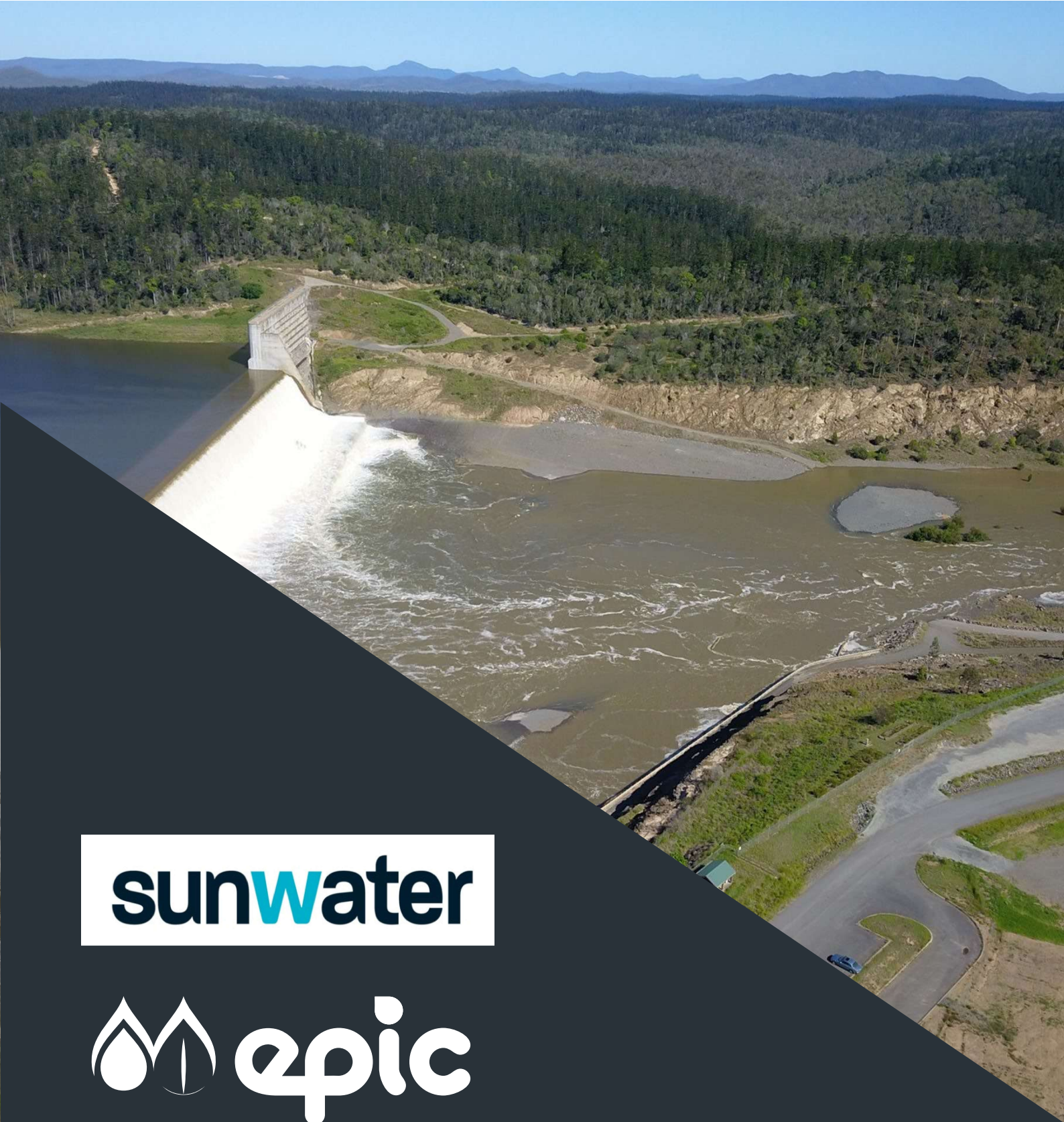

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Initial Advice Statement (IAS)

Paradise Dam Improvement Project
BAA240040.01
1 July 2025

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TABLE OF ACRONYMS

A table of acronyms for this document is provided in **Table 1.**

Table 1. Table of Acronyms

Acronym	Description
ACHA	*Aboriginal Cultural Heritage Act 2003*
AEP	Annual Exceedance Probability
AHD	Australian Height Datum
AIP	Australian Industry Participation
ALF	Australian lungfish
AMTD	Adopted Middle Thread Distance
ANCOLD	Australian National Committee on Large Dams
ANZG	Australian and New Zealand Guidelines for Fresh and Marine Water Quality
BGGGTB	Bailai, Gurang, Gooreng Gooreng, Taribelang Bunda People Aboriginal Corporation
BRC	Bundaberg Regional Council
BWSS	Bundaberg Water Supply Scheme
CEMP	Construction Environmental Management Plan
CHMA	Cultural Heritage Management Agreement
CHMP	Cultural Heritage Management Plan
CID	Community Infrastructure Designation
CLR	Contaminated Land Register
CNVIA	Construction Noise and Vibration Impact Assessment
CVC	Conventional Concrete
dB	Decibel
DCCEEW	Department of Climate Change, Energy, the Environment and Water
DETSI	Department of Environment, Tourism, Science and Innovation
DLGWV	Department of Local Government, Water and Volunteers
DNRMMRRD	Department of Natural Resources and Mines, Manufacturing and Regional and Rural Development
DoPC	Department of Premier and Cabinet
DoR	Department of Resources
DPI	Department of Primary Industries
DRDMW	Department of Regional Development, Manufacturing and Water
DSDI	Department of State Development and Infrastructure
DSDIP	Department of State Development, Infrastructure and Planning
DSDILGP	Department of State Development, Infrastructure, Local Government and Planning
DSEWPaC	Department of Sustainability, Environment, Water, Populations and Communities
DTMR	Department of Transport and Main Roads
EAP	Emergency Action Plan
EAR	Environmental Assessment Report
EMR	Environmental Management Register
EO Act	*Environmental Offsets Act 2014*
EP Act	*Environmental Protection Act 1994*
EPBC Act	*Environment Protection and Biodiversity Conservation Act 1999*
EPP Noise	Environmental Protection (Noise) Policy 2019
EPP WWB	Environmental Protection (Water and Wetland Biodiversity) Policy 2019
ERA	Environmentally Relevant Activity
ESCP	Erosion and Sediment Control Plan
EV	Environmental Value
FSL	Full Supply Level
GOC Act	*Government Owned Corporations Act 1993*
GDE	Groundwater Dependant Ecosystem
GVP	Gross Value of Production
Ha	Hectares
HES	High Ecological Significance
HEV	High Ecological Value
HIG	Harrison Infrastructure Group

Acronym	Description
IAS	Initial Advice Statement
IAR	Impact Assessment Report
IECA	International Erosion Control Association
ILUA	Indigenous Land Use Agreement
IMS	Interactive Mapping System
ISO	International Standards Organisation
kg	Kilogram
km	Kilometres
Kv	Kilovolt
LC	Least Concern
LGA	local government area
MCU	Material change of use
ML	Megalitre
MLES	Matter of Local Environmental Significance
MNES	Matter of National Environmental Significance
MP	Member of Parliament
MSES	Matter of State Environmental Significance
NBRC	North Burnett Regional Council
NC Act	*Nature Conservation Act 1992*
NC (Animals) Reg	Nature Conservation (Animals) Regulation 2020
NC (Plants) Reg	Nature Conservation (Plants) Regulation 2020
OC	Of Concern
PIA	Pavement Impact Assessment
the Project	Paradise Dam Improvement Project
PDRG	Paradise Dam Reference Group
PPFSR	Protected Plant Flora Survey Report
QHA	*Queensland Heritage Act 1992*
RCC	Roller Compacted Concrete
RE	Regional Ecosystem
REDD	Regional Ecosystem Description Database
ROL	Resource Operations Licence
RPI Act	*Regional Planning Interests Act 2014*
RWA	Regional Water Assessment
SARA	State Assessment and Referral Agency
SDAP	State Development Assessment Provisions
SDPWO Act	*State Development and Public Works Organisation Act 1971*
SEA	Strategic Environmental Area
SLC	Special least concern
SPP	State Planning Policy 2017
TEC	Threatened ecological community
TIA	Transport Impact Assessment
TI Act	*Regional Planning Interests Act 2014*
TPAV	Temporary Project Accommodation Village
VM Act	*Vegetation Management Act 1999*
WBBCC	Wide Bay Burnett Conservation Council
WHSA	*Work Health and Safety Act 2011*
WoNS	Weeds of National Significance
WQIP	Water Quality Improvement Plan
WQO	Water Quality Objective
WSSR Act	*Water Supply (Safety and Reliability) Act 2008*
WTST	White-throated snapping turtle
WWBW	Waterway barrier works
WWNTAC	Wakka Wakka Native Title Aboriginal Corporation

EXECUTIVE SUMMARY

This Initial Advice Statement (IAS) is for the Paradise Dam Improvement Project (PDIP, the Project) and has been prepared by Sunwater Limited (Sunwater) in accordance with Part 4, Subdivision 2, Section 27AB of the *State Development and Public Works Organisation Act 1971* (SDPWO Act).

The purpose of this IAS is to present a clear and concise narrative of the Project and to allow the Coordinator-General to consider Project details against the criteria in Section 27 of the SDPWO Act to determine whether to declare the Project a Coordinated Project.

Background

Paradise Dam is an existing approved operational dam located on the Burnett River in Coringa, Queensland. Paradise Dam was constructed between 2003 and 2005 to provide water supply to the Wide Bay Burnett and Bundaberg regions and support growth in the agriculture sector, attract new industry and meet future urban growth needs. As originally constructed, the dam provided an approved storage volume of 300,000 megalitres (ML), at a Full Supply Level (FSL) of 67.6 metres above Australian Height Datum (mAHD). Following flood-related damage to the dam, the primary spillway of Paradise Dam was lowered by 5.8 m during the Essential Works project in 2019, corresponding with a reduced storage volume of 170,000 ML.

In January 2024, the Queensland Government announced Sunwater would begin planning for a replacement dam wall for Paradise Dam to ensure a safe and secure water supply for the Bundaberg region for future generations. On 18 December 2024, the Queensland Government reaffirmed its commitment to the Project. The replacement dam wall will address issues with the original construction of Paradise Dam and will return the dam to its original storage volume. These improvements are to be delivered through the PDIP.

The PDIP will restore Paradise Dam to the original FSL, reinstate water supplies to the existing market and provide water security to the region for decades to come. Securing this water supply will support one of Australia's most important food bowls and support local economic development and employment growth.

Reason for Declaration

Sunwater considers that the Project is eligible for declaration as a Coordinated Project under the SDPWO Act for the following key reasons:

- Requires local, State and Commonwealth approvals
- Has significant infrastructure requirements
- Has potential to be of strategic significance to the region, State and Commonwealth, including but not limited to social and economic benefits, employment opportunities and capital investment

Scope of Declaration

The components of the Project proposed to be declared are detailed in **Table E1**. Early Works and other operational aspects associated with the PDIP are excluded from the scope of this declaration, however are detailed in **Table E1** for context.

Table E1. Scope of Declaration

Project – Included in this Declaration	✓ Construction of a replacement dam wall approximately 90 m downstream of the original dam wall, including associated intake and outlet structures, provisions for fish passage, primary and secondary spillways and left abutment ✓ Realignment of local road (Kalliwa Road) on left abutment and clearing for left abutment access roadway (service road) ✓ Widening of the primary site access across Allen Creek ✓ Works associated with the right abutment including permanent excavation and permanent access roadway, secondary spillway and works area ✓ Disposal of spoil ✓ Relocation of the Sunwater Site Operations Office ✓ Partial demolition and decommissioning of the original dam wall, including left abutment and secondary spillway

	✓ Operation of the new dam at the original approved storage volume of 300,000 ML, at a FSL of 67.6 mAHD
Early Works – Excluded from this Declaration	✗ Construction and operation of the Temporary Project Accommodation Village ✗ Laydown, construction staging areas and temporary site offices ✗ Earthworks, construction and operation of two concrete batch plants and materials storage/handling ✗ Temporary road closure of Paradise Dam Road ✗ Geotechnical investigations, including geotechnical drilling, trenching and soil sampling ✗ Investigations of potential quarry locations (e.g. drilling, blasting, samples, access to roads etc) on properties located nearby to the Project site
Other aspects – Excluded from this Declaration	✗ Decommissioning of the new dam ✗ Potential quarry extraction activities on properties located nearby to the Project

Proponent

The proponent, Sunwater, is the owner and operator of Paradise Dam and the holder of the Resource Operations Licence (ROL) of the Bundaberg Water Supply Scheme (BWSS). Sunwater owns and operates 19 dams, 64 weirs and barrages, and 1,951 km of pipelines to capture and deliver around 40 % of water used commercially in Queensland to more than 5,000 customers.

Project Need and Justification

As the owner of Paradise Dam, Sunwater is required to meet requirements under the *Water Supply (Safety and Reliability) Act 2008*, including the dam safety regulatory framework. Sunwater also seeks to meet national dam safety guidelines as defined by the Australian National Committee on Large Dams (ANCOLD). Completion of an Essential Works project in 2021 significantly reduced the risk of dam failure by lowering the existing dam wall by 5.8 m, though the dam still does not currently meet the ANCOLD Guideline acceptable Limit of Tolerability. Delivery of the Project will ensure the Paradise Dam satisfies the ANCOLD Limit of Tolerability and therefore meet ANCOLD guidelines.

The replacement dam wall will restore Paradise Dam to the original FSL which is needed to improve dam safety, meet future water demands and improve water supply resilience in the region. Securing this water supply will support one of Australia's most important food bowls and support local economic development and employment growth. Whilst alternative options to the Project have previously been considered (including repairs to the original dam wall following the Essential Works), there is no doubt that Paradise Dam is a compromised asset and that no amount of improvement work will fix the original dam.

Existing Environment

Sunwater has a comprehensive understanding of the existing environment and the associated impacts of the PDIP. Based on this understanding Sunwater considers that the Project is of low environmental risk. The replacement dam wall is to be constructed immediately (approximately 90 m) downstream of the original dam wall and is to utilise previously disturbed areas as far as practicable. Paradise Dam will be reinstated to the originally approved FSL and inundation footprint, with no new inundation impact proposed. Key environmental considerations for the Project are therefore construction-focused and are anticipated to be appropriately mitigated and managed.

Preliminary site assessments indicate that key environmental impacts for the Project are limited to new disturbance of land associated with terrestrial ecological values. Vegetation clearing requirements for the Project are likely to have some specific significant residual impacts to Matters of National Environmental Significance (MNES) under the Commonwealth *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) and Matters of State Environmental Significance under the Queensland *Environmental Offsets Regulation 2014* (EO Reg). No significant residual impacts are proposed to aquatic ecological values that are MNES or MSES.

As the Project's potential impacts will be generally construction related, a Construction Environmental Management Plan (CEMP) will be developed as part of the approval process. The CEMP will describe the

environmental values of the Project area and will establish appropriate mitigation and management measures for the Project to minimise impacts on environmental values.

Approval Pathway

Sunwater considers that as the extent of the environmental impacts for the Project are well understood, limited in extent and can be managed effectively, the use of an Impact Assessment Report (IAR) process under the SDPWO Act is the appropriate assessment pathway for the Project. The IAR process provides a streamlined 'fit-for-purpose' assessment process that facilitates coordination with the Commonwealth, State and Local Government departments for the relevant Project approvals. A range of secondary approvals will also be necessary, which will be confirmed as part of the IAR process.

The EPBC Act requires assessment and approval for any activity or action that will have, or is likely to have, a significant impact on MNES. Of the nine MNES listed under the EPBC Act, Sunwater has identified the potential for 'threatened species and ecological communities' to be impacted by the Project. Sunwater has split the EPBC Act referrals for different components of the Project, including:

- **Referral 1** – Concrete Batch Plants and the Trial Embankment Area (Ref: 2025/10206)
- **Referral 2** – Paradise Dam Improvement Project (Primary Dam Works)

Sunwater is expecting a "controlled action" determination for both referrals. However, it is anticipated only Referral 2 will be assessed under a bilateral agreement between the Commonwealth and Queensland governments. The EPBC Act allows for bilateral assessment agreements between the Commonwealth and state governments using an accredited process. An IAR process under the SDPWO Act is an accredited form of assessment for MNES, as detailed under the bilateral agreement between the Commonwealth and the State of Queensland.

Sunwater are planning to submit the EPBC Act referral for the Project (Referral 2, as mentioned above) at the same time as the submission of this IAS. This approach is expected to facilitate the most efficient coordination between the Commonwealth and Queensland governments to support the efficient delivery of the Project.

Community Engagement

The Paradise Dam Reference Group (PDRG) is the key engagement forum for the Project to facilitate the exchange of information and ideas between key stakeholders and Sunwater. The majority of stakeholders on the PDRG have a long history of involvement with Paradise Dam. Customers, grower groups and local councils are all long-term advocates of Paradise Dam being safely returned to its original FSL. Sunwater is committed to ongoing PDRG engagement and continues to provide updates on timing of the Project as it progresses. Sunwater continues to engage residents located close to the Project to identify and manage expected Project impacts.

1 INTRODUCTION

Paradise Dam is located on the Burnett River in Coringa, Queensland. The dam wall and associated reservoir are located within the North Burnett Regional Council (NBRC) and Bundaberg Regional Council (BRC) local government areas (LGA). Paradise Dam was constructed between 2003 and 2005 to provide water supply to the Wide Bay Burnett and Bundaberg regions. Ownership and operation of the dam was transferred to Burnett Water Pty Ltd, a subsidiary of Sunwater Limited (Sunwater), in December 2005.

In January 2024, the Queensland Government announced Sunwater would begin planning for a replacement dam wall for Paradise Dam to ensure a safe and secure water supply for the Bundaberg region for future generations. The replacement dam wall will address issues with the original construction of Paradise Dam and will return the dam to its original storage volume. These improvements are to be delivered through the Paradise Dam Improvement Project (PDIP). A preliminary concept layout of the PDIP is shown through **Figure 1**.

This Initial Advice Statement (IAS) is for the PDIP (also referred to as the Project) and prepared by Sunwater Limited (Sunwater) in accordance with Part 4, Subdivision 2, Section 27AB of the *State Development and Public Works Organisation Act 1971* (SDPWO Act). The Project will consist of Primary Dam Works associated with construction of the replacement dam wall, partial decommissioning of the original dam wall, and commissioning of the replacement dam wall and associated activities and infrastructure.

Sunwater are seeking a 'Coordinated Project' declaration for the Project, in accordance with Part 4, Subdivision 2, Section 27AB of the *State Development and Public Works Organisation Act 1971* (SDPWO Act).

Early works are excluded from the Project and being facilitated separately under the SDPWO Act through a Works Regulation.

1.1 Background

Paradise Dam (formerly referred to as Burnett River Dam, herein referred to as the Dam) is located on the Burnett River approximately 131 kilometres (km) upstream of the mouth of the Burnett River within the Wide Bay Burnett region. The Dam is located at 1671 Paradise Dam Road, Coringa, which is approximately 20 km northwest of Biggenden and 80 km south-west of Bundaberg, refer **Figure 2.**

The Dam was constructed to provide a reliable source of water to support growth in the agricultural sector, attract new industry and meet future urban growth needs. The Dam impoundment covers an area of 2,951 hectares (ha), with an original storage volume of 300,000 megalitres (ML), at a Full Supply Level (FSL) of 67.6 metres Australian Height Datum (m AHD). The Dam is a key component of the Bundaberg Water Supply Scheme (**Figure 3**) and is owned and operated by Burnett Water Pty Ltd.

The original dam wall consists of a 315 m wide primary spillway, constructed from a Roller Compacted Concrete (RCC) core with a reinforced concrete capping to the crest, stepped reinforced concrete downstream face and precast panels to the upstream face. The core of the Dam wall consists of a lean RCC mix (65 kilograms [kg] of cement per cubic meter [m^3]) placed in horizontal lifts nominally 310 mm thick.

To facilitate fish passage, the Dam wall structure has an upstream fish lift system and a separate downstream fish lock system. A small hydroelectric unit was also installed and is used during low flow releases to generate electrical energy.

1.1.1 2019 Essential Works – Primary Spillway Lowered by 5.8 m

In December 2010, January 2011 and again in January 2013, the Dam experienced a series of significant flooding events. Following the 2013 flood, extensive and unexpected scour damage occurred to the riverbed immediately downstream of the primary spillway apron, resulting in significant damage to the apron, and potential for further scour and undercutting of the dam wall.

The three flood events were all smaller than the maximum flows the Dam had been designed to withstand. The January 2013 flood was assessed as a 1 in 200 Annual Exceedance Probability (AEP) flood event (a 0.5%

likelihood of a flood event being exceeded in any one year), while the Dam was originally designed to safely pass up to a 1 in 30,000 AEP flood event.

Following the January 2013 flood event, Sunwater undertook emergency dam repair works, and subsequently completed a detailed dam safety review, comprehensive risk assessment and associated studies that identified the need for longer term improvements to the Dam.

By 2017, initial improvement works were completed, however further works were needed to ensure the dam could continue to hold and safely pass excess volumes of water during periods of extreme rainfall, and to satisfy design standards and dam safety guidelines.

Dam safety investigations undertaken by Sunwater identified the following areas of concern:

- The strength of the bonds between each layer of the RCC that forms the primary spillway wall were compromised
- Downstream scour and foundation risks indicated that, under pressure, the dam wall could shear and come apart
- The RCC lift joints were unbonded or had segregation present at the bottom of the lift

For these reasons, Sunwater undertook the Essential Works project to lower the primary spillway by 5.8 m. Lowering the dam wall was the most effective way in the short term to improve stability of the dam during significant flood events.

For the 5.8 m lowering to be achieved, the storage level of the Dam was reduced ahead of the 2019/20 wet season. Reducing the volume of water stored in the dam lowered pressure on the dam wall and allowed the construction works to be undertaken safely, ultimately resulting in better community safety. Sunwater achieved the reduction between September to November 2019 by releasing its own allocation of unsold water.

As of January 2021, the dam safety aspects of the Essential Works project were completed. Through the Essential Works project, the Dam failure risk was reduced from a probability of a 1 in 200 AEP flood event (i.e., 0.5% annual probability, and similar to the 2013 flood event) to a 1 in 5,000 AEP flood event (0.02% annual probability). This led to a corresponding reduction in both the risk to human health and the economic risks of a dam failure while Sunwater undertook work to restore the Dam to its original FSL.

1.1.2 Direction from Queensland Government

The Essential Work project was an important interim measure that significantly improved dam safety. Further significant improvement works are required to reduce risks to an acceptable level in the long-term and to ensure the dam meets the Australian National Committee on Large Dam (ANCOLD) Guideline acceptable Limit of Tolerability. In addition, there is a need to meet projected, long-term water requirements in the region, which the current reduced volume does not provide.

Sunwater has been progressing plans to return the Dam to its full height and original capacity since December 2021, when the Queensland Government announced the preferred option for the long-term future of the Dam was to return the Dam wall to its original FSL, as part of significant dam safety improvement works. This decision was made after considering an **Options Evaluation Report** and feedback from key stakeholders in the community and industry.

As part of the detailed business case for returning the Dam to its original height, a program of intensive testing was undertaken to inform design development. The investigations identified three unexpected new issues regarding the long-term strength and quality of the Dam wall's concrete. These issues were identified as stemming from the Dam's original construction and are discussed briefly below:

- ***Swelling clay***: Due to the porous nature of the concrete, low cement content, and high clay content, moisture in the wall caused repeated swelling and contracting
- ***Cement leaching***: Porous concrete caused key ingredients that bond the cement to leach out of the concrete, leading to deterioration and strength loss
- ***Carbonation***: The mix of carbon dioxide, moisture, and cement resulted in low pH (increased acidity), increasing the negative effects from swelling clay and lowering the concrete's strength

These issues are unprecedented, as dams are usually not tested for long-term strength loss and as the Dam was only constructed approximately 20 years ago, it should not be experiencing issues of this degree. Because of this, Sunwater, along with its partners and independent experts, were required to develop a bespoke and world-first concrete testing program. Results from the testing program showed that the Dam was built with a far higher percentage of clay than the majority of other RCC dams in the world. The results confirmed that no amount of improvement work will fix the Dam wall, and that returning the Dam wall to its original FSL was not possible.

In January 2024, the Queensland Government announced Sunwater would begin planning for a replacement dam wall on the Burnett River to ensure a safe and secure water supply for the Wide Bay Burnett and Bundaberg regions.

The Project is one of the most significant projects included in Sunwater's Dam Improvement Program. This program identifies those dams and priority improvement works, from Sunwater's overarching Portfolio Risk Assessment, in order to ensure dam safety compliance and long-term risk reduction in accordance with:

Queensland Government legislation and dam safety guidelines – including the following:

- *Water Supply (Safety and Reliability) Act 2008*
- *Dam Safety Management Guideline 2020*
- *Guidelines on Safety Assessments for Referable Dams 2021*
- *Guideline for failure impact assessment of water dams 2018*
- National dam safety guidelines – including the ANCOLD Guidelines

While planning for the Dam has changed, the overall objective has remained the same. Returning the dam to its original FSL will provide a safe dam and ensure long-term water security for the region and is the basis for the current planning, design, environment assessment, and detailed business case activities for the PDIP.

In a joint statement, issued on 18 December 2024 by the Treasurer and the Minister for Local Government, Water and Volunteers, the Government committed to delivering the PDIP.

1.2 Reasons for Seeking Coordinated Project Declaration

Sunwater considers that the PDIP is eligible for declaration as a Coordinated Project under the SDPWO Act for the following key reasons:

- Requires local, State and Commonwealth approvals
- Has significant infrastructure requirements
- Has potential to be of strategic significance to the region, State and Commonwealth, including but not limited to social and economic benefits, employment opportunities and capital investment

Sunwater considers that as the extent of the environmental impacts for the Project are well understood, limited in extent and can be managed effectively, that the use of an Impact Assessment Report (IAR) process under the SDPWO Act is the appropriate assessment pathway for a Coordinated Project. The IAR process allows a more streamlined 'fit-for-purpose' assessment process for a project that is well-defined and of low environmental risk.

Sunwater has undertaken significant work to understand the likely impacts of the Project, while refining the Project area to avoid and reduce impacts where feasible. The extent and scale of the potential impacts are well known and can be appropriately managed through environmental risk mitigation and management measures. Potential Project impacts will generally be limited to the construction phase with the majority of the Project area (refer **Figure 1**) occurring within previously disturbed areas, reducing the overall impact to environmental values.

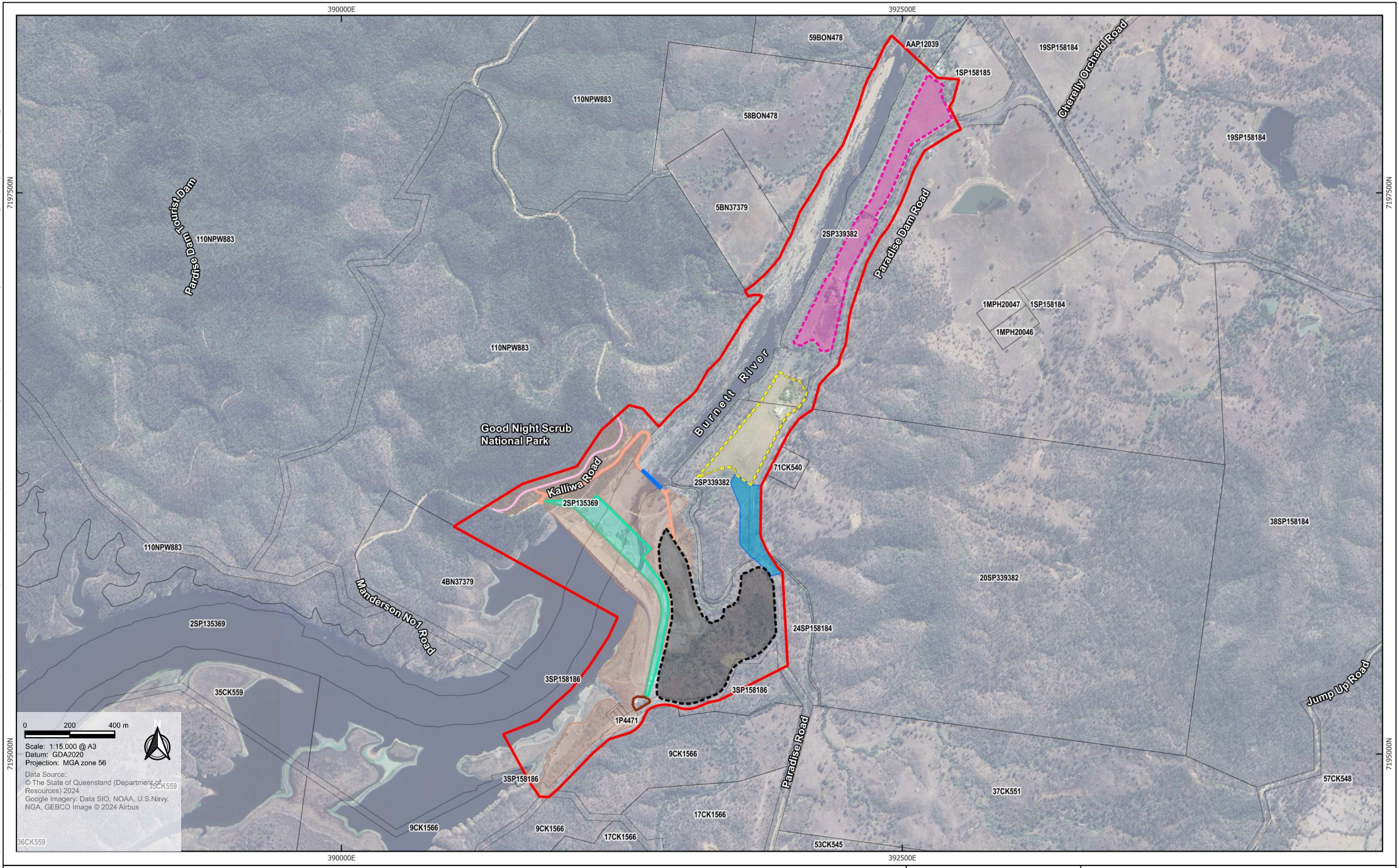
The Dam will continue to operate during the construction related activities of the Project. These activities will facilitate current operations to the greatest practicable extent to ensure the Dam continues to service the Bundaberg region during the Project activities.

1.3 Purpose of IAS

This IAS has been prepared in line with the application requirements for a 'Coordinated Project' declaration (DSDILGP 2023) and under Part 4, Subdivision 2, Section 27AB of the SDPWO Act to support an application to the Coordinator-General, with the intention of:

- Assisting the Coordinator-General in deciding whether the Project should be declared a Coordinated Project
- Assisting the Coordinator-General in determining whether an IAR is appropriate
- Informing and enabling stakeholders to determine the nature and relevance of the Project
- Assisting the Coordinator-General to prepare a draft guideline for the IAR if this process is deemed appropriate for the Project

This IAS presents a clear and concise narrative of the Project to allow the Coordinator-General to consider the Project details against the criteria in Section 27 of the SDPWO Act to determine whether to declare the Project a Coordinated Project. Whilst the information presented in this IAS is preliminary, it is intended the Project scope will be further defined during the environmental impact assessment process. Impacts and their mitigation will be informed by engineering work progressed during the IAR and in conjunction with feedback received from key stakeholders.



Legend

- Project area
- Cadastre (DCDB)

PDIP Primary Dam Works

- Culvert
- Dam wall
- Sunwater dam operations office
- Widening of Allens Creek crossing
- Work areas
- Kalliwa Road
- Road/Access

Early works

- Batch plant area
- Laydown area
- Temporary project accommodation village (TPAV)

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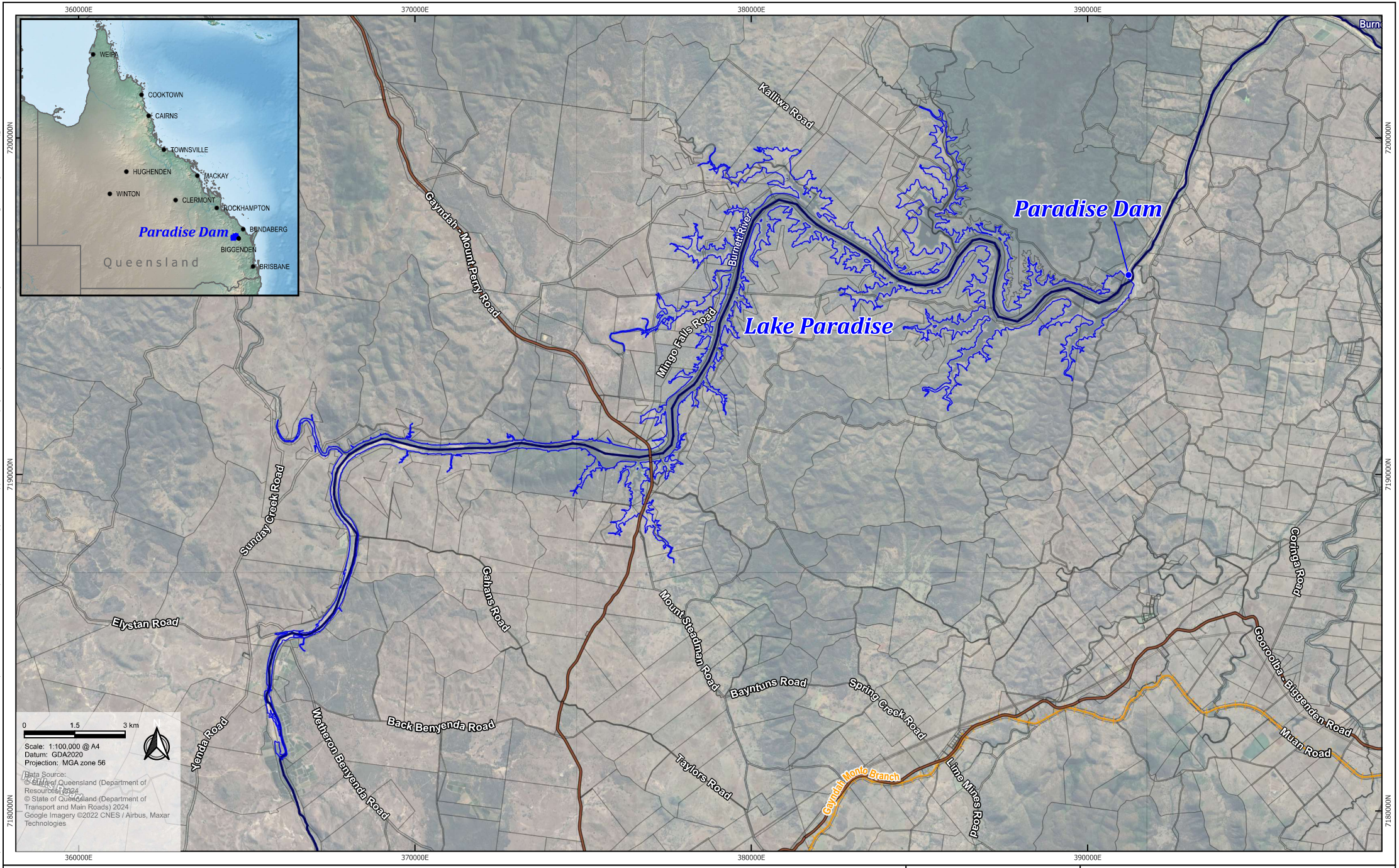
Paradise Dam Improvement Project
Proposal for Coordinated Project declaration

Figure 1
Project concept layout



Legend

- Paradise Dam
- Cadastre (DCDB)
- State controlled roads
- Railways
- Major watercourses

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Paradise Dam Improvement Project
Proposal for Coordinated Project declaration

Figure 2
Project location

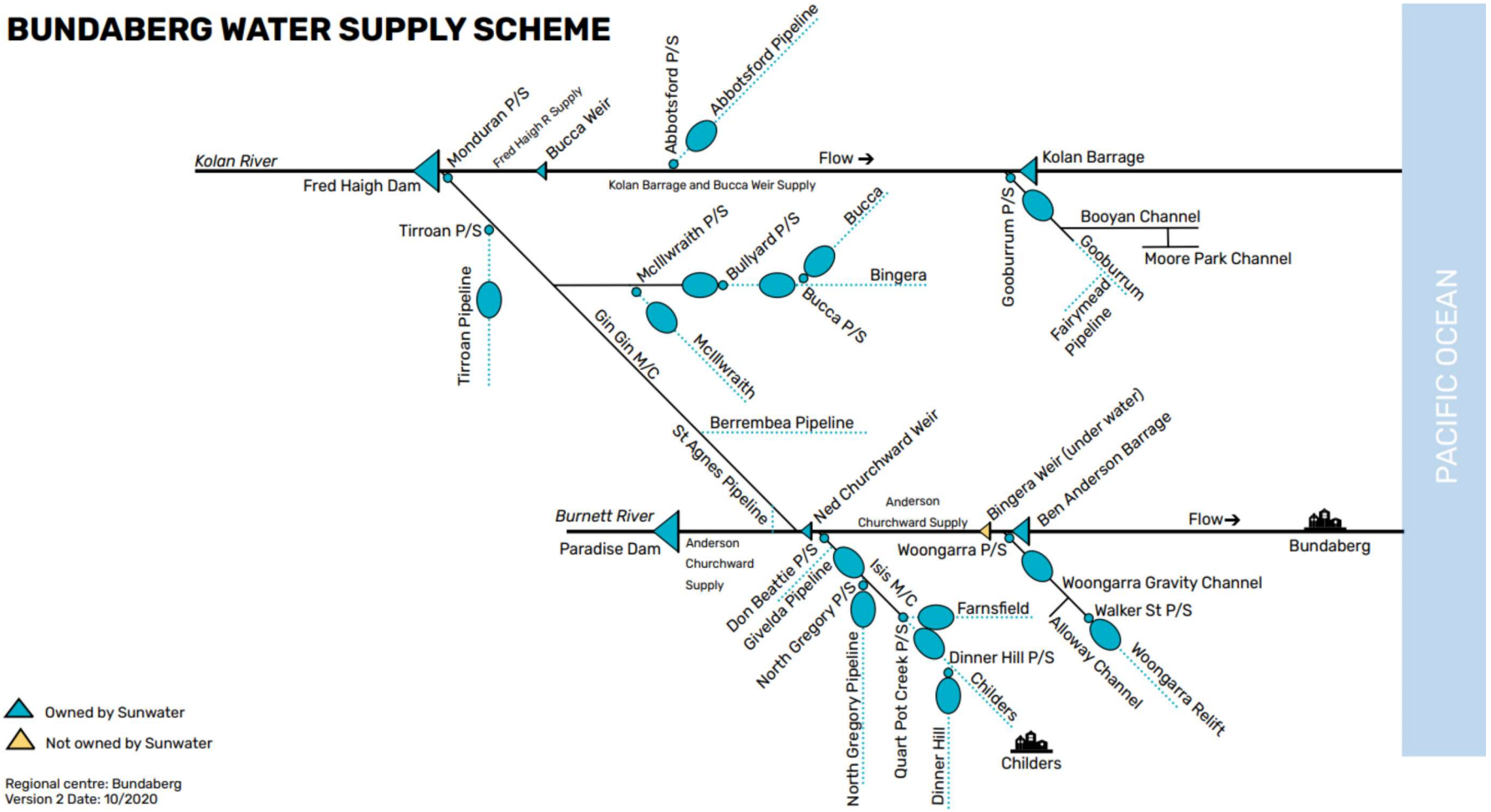


Figure 3. Overview of Bundaberg Water Supply Scheme

1.4 Scope of Proposed Declaration

The scope of this proposed declaration are the components of the PDIP, as listed in **Section 1.4.1**. Certain Early Works and other operational aspects associated with the PDIP are excluded from this proposed declaration as separate State approvals have been sought to authorise these works. The subject of this declaration and the Early Works and other aspects excluded from the proposed declaration are summarised below and illustrated in **Figure 1**. A description of the Project is expanded upon in **Section 3.1**.

1.4.1 The Project – Included in this Declaration

Project components to be declared (subject to a Coordinated Project declaration) are the Primary Dam Works, as described in **Section 3.1** and illustrated in **Figure 4**, and summarised as follows:

- Construction of a replacement dam wall approximately 90 m downstream of the Dam wall, including associated intake and outlet structures and provisions for fish passage
- Realignment of local road (Kalliwa Road) on left abutment and clearing for left abutment access roadway (service road)
- Widening of the primary site access across Allen Creek
- Works associated with the right abutment including permanent excavation and permanent access roadway, secondary spillway, primary spillway, left abutment and works area
- Disposal of spoil
- Relocation of the Sunwater Site Operations Office
- Partial demolition and decommissioning of the Dam wall, including left abutment and secondary spillway
- Operation of the new dam

1.4.2 Early Works – Excluded from this Declaration

Early Works associated with the Project that are expressly excluded from this declaration, include:

- Construction and operation of the Temporary Project Accommodation Village (TPAV)
  - Survey demarcation of disturbance extents
  - Establishment of erosion and sediment control measures
  - Vegetation clearing and earthworks to facilitate the establishment of the TPAV
  - Establishment of the TPAV, and associated facilities including vehicular entrances and exits, permanent and temporary (generators) power supply
  - Construction and commissioning of a sewage treatment, water treatment plants and associated extraction/pumping facilities
- Laydown and construction staging areas
  - For stockpile areas, crib areas, ablutions, material laydown, etc.
  - Concrete batch plant layouts, including water management and treatment infrastructure
  - Earthworks associated with the works areas and laydown areas
- Construction of the temporary site offices and light vehicle car park
  - Earthworks
  - Establish concrete foundations and walkways
  - Mobilisation of demountable buildings
  - Establishment of demountable buildings (including electrical, plumbing etc.)
  - Demobilisation, decommissioning and rehabilitation
- Earthworks, construction and commissioning of two concrete batch plants and materials storage/handling
  - Establishment of erosion and sediment control measures
  - Vegetation clearing and earthworks to facilitate the establishment of the work areas
  - Aggregate material delivered to the site and stockpiled
  - Screening (may include washing, crushing, grinding, milling, sizing or separating) material on the site
  - Construction of internal haulage roads, including ingress and egress

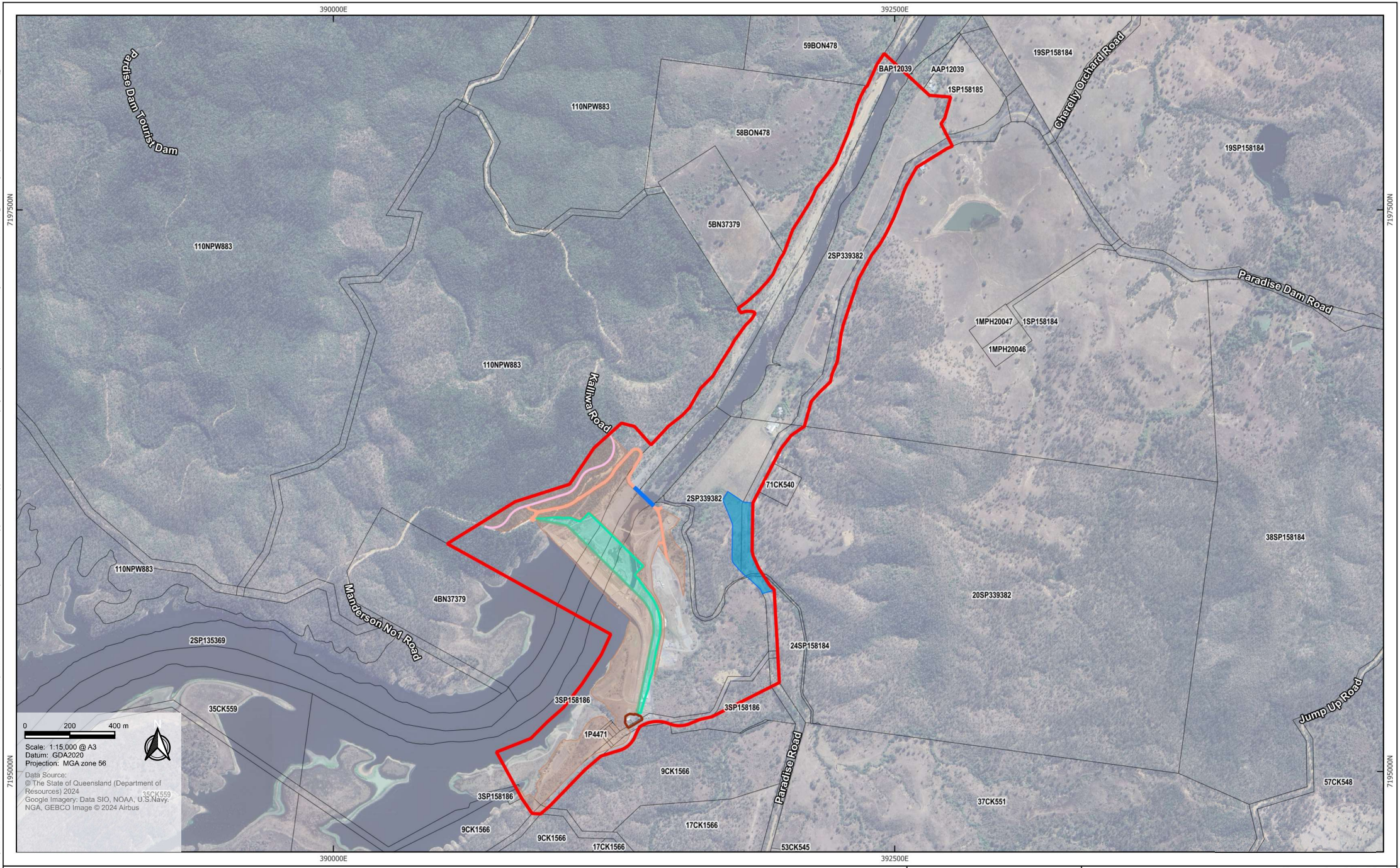
  - Establish material and/or spoil disposal areas
  - Establish site offices and amenities
  - Installation of permanent and temporary (generators) power supply
  - Plant erection and commissioning for one RCC plant (24/7 operation) and one Conventional Concrete (CVC) plant
  - Trials of RCC placement in a trial embankment
  - Demobilisation, decommissioning and rehabilitation
- Operation of the concrete batch plants
- Temporary road closure of Paradise Dam Road
- Geotechnical investigations, including geotechnical drilling, trenching and soil sampling
- Investigations of potential quarry locations (e.g. drilling, blasting, samples, access to roads etc) on properties located nearby to the Project area
- The Project requires a secure source of quarry material to make high quality concrete for the replacement dam wall. Quarry investigations will be conducted on nearby properties to the Dam prior to the commencement of the Project. To reduce potential impacts (traffic, air, noise etc.) in the local area, Sunwater is seeking a local source of quarry material

A Works Regulation under the *State Development and Public Works Organisation Regulation 2020* (SDPWO Reg) was identified as the appropriate State approval pathway for Early Works to meet the Project timeframes in consultation with the Department of State Development, Infrastructure and Planning (DSDIP).

1.4.3 Other aspects – Excluded from this Declaration

In addition to the above, as the Dam is an existing operational structure, any aspect of its operation and maintenance during the Project does not form part of this declaration. Similarly, any aspect of the decommissioning of the replacement dam wall does not form part of the declaration.

The establishment and operation of a quarry to supply materials for the Project is also excluded from the declaration. The required local, State and/or Commonwealth approvals will be obtained by the quarry operator.



Legend

- Project area
- Cadastre (DCDB)

Project components to be declared

- Culvert
- Dam wall
- Sunwater dam operations office
- Widening of Allens Creek crossing
- Work areas
- Kalliwa Road
- Road/Access

epic
A Montrose Environmental Company

Sunwater Limited
Paradise Dam Improvement Project
Proposal for Coordinated Project declaration

Figure 4
Project components to be declared

2 THE PROPONENT

2.1 Proponent Details

Sunwater is the Project proponent as the owner and operator of the Dam, and the Resource Operations Licence (ROL) holder of the Bundaberg Water Supply Scheme (BWSS). Through the *Government Owned Corporations Act 1993 (Qld)* (GOC Act), Sunwater was established in October 2000 to own, operate and facilitate the development of bulk water supply infrastructure throughout Queensland, with the exception of South-East Queensland. Sunwater commenced ownership and operation of the Dam in December 2005.

Sunwater owns and operates 19 dams, 64 weirs and barrages, and 1,951 km of pipelines to capture and deliver around 40 % of water used commercially in Queensland to more than 5,000 customers. Sunwater supplies urban and industrial customers across 31 bulk water and irrigation supply schemes. As a specialist bulk water service provider, Sunwater has extensive expertise in designing, constructing, operating and maintaining dams, weirs, pump stations, pipelines, open channels and drainage systems.

Sunwater has been the proponent for several coordinated projects including Nathan Dam and Pipelines Project, Connors River Dam and Pipelines Project, and the Lower Fitzroy River Infrastructure Project; all of which received State and Commonwealth approval.

Sunwater's shareholding Ministers are currently the Hon Ann Leahy Member of Parliament (MP), Minister for Local Government and Water and Minister for Fire, Disaster Recovery and Volunteers and the Hon Ros Bates MP, Minister for Finance, Trade, Employment and Training.

Sunwater's head office is located at the following address:

Green Square North
Level 9, 515 St Pauls Terrace
Fortitude Valley, Queensland 4006

2.2 Environmental Record

Sunwater is committed to minimising the environmental impact of its activities and preventing pollution for the benefit of current and future generations. Sunwater maintains a certified Environmental Management System to meet the requirements of AS/NZS ISO 14001:2015. Sunwater provides personnel, financial and educational resources to support good environmental management. Sunwater complies with all relevant environmental management legislation, related standards, codes of practice, stakeholder agreements and other requirements.

In 2007 an audit conducted by the then Department of Sustainability, Environment, Water, Populations and Communities (DSEWPaC) found Burnett Water Pty Ltd's operation of the Dam to be partially non-compliant against a condition of approval under the Commonwealth *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act). In 2008, the Wide Bay Burnett Conservation Council (WBBCC) initiated proceedings in the Federal Court against Sunwater's subsidiary Burnett Water Pty Ltd, alleging it had breached a condition of the EPBC Act approval (EPBC 2001/422) for the construction and operation of the Dam. Judgement in favour of Burnett Water Pty Ltd was handed down on 4 March 2011, confirming that the condition had been complied with.

Following the handing down of the above judgement, DSEWPaC issued an addendum to the Final Compliance Audit Report. The addendum refers to the above judgement and the finding that periods of non-operation of the fishway did not constitute a breach of the EPBC Act approval.

On 18 September 2023, Sunwater received notice that the Department of Climate Change, Energy, the Environment and Water (DCCEEW) had found that Burnett Water Pty Ltd was non-compliant with condition 1 of the EPBC Act approval (EPBC 2001/422) for Paradise Dam. In response to this matter and to close out the contravention, DCCEEW on 16 January 2024 varied the conditions of approval under section 143 of the EPBC Act. New condition 1 requires Burnett Water Pty Ltd to compensate for the impacts of the action to the Black-breasted Button Quail by legally securing (by way of dedication as a conservation park under the *Nature*

Conservation Act 1992 (Qld) or another mechanism agreed to in writing by the Minister) the Mount Blandy offset area. It should be noted that Mount Blandy had previously been dedicated as a Conservation Park in July 2016 under the *Nature Conservation (Protected Areas) Regulation 1994* (Qld) at the behest of Sunwater.

Sunwater prides itself on its values which guide everything it does and how it does it. Sunwater's values are set out below:

- Value people – everyone matters and we are committed to zero harm for all our people
- Work together – we are our best when we work together as one Sunwater and with our customers front of mind
- Take responsibility – we all have a part to play to deliver on our promises and challenge our thinking

Sunwater, as a responsible entity and in accordance with its Environmental Policy, actively seeks to minimise the potential for adverse impacts from its activities on the environment, identifies ways of improving its environmental performance, and fulfills all environmental compliance obligations.

3 NATURE OF PROPOSAL

3.1 Scope of the Project

The Project involves the construction of a replacement dam wall immediately downstream (approximately 90 m) of the original dam wall, followed by the partial demolition of the original dam wall. The Project will return the Dam to the original approved FSL of 67.6 mAHD and will ensure a safe and secure water supply for the Wide Bay Burnett and Bundaberg regions. Conceptual views of the new structure are shown in **Figure 5** and **Figure 6** (for illustrative purposes only).

A comparison of the replacement dam wall against the Dam wall is provided in **Table 2** (based on concept design, noting this is subject to revision during detailed design). A preliminary conceptual Project layout is shown in **Figure 1**.

Table 2. Replacement dam wall and original dam wall comparison

Dam Component		**Detail**	
		Original dam wall	**Replacement dam wall**
Full Supply Level (FSL)		67.6 mAHD	67.6 mAHD
Maximum storage volume		300,000 ML	300,000 ML
Primary spillway stilling basin (downstream length)		20 m	55 m (nominal)
Primary Spillway	Crest level	67.6 mAHD	67.6 mAHD
	Crest length	315 m	340 m
Secondary Spillway	Crest level	78 mAHD	81 mAHD
	Crest length	480 m	320 m
Tertiary Spillway	Crest level	N/A	90 mAHD
	Crest length	N/A	300 m
Non-overtopping crest (Left abutment)	Crest level	83 mAHD	94 mAHD (left abutment)
	Crest length	120 m	200 m

Figure 5. Conceptual view of the replacement dam wall downstream of existing Dam structure (view is shown looking upstream)

Figure 6. Conceptual view of the replacement dam wall downstream of existing Dam structure (view is shown looking downstream)

3.1.1 Project Description

3.1.1.1 Construction

Due to its scale and complexity, the Paradise Dam Improvement Project is required to obtain a number of business case, financial, environmental and planning approvals prior to commencement of main dam works. While indicative dates are provided in this document, the commencement of any construction activities are subject to Final Investment Decision (FID) and other budgetary approval processes.

Subject to obtaining the necessary environmental and planning approvals, construction of the Project is anticipated to commence in 2028, with Early Works (excluded from this declaration) commencing prior to this. It is planned that Sunwater will construct the replacement dam wall while the Dam wall remains operational. This will ensure the Dam's operational requirements can continue to be met during construction, including making releases for irrigation, town water supply needs and environmental flows.

The construction stage of the Project is expected to include the following:

- Replacement of dam wall:
  - Survey demarcation of disturbance extents
  - Establishment of erosion and sediment control measures
  - Delivery of plant and equipment to the site
  - Permanent excavation and construction of an access roadway across the Burnett River downstream of the dam wall (culvert crossing designed to be overtopped in high flows)
  - Construction of temporary coffer dams and diversions to manage river flows and maintain fish passage in the construction area
  - Large excavations for construction of the replacement dam wall, left and right abutments, primary and secondary spillways
  - Construction of the replacement dam wall including the primary spillway, right abutment, left abutment, stilling basin and apron, outlet channel and fish passage infrastructure, intake tower and secondary and tertiary spillways
  - Testing and commissioning of the replacement dam wall and associated infrastructure such as outlet works and fish passage facilities
  - Establishment of a temporary additional crossing over Allen Creek, adjacent to the existing Paradise Dam Road (Campbells Road) crossing and remaining within the road reserve
  - Demobilisation and rehabilitation
- Relocation of the Sunwater Site Operations Office (to make way for extended tertiary spillway of the replacement dam wall):
  - Survey demarcation of disturbance extents
  - Delivery of plant, equipment and structures to the site
  - Establishment of erosion and sediment control measures
  - Vegetation clearing and earthworks
  - Demolition and augmentation of existing infrastructure
  - Establish permanent site offices, workshops, stores and amenities, including landscaping
- Establishment of works areas (general):
  - Survey demarcation of disturbance extents
  - Delivery of plant, equipment and structures to the site
  - Establishment of erosion and sediment control measures
  - Vegetation clearing and earthworks
  - Construction of internal haulage roads, including ingress and egress
  - Demobilisation and rehabilitation
- Realignment of Kalliwa Road (approximately 1,000 m length near dam wall):
  - Survey demarcation of disturbance extents
  - Delivery of plant, equipment and structures to the site
  - Establishment of erosion and sediment control measures
  - Vegetation clearing and earthworks

  - Construction of road infrastructure and tie-ins to the existing Kalliwa Road
  - Demobilisation and rehabilitation
- Ancillary activities:
  - Reinstatement of the mini-hydropower unit
  - Re-establishment of a helicopter landing pad, for emergency use
  - Reinstatement of recreational areas and infrastructure

The construction methodology provided above is preliminary and subject to change as detailed engineering design progresses. Geotechnical investigations are currently being completed in the general location of the new dam structure (including in the riverbed area) and these results will inform the detailed engineering design.

A summary of construction stage aspects is provided in **Table 3**.

Table 3. Construction stage aspects

Aspect	Details (estimates only)
Construction Period	Construction is anticipated to commence in 2028 and the in-river works are expected to take up to 5 years depending on river flow conditions (i.e. there is a strong potential for site flooding to occur, causing possible disruption to worksite activities).
Construction Staff Numbers	Staged ramp-up to 600 persons with potential to reach 750 persons at peak construction.
Workforce source	The Project's labour workforce will be sourced locally from within the Wide Bay Burnett, Bundaberg and Gladstone regions and more broadly from the Brisbane and Sunshine Coast regions. Specialist workforce skills may be required to be sourced nationally and/or internationally.
Workforce accommodation[1]	It is expected that a high proportion of the workforce will be accommodated onsite (within the TPAV), the main exception being for staff who live locally in the Burnett region.
Construction Hours	It is anticipated construction will occur between the hours of 6:00AM and 6:00PM, generally, with some 24 hour works required (e.g. RCC plant operation and concrete placement).
Temporary Building Heights[1]	Single and/or double stacked, demountable buildings.
Temporary Car Parking Provisions[1]	450 car parks plus a further 100 for site vehicles and busses.
Temporary Access Arrangements	Access to the worksite will be via the existing Paradise Dam Road and also internal haulage roads.
Temporary Servicing Requirements[1]	Onsite potable water treatment package plant; onsite wastewater treatment and irrigation to land in accordance with relevant environmental approvals that will be sought once Project elements are finalised.

[1] As mentioned in **Section 1.4.2**, the construction, operation and decommissioning of the TPAV and temporary offices to be used for the Project is authorised under a Works Regulation and do not form part of this proposed declaration.

3.1.1.2 Rehabilitation

At certain points during the construction program, Sunwater will undertake targeted rehabilitation activities. This will apply to multiple areas and in different stages. There will likely be elements of temporary and progressive rehabilitation during construction works and then final rehabilitation of all works areas that do not comprise permanent infrastructure. These activities will include:

- Demobilisation and removal of plant, equipment and demountable buildings from site (e.g. plant equipment)
- Earthworks to return the disturbed areas not associated with the Dam operations consistent with pre-disturbance conditions and may include:
  - Leveling and contouring
  - Ripping subsoils
  - Spreading topsoils
- Application of a hydromulch seed mix and/or seedlings using a combination of annual and native perennial vegetation

- On-going monitoring and maintenance to establish vegetation, including weed control

3.1.1.3 Decommissioning

The decommissioning stage will commence on completion of the replacement dam wall.

The decommissioning of the Dam wall will be undertaken in a manner consistent with the relevant Dam Safety requirements and in accordance with any direction from the Dam Safety Regulator. These works conceptually include:

- Removal of the left abutment and secondary spillway to match the currently lowered primary spillway level of 61.8 mAHD (post Primary Dam Works)
- Removal of a slot in the Dam wall down to riverbed level (final location and slot width have yet to be determined and are pending water quality and flow modelling)
- Partial removal of the existing intake tower to a level yet to be determined to accommodate the dam wall decommissioning
- Removal of demolition material to an approved disposal location

Decommissioning will be subject to the development of a Decommissioning Plan. The currently proposed method for decommissioning is based on mechanical means using excavators and bulldozers, consistent with the methodology applied during the Essential Works project.

Blasting methods for the demolition of the Dam wall are not currently proposed. If blasting is required (e.g. excavation works), this will be undertaken to meet noise and vibration criteria in the '*Guideline – Noise and vibration from blasting*' (ESR/2016/2169) (Department of Environment and Science [DES] 2022).

3.1.1.4 Dam Operations

Once the replacement dam wall has been fully constructed and the existing structure has been decommissioned, the replacement dam wall and its operational facilities will be commissioned. After commissioning, routine operations will recommence. It is anticipated that the replacement dam wall will have a minimum design life of 100 years.

The replacement dam operations will mirror the general requirements of the ROL and the corresponding ROL Operations Manual, which include:

- Making releases downstream for water allocation holders in the Bundaberg Water Supply Scheme (including irrigation releases, releases for town water supply and industrial use)
- Maintaining environmental flows

Routine operations will be undertaken from the relocated Sunwater Site Operations Office. Typically, 3-4 dam operators are required on-site at times during the working week, with no operational staff living on-site. It is expected that vehicle parking facilities will accommodate up to 20 vehicles for ongoing operational purposes.

3.2 Land Use

Existing land uses within the Project area (refer **Figure 1**) are mainly associated with water management infrastructure for the Dam (refer also to **Section 6.1**). Most of the land immediately adjacent to the Dam and within the Project area is freehold owned or leased by Burnett Water Pty Ltd (**Table 5**), which is wholly owned by Sunwater.

When the Dam was built, the required land up to the 'Q100 level' (assessed at the time as being the level corresponding to a 1 in 100 AEP flood event inundation level) was acquired by the Queensland Government and included areas needed for the works (original Dam construction) area, water storage area (to FSL) and a flood margin. These areas will accommodate the FSL inundation area of the Dam and the majority of the new water management infrastructure on completion of the Project.

Good Night Scrub National Park (Lot 110 NPW883) borders the Project area to the immediate north and west and on the northern side of the Burnett River. Development of the left abutment work area and service road will occur outside of the National Park on Lot 2 SP135369, which is located between the Burnett River and the boundary of the National Park.

Existing recreational facilities (lookout and caravan facilities) will be closed during the construction period for safety reasons. Sunwater is liaising with relevant stakeholders regarding the reinstatement of the facilities post-construction.

3.3 Project Need and Justification

In January 2024, the Queensland Government announced Sunwater would begin planning for a replacement dam wall immediately downstream of the original Dam wall on the Burnett River to ensure a safe and secure water supply for the Wide Bay Burnett and Bundaberg regions. In a joint statement issued on 18 December 2024 by the Treasurer and the Minister for Local Government, Water and Volunteers, the Queensland Government committed to delivering the PDIP.

Whilst alternative options to the Project have previously been considered (including repairs to the Dam wall), there is no doubt that the Dam is a compromised asset, that no amount of improvement work can fix.

The replacement dam wall will restore the original FSL which is needed to improve dam safety, meet future water demands and improve water supply resilience in the region. Securing this water supply will support one of Australia's most important food bowls and support local economic development and employment growth.

The below sub-sections summarise the strategic need for the Project and the benefits the Project will deliver to the region.

3.3.1 Dam Safety

Completion of the Essential Works project (refer **Section 1.1.1**) significantly reduced the risk of dam failure, however there is a need to further reduce this risk to meet National dam safety guidelines. At present, the Dam does not meet national dam safety guidelines, specifically the ANCOLD Guideline acceptable Limit of Tolerability.

The Project will provide a safe, sustainable whole-of-life solution by reducing dam safety risks to an acceptable level in accordance with regulatory requirements and dam safety guidelines for long term operation.

3.3.2 Water Demand

The Department of Local Government, Water and Volunteers (DLGWV) (formerly, Department of Regional Development, Manufacturing and Water [DRDMW]) in partnership with Sunwater completed the draft Regional Water Assessment (RWA) for the Bundaberg and Burnett regions, providing a comprehensive investigation into current and future water demands. The draft findings are summarised below.

Consultation was completed on the draft RWA and the final RWA is currently being considered by the Queensland Government.

3.3.2.1 Current Demand

Current demands on water supply in the Bundaberg and Burnett regions are from agriculture, industry and commercial and urban uses.

The Bundaberg region is a major producer of agricultural products in Queensland. Key products are sugar cane and irrigated crops, including macadamia, avocado and annual fruit and vegetables. Current agricultural water requirements for the region are in the order of 592,000 megalitres per annum (ML/a) (DRDMW 2023). In 2020, the Dam supplied the Bundaberg region with approximately 22,598 ML of water for agricultural activities (NCEconomics 2021).

Industrial and commercial businesses in the region also require water supply for value-added agriculture, manufacturing and construction. Value-added agriculture such as food production and processing are particularly important industries in the Bundaberg and Burnett region, and include sugar mills, pork and horticulture processing.

Bundaberg and local communities in the Burnett, Kolan and Isis Shires also draw from the Dam for urban water supply requirements. Current urban water supply needs are approximately 10,000 ML/a for the Bundaberg and Burnett regions, with approximately 7,000 ML/a required for Bundaberg (DRDMW 2023).

3.3.2.2 Future Demand

Future water demands for the Bundaberg and Burnett regions are projected to increase (DRDMW 2023). Returning the original FSL is intended to meet these demands.

Irrigated agriculture will be a major source of future water demands. Irrigated agriculture is continuing to grow in the region, with the expansion of irrigated cropping areas and the conversion from sugarcane production areas to higher-value horticulture crops (e.g. macadamia and avocados) with corresponding increased water demands (DRDMW 2023). Growth in the agricultural sector is expected to drive the industry's water demands by between 23 - 40 % by 2052, subject to forecast water prices (DRDMW 2023).

Within the Burnett River sub scheme, the projected agricultural demand on water supplies will increase from around 231,000 ML/a in 2020 to approximately 314,200 ML/a by 2050 (NCEconomics 2021). Other minor increases on water supply are projected from industrial, commercial and urban uses, with a projected increase from around 17,100 ML/a in 2020 to around 17,820 ML/a by 2050 (NCEconomics 2021). Total projected demand is approximately 68,100 ML/a of additional Medium Priority (MP) equivalent by 2050. It should be noted that the water demand is also being reviewed as part of the detailed business case development.

In addition to expected growth from the agricultural sector, the impacts of climate change are estimated to result in increased water demand from the Dam, which can be met from returning the original FSL.

3.3.2.3 Water Security

Returning the original FSL will reinstate water supplies to the existing market and provide water security to the region for decades to come.

Currently, the Dam is operating at a reduced full supply volume since the reduction of the primary spillway during the Essential Works program in 2019. In March 2020, an amendment to water-sharing rules in the Bundaberg Water Supply Scheme ROL was approved resulting in unsold water allocations (high and medium priority) being quarantined and removed from the announced allocation calculations pending completion of the Project. This has maximised access to water allocations at the Dam's reduced storage level for existing customers. To meet future demand and particularly the predicted growth in the region's agricultural sector, a permanent water security solution is needed.

Returning the original FSL will enable reinstatement of the quarantined water allocations to the existing market. On completion of the Project, the existing market will benefit from the reinstatement of all quarantined volumes, including 137,900 ML of MP equivalent for sale, comprising 17,000 ML of High Priority allocation and 100,000 ML of MP allocation (Sunwater 2021). The increased allocations will provide additional water supply and security to growers and other water users in the region.

In terms of future water security, an additional 68,100 ML of additional MP equivalent will be required in the Burnett River sub scheme by 2050 (NCEconomics 2021). The reinstatement of the original FSL will meet this demand, thereby providing a safe and resilient water supply for the region for future generations.

3.3.3 Climatic Variation

The Bundaberg and North Burnett regions are predicted to be hotter and drier in the future, as a result of climate change (DRDMW 2023). The Queensland Future Climate Regional Impact Summary for the Wide Bay-Burnett region predicts the following by 2050 (Department of Energy and Climate 2024):

- Higher temperatures: annual average temperatures approximately 1.4°C under a low emission scenario or about 1.9°C under a high emissions scenario
- More frequent hot days: annual average number of hot days (over 35°C) approximately 26 days under a low emission scenario or about 34.6 days under a high emission scenario
- Rainfall variability: large uncertainty in average annual rainfall totals. Likely a small increase in the number of consecutive dry days
- Increased evapotranspiration: small projected increases to annual evapotranspiration rates by 2050, with greater changes projected by 2090
- Cyclone variability: less frequent but more intense tropical cyclones

The changing climate is estimated to result in increased irrigation water requirements and increased uncertainty in climate-dependent water supplies (DRDMW 2023). These changes are predicted to drive increased water demand and reduced water storage efficiency across the Bundaberg and Burnett regions.

Returning the original FSL will reinstate the available water allocations to the volume approved for the original Dam (pre–Essential Works). This is estimated to result in low to moderate climate change impacts for existing water users (DRDMW 2023).

3.3.4 Community Sustainability and Liveability

The BRC and NBRC have five-year corporate plans that establish objectives and performance outcomes with respect to the community and the environment, infrastructure and development, and organisational services. These are the *Bundaberg Regional Council's Corporate Plan 2021-2026* (BRC 2021) and the *North Burnett Regional Council Corporate Plan 2021 – 2026* (NBRC 2021).

The PDIP will offer social and economic value with improved water security to support economic development and employment growth in the region. Providing water security for the region through the PDIP aligns with the region's corporate plans and objectives, providing community benefits including:

- Economic growth and prosperity – development and investment into regional business and industry, and support for new business and industry to emerge
- Sustainable communities – retain population, contribute to liveability and attract investment
- Community and industry resilience – increased resilience to natural disaster events
- Natural areas – well managed natural areas and facilities for the community and environment.

3.3.5 Economic

The Bundaberg and North Burnett regions are a significant national food bowl, with strong ties between agriculture and the region's local economy and employment.

In 2023-2024, the Bundaberg region produced a Gross Value of Production (GVP) worth $899 Million and was Queensland's third best performing GVP by LGA (Department of Premier and Cabinet [DoPC] 2024). Sugarcane and macadamias are important irrigated crops contributing to the region's GVP.

Agricultural businesses provide significant employment opportunities in the region, accounting for 10.7% of the workforce in the BRC LGA (BRC 2024) and 33.4% in the NBRC LGA (NBRC 2024).

Economic statistics for the region underscore the importance of water security to the local economy. While recent wet seasons have delivered heavy rainfalls to the region, the region is prone to drought conditions and

was mostly recently drought declared during June 2019 – April 2022 (Department of Agriculture and Fisheries [DAF] 2024).

Reinstating the original FSL will secure a reliable water supply for the region, thereby supporting economic development and employment growth in the BRC and NRBC LGAs.

3.4 Project Timeframes

The Project will be delivered in phases which are undertaken concurrently and are often dependent on each other. An indicative Project schedule outlining the key Project phases has been provided in **Table 4**. The indicative schedule includes planning, design and Early Works phases which are not subject to the proposed declaration and are provided for information.

Table 4. Indicative Project schedule

Phase	Timeframe	Status
Detailed business case	2024 – 2027	Underway
Procurement and Planning	2024 – 2027	Underway
Investigations (geotechnical etc) and quarry investigations	2024 – 2026	Underway
Engineering Design (concept, preliminary and detailed)	2023 – 2027	Concept – complete Preliminary – underway Detailed - planned
Environmental assessment and approvals	2025 – 2027	Underway
Early Works		
Construction of the TPAV[1]	2026 – 2027	Underway / Planned (subject to approvals)
Construction of the laydown and staging areas[1]	2026 – 2027	
Construction of the concrete batch plants and trial embankment area[1]	2026 - 2027	
Primary Dam Works		
Construction	2028 – 2032	Planned (subject to approvals)
Decommissioning	2032	
Dam Operations	2032	

[1] As mentioned in **Section 1.4.2,** the construction of the TPAV, laydowns, staging areas, concrete batch plants and trial embankment area are authorised under state works regulation and do not form part of this proposed declaration. The concrete batch plant and trial embankment area has been referred to the commonwealth (EPBC 2025/10206)

3.5 Construction and Operational Processes

As construction of the replacement dam wall will occur in close proximity to the Dam wall, the majority of construction activities will occur in previously disturbed areas.

By means of a series of staged diversion works, the environmental flow objectives prescribed by the *Water Plan (Burnett Basin) 2014 (*Water Plan) will be maintained during the construction period to reduce downstream impacts. The Dam wall will act as a coffer dam during construction, to protect the worksite and the safety of the construction workforce.

Existing roads will be used during construction, with Paradise Dam Road being the primary access point for the site. This road will be closed to the public during construction to ensure safety to the public and workforce. Additional work access (a service road) to the left abutment is required to be constructed and some minor realignment to the ungazetted portion of Kalliwa Road might be required to accommodate the left abutment structure and service road. Temporary closure of a portion of the local road to accommodate these works is also proposed.

Overburden material (naturally occurring soil and rock) is to be removed from the downstream area to accommodate the foundations of the replacement dam wall. This material may not be suitable for re-use and may require on-site or off-site disposal. Other materials removed from the original dam wall during the original

dam demolition will consist mainly of concrete and reinforcing steel. It is yet to be determined whether these materials can be partially recycled or will require on-site or off-site disposal. These details will be confirmed during detailed engineering design of the Project.

Water supply required during construction will be sourced from the Dam through arrangements agreed between Sunwater (as the ROL holder) and the regulator of the *Water Act 2000* (Water Act), DLGWV. The Project intends to use the existing electrical and telecommunications network, which comprise an overhead 11 kV powerline and a nearby microwave telecommunications repeater tower.

3.6 Workforce requirements during construction and operation

3.6.1 Construction Workforce

Workforce planning is being undertaken in accordance with the following:

- Queensland Procurement Policy, including the Local Benefits Test
- Best Practice Principles
- Australian Industry Participation (AIP) plan and the *Job Security Act 2013*
- Queensland Charter for Local Content (the local industry policy under the *Queensland Industry Participation Policy Act 2011*)
- Queensland Government Building and Construction Training Policy

The Project's labour workforce will be sourced locally from within the Wide Bay Burnett, Bundaberg and Gladstone regions and more broadly from the Brisbane and Sunshine Coast regions. Specialist workforce skills may be required to be sourced nationally and/or internationally.

It is anticipated that a median construction workforce of 600 will be required, with a peak of 750 persons. It is anticipated that the majority of the construction workforce will be accommodated in the TPAV onsite, with the exception of staff who live locally in the Burnett region.

3.6.2 Operations Workforce

Routine operations will be undertaken from the relocated Sunwater Site Operations Office. Typically, 3 to 4 dam operators are required on-site at times during the working week, with no operational staff living on-site.

3.7 Economic Indicators

The economic benefits through the construction phase of the Project are expected to be largely within the local and regional areas through direct and indirect employment opportunities, as discussed in **Section 3.3**. The economic benefits through the operation phase of the Project are expected to be regional and State-wide through the economic activity generated through the increased water supply.

3.8 Financial Requirements and Implications

Based on concept design work to date, the Project's capital expenditure is estimated to be $4.4 billion. The cost estimate will be refined as part of the Project's detailed business case and detailed design phases. Based on earlier commitments, it is expected that the Queensland Government and Commonwealth Government will jointly fund the Project.

4 LEGISLATION AND PROJECT APPROVALS

4.1 Relevant Legislation and Government Policies

Relevant legislation and government policies for the Project are overviewed in the below sub-sections. Likely approvals required for the Project are described in **Section 4.2**.

4.1.1 Commonwealth

Environment Protection and Biodiversity Conservation Act 1999

The EPBC Act is the Commonwealth's primary environment protection legislation in Australia which aims to conserve aspects of the environment that are considered a MNES.

The EPBC Act stipulates that any action (i.e. a project, development, undertaking an activity, or a series of activities) that has, will have, or is likely to have a significant impact on a MNES, or other matters protected under the EPBC Act, requires approval from the Commonwealth Minister for the Department of Climate Change, Energy, the Environment and Water (DCCEEW).

To facilitate construction of the Dam, approval (EPBC 2001/422) was granted by the Commonwealth Government on 25 January 2002. This approval granted authorisation for construction of Paradise Dam (formerly known as Burnett River Dam) to proceed based on agreed management/mitigation measures with respect to listed threatened species and communities and listed migratory species known to occur within the impact area. The approval has subsequently been varied on several occasions and remains effective for the life of the Dam.

Sunwater have identified the potential for 'threatened species and ecological communities' to be impacted by the Project. Consequently, Sunwater has commenced early engagement with DCCEEW regarding approval requirements under the EPBC Act for the Project. Through this engagement, Sunwater has determined split EPBC Act referrals are required to allow early authorisation of investigative activities to inform the design of the PDIP. The split referrals include:

- **Referral 1** – Concrete Batch Plants and the Trial Embankment Area (Ref: 2025/10206)
- **Referral 2** – Paradise Dam Improvement Project (Primary Dam Works)

Sunwater are expecting a "controlled action" determination for both referrals. The EPBC Act allows for bilateral assessment between the Commonwealth and State governments using an accredited form of assessment. An IAR under the SDPWO Act is an accredited form of assessment for MNES, with the bilateral agreement between the Commonwealth and the State of Queensland describing the role of the State and providing the Commonwealth with final approval of the Project. It is anticipated only Referral 2 will be assessed under a bilateral process between the Commonwealth and Queensland governments.

DCCEEW has input at the required times in the Coordinator-General's IAR process and is responsible at the end of the process for issuing a separate conditioned approval for the action and for managing ongoing compliance. This approach facilitates efficient consultation between Commonwealth and State governments and removes the need to conduct separate assessment processes, streamlining approval requirements for the Project.

Native Title Act 1993

The *Native Title Act 1993* (NT Act) provides recognition of the rights and interests of Aboriginal and Torres Strait Islander people over land and waters according to their traditional laws and customs.

The NT Act establishes procedures where proposed activities on land or water will affect native title rights and interests, called 'future acts'. In some cases, the NT Act requires that the government and the applicant that proposed the future act to negotiate with the native title party. Registered native title parties have procedural rights, including the 'right to negotiate' with applicants regarding future acts relevant to their native title claim.

Under the NT Act, applicants and native title parties may negotiate agreements under an Indigenous Land Use Agreement (ILUA) regarding the future use and management of land and waters.

4.1.2 State

State Development and Public Works Organisation Act 1971

The SDPWO Act provides powers to the Coordinator-General to facilitate large-scale and complex projects while ensuring environmental and social impacts are properly managed.

Relevantly, under the SDPWO Act, the Coordinator-General can declare a project to be a Coordinated Project where it involves:

- Complex approval requirements, involving local, State and Federal governments
- Significant environmental effects
- Strategic significance to the locality, region or state, including for the infrastructure, economic and social benefits, capital investment or employment opportunities it may provide
- Significant infrastructure requirements.

As discussed in **Section 1.2**, Sunwater considers that the Project is eligible for declaration as a Coordinated Project under the SDPWO Act.

Coordinated Project declarations establish a rigorous impact assessment process that involves either an Environmental Impact Statement (EIS) or IAR. An EIS process is a comprehensive assessment process that considers all potential environmental impacts of the project and is generally used for high-risk projects where impacts are not well understood. An IAR process provides a more targeted assessment of environmental impacts, suitable for projects that are of low-medium risk with well understood environmental impacts.

Sunwater considers the use of an IAR process under the SDPWO Act is the appropriate Coordinated Project pathway. As detailed in **Section 6**, the Project is well-defined and of low environmental risk. Environmental impacts from the Project are well understood and highly predictable, informed by the Dam's development and site-based environmental assessments completed for the Project.

Planning Act 2016

The *Planning Act 2016* (Planning Act) and *Planning Regulation 2017* (Planning Reg) establishes a system of land use planning, development assessment and related matters that facilitates the achievement of ecological sustainability in Queensland. This integrates the protection of ecological processes and natural systems at local, regional, State, and wider levels while promoting economic development and the maintenance of the cultural, economic, physical and social wellbeing of people and communities.

The Planning Act mandates the framework and process for development assessment and the basic requirements for development applications. Under the Planning Act, proposed developments may fall into one of three categories, being accepted development, assessable development (code or impact assessable) or prohibited development. Assessable developments require approval before proceeding, with assessments completed under the relevant local government's planning scheme, and/or matters outlined in the *Planning Regulation 2017.* For the Project, it is anticipated that development approval will be required for building works.

Under the Planning Act, the Dam (then the Burnett River Dam) was developed under a Community Infrastructure Designation of land for the project.

Environmental Protection Act 1994

The *Environmental Protection Act 1994* (EP Act) and its subordinate legislation are Queensland's principal environmental legislative framework. The EP Act aims to protect Queensland's environment while allowing for ecologically sustainable development. The EP Act regulates environmental impacts from development and other activities by:

- Requiring specific industries and activities to obtain relevant permits and licences, including environmentally relevant activities (ERAs)
- Imposing obligations and duties to prevent or minimise environmental harm, and notify the regulator on observing potential environmental harm

- Imposing a duty to restore to persons involved in unauthorised environmental harm
- Enabling the regulator to monitor and enforce compliance with the EP Act

Subordinate legislation that supports the EP Act has been developed for specific aspects of the environment and to prescribe the detail for processes contained in the EP Act, this includes:

- *Environmental Protection Regulation 2019*
- *Environmental Protection (Air) Policy 2019*
- *Environmental Protection (Noise) Policy 2019*
- *Environmental Protection (Water and Wetland Biodiversity) Policy 2019*

The EP Act also establishes specific measures to improve the quality of water entering the Great Barrier Reef. The Burnett Mary region, inclusive of the Burnett River catchment, forms part of the Great Barrier Reef catchment. Applicable water quality targets for the Burnett River catchment are established under the Reef 2050 Water Quality Improvement Plan (Reef 2050 WQIP). The Reef 2050 WQIP is endorsed by the Australian and Queensland government and relevantly sets out a series of actions that are to be implemented by government and its partners. Sunwater will continue to support governments, industry and other stakeholders in achieving the targets of the Reef 2050 WQIP.

Construction activities for the Project are likely to involve industrial activities that are ERAs and regulated under the EP Act. For example, this may include temporary chemical storage during construction. As required under the EP Act, Sunwater will obtain environmental authorities to conduct any prescribed ERAs.

In accordance with the requirements of the Queensland EP Act, the Department of Environment, Tourism, Science and Innovation (DETSI) maintain a register of sites identified as having previous or current notifiable activities or which are contaminated by hazardous materials. The Environmental Management Register (EMR) identifies 'low-risk' sites that have been used for an activity which is likely to cause land contamination, while the Contaminated Land Register (CLR) identifies proven contaminated sites (considered 'risk sites') that require remediation.

Environmental Offsets Act 2014

The *Environmental Offsets Act 2014* (EO Act) is intended to counterbalance significant residual impacts on prescribed environmental matters by means of environmental offsets, through either land-based offsets and/or financial settlement offsets.

The EO Act provides a framework for the protection of prescribed environmental matters, including a Matter of State Environmental Significance (MSES), or an accredited arrangement for MNES (where Queensland receives accreditation in relation to offsets for the purposes of the EPBC Act), or for a Matter of Local Environmental Significance (MLES).

Prescribed environmental matters have been identified within the Project area, including MNES and MSES. It is anticipated that impacts to prescribed environmental matters that are MNES will be considered under a bilateral assessment agreement between the Commonwealth and Queensland governments, to avoid further duplication of assessment of MNES under the EPBC Act.

Nature Conservation Act 1992

The *Nature Conservation Act 1992* (NC Act) regulates environmental impacts through requirements for vegetation clearing permits, species management programs and other permits.

A clearing permit is required to clear protected plants unless an exemption applies. In general, clearing of Critically Endangered, Endangered, Vulnerable or Near Threatened protected plants will require a clearing permit. Clearing permit applications are assessed on a case-by-case basis and approvals will be subject to conditions.

Where activities involve tampering with animal breeding places, the activities may be authorised by application to DETSI through an approved species management program.

Vegetation Management Act 1999

The *Vegetation Management Act 1999* (VM Act) Act regulates clearing of native vegetation in Queensland. The VM Act aims to conserve Queensland's biodiversity through vegetation management. The intent of the VM Act is to regulate the clearing of native vegetation in a way that:

- Conserves remnant vegetation
- Ensures clearing does not cause land degradation
- Prevents loss of biodiversity
- Maintains ecological processes
- Reduces greenhouse gas emissions
- Allows for sustainable land use

Generally, the clearing of native vegetation in Queensland is considered 'assessable development' and a development approval is required, unless an exemption applies under the VM Act or Planning Act.

Water Act 2000

The Water Act provides for the sustainable management of Queensland's water resources, including the establishment and operation of water authorities, and the management of impacts to groundwaters.

The Dam falls within the Burnett Basin Water Plan Area. The Water Plan provides the framework for the sustainable management of water within the Burnett Basin, including management of water allocations, environmental flow objectives, infrastructure operating levels and management rules.

The dam operations are permitted under the Water Act through the Resource Operations Licence (ROL) for the Bundaberg Water Supply Scheme (BWSS) and the corresponding ROL Operations Manual. The ROL authorises the interference to water flow in the BWSS, and the use of watercourses for the distribution of water.

The operational requirements for the Dam are specified in the ROL. The replacement dam wall structure will broadly comply with the ROL requirements, though recognising that the new structure will be designed to meet more recent standards and guidelines (refer above). Some minor amendments to the ROL are likely to be required. Changes (if any) to the downstream flow regime are not expected to be significant.

Water Supply (Safety and Reliability) Act 2008

The *Water Supply (Safety and Reliability) Act 2008* (WSSR Act) provides for the safety and reliability of water supply, establishing a regulatory framework for water services in Queensland and protecting the interests of customers of water services providers.

The WSSR Act relevantly includes provisions for Sunwater, as a service provider, with respect to managing dam safety. Under the provisions of the WSSR Act, Sunwater are required to provide reports to the Dam Safety Regulator (located within the former DRDMW). As a referable dam, Sunwater are also required to complete dam failure impact assessments and have an approved Emergency Action Plan (EAP) in place for the Dam.

The Dam has been managed at a reduced FSL for dam safety purposes since the Essential Works project and in accordance with s399B of the WSSR Act. The Project will significantly improve dam safety outcomes for the Dam and will return the dam to its original FSL.

Fisheries Act 1994

The *Fisheries Act 1994* (Fisheries Act) regulates fisheries and fish habitat. Any works that may impact on fish habitat and fish movement may require authorisation under the Fisheries Act. Such works include waterway barrier works, including work on existing waterway barriers such as dams and weirs. Fisheries-related developments are implemented under the provisions of the Fisheries Act and the Planning Act.

The Dam currently has an upstream fishway and downstream fishway to meet waterway barrier works approval requirements (and as noted in the BWSS ROL). As required for the Project, waterway barrier works approvals will be sought for permanent and temporary fish passage. The new permanent fish passage for the replacement dam wall will have similar, though improved, functionality.

Land Act 1994

The *Land Act 1994* (Land Act) is the primary legislation under which State land is defined, managed and administered. The purpose of the Land Act is to ensure that relevant land is managed for the benefit of the people of Queensland.

Land tenure within the Project area is principally comprised of freehold land owned by Burnett Water Pty Ltd, and areas of leasehold and road reserves. Construction areas associated with the Project will generally be located within land owned by Burnett Water Pty Ltd.

Subject to road work requirements, a permit under the Land Act may be sought for the temporary closure of public roads during the Project.

Aboriginal Cultural Heritage Act 2003

The main purpose of the *Aboriginal Cultural Heritage Act 2003* (ACHA) is to provide effective recognition, protection and conservation of Aboriginal cultural heritage. The ACHA binds all persons to take reasonable and practicable measures to ensure that activities do not harm Aboriginal cultural heritage, establishing a cultural heritage duty of care.

Sunwater acknowledges this duty of care and will ensure that the CEMP developed for the Project includes provisions for the protection of Aboriginal cultural heritage.

Queensland Heritage Act 1992

The *Queensland Heritage Act 1992* (QHA) aims to provide for the conservation of Queensland's cultural heritage for the benefit of the community and future generations. The QHA establishes the State's Heritage Register, which is the primary instrument by which places of cultural heritage are identified and protected. The register identified places that are important to Queensland's heritage, and protected areas with strong heritage values that are under threat.

Native Title (Queensland) Act 1993

The *Native Title (Queensland) Act 1993* was enacted to ensure consistency with Queensland legislation and the Commonwealth NT Act for future dealings affecting native title, and to provide clarification around past acts.

Regional Planning Interests Act 2014

The *Regional Planning Interests Act 2014* (RPI Act) identifies areas of regional interest in Queensland and aims to protect these areas from the impacts of resource activities and regulated activities. Areas of regional interest are areas that contribute or are likely to contribute to Queensland's economic, social and environmental prosperity. These areas are defined as: priority agricultural areas, priority living areas, strategic environmental areas and strategic cropping areas.

Areas of regional interest and associated policies apply for the purposes of both the RPI Act and Planning Act to achieve consistent planning outcomes.

Transport Infrastructure Act 1994

The *Transport Infrastructure Act 1994* (TI Act) provides a framework for the effective integrated planning and efficient management of the State's transport infrastructure. The DTMR regulates and approves activities under the TI Act, such as works that interfere with the operation of State-controlled roads. Activities undertaken within a State-controlled roads, may trigger a road corridor permit under the TI Act.

Local Government Act 2009

The *Local Government Act 2009* provides for the way in which a local government is constituted and the nature and extent of its responsibilities and powers, ensuring that Queensland local governments are accountable, effective, efficient and sustainable. Local governments can make local laws to address issues

within the local community, including in relation to local government controlled areas and roads. Where a local law applies, a local law permit must be obtained from the LGA.

Work Health and Safety Act 2011

The *Work Health and Safety Act 2011* (WHSA) sets out the requirements and standards to secure the health and safety of Queensland workers and workplaces. The WHSA establishes health and safety duties and rights in the workplace for workers and employees.

4.1.3 Relevant Policies and Plans

State Planning Policy

The current *State Planning Policy 2017* (SPP) commenced in July 2017 and is the overarching document that clearly identifies State planning interests and how they must be addressed through local planning schemes and regional plans. The SPP has effect throughout Queensland and is above regional plans and local planning schemes in the hierarchy of planning instruments.

Consideration of the SPP is required by local governments when making or amending a local planning instrument or regional plan, and assessing a development application where the planning scheme has not yet appropriately integrated the relevant SPP State interests. This applies to code assessable and impact assessable applications. The SPP applies also where an assessment manager or referral agency other than the local government are assessing the application.

State Development Assessment Provisions

State Development Assessment Provisions (SDAP) establish assessment benchmarks or matters for the assessment of development applications where the assessment manager is the State Assessment and Referral Agency (SARA). SARA uses SDAP to deliver a coordinated, whole-of-government approach to the state's assessment of development applications. The SDAP includes state codes which comprise assessment benchmarks for different development types and locations.

Wide Bay Burnett Regional Plan

The *Wide Bay Burnett Regional Plan 2023* (Regional Plan) is the relevant regional plan applicable to the Project. The Regional Plan is a statutory 25-year plan for the region, that provides a framework to assess and respond to region-specific challenges and opportunities. Securing sufficient reliable water to support economic growth is identified as a key challenge in the region.

The Regional Plan recognises flooding events can significantly impact on communities in the region and future development and infrastructure planning is needed to respond appropriately to natural hazard risks. This is important to ensure development does not occur in a manner than is likely to increase the extent or severity of flooding.

The Project is consistent with the intent of the Regional Plan, providing dam safety improvements that will increase the region's resilience to natural hazards.

Pursuant to Section 2.2 of the *North Burnett Regional Council Planning Scheme* 2014 Version 1.4/2020 (NBRC Planning Scheme), the Minister previously identified that this planning scheme (yet to be updated with respect to the Regional Plan), specifically the strategic framework, appropriately advanced the previous Regional Plan in regards to the planning scheme area. The proposal is consistent with the intent of the Regional Plan.

Similarly, pursuant to Section 2.2 of the *Bundaberg Regional Council Planning Scheme 2015* (BRC Planning Scheme), the Minister also previously identified that the planning scheme (also yet to be updated with respect to the Regional Plan), specifically the strategic framework, appropriately advances the Wide Bay Burnett Regional Plan 2011, as it applies in the planning scheme area. The proposal is consistent with the intent of the Regional Plan.

Reef 2050 Long-Term Sustainability Plan

The *Reef 2050 Long-Term Sustainability Plan 2021 - 2025* (Reef Plan) sets out a strategy to protect and manage the Great Barrier Reef to support its health and resilience. The Reef Plan is a collaboration between the Australian and Queensland governments, industry, and other stakeholders.

The Reef Plan sets out strategic objective for the Reef through to 2050, with goals and strategic actions for each 5-year period and 5-yearly reviews to ensure the Reef Plan is adaptive and current. Strategic objectives are identified for key work areas, which relate to climate change, land-based and water-based activities, international sources of impacts, protection and rehabilitation. Strategic actions include the delivery of the Reef 2050 WQIP to address land-based sources of water pollution entering the Great Barrier Reef.

4.2 Approvals Required for the Project

Sunwater is seeking declaration of the Project (**Section 1.4.1**) as a Coordinated Project pursuant to the SDPWO Act. As part of this declaration, Sunwater is seeking to utilise the IAR process. Sunwater considers the use of an IAR process is appropriate for the Project, acknowledging that the Project is of strategic significance to the region (**Section 1.2**) and that this approval process will support the efficient and timely delivery of the Project.

Likely approval requirements for the Project are documented in **Appendix A,** including approvals proposed to be coordinated through the IAR process. Following preliminary design, a finalised list of required approvals will be presented as part of the IAR. As the Project design is refined, there is potential that some of the proposed approvals may not be required for the final Project.

5 LOCATION OF KEY PROJECT ELEMENTS

5.1 Location

The Dam is located on the Burnett River, approximately 20 km northwest of Biggenden and 80 km south-west of Bundaberg in the Wide Bay Burnett region (**Figure 2**). The Dam wall is located at latitude -25.35 and longitude 151.92 and is approximately 131 km upstream from the mouth of the Burnett River.

The Dam is accessible via local roads, namely Campbells Road and River Road (also known as Paradise Dam Road), which ultimately join with the Bruce Highway and the Isis Highway.

The existing local natural environment is described in **Section 6.1**.

5.2 Tenure

Most of the land within the FSL and the impoundment flood margin is owned or leased by Sunwater, including the area that will be directly disturbed during construction. Property impacts will be limited to the Project area, as identified in **Figure 1**. The Project will not result in any change to the existing approved inundation area.

The inundation area and Dam are located within the NBRC and BRC areas. Property details within the Project area are provided through **Table 5**.

5.3 Native Title

Registered native title bodies corporate (RNTBCs) relevant to the Project area are the First Nations Bailai, Gurang, Gooreng Gooreng, Taribelang Bunda People (BGGGTB) People Aboriginal Corporation, and the Wakka Wakka Native Title Aboriginal Corporation (WWNTAC).

Native Title has been determined over part of the Project area on behalf of the BGGGTB RNTBC (QCD2017/010) and the WWNTAC RNTBC (QCD2022/004). Areas subject to the Native Title determinations include areas associated with the Burnett River, the proposed left abutment area (on Lot 2SP135369), Allen Creek, and Paradise Cemetery (Lot 71CK540).

Table 5. Property descriptions within Project area

Property Description	Lot 2 SP135369	Burnett River	Allen Creek / Paradise Creek	Lot 3 SP158186	Lot 9 CK1566	Lot 2 SP339382	Lot 3 P4471	Lot 2 P4471	Lot 1 P4471	Unnamed Roads	Paradise Dam Road	Paradise Road
Tenure	Leasehold	Watercourse	Watercourse	Freehold	Freehold	Freehold	Freehold	Freehold	Freehold	Road Reserve	Road Reserve	Road Reserve
LGA	BRC	BRC and NBRC	NBRC	NBRC	NBRC	NBRC	NBRC	NBRC	NBRC	NBRC	NBRC	NBRC
Landholder	Burnett Water Pty Ltd	State of Queensland	State of Queensland	Burnett Water Pty Ltd	Burnett Water Pty Ltd	Burnett Water Pty Ltd	Burnett Water Pty Ltd	Burnett Water Pty Ltd	Burnett Water Pty Ltd	State of Queensland	State of Queensland	State of Queensland
Easements Encumbrances Interests	Rights and interests reserved to the Crown by Lease No. 40039575	N/A	N/A	Rights and interests reserved to the Crown by Deed of Grant No. 15640037 (POR 3)	Rights and interests reserved to the Crown by Deed of Grant No. 17255116 (Lot 9 on CP CK1566)	Rights and interests reserved to the Crown by Deed of Grant No. 14833106 (POR 20) and Deed of Grant No. 12172162 (POR 55)	Rights and interests reserved to the Crown by Deed of Grant No. 10867041 (ALLOT 3 SEC 9A)	Rights and interests reserved to the Crown by Deed of Grant No. 10867042 (ALLOT 2 SEC 9A)	Rights and interests reserved to the Crown by Deed of Grant No. 10867043 (ALLOT 1 SEC 9A)	N/A	N/A	N/A
Administrative Advices	718782245 719767646	N/A	N/A	Nil	Nil	711133979	Nil	Nil	Nil	N/A	N/A	N/A
Land Use	River Reservoir / dam	River Reservoir / dam	Watercourse	Services River Reservoir / dam	Services Reservoir / dam	Services River	Services	Services	Services	Road	Road	Road

6 ENVIRONMENTAL CONSIDERATIONS

This section provides an overview of the existing environment, potential impacts, and proposed management and mitigation measures for the Project, in accordance with Appendix 1 of the *Application guideline – Coordinated project declaration* under the SDPWO Act (DSDILGP 2023).

As outlined in **Section 3**, the Project is necessary to improve dam safety, meet future water demands and improve water supply resilience in the region. The Project is located largely within a previously disturbed area and is classified as a brownfield site. Reinstatement of the FSL will maintain the originally approved operational profile of the Dam. Since 2019, Sunwater has undertaken extensive desktop and field investigations to support preliminary impact assessments and has progressively avoided, refined and reduced the overall impact area of the Project through the design and planning stages.

As an existing operational dam with established catchment management practices, Sunwater has a comprehensive understanding of the existing environment of the Dam and its associated impacts.

Identification of new likely impacts from the Project has been informed by a wide range of stakeholders and subject matter experts, including independent consultants, internal Sunwater personnel, dam operators, hydrologists, and engineers.

Preliminary assessments completed for the Project include:

- Terrestrial ecology – desktop and several field surveys for State and Commonwealth matters (Epic 2025)
- Aquatic ecology – desktop and field surveys for State and Commonwealth matters (Hydrobiology Pty Ltd [Hydrobiology] 2025)
- Noise and vibration impact assessment (Renzo Tonin & Associates 2024)
- Traffic impact assessments for State and local roads (Harrison Infrastructure Group [HIG] 2024)
- Bushfire hazard assessment (Wolter Consulting Group [Wolter] 2024)

These assessments have contributed to a preliminary understanding of the potential impacts from the Project and the appropriate mitigation and management measures to be implemented, as summarised in the following sub-sections. These assessments have also guided the refinement of the 'Project area' (**Figure 1**) (inclusive of the construction footprint and impact area). The proposed siting of construction activities within the Project area has been designed to prioritise the use of previously disturbed areas.

Given the sound understanding of the Project and its impacts, Sunwater considers that an IAR assessment under the SDPWO Act is the most appropriate approval pathway for the Project.

6.1 Land Use and Built Environment

6.1.1 Existing Environment

Existing land uses within the Project area are mainly associated with water management infrastructure for the original dam. The Project area includes the Burnett River area immediately downstream from the original dam wall and areas of road reserves. Paradise Dam is popular with the public and is utilised for recreational activities such as fishing, boating, and camping, with camping grounds located nearby the Dam wall. Tenure within the Project area is comprised of freehold, leasehold, road reserves and watercourse (**Table 5**).

The Project area is zoned as 'community facilities' and 'rural' on the northern and southern portions of the Burnett River under the respective BRC and NBRC planning schemes

Land uses within the surrounding region of the Project area are dominated by grazing and agriculture (e.g. cattle grazing), with agricultural land uses to the north, east and south. Good Night Scrub National Park (Lot 110 NPW883) also borders the Project area to the immediate north and west of the Project area on the northern side of the Burnett River. The National Park is approximately 7,100 ha in area and includes examples of dry rainforest scrub that would have once covered extensive areas of the Gin Gin and Gayndah districts. Good Night Scrub National Park was declared a National Park in 1998 (Burnett Water 2001).

A small portion of the Project area is located within a Strategic Environmental Area (SEA), as established in the Regional Plan and in accordance with section 11 (1)(b)(i) of the RPI Act (**Section 4.1.3**). This area relates to the construction of the Dam's left abutment and the proposed re-alignment of Kalliwa Road. Areas of regional interest and associated policies apply for the purposes of both the RPI Act and Planning Act to achieve consistent planning outcomes. Under the Regional Plan, SEAs are described as containing regionally significant attributes for biodiversity, water catchments, ecological function and connection. No other mapped areas of Regional Interest (e.g. Priority Agricultural Area, Strategic Cropping Land) occur within the Project area.

6.1.1.1 Topography, Geology and Soils

The Project area falls within the Gympie subregion of the greater South-east Queensland bioregion, which is characterised by low, hilly landscapes on old geological parent material.

The catchment geology consists of predominantly marine volcaniclastic depositions. Local geology comprises alluvium, barambah basalt, the goodnight beds, mingo granite, andesite, rhyolite, granodiorite, gabbro and other metamorphosed sediments (Queensland Government 2024).

The topography near the original dam wall is undulating on both the northern and southern extents of the Burnett River. Steep topography within the Good Night Scrub National Park extent reaches approximately 90 m elevation, rapidly falling to approximately 32 m elevation along the stream bed of the Burnett River downstream of the original dam wall. Hills and gullies occur on the southern side of the Burnett River, including along Allen Creek where it feeds into the Burnett River. Further downstream on the southern banks of the Burnett River, relatively flat expanses occur. Higher elevations occur outside to the east of the Project area, with a small ridge reaching approximately 170 m elevation. The topography plays an important role in water management for the dam, with the surrounding hills contributing to the catchment area for the reservoir.

6.1.1.2 Contaminated Land

The following lots associated with the Project area are listed on the EMR:

- Lot 2 SP339382 (livestock dip or spray race – operating a livestock dip or spray race facility)
- Lot 2 SP135369 (landfill – disposing of waste excluding inert construction and demolition waste)

While the livestock dip is located on Lot 2 SP339382, it is on the opposite side of Paradise Dam Road outside the Project area and the dam inundation area. As such, construction activities will not directly or indirectly impact these areas.

The current EMR search for Lot 2 SP135369 references the former National Parks and Wildlife Lot 110 NPW550. Lot 2 SP135369 was created from parts of Lot 110 NPW550 below the 100 year flood level.

An EMR search undertaken by Burnett Water in 2003 (prior to the construction of the original Dam), as part of a preliminary contaminated sites investigation, includes information on a Notifiable Activity for Landfill on Lot 110 NPW550. The report states that 'Burnett Water has been advised by Department of Natural Resources that this site however is located at One Tree Hill, which is outside the 100 year flood level.'

An initial desktop study reviewed the findings of this assessment from 2003 and it is currently understood that the bulk of the original Lot 110 NPW550 (now identified as Lot 110 NPW883), includes the landfill location and remains under the control of the Queensland Parks & Wildlife Service. It is understood the landfill area was not transferred to Burnett Water and remains outside of the Project area.

6.1.2 Potential Impacts

The Project is consistent with the Regional Plan and local planning schemes, providing water security for the region to advance economic growth and improve natural hazard outcomes due to the dam safety improvement upgrade aspect.

The Project's impacts to built infrastructure are expected to be minimal and generally positive, with minor upgrades proposed to the existing local road network. Finalisation of road impacts and upgrade requirements will be considered as part of the Project IAR.

Construction related activities are within the immediate dam area, utilising the existing infrastructure and pre-disturbed areas and minimising impacts to surrounding land uses. This siting also intends to locate construction areas within Burnett Water Pty Ltd owned land.

As such, land impacts will generally be limited to the construction areas, noting the inundation footprint will be reinstated to the originally approved FSL.

6.1.3 Management Measures

A range of management and mitigation measures will be determined during the IAR to minimise potential impacts to land from the Project. The following documents will be prepared prior to construction commencement and to document the range of management and mitigation measures including:

- CEMP
- Erosion and Sediment Control Plan (ESCP)
- Update to the existing Vegetation Regeneration Plan
- Soil management procedures
- Land disturbance procedures
- Spill management procedure
- Unexpected Contaminated Land Procedure

6.2 Terrestrial Ecology

A terrestrial ecological survey was undertaken by Epic in November 2024 of the Terrestrial Study area (see **Figure 7**). This survey built on extensive previous terrestrial ecological survey work completed for Paradise Dam and the surrounding area. Recent terrestrial ecological surveys for Paradise Dam include:

- November 2024 fauna and flora survey of the Study area to determine the presence of MNES and MSES
- 2023 targeted MNES survey, targeting the north-west of the original dam wall
- 2022 flora and fauna survey, surveying approximately 109 ha of the Paradise Dam area (restricted to the south side of the Burnett River)
- 2019/2020 flora and fauna survey, surveying approximately 109 ha of the Paradise Dam area

The November 2024 fauna and flora survey identified a total of 117 flora species and 99 fauna species within the Terrestrial Study area. No threatened or near threatened fauna or flora species were identified within the Terrestrial Study area, with the minor exceptions of the Short-beaked Echidna (*Tachyglossus aculeatus*) and Crested Tern (*Thalasseus bergii*), both 'Special Least Concern' (SLC) as defined under the *Nature Conservation (Animals) Regulation 2020* (NC (Animals) Reg).

Appendix B details all flora and fauna species identified during the surveys listed above.

6.2.1 Existing Environment

The Dam is located within the Gympie subregion of the greater South-east Queensland bioregion. The Gympie subregion is characterised by low, hilly landscapes on old geological parent material. Catchment geology consists of predominantly marine volcaniclastic depositions. Local geology in and surrounding the Project area comprises alluvium, baramba basalt, the goodnight beds, mingo granite, andesite, rhyolite, granodiorite, gabbro and other metamorphosed sediments (Queensland Government 2024).

6.2.1.1 Matters of National Environmental Significance

Desktop assessments have identified the potential occurrence of threatened ecological communities (TEC), flora and fauna listed under the EPBC Act within a 5 km buffer to the Project area. The potential occurrence of MNES within this search area, where they are known, likely, or have potential to occur, is provided in **Appendix C** and summarised below in **Table 6**. The full results of the Protected Matters Search Tool (PMST) Report is provided in **Appendix D**.

Table 6. MNES – likelihood of occurrence (Epic 2025)

Species	Common Name	Likelihood of occurrence[1]	EPBC Act Status[2]
Threatened Ecological Communities (TEC)			
-	Subtropical eucalypt floodplain forest and woodland of the New South Wales north coast and southeast Queensland	Known	E
FLORA			
Arthraxon hispidus	Hairy-joint Grass	Possible	E
Samadera bidwillii	Quassia	Possible	V
Rhodamnia rubescens	Scrub turpentine	Possible	CE
Cupaniopsis shirleyana	Wedge-leaf Tuckeroo	Possible	V
FAUNA			
Turnix melanogaster	Black-breasted Button-quail	Possible	V
Stagonopleura guttata	Diamond Firetail	Possible	V
Gallinago hardwickii	Latham's Snipe	Possible	V
Hirundapus caudacutus	White-throated Needletail	Likely	V, M
Petauroides volans	Greater Glider (southern and central)	Possible	E
Pteropus poliocephalus	Grey-headed Flying-fox	Known	V
Phascolarctos cinereus	Koala	Possible	V
Petaurus australis australis	Yellow-bellied Glider (southeastern)	Possible	V
Delma torquata	Collared Delma	Possible	V
MIGRATORY			
Pandion haliaetus	Eastern Osprey	Known	M
Hydroprogne caspia	Caspian Tern	Known	M
Thalasseus bergii	Greater Crested Tern	Known	M
Apus pacificus	Fork-tailed Swift	Possibly	M
Cuculus optatus	Oriental Cuckoo	Possibly	M
Rhipidura rufifrons	Rufous Fantail	Known	M

Note:
1 Assessment criteria are provided in Appendix C
2 EPBC Act Status: CR = Critically Endangered, E = Endangered, V = Vulnerable, M = Migratory

Field surveys have identified Subtropical floodplain forest TEC (listed as Endangered under the EPBC Act in October 2022) within the Terrestrial Study Area are analogous to two regional ecosystems (REs) (i.e. 12.3.7 and RE 12.3.3). Within this area, the occurrence of the Subtropical floodplain forest TEC is restricted to Allen Creek. Other areas of riparian vegetation fringing the Burnett River have been determined as not meeting TEC status.

Multiple flora surveys completed during 2019/2020 – 2024 have not identified any threatened flora listed under the EPBC Act.

One MNES species is known to occur within the Terrestrial Survey Area from the 2020 field survey, the Grey-headed Flying-fox. This species was observed during surveys completed in 2022, however was not recorded during the 2024 survey.

6.2.1.2 Matters of State Environmental Significance

Desktop assessments have indicated the potential occurrence of a number of fauna and flora species associated with MSES under the NC Act within a 25 km buffer to the Project area. The potential occurrence of MSES within this search area, where they are known, likely, or have potential to occur, is summarised below in **Table 7**.

Table 7. MSES - likelihood of occurrence (Epic 2025)

Species	Common Name	Likelihood of occurrence[1]	NC Act Status[2]
FLORA			
Brachychiton australis	Broad-leaved Bottle Tree	Known	SLC
Brachychiton populneus	Black Kurrajong	Known	SLC
Brachychiton bidwillii	Little Kurrajong	Known	SLC
Backhousia oligantha	-	Possible	CE
Crinum flaccidum	Murray Lily	Known	SLC
Dockrillia spp.		Known	SLC
Drynaria x dumicola	-	Possible	V
Eucalyptus decolor	-	Possible	NT
Arthraxon hispidus	Hairy-joint Grass	Possible	E
Macrozamia mountperriensis		Known	SLC
Samadera bidwillii	Quassia	Possible	V
Rhodamnia pauciovulata	-	Possible	CE
Rhodamnia rubescens	Scrub turpentine	Possible	CE
Cupaniopsis shirleyana	Wedge-leaf Tuckeroo	Possible	V
Xanthorrhoea fulva	Swamp Grass Tree	Known	SLC
FAUNA			
AMPHIBIANS			
Adelotus brevis	Tusked Frog	Possible	V
BIRDS			
Turnix melanogaster	Black-breasted Button-quail	Possible	V
Tringa nebularia	Common Greenshank	Possible	E
Stagonopleura guttata	Diamond Firetail	Possible	V
Calyptorhynchus lathami lathami	Glossy Black-cockatoo (south-eastern)	Possible	V
Gallinago hardwickii	Latham's Snipe	Possible	V
Ninox strenua	Powerful Owl	Possible	V
Calidris acuminata	Sharp-tailed Sandpiper	Possible	V
Hirundapus caudacutus	White-throated Needletail	Likely	V
MAMMALS			
Petauroides volans	Greater Glider (southern and central)	Possible	E
Phascolarctos cinereus	Koala	Possible	E
Petaurus australis australis	Yellow-bellied Glider (southeastern)	Possible	V
Delma torquata	Collared Delma	Possible	V
Acanthophis antarcticus	Common Death Adder	Possible	V
Tachyglossus aculeatus	Short-beaked Echidna	Known	SLC
Thalasseus bergii	Crested Tern	Known	SLC

Notes:

1 NC Act / NC (Animals) Reg / NC (Plants) Reg Status: CR = Critically Endangered, E = Endangered, V = Vulnerable, SLC = Special Least Concern

2 Assessment criteria are provided in Appendix C

None of the threatened flora species identified as possible occurrences were recorded during the recent survey or the previous surveys undertaken by Epic in 2019/2020 or 2022 (Epic 2020; 2022). Similarly, no threatened fauna species were identified during the 2024 survey.

Of the threatened fauna species indicated as potentially occurring within the Terrestrial Study area, only the White-throated Needletail, is considered likely to occur.

SLC flora and fauna are protected under the NC Act and are defined in the NC (Animals) Reg and Nature Conservation (Plants) Regulation 2020 (NC (Plants) Reg). Seven SLC flora species are known to occur within the Terrestrial Study area, having been identified during the 2024 survey. SLC flora species are generally slow growing species, species which produce limited seed stock or species of commercial value. Two SLC fauna

species are also known to occur within the Terrestrial Study area, with the Short-beaked Echidna and Crested Tern recorded during the 2024 survey.

Ground-truthing of the Queensland Herbarium's Regional Ecosystem Description Database (REDD) mapping has confirmed the presence of four vegetation communities associated with seven RE types within the Terrestrial Study area (**Table 8** and **Figure 7**). Historical clearing associated with grazing activities has resulted in large areas of non-remnant vegetation in the Project area.

Table 8. Ground-truthed Regional Ecosystems within the Terrestrial Study area

RE	Description[1]	VM Act status[2]	Threatened Ecological Community (TEC) (Yes/No)
12.3.7	*Eucalyptus tereticornis*, *Casuarina cunninghamiana* subsp. *cunninghamiana* +/- *Melaleuca* spp. fringing woodland	LC	Partially Yes
12.3.3	*Eucalyptus tereticornis* woodland on Quaternary alluvium	E	Yes
12.3.3a	*Eucalyptus crebra, Corymbia tessellaris* woodland to open forest. Other species that may be present as scattered individuals or clumps include *Corymbia clarksoniana, Eucalyptus melanophloia, E. tereticornis* and *C. citriodora* subsp. *variegata*. Occurs on high level alluvial plains often of Pleistocene age, terraces and fans where rainfall is less than 1,000 mm/annum	E	No
12.11.6	*Corymbia citriodora* subsp. *variegata*, *Eucalyptus crebra* woodland on metamorphics +/- interbedded volcanics	LC (remnant)	No
		LC (regrowth)	No
12.11.14	*Eucalyptus crebra*, *E. tereticornis*, *Corymbia intermedia* woodland on metamorphics +/- interbedded volcanics	OC (remnant)	No
		OC (regrowth)	No
12.11.12	Araucarian complex microphyll vine forest on metamorphics +/- interbedded volcanics, usually in northern half of bioregion	OC	No
12.3.7b	Naturally occurring instream waterholes and lagoons, both permanent and intermittent. Includes exposed stream bed and bars. Occurs in the bed of active (may be intermittent) river channels	LC	No
-	Non-remnant	-	No

Note:
[1] Vegetation description from the Regional Ecosystem Description Database (REDD) v13.1.0 (Queensland Herbarium 2024)
[2] VM Act Status: E = Endangered, OC = Of Concern, LC = Least Concern

MSES values related to vegetation within the Terrestrial Study area include:

- Protected wildlife habitat for endangered / vulnerable species under the NC Act
- Protected wildlife habitat for SLC animals under the NC Act
- Protected plants survey trigger map
- Regulated vegetation under the VM Act
  - Category R regrowth vegetation within 50 m of a watercourse or drainage feature in the Great Barrier Reef catchment areas
  - Within a defined distance of a defined watercourse (in kilometres)
  - REs mapped as Category B vegetation (remnant) located within a defined distance of a VM Act watercourse
  - Essential habitat on the essential habitat map for wildlife prescribed as endangered or vulnerable under the NC Act

6.2.2 Potential Impacts

The Project has the potential to impact on terrestrial ecological values from the following activities:

- Vegetation clearing
- Bulk earthworks
- Movement of vehicles, equipment, machinery and personnel
- Storage of waste and hazardous materials
- Artificial lighting

The potential impacts associated with the abovementioned Project activities include:

- Loss of habitat, habitat fragmentation and loss of connectivity
- Fauna injury and mortality
- Introduction of invasive species
- Degradation of habitat (from noise, dust, light and water releases)
- Impact to breeding and migration cycles (from artificial lighting)

Loss of habitat (including fragmentation and loss of connectivity) from vegetation clearing is the most significant and direct impact to terrestrial ecological values. Key areas of the construction footprint that require vegetation clearing are associated with the left abutment and access roadway, the widening of the primary site access across Allen Creek, and areas to facilitate ancillary infrastructure including temporary laydowns. Importantly, the only planned permanent disturbance in native vegetated areas will be the replacement dam wall and the realignment of Kalliwa Road. Other permanent infrastructure, such as the Sunwater Site Operations Office, will be located in pre-disturbed areas. After construction is complete, the remaining areas will be revegetated.

Preliminary Project design and planning have indicated a construction footprint of 53.28 ha, of which 15.14 ha is remnant vegetation and 38.14 ha of non-remnant vegetation (see **Table 9**) (**Figure 7**). These Project disturbance areas are subject to detailed design and will be confirmed in the IAR.

Table 9. Potential impact to ground-truthed vegetation communities

Vegetation community type	RE	Status	Project area (ha)	Disturbance footprint (ha)	Impacted Subtropical floodplain forest TEC (ha)
Remnant Riparian Queensland Bluegum woodland	12.3.3	Remnant	6.12	0.95	0.948
	12.3.7	Remnant	25.25	1.18	0.404
Remnant/regrowth eucalypt woodland on metamorphic rock	12.11.6	Remnant	7.94	2.56	-
		Regrowth	21.1	1.15	-
	12.11.14	Remnant	0.09	-	-
		Regrowth	1.64	-	-
Remnant microphyll vine forest on metamorphic rock	12.11.12	Remnant	12.85	7.35	-
Gravel riverbed and pools	12.3.7b	Remnant	19.43	1.95	-
Non-remnant	-	-	112.75	38.14	-
		Total	207.1	53.28	1.35

6.2.2.1 Matters of National Environmental Significance

Land clearance is listed as a key threatening process under the EPBC Act as it reduces the size of local populations of flora and fauna dependent on the removed habitat. As indicated in **Table 9**, the Project construction footprint is estimated to result in impacts to native vegetation, including 1.35 ha of Subtropical floodplain forest TEC. The removal of habitat may reduce the size of local populations of flora and fauna dependent on that habitat. These impacts are immediate and may be significant in the short-term. Impacts may persist in the long-term if rehabilitated areas do not closely resemble pre-disturbance ecosystems.

Based on the preliminary design, there is potential for the Project to have significant impacts on potential habitat for MNES flora and fauna and a small portion of the Subtropical floodplain forest TEC that occurs along the fringes of Allen Creek within the Project area.

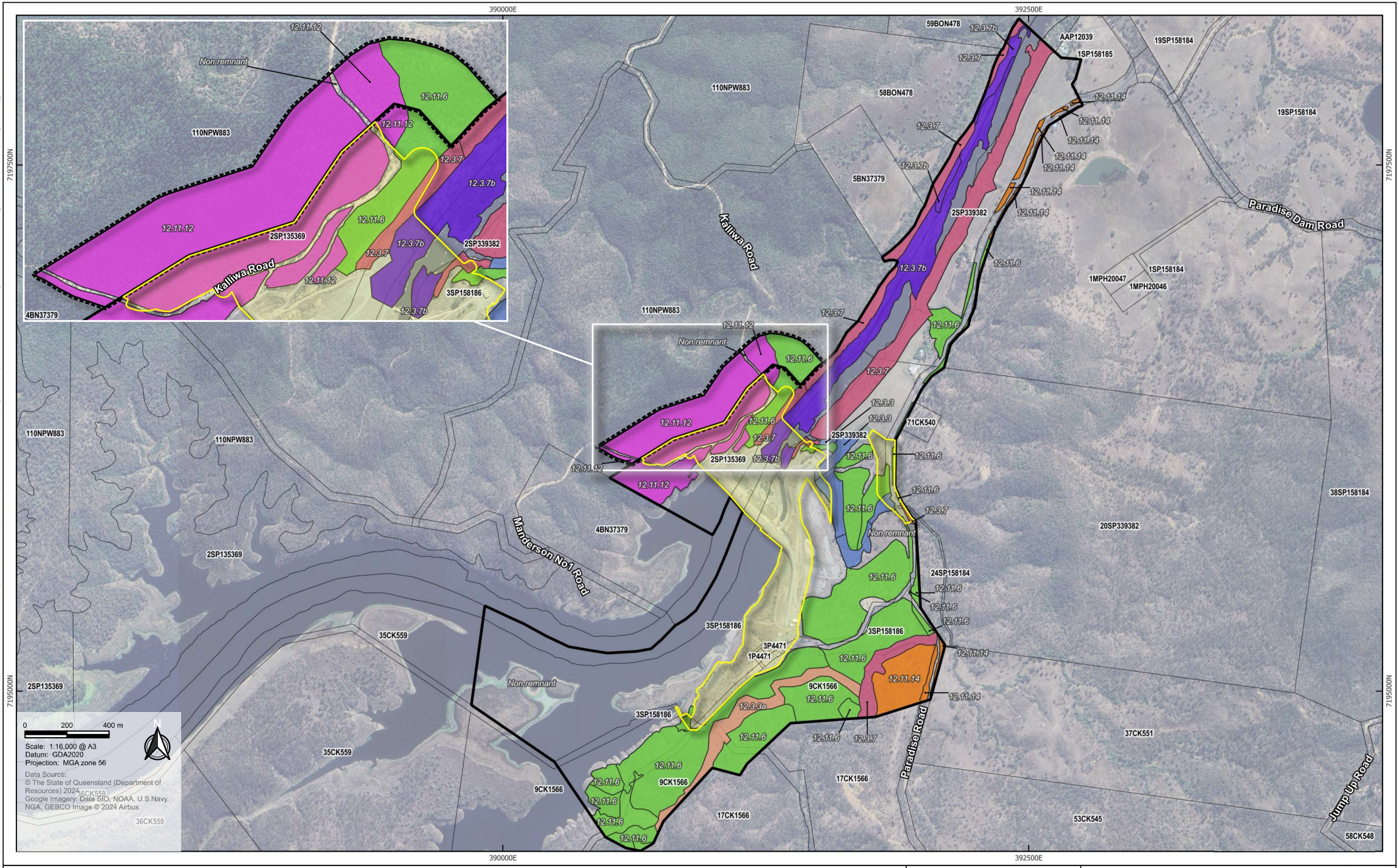
Potential habitat for terrestrial MNES species that may be impacted by the Project includes habitat for Koala, Greater Glider, Grey-headed Flying-fox and Black-breasted Button-quail (see **Table 10**). Direct impacts to these species are unlikely, acknowledging that these species were not recorded within the Project area during the 2024 survey, and with the exception of the Grey-headed Flying-Fox, have not been identified through the multiple surveys of the Project area completed during 2019/2020 – 2024.

Four migratory species listed under the EPBC Act are known to occur within the Project area, including the White-throated Needletail. It is considered unlikely that these species will be significantly impacted by the Project, acknowledging that these species include aerial and wetland species.

The detailed design process will aim to reduce the area of impact to MNES as much as practicable for construction. The potential for significant residual impacts to MNES will be assessed in accordance with the *MNES significant impact guidelines 1.1* (MNES Guideline) (DE 2013) and documented in the IAR.

Table 10. Potential impact to ground-truthed threatened fauna species habitat

Threatened species	Habitat Class	Project area (ha)	Disturbance footprint (ha)
Koala	Preferred	3.41	2.56
	Potential / Dispersal	72.26	3.28
Greater Glider	Breeding	3.43	2.46
	Foraging / Dispersal	27.95	3.38
Grey-headed Flying-fox	Breeding	-	-
	Foraging / Dispersal	89.36	13.19
Black-breasted Button-quail	Preferred	-	-
	Potential / Dispersal	12.85	7.35



Legend

- Terrestrial study area
- Terrestrial study area - 150m buffer area
- PDIP footprint
- Cadastre (DCDB)

Ground-truthed Regional Ecosystems

- 12.11.12
- 12.11.14
- 12.11.6
- 12.3.3
- 12.3.3a
- 12.3.7
- 12.3.7b
- Non remnant

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Figure 7
Ground-truthed Vegetation within Terrestrial Study area

6.2.2.2 Matters of State Environmental Significance

Under the EO Act, where significant residual impacts to prescribed environmental matters cannot be mitigated or avoided, environmental offsets are required.

Preliminary assessments have not indicated impacts to endangered, vulnerable or near threatened species listed under the NC Act are likely to occur within the Project area. The White-throated Needletail, while recorded within the Project area (and also MNES) is predominantly aerial and therefore considered unlikely to be impacted by the Project. There is potential for vegetation clearing to impact some SLC species (see **Table 7**), particularly in areas where clearing of RE 12.11.12 (microphyll vine forest) is proposed.

Protected wildlife habitat and essential habitat is also mapped within the construction footprint. These areas are associated with species listed as endangered and vulnerable under the NC Act (Koala and *Cycas megacarpa*) and SLC species (Short-beaked Echidna). Only the Short-beaked Echidna has been recorded within the Project area.

Other potential MSES values that may be impacted by the Project are associated with Regulated Vegetation under the VM Act. These include areas along the Burnett River and Allen Creek that are:

- Category R regrowth vegetation within 50 m of a watercourse or drainage feature in the Great Barrier Reef catchment areas
- Within a defined distance of defined watercourse (in kilometres)
- REs mapped as Category B vegetation (remnant) located within a defined distance of a VM Act watercourse

The detailed design process will aim to reduce the area of impact to MSES as much as practicable for construction. The Terrestrial Ecology Assessments will consider the requirements outlined in the DETSI *Guideline Application Requirements for Activities with Impacts to Land* (DESI 2024d) and include an impact assessment for MSES in accordance with the *Significant Residual Impact Guideline* (DEHP 2014) and will be summarised in the IAR.

6.2.3 Management Measures

In the first instance, the detailed design process will aim to reduce the Project's potential impacts to terrestrial ecological values as much as practicable.

A range of management and mitigation measures will be determined during the IAR to further mitigate, reduce and as necessary, offset Project impacts. The following documents will be prepared prior to construction commencement to document the management and mitigation measures:

- Procedures for surface disturbance and vegetation clearing
- CEMP - including ESCP and waste management
- Revegetation Management Plan
- Threatened Species Management Plan
- Flora and Fauna Management Plan
- Weed and Pest Management Plan
- Biodiversity offsets for MNES and MSES in consideration of the EO Act, EPBC Act Environmental Offsets Policy 2012 and Queensland Environmental Offsets Policy, including preparation of an Offset Management Plan

6.3 Aquatic Ecology

Sunwater commissioned Epic and Hydrobiology to undertake aquatic ecology surveys based on existing information to document the baseline ecological values of the Aquatic Study area (see **Figure 8**) and provide a preliminary impact assessment. The study area relevant to the aquatic ecology assessment encompasses the Burnett River and major tributary streams from approximately 10 km downstream of Gayndah to a point 40 km downstream of the Paradise Dam wall near Wallaville, including the Paradise Dam reservoir. Hydrobiology

completed detailed desktop assessments and field surveys between November and December 2024 (Hydrobiology 2025).

6.3.1 Existing Environment

The Burnett River and its tributaries provide important aquatic habitat for flora and fauna. Within the Aquatic Study area, there are ten watercourses (as defined by the Water Act) that flow into the Burnett River (as identified in **Figure 8**). The Dam impoundment also provides habitat for local flora and fauna.

Aquatic habitat within the Dam impoundment is relatively homogenous, characterised by a large deep pool with a predominantly silty or silty/sandy substrate. Instream habitat is dominated by inundated trees which provide underwater habitat complexity. Riparian habitat surrounding the Dam is generally disturbed and discontinuous due to surrounding land uses and historic clearing. In general, the aquatic habitat associated with the Dam (including immediately downstream of the dam wall and within the impoundment area) is unfavourable for threatened species likely to be present, including Australian lungfish (*Neoceratodus forsteri*) (ALF), white-throated snapping turtle (*Elseya albagula*) (WTST) and platypus (*Ornithorhynchus anatinus*) (ESP 2019). However, areas regarded as representing habitat critical to the survival of ALF and WTST are present within the broader region, as per the respective National Recovery Plans for these species (DCCEEW 2017, Commonwealth of Australia 2020).

Downstream of the impoundment (up to 10 km downstream of the dam wall) is generally considered as potentially suitable for ALF, WTST and platypus. However, the existing disturbed area immediately (approximately 300 m) downstream from the original dam wall is considered unsuitable for these species (Hydrobiology 2025).

The surveyed reach upstream (approximately 3 km from the dam wall) and downstream (up to 10 km from the dam wall) of the impoundment provides improved habitat condition and habitat diversity. In-stream habitat provides diversity in substrate types (silt, sand, boulders and bedrock), flow regimes, pool types, in-stream structures and habitat for refuge and foraging for a variety of aquatic fauna. Riparian vegetation is generally continuous and in good condition, comprised mainly of gums (*Eucalyptus* spp.), tea tree (*Melaleuca* spp.*)* and bottlebrushes (*Callistemon* spp.). The understorey of the upper banks is generally dominated by grasses, and a variety of macrophyte species of herbs, rushes and sedges, providing vegetated banks and in-stream habitat around the edges of the waterways.

Macrophytes (aquatic plants) within the Aquatic Study area are dominated by eelgrass (*Vallisneria* sp.), water milfoils (Myriophyllum sp.), water primrose (*Ludwigia* sp.), waterthymes (*Hydrilla* sp.), and salvinia (*Salvinia* sp.). No threatened aquatic flora listed under the EPBC Act are likely to occur. One species of aquatic plant, *Vallisneria annua,* has a record relevant to the Aquatic Study area. This species is listed as SLC under the NC Act.

Aquatic fauna of conservation significance under Commonwealth legislation (MNES) that are known to occur within the Aquatic Study area are:

- ALF (Vulnerable)
- WTST (Critically endangered)

The desktop assessment indicates that other aquatic fauna MNES are highly unlikely.

Aquatic MSES (including matters that are also MNES) values listed under the NC Act that are known or likely to occur within the Aquatic Study area include:

- WTST (Critically endangered)
- ALF (Vulnerable)
- Platypus (SLC)
- Macrophyte *Vallisneria annua* (SLC)

The saltwater crocodile (*Crocodylus porosus*) (vulnerable) is known to inhabit the wider Mary-Burnett Basin, although no records of its presence within the Aquatic Study area were found and it considered unlikely to occur. Similarly, several threatened macrocrustaceans listed under the NC Act are known to occur outside of the Aquatic Study area, but have habitat requirements that are not provided for within the Aquatic Study area

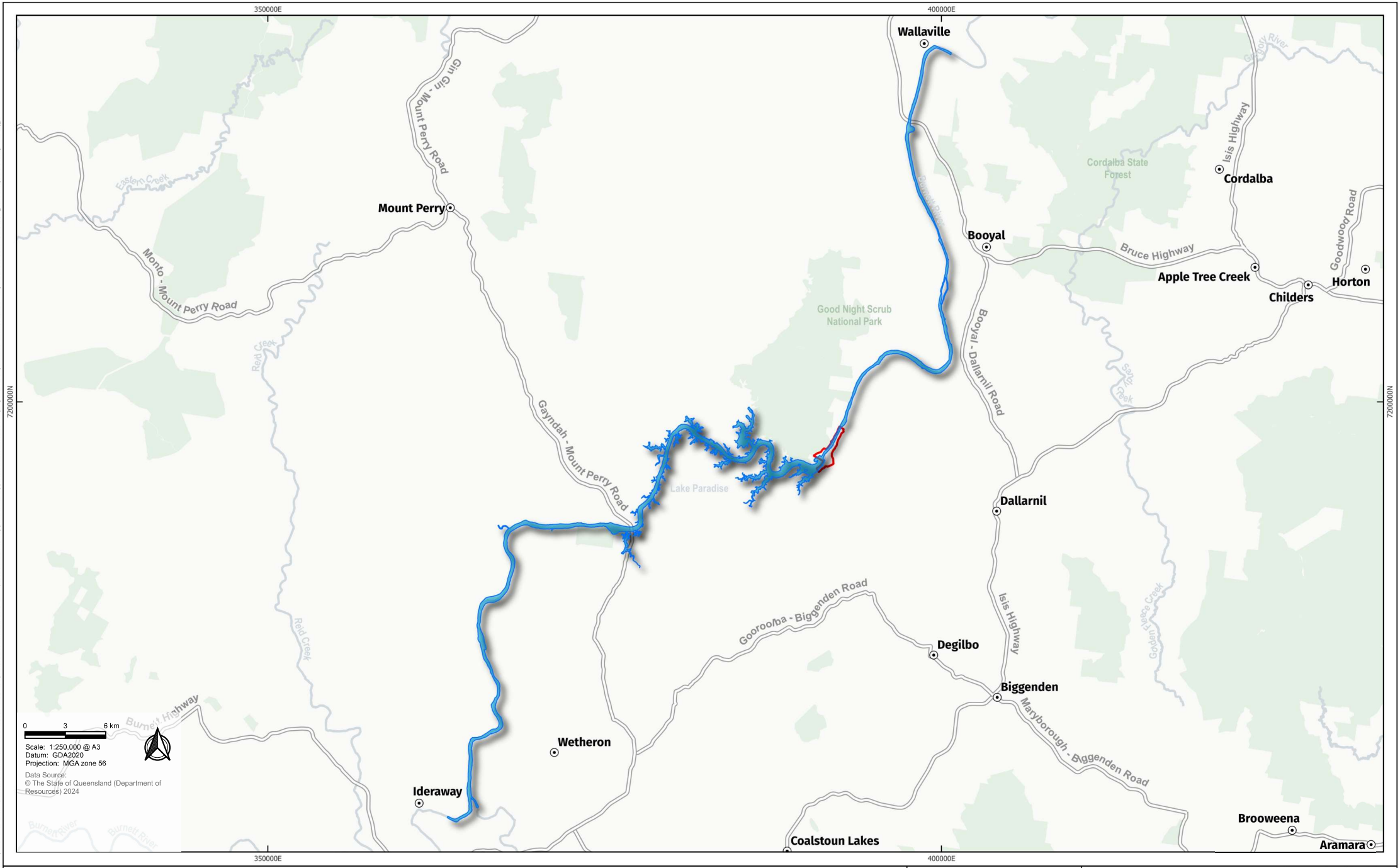
(Hydrobiology 2025). These species therefore are considered unlikely to occur within the Aquatic Study area, acknowledging that this includes a broad area surrounding the Project area.

Watercourses within the Project area and surrounds which are also waterways for waterway barrier works (WWBW) are shown in **Figure 9** and summarised below:

- Burnett River
  - Major risk (purple) waterway
- Allen Creek
  - Several tributaries mapped as low risk (green) or no rating
  - Major risk (purple) waterway
- Bowden Creek
  - Several tributaries mapped as no rating
  - Intersects a small proportion of the Project area as a high risk (red) waterway
- Un-named waterways
  - Three low risk (green) waterway and one un-named waterway of medium risk (orange) waterway, which intersect the northern and western extent of the Project area
- Finney Creek
  - Associated with medium, low or no risk rating tributaries
  - High risk (red) waterway

No wetlands are mapped within the Project area, however, they are known to occur within the surrounding region of the Dam. The closest wetland protection area is located approximately 16 km downstream of the dam wall, adjacent to the Burnett River.

No wetlands of High Ecological Value (HEV) are shown on the map of Queensland Wetland Environmental Values within the Aquatic Study area (Queensland Government 2024). Furthermore, no Nationally Important Wetlands registered under the Directory of Important Wetlands in Australia, or wetlands of international significance, occur within the Aquatic Study area (Hydrobiology 2025).



Legend

- Project area
- Aquatic ecology study area
- Protected area
- Reservoirs
- State controlled roads
- City/Town
- Watercourse
  - Major

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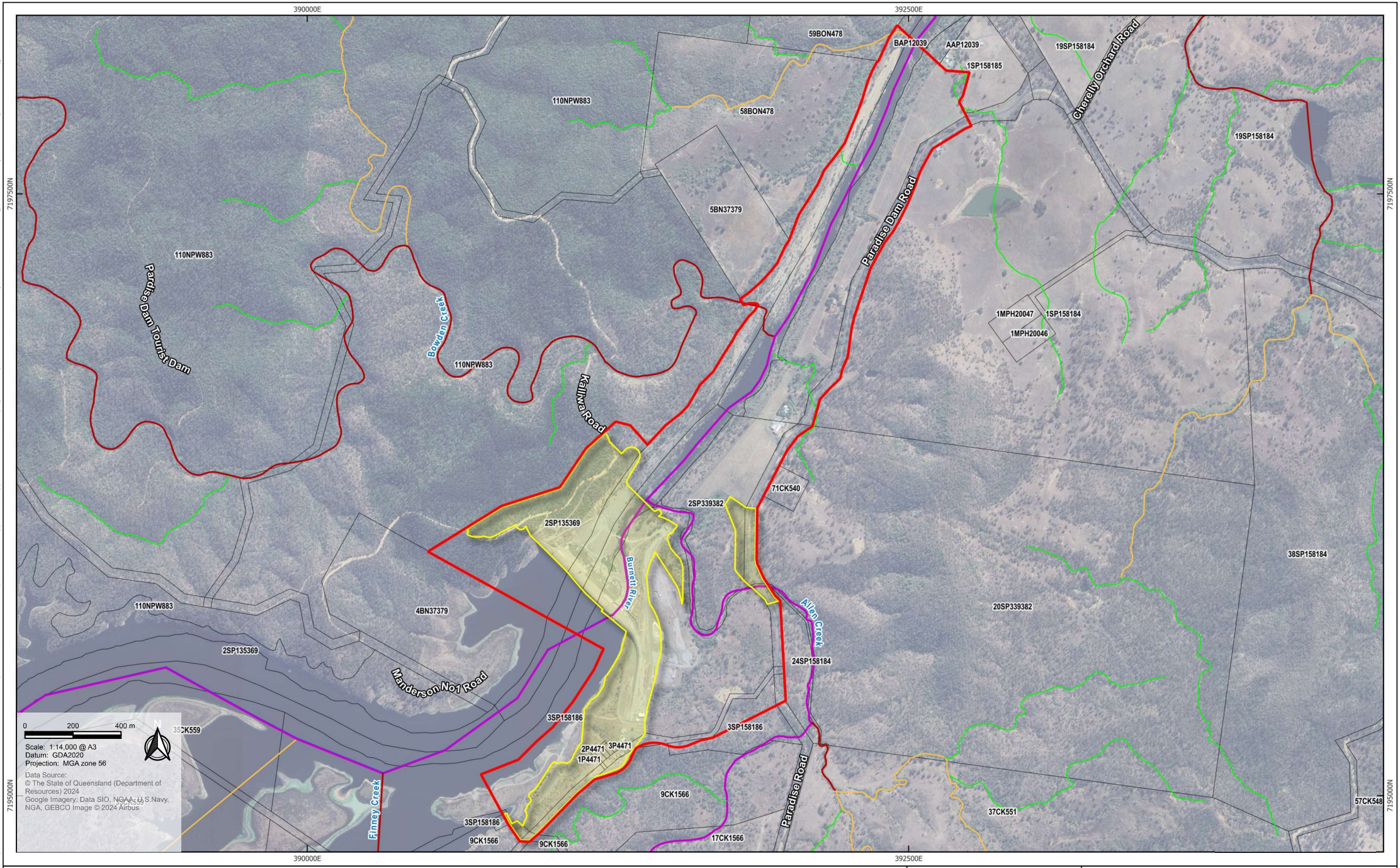
Figure 8
Aquatic study area



Legend

- Project area
- PDIP footprint
- Cadastre (DCDB)

QLD waterways for waterway barrier works

- Low
- Moderate
- High
- Major

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Figure 9
Waterways for waterway barrier works

6.3.2 Potential Impacts

The Project has the potential to impact on aquatic ecological values during construction from the following activities:

- Physical disturbance of the watercourse bed and banks by instream and bank works
- Stormwater run-off from work areas
- Physical barriers during construction
- Dewatering works and infrastructure development
- Flow and water level management
- Noise and vibration from construction and decommissioning activities
- Artificial lighting from the construction work areas
- Management of waste during construction and decommissioning activities
- Storage and handling of fuels, hazardous chemicals and hazardous materials

It is anticipated that impacts to aquatic flora and fauna are primarily during the construction and decommissioning phase of the Project and may include:

- Loss of habitat
- Loss of ability for fauna movement
- Impact to breeding cycles
- Loss of downstream water quality
- Fauna injury and mortality

The Dam currently has an upstream fishway and downstream fishway to provide for the upstream and downstream movement of fish. The new structure will similarly provide for upstream and downstream fish passage, though with improved functionality.

6.3.2.1 Matters of National Environmental Significance

Preliminary assessment indicates that the Project will not result in significant impacts to the ALF or WTST for the following reasons (Hydrobiology 2025):

- Low flow and hydraulic habitat requirements for the ALF and WTST are to be maintained as flow is to be managed in accordance with the Burnett Basin Water Plan
- Impacts on ALF spawning and foraging habitat upstream of the dam wall are expected to be temporary
- Impacts to WTST habitat are not expected to adversely affect habitat that has been identified as critical to the survival of the species (as per the National Recovery Plan), as the permanent loss represents a very small proportion of the overall habitat critical to the survival of the species within the Aquatic Study area. Permanent impacts to this habitat would be limited to a small area immediately downstream of the Dam wall. All other impacts to habitat critical to the survival of the WTST are temporary
- The replacement dam wall is not expected to increase the impact of invasive species and disease within the Aquatic Study area
- Water quality management and management of low flow and hydraulic habitat requirements downstream of the wall will maintain downstream habitat

6.3.2.2 Matters of State Environmental Significance

Preliminary assessment indicates that the Project will not result in significant impacts to aquatic MSES (Hydrobiology 2025).

Platypus are known to occur upstream and downstream of the Dam, with only one record within the impoundment area within the upper extent of the Dam. Significant impacts to the platypus are considered unlikely, as habitat requirements for the species are to be maintained with flow management in accordance with the Burnett Basin Water Plan. Water quality, low flow and hydraulic habitat requirements for the species are expected to be maintained in downstream habitat.

While several threatened macrocrustaceans have the potential to occur in the Aquatic Study area, all of these species have restricted ranges that occur outside of the Aquatic Study area and require habitat that are not present in the Aquatic Study area. Therefore, the Project is considered unlikely to have a significant residual impact on these species and no further assessment is planned.

6.3.3 Management Measures

A range of management and mitigation measures are proposed to minimise and manage potential impacts to aquatic ecology values and include (but not limited to):

- Fish Movement Strategy for Construction and Commissioning phases – to address the replacement dam wall, downstream culverts and Allen Creek road crossing
- Installation of a temporary bypass for aquatic fauna to travel upstream during construction
- Inspection and Monitoring Program for confirmation of the performance of the temporary fish passage
- Installation of permanent upstream and downstream fish passage for operations
- Include fish salvage as per the Fish Salvage Guidelines described for least concern (DPI 2022) and threatened species (DSEWPaC 2022) and developed species management plans.
- Implementation of best practice erosion and sediment control plans, including specific plans for works within the river
- Develop and implement site-specific water quality guideline values from baseline data to meet the Australian and New Zealand Guidelines for Fresh and Marine Water Quality (ANZG) 2018. Currently, there are no Water Quality Objectives (WQOs) defined for the Burnett River to compare changes in water quality against. Derivation of site-specific guideline values will allow monitoring of water quality to limit negative impact on aquatic ecosystems
- Water flow management in accordance with the Burnett Basin Water Plan
- Monitoring Program for confirming the performance of the permanent upstream and downstream fishways

6.4 Biosecurity

6.4.1 Existing Environment

A total of 31 non-native flora species and 6 non-native fauna species were identified during the 2024 terrestrial ecology survey of the Terrestrial Study area (Epic 2025).

Non-native flora included eight Category 3 restricted matter species listed under the Queensland *Biosecurity Act 2014*. This included five species that are Weeds of National Significance (WoNS):

- Lantana (*Lantana camara*),
- Creeping Lantana (*Lantana montevidensis*),
- Rubber Vine (*Cryptostegia grandiflora*),
- Cat's Claw Creeper (*Dolichandra unguis-cati*)
- Common Prickly Pear (*Opuntia stricta*)

Introduced fauna recorded in the Terrestrial Study area included two pest species listed under Schedule 2 of the *Biosecurity Act 2014* as restricted matters, being the European Rabbit (*Oryctolagus cuniculus*) and feral pig (*Sus scrofa*). Other introduced fauna common to the area and recorded in the 2024 survey were:

- Cane Toad (*Rhinella marina*)
- Common Myna (*Acridotheres tristis*)
- European Brown Hare (*Lepus europaeus*)
- House Mouse (*Mus musculus*)

In terms of the aquatic environment, three aquatic species classified as restricted biosecurity matters under the *Biosecurity Act 2014* are known to occur within the Aquatic Study area and are listed as WoNS, being hymenachne (*Hymenachne amplexicaulis*), water hyacinth (*Eichhornia crassipes*) and salvinia (*Salvinia molesta*).

6.4.2 Potential Impacts

The following Project activities have the potential to promote the proliferation of existing weeds and pests within the Project area, or introduce new weeds and pests from surrounding areas:

- Use of construction machinery and plant sourced from outside of the region may introduce new non-native species and spread existing non-native species
- Vegetation clearing as cleared areas favour the re-establishment of weeds
- Storage and disposal of waste may attract feral animals

Introduced species have the potential to impact on terrestrial and aquatic ecological values as they may displace native species through competition with non-native species and adversely affected by browsing and soil trampling caused by feral animals such as pigs. Native fauna populations, particularly small to medium sized species, may also be impacted by predation from introduced carnivores such as feral cats.

6.4.3 Management Measures

Weed and pest management measures will be documented within a Project CEMP. It is considered unlikely the proposed works will cause the introduction of any novel weed/pest species to the Project area or cause the proliferation of existing species.

6.5 Surface Water

6.5.1 Existing Environment

The Dam is located within the Burnett Basin and specifically the Lower Burnett River sub-basin. The broader Burnett Basin has a catchment area of approximately 3,320,998 ha. The Burnett Basin lies within the Wide Bay and Burnett Region, inland from the Burrum and Mary River Basins. The Burnett River originates at Mount Gaeta in the Great Dividing Range near Monto. It flows south to southwest for approximately 100 km, then east near Riverleigh, and northeast at Gayndah until it discharges into the Coral Sea near Bundaberg (45 km south of the Great Barrier Reef Marine Park).

The Environmental Protection (Water and Wetland Biodiversity) Policy 2019 (EPP WWB) provides for the achievement of the objectives of the EP Act in relation to Queensland waters. The Burnett, Mary and Great Sandy Basins are scheduled under the EPP WWB, however Environmental Values (EVs) and WQOs are not established for the Burnett River Basin.

Relevant WQOs for the Project area are defined under the water quality improvement plan prepared for the Burnett Mary Region. In addition, water quality targets for the Burnett catchment have been set under the Reef 2050 WQIP.

6.5.2 Potential Impacts

Surface water impacts following the construction period, are expected to be comparable to the operation of the original dam wall, with limited impacts during the construction phase. The primary direct impacts of the replacement dam wall will be associated with temporary water quality changes during construction activities.

Potential water quality impacts from the Project are associated with the following (Hydrobiology 2025):

- Sediment run-off from earthwork activities
- Re-inundation of historically submerged areas to the FSL, with the potential for reduced oxygen levels as vegetation is submerged and decays
- Potential releases of wastewaters, spills and leaks from construction areas and dewatering activities
- Releases of water to the downstream reaches of the Burnett River and associated creeks, potentially with elevated suspended solids and/or lower dissolved oxygen concentrations

Water quality and downstream flows are expected to be maintained or improved on commissioning of the replacement dam wall. Water flow will continue to be managed in accordance with the Water Plan. The replacement dam wall will include multi-level intakes to manage water quality during releases, facilitating the

mixing of waters and dissolved oxygen concentrations. There is potential for ongoing changes in water quality as the dam returns to its original FSL.

The Dam currently has an upstream fishway and downstream fishway to meet existing waterway barrier works approval requirements (and as noted in the BWSS ROL). The new structure will have similar, though improved, functionality.

Significant impacts to wetlands within the surrounding area are not expected, noting the Project's disturbance footprint does not intersect any mapped HES wetlands or wetlands in a wetland protection area.

6.5.3 Management Measures

The detailed design process will aim to reduce the Project's potential impacts to surface water values as much as practicable by minimising the Project's construction footprint.

A range of management and mitigation measures will be implemented to minimise potential impacts to surface water from construction and commissioning of the replacement dam wall. These will include:

- Development of site-specific water quality guideline values from baseline data to meet the ANZG 2018 guidelines
- Development and implementation of a dam water release strategy related to water quality
- Timing of major earth works to coincide with low rainfall and low flow periods (i.e. dry season) as far as practicable
- Appropriate use and storage of hazardous substances and wastes in accordance with relevant legislation, guidelines and standards

The following documents will be prepared prior to construction commencement to document the range of management and mitigation measures:

- CEMP
- Water quality monitoring program
- Stormwater Management Plan (including erosion and sediment control plans)
- Spill Management Plan

6.6 Groundwater

6.6.1 Existing Environment

The Dam is located within the Burnett Basin and falls outside of a groundwater management area under the Burnett Basin Water Plan area. Groundwater flow in the area is through Palazeoic rocks or Mesozoic intrusive.

There is limited groundwater use in the surrounds to the Dam. The nearest registered groundwater bore is located over 4 km to the east of the original dam wall. There are no registered groundwater bores within the Project area.

The Bureau of Meteorology (Bureau) Groundwater Dependent Ecosystem Atlas indicates there is high potential terrestrial groundwater dependent ecosystems (GDE) in association with the Burnett River downstream from the original dam wall (Bureau 2025a). Terrestrial GDEs indicate terrestrial ecosystems that rely on the subsurface presence of groundwater and are wide-spread within the surrounding region. The Bureau GDE Atlas also indicates limited areas of low potential and moderate potential aquatic GDEs mapped along the Burnett River streambed both upstream and downstream of the dam wall.

6.6.2 Potential Impacts

Groundwater impacts are expected to be negligible for the Project, acknowledging that the inundation area will be comparable to the approved dam and that there are no groundwater users within the surrounding area.

Water supply for the Project will be from the existing Dam using Sunwater's allocation. Groundwater extraction for construction purposes is not proposed.

6.6.3 Management Measures

The Project is not expected to result in impacts to groundwater. As required, management and mitigation measures relevant to groundwater will be determined during the approval process.

6.7 Noise, Vibration and Air Quality

A preliminary Construction Noise and Vibration Impact Assessment (CNVIA) was prepared by Renzo Tonin & Associates (2025) which provided an assessment of key Project noise and vibration impacts against relevant criteria, legislation and guidelines. Ambient (background) noise monitoring of the Project area was conducted by Matrix Consulting in 2020.

6.7.1 Existing Environment

Air quality within the Project area and surrounds is considered to be consistent with a rural landscape and of high quality. Existing air quality is influenced by dust generated from stock movements, dust of natural origin, bushfires and controlled burns, and vehicular movements on unsealed roads.

Existing background noise levels for the Project area are consistent with nearby rural areas. Representative background noise levels vary from 38 – 47 A-weighted decibels (db(A)L_{90}) during the daytime to 30 – 38 db(A)L_{90} in the night-time.

There is a single dwelling that is a sensitive receptor within the Project area, being the rural residential homestead located approximately 2 km north-east of the Dam on Lot 1 on SP158185 (as shown in **Figure 10**).

Goodnight Scrub National Park is also a sensitive receptor, being a protected area recognised under the Environmental Protection (Noise) Policy 2019 (EPP Noise). Acoustic environmental values relate to the health and biodiversity of ecosystems, with the prescribed acoustic quality objective being 'the level of noise that preserves the amenity of the existing area or place'.

6.7.2 Potential Impacts

Noise, vibration and air quality impacts associated with the replacement dam wall, once constructed, are expected to be comparable to the operation of the original dam wall. There is the potential for minor air quality and noise impacts during the construction phase of the replacement dam wall.

Potential impacts from the Project activities relevant to air quality, noise and vibration include:

- Air quality impacts:
  - Dust generation from construction areas, vehicle movements on unsealed tracks and spoil and material stockpiles
  - Emissions from mobile equipment, light vehicles, and generators
- Noise impacts:
  - Noise from construction activities including the excavation and installation of the replacement dam wall abutments and foundation works, RCC facing works
  - Demolition of Dam wall
  - Construction traffic noise, including light vehicles, buses and delivery trucks
- Vibration impacts from any blasting activities (not anticipated but if required) for decommissioning of the Dam wall

Further studies and assessments of potential noise, vibration and air quality impacts from the Project will be undertaken through the approval process.

6.7.3 Management Measures

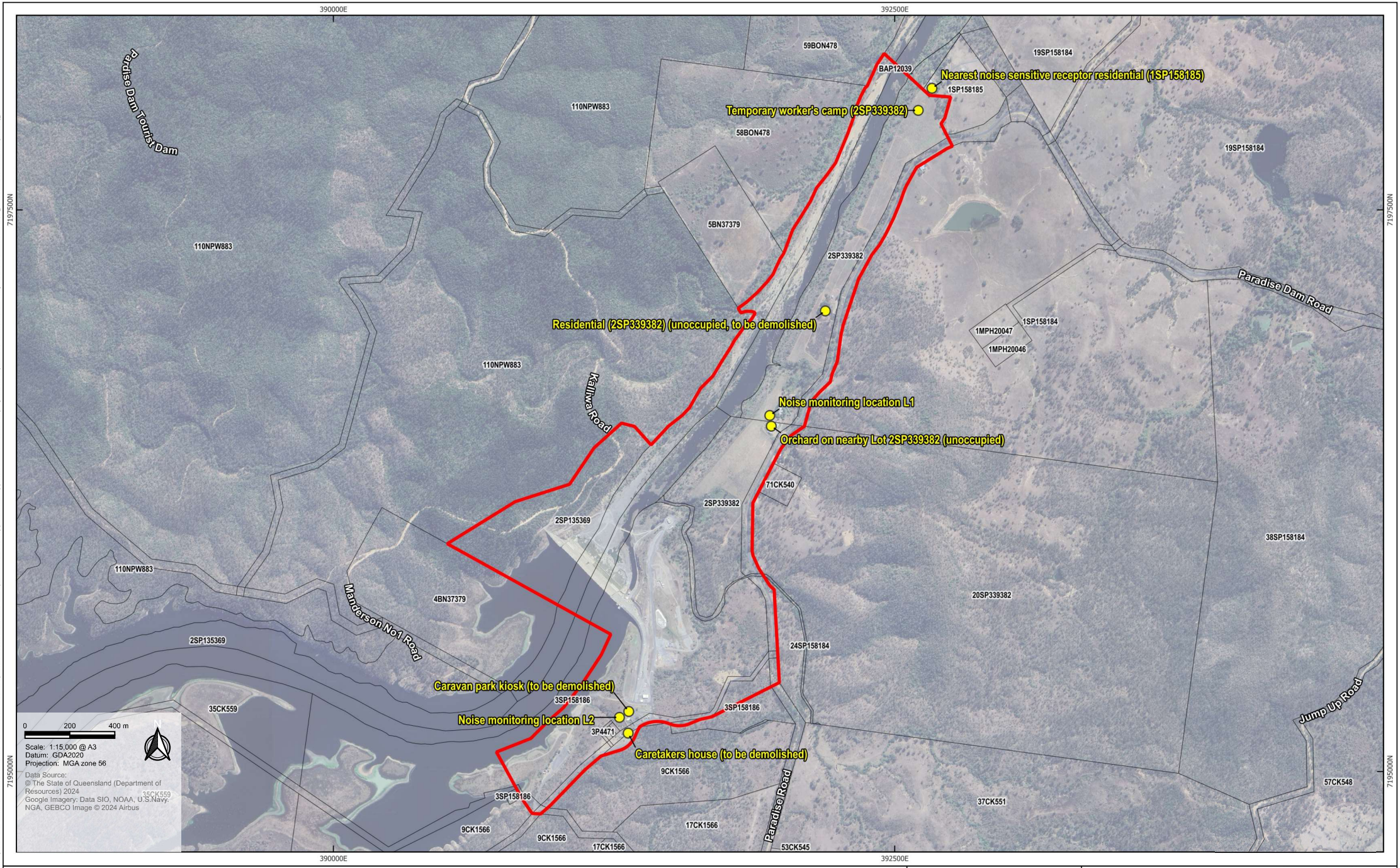
A range of management and mitigation measures would be determined during the IAR to minimise potential impacts to noise, vibration and air quality during the construction phase and will include:

- Construction hours – where feasible and reasonable, construction should be carried out during standard daytime working hours.

- Non-tonal reversing alarms should be fitted and used on all construction vehicles regularly used on site
- Use and siting of plant – including maximising the offset distance between noisy plant and sensitive receptors, and limiting/avoiding the simultaneous operation of noisy plant within range of sensitive receptors
- Minimise disturbance arising from delivery of goods by ensuring all deliveries arrive during standard construction hours
- Shield sensitive receptors from noisy activities using structures where reasonable and feasible

The following documents will be prepared prior to construction commencement to document the range of management and mitigation measures:

- Community Liaison Plan, outlining measures to inform the community of construction activities and potential impacts
- Construction Noise Management Plan
- Inclusion of dust management measures within the CEMP



Legend

- Project area
- Cadastre (DCDB)
- Sensitive receptor

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Figure 10
Sensitive receptors

6.8 Traffic and Transport

A preliminary Traffic Impact Assessment (TIA) has been completed by Harrison Infrastructure Group for State controlled roads and council owned roads (HIG 2025). The TIA included a Pavement Impact Assessment (PIA) to estimate the level of impact construction could have on the operation and safety of the surrounding road network and to confirm that the Project appropriately protects the surrounding movement network and will not adversely impact upon State transport infrastructure. An updated TIA will be undertaken for the IAR and as the preliminary Project design progresses.

Sunwater is investigating options for sourcing aggregate material from a local quarry. The transport of aggregate material from the quarry to be used for the Project's construction will be considered through a separate approval process specific to the quarry.

6.8.1 Existing Environment

The Dam is connected to an existing road network that is shown on **Figure 11**.

Key roads likely to be used by the Project include:

- Paradise Dam Road (inclusive of Grills Road, River Road and Campbells Road) (NBRC road)
- Coringa Road (NBRC road)
- Booyal-Dallarnil Road (State-controlled road)
- Isis Highway (State-controlled highway)
- Bruce Highway (National highway)
- Goodwood Road (State-controlled road)
- Maryborough Biggenden Road (State-controlled road)

Sunwater is progressing the following road and safety upgrades within the local network and are anticipated to be in place for the Project:

- Road upgrades at Paradise Dam Road including the widening of the road to an 8 m sealed formation with two 3.5 m traffic lanes
- Safety upgrades such as guardrails, signage and delineation at Booyal-Dallarnil Road

The Project's use of road infrastructure will be assessed and confirmed within the IAR.

6.8.2 Potential Impacts

The main transport-related activities from the Project that will impact on the local transport network include:

- Heavy vehicle haulage of approximately 3.2 to 3.6 million tonnes (initial estimate subject to final design) of aggregate material to site
- Haulage of other material and equipment including steel, anchors and machinery and plant equipment
- Regular deliveries of fuel and other consumable
- Workforce commuting, including buses to and from the TPAV
- Light vehicles for Project staff and contractors

Transport-related impacts including haulage and deliveries are expected over a two-to-three-year construction period, with some ongoing activities continuing beyond this period.

Potential impacts from the heavy vehicle haulage of aggregate material will be confirmed during the detailed design stage. It is anticipated that impacts may include:

- Additional loaded truck trips over a 28 month period (up to 150 daily trips)
- Increased Standard Axle Repetitions (SARs) on roads in close proximity to the quarry and haulage routes, requiring pavement upgrades or financial contributions
- Potential reduction in road safety on haulage routes due to the increase of heavy vehicle presence, requiring intersection upgrades, signage and turn treatments

- Concentrated impacts on section of local areas, including Grills Road, River Road and Campbells Road

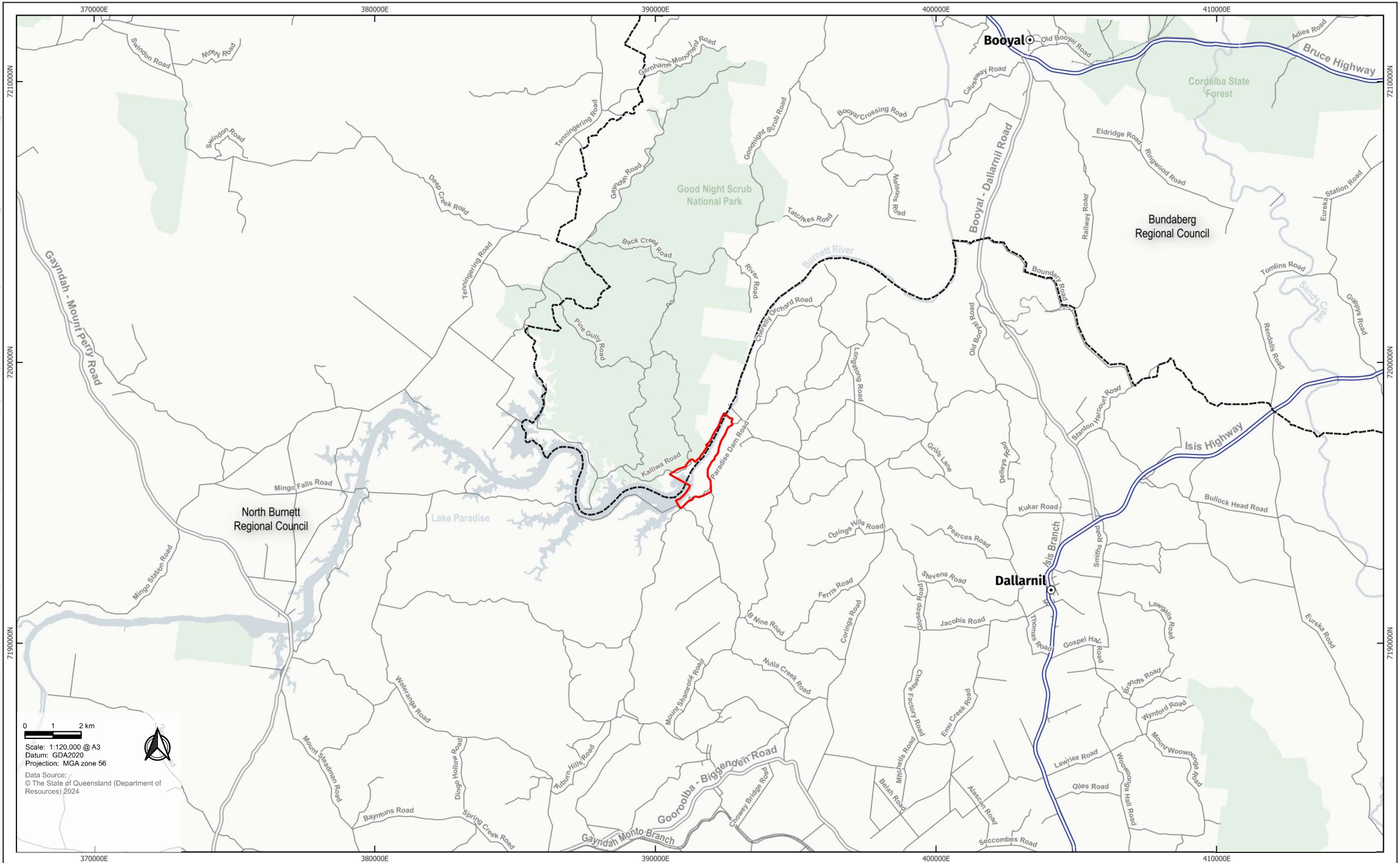
An increase in light vehicles is also expected during the construction period, which includes workers commuting (including buses and cars), visitor trips and site logistics which has the potential to increase pressure on the road network.

Potential transport impacts will be confirmed in a revised TIA, which will be provided in the IAR documentation. The TIA will be based on the final location of the source of the aggregate material and final material estimates.

6.8.3 Management Measures

A range of management and mitigation measures would be determined during the IAR to minimise potential impacts to the road network from the Project and may include:

- Various intersection improvements
- Further safety enhancements such as improved signage and line marking on high-traffic routes and adequate lighting and visibility at intersections



Legend

- Project area
- Local Government Area
- Protected area
- Reservoirs
- State controlled roads
- Highway
- Roads and tracks
- Railways
- City/Town
- **Watercourse**
- Major

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Figure 11
Local road network

6.9 Social

6.9.1 Existing Environment

The Dam is located within the NBRC and BRC LGAs. Key Local communities within the surrounding region of the Dam are located in Bundaberg, Childers, Biggenden and Gin Gin. Community engagement and stakeholder consultation undertaken by Sunwater for the Project is outlined in **Section 7**.

6.9.2 Potential Impacts

The Project will offer social and economic benefits for local communities during construction and operational phases.

The Project's capital works will create additional local jobs, stimulating the local economy, including local construction and supply companies which will be engaged to undertake the works.

A construction workforce of 600 persons (with a peak of 750 persons) is estimated for the Project. Wherever possible, the Project's construction workforce will be sourced locally from within the Wide Bay Burnett, Bundaberg and Gladstone regions and more broadly from the Brisbane and Sunshine Coast regions. Specialist workforce skills may be required to be sourced nationally and/or internationally. It is expected that the construction workforce will be accommodated on-site within the TPAV, with the exception of staff who live locally in the Burnett region.

Limited negative social issues are expected, and typical of project construction phases (e.g. increased traffic from the construction workforce and increased potential for traffic incidents, workers being separated from family). Temporary negative impacts for the region may include reduced tourism to the Dam during construction due to the closure of the dam's recreational facilities.

On commissioning, the Project will provide enhanced dam safety and improved water security to support economic development and employment growth in the region. Providing water security for the region through the Project aligns with the region's corporate plans and objectives, providing community benefits such as:

- Economic growth and prosperity – development and investment into regional business and industry, and support for new business and industry to emerge
- Sustainable communities – retain population, contribute to liveability and attract investment
- Community and industry resilience – increased resilience to natural disaster events
- Natural areas – well managed natural areas and facilities for the community and environment.

6.9.3 Management Measures

A range of management and mitigation measures would be determined during the IAR to minimise potential social impacts from the Project. A Community and Stakeholder Engagement Plan will be prepared and implemented.

Sunwater will also continue community and stakeholder engagement (refer **Section 7**).

6.10 Cultural Heritage

6.10.1 Existing Environment

The Dam is located on the traditional lands of the First Nations Bailai, Gurang, Gooreng Gooreng, Taribelang Bunda People (Burnett River (in-river) and left bank of the Project Area) and Wakka Wakka People (right bank of the Project Area).

The ACHA sets out provisions that provide for the effective recognition, protection and conservation of Aboriginal cultural heritage (**Section 4.1.2**). Under the ACHA, a person must take all reasonable and practicable measures to ensure an activity does not harm Aboriginal cultural heritage (the cultural heritage duty of care).

Comprehensive cultural heritage surveys were undertaken in circa 2002 (2002 Survey) (prior to the commencement of the ACHA) in relation to the original Dam footprint, which included mitigation measures such as relocation and registration of cultural heritage finds. The results of the 2002 Survey informed subsequent Cultural Heritage Management Plans, which were developed with the relevant Traditional Owners at the time the Dam was constructed.

A contemporary Cultural Heritage Management Agreement was entered into with the BGGGTB RNTBC in December 2024 (2024 CHMA). The 2024 CHMA Area includes the Burnett River (in-river works) and the left bank and governs future PDIP project activities. The 2024 CHMA applies to existing surveyed and mitigated cultural heritage areas undertaken at the time of original construction and includes procedures to identify, record and protect Aboriginal Cultural heritage within an extended 2024 CHMA area for the in-river investigation and early works for the replacement dam wall.

Sunwater is continuing to ensure its cultural heritage duty of care obligations are met in the Project Area south of the Burnett River (including enabling road works and quarry investigations) through ongoing engagement with the Wakka Wakka people. A draft contemporary Cultural Heritage Management Agreement for the dam site works area to the south of the Burnett River has been prepared and is currently being negotiated by the parties.

In regards non-Indigenous cultural heritage, review of Commonwealth, National, State and local heritage databases indicates there are no registered matters of historic heritage significance within the Project area. The closest registered State site is Deep Creek Railway Bridge, Chowey, located approximately 12 km south of the Project area. The NBRC local heritage register also identifies the Paradise Cemetery (Lot 71 CK540), which was connected with the historical Paradise gold mining settlement (circa 1890s). The Paradise Cemetery is located alongside Paradise Dam Road, however, it is outside of the Project area.

6.10.2 Potential Impacts

There is potential for Aboriginal cultural heritage to be associated with mature and/or remnant vegetation and water sources such as creeks, rivers, billabongs, lakes and springs. *Duty of Care* obligations under the ACHA require land users to take all reasonable and practicable measures to ensure their activity does not harm Aboriginal cultural heritage. This duty of care applies to any activity where Aboriginal cultural heritage is located. This includes cultural heritage located on freehold land and regardless of whether it has been identified or recorded in a database. Any activities that may cause ground disturbance or otherwise impact cultural heritage sites of significance will need to comply with the *Duty of Care guidelines.*

All non-Indigenous cultural heritage sites are located outside of the Project area and will not be impacted by the Project.

6.10.3 Management Measures

The ACHA requires that a person must exercise due diligence and reasonable precaution before undertaking an activity which may harm Aboriginal Cultural Heritage. The ACHA *Duty of Care Guidelines* were gazetted in April 2004 to provide guidance on actions required to demonstrate compliance with the ACHA. Any Aboriginal cultural heritage, if found, is protected under the ACHA.

A range of management and mitigation measures would be determined during the IAR process to minimise potential impacts associated with cultural heritage values from the Project. These management measure will be developed through continued consultation with Traditional Owners and registered cultural heritage parties. The following documents will be prepared prior to construction commencement to document the management and mitigation measures:

- Cultural Heritage Plan
- Accidental Finds Procedures

6.11 Hazards, Health and Safety

Hazards, health and safety considerations for the Project include climate hazards, particularly flooding and bushfires. Other hazards to the State of Queensland identified by the Queensland 2023 State Disaster Risk

Report (QFES 2023) include severe thunderstorms, tropical cyclones, heatwaves, and earthquakes, and will be further described in the IAR.

6.11.1 Existing Environment

Major flooding of the Burnett River is relatively infrequent, however under certain meteorological conditions, heavy rainfall in the catchment can result in significant river level rise and flooding. Historical flood events in the region have caused considerable damage to rural properties along the river and to the commercial and residential areas in some of the smaller towns in the surrounding area and downstream at Bundaberg. The Dam has also experienced two significant flooding events in the past eleven years which have caused damage to the original dam wall (refer **Section 1.1**).

Sunwater has completed a number of technical flood studies to inform recent work programs. These studies have incorporated disciplines such as hydrology, hydraulics and downstream consequence assessment work.

As the owner of the Dam, Sunwater is regulated for dam safety purposes by the Dam Safety Regulator (located within the former DRDMW) under provisions of the WSSR Act. A recent example of such a flood assessment report is the Hydrology, Dambreak Modelling and Consequence Assessment Report - Version 4 (August 2021) which has been submitted to the office of the Dam Safety Regulator as part of planning discussions for the Project.

The Dam is a Referable Dam under the provisions of the WSSR Act and, as such, is required to have an approved Emergency Action Plan (EAP) in place. The current Paradise Dam EAP is accessible on the DLGWV website at this address: https://www.rdmw.qld.gov.au/__data/assets/pdf_file/0003/1619760/paradise-eap.pdf

Appendix B3 of the EAP lists some of the downstream inundation maps under different modelled dam break scenarios, associated with different flooding events. This depicts the modelled downstream flooding extent for a dam break at the Dam if it were to experience a 'sunny day failure', whereby the primary spillway fails in circumstances not associated with a major river flood event.

Note that the water level upstream of the Dam (shown in light blue colour) is labelled as Paradise Dam Essential Works FSL 61.80 m AHD, which is the current FSL of the dam. The flood impact (arising from the simulated dam failure) is shown in yellow and extends downstream to Bundaberg CBD and beyond towards Burnett Heads. Low-lying areas around Fairymead and Moore Park are also shown as being widely impacted.

Whilst completion of the Paradise Dam Essential Works program has significantly reduced the risk of dam failure, the dam does not currently meet the ANCOLD Guideline acceptable Limit of Tolerability. Delivery of the Project will ensure the dam satisfies the ANCOLD Limit of Tolerability.

A preliminary bushfire hazard assessment completed for the Project area (Wolter 2024) identifies parts of the Project area are mapped within a bushfire prone area as per SPP mapping.

6.11.2 Potential Impacts

A key objective of the Project is to reduce dam safety risks to an acceptable level in accordance with regulatory requirements and dam safety guidelines for long term operation. Construction of the replacement dam wall will ensure the dam satisfies the ANCOLD Limit of Tolerability, improving the dam's tolerance to flood events and reducing the risk of dam failure.

Dam failure risk will be further reduced following completion of the Project. For comparison, the original design basis for the Dam was to safety pass flows over the dam for a flood event up to 93,000 m^3 per second (the Probable Maximum Precipitation design flood). The Project will achieve an improved dam safety and flood immunity. The Project concept for the replacement dam wall is currently targeting a flow of up to 124,000 m^3 per second (allowing for revised flood hydrology, and consideration of climate change impacts).

In regard bushfire risks, bushfire assessments have indicated that the TPAV is the most vulnerable aspect with regards to bushfire hazard. Siting of the TPAV will be in consideration of the bushfire hazard assessment and the recommended mitigation measures (noting this Project component is not being proposed for declaration).

6.11.3 Management Measures

A range of management and mitigation measures would be determined during the IAR to minimised potential impacts associated with natural hazards. The management and mitigation measures will be developed through:

- A risk assessment, which will be undertaken in accordance with *Australian Standard/New Zealand Standard International Standards Organisation (ISO) 31000:2009 Risk Management – Risk Assessment Technique*
- Flood assessment

The following documents will be prepared prior to construction commencement to document the range of management and mitigation measures:

- The Emergency Action Plan
- Bushfire Emergency Evacuation Plan
- Health and Safety Management Plan
- Safety Management System

7 COMMUNITY AND STAKEHOLDER ENGAGEMENT

Sunwater have been engaging with the community and stakeholders on the Project since 2022. **Table 11** provides details of preliminary stakeholder communication and engagement that was undertaken by Sunwater between January 2024 (when the Queensland Government announced planning had begun to build a replacement dam wall) and the end of December 2024.

Table 11. Details of preliminary stakeholder communication and engagement

Stakeholder	Correspondence / engagement	Date
Paradise Dam Reference Group (that includes representatives from local government, peak bodies, customers, Traditional Owners and downstream residents)	Briefing meeting on the decision to plan for a replacement dam wall	11 January 2024
Broader community	Video regarding the replacement dam wall announcement was published on the Paradise Dam Facebook Page and Sunwater website	11 January 2024
Broader community	Video regarding concrete issues was published on the Paradise Dam Facebook Page and Sunwater website	12 January 2024
Local community	Information stall and drop-in sessions completed - • Lions Park North, Bundaberg • Pioneer Park, Childers • Gin Gin Community Markets • Bundaberg Community Markets • Lions Park North, Bundaberg • Beiers Park, Biggenden	12 to 17 January 2024
The Fact Sheet: long term concrete strength issues and new dam wall (January 2024) was also shared on the Paradise Dam Facebook Page	Social media post	16 January 2024
Paradise Dam Reference Group	Meeting and update on the Ministerial Infrastructure Designation (MID) process for the replacement dam wall	29 February 2024
DSDIP	Briefing meeting	22 April 2024
Paradise Dam Reference Group	Meeting and update on the MID process for the replacement dam wall	9 May 2024
Near neighbours	Meetings with residents and landowners regarding the change in Project scope and expected local impacts associated with building a replacement dam wall & how impacts can be minimised/mitigated, including discussions regarding materials sourcing options	From May – December, ongoing
Environment groups (Wide Bay Burnett Environmental Council, Burnett Catchment Care Association, Gladstone Conservation Council, Queensland Conservation Council)	Online meeting and update on the MID process for the replacement dam wall	28 May 2024
DETSI (Utilities and Government Organisations)	Briefing meeting	16 May 2024
DPI (Fisheries Queensland, Rural Economic Development)	Briefing meeting	16 May 2024
TMR	Briefing meeting	17 May 2024
DNRMMRRD	Briefing meeting	23 May 2024
DSDIP	MID proposal meeting	04 June 2024
DPI, DSDIP	MID proposal meeting	16 July 2024
The PDIP Project Delivery Phases Brochure (June 2024) was also shared on the Paradise Dam Facebook Page	Social media post	29 July 2024

Stakeholder	Correspondence / engagement	Date
DRDMW (Major Infrastructure Projects)	Briefing meeting	6 August 2024
Broader community	Produced and published brochure on Sunwater website outlining key Project phases including state environmental approvals The Project Community Update (August 2024) was also shared on the Paradise Dam Facebook Page	13 August 2024 and 26 August 2024
Paradise Dam Reference Group	Meeting and update on the MID process for the replacement dam wall	13 August 2024
Local community and residents	Hosted community drop-in sessions to discuss road upgrades and provide a Project update including MID process and distribution of the Project brochure	27 and 28 August 2024
DETSI (Utilities and Government Organisations)	Briefing meeting on relevant environmental values	29 August 2024
First Nations Bailai, Gurang, Gooreng Gooreng, Taribelang Bunda and broader community	Information stall at Dorrie Day First Nations careers day	29 August 2024
First Nations Bailai, Gurang, Gooreng Gooreng, Taribelang Bunda community	Provided a Project update during the First Nations Bailai, Gurang, Gooreng Gooreng, Taribelang Bunda community roadshow in Bundaberg including the MID process	20 September 2024
Broader community (Sunwater spoke with more than 160 people regarding the project including the MID and approvals process)	Information stall at Agrotrend, Bundaberg Recreational Precinct	20 - 21 September 2024
NBRC	Briefing meeting regarding the MID process	14 November 2024
Paradise Dam Reference Group	Online meeting and update on the MID process for the replacement dam wall	26 November 2024
Office of the Coordinator-General	Ongoing engagement with the Coordinator-General and the Office of the Coordinator-General regarding approvals pathway including potential to declare Project a Coordinated Project	Commenced December 2024 - ongoing
Paradise Dam Reference Group	In person meeting to discuss the change to approvals pathway.	3 April 2025
DCCEEW	Pre-referral meetings to discuss the EPBC Act referrals for the Project and the concrete batch plant and trial embankment	October 2024 March 2025 May 2025

Sunwater has been formally engaging with the BGGGTB RNTBC as the Prescribed Body Corporate representing the rights and interests of the First Nations BGGGTB since a shared Memorandum of Understanding was entered into in late 2023. An Indigenous Land Use Agreement (ILUA) is currently being negotiated for the Project.

Sunwater has also been formally engaging with the WWNTAC RNTBC (as the Prescribed Body Corporate representing the rights and interests of the Wakka Wakka People) to develop a shared benefits agreement or ILUA (to keep the option of works at Allen Creek, if required) for the Project since early 2023.

Sunwater continues to engage regularly and shared an update on the Project and the approvals processes at the meeting with WWNTAC on 10 April 2025 and the BGGGTB RNTBC on 19 December 2024.

The above listed communications, briefings and community information sessions have enabled Sunwater to share information and receive questions and feedback from a wide range of Project stakeholders.

The Paradise Dam Reference Group (PDRG) is the key engagement forum for the Project to facilitate the exchange of information and ideas between key stakeholders and Sunwater for the Project. The majority of stakeholders on the PDRG have a long history of involvement with the Dam. Customers, grower groups and local councils are all long-term advocates of the Dam being safely returned to its original FSL. Sunwater is committed to ongoing PDRG engagement and continues to provide updates on timing of the Project and the broader the Project as it progresses.

Sunwater has continued to engage residents located close to the Project site to identify and manage expected Project impacts. This has included the early planting of a tree barrier adjacent to the proposed TPAV which shares a boundary with the nearest neighbours to the Dam.

8 GLOSSARY

Term	Meaning
Apron	The concrete section downstream of the Dam designed to prevent erosion and undercutting by the force of flowing water over the spillway.
Dam	The Paradise Dam
Early Works	The aspects of the Project that are seeking State Government authorisations under a Works Regulation and are intending to commence prior to the approval for the Primary Dam Works.
Essential Works project	Sunwater project undertaken in 2019 to lower the primary spillway by 5.8 m.
Full Supply Level (FSL)	The maximum operating water level representing 100% capacity of the Dam.
Impoundment area	The area of land that can be inundated with water when the waste level at the Dam reaches its full supply level.
Left Abutment	The western side of the natural valley on which the Dam will be built.
Right Abutment	The eastern side of the natural valley on which the Dam will be built.
Project or PDIP	The Paradise Dam Improvement Project, inclusive of all aspects that are the subject of this IAS declaration
Project	Primary Dam Works, as described in **Section 3.1** of this IAS
Project area	The area of land encompassing the PDIP and the Early Works
Spillway	The structure on the Dam designed to release excess water from the reservoir when the Dam reaches its full supply level.
Study area	The specific geographic location or boundary where a subject matter expert has or will focus their assessment to determine Project impacts
Geotechnical investigations	Geotechnical investigations and including but not limited to geotechnical drilling, trenching and soil sampling to inform project or design development
Quarry investigations	Quarry investigations for a secure source of material on properties located nearby to the project site including but not limited to: • site surveys, environmental and cultural heritage investigations, and land access • geotechnical investigations including percussion drilling, core drilling and small-scale trial blasts and extractions

9 REFERENCES

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Note - references identified in appendices are referenced in the above-mentioned Epic (2025) report

10 LIMITATIONS AND DISCLAIMER

Epic Environmental Pty Ltd (Epic) has prepared the following report for the exclusive benefit of Sunwater Limited (Client) and for the singular purpose of supporting the Paradise Dam Improvement Project at Paradise Dam, Queensland. All interpretations, finding or recommendations outlined in this report should be read and relied upon only in the context of the report as a whole.

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APPENDIX A APPROVALS REGISTER

Legislation	Approval	Approval Trigger	Relevance to Project	Administering Authority	Proposed Coordinated Assessment
Commonwealth					
Environment Protection and Biodiversity Conservation Act 1999	EPBC Act Approval	A project that will have or is likely to have a significant impact on a MNES. Where the Minister makes a decision that the Project is a Controlled Action and is subject to assessment and approval under the EPBC Act can be via an accredited process which includes the bilateral agreement between the State and the Commonwealth.	Significant residual impacts to MNES are possible as a result of the Project. Sunwater is planning to submit split EPBC Act referrals for the Project and Early Works (specifically, the Concrete Batch Plant and Trial Embankment Area). A Controlled Action determination is anticipated due to the potential for the Project to impact on MNES.	DCCEEW	Yes
	Offset Strategy	Where there is a residual adverse impact on a MNES following adoption of all avoidance and mitigation measures have been adopted.	It is anticipated that residual adverse impacts to MNES would be offset under an offsets strategy delivered under the Queensland *Environmental Offsets Act 2014*, where there is bilateral agreement under the EPBC Act.	DCCEEW	Yes, if required
Native Title Act 1993	Indigenous Land Use Agreement	Where the proponent proposes future acts on land or water that is subject to a Native Title determination.	Native Title has been determined over part of the Project Area on behalf of the BGGGTB RNTBC (QCD2022/004) and WWNTAC RNTBC (QCD2017/010). Areas subject to the Native Title determinations include areas within the Project area, relevantly the Burnett River, left abutment area and Allen Creek. Sunwater has been engaging with both the First Nations BGGGTB People Aboriginal Corporation RNTBC as the Prescribed Body Corporate representing the rights and interests of the Bailai, Gurang, Gooreng Gooreng, Taribelang Bunda People to develop an Indigenous Land Use Agreement and the WWNTAC RNTBC for the Project.	National Native Title Tribunal	No
State					
State Development and Public Works Organisation Act 1971	Coordinated Project declaration	Where the proponent is seeking a Coordinated Project determination from the Coordinator-General to facilitate the planning and delivery of infrastructure.	Facilitation of the approval process for the Project.	OCG	Yes
Aboriginal Cultural Heritage Act 2003	Cultural Heritage Management Plan	Where an EIS is required for the Project under Part 7 of the ACHA.	Cultural Heritage Management Agreements (CHMA) were developed with the relevant Traditional Owners when the Dam was constructed and which relate to the original dam footprint. Contemporary Cultural Heritage Management	Department of Seniors, Disability Services and	No

Legislation	Approval	Approval Trigger	Relevance to Project	Administering Authority	Proposed Coordinated Assessment
			Agreements have been finalised with the BGGGTB People and are being prepared for the Wakka Wakka People. If an EIS is required for the Project, a contemporary Cultural Heritage Management Plan (CHMP) will be prepared under Part 7 of the ACHA.	Aboriginal and Torres Strait Islander Partnerships	
Planning Act 2016 / Building Act 1975	Building Works	Building work within the Project area that is assessable development under the *Building Act 1975.*	Building work within the Project area, e.g. Sunwater Site Operations Office.	DSDIP	Yes, if required
Planning Act 2016 / Fisheries Act 1994	Operational work that is constructing or raising waterway barrier works	Constructing or raising a waterway barrier (e.g. weirs, dams, culverts and causeways) that is assessable development under the Planning Act.	Construction of the replacement dam wall and culvert crossing of the Burnett River, and the decommissioning of the original dam wall.	DSDIP DPI	Yes, if required
Planning Act 2017 / Fisheries Act 1994	Temporary Waterway Barrier Works	Construction of a temporary waterway barrier that impedes the natural movement of fish that is assessable development under the Planning Act.	Temporary waterway barrier works during construction.	DSDIP DPI	Yes, if required
Planning Act 2016 / Water Act 2000	Operational work that is taking or interfering with water	Operational works that are for taking overland flow water or works for taking or interfering with underground water.	Interfering with the flow of overland water as a result of the Primary Dam Works.	DLGWV DSDIP	Yes, if required
Planning Act 2016	Operational works for earthworks	Operational works for earthworks that include excavation, filling of land or changing ground levels.	Earthworks within the Project area.	DSDIP	Yes, if required
Planning Act 2016	Material Change of Use	Where there is the start of a new use of the premises, or the re-establishment on the premises of a use that has been abandoned, or a material increase in the intensity or scale of the use of the premises.	Project components requiring a material change of use. Potentially for the Sunwater Site Operations Office.	NBRC	Yes, if required
Planning Act 2016 / Vegetation	Operational works for	Where the works require the clearing of native vegetation that is not exempt clearing works or accepted development.	Native vegetation clearing within the Project area.	DSDIP DNRMMRRD	Yes, if required

Legislation	Approval	Approval Trigger	Relevance to Project	Administering Authority	Proposed Coordinated Assessment
Management Act 1999	clearing vegetation				
Planning Act 2016 / Environmental Protection Regulation 2019	Material Change of Use for an ERA	Material change of use for an environmentally relevant activity (ERA) that is a concurrence ERA that is authorised under an Environmental Authority. An EA under the EP Act would still be required.	Construction activities for the Project are likely to involve industrial activities that are ERAs and regulated under the EP Act. For example, this may include temporary chemical storage and extraction/dredging in a watercourse during construction. If required, relevant EAs will be obtained by the Principal Constructor (E.g. Alliance)	DETSI	Yes, if required
Environmental Protection Act 1994 / Environmental Protection Regulation 2019	Environmental Authority				
Planning Act 2016 / Water Supply (Safety and Reliability) Act 2008 / Environmental Protection Act 1994 / Work Health and Safety Act 2011 / Professional Engineers Act 2002	Operational work for a referrable dam	Operational work that is the construction of a dam, or relates to the dam, is assessable development under the *Planning Regulation 2017* if the dam failure impact assessment has a Category 1 or Category 2 failure impact rating.	Construction activities for the Project involve Primary Dam Works for a referrable dam that requires a failure impact assessment.	DLGWV DSDIP	Yes, if required
Environmental Offsets Act 2014	Offset strategy	Where there is a significant residual impact to a prescribed environmental matter (MNES, MSES, MLES).	Significant residual impacts to MNES and MSES are possible as a result of the Project. Any significant residual impacts to MNES and MSES would be offset under an offsets strategy. Offset requirements for prescribed environmental matters will be confirmed through the IAR process.	DETSI DPI	Yes, if required
Nature Conservation Act 1992 /	Species management	If interfering with protected native fauna habitat and breeding places of least concern animals that aren't	Clearing for the Project with an impact on identified fauna habitat and breeding places.	DETSI	Yes, if required

Legislation	Approval	Approval Trigger	Relevance to Project	Administering Authority	Proposed Coordinated Assessment
Nature Conservation (Animals) Regulation 2020	program (low risk impacts)	colonial breeders and will not impact on the broader population.			
Nature Conservation Act 1992 / Nature Conservation (Animals) Regulation 2020	Species management program (high risk impacts)	If interfering with protected native fauna habitat and breeding places that is used for: • Least concern animals that are colonial breeders and therefore whose broader populations are at greater risk from the impacts of events at a single location • Special least concern animals (as prescribed in the *Nature Conservation (Animals) Regulation 2020* (the Animals Regulation) • Near threatened, Vulnerable, Endangered, Critically Endangered, or Extinct in the Wild Animals (as prescribed in the Animals Regulation).	Clearing for the Project with an impact on identified fauna habitat and breeding places that is likely to affect the broader population.	DETSI	Yes, if required
Water Act 2000	Riverine Protection Permit	Placing fill or excavation in a mapped watercourse that is not exempt under the *Riverine Protection Exemption Requirements* (WSS/2013/726).	Construction works within the mapped watercourse for the Primary Dam Works.	DLGWV	Yes, if required
	Resource operations licence - amendment	Commissioning of new water infrastructure that is to operate under the Bundaberg Water Supply Scheme Resource Operations Licence.	The existing Dam operations are authorised under the Bundaberg Water Supply Scheme Resource Operations Licence. The ROL authorises the interference water flow in the Bundaberg Water Supply Scheme, and the use of watercourses for the distribution of water. Update of the BWSS ROL will be required for the replacement dam wall.	DLGWV	No
Land Act 1994	Permit to occupy state land	Where occupation is proposed over a reserve or local road or unallocated State land.	Subject to confirming if occupation over State land, such as a road reserve, is required for the Project. Requirements will be confirmed through detailed design.	DNRMMRRD	Yes, if required
Transport Infrastructure Act 1994	Road access works	Where proposed road access works (e.g. construction of a driveway) provides vehicular access onto a state-controlled road.	Subject to confirming if road access works (e.g. a driveway) is needed to provide access off a state-controlled road for the Project. Requirements will be confirmed through detailed design.	DTMR	No
	Road corridor permits	If proposing any of the following, that are not exempt ancillary works and encroachments, within the boundary of a state-controlled road:	Subject to confirming if activities or structures within state-controlled road corridors are required for the	DTMR	No

Legislation	Approval	Approval Trigger	Relevance to Project	Administering Authority	Proposed Coordinated Assessment
		• undertaking an activity • locating or constructing a structure or thing • maintaining a structure or thing • upgrading a structure or thing • operating a structure or thing.	Project. Requirements will be confirmed through detailed design.		
NBRC Subordinate Local Law No. 1 (Administration) 2011 *NBRC Subordinate Local Law No. 4 (Local Government Controlled Areas, Facilities and Roads) 2011*	Road permit (local road)	Carrying out works on a road or interfering with a local road or its operation within the NBRC.	Approval may be required under Local Law for temporary road closures during construction (e.g. Paradise Dam Road), as well as the re-alignment of Kalliwa Road (open and closure). There is also likely a requirement for new vehicular cross-over points into the PDIP site. Requirements will be confirmed through detailed design.	NBRC	Yes
BRC Subordinate Local Law No. 1.15 (Carrying Out Works on a Road or Interfering with a Road or its Operation) 2011 *Subordinate Local Law No. 4 – Local Government Controlled Areas, Facilities and Roads*	Road permit (local road)	Carrying out works on a road or interfering with a local road or its operation within the BRC area.		BRC	

APPENDIX B FLORA AND FAUNA LIST

Table 12. Compilation of flora species recorded in Project area and surrounds during surveys carried out by Epic in 2019, 2022, 2023 and 2024

Species	Scientific name	NC Act / NC (Plants) Reg Status	Biosecurity Act / WONS	Survey timing			
				December 2019	October 2022	August 2023	November 2024
Abutilon sp.	-	-		-	-	-	X
Acacia bidwillii	Dogwood	LC		-	-	-	X
Acacia decora	Pretty Wattle	LC		X	X	-	X
Acacia disparrima	Brown Salwood	LC		X	X	X	X
Acacia fasciculifera	Scaly Bark	LC		X	-	-	-
Acacia leiocalyx	-	LC		X	-	X	-
Acacia leptocarpa	North Coast Wattle	LC		-	X	-	-
Acacia maidenii	Maiden's Wattle	LC		X	X	-	-
Acacia sutherlandii	Corkwood Wattle	LC		-	-	-	X
Achyranthes aspera	Chaff Flower	LC		-	-	-	X
Acalypha eremorum	Soft Acalypha	LC		X	-	-	-
Acronychia laevis	White Lilly Pilly	LC		X	-	-	-
Ageratum houstonianum	Blue Billygoat Weed	-		X	X	X	X
Afrohybanthus stellarioides	Blue Spade Flower	LC		X	-	-	-
Alchornea ilicifolia	Native Holly	LC		X	X	-	-
Alectryon diversifolia	Scrub Boonaree	LC		X			
Alectryon pubescens	Hairy Boonaree	LC		X			
Alectryon oleifolius subsp. *elongatus*	Boonaree	LC		-	-	-	X
Alectryon tomentosus	Hairy Alectryon	LC		X	-	X	-
Allocasuarina torulosa	Mountain Oak	LC		-	X	-	-
Allocasuarina littoralis	Black Sheoak	LC		-	-	-	X

Species	Scientific name	NC Act / NC (Plants) Reg Status	Biosecurity Act / WONS	Survey timing			
				December 2019	October 2022	August 2023	November 2024
Alphitonia excelsa	Soap Tree	LC		X	X	X	X
Alstonia constricta	Bitterbark	LC		X	-	-	-
Alternanthera denticulata	Lesser Joyweed	LC		X	X	X	-
Alyxia magnifolia	-	LC		X	-	X	-
Alyxia oblongata	Chain Fruit	LC		-	-	X	X
Ambrosia artemisiifolia	Annual Ragweed	-	Category 3	-	X	-	X
Amaranthus viridis	Green Amaranth	-		X	-	X	-
Ancistrachne uncinulata	Hooky Grass	LC		X	-	-	-
Angophora floribunda	Rough-barked Apple	LC		-	X	-	-
Araucaria cunninghamii var. cunninghamii	Hoop Pine	LC		X	-	X	X
Argemone ochroleuca	Mexican poppy	-		X	X	X	-
Aristida calycina	Dark Wiregrass	LC		-	X	-	X
Aristida latifolia	Feathertop Wiregrass	LC		-	X	-	-
Aristida Queenslandicum	Queensland Wiregrass	LC		-	X	-	-
Aristida sp.	Wiregrass	-		X	-	-	X
Arivela viscosa	Tick-weed	LC		-	-	X	-
Asclepias curassavica	Red-head Cottonbush	-		-	X	-	-
Arundinella nepalensis	Reedgrass	LC		X	-	-	X
Arytera divaricata	Coogera	LC		X	-	-	-
Atalaya hemiglauca	Whitewood	LC		X	-	-	-
Austrostipa ramosissima	Bamboo Grass	LC		X	-	-	-
Baccharis halimifolia	Groundsel Bush	LC		-	-	-	X
Backhousia angustifolia	Narrow-leaved Backhousia	LC		X	-	X	-
Bidens pilosa	Cobbler's Peg	-		X	X	-	-
Blakella tessellaris	Moreton Bay Ash	LC		-	-	-	X
Boerhavia paludosa	Roly-poly Tar Vine	LC		-	-	-	X

Species	Scientific name	NC Act / NC (Plants) Reg Status	Biosecurity Act / WONS	Survey timing			
				December 2019	October 2022	August 2023	November 2024
Bothriochloa pertusa	Indian Couch	-		-	X	-	-
Brachychiton australis	Broad-leaved Bottle Tree	SL		X	-	X	X
Brachychiton bidwillii	Little Kurrajong	SL		X	-	X	X
Brachychiton populneus	Black Kurrajong	LC		X	X	-	X
Brachychiton rupestris	Queensland Bottle Tree	SL		X	-	X	-
Breynia oblongifolia	Coffee Bush	LC		X	X	X	-
Bridelia leichhardtii	Scrub Ironbark	LC		X	-	-	-
Bryophyllum delagoense	Mother-of-millions	-	Category 3	X	-	X	-
Bursaria incana	Box Thorn	LC		X	X	-	-
Bursaria spinosa	Blackthorn	LC		X	-	-	-
Calyptocarpus vialis	Creeping Cinderella Weed	-		-	X	-	X
Capparis arborea	Brush Caper Berry	LC		X	X	X	X
Capparis canescens	-	LC		X	-	X	-
Capparis sarmentosa	Scrambling Caper	LC		X	-	-	-
Carissia ovata	Currantbush	LC		X	-	X	X
Cassinia laevis	Couch Bush	LC		X	-	X	-
Cassytha pubescens	Downy Dodder Laurel	-		-	-	-	X
Casuarina cunninghamiana subsp. *cunninghamiana*	River Sheoak	LC		-	X	-	X
Catharanthus roseus	Pink Periwinkle	-		X	-	-	-
Celtis paniculata	Native Celtis	LC		-	X	-	X
Centipeda minima	Spreading Sneezeweed	LC		-	X	-	-
Centella asiatica	Pennywort	LC		X	-	-	-
Chamaecrista absus	Tropical Sensitive Pea	LC		X	-	-	-
Chamaecrista rotundifolia	Roundleaf Cassia	-		X	-	-	-
Cheilanthes nudiuscula	-	LC		-	X	-	-

Species	Scientific name	NC Act / NC (Plants) Reg Status	Biosecurity Act / WONS	Survey timing			
				December 2019	October 2022	August 2023	November 2024
Cheilanthes sieberi	Mulga Fern	LC		X	-	-	X
Chloris gayana	Rhodes Grass	-		X	X	-	-
Chloris inflata	Purple top Chloris	-		X	-	-	-
Chrysocephalum apiculatum	Yellow Buttons	LC		-	X	-	X
Chrysopogon fallax	Golden Beardgrass	LC		X	-	-	-
Cirsium vulgare	Spear Thistle	-		X	-	-	-
Clematicissus opaca	Slender Grape	LC		X	X	-	-
Cleome viscosa	Tick-weed	-		X	-	-	-
Clerodendrum tomentosum	Hairy Clerodendrum	LC		X	-	-	-
Coleus australis	Native Coleus	LC		-	X	-	-
Commelina diffusa	Wandering Jew	LC		X	X	-	-
Convolvulus erubescens	Australian Bindweed	LC		-	X	-	-
Corchorus cunninghamiana	Native Jute	LC		-	-	-	X
Corymbia citriodora	Spotted Gum	LC		X	-	-	X
Corymbia citriodora subsp. *variegata*	Spotted Gum	LC		-	X	-	-
Corymbia clarksoniana	Grey Bloodwood	LC		X	-	-	X
Corymbia intermedia	Pink Bloodwood	LC		-	X	-	X
Corymbia trachyphloia	Brown Bloodwood	LC		-	-	-	X
Corymbia tessellaris	Moreton Bay Ash	LC		X	X	-	X
Crinum arenarium	Field Lily	SL		X	-	X	-
Crinum flaccidum	Murray Lily	SL		-	X	-	X
Crotalaria incana	Wooly Rattlepod	-		X	-	-	-
Croton acronychioides	Thick-leaved Croton	LC		X	-	-	X
Croton insularis	Queensland cascarilla	LC		X	-	-	-
Cryptocarya hypospodia	North Queensland Purple Laurel	LC		-	X	-	-

Species	Scientific name	NC Act / NC (Plants) Reg Status	Biosecurity Act / WONS	Survey timing			
				December 2019	October 2022	August 2023	November 2024
Cryptocarya triplinervis	Brown Laurel	LC		X	X	-	-
Cryptostegia grandiflora	Rubber Vine	-	Category 3 / WoNS	X	-	-	X
Cucumis sp.	-	-		X	-	-	-
Cupaniopsis anacardioides	Tuckeroo	LC		X	X	X	X
Cupaniopsis parvifolia	Small-leaved Tuckeroo	LC		X	-	-	-
Cyanthillium cinereum	*Veronia*	LC		X	X	-	-
Cyclophyllum coprosmoides	-	LC		X	-	-	-
Cymbidium canaliculatum	*Black Orchid*	SL		X	X	-	-
Cymbopogon bombycinus	*Silky Oil Grass*	LC		X	X	-	-
Cymbopogon refractus	Barbed-wire Grass	LC		X	-	X	X
Cyanthillium cinereum	Veronia	LC		X	-	-	-
Cynodon dactylon	Bermuda Grass	-		X	X	-	X
Cyperus gracilis	Whisker Grass	LC		X	-	-	X
Cyperus eragrostis	Umbrella Sedge	-		X	-	-	-
Cypress exaltatus	Giant Sedge	LC		-	-	-	X
Cypress rotundus	Nutgrass	-		X	X	X	-
Datura ferox	Fierce Thornapple	-		-	X	-	-
Daucus glochidiatus	Australian Carrot	LC		-	X	-	-
Denhamia disperma	Orange Boxwood	LC		X	-	X	-
Denhamia pittosporoides	Veiny Denhamia	-		X	-	-	X
Desmodium rhytidophyllum	Hairy Trefoil	LC		X	-	-	-
Dianella caerulea	Blue Flax-lily	LC		X	X	X	-
Dichanthium sericeum	Queensland Bluegrass	LC		-	X	-	-
Dichanthium sp.	Bluegrass	LC		-	-	-	X
Diospyros fasciculosa	Grey Ebony	LC		X	-	-	-
Diospyros geminata	Scaly Ebony	LC		X	X	-	X

Species	Scientific name	NC Act / NC (Plants) Reg Status	Biosecurity Act / WONS	Survey timing			
				December 2019	October 2022	August 2023	November 2024
Diospyros humilis	Small-leaved Ebony	LC		X	-	-	-
Dolichandra unguis-cati	Cat's Claw Creeper	-	Category 3 / WoNS	-	-	-	X
Dockrillia bowmanii	Scrub Pencil Orchid	SL		X	-	X	-
Dockrillia sp.	Pencil Orchid	SL		X	-	-	X
Dodonaea triquetra	Large-leaved Hop Bush	LC		X	-	-	-
Drynaria sparsisora	Basket Fern	SL		X	-	-	-
Drypetes deplanchei	Grey Boxwood	LC		X	X	-	X
Dysphania carinata	Green Crumbweed	LC		-	X	-	-
Echinochloa colona	Awnless Barnyard Grass	-		X	-	-	-
Echinochloa crus-galli	Barnyard Grass	-		X	-	-	-
Elaeodendron australe var. integrifolium	Narrow-leaved Red Olive Plum	LC		X	-	-	-
Elattostachys xylocarpa	White Tamrind	LC		X	-	-	-
Enneapogon sp.	-	-		X	-	X	-
Entolasia stricta	Wiry Panic	LC		X	-	-	X
Eragrostis sp.	Lovegrass	-		X	-	-	X
Eremochloa bimaculata	Poverty Grass	LC		X	-	-	-
Eriachne sp.	-	-		X	-	X	-
Erigeron bonariensis	Flaxleaf Fleabane	-		X	-	X	-
Erythrina numerosa	-	LC		X	-	-	-
Erythrina vespertilio	Bats-wing Coral Tree	LC		-	X	-	X
Erythroxylum australe	Cocaine Bush	LC		-	X	-	-
Eucalyptus acmenoides	White Mahogany	LC		X	-	-	-
Eucalyptus crebra	Narrow-leaved Ironbark	LC		X	X	-	X
Eucalyptus melanophloia	Silver-leaved Ironbark	LC		X	X	-	X
Eucalyptus resinifera	Red Mahogany	LC		X	-	-	-
Eucalyptus tereticornis	Queensland Blue Gum	LC		X	X	-	X

Species	Scientific name	NC Act / NC (Plants) Reg Status	Biosecurity Act / WONS	Survey timing			
				December 2019	October 2022	August 2023	November 2024
Euphorbia drummondii	Caustic Weed	LC		X	-	-	-
Euphorbia hirta	Asthma Plant	-		X	X	-	-
Euroschinus falcatus var falcatus	-	LC		X	-	X	-
Eustrephus latifolius	Wombat Berry	LC		X	X	-	-
Evolvulus alsinoides	Baby Blue Eyes	LC		-	-	-	X
Exocarpos latifolius	Native Cherry	LC		X	-	-	-
Ficus henneana	Deciduous Fig	LC		-	-	-	X
Ficus macrophylla	Moreton Bay Fig	LC		-	X	-	-
Ficus opposita	Sandpaper Fig	LC		X	X	-	X
Ficus rubiginosa	Port Jackson Fig	LC		X	-	-	X
Fimbristylis dichotoma	Common Fringe-rush	LC		X	-	-	-
Flindersia australis	Crow's Ash	LC		X	-	-	-
Flinders collina	Broad-leaved Leopard Tree	LC		X	-	X	-
Flueggea leucopyrus	-	LC		X	-	-	-
Galactia tenuiflora	Snail Flower	LC		X	-	-	-
Glinus lotoides	Hairy Carpet Weed	LC		X	-	-	-
Glinus oppositifolius	-	LC		X	-	-	-
Glochidion ferdinandi	Cheesewood	LC		X	-	-	-
Geitonoplesium cymosum	Scrambling Lily	LC		-	-	X	X
Gomphocarpus physocarpus	Balloon Cottonbush	-		X	X	X	X
Gomphrena celioides	Gomphrena Weed	-		-	X	-	-
Goodenia delicata	-	LC		X	X	-	-
Goodenia glabra	Smooth Goodenia	LC		-	X	-	-
Goodenia mystrophylla	Wild Pansies	LC		-	-	-	X
Gossia bidwillii	Python Tree	LC		X	-	-	X

Species	Scientific name	NC Act / NC (Plants) Reg Status	Biosecurity Act / WONS	Survey timing			
				December 2019	October 2022	August 2023	November 2024
Grewia latifolia	Dysentery Plant	LC		X	-	X	X
Heliotropium amplexicaule	Blue Heliotrope	-		X	X	X	-
Heliotropium indicum	Indian Heliotrope	-		X	-	-	-
Heteropogon contortus	Black Speargrass	LC		X	X	-	X
Hibiscus heterophylla	Native Hibiscus	LC		X	-	-	-
Hibiscus sp.	-	-		X	-	-	-
Hoya australis subsp. australis	Native Hoya	LC		X	-	-	-
Hyparrhenia rufa subsp. rufa	Thatch Grass	-		X	-	-	-
Indigofera australis	Australian Indigo	LC		X	-	-	X
Iseilema vaginiflorum	Red Flinders Grass	LC		-	X	-	-
Jacksonia scoparia	Dogwood	LC		X	X	-	-
Jagera pseudorhus	Foam Bark	LC		X	X	X	-
Jasminum didymum	Native Jasmine	LC		X	X	-	X
Jasminum simplicifolium	Native Jasmine	LC		X	-	-	X
Jasminum sp.	-	-		X	-	-	-
Juncus sp.	-	-		X	-	-	-
Juncus usitatus	Rush	LC		X	X	-	X
Koelreuteria elegans subsp. formosana	Golden Rain Tree	-		-	-	-	X
Lantana camara	Lantana	-	Category 3 / WoNS	X	X	X	X
Lantana montevidensis	Creeping Lantana	-	Category 3	X	X	X	X
Laxmannia gracilis	Slender Wire Lily	LC		X	-	-	-
Leersia hexandra	Swamp Rice Grass	LC		X	-	-	-
Leiocarpa panaetioides	-	LC		-	X	-	-
Lomandra confertifolia	Clumped Matrush	LC		X	-	-	-
Lomandra hystrix	Longleaf Matrush	LC		-	-	X	X
Lomandra multiflora	Many-flowered Mat-rush	LC		X	X	-	-

Species	Scientific name	NC Act / NC (Plants) Reg Status	Biosecurity Act / WONS	Survey timing			
				December 2019	October 2022	August 2023	November 2024
Lophostemon confertus	Brush Box	LC		X	-	-	X
Lophostemon suaveolens	Swamp Box	LC		X	X	-	-
Lotus cruentus	Red-flowered Lotus	LC		-	-	-	X
Ludwigia octovalvis	Willow Primrose	LC		-	-	-	X
Macfadyena unguis-cati	Cat's Claw Creeper	-		-	X	-	-
Maclura cochinchinensis	Cockspur Vine	LC		-	X	-	-
Macroptilium atropurpureum	Siratro	-		X	X	-	-
Macroptilium lathyroides	Phasey Bean	-		X	-	-	-
Macrozamia mountperriensis	-	SL		X	-	X	X
Mallotus claoxyloides	Green Kamala	LC		X	-	-	X
Mallotus philippensis	Red Kamal	LC		X	-	X	X
Marsdenia sp.	-	-		X	-	-	-
Malvastrum americanum	Spiked Marrow	LC		-	X	-	-
Megathyrsus maximus	Guinea Grass	-		X	X	-	X
Melaleuca bracteata	Black Tea-tree	LC		X	X	-	X
Melaleuca linarifolia	Snow-in Summer	LC		-	-	-	X
Melaleuca nodosa	Pricklyleaf Paperbark	LC		-	X	-	-
Melaleuca trichostachya	Flaxleaf Paperbark	LC		X	-	-	-
Melaleuca viminalis	Creek Bottlebrush	LC		X	X	X	X
Melia azedarach	White Cedar	LC		-	X	-	-
Melinis repens	Red Natal Grass	-		X	X	X	X
Melodorum leichhardtii	Zig Zag Vine	LC		X	-	-	-
Microlaena stipoides	Weeping Grass	LC		X	-	-	-
Murdannia graminea	Grass Lilies	LC		X	-	-	X
Murraya ovatifoliolata	Native Murraya	-		X	-	X	-
Neptunia gracilis	Sensitive Plant	LC		-	X	-	-

Species	Scientific name	NC Act / NC (Plants) Reg Status	Biosecurity Act / WONS	Survey timing			
				December 2019	October 2022	August 2023	November 2024
Notelaea microcarpa	Native Olive	LC		X	-	-	X
Opuntia stricta	Common Prickly Pear	-	Category 3 / WoNS	-	X	-	-
Opuntia tomentosa	Velvety Tree Pear	-	Category 3 / WoNS	X	-	X	-
Oxalis corniculata	Creeping Oxalis	-		X		X	-
Oxalis exilis	Sorrel	LC		-	X	-	-
Pellaea falcata	Sickle Fern	LC		-	-	-	X
Pandorea pandorana	Wonga Vine	LC		X	-	X	-
Panicum decompositum	Australian Millet	LC		-	X	-	-
Panicum queenslandicum	Yabila Grass	LC		-	-	-	X
Parsonsia sp.	-	-		X	-	-	-
Parsonsia straminea	Monkey Rope	LC		X	-	X	-
Parthenium hysterophorus	Parthenium Weed	-	Category 3 / WoNS	-	-	-	X
Paspalum scrobiculatum	Ditch Millet	LC		-	X	-	-
Paspalidium sp.	-	-		X	-	-	-
Passiflora edulis	Common Passionfruit	-		X	-	-	-
Passiflora foetida	Stinking Passion Flower	-		X	X	X	X
Passiflora suberosa	Corky Passion Flower	-		X	-	X	X
Pavetta australiensis	Butterfly Bush	LC		X	-	-	-
Persicaria attenuata	Hairy Knotweed	LC		X	-	-	X
Persicaria lapathifolia	Pale Knotweed	LC		-	-	-	X
Persicaria orientalis	Princes Feathers	LC		-	-	-	X
Petalostigma pubescens	Quinine Tree	LC		X	X	X	X
Phyllanthus virgatus	-	LC		X	-	-	-
Physalis minima	Gooseberry	-		-	X	-	-
Phyla canescens	Lippia	-		-	X	-	X
Pigea stellarioides	Orange Spade Flower	LC		-	-	-	X

Species	Scientific name	NC Act / NC (Plants) Reg Status	Biosecurity Act / WONS	Survey timing			
				December 2019	October 2022	August 2023	November 2024
Pittosporum spinescens	Wallaby Apple	LC		X	-	-	X
Pleiogynium timorense	Burdekin Plum	LC		X	-	X	X
Poa labillardieri	-	LC		-	-	-	X
Polyscias elegans	Celery Wood	LC		X	-	-	-
Portulaca pilosa	Hairy Pigweed	-		X	-	-	-
Pouteria cotinifolia	Coondoo	LC		X	-	-	-
Pouteria myrsinifolia	Blunt-leaved Coondoo	LC		X	-	-	-
Pouteria sericea	Mongo	LC		X	-	-	-
Praxelis clematidea	-	-		X	X	-	X
Pseuderanthemum variabile	Pastel Flower	LC		X	-	-	-
Psydrax odorata subsp. buxifolia	Shiny Canthium	LC		-	-	-	X
Psydrax odorata subsp. odorata	-	-		X	-	-	X
Pterocaulon redolens	-	LC		-	X	-	-
Pterocaulon sphacelatum	Applebush	LC		-	-	X	-
Rhynchosia minima	Rycho	LC		X	-	-	-
Ricinus communis	Castor Oil Bush	-		X	X	-	-
Rivina humilis	Coralberry	-		X	-	X	X
Ruellia simplex	-	-		-	-	-	X
Ruellia tweediana	Spearpod	-		-	X	-	-
Rumex sp.	-	-		X	-	-	-
Sarcochilus sp.	-	-		X	-	-	-
Scleria brownii	-	LC		X	-	-	-
Scleria sp. *(mackaviensis* or *brownii)*	-	LC		X	-	-	-
Scoparia dulcis	Bitter Broom	-		X	-	-	-
Senna gaudichaudii	Climbing Cassia	LC		X	-	-	-
Sesbania cannabina	Sesbania Pea	LC		X	-	-	-

Species	Scientific name	NC Act / NC (Plants) Reg Status	Biosecurity Act / WONS	Survey timing			
				December 2019	October 2022	August 2023	November 2024
Sida hackettiana	Queensland Hemp	LC		X	X	X	X
Sida cordifolia	Flannelweed	LC		-	X	-	-
Sida rhombifolia	Common Sida	-		-	X	-	X
Sarga leiocladum	Wild Sorghum	LC		-	X	-	-
Smilax australis	Barbed-wire Vine	LC		X	-	X	-
Solanum ellipticum	Potato Bush	LC		X	X	-	-
Solanum lycopersicum	Garden Tomato	-		X	-	-	-
Solanum mauritianum	Wild Tabacco	-		-	-	-	X
Solanum nigrum	Blackberry Nightshade	-		X	X	-	X
Solanum seaforthianum	Brazilian Nightshade	-		X	-	X	-
Solanum sp. (native)	-	-		X	-	-	-
Solanum stelligerum	Devil's Needle	LC		-	-	X	-
Solanum torvum	Devil's Fig	-		X	X	-	X
Sorghum halepense	Johnson Grass	-		X	-	-	-
Sphaeromorphaea australis	-	LC		X	-	-	-
Sporobolus caroli	Fairy Grass	LC		-	X	-	-
Sporobolus pyramidalis	Rats Tail Grass	-	Category 3	-	X	-	X
Sporobolus sp.	-	-		X	-	-	-
Stachytarpheta cayennensis	Dark Blue Snake Weed	-		-	-	-	X
Sterculia quadrifida	Peanut Tree	LC		X	-	-	-
Stylosanthes scabra	Shrubby stylo	-		X	X	-	X
Tinospora smilacina	Snake Vine	LC		X	-	-	-
Themeda quadrivalvis	Grader Grass	-		-	X	-	-
Themeda triandra	Kangaroo Grass	LC		-	X	-	X
Tridax procumbens	Tridax Daisy	-		X	-	-	-
Trophis scandens	Burny Vine	LC		X	-	-	-

Species	Scientific name	NC Act / NC (Plants) Reg Status	Biosecurity Act / WONS	Survey timing			
				December 2019	October 2022	August 2023	November 2024
Turraea pubescens	Native Honeysuckle	LC		X	-	-	X
Typhus sp.	Cumbungi	-		-	-	-	X
Urochloa decumbens	-	-		X	X	-	-
Urochloa mosambicensis	Sabi Grass	-		X	-	-	-
Urochloa mutica	Para Grass	-		X	-	-	-
Vachellia farnesiana	Mimosa Bush	-		-	X	-	-
Verbena litoralis	Verbena	-		-	X	-	-
Waterhousea floribunda	Weeping Lily Pilly	LC		X	X	-	-
Xanthorrhoea fulva	Swamp Grass Tree	SL		-	-	-	X
Xanthorrhoea johnsonii	Grass Tree	SL		X	X	-	-
Zinnia peruviana	Wild Zinnia	-		X	-	-	-

[1] NC Act / NC (Plants) Reg Status: CR = Critically Endangered, E = Endangered, V = Vulnerable, SL = Special Least Concern

Table 13. Compilation of fauna species recorded in Project area and surrounds during surveys carried out by Epic in 2019, 2022, 2023 and 2024

Species	Scientific name	EPBC Act Status	NC Act / NC (Animals) Reg Status[1]	Survey timing			
				December 2019	October 2022	August 2023	November 2024
FROGS							
Cane Toad	*Rhinella marina*	-	-	X	X	X	X
Common Green Treefrog	*Litoria caerulea*	-	C	X			X
Bumpy Rocket Frog	*Litoria inermis*	-	C	X			
Red Tree Frog	*Litoria rubella*	-	C				X
Eastern Stony Creek Frog	*Litoria wilcoxii*	-	C		X		
Ornate Burrowing Frog	*Platyplectrum ornatum*	-	C				X
Striped Marshfrog	*Limnodynastes peronii*	-	C				X
BIRDS							
Australasian Darter	*Anhinga novaehollandiae*	-	C	X	X	X	X
Australasian Figbird	*Sphecotheres vieilloti*	-	C	X	X		X
Australasian Pipit	*Anthus novaeseelandiae*	-	C	X			X
Australian Brush-turkey	*Alectura lathami*	-	C	X			
Australian King-parrot	*Alisterus scapularis*	-	C		X		
Australian Pelican	*Pelecanus conspicillatus*	-	C	X	X		
Australian Magpie	*Gymnorhina tibicen*	-	C	X	X	X	X
Australian Pelican	*Pelecanus conspicillatus*	-	C			X	X
Australian Reed-warbler	*Acrocephalus australis*	-	C				X
Australian White Ibis	*Threskiornis moluccus*	-	C			X	
Australian Wood Duck	*Chenonetta jubata*	-	C	X			
Bar-shouldered Dove	*Geopelia humeralis*	-	C		X	X	
Black Swan	*Cygnus atratus*	-	C	X			
Black-faced Cuckoo Shrike	*Coracina novaehollandiae*	-	C	X	X	X	X
Black-fronted Dotterel	*Elseyornis melanops*	-	C	X			

Species	Scientific name	EPBC Act Status	NC Act / NC (Animals) Reg Status[1]	Survey timing			
				December 2019	October 2022	August 2023	November 2024
Black-winged Stilt	*Himantopus himantopus*	-	C	X			
Blue-faced Honeyeater	*Entomyzon cyanotis*	-	C		X		
Brahminy Kite	*Haliastur indus*	-	C			X	
Brown Falcon	*Falco berigora*	-	C		X		X
Brown Honeyeater	*Lichmera indistincta*	-	C	X	X		X
Brown Quail	*Synoicus ypsilophorus*	-	C		X		
Brown Thornbill	*Acanthiza pusilla*	-	C	X	X		
Bush Stone-curlew	*Burhinus grallarius*	-	C		X		
Caspian Tern	*Sterna caspia*	M	SL	X			
Channel-billed Cuckoo	*Scythrops novaehollandiae*	-	C	X	X		X
Chestnut-breasted Mannikin	*Lonchura castaneothorax*	-	C		X		X
Common Cicadabird	*Edolisoma tenuirostra*	-	C	X		X	X
Common Myna	*Acridotheres tristis*	-	-		X		X
Crested Pigeon	*Ocyphaps lophotes*	-	C	X	X	X	
Eastern Koel	*Eudynamys orientalis*	-	C		X		
Greater Crested Tern	*Thalasseus bergii*	M	SL				X
Dollarbird	*Eurystomus orientalis*	-	C				X
Double-barred Finch	*Taeniopygia bichenovii*	-	C	X			
Dusky Moorhen	*Gallinula tenebrosa*	-	C	X			X
Eastern Great Egret	*Ardea alba modesta*	-	C				X
Eastern Koel	*Eudynamys orientalis*	-	C				X
Eastern Whipbird	*Psophodes olivaceus*	-	C	X		X	X
Eurasian Coot	*Fulica atra*	-	C	X	X	X	X
Fairy Gerygone	*Gerygone palpebrosa*	-	C	X			
Fairy Martin	*Petrochelidon ariel*	-	C			X	
Fan-tailed Cuckoo	*Cacomantis flabelliformis*	-	C			X	

Species	Scientific name	EPBC Act Status	NC Act / NC (Animals) Reg Status[1]	Survey timing			
				December 2019	October 2022	August 2023	November 2024
Forest Kingfisher	*Todiramphus macleayii*	-	C	X			X
Galah	*Eolophus roseicapilla*	-	C		X		
Golden Whistler	*Pachycephala pectoralis*	-	C			X	
Golden-headed Cisticola	*Cisticola exilis*	-	C				X
Great Cormorant	*Phalacrocorax carbo*	-	C	X	X	X	X
Great Crested Grebe	*Podiceps cristatus*	-	C	X			
Great Egret	*Ardea alba*	-	C	X			
Grey Butcherbird	*Cracticus torquatus*	-	C		X	X	
Grey Fantail	*Rhipidura albiscapa*	-	C			X	
Grey Strike-thrush	*Colluricincla harmonica*	-	C	X		X	X
Grey Teal	*Anas gracilis*	-	C	X			
Grey-crowned Babbler	*Pomatostomus temporalis*	-	C	X	X		
Hardhead	*Aythya australis*	-	C	X			
Large-billed Scrubwren	*Sericornis magnirostra*	-	C	X			
Leaden Flycatcher	*Myiagra rubecula*	-	C		X		X
Laughing Kookaburra	*Dacelo novaeguineae*	-	C	X	X	X	X
Lewin's Honeyeater	*Meliphaga lewinii*	-	C	X	X	X	X
Little Black Cormorant	*Phalacrocorax sulcirostris*	-	C	X	X		X
Little Egret	*Egretta garzetta*	-	C	X			
Little Friarbird	*Philemon citreogularis*	-	C		X		
Little Grassbird	*Poodytes gramineus*	-	C				X
Little Pied Cormorant	*Microcarbo melanoleucos*	-	C	X	X		X
Magpie-Lark	*Grallina cyanoleuca*	-	C	X	X	X	X
Masked Lapwing	*Vanellus miles*	-	C	X	X		X
Mistletoe Bird	*Dicaeum hirundinaceum*	-	C				X
Nankeen Kestrel	*Falco cenchroides*	-	C		X		

Species	Scientific name	EPBC Act Status	NC Act / NC (Animals) Reg Status[1]	Survey timing			
				December 2019	October 2022	August 2023	November 2024
Noisy Friarbird	*Philemon corniculatus*	-	C		X	X	X
Noisy Miner	*Manorina melanocephala*	-	C	X	X	X	X
Olive-backed Oriole	*Oriolus sagittatus*	-	C		X		X
Osprey	*Pandion haliaetus*	M	SL		X		
Pacific Black Duck	*Anas superciliosa*	-	C	X	X		
Pale-headed Rosella	*Platycercus adscitus*	-	C	X	X	X	X
Peaceful Dove	*Geopelia placida*	-	C	X	X		
Peregrine Falcon	*Falco peregrinus*	-	C	X			
Pheasant Coucal	*Centropus phasianinus*	-	C	X	X		X
Pied Butcherbird	*Cracticus nigrogularis*	-	C	X	X		
Pied Cormorant	*Phalacrocorax varius*	-	C	X	X	X	
Pied Currawong	*Strepera graculina*	-	C	X	X	X	X
Plumed Egret	*Ardea plumifera*	-	C	X	X	X	
Rainbow Bee-eater	*Merops ornatus*	-	C	X	X	X	X
Rainbow Lorikeet	*Trichoglossus moluccanus*	-	C	X	X	X	X
Red-backed Fairy-wren	*Malurus melanocephalus*	-	C	X	X		X
Red-browed Finch	*Neochmia temporalis*	-	C	X	X		
Red-tailed Black-cockatoo	*Calyptorhynchus banksii*	-	C	X	X		X
Restless Flycatcher	*Myiagra inquieta*	-	C	X	X	X	
Royal Spoonbill	*Platalea flavipes*	-	C	X			
Rufous Fantail	*Rhipidura rufifrons*	M	SL	X		X	
Rufous Shrike-thrush	*Colluricincla rufogaster*	-	C	X			
Rufous Whistler	*Pachycephala rufiventris*	-	C			X	
Sacred Kingfisher	*Todiramphus sanctus*	-	C				X
Scarlet Myzomela	*Myzomela sanguinolenta*	-	C		X	X	
Silvereye	*Zosterops lateralis*	-	C			X	

Species	Scientific name	EPBC Act Status	NC Act / NC (Animals) Reg Status[1]	Survey timing			
				December 2019	October 2022	August 2023	November 2024
Spangled Drongo	*Dicrurus bracteatus*	-	C	X	X		X
Spotted Pardalote	*Pardalotus punctatus*	-	C			X	
Striated Heron	*Butorides striata*	-	C	X			
Striated Pardalote	*Pardalotus striatus*	-	C	X	X	X	
Sulphur-crested Cockatoo	*Cacatua galerita*	-	C	X		X	
Tawny Grassbird	*Megalurus timoriensis*	-	C		X		
Tawny Frogmouth	*Podargus strigoides*	-	C				X
Torresian Crow	*Corvus orru*	-	C	X	X	X	X
Tree Martin	*Petrochelidon nigricans*	-	C	X	X		
Varied Sittela	*Daphoenositta chrysoptera*	-	C			X	
Varied Triller	*Lalage leucomela*	-	C	X			
Variegated Fairywren	*Malurus lamberti*	-	C			X	
Wedge-tailed Eagle	*Aquila audax*	-	C		X		
Welcome Swallow	*Hirundo neoxena*	-	C	X	X		X
Whistling Kite	*Haliastur sphenurus*	-	C	X	X	X	X
White-bellied Sea-eagle	*Haliaeetus leucogaster*	-	C	X	X	X	X
White-breasted Woodswallow	*Artamus leucorhynchus*	-	C	X			
White-browed Scrubwren	*Sericornis frontalis*	-	C	X		X	X
White-faced Heron	*Egretta novaehollandiae*	-	C	X		X	
White-necked Heron	*Ardea pacifica*	-	C	X		X	
White-throated Gerygone	*Gerygone olivacea*	-	C	X	X	X	X
White-throated Honeyeater	*Melithreptus albogularis*	-	C	X	X		
White-throated Nightjar	*Eurostopodus mystacalis*	-	C		X		
White-throated Treecreeper	*Cormobates leucophaea*	-	C	X			
Willie Wagtail	*Rhipidura leucophrys*	-	C	X	X	X	X
Yellow-billed Spoonbill	*Platalea flavipes*	-	C	X			

Species	Scientific name	EPBC Act Status	NC Act / NC (Animals) Reg Status[1]	Survey timing			
				December 2019	October 2022	August 2023	November 2024
MAMMALS							
Black-striped Wallaby	*Notamacropus dorsalis*	-	C	X	X	X	
Chocolate Wattled Bat	*Chalinolobus morio*	-	C				X
Common Brushtail Possum	*Trichosurus vulpecula*	-	C	X	X		X
Common Planigale	*Planigale maculata*	-	C				X
Delicate Mouse	*Pseudomys mimulus*	-	C				X
Dingo	*Canis lupus dingo*	-	-	X			
Eastern Bentwing Bat	*Miniopterus orianae oceanensis*	-	C				X
Eastern Free-tailed Bat	*Ozimops ridei*	-	C				X
Eastern Horseshoe Bat	*Rhinolophus megaphyllus*	-	C				X
Eastern Pebble Mouse	*Pseudomys patrius*	-	C				X
European Brown Hare	*Lepus europaeus*	-	-	X	X		X
Gould's Wattled Bat	*Chalinolobus gouldi*	-	C				X
Greater Free-tailed Bat	*Chaerephon jobensis*	-	C				X
Grey-headed Flying-fox	*Pteropus poliocephalus*	V	C		X		
Hoary Wattled Bat	*Chalinolobus nigrogriseus*	-	C				X
House Mouse	*Mus musculus*	-	-				X
Large-footed Myotis	*Myotis macropus*	-	C				X
Little Bentwing Bat	*Miniopterus australis*	-	C				X
Little Broad-nosed Bat/ Hoary Wattled Bat	*Scotorepens greyii / sp parnabyi / Chalinolobus nigrogriseus*	-	-				X
Long-eared Bat species/Large- footed Myotis	*Nyctophilus sp./Myotis macropus*	-	-				X
Northern Free-tailed Bat	*Mormopterus lumsdenae*	-	C				X
Pig	*Sus scrofa*	-	-		X	X	X
European Rabbit	*Oryctolagus cuniculus*	-	-	X	X		X

Species	Scientific name	EPBC Act Status	NC Act / NC (Animals) Reg Status[1]	Survey timing			
				December 2019	October 2022	August 2023	November 2024
Red-necked Wallaby	*Notamacropus rufogriseus*	-	C	X	X	X	X
Rufous Bettong	*Aepyprymnus rufescens*	-	C	X	X		
Short-beaked Echidna	*Tachyglossus aculeatus*	-	SL		X		X
Squirrel Glider	*Petaurus norfolcensis*	-	C			X	
Swamp Wallaby	*Wallabia bicolor*	-	C	X			X
White-striped Freetail Bat	*Austronomus australis*	-	C				X
Whiptail Wallaby	*Notamacropus parryi*	-	C	X			X
Yellow-bellied Sheathtail Bat	*Saccolaimus flaviventris*	-	C				X
REPTILES							
Black-Headed Python	*Aspidites melanocephalus*	-	C				X
Burton's Legless Lizard	*Lialis burtonis*	-	C				X
Carpet Python	*Morelia spilota*	-	C	X			X
Copper-tailed Skink	*Ctenotus taeniolatus*	-	C	X			
Dubious Dtella	*Gehyra dubia*	-	C	X			X
Eastern Brown Snake	*Pseudonaja textilis*	-	C				X
Eastern Snake-necked Turtle	*Chelodina longicollis*	-	C	X			
Eastern Water Dragon	*Intellagama lesueurii*	-	C		X		X
Eastern Water Skink	*Eulamprus quoyii*	-	C		X	X	X
Elegant Snake-eyed Skink	*Cryptoblepharus pulcher*	-	C	X			
Freshwater Snake	*Tropidonophis mairii*	-	C				X
Lace Monitor	*Varanus varius*	-	C	X	X		
Open-litter Rainbow Skink	*Carlia pectoralis*	-	C				X
Orange-flanked Rainbow Skink	*Carlia rubigo*	-	C	X	X		
Red-bellied Black Snake	*Pseudechis porphyriacus*	-	C				X
Robust Striped Ctenotus	*Ctenotus robustus*	-	C				X
Sand Monitor	*Varanus gouldii*	-	C	X			X

Species	Scientific name	EPBC Act Status	NC Act / NC (Animals) Reg Status[1]	Survey timing			
				December 2019	October 2022	August 2023	November 2024
Saw-shelled Turtle	*Wollumbinia latisternum*		C	X			
Schmeltz's Rainbow Skink	*Carlia schmeltzii*	-	C				X
Three-clawed Worm Skink	*Anomalopus verreauxii*	-	C				X
Tussock Rainbow-skink	*Carlia vivax*	-	C				X

[1] NC Act / NC (Animals) Reg Status: CR = Critically Endangered, E = Endangered, V = Vulnerable, SL = Special Least Concern

APPENDIX C LIKELIHOOD OF OCCURRENCE

The terrestrial ecological assessment completed by Epic (Epic 2025) included a likelihood of occurrence assessment to categorise the potential for threatened flora and fauna to occur within the Terrestrial Study area based on desktop review data and the habitat observed within the assessment area and surrounds. The assessment utilised the following criteria:

- Known to occur
  - Observed within assessment area during surveys
- Likely to occur
  - Observed close to the site during surveys and suitable habitat occurs within the assessment area, or
  - Database records occurring close to the site (within 1 km) and suitable habitat occurs within the site
- Possibly occur
  - Database records occurring in wider area (within 10 km) and marginally suitable habitat occurs within the assessment area, or
  - No database records occurring in wider area (within 10 km) but suitable habitat occurs within the site and is within known distribution of the species
- Unlikely to occur
  - No database records in wider area and habitat present is generally unsuitable, or
  - Assessment area is generally outside of known distribution of the species

The results of the likelihood of occurrence assessments for flora and fauna are detailed below in **Table 14** and **Table 15**.

Table 14. Likelihood of occurrence of threatened flora species (Epic 2025)

Species	Habitat/distribution	Likelihood of occurrence
Acacia grandifolia EPBC Act: V NC Act: NT	This species is restricted to the Mundubbera area in the Burnett district, south-east Queensland. It has a range of approximately 100 km and encompasses an extent of occurrence approximately 4200 km2. It has been recorded from six State Forests as well as road verges, freehold and leasehold land (DE 2014). This species grows on hilly terrain of varying aspects and slope, on hillcrests, in gullies on plains. It also appears in disturbed ground and grows well on roadsides. It has also been recorded on shallow stony soils derived from basalt. It occurs in ironbark gum and spotted gum forests and woodlands associated with *Eucalyptus crebra*, *Corymbia citriodora*, *C. trachyphloia* and *E. exserta* (DE 2014).	**Unlikely**. Suitable habitat does occur within the assessment area. The nearest record is located 35 km southwest of the assessment area, however the assessment area is beyond the known distribution of the species.

Species	Habitat/distribution	Likelihood of occurrence
Austral Cornflower (*Leuzea australis*) EPBC Act: V (listed as *Rhaponticum australe*) NC Act: V	The Austral Cornflower is currently confined to Queensland. The current distribution of the Austral Cornflower extends from Allora (north of Warwick) to Callide (north-west of Biloela), Queensland (DCCEEW 2024b). The species usually grows on heavy black or red-brown clay, or clay loams derived from basalt (DCCEEW 2024b). Populations are often confined to roadsides and cultivation headlands (DCCEEW 2024b). Locations where the species occurs range in altitude up to 480 m above sea level (DCCEEW 2024b).	**Unlikely**. Suitable habitat for the species does not occur within the assessment area. The nearest record of the species is located 20 km southeast of the assessment area.
Backhousia oligantha EPBC Act: - NC Act: CE	Largely confined to the Biggenden area of south east Queensland with few recordings at Mt Archer outside of Rockhampton on the central Queensland coast (Queensland Herbarium 2003). Occurs in Araucarian microphyll vine-forests (Queensland Herbarium 2003).	**Possible**. Suitable habitat for the species does occur within the assessment area. The nearest record of the species is located 12 km southwest of the assessment area.
Boolbunda stink bush (*Zieria boolbunda*) EPBC Act: - NC Act: CE	This species range is highly restricted within southeast Queensland. It grows in granite outcrops in woodland or heath at altitudes above 600 m (Duretto & Forster 2007).	**Unlikely.** Suitable habitat does not exist within the assessment area and the closest records are approximately 30 km to the northeast.
Coleus omissus EPBC Act: E NC Act: E	Previously identified as Plectranthus omissus, this species is found at just five locations between the Conondale Ranges and Gayndah in Queensland. One of these sites hosts a population of only 30 to 40 plants. The species inhabits Conondale National Park, Wratten Resource Reserve, Grongah National Park, Miva State Forest, and Mudlo National Park. It has been observed on steep, rocky outcrops at elevations of about 300-400 meters above sea level, typically on the edges of vine forests or sclerophyll forests (DESI 2024a).	**Unlikely.** Suitable habitat may occur within the assessment area, however this is likely outside the species distribution. The closest record is approximately 60 km south of the assessment area (ALA 2024).
Cossinia (*Cossinia australiana*) EPBC Act: E NC Act: E	This species distribution is from Rockhampton to Kingaroy, east of the Great Dividing Range, a distance of approximately 300 km (DEWHA 2008b). This species is known from fragmented relict patches of Araucarian vineforests or vine thickets on fertile soils (DEWHA 2008b).	**Unlikely**. Suitable habitat with fertile soil does not occur within the assessment area. The nearest record for the species is located 15 km northeast of the assessment area.
Cudgerie (*Hernandia bivalvis*)	This species is restricted to the central coastal and south-east Queensland, between Dryander Creek south to Mt Tamborine. It has also been recorded from Mt Colosseum National Park (DETSI 2022).	**Unlikely**. Suitable habitat for the species does not occur within the assessment area. The

Species	Habitat/distribution	Likelihood of occurrence
EPBC Act: - NC Act: V	This species grows in vine thicket, microphyll vine forest, or rainforests on rock pavements and outcrops with shallow soils. It occurs up to 620 m altitude (DETSI 2022).	nearest record of the species is located 13 km south of the assessment area.
Cycas megacarpa EPBC Act: E NC Act: E	This species is endemic to south-east Queensland. It is found from as far south as Woolooga to Bouldercombe in the north (Queensland Herbarium 2017). This species is found in woodland, open woodland and open forests, often in conjunction with a grassy understory, as well as on the edge of rainforest habitat. Associated species included *Eucalyptus crebra* and *Corymbia citriodora* as well as *Corymbia erythrophloia, Eucalyptus melanophloia* and *Lophostemon confertus* (Queensland Herbarium 2017).	**Unlikely**. Suitable habitat occurs within the assessment area and the nearest record for the species is located 4 km to the south. However, the species is easily detected but was not observed during the flora survey completed across the assessment area, or during previous surveys.
Drynaria x *dumicola* EPBC Act: - NC Act: V	Two populations of this hybrid species exist. One occurs in Good Night Scrub State Forest, QLD and the other in River Heads, southern of Hervey Bay, QLD. (Bostock & Stockes 1998). This species occurs in Araucarian vine forest or littoral vine forest (DETSI 2022d)	**Possible**. Suitable habitat for the species does occur within the assessment area. The nearest record of the species is located 15 km northwest of the assessment area.
Eucalyptus decolor EPBC Act: - NC Act: NT	This species is restricted to Queensland. It is distributed as far north as Castle Tower National Park (north west of Miriam Vale) to south to the ranges south of Biggenden (Mount Walsh National Park). The species occurs within Castle Tower National Park; Many Peaks Range; Eurimbula National Park; Gongiberoo Range; and Mt Walsh National Park, near Biggenden (DETSI 2022e). This species grows in open forest or open tall woodland on ridges, crest or steep slopes on grey loams or shallow soils derived from granite or sandstone from 160 to 550 m above sea-level. Associated species include: *Corymbia citriodora*, *C. trachyphloia* subsp. *trachyphloia*, *Eucalyptus major*, *E. moluccana*, *E. acmenoides*, *E. montivaga*, *E. exserta*, *Allocasuarina littoralis*, *Lophostemon confertus*, *Leptospermum neglectum*, *Pomaderris argyrophylla*, *Arundinella nepalensis* and *Eremochloa bimaculata*, and *E. montivaga* (DETSI 2022e).	**Possible**. Suitable habitat does occur within the assessment area. The nearest record of the species is located 18 km northwest of the assessment area.
Fontainea venosa EPBC Act: V NC Act: V	This species occurs southwest of Beenleigh near Brisbane, along the Koolkooroon Creek in the Boyne Valley, and near Littlemore, in Queensland. This species is located within Dawes National Park State and Marys Creek State Forest (DEWHA 2008c). This species occurs in notophyll vine forest and vine thicket with a mean annual rainfall of 1000-1100 mm on soils derived from and containing abundant andesitic rocks, often on rocky outcrops or along creeks. Associated species include B*ackhousia citriodora, Actephila lindleyi, Bosistoa medicinalis, Diospyros fasciculosa, Barkly syringifolia, Araucaria cunninghamii, Owenia venosa, Aphananthe philippinensis, Argyrodendron trifoliolatum, Croton acronychioides, Pentaceras australe* and *Planchonella myrsinoides* (DEWHA 2008c).	**Unlikely**. Suitable habitat does not occur within the assessment area. The nearest record for the species is located 105 km southeast of the assessment area.
Gossia hillii EPBC Act: - NC Act: CE	This species is endemic to Australia and occurs across Queensland, including Cape York Peninsula, North East Queensland and Central East Queensland, and as far south as northeastern New South Wales. Altitudinal range in NEQ from 700-1000 m. Gossia hillii grows as a shrub or small understory tree in well-developed upland and mountain rain forest (LC 2020a).	**Unlikely.** The closest record is approximately 18 km southwest of the assessment area, however suitable habitat for the species does not occur within the assessment area.

Species	Habitat/distribution	Likelihood of occurrence
Hairy-joint Grass (*Arthraxon hispidus*) EPBC Act: E NC Act: E	This species has scattered locations throughout Queensland and on the northern tablelands and north coast of NSW. This species occurs as far south as Kempsey, and west to Glen Innes, NSW; in Queensland it occurs north to Port Douglas, and west to disjunct occurrences around mound springs in Carnarvon National Park (NP); however, most occurrences are from Noosa southwards (DEWHA 2008d). This species is found within or on the edges of rainforest and in wet eucalypt forest, near creeks and swamps, woodlands, around freshwater springs on coastal foreshore dunes, shaded gullies, creek banks and on alluvium in creek beds in open forest (DEWHA 2008d).	**Possible**. Suitable habitat does occur within the assessment area. The nearest record for the species is located 80 km northwest of the assessment area.
Isis tamarind (*Alectryon ramiflorus*) EPBC Act: E NC Act: E	The species is restricted to the Cordalba Forest Reserve and surrounding areas (TSSC 2016). Suitable habitat includes Araucarian microphyll vineforest and riparian vine forest (TSSC 2016)	**Unlikely**. Suitable habitat does occur within the assessment area, although the nearest record for the species is located 25 km northeast of the assessment area.
Leafless Tongue-orchid (*Cryptostylis hunteriana*) EPBC Act: V NC Act: SL	This species distribution extends from Orbost in East Gippsland in Victoria, through coastal NSW and up to the Tin Can Bay area of southern Queensland (DEWHA 2008e). This species exists in a wide variety of habitats including heathlands, heathy woodlands, sedgelands, *Xanthorrhoea* spp. plains, dry sclerophyll forests, forested wetlands, freshwater wetlands, grasslands, grassy woodlands, rainforests and wet sclerophyll forests. Soils are generally considered to be moist and sandy, however, this species is also known to grow in dry or peaty soils (DEWHA 2008e)	**Unlikely**. The assessment area is beyond the known distribution of the species. The closest record is approximately 95 km southeast of the assessment area.
Macadamia Nut (*Macadamia integrifolia*) EPBC Act: V NC Act: V	Macadamia Nut occurs from Mt Bauple, near Gympie, to Currumbin Valley in the Gold Coast hinterland, south-east Queensland (DCCEEW 2024b). This species grows in remnant rainforest, including complex mixed notophyll forest, and prefers partially open areas such as rainforest edges (DCCEEW 2024b).	**Unlikely**. The assessment area is beyond the known distribution of the species. The closest record is approximately 70 km east of the assessment area (ALA 2024).
Macrozamia cardiacensis EPBC Act: - NC Act: V	Two populations of this species occur in Mount Walsh National Park and adjacent State Forest, near Biggenden recorded between 500 and 640 m asl (Foster 2010). Species forms extensive colonies on precipitous slopes in *Eucalyptus acmenoides* and *E. major* dominated open forest. Species grow in skeletal soils derived from rhyolites or andesites (Foster 2010).	**Unlikely**. Suitable habitat for the species does not occur within the assessment area. The nearest record of the species is located 27 km south of the assessment area.
Melaleuca formosa EPBC Act: - NC Act: NT	This species occurs in near coastal districts in south eastern Queensland at altitudes between 350-600 m altitude (Brophy et al. 2013). This species grows in vine forest or as an understorey plant beneath eucalypts in loam or sandy soil over trachyte (Brophy et al. 2013).	**Unlikely**. Suitable habitat does not occur within the assessment area. The assessment area is well below the required altitude for the species. The nearest record of the species is located 26 km southeast of the assessment area.

Species	Habitat/distribution	Likelihood of occurrence
Micromyrtus vernicosa EPBC Act: - NC Act: V	This species is endemic to Mt Walsh near the town of Biggenden (DETSI 2022f). This species grows on rocky slopes in heathland, associated with *Kunzea flavescens*, *Leucopogon rupicola* and *Grevillea whiteana* and on lower slopes of stony ridges with brown stony loam. The species has been associated with mid-high shrubby woodland of *Eucalyptus dura, Corymbia trachyphloia* and *Acacia blakei* (DETSI 2022f).	**Unlikely**. Suitable habitat for the species does not occur within the assessment area. The nearest record of the species is located 26 km southeast of the assessment area.
Mt Berryman Phebalium (*Phebalium distans*) EPBC Act: E NC Act: E	The Mt. Berryman Phebalium is known from ten populations in south-east Queensland, where it is endemic. Five of these are in close proximity to one another at Mt Berryman. Four are at Mt Jones Plateau, near Kingaroy, and the tenth at Mt Walla, near Coalstoun Lakes (DCCEEW 2024b). The species is found in semi-evergreen vine thicket on red volcanic soils, or in communities adjacent to this vegetation type. The species occurs on deeply weathered basalt with undulating to hilly terrain (DCCEEW 2024b).	**Unlikely**. Suitable habitat does not occur within the assessment area. The nearest record of the species is located 32 km southwest of the assessment area.
Myrsine serpenticola EPBC Act: - NC Act: E	Occurs in central east Queensland from near Marlborough and southwards to Rainbow Beach (LC 2020b). Occurs in dry rainforest on serpentinite country (LC 2020b)	**Unlikely**. Suitable habitat for the species does not occur within the assessment area. The nearest record of the species is located 27 km southwest of the assessment area.
Native Guava (*Rhodomyrtus psidioides*) EPBC Act: CE NC Act: CE	Found from north of Sydney all the way up to Maryborough (OEH 2019). Populations are typically restricted to coastal and sub-coastal areas of low elevation. Known to be associated with dry sclerophyll forests, forested wetlands, rainforests, saline wetlands and wet sclerophyll forests (OEH 2019).	**Unlikely**. Suitable habitat does not occur within the assessment area. The closest record is approximately 70 km southeast of the assessment area (ALA 2024).
Ooline (*Cadellia pentastylis*) EPBC Act: V NC Act: V	This species occurs on the western edge of the NSW north-west slopes, from Mt Black Jack near Gunnadah to west of Tenterfield, and extends into Queensland to Carnarvon Range and Callide Valley, south-west of Rockhampton (DEWHA 2008f). This species grows in semi-evergreen vine thickets and sclerophyll vegetation on undulating terrain of various geology, including sandstone, conglomerate and claystone. The species forms a closed or open canopy, as a dominant or commonly with *Eucalyptus albens* and *Callitris glaucophylla*, with an open understorey and leaf litter dominating the forest floor (DEWHA 2008f).	**Unlikely**. Suitable habitat for the species does not occur within the assessment area. The nearest record of the species is located 57 km west of the assessment area.
Polianthion minutiflorum EPBC Act: V NC Act: V	Polianthion minutiflorum is found from Redcliffe Vale, approximately 110 km west of Mackay, extending south to Kingaroy, spanning around 800 km. Specific locations include Redcliffe Vale, areas near Blackwater, Callide Range northeast of Biloela, Coominglah State Forest west of Monto, and the Kingaroy region north of Nanango, northeast of Jandowae, and near Goodger (DETSI 2024b). This species has been documented in state forests and timber reserves such as Amaroo State Forest, Coominglah State Forest, and Diamondy State Forest. Polianthion minutiflorum typically grows in forests and woodlands on sandstone slopes and gullies with skeletal soil, or occasionally in deeper sands adjacent to heavily weathered laterite. It is associated with vegetation like open woodlands of Acacia shirleyi, Lysicarpus angustifolius,	**Unlikely.** Suitable habitat does not occur within the assessment area. The closest record is approximately 98 km northwest of the assessment area (ALA 2024).

Species	Habitat/distribution	Likelihood of occurrence
	and Corymbia aureola, as well as woodlands of Eucalyptus corynodes, Corymbia trachyphloia, and Eucalyptus cloeziana on sandy soils over sandstone. On sandstone plateaus, it is found with Eucalyptus dura, Eucalyptus fibrosa, Angophora leiocarpa, and Eucalyptus major (DETSI 2024b).	
Quassia (*Samadera bidwillii*) EPBC Act: V NC Act: V	Quassia is endemic to Queensland and is currently known to occur in several localities between Scawfell Island, near Mackay, and Goomboorian, north of Gympie (DEWHA 2008g). The species commonly occurs in lowland rainforest often with Araucaria cunninghamii or on rainforest margins, but it can also be found in other forest types, such as open forest and woodland, it is commonly found in areas adjacent to both temporary and permanent watercourses up to 510 m altitude (DEWHA 2008h). Commonly associated trees in the open forest and woodlands include Corymbia citriodora, Eucalyptus propinqua, E. acmenoides, E. tereticornis, C. intermedia, E. siderophloia, E. moluccana, E. cloeziana and E. fibrosa (DEWHA 2008g).	**Possible**. Suitable habitat for the species does occur within the assessment area. The nearest record for the species is located 26 km south of the assessment area.
Rhodamnia pauciovulata EPBC Act: - NC Act: CE	Distribution from the Whitsundays and Mt Dryander southwards to near Kilcoy in south eastern Queensland. Grows in dry rainforest, vine thickets and littoral forest (LC 2020c).	**Possible.** Suitable habitat occurs within the assessment area and the nearest records in approximately 8 km northwest (ALA 2024).
Rib-fruited Malletwood (*Rhodamnia dumicola*) EPBC Act: - NC Act: E	Occurs in sub-coastal dry rainforest communities from Beenleigh north to the Gladstone area (Leiper et al. 2014, ALA 2022).	**Unlikely**. Suitable habitat for the species does not occur within the assessment area. The nearest record of the species is located 18 km southeast of the assessment area.
Scrub turpentine (*Rhodamnia rubescens)* EPBC Act: CE NC Act: CE	The species grows in a variety of different rainforests. Distribution from Batemans Bay region of southeastern New South Wales to Gympie in southeastern Queensland. Not found in cool temperate rainforests (ALA 2024).	**Possible.** Suitable habitat occurs within the assessment area and the closest record is approximately 5km northwest (ALA 2024).
Sophora fraseri EPBC Act: V NC Act: V	Sophora fraseri is found north of Casino in northern NSW, where it is very rare, and into south-east Queensland, where it is widespread but not common (DCCEEW 2024b). The species grows in moist habitats, often in hilly terrain at altitudes from 60–660 m on shallow soils along rainforest margins in eucalypt forests or in large canopy gaps in closed forest communities (DCCEEW 2024b).	**Unlikely**. Suitable habitat does not occur within the assessment area. The nearest record for the species is located 87 km southeast.
Southern Corynocarpus	This species occurs in the Clarence Valley near Coffs Harbour and Grafton and the Tenterfield area, NSW. In Queensland the species has been recorded in Lamington and Springbrook National Parks, Triunia National Park and Mount Walsh National Park. Occurs in Araucarian notophyll vineforest often on red basaltic slopes (DETSI 2022g).	**Unlikely**. Suitable habitat for the species does not occur within the assessment area. The nearest record of the species is located 13 km south of the assessment area.

Species	Habitat/distribution	Likelihood of occurrence
(*Corynocarpus rupestris* subsp. *arborescens*) EPBC Act: - NC Act: V	This species inhabits dry rainforest on steep, rocky basaltic slopes on the northeastern face of Glenugie Peak. It persists in areas where fire is excluded due to the terrain and lack of ground litter (DETSI 2022g).	
Southern penda *(Xanthostemon oppositifolius)* EPBC Act: V NC Act: V	This species has been recorded in various locations across Queensland including, the Granite Creek valley near Miriam Vale, near Maryborough and in the Kin Kin- Boreen Point-Cooroy District near Nambour. As well as Alyxia Nature Refuge, Bulburin National Park, Great Sandy National Park, Tewantin National Park, Ringtail State Forest and Toolara State Forest (DCCEEW 2024b). This species grows in clayey sands to sandy clay loams derived from sedimentary and metasedimentary rocks and is most commonly found in notophyll and microphyll vineforest communities and occasionally in wet sclerophyll communities. It is found along stream banks and flat alluvial terraces and is occasionally found on foot slopes and low ridges at altitudes from near sea-level to 300 m (DCCEEW 2024b).	**Unlikely.** Suitable habitat does not occur within the assessment area. The closest record is approximately 80 km southeast.
Tall Velvet Sea-berry (*Haloragis exalata* subsp. *Velutina*) EPBC: V NC Act: V	This species occurs in south-east Queensland, from Brisbane west to the Bunya Mountains, with an isolated occurrence in Carnarvon National Park. It is locally common in some areas such as Bunya Mountains National Park, Carnarvon National Park, Carnarvon Station Nature Refuge, D'Aguilar National Park, Deer Reserve National Park and Yarraman State Forest (DETSI 2022h). This species occurs in eucalypt forests, from rainforest margins and grasslands from near sea-level to 1000 m altitude. It grows on brown heavy clay (Carnarvon National Park), shallow rock loam (Bunya Mountains National Park), and basaltic soils. Associated species include *Eucalyptus tereticornis*, *Angophora subvelutina*, *Acacia irrorata* (DETSI 2022h).	**Unlikely**. Suitable habitat for the species does not occur within the assessment area. The nearest record of the species is located 76 km northwest of the assessment area.
Three-leaved Bosistoa (*Bosistoa transversa*) EPBC Act: V NC Act: V	This species is known to occur from the Richmond River in NSW to Mt Larcom near Gladstone in Queensland (DEWHA 2008h). This species grows in lowland subtropical rainforest up to 300 m in altitude. Associated vegetation includes *Argyrodendron trifoliolatum*, *Syzygium hodgkinsoniae*, *Endiandra pubens*, *Dendrocnide photinophylla*, Acmena ingens, *Diploglottis australis* and *Diospyros mabacea* (DEWHA 2008h).	**Unlikely**. Suitable habitat for the species does not occur within the assessment area. The nearest record for the species is approximately 8 km west of the assessment area.
Wedge-leaf Tuckeroo (*Cupaniopsis shirleyana*) EPBC Act: V NC Act: V	This species has been recorded from Mt Larcom near Gladstone in the north, to Brisbane in the south (DEWHA 2008i). This species occurs in a variety of dry rainforest vegetation types, including vine thicket communities on hillsides, stream beds and along riverbanks at altitudes up to 550 m above sea-level. It is also likely to occur on the margins of native vegetation in scrubby urbanised areas (DEWHA 2008i).	**Possible**. Suitable habitat for the species may occur within the assessment area. The nearest record of the species is located 15 km northeast of the assessment area.

Note:
[1] EPBC Act Status: CR = Critically Endangered, E = Endangered, V = Vulnerable, M = Migratory
[2] NC Act Status: CR = Critically Endangered, E = Endangered, V = Vulnerable, SLC = Special Least Concern

Table 15. Likelihood of occurrence of threatened fauna species (Epic 2025)

Species	Habitat and distribution	Likelihood of occurrence
AMPHIBIANS		
Tusked Frog (*Adelotus brevis*) EPBC Act: - NC Act: V	Distribution disjunct; occurs in the Clarke Range (mideast Queensland), then from Shoalwater Bay (mid-east Queensland), south to near Moss Vale (mid-east New South Wales) (Hines et al. 1999; Hines et al. 2004; Hines 2012). In Queensland, inland populations are also present at Blackdown Tableland and Carnarvon Gorge (Hines et al. 2004; Hines 2012), and in Barakula State Forest (Rowland 2013). This species inhabits wet eucalypt forest, rainforest, and sometimes dry eucalypt forest, where it can be found in close proximity to suitable breeding habitat such as ponds and slow-moving sections of streams. It has also been recorded from dams and garden ponds in urban and peri-urban areas (Rowland 2013).	**Possible**. Suitable habitat does occur within the assessment area. The nearest record of the species is located 8 km north of the assessment area (ALA 2024).
BIRDS		
Black-breasted Button-quail (*Turnix melanogaster*) EPBC Act: V NC Act: V	Has been recorded from the Byfield region in the north to at least the Border Ranges rainforests, generally east of the Great Dividing Range, although some observations have been made on its western slopes, up to 300 km inland at locations such as Palm Grove National Park and Barakula State Forest in Queensland (Marchant & Higgins 1993; Smyth & Pavey 2001; Garnett et al. 2011). Habitat considered critical to the survival of the black-breasted button-quail includes: Vine thickets and rainforest vegetation types, particularly semi-evergreen vine thicket, low microphyll vine forest, Araucarian microphyll vine forest, Araucarian notophyll vine forest and Brachychiton scrubs; Low thickets or woodlands with a dense understorey but little ground cover, typically dominated by Acacia spp.; and in littoral situations, dry vine scrubs, acacia thickets and areas densely covered in shrubs, particularly Austromyrtus dulcis and Lantana (DEECCW 2024b).	**Possible.** Suitable habitat likely occurs within Good Night Scrub National Park. The nearest record of the species is located 15 km northeast of the assessment area (ALA 2024).
Common Greenshank (*Tringa nebularia*) EPBC Act: E NC Act: E	Recorded in most coastal regions. Inland, there have been a few records south of a line from near Dalby to Mt Guide, and sparsely scattered records elsewhere. Sites of international importance in Queensland include the south-east Gulf of Carpentaria and the Great Sandy Strait (DotE 2015a). The species occurs in all types of wetlands. Typical habitat for this species a wide variety of inland wetlands and sheltered coastal habitats of varying salinity, including sheltered coastal habitats, typically with large mudflats and saltmarsh, mangroves or seagrass, both permanent and ephemeral terrestrial wetlands, including swamps, lakes, dams, rivers, creeks, billabongs, waterholes and inundated floodplains, claypans and saltflats (DotE 2015a).	**Possible**. Marginally suitable habitat is present within the assessment area. The nearest record of the species is located 25 km northeast of the assessment area (ALA 2024).
Diamond Firetail (*Stagonopleura guttata*) EPBC Act: V NC Act: V	Diamond Firetails occur from southeast Queensland to Eyre Peninsula, South Australia, with their distribution spanning approximately 300 km inland from the sea (Higgins et al. 2007). Their range has contracted from north Queensland inland from Cardwell, to now only occurring in the southeast corner of the state (Hodder et al. 2021). Diamond Firetails occur in woodlands where the dominant species are eucalypt, acacia or casuarina. The species is also found in open forest or lightly timbered habitats such as farmland and grasslands with scattered trees and a preference for habitat with low tree density and high grass cover (Higgins et al. 2007; Antos et al. 2008). Grass cover is essential for feeding as the species feeds on ripe and partly-ripe grass and herb seeds and green leaves, sometimes also consuming insects - particularly during the breeding season, between January and August (Blakers et al. 1984) The presence of RE 13.11.4 and RE 13.11.8 within the disturbance areas and surrounds suggests that suitable habitat may occur, although a relatively dense shrub layer was observed as present (which the species does not prefer) during previous surveys.	**Possible.** Suitable habitat occurs within the assessment area. The closest record is located approximately 40 km to the southwest (ALA 2024).

Species	Habitat and distribution	Likelihood of occurrence
Glossy Black-cockatoo (south-eastern) (*Calyptorhynchus lathami lathami*) EPBC Act: V NC Act: V	This species occurs from Bundaberg in Queensland south to eastern Gippsland in Victoria. It has a continuous distribution through the forested parts of the Great Diving Range but is more scattered inland. In Queensland, it occurs as far west as St George (Cameron et al. 2021). Glossy Black-Cockatoo occurs in woodlands dominated by casuarinas (*Allocasuarina* and *Casuarina* spp.) and in woodlands with an understorey of *Casuarina* (Higgins 1999; Holmes 2012). Many populations are restricted to remnant vegetation within hills and gullies surrounded by agricultural land; however, some populations move through artificial landscapes such as semi-urban parks, gardens and golf courses to access favoured food resources. Groups are never far from waterbodies, which are visited daily (Higgins 1999). Glossy Black-Cockatoos require hollows in tall trees, preferring dead trees, for nesting. Trees that develop hollows suitable for nesting are thought to be at least 100 years old (Cameron 2006).	**Possible**. *Allocasuarina* occurs in low densities within the assessment area. No evidence of the species occurrence observed in the site visit. The nearest record of the species is located 4 km north of the assessment area from Good Night Scrub National Park (ALA 2024).
Grey Falcon (*Falco hypoleucos*) EPBC Act: V NC Act: V	The Grey Falcon is poorly known and is considered to be Australia's rarest falcon and rarest *Falco* species in the world (Schoenjahn 2013). Resident or nomadic visitor to inland parts of all mainland states. Also recorded from most of Australia except Cape York Peninsula and Southeast Qld. Mainly occurs where annual rainfall is <500 mm (Garnett et al. 2011). Can occur in the Murray-Darling Basin, Eyre Basin, and central Australia. This species is confined to the arid and semi-arid areas, habitat is generally timbered lowland plains that are crossed by tree-lined watercourses, and adjacent to treeless areas, grasslands (including spinifex and tussock) and open woodlands that are used for foraging (Garnett et al. 2011; Olsen et al, 1986). Key habitat is identified as Acacia shrublands that are crossed by tree-lined watercourses (Garnett et al. 2011).	**Unlikely**. Suitable habitat does not occur within the assessment area. The nearest record of the species is located 78 km southeast of the assessment area (ALA 2024).
Latham's Snipe (*Gallinago hardwickii*) EPBC Act: V NC Act : V	Widespread although scattered occurrence in both coastal and inland areas. Extends inland over the eastern tablelands in south-eastern Queensland (and occasionally from Rockhampton in the north), and to west of the Great Dividing Range in New South Wales (Barrett et al. 2003; Blakers et al. 1984; Frith et al. 1977). Occasionally recorded in south-western Queensland. They usually inhabit open, freshwater wetlands with low, dense vegetation (e.g. swamps, flooded grasslands or heathlands, around bogs and other water bodies). However, they can also occur in habitats with saline or brackish water, in modified or artificial habitats, and in habitats located close to humans or human activity. Various other freshwater habitats can be used including bogs, waterholes, billabongs, lagoons, lakes, creek or river margins, river pools and floodplains (DotE 2015b).	**Possible**. Marginally suitable habitat occurs within the assessment area. The nearest record of the species is located 2 km north-west of the assessment area. (ALA 2024).
Painted Honeyeater (*Grantiella picta*) EPBC Act: V NC Act: V	Sparsely distributed from south-eastern Australia to north-western Queensland and eastern Northern Territory (Garnett & Crowley 2000). The greatest concentrations of the bird and almost all breeding occurs on the inland slopes of the Great Dividing Range in NSW, Victoria and southern Queensland (DCCEEW 2024b). The species forages on mistletoes in eucalypt forests/woodlands, riparian woodlands of black box and river red gum, box-ironbark-yellow gum woodlands, *Acacia*-dominated woodlands, paperbarks, *Casuarina*, *Callitris*, and trees on farmland or gardens (DotE 2015c). The species prefers woodlands which contain a higher number of mature trees, as these host more mistletoes (DotE 2015c).	**Unlikely.** The assessment area is outside the normal range of the species. The nearest record of the species is located 70 km east of the assessment area (ALA 2024).
Plumed Frogmouth (*Podargus ocellatus*	Two widely separated subspecies exists, one confined to the central eastern portion of the Cape York Peninsula, and the other occurring from south eastern Queensland to north eastern New South Wales. The latter has been recorded from Gladstone to Lismore and inland to the Burnett Range and west to the Richmond Range (OEH 2022).	**Unlikely.** Suitable habitat does not exist within the assessment area. The closest record is 21 km north (ALA 2024).

Species	Habitat and distribution	Likelihood of occurrence
plumiferus) EPBC Act: - NC Act: V	This species preferred habitat is subtropical rainforest in deep, wet sheltered gullies along creek lines. It is often found in areas containing strands of Bangalow Palms or ferns. The species can also occasionally be found in the ecotone between wet eucalypt forests and rainforests, or in cool rainforests or higher elevation temperate forests (OEH 2022).	
Powerful Owl (*Ninox strenua*) EPBC Act: - NC Act: V	In Queensland, Powerful Owl occurs as far north as the Eungella area and west to Carnarvon Gorge (Debus 2012). This species lives in open forests and woodlands, sometimes with dense forest nearby. It is often found in tall open wet sclerophyll forest, mainly in sheltered gullies containing old-growth forest with dense understorey and often near permanent streams (Higgins 1999). Roost and nest sites are usually in gullies (Debus 2012). It nests in hollows in large old trees (Higgins 1999; Kavanagh 2002), usually a living eucalypt, often in trees near creeks. Roost sites are mostly in closed forest but occasionally in open forest and woodland (Higgins 1999). The species also occurs in large areas of urban bushland and large botanic gardens in cities (Debus 2012)	**Possible**. Suitable habitat may occur within the assessment area. The nearest record of the species is located approximately 2 km west of the assessment area (ALA 2024).
Red Goshawk (*Erythrotriorchis radiatus*) EPBC Act: E NC Act: E	Sparsely dispersed across 15% of coastal and sub-coastal Australia, from the Kimberley in Western Australia to north-eastern New South Wales (DCCEEW 2024b). Also recorded along major rivers in central Australia, most likely to be transient birds (sprat page). Recent records in Queensland suggest that both southern and northern Queensland birds are in existing national parks or state forests with a strongholds in north-east Queensland and eastern Cape York Peninsula (DERM 2012). The species prefers landscapes containing a mosaic of habitats including coastal and sub-coastal tall open forest, woodland and rainforest edges. Forests of intermediate density are particularly favoured, as are ecotones between variably dense habitats. Habitat utilisation is influenced by the location of large populations of birds (primary prey). It is rarely encountered over agricultural land as it avoids open habitats. Nesting occurs in tall trees within 1 km of permanent water, generally in open, biologically rich forest or woodland (TSSC 2015a).	**Unlikely**. Suitable habitat does not occur within the assessment area. The nearest record of the species is located 25 km north of the assessment area (ALA 2024).
Sharp-tailed Sandpiper (*Calidris acuminata*) EPBC Act: V NC Act: V	In Queensland, they are recorded in most regions, being widespread along much of the coast and are very sparsely scattered inland, particularly in central and south-western regions (Higgins & Davies 1996). The species typically inhabits muddy edges of shallow fresh or brackish wetlands, with inundated or emergent sedges, grass, saltmarsh or other low vegetation (DotE 2015d). This includes lagoons, swamps, lakes and pools near the coast, and dams, waterholes, soaks, bore drains and bore swamps, saltpans and hypersaline salt lakes inland (DotE 2015d). The species may use flooded paddocks, sedgelands and other ephemeral wetlands, but vacate these habitats during dry conditions (DotE 2015d). Marine habitats for the species include intertidal mudflats in sheltered bays, inlets, estuaries or seashores, and also swamps and creeks lined with mangroves (DotE 2015). Sometimes occur on rocky shores and rarely on exposed reefs (DotE 2015d).	**Possible.** Marginally suitable habitat occurs within the assessment area. The nearest record of the species is located approximately 25 km north-east of the assessment area (ALA 2024).
Squatter Pigeon (southern) (*Geophaps scripta scripta*)	Squatter Pigeon is now largely restricted to Queensland, where the southern subspecies occurs north to the Burdekin River (Frith 1982). The species extends west to Longreach and Charleville. There is a subpopulation from Warwick to Texas. A small population may persist in the upper Brisbane valley, where the last Bird data record is from 2014 (Ward et al. 2021). Squatter Pigeon does not appear to undertake any large-scale seasonal movement and is probably locally nomadic, or perhaps sedentary (Frith 1982; Blakers et al. 1984).	**Unlikely.** Suitable habitat does not occur within the assessment area and is generally east of the species normal distribution. The nearest record of the species is located 17 km south of the assessment area (ALA 2024).

Species	Habitat and distribution	Likelihood of occurrence
EPBC Act: V NC Act: V	The southern subspecies of the Squatter Pigeon occurs mainly in dry grassy woodlands and open forests (Frith 1982; Crome & Shields 1992).	
Star Finch (southern) (*Neochmia ruficauda ruficauda*) EPBC Act: V NC Act: V	The distribution of the southern subspecies of Star Finch is poorly known but thought to only occur in central Queensland (DEECCW 2024b). It is now thought to be extinct (DCCEEW 2024b). Formerly distributed from Bowen in the north to Winton in the west and Wowan in the south. The species mainly occurred mainly in grasslands and grassy woodlands that are located close to bodies of fresh water.	**Unlikely**. The nearest record of the subspecies is located approximately 227 km west of the assessment area. Currently thought to be extinct (ALA 2024).
White-throated Needletail (*Hirundapus caudacutus*) EPBC Act: V, M NC Act: V	In Australia, White-throated Needletail is almost completely an aerial species, possibly even sleeping on the wing. The species is sometimes found roosting in trees and may on rare occasions rest in trees and on the ground during the day (Higgins 1999). White-throated Needletail is found over a wide variety of habitat, including open areas, modified land and the ocean but is most often recorded over wooded areas (Higgins 1999). They sometimes forage over recently disturbed areas, such as forest that has been cleared or burnt (Blakers et al. 1984).	**Likely**. Suitable habitat occurs within the assessment area. The nearest record of the species is located approximately 2 km north-west of the assessment area (ALA 2024).
MAMMALS		
Corben's Long-eared Bat (*Nyctophilus corbeni*) EPBC Act: V NC Act: V	In Queensland, it is known from <30 localities, mainly in the Brigalow Belt South Bioregion. The distribution is bordered by the Bunya Mountain National Park to the east, Expedition Range and Dawson River areas to the north, the Mulga Lands Bioregion west of Bollon to the west, and the NSW-Qld border to the south (DCCEEW 2024b). The species is found in a wide range of inland woodland vegetation types, these include box/ironbark/cypress pine woodlands, Buloke woodlands, Brigalow woodland, Belah woodland, Smooth-barked Apple woodland, river red gum forest, black box woodland, and various types of tree mallee (TSSC 2015b). The species is more abundant in extensive stands of vegetation in comparison to smaller woodland patches (TSSC 2015b).	**Unlikely**. Suitable habitat does not occur within the assessment area. The nearest record of the species is located 143 km southwest of the assessment area (ALA 2024).
Ghost Bat (*Macroderma gigas*) EPBC Act: V NC Act: E	The species occurs across a range of habitats, from arid Pilbara to tropical savanna woodlands and rainforests. During the daytime they roost in caves, rock crevices and old mines. Roost sites used permanently are generally deep natural caves or disused mines with a relatively stable temperature of 23°–28°C and a moderate to high relative humidity of 50–100 percent. The average foraging distance is approximately 2 km from the daytime roost (DCCEEW 2024b).	**Unlikely**. There is no suitable rocky roost habitat within or near the assessment area. The nearest record of the species is located 218 km northwest of the assessment area (ALA 2024).

Species	Habitat and distribution	Likelihood of occurrence
Greater Glider (southern and central) (*Petauroides volans*) EPBC Act: E NC Act: E	This species occurs in Eastern Australia with a broad distribution from around Proserpine in Qld, south through NSW and the ACT, to Wombat State Forest in central Vic (DCCEEW 2024b). The species is primarily folivorous, generally restricted to eucalypt forests and woodlands, feeding on eucalypt leaves, buds and flowers, particularly favouring forest with a diversity of eucalypt species (DCCEEW 2024b). During the day the species shelters in tree hollows, with a particular selection for large hollows (>10 cm) in large, old trees (DCCEEW 2024b). In southern Qld these species seem to prefer at least 2-4 live den trees (containing hollows > 10 cm) for every 2 ha of suitable forest (Eyre 2000). Modelling suggests that they require native forest patches of at least 160 km^2 to maintain viable populations (Eyre 2002).	**Possible**. Habitat within the assessment area comprises regrowth with few large hollows observed. Not recorded during spotlighting onsite. Nevertheless, the species has some potential to occur. The nearest record of the species is located 19 km northeast of the assessment area (ALA 2024).
Grey-headed Flying-fox (*Pteropus poliocephalus*) EPBC Act: V NC Act: LC	Occurs in the coastal belt from Rockhampton in central Queensland to Melbourne in Victoria. It is infrequently found west of the Great Dividing Range (Tidemann 1998). Patterns of occurrence and relative abundance vary widely between seasons and years, and are determined primarily by the availability of food (DCCEEW 2024b). The species feeds on canopy fruits and nectar within rainforests, open forests, closed and open woodlands, *Melaleuca* swamps and *Banksia* woodlands. Their primary food source is Eucalypt blossoms however due to a discontinuous supply throughout the year, migrates between suitable habitats. Roosting sites are typically located within rainforests, riparian vegetation and Melaleuca woodlands near water sources, such as lakes, rivers and dams. The species has also been recorded using highly modified vegetation in urban and suburban areas (DCCEEW 2024b).	**Known**. The species was observed within the assessment area during field surveys which were undertaken in 2022 by Epic. No new sightings occurred during the recent survey. The nearest record is 25 km southwest of the assessment area, recorded in 1995, and the most recent record located in Bundaberg 50 km east of the assessment area, recorded in 2024 (ALA 2024). No roost sites were observed in the local area. The assessment area provides suitable foraging habitat.
Koala (*Phascolarctos cinereus*) EPBC Act: V NC Act: V	In Queensland, the species contains scattered populations throughout moist forests along the coastline, subhumid woodlands in central and southern regions and within eucalypt woodlands along watercourses within semi-arid areas further west. Koalas occur in a range of temperate, sub-tropical and tropical forest, woodland and semi-arid communities dominated by *Eucalyptus* species (preference varying regionally). Diet is thought to be a major determinant of habitat selection, with the use small remnants of original vegetation where suitable habitat is present. Koalas are also known to occur in modified or regenerating native vegetation communities, as well as urban and rural landscapes where food trees or shelter trees may be highly scattered (DotE 2014a).	**Possible**. Suitable habitat occurs within the assessment area. The nearest record of the species is located approximately 7 km southeast of the assessment area (ALA 2024).
Long-nosed Potoroo (northern) (*Potorous tridactylus tridactylus*) EPBC: V NC Act: V	This species occurs in south-eastern Queensland. It has been recorded at Many Peaks Range, south-east of Gladstone, Bellthorpe near Beerwah and in the Border Ranges (Amos 1982). It has also been seen at Bulburin, south-west of Miriam Vale (Lindenmayer & Viggers 1994) and in Lamington National Park and surrounds (Queensland Regional NRM Groups' Collective 2013). Within its range, the distribution is patchy (DCCEEW 2024b). The species may occur in a variety of habitats including in wet eucalypt forests to coastal heaths and scrubs (DotE 2015e). The main factors driving habitat selection include dense vegetation for shelter and the presence of an abundant supply of fungi for food (DotE 2015e).	**Unlikely**. Suitable habitat does not occur within the assessment area. The nearest record of the species is located 27 km south of the assessment area (ALA 2024).

Species	Habitat and distribution	Likelihood of occurrence
Yellow-bellied Glider (southeastern) (*Petaurus australis australis*) EPBC Act: V NC ACT: V	The species has a widespread but patchy distribution from south-eastern Queensland (Qld) to far south-eastern SA, near the SA-Vic border in found at altitudes ranging from sea level to 1400 m above sea level (DCCEEW 2024b). The species occurs in tall mature eucalypt forest in areas with high rainfall and nutrient rich soils. Forest type preferences vary with latitude and elevation; mixed coastal forests to dry escarpment forest in the north; moist coastal gullies and creek flats to tall mountain forests in the south (OEH 2017).	**Possible**. Suitable habitat may occur within the assessment area itself but may occur nearby. The nearest record of the species is located 5 km north of the assessment area from Good Night Scrub National Park (ALA 2024).
REPTILES		
Collared Delma (*Delma torquata*) EPBC Act: V NC Act: V	The species occurs across a patchy distribution from the Central Tablelands in the north to the Southern Downs in the south (ALA 2024). Individuals typically shelter under fallen debris (e.g. rocks, fallen timber, leaf litter) but may also be found below the ground surface or in soil cracks (Richardson 2006; Cogger 2014; Wilson & Swan 2017). Surface rocks are a significant habitat feature (Peck 2012). Collared Delma is typically associated with west-facing ridgelines with dry open sclerophyll and acacia woodlands with an open midstorey and a ground cover of native grasses, thick leaf litter and abundant loose rocks (Peck 2012). It has also been recorded from semi-evergreen vine thickets (Ryan 2006) and from *E. tereticornis* woodland and Brigalow (*Acacia harpophylla*) without abundant rock (Wilson 2005; Peck 2012).	**Possible**. Suitable habitat may occur within the assessment area. The nearest record of the species is located 27 km northwest of the assessment area (ALA 2024).
Common Death Adder (*Acanthophis antarcticus*) EPBC Act: - NC Act: V	The distribution for this species is widespread along the South and East of Australia. It occurs from central Queensland through to New South Wales, also occurring in southern parts of South Australia and Western Australia (DETSI 2024c). This species can be found in a wide variety of habitats from rainforests and wet sclerophyll forests to woodlands, shrublands and grasslands. It also occurs within coastal heathlands. The species prefers areas with deep fixed leaf litter within which it can burrow and hide (DETSI 2024c).	**Possible.** Suitable habitat does occur within the assessment area. The closest record is approximately 8 km to the east (ALA 2024).
Dunmall's Snake (*Furina dunmalli*) EPBC Act: V NC Act: V	Dunmall's Snake is found from near the Queensland border throughout the Brigalow Belt South and Nandewar bioregions, and as far south as Ashford in New South Wales (DCCEEW 2024b). In Queensland, it occurs primarily in the Brigalow Belt region in the south-eastern interior (DCCEEW 2024b). The snake is very rare or secretive with limited records existing. All recent records are from the Chinchilla and Morven area in southern Queensland (Chapple et al. 2019). The species has been recorded in a range of habitats includes forests and woodlands on black alluvial cracking clay and clay loams dominated by Brigalow, other wattles (e.g. *A. burowii*, *A. deanii*, *A. leiocalyx*), *Callitris* spp. or *Allocasuarina luehmannii*; and *Corymbia citriodora*, *Eucalyptus crebra*, *E. melanophloia*, *Callitris glaucophylla* and bulloak open forest and woodland associations on sandstone derived soils (DotE 2014b).	**Unlikely**. Suitable habitat does not occur within the assessment area. The nearest record of the species is located 41 km southwest of the assessment area (ALA 2024).
Yakka Skink (*Egernia rugosa*)	Yakka Skink is endemic to eastern Queensland and is patchily distributed in sub-humid to semi-arid dry open forest, woodland and rocky areas. The species distribution includes the Brigalow Belt, Mulga Lands, South-east Queensland, Einasleigh Uplands, Wet Tropics and Cape York Peninsula Biogeographical Regions (Brigalow Belt Reptiles Workshop 2010; Cogger 2014).	**Unlikely**. Suitable habitat does not occur within the assessment area. The nearest record of the species is located 70 km northeast of the assessment area (ALA 2024).

Species	Habitat and distribution	Likelihood of occurrence
EPBC Act: V NC Act: V	The species lives in communal burrow systems, often under timber and in deep rock crevices. The species also uses abandoned Rabbit (*Oryctolagus cuniculus*) warrens and shelters in hollow logs. The species occurs in land zones 3, 4, 5, 7, 9 and 10, and possibly in land zone 8. Occurs in a wide variety of habitat types, particularly woodland and open forest dominated by *Acacia harpophylla, A. aneura, A. catenulata, A. shirleyi, Casuarina cristata, Eucalyptus populnea, Callitris glaucophylla* and ironbark species. Yakka Skink usually occurs on well-drained, coarse, gritty soils in the vicinity of low ranges, foothills and undulating terrain (Ehmann 1992; Wilson 2005; Richardson 2006; Brigalow Belt Reptiles Workshop 2010; Cogger 2014) but are also found on loam and clay soils (Eddie 2012). Land zone 11 is not recognised as potential habitat for the species.	

Note:

[1] EPBC Act Status: CR = Critically Endangered, E = Endangered, V = Vulnerable, M = Migratory

[2] NC Act Status: CR = Critically Endangered, E = Endangered, V = Vulnerable, SLC = Special Least Concern

APPENDIX D PMST REPORT

EPBC Act Protected Matters Report

This report provides general guidance on matters of national environmental significance and other matters protected by the EPBC Act in the area you have selected. Please see the caveat for interpretation of information provided here.

Report created: 08-Apr-2025

Summary

Matters of National Environment Significance

This part of the report summarises the matters of national environmental significance that may occur in, or may relate to, the area you nominated. Further information is available in the detail part of the report, which can be accessed by scrolling or following the links below. If you are proposing to undertake an activity that may have a significant impact on one or more matters of national environmental significance then you should consider the Administrative Guidelines on Significance.

World Heritage Properties:	None
National Heritage Places:	None
Wetlands of International Importance (Ramsar	None
Great Barrier Reef Marine Park:	None
Commonwealth Marine Area:	None
Listed Threatened Ecological Communities:	5
Listed Threatened Species:	40
Listed Migratory Species:	11

Other Matters Protected by the EPBC Act

This part of the report summarises other matters protected under the Act that may relate to the area you nominated. Approval may be required for a proposed activity that significantly affects the environment on Commonwealth land, when the action is outside the Commonwealth land, or the environment anywhere when the action is taken on Commonwealth land. Approval may also be required for the Commonwealth or Commonwealth agencies proposing to take an action that is likely to have a significant impact on the environment anywhere.

The EPBC Act protects the environment on Commonwealth land, the environment from the actions taken on Commonwealth land, and the environment from actions taken by Commonwealth agencies. As heritage values of a place are part of the 'environment', these aspects of the EPBC Act protect the Commonwealth Heritage values of a Commonwealth Heritage place. Information on the new heritage laws can be found at https://www.dcceew.gov.au/parks-heritage/heritage

A permit may be required for activities in or on a Commonwealth area that may affect a member of a listed threatened species or ecological community, a member of a listed migratory species, whales and other cetaceans, or a member of a listed marine species.

Commonwealth Lands:	None
Commonwealth Heritage Places:	None
Listed Marine Species:	21
Whales and Other Cetaceans:	None
Critical Habitats:	None
Commonwealth Reserves Terrestrial:	None
Australian Marine Parks:	None
Habitat Critical to the Survival of Marine Turtles:	None

Extra Information

This part of the report provides information that may also be relevant to the area you have

State and Territory Reserves:	1
Regional Forest Agreements:	None
Nationally Important Wetlands:	None
EPBC Act Referrals:	4
Key Ecological Features (Marine):	None
Biologically Important Areas:	None
Bioregional Assessments:	None
Geological and Bioregional Assessments:	None

Details

Matters of National Environmental Significance

Listed Threatened Ecological Communities [Resource Information]

For threatened ecological communities where the distribution is well known, maps are derived from recovery plans, State vegetation maps, remote sensing imagery and other sources. Where threatened ecological community distributions are less well known, existing vegetation maps and point location data are used to produce indicative distribution maps.
Status of Vulnerable, Disallowed and Ineligible are not MNES under the EPBC Act.

Community Name	Threatened Category	Presence Text	Buffer Status
Coastal Swamp Oak (Casuarina glauca) Forest of New South Wales and South East Queensland ecological community	Endangered	Community may occur within area	In feature area
Coastal Swamp Sclerophyll Forest of New South Wales and South East Queensland	Endangered	Community may occur within area	In feature area
Lowland Rainforest of Subtropical Australia	Critically Endangered	Community may occur within area	In feature area
Poplar Box Grassy Woodland on Alluvial Plains	Endangered	Community may occur within area	In feature area
Subtropical eucalypt floodplain forest and woodland of the New South Wales North Coast and South East Queensland bioregions	Endangered	Community likely to occur within area	In feature area

Listed Threatened Species [Resource Information]

Status of Conservation Dependent and Extinct are not MNES under the EPBC Act.
Number is the current name ID.

Scientific Name	Threatened Category	Presence Text	Buffer Status
BIRD			
Calidris acuminata Sharp-tailed Sandpiper [874]	Vulnerable	Species or species habitat may occur within area	In feature area
Calidris ferruginea Curlew Sandpiper [856]	Critically Endangered	Species or species habitat may occur within area	In feature area

Scientific Name	Threatened Category	Presence Text	Buffer Status
Erythrotriorchis radiatus Red Goshawk [942]	Endangered	Species or species habitat likely to occur within area	In feature area
Falco hypoleucos Grey Falcon [929]	Vulnerable	Species or species habitat likely to occur within area	In feature area
Gallinago hardwickii Latham's Snipe, Japanese Snipe [863]	Vulnerable	Species or species habitat known to occur within area	In feature area
Geophaps scripta scripta Squatter Pigeon (southern) [64440]	Vulnerable	Species or species habitat likely to occur within area	In feature area
Grantiella picta Painted Honeyeater [470]	Vulnerable	Species or species habitat may occur within area	In feature area
Hirundapus caudacutus White-throated Needletail [682]	Vulnerable	Species or species habitat known to occur within area	In feature area
Neochmia ruficauda ruficauda Star Finch (eastern), Star Finch (southern) [26027]	Endangered	Species or species habitat likely to occur within area	In feature area
Rostratula australis Australian Painted Snipe [77037]	Endangered	Species or species habitat likely to occur within area	In feature area
Stagonopleura guttata Diamond Firetail [59398]	Vulnerable	Species or species habitat may occur within area	In feature area
Tringa nebularia Common Greenshank, Greenshank [832]	Endangered	Species or species habitat may occur within area	In feature area
Turnix melanogaster Black-breasted Button-quail [923]	Vulnerable	Species or species habitat likely to occur within area	In feature area
FISH			

Scientific Name	Threatened Category	Presence Text	Buffer Status
Neoceratodus forsteri			
Australian Lungfish, Queensland Lungfish [67620]	Vulnerable	Species or species habitat known to occur within area	In feature area
MAMMAL			
Dasyurus hallucatus			
Northern Quoll, Digul [Gogo-Yimidir], Wijingadda [Dambimangari], Wiminji [Martu] [331]	Endangered	Species or species habitat likely to occur within area	In feature area
Macroderma gigas			
Ghost Bat [174]	Vulnerable	Species or species habitat may occur within area	In feature area
Nyctophilus corbeni			
Corben's Long-eared Bat, South-eastern Long-eared Bat [83395]	Vulnerable	Species or species habitat may occur within area	In feature area
Petauroides volans			
Greater Glider (southern and central) [254]	Endangered	Species or species habitat likely to occur within area	In feature area
Petaurus australis australis			
Yellow-bellied Glider (south-eastern) [87600]	Vulnerable	Species or species habitat likely to occur within area	In feature area
Phascolarctos cinereus (combined populations of Qld, NSW and the ACT)			
Koala (combined populations of Queensland, New South Wales and the Australian Capital Territory) [85104]	Endangered	Species or species habitat likely to occur within area	In feature area
Potorous tridactylus tridactylus			
Long-nosed Potoroo (northern) [66645]	Vulnerable	Species or species habitat may occur within area	In feature area
Pteropus poliocephalus			
Grey-headed Flying-fox [186]	Vulnerable	Foraging, feeding or related behaviour known to occur within area	In feature area
PLANT			
Arthraxon hispidus			
Hairy-joint Grass [9338]	Vulnerable	Species or species habitat may occur within area	In buffer area only

Scientific Name	Threatened Category	Presence Text	Buffer Status
Bosistoa transversa Three-leaved Bosistoa, Yellow Satinheart [16091]	Vulnerable	Species or species habitat may occur within area	In feature area
Coleus omissus listed as Plectranthus omissus [91381]	Endangered	Species or species habitat may occur within area	In feature area
Cossinia australiana Cossinia [3066]	Endangered	Species or species habitat likely to occur within area	In feature area
Cupaniopsis shirleyana Wedge-leaf Tuckeroo [3205]	Vulnerable	Species or species habitat likely to occur within area	In feature area
Cycas megacarpa [55794]	Endangered	Species or species habitat known to occur within area	In feature area
Dichanthium setosum bluegrass [14159]	Vulnerable	Species or species habitat likely to occur within area	In feature area
Eucalyptus raveretiana Black Ironbox [16344]	Vulnerable	Species or species habitat may occur within area	In feature area
Leuzea australis listed as Rhaponticum australe Austral Cornflower, Native Thistle [9363]	Vulnerable	Species or species habitat may occur within area	In feature area
Macadamia integrifolia Macadamia Nut, Queensland Nut Tree, Smooth-shelled Macadamia, Bush Nut, Nut Oak [7326]	Vulnerable	Species or species habitat may occur within area	In feature area
Polianthion minutiflorum [82772]	Vulnerable	Species or species habitat may occur within area	In buffer area only
Samadera bidwillii Quassia [29708]	Vulnerable	Species or species habitat likely to occur within area	In feature area

Scientific Name	Threatened Category	Presence Text	Buffer Status
Sophora fraseri [8836]	Vulnerable	Species or species habitat may occur within area	In feature area
REPTILE			
Delma torquata Adorned Delma, Collared Delma [1656]	Vulnerable	Species or species habitat may occur within area	In feature area
Egernia rugosa Yakka Skink [1420]	Vulnerable	Species or species habitat may occur within area	In feature area
Elseya albagula Southern Snapping Turtle, White-throated Snapping Turtle [81648]	Critically Endangered	Species or species habitat known to occur within area	In feature area
Furina dunmalli Dunmall's Snake [59254]	Vulnerable	Species or species habitat may occur within area	In feature area
Hemiaspis damelii Grey Snake [1179]	Endangered	Species or species habitat likely to occur within area	In feature area

Listed Migratory Species [Resource Information]

Scientific Name	Threatened Category	Presence Text	Buffer Status
Migratory Marine Birds			
Apus pacificus Fork-tailed Swift [678]		Species or species habitat likely to occur within area	In feature area
Migratory Marine Species			
Crocodylus porosus Salt-water Crocodile, Estuarine Crocodile [1774]		Species or species habitat likely to occur within area	In feature area
Migratory Terrestrial Species			
Cuculus optatus Oriental Cuckoo, Horsfield's Cuckoo [86651]		Species or species habitat may occur within area	In feature area
Hirundapus caudacutus White-throated Needletail [682]	Vulnerable	Species or species habitat known to occur within area	In feature area
Migratory Wetlands Species			

Scientific Name	Threatened Category	Presence Text	Buffer Status
Actitis hypoleucos Common Sandpiper [59309]		Species or species habitat may occur within area	In feature area
Calidris acuminata Sharp-tailed Sandpiper [874]	Vulnerable	Species or species habitat may occur within area	In feature area
Calidris ferruginea Curlew Sandpiper [856]	Critically Endangered	Species or species habitat may occur within area	In feature area
Calidris melanotos Pectoral Sandpiper [858]		Species or species habitat may occur within area	In feature area
Gallinago hardwickii Latham's Snipe, Japanese Snipe [863]	Vulnerable	Species or species habitat known to occur within area	In feature area
Pandion haliaetus Osprey [952]		Species or species habitat known to occur within area	In feature area
Tringa nebularia Common Greenshank, Greenshank [832]	Endangered	Species or species habitat may occur within area	In feature area

Other Matters Protected by the EPBC Act

Listed Marine Species			[Resource Information]
Scientific Name	Threatened Category	Presence Text	Buffer Status
Bird			
Actitis hypoleucos Common Sandpiper [59309]		Species or species habitat may occur within area	In feature area
Anseranas semipalmata Magpie Goose [978]		Species or species habitat may occur within area overfly marine area	In feature area

Scientific Name	Threatened Category	Presence Text	Buffer Status
Apus pacificus Fork-tailed Swift [678]		Species or species habitat likely to occur within area overfly marine area	In feature area
Bubulcus ibis as Ardea ibis Cattle Egret [66521]		Species or species habitat may occur within area overfly marine area	In feature area
Calidris acuminata Sharp-tailed Sandpiper [874]	Vulnerable	Species or species habitat may occur within area	In feature area
Calidris ferruginea Curlew Sandpiper [856]	Critically Endangered	Species or species habitat may occur within area overfly marine area	In feature area
Calidris melanotos Pectoral Sandpiper [858]		Species or species habitat may occur within area overfly marine area	In feature area
Chalcites osculans as Chrysococcyx osculans Black-eared Cuckoo [83425]		Species or species habitat likely to occur within area overfly marine area	In feature area
Gallinago hardwickii Latham's Snipe, Japanese Snipe [863]	Vulnerable	Species or species habitat known to occur within area overfly marine area	In feature area
Haliaeetus leucogaster White-bellied Sea-Eagle [943]		Species or species habitat known to occur within area	In feature area
Hirundapus caudacutus White-throated Needletail [682]	Vulnerable	Species or species habitat known to occur within area overfly marine area	In feature area
Merops ornatus Rainbow Bee-eater [670]		Species or species habitat may occur within area overfly marine area	In feature area

Scientific Name	Threatened Category	Presence Text	Buffer Status
Monarcha melanopsis Black-faced Monarch [609]		Species or species habitat known to occur within area overfly marine area	In feature area
Myiagra cyanoleuca Satin Flycatcher [612]		Species or species habitat likely to occur within area overfly marine area	In feature area
Pandion haliaetus Osprey [952]		Species or species habitat known to occur within area	In feature area
Pterodroma cervicalis White-necked Petrel [59642]		Species or species habitat may occur within area	In feature area
Rhipidura rufifrons Rufous Fantail [592]		Species or species habitat known to occur within area overfly marine area	In feature area
Rostratula australis as Rostratula benghalensis (sensu lato) Australian Painted Snipe [77037]	Endangered	Species or species habitat likely to occur within area overfly marine area	In feature area
Symposiachrus trivirgatus as Monarcha trivirgatus Spectacled Monarch [83946]		Species or species habitat may occur within area overfly marine area	In feature area
Tringa nebularia Common Greenshank, Greenshank [832]	Endangered	Species or species habitat may occur within area overfly marine area	In feature area
Reptile			
Crocodylus porosus Salt-water Crocodile, Estuarine Crocodile [1774]		Species or species habitat likely to occur within area	In feature area

Extra Information

State and Territory Reserves			[Resource Information]
Protected Area Name	Reserve Type	State	Buffer Status
Good Night Scrub	National Park	QLD	In feature area

EPBC Act Referrals				[Resource Information]
Title of referral	Reference	Referral Outcome	Assessment Status	Buffer Status
Controlled action				
Paradise Dam Bundaberg	2001/189	Controlled Action	Completed	In feature area
Water Storage Reservoir	2001/422	Controlled Action	Post-Approval	In feature area
Not controlled action				
Improving rabbit biocontrol: releasing another strain of RHDV, sthrn two thirds of Australia	2015/7522	Not Controlled Action	Completed	In feature area
Wateranga Mining Project	2003/1277	Not Controlled Action	Completed	In feature area

Caveat

1 PURPOSE

This report is designed to assist in identifying the location of matters of national environmental significance (MNES) and other matters protected by the Environment Protection and Biodiversity Conservation Act 1999 (Cth) (EPBC Act) which may be relevant in determining obligations and requirements under the EPBC Act.

The report contains the mapped locations of:

- World and National Heritage properties;
- Wetlands of International and National Importance;
- Commonwealth and State/Territory reserves;
- distribution of listed threatened, migratory and marine species;
- listed threatened ecological communities; and
- other information that may be useful as an indicator of potential habitat value.

2 DISCLAIMER

This report is not intended to be exhaustive and should only be relied upon as a general guide as mapped data is not available for all species or ecological communities listed under the EPBC Act (see below). Persons seeking to use the information contained in this report to inform the referral of a proposed action under the EPBC Act should consider the limitations noted below and whether additional information is required to determine the existence and location of MNES and other protected matters.

Where data is available to inform the mapping of protected species, the presence type (e.g. known, likely or may occur) that can be determined from the data is indicated in general terms. It is the responsibility of any person using or relying on the information in this report to ensure that it is suitable for the circumstances of any proposed use. The Commonwealth cannot accept responsibility for the consequences of any use of the report or any part thereof. To the maximum extent allowed under governing law, the Commonwealth will not be liable for any loss or damage that may be occasioned directly or indirectly through the use of, or reliance on the contents of this report.

3 DATA SOURCES

Threatened ecological communities

For threatened ecological communities where the distribution is well known, maps are generated based on information contained in recovery plans, State vegetation maps and remote sensing imagery and other sources. Where threatened ecological community distributions are less well known, existing vegetation maps and point location data are used to produce indicative distribution maps.

Threatened, migratory and marine species

Threatened, migratory and marine species distributions have been discerned through a variety of methods. Where distributions are well known and if time permits, distributions are inferred from either thematic spatial data (i.e. vegetation, soils, geology, elevation, aspect, terrain, etc.) together with point locations and described habitat; or modelled (MAXENT or BIOCLIM habitat modelling) using point locations and environmental data layers.

Where little information is available for a species or large number of maps are required in a short time-frame, maps are derived either from 0.04 or 0.02 decimal degree cells; by an automated process using polygon capture techniques (static two kilometre grid cells, alpha-hull and convex hull); or captured manually or by using topographic features (national park boundaries, islands, etc.).

In the early stages of the distribution mapping process (1999-early 2000s) distributions were defined by degree blocks, 100K or 250K map sheets to rapidly create distribution maps. More detailed distribution mapping methods are used to update these distributions when time permits.

4 LIMITATIONS

The following species and ecological communities have not been mapped and do not appear in this report:

- threatened species listed as extinct or considered vagrants;
- some recently listed species and ecological communities;
- some listed migratory and listed marine species, which are not listed as threatened species; and
- migratory species that are very widespread, vagrant, or only occur in Australia in small numbers.

The following groups have been mapped, but may not cover the complete distribution of the species:

- listed migratory and/or listed marine seabirds, which are not listed as threatened, have only been mapped for recorded breeding sites; and
- seals which have only been mapped for breeding sites near the Australian continent

The breeding sites may be important for the protection of the Commonwealth Marine environment.

Refer to the metadata for the feature group (using the Resource Information link) for the currency of the information.

Acknowledgements

This database has been compiled from a range of data sources. The department acknowledges the following custodians who have contributed valuable data and advice:

-Office of Environment and Heritage, New South Wales
-Department of Environment and Primary Industries, Victoria
-Department of Primary Industries, Parks, Water and Environment, Tasmania
-Department of Environment, Water and Natural Resources, South Australia
-Department of Land and Resource Management, Northern Territory
-Department of Environmental and Heritage Protection, Queensland
-Department of Parks and Wildlife, Western Australia
-Environment and Planning Directorate, ACT
-Birdlife Australia
-Australian Bird and Bat Banding Scheme
-Australian National Wildlife Collection
-Natural history museums of Australia
-Museum Victoria
-Australian Museum
-South Australian Museum
-Queensland Museum
-Online Zoological Collections of Australian Museums
-Queensland Herbarium
-National Herbarium of NSW
-Royal Botanic Gardens and National Herbarium of Victoria
-Tasmanian Herbarium
-State Herbarium of South Australia
-Northern Territory Herbarium
-Western Australian Herbarium
-Australian National Herbarium, Canberra
-University of New England
-Ocean Biogeographic Information System
-Australian Government, Department of Defence
Forestry Corporation, NSW
-Geoscience Australia
-CSIRO
-Australian Tropical Herbarium, Cairns
-eBird Australia
-Australian Government – Australian Antarctic Data Centre
-Museum and Art Gallery of the Northern Territory
-Australian Government National Environmental Science Program
-Australian Institute of Marine Science
-Reef Life Survey Australia
-American Museum of Natural History
-Queen Victoria Museum and Art Gallery, Inveresk, Tasmania
-Tasmanian Museum and Art Gallery, Hobart, Tasmania
-Other groups and individuals

The Department is extremely grateful to the many organisations and individuals who provided expert advice and information on numerous draft distributions.

Please feel free to provide feedback via the Contact us page.

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