Coal Power Stations and the Calvale Substation, with numerous high-voltage transmission lines connecting various locations. The Callide Coalfield, producing 10 to 11 million tonnes of coal annually, and natural gas extraction are significant industrial activities is the primary large scale extractive operation within LVIA Study Area 1. The Moura Railway System, part of Aurizon's Central Queensland Coal Network, supports coal handling for the Callide Coalfield mine and intersects LVIA Study Area 1.

Additionally, the Callide Timber Reserve, although not accessible to the public, offers limited natural recreation experiences. The Mount Murchison State School, located 8.9 km from MPA1, serves the local community with 25 students. Overall, the area is a blend of residential, industrial, and recreational environments, with significant infrastructure supporting both local and regional activities.

6.4.1.2 LVIA Study Area 2

MPA 2 is wholly within LVIA Study Area 2 and is situated across the localities of Bracewell, East End, Aldoga, West Stowe, Yarwun, and Callemondah. It includes three sections: Section C (Bracewell and East End, 16 km), Section D (East End, Aldoga, West Stowe, and Yarwun, 13.5 km), and Section E (Yarwun and Callemondah, 0.5 km). The LVIA Study Area 2 comprises rural residential localities with a combined population of around 40,000 people, including significant populations in Clinton, New Auckland, and West Gladstone.

Key roads such as the Gladstone-Mount Larcom Road and Gladstone-Benaraby Road provide access and opportunities for scenic views for travellers, as well as several local roads. LVIA Study Area 2 features seven promoted tourist drives, including the Gladstone City Sights Drive and the Southern Great Barrier Reef road trip, which attract visitors to local lookouts, parks, and the Gladstone Marina. Local attractions include the Gladstone Power Station tours, Gladstone Maritime Museum, and various parks like Spinnaker Park and the Gladstone Tondoon Botanic Gardens. The Great Barrier Reef islands are accessible via the Gladstone Marina, enhancing the area's appeal to visitors.

The Bicentennial National Trail traverses LVIA Study Area 2, passing along the Calliope River and a section of the Dawson Highway. Four State forests, including Beecher State Forest and Mount Stowe State Forest, as well two conservation parks, Calliope Conservation Park and Garden Island Conservation Park, offer limited recreational opportunities, with Beecher State Forest being popular for motorcross and mountain biking. The highest landform points include Mount Larcom, Auckland Hill, and Round Hill, with Mount Larcom offering 360-degree views for hikers.

Energy infrastructure includes 22 existing transmission line corridors and associated infrastructure, such as the Larcom Creek to Yarwun 110 kV line and multiple 132 kV and 275 kV lines connecting various substations. The area is also traversed by several railway lines, including Aurizon's Blackwater System, Moura System, and North Coast Line, with the Callemondah Yard Locomotive Depot located within the LVIA Study Area 2.

6.4.1.3 Designated landscapes

Great Barrier Reef World Heritage Area

MPA2, Section E, is located within the GBRWHA, with the eastern 1.4 km of the Project crossing into the area to connect to the Calliope River Substation in Callemondah.

The unnamed vegetated island is enclosed by GBRWHA waters including the Calliope River Anabranch to the west and the Calliope River to its south and east where it joins the coastal waters of the Port of Gladstone.

The area that MPA2 will connect to, within the unnamed GBRWHA vegetated island, already includes existing energy infrastructure comprising the Calliope River Substation and extensive OHTL transmission lines which connect the Calliope River substation to the west, south and to the east. The State-controlled Hanson Road crosses the northern section of the unnamed island, and no other infrastructure is present.

Due to the presence of this infrastructure, the section of MPA2 within the GBRWHA does not strongly express features of the World Heritage criteria relating to landscape and visual matters.

Other Key Landscapes

Other designated landscapes in the Study Areas are summarised in **Table 6.19**.

Table 6.19 Designated Landscapes and Relevance

Designated Landscape	Relevance
Calliope Conservation Park	Located 9 km southwest from Gladstone central, hiking trails are available for guests, with no general amenities available. MSES regulated vegetation (Category B – endangered or of concern) is located across the entirety of the Conservation Park. Section D as part of MPA2, passes directly through the northern to northwest section of the Conservation Park.
Garden Island Conservation Park	Garden Island Conservation Park is located 5.6 km north across the coastal waters from Gladstone Central and is a sanctuary for both wildlife and nature enthusiasts. Walking trails and picnic trails amenities are available for guests, with volunteer and conservation programs to take part in. This park is located 8.8 km northeast from MPA2.

6.4.2 Potential Impacts

6.4.2.1 Landscape Impacts

The assessment of impacts upon landscape character for MPA1 within LVIA Study Area 1 determined there would be no significant impacts for the following reasons:

- LCT B (LCA B21) due to noticeable change the Project is anticipated to have on localised parts of this LCT.
- LCT D (LCA D6) and LCT E (LCA E15) and LCT F (LCA F21) due to the noticeable change the Project is anticipated to have on localised parts of this LCT and the introduction of similar infrastructure to what is already existing within these LCAs.

The assessment of impacts on landscape character for MPA2 within LVIA Study Area 2 determined that there would be a highly localised significant impact on one LCT, described as follows:

- LCT B (LCA B1, B2) in association with Calliope Conservation Park (LCA B1) and Mount Alma (B2) due to the introduction of additional transmission infrastructure to a forested landscape with scenic and landscape values.

All other impacts on landscape values on MPA2 within LVIA Study Area 2 are not considered significant for the following reasons:

- LCT A (LCA A1) due to a barely perceptible change to the LCA due to existing electrical infrastructure located in the GBRWHA.
- LCT C (LCA C1, C2), LCT D (LCA D1, D2) and LCT E (LCA E1, E2) due to noticeable change the Project is anticipated to have on localised parts of these LCTs which feature varying vegetation and existing transmission infrastructure.
- LCT F due to the extent to which this infrastructure would blend with the existing character.

Refer to the LVIA (**Appendix I**, Section 7.0) for the full assessment of the LCTs and each LCA.

6.4.2.2 Visual Impacts

The visual assessment identified that views towards the Project will be experienced by a variety of receptors, including local and rural residents, rural workers and motorists and visitors who may be undertaking tourist drives or visiting points of interest as well as visitors to the area.

The visual impact assessment (assessment of impacts upon views) has concluded that there would not be any significant impacts on representative views. The assessment concluded:

- **Moderate**, **Not Significant** impacts on views from Hanson Road (VP 1) looking towards the GBRWHA, and views from the Bruce Highway (VP 7).
- **Minor to Moderate**, **Not Significant** impacts on a private residence on Boyles Road (VP 5) and southerly views from Boyles Road (VP6).
- **Minor**, **Not Significant** impacts on views from Round Hill Lookout in Gladstone (VP 2), another private residence on Boyles Road (VP 4), northerly views from Kaluda Road (VP 8), various views from Lake Callide (VP 9) and views from Callide Lookout (VP 10).
- **Minor to Negligible** views on viewpoint located on Cania Way (VP 3).

It is evident that no regionally important scenic viewpoints would be significantly affected; however, it is noted that distant views towards the Project will be possible from the locally visited Round Hill Lookout (VP 2) as well as the Bruce Highway which is a tourist drive (VP 7) and localised views of the GBRWHA (VP 1).

The assessment considers that the Project (MPA2) is likely to have a Moderate to Major, Significant impact on a corridor of land associated with LCT B: Forested Ranges and Mountains within Calliope Conservation Park (LCA B1) and Mount Alma (B2), due to the introduction of additional OHTL infrastructure to a forested landscape with scenic and landscape values. Other impacts on landscape character are not considered significant.

Localised impacts on the GBRWHA are anticipated to occur associated within MPA2. However, the impacts on views are not considered significant, particularly due to the context of MPA2 within the Priority Port of Gladstone Master Planned Area and close to the GSDA, which already include industrial and electrical infrastructure. No significant impacts are identified from the selected representative viewpoints across the LVIA Study Areas.

6.4.3 Mitigation and Management Measures

This section outlines the standard operating procedures and other factors considered to reduce and manage the impact of the Project infrastructure on the landscape, views and visual amenity. It is acknowledged that due to the size of the proposed infrastructure, the undulating nature of MPA1 and MPA2, which includes elevated areas, combined with the open and unobscured views of the Project from some surrounding areas, it is not possible to 'screen' or 'hide' the OHTL towers or associated infrastructure within the landscape. The measures outlined are therefore considered to assist to provide a more harmonious appearance to the Project overall.

The mitigation framework focusses on managing the impact of construction activities, including post–construction site rehabilitation activities (e.g. rehabilitating temporary access tracks and storage areas). Tailored mitigation could also be considered in liaison with affected landowners, if required during the detailed design process. A summary of mitigation measures is provided in **Table 6.20**.

Table 6.20 LVIA Mitigation Measures

Proposed Mitigation Category	Description of Measures to Minimise Landscape and Visual Impacts
Activities Undertaken During Design	
Tower siting and detailed design	• Micro–siting of tower infrastructure will be designed / located to minimise tree and other vegetation removal where practicable. Vegetation clearance should be minimised to the greatest extent possible during construction to avoid creating more visibility to existing infrastructure and proposed components. • To the greatest extent possible, undertake micro-siting of towers that are potentially visually prominent from residences and public viewing points to minimise visual impact. • The natural line of the landscape will be used wherever practicable to reduce visibility and assist integration of the Project infrastructure.

Proposed Mitigation Category	Description of Measures to Minimise Landscape and Visual Impacts
Landscape strategy	• Retain existing vegetation around MPA1 and MPA2, particularly associated with roads and properties, to the greatest extent compatible with safety and operational issues. For example, ensure that construction activities do not unnecessarily encroach on mature vegetation areas that can be retained following construction of the Project and will serve as a screening element. In particular, seek to protect existing vegetation located along the perimeter of MPA1 and MPA2, including areas where vegetation is not of significance (areas outside State forests and Conservation Parks) to the greatest extent compatible with safety. It is noted that retention of significant vegetation has been a key driver for inherent mitigation built into the Project design by utilising an existing transmission corridor. • Retain vegetation associated with creek lines to the greatest extent practicable.
Activities Undertaken During Construction and Operation	
Construction management and rehabilitation	• Develop a construction management and rehabilitation plan that includes measures that seek to manage soil stability, dust, waste and other elements that have the potential to affect landscape and/or visual amenity and assist in the integration of the Project into its landscape setting.

6.4.4 Summary of Findings

Given the MID proposal's effect on landscape character and visual amenity in a landscape already modified by existing transmission infrastructure, mitigation measures are considered unlikely to alter the overall significance of the level of landscape effects assessed in the LVIA (**Appendix I**) and summarised in **Section 6.4.2**. There is limited potential to screen views of transmission towers up to 65 m high, even if this were to be a desirable outcome. Moreover, it is noted that existing transmission line infrastructure is already present in the landscape, so the resulting landscape and visual impacts identified represent an incremental increase to the impacts of the existing transmission infrastructure.

6.5 Surface Water

An SWIA has been prepared (**Appendix J**) to assess the stormwater, flooding and the coastal hazards and processes within and adjacent to the MPA. The following sections summarise the existing environment, potential impacts and proposed mitigation and management measures relevant to the Project's hydrology.

6.5.1 Existing Environment

6.5.1.1 Regional climate conditions

The Project is located in the central coast region south of the Tropic of Capricorn, which experiences a subtropical climate with significant summer rainfall, predominantly occurring between December and March. Rainfall ranges from low to moderate in the coastal plains, increasing to moderate to high in the steeper ranges due to orographic influences. According to the Köppen Classification system, as outlined by the Bureau of Meteorology of Australia, the climate of the Project Area falls within the moderately dry winter subtropical zone. Rainfall is seasonally distributed, characterised by a wet season from October to March and a drier season from April to September.

The highest annual rainfall at the utilised station (1,588 mm) was estimated for the 1892/93 water year. During the 1974 water year, an annual total of 1,408 mm was observed, which is about double the median annual rainfall total of 786 mm.

Figure 6.11 shows summary rainfall statistics, with the highest monthly rainfalls occurring in January and February. Evaporation peaks between November and January (inclusive). Large rainfalls can occur throughout the year, with a notable monthly rainfall occurring in December 1973.

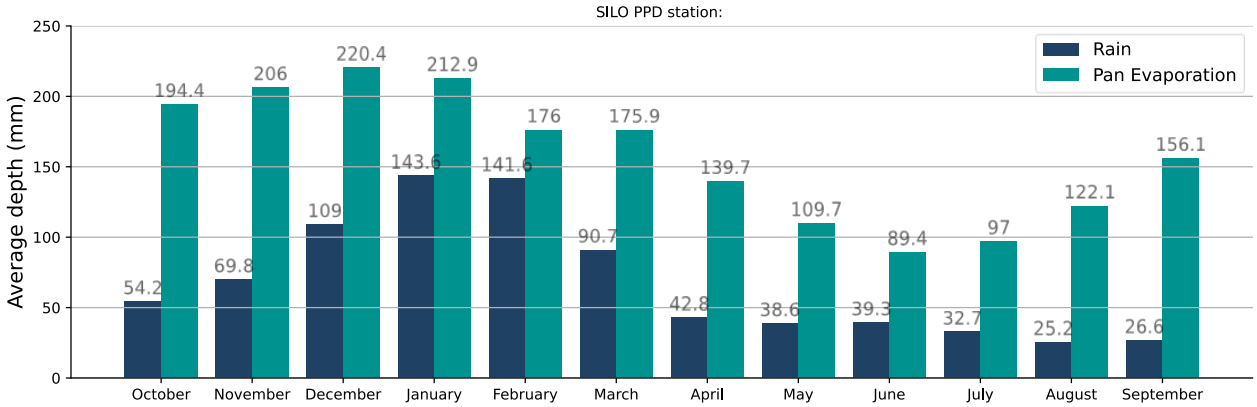


Figure 6.11 Distribution of Monthly Rainfall and Pan Evaporation

6.5.1.2 Water Quality Aspects

The MPA is located in Basin 132 in the Upper Calliope River's southern tributaries (WQ1311).

The Curtis Island, Calliope River and Boyne River Basins Environmental Values (EVs) and Water Quality Objectives (WQOs) document contains EVs for waters in the Calliope River southern tributaries as listed under schedule 1 of the Environmental Protection (Water and Wetland Biodiversity Policy 2019 (EPP (Water)). The applicable EVs are as follows:

- Aquatic ecosystems – the intrinsic value of aquatic ecosystems, habitat in waterways
- Irrigation – water supply for irrigation
- Farm supply/use – non-potable farm water supply
- Stock water – water supply for the production of healthy livestock
- Human consumer – producing aquatic foods from natural waterways

- Primary recreation – full body contact and frequent immersion
- Secondary recreation – contact with limbs and regular wetting
- Visual recreation – uses that require no direct contact with water
- Drinking water – suitable as a supply to water treatment plant
- Cultural and spiritual values – scientific, social or cultural heritage.

WQOs are defined under the Water Act and EPP (Water) for the purpose of protecting the identified EVs for a particular receiving environment. Relevant local guideline values are defined at a sub-basin level. Relevant aquatic ecosystem WQOs for baseflow conditions for the Surface Fresh Waters (Management Intent – Moderately Disturbed) are based on the Calliope Fresh Waters Outside State Development Area water quality guidelines and is outlined within the SWIA (**Appendix J**, **Section 4.2.3**).

No direct water quality measurements or qualitative water quality information is available for any watercourses relevant to the MPA. Water quality within the MPA is expected to be commensurate with moderately disturbed streams nearby that are subjected to factors such as limited vegetation clearing, grazing and erosion.

6.5.1.3 Land Use and Classification

The SWIA described the MPA as located in a largely rural and sparsely settled landscape mostly used for light grazing and livestock production. The Queensland Land Use layer maps the primary land usage as production from relatively natural environments, such as grazing native vegetation. Cattle grazing is the dominant land use in the catchment, primarily confined to the coastal plains where much of the natural vegetation has been thinned or removed. At the same time, the ranges mostly retain undisturbed eucalypt forests. The MPA does not contain water storage, and the landform though cleared of large stands of trees, is relatively unmodified from its natural condition. Vegetation throughout the MPA is sparse, with some significant riparian vegetation along drainage corridors.

The land classification according to the Queensland Government's agricultural land types within the MPA are as follows:

- Pastureland – sown pastures and native pastures (C1)
- Pastureland – native pastures (C2).

6.5.1.4 Soil and Geology

The MPA is mapped as having a Dermosol soil and other soil types adjacent. The soil types within the MPA were obtained through soil and land resource datasets provided by the Queensland Government's open data portal.

The development of erosion and salinity problems on marginal land has led to land management being identified as a high priority to reduce sediment loads being transported by rivers into the Great Barrier Reef lagoon.

6.5.1.5 Regional Drainage Characteristics

The Calliope River basin's catchment area is 1,890 km^2. The Calliope River gathers water from significant tributaries such as Oakey Creek and Larcom Creek, as shown on **Figure 6.12**. Also shown are catchment areas draining through Section C and Section D of the MPA. Larcom Creek is also the longest contributing creek to Calliope River and drains approximately 270 km^2 through Section C.

Section C and Section D of the MPA cross unmapped watercourses and drainage features as defined by the Water Act. Numerous drainage features are mapped and crossed by Section D. The Water Act predominately identifies a series of first-order streams near the MPA that are designated as unmapped watercourses, as shown on **Figure 6.13** and **Figure 6.14.** Farmer Creek and Six Mile Creek are mapped as defined watercourses. It is notable, that Larcom Creek is a fourth-order stream when it passes through the MPA. However, the Water Act does not define Larcom Creek as a watercourse. It is only further downstream (about 2 km) of Section C of the MPA, that Larcom Creek is defined a watercourse.

The Calliope River basin's current ecological state reflects a balance between human impact and natural resilience. While the basin has witnessed considerable clearing of native vegetation, estimated up to two-thirds, riparian zones comprising native flora still exist along major creeks within the basin. This riparian vegetation plays a vital role in maintaining in-stream water quality, offering a degree of protection against the impacts of grazing, cropping, and industrial activities within the catchment.

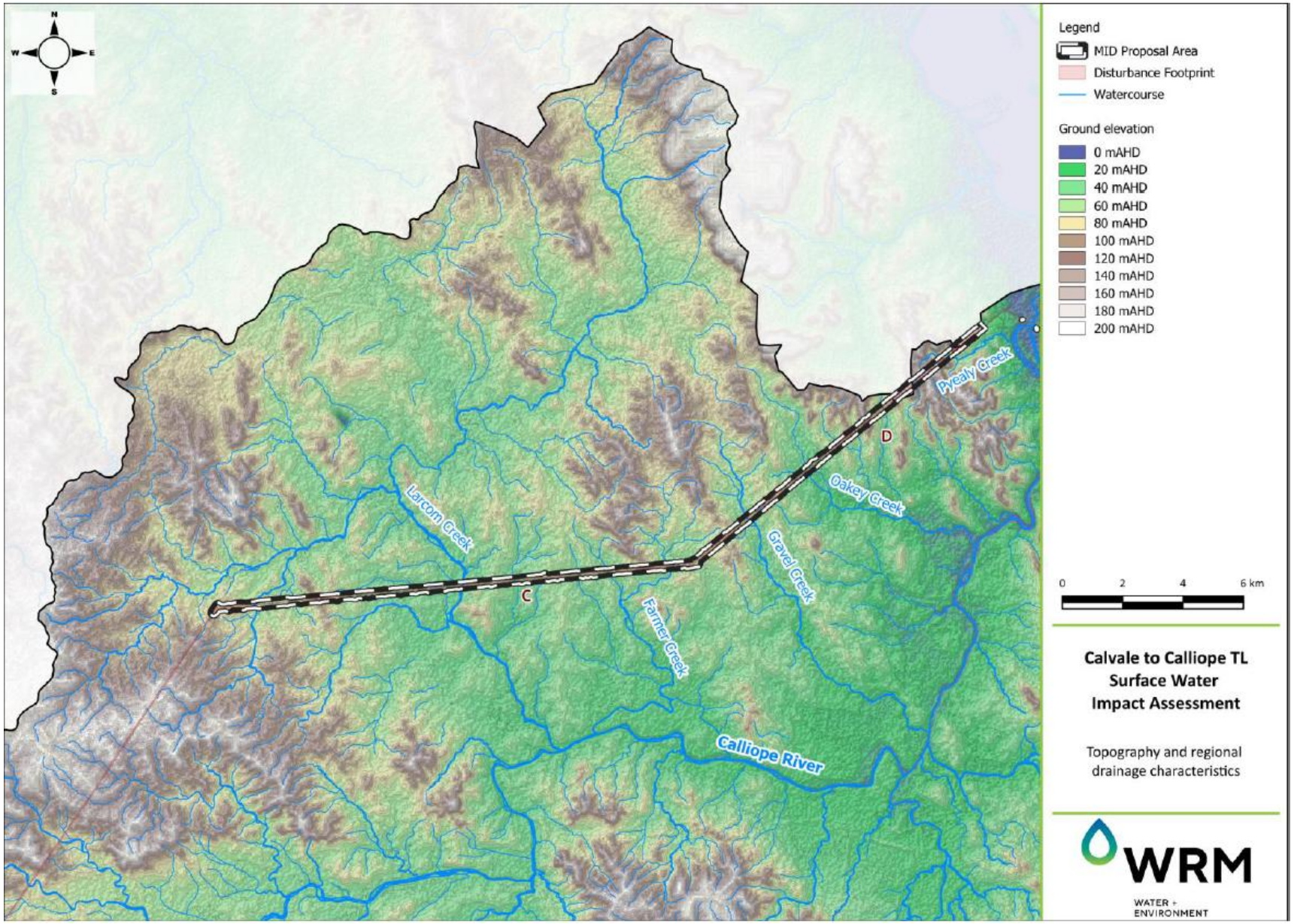


Figure 6.12 Topography and Regional Drainage Characteristics

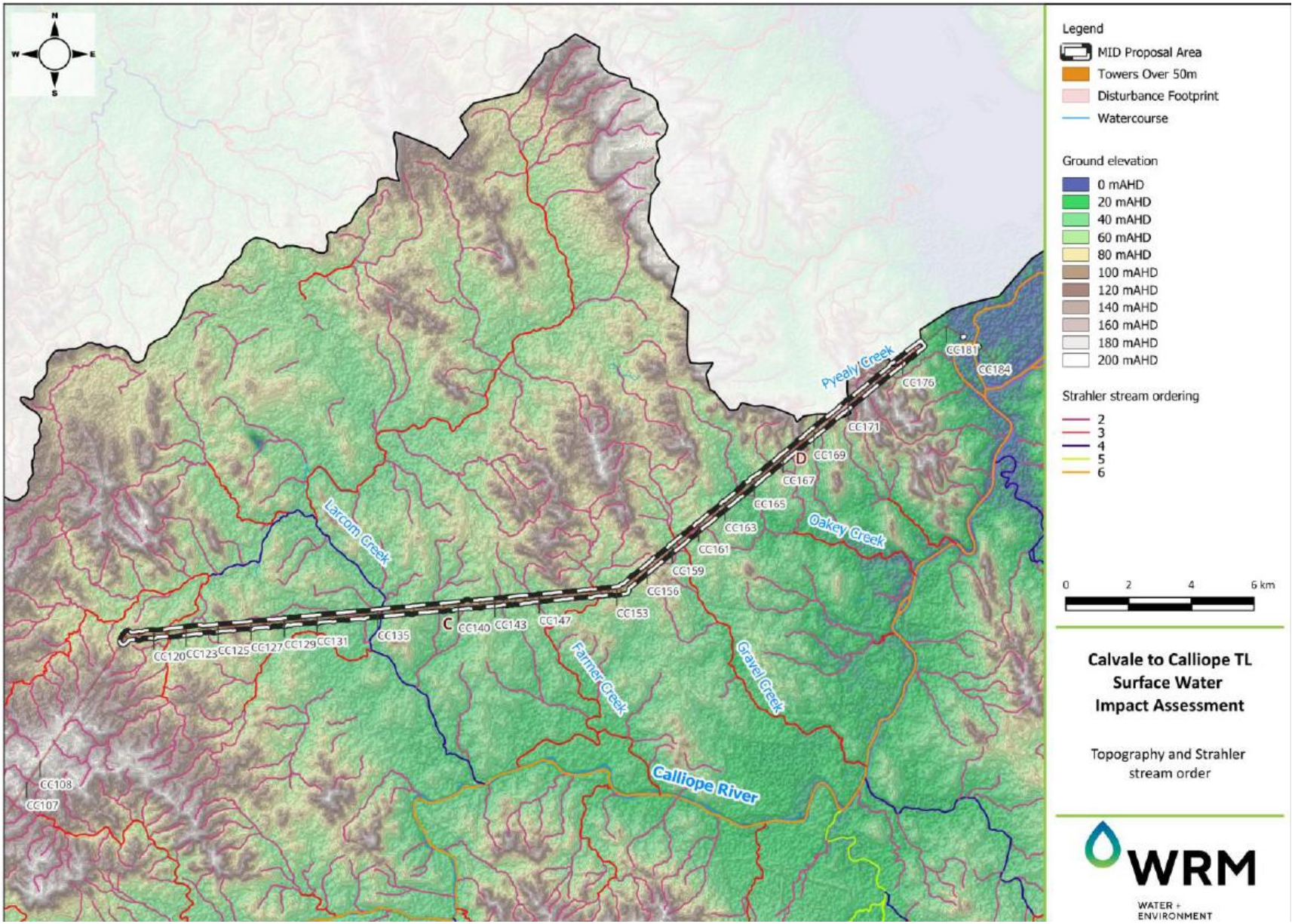


Figure 6.13 Strahler Stream Order

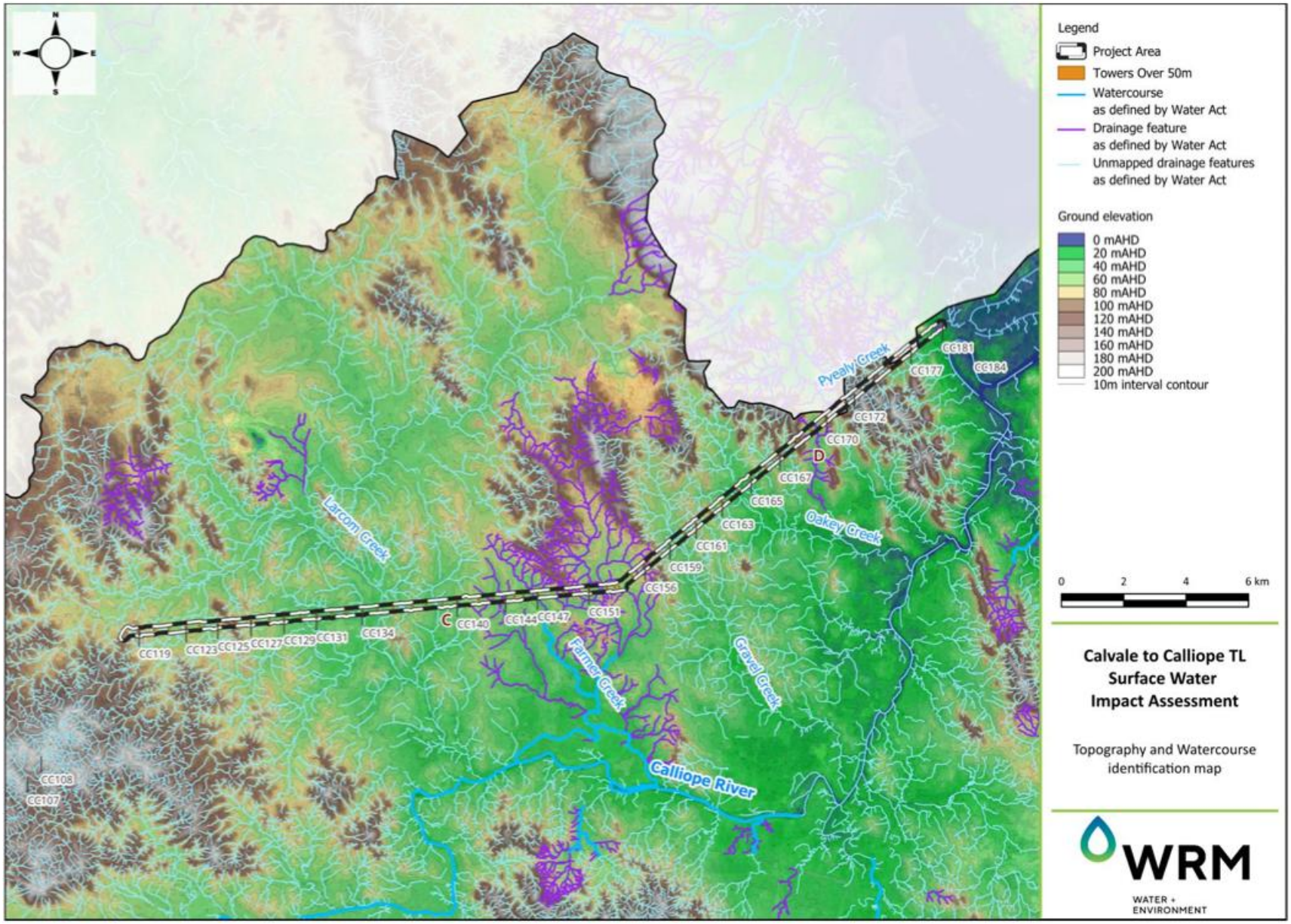


Figure 6.14 Watercourse Identification Map

6.5.1.6 Coastal Environment

The MPA passes into the coastal management district, as shown on **Figure 6.15**. There is no coastal building line defined near the MPA.

Gladstone Regional Council's Our Coast Our Future Strategic Plan is a long-term Gladstone Region Coastal Hazard Adaptation Strategy (CHAS) that aims to manage and adapt to the impacts of coastal hazards. The CHAS involved a detailed coastal hazard modelling study, the results of which were used to inform the maps shown as **Figure 6.16** to **Figure 6.17**.

There are six storm tide evacuation zones for the MPA, as shown on **Figure 6.16**. The storm surge components that result from the high onshore winds (wind setup), wave energy (wave setup) and/or low atmospheric pressures, this is mapped as high-hazard area on **Figure 6.17**. The wind setup component is the vertical rise of a body of water above the still water level caused by the wind stresses on the surface of the water and is mapped as a medium hazard area.

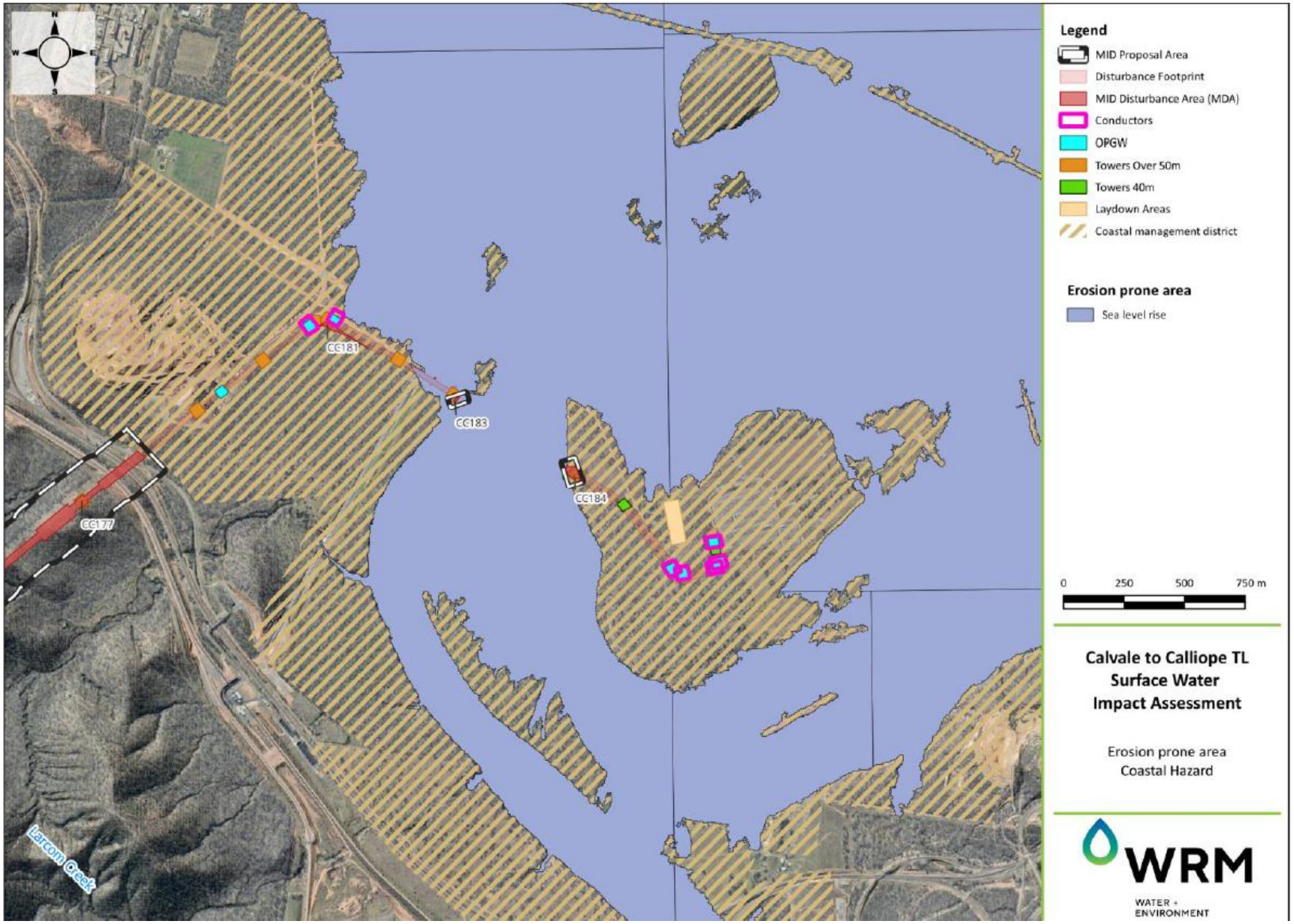


Figure 6.15 Erosion Prone Area and Coastal Management District

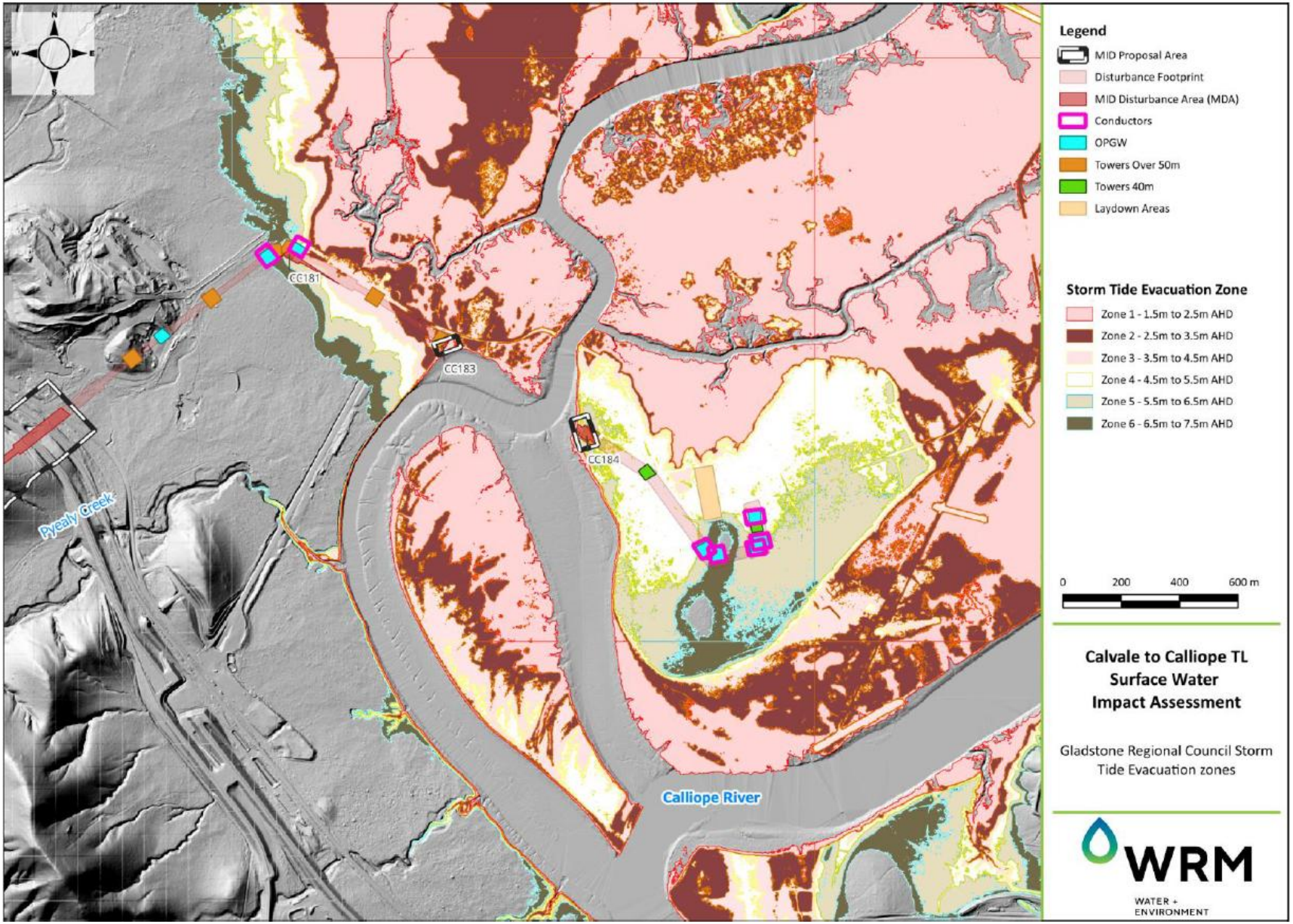


Figure 6.16 Gladstone Regional Council Storm Tide Evacuation Zones

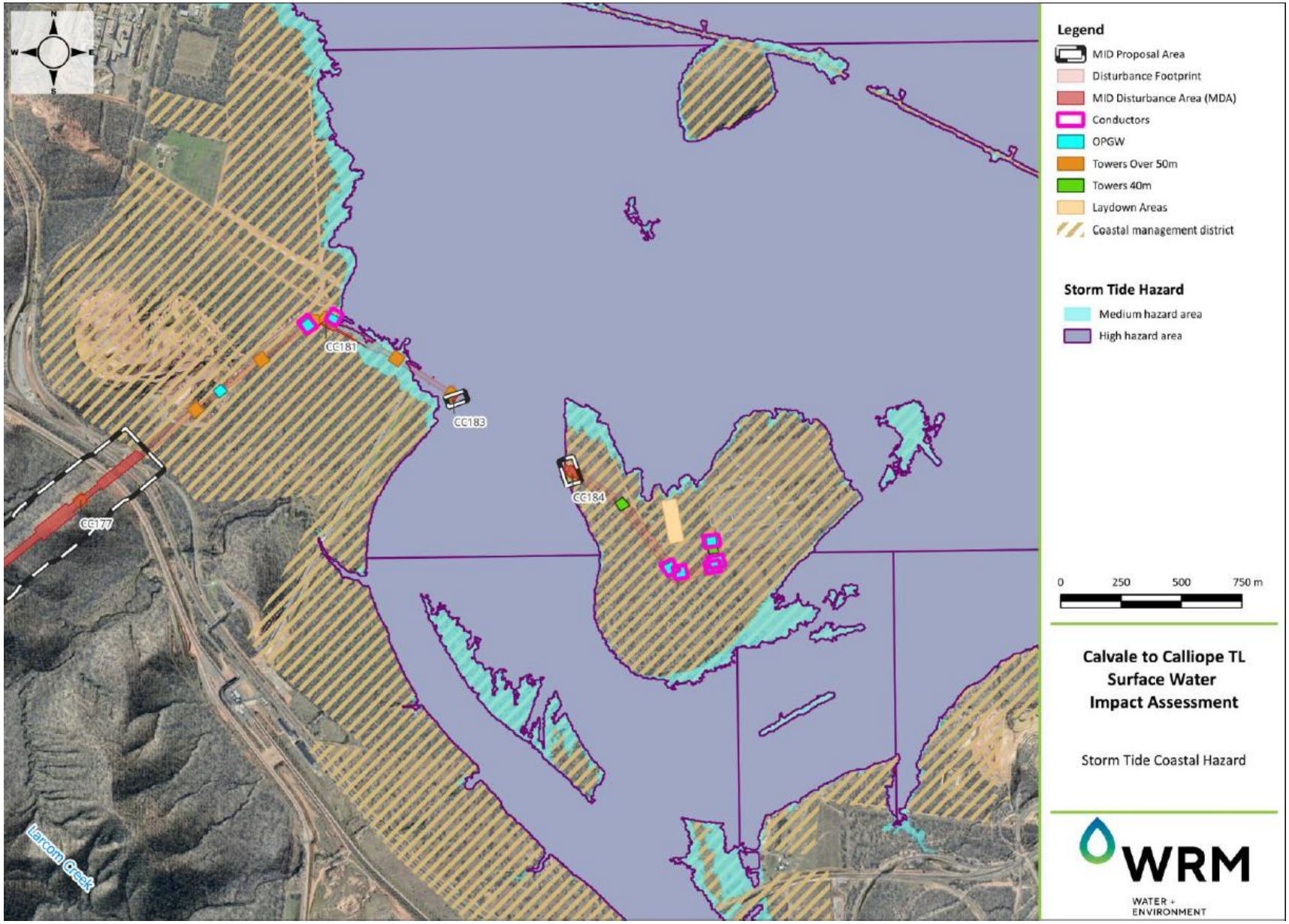


Figure 6.17 Storm Tide and Coastal Management District

6.5.2 Potential Impacts

The assessment concluded that the MID Proposal is anticipated to have minimal impacts on surface water conditions due to the limited extent of ground disturbance and its location predominantly within and adjoining an existing transmission line corridor. The assessment confirms that the MID Proposal does not involve the storage or management of significant quantities of potential pollutants, nor will it contribute to increased stormwater runoff volumes. The MID Proposal's interaction with the coastal environment is aligned with the State Planning Policy.

6.5.2.1 Coastal Impacts

The span between towers CC183 and CC184 requires disturbance within the Calliope River estuary, particularly the western bank of the Calliope River near CC183. Immediately to the east of CC183 there are two existing transmission towers. The southernmost tower is located within ten metres of the bank of the Calliope River at a natural elevation of 4.94 m Australian Height Datum (AHD). This area is mapped as being erosion-prone land and also high-hazard areas at risk of storm surge or storm tide inundation. **Figure 6.18** and **Figure 6.19** are artist impressions of the towers (CC183 and CC184) located in Section E of the MPA near the Calliope River. The elevations measured at the base of CC183 is 3.31 m AHD, and at CC184 it is 5.46 m AHD. These elevations place the tower bases above the normal tidal range and into the storm tide zones of Zone 2 and Zone 4, respectively. At this elevation, any regular impacts on coastal processes are unlikely as they will remain dry. The location of these towers cannot be easily relocated due to the route required to reach the Calliope River Substation, flight paths and navigable channels which requires a minimum height clearance.

Figure 6.18 Artist Impression Looking Towards Tower CC183*

Figure 6.19 Artist Impression Looking Towards Tower CC184*

*Conceptual render only – does not show details regarding erosion protection and revetment treatments likely to be required to protect against the defined storm tide event. Note the Project will involve double-circuit lines rather than the single-circuit pictured.

6.5.2.2 Flood Impacts

The modelling undertaken was limited and indicative due to the coarse resolution of the available elevation grids in Larcom Creek. Modelled flows are estimates that were not able to be calibrated to local flood gauges or validated via Regional Flood Frequency Estimation (RFFE). The SWIA (**Appendix J**) provides corridor mapping with the best available information on potentially flood-prone land.

Figure 6.20 shows the proposed towers CC134, CC135 and CC136 located on the high ground above Larcom Creek which are the towers closest to the flood prone land. The lowest elevation of these towers is 46 m AHD, while the bed of Larcom Creek is 30.3 m AHD. Larcom Creek is expected to see large flood flows within this area, but peak water depths are unlikely to reach 15 m. Towers will be located on relatively higher land and above expected surface water flow paths. As such, there is no foreseeable mechanism for the placement of the tower to result in any disruption of overland flow and, in turn, generate afflux. Equally, impacts are not considered to be likely outside of the MPA. The assessment ultimately determined that potential flood risks are primarily confined to the MID Proposal construction phase.

Figure 6.20 Larcom Creek and Overbank Topography

6.5.3 Mitigation and Management Measures

In general, the risk posed by out-of-bank surface water flows can be protected using deeper bored piles and revetment treatment to protect the base of the tower. This treatment may be a combination of rock riprap or flexible interlocking matting. The towers are located in the highest possible locations to maximise span distances. This design would ensure bored piles are well protected from unstable ground conditions.

6.5.3.1 Coastal Mitigations

To protect the base of the towers against defined storm tide events, commonly utilised protective revetment treatment will be employed, where required. This treatment may be a combination of rock riprap or flexible interlocking matting; the level of treatment will be confirmed during the detailed design phase. Further, the design of the leg stubs and bored piles required for CC183 will ensure that they are protected against storm surge and related coastal erosion processes.

To mitigate the risk of tidal water inundation in erosion-prone areas, the towers will be designed with footprints that can withstand saturated and brackish environments. The base of the towers require fill to construct a stable pad above the projected tidal range. The existing coastal environment will be protected by ensuring that the native and remnant vegetation is preserved and not adversely impacted through the construction and maintenance of towers.

The importation of material considered likely to form a sediment plume (i.e. silts, clays or fine sands that rapidly erode) or contain weed seed will be avoided during construction to the greatest extent possible. Any boring of piles will take adequate measures to avoid exposing acid sulfate soils. The proposed infrastructure and protective treatments are considered to mitigate the coastal erosion risk to a low level.

6.5.3.2 Flood Mitigations

Similarly, the risk posed to the structural integrity of the towers by out-of-bank surface water flows can be minimised using deeper bored piles and revetment treatment to protect the base of the tower. The towers are also located in the highest possible locations to maximise span distances. This design would ensure bored piles are well protected from unstable ground conditions resulting from flood impacts.

The construction-phase risks can be effectively mitigated through the implementation of well-established environmental management practices and appropriate methodologies, to be outlined in the Project's CEMP.

6.6 Bushfire

The MPA is mapped as containing areas of medium, high and the potential impact buffer of the bushfire prone area under the SPP. As such, the MID Proposal must meet the relevant SPP assessment benchmarks for planning for natural hazards, risk and resilience. A response to the natural hazards, risk and resilience assessment benchmarks of the SPP is provided in **Appendix E**. The assessment concluded that the preparation of a project-specific CEMP that includes bushfire hazard management measures, will adequately mitigate risks to a tolerable level. The CEMP will be prepared to capture risks of the entire Project, whereas the following assessment is relevant to the MPA only. It is noted that bushfire mitigation measures for the design and operation/maintenance of the Project are included in Powerlink's EMP.

The MPA includes transmission line components and ancillary infrastructure only, with connections to substations associated with the Project being located within approved MIDs. As such, advice was received from Land and Environment Consultants (LEC) that a site-specific bushfire hazard study was not required to assess the transmission infrastructure within the MPA. The following section outlines the potential impacts associated with high-voltage transmission lines only.

According to Rob Janssen, Managing Principal, LEC (2025, pers. comm.) high voltage transmission lines are susceptible to 'flashover' which can cause a fire ignition in surrounding vegetation. Fires with a flame height greater than 1 m adjacent to or under high voltage transmission lines have the potential to:

- create electrical arcs (known as flashovers) that can endanger people, animals and objects
- damage or destroy wires, insulators and supports of the transmission line
- interrupt power supply to households, business and industry.

To mitigate the potential impacts, the management of vegetation underneath high voltage transmission lines will be in accordance with Powerlink's vegetation management specification for high voltage transmission lines, provided at **Appendix L**.

It is considered that full compliance with Powerlink's vegetation management specification for high voltage transmission lines may not be required or practical in certain scenarios. For example, where the conductor is suspended across a valley, and it can be demonstrated that there will be an appropriate distance of separation between the conductor and the canopy of vegetation in the valley or where topography restricts the safe use of plant and equipment required to establish and maintain the vegetation management area.

Fire-fighting operations near high voltage transmission lines must be planned and implemented in accordance with the National Guidelines on Electrical Safety for Emergency Service Personnel (ENA DOC 008-2006) and the carrier's instructions. Other general management measures are provided in Powerlink's EMP (**Appendix K**).

Powerlink has an overall Bushfire Mitigation Plan (ASM-PLN-A3285085) which provides a co-ordinated, integrated and transparent approach to bushfire mitigation that considers the resources and responses needed to manage risk associated with bushfires. The Bushfire Mitigation Plan is reviewed annually to ensure maintenance of and where appropriate, improvement to bushfire mitigation controls. The Bushfire Mitigation Plan has been developed bas on a range of authoritative sources and references and is consistent with the Queensland Fire Department's (QFD) Bushfire Risk Mitigation Plan – Template.

6.7 Electric and Magnetic Fields

Electric and Magnetic Fields (EMF) occur everywhere, can exist independently of each other, and can result from both natural sources and human activity. Naturally occurring electric fields result from charged particles in the atmosphere and storm activity, and the electric field strength can vary quite quickly as a result of lightning discharges. The earth's natural magnetic field varies with latitude, and some rocks and minerals are also naturally magnetic.

Unlike most natural electric and magnetic fields, those relevant to transmission lines alternate at the frequency of the alternating current (AC) power transmission system. These fields alternate in magnitude and direction 50 times per second (50 Hz). Although they may occur simultaneously at the same place, the electric and magnetic fields exist independently of one another. These power-frequency fields are commonly referred to as extra low frequency electric and magnetic fields (ELF EMFs).

Electric fields are present in any appliance plugged into a power point which is switched on or on stand-by. Electric fields are proportional to the voltage of the appliance and the distance the user is from it. They are strongest close to their source and their strength diminishes rapidly as you move away in much the same way as noise decreases as you move away from the source. Electric fields are also shielded by most objects including trees and buildings.

Magnetic fields are present in any appliance plugged into a power point, switched on and operating. They are proportional to the amount of electrical current flowing in the device. When an appliance is completely turned off, there is no magnetic field. Again, these are strongest close to their source, and their strength diminishes rapidly as you move away.

For magnetic fields, Powerlink's transmission network is designed and operated well below the general public exposure guideline limits of 200 micro-Tesla (μT). Powerlink's assets are also designed in accordance with technical recommendations in the Energy Networks Australia (ENA) EMF Handbook regarding general public exposure to electric fields. Further, Powerlink are committed to working closely with landholders, the community and other stakeholders with an interest in EMF by:

- Where possible, locating proposed transmission infrastructure away from houses and habitable buildings, so they do not materially add to EMF levels that already exist in a typical household environment.
- Providing information to the public regarding the latest findings from independent and credible scientific research into potential health impacts.
- Designing transmission lines to reduce EMF in accordance with best practice outlined in the ENA EMF Management Handbook (www.energynetworks.com.au/resources/fact-sheets/emf-management-handbook).
- Providing the maximum EMF generated by proposed transmission lines as part of public consultation for planned projects.
- Should radio or television interference be identified, Powerlink can assist people experiencing reception problems caused by transmission line by providing advice and signal amplification equipment.

Where the possibility that a transmission line could cause interference with the operation of an electric fence running parallel to the line, Powerlink will provide specific mitigation measures to assist the owner of any electric fence installation that might be adversely affected. Landholders are encouraged to contact Powerlink regarding their proposed electric fencing arrangement so that technical advice and assistance can be provided.

6.8 Agriculture

6.8.1 Agricultural Land

The MPA, Section D is mapped as containing small areas of Agricultural Land Classification (ALC) A and B under the SPP (**Figure 6.21**). As such, the MID proposal must meet the relevant assessment benchmarks under the SPP for the agriculture State interest. A response to the assessment benchmarks for agriculture under the SPP is provided in **Appendix E**. The MPA does not contain an 'Important Agricultural Area (IAA)' as defined in the SPP. The assessment concluded that the Project will not compromise the agricultural productivity of the area, given the MPA intersects a minor area of ALC Class A and B land, which is already impacted by an existing transmission easement.

The Guidelines for Agricultural Land Evaluation in Queensland (2nd edition) defines ALC Class A and B land as follows:

- ALC Class A – "Land that is suitable for a wide range of current and potential crops with nil to moderate limitations to production."
- ALC Class B – "Land that is suitable for a narrow range of crops. The land is suitable for sown pastures and may be suitable for a wider range of crops with changes to knowledge, economics or technology."

The locality within and surrounding the area mapped as ALC Class A and B has been historically used for low intensity grazing, production native forests, and other minimal conservation uses. The mapped area is heavily modified and largely cleared to accommodate an existing Powerlink 275 kV transmission line which spans over the mapped agricultural area and as such does not comprise any towers within the mapped area.

The alignment of the MPA avoids significant areas of ALC Class A and B located to the north-west of Section C, as shown in **Figure 6.21**, and avoids the smaller mapped areas toward West Stowe and the Calliope River Conservation Park to the greatest extent possible while maintaining constructability and utilising the benefits of co-location.

The MID proposal is therefore considered to have a negligible impact on the existing agricultural productivity within the MPA by restricting access where tower pads for the operational life of the Project. As the transmission line will span over mapped agricultural land, the area below the line will be cleared if is currently vegetated, and maintained in accordance with Powerlink's vegetation management specification, provided in **Appendix L.** Given the MPA is co-located with existing Powerlink transmission infrastructure, the construction of an additional 275 kV transmission line within the ALC Class A and B mapped area is not considered to be a significant departure from the pre-development scenario.

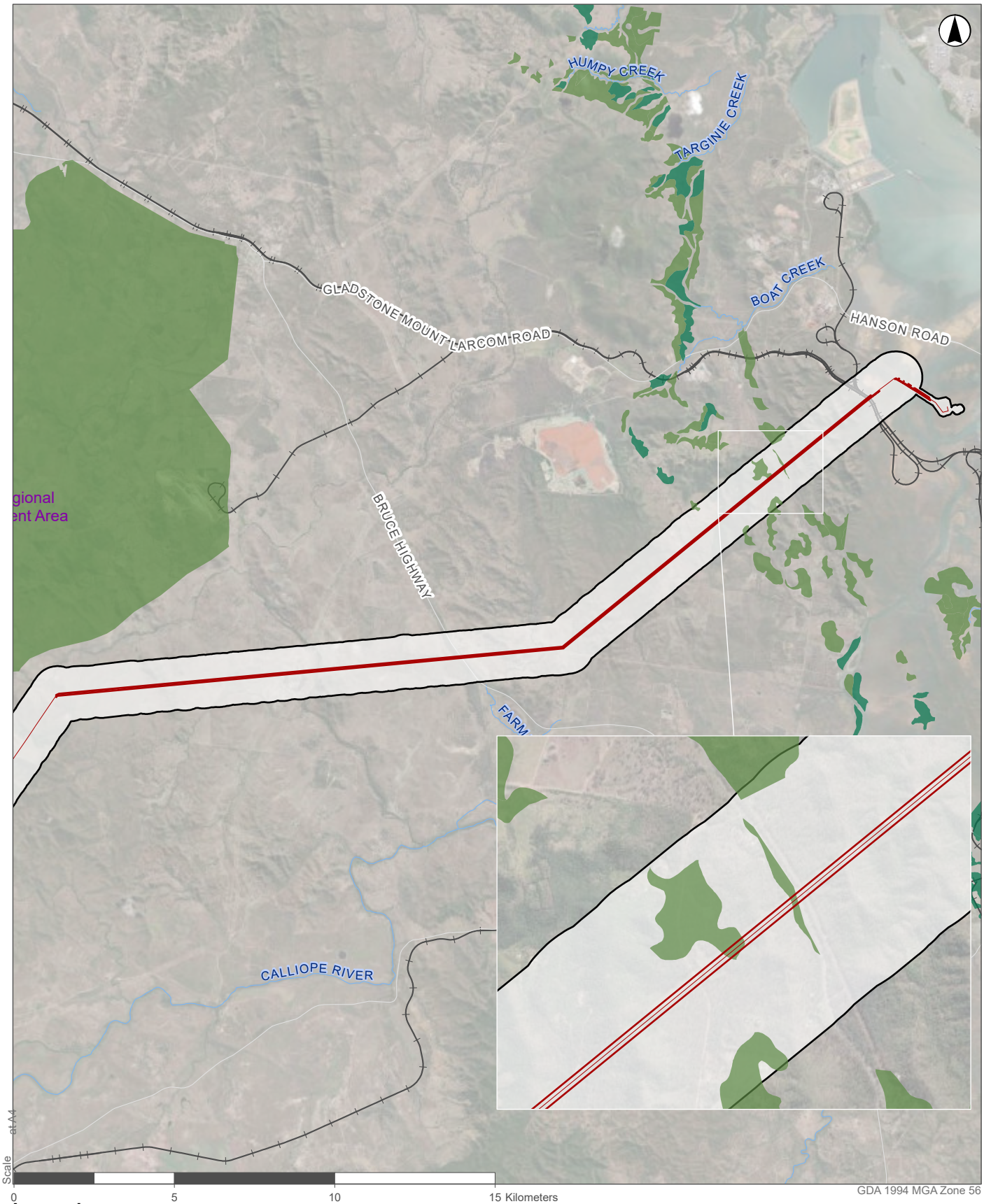
6.8.2 Stock Routes

Section A of the MPA intersects a stock route, described as:

- SR 424BANA on Biloela Callide Road reserve.

An assessment of the MPA in Section A identifies that no transmission infrastructure will be located within SR 424BANA on Biloela Callide Road reserve. However, it is noted that the proposed transmission line will span over this stock route in one location.

Notwithstanding, Powerlink will liaise with the relevant stock route manager prior to the commencement of construction and will undertake construction activities in accordance with a project-specific CEMP to ensure any potential impacts to the stock route experienced during construction are appropriately managed.



1:165,000 Scale at A4

0 5 10 15 Kilometers

GDA 1994 MGA Zone 56

Legend

- Study Area Boundary
- MID Proposal Area (MPA)
- Town
- Major Watercourses
- Major Roads
- Railway

Agricultural Land Audit

- Land Class A
- Land Class B

POWERLINK - CALVALE TO CALLOPE RIVER

FIGURE 6.21

Agricultural Land in the MPA

Image Source: ESRI Maps (2020) **Data source:** QSpatial (2020)

6.9 Hazards, Health, Safety and Environment

This section outlines the health, safety and environmental hazards and risks associated with the construction, operation and decommissioning of works associated with the MID Proposal, and provides preliminary risk identification, including:

- identification of potential project hazards (e.g. accidents, spillages, fire and abnormal events) during construction, operation and decommissioning
- identification of potential natural hazards (e.g. flooding, bushfire, landslide)
- discussion of potential mitigation measures, including the development and implementation of an emergency management plan.

6.9.1 Existing Environment

Hazards and associated risks exist in the environment where the MID proposal will take place, such as natural hazards and existing transmission line infrastructure. The severity of existing known hazards and risks may potentially be increased by the MID Proposal and are analysed in **Table 6.21**.

Table 6.21 Existing Hazards and Risks

Item	Hazard / Risk	Details
Natural Events		
1.	Bushfire	Bushfires are a natural part of the Australian landscape and can impact anywhere in Queensland. Climate change has led to longer and more intense periods of extreme weather and more elevated fire weather days. The MPA intersects areas mapped as potential impact buffer, medium and high bushfire prone areas identified under the SPP. The overall landscape of the MPA is fragmented within existing transmission easements which are largely cleared under Powerlink's vegetation management specifications and their associated access tracks which may assist with access to and control of a bushfire event.
2.	Flooding	Located in the Queensland central coast region beneath the Tropic of Capricorn, the MPA experiences a subtropical climate with significant summer rainfall, predominantly occurring between December and March. Rainfall ranges from low to moderate in the coastal plains, increasing to moderate to high in the steeper ranges due to orographic influences. The MPA will cross Larcom Creek in Section C and the Calliope River in Section E which can be subject to significant flooding during high rainfall events.
3.	Erosion	The MPA is mapped as having mostly Dermosol soil along with other soil types such as Sodosol, Tenosol and Hydrosol. The development of erosion and salinity problems on marginal land has led to land management being identified as a high priority to reduce sediment loads being transported by rivers into the Great Barrier Reef. Short or long-term seawater inundation of low-lying areas in the CMD are also subject to erosion impacts.

Item	Hazard / Risk	Details
4.	Landslide	Landslides in Queensland are generally caused by heavy rain in areas with steep land. The topography within the MPA ranges from flat low-lying areas to steep crossings of ranges and mountains. The MPA spans areas identified in the steep land overlay of the GRC Planning Scheme.
Infrastructure		
5.	Road and Rail	The MPA crosses a state-controlled road, being the Bruce Highway (managed by DTMR) and a number of local roads (managed by BSC and GRC). The MPA also spans a state-controlled railway corridor, being the Moura Link which crosses the Calliope River.
6.	Existing Electricity Infrastructure	The MID proposal is co-located with existing transmission lines within existing or widened easements.
7.	High Pressure Gas Pipeline	The MPA spans a number of high-pressure gas pipelines, one located along the Calliope River Road reserve in Section E and four located adjacent to Mount Alma Road in Section C.

6.9.2 Potential Impacts and Mitigation Measures

The following information presented in **Table 6.22** and **Table 6.23** summarise the potential impacts with respect to health and safety during construction, operation and decommissioning along with the relevant mitigation and/or management strategy. Some identified hazards are found in a specific location in the MPA whereas others are non-location specific and can therefore cause potential impacts anywhere within the MPA.

Table 6.22 Location Specific Hazards

Item	Location	Hazard	Project Stage	Potential Impacts	Mitigation / Management
1.	Mount Stowe State Forest	Bushfire	• operation.	• Damage to neighbouring infrastructure and properties. • Transmission line structural failure and loss of service delivery. • Injuries or fatality.	• Implementation of Powerlink's vegetation management specification. • Preparation of a CEMP that includes detailed Bushfire Hazard mitigation measures • Adherence to the EMP bushfire management measures (**Section 6.6**)
2.	Steep land at Section D of the MPA	Landslide	• construction • operation • decommissioning.	• Instability of transmission towers. • Significant failure of infrastructure and service delivery. • Change of construction plan. • Injuries or fatality, e.g. struck by moving rocks.	• Towers to be located outside of mapped steep land areas. • Towers to be set back from the banks of watercourses. • Preparation of a CEMP detailing both erosion and sediment control and rehabilitation measures, including monitoring to address soil stabilisation and regeneration following construction.
3.	Larcom Creek and Calliope River	Flooding	• operation.	• Transmission line damage and loss of service delivery. • Damage to electrical assets. • Loss of access to infrastructure. • Inundation of construction laydown areas.	• Towers to be located outside of Q100 surface water flow paths. • Towers designed using deep bored piles and revetment treatment to protect the base of the tower. • Access tracks to be located to avoid watercourse crossings where possible and designed to not impede surface water flow.

Item	Location	Hazard	Project Stage	Potential Impacts	Mitigation / Management
4.	Co-location with existing transmission infrastructure	132 kV line	• construction.	• Contact with overhead services. • Inadvertent contact with overhead lines resulting in potential fatality.	• Preparation of a Contractors Workplace Health and Safety (WHS) Management Plan detailing design measures and safe work methods.
5.	Co-location with existing transmission infrastructure	Electric and magnetic fields	• operation.	• Perceived health impacts. • Induction on adjacent metal objects. • Electrical shock or electrocution.	• Designing transmission lines to reduce EMF in accordance with best practice guidelines. • Siting transmission infrastructure as far away from houses as possible. • Should radio or television interference be identified, Powerlink can provide advice and signal amplification equipment, if required.
6.	High-pressure gas pipelines	Explosion and release of toxic gases	• construction.	• Erosion of soils. • Pollution of waterways. • Habitat destruction. • Human health impacts. • Thermal radiation and damage to property.	• Preparation of an Emergency Response Plan (ERP) in accordance with Powerlink's EMP. • Preparation of a WHS Management Plan detailing design measures and safe work methods.
7.	State-controlled Road and railway corridors	Flooding	• construction • operation	• Road damage • Disruptions to traffic and access • Damage to services and infrastructure under or over State transport corridors	• Preparation of a CEMP detailing traffic management measures during construction. • Wayleave agreements with road owner and railway operator.

Table 6.23 Non-location Specific Hazards

Item	Hazard	Project Stage	Potential Impacts	Mitigation/Management
1.	Spread of animal or plant disease	• construction • operation • decommissioning.	• Potential stock losses or quarantines impacts agricultural industry. • Loss of biodiversity. • Changes to irrigation requirements. • Possible health hazards to animals.	• Adherence to the biosecurity measures outlined in Powerlink's EMP.
2.	Construction waste (concrete, timber, plastic)	• construction • decommissioning.	• Offensive odour. • Impact on visual amenity, e.g. temporary stockpile. • Cross contamination of hazardous materials with general waste polluting soil.	• Preparation of a CEMP that includes a Waste Management measures • Adherence to the Powerlink's EMP waste management measures.
3.	Handling and transportation of hazardous materials	• construction • operation • decommissioning.	• Loss of containment. • Pollution to stormwater and soil. • Potential fire from flammable goods. • Escalate the risk of bushfire.	• Management of hazardous material risks in accordance with Powerlink's EMP.
4.	Contact with high-voltage transmission line	• operation.	• Injuries, e.g. cardiac arrest, electrical shock. • Potential fatality.	• Preparation of an ERP in accordance with Powerlink's EMP.
5.	Overhead collision with transmission infrastructure (e.g., heli-stringing, cranes, helicopter etc)	• construction • operation • decommissioning.	• Dropped loads. • Injuries, e.g. fracture, concussion. • Contact with live electricity. • Fatality. • Livestock loss. • Property damage.	• Preparation of a WHS Management Plan detailing design measures and safe work methods.

Item	Hazard	Project Stage	Potential Impacts	Mitigation/Management
6.	Noise and vibration	• construction • decommissioning.	• Human health impact. • Nuisance and disturbance to sensitive receptors.	• Preparation of a CEMP that comprises a noise and vibration management measures detailing hours of construction, vibration, and construction noise (including the default noise standards), in accordance with the EP Act. • Adherence to the EMP noise and vibration management measures (**Appendix K**).
7.	Traffic generation / vehicle movements	• construction • decommissioning.	• Injuries / mortality from vehicle strike. • Increase in traffic congestion. • Pavement impacts.	• Preparation of a TMP. • Adherence to the EMP traffic management measures (**Appendix K**).
8.	Dust	• construction.	• Human and animal health impacts. • Poor visibility. • Impact to surrounding residential properties.	• Preparation of a CEMP detailing air quality management measures during construction (such as use of water or polymer to supress potential dust). • Adherence to the Powerlink's EMP dust management measures.

6.10 Environmental Management Plan Outline

An EMP has been prepared (**Appendix K**) to outline the standard controls that are to be implemented to meet Powerlink's environmental objectives during construction, maintenance and operation of the Project. The EMP also outlines the monitoring and compliance obligations in accordance with Powerlink's Health, Safety and Environmental Audit Program, and confirms the roles and responsibilities for the implementation of the EMP, which are summarised in in **Table 6.24**.

As part of the contractor engagement, an 'Environmental Annexure' will be developed and issued. The Environmental Annexure will detail Project specific environmental management requirements. It is intended that the Project contractor will then prepare and submit a CEMP prior to the commencement of construction that is in accordance with the Powerlink's EMP, the Environmental Annexure and the relevant MID approval requirements.

The Contractor's CEMP will be developed to meet the requirements of the Environmental Management Plan, Powerlink Specifications, Environmental Annexure and approval conditions and supporting management plans.

Table 6.24 Roles and Responsibilities

Item	Personnel	Action
1.	Powerlink Environmental Project Manager	Approves the EMP and any revisions. Responsible for ensuring Powerlink project personnel receive environmental inductions and awareness training and inductions outlined in the EMP. Ensures the EMP is received by the nominated Contractor/s and ensures that implementation of the controls in the EMP are adhered to through a verification and compliance plan. Notifies Supervisor/ Manager of any environmental events relating to the Project, and that they are investigated at the appropriate level and corrective/ preventative actions implemented to prevent reoccurrence.
2.	Powerlink Environmental Representatives	Environmental specialist responsible for interpreting and promoting awareness and understanding the requirements of this EMP. Provide the Project team with Project specific environmental advice and the required application of mitigation measures in this EMP. Facilitate the development of the Project specific HSE verification and compliance plan to monitor the Contractor/s. Assist in verification of Contractor compliance against the EMP. Ensure any permits/approvals/licenses are obtained in accordance with the EMP. Undertake investigations of environmental events when required. Ensure that all environmental items are closed out prior to completion of the Project.

Item	Personnel	Action
3.	Powerlink Employees / Contractors	Undertake works in accordance with the documented EMP and Environmental Annexure requirements. Attend and actively participate in inductions and Project training requirements. Report environmental events to Supervisor as soon as possible. Participate in investigations if requested, including the implementation of corrective/ preventative actions as required.

7.0 Consultation

Powerlink has conducted a comprehensive stakeholder consultation programme to date and further consultation is proposed as part of the MID assessment process and in post-approvals. The following sections summarise the engagement framework, the relevant stakeholders, engagement activities, feedback received and their associated outcomes.

7.1 Framework

Powerlink is committed to effective and genuine engagement practices with landholders, Traditional Owner groups, the wider community and other stakeholders.

Powerlink's activities are guided by a Stakeholder Engagement Framework[6] which is underpinned by the key principles of integrity, openness, responsiveness, accountability and inclusiveness. Our Community Engagement Strategy[7] also underpins our engagement planning approach and commitments to ensure we remain focused on undertaking respectful and transparent engagement across all stages of our infrastructure lifecycle. These framework documents are available online. Powerlink's engagement program for the Project aims to:

- Provide timely, relevant and meaningful information about the project, reflective of the scale and complexity of the project activities.
- Ensure landholders, Traditional Owner groups, the wider community and other stakeholders are aware of key project activities and how they can provide input within the scope of consultation processes.
- Utilise a range of engagement methods to facilitate two-way information sharing with identified stakeholder groups.

7.1.1 Project Stakeholders

The identified key stakeholder groups for the project are provided in **Table 7.1**. The stakeholder groups have been informed by the location of proposed project activities, their proximity to the Study Area, and previous engagement undertaken in the region by Powerlink.

Table 7.1 Project Stakeholders

Stakeholder Group	Stakeholders
Elected Representatives	State: • Mr Bryson Head, Member for Callide • Glenn Butcher, Member for Gladstone
	Federal: Mr Colin Boyce, Member for Flynn.

[6] Stakeholder Engagement Framework, Powerlink, www.powerlink.com.au/engagement-framework

[7] Community Engagement Strategy, Powerlink, www.powerlink.com.au/resources/community-engagement-strategy

Stakeholder Group	Stakeholders
Local Council	BSC: • Nev Ferrier, Mayor • Tom Upton, CEO
	GRC: • Matt Burnett, Mayor • Leisa Dowling, CEO
Directly Affected Landholders	Residential / agricultural: • Section A, C and E, where easement widening is required (8 properties). • Sections A, B, D and E, where existing easements will be used (17 properties)
	Companies and government bodies with property or infrastructure along the corridor (approx. 17), including utilities, industry, Queensland Government, and local government
Adjacent Landholders	Within 1 km of the final corridor (13 properties)
	Near neighbours (further than 1 km of the final corridor) Yarwun area (39 properties) and Bracewell area (32 properties)
Traditional Owner Groups	Gaangulu Nation People (GNP)
	Bailai, Gurang, Gooreng Gooreng, Taribelang Bunda People (BGGGTBP)
Aviation Safety	Civil Aviation Safety Authority (CASA)
	Gladstone Airport Corporation (GAC)
High Pressure Gas Pipeline Operators	Santos – GLNG Gas Transmission Pipeline
	Jemena – Queensland Gas Pipeline (QGP)
	APA Group – Wallumbilla Gladstone Pipeline (WGP)
	Australia Pacific LNG Pipeline (APLNG) – Origin, ConocoPhillips and Sinopec (owner), Origin (operator)
Wider Community / General Public	Community groups: • Local business, industry groups and government (7) • Volunteering and school-based communities (5) • Local emergency services (4) • Environmental (4)
	People living in Gladstone Region and Banana Shire LGAs
	People that participated in previous project consultation
	Subscribers to project updates

7.2 Engagement Activities

A Project Engagement Plan (PEP) was prepared in early 2023, to guide community and stakeholder engagement throughout the planning phase of the project. The PEP incorporates multiple phases of engagement, outlining open and transparent processes to capture feedback at key stages. A new PEP will be prepared to support the construction phase, pending the outcome of planning and environmental approvals. See **Table 7.2** below for the timing, purpose and status of each planned engagement activity.

Table 7.2 Engagement Activities

#	Engagement Phase	Timing	Purpose of Engagement	Status
1	Early Engagement and project introduction with key stakeholders and landholders	March–August 2023	Targeted consultation to introduce the project and gain early understanding of key issues and interests. Project web page established on Powerlink website.	Complete
2	Release of Draft Corridor Selection Report (CSR)	June 2024	Consultation with landholders, Traditional Owner groups, the community and other stakeholders, to support the release of the Draft CSR.	Complete
3	Release of the Final CSR	August 2024	Communication with project stakeholders, to generate awareness of the Final CSR, which confirms the final corridor to be progressed to planning and environmental approvals. The Final CSR includes a summary of feedback received during Draft CSR consultation, and Powerlink's response.	Complete
4	Consultation with landholders and other stakeholders to inform the planning and approvals process	Mid 2023 – Current	Targeted consultation with landholders along the final corridor and other key stakeholders (including Traditional Owners). Engage with directly impacted landholders about: • Land Access Protocol and Project Participation and Access Allowance (PPAA) and facilitating access for field studies. • Understanding their concerns and priorities. • Understanding land use in-detail, including any property-specific or commercial land activities that may be impacted or will co-exist with the project. • Infrastructure placement, including transmission towers and supporting infrastructure such as access tracks.	Ongoing
5	EPBC Referral update to stakeholders	December 2024 – January 2025	Letter and email updates to key project stakeholders, in December, providing a progress update on the project approvals process. Follow-up email in January, to advise *Environmental Protection and Biodiversity Conservation Act 1999* (EPBC Act) Referral was open for consultation.	Complete

#	Engagement Phase	Timing	Purpose of Engagement	Status
6	Local industry and business engagement	January–April 2025	Early engagement to inform planning, to maximise local and indigenous participation in project delivery. Key stakeholders: Councils, key industry stakeholders, Traditional Owner groups.	Complete
7	Project update	April 2025	Project newsletter, including update on the approvals process. Newsletter distributed widely to key stakeholders (as per table above) and the community through letterbox drop, web page update, and at two local industry events in Gladstone on 9 and 30 April 2025.	Complete
WE ARE HERE				
8	Formal Consultation on Ministerial Infrastructure Designation (MID) application	2025	Formal 20-business-day public consultation period on the MID application. Powerlink will undertake communication and engagement activities to generate awareness of the MID Proposal and consultation period.	Upcoming
9	Formal consultation on Public Environment Report for EPBC Act approval.	Q4 2025	Formal public consultation on draft Public Environment Report (PER) documentation and management plans.	Upcoming
10	Post planning and environmental approval	Targeted mid-2026, pending approvals	To communicate the completion of the approvals process and advise next steps and timeframes leading into the construction phase.	Pending approvals

7.2.1 Traditional Owner Engagement

Powerlink has dedicated team members for engaging with Traditional Owner (TO) groups about legislative cultural heritage requirements, as well as engagement on project milestones and other partnering opportunities. **Table 7.3** below summarises project engagement to-date with the TO groups:

- GNP
- BGGGTBP.

Table 7.3 Traditional Owner Engagement

Phase	Timing	Activity
Early Engagement	From October 2022	Commenced early engagement with TO Groups to seek their views on the corridor and their preferred means of ongoing engagement throughout the project.
	March 2023	Continued engagement with TO Groups along the project corridor, coinciding with public introduction of the project.
Release of Final CSR	August 2024	Update provided to both TO groups that a final corridor has been confirmed.
Detailed consultation to inform planning and approvals process	Mid 2023 – Current	Ongoing, regular engagement with GNP and BGGGTBP through Powerlink's Indigenous Partnerships team, to: • scope, schedule and undertake cultural heritage surveying works • discuss project design as well as cultural heritage assessment and management strategies over the Project Area. • Discuss Relationship Agreement and Traditional Owner Benefits.

7.3 Feedback and Outcomes

On Monday 17 June 2024, Powerlink published a Draft CSR for the project. The community was invited to provide comments over a four-week consultation period, between Monday 17 June and 5 pm Friday 12 July 2024.

The consultation period and feedback channels were promoted through a range of communication activities, including advertising, letters, newsletter mail-out, emails, briefings and the project web page. Multiple options were made available for feedback, including:

- In-person, through community information drop-in sessions and stakeholder meetings.
- Phone, mostly through conversations between Powerlink's Landholder Relations Advisor (LRA) and landholders.
- Online, including feedback form and email.

Most feedback was provided verbally, either in-person or by phone. The stakeholder group that provided the most feedback was directly impacted landholders, via the Powerlink Landholder Relations Advisor (LRA). Analysis of the detailed feedback across all channels identified the following key issues and themes, outlined in **Table 7.4**.

After the consultation period was complete, Powerlink:

- reviewed and considered feedback
- responded individually to stakeholders
- incorporated the key issues/ themes and Powerlink's response, into the Final CSR.

The Final CSR and a project newsletter were published in August 2024. The Draft and Final CSRs, and all project newsletters, are available on the project web page, www.powerlink.com.au/calvale-calliope.

In response to feedback about Powerlink's current biosecurity practices, Powerlink also developed new, plain English responses to Frequently Asked Questions (FAQs) about our systems and processes for managing biosecurity risk, including avoiding the spread of weeds. This document is also available on the project web page and is used by the LRA to support conversations with landholders.

Ongoing engagement with landholders, Traditional Owner groups, the community and other stakeholders remains a key focus during all phases of Powerlink projects. This ensures Powerlink has the opportunity to strengthen and leverage relationships with key groups throughout the project lifecycle.

Table 7.4 Key Issues Raised During Preliminary Stakeholder Engagement

Topic	Key Issues / Themes	Powerlink Response
Compensation	• Payment amount, criteria, and eligibility to receive payments. • Potential impacts to lifestyle, amenity, and property values and future saleability.	• All landholders who have easements acquired or widened over their property for a new transmission line are entitled to compensation under the AL Act. Compensation under the AL Act is not applicable where an existing spare transmission easement is utilised. • Powerlink will work with landholders across the project to determine the application of Powerlink's Landholder Payment Framework, noting that the portion of any payment under this framework linked to compensation under the AL Act is not applicable where an existing spare transmission easement is used. Powerlink will seek to understand any potential impacts on landholders' properties due to the new infrastructure and Powerlink's ongoing operations and discuss next steps with landholders.
Biosecurity matters	• Potential spread of weeds from using access tracks and activity within the easement. • Current weed management approach.	• Powerlink understands that biosecurity is a priority for landholders. Powerlink takes biosecurity seriously and has processes in place to avoid spreading weeds between properties or introducing new weeds from outside the local area. Powerlink takes preventative measures to minimise exposure to weeds, such as: ○ Conducting regular vehicle wash downs. ○ Avoiding travel through areas heavily affected by biosecurity matter. ○ Visiting clean areas first, before travelling to affected areas. ○ Staying on roads and designated access tracks in work areas. ○ Obtaining weed and seed declarations on any fill material brought onto a property. ○ Powerlink will work with landholders to identify biosecurity risks on each property and develop appropriate management measures, including those referred to in existing BMP's. PLQ values their long-term, working relationships with landholders, and intend to work with landholders regarding biosecurity from the planning phase through to construction, operation and maintenance.

Topic	Key Issues / Themes	Powerlink Response
Commercial impacts	• Potential impacts on business operations and planned developments.	○ Powerlink recognises that residents, business operators and developers may have concerns about how the new transmission line and construction works could impact their lifestyle, operations or planned development. • Powerlink is committed to working with landholders, business operators and developers to manage and mitigate impacts where possible. This means understanding land use in detail and looking together at ways to minimise impact and maximise co-existence opportunities. • While some activities cannot occur on, or near, an easement, many can continue as normal. For example, grazing or growing crops (less than 3.5 m high) can generally occur on an easement, providing electrical safety clearance requirements are maintained. For further detail about activities that can occur an easement, please refer to powerlink.com.au/easements.
Visual amenity	• Additional visual amenity impacts due to the taller height of the new transmission towers, compared to the existing towers.	• Visual amenity is a key consideration in the design phase of a Powerlink project. Powerlink is committed to working with landholders and the surrounding community to understand the most appropriate location for transmission towers. Powerlink will seek to minimise and mitigate any potential impacts to landholders and community by strategically designing the line where possible, noting other social, environmental and economic factors. • The MID Proposal is supported by an LVIA report that addresses impacts to visual amenity in accordance with the relevant provisions of the local planning scheme(s).
Broader social concerns about renewable energy (not project specific)	• Living in an area with significant renewable development activity. • Differing community sentiment regarding renewable energy. • Distribution of benefits and impacts within a community.	• The Project is required to secure the future supply of electricity to the Gladstone area, in preparation for the expected decarbonisation of major industrial loads in the Gladstone region. Powerlink will seek to keep landholders, Traditional Owner groups, key stakeholders and community informed throughout the project process including planning, construction and operational phases as relevant. **Support Services Available** • Powerlink acknowledges that there are many renewable energy projects planned for the region and landholders may be facing a time of uncertainty due to the rapidly changing landscape in the renewable energy market.

Topic	Key Issues / Themes	Powerlink Response

		• For landholders and community members needing support, Powerlink has a professional counselling service available (Rural Health Connect). This is an independent provider and is completely confidential with several sessions provided free of charge. For more information, please visit powerlink.com.au/support.
		Powerlink Community Grants
		• As part of the energy transformation, Powerlink is helping deliver benefits to communities across Queensland. Our community investment program provides small grants aligning with Powerlink's values of supporting sustainable communities and economic development.
		• Powerlink's goal is to support projects and activities aligning with resilience, safety, wellbeing, and economic outcomes, ultimately leading to positive impacts for groups and communities.
		• There have been two Powerlink Community Grant rounds during the planning phase of this project:
		  ○ In 2024, grant applications were open between 22 August and 3 October 2024.
		  ○ In 2025, applications opened on 21 July 2025 and closed on 22 August 2025.
		• Community groups, community clubs and not-for-profit organisations in Banana Shire, Gladstone Region and selected other Local Government Areas are invited to apply.
		• Powerlink Community Grants support initiatives and activities valued at up to $5,000 located in regional Queensland. Grants are available annually, for projects commencing from January the following year. For further information, please visit powerlink.com.au/communitygrants
		• In the 2024 round, 14 community groups in Central Queensland shared almost $50,000 in funding.

7.4 MID Stakeholder Engagement Plan

This section outlines the proposed plan for stakeholder engagement for the MID Proposal in accordance with the requirements outlined in Schedule 4 (7) of the MGR, which states that a public consultation process must include the items detailed in **Table 7.5**.

Table 7.5 Stakeholder Engagement Plan

Item	MGR Requirement	Response
1	A public notice be published that states details of the MID Proposal, the description of the land to which the MID Proposal applies, the type of infrastructure it relates to, how the MID Proposal can be viewed or accessed, how to make a submission about the proposal and the day by when submissions may be made to the Minister.	A public notice will be published in a local publication and Powerlink's website that complies with the public notice requirements outlined in Part 1 of the Development Assessment Rules (Version 2.0).
2	That a sign will be placed on the site.	A public notice will be placed at a number of locations that will be used for site access during construction.
3	That a notice will be sent to all stakeholders identified in the Consultation Strategy.	A notice will be sent to all stakeholders identified in **Table 7.1**.
4	A 20-business day period for undertaking consultation is required, following notice from DSDIP that this period has commenced.	Noted.

7.5 Additional Activities

In addition to the MGR notification requirements, Powerlink proposes to undertake the following activities to inform project stakeholders and the community about aspects of the MID Proposal, including:

- Preparation of a project newsletter, detailing:
  - What is the MID Proposal for this project, why it's been prepared, and what's in it
  - How it can be viewed (online, or in-person)
  - How to contact the Powerlink project team with any questions, through a range of communication channels
  - How to make a formal submission to the Minister.
- Community information drop-in sessions at multiple locations along the project alignment.
- Making printed copies of the MID Proposal available at local venues, such as libraries, Council offices or post offices.
- Additional communication with landholders and key stakeholders, such as proactive phone calls, emails and individual meetings upon request.

- Updates to the Powerlink project web page https://www.powerlink.com.au/projects/calvale-calliope-river-transmission-line-reinforcement-project
- Managing community enquiries through the existing project communication channels:
    - email: cqprojects@powerlink.com.au
    - phone: 1800 635 369 (Monday to Friday, 7.30 am – 5.00 pm)
    - online contact form on the project webpage.
- Powerlink will maintain the appointment of a LRA for the project, who will continue regular communication with directly impacted landholders, and is available via phone, email or in-person to manage landholder enquiries.

8.0 Conclusion

This MID proposal has been prepared for Powerlink who is seeking a MID under Part 5 of the Planning Act for the Project to upgrade existing transmission infrastructure in Central Queensland. The Project involves the construction of a new 87 km, 275 kV double circuit transmission line within an existing transmission easement and the expansion of the Calliope River Substation. This MID Proposal has been prepared to address the material required for the MID proposal in accordance with Schedule 3 of the MGR.

The purpose of this report is to describe the Project and its impacts and mitigations having regard to the relevant planning instruments and technical studies undertaken to date. A large portion of the Project alignment is located within existing and approved MIDs. Works associated with the Project within these areas are therefore categorised as *accepted development* in accordance with section 44(6)(b) of the Planning Act. In line with pre-lodgement advice from DSDIP, a new MID is sought for the entire Project alignment. However, the assessment of impacts focuses on the areas of the Project alignment that fall outside of existing and approved MIDs (the MID Proposal).

The key findings the MID proposal include:

- Risks to ecological values during construction, including potential impacts from vegetation clearing, habitat fragmentation, and disturbance to threatened species will be managed through a range of mitigation measures outlined in the EMP and to be included in the preparation of a contractor's CEMP.
- Potential impacts to residential sensitive receptors along the MPA that are predicted to have noise levels above the AQO criteria during daytime construction activities will be managed through measures outlined in EMP and to be included in the preparation of a contractor's CEMP.
- Potential traffic impacts on local roads during the construction period will be adequately managed through the implementation of a TMP, which will provide advanced signage and decrease speed limits to improve sight distances and alert drivers of turning traffic.
- Landscape and visual impacts will be experienced in the Calliope Conservation Park and Mount Alma due to the introduction of additional transmission infrastructure to a forested landscape with scenic and landscape values. However, these impacts are considered to be a minor incremental increase to the impacts already experienced within a modified environment accommodating existing transmission infrastructure.
- Impacts on surface water conditions are minor due to the limited extent of ground disturbance and the MID proposal's location predominantly within and adjoining an existing transmission line corridor. These minor impacts can be effectively mitigated through the implementation of well-established environmental management practices, appropriate revetment design and construction management methodologies outlined in the contractor's CEMP.

As such, it is considered that direct impacts resulting from the construction and operation of the Project can be adequately mitigated through avoidance and minimisation of impacts in detailed design and micro-siting, rehabilitation of disturbed areas, and implementation of species-specific management measures and plans.

Offsite impacts resulting from the construction of the Project can be adequately mitigated through the implementation of a project-specific CEMP, which will comprise the preparation of specific plans including (but not limited to) transport, waste, air quality, noise and vibration, biosecurity, and bushfire.

It is therefore considered that the MID Proposal aligns with the principles, policies and assessment benchmarks of the legislative framework. The Project will continue to undertake comprehensive community and stakeholder engagement to ensure feedback is appropriately considered and integrated into Project outcomes, resulting in the successful delivery of the Project.

Appendix A

Real Property Descriptions

Appendix B

Draft Corridor Selection Report

Appendix C

Final Corridor Selection Report

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Appendix D

Pre-lodgement Written Advice

Appendix E

Code Responses

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Appendix F

Ecological Assessment Report

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Appendix G

Noise Impact Assessment Report

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Appendix H

Traffic Impact Assessment

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Appendix I

Landscape and Visual Impact Assessment

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Appendix J

Surface Water Impact Assessment

Appendix K

Powerlink Environmental Management Plan

Appendix L

Powerlink Vegetation Management Specification

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Appendix M

Existing MID Gazette Notices