Calvale to Calliope River Transmission Line Reinforcement Project Ministerial Infrastructure Designation

Landscape and Visual Impact Assessment

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LatStudios acknowledge the Traditional Custodians of the lands and waters where we work, including the Bailai, Gurang, Gooreng Gooreng, Taribelang Bundaand and Gangulu People whom have connection to the LVIA Study Areas.

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Acronyms and key terms

AADT	Annual Average Daily Traffic
AS/NZS 4282:2023	Australian Standard / New Zealand Standard 4282:2023 Control of the Obtrusive Effects of Outdoor Lighting
BSC	Banana Shire Council
BSPS	Banana Shire Planning Scheme
BVG	Broad Vegetation Groups
Client	Umwelt (Australia) Pty Ltd
CQRP	Central Queensland Regional Plan
DCCEEW	Department of Climate Change, Energy, the Environment and Water (formerly Department of Sustainability, Environment, Water, Population and Communities)
EPBC Act	*Environment Protection and Biodiversity Conservation Act 1999*
GBRMP	Great Barrier Reef Marine Park
GBRNHP	Great Barrier Reef National Heritage Place
GBRWHA	Great Barrier Reef World Heritage Area
GBRRSAR	Great Barrier Reef Region Strategic Assessment Report
GPS	Global Positioning System
GRC	Gladstone Regional Council
GRPS	Gladstone Regional Planning Scheme
GSDA	Gladstone State Development Area
GNLVA	Guidance Note for Landscape and Visual Assessment
ha	Hectare
HFoV	Horizontal Field of View
ERIN	Queensland Government Environmental Resources Information Network
IBRA	Interim Biogeographic Regionalisation for Australia
km	Kilometre
kV	Kilovolt
LCA	Landscape Character Area (i.e., a geographically discrete area of a nominated LCT)
LCT	Landscape Character Type
LGA	Local Government Area
LVIA	Landscape and Visual Impact Assessment

LVIA Study Area(s)	Comprising land within the potential viewshed of and forming the wider landscape context of the Project area as shown on **Figure 2**, comprising land up to 10 km from the site boundary. The LVIA Study Area(s) comprise two separate areas: LVIA Study Area 1 (for MPA1) and LVIA Study Area 2 (for MPA2) as shown on **Figure 3**
m	Metres
m AHD	Metres in Australian Height Datum
MDA	**MID Disturbance Area:** represents the disturbance footprint within the MPA.
MID	Ministerial Infrastructure Designation
MSES	Matters of National Environmental Significance
MNES	Matters of National Environmental Significance
MPA	MID Proposal Area (MPA) – Refers to the areas of the Project alignment that are not captured by an existing MID and therefore are the subject of the MID proposal. The MPA includes a small portion of Section A and Section E and larger areas of Section C and Section D.
OGV	Ocean Going Vessels
PO	Performance Outcome
Project	Calvale to Calliope River Transmission Line Reinforcement Project as shown on **Figure 2**. This includes MPA1, Section A; MPA2, Section C; MPA2, Section D; and MPA 2, Section E.
Powerlink	Powerlink Pty Ltd (The Proponent)
Powerlink Study Area	The Powerlink Study Area extends from the Calvale Substation site to the Calliope River Substation site and includes the existing powerline easement with a varying buffer for each section. The Powerlink Study Area covers approximately 14,293 hectares (ha) and extends for 87 kilometres (km)..
Qld	Queensland
QPWS&P	Queensland Parks and Wildlife Service and Partnerships
Site	Land within the Site ownership boundaries of 'the Project' as shown on **Figure 2**
SPP	State Planning Policy
Study Area(s)	See LVIA Study Area(s)
ToR	Terms of Reference

Glossary of Assessment Terms

Amenity	The pleasantness of a place as conveyed by desirable attributes including visual, noise, odour etc.
Bioregion/biogeographic region	Areas with the same broad landscape patterns including geology, climate, flora and fauna. They are the primary level of biodiversity classification in Queensland.
Character	A distinct, recognisable and consistent pattern of elements in the landscape that makes one landscape different from another, and often conveys a distinctive sense of place. This term does not imply a level of value or importance.
Effect	The landscape or visual outcome of a proposed change. It may be the combined result of sensitivity together with the magnitude of the change.
Interim Biogeographic Regionalisation for Australia (IBRA)	The biogeographic regionalisation of Australia developed by the Australian Government's (then known as) Department of Sustainability, Environment, Water, Population and Communities and represents a landscape–based approach to classifying the land surface of Australia.
Impact	The categorisation of effects. Legislative context should be considered in defining impacts and their significance.
Landscape	Landscape is an all–encompassing term that refers to areas of the earth's surface at various scales. It includes those landscapes that are: urban, rural, and natural; combining bio–physical elements with the cultural overlay of human use and values.
Landscape values	Areas protected under a regional plan and/or local government planning scheme, such as biodiversity networks, natural economic resource areas (including rural production), scenic amenity areas and landscape heritage areas. Also refer 'values' below.
Magnitude of change	The extent of change that will be experienced by receptors. This change can be adverse or beneficial. Factors that could be considered in assessing magnitude are: the proportion of the view / landscape affected; extent of the area over which the change occurs; the size and scale of the change; the rate and duration of the change; and the level of contrast and compatibility.
Mitigation	Measures to avoid, reduce and manage identified potential adverse impacts.

National Park	An area dedicated under the *Nature Conservation Act 1992* (Qld). A national park is to be managed to: • provide, to the greatest possible extent, for the permanent preservation of the area's natural condition and the protection of the area's cultural resources and values; and • present the area's cultural and natural resources and their values; and • ensure that the only use of the area is nature-based and ecologically sustainable; and • provide opportunities for educational and recreational activities in a way consistent with the area's natural and cultural resources and values; and • provide opportunities for ecotourism in a way consistent with the area's natural and cultural resources and values.
Receptor	A place, route, viewer audience or interest group which may require assessment.
Scenic amenity	A measure of the relative contribution of each place in the landscape to the collective appreciation of open space as viewed from places that are important to the public.
Sensitivity	Susceptibility of a landscape or receptor to change without losing valued attributes.
State Forest	Land reserved by the Queensland State government for State Forest purposes in accordance with the Forestry Act 1959 (Qld).
Values	Any aspect of landscape or views people consider to be important. Landscape and visual values may be reflected in local, State or Federal planning regulations, other published documents or be established through community consultation and engagement, or as professionally assessed.
View	Any sight, prospect or field of vision as seen from a place, and may be wide or narrow, partial or full, pleasant or unattractive, distinctive or nondescript, and may include background, mid ground and/or foreground elements or features.
Viewpoint	The specific part of a wider view obtained from a viewpoint used for assessment purposes (typically up to around 75° but can be wider or narrower as required).
Viewshed	Areas visible from a particular location (may be modelled or field–validated).
Visual catchment	Areas visible from a combination of locations within a defined setting (may be modelled or field–validated).
Visual audience	Groups of visual receptors with common attributes and sensitivities to changes in views (e.g., residents, golfers, road travellers, walkers, shoppers, beach goers, farmers, recreational users).
Visual absorption capacity ('capacity')	Potential for a landscape or scene to absorb a particular change without a noticeable loss of valued attributes.
Visual amenity	The attractiveness of a scene or view.

Visual representation	Graphic representation of a proposal in context showing its likely appearance and scale.

Executive summary

Umwelt (Australia) Pty Ltd (Umwelt), on behalf of Powerlink Pty Ltd (Powerlink), is seeking a Ministerial Infrastructure Designation (MID) from the Minister of the Department of State Development, Infrastructure and Planning (DSDIP) for the Calvale to Calliope River (C2C) Transmission Line Reinforcement Project (the Project). LatStudios Pty Ltd (LatStudios) was commissioned by Umwelt, on behalf of Powerlink, to prepare a Landscape and Visual Impact Assessment (LVIA) to support the MID application to be submitted to the DSDIP.

The Project extends from 10 kilometres (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 is split into five sections (A to E) as detailed further below.

The MID proposal comprises a new double circuit, 275 kilovolt (kV) transmission line within a 60 metre (m) wide easement. A large portion of the Project is contained within approved MID areas. Works to be undertaken within the approved MIDs is categorised as accepted development in accordance with section 44(6)(b) of the Planning Act 2016 (Planning Act). The assessment of landscape and visual impacts focuses on the areas of the Project that fall outside of the approved MIDs (the MID proposal).

As there are no specific Project Terms of Reference (ToR) for an MID, Powerlink's generic ToR have been applied in accordance with best practice. Therefore, an assessment of the existing environment, potential impacts and management/mitigation measures in relation to landscape and visual amenity has undertaken.

The Project is a reinforcement project, whereby secondary overhead transmission line (OHTL) towers will be 'co-located' or built side by side along an existing OHTL corridor to support high voltage electrical requirements. The Project involves the construction and operation of high voltage electrical transmission towers and associated infrastructure. The Project will comprise the following major Project elements.

- beams and other pole structures at 24 m high
- steel lattice overhead transmission line (OHTL) towers, generally 46-65 m high and typically 450 m apart
- gates, grids, washdown bays
- internal access tracks
- vegetation and tower benching

Within the LVIA, the **MID Proposal Area (MPA)** refers to the areas of the Project alignment that are not captured by an existing MID and, therefore, are the subject of the MID proposal. The MPA includes a small portion of Section A and Section E and larger areas of Section C and Section D. The four sections that form the MPA assessed in this LVIA comprise:

- *MPA1, Section A 1*: is around 0.5 km in length and located near the junction of Biloela-Callide Road and Ian McCauley Way within the BSC LGA. It is located within Section A (which does not form part of this Project), and approximately 13 km from Biloela.

- *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.
- *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 easement 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 Section E (which does not form part of this Project), and adjoins the Calliope River Substation.

For the purposes of this LVIA, the focus of the assessment is on MPA1 and MPA2 and its immediate context. However, as views can extend well beyond site boundaries, a wider Study Area for the LVIA has been defined based on a 10 km offset from MPA1 and MPA2 boundary. Therefore, two separate LVIA Study Areas have been identified:

- LVIA Study Area 1: MPA1 including *MPA1, Section A* within the location of Mount Murchison, located 13 km from Biloela
- LVIA Study Area 2: MPA2 including MPA2 *Section C, Section D* and *Section E* in the location of Bracewell, East End, Aldoga, West Stowe, Yarwun and Callemondah, to the west of Gladstone

The LVIA Study Area 1 is located across both the Banana Shire LGA and the LVIA Study Area 2 is located within the Gladstone Regional LGA. The intent of the LVIA is to provide an assessment of the impacts of the proposed Project on the Site to satisfy the requirements of both the *Banana Shire Planning Scheme 2021* (BSPS) and the *Gladstone Regional Planning Scheme* (GRPS) (GRC, 2017), whereby the latter includes recommendations within Part 8 of the *GRPS Scenic Amenity Overlay Code*.

The BSPS strategic framework includes provisions for the protection of existing natural and rural landscape and scenic amenity values including the requirement that "*visually prominent landscapes retain their environmental, aesthetic and amenity values*." The BSPS does not contain a scenic amenity overlay code or associated overlay mapping, as no mapping has been produced for the Banana Shire. Rural landscapes are acknowledged as contributing to the character of the Banana Shire region. In addition, the BSPS planning scheme identifies significant natural landscapes that are considered likely to be of high scenic or aesthetic value that have been assessed to be present within the LVIA Study Area 1, including:

- Elevated and vegetated landscapes associated with the Callide range and escarpments
- Landscapes within protected areas
- Water features such as rivers, lakes, and wetlands
- Callide Dam (with significant views).

The Project is located across three zones within BSPS including the:

- Special Industry zone: supports industry activities and requires that buffer areas area maintained for safety and amenity while establishing where possible landscaping which visually obtrusive impacts of electricity infrastructure.
- Community Facilities zone: supports transport and telecommunications networks, where intended community uses are to continue and existing amenity is regarded. The infrastructure is specific to operations while recognising the character of the

surrounding area with acceptable outcomes recommended particularly on separation distances (20-50 m) are recommended depending on the transmission line kV.
- Rural zone: requires that development is sensitive and responsive to the rural character and scenic amenity and maintains vegetation cover in significant areas. Energy infrastructure within the Rural zone is supported providing significant natural and cultural areas are avoided and impacts on sensitive uses are managed, including through several relevant acceptable outcomes such as restricting vegetation clearance and avoiding impacts on waterways.

Part of LVIA Study Area 2, *MPA2, Section E*, contains areas mapped within the Great Barrier Reef World Heritage Area (GBRWHA) and Great Barrier Reef National Heritage Place (GBRNHP). Therefore, the provisions associated with the GBRWHA and GBRNHP have been considered in the LVIA to inform the understanding of the sensitivity of the landscape and views to change.

Parts of the MPA2 are also located within the Priority Port of Gladstone. The masterplan of the Priority Port of Gladstone has determined that a part of the Project falls within the Port, industry and Commerce precinct area which is supportive of large-scale infrastructure projects.

The LVIA considers the requirements of the GRPS including recommendations within Part 8 of the *GRPS Scenic Amenity Overlay Code* (GRC, 2025). The GRPS confirms that *"areas of high scenic and landscape values within the region are protected from inappropriate development or impacts upon their amenity".* Scenic amenity areas have been identified in the GRPS Scenic Amenity Overlay Map *Regional Significance 8-10 Scenic Amenity,* with scenic amenity found in:

- The coastal waters of the Great Barrier Reef
- The Gladstone harbour islands, including Curtis Island
- The Calliope River
- Areas containing rural landscape character
- Areas of open space
- Areas of conservation such as National Park, Calliope Conservation Park, Targinie State Forest and Mount Stowe State Forest
- Creeks, gullies, waterways, wetlands and bushland
- Mount Alma and Mount Larcom Ranges
- O'Connell Ridges.

The Project is located across five zones identified in the GRPS, including the:

- Open Space zone: requires that *places that contribute to the visual amenity and landscape character of the region are protected* as open space areas act as a buffer from built form and urban areas
- Environmental Management zone: that the scale of development in areas of environmental and visual amenity significance is limited, such as on the Gladstone harbour islands as well as the National Parks. This is to avoid fragmenting existing corridors with ecological values
- Conservation zone: the same considerations at the Environmental Management zone.

- Rural zone: requires the protection of existing rural character of the landscape and associated natural features such as creeks, gullies, waterways, wetlands and bushland
- Special Purpose zone: is supportive of high voltage electricity transmission infrastructure projects and any inherent visual impacts caused by a development is to be mitigated by *screening unsightly components.* Acceptable outcomes relating to each zone with regard to the height of proposed built form, setbacks, screening and buffering will need to be considered within the project layout.

Landscape Character Assessment is a tool for identifying what makes one place different from another. It identifies what makes a place distinctive, without necessarily assigning a value to it. A Landscape Character Assessment has been undertaken to establish the existing character of the landscape and provide a framework for measuring the impact of the Project on identified landscape values within the LVIA Study Areas. The Landscape Character Assessment also includes consideration of whether identified Landscape Character Types (LCTs) and associated Landscape Character Areas (LCAs) contain scenic areas or landscapes of significant value.

The Landscape Character Assessment has defined eight LCTs across LVIA Study Areas 1 and 2. The Project directly traverses four out of the eight identified LCT's. The sensitivity of these LCTs ranges from low to high, associated with the combination of landscape elements and characteristics – including areas considered to contain scenic amenity areas as defined in the GRPS as outlined above.

MPA1 contains landscapes within:

- *LCT B: Forested Ranges and Mountains* (LCA B21),
- *LCT F: Industrial Mined and Transitional Lands*

MPA2 contains landscape within:

- *LCT A: Rivers, Estuaries and Islands* (LCA A1),
- *LCT B: Forested Ranges and Mountains* (LCA B1, B2)
- *LCT C: Forested Lowlands* (LCA C1, C2)
- *LCT D: Undulating and Grazed Uplands* (LCA D1, D2)
- *LCT E: Lowland Rural Plains* (LCA E1, E2)

LCT A: Rivers, Estuaries and Islands within LVIA Study Area 2 includes a typically well vegetated river system within a gently undulating landscapes, along with estuaries that are relatively flat with marshlands, mangroves and woodlands. This LCT extends across the predominately eastern area of LVIA Study Area 2, and includes waterways and landscapes within the GBRWHA, the Calliope River and associated estuaries. It also contains high value scenic amenity areas as identified within the GRPS Scenic Amenity Overlay Map. There is a perceived naturalness throughout much of LCT A, however, in the immediate vicinity of *MPA2, Section E*, there is a significant presence of both industrial and electrical infrastructure within the LCT associated with the operations of the Port of Gladstone. In particular, existing OHTL infrastructure has resulted in cleared corridors traversing otherwise adjoining areas of vegetation.

LCT B: Forested Ranges and Mountains is found within both LVIA Study Area 1 and 2 consisting of the elevated, undulating and steep ridges and valleys which are typically forested and include both private property as well as areas within state forests,

conservation parks and timber reserves. Vegetation is dominated by eucalypt woodlands, open forests and scrub, and major watercourses traverse this LCT. This LCT include existing OHTL infrastructure that traverses ridgelines.

LCT C: Forested Lowlands within both LVIA Study Area 1 and 2 are generally undulating, featuring several creeks or located over floodplains. Vegetation is characterised by forested woodlands, and is typically denser than other LCTs with a natural aesthetic. This LCT includes some areas of State Forest such as Mount Stowe State Forest, Beecher State Forest, and are typically situated at the foothills of localised ranges. This LCT includes existing OHTL infrastructure.

LCT D: Undulating and Grazed Uplands found across both LVIA Study Area 1 and 2 is a generally undulating landscape with locally elevated areas. Land use is primarily grazing land both cleared and featuring open woodland, and forested tracts located on the more elevated topography and riparian vegetation along creek lines. Vegetation is typically associated with locally elevated areas and riparian corridors along major creek channels. Small areas of vegetation that do occur within this LCT are typically dominated by eucalypt woodlands to open forests, with smaller localised areas of rainforest and scrub. This LCT is traversed by several non-perennial creeks, and this LCT is exposed in part due to the undulating topography as well as the vegetation clearing that has occurred in the landscape. This LCT includes existing OHTL infrastructure.

LCT E: Lowland Rural Plains within both LVIA Study Area 1 and 2 is generally flat to gently sloping, with higher elevations occurring in areas where plains extend into creek valleys. Land use throughout this LCT is primarily dominated by grazing on native pastures, with irrigated areas are generally situated immediately adjacent to or in close proximity to the Calliope River or its tributaries. There has been significant vegetation clearing within this LCT, with limited regrowth vegetation and other stands of vegetation along road corridors. Broad open views are generally possible across this LCT and are generally unimpeded, due to its flat to gently sloping topography and extensive historic clearing that has occurred in the landscape. However, there are localised areas where vegetation and/or subtle variations in topography obstructs views, such as along creek and road corridors. This LCT includes existing OHTL infrastructure.

The assessment of impacts upon landscape character for MPA1 within LVIA Study Area 1 has concluded that there would be no significant impacts with the assessment as follows:

- Direct **Moderate, Not Significant** impacts on LCT B (LCA B21) due to noticeable change the Project is anticipated to have on localised parts of this LCT.
- Direct **Minor to Moderate**, **Not Significant** impacts on LCT D (D6) and LCT E (E15) and LCT F (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.
- **No direct / significant impacts** have been identified within LCT G and H.

The assessment of impacts upon landscape character for MPA2 within LVIA Study Area 2 has concluded that there would be a highly localised significant impact on one LCT:

- Direct highly localised **Moderate to Major, Significant** impacts on LCT B (LCA B1, B2) in association with Calliope Conservation Park (LCA B1) and Mount Alma (B2) due to the introduction additional OHTL infrastructure to a forested landscape with scenic and landscape values.

All other impacts on landscape values on MPA2 within LVIA Study Area 2 are considered to be not significant including:

- Direct **Moderate**, **Not Significant** impacts on LCT A (LCA A1) due to a noticeable change to the LCA due to existing electrical infrastructure located in proximity to the naturalness of GBRWHA.
- Direct **Minor to Moderate, Not Significant** impacts on 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 OHTL infrastructure.
- Direct Minor to Negligible, Not Significant impacts on LCT F due to the extent to which this infrastructure would blend with the existing character.
- **No direct / significant impacts** have been identified within LCT F, G or H.

The visual assessment has 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 GBRWHA.

The potential for views within 10 km of the Project was considered and ten viewpoints (VPs) were selected to represent the views of identified receptors including:

- *LVIA Study Area 1*: Tourists accessing two local lookouts and a rest area and playground
- *LVIA Study Area 1*: Local residents recreationally accessing a local lookout, rest area and playground
- *LVIA Study Area 1*: Workers in the nearby resource extraction industry accessing a local rest area
- *LVIA Study Area 2*: Urban residents living in Clinton who may experience views towards MPA2, as well as residents accessing local recreational areas including a lookout and recreational use of the Calliope River Boat Ramp and Calliope River
- *LVIA Study Area 2*: Rural residents accessing local roads including Kalua Road and Boyles Road, as well as the Bruce Highway as a state-controlled road
- *LVIA Study Area 2*: Rural residents' private properties and views from Boyles Road
- *LVIA Study Area 2*: Tourists visiting a local lookout, and travelling along roads within the LVIA Study Area 2, including Hanson Road and Bruce Highway which are included in advertised self-drive trails
- *LVIA Study Area 2*: Workers in the resource extraction industry travelling on roads, including Hanson Road and the Bruce Highway

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).

It is acknowledged that screening views of OHTL towers up to 65 m high is not possible, even if this were to be a desirable outcome. However, opportunities to mitigate and enhance the integration of the OHTL infrastructure into the landscape have been described. The Project will introduce additional OHTL towers, powerlines and associated elements into the landscape that will locally intensify the presence of electrical infrastructure within the landscape as well as requiring vegetation clearance within the associated disturbance zone. However, as the Project will be collocated with existing OHTL infrastructure, this is considered to minimise incursion of powerlines into new areas and will result in an incremental consolidation of impacts within areas already affected by transmission lines, rather than introduce new elements with associated landscape and visual impacts, into the wider rural and natural landscape of the Study Area(s).

In conclusion, 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 additional OHTL infrastructure to a forested landscape with scenic and landscape values. Other impacts on landscape character are not considered significant.

Localised impacts on are anticipated to occur associated within *MPA2, Section E* which falls within a small part of the GBRWHA. However, the impacts on landscape character and 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.

In conclusion, the Project has been designed to minimise and mitigate impacts on landscape character, scenic amenity and landscape values to the greatest extent possible. This includes through careful siting of OHTL infrastructure which has been located adjacent to existing electrical infrastructure to avoid impacts on new areas of the rural and natural landscape and minimise visual incursion into new areas.

1. Introduction

Umwelt (Australia) Pty Ltd (Umwelt), on behalf of Powerlink Pty Ltd (Powerlink), is seeking a Ministerial Infrastructure Designation (MID) from the Minister of the Department of State Development, Infrastructure and Planning (DSDIP) for the Calvale to Calliope River (C2C) Transmission Line Reinforcement Project (the Project). LatStudios Pty Ltd (LatStudios) was commissioned by Umwelt (Australia) Pty Ltd (Umwelt), on behalf of Powerlink, to prepare a Landscape and Visual Impact Assessment (LVIA) to support the MID application to be submitted to the DSDIP.

The Project extends from 10 kilometres (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 is split into five sections as detailed below . For a full description of the Project, including construction activities and methodologies, please refer to the MID Proposal Report (Umwelt, 2025).

The MID proposal comprises a new double circuit, 275 kilovolt (kV) transmission line within a 60 metre (m) wide easement as described further in **Section 1.4** and **Section 4**.

A large portion of the Project is contained within approved MIDs. Works to be undertaken within the approved MIDs is categorised as accepted development in accordance with section 44(6)(b) of the Planning Act 2016 (Planning Act). The assessment of landscape and visual impacts therefore focuses on the areas of the Project that fall outside of the approved MIDs (the MID proposal). The MID proposal captures a small portion of Section A and Section E and larger areas of Section C and Section D as illustrated in **Figure 1** in **Appendix 1**. .

There are no specific Terms of Reference (ToR) for the LVIA. Therefore, impacts on landscape and visual amenity have been assessed in accordance with the general Powerlink Terms of Reference (ToR) as follows:

"Describe and illustrate the visual impact of the construction and operation of the project. Include and any broad scale clearing for substations or communication sites. Include potential visual impacts on the users of State-Controlled roads. Sketches, diagrams, computer imaging and photos may be used where possible to portray the near views and far views of the completed development and their surroundings from visually sensitive locations."

Further detail of the ToR regarding the specific outcomes required for the Project with relevance to impacts on landscape and visual values is addressed in **Section 1.1: General Powerlink Terms** of Reference.

As the evaluation of visual impacts are required by the ToR on a local level, the provisions of the Gladstone Regional Planning Scheme (GRPS), including *Planning Scheme Overlay Map – Scenic Amenities*, and the Banana Shire Planning Scheme (BSPS) have been considered to further identify visually sensitive areas including "*major views, view sheds, outlooks, and features contributing to the amenity of the area"* as defined by the ToR.

A small section of the Project is located within the Port of Gladstone and also within the bounds of the Great Barrier Reef World Heritage Area (GBRWHA). As part of the evaluation of regional visual impacts, consideration has been made of the potential for the

Project to impact factors considered likely to contribute to the landscape and visual amenity value of GBRWHA.

The intent of this LVIA is to determine the potential project impacts upon existing identified landscape and visual amenity values. In summary, the objectives of the study are to:

- Undertake a baseline assessment describing existing environmental values of the study area with respect to landscape character and visual amenity
- Determine the existing landscape character types (LCTs) and degrees of visual sensitivity and magnitude of change that the LCTs will experience with the implementation of the Project
- Describe the existing landscape (landscape receptors) and identify those people who experience and value views of the landscape (visual receptors)
- Identify and evaluate key project risks on landscape and/or visual values during day and/or night
- Describe any project modifications or management techniques that can mitigate identified landscape and visual impacts.

1.1. General Powerlink Terms of Reference for LVIA

The generic draft ToR for an EAR have been prepared specifically to be applicable to Powerlink projects, derived from the Queensland Coordinator-*General's Generic draft terms of reference for an environmental impact statement for a non-resource project*. These ToR are not a requirement for MIDs. However, they have been considered and addressed in line with best practice for an LVIA assessing the impact of powerlines. The key ToR relevant to landscape and visual impact assessment is described in **Table 1** below, which also describes where the LVIA report responds to each requirement.

Table 1: Powerlink Terms of Reference in relation to LVIA

Powerlink MID Terms of Reference	Place where Term is addressed in the LVIA
4.0 Assessment of Matters	
4.11 Visual Amenity	
Describe and illustrate the visual impact of the construction and operation of the project. Include major views, view sheds, outlooks, and features contributing to the amenity of the area, including assessment from private residences. Evaluate and regional visual impacts of the transmission development and any broad scale clearing for substations or communications sites. Include potential visual impacts on the users of State-controlled roads.	Important viewpoint locations and areas of scenic amenity are identified within relevant legislation and policy as described in **Section 5: Legislative context and standards.** The impact of the Project on the amenity of the area is assessed within **Section 7: Landscape assessment**. The visual impacts from representative public areas, such as state controlled roads and lookouts; and private areas such as from selected private residences impacted by the Project is assessed in **Section 8: Visual assessment.**

1.2. Definition of key terms and LVIA Study Area

The Project area boundaries referred to throughout this report as shown on **Figure 2** (**Appendix 1**) are defined as follows:

- **Disturbance Footprint** – Represents the extent of direct impacts (i.e., vegetation clearing) for all Project elements within the Study Area.

- **MID Proposal Area (MPA)** – Refers to the areas of the Project alignment that are not captured by an existing MID and therefore are the subject of the MID proposal. The MPA includes a small portion of Section A and Section E and larger areas of Section C and Section D.

- **MID Disturbance Area (MDA)** – Represents the disturbance footprint within the MPA.

As shown on **Figure 2** (**Appendix 1**), there are three separate study areas defined and used in this LVIA:

- **The Powerlink Study Area** - The Powerlink Study Area extends from the Calvale Substation site to the Calliope River Substation site and includes the existing powerline easement with a varying buffer for each section. The Powerlink Study Area covers approximately 14,293 hectares (ha) and extends for 87 kilometres (km).

The LVIA Study Areas aim to define the specific area(s) within which the parts of the Project not captured by an existing MID may potentially influence landscape amenity and/or views obtained by visual receptors. 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 the 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.

Refer to **Figure 2** (**Appendix 1**) for further detail.

1.3. Project location

The combined Project is 30.5 km in length and comprises from west to east four parts (as shown on **Figure 2** in **Appendix 1)**:

- **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 Project), 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 easement 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 Project), and adjoins the Calliope River Substation.

The Project will be located on land across 40 lots as detailed in Table 2 below and as shown on **Figure 2 in Appendix 1.**

Table 2: Project Lots

Project section	Associated Lots	
MPA1, Section A	• Lot 1 CP890133 • Lot 2 CP890133 • Lot 4 SP103557 • Lot 6 SP103557 • Lot C SP157682	• Lot 16 RP848909 • Lot 6 RP848846 • Lot F SP157682 • Lot 6 RP889910
MPA2, Section C	• Lot 55 CTN515 • Lot 27 MPH23015 • Lot 20 MPH23015 • Lot 36 CTN260 • Lot 36 CTN260 • Lot 534 CL40257 • Lot 479 CL40215	• Lot 475 SP238753 • Lot 18 CL40367 • Lot 19 SP238752 • Lot 7 SP239664 • Lot 5 SP239664 • Lot 4 SP200839
MPA2, Section D	• Lot 4 SP200839 • Lot 6 SP200837 • Lot 45 CTN198 • Lot 46 CTN198 • Lot 89 CTN248 • Lot 90 CTN248 • Lot 365 FTY1160	• Lot 3 RP606484 • Lot 365 FTY1160 • Lot 3 RP863615 • Lot 40 CTN157 • Lot 541 AP22498 • Lot 365 FTY1160 • Lot 3 SP338512
MPA2, Section E	• Lot 3 SP338512 • Lot 110 SP238409	• Lot 4 SP218648 • Lot 113 CTN7

For clarity within this document, the four separate Project areas are grouped into two Project sections and assessed within two separate 10 km Site LVIA Study Areas described as:

- MPA1: *MPA1, Section A* (assessed within LVIA Study Area 1)
- MPA2: *MPA2*, *Section C; MPA 2, Section D; and MPA2, Section E* (assessed within LVIA Study Area 2)

1.4. Project description

The Project, as assessed in this LVIA, comprises a 30.5 km 275 kV OHTL, connecting the existing Powerlink Calvale Substation in Calvale to the Calliope River Substation in Gladstone. The specifications for the Project are provided in **Table 3**. Relevant ancillary infrastructure included within the Project as well as the OHTL corridor are:

- beams and other pole structures at 24 m high
- gates, grids, washdown bays
- internal access tracks
- vegetation and tower benching

The proposed new OHTL corridor is located adjoining existing transmission infrastructure (including substations). The new OHTL alignment is typically located approximately 40 m from the existing OHTL corridor.

MPA1 and MPA2 are located within the localities of Gladstone, West Stowe, East End, Bracewell and Dumgree and comprise a variety of freehold and leasehold land parcels. MPA1 and MPA2 traverses several local roads and State-controlled Roads, the most significant being the Bruce Highway (A1), Coal Road and Calliope River Road. The terrain within both MPA1 and MPA2 are undulating, with elevations ranging from 20 m AHD to 590 m AHD.

The location and heights of transmission towers are currently in development and subject to further refinement. Current specifications are outlined in **Table 3** below:

Table 3: Project Specifications

Feature	Statistic
Number of towers within OHTL corridor	Approximately 65
Nominal tower heights*	Between 46 and 65 m
Proposed length of Transmission Line	MPA1: 0.5 km MPA2: 30 km
Colour/finish	Grey steel

2. Scope of assessment

2.1. Approach to the LVIA

Landscape impacts include physical changes to the fabric of the landscape, as well as perceptual changes in the character of the landscape. They also include impacts on areas designated for their scenic or landscape qualities at a national, regional or local level, for example national parks or important recreation areas. Visual impacts relate to changes in views and the appearance of ancillary infrastructure in those views. The approach to this LVIA is set out in Table 4.

Table 4: LVIA Approach

Baseline Assessment	
Stage 1	**Review of landscape and visual legislative context:** A review of any landscape or scenic amenity designations applying to MPA1 and MPA2 and/or wider LVIA Study Area 1 and 2 at national, state, regional or local level; including local planning designations.
Stage 2	**Desktop landscape assessment:** A review of available information describing the landscape characteristics of LVIA Study Area 1 and 2.
Stage 3	**Desktop visual assessment:** Identification of potential key visual receptor audiences (viewers) such as private residences, roads (including any nominated scenic routes), public parks and recreation areas (including any nominated scenic lookouts and recreation trails) and other properties including farmland, institutions. The assessment is also informed by Google Earth, Queensland Globe and other desk–based mapping tools.
Stage 4	**Field survey:** One field surveys (during 23 and 24 January 2025) was undertaken to confirm baseline findings and obtain photographs of representative viewpoints in the field, including images to use as a base for the preparation of photomontages.
Preparation of the LVIA	
Stage 5	**Definition, description and illustration of the landscape and visual baseline:** Including Landscape Character Assessment (LCA) and landscape and visual sensitivity.
Stage 6	**Mapping and supporting material:** Preparation of mapping to support the LVIA and compilation of site photography to illustrate the existing view from selected viewpoints.
Stage 7	**Assessment of magnitude of change:** Identification of the magnitude of change of the landscape resource during the construction, operation, and decommissioning phase.
Stage 8	**Significance assessment:** Evaluation of the significance of the proposed change on the landscape and visual resource.
Stage 9	**Mitigation potential:** This comprises a consideration of the opportunity to minimise and mitigate project impacts.
Stage 10	**Residual assessment:** Consideration of impacts of the project assuming all recommended mitigation is implemented.

3. Methodology

3.1. Relevant guidelines and standards

The LVIA methodology has been developed with reference to accepted guidelines from Australia and elsewhere, including the relevant legislation and guidelines related to the assessment of impacts on MNES concerning the GBRWHA, as described in more detail in **Section 5: Legislative context and standards**. These include:

- Commonwealth Government, Department of Environment (2013) *Matters of National Environmental Significance Significant Impact Guidelines* (Commonwealth of Australia, 2013).
- AILA Queensland *Guidance Note for Landscape and Visual Assessment* (GNLVA) (Australian Institute of Landscape Architects, 2018)
- Environmental Impact Assessment Practice Note – Guidelines for Landscape Character and Visual Impact Assessment EIA-N04 Version 2.3 (practice note EIA-N04) (Transport for New South Wales, 2023)
- *The Guidelines for Landscape and Visual Assessment*, Second Edition (GLVIA2) (The Landscape Institute and the Institute of Environmental Management and Assessment, UK, Spon Press, 2002)
- *The Guidelines for Landscape and Visual Assessment*, Third Edition (GLVIA3) (The Landscape Institute and the Institute of Environmental Management and Assessment, UK, Routledge (Landscape Institute, 2013)
- *Topic Paper 6: Techniques and Criteria for Judging Capacity and Sensitivity* (Scottish Natural Heritage and The Countryside Agency, UK, 2006).

3.2. Desktop analysis

A desktop assessment has been undertaken in order to understand the landscape context of MPA1 and MPA2 (falling within LVIA Study Areas 1 and 2) and to review of relevant background documents to confirm the methodology for the LVIA and key 'risks and issues' from a visual perspective. Key information sources that have been identified and reviewed as a component of the desktop analysis. These include:

- Relevant planning schemes, policies and guidelines from the Commonwealth Government, State Government and local councils (see **Section 5: Legislative context and standards**)
- Documents describing the landscape and visual values of the landscape around MPA1 and 2 (refer in **Section 5.5: Other relevant baseline studies on landscape and scenic values.**
- World Heritage Areas (DCCEEW, 2024)
- Publicly available information on recreation spaces and public visitor areas in the vicinity of MPA1 and MPA2
- Digital satellite aerial imagery (obtained December 2024 and January 2025 from Google)
- Information available on Queensland Globe (State of Queensland, 2025) and National Map (Australian Government, 2025).

3.3. Field survey

A field visit to assess MPA1 and MPA2 was carried out on 23 and 24 January 2025 by two qualified landscape architects / landscape planners both with experience in LVIA and landscape photography. The weather during the field assessment was clear and sunny, enabling sufficiently clear views toward MPA1 and MPA2 for the purposes of undertaking LVIA.

The field assessment was used to ground truth the findings of the desktop assessment and to undertake an on–site assessment of landscape character and visual amenity, including identifying sensitive viewpoints requiring further assessment. Photographs were taken to:

- Portray landscape character
- Illustrate the influence of existing OHTL infrastructure within the LVIA Study Areas(s)
- Inform the viewpoint assessment from representative viewpoints.

The field visit focused on those aspects of the landscape with potential to be of the greatest sensitivity to the Project and to understand Project infrastructure that is most likely to affect landscape character and visual amenity in the context of the existing electricity infrastructure present. Viewpoints were recorded on site using a camera with built in Global Positioning System (GPS) unit.

3.4. Identification of potential Project impacts

A component of the LVIA includes a review of the Project infrastructure components to inform a description of infrastructure that is likely to be associated with the Project, such as the presence of the OHTL towers. These potential impacts are discussed in **Section 4: Potential Project impacts.**

3.5. Landscape impact assessment methodology

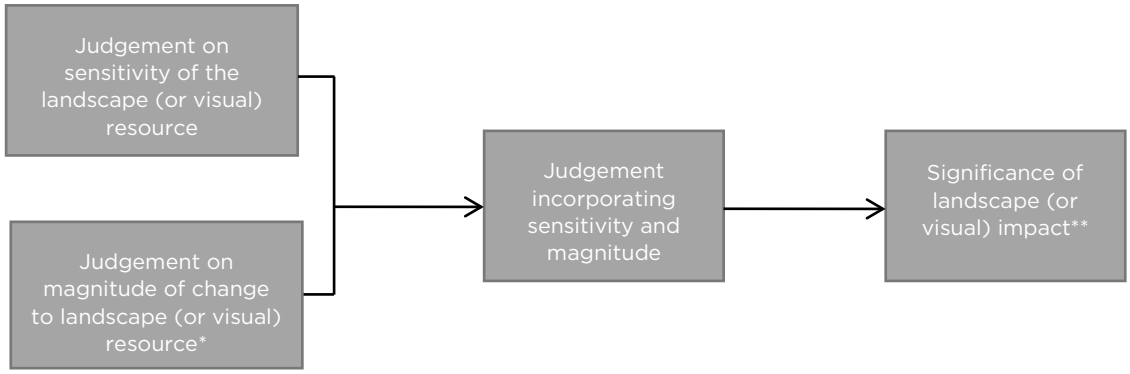
Landscape Character Assessment is a tool for identifying what makes one place different from another. It identifies what makes a place distinctive, without necessarily assigning a value to it. This approach has been used to establish the existing character of the landscape and to provide a framework for measuring the impact of the Project on landscape character. The Landscape Character Assessment also includes consideration of whether identified Landscape Character Types (LCTs) contain areas identified as having high scenic amenity value.

The LCTs have been defined by both high level desktop assessment with further refined through fieldwork assessment. The LCTs have also been considered in relation to other projects conducted by LatStudios in relative proximity to the Project to ensure the continuity of character assessments across landscapes that may share similar components. LCTs have been defined to provide a framework for describing these areas methodically. Where necessary, these have been further subdivided into Landscape Character Areas (LCAs), which are geographically distinct areas. The general character of the landscape is described in **7.1: Landscape character baseline**, whilst the identified LCTs are described in **Section 7.2: Landscape character assessment.**

The assessment of anticipated sensitivity (and consequent likely impact to) landscape character and amenity is based on the scale and layout of the Project and how this relates to the characteristics of the receiving landscape. Consideration is also given to designations or landscape policies (as identified, for example, in a local planning scheme) in determining the sensitivity of a landscape to change.

Unlike some other technical disciplines, there are no established, measurable thresholds of significance that exist for landscape impacts. The significance of impact is therefore determined by considering the sensitivity of the landscape receptor and the magnitude of change expected because of the proposed development, as shown in the process diagram in Illustration 1.

Illustration 1: Approach to evaluating the significance of landscape (or visual) change



** There is no standard methodology for the quantification of the magnitude of effects; however, it is generally based on the scale or degree of change to the landscape resource, the nature of the effect and its duration.*

*** Overall landscape impact is determined by combining the sensitivity of the landscape resource with the magnitude of landscape change. Professional judgement is used to determine the overall significance of impact based on these two elements.*

The overall significance of a potential impact is determined by considering the sensitivity of the landscape or visual receptor and the magnitude of change anticipated that is likely to occur due to the Project (Table 5).

Table 5: Determining significance of effect

Significance of effect		Magnitude of change			
		High (Dominant change)	Medium (Considerable change)	Low (Noticeable change)	Negligible (Barely perceptible change)
Sensitivity	High	Major	Moderate to Major	Moderate	Minor to Moderate
	Medium	Moderate to Major	Moderate	Minor to Moderate	Minor
	Low	Moderate	Minor to Moderate	Minor	Minor to Negligible
	Negligible	Minor to Moderate	Minor	Minor to Negligible	Negligible

'Major and 'Moderate to Major' significance of effect results in a 'significant' impact.

Where magnitude of change is 'no impact' the significance is 'no impact'.

3.5.1. Judgement of landscape sensitivity

The sensitivity of a landscape is judged on the extent to which it can accept change of a particular type and scale without adverse effects to existing landscape character. Levels of sensitivity, shown in **Table 6,** vary according to the type of development and the nature of the landscape. Key aspects that have been considered when identifying the level of sensitivity associated with each landscape character type include:

- The landscape's inherent values (e.g., perceptual qualities, cultural importance, and any specific values that may apply such as landscape planning designations).
- The landscape's ability to absorb changes associated with the Project (e.g., the extent to which may fit or be absorbed into the landform, land use, pattern, scale or texture of the existing landscape).

Table 6: Defining landscape sensitivity

Sensitivity of landscape	Attributes of landscape sensitivity categories
High	A landscape protected by national designation and/ or widely acknowledged for its quality and value; a landscape with distinctive character and low capacity to accommodate the type of change envisaged.
Medium	A moderately valued landscape, perhaps a regionally important landscape and / or protected by regional/state designation or on a scenic amenity overlay in a local planning scheme, and /or where its character, land use, pattern and scale have limited capacity to accommodate a degree of the type of change envisaged.
Low	A landscape valued to a limited extent, perhaps a locally important landscape or where its character, land use, pattern and scale is likely to have the capacity to accommodate the type of change envisaged.
Negligible	A landscape which is not valued for its scenic quality or where its character, existing land use, pattern and scale are tolerant of the type of change envisaged, and the landscape has capacity to accommodate change.

3.5.2. Magnitude of change to landscape character

The magnitude of change to landscape character depends on the nature, scale and duration of the change that is expected to occur. The magnitude of change also depends on the loss, change or addition of any feature to the existing landscape and is based upon that part of the landscape character type which is likely to be impacted to the greatest extent by the Project before the application of any mitigation.

Magnitude of change is described as negligible (barely perceptible change), low (noticeable change), medium (considerable change) or high (dominant change), as illustrated in Table 7. The descriptions of magnitude and sensitivity are illustrative as there is no defined boundary between levels of impacts.

Table 7: Defining magnitude of change to landscape character

Magnitude of Change	Typical Examples
High	Dominant change: A clearly evident and frequent/continuous change in landscape characteristics affecting an extensive area, which is likely to fundamentally change the character of the landscape.
Medium	Considerable change: A considerable change in landscape characteristics, frequent or continuous and over a wide area or a clearly evident change, but over a restricted area.
Low	Noticeable change: A noticeable change in landscape characteristics over a wide area or a considerable change over a restricted area but will not fundamentally change the character of the landscape.
Negligible	Barely perceptible change: An imperceptible, barely or rarely perceptible change in landscape characteristics.
No impact	No change: No change in landscape characteristics.

3.5.3. Overall significance of impact on landscape character

An evaluation of overall potential effects on landscape character is based on the sensitivity of the existing landscape to change and the magnitude of change that is likely to occur. No prescribed methods for assessment of significance of landscape impacts exist; therefore, professional judgement and experience are applied to identify the level of significance. Each landscape receptor is assessed on its own merits, as factors unique to each circumstance need to be considered. However, there are general principles which can be used as a guide to this process that provide transparency about how judgements have been made. The overall significance of change to landscape amenity is determined by using Table 5.

3.5.4. Lighting Assessment

It is understood that no permanent Project lighting is proposed. Any required lighting would comply to the relevant Australian Standard. For this reason a lighting assessment to address Australian Standard / New Zealand Standard 4282:2023 – Control of the Obtrusive Effects of Outdoor Lighting is not required and has not been undertaken.

3.6. Visual impact assessment methodology

3.6.1. Identification and description of visual receptor audiences and viewpoints

The visual assessment is based upon the identification through desktop and fieldwork assessment of potential views to the Project, particularly any major views or outlooks identified in legislation or planning documents during the desktop phase or through stakeholder and community consultation.

Visual receptor audiences are assessed and described in terms of the views which can be obtained from selected representative viewpoints within the Study Area. The specific viewpoints used for the assessment have been selected based upon the likelihood of these receptors to experience views towards the Project. Consistent with typical landscape and visual assessment practice, viewpoints on private properties have not been visited or assessed. Where appropriate, publicly accessible locations nearby have been selected to represent private views.

Potential representative visual audiences and receptors have been identified based on a range of parameters including:

- Proximity of the receptor: the most affected visual receptors are typically anticipated to be located within proximity to the project (a nominal 10 km radius of the Project) unless located at an elevated vantage point
- Type of visual receptor/visual receptor audience, for example:
    - A permanent resident of a dwelling or homestead
    - Drivers or passengers of vehicles passing through the impact assessment area
    - Members of the public accessing marked recreational areas (for example in national parks, state forests, cycle ways, footpaths and public parks and sportsgrounds)
    - An industrial or commercial worker (excluding those employed as part of the Project).

These visual receptor audiences and representative viewpoints are discussed further in Section 8.1: Visual audiences and viewpoint selection.

3.6.2. Judgement of visual sensitivity

The sensitivity of each viewpoint and the visual receptor audiences which it represents is dependent upon the:

- importance of the view, its existing scenic qualities and the presence of other existing man–made elements in the view
- type of the visual receptor audience and their likely interest in the view (e.g., residents, visitors to important/valued landscapes or visitors to non–designated areas, motorists)
- volume of visual receptors and the duration of time that receptors spend experiencing the view.

The *Guidelines for Landscape and Visual Impact Assessment* (Landscape Institute and the Institute of Environmental Management and Assessment, 2002) states "*changes affecting large numbers of people are generally more significant than those affecting a relatively small group of users*." Similarly, the *Guidelines for Landscape and Visual Impact*

Assessment (Landscape Institute, 2013) states the visual receptors most susceptible to change include "*… residents at home…people, whether residents or visitors who are engaged in outdoor recreation, including use of public rights of way whose attention or interest is likely to be focused on the landscape and on particular views; …communities where views contribute to the landscape setting enjoyed by residents in the area*". This guidance is reflected in the method used to assess the sensitivity of the viewpoints to the Project e.g., with greater sensitivity applied to views from a regionally important location where viewers' interest is specifically focussed on the landscape (such as views from Hanson Road and the Bruce Highway which are a part of promoted tourist routes).

Levels of sensitivity, shown in **Table 8**, vary according to the type of development and the visual receptor audience.

Table 8: Defining viewpoint sensitivity

Sensitivity of viewpoint	Attributes of viewpoint sensitivity categories
High	Large numbers of viewers or those with proprietary interest and prolonged viewing opportunities such as high concentrations of private residents and users of attractive and/or well–used recreational facilities. Views from a regionally important location whose interest is specifically focussed on the landscape e.g., a scenic lookout.
Medium	Medium numbers of residents (e.g., rural communities and townships) and moderate numbers of visitors with an interest in their environment e.g., visitors to state forests, including bush walkers, horse riders, trail bikers. Larger numbers of travellers with an interest in their surroundings e.g., local designated scenic routes. Views encompassing landscapes valued on account of their scenic amenity values e.g., identified by a scenic overlay in a local planning scheme.
Low	Small numbers of rural residents, receptors with a passing interest in their surroundings or transient views e.g., those travelling along principal roads and/or where scenic quality is already compromised. Viewers whose interest is not specifically focussed on the landscape e.g., workers, commuters, truck drivers.
Negligible	Very occasional numbers of viewers with a passing interest in their surroundings e.g., those travelling along minor roads, and views from the air.

3.6.3. Magnitude of change to visual amenity from representative viewpoints

The magnitude of change to views and visual amenity depends on the nature, scale and duration of the change that is expected to occur. The magnitude of change also depends on the loss, change or addition of any feature in the field of view of the receptor, or any change to the backdrop to, or outlook from, a viewpoint. The assessment assumes a worst–case height of the Project, without mitigation. The level of effects on a view depends on the extent of visibility, degree of obstruction of existing features, degree of contrast with the existing view, angle of view, duration of view and distance from the Project.

Magnitude of change is described as negligible (barely perceptible change), low (noticeable change), medium (considerable change) or high (dominant change), as illustrated in **Table 9**.

Table 9: Defining magnitude of change to visual amenity

Magnitude of change	Typical example
High	Dominant change: Major changes in view at close distances, affecting a substantial part of the view, continuously visible for a long duration, or obstructing a substantial part or important elements of view. Generally, short distances (typically 0-500 m) to the nearest Project infrastructure element.
Medium	Considerable change: Clearly perceptible changes in views at intermediate distances, resulting in either a distinct new element in a significant part of the view, or a more wide-ranging, less concentrated change across a wider area. Generally, short to medium views (typically around 500 m – 1.5 km) to the nearest Project infrastructure.
Low	Noticeable change: Minor changes in views at long distances or visible for a short duration, and/or are expected to blend in with the existing view to a moderate extent. Generally, medium to long distance views (typically around 1.5 km – 5 km) to the nearest Project infrastructure
Negligible	Barely perceptible change: Change which is barely visible at a very long distance or visible for a very short duration, and/or is expected to blend with the existing view. Distant views (generally, > 5 km) to the nearest Project infrastructure.
No impact	No change: No visible change as a result of Project infrastructure.

3.6.4. Overall significance of impact on visual amenity from representative viewpoints

The evaluation of overall potential impacts on visual amenity is based on the sensitivity of existing views to change and the magnitude of change that is likely to occur. No prescribed methods for assessment of significance of impacts on visual amenity exist; therefore, professional judgement and experience are applied to identify the level of significance. Each viewpoint is assessed on its own merits, as factors unique to each circumstance need to be considered. However, there are general principles which can be used as a guide to this process; these provide transparency about how judgements have been made. The overall significance of change to visual amenity and individual viewpoints is determined by using Table 10.

Table 10: Determining level of effect on visual amenity

Level of effect		Magnitude of change to visual amenity			
		High (Dominant change)	**Medium** (Considerable change)	**Low** (Noticeable change)	**Negligible** (Barely perceptible change)
Sensitivity of viewer	**High**	Major	Moderate to Major	Moderate	Minor to Moderate
	Medium	Moderate to Major	Moderate	Minor to Moderate	Minor
	Low	Moderate	Minor to Moderate	Minor	Minor to Negligible
	Negligible	Minor to Moderate	Minor	Minor to Negligible	Negligible

Where magnitude of change is 'No impact' the significance is 'No impact'.

Denotes a 'Significant' impact.

Denotes a 'Not Significant' impact.

Impacts which are graded as being 'moderate', 'moderate to major' or 'major' are those which are given greatest weight, relative to other levels of visual impact, in decision making. They usually concern immediate landscapes around proposed OHTL tower sites and close views seen by sensitive viewers. 'Minor to moderate' levels of impact are of progressively reducing importance. Impacts graded as 'minor' also constitute effects which warrant consideration, but individually carry little weight in the decision–making process.

Impacts on the visual resource have been described by representative views in the LVIA Study Area(s). Impacts can be short term (i.e., those occurring during installation/construction of a development) or long term (i.e., those lasting for the lifetime of the Project). In addition, they can be widespread (i.e., taking up a large proportional change in the view) or localised.

For the purposes of this assessment, subjective interpretation of the Project has been avoided; rather, the focus has been directed on the significance of the impact (i.e., a transparent judgement on the sensitivity of the visual resource, combined with the anticipated magnitude of change to the view).

4. Potential Project impacts

4.1. Key sources of potential impact

This section describes the key components of the Project that are relevant to this LVIA.

Key components of the development activities anticipated for the construction, installation, operation, decommissioning and rehabilitation, which are relevant to the assessment of landscape and visual impacts are identified. In describing OHTL towers, it is necessary to understand the following components:

- Tower site benching
- Concrete slab foundations
- Formation of tower pads
- Steel lattice overhead transmission line towers
- Overhead transmission line cables
- Ancillary infrastructure including temporary site offices, gates, grids, washdown bays and access tracks
- Laydown areas

MPA1, Section A will connect (via Section A of the MID, that is not part of this assessment) to the existing Calvale Substation, and *MPA2, Section E* will connect from Section E of the existing MID (not part of this assessment) to connect to the Calliope River Substation.

4.1.1. Consideration of collocation of OHTL with existing infrastructure

In considering the potential impact of the OHTL and associated infrastructure on landscape and visual amenity, it is noted that the OHTL is proposed to be collocated across the alignment adjacent to an existing OHTL corridor. The following observations have informed the assessment:

- The proposed new OHTL corridor is typically located around 40 m from existing powerlines, which will seek to consolidate impacts, including visual impacts.
- The collocation of existing and proposed infrastructure will assist in minimising the need for additional vegetation clearance, since much of the proposed MID/easement is already cleared.
- Existing access tracks will be used, with some clearing to widen the existing tracks where necessary.
- The new towers are a similar size to the existing towers, typically being around 15 m higher - while this height difference will be noticeable it will be similar to the variance of existing electrical infrastructure in the LVIA Study Area(s).
- While collocation of facilities results in the potential intensification of landscape and visual impacts over a localised area, the intent is to minimises the extent to which new visual receptors are likely to be affected.

Illustration 2 shows the character of the existing OHTL corridor and associated electrical infrastructure within the LVIA Study Area(s)

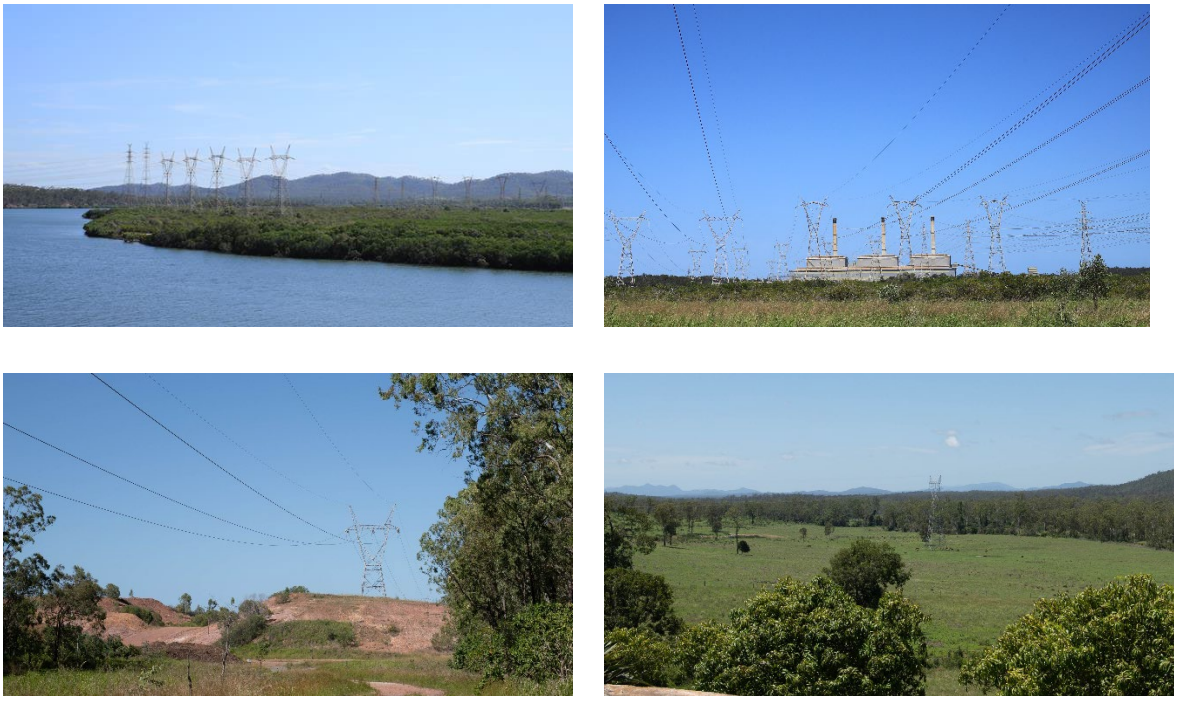


Illustration 2: Existing OHTL and electrical infrastructure within the LVIA Study Area(s)

4.1.2. Construction phase

The focus of the LVIA is the operational impact described in Section 4.1.3 below. However, construction impacts have also been considered. The construction phase of the Project is temporary and is estimated to commence in 2026 with anticipated completion by December 2028. Site components and activities that may potentially impact on the landscape (including landscape features, character and amenity) and views and visual amenity during construction are described in **Table 11**.

Table 11: Potential impacts during construction phase

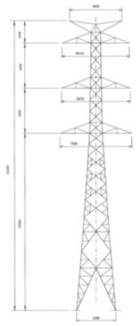
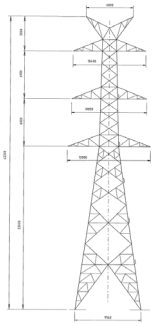
Construction activities and infrastructure	Indicative project imagery
Enabling works Select vegetation clearing followed by the establishment of temporary constructions compound(s) and fencing and civil works i.e. new site entrances, levelling, earthworks, temporary water storage and local vegetation clearance.	 Source: LatStudios
Construction compounds and laydown areas Temporary construction compound, laydown and stockpile areas will be located across the Project (typically in the Disturbance Footprint) and where possible in existing cleared areas. These areas will be decommissioned post-construction.	 Source: LatStudios

Two concrete batching plants are anticipated to be required for the construction of the Project that will likely be located on Lot 412 CL40158 and Lot 534 CL40257 A mobile site office located within the cleared easement will move in association with Project progression	
Unsealed access tracks Construction of access tracks to each high voltage overhead transmission tower and ancillary infrastructure including gates, grids and locations. Where practicable, existing cleared tracks will be used and upgraded where needed to minimise vegetation clearing and fragmentation. New tracks will also be placed in cleared areas where required and clearing widths minimised.	 Source: LatStudios
Construction of project infrastructure Construction of associated foundations and high voltage overhead transmission towers will comprise installation of gates, grids, clean down bays and access tracks; tower site benching; foundation excavation and installation; establishment of brake and winch sites; and structure assembly and erection using a large mobile crane.	 Source: Powerlink
Construction (stringing) of high voltage overhead transmission lines Conductor and stringing of high voltage power lines is carried out as either conventional or aerial stringing Conventional stringing involves the clearing of two or more tracks, following which 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. Stringing will be completed in sections of varying length of up to 10 km between termination structures, depending on constraints, terrain, and access. 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.	 Source: Powerlink

4.1.3. Operational phase

The operational phase of the Project is estimated to last approximately 50 years. The potential impacts on the landscape (including landscape features, character and qualities) and visual amenity during operation are outlined in **Table 12**.

Table 12: Potential impacts during operational phase

Operational activities and infrastructure		
275 kV electricity transmission towers and associated overhead power lines Detailed design is currently underway to optimise the configuration. It has been assumed that development scenarios would include 275 kV steel suspension or tension transmission lines supported by galvanised steel lattice transmission towers at between 41 and 65 m height and located approximately every 400 to 500 m depending on local topography. The proposed OHTL alignment is typically located approximately 40 m from the existing OHTL corridor as discussed in Section 4.1.1). 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. Following inspection, clearance of regrowth vegetation will be undertaken in accordance with the fire risk in accordance with the relevant Powerlink's policy.	  Typical suspension tower Source: Powerlink	  Typical tension tower Source: Queensland Government, Powerlink Tower
Easement and Access Tracks The transmission line will be located within a 60 m wide easement and vegetation clearing will be required to maintain safe electrical clearances. Existing access tracks will be utilised in the first instance. New access tracks will be refined as the detailed design of the Project progresses. Ongoing maintenance of access tracks will be 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, and in consultation with the appropriate authority and landowner.	 Source: Powerlink	

4.1.4. Decommissioning and rehabilitation phase

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.

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. Legislative context and standards

This section summarises the key planning policies and guidance that have been identified that inform this LVIA and/or indicate the potential sensitivity of the landscape to change.

The emphasis of this section is to identify those aspects of landscape and/or visual amenity that require assessment under legislation or relevant planning schemes so that these can be appropriately identified and assessed within the LVIA process. The purpose is to determine the extent to which valued and protected landscape and/or visual aspects may be potentially affected to assist in understanding the level of risk associated with the Project. The provisions of these guidelines and planning schemes applicable to landscape and scenic amenity are described in **Table 13** to **Table 15**.

5.1. Commonwealth planning and legislative context

The *Environment Protection and Biodiversity Conservation Act* 1999 (Cth) (EPBC Act) is the 'key piece' of legislation relating to the environment and is focussed on matters of national environmental significance (MNES), which are based primarily on Australia's responsibilities under international agreements on environmental protection as well as the 1997 Heads of agreement on Commonwealth and State roles and responsibilities for the Environment.

There is no specific national legislation requiring or directing the assessment of scenic amenity for major infrastructure projects. However, the *EPBC Act* requires assessment of any 'action' that will have, or is likely to have, a significant impact on a matter of national environmental significance. These matters include World Heritage properties, and National Heritage places.

MPA2, Section E within LVIA Study Area 2 is located within the GBRWHA and National Heritage Place. It falls within the Priority Port of Gladstone area boundary (described further below), and is notably not part of the nearby Great Barrier Reef Marine Park (GBRMP).

The Great Barrier Reef (GBR) was declared a world heritage area (WHA) and inscribed on the World Heritage List in 1981. The GBRWHA extends seaward of low water for approximately 2,000 km along the coast of Queensland and covers around 35,000,000 ha and includes islands such as Calliope River Island. For the GBR to obtain a world heritage area designation, it was required to demonstrate a number of internationally significant values including aesthetic attributes of outstanding universal value (OUV) (UNESCO, 2019).

In particular, of the four World Heritage Criteria associated with the GBRWHA designation, criteria of key consideration in the context of this assessment (insofar as it applies to one localised section of the Project) is:

> *'(vii) to contain superlative natural phenomena or areas of exceptional natural beauty and aesthetic importance'.*

This legislation has informed the rating of landscape and visual sensitivity within this MID LVIA to the limited geographical extent applicable i.e., *MPA2, Section E*.

5.2. State planning and legislative context

At the State level, major energy infrastructure is considered within the *State Planning Policy 2017 (*Queensland Government, DILGP, 2017). The relevant provisions of these guidelines in relation to landscape and visual considerations are summarised in **Table 13**.

Table 13: Review of key State policy and guidance relevant to LVIA

State Planning Policy 2017
The *State Planning Policy 2017* (SPP) contains state interest policies for energy, water supply and liveable communities *(*Queensland Government, DILGP, 2017). The SPP state interest policies for major energy infrastructure recognises that: (3) *The development of major electricity infrastructure and bulk water supply infrastructure avoids or otherwise minimises adverse impacts on surrounding land uses and the natural environment.* *The SPP state interest policy for liveable communities recognises:* 3 (b) *maintain or enhance important cultural landscapes and areas of high scenic amenity, including important views and vistas that contribute to natural and visual amenity.*
Gladstone State Development Area
The Project (Parts of *Section C* and *Section D* and the *MPA2, Section E*) is located within the Gladstone State Development Area (GSDA) which is a defined area of land that is suitable for large-scale, large footprint industrial development and materials transportation infrastructure. The GSDA was established by the State Coordinator-General in 1993 to promote economic development in Queensland, and is legislated under the under section 77 of *the State Development and Public Works Organisation Act 1971* (Queensland Government, 2022). The alignment of this section of the Project falls within a small section of the Port Related Industry Precinct close to the Port of Gladstone, with the mid-section turn of the Project crossing an area of the High Impact Industry Precinct.
2.4.1 Port Related Industry Precinct (1) The preferred development intent for the Port Related Industry Precinct is: (a) This precinct is to accommodate industrial development that: (i) has links to the Port of Gladstone through the import and export of material (ii) benefits from close proximity to port related infrastructure and services (iii) is difficult to locate and requires separation from sensitive land uses. (b) This precinct may also accommodate industrial development that requires co-location with uses that support the preferred development intent. (2) Defined uses that support the preferred development intent are: (a) high impact industry (b) medium impact industry (d) special industry (3) Defined uses that may be considered where the use does not compromise the preferred development intent include: (c) linear infrastructure facility
2.4.2 High Impact Industry Precinct (1) The preferred development intent for the High Impact Industry Precinct is: (a) This precinct is to accommodate industrial development that: (i) is difficult to locate and requires separation from sensitive land uses (ii) requires access to key transport and supply chain networks.

(2) Defined uses that support the preferred development intent are: (a) high impact industry (b) special industry. (3) Defined uses that may be considered where the use does not compromise the preferred development intent include: (b) linear infrastructure facility
The SPP recognises that the '*the coastal environment, including tidal water, beaches, dunes and coastal wetlands, is important for its environmental, economic, social, cultural and* ***aesthetic*** *values', and states that 'the coastal environment is protected and enhanced, while supporting opportunities for coastal-dependent development, compatible urban form, and maintaining appropriate public use of and access to, and along, state coastal land'.* This includes the requirement under the protection of the coastal environment that coastal processes and coastal resources state-wide, including in the Great Barrier Reef catchment, are protected by **'maintaining or enhancing the scenic amenity and aesthetic values of important natural coastal landscapes, views and vistas.'**
Master Plan for the priority Port Gladstone
The Priority Port of Gladstone is excised from the GBRMP and is a designated area managed by Gladstone Ports Corporation exclusively for port operations under the *Transport Infrastructure Act 1994*. The Port of Gladstone is internationally recognised as a major bulk port and includes shipping operations that traverse the GBRWHA and GBRNHP. The Master plan for the priority Port of Gladstone (Queensland Government, DTMR, 2025) is a long-term strategic document. The priority port of Gladstone map indicated that MPA2, Section E is located within the *Port, industry and commerce precinct* and the *Marine infrastructure precinct* in the vicinity of and crossing the Calliope River respectively. Development within the *Port, industry and commerce precinct* provides for a range industries which are of regional, state, national and global economic significance, and may include associate infrastructure for the daily operations of the port including utility installations. Development within the *Marine infrastructure precinct* must not compromise or adversely impact on the port and shipping access or marine-based port infrastructure with the specification of development on marine-based activities, and it must not impact existing adjacent uses. The Master plan is supportive of large-scale infrastructure projects such as OHTL corridors as a utility infrastructure within the *Port, industry and commerce precinct* and associated *Marine infrastructure precinct.* Refer to **Section 5.5.1: Master plan for Priority Port of Gladstone**.

5.3. Regional planning and legislative context

Both the BS and GR LGAs are located within the *Central Queensland Regional Plan (2013)* (Queensland Government, 2013). A review of key regional policy and guidance relevant to this LVIA is provided in **Table 14**.

Table 14: Review of key regional policy and guidance relevant to LVIA

Central Queensland Regional Plan 2013
The Central Queensland Regional Plan (CQRP) notes that electrical infrastructure is a priority outcome for the region, with opportunities to reinforce electricity generation and transmission/distribution systems where and when they are needed to service anticipated population and industry growth. The CQRP recognises that areas of high scenic or natural amenity are the region's most significant drawcard so managing potential tourism sector impacts on environmental values is necessary to ensure a long term sustainable tourism industry in the region, while also recognising that the

region encompasses a variety of regional landscapes, including urban and rural holdings, agricultural production, resource and mine sites, and protected areas.

There are no other specific references to protection rural amenity, rural character, visual amenity or landscape character or associated Desired Regional Outcomes (DROs).

5.4. Local planning and legislative context

LVIA Study Area 1 including MPA1 falls within the Banana Shire LGA and falls within the area addressed by local government planning policies within the *Banana Shire Planning Scheme 2021* (BSPS) (Banana Shire Council, 2025). MPA1 in its western part starts within a Community Facility zone (and is included in the Community Facilities Precinct 2 – Electricity, Transport and Infrastructure section), with its middle in a part of the Special Industry Zone and its eastern part concluding within the Rural Zone.

LVIA Study Area 2, including MPA2 is located within the Gladstone Regional LGA, where the *Gladstone Regional Planning Scheme* (GRPS) applies. MPA2 crosses through the GRPS zones of Open Space, Conservation, Rural and Special Purpose as well as defined Scenic Amenity areas.

The relevant provisions of both planning schemes relevant to this LVIA are described in Table 15.

Table 15: Review of key local policy and guidance relevant to LVIA

Banana Shire Planning Scheme 2021
In June 2021, Banana Shire Council resolved to adopt the new *Banana Shire Planning Scheme 2021* (BSPS), which has been prepared in accordance with the *Planning Act 2016* (Qld).
Part 2 – Strategic Framework
2.2 Strategic intent Notes that *"The rural character of agricultural land, mining resources and natural areas is protected and maintained for their production, landscape and environmental values. Development enhances the rural sector and economy while ensuring that existing amenity, economic, landscape and environmental values are not compromised."* In addition, it is the intent that *"Visually prominent landscapes retain their environmental, aesthetic and amenity values".* **2.4 Rural Areas** The Shire's rural areas support a diverse rural sector; cropping, grazing, intensive animal and horticultural industries; mining and resources activity and environmental and conservation areas. The resultant rural landscape is an intrinsic part of the Shire's character and is important in defining the urban areas of the Shire. Areas of the Shire like the Callide Range, Callide Dam, other conservation parks and State forests display significant views and important scenic elements that could potentially be jeopardised by large scale, inappropriately-sited development. **2.4.1.1 Specific Outcomes** notes the following relevant outcomes: (14) The visual impacts of development on the scenic values provided by areas of rural production and undisturbed open space are mitigated through selective location, layout and design **2.6 Natural Systems and hazards** Notes that *"the Banana Shire contains areas of national, state and local environmental significance that include Expedition, Isla Gorge, Kroombit Tops and Precipice National Parks, conservation parks*

and State forests, the forested Banana, Callide/Calliope, Dawson, Gilbert, Lynd and Murphy Ranges, lakes, wetlands, sub–artesian waters and the Dawson, Dee and Don River catchments. Protection and management of the natural environment, its biological diversity, ecological integrity, and natural assets is paramount in preserving both the natural and economic benefits. Effective management protects against the impacts of land degradation and pest invasion and provide long term benefits for the Shire's current and future populations. Communities conserve and prudently use areas valued for landscape and scenic amenity to meet their present needs without compromising the ability of future generations to meet their needs".

2.6.1 Strategic Outcomes notes the following relevant outcomes:

(1) The natural environment and its assets, connectivity, ecological processes and biodiversity values are conserved, enhanced, restored and protected from incompatible development to avoid or otherwise minimise significant adverse impacts on their values.

(2) Development within or adjacent to an area of environmental significance minimises disturbance to the natural landform, ecology and wildlife habitats and contributes to ecosystem health, liveability and prosperity.

(3) Water resources such as those associated with the main river systems of the Dawson, Dee and Don Rivers and sub-artesian resources are managed and protected. Natural drainage, groundwater and landscape features are protected or enhanced.

Part 5 – Zones

5.7.2 Special Industry zone

The purpose of the Special Industry Zone is to provide for:

(a) special industry

(b) other uses and activities that:

(i) support industry activities; and

(ii) do not compromise the future use of premises for industry activities;

The purpose of the Code will be achieved through the following overall outcomes:

(a) the use of the zone for the generation of electricity, the processing or manufacture of chemicals or natural fibre based products, the intensive slaughter of animals for food production or the loading of coal is facilitated;

(b) ancillary uses that directly support special industry are consistent with the purpose of the zone;

(c) special industries maintain the safety of people and minimise impacts on existing surrounding uses, having regard to the inherent risks and hazards associated with their operation;

Performance outcomes (PO)	Acceptable outcomes (AO)
PO 35	Development is separated from major electricity infrastructure or substations and incorporates buffers to maintain public health and safety, residential amenity and allow access to infrastructure for maintenance.
PO 36	Development dedicates part of the site to establish landscaping which screens or otherwise softens the visually obtrusive impacts of electricity infrastructure.

5.7.2 Community Facilities zone

The purpose of the Community Facilities Zone is to provide for community-related uses, activities and facilities, whether publicly or privately owned, including, for example:

(a) educational establishments; and

(b) hospitals; and

(c) transport and telecommunications networks; and

(d) utility installations; The purpose of the Code will be achieved through the following overall outcomes: (a) community activities and services are co-located and integrated in accessible locations and meet the needs of residents and visitors; (c) existing community uses are intended to continue and intensify if necessary, having regard to infrastructure capacity and the amenity of surrounding areas; (f) the form of development is specific to the facility in recognition of particular operational, functional and locational criteria while recognising the prevailing character of the surrounding area;	
Acceptable outcomes (AO)	**Acceptable outcomes (AO)**
AO11.9	Sensitive land uses maintain the following separation distances from the following electricity infrastructure: (a) 20 m for transmission lines up to 132 kilovolts; (b) 30 m for transmission lines between 133 kilovolts and 275 kilovolts; (c) 40 m for transmission lines exceeding 275 kilovolts; (d) 50 m for high voltage substations;
A011.10	A minimum 3m wide densely planted landscaped buffer is provided along the boundary adjoining the major electricity infrastructure or easement, including provision for advanced trees and shrubs that will grow to a minimum height of 10m.
5.10.2 Rural Zone Code The purpose of the Rural Zone Code includes: (b) provide for other uses and activities that are compatible with: (i) existing and future rural uses and activities; and (ii) the character and environmental features of the Zone; (c) maintain the capacity of rural land for rural uses and activities by protecting and managing significant natural resources and processes. The purpose of the Code will be achieved through the following overall outcomes: (b) development is sensitive and responsive to the rural character and scenic amenity and maintains vegetation cover in significant areas.	
Acceptable outcomes (AO)	**Acceptable outcomes (AO)**
AO21.9	Sensitive land uses maintain the following separation distances from the following electricity infrastructure: (a) 20 m for transmission lines up to 132 kilovolts; (b) 30 m for transmission lines between 133 kilovolts and 275 kilovolts; (c) 40 m for transmission lines exceeding 275 kilovolts; (d) 50 m for high voltage substations;
AO21.10	A minimum 3m wide densely planted landscaped buffer is provided along the boundary adjoining the major electricity infrastructure or easement, including provision for advanced trees and shrubs that will grow to a minimum height of 10m.

Gladstone Regional Planning Scheme – Our Place Our Plan 2017

The current Gladstone Regional planning scheme *Our Place Our Plan Gladstone Regional Planning Scheme Version 2* commenced on the 3 July 2017 and included Major Amendment 1 and updates to align with the *Planning Act 2016* (the Act). Key provisions, relevant to the assessment, are described below.

Part 3 – Strategic framework

3.2 Strategic intent

3.7 Our environment and heritage

3.7.1 Strategic outcomes notes the following relevant outcomes:

(2) Natural places including areas with national and state environmental significance are protected through appropriate planning and development practices.

(3) Natural places and valuable features of our natural environment are linked through regional and local environmental corridors. The major urban area of Gladstone is separated from those of Boyne Island / Tannum Sands and Calliope by a greenbelt free of any urban development that delineates these urban areas and preserves significant environmental and landscape amenity values.

(4) The region's identified scenic amenity values are protected from inappropriate development.

(5) The environmental values and quality of the region's waters and waterways are protected.

(10) Places of cultural heritage are conserved so that the unique cultural and historical identity and diversity of the Gladstone region can be appreciated and interpreted.

(11) Development on or adjoining local heritage places preserves their heritage significance and complements their character.

3.7.2 Elements sets out factors relating to sustainable management of the natural environment and resources. Relevant provisions include:

Development minimises and mitigates environmental impacts on the region's natural environment and resources.

Areas of high scenic and landscape values within the region are protected from inappropriate development or impacts upon their amenity, particularly in the areas of Mount Larcom and much of the natural coastal and riverine areas.

4.2.9 Open Space zone code

The purpose of the open space zone code is to ensure:

(a) The provision of informal recreation areas where the built form is restricted and subservient to the enjoyment of the space.

(b) Open space acts as a buffer from built form in urban areas.

(c) Places that contribute to the visual amenity and landscape character of the region are protected.

Performance outcomes (PO)	Acceptable outcomes (AO)
Separation of uses PO3 Development provides adequate separation, screening and buffering from any adjoining residential uses or residential zone so that residential privacy and amenity is not adversely affected.	Where development (not including a club or community use) adjoins a residential premises or residential zone, a minimum boundary setback of 6m is required for: (a) buildings (b) temporary structures including markets (c) active outdoor use areas (d) site access points (e) car parking areas, and (f) servicing or outdoor storage areas.

Design and amenity PO7 Development does not detract from the site's cultural values, visual quality, and landscape quality intent of the zone.	No acceptable outcome is nominated.
Design and amenity PO8 Landscaping: (a) enhances visual amenity (b) integrates with the open space and parkland (d) can provide screening to active use areas where adjoining residential use, and	No acceptable outcome is nominated.
Design and amenity PO9 Development maintains a high level of amenity within the site and minimises impacts on surrounding areas, having regard to: (c) visual impact	No acceptable outcome is nominated.
Design and amenity P10 Development responds sensitively to on–site and surrounding topography, drainage patterns, coastal foreshores, waterways, utility services, access, vegetation and adjoining land uses, such that: (a) any hazards to people or property are avoided (b) any earthworks are minimised (c) the retention of natural drainage lines is maximised (d) the retention of existing vegetation is maximised (e) damage or disruption to sewerage, stormwater and water infrastructure is avoided, and (f) there is adequate buffering, screening or separation to adjoining development.	No acceptable outcome is nominated.
4.2.10 Environmental Management zone code The purpose of the environmental management zone code is to limit the scale of development in areas of environmental and visual amenity significance such as on the Gladstone harbour islands. The purpose of the zone will be achieved through the following overall outcomes: (c) Adverse impacts from on–site and adjoining sites are minimised or avoided through the location, design and management of development and activities. (d) Development does not fragment regional or local environmental corridors and maintains linkages to areas with other ecological values. (f) Very low intensity development related to the conservation and environmental values of the area may be facilitated where it does not detrimentally affect the environmental values of the area. (g) Further lot reconfiguration does not occur in order to protect areas with high visual and environmental values.	
Performance outcomes (PO)	**Acceptable outcomes (AO)**
Built Form (if involving building work) PO2 Buildings and other structures: (a) are low rise, and (b) reflect the low density, natural and open space character of the area.	**AO2.1** Building height does not exceed 8.5m. **Note – this Project is to follow the direction set out in the ToR. Whilst the proposed Project infrastructure exceeds this limit, the Project infrastructure will follow the existing electrical corridor that intersects this zone. This specific performance outcome highlights the*

	significance and maintenance of the open space character of the area.
Land use PO4 Development: (a) is consistent with the environmental character of the locality, and (b) protects rural, natural and scenic values of the locality.	No acceptable outcomes are nominated.
Effects of development PO5 Development responds sensitively to on–site and surrounding topography, drainage patterns, coastal foreshores, waterways, utility services, access, vegetation and adjoining land use, such that: (b) any earthworks are minimised (d) the retention of existing vegetation is maximised (f) there is adequate buffering, screening or separation to adjoining development.	No acceptable outcome is nominated.
4.2.11 Conservation zone code The purpose of the conservation zone code is to provide for the protection, restoration and management of areas (such as National Parks) identified as supporting significant biological diversity and ecological integrity. The purpose of the zone will be achieved through the following overall outcomes: (a) The ecological values of land in the conservation zone are protected from the impacts of development. (d) Adverse impacts from on–site and adjoining sites are minimised or avoided through the location, design and management of development and activities. (g) Development does not fragment regional or local environmental corridors and maintains linkages to areas with other ecological values.	
Performance outcomes (PO)	**Acceptable outcomes (AO)**
Land use PO4 Development is limited to: (c) the establishment of infrastructure that cannot practicably be located elsewhere.	No acceptable outcome is nominated.
Effects of development PO7 Development responds sensitively to on–site and surrounding topography, coastal foreshores, waterways, drainage patterns, utility services, access, vegetation and adjoining land use, such that: (b) any earthworks are minimised (d) the retention of existing vegetation is maximised (f) there is adequate buffering, screening or separation to adjoining development.	No acceptable outcome is nominated.

4.2.22 Rural zone code The purpose of the rural zone code is to: (a) Provide opportunities for non–rural uses that are compatible with agricultural and rural activities, and the landscape character of the rural area where they do not compromise the long–term use of the land for rural purposes The purpose of the zone will be achieved through the following overall outcomes: (i) Natural features such as creeks, gullies, waterways, wetlands and bushland are retained, managed and separated from adjacent development where possible. (j) Rural land uses incorporate sustainable practices to prevent soil erosion, protect the quality of land resources and water catchments, and maintain habitat values of waterways and native timber and forest areas	
Performance outcomes (PO)	Acceptable outcomes (AO)
Amenity PO7 Development does not adversely impact on the amenity of the surrounding rural or residential land uses or rural landscape character.	A07 Plant and air–conditioning equipment, storage areas and processing activities are screened from view of the road or adjoining residential uses.
Land Use P10 Development: (a) is consistent with the rural character of the locality (b) supports the primary rural function of the zone; and (c) protects rural, natural and scenic values of the locality.	No acceptable outcome is nominated.
4.2.24 Special Purpose zone code The purpose of the Special purpose zone is to provide for public uses that are owned or operated by a government, semi–government, statutory authority, government owned corporation, local government or private organisations in the course of a public utility undertaking such as: (a) High voltage electricity transmission corridors, substations, gas and other related network elements. The purpose of the zone will be achieved through the following overall outcomes: (b) Development is located appropriate to the type of special purpose proposed and is generally consistent in scale, height and bulk with that of the surrounding development. (g) Development avoids significant adverse effects on water quality and the natural environment.	
Performance outcomes (PO)	Acceptable outcomes (AO)
Amenity PO9 Landscaping is provided to mitigate the visual impact of development and screen unsightly components.	AO9 Landscaping is provided along the entire principal site frontage, excluding driveway, with a minimum width of: (a) 4m along an arterial road, and (b) 2m along any other road.
Effects of development PO11 Development responds sensitively to on–site and surrounding topography, coastal foreshores, waterways, drainage patterns, utility services, access, vegetation and adjoining land use, such that: (a) any hazards to people or property are avoided (b) any earthworks are minimised (c) the retention of natural drainage lines is maximised (d) the retention of existing vegetation is maximised	No acceptable outcome is nominated.

(e) damage or disruption to sewerage, stormwater and water infrastructure is avoided, and (f) there is adequate buffering, screening or separation to adjoining development.	

Part 8 – Overlays

8.2 Overlay codes

8.2.11 Scenic Amenity

The planning scheme has an Overlay Map relating to visual amenity, the Planning Scheme Overlay – Scenic Amenities. **Within this overlay map, the Site passes through sections of identified scenic amenity including:**

(a) district significance (7.5) with the Calliope Conservation Park

(b) district significance (7.5) and regional significance (8) with the Mount Stowe State Forest

(c) regional significance (8) associated with the Calliope River.

Additionally**,** landscapes within the broader LVIA Study Area are identified as having scenic amenity value. This includes elevated and vegetated landscapes associated within the following areas with regards to their scenic values (refer **Figure 3**):

(a) district (7.5) and regional (8, 9, 10) significance of Mount Alma Range to the west

(b) district (7.5) and regional (8, 9) significance of the Mount Larcom Range to the north

(c) district (7.5) and regional (8) significance of Targinie State Forest to the north

(d) district significance (7.5) of the O'Connell Ridges to the southwest

(e) regional significance (8) of the coastal waters of the Great Barrier Reef and Curtis Island to the northeast.

8.2.11.2 Purpose

The purpose of the Scenic amenity overlay code is "*to ensure that development in areas of high scenic amenity is sited and designed to minimise adverse impacts on those scenic amenity values*."

The purpose of the code will be achieved through the following overall outcomes:

(a) Development avoids areas of high scenic amenity, or, is sited and designed to minimise the impact on the scenic qualities of the area to the maximum extent possible.

(b) The scenic qualities of headlands, landmarks and lookouts are not diminished by inappropriate development.

(c) Development avoids or minimises adverse impacts on the scenic amenity of important views and vistas.

8.2.11.3 Assessment benchmarks

Table 8.2.11.3.1—Accepted development subject to requirements and assessable development contains the following relevant overall outcomes:

Performance outcomes (PO)	Acceptable outcomes (AO)
Siting of development PO1 Any buildings or structures are sited to minimise the impact on the natural landscape and topographical features.	**AO1** Any buildings or structures are not located on ridgelines.
Siting of development PO2 Development is visually integrated with the landscape elements to maintain or enhance the landscape and scenic amenity values. Note—The scenic amenity values of and visible from the land must be assessed and confirmed in a Scenic Amenity Assessment report prepared by a suitably qualified and experienced person. The report is to	No acceptable outcome is nominated.

address strategies and design responses in order to demonstrate compliance with this performance criterion. The South East Queensland Regional Plan 2005–2026 Implementation Guideline No. 8: Identifying and Protecting Scenic Amenity Values provides a process for identifying areas with high scenic amenity as well as significant and popular viewpoints*. (*It is noted that this methodology is intended as a methodology to be used by LGA's for identification of areas of high scenic amenity on a region-wide basis).	
Visibility of development PO7 Development visible from identified significant viewer locations does not adversely impact upon significant views and landscape and scenic amenity values.	No acceptable outcome is nominated.

5.5. Other relevant baseline studies on landscape and scenic values

Other literature sources provide a context for understanding the landscape and scenic values of MPA2 and its wider landscape context are described below. Where relevant, the values identified in these sources have been included in the assessment of potential impacts of the Project on existing landscape and visual values.

5.5.1. Master plan for Priority Port of Gladstone

The Master plan for the priority Port of Gladstone (Queensland Government, DTMR, 2025) is a strategic document that has a long-term outlook for the sustainable development of the port through to 2050. Long-term master planning provides a strategic and coordinated approach to managing port-related development, considers issues including marine and land-based impacts, port and supply chain infrastructure optimisation and looks beyond the port boundary to ensure port-related development is sustainably managed while protecting the Great Barrier Reef. The master planned area includes strategic port land under the *Transport Infrastructure Act 1994* controlled by Gladstone Ports Corporation.

The MPA2 is located within the *Port, industry and commerce precinct* which is identified and mapped within the master plan. The purpose of this zone is to provide for port operations, industry, port-related commercial activities and other supporting or related development.

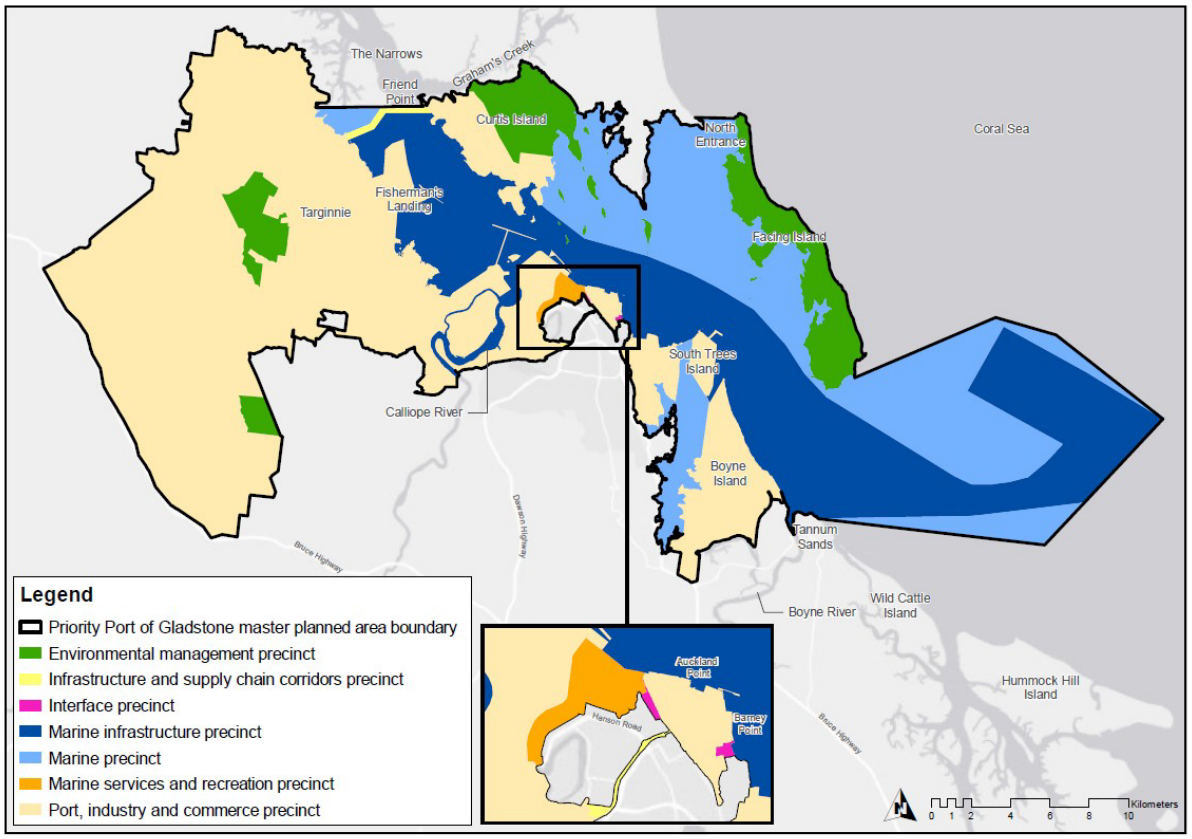


Illustration 3: Master plan for the priority Port of Gladstone

A large portion of the master planned area Port of Gladstone is situated within the GBRWHA. *Appendix B – Mapping of the OUV of the GBRWHA and other environmental values* provides consolidated mapping of the environmental values within and surrounding the master planned area. Mapping indicates that on the unnamed island of MPA2 close to the Calliope River Substation, MPA2 contains ecosystems of potential visual amenity value including vegetation and wetlands.

See **Section 5.2: State planning and legislative context** for additional information as to the Master plan.

5.6. Summary of relevance of legislative context and standards

With regards to the specific outcomes stated within Powerlink's general ToR as noted in **Section 1.1: General Powerlink Terms** of Reference, legislation relevant to the Project and broader LVIA Study Area 2 have been identified to contain "*...major views, view sheds, outlooks, and features contributing to the amenity of the area."* In addition, the ToR also notes to, "*Evaluate local and regional visual impacts of the transmission development...*" which can be achieved by the identification of local and regional policy where landscapes have been considered to contain scenic value.

There is no specific national legislation requiring or directing the assessment of scenic amenity for major infrastructure projects. However, the presence of the GBRWHA has been considered in determining the landscape and visual amenity values and sensitivities

as a baseline for the LVIA. Landscapes within the LVIA Study Area 2 associated with the GBRWHA include:

- the Calliope River and;
- the Gladstone Harbour *or* Port Curtis.

With regards to local planning, the Project falls within both the Gladstone Regional and the Banana Shire LGAs and the provisions of the GRPS and BSPS apply. The GRPS indicates that MPA2 is located across five zones including the Open Space zone, the Environmental Management zone, the Conservation zone, the Rural zone and the Special Purpose zone, as shown in **Figure 4**.

Specific performance outcomes for these zones require consideration. The Open Space zone requires that *places that contribute to the visual amenity and landscape character of the region are protected* as open space areas act as a buffer from built form and urban areas. In addition, the Environmental Management and Conservation zone code requires that the scale of development in areas of environmental and visual amenity significance is limited, such as on the Gladstone harbour islands as well as the National Parks. This is to avoid fragmenting existing corridors with ecological values. The Rural zone code requires the protection of existing rural character of the landscape and associated natural features such as creeks, gullies, waterways, wetlands and bushland. The Special Purpose zone code is supportive of high voltage electricity transmission infrastructure projects and any inherent visual impacts caused by a development is to be mitigated by *screening unsightly components.* Acceptable outcomes relating to each zone with respect to the height of proposed built form, setbacks, screening and buffering will need to be considered within the project layout.

Areas of significance in terms of visual amenity as discussed in the Open Space zone code, Environmental Management zone code and Conservation zone code are further established within the Scenic Amenity Overlay Code and the Planning Scheme Overlay – Scenic Amenities Mapping. Within this overlay map, MPA2 passes through sections of identified scenic amenity including:

- (a) district significance (7.5) with the Calliope Conservation Park
- (b) district significance (7.5) and regional significance (8) with the Mount Stowe State Forest
- (c) regional significance (8) associated with the Calliope River.

In summary, areas identified by the GRPS as containing significant visual amenity or deemed visually sensitive within the LVIA Study Area 2 are:

- The coastal waters of the Great Barrier Reef
- The Gladstone harbour islands, including Curtis Island
- The Calliope River
- Areas containing rural landscape character
- Areas of open space
- Areas of conservation such as National Parks, Calliope Conservation Park, Targinie State Forest and Mount Stowe State Forest
- Creeks, gullies, waterways, wetlands and bushland
- Mount Alma and Mount Larcom Ranges
- The O'Connell Ridges

Whilst it is the intent of the BSPS that *"visually prominent landscapes retain their environmental, aesthetic and amenity values"*, MPA1 is located across a Community Facilities Zone (with an inclusion in the Precinct 2 – Electricity, Transport and Infrastructure) and Special Industry Zone which is supportive of transition corridor infrastructure projects. Part of MPA1 also falls within the Rural zone where the planning scheme identifies rural landscape as *an intrinsic part of the Shire's character and is important in defining the urban areas of the Shire.*

The BSPS does not contain a scenic amenity overlay code or associated overlay mapping, as no mapping has been produced for the Banana Shire. However, the planning scheme does identify significant natural landscapes that are considered to be of high scenic or aesthetic value and are present within the LVIA Study Area(s), including:

- Elevated and vegetated landscapes associated with the Callide range and escarpments
- Landscapes within protected areas
- Water features such as rivers, lakes, and wetlands.
- Callide Dam (displays significant views)

Based on these parameters, MPA1 is considered likely to contain some features considered to contribute to the rural landscape character of the region or have high levels of scenic amenity/aesthetic value. This includes farmland areas, mountain ranges as well as vegetated and elevated areas, waterways and Lake Callide.

Despite the lack of formal mapping of scenic values within the Banana Shire, the *Banana Shire Landscape and Visual Impact Assessment Policy* (BSC, 2022) was adopted in 2022. The purpose of this policy is to ensure that appropriate regard is given to the identification and mitigation of impacts from large-scale developments on the landscape character and visual amenity of surrounding properties. The policy outlines a methodology for assessing landscape and visual impacts informed by the *Guidelines for Landscape and Visual Impact Assessment, Third Edition* (GLVIA3) (The Landscape Institute and the Institute of Environmental Management and Assessment, UK, Routledge (Landscape Institute, 2013) and the A*ILA Queensland Guidance Note for Landscape and Visual Assessment* (GNLVA) (Australian Institute of Landscape Architects, 2018) – which have both informed the methodology of this LVIA.

It is acknowledged that development within the Study Area has potential to influence visual amenity and landscape values, including neighbouring rural residential areas and publicly accessible locations. As such, this LVIA considers the Project in conjunction with relevant strategies and policies identified within this legislative context.

6. Existing environment

6.1. Regional landscape context

MPA1, 2 and their wider landscape contexts are illustrated in **Figure 1**, **Figure 2**, and **Figure 3** included in **Appendix 1**.

6.1.1. Settlement and infrastructure

LVIA Study Area 1

The MPA1 is situated within the locality of Mount Murchison and Dumgree within the Study Area. MPA1 at 0.5 km in length is located 13.0 km northeast of Biloela, 300 m northeast of the Callide Power Stations B and C, and near the junction of Biloela Callide Road and Ian McCauley Way.

LVIA Study Area 1 contains the rural residential localities and properties located within Callide, Dakenba, Dumgree, Mount Murchison and Valentine Plains. It is noted that the boundaries of these localities extend beyond LVIA Study Area 1. The populations of these rural localities (suburb and locality) that occur within LVIA Study Area 1 provide an indication of the likely number of residential viewers in these areas (ABS, 2021), and are as follows:

- Callide – 80 people
- Dakenba – 127 people
- Dumgree – 63 people
- Mount Murchison – 128 people
- Valentine Plains - 373 people

Roads around MPA1 provide access to rural properties and provide opportunities for travellers to view landscapes across the region (Queensland Government Data, 2021). State-controlled roads within LVIA Study Area 1 and their Annual Average Daily Traffic (AADT) counts[1] are:

- Dawson Highway (Gladstone-Biloela) – AADT of 1402 (25.21% of which are heavy vehicles) 4.4 km northeast of Biloela
- Biloela-Callide Road
    - AADT of 669 (19.39% of which are heavy vehicles) 5.2 km northeast of Biloela
    - AADT of 1264 (15.69% of which are heavy vehicles) 6.9 km northeast of Biloela

As shown on **Figure 2**, several other local roads are present within LVIA Study Area 1 as described in **Section 6.2: Description of the Site**.

[1] Note: Where several AADTs are provided along a road route, the maximum count has been provided.

Three local roads intersect MPA1, including:

- Pelican Point Road, Mount Murchison
- Biloela-Callide Road, Dumgree
- Ian McCauley Way, Dumgree.

There are three promoted tourist drives within LVIA Study Area 1:

- *Scenic Way* drive, a 75 km loop from Biloela via the Dawson Highway and Biloela-Callide Road via the Callide Power Station Lookout (Drive Inland, 2024)
- *Magical Mountains* drive, an 86 km drive from Thangool to Mount Scoria and Kroombit Tops via Kroombit Dam, Kroombit Dam Lookout and Valentine Plains Roads (noting that the Kroombit Tops section is accessible to 4WD vehicles only). (Drive Inland, 2024).
- The *Gladstone Region Drive* travels along the Dawson Highway, stopping at the Lake Callide before exiting LVIA Study Area 1, west to Biloela (Barrier Reef Australia, n.d).

Section 4 of the *Bicentennial National Trail*, a long-distance multi-use route for hikers, cyclists and horse riders, traverses LVIA Study Area 1. From Kroombit Tops National Park, the trail follows Alcocks Road, Valentine Plains Road and Calvale Road to Biloela via Lake Callide and Biloela-Callide Road before crossing the Calliope and Callide Ranges. A campground is provided at Kroombit Creek on the trail (National Trail, 2025).

The Callide Dam, as part of Lake Callide, fulfils roles of both operational and local attraction within LVIA Study Area 1. The dam was originally built to supply water for the Callide Power Station, and now stores and supplies water for irrigation, industrial and urban use. The dam additionally attracts a range of recreational visitors to the dam, especially visitors enjoying water activities such as boating, kayaking, sailing, stand up paddle boarding, swimming and fishing in designated areas (Sunwater, 2023).

The Mount Murchison State School is located 8.9 km at its closest point to MPA1, with 25 current students at the school (Queensland Government, 2025).

The Callide Mine Lookout is located 380 m north of a section of MPA1 on Ian McCauley Way (Outback Queensland, 2023). At an elevation of 290 m AHD, the lookout takes in the view across Lake Callide, Callide Valley and the Callide Power Stations. This lookout is promoted locally to visit, and is minimally maintained with no amenities.

The Mount Murchison Nature Refuge includes walking trails for visitors with minimal guest amenities (Pacer, 2024). While there are no state forests or national parks within LVIA Study Area 1, the closest national park outside of LVIA Study Area 1 is Kroombit Tops National Park where the Griffith's Creek camping area is located 33.6 km west of the MPA1. Due to topography and vegetation, views from this national park and the Griffith's Creek camping area were not assessed as it was anticipated that no views towards the Project would have been likely.

The highest landform points within LVIA Study Area 1 include Mount Murchison (524 m AHD) and Giles Peak (518 m AHD), and are not publicly accessibly.

The Callide Timber Reserve at 9,630 ha within a large northern part of LVIA Study Area 1 is protected area under the *Forestry Act 1959*, and while it is not accessible to the general public, may provide some limited natural recreation experiences.

Large scale energy infrastructure sites within LVIA Study Area 1 includes:

- the two coal powered Callide Power Stations
    - Callide Power Station A, which was decommissioned in 2016
    - Callide Power Station B is owned by CS Energy with two 350 MW generating units and cooling tower that discharges water vapour
    - Callide Power Station C has a capacity of 844 MW with two generating units
- the H024 Calvale Substation which is owned by Powerlink

There are 13 OHTL corridors and associated infrastructure within the LVIA Study Area 1 including:

- 110 kV lines
    - the 110 kV Callide A Power Station to Callide B Power Station line which connects the two power stations
- 132 kV lines
    - the Baralaba to Callide A Power Station line which connects to the Callide A Power Station and travels to the west of LVIA Study Area 1
    - the Biloela to Callide A Power Station line which travels across the southwest of the LVIA Study Area 1
    - the H024 Calvale Substation to Callide A Power Station line which connects both locations
    - the Gladstone South-T152 to Callide A Power Station line which travels to the northeast of LVIA Study Area 1
- 275 kV lines
    - the dual Callide A to Stanwell line where two lines connect separately to the H024 Calvale Substation and the Callide A Power Station, with both in the same alignment within the travelling to the northwest of LVIA Study Area 1
    - two Callide B Power Station to H024 Calvale Substation lines which connect both locations
    - two Callide C Power Station to H024 Calvale Substation lines which connect both locations
    - the Wurdong to Calvale line which travels to the north of the LVIA Study Area 1
    - the Callide to Halys line which travels to the southeast of the LVIA Study Area 1

The primary large scale extractive operation within the LVIA Study Area 1 is the Callide Coalfield. The mine produces 10 to 11 million tonnes of ultra-low impurity coal each year, and has been operational for the past 80 years (Batchfire Resources, 2025). Additionally, natural gas extraction occurs within the LVIA Study Area 1.

The Callide Mine Balloon Loop on the Moura Railway System operated by Aurizon travels from the west to the central area of the LVIA Study Area 1. This railway line is one of four rail systems in Aurizon's Central Queensland Coal Network, and is as a key coal handling connection for the Callide Coalfield mine (Aurizon, n.d).

LVIA Study Area 2

The MPA2 is situated across the localities of Bracewell, East End, Aldoga, West Stowe, Yarwun and Callemondah within LVIA Study Area 2, comprising:

- *Section C:* traverses Bracewell and East End, beginning approximately 14 km west of the Calliope River substation and is approximately 16 km in length
- *Section D:* includes East End, Aldoga, West Stowe and Yarwun, beginning approximately 1 km north-west of the Calliope River substation in the GRC LGA and is approximately 13.5 km in length
- *MPA2, Section E*: includes Yarwun and Callemondah which crosses the Calliope River within the GRC, the undesignated area of the alignment is around 0.5 km in length.

The LVIA Study Area 2 contains the rural residential localities and properties listed below, and it is noted that the boundaries of these localities can extend beyond LVIA Study Area 2. The populations of these rural localities (suburb and locality) that occur within the LVIA Study Area 2 provide an indication of the likely number of residential viewers in these areas (ABS, 2021), and are as follows:

- Barney Point - 1,065 people
- Beecher – 876 people
- Bracewell – 178 people
- Burua – 849 people
- Callemondah – 30 people
- Clinton – 6,170 people
- Curtis Island – 36 people
- Gladstone Central – 1,550 people
- Gladstone Harbour – 24 people
- Glen Eden – 2,918 people
- Kin Kora – 2,396 people
- Kirkwood – 2,513 people
- Machine Creek – 131 people
- Mount Alma – 59 people
- Mount Larcom – 332 people
- New Auckland – 5,266 people
- River Ranch – 269 people
- South Gladstone – 3,476 people
- Sun Valley – 1,296 people
- Targinnie – 31 people
- Telina – 2,197 people
- Toolooa – 992 people
- West Gladstone – 4,844 people
- West Stowe – 391 people
- Wooderson – 217 people
- Yarwun – 89 people

Limited information is available for Aldoga and South Trees as the areas contained a very low population in the 2021 Census.

Roads around the MPA2 and provide access to rural properties and provide opportunities for travellers to view landscapes across the region (Queensland Government Data, 2021). State-controlled roads within the LVIA Study Area 2 and their Annual Average Daily Traffic (AADT) counts[2] are:

[2] Note: Where several AADTs are provided along a road route, the maximum count has been provided.

- Gladstone – Mount Larcom Road
    - AADT of 3055 (26.25% of which are heavy vehicles) 14.4 km west of Gladstone
    - AADT of 6728 (18.98% of which are heavy vehicles) 5.9 km west of Gladstone
    - AADT of 9414 (16.92% of which are heavy vehicles) 3 km west of Gladstone
    - AADT of 5686 (25.01% of which are heavy vehicles) 2.2 km west of Gladstone
    - AADT of 10,911 (13.27% of which are heavy vehicles) 147 m south of Gladstone
    - AADT of 11,106 (heavy vehicles not recorded) 268 m southwest of Gladstone
- Gladstone Port Access – AADT of 1707 (31.35% of which are heavy vehicles) 14.4 km west of Gladstone
- Gladstone – Benaraby Road
    - AADT of 14,932 (7.91% of which are heavy vehicles) 3.2 km southwest of Gladstone
    - AADT of 9,067 (heavy vehicles not recorded) 3.2 km southwest of Gladstone
    - AADT of 6,374 (heavy vehicles not recorded) 3.5 km southeast of Gladstone
    - AADT of 10,496 (8.79% of which are heavy vehicles) 3.9 km southeast of Gladstone
- Dawson Highway
    - AADT of 27,051 (9.59% of which are heavy vehicles) 3.6 km southwest of Gladstone
    - AADT of 22, 136 (6.26% of which are heavy vehicles) 4.4 km southwest of Gladstone

As shown on **Figure 2**, a considerable number of roads which span major roadways, local roads and access tracks are present within the LVIA Study Area 2. One state-controlled road, seven local roads and a small number of unnamed tracks intersect the MPA2, including:

- Kaluda Road, Bracewell
- Mount Alma Road, East End
- Two unnamed roads, East End
- the Bruce Highway, East End
- An access road to the Rio Tinto Alcan Red Mud Depository, Aldoga
- Boyles Road, West Stowe
- Queensland Parks and Wildlife Service and Partnerships (QPWS&P) tracks in Mount Stowe State Forest, West Stowe
- Calliope River Road, West Stowe
- QPWS&P tracks in the Calliope Conservation Park, West Stowe
- Mount Miller Road, West Stowe
- Reid Road, West Stowe
- Esplanade, Callemondah

There are seven promoted tourist drives within the LVIA Study Area 2:

- The *Gladstone City Sights Drive* 30 km route visits Round Hill Lookout, Auckland Hill Lookout, with the suggestion to tour the Gladstone Power Station (Queensland, n.d)
- The *Gladstone into the Hinterland* 3 day tourist drive travels from Callemondah, Gladstone with the suggestion to climb Mount Larcom before travelling through to Calliope, Lake Callide and onto Biloela. This drive travels on roads that directly pass under the Project (Queensland, n.d)
- The *Southern Great Barrier Reef* road trip travels into the LVIA Study via Gladstone Benaraby Road from Agnes Water to Gladstone, before departing for Yeppoon on the Gladstone Mount Larcom Road (Queensland, n.d)
- The *Time to Explore* drive, which travels from Gladstone Central west along Mt Larcom Road to Mt Larcom (Gladstone Region, n.d)
- the *Off Road Adventures* drive which travels from Gladstone Central southwest outside of the LVIA Study Area 2 before travelling along the Dawson Highway within the south of the LVIA Study Area 2 (Gladstone Region, n.d)
- The *7 Day Great Gladstone Road Trip* which travels from Mount Larcom along Hanson Road towards Gladstone Central (Gladstone Region, n.d).
- The *Gladstone Region Drive* travels from Gladstone Central south before joining the Dawson Highway in the south of the LVIA Study Area 2. The suggestion to visit both Auckland Hill along with Mount Larcom from Gladstone Central invites visitors to travel along Hanson Drive in proximity to the Project (Barrier Reef Australia, n.d).
- The *Bruce Highway Road Trip* which travels the Bruce Highway from Brisbane to Cairns (Discover Australia Now, 2024)
- *The ultimate 8-day Cairns to Brisbane road trip* which travels along the Bruce Highway between Yeppoon and Bundaberg (Queensland, n.d)
- *Pacific Coast Way* travels the Bruce Highway between Rockhampton and Agnes Waters (Queensland, n.d).

Several local attractions within the LVIA Study Area 2 are promoted to visitors and may attract receptors to the area, including visiting:

- The local lookouts of Jeff Ringland Dr Lookout, Auckland Hill Lookout, William Golding Memorial Lookout and Round Hill Lookout which are located 3.6 km, 6.8 km, 6.5 km and 6.6 km respectively east of the MPA2
- Touring the Gladstone Power Station, which is located 2.4 km east of the MPA2, or the Gladstone Maritime Museum
- The Gladstone Marina located 6 km east of MPA2
- Local parks including Spinnaker Park, Gladstone Port's Corporation East Shores Parklands, the Gladstone Aquatic Centre and the Gladstone Tondoon Botanic Gardens
- Over 200 festivals and events annually within the Gladstone region, including the Brisbane to Gladstone Yacht Race
- Great Barrier Reef islands are located offshore of Gladstone,. The Gladstone Marina is the main SeaLink ferry access point to the islands
- Other events outside of the Gladstone Central area within the LVIA Study Area 2.

- Helicopter scenic ride from the Gladstone Heliport located at the Gladstone Airport over the Gladstone and Great Barrier Reef Islands
- Calliope River north rest area and south campsite as well as nearby swim spot and bridge fishing spot.

The *Bicentennial National Trail*, a long-distance multi-use route for hikers, cyclists and horse riders, traverses the LVIA Study Area 2, traversing along the Calliope River and a section of the Dawson Highway.

There are five State Forests within the LVIA Study Area 2 including Beecher State Forest in the southeast, Mount Stowe State Forest and Calliope Conservation Park in the east, Mount Maurice State Forest in the south east, Targinie State Forest in the north east and Garden Island Conservation Park on Curtis Island in the east. Beecher State Forest is generally the only State Forest that is accessed recreationally by motorcross and mountain bike riders for trail riding, limited natural recreational experiences in Mount Stowe State Forest and Calliope Conservation Park.

The highest landform points within LVIA Study Area 2 includes:

- Auckland Hill (41 m AHD)
- Blackfellow Mountain (154 m AHD)
- Maurice Hill (225 AHD)
- Mount Biondello (146 m AHD)
- Mount Harper (238 m AHD)
- Mount Larcom (631 m AHD)
- Mount Martin (228 m AHD)
- Mount Stowe (205 m AHD)
- Mount Sugarloaf (314 m AHD)
- Round Hill (133 m AHD)
- Scorrier Hill (203 m AHD)
- Ship Hill (174 m AHD)
- White Hill (82 m AHD)
- Zamia Knob (273 m AHD)

Of these mountains, Mount Larcom is publicly accessible for hikers with 360-degree views of the region, Auckland Hill and Round Hill are promoted as a local lookout, Mount Biondello features walking trails.

There are 22 existing OHTL corridors and associated infrastructure within LVIA Study Area 2 including:

110 kV

- The Larcom Creek to Yarwun – H058 that connects both substations

132 kV

- The dual Yarwun to Boat Creek line that connects both substations
- The dual Gladstone North to Wiggins Island line
- The Calliope River to Gladstone North line
- The Gladstone –T5 to Calliope River H – 67

- The Callemondah to Gladstone South – T152
- The Calliope River – H67 to Boyne Island
- The Calliope River – H67 to Callemondah – T101
- Gladstone South – T152 to Callide A Power Station

275 kV

- Wurdong to Calvale line which travels in and out of the southern part of LVIA Study Area 2
- Raglan to Larcom Creek line which enters the LVIA Study Area 2 in the northeast
- The Larcom Creek – H058 to Calliope River – H67 that connects both substations
- The four Calliope River – H67 to Gladstone – H7 lines
- The Gladstone – H7 to Wurdong line
- The dual Gin Gin – H6 to Calliope River – H67
- The Calliope River – H67 to Wurdong

A large number of railway lines traverse LVIA Study Area 2, with balloon loops in key mineral and resource extraction areas. The railway lines include Aurizon's Blackwater System and Moura System freight railway lines, and Aurizon's North Coast Line which has both freight and a passenger line from Brisbane to Cairns. The Callemondah Yard Locomotive Depot is also located within LVIA Study Area 2.

6.1.2. Interim Biogeographic Regionalisation for Australia

The Interim Biogeographic Regionalisation for Australia (IBRA) is a biogeographic regionalisation of Australia developed by the Australian Government's Department of Sustainability, Environment, Water, Population and Communities (now Department of Climate Change, Energy, the Environment and Water (DCCEEW)) and represents a landscape–based approach to classifying the land surface of Australia. The IBRA data consists of two datasets: IBRA bioregions, which are a larger scale regional classification of homogenous ecosystems; and subregions, which are more localised.

Whilst bioregions have been defined mainly for the purposes of ecosystem planning and monitoring, the nominal attributes that make up IBRA are climate, lithology/geology, landform, vegetation, flora and fauna, and land use, which are themes typically used to define landscape character at a high level. IBRA 7.0 was released in 2012, which delineates 89 biogeographic regions and 419 sub regions, each reflecting a unifying set of major environmental influences which shape the occurrence of flora and fauna and their interaction with the physical environment across Australia. The bioregion information enables a high–level desktop understanding of the different landscape settings of the LVIA Study Areas. The descriptions for the sub–regions that accompany IBRA 7.0 are not currently published. However, upon request, the Queensland Government Environmental Resources Information Network (ERIN) were able to supply descriptions of each of the subregions in the LVIA Study Areas for the IBRA 5.1 dataset (which follows similar boundaries to the current version in the vicinity of MPA1 and MPA2).

As defined by IBRA 7.1 (DCCEEW, 2023), LVIA Study Area 1 and 2 are located across four bioregions and subregions:

- The Brigalow Belt North (BBN) with the subregion of Marlborough Plains (located only within the LVIA Study Area 2 with no part of the Project located in this area)

- The South East Queensland (SEQ) with the subregion of Burnett-Curtis Hills (located within LVIA Study Area 2 as a part of *Section D* and the *MPA2, Section E*)
- The Brigalow Belt South (BBS) with the subregion of Mount Morgan Ranges (located within both LVIA Study Area 1 and 2 as a part of *Section C*, *Section D,* and a section of *MPA1, Section A*)
- The Brigalow Belt South (BBS) with a subregion of Callide Creek Downs (located within LVIA Study Area 1 as a part of *MPA1, Section A*)

Descriptions for subregions are provided in **Table 16** (ERIN, 2012).

Table 16: IBRA subregion descriptions

IBRA subregion name, code and total area (ha)	Description
Marlborough Plains (BBN14) 1,125,200 ha	Marlborough Plains is an undulating to hilly subregion with a complex geology. Bedrock includes Devonian, Carboniferous, Permian and Cretaceous sediments, Permian volcanics and a variety of igneous rocks. The subregion is dominated by alluvial plains and colluvial slopes, usually carrying a woodland of poplar gum (*Eucalyptus platyphylla*), ghost gum (*Corymbia dallachiana*), forest red gum (*E. tretinoins*) and tea tree (*Melaleuca spp.*), with low rises carrying narrow–leaved ironbark (*E. crebra*). Hillier areas carry an open forest or woodland which includes lemon–scented gum (*C. citriodora*), bloodwood (*Corymbia spp.)* and narrow– leaved ironbark (*E. crebra*), with supple jack (*Lophostemon sp. aff. L. confertus*) nearer to the coast and silver–leaved ironbark (*E. melanophloia*) inland. There are also extensive saline coastal littoral communities.
Burnett - Curtis Hills and Ranges (SEQ01) 990,674 ha	Is less well defined geologically as the other subregions. This is partly due to the influence of climate as this subregion abuts the dry coastal corridor between Gladstone and Sarina that is part of the Brigalow Belt bioregion. It is geologically diverse and includes granite hills and ranges in the east and low rolling hills on old sedimentary rocks in the west. The subregion has been extended north-west to include the elevated sandstone and volcanic Kroombit Tops plateau that is a moist topographic isolate linked floristically and climatically to Blackdown Tableland and the ranges of southern Queensland. Main vegetation types of the subregion include (*Eucalyptus crebra*) and (*E. citriodora*) woodlands, eucalypt mixed open forests and araucarian microphyll rainforests.
Mount Morgan Ranges (BBS04) 1,293,528 ha	Mount Morgan Ranges is a rugged to hilly province formed on the Palaeozoic rocks of the coastal ranges from inland of Rockhampton extending south to the Eidsvold area. The dominant rocks are volcanics, with areas of igneous rocks and small areas of folded metasediments. The steeper areas are dominated by narrow-leaved ironbark (*Eucalyptus crebra*) woodlands with red bloodwood (*Corymbia erythrophloia*), spotted gum (*C. citriodora*) and rosewood (Acacia rhodoxylon). Silver-leaved ironbark (*Eucalyptus melanophloia*) forms a woodland on erosional lower slopes and gum-topped box (*E. moluccana*) forms woodlands on colluvial slopes. Forest red gum (*Eucalyptus tereticornis*) and Moreton Bay ash (*Corymbia tessellaris*) occur on alluvial soils.

IBRA subregion name, code and total area (ha)	Description
Callide Creek Downs (BBS05) 298,166 ha	Callide Creek Downs is an undulating river valley dominated by lower catena Tertiary deposits, with extensive areas of outcrop of underlying argillaceous rocks and smaller areas of low dissected tablelands of upper catena Tertiary deposits. Brigalow (*Acacia harpophylla*) communities are dominant, with areas of softwood scrub. Shrubby woodlands dominated by narrow-leaved ironbark (*Eucalyptus crebra*) occur on the dissected tablelands and the alluvial areas are dominated by forest red gum (*Eucalyptus tereticornis*).

Note: these descriptions were provided directly to LatStudios staff by Queensland Government Environmental Resources Information Network (ERIN) (personal correspondence).

6.1.3. Soils, vegetation, and rural land use

Australian soil classification mapping indicates that within LVIA Study Area 1, rudosols, sodosols, vertosols, dermosols and kurosols are the predominant soil orders. Within LVIA Study Area 2, dermosols, tenosols, sodosols, hydrosols, rudosols, chromosols and kurosols are present (Searle, 2021). Soil types strongly influence landuse (including farming and agriculture), and landcover (particularly vegetation) and therefore have an influence on the visual character of the landscape.

The dominant land use within the LVIA Study Area 1 is grazing, cropping, sections that support mining, production of native forests and residual native vegetation. Land use within LVIA Study Area 2 land use predominately includes grazing on native vegetation, along with residual native cover, native forest production, manufacturing and industrial, rural residential agricultural activities and associated farming infrastructure as well as infrastructure easements including transmission lines which travels extensively through both LVIA Study Area 1 and 2.

Historical land clearing has occurred within the LVIA Study Area 1, though where it has occurred, clearing has facilitated grazing and agricultural activities, along with mining or infrastructural corridors. As such, remnant vegetation is limited to that occurring within riparian corridors and smaller localised areas associated with variations in topography such as mountains and mountain ranges. The broader LVIA Study Area 1 also includes land that supports industrial operations including quarrying, large scale machinery, public services, as well as infrastructure easements such as the transmission lines which travel extensively through the LVIA Study Area 1.

The 1:5 million Broad Vegetation Group mapping within the LVIA Study Area 1 indicates that remnant vegetation within the LVIA Study Area 1 is dominated by brigalow, belah and gidgee on heavy clay soils along with eucalyptus woodlands on granitic and metamorphic ranges, sandplains and footslopes of hills and ranges and dry eucalypt woodlands to open woodlands on shallow soils in hilly terrain.

The 1:5 million Broad Vegetation Group mapping within the LVIA Study Area 2 indicates mangroves and saltmarshes along the coastal area, followed by moist open forests to woodlands dominated by spotted gums and vine thickets. This graduates to eucalyptus woodlands across a broad range of landscapes including open forest and woodlands drainage lines and alluvial plains.

6.1.4. Geology, landform, and hydrology

Geology, landform and hydrology are expressed in the character of the landscape. The topography of the LVIA Study Area 1 includes a mix of:

- Expansive lowland rural plains from 180 m AHD to 190 m AHD in the in the western areas of the LVIA Study Area 1
- Visually distinctive mountains including Mount Murchison (524 m AHD), Giles Peak (518 m AHD) located within the north of the LVIA Study Area 1
- Elevated and undulated forested ranges and mountains within the south, east and north (with elevations of up to 520 m AHD) of the LVIA Study Area 1.

The topography of the LVIA Study Area 2 includes a mix of:

- Expansive lowland rural plains from 10 m AHD to 50 m AHD in the in the northeast to central area of the LVIA Study Area 2 which generally follows the Calliope River
- Numerous visually distinctive mountains including Zamia Knob (273 m AHD) and Mount Harper (203 m AHD) with the southwest range area, to Mount Larcom (631 m AHD), Mount Sugarloaf (314 m AHD) and Mount Martin (223 m AHD) within the north and central area of the LVIA Study Area 2
- Elevated and undulated forested ranges and mountains within the west and north (with elevations of up to 120 m AHD) of the LVIA Study Area 2.

The LVIA Study Area 1 is located within the North East Coast drainage division and contains watercourses within the Fitzroy basin and a section of the Calliope River Basin in the northeast. Lake Callide is the major watercourse located centrally within the LVIA Study Area 1. As illustrated on **Figure 5,** landform within parts of LVIA Study Area 1 associated with key watercourses are broadly characterised by gently undulating to undulating plains and rises interspersed with occasional mountainous terrain.

The LVIA Study Area 2 is located within the North East Coast drainage division and contains watercourses primarily within the Calliope River Basin and the coastal waters of the GBRWHA to the east. A small section of the Fitzroy basin is located in the northwest, and a small section of the Boyne River Basin in the southeast. The Calliope River is the major watercourse that joins the coastal waters and flows centrally within the LVIA Study Area 2.

While the visual character of watercourses within both LVIA Study Areas varies greatly, within LVIA Study Area 1, the significant watercourse of Lake Callide has been engineered to store and facilitate water, and in LVIA Study Area 2, the coastal waters of the Pacific Ocean flow in proximity to Gladstone to create rivers, estuaries and islands that are a part of the GBRWHA. Collectively, these watercourses contribute to the visual character of the landscape.

Regional surface geology mapping was obtained from the Queensland geology regional web map service (Department of Natural Resources, Mines and Energy, 2021). LVIA Study Area 1 is located within the Bowen basin, and the surface geology of the LVIA Study Area 1 corresponds strongly with the terrain. The southwestern area features a large section of arenite-mudrock including volcanic and metamorphic rock, along with mixed sedimentary rocks.

The western part of LVIA Study Area 2 is located within the Bowen basin, comprised of mixed volcanic and sedimentary volcanic and metamorphic rocks. The eastern area of

LVIA Study Area 2 within the Gladstone region has a wide range of mixed sedimentary deposits, alluvium, coastal muds, basalt, granite, siltstones, arenite, chert and mudstone, sedimentary and mafites in a relatively small area.

6.1.5. Designated landscapes

The LVIA Study Area(s) includes the following protected landscape areas as shown on **Figure 4** and designated in accordance with the legislation described in **Section 5**.

6.1.5.1. 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 island is also intersected by a sub branch of the Calliope River.

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, i.e. "*Contain superlative natural phenomena or areas of exceptional natural beauty and aesthetic importance*" (Queensland Government, 2020). Representative photos showing the existing landscape character of the GBRWHA in proximity to MPA2, Section E as provided in **Illustration 4**.

Illustration 4: Existing features and infrastructure within the GBRWHA

View from Hanson Road, Callemondah toward the Gladstone Power Station on the GBRWHA

View from Hanson Road, Callemondah toward the Wiggins Island Coal Export Terminal on the GBRWHA

View from Hanson Road, Callemondah toward MPA2 on the unnamed island across the GBRWHA

6.1.5.2. Other key designated landscapes

Other designated landscapes in the Study Areas are summarised in **Table 17**.

Table 17: 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.

6.1.5.3. Matters of State Environmental Significance

The primary purpose of MSES is the protection of biodiversity values of state interest (which are assessed elsewhere). However, this assessment has considered MSES as deemed appropriate, where such matters are relevant to scenic amenity values (such as the presence of riverine regulated vegetation), noting not all areas of vegetation are of aesthetic value.

MSES includes all protected areas under the Nature Conservation Act 1992, except coordinated conservation areas within the LVIA Study Area as described above in Section 6.1.5: Designated landscapes and shown on Figure 4 which includes MSES protected areas (estates). MPA2 includes a small part of the GBRWHA and a section of the Calliope Conservation Park.

6.2. Description of the Site

6.2.1. MPA1

MPA1 is shown on Figure 2 and occupies approximately ten (10) land parcels , as well as easements and road reserves. The boundary of the Site is defined by freehold, easements and road reserves.

MPA1 crosses the local roads of Pelican Point Road, Biloela-Callide Road and Ian McCauley Way before running in alignment with Coal Road, which at its closest point, is located 65 m away from the Project. *MPA2, Section E* is around 0.5 km predominantly situated between and around Biloela-Callide Road and Ian McCauley Way (refer inset on Figure 4).

As illustrated on Figure 3, MPA1 is characterised by a sloping topography from 230 m AHD in the west to 310 m AHD centrally, before sloping in the east to 260 m AHD.

Public access to MPA1, Section A including connection to the H024 Calvale Substation is restricted due to the site's restricted access and exclusion fencing.

According to 1:5 million BVG (broad vegetation groups) mapping, pre-clearing vegetation present on the Site indicates the Site in the west supports Eucalypt dry woodlands on

inland depositional plains, *Acacia aneura* dominated open forests, woodlands and shrublands and Eucalypt woodlands to open forests (mainly Eastern) in the east.

Vegetation clearing is already evident on MPA1 to accommodate existing OHTL towers but parts of the Site 1 are located on moderately dense non-remnant woody and grassy sclerophyll vegetation which provides a general rural character. Existing vegetation is mature and dense and contributes to buffering views towards the existing OHTL corridor. Where MPA1 crosses the roads of Pelican Point Road, Biloela Callide Road and Ian McCauley Way, views are framed by existing roadside that has been cleared for the existing OHTL corridor, with clear visibility down the OHTL corridor when located within the MPA1. Existing vegetation in this area includes MSES regulation vegetation including some Category B and C (Endangered or of concern).

MPA1 contains electricity infrastructure comprising of two existing transmission lines:

- 132 kV Calvale to Callide A Power Station
- 132 kV Gladstone South-T152 to Callide A Power Station

Land use within MPA1 includes the current energy transmission operations of the adjoining H024 Calvale Substation. Built infrastructure within MPA1 includes high voltage OHTL towers located within the central and eastern part of the Site. Neighbours of MPA1 are limited to mining or energy operations located within freehold landholdings as well as their associated access roads, structures and powerlines.

Built infrastructure within MPA1 includes the existing H024 Calvale Substation within the west of the Site, and the existing Calvale to Callide A Power Station and Gladstone South-T152 to Callide A Power Station 132 kV transmission powerline corridor within the centre and east of MPA1.

Representative photos showing the existing landscape character of the site are provided in **Illustration 5**.

Illustration 5: Existing features and infrastructure on MPA1 and surrounds

View from Biloela Callide Road, Mount Murchison toward MPA1

View from Coal Road, Dumgree toward Project Site 1

View from Coal Road, Dumgree toward MPA1

View from Callide Lookout, Dumgree toward MPA1

View from Ian McCauley Way, Dumgree toward MPA1

View from Ian McCauley Way, Dumgree toward MPA1

6.2.2. MPA2

MPA2 (including *MPA2, Section C; MPA2, Section D; and MPA2, Section E*) is shown on **Figure 2** and occupies 31 land parcels, as well as easements and road reserves (refer **Figure 4** and associated inset).

The boundary of MPA2 is defined by freehold, easements, lands lease, road reserves, State Forest, National Park and the Calliope River Anabranch.

MPA2 crosses one state-controlled road, the Bruce Highway (in East End) as well as the local roads of Kaluda Road (Bracewell), Mount Alma Road (East End), Boyles Road, Calliope River Road, Mount Miller Road and Reid Road (West Stowe) and Esplanade (Callemondah). MPA2 also crosses over two unnamed roads (East End), an access road to the Rio Tinto Alcan Red Mud Depository (Aldoga) and QPWS&P tracks in Mount Stowe State Forest and Calliope Conservation Park (West Stowe).

As illustrated on **Figure 3**, MPA2 within *Section C* is characterised by gentle undulations from 90 m AHD in the west sloping to 60 m AHD, before a rise of 70-100 m AHD, tapering to 40-60 m AHD, a small rise from 70-90 m AHD before ending at 60 m AHD.

MPA2 within *Section D* is characterised by undulations from 60 m AHD in the west, moving from 60-130 m AHD in Mount Stowe State Forest, moving from 60 m AHD to 130 m AHD to 40 m AHD in Calliope Conservation Park, before sloping down in the northeast of Section D from 30-10 m AHD.

MPA2, Section E is mostly flat at around 10 m AHD.

Public access to the connection of MPA2 to the Calliope River Substation will be restricted due to restricted access and the public excluded by fencing .

According to the 1:5 million BVG (broad vegetation groups) mapping, pre-clearing vegetation present on MPA2 includes within *Section C* with Eucalypt woodlands to open forests (mainly Eastern) and in watercourse areas, Eucalypt open forests to woodlands on floodplains. In *Section D*, rainforests and scrub in the area of Mount Stowe State Forest, concluding in the northeast of *Section D* Eucalypt dry woodlands on inland depositional plains. *MPA2, Section E* includes Eucalypt open forests to woodlands on floodplains

Some vegetation clearance on MPA2 has occurred to accommodate the existing OHTL towers, however parts of the MPA2 are located on moderately dense non-remnant woody and grassy sclerophyll vegetation, which contributes to the rural character. Existing vegetation is mature and dense in buffering the visibility of the existing OHTL corridor where it is present in the current Site area. MPA2 is visible where MPA2 crosses roads such as the Bruce Highway, as well as the local roads of Kaluda Road, Mount Alma Road, Boyles Road, Calliope River Road, Mount Miller Road, Reid Road, and Esplanade, as well as the two unnamed roads in East End and an access road in Aldoga, and QPWS&P tracks in Mount Stowe State Forest and Calliope Conservation Park. These views are framed by existing roadside that has been cleared for the existing OHTL corridor, with clear visibility down the OHTL corridor when located within the MPA2.

Landscape sensitivities of MPA2 of particular note with regards to the Project would relate to the clearance additional vegetation on the Site, particularly MSES regulation vegetation including Category B and C (Endangered or of concern), and vegetation associated in the areas of the Mount Stowe State Forest and Calliope Conservation Park.

MPA2 follows the two concurrent OHTL transmission line corridors which are present within *Section C* and *D*:

- 275 kV Wurdong to Calvale
- 275 kV Bouldercombe-H10 to Calliope River-H67

Built infrastructure across *Section C* and *D* includes the existing OHTL towers and cables within the OHTL corridor, along with fences, the Aurizon North Coast Brisbane to Cairns and Wiggins Island Balloon Loop railway line and the Calliope River Substation as a point of connection for *MPA2, Section E.*

Representative photos showing the existing landscape character of the site are provided in Illustration 6.

Illustration 6: Existing features and infrastructure on MPA2 and surrounds

View from unnamed track, Callemondah within MPA2

View from Esplanade, Callemondah within MPA2

View from Mount Miller Road, Yarwun toward MPA2

View from Calliope River Road, Yarwun toward MPA2

View from Boyles Road, West Stowe toward MPA2

View from Boyles Road, West Stowe toward MPA2

View from Bruce Highway, East End within MPA2

View from Mount Alma Road, Bracewell toward MPA2

View from Kaluda Road, Bracewell within MPA2

7. Landscape assessment

7.1. Landscape character baseline

Eight LCTs have been identified within both LVIA Study Areas 1 and 2 (**Figure 2** in **Appendix 1**). The LCTs identified have been informed by fieldwork assessment and baseline assessment. The eight LCTs defined are:

- LCT A: Rivers, Estuaries and Islands
- LCT B: Forested Ranges and Mountains
- LCT C: Forested Lowlands
- LCT D: Undulating and Grazed Uplands
- LCT E: Lowland Rural Plains
- LCT F: Industrial, Mined and Transitional Lands
- LCT G: Residential
- LCT H: Lakes and Dams.

7.2. Landscape character assessment (operation)

MPA1 and MPA2 fall within parts of LCT A, LCT B, LCT C, LCT D, LCT E and LCT F that are directly impacted by operation of the project. All other LCTs are anticipated to only experience indirect operational impacts. The Project falls within the following LCTs/LCAs:

MPA1

- MPA1, Section A
    - LCT F: Callide Industrial, Mined and Transitional Lands (LCA F21)

MPA2

- Section C
    - LCT B: Calliope Conservation Forest Ranges and Mountains (LCA B1)
    - LCT B: Mount Alma Forest Ranges and Mountains (LCA B2)
    - LCT C: West Stowe Forested Lowlands (LCA C2)
    - LCT D: West Stowe Undulating and Grazed Uplands (LCA D1)
    - LCT D: Mount Alma Undulating and Grazed Uplands (LCA D2)
    - LCT E: Mount Alma Lowland Rural Plains (LCA E2)
- Section D
    - LCT B: Calliope Conservation Forest Ranges and Mountains (LCA B1)
    - LCT C: Calliope Conservation Forested Lowlands (LCA C1)
    - LCT C: West Stowe Forested Lowlands (LCA C2)
    - LCT D: West Stowe Undulating and Grazed Uplands (LCA D1)
    - LCT E: West Stowe Lowland Rural Plains (LCA E1)
    - LCT F: Mount Miller Road Industrial, Mined and Transitional Lands (LCA F2)
- MPA2, Section E
    - LCT A: Calliope River Estuaries and Islands (LCA A1)
    - LCT F: Calliope River Industrial, Mined and Transitional Lands (LCA F1)
    - LCT F: Wiggins Island Industrial, Mined and Transitional Lands (LCA F3)
    - LCT C: Calliope Conservation Forested Lowlands (LCA C1)

An assessment of the potential **operational impact** on identified LCTs and LCAs is provided in **Table 18** and **Table 19.** Construction and decommissioning impact is considered in **Section 9.**

The likely sensitivity of LCT A, LCT B, LCT C, LCT D and LCT E which are directly impacted by operations of the project and an assessment of the likely magnitude of change and significance of that effect on landscape amenity values of this LCT are described in **Table 20** to **Table 24**.

While both MPA1 and MPA2 intersect parts of LCT F: Industrial, Mined and Transitional Lands, these lands comprise heavy and light industry, mines and associated infrastructure including electricity infrastructure. As the proposed Project infrastructure associated with the OHTL corridor is consistent with the character of electrical infrastructure typically found within LCTF, it is considered that the impact on landscape character would be negligible. New electrical infrastructure may intensify development but would be consistent with the existing character. Therefore, it is anticipated that the Project would not appear out of context within this LCT, the sensitivity of the landscape to change is low and likely magnitude of change would be negligible so any impacts would not be significant. Therefore a detailed assessment of impacts on this LCT has not been included within this report.

Table 18: Potential operational impacts on identified Landscape Character Types (LCTs) Table 18 and Landscape Character Areas (LCAs) within MPA1 and LVIA Study Area 1

Landscape Character Type (LCT)	Landscape Character Area(s) (LCAs)	Potential operational impact
LCT B: Forested Ranges and Mountains	LCA B21: Callide North Forest Ranges and Mountains	Indirect
LCT D: Undulating and Grazed Uplands	LCA D6: Biloela Undulating and Grazed Uplands	Indirect
LCT E: Lowland Rural Plains	LCA E15: Biloela Lowland Rural Plains	Indirect
LCT F: Industrial, Mined and Transitional Lands	LCA F21: Callide Industrial, Mined and Transitional Lands	Direct – but no significant impact anticipated
LCT H: Lakes and Dams	No Impact	No Impact

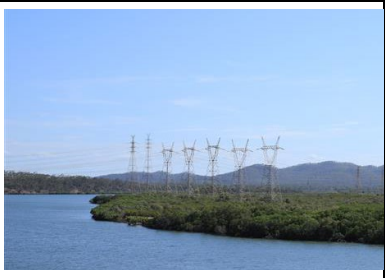
Table 19: Potential Project impacts on identified Landscape Character Types (LCTs) and Landscape Character Areas (LCAs) within MPA2 and LVIA Study Area 2

Landscape Character Type (LCT)	Landscape Character Area(s) (LCAs)	Potential operational impact
LCT A: Rivers, Estuaries and Islands	LCA A1: Calliope River, Estuary and Islands	Direct
LCT B: Forested Ranges and Mountains	LCA B1: Calliope Conservation Forest Ranges and Mountains	Direct
	LCA B2: Mount Alma Forest Ranges and Mountains	Direct
LCT C: Forested Lowlands	LCA C1: Calliope Conservation Forested Lowlands	Direct
	LCA C2: West Stowe Forested Lowlands	Direct
LCT D: Undulating and Grazed Uplands	LCA D1: West Stowe Undulating and Grazed Uplands	Direct
	LCA D2: Mount Alma Undulating and Grazed Uplands	Direct
LCT E: Lowland Rural Plains	LCA E1: West Stowe Lowland Rural Plains	Direct
	LCA E2: Mount Alma Lowland Rural Plains	Direct
LCT F: Industrial, Mined and Transitional Lands	LCA F1: Calliope Industrial, Mined and Transitional Lands	Direct –no significant impact anticipated as described above
LCT G: Residential	No Impact	No Impact
LCT H: Lakes and Dams	No Impact	No Impact

8.1.2 Landscape Character Type A

Table 20: Landscape impacts assessment of LCT A: Rivers, Estuaries and Islands

Type A: Rivers, Estuaries and Islands	
Landscape Baseline Assessment	
Location and boundaries	This landscape type is located in: **LVIA Study Area 2**: Predominantly eastern areas and some southern areas, associated with the GBRWHA, Calliope River and associated estuary. There is one LCA of this type in the LVIA Study Area 2 – the Calliope River, Estuary and Islands (LCA A1).

Type A: Rivers, Estuaries and Islands	
Typical character images:	
     	
Key characteristics	• The river system exist within a gently undulating landscape. Landscapes that include estuaries are relatively flat with marshlands. • Typically well-vegetated riverbanks with fringing mangrove forests, saltpans and woodlands creating a visually interesting natural character. • Includes waterways and landscapes within the GBRWHA. • Contains areas vegetation of aesthetic merit (some of which is considered to be MSES), including associated with defined watercourses and wetlands. • Contains some high value scenic amenity areas as identified within the GRPS Scenic Amenity Overlay Map as shown on **Figure 4**.
Precedent modifications and infrastructure elements	• Existing Port of Gladstone, including existing shipping operations, coal mining operations terminal and barging operations. • Large Ocean Ging Vessels (OGVs) associated with transhipment. • Gladstone Marina which includes various public and private OGVs. • Generally a moderate natural landscape due to the built infrastructure elements associated with port facilities, boat ramps, jetties and marina at the Calliope River Estuary, but heavily influenced by the surrounding LCT (particularly LCT F). • Existing road bridge crossings across the rivers allow views of the river, estuary and Port of Gladstone.
Landscape Character Sensitivity Assessment	• Moderate degree of perceived naturalness with anticipated low wilderness values due to presence of varying OGVs, port operations, bridges and jetties with some waterway modifications at marinas. • Several tourist opportunities as this LCT is utilised for recreational and commercial activities including crabbing, several fishing areas including bridge fishing, birdwatching, scenic flights, tours out towards the GBR and nearby islands outside the LVIA Study Area 2, swimming spots, general boating and general sight-seeing. • Contains landscapes associated with the GBRWHA.

Type A: Rivers, Estuaries and Islands	
	• Value of visual and aesthetic context is reduced by nearby land uses such as the existing Port of Gladstone which furthermore locally reduces the sensitivity of the landscape values to change. • Parts of this LCT have been identified as containing *Regional Significance 8 Scenic Amenity* within the Scenic Amenities Overlay Map and other high scenic or aesthetic value as identified in the GRPS policies, including: o the Calliope River and its associated estuary o the coastal waters of the Great Barrier Reef WHA associated with Gladstone Harbour and Curtis Island to the northeast, o creeks, gullies, waterways and wetlands. • Despite the moderate degree of perceived naturalness due to a considerable presence of existing infrastructure associated with the Port of Gladstone, it is considered that much of this LCT is valued on an international, national, state, regional and local level. This LCT is also utilised for several recreational and commercial activities. Following the precautionary principle, given the WHA status of parts of the affected landscape, the overall sensitivity is considered to be up to ***High***.
Landscape Evaluation	
Magnitude of Change Assessment	• A small part of LCA A1 falls within MPA2 (*MPA2, Section E*) and the Project directly impacts a localised area of this LCA associated with an oxbow in the Calliope River, through the introduction of additional OHTL towers and powerlines which will cross the water. • Within LCA A1, the magnitude of change is anticipated to be noticeable due to the following factors: o Localised vegetation clearing to accommodate OHTL towers, supporting infrastructure and access tracks. o The character of this localised area is already partially influenced by the existing 275 kV OHTL corridor. This would result in an intensification but would not fundamentally change the character noting the similar, large–scale infrastructure within what is currently surrounded by a highly developed landscape (*LCT F: Industrial, Mined and Transitional land*). • This is considered to represent a ***Low (direct)*** magnitude of change. • Other parts of the LCT are not directly impacted by the Project and situated at some distance (greater than 5 km) from the nearest proposed OHTL tower, therefore any impacts on other areas within this LCT would be ***Negligible*** (indirect).
Significance of Effect	• The greatest effect of the Project on *LCT A: Rivers, Estuaries and Islands* (LCA A1*)* is considered to be ***Moderate*** and, therefore, ***Not Significant***.

7.2.1. Landscape Character Type B

Table 21: Summary description of LCT B: Forested Ranges and Mountains

LCT B: Forested Ranges and Mountains	
Landscape Baseline Assessment	
Location and boundaries	This landscape type is located throughout the LVIA Study Areas, associated with elevated and forested ranges, mountains and hills typically above 80 m AHD. There are twenty-four LCAs of this type within LVIA Study Area 1 and LVIA Study Area 2. • LVIA Study Area 1 - LCAs include: Callide Forested Ranges and Mountains (LCA B24), Valentine Plains Forest Ranges and Mountains (LCA B23), Callide East Forest Ranges and Mountains (LCA B22) and Callide North Forest Ranges and Mountains (LCA B21). Areas of this LCT that fall within MPA1 and are directly impacted include Callide North Forest Ranges and Mountains (LCA B21). • LVIA Study Area 2 - LCAs include: Calliope Conservation Forest Ranges and Mountains (LCA B1), Mount Alma Forest Ranges and Mountains (LCA B2), Larcom Creek Forest Ranges and Mountains (LCA B3), Boyle Road Forest Ranges and Mountains (LCA B4), West Stowe Forest Ranges and Mountains (LCA B5), North Gladstone Forest Ranges and Mountains (LCA B6), South Gladstone Forest Ranges and Mountains (LCA B7), West Gladstone Forest Ranges and Mountains (LCA B8), Calliope Forest Ranges and Mountains (LCA B9), Wooderson Forest Ranges and Mountains (LCA B10), East Wooderson Forest Ranges and Mountains (LCA B11), South Wooderson Forest Ranges and Mountains (LCA B12), Mount Alma South Forest Ranges and Mountains (LCA B13), Bracewell Forest Ranges and Mountains (LCA B14), East End Forest Ranges and Mountains (LCA B15), North Bracewell Forest Ranges and Mountains (LCA B16), North East Bracewell Forest Ranges and Mountains (LCA B17), Blackfellow Mountain Forest Ranges and Mountains (LCA B18), South Mount Larcom Forest Ranges and Mountains (LCA B19), Curtis Island Forest Ranges and Mountains (LCA B20). Areas of this LCT that fall within MPA2 and are directly impacted include Calliope Conservation Forest Ranges and Mountains (LCA B1) (*Section C* and *D*) and Mount Alma Forest Ranges and Mountains (LCA B2) (*Section C*).
Typical character images	
	 

		
Key characteristics	• The geology is highly varied and includes volcanic and sedimentary rocks and sandstone. • Soils are dominated by rudosols in LVIA Study Area 1, whilst rudosols, dermosols, kandosols and tenosols are present in LVIA Study Area 2. • Generally steep landscape consisting of the elevated and undulating ridges and valleys associated with the Callide, Mount Alma and Mount Larcom Ranges. Topography typically ranges between 80-750 m AHD; with elevations up to 750 m AHD associated with Mount Alma (LCA B2). • These typically forested landscapes include both private property as well as areas within state forests, conservation parks and timber reserves. This includes Mount Stowe State Forest (LCA B1), Calliope Conservation Park (also within LCA B1) and Callide Timber Reserve (LCA B21). • Vegetation is dominated by eucalypt woodlands to open forests, whilst areas of scrub and *Corymbia* sp. forest also occur. • Several major watercourses traverse this LCT, including the Callide River and non-perennial creeks, for example, Rainbow Creek, Callide Creek, Boat Creek, Gravel Creek and their tributaries. • No major roads (such as state highways) transect this LCT however, several local roads within LVIA Study Area 1 and 2 are present. • Very sparsely settled landscape, with very few built homesteads or cottages. • These landscapes form a backdrop to long distant views from the surrounding landscape due to their elevated nature.	
Precedent modifications and infrastructure elements	• Several local roads, access tracks and the North Coast railway line traverse this landscape. • Existing large-scale infrastructure includes telecommunication towers located on Callide Range. • Presence of existing 132kV and 275 kV transmission lines which traverse several LCAs, including LCA B1, B2 and B21, including associated with the proposed MPA alignment.	
Landscape Character Sensitivity Assessment	• LCT B is typically a highly visible landscape due to the elevated topography of this landscape type and forms a backdrop to views from the surrounding landscape. • Generally there is a high level of perceived naturalness and inaccessibility throughout much of this landscape, however, as noted above, there is evidence of some human interventions such as road and rail infrastructure, transmission lines and telecommunications towers. • A significant portion of this LCT is within protected estates, such as Mount Stowe State Forest (LCA B1), Calliope Conservation Park (LCA B1) and Callide Timber Reserve (LCA B21), which are anticipated to provide some limited natural low key recreation experiences. • Parts of this LCT have been identified as containing *Regional Significance 8-10 Scenic Amenity* within the Scenic Amenities Overlay Map and other high scenic or aesthetic value as identified in the GRPS policies, including:	

	○ Areas of conservation such as National Parks, Calliope Conservation Park, Targinie State Forest and Mount Stowe State Forest ○ Creeks, gullies, waterways and bushland ○ Mount Alma and Mount Larcom Ranges ○ The O'Connell Ridges. • Parts of this LCT contain significant natural landscapes that are considered to be of high scenic or aesthetic value as identified by the BSPS and are present within LVIA Study Area 1, include: ○ Elevated and vegetated landscapes associated with the Callide range and escarpments ○ Landscapes within protected areas. • Coal Road is nominated as a tourist drive. • Overall, a significant portion of this landscape is valued for its natural qualities, scenic amenity and aesthetic values, which is formalised by national park designations, local planning schemes and the GRPS scenic amenity overlay. • Whilst it is acknowledged that this is a large scale landscape, due to the elevated nature of the landscape, high level of visual exposure, and recognition of the high scenic values, it is considered that there will be areas within this landscape type that would have a low capacity to accommodate change. Therefore, the sensitivity of this landscape is considered to be up to ***High*** for areas protected on account of their unique landscape values that offer tourism experiences, such as conservation parks **(LCA B1** and **B2)**. Other areas are considered to have a ***Medium*** sensitivity, such as LCA B21, as they are valued at the regional and local level for their aesthetic contribution to the landscape.
Landscape Evaluation	
Magnitude of Change Assessment	• Parts of LCA B1 and B2 within MPA2 and B21 within MPA1 are directly impacted by the proposed OHTL corridor (which reduces the contrast with the existing landscape character as described in Section 4.1.1). • Other parts of the LCT are not directly impacted by the Project, therefore any impacts on other LCAs would be indirect. • Within LCA B1, B2 and B21, the magnitude of change is anticipated to be noticeable due to the following factors: ○ Some localised vegetation clearing to accommodate OHTL towers, supporting infrastructure and access tracks. ○ The introduction of similar, large–scale infrastructure within what is currently a relatively undeveloped natural landscape that may impact upon the perception of rural ambience and tranquillity. ○ Existing OHTL corridors already transect these LCAs and the proposed infrastructure is set out next to an existing cleared easement. • Therefore, it is anticipated that the Project will have a noticeable impact on the landscape character of parts of this LCT within MPA1 and MPA2 (LCA B1, B2 and B21), as it will be introducing additional large-scale infrastructure into the landscape. This is considered to represent a ***Medium (direct)*** magnitude of change for LCA B1, B2 and B21, as the change will be clearly evident, however is limited to localised areas within this LCA. It is also noted that existing OHTL corridors exist within these areas and the proposed Project infrastructure associated with LCA B1 and B2 follow an existing OHTL corridor. • Other parts of the LCT are not directly impacted by the Project and situated at some distance (greater than 5 km) from the nearest proposed

	OHTL tower, therefore any impacts on other LCAs would be ***Negligible*** (indirect).
Significance of Effect	• The greatest effect of the Project on LCT B: Forested Ranges and Mountains (*LCA B1 and B2)* is considered to be ***Moderate to Major*** and, therefore, ***Significant***. • Impacts on LCA B21 are considered to be ***Moderate*** and, therefore, ***Not Significant***.

7.2.2. Landscape Character Type C

Table 22: Summary description of LCT C: Forested Lowlands

LCT C: Forested Lowlands	
Landscape Baseline Assessment	
Location and boundaries	This LCT is predominantly located in low lying areas of the LVIA Study Area 2 with occurrences in central catchment areas associated with watercourses and remnant vegetation. There are eighteen LCAs of this type within LVIA Study Area 2. • **LVIA Study Area 2** - LCAs include: Calliope Conservation Forested Lowlands (LCA C1), West Stowe Forested Lowlands (LCA C2), Gladstone Harbour Forested Lowlands (LCA C3), East Mount Larcom Forested Lowlands (LCA C4), Mount Larcom Forested Lowlands (LCA C5), West Mount Larcom Forested Lowlands (LCA C6), Mount Alma Forested Lowlands (LCA C7), West Wooderson Forested Lowlands (LCA C8), North Wooderson Forested Lowlands (LCA C9), West Calliope Forested Lowlands (LCA C10), North Calliope Forested Lowlands (LCA C11), Mount Beecher Forested Lowlands (LCA C12), Round Hill Forested Lowlands (LCA C13), West Round Hill Forested Lowlands (LCA C14), Gladstone Forested Lowlands (LCA C15), Hamilton Point Forested Lowlands (LCA C16), Ship Hill Forested Lowlands (LCA C17), Laird Point Forested Lowlands (LCA C18). Areas of this LCT that fall within MPA2 and are directly impacted include Calliope Conservation Forested Lowlands (LCA C1) ((*Section C* and *MPA2, Section E*) and West Stowe Forested Lowlands (LCA C2) (*Section D*).
Typical character images	
	 

		
Key characteristics	• The majority of the geology within LCT C is the Galloway Plains igneous complex and Crana beds including limestone, mudstone and arenite-rudite in small parts of LVIA Study Area 2. • Dominant soil types found within LCT C are typically sodosols and rudosols. • Landform is generally undulating, incised by several creeks or located over floodplains. • Vegetation within this LCT is characterised by woodlands of *Corymbia sp*. and *Eucalyptus sp.* with pockets of *Allocasuarina sp*. • The vegetation within this typically forested LCT is comparably much denser than other LCTs within the context of LVIA Study Area 2 and has a more natural aesthetic than many other rural areas nearby. • This LCT includes some areas of State Forest such as Mount Stowe State Forest, Beecher State Forest and are typically situated at the foothills of localised ranges.	
Precedent modifications and infrastructure elements	• There is some infrastructure within this LCT including major road corridors such as the Bruce Highway within C2 and existing 275 kV and 132 kV transmission lines which traverse sections of C1,C2 and C13 but existing built elements predominantly consist of local and rural road infrastructure and scattered rural dwellings. • Clearing of vegetation typically aligns to the transmission line and road alignments, areas that are dominated by grazing on native vegetation.	

Landscape Character Sensitivity Assessment	• Existing OHTL corridors currently transection LCA C1, C2 and C13 (which reduces the contrast with the existing landscape character as described in Section 4.1.1).
	• Parts of this LCT have been identified as containing *Regional Significance 8* and *District Significance 7.5 Scenic Amenity* within the Scenic Amenities Overlay Map and other high scenic or aesthetic value as identified in the GRPS policies, including:
	  ○ Areas containing rural landscape character
	  ○ Areas of conservation such as National Parks, Calliope Conservation Park, Beecher State Forest and Mount Stowe State Forest
	  ○ Creeks, gullies, waterways, wetlands and bushland
	• Generally a moderate degree of perceived naturalness, remoteness and inaccessibility, with little evidence of human uses and modification of the landscape.
	• Parts of this LCT are visually enclosed (e.g. within heavily vegetated State Forests).
	• While the State Forests located within this LCT are not anticipated to be frequently visited for recreational purposes, they are acknowledged for their environmental values within the landscape.
	• The Bruce Highway (A1), which is identified as a tourist route, traverses through a small section of LCA C2.
	• As this LCT includes areas of landscape value identified by the GRPS, specifically containing areas of conservation, bushland, creeks, gullies,	

	wetlands and areas of rural character of significance which contribute to the character and scenic amenity of the region, the overall inherent sensitivity is considered to be up to ***Medium***.
Landscape Evaluation	
Magnitude of Change Assessment	• Sections of MPA2 directly impact LCA C1 and C2. This would create a noticeable change as it would be introducing more infrastructure of a similar style of existing OHTL corridors nearby, which would create a more developed and industrial feel to the landscape. This however would occur over a highly restricted and localised area within the LCA. Therefore, it is anticipated that the magnitude of change on LCA C1 and LCA C2 is anticipated to be ***Low (direct).***
Significance of Effect	• The effect of the Project on Calliope Conservation Forested Lowlands (LCA C1) and West Stowe Forested Lowlands (LCA C2) is considered to be ***Minor to Moderate*** and therefore ***Not Significant.***

7.2.3. Landscape Character Type D

Table 23: Summary description of LCT D: Undulating and Grazed Uplands

LCT D: Undulating and Grazed Uplands	
Landscape Baseline Assessment	
Location and boundaries	This landscape type is found in both LVIA Study Area 1 and 2, typically between the higher elevations of LCT B and the lower lying rural plains (LCT E) and comprises rolling uplands, plateaus and cleared or sparsely vegetated ridgelines and localised peaks. There are six LCAs of this type in: • **LVIA Study Area 1** - LCAs include: Biloela Undulating and Grazed Uplands (LCA D6) No areas of this LCT falls within MPA1, however indirect impacts are anticipated due to the close proximity of this LCT. • **LVIA Study Area 2 - LCAs include:** West Stowe Undulating and Grazed Uplands (LCA D1), Mount Alma Undulating and Grazed Uplands (LCA D2), West Wooderson Undulating and Grazed Uplands (LCA D3), East Wooderson Undulating and Grazed Uplands (LCA D4), Mount Larcom Undulating and Grazed Uplands (LCA D5). Areas of this LCT that fall within MPA2 and are directly impacted by the Project include West Stowe Undulating and Grazed Uplands (LCA D1) (*Section C* and *D*) and Mount Alma Undulating and Grazed Uplands (LCA D2) (*Section C*).
Typical character images	
	 

		
Key characteristics	• The geology is typically dominated by sedimentary rocks, whilst and volcanic rocks, including mixed mafites and felsites and granitoids also occur. • Soils are dominated by dermosols and vertosols, whilst sodosols, and chromosols also occur throughout. • Generally undulating landscape typically between 80 m and 500 m AHD with locally elevated areas creating topographic interest, such as plateau remnants and volcanic hills. • Land use is primarily grazing land both cleared and featuring open woodland, and forested tracts located on the more elevated topography and riparian vegetation along creek lines. • Vegetation is typically associated with locally elevated areas and riparian corridors along major creek channels. Small areas of vegetation that do occur within this LCT are typically dominated by eucalypt woodlands to open forests, with smaller localised areas of rainforest and scrub. • This landscape type is traversed by several the non-perennial creeks, including, for example, Callide Creek, Larcom Creek, Oaky Creek, Gravel Creek and their tributaries. • The Dawson Highway, Burnett Highway and Coal Road traverse the parts of this landscape type, whilst several other local roads and private property access tracks provide connectivity throughout rural areas. • Generally a sparsely settled landscape with scattered farmsteads. • This LCT is exposed in part due to the undulating topography as well as the vegetation clearing that has occurred in the landscape. As such often views into and out of the LCTs are unimpeded, however there are some areas where remnant vegetation and/or topography limit long-distance views, particularly along creek corridors.	
Precedent modifications and infrastructure elements	• The Dawson Highway, Burnett Highway and Coal Road, several other local roads, access tracks and the Moura System railway as well as a small section of the Blackwater System traverse this landscape. • Existing large-scale infrastructure includes 132kV and 275 kV transmission lines which traverse LCA D1, D2, and D6.	
Landscape Character Sensitivity Assessment	• Generally a low to moderate degree of perceived naturalness, with the exception of areas containing tracts of remnant or regrowth vegetation, such as on locally elevated hilltops and ridgelines. • Several existing OHTL corridors exist within LCA D1, D2 and D6, which reduces the overall sensitivity of the landscape. • Relatively remote, with the exception of areas in proximity to highways and major roads. • Predominantly visually open and sparsely settled, with opportunities for broad, open views across the landscape, particularly from ridgelines and hilltops. • Parts of this LCT have been identified as containing *Regional Significance* and *District Significance 7.5 Scenic Amenity* within the Scenic Amenities	

	Overlay Map and other high scenic or aesthetic value as identified in the GRPS policies, including: o Areas containing rural landscape character o Areas of open space o Creeks, gullies, waterways, wetlands and bushland o Mount Alma and Mount Larcom Ranges • Significant natural landscapes that are considered to be of high scenic or aesthetic value as identified by the BSPS and are present within the LVIA Study Areas, include: o Elevated and vegetated landscapes associated with the Callide range and escarpments • The Dawson Highway, Burnett Highway and Coal Road are nominated as tourist drives. • Overall, features within this landscape are considered to be valued at the local level for their natural qualities, scenic amenity and aesthetic values, which is formalised by local planning schemes and the GRPS scenic amenity overlay. • This landscape is considered to generally contains landscapes of a typical rural character that are valued at the local level for their contribution to the character of the region. However, parts of this LCT including areas within MPA2 are identified as being valued for their landscape qualities and high scenic amenity values, which is formalised by local planning scheme provisions. Whilst it is acknowledged that this is a large scale landscape based on the above values coupled with the open, broad and undulating nature of the landscape, it is considered that generally this landscape has capacity to accommodate the changes proposed due to several existing OHTL corridors present. Therefore, the sensitivity of this landscape is considered to be up to ***Medium***.
Landscape Evaluation	
Magnitude of Change Assessment	• Localised areas of LCA D1 and D2 are located within the MPA2 boundary. • Other parts of the LCT, such as LCA D6 are not directly impacted by the Project therefore any impacts on other LCAs would be indirect. • Within LCA D1 and D2, the magnitude of change is anticipated to be noticeable due to the following factors: o Localised vegetation clearing to accommodate OHTL corridor and access tracks (noting that extensive parts of this LCT are already cleared). o The introduction of more, large–scale infrastructure within what is currently a quiet rural landscape with localised areas of infrastructure. • Therefore, it is anticipated that the impact of the Project will have a noticeable impact on the landscape character of a relatively localised part of this LCT, as it will be introducing more large-scale infrastructure into the existing rural setting. As the impacts are limited to part of LCA D1 and D2 within MPA2, it is considered that this represents a ***Low*** magnitude of change. • Given the close proximity of LCA D6 to MPA1, indirect impacts within this LCA are considered to be ***Low (indirect)*** magnitude. • Other parts of the LCT are not directly impacted by the Project and situated at some distance from the Site, therefore any impacts on other LCAs would be ***Negligible*** (indirect).
Significance of Effect	• The greatest effect of the Project on LCT D: West Stowe Undulating and Grazed Uplands (LCA D1) and LCT D: Mount Alma Undulating and Grazed Uplands (LCA D2) is considered to be ***Minor to Moderate*** and, therefore, ***Not Significant***.

	• The greatest indirect effect of the Project on LCT D: Biloela Undulating and LCT D: Grazed Uplands (LCA D6) is considered to be ***Minor to Moderate*** and, therefore, ***Not Significant***.

7.2.4. Landscape Character Type E

Table 24: Summary description LCT E: Lowland Rural Plains

LCT E: Lowland Rural Plains	
Landscape Baseline Assessment	
Location and boundaries	This landscape is located in discrete areas across both LVIA Study Areas and includes flat to gently inclined plains adjacent to major watercourses and creeks. There are fifteen LCAs of this type in: • **LVIA Study Area 1** - LCAs include: Biloela Lowland Rural Plains (LCA E15) No areas of this LCT falls within MPA1, however indirect impacts are anticipated due to moderately distant proximity. • **LVIA Study Area 2 - LCAs include:** West Stowe Lowland Rural Plains (LCA E1), Mount Alma Lowland Rural Plains (LCA E2), Yarwun Lowland Rural Plains (LCA E3), White Hill Lowland Rural Plains (LCA E4), North Calliope Lowland Rural Plains (LCA E5), West Calliope Lowland Rural Plains (LCA E6), Calliope Lowland Rural Plains (LCA E7), Dawson Highway Lowland Rural Plains (LCA E8), Wooderson Lowland Rural Plains (LCA E9), West Wooderson Lowland Rural Plains (LCA E10), South Wooderson Lowland Rural Plains (LCA E11), South Mount Alma Lowland Rural Plains (LCA E12), Beecher Lowland Rural Plains (LCA E13), Gladstone Lowland Rural Plains (LCA E14). Areas of this LCT that fall within MPA2 and are directly impacted include West Stowe Lowland Rural Plains (LCA E1) (*Section D*) and Mount Alma Lowland Rural Plains (LCA E2) (*Section C* and *D*).
Representative images of the character of this LCT:	
     	
Key characteristics	• Surface geology varies throughout this LCT and corresponds generally with the underlying solid geology and is dominated by granite, mudstone and limestone sedimentary rock.

	• Soils vary considerably throughout this LCT, with lower lying areas dominated by sodosols and more elevated locations of this LCT contain rudosols. • Landform is generally flat to gently sloping and is typically between 10 m and 80 m AHD, with higher elevations occurring in areas where plains extend into creek valleys. • Land use throughout this LCT is primarily dominated by grazing on native pastures. • Irrigated areas are generally situated immediately adjacent to or in close proximity to the Calliope River or its tributaries. • This LCT contains the lower parts of ephemeral and permanent waterways that are tributaries of major watercourses such as the Calliope River. Riparian vegetation has generally been cleared and is limited to a relatively narrow channel along the watercourse. • There has been significant vegetation clearing within this LCT, with remnant vegetation limited to Eucalypt open woodlands on floodplains, and isolated pockets of acacia-dominated shrublands. • There is some limited regrowth vegetation and other stands of vegetation along road corridors. • Contains some rural localities that support limited scattered isolated rural residential homesteads, such as Mount Alma, Bracewell and western areas of Wooderson. • Broad open views are generally possible across this LCT and are generally unimpeded, due to its flat to gently sloping topography and extensive historic clearing that has occurred in the landscape. However, there are localised areas where vegetation and/or subtle variations in topography obstructs views, such as along creek and road corridors.
Precedent modifications and infrastructure elements	• This LCT is typically rural with limited large–scale infrastructure, with the exception of existing transmission lines (275 kV and 132 kV) that traverse through this landscape type, including through LCA E1, E2 and E15. • There are also several other major roads such as the Bruce Highway and Dawson Highway, local roads, rail corridor as well as property access tracks within this LCT. • Historical clearing for grazing is a key modification that has shaped (and indeed even led to the establishment of) this LCT.

Landscape Character Sensitivity Assessment	• Generally there is a low degree of perceived naturalness, with the exception of areas containing remnant vegetation, such as areas adjacent to major watercourses.
	• Highly rural, with the exception of areas in proximity to major roads.
	• Parts of this LCT have been identified as containing high scenic or aesthetic value as identified in the GRPS policies, including:
	  o Areas containing rural landscape character
	  o Areas of open space
	  o Creeks, gullies, waterways, wetlands
	• No specific areas were mapped within the GRPS overlay map.
	• Significant natural landscapes that are considered to be of high scenic or aesthetic value as identified by the BSPS and are present within the LVIA Study Areas, include:
	  o Rural landscape character
	  o Water features such as rivers, lakes, and wetlands.
	• It is considered that the several existing transmission lines within this character type reduce the sensitivity of the landscape.

	• Overall, it is considered that whilst this LCT contains some areas acknowledged for their scenic qualities (which are formalised by local planning scheme provisions), much of this landscape is highly modified and largely devoid of highly unique or distinguishing landscape features. Whilst it is acknowledged that this is a large scale landscape based on the above values coupled with the open, flat and expansive nature of the landscape, the presence of the existing transmission lines reduce the sensitivity of the landscape. Therefore, the sensitivity of this landscape is considered to be ***Low***.
Landscape Evaluation	
Magnitude of change assessment	• LCA E1 and E2 that is typically associated with the low lying areas surrounding the Calliope River and foothills of Mount Stowe State Forest falls within MPA2 boundary. These LCAs will be directly impacted by Project infrastructure. • Within LCA E1 and E2, the magnitude of change is anticipated to be noticeable due to the following factors: o The introduction of more infrastructure within what is currently a relatively intact landscape consisting of a strong rural character (with the exception of the existing OHTL within LCA E1, E2 and E15). o A considerable change over a restricted area with LCA E1 and E2. • Whilst it is anticipated that the direct influence of the project infrastructure would represent a clearly evident change in a relatively restricted area, the new infrastructure is being introduced in part of the landscape character type that has already been affected by the presence of existing OHTL(which reduces the contrast with the existing landscape character as described in Section 4.1.1)., the Dawson Highway, Bruce Highway and rail corridor which collectively are considered to generally reduce the sensitivity of LCA E1 and E2. As these impacts are limited to a very small areas with existing infrastructure, the impact is direct and considered that this represents up to a ***Medium (direct)*** magnitude of change.
Significance of effect	• The effect of the Project on LCT E: West Stowe Lowland Rural Plains (LCA E1), LCT E: Mount Alma Lowland Rural Plains (LCA E2) is considered to be ***Minor to Moderate*** and therefore, ***Not Significant.***

7.3. Summary of landscape impact assessment

Scenic landscape elements specified within the relevant legislation and planning schemes as identified in **Section 5** indicate that a localised scenic amenity can be identified within certain landscape characters. This has been considered within the definition of the LCTs and the assessment of sensitivity ratings in the Landscape Character Assessment where applicable.

Based on the landscape character assessment described above and the method for assessing landscape significance set out in **Table 5**, a summary of the baseline analysis and overall likely landscape impact anticipated during the operation of the Project is provided for each LCT in **Table 25** and **Table 26**.

Table 25: Potential Project impacts on identified Landscape Character Types (LCTs) and Landscape Character Areas (LCAs) within the MPA1 and LVIA Study Area 1

Landscape Character Type (LCT)	Landscape Character Area(s) (LCAs)	Landscape Sensitivity	Magnitude of change	Potential Landscape Effect	Significance of effect
LCT B: Forested Ranges and Mountains	LCA B21	Medium	Medium	Moderate	Not Significant
LCT D: Undulating and Grazed Uplands	LCA D6	Medium	Low (indirect)	Minor to Moderate	Not Significant
LCT E: Lowland Rural Plains	LCA E15	Low	Medium	Minor to Moderate	Not Significant
LCT F: Industrial, Mined and Transitional Lands	LCT F21	Low	Negligible	Minor to Negligible	Not Significant
LCT H: Lakes and Dams	No Impact	NA	NA	NA	No Impact

Table 26: Potential Project impacts on identified Landscape Character Types (LCTs) and Landscape Character Areas (LCAs) within the MPA2 and LVIA Study Area 2.

Landscape Character Type (LCT)	Landscape Character Area(s) (LCAs)	Landscape Sensitivity	Magnitude of change	Potential Landscape Effect	Significance of effect
LCT A: Rivers, Estuaries and Islands	LCA A1	High	Low	Moderate (highly localised)	Not Significant
LCT B: Forested Ranges and Mountains	LCA B1	High	Medium	Moderate to Major	Significant
	LCA B2	High	Medium	Moderate to Major	Significant
LCT C: Forested Lowlands	LCA C1:	Medium	Low	Minor to Moderate	Not Significant
	LCA C2	Medium	Low	Minor to Moderate	Not Significant

Landscape Character Type (LCT)	Landscape Character Area(s) (LCAs)	Landscape Sensitivity	Magnitude of change	Potential Landscape Effect	Significance of effect
LCT D: Undulating and Grazed Uplands	LCA D1	Medium	Low	Minor to Moderate	Not Significant
	LCA D2	Medium	Low	Minor to Moderate	Not Significant
LCT E: Lowland Rural Plains	LCA E1	Low	Medium	Minor to Moderate	Not Significant
	LCA E2	Low	Medium	Minor to Moderate	Not Significant
LCT F: Industrial, Mined and Transitional Lands	No Impact	Low	Negligible	Minor to Negligible	Not Significant
LCT G: Residential	No Impact	NA	NA	NA	No Impact
LCT H: Lakes and Dams	No Impact	NA	NA	NA	No Impact

8. Visual assessment

8.1. Visual audiences and viewpoint selection

The visual baseline has been assessed and is described in terms of potential for views of the operational project to be obtained by selected visual audiences within both LVIA Study Area 1 and 2. It is considered that the viewers (visual receptors) who may experience views of the operational project are likely to include:

LVIA Study Area 1

- Tourists accessing two local lookouts and a rest area and playground
- Local residents recreationally accessing a local lookout, rest area and playground
- Workers in the nearby resource extraction industry accessing a local rest area

LVIA Study Area 2

- Urban residents living in Clinton who may experience views towards MPA2, as well as residents accessing local recreational areas including a lookout and recreational users of the Calliope River Boat Ramp and Calliope River
- Rural residents accessing local roads including Kalua Road and Boyles Road, as well as the Bruce Highway as a state controlled road
- Rural residents' private properties and views from Boyles Road
- Tourists visiting a local lookout, and travelling along roads within the LVIA Study Area 2, including Hanson Road and Bruce Highway which are included in advertised self-drive trails
- Workers in the resource extraction industry travelling on roads, including Hanson Road and the Bruce Highway.

Ten viewpoints have been selected and are assessed, which are considered representative of the receptors noted above with the potential to be impacted by the Project. They are also considered to represent in some instances the 'worst case' scenario i.e. views from localities with the greatest likely magnitude for a range of likely viewers as well as locations where the most receptors are likely to be present and are taken from areas with relatively open and unobstructed views toward the Project (e.g. Hanson Road and Bruce Highway).

The location of the selected views is shown on **Figure 6** (**Appendix 1**) and the views obtained from these representative viewpoints are shown in **Figure 7** to **Figure 17 (Appendix 2)** and summarised in **Table 27**.

Table 27: Representative viewpoints selection

Code	Description	Visual Audience
VP1	Viewpoint 1: Southwestely view from Hanson Road.	Represents transient views experienced by residents, workers, and tourists from the elevated, open area of Hanson Road. Also represents prolonged views experienced by urban residents of Clinton from their properties.

Code	Description	Visual Audience
VP2	Viewpoint 2: Westerly view from Round Hill LookoutViewpoint 2:	Represents views experienced by tourists and residents visiting the Round Hill Lookout.
VP3	Viewpoint 3: Northwesterly view from Cania WayViewpoint 3:	Represents prolonged views experience by urban residents in proximity to Cania Way.
VP4	Viewpoint 4: Southeasterly view from Private Property, 83 Boyles Road	Represents prolonged views experienced by a single (one) private rural residential property
VP5	Viewpoint 5: Southerly view from Private Property, 670 Boyles Road	Represents prolonged views experienced by two private rural residential properties
VP6	Viewpoint 6: Southerly view from Boyles Road	Represents transient views experienced by rural residents motoring on local roads, as well as prolonged views experienced by rural residents in the vicinity of Boyles Road.
VP7	Viewpoint 7: Southeasterly view from Bruce HighwayViewpoint 7:	Represents transient views experience by residents, workers and tourists motoring on the Bruce Highway, along with prolonged views of a local rural resident.
VP8	Viewpoint 8: Northerly view from Kaluda Road	Represents transient vies for rural residents motoring along the local road, and representative of prolonged views experienced by rural residents in the vicinity.
VP9	Viewpoint 9A: Northeasterly view from Lake Callide Lookout and Viewpoint 9B: Northeasterly view from Lake Callide Playground	Represents tourists visiting the local lookout, as well as transient views by local residents, workers and tourists accessing the visiting.
VP10	Viewpoint 10: Southerly view from Callide Lookout	Represents tourists visiting the local lookout.

8.1.1 Residential viewers

Key residential receptors living within both LVIA Study Area 1 and 2 are described in Section 6.1.1: Settlement and infrastructure.

Views representative of potential 'worst case' impact on close urban residential receptors are considered in the assessment within LVIA Study Area 2 from Cania Way (Viewpoint 3), views experienced by rural residents in the vicinity of Boyles Road, the Bruce Highway and Kaluda Road (Viewpoint 6, 7, 8 respectively). Two views from private rural properties on Boyles Road (Viewpoint 4 and 5) assess private views obtained with the owners' consent, with Viewpoint 5 considering the view for the additional rural residence visible within the viewpoint.

Key impacts on rural residential receptors within LVIA Study Area 2 are anticipated to be associated with close to distant, filtered, partial to open views toward MPA2 with potential

screening from vegetation, topographic variations or elevated ridgelines, or existing infrastructure shielding potential views experience by rural residents.

Key impacts on urban residential receptors within LVIA Study Area 2 are anticipated to be associated with moderate, filtered to open views toward MPA2 from nearby properties, with general topography changes and vegetation, including that from the State Forests, and existing infrastructure shielding open views that may be experienced by urban residents.

No representative views for rural residential receptors have been included from LVIA Study Area 1 due to the low number of residents that live within the study area.

No representative views for rural residential receptors have been included from the southeast, south central, southwest, west or northwest of LVIA Study Area 2 due to the distance from MPA2. Additionally, no representative views of urban residential receptors are considered within the east of LVIA Stud Area 2 due to thick vegetation which shields any potential views across the topography of plains, low hills and rises within the area.

8.1.2 Workers

A significant portion of LVIA Study Area 1 and 2 includes the mining and processing of coal.

Both rural and mine workers travelling within the area may experience transient views of the Project, and the extent of view would change in accordance with the topography and locally depending on the presence of vegetation. Workers' views are considered when travelling on Hanson Road (Viewpoint 1), the Bruce Highway (Viewpoint 7), accessing the rest area of Lake Callide Playground (Viewpoint 9B).

8.1.3 Recreational viewers

Key recreational viewers within both LVIA Study Area 1 and 2 are described in **Section 6.1.1: Settlement and infrastructure**, with key visual receptors and tourist drives in **Figure 6.**

Recreational viewers within LVIA Study Area 1 are focused on the views and experiences in relation to Lake Callide within a highly industrialised landscape setting. Views were considered across two publicly accessible lookouts (Viewpoint 9a and 10), as well as the rest area of the Lake Callide Playground (Viewpoint 9b). Visibility of the MPA1 is dependent on screening by vegetation, other infrastructure or topography, with the predominately short duration of views dependent on the amount of time recreational viewers choose to access these locations.

Recreational viewers were considered across public spaces within the LVIA Study Area 2, with the majority of locally promoted tourism destinations located within the town of Gladstone. Gladstone is positioned as the key access point to visit the islands of the Great Barrier Reef. Visitors were considered including those travelling Hanson Road, which is a designated tourist drive (Viewpoint 1), Round Hill Lookout visitors (Viewpoint 2), and from the Bruce Highway which is a designated tourist route (Viewpoint 7).

Additionally, recreational visitors access services to access the Great Barrier Reef such as the Calliope River Boat Ramp and recreational visitors accessing the waters of the Calliope River (Viewpoint 1), as well as accessing the Gladstone Airport (Viewpoint 2) helipad for scenic flights over the region.

Across both LVIA Study Areas, some protected estates including State Forests and Conservation Parks are anticipated to provide some limited natural low key recreation experiences, while others including mountains and ranges additionally, are either not publicly accessible or do not include public amenity. Due to the minimal access by the public to these areas and their forested character, no views were obtained from protected estates.

8.1.4 General road users

The main roads within the LVIA Study Area are described **Section 6.1.1: Settlement and infrastructure,** with key visual receptors and tourist drives in

Visibility of the Project from these roads experiences variables which typically relates to the presence or lack thereof of vegetation, topography, built form and infrastructure.

Typically, views experienced by road users are transient. Views toward the MPA2 from Hanson Road will be moderate, elevated and filtered to open to Project Sit 2 which will be evident in close proximity to existing OHTL infrastructures. Impacts on views at this intersection are discussed in Viewpoint 1.

Other transient close views towards MPA1 will be evident from both Boyles Road, a local road (Viewpoint 6), and the Bruce Highway (Viewpoint 7), with views providing filtered to clear and filtered respectively views of MPA1.

As noted in **Section 6.1.1: Settlement and infrastructure**, with LVIA Study Area 1, roads provide access to rural properties and provide opportunities for travellers to view landscapes across the region. LVIA Study Area 2 includes a range of road types than include major roadways, local roads and access tracks.

Figure 6 (in Appendix 1) shows the locations of key tourist drives in the area. Views from these tourist routes are considered in relation to the viewpoints used in the assessment of general road viewers. Views from Hanson Road as experienced while travelling the *Gladstone into the Hinterland*, *Gladstone Region Drive, Southern Great Barrier Reef*, *Time to Explore* and *7 Day Great Gladstone Road Trip* which are promoted to tourists are considered in Viewpoint 1, as well as the *Bruce Highway Road Trip*, *The ultimate 8-day Cairns to Brisbane road trip* and *Pacific Coast Way* which travel along the Bruce Highway which is considered in Viewpoint 7.

8.2. Viewpoint assessment (operation)

A summary of the baseline analysis and overall likely visual impact anticipated during the operation of MPA1 and MPA2 is provided for each viewpoint in **Table 28** to **Table 37**. Construction and decommissioning impact is considered in **Section 9.**

8.2.1 Viewpoint 1

Table 28: Likely visual effect of the MPA2 on Viewpoint 1

Viewpoint 1: Southwestely view from Hanson Road	
Visual baseline assessment	
 *Existing view from Figure 7 Viewpoint 1: Southwestely view from* Hanson Road Refer to Viewpoint 1: Southwestely view from Hanson RoadFigure 7 in Appendix 2 for appropriately scaled image and wider panoramic view.	
Location	• 23°50'45.918" S 151°12'43.296" E
Elevation	• 20.2 m
Description	• Moderate southwesterly view from Hanson Road, providing elevated, filtered and open views toward MPA2 and LVIA Study Area 2. • Representative of moderate, transient views experienced by a high number of visitors, residents and workers travelling along Hanson Road. • Also representative of moderately distant open views by visitors to the nearby Calliope River Boat Ramp and recreational visitors accessing the waters of the Calliope River. • This has been selected as is the closest location that significant numbers of viewers can readily access. Other views towards MPA2 (including MPA2, Section E) are possible from people undertaking recreational boating on the Calliope River or accessing the boat ramp, but the number of such viewers would be less. • This viewpoint is located within LCT A: River Estuaries and Islands, providing views across the LCT toward LCT B: Forested Ranges and Mountains, LCT C: Forested Lowlands, LCT F: Industrial, Mined and Transitional Lands and LCT G: Residential. • Landscapes associated with the GBRWHA and GRPS Scenic Amenities Overlay Map are visible within this viewpoint, and this view is located within the GRPS special industry zone. • The view has a mixed natural, infrastructural, industrial and residential character. Natural character includes views across the Calliope River towards the elevated background range. Highly visibly infrastructural and industrial elements in the foreground and background. Residential houses are evident in the midground. • Existing infrastructure evident in the view includes fourteen OHTL towers and transmission cables on either side of Calliope River, numerous OHTL towers and cables at a distance and traversing the mountain range, the Calliope River Substation, residential dwellings, telecommunication towers and industrial coal processing sheds and infrastructure.
Key visual sensitivities	• Key visual receptors include: ○ A high number of residents and workers travelling on Hanson Road who may experience transient views toward the MPA2 and are considered to have a passing level of interest in their surroundings.

Viewpoint 1: Southwestely view from Hanson Road	
	○ A moderate number of residents who may experience similar prolonged views toward the MPA2 from their properties, and are considered to have a moderate level of interest in their surroundings. ○ A low number of tourists travelling on Hanson Road who may experience transient views toward the MPA2 and are considered to have a high level of interest in their surroundings. • This view contains World Heritage Criteria associated with GBRWHA designation and associated aesthetic attributes. These qualities are found to be present in association with the Calliope River, biodiversity and GBR habitats including islands, beaches and coastline, mangrove forests, along with geomorphological features including islands and shorelines. • This viewpoint provides distant views across a mix of GRPS zones including community facilities, conservation, low density residential, medium impact industry, open space, rural and special purpose. This number of zones provides a complexity of landscape characters in the area, and which is considered to be typical of the area. • Parts of viewpoints located within LCT A: River Estuaries and Islands have been identified in the GRPS Scenic Amenities Overlay Map Regional Significance 8-10 Scenic Amenity including the coastal waters of the GBR, the Calliope River as well as waterways, wetlands and bushland. • This section of Hanson Road is a part of the Gladstone into the Hinterland, Southern Great Barrier Reef, Time to Explore and 7 Day Great Gladstone Road Trip tourist drives. • This viewpoint provides moderate to distant views across a complex mix of natural, infrastructural, industrial and residential landscapes considered to be typical of the area. Due to its location in the vicinity of the Port of Gladstone, the surrounding area experiences a high degree of concentrated infrastructural components to support the industrial and infrastructural activities that are highly built up in this location. • This view is likely valued at the local level outside of formal planning recommendations, due to the mix of natural components of the water and forested ridgelines alongside the complexity of the infrastructural and industrial within the viewpoint. • The character of this view is heavily influenced by the proximity of this viewpoint to large scale energy and industrial infrastructure.
Visual sensitivity	• *High.*
Visual evaluation	
Magnitude of change assessment	• The nearest part of MPA2 is *MPA2, Section E* located 2.4 km southwest of this viewpoint. Therefore, views from this location are considered to be moderately distant. • At this distance, it is anticipated that clear to filtered views of the OHTL towers and cables at a height of up to 60 m may be evident above vegetation and filtered by existing infrastructure toward the proposed OHTL towers and cables will be evident. OHTL towers may be clearly visible at the top of the forested ridgeline due to their elevated placement. • It is anticipated that the clearing of vegetation in proximity to the Calliope River Substation and along the forested ridgeline may increase the visibility of the OHTL towers and the Calliope River Substation. • While both World Heritage Criteria associated with the GBRWHA and GRPS Scenic Amenities Overlay Map qualities are found within specific landscape included within this view, the high degree of existing infrastructural

Viewpoint 1: Southwestely view from Hanson Road	
	components that are collocated within the landscape lowers the degree of landscape sensitivity to which the GBRWHA and GRPS scenic amenity qualities are already impacted. • Views of the movement of plant and machinery accessing the MPA2 during construction may be likely from this location, especially in relation to the clearing of vegetation or installation of OHTL towers on elevated areas. • Overall, the MPA2 is anticipated to result in a noticeable change to this view, with filtered to clear views in response to existing vegetation and infrastructure possible from this location toward the MPA2 and across the forested ridgeline. • Alternative similar views at closer distance, for example obtained from watercraft on the Calliope River, are also likely and such viewers would experience the OHTL crossing *MPA2, Section E* in the vicinity of the existing substation at the edge of the GSDA, where the infrastructure would not represent a strong contrast to the landscape setting. • While existing infrastructure and vegetation may locally restrict the visibility of the Projects visibility from this viewpoint, the Project will contribute moderately to the present of energy infrastructure within this highly infrastructural area. • Although at a moderate distance, while the MPA2 may result in an intensification of large scale energy infrastructural evident within the view, it is likely to blend somewhat into the existing view.
Magnitude of change	• *Low.*
Significance of effect	• *Moderate and Not Significant.*

8.2.2 Viewpoint 2

Table 29: Likely visual effect of the MPA2 on Viewpoint 2

Viewpoint 2: Westerly view from Round Hill Lookout	
Visual baseline assessment	
 *Existing view from Viewpoint 2: Westerly view from Round Hill Lookout* Refer to Figure 8 in Appendix 2 for appropriately scaled image and wider panoramic view.	
Location	• 23°52'6.648" S 151°15'18.264" E
Elevation	• 131.4 m
Description	• Distant westerly view from the Round Hill Lookout off Boles Street, providing elevated framed views by existing vegetation providing open and clear views toward MPA2 and LVIA Study Area 2. • Representative of distant views experienced by a moderate number of tourists and residents visiting the lookout.

Viewpoint 2: Westerly view from Round Hill Lookout	
	• This viewpoint is located within LCT B: Forested Ranges and Mountains and provides views across LCT A: River Estuaries and Islands, LCT C: Forested Lowlands, LCT E: Lowland Rural Plain, LCT F: Industrial, Mined and Transitional Lands and LCT G: Residential toward the LCT B: Forested Ranges and Mountains located in the background of the view. • Landscapes associated with the GBRWHA and GRPS Scenic Amenities Overlay Map are visible within this view, and this view is located within the GRPS open space zone. • This view comprises a complex view of residential, infrastructural, industrial and natural views towards forested elevated ridgelines, including Mount Larcom and range, along with the Mount Stowe State Forest. • Existing infrastructure includes industrial stacks, sheds and operational infrastructure, OHTL towers and cables, the Calliope River Substation, a railway line, telecommunication towers and the Gladstone airport.
Key visual sensitivities	• Key visual receptors include a moderate number of tourists and low number of residents who may experience durationally short views towards the MPA2 and are considered to have a high level of interest in their surroundings. • This view contains World Heritage Criteria associated with GBRWHA designation and contains aesthetic attributes of value. These qualities are found to be most present in the visibility of the Calliope River and mangrove forests. • Moderately distant to distant views towards the Calliope River as part of the GBRWHA are possible within this view, with the closest part of Calliope River located 2.2 km from this view. • This viewpoint provides distant views across a mix of GRPS zones including, centre (level 1 zone), community facilities, conservation, environmental management, limited development (constrained land), low and medium density residential, medium impact industry, open space, rural residential, rural and special purpose considered to be typical of the area. • Landscapes located identified in the GRPS Scenic Amenities Overlay Map Regional Significance 8-10 Scenic Amenity are found in this view, including the coastal waters of the GBR, the Calliope River, waterways, wetlands and bushland, areas containing rural landscape character, areas of open space, areas of conservation such as Mount Stowe State Forest, creeks, gullies, waterways, wetlands, bushland and the Mount Larcom Ranges. • The character of this view is heavily influenced by the proximity of this viewpoint to a range of landscape characters including significant large scale energy and industrial infrastructure and forested ridgelines. It is likely to be valued locally for its mixed character.
Visual sensitivity	• *Medium.*
Visual evaluation	
Magnitude of change assessment	• The nearest part of MPA2 is Section D which is located 6.5 km west of this viewpoint and therefore views from this location are considered to be distant. • Existing vegetation may screen lower parts of the MPA2's OHTL towers, and existing large scale energy infrastructure may filter sections of MPA2. • OHTL towers may be clearly visible at the top of the forested ridgeline due to their elevated placement. The top of the OTHL towers may be visible from the other side of the range, with the majority of the structure obscured by the range. • While both World Heritage Criteria associated with the GBRWHA and GRPS Scenic Amenities Overlay Map qualities are found within specific landscapes

Viewpoint 2: Westerly view from Round Hill Lookout	
	included within this view, the high degree of existing infrastructural components that are collocated within the landscape lowers the degree of landscape sensitivity to which the GBRWHA and GRPS scenic amenity qualities are already impacted. • Views of the movement of plant and machinery accessing MPA2 during construction may be visible in the latter stages of the OHTL installation from this location. • The MPA2 is anticipated to result in a barely perceptible change to this view, as MPA2 will blend into the high number of large scale energy infrastructural components already visible within this viewpoint. • At this distance, while the MPA2 may result in an intensification of large scale energy infrastructural evident within the view, it is likely to blend somewhat into the existing view.
Magnitude of change	• *Negligible.*
Significance of effect	• *Minor to Negligible* and *Not Significant*.

8.2.3 Viewpoint 3

Table 30: Likely visual effect of the MPA2 on Viewpoint 3

Viewpoint 3: Northwesterly view from Cania Way	
Visual baseline assessment	
 *Existing view from Viewpoint 3: Northwesterly view from Cania Way*Viewpoint 3: Refer to Figure 9 in Appendix 2 for appropriately scaled image and wider panoramic view.	
Location	• 23°52'37.84"S 151°12'31.62"E
Elevation	• 63.3 m
Description	• Moderate northwesterly view from Cania Way, providing open to filtered, elevated views towards MPA2 in LVIA Study Area 2. • Representative of moderate, prolonged views experienced by a high number of urban residents. • This viewpoint is located within *LCT: Residential* and provides views across *LCT A: River Estuaries and Islands*, *LCT B: Forested Ranges and Mountains*, *LCT C: Forested Lowlands*, *LCT E: Lowland Rural Plains* and *LCT F: Industrial, Mined and Transitional Lands*. • Landscapes associated with the GBRWHA and GRPS Scenic Amenities Overlay Map are visible within this viewpoint, and this view is located within the GRPS low density residential zone.

Viewpoint 3: Northwesterly view from Cania Way	
	• This view comprises a complex view of residential, infrastructural, industrial and natural views towards forested elevated ridgelines, including Mount Larcom and range, along with the Mount Stowe State Forest. • Existing infrastructure includes industrial silos and stacks, the Rio Tinto Alcan refinery, OHTL towers and cables across the OHTL corridor and a telecommunication tower.
Key visual sensitivities	• Key visual receptors include a high number of urban residents of Gladstone who may experience prolonged views toward MPA2 from their properties and are likely to have a high level of interest in their surroundings. • This view contains World Heritage Criteria associated with GBRWHA designation and contains associated aesthetic attributes. These qualities are found to be most present in the visibility of the Calliope River and mangrove forests. • Moderately distant to distant views towards the Calliope River as part of the GBRWHA are possible within this view, with the closest part of Calliope River located 4.2 km from this view. • This viewpoint provides distant views across a mix of GRPS zones including conservation, environmental management, low density residential, open space, rural, special industry, special purpose considered to be typical of the area. • Landscapes located identified in the GRPS Scenic Amenities Overlay Map Regional Significance 8-10 Scenic Amenity are found in this view, including the Calliope River, waterways, wetlands and bushland, areas containing rural landscape character, areas of open space, areas of conservation such as Mount Stowe State Forest, waterways, wetlands, bushland and the Mount Larcom Ranges. • The view is likely valued at the local level outside of formal planning recommendations. • This viewpoint includes moderate, open to filtered elevated views across the mixed landscape character area that is typical for this area. The character of this view is influenced by the presence of large scale energy and industrial infrastructure that is a part of this view.
Visual sensitivity	• *Low*.
Visual evaluation	
Magnitude of change assessment	• The nearest part of MPA2 is Section D which is located 2.7 km northwest of this viewpoint and therefore views from this location are considered to be moderate. • Existing vegetation may screen lower parts of the MPA2's OHTL towers, and OHTL towers may be more clearly visible in their placement at the top of the forested ridgeline due to their elevated placement. Additionally, the top of the OTHL towers may be visible from the other side of the range, with the majority of the structure obscured by the range. • While both World Heritage Criteria associated with the GBRWHA and GRPS Scenic Amenities Overlay Map qualities are found within specific landscapes included within this view, the moderate degree of existing infrastructural components that are collocated within the landscape lowers the degree of landscape sensitivity to which the GBRWHA and GRPS scenic amenity qualities are already impacted. • Views of the movement of plant and machinery accessing MPA2 during construction may be visible in the latter stages of the OHTL installation from this location.

Viewpoint 3: Northwesterly view from Cania Way	
	• The MPA2 is anticipated to result in a barely perceptible change to this view, as MPA2 will blend into the high number of large scale energy infrastructural components already visible within this viewpoint. • At this distance, while the MPA2 may result in an intensification of large scale energy infrastructural evident within the view, it is likely to blend somewhat into the existing view.
Magnitude of change	• *Negligible.*
Significance of effect	• *Minor to Negligible* and *Not Significant.*

8.2.4 Viewpoint 4

Table 31: Likely visual effect of the MPA2 on Viewpoint 4

Viewpoint 4: Southeasterly view from Private Property, 83 Boyles Road	
Visual baseline assessment	
 *Existing view from Viewpoint 4: Southeasterly view from Private Property, 83 Boyles Road* Refer to Figure 10 in Appendix 2 for appropriately scaled image and wider panoramic view.	
Location	• 23°52'25.79"S 151° 8'6.83"E
Elevation	• 62.3 m
Description	• Close southeasterly view from a private property (Lot 3 RP863615) (obtained with the consent of the owner), providing moderately filtered and vegetated views toward the MPA2 in LVIA Study Area 2. • Representative of close prolonged views from the backyard of one private rural residence. • This viewpoint is located within *LCT B: Forested Ranges and Mountains,* providing views within *LCT B: Forested Ranges and Mountains.* • Landscapes associated with the GRPS Scenic Amenities Overlay Map are visible within this viewpoint, and this view is located within the GRPS rural zone. • The view has a combined rural residential and natural character, which extends to a densely forested vegetation component of the private backyard. • Existing infrastructure evident within the view includes a private rural residence, an electrical pole along with residential infrastructure including a greenhouse, two water tanks, a dog pen and a plant cover.
Key visual sensitivities	• Key visual receptors include the residents of a single (one) private rural residence, who may experience close prolonged views towards MPA2 and are considered to have a high level of interest in their surroundings. • This viewpoint provides close filtered views across the GRPS rural zone, which contains a mix of rural and natural character which is typical for the area where rural residents live.

Viewpoint 4: Southeasterly view from Private Property, 83 Boyles Road	
	• Landscapes located identified in the GRPS Scenic Amenities Overlay Map *Regional Significance 8-10 Scenic Amenity* are found in this view*,* including the bushland and areas containing rural landscape character. • The view is likely valued at the local level outside of formal planning recommendations, and the view is likely valued by rural residents who make their homes and conduct farming activities within the rural landscape. • This viewpoint provides close views across the rural landscape, and does not feature any large scale infrastructural elements. • While a low (single) number of receptors are anticipated to experience this particular view, this view is also representative of other viewpoints obtained from private properties in the local area..
Visual sensitivity	• *Low*
Visual evaluation	
Magnitude of change assessment	• The nearest part of MPA2 is *Section D's* OHTL corridor, which is located 231 m southeast of this viewpoint, and the closest OHTL tower is located 361 m southeast of this viewpoint. Therefore views from this location are considered to be close. • Existing vegetation may partially screen MPA2's OHTL towers that may be visible within this view. • Clear views of the OHTL cables may be possible in areas backgrounded only by the sky. • While GRPS Scenic Amenities Overlay Map qualities are found within specific landscapes included within this view, the low degree of existing infrastructural components that are collocated within the landscape indicates a higher degree of landscape sensitivity to be impacted by change. • Views of the movement of plant and machinery accessing MPA2 during construction are not anticipated to be visible within this view, with only the latter stages of the OHTL installation visible from this location. • The MPA2 is anticipated to result in a noticeable change to this view, with the visibility of MPA2 being filtered by the density and height of the existing vegetation within this viewpoint. • At this distance, while MPA2 will result in the introduction of new large scale energy infrastructural components within the view, it is likely to be screened by the existing vegetation and views may be filtered.
Magnitude of change	• *Low*
Significance of effect	• *Minor* and *Not Significant.*

8.2.5 Viewpoint 5

Table 32: Likely visual effect of the MPA2 on Viewpoint 5

Viewpoint 5: Southerly view from Private Property, 670 Boyles Road	
Visual baseline assessment	
 ***Existing view from Viewpoint 5: Southerly view from Private Property, 670 Boyles*** Road Refer to Figure 11 in Appendix 2 for appropriately scaled image and wider panoramic view.	
Location	• 23°53'15.02"S 151° 6'46.32"E
Elevation	• 64.3 m
Description	• Close southerly view from a private property (Lot 90 CTN248) (obtained with the owner's consent), providing elevated open and partially screened views towards the MPA2 in LVIA Study Area 2. • Represents close to moderately close prolonged views from two rural residences including the backyard of one private rural residence from which this viewpoint was taken and the additional rural residential dwelling visible within this view. • This viewpoint is located within *LCT E: Lowland Rural Plains*, providing views across the LCT to also include *LCT C: Forested Lowlands* with elevated forested areas in the background. • Landscapes associated with the GRPS Scenic Amenities Overlay Map are visible within this viewpoint, and this view is located within the GRPS rural zone. • The view has a combined rural, infrastructural and natural character, with views of rolling vegetated lowlands extending into the background of the view. • Existing infrastructure evident within the view includes five OHTL towers and cables of the 275 kV Bouldercombe to Calliope River OHTL line, fencing, a rural residential dwelling, residential infrastructure including two water tanks and shed.
Key visual sensitivities	• Key visual receptors include: o A single (one) private rural residence, who may experience close to moderately close prolonged views towards MPA2 and are considered to have a high level of interest in their surroundings o A single (one) private rural residence, who may experience moderately close prolonged views towards MPA2 and are considered to have a high level of interest in their surroundings • This viewpoint provides close filtered views across the GRPS rural zone, which contains a mix of rural and natural character which is typical for the area where rural residents live. • Landscapes located identified in the GRPS Scenic Amenities Overlay Map *Regional Significance 8-10 Scenic Amenity* are found in this view, including areas containing rural landscape character.

Viewpoint 5: Southerly view from Private Property, 670 Boyles Road	
	• The view is likely valued at the local level outside of formal planning recommendations, and the view is likely valued by rural residents who make their homes and conduct farming activities within the rural landscape. • This viewpoint provides close views across the rural landscape, while featuring large scale infrastructural elements with the five OHTL towers associated with the 275 kV Bouldercombe to Calliope River OHTL line. • A low number of receptors (two rural residences) are anticipated to experience this view..
Visual sensitivity	• *Low*
Visual evaluation	
Magnitude of change assessment	• The nearest part of MPA2 is *Section D's* OHTL corridor, which is located 471 m southwest of this viewpoint, and the closest OHTL tower is located 570 m southwest of this viewpoint. Therefore views from this location are considered to be close. • The closest proposed OHTL within this view may be clearly visible, with minimal screening providing by the existing OHTL tower that can be seen within this view, and other proposed OHTL towers within this view may be partially screened by existing vegetation and other existing OHTL towers. • Clear views of the OHTL cables may be possible in areas backgrounded only by the sky, and filtered to negligible views of the cables will be evident in vegetated areas located directly behind the cables. • While GRPS Scenic Amenities Overlay Map qualities are found within specific landscapes included within this view, the moderate degree of existing infrastructural components that are collocated within the landscape indicates a lower degree of landscape sensitivity to be impacted by change. • Views of the movement of plant and machinery accessing MPA2 during construction may be visible within this view across the construction and installation stages from this location. • The MPA2 is anticipated to result in a considerable change to this view, with the visibility of MPA2 experiencing both open and partial views within this viewpoint. • At this distance, while MPA2 will result in the introduction of new large scale energy infrastructural components within the view, it is likely to experience a mix of visibility from open views of one OHTL tower and partial screening of additional OHTL towers by existing vegetation.
Magnitude of change	• *Medium*
Significance of effect	• *Minor to Moderate* and *Not Significant*.

8.2.6 Viewpoint 6

Table 33: Likely visual effect of the MPA2 on Viewpoint 6

Viewpoint 6: Southerly view from Boyles Road	
Visual baseline assessment	
 *Existing view from Viewpoint 6: Southerly view from Boyles Road* Refer to Figure 12 in Appendix 2 for appropriately scaled image and wider panoramic view.	
Location	• 23°53'29.298" S 151°6'44.094" E
Elevation	• 29.1 m
Description	• Close southerly view from the unsealed Boyles Road, providing both screened, vegetated to filtered views toward MPA2 and LVIA Study Area 2. MPA2 Boyles Road within this view. • Representative of views experienced by rural residents who may be travelling along local unsealed roads within the area. • Also representative of prolonged views experienced by rural residents in the vicinity of Boyles Road who may experience similar views toward the MPA2. • This viewpoint is located within *LCT E: Lowland Rural Plains* with views towards *LCT B: Forested Range and Mountains* as well as *LCT C: Forested Lowlands.* • Landscapes associated with the GRPS Scenic Amenities Overlay Map are visible within this viewpoint, and this view is located within the GRPS rural zone. • This view has a rural character typical of the area, which is influenced by existing infrastructure components, dense to cleared vegetation and undulating landscape forms evident. • Existing infrastructure evident in the view includes unsealed private roads, road and property markers, rural fencing, gates, property signage, a rural residence and stock pen fencing and two OHTL towers and cables.

Key visual sensitivities	• Key visual receptors include:
	  ○ A low number of rural residents travelling on Boyles Road (a dead end road) who may experience transient views towards MPA2 and are considered to have a passing to high level of interest in their surroundings.
	  ○ A very low number of rural residents who may experience prolonged views towards the MPA2 from their properties and are considered to have a high level of interest in their surroundings.
	• This viewpoint provides views across the GRPS rural zone considered to be typical of the area. The general rural character includes large scale energy infrastructure.
	• Landscapes located in this view as identified in the GRPS Scenic Amenities Overlay Map *Regional Significance 8-10 Scenic Amenity* include rural landscape character.

Viewpoint 6: Southerly view from Boyles Road	
	• This view is likely to be valued locally for its general rural character, with regard for the vegetation, grassy and open fields and flat to undulating landforms.
Visual sensitivity	• *Low.*
Visual evaluation	
Magnitude of change assessment	• The nearest part of the MPA2 is *Section D's* OHTL corridor located 173 m south from this location, and the closest of OHTL towers is located 232 m south from this location. Therefore views from this location are considered to be close. • Additional OHTL towers following the existing OHTL corridor will be visible from this location, with a close, filtered view of a tower to the west and a close, clear view of a tower to the east. • Clear views of the OHTL cables will be possible in areas backgrounded only by the sky, and filtered to negligible views of the cables will be evident in grass or vegetated areas located directly behind the cables. • Views towards the OHTL towers and cables may be possible from elevated parts of the surrounding rural properties. • While GRPS Scenic Amenities Overlay Map qualities are found within the rural landscape of this view, existing large scale infrastructural components that exist within the rural landscape lowers the degree of landscape sensitivity in which GRPS scenic amenity qualities are found. • Views of the movement of plant and machinery accessing the MPA2 during construction will be visible from this location, with potential access changes experienced by local road users. • The Project is anticipated to result in a considerable change to this view, with both clear and filtered visibility toward MPA2 alongside existing large scale infrastructure visible from this location. • The Project from this view will introduce additional large scale energy infrastructural components into an area that currently has large scale energy infrastructural components. Screening effects due to the density and height of trees will be evident in places, with open and clear views possible outside of vegetated screening.
Magnitude of change	• *Medium.*
Significance of effect	• *Minor to Moderate* and *Not Significant.*

8.2.7 Viewpoint 7

Table 34: Likely visual effect of the MPA2 on Viewpoint 7

Viewpoint 7: Southeasterly view from Bruce Highway	
Visual baseline assessment	
 *Existing view from Viewpoint 7: Southeasterly view from Bruce Highway* Refer to Figure 13 in Appendix 2 for appropriately scaled image and wider panoramic view.	
Location	• 23°55'21.396" S 151°2'22.662" E
Elevation	• 67.2 m
Description	• Close southeasterly view representative of the Bruce Highway, providing clear and filtered views towards the MPA2 and LVIA Study Area 2. • This view was taken 33 m off the sealed Bruce Highway, at a property entrance close to where MPA2 crosses the highway. • Representative of transient views for rural residents, workers and tourists travelling along the Bruce Highway. • Also representative of close, prolonged views experienced by a rural resident whose property is included in this location. • This viewpoint is located within *LCT C: Forested Lowlands* and provides views across *LCT D: Undulating and Grazed Uplands* towards a mix of *LCT C: Forested Lowlands* and *LCT B: Forested Ranges and Mountains*. • Landscapes associated with the GRPS Scenic Amenities Overlay Map are visible within this viewpoint, and this view is located within the GRPS special purpose zone. • The character of the view is comprised primarily of both rural and infrastructural character, with views of undulating grassy and vegetated hills towards forested ranges. • Evident infrastructure within this view includes fencing, OHTL towers and cables, telecommunication infrastructure, a rural farm shed with stock pen and water towers.
Key visual sensitivities	• Key visual receptors include: • A high number of rural residents and workers travelling on the Bruce Highway, along with a low number of tourists following self-drive trails, who may experience transient views towards MPA2 and are likely to respectively have a high level, to passing level to high level of interest in their surroundings. • A rural resident who may experience prolonged views towards the MPA2 from their property and are considered to have a high level of interest in their surroundings. • The tourist routes that pass along the Bruce Highway include *Bruce Highway Road Trip*, *The ultimate 8-day Cairns to Brisbane road trip* and *Pacific Coast Way.* • The Bruce Highway is identified within the GRPS as a major urban arterial road and highway.

Viewpoint 7: Southeasterly view from Bruce Highway	
	• This viewpoint provides views across GRPS rural and special purpose zones considered to be typical of the area. • Landscapes located in this view as identified in the GRPS Scenic Amenities Overlay Map *Regional Significance 8-10 Scenic Amenity* include rural landscape character which is typical for this area, and the character is significantly influenced by the large scale energy infrastructure that is included within this view.
Visual sensitivity	• *Medium*
Visual evaluation	
Magnitude of change assessment	• The nearest part of the MPA2 is *Section C's* OHTL corridor located 382 m southeast of this viewpoint, with the closest OHTL tower located 416 m southeast of this location, whereby new OHTL towers will following the existing OHTL corridor. Therefore views from this location are considered to be close. • Existing vegetation and the undulating topography may screen of the lower parts of some the MPA2 OHTL towers, however, the addition of large scale energy infrastructure within the existing OHTL corridor will be visible. • Clear views of the OHTL cables will be possible in areas backgrounded only by the sky, and filtered to negligible views of the cables will be evident in grassy or vegetated areas located directly behind the cables. • OHTL towers may be more clearly visible at the top of the low hills due to their elevated placement and cleared vegetation, with more partial views in their placement behind a low hill or rise. • Glimpsed filtered views towards the large scale energy infrastructural components may be possible from this viewpoint for receptors travelling along the Bruce Highway. These views will be dependent on possible vegetation screening and the sloping topography. • While GRPS Scenic Amenities Overlay Map qualities are found within the rural landscape of this view, existing large scale infrastructural components that exist within the rural landscape lowers the degree of landscape sensitivity in which GRPS scenic amenity qualities are found. • Views of the movement of plant and machinery accessing the MPA2 during construction will be visible from this location, with potential access changes experienced by motorists travelling along the Bruce Highway. • The Project is anticipated to result in a considerable change to this view, whereby filtered, partial and clear views towards the large scale energy infrastructure may be possible. • While close, the visible components of the Project will have a minimal impact within the existing large scale energy infrastructure within view and is likely to blend within the existing view.
Magnitude of change	• *Medium*
Significance of effect	• *Moderate* and *Not Significant.*

8.2.8 Viewpoint 8

Table 35: Likely visual effect of the MPA2 on Viewpoint 8

Viewpoint 8: Northerly view from Kaluda Road	
Visual baseline assessment	
 *Existing view from Viewpoint 8: Northerly view from Kaluda Road* Refer to **Figure 14** in Appendix 2 for appropriately scaled image and wider panoramic view.	
Location	• 23°56'6.354" S 150°55'20.94" E
Elevation	• 67.2 m
Description	• Very close and close northerly view from Kaluda Road along the existing OHTL corridor towards MPA2 and LVIA Study Area 2. • Representative of transient views for rural residents travelling along the Kaluda Road. • Also representative of prolonged views experienced by rural residents in the vicinity of Kaluda Road. • This viewpoint is located within *LCT B: Forested Ranges and Mountains* and provides views across *LCT D: Undulating and Grazed Uplands* and towards further *LCT B: Forested Ranges and Mountains* located in the background of the view. • Landscapes associated with the GRPS Scenic Amenities Overlay Map are visible within this viewpoint, and this view is located within the GRPS rural zone. • The character of the view is comprised primarily of both rural and infrastructural character, with glimpses towards the elevated mountain ridges in the background. • Evident infrastructure within this view includes fencing, OHTL towers and cables and road markers.
Key visual sensitivities	• Key visual receptors include: • A low number of rural residents and farm workers who may experience transient views toward the Project and are likely to respectively have a passing to high level of interest in their surroundings. • A low number of rural residents who may experience similar prolonged views toward the Project from their properties and are considered to have a high level of interest in their surroundings. • This viewpoint provides views across the GRPS rural zone considered to be typical of the area. • Landscapes located in this view as identified in the GRPS Scenic Amenities Overlay Map *Regional Significance 8-10 Scenic Amenity* include rural landscape character which is typical for this area, and the character is significantly influenced by the large scale energy infrastructure that is included within this view. • The view is likely valued at the local level outside of formal planning recommendations for its general rural character that is local to the area.

Viewpoint 8: Northerly view from Kaluda Road	
	• This view includes moderately close views across the rural landscape typical for this area.
Visual sensitivity	• *Low*
Visual evaluation	
Magnitude of change assessment	• The nearest part of the MPA2 is *Section C's* OHTL corridor located 6 m north of this viewpoint, with the closest OHTL tower located 167 m northwest of this location, whereby new OHTL towers will following the existing OHTL corridor. Therefore views from this location are considered to be close. • Clear and unobstructed views of the OHTL towers to the west may be possible, and filtered, partial views of the OHTL towers to the east may be impacted by existing vegetation, infrastructure and the undulating topography. The addition of further large scale energy infrastructure within the existing OHTL corridor may be visible. • Clear views of the OHTL cables may be possible in areas backgrounded only by the sky, and filtered to negligible views of the cables will be evident in grassy or vegetated areas located directly behind the cables. • OHTL towers may be more clearly visible at the top of the low hills within the existing OHTL corridor due to their elevated placement and cleared vegetation, with more partial views in their placement behind a low hill or rise. • Open, partial to glimpsed views towards the large scale energy infrastructure may be possible from this viewpoint for receptors travelling along Kaluda Road. These views will be dependent on possible vegetation screening and the sloping topography. • While GRPS Scenic Amenities Overlay Map qualities are found within the rural landscape of this view, existing large scale infrastructural components that exist within the rural landscape lowers the degree of landscape sensitivity in which GRPS scenic amenity qualities are found. • MPA2 is anticipated to result in a noticeable change to this view, whereby both open and partial views towards the large scale energy infrastructure may be possible. While close, the visible components of MPA2 will have a minimal impact within the existing large scale energy infrastructure within view and is considered likely to blend within the existing view.
Magnitude of change	• *Low.*
Significance of effect	• *Minor* and *Not Significant.*

8.2.9 Viewpoint 9

Table 36: Likely visual effect of the MPA1 on Viewpoint 9

Viewpoint 9A: Northeasterly view from Lake Callide Lookout and the Viewpoint 9B: Northeasterly view from Lake Callide Playground	
Visual baseline assessment	
 *Existing view from Viewpoint 9A: Northeasterly view from Lake Callide Lookout* Refer to **Figure 15** in Appendix 2 for appropriately scaled image and wider panoramic view.  *Existing view from Viewpoint 9B: Northeasterly view from Lake Callide Playground* Refer to **Figure 16** in Appendix 2 for appropriately scaled image and wider panoramic view.	
Location	• 24°22'4.302" S 150°36'46.854" E (9A) • 24°22'26.832" S 150°36'46.062" E (9B)
Elevation	• 230.6 m (9A) • 225.5 m (9B)
Description	• Moderately distant northeastely view from the Lake Callide Lookout and Lake Callide Playground within MPA1 and LVIA Study Area 1. • Representative of views for visitors and local receptors accessing the Lake Callide Lookout, and local residents, visitors and workers accessing the Lake Callide Playground and rest area. • Viewpoint 9a is located on the border of both *LCT F: Industrial, Mined and Transitional Lands* and *LCT H: Lakes and Dams*, and Viewpoint 9b is located in *LCT F: Industrial, Mined and Transitional Lands.* Both viewpoints include views across both *LCT F: Industrial, Mined and Transitional Lands* and *LCT H: Lakes and Dams* with *LCT B: Forested Ranges* in the background of each view. • 9a is located within the BSPS rural zone, and 9b is located within the recreation and open space zone. • The character of the views comprises rural, natural and infrastructural character, with glimpses towards the elevated forested ridges in the background. • Evident infrastructure within both views includes the 132 kV Biloela to Callide A OHTL line, 275 kV Wurdong to Calvale OHTL line, 275 kV Callide to Halys OHTL line, three stacks associated with the Callide Power Station A and B, Lake Callide restricted water storage area. Addition infrastructure includes

Viewpoint 9A: Northeasterly view from Lake Callide Lookout and the Viewpoint 9B: Northeasterly view from Lake Callide Playground	
	(9a) includes Lake Callide spillway walls, industrial sheds, water pipe, fencing, and (9b) includes sheltered picnic area, grate tower and floodgates.
Key visual sensitivities	• Key visual receptors include: • A low number of local residents visiting the Lake Callide Lookout, with a moderate number of local residents and workers visiting the Lake Callide Playground and rest area who are respectively considered to have a high to passing level of interest in their surroundings. • A moderate number of tourists and visitors visiting both the Lake Callide Lookout and the Lake Callide Playground and rest area as well as those staying at the nearby Lake Callide Retreat who are considered to have a high level of interest in their surroundings. • Both views look out over the BSPS special industry, rural and community facility zones. • As identified by the BSPS, significant natural landscapes that are considered to be of high scenic or aesthetic value within this view include elevated and vegetated landscapes associated with the Callide range escarpments, landscapes within protected areas (Mount Murchison Conservation Area in 9b), and Callide Dam which displays significant views. • The view is likely valued at the local level outside of formal planning recommendations. • This view includes moderately distant views across the rural, natural and infrastructural landscape, which includes a high degree of energy and extractive infrastructure within this landscape is typical for this area. • Components of the rural and natural character is significantly influenced by the intensity and scale of infrastructure which dominates the view.
Visual sensitivity	• *Medium*
Visual evaluation	
Magnitude of change assessment	• The nearest part of MPA1 is *MPA1, Section A,* which is located 3.2 km northwest of Viewpoint 9a, and 3.8 km northwest of Viewpoint 9b.Therefore, views from this location are considered to be moderately distant. • Both 9a and 9b views are expansive and clear unobstructed views to MPA1, with the potential partial view of the lower section of the OHTL towers impacted by existing vegetation, infrastructure and the undulating topography. • The addition of further OHTL towers and cables within the existing OHTL corridor may be visible. • Clear views of the OHTL cables may be possible in areas backgrounded only by the sky, and filtered to negligible views of the cables will be evident in grassy or vegetated areas located directly behind the cables. • OHTL towers may be more clearly visible at the top of the vegetated range within the existing OHTL corridor due to their elevated placement and cleared vegetation, with more partial views in their placement behind a low hill or rise. • Open and partial views towards the large scale energy infrastructure may be possible from both viewpoint for receptors accessing the lookout (9a) and the recreational amenities of the playground (9b).These views will be dependent on possible vegetation screening the lower parts of the OHTL towers, with views dependant on the sloping topography.

Viewpoint 9A: Northeasterly view from Lake Callide Lookout and the Viewpoint 9B: Northeasterly view from Lake Callide Playground	
	• While significant natural landscapes as identified in the BSPS are visible within this view, existing large scale infrastructure that exists within the landscape lowers the degree of landscape sensitivity. • MPA1 is anticipated to result in a barely perceptible change to this view, whereby both open and partial views towards the large scale energy infrastructure may be possible. • While moderately distant, the visible components of MPA1 will have a minimal impact within the existing infrastructural components within the view, MPA1 is likely to blend within the existing view infrastructural components within the view.
Magnitude of change	• *Negligible.*
Significance of effect	• *Minor* and *Not Significant.*

8.2.10 Viewpoint 10

Table 37: Likely visual effect of the MPA1 on Viewpoint 10

Viewpoint 10: Southerly view from Callide Lookout	
Visual baseline assessment	
 *Existing view from Viewpoint 10: Southerly view from Callide Lookout* Refer to **Figure 17** in Appendix 2 for appropriately scaled image and wider panoramic view.	
Location	• 24°19'50.034" S 150°38'7.59" E
Elevation	• 299.9 m
Description	• Close, elevated and expansive views above vegetation toward MPA1 in LVIA Study Area 1. • Representative of views experienced by a low number of tourists visiting the lookout. • This viewpoint is located within *LCT F: Industrial, Mined and Transitional Lands,* with views across *LCT H: Lakes and Dams* towards *LCT E: Undulating and Grazed Uplands.* • This viewpoint is located within a road easement of BSPS. • The character of the view includes both rural, natural and infrastructural character in the foreground, with the elevated forested ridgeline in the background. • Infrastructure within this view includes numerous OHTL towers and cables including the 132 kV Gladstone South to Callide A Power Station OHTL line, 275 kV Wurdong to Calvale OHTL line, 275 kV Callide to Halys OHTL line, three stacks associated with the Callide Power Station A and B and the Callide Substation.

Viewpoint 10: Southerly view from Callide Lookout	
Key visual sensitivities	• While this is a scenic lookout, key visual receptors include a low number of tourists and visitors who may experience durationally short views towards the MPA1, and are considered to have a high level of interest in their surroundings. • This view looks out over the BSPS special industry, rural, community facility, and recreation and open space zones. • As identified by the BSPS, significant natural landscapes that are considered to be of high scenic or aesthetic value within this view include elevated and vegetated landscapes associated with the Callide Dam which displays significant views. • The view is likely valued at the local level outside of formal planning recommendations. • This view includes close and expansive views across the landscape typical for across the rural, natural and infrastructural landscape, which includes a high degree of energy and extractive infrastructure within this landscape is typical for this area. • Components of the rural and natural character is significantly influenced by the intensity and scale of infrastructure which dominates the view.
Visual sensitivity	• *Low*
Visual evaluation	
Magnitude of change assessment	• The nearest part of MPA1 is *MPA1, Section A's* OHTL corridor located 370 m south of this view, and the closest OHTL tower located 406 m south of this view. Therefore, views from this location are considered to be close. • The addition of further OHTL towers and cables within the existing OHTL corridor may be visible from this view. • Clear views of the OHTL cables may be possible in areas backgrounded only by the sky, and filtered to negligible views of the cables will be evident in grassy or vegetated areas located directly behind the cables. • Open as well as partial views towards the large scale energy infrastructure may be possible, and views will be dependent on possible vegetation screening the lower parts of the OHTL towers, with views dependant on the sloping topography. • While significant natural landscapes as identified in the BSPS are visible within this view, existing large scale infrastructure that exists within the landscape lowers the degree of landscape sensitivity. • MPA1 is anticipated to result in a barely perceptible change to this view, whereby both open and partial views towards the large scale energy infrastructure may be possible. • While close, the visible components of MPA1 will have a minimal impact within the existing infrastructural components within the view, MPA1 is likely to blend within the existing view infrastructural components within the view.
Magnitude of change	• *Low.*
Significance of effect	• *Minor* and *Not Significant.*

8.3. Summary of visual impact assessment

A summary of the baseline analysis and overall likely visual impact anticipated during the operation of the Project (as described in **Section 8.2: Viewpoint assessment**) associated

with the presence of MPA1 and MPA2, including OHTL towers, cables and associated infrastructure is presented in **Table 38**.

Table 38: Summary of visual assessment

Viewpoint name	Distance to nearest part of Site	Key visual receptors	Viewpoint Sensitivity	Magnitude of change	Potential Visual Effect	Significance of effect
Viewpoint 1: Southwestely view from Hanson Road	2.4 km	Passing tourists, residents and workers, recreational boaters	High	Low	Moderate	Not significant
Viewpoint 2: Westerly view from Round Hill Lookout	6.5 km	Tourists and residents	Medium	Negligible	Minor	Not significant
Viewpoint 3: Northwesterly view from Cania Way	2.7 km	Urban residents	Low	Negligible	Minor to Negligible	Not significant
Viewpoint 4: Southeasterly view from Private Property, 83 Boyles Road	231 m (OHTL corridor), 361 m (tower)	Single (one) rural residence	Low	Low	Minor	Not Significant
Viewpoint 5: Southerly view from Private Property, 670 Boyles Road.	471 m (OHTL corridor) 570 m (tower)	Single (one) rural residence	Low	Medium	Minor to moderate	Not significant
Viewpoint 6: Southerly view from Boyles Road	173 m (OHTL corridor), 232 m (tower)	Passing rural residents, and rural residents	Low	Medium	Minor to moderate	Not significant
Viewpoint 7: Southeasterly view from Bruce Highway	382 m (OHTL corridor), 416 m (tower)	Passing tourists, rural residents and workers, a rural residents	Medium	Medium	Moderate	Not significant
Viewpoint 8: Northerly view from Kaluda Road	6 m (OHTL corridor), 167 m (tower)	Passing rural residents, and rural residents	Low	Low	Minor	Not Significant

Viewpoint 9A: Northeasterly view from Lake Callide Lookout and Viewpoint 9B: Northeasterly view from Lake Callide Playground	3.2 km (9a), 3.8 km (9b)	Local residents and tourists (9a), locals, tourists and workers (9b)	Medium	Negligible	Minor	Not significant
Viewpoint 10: Southerly view from Callide Lookout	370 m (OHTL corridor), 406 m (tower)	Tourists	Low	Low	Minor	Not Significant

9 Construction and decommissioning assessment

9.1 Construction / installation impacts

Project infrastructure is located across the following LCTs and LCAs:

LVIA Study Area 1

- *LCT A: Rivers, Estuaries and Islands* – Calliope River, Estuary and Islands (LCA A1)
- *LCT B: Forested Ranges and Mountains* - Callide North Forest Ranges and Mountains (LCA B21).

LVIA Study Area 2

- *LCT B: Forested Ranges and Mountains* - Calliope Conservation Forest Ranges and Mountains (LCA B1) and Mount Alma Forest Ranges and Mountains (LCA B2).
- *LCT C: Forested Lowlands* - Calliope Conservation Forested Lowlands (LCA C1) and West Stowe Forested Lowlands (LCA C2)
- *LCT D: Undulating and Grazed Uplands* - West Stowe Undulating and Grazed Uplands (LCA D1) and Mount Alma Undulating and Grazed Uplands (LCA D2)
- *LCT E: Lowland Rural Plains* - West Stowe Lowland Rural Plains (LCA E1) and Mount Alma Lowland Rural Plains (LCA E2).

Based on the potential construction phase elements identified in Section 4.1: Key sources of potential impact, there are likely to be short term changes and effects to the landscape character, views and visual amenity during the construction of the Project. The timeframe of this estimated to commence in 2026 and be complete by December 2028. It is noteworthy that the construction will occur in a progressive programme so construction works will not be visible across the full alignment for the whole construction programme as each tower will be sequentially completed. This will limit the length of time that construction works will be visible by individual visual receptors/from representative viewpoints.

This includes the presence of large–scale machinery and helicopters constructing and installing the Project. Visibility of construction activities (including excavation, trenching, earthmoving, vegetation clearance/trimming installing the OHTL towers and cables, which may be more visible within LCTs A, C, D and E. This will be dependent on potential screening from existing topography, vegetation and existing built infrastructure, with different experiences of close to distant range views depending on potential receptors distance from MPA1 and MPA2.

Construction activities will be occurring within proximity to the existing transmission lines and easements so will be less obtrusive than may be the case in a rural or natural landscape free from existing infrastructure elements.

Construction impacts are likely to be evident and experienced by receptors on roads in close proximity to MPA1 and MPA2, especially in instances where travellers may need to stop in parts where the Project crosses roads including Kaluda Road, Boyle Road, the Bruce Highway. Views along roads in close proximity to the Project may be largely constrained by existing roadside vegetation, while some local roads provide more open viewing opportunities toward the Site.

Construction impacts may also be experienced by nearby rural receptors (including those living on rural lifestyle properties in proximity to Kaluda Road, Boyles Road, the Bruce Highway), with more minimal but still evident impacts experienced by urban residents in proximity to Cania Way and urban residents recreationally accessing the Calliope River. Views from key roads including Hanson Road may be likely with regard to possible clearing of vegetation. The connection points of the Project to both the Callide Substation and Calliope River Substation as part of the Powerlink Project overall are anticipated to provide only limited additional viewing opportunities toward parts of the Project.

Further to this these works would be temporary in nature and as such considered to be of an overall lower significance then the effects identified in **Section 7.2: Landscape character assessment** and **Section 8.2: Viewpoint assessment**.

9.2 Decommissioning impacts

If it is determined that the Project will be decommissioned (see Section 4.1.4), impacts during the decommissioning phase will be temporary and similar to those during the construction phase. Over the longer term it is anticipated that rehabilitation would reinstate the landscape character, views and visual amenity largely to their former conditions. Consequently, it is expected that following decommissioning, the Project would result in a low impact on the appearance of the surface landscape.

10 Mitigation 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 below are therefore considered to assist by providing a more harmonious appearance to the Project overall.

The mitigation framework seeks, as a first priority, to minimise adverse landscape and visual impacts through careful design. It is noted that these factors have been explored iteratively and are therefore 'inherent' in the current design to the greatest extent possible.

Due to the height of the proposed OHTL towers, the proposition of providing and maintaining off-site planting to manage all views of the Project is not practical. 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. Table 39 describes measures identified to mitigate impact.

Table 39: Inherent and potential additional mitigation measures

Proposed mitigation category	Description of measures to minimise landscape and visual effects
Activities undertaken during design (inherent in existing 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. In particular, attention should be given to the provisions for the protection of vegetation set out within *AS 4970-2009: Protection of Trees on Development Sites (2009)*. • 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.
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). It is noted that retention of significant vegetation

Proposed mitigation category	Description of measures to minimise landscape and visual effects
	has been a key driver for inherent mitigation built into the Project design by utilising an existing OHTL corridor. • Retain vegetation associated with creek lines to the greatest extent practicable. • Any new planting undertaken to make-good disturbed areas or to provide select screening for affected viewers, to the extent possible (i.e. outside of the area required to be kept clear to maintain electrical safety and minimise fire risk) may consist of mixed plants of local provenance including some fast-growing species, as appropriate to the identified landscape character or suitable for planting near transmission lines.
Activities undertaken during construction and operation	
Construction management and rehabilitation	• Develop a construction management and rehabilitation plan that includes measures that seek to manage vegetation, 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.

11 Residual impacts

Residual impacts relate to any changes in the overall level of effect for potential impacts after the implementation of mitigation. Although a number of reasonable mitigation measures are suggested in **Section 10: Mitigation measures** that may be applied to help enhance the qualitative outcomes of the Project's effect on landscape character and visual amenity, such mitigation measures are considered unlikely to alter the overall significance of the level of landscape effects assessed in **Section 7: Landscape assessment** or visual effect assessed in **Section 8: Visual assessment**. Even the most thorough mitigation strategy has limited potential to screen views of OHTL 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 OHTL infrastructure.

Subsequently, the residual impact is considered to be as per those impacts in the conclusions below.

12 Conclusion

This LVIA has been undertaken with reference to the general Powerlink Terms of Reference for a Ministerial Infrastructure Designation. Specifically with regards to visual amenity, the LVIA has sought to "*Describe and illustrate the visual impact of the construction and operation of the project. Include major views, view sheds, outlooks, and features contributing to the amenity of the area, including assessment from private residences. Evaluate and regional visual impacts of the transmission development and any broad scale clearing for substations or communications sites. Include potential visual impacts on the users of State-controlled roads.*"

The assessment has considered the relevant provisions of the *Gladstone Regional Planning Scheme* and *Banana Shire Planning Scheme* as well as aesthetic values related to the presence of a small part of the Project within the GBRWHA.

The capacity of a landscape to accommodate additional OHTL infrastructure depends on the degree of impact the development will have on the existing character of the landscape; and the extent to which this impact can be modified and reduced by design.

Transmission lines are a common feature of the rural and urban landscape. However, *all* transmission lines will unavoidably result in some significant changes to the landscape and visual resource (character and views) due to their size, prominence and/or location. The Project will introduce new OHTL infrastructure into the landscape.

The proposed towers associated with the OHTL are tall (up to around 65 m) and are likely to be highly visible from some locations. The Project will therefore introduce additional OHTL towers, powerlines and associated elements into the landscape that will locally incrementally intensify the presence of electrical infrastructure within the landscape as well as requiring vegetation clearance within the associated disturbance zone. As this will be collocated with existing OHTL infrastructure, this is considered to minimise incursion of powerlines into new areas and will result in an incremental consolidation of impacts within areas already affected by transmission lines, rather than introduce new elements into the wider rural and natural landscape of the Study Area(s).

The LVIA has used a range of desk–based and field–based analysis techniques to assess the impact of the Project on landscape and visual amenity values.

The key issues identified are the changes in the character of the landscape within parts of the Project Area (MPA2) and visual impacts on individual properties and road users nearest to the Project as summarised below.

The Landscape Character Assessment has defined eight LCTs across LVIA Study Areas 1 and 2. Parts of four of the eight LCTs are directly impacted by the proposed Project infrastructure.

MPA1 contains landscapes within:

- *LCT B: Forested Ranges and Mountains* (LCA B21),
- *LCT F: Industrial Mined and Transitional Lands*

MPA2 contains landscape within:

- *LCT A: Rivers, Estuaries and Islands* (LCA A1),

- *LCT B: Forested Ranges and Mountains* (LCA B1, B2)
- *LCT C: Forested Lowlands* (LCA C1, C2)
- *LCT D: Undulating and Grazed Uplands* (LCA D1, D2)
- *LCT E: Lowland Rural Plains* (LCA E1, E2)

The assessment of impacts upon landscape character for MPA1 within LVIA Study Area 1 has concluded that there would be no significant impacts with the assessment as follows:

- Direct **Moderate, Not Significant** impacts on LCT B (LCA B21) due to noticeable change the Project is anticipated to have on localised parts of this LCT.
- Direct **Minor to Moderate**, **Not Significant** impacts on LCT D (D6) and LCT E (E15) and LCT F (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.
- **No direct / significant impacts** have been identified within LCT G and H.

The assessment of impacts upon landscape character for MPA2 within LVIA Study Area 2 has concluded that there would be a highly localised significant impact on one LCT:

- Direct highly localised **Moderate to Major, Significant** impacts on LCT B (LCA B1, B2) in association with Calliope Conservation Park (LCA B1) and Mount Alma (B2) due to the introduction additional OHTL infrastructure to a forested landscape with scenic and landscape values.

All other impacts on landscape values on MPA2 within LVIA Study Area 2 are considered to be not significant including:

- Direct **Moderate**, **Not Significant** impacts on LCT A (LCA A1) due to a barely perceptible change to the LCA due to existing electrical infrastructure located in the GBRWHA.
- Direct **Minor to Moderate, Not Significant** impacts on 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 OHTL infrastructure.
- Direct Minor to Negligible, Not Significant impacts on LCT F due to the extent to which this infrastructure would blend with the existing character.
- **No direct / significant impacts** have been identified within LCT F, G or H.

The visual assessment has 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 potential for views within 10 km of the Project was considered and ten viewpoints (VPs) were selected to represent the views of identified receptors including:

- *LVIA Study Area 1*: Tourists accessing two local lookouts and a rest area and playground
- *LVIA Study Area 1*: Local residents recreationally accessing a local lookout, rest area and playground
- *LVIA Study Area 1*: Workers in the nearby resource extraction industry accessing a local rest area

- *LVIA Study Area 2*: Urban residents living in Clinton who may experience views towards MPA2, as well as residents accessing local recreational areas including a lookout and recreational use of the Calliope River Boat Ramp and Calliope River
- *LVIA Study Area 2*: Rural residents accessing local roads including Kalua Road and Boyles Road, as well as the Bruce Highway as a state controlled road
- *LVIA Study Area 2*: Rural residents' private properties and views from Boyles Road
- *LVIA Study Area 2*: Tourists visiting a local lookout, and travelling along roads within the LVIA Study Area 2, including Hanson Road and Bruce Highway which are included in advertised self-drive trails
- *LVIA Study Area 2*: Workers in the resource extraction industry travelling on roads, including Hanson Road and the Bruce Highway

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).

It is acknowledged that screening views of OHTL towers up to 65 m high is not possible, even if this were to be a desirable outcome. However, opportunities to mitigate and enhance the integration of the OHTL infrastructure into the landscape have been described.

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 GBRWA 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.

In conclusion, the Project has been designed to minimise and mitigate impacts on landscape character, scenic amenity and landscape values to the greatest extent possible through careful siting and collocation of OHTL infrastructure adjacent to existing electrical

infrastructure to minimise additional impacts including minimising landscape and visual impacts on the rural and natural landscape of the wider LVIA Study Area.

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APPENDIX 1: LVIA PLANS

The following plans have been prepared by Umwelt to support the LVIA:

Figure 1: Regional context

Figure 2: LVIA Project Study Area

Figure 3: Landform and Hydrology Context

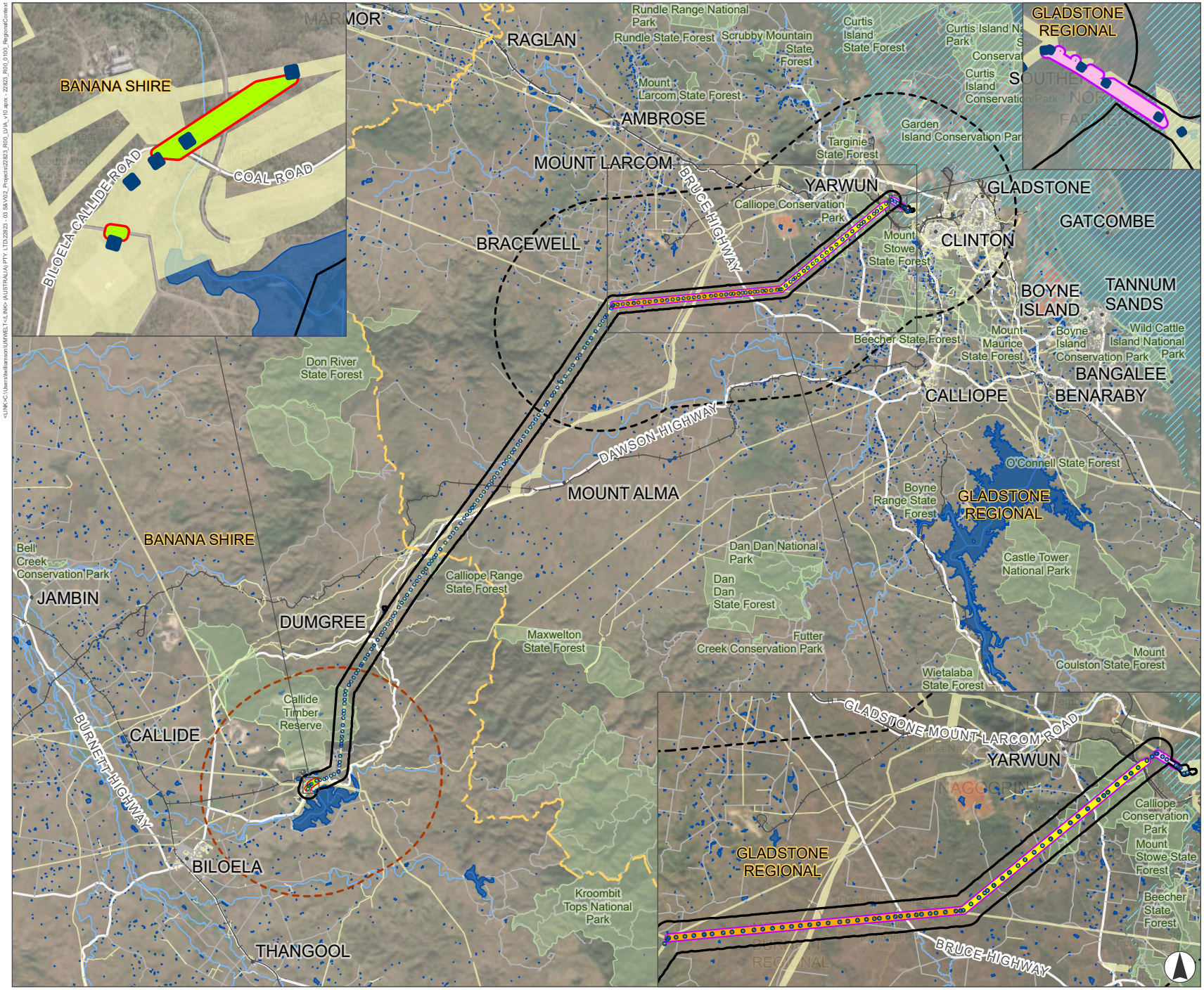
Figure 4: Landscape Planning Designations

Figure 5: Preliminary Landscape Character Types

Figure 6: Key Visual Receptors and Tourist Drives

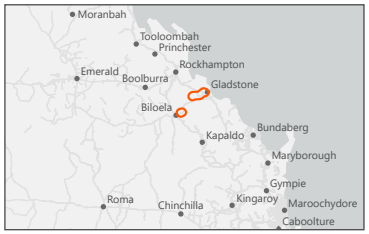
FIGURE 1

Regional Context



Legend

- Powerlink Study Area
- MID Proposal Area 1 (MPA1)
- MID Proposal Area 2 (MPA2)
- LVIA Study Area 1
- LVIA Study Area 2
- Local Government Area
- Existing Overhead Transmission Line Corridor
- Tower Pad
- MPA1, Section A
- MPA2, Section C
- MPA2, Section D
- MPA2, Section E
- Protected Area
- Lake/Dam
- World Heritage Area - Great Barrier Reef
- Railway
- Major Road
- Local Road/ Track
- Watercourse



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Kilometres

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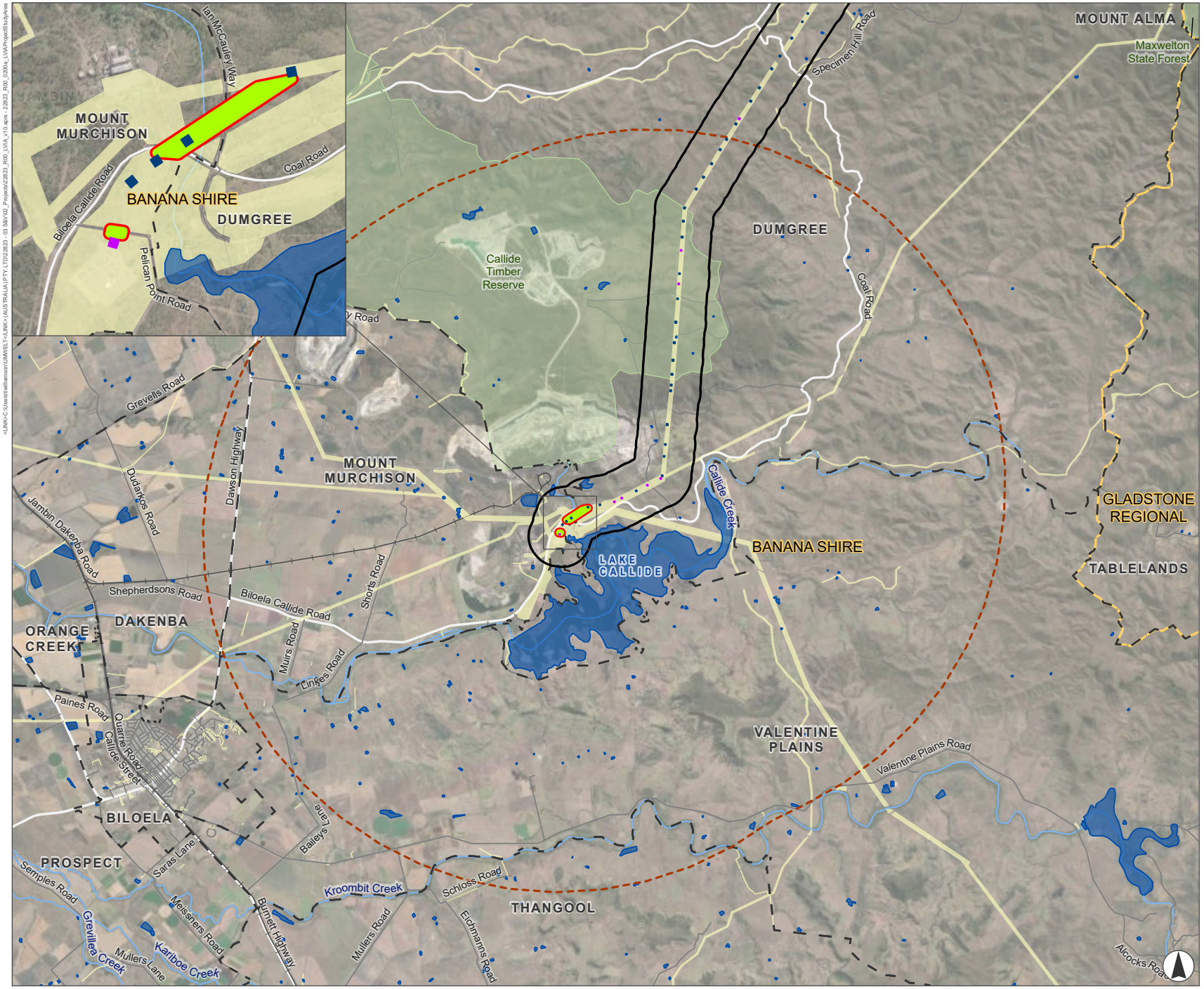
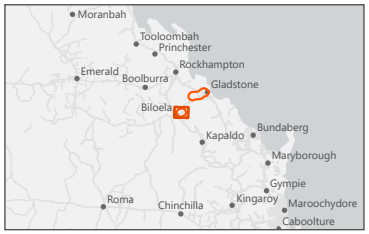


FIGURE 2a

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



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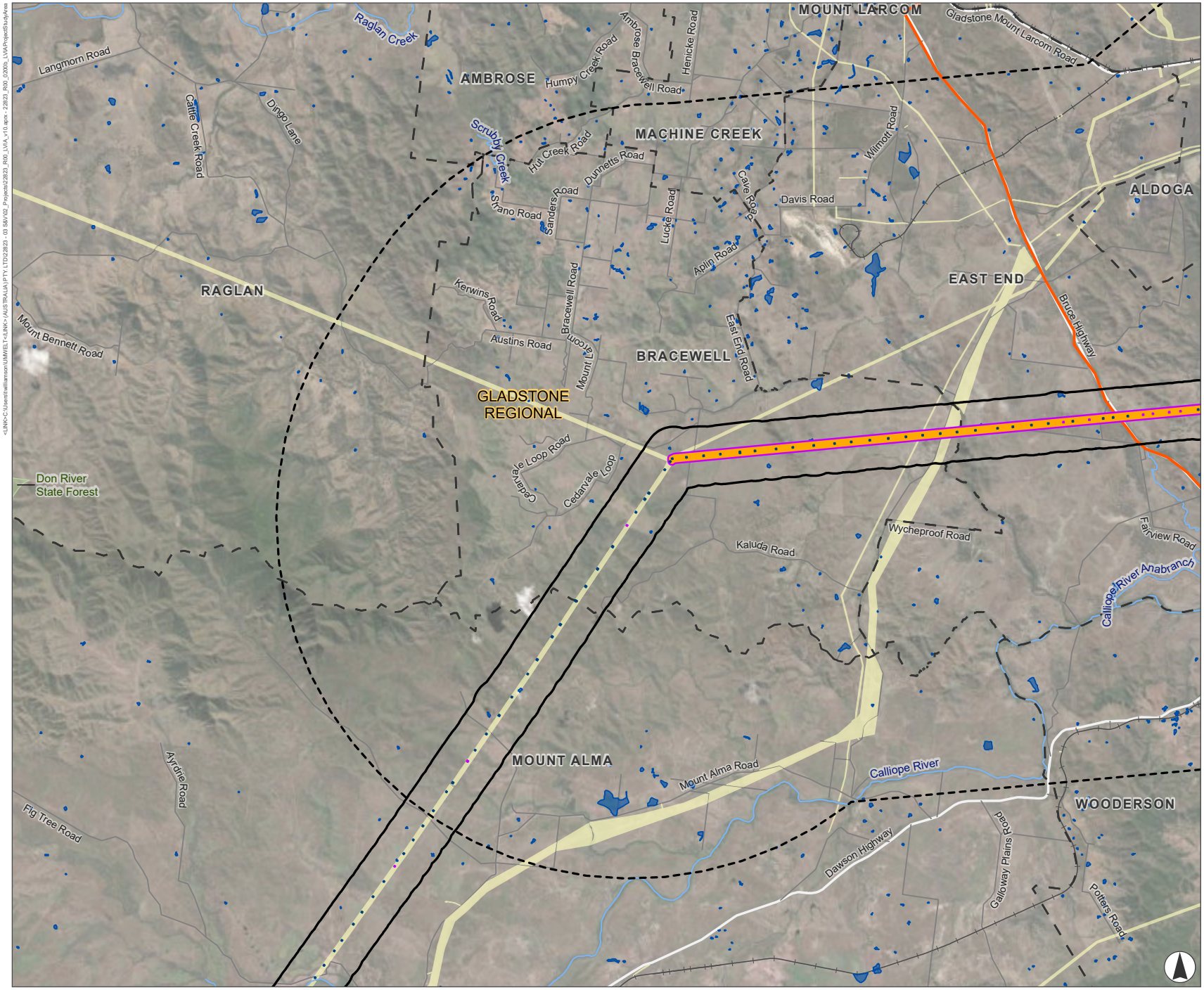
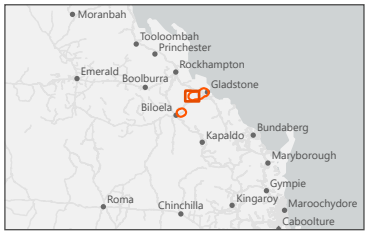


FIGURE 2b

LVIA Project Study Area

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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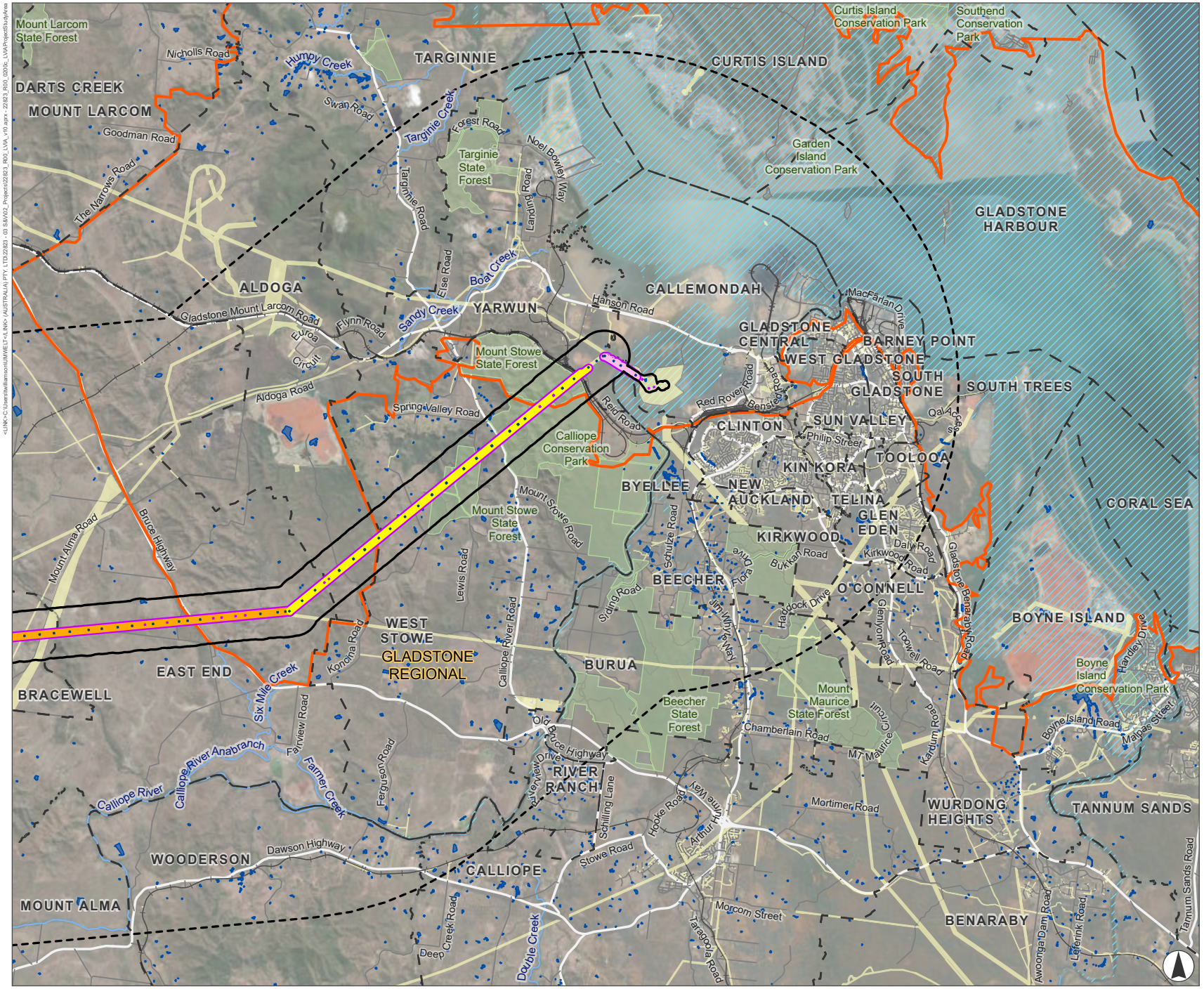

FIGURE 2c

LVIA Project Study Area

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

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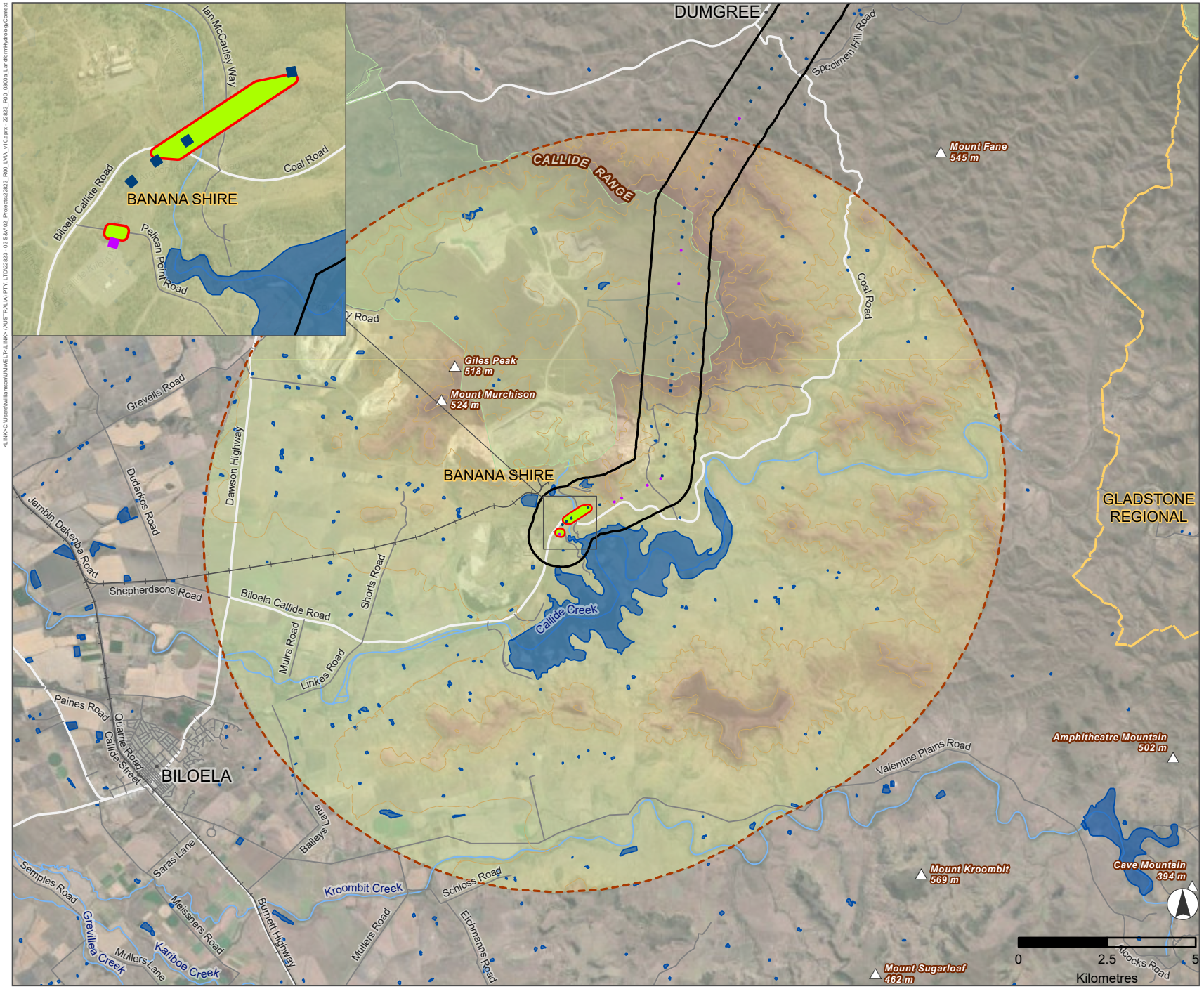


FIGURE 3a

Landform and Hydrology Context

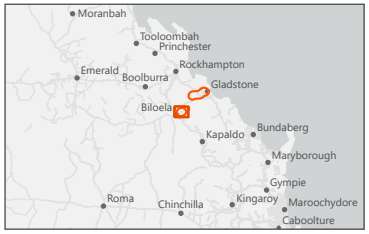
Legend

- Populated Place
- Mountain
- Contours (100m)
- Railway
- Major Road
- Local Road/ Track
- Watercourse
- Powerlink Site Boundary
- MID Proposal Area 1 (MPA1)
- LVIA Study Area 1
- Local Government Area
- MPA1, Section A
- Tower Locations (40m)
- Tower Locations (>50m)
- Protected Area
- Lake/Dam

Elevation Surface (m)

680m

10m



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

Image Source: ESRI Basemap (2024) | **Data Source:** QLD Government (2024), RES (2023), © Banana Shire Council [2024]

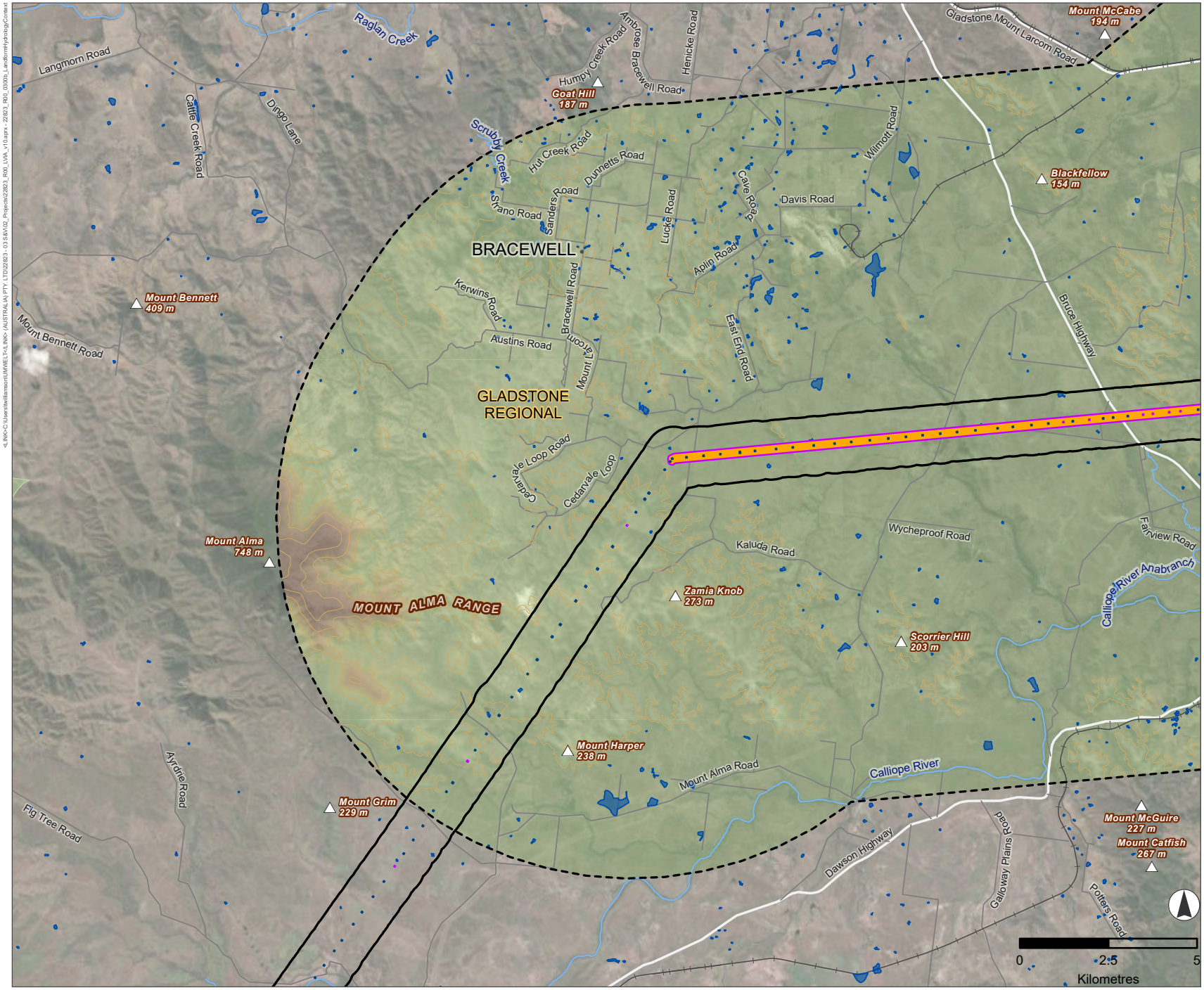


FIGURE 3b

Landform and Hydrology Context

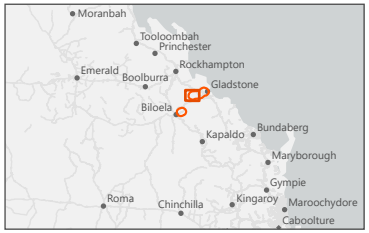
Legend

- Populated Place
- Mountain
- Contours (100m)
- Railway
- Major Road
- Local Road/ Track
- Watercourse
- Powerlink Site Boundary
- MID Proposal Area 2 (MPA2)
- LVIA Study Area 2
- Local Government Area
- MPA2, Section C
- Tower Locations (40m)
- Tower Locations (>50m)
- Protected Area
- Lake/Dam

Elevation Surface (m)

680m

10m



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

Image Source: ESRI Basemap (2024) | **Data Source:** QLD Government (2024), RES (2023), © Banana Shire Council [2024]

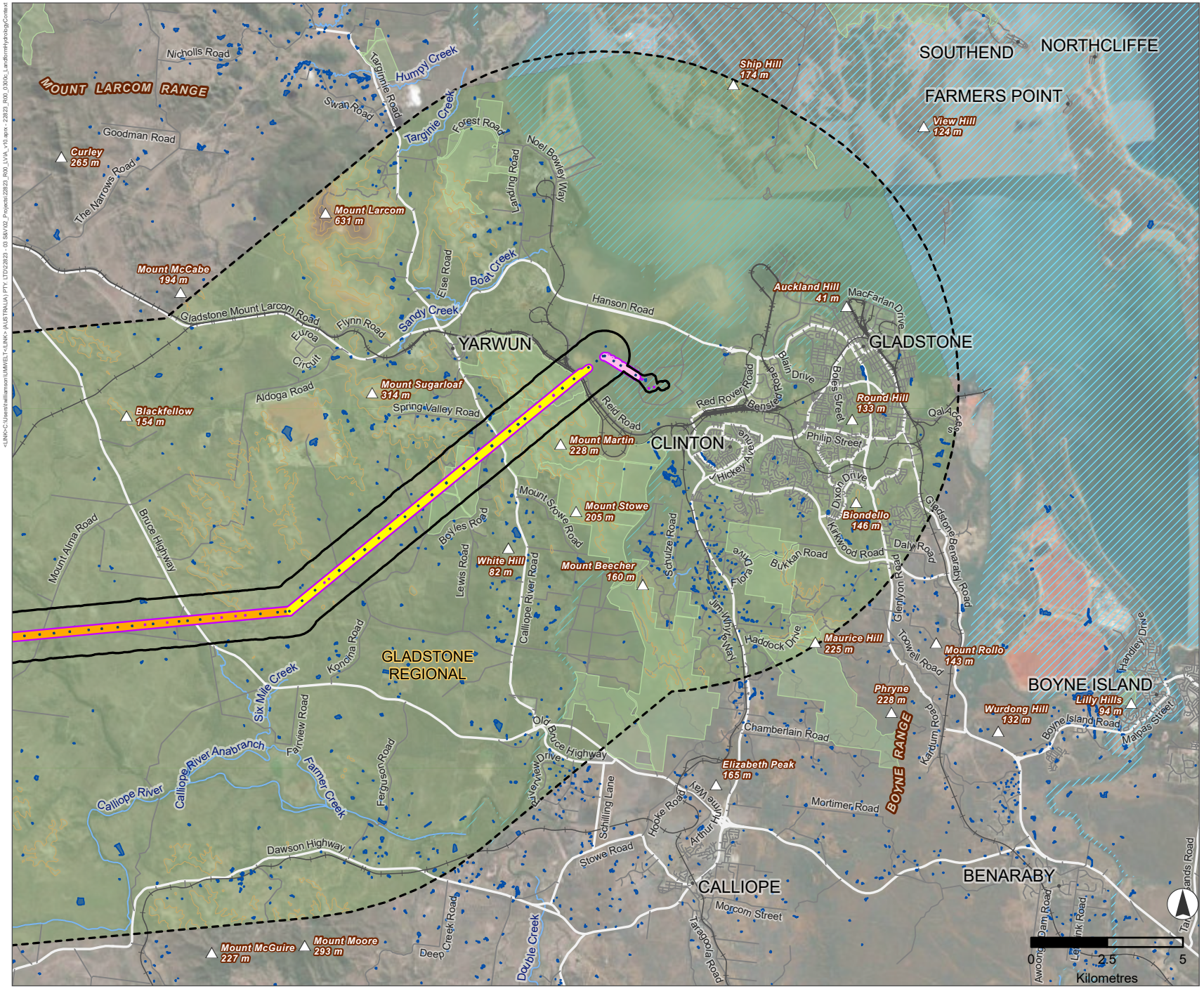


Image Source: ESRI Basemap (2024) | **Data Source:** QLD Government (2024), RES (2023), © Banana Shire Council [2024]

FIGURE 3c

Landform and Hydrology Context

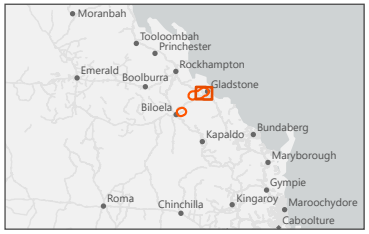
Legend

- Populated Place
- Mountain
- Contours (100m)
- Railway
- Major Road
- Local Road/ Track
- Watercourse
- Powerlink Site Boundary
- MID Proposal Area 2 (MPA2)
- LVIA Study Area 2
- Local Government Area
- MPA2, Section C
- MPA2, Section D
- MPA2, Section E
- Tower Locations (40m)
- Tower Locations (>50m)
- Protected Area
- Lake/Dam
- World Heritage Area - Great Barrier Reef

Elevation Surface (m)

680m

10m



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

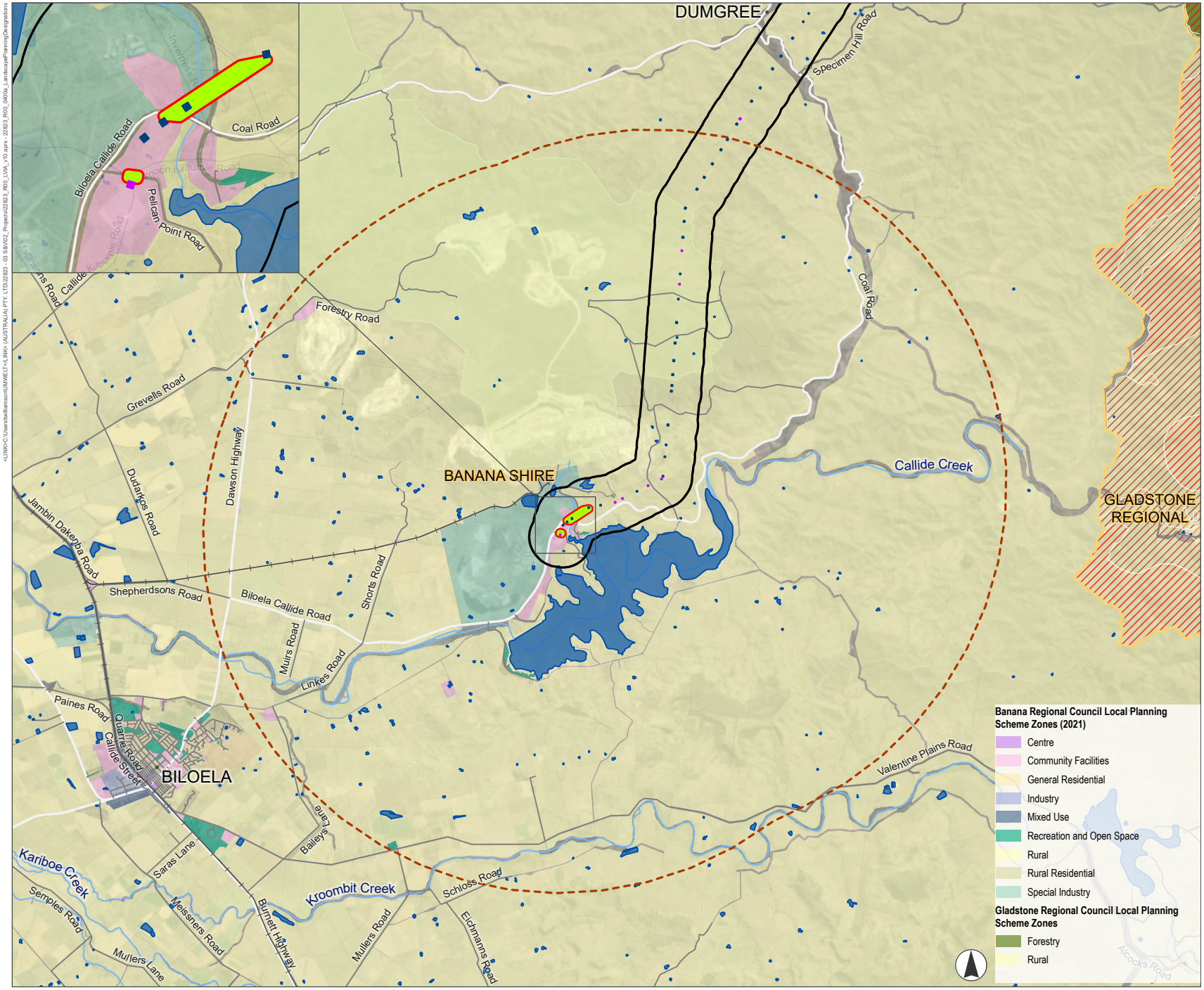


FIGURE 4a

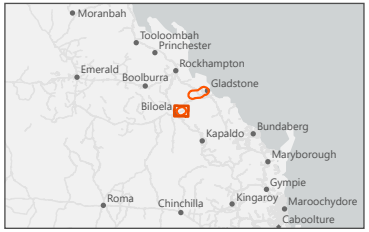
Landscape Planning Designations

Legend

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

Scenic Amenity

- Regional Significance 8
- Regional Significance 9
- Regional Significance 10



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Kilometres

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

Image Source: ESRI Basemap (2024) | **Data Source:** QLD Government (2024), RES (2023), © Banana Shire Council [2024]

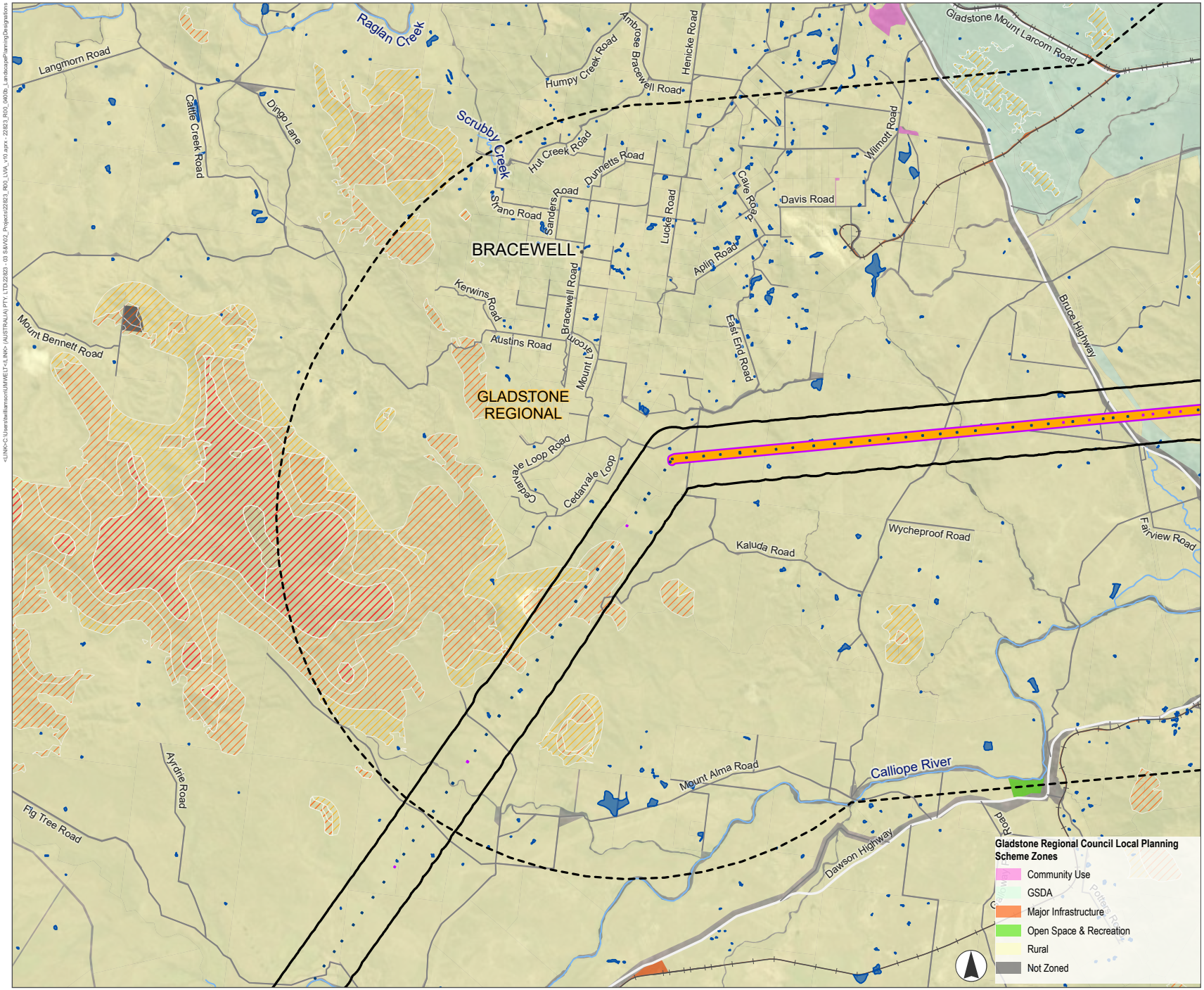


FIGURE 4b

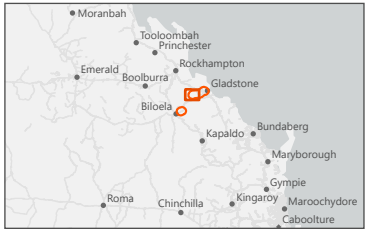
Landscape Planning Designations

Legend

- Major Road
- Local Road/ Track
- Railway
- Watercourse
- Powerlink Study Area
- MID Proposal Area 2 (MPA2)
- LVIA Study Area 2
- Local Government Area
- MPA2, Section C
- Tower Locations (40m)
- Tower Locations (>50m)
- Protected Area
- Lake/Dam

Scenic Amenity

- Regional Significance 7.5
- Regional Significance 8
- Regional Significance 9
- Regional Significance 10



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Kilometres

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

Image Source: ESRI Basemap (2024) | **Data Source:** QLD Government (2024), RES (2023), © Banana Shire Council [2024]

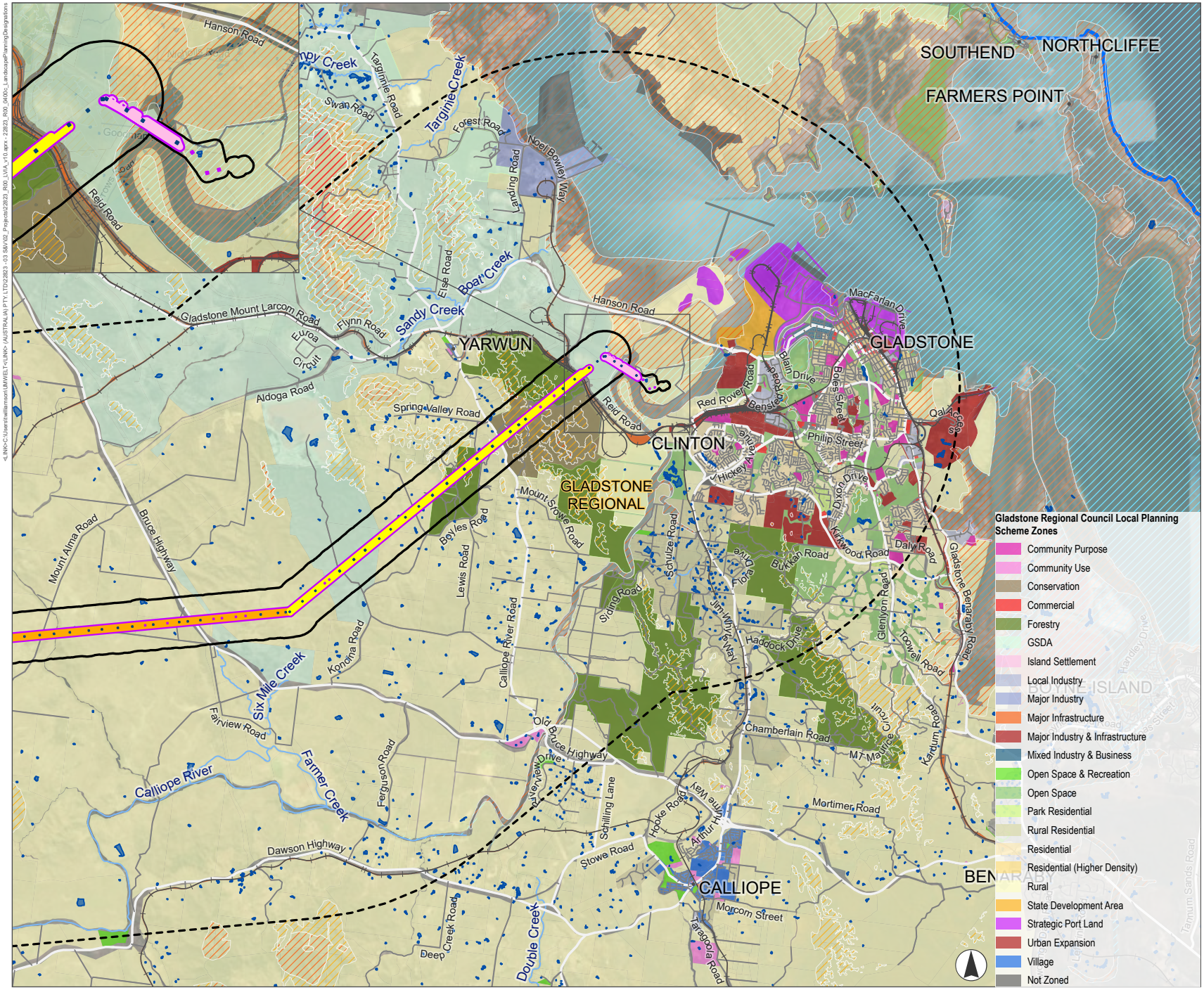


FIGURE 4c

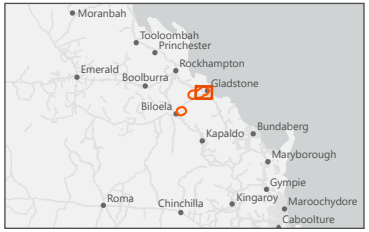
Landscape Planning Designations

Legend

- Major Road
- Local Road/ Track
- Railway
- Watercourse
- Powerlink Study Area
- MID Proposal Area 2 (MPA2)
- Great Barrier Reef Marine Park
- LVIA Study Area 2
- Local Government Area
- MPA2, Section C
- MPA2, Section D
- MPA2, Section E
- Tower Locations (40m)
- Tower Locations (>50m)
- Protected Area
- Lake/Dam
- World Heritage Area - Great Barrier Reef

Scenic Amenity

- Regional Significance 7.5
- Regional Significance 8
- Regional Significance 9



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), © Banana Shire Council [2024]

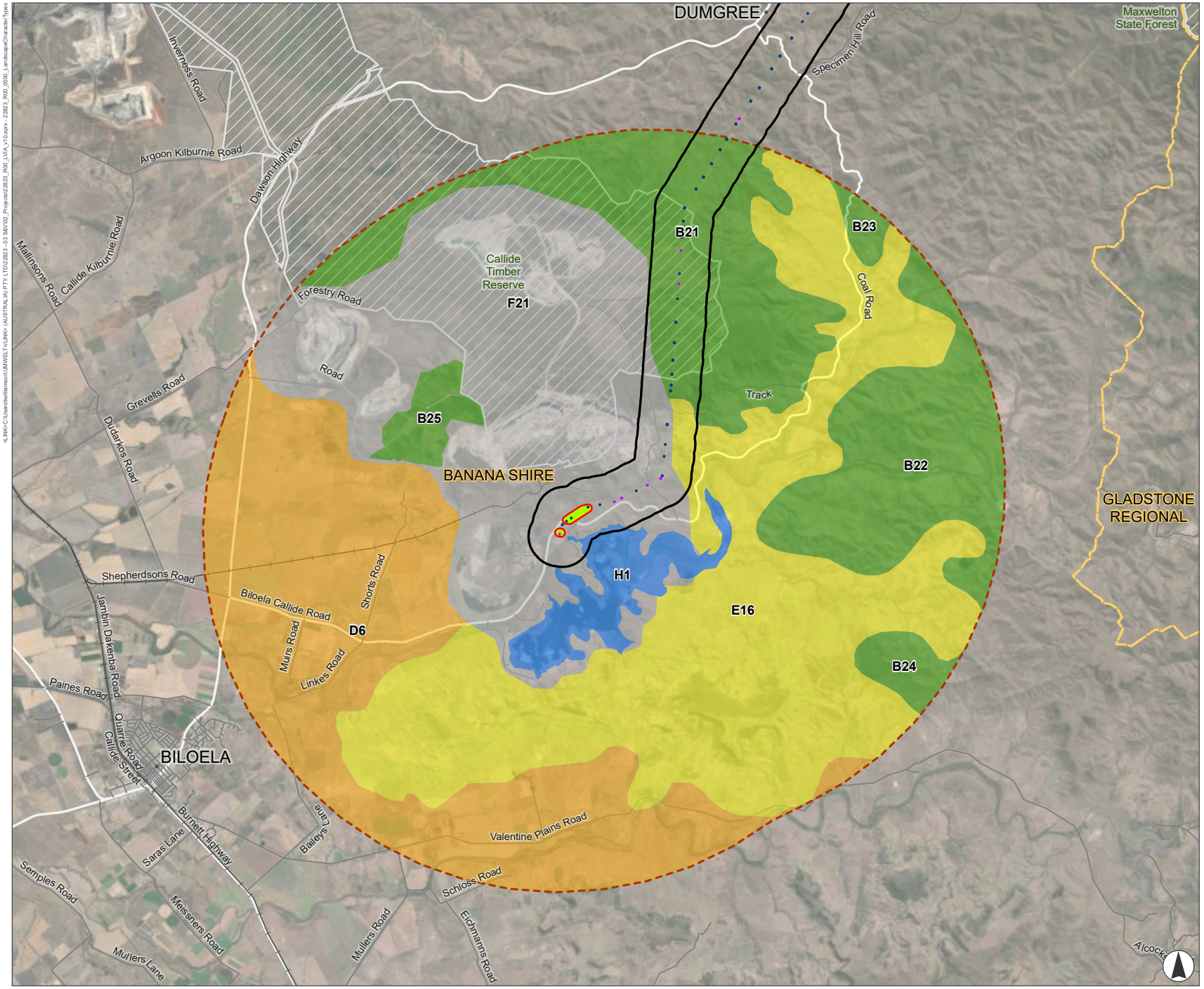


FIGURE 5a

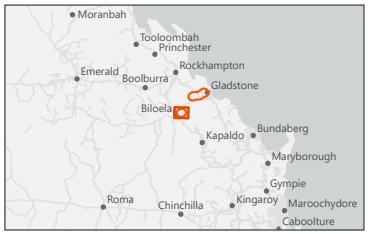
Landscape Character Types

Legend

- Powerlink Study Area
- MID Proposal Area 1 (MPA1)
- LVIA Study Area 1
- Protected Area
- Local Government Area
- Tower Locations (40m)
- Tower Locations (>50m)
- MPA1, Section A
- Railway
- Major Road
- Local Road/ Track

Landscape Character Type

- LCT B: Forested Ranges
- LCT D: Lowland Rural Plain
- LCT E: Undulating and Grazed Uplands
- LCT F: Industrial, Mined and Transitional Lands
- LCT H: Lakes and Dams



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), © Banana Shire Council [2024]

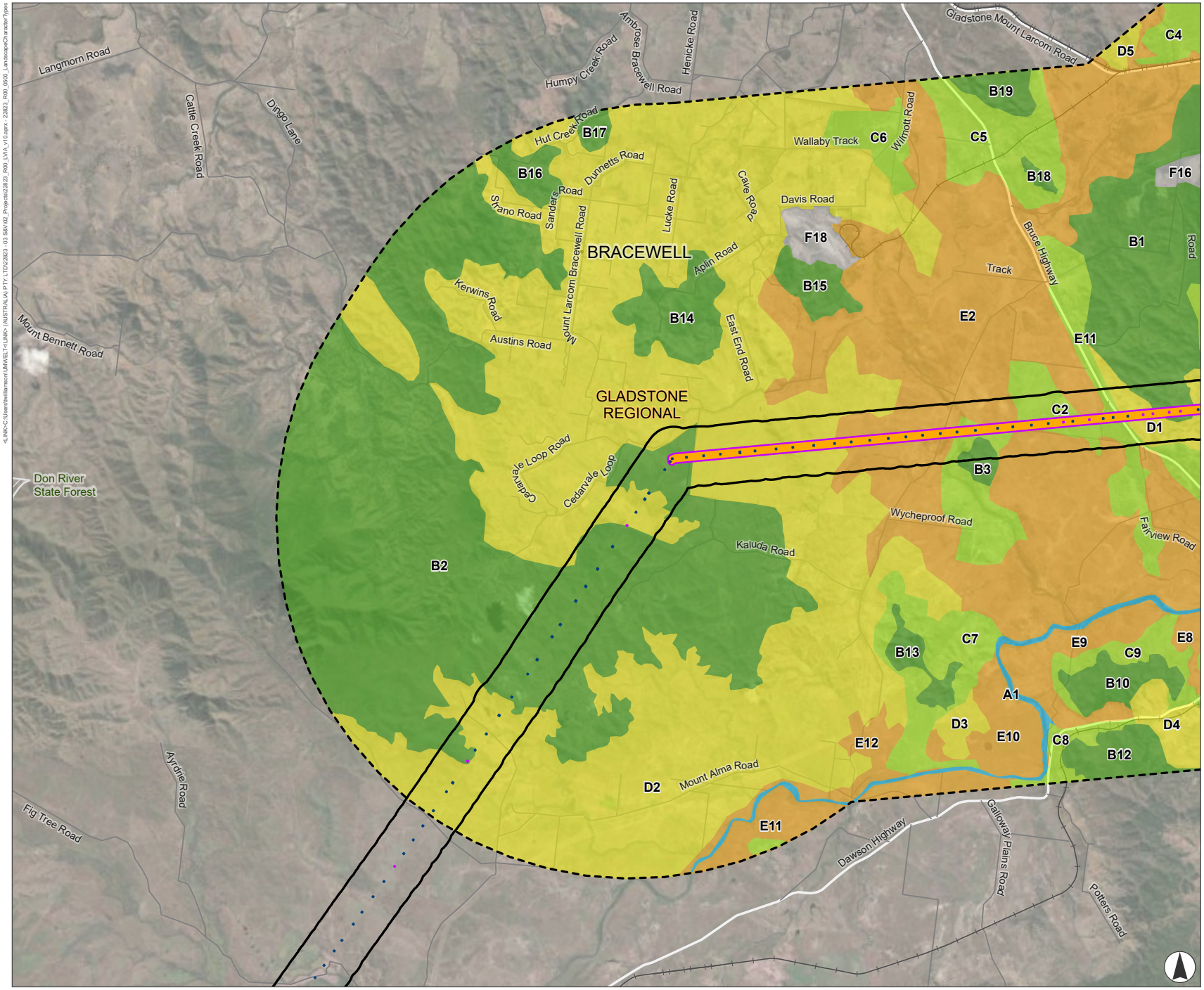


FIGURE 5b

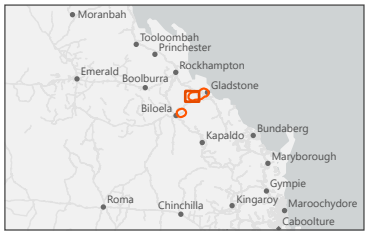
Landscape Character Types

Legend

- Powerlink Study Area
- MID Proposal Area 2 (MPA2)
- LVIA Study Area 2
- Protected Area
- Local Government Area
- Tower Locations (40m)
- Tower Locations (>50m)
- MPA2, Section C
- Railway
- Major Road
- Local Road/ Track

Landscape Character Type

- LCT A: River Estuaries and Islands
- LCT B: Forested Ranges
- LCT C: Forested Lowlands
- LCT D: Lowland Rural Plains
- LCT E: Undulating and Grazed Uplands
- LCT F: Industrial, Mined and Transitional Lands



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), © Banana Shire Council [2024]

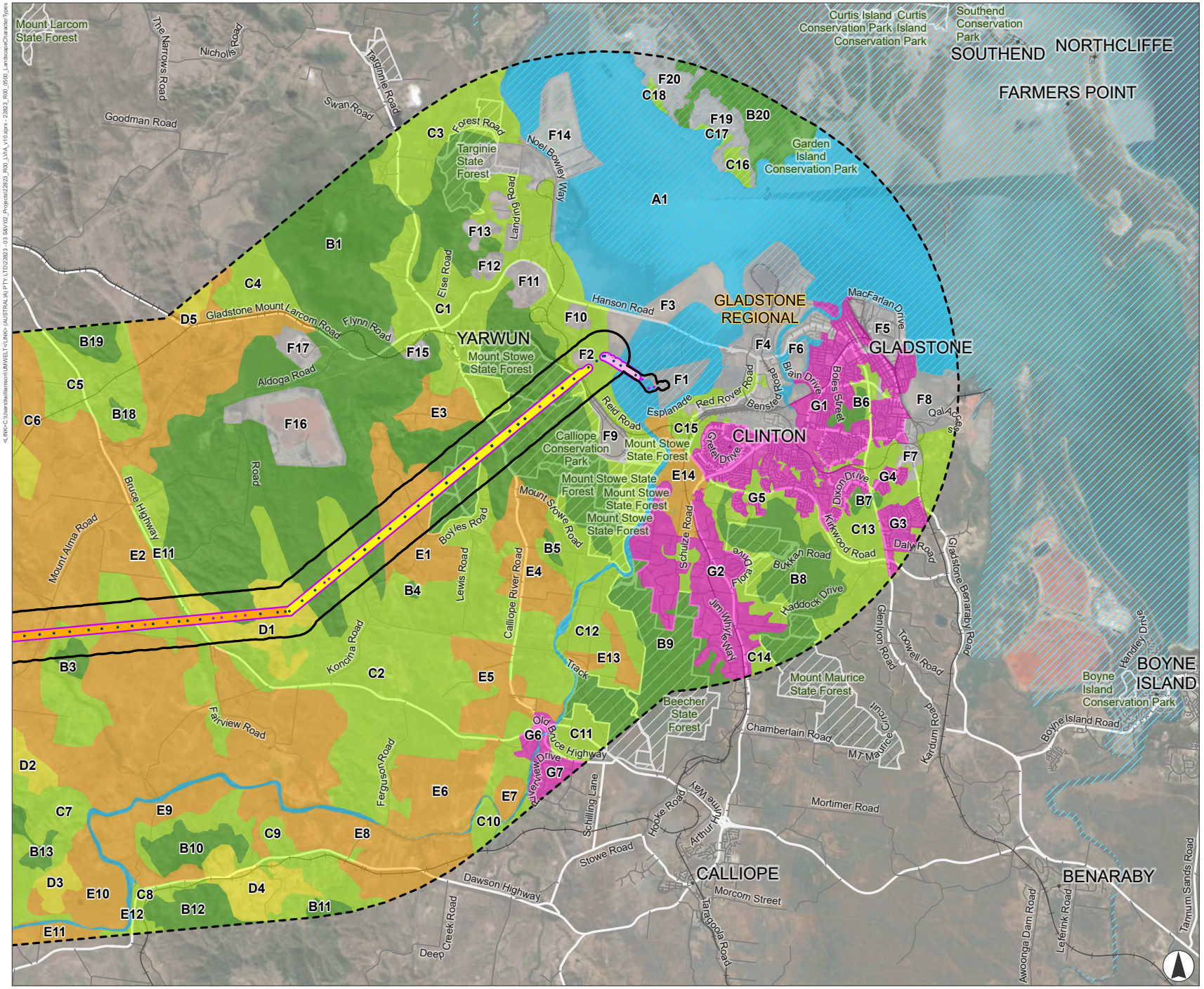


FIGURE 5c

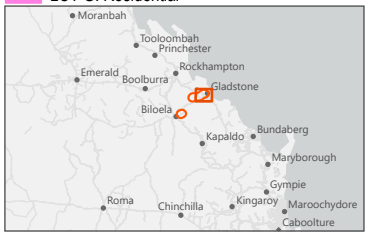
Landscape Character Types

Legend

- Powerlink Study Area
- MID Proposal Area 2 (MPA2)
- LVIA Study Area 2
- Protected Area
- Local Government Area
- World Heritage Area - Great Barrier Reef
- Tower Locations (40m)
- Tower Locations (>50m)
- MPA2, Section C
- MPA2, Section D
- MPA2, Section E
- Railway
- Major Road
- Local Road/ Track

Landscape Character Type

- LCT A: River Estuaries and Islands
- LCT B: Forested Ranges
- LCT C: Forested Lowlands
- LCT D: Lowland Rural Plains
- LCT E: Undulating and Grazed Uplands
- LCT F: Industrial, Mined and Transitional Lands
- LCT G: Residential



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Kilometres

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

Image Source: ESRI Basemap (2024) | **Data Source:** QLD Government (2024), RES (2023), © Banana Shire Council [2024]

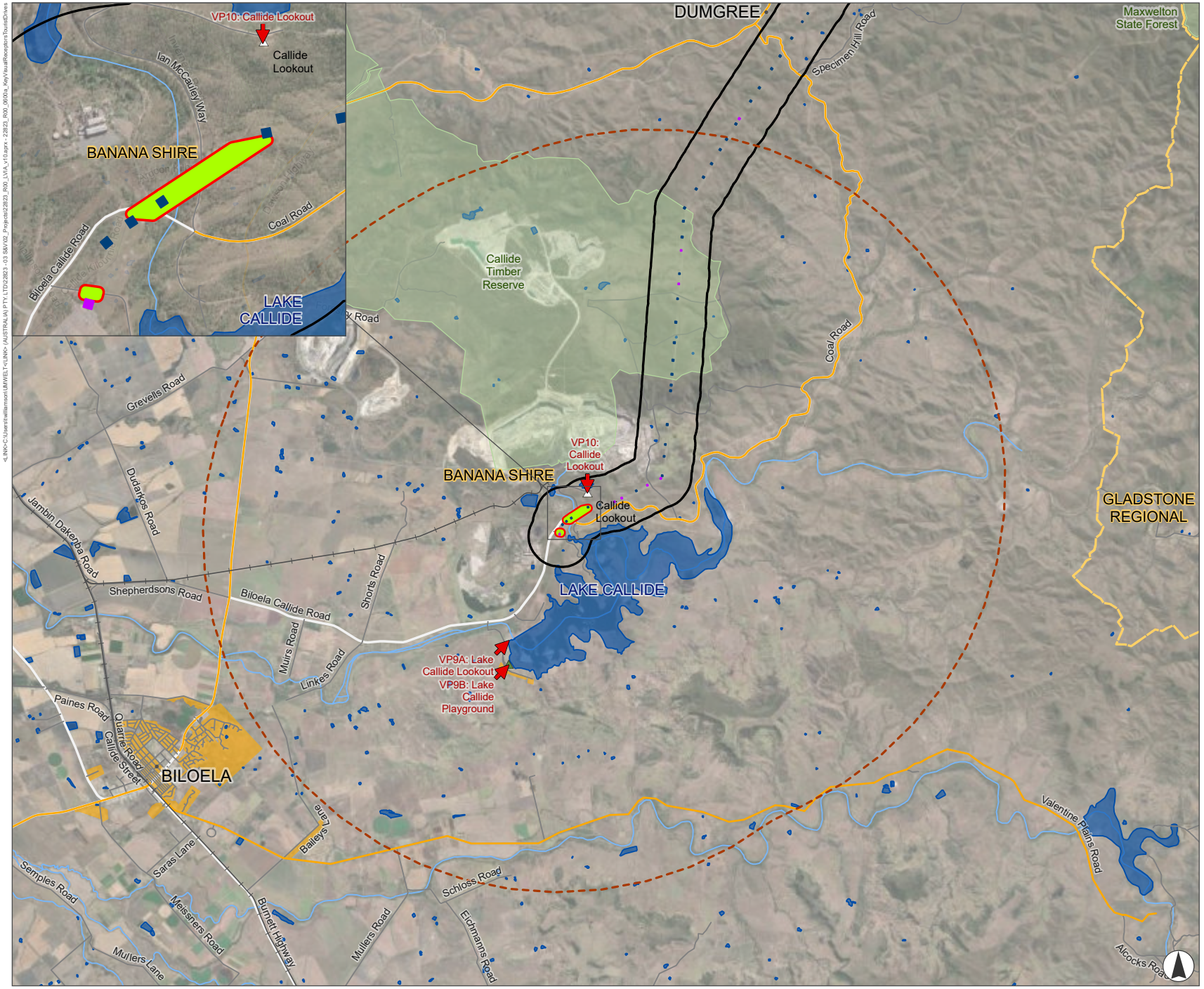
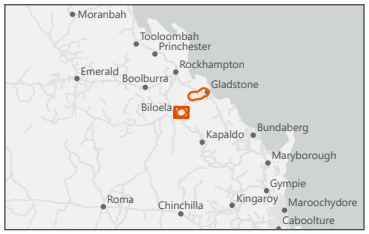


FIGURE 7a

Key Visual Receptors and Tourist Drives

Legend

- Populated Places
- Viewpoint Locations
- Lookouts
- Major Road
- Local Road/ Track
- Railway
- Watercourse
- Scenic/Tourist Routes
- Powerlink Study Area
- MID Proposal Area 1 (MPA1)
- LVIA Study Area 1
- Local Government Area
- MPA1, Section A
- Tower Locations (40m)
- Tower Locations (>50m)
- Lake/Dam
- Protected Area
- Rural and Urban Living Areas



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), © Banana Shire Council [2024]

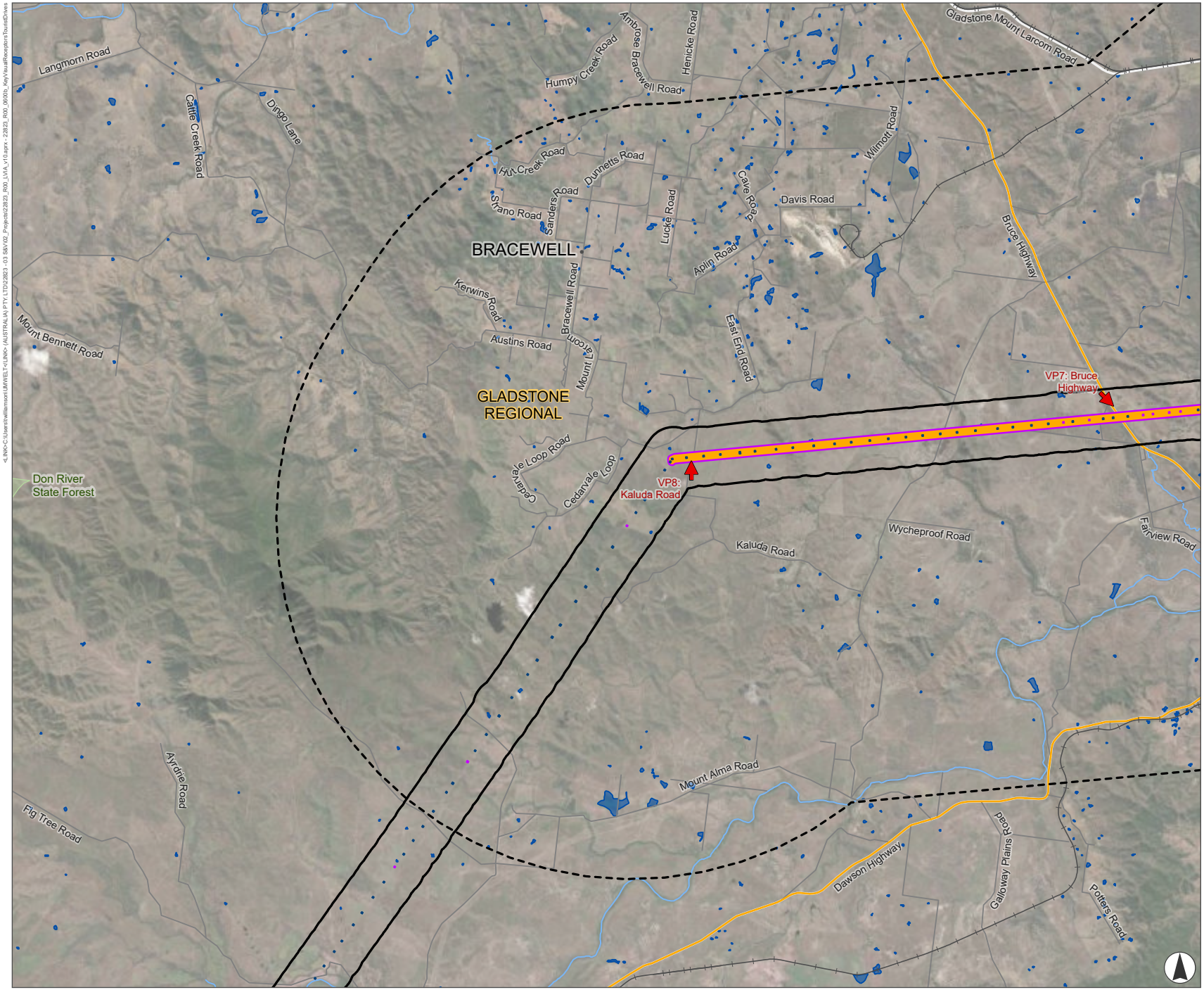
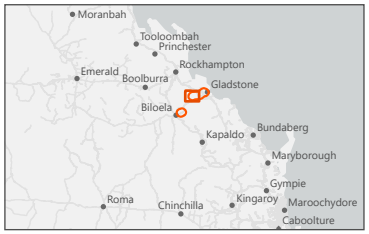


FIGURE 7b

Key Visual Receptors and Tourist Drives

Legend

- Populated Places
- Viewpoint Locations
- Major Road
- Local Road/ Track
- Railway
- Watercourse
- Scenic/Tourist Routes
- Powerlink Study Area
- MID Proposal Area 2 (MPA2)
- LVIA Study Area 2
- Local Government Area
- MPA2, Section C
- Tower Locations (40m)
- Tower Locations (>50m)
- Lake/Dam
- Protected Area



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), © Banana Shire Council [2024]

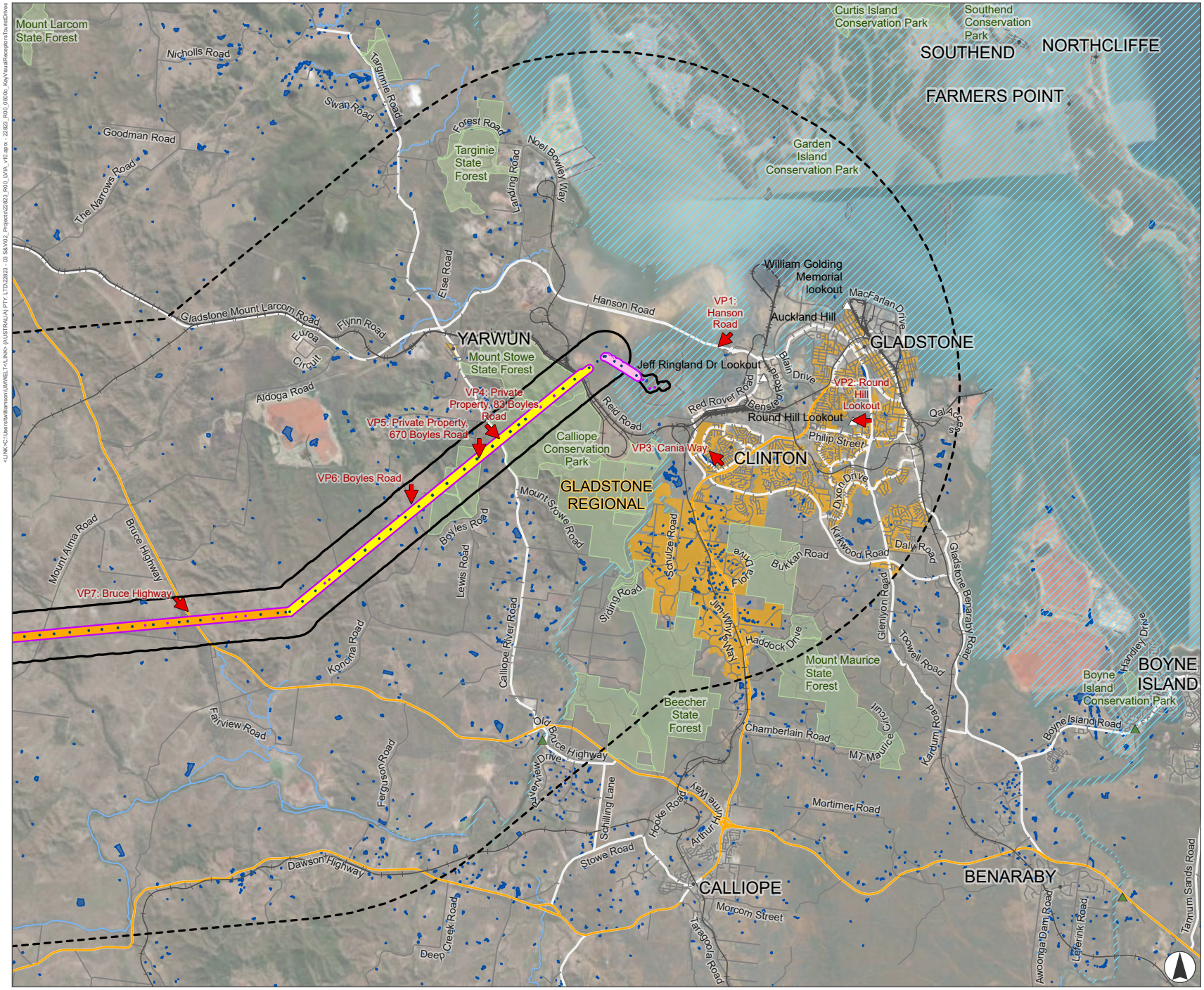
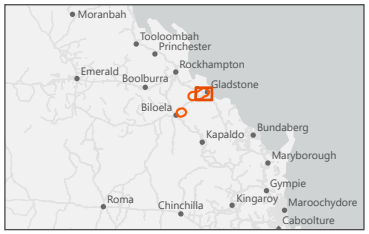


FIGURE 7c

Key Visual Receptors and Tourist Drives

Legend

- Populated Places
- Viewpoint Locations
- Lookouts
- Major Road
- Local Road/ Track
- Railway
- Watercourse
- Scenic/Tourist Routes
- Powerlink Study Area
- MID Proposal Area 2 (MPA2)
- LVIA Study Area 2
- Local Government Area
- World Heritage Area - Great Barrier Reef
- MPA2, Section C
- MPA2, Section D
- MPA2, Section E
- Tower Locations (40m)
- Tower Locations (>50m)
- Lake/Dam
- Protected Area
- Rural and Urban Living Areas



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), © Banana Shire Council [2024]

APPENDIX 2: VIEWPOINTS

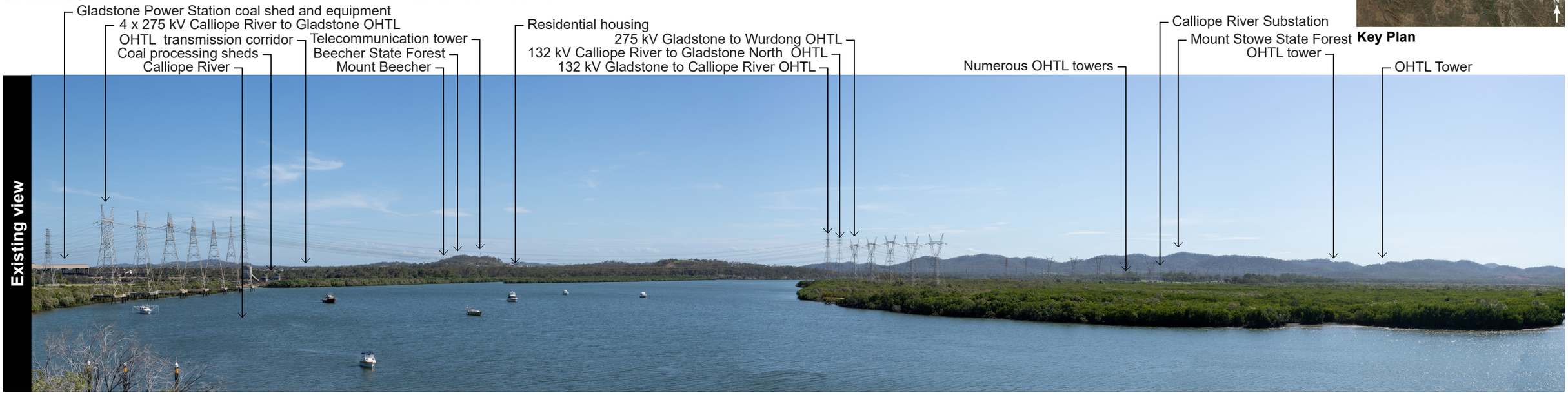
The following viewpoint figures have been prepared based on field photography by LatStudios:

Figure 7: **Viewpoint 1: Southwesterly view from Hanson Road - existing view**

Notes:

Date: 24th of January 2025
Location: 23°50'45.918" S 151°12'43.296" E
Elevation: 20.2 m

Camera: Canon EOS 6D Mark II
Lens: Sigma 50mm f/1.4 DG JSM lens
Horizontal field of view: 120°



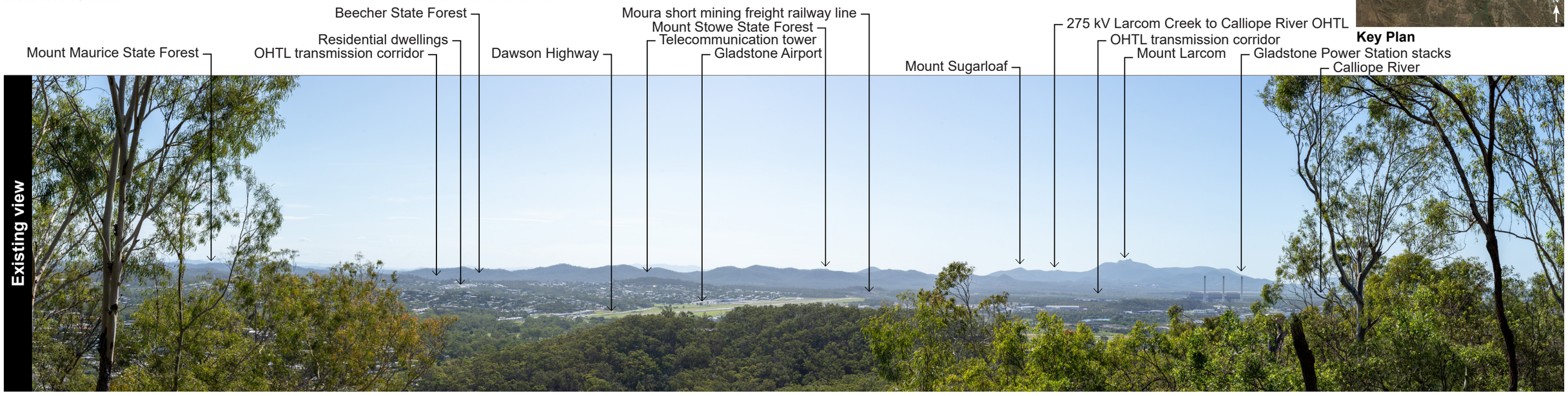
Key Plan

Figure 8: **Viewpoint 2: Easterly view from Round Hill Lookout - existing view**

Notes:
Date: 24th of January 2025
Location: 23°52'6.648" S 151°15'18.264" E
Elevation: 131.4 m

Camera: Canon EOS 6D Mark II
Lens: Sigma 50mm f/1.4 DG JSM lens
Horizontal field of view: 107°

Key Plan



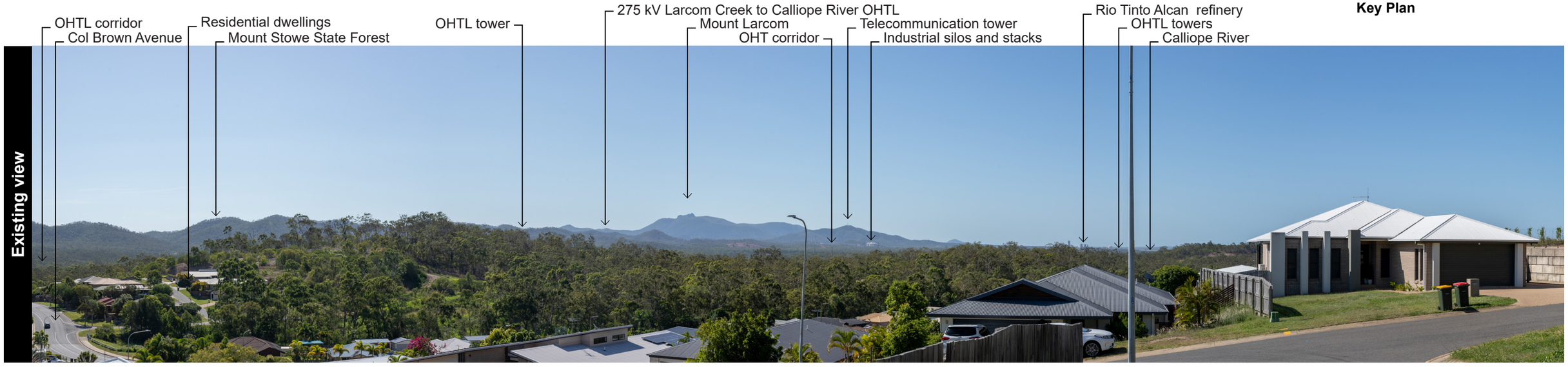
Approximate extent of Project
6.5 km to MPA2

Figure 9: Viewpoint 3: Northwesterly view from Cania Way - existing view

Notes:
Date: 24th of January 2025
Location: 23°52’37.84”S 151°12’31.62”E
Elevation: 63.3 m

Camera: Canon EOS 6D Mark II
Lens: Sigma 24mm f/1.4 DG JSM lens
Horizontal field of view: 196°

Key Plan

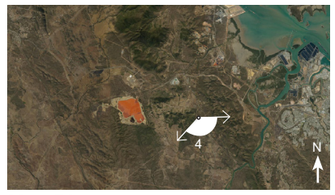


Approximate extent of Project
2.7 km to MPA2

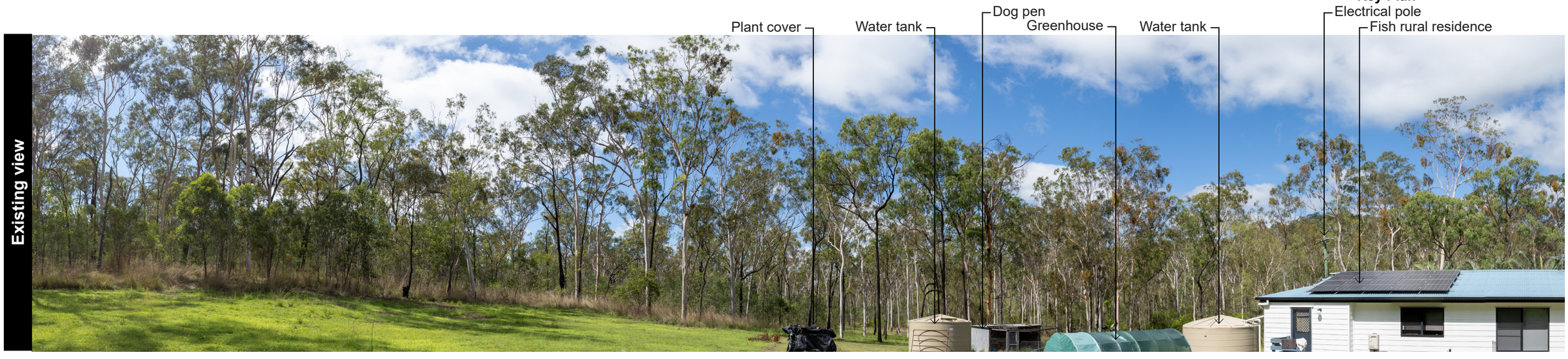
Figure 10: **Viewpoint 4: Southeasterly view from Private Property, 83 Boyles Road - existing view**

Notes:
Date: 23rd of January 2025
Location: 23°52'25.79"S 151° 8'6.83"E
Elevation: 62.3 m

Camera: Canon EOS 6D Mark II
Lens: Sigma 24mm f/1.4 DG JSM lens
Horizontal field of view: 385°



Key Plan



Approximate extent of Project

361 m to MPA2

Figure 11: **Viewpoint 5: Southerly view from Private Property, 670 Boyles Road - existing view**

Notes:
Date: 23rd of January 2025
Location: 23°53’15.02”S 151° 6’46.32”E
Elevation: 64.3 m

Camera: Canon EOS 6D Mark II
Lens: Sigma 24mm f/1.4 DG JSM lens
Horizontal field of view: 192°

Key Plan

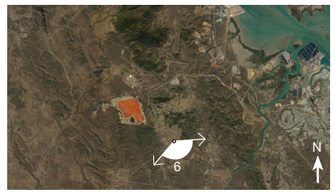
Approximate extent of Project

471 m to MPA2

Figure 12: **Viewpoint 6: Southerly view from Boyles Road - existing view**

Notes:
Date: 23rd of January 2025
Location: 23°53’29.298” S 151°6’44.094” E
Elevation: 29.1 m

Camera: Canon EOS 6D Mark II
Lens: Sigma 24mm f/1.4 DG JSM lens
Horizontal field of view: 192°



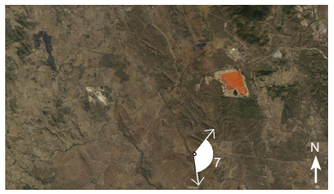
Key Plan

Approximate extent of Project
173 m to MPA2

Figure 13: **Viewpoint 7: Southeasterly view from Bruce Highway - existing view**

Notes:
Date: 23rd of January 2025
Location: 23°55'21.396" S 151°2'22.662" E
Elevation: 67.2 m

Camera: Canon EOS 6D Mark II
Lens: Sigma 24mm f/1.4 DG JSM lens
Horizontal field of view: 192°



Key Plan

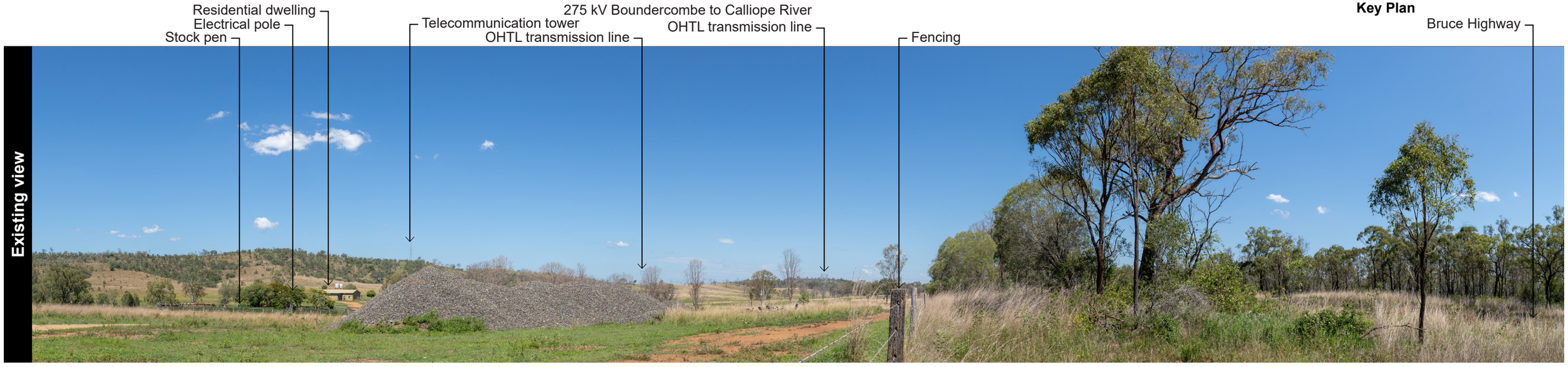
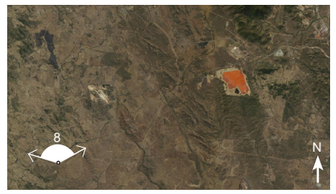


Figure 14: **Viewpoint 8: Northerly view from Kaluda Road - existing view**

Notes:
Date: 23rd of January 2025
Location: 23°56'6.354" S 150°55'20.94" E
Elevation: 67.2 m

Camera: Canon EOS 6D Mark II
Lens: Sigma 24mm f/1.4 DG JSM lens
Horizontal field of view: 165°



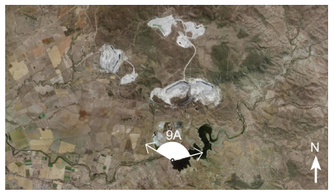
Key Plan

Approximate extent of Project
6 m to MPA2

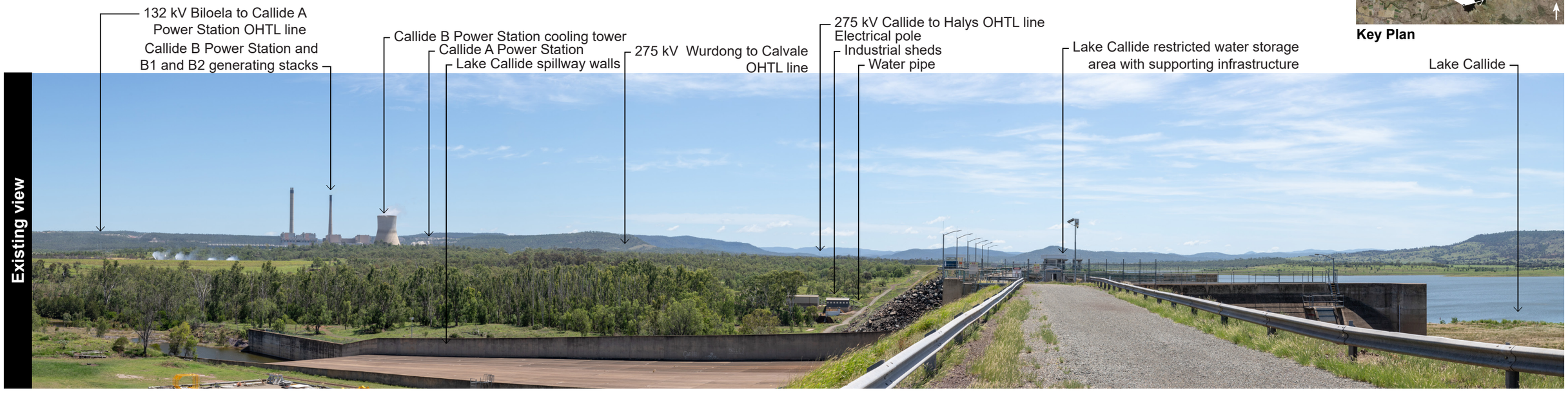
Figure 15: **Viewpoint 9A: Northeastely view from Lake Callide Lookout - existing view**

Notes:
Date: 24rd of January 2025
Location: 24°22'4.302" S 150°36'46.854" E
Elevation: 230.6 m

Camera: Canon EOS 6D Mark II
Lens: Sigma 24mm f/1.4 DG JSM lens
Horizontal field of view: 220°



Key Plan

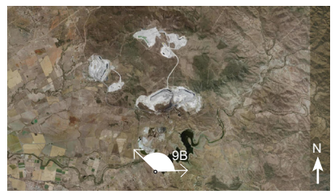


Approximate extent of Project
3.2 km to MPA1

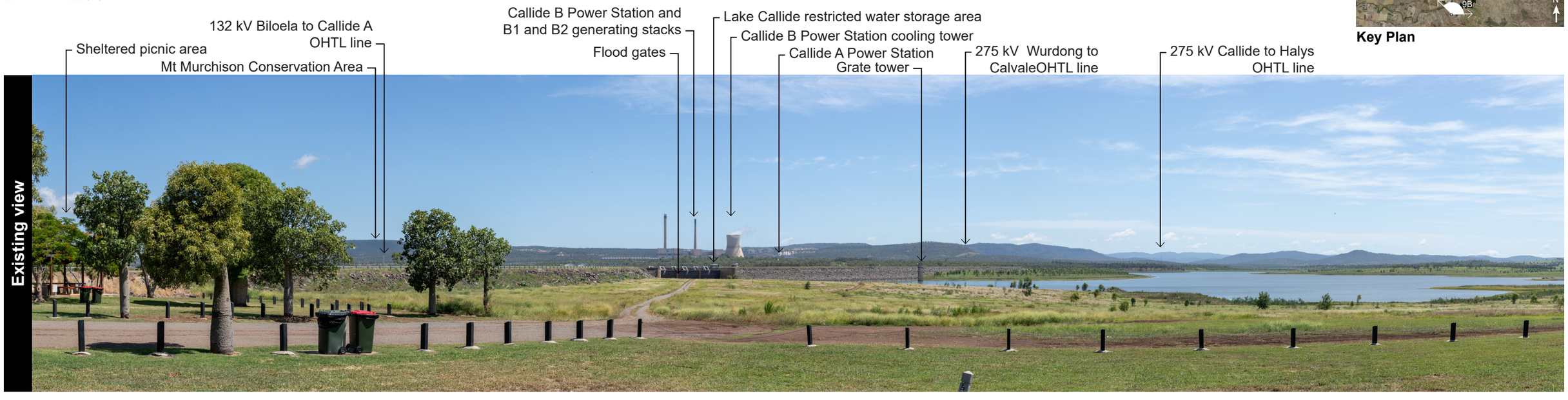
Figure 16: **Viewpoint 9B: Northeastely view from Lake Callide Playground - existing view**

Notes:
Date: 24rd of January 2025
Location:24°22'26.832" S 150°36'46.062" E
Elevation: 225.5 m

Camera: Canon EOS 6D Mark II
Lens: Sigma 24mm f/1.4 DG JSM lens
Horizontal field of view: 225°



Key Plan



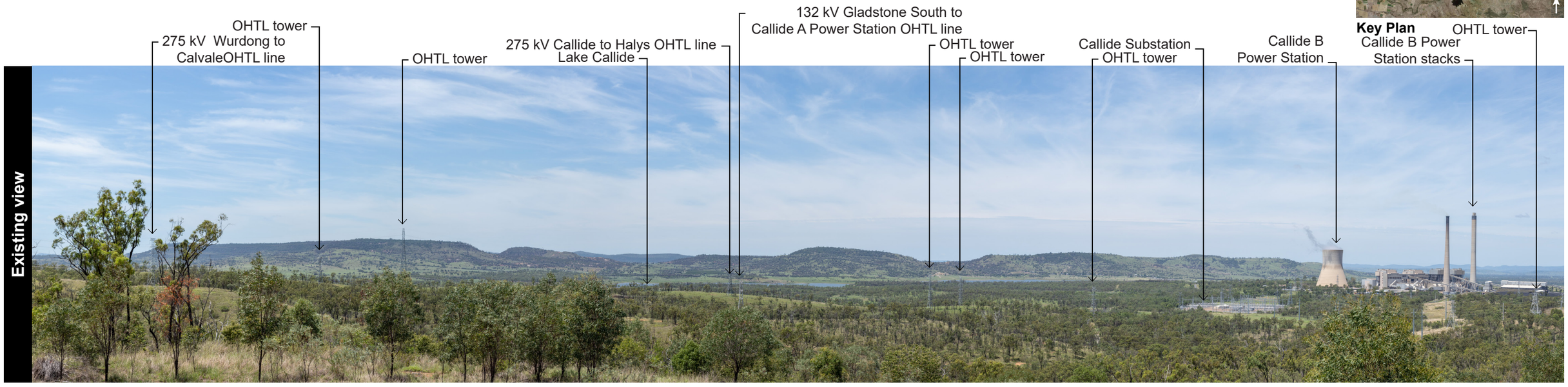
Approximate extent of Project
3.8 km to MPA1

Figure 17: **Viewpoint 10: Southerly view from Callide Lookout - existing view**

Notes:
Date: 24rd of January 2025
Location: 24°19'50.034" S 150°38'7.59" E
Elevation: 299.9 m

Camera: Canon EOS 6D Mark II
Lens: Sigma 24mm f/1.4 DG JSM lens
Horizontal field of view: 199°

Key Plan



Approximate extent of Project
370 m to MPA1