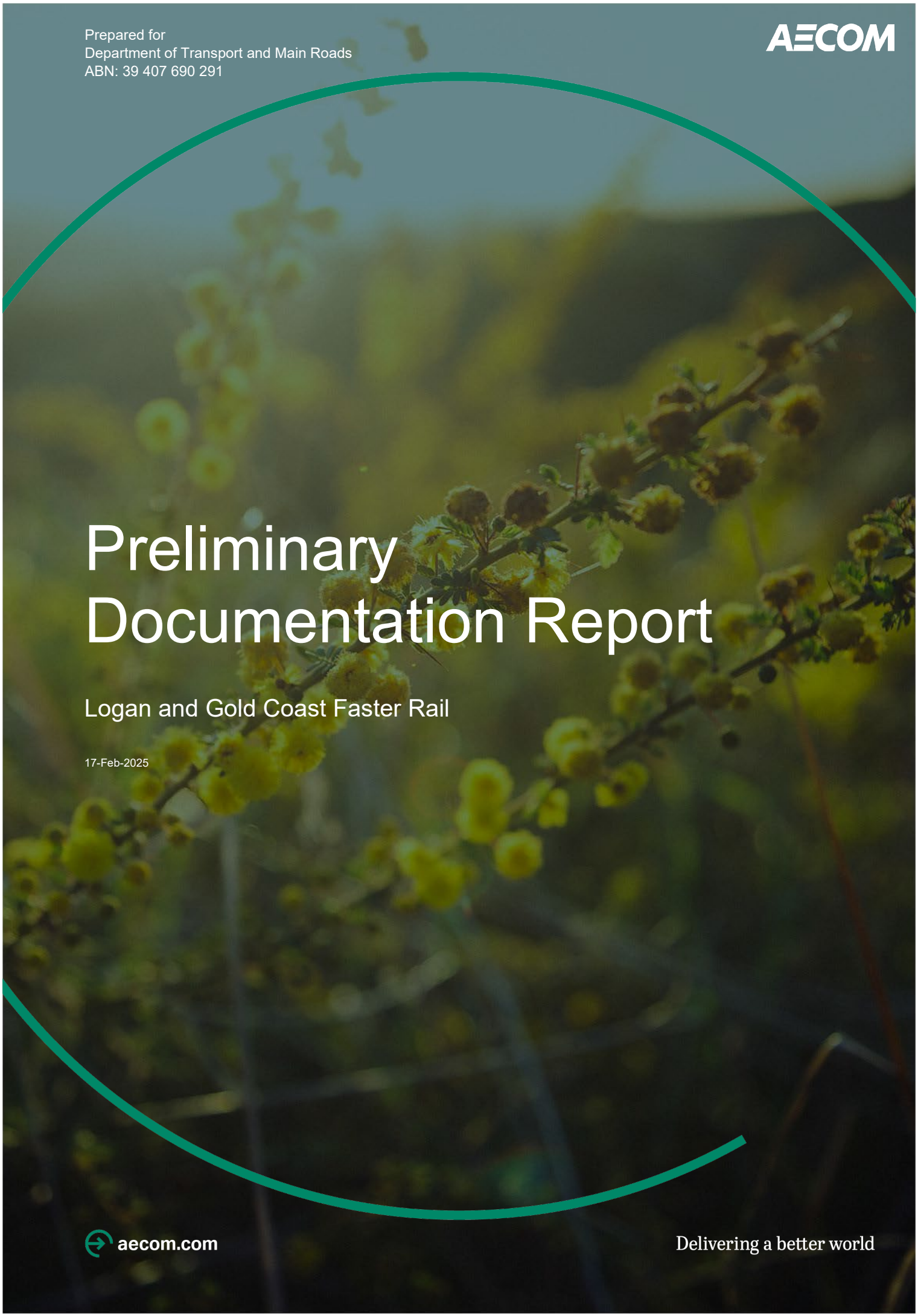
Prepared for
Department of Transport and Main Roads
ABN: 39 407 690 291

AECOM

Preliminary Documentation Report

Logan and Gold Coast Faster Rail

17-Feb-2025



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Preliminary Documentation Report

Logan and Gold Coast Faster Rail

Client: Department of Transport and Main Roads

ABN: 39 407 690 291

Prepared by

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Table of Contents

Table of Figures

Table of Tables

Abbreviations and Definitions

Term	Definition
ADR	Accepted Development Requirements
AEP	Annual Exceedance Probability
AHD	Australian Height Datum
AL Act	*Acquisition of Land Act 1967*
ALA	Atlas of Living Australia
ATC	Active Transport Corridor
Biosecurity Act	*Biosecurity Act 2014*
BCC	Brisbane City Council
CBD	Central Business District
CHMP	Cultural Heritage Management Plan
CHRA	Cultural Heritage Risk Assessments
Coastal Act	*Coastal Protection and Management Act 1995*
CMD	Coastal Management District
CPTED	Crime Prevention Through Environmental Design
CREVNT	Critically Endangered, Endangered, Vulnerable or Near threatened flora
DAF	Department of Agriculture and Fisheries
DAWE	Department of Agriculture, Water and the Environment (now known as DCCEEW)
DCCEEW	Department of Climate Change, Energy, the Environment and Water
DETSI	Department of Environment, Tourism, Science and Innovation
EA	Environmental Authorities
EMP(C)	Environmental Management Plan (Construction)
EMR	Environmental Management Register
EOP	*Environment Protection and Biodiversity Conservation Act 1999* Environmental Offsets Policy (October 2012)
EP Act	*Environmental Protection Act 1994*
EPBC Act	*Environment Protection and Biodiversity Conservation Act 1999*
ERA	Environmentally relevant activity
ESD	Ecologically Sustainable Development
ETCS	European train control system
GBO	General Biosecurity Obligations
GSTI	Government supported transport infrastructure
ILUA	Indigenous Land Use Agreements
IPP	Indigenous Participation Plan
KFPS	Karawatha Forest Protection Society
LCC	Logan City Council

Term	Definition
LG Act	*Local Government Act 2009*
LGA	Local Government Area
LGC	Logan and Gold Coast
MNES	Matters of National Environmental Significance
NC Act	*Nature Conservation Act 1992*
NC Animals Reg	*Nature Conservation (Animals) Regulation 2020*
NC Plants Reg	*Nature Conservation (Plants) Regulation 2020*
NIAA	National Indigenous Australians Agency
NIR	Notices of Intention to Resume
NTU	TMR's Native Title Unit
OAG	Offsets Assessment Guide
OAMP	Offset Area Management Plan
OEMP	Overarching Environmental Mitigation Plan
Offsets Act	*Environmental Offsets Act 2014*
OHLE	Overhead Line Equipment
Planning Act	*Planning Act 2016*
PMST	Protected Matters Search Tool
PUP	Public Utility Plant
QIPP	Queensland Indigenous (Aboriginal and Torres Strait Islander) Procurement Policy
QPP	Queensland Procurement Policy
QR	Queensland Rail
RE	Regional Ecosystems
RFI	Request for Information
RMAR	Rail Maintenance Access Roads
RPP	Riverine Protection Permit
SEQ	South East Queensland
SMP	Species Management Program
SPRAT	Species Profile and Threats Database
TEC	Threatened Ecological Communities
TMR	Queensland Department of Transport and Main Roads (The Proponent)
VM Act	*Vegetation Management Act 1999*
Water Act	*Water Act 2000*

Executive Summary

The Queensland Department of Transport and Main Roads (TMR) (the Proponent) is proposing to duplicate the existing rail line from two to four tracks between Kuraby and Beenleigh Stations, to support the growing population and customer demand between Brisbane, Logan and the Gold Coast (the 'Logan and Gold Coast Faster Rail Project', herein referred to as the 'proposed action'). The proposed action is located within the Brisbane City Council and Logan City Council local government areas (LGAs), approximately 16 km south-east of the Brisbane central business district (CBD).

Proposed action

The proposed action will widen the existing rail corridor within a highly modified urban environment, with the Impact area comprising more than 90% of disturbed and previously cleared residential areas and industrial land, roads, railway corridors and stations, parklands (not vegetated), artificial wetlands and mixed regrowth and revegetation areas subject to historical broad scale clearing for agricultural purposes. The remaining Impact area (less than 10%) comprises undisturbed eucalypt woodland and native aquatic vegetation. Areas of ecological value provided by remnant vegetation are generally confined to Key Biodiversity Areas such as Acacia Forest Park, Karawatha Forest Park, and Gould Adams Park/Nealdon Park. The 'Impact area' is the area where direct impacts will occur and covers 194.45 hectares (ha) to accommodate the key features of the proposed action:

- Duplication of 18.7 km of rail corridor and upgrades to associated rail systems between Kuraby and Beenleigh Stations resulting in an increase from two tracks to four tracks.
- Eight station upgrades including a station relocation (Trinder Park Station) to improve accessibility, safety and amenity, including platform straightening, new pedestrian bridges with lifts and improve bus stop, park 'n' ride and kiss 'n' ride facilities.
- Removal of existing rail level crossings at Trinder Park (Railway Parade), Holmview (Spanns Road) and Beenleigh (Holmview Road).
- Adjacent local road network alterations associated with the railway duplication.
- Dedicated active transport along the corridor.
- Extension of the cattle siding at Holmview Station.
- Dedicated rail maintenance access road adjacent to the rail corridor.

The proposed construction of permanent infrastructure and temporary construction compounds and laydown areas will be confined to the Impact area, including:

- Site preparation works, including clearing and grubbing, earthworks, and establishment of temporary construction compounds and laydowns.
- Public Utility Plant (PUP) relocation work.
- Construction of new tracks, including bridges and associated drainage works.
- Roadworks (including minor road realignments resulting from track widening); and
- Station rebuilds (including upgrade and relocation of stations).

Assessment background

The proposed action was referred to the Commonwealth Department of Climate Change, Energy, the Environment and Water (DCCEEW) on 17 December 2022 for assessment of Matters of National Environmental Significance (MNES) under the Commonwealth Environment Protection and Biodiversity Conservation Act 1999. The proposed action was determined a 'Controlled Action' on 11 April 2023 to be assessed by Preliminary Documentation for controlling provisions: Listed threatened species and communities (section 18 & 18A).

This Preliminary Documentation suite is prepared to address DCCEEW's decision notice and request for information (RFI) received on 4 May 2023, incorporating extensive baseline data to describe habitat,

inform impact assessment and demonstrate effective avoidance, minimisation, mitigation, management and monitoring.

Primarily, TMR has advanced refinement of the Impact area and design by optioneering through procurement, refinement of properties during acquisition, review of construction staging and methodology, stakeholder and asset owner input/feedback, design technical investigations, and targeted ecology surveys. Further design refinements have resulted in a reduced Impact area of 194.45 ha encompassing 99.74 ha (33.90%) less than the Impact area referred for assessment in December 2022 (i.e. 294.19 ha).

A summary of the proposed action's footprint refinement is presented in Table ES-1.

Table ES-1 Summary of the proposed action's footprint refinement

Proposed action area	Referral submission (December 2022)	Revised Impact area
Impact area (ha)	294.19 ha	194.45 ha
Overall reduction (ha)	-	99.74 ha
Overall reduction (%)	-	33.90%

The Supplementary MNES Report (Appendix A) includes detailed desktop assessments and findings of extensive targeted ecological assessments of threatened species and ecological communities within and adjacent to areas informing risk screening and assessment of likely significant impacts after avoidance, minimisation and mitigation of potential direct and indirect impacts from the proposed action. Substantial reduction in the Impact area has been achieved through design refinement

In addition to direct impacts, threatened species and ecological communities identified within the impact area are susceptible to indirect impacts to varying degrees; however, some MNES are more vulnerable to factors such as sensitivity to habitat fragmentation, noise, light, and other disturbances. Buffer zones have been prescribed for conservation significant species and communities to assess potential for indirect impacts and where the provision of buffer zones is considered ecologically relevant. Species-specific buffer zones are discussed in Section 6.4 of the Supplementary MNES report.

Further measures to avoid, minimise, mitigate, rehabilitate and remediate potential direct and indirect impacts to known or potentially occurring threatened species and communities are described in the Supplementary MNES Report (Appendix A) and will be implemented throughout project delivery through the:

- Overarching Environmental Mitigation Plan (OEMP) (Appendix B) – providing consolidated mitigations for known or potentially occurring conservation significant species and communities that will be implemented throughout design and construction of the proposed action. Implementation of the OEMP is expected to be a condition of approval taking place of post-approval management plans.
- Fauna Monitoring Program (FMP) – has been developed for the proposed action, in alignment with TMR's Fauna Sensitive Transport Infrastructure Delivery manual – Chapter 6 (Department of Transport and Main Roads, 2024), to ensure effective fauna mitigation. Incorporating permanent mitigation measures at suitable locations and assessing the effectiveness of fauna connectivity infrastructure. TMR will oversee the FMP to ensure continued monitoring captures pre-, during, and post-construction phases of the proposed action.

Significant impact assessment

In accordance with the EPBC Act Policy Statement 1.1 Significant Impact Guidelines: Matters of National Environmental Significance (the Significant Impact Guidelines) (Department of the Environment, 2013) a significant impact assessment (SIA) was undertaken to assess the nature, likelihood, consequence and extent of potential impacts to conservation significant species and communities identified with a potential risk from the proposed action. After avoidance, the assessment concluded significant impacts are likely for the following five (5) species:

- Koala – up to 27.48 ha of breeding/foraging and 80.27 ha of shelter/dispersal habitat.

- Grey-headed flying fox – up to 0.54 ha of breeding/roosting, 42.60 ha of foraging/dispersal habitat and up to 2.20 ha indirect impact to breeding/roosting habitat.
- South-eastern glossy black cockatoo – up to 18.91 ha of breeding, 7.13 ha of breeding and foraging, 2.19 ha of foraging and 13.51 ha of dispersal habitat.

The significant impact assessment indicates a significant impact to potential habitat for swift parrot and regent honeyeater is unlikely based on conservative assessment of habitat critical to survival of the species and assessment against EPBC Act Policy Statement 1.1 Significant Impact Guidelines: Matters of National Environmental Significance (DCCEEW, 2013). This is because there are infrequent records in the past two decades indicating both species only sporadically forage in south-east Queensland when food resources in Victoria and New South Wales are scarce and impacts to relatively thin areas of marginal habitat are unlikely to significantly impact these highly mobile and wide-ranging species.

With the above said, due to the presence of 42.28 ha of potential foraging and dispersal habitat within the Impact area considered habitat critical to the survival of the species, DCCEEW considers the proposed action may have a significant impact on the swift parrot and regent honeyeater. While the Proponent remains of the view that such an impact is unlikely, to ensure DCCEEW's response is adequately addressed, the Proponent has considered these species as if the proposed action will have a significant impact. This commitment is reflected within all relevant documents within the revised Preliminary Documentation.

Initially, it was assessed the proposed action has potential to result in a significant impact greater glider and yellow-bellied glider (south-eastern), as per EPBC Act referral (2022). Since the referral for the proposed action, significant reductions to the Impact area have occurred, as well as targeted surveys and species-specific habitat mapping. As such, direct impacts to greater glider (southern and central) and yellow-bellied glider (south-eastern) habitat have substantially reduced from 49.42 ha to 33.19 ha. The SIA for this species was updated to reflect these changes resulting in the proposed action is unlikely to result in a significant impact to the greater glider (southern and central) and yellow-bellied glider (south-eastern), and is unlikely to be important, notable or of consequence.

Offset acquittal

Biodiversity offsets are provided in accordance with the Environmental Offsets Policy (EOP) for significant residual impacts to conservation significant species and their habitat. To address the proposed action's offset requirements, and in response to the DCCEEW's Request for Information, two Offset Area Management Plans (OAMPs) have been developed — one for the Benobble property and the other for the Undullah property. The OAMPs detail the offsets to be delivered to acquit the proposed action's impacts to the koala, grey-headed flying fox, glossy-black cockatoo, regent honeyeater and swift parrot. The OAMPs demonstrate compliance with Part 9 of EOP and identify management requirements ensuring a no net loss to these MNES, including:

- Legal security to ensure that offset areas are legally protected through legal instruments that prevent future development or land-use changes that could negatively impact biodiversity values.
- Fire, weed and pest management regimes to respond to the ecological needs of the habitat and species to maintain or improve habitat quality, and minimise threats.
- Hollow replacement program to account for individual habitat features impacted by the proposed action.
- Targeted replanting approach to accelerate natural regeneration, connectivity and enhance foraging availability.

1.0 Introduction

1.1 Overview

On 17 December 2022, the Queensland Department of Transport and Main Roads (TMR) (the Proponent) submitted a referral for the Logan and Gold Coast (LGC) Faster Rail Project (the proposed action) to the Department of Climate Change, Energy, the Environment and Water (DCCEEW) for assessment under the Commonwealth *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act).

On 11 April 2023, a delegate of the Minister for the Environment and Water determined the proposed action is a 'Controlled Action' due to its potential to have a significant impact on a Matter of National Environmental Significance (MNES) i.e. listed threatened species and communities (sections 18 & 18A of the EPBC Act) to be assessed by Preliminary Documentation.

This Preliminary Documentation suite, including supporting documentation, has been prepared to address the request for additional information issued by DCCEEW on 4 May 2023.

1.2 Purpose of document

The purpose of this Preliminary Documentation is to address the request for additional information (required for assessment by Preliminary Documentation), issued by DCCEEW to the Proponent on 4 May 2023. This document has been partitioned into sections reflecting the format of the formal DCCEEW-issued Request for Information (RFI). A cross-reference table identifying where each of the RFIs are addressed is provided in Appendix A.

The Preliminary Documentation presented is considered sufficient to allow the Minister (or delegate) to make an informed decision on whether to approve the proposed action under Part 9 of the EPBC Act.

To respond to the RFI, a significant body of work has been undertaken by the Proponent following the original referral and Preliminary Documentation. Providing certainty in how the proposed action will be implemented, several key reports have been prepared to capture various aspects of the proposed action's impact on MNES as well as formalise the commitments to avoid, minimise, mitigate and offset significant impacts. The documents listed in Table 1 are attached to this report and are to be read in support of the summarised responses provided to assess the proposed action in this document.

Table 1 Preliminary Documentation appendices

<table>
<tr><th>Appendix</th><th>Title</th><th>Description</th></tr>
<tr><td>Appendix A</td><td>Cross reference table</td><td>The cross-reference table provides the location of the responses to each question posed by DCCEEW in the RFI for easy reference.</td></tr>
<tr><td>Appendix B</td><td>Supplementary MNES Report</td><td>The Supplementary MNES Report provides an assessment of the proposed action's potential impact on MNES under the EPBC Act. To provide an assessment of potential impacts on MNES, the Supplementary MNES Report has been structured to provide additional information to supplement the information provided in the referral. A summary of the report structure and content is provided below:
<table>
<tr><th>Section</th><th>Description</th></tr>
<tr><td>Section 1.0</td><td>Details the proposed action, including the proposed scope of works, proposed action background and proposed activities.</td></tr>
<tr><td>Section 2.0</td><td>Summarises the legislative context, including Commonwealth and State matters and guidance considered in the assessment, and describes the methodology and approach to assess potential impacts to MNES.</td></tr>
<tr><td>Section 3.0</td><td>Describes ecology values of the study area.</td></tr>
<tr><td>Section 4.0</td><td>Describes the likelihood of occurrence of MNES.</td></tr>
<tr><td>Section 5.0</td><td>Identifies direct and indirect impacts of the proposed action.</td></tr>
</table>
</td></tr>
</table>

Appendix	Title	Description
		Section 6.0 Details the project-specific avoidance and mitigation measures proposed to minimise potential impacts on MNES. **Section 7.0** Significant impact risk screening, summary of significant impact assessment results and offset requirements. **Section 8.0** Conclusions **Section 9.0** Lists the references considered in the assessment. **Appendix A** Protected matters search informing the referral. **Appendix B** Supporting figures **Appendix C** Likelihood of occurrence assessment **Appendix D** MNES habitat mapping rules **Appendix E** Flora and fauna species list **Appendix F** Significant Impact Assessment **Appendix G** Landscape Connectivity Modelling **Appendix H** Koala habitat mapping letter
Appendix C	Overarching Environmental Mitigation Plan (OEMP)	Prepared in response to DCCEEW RFI, 4 May 2023, the purpose of this OEMP is to set out the proposed objectives and mitigation measures proposed to avoid, minimise and manage potential impacts to MNES from construction of the proposed action. In effect, this OEMP is the **action management plan** for the proposed action expected to be conditioned for implementation taking place of post-approval management plans. Attached to the OEMP, the Fauna Monitoring Plan sets out requirements to monitor impacts to fauna during construction.
Appendix D	Offset Area Management Plans (OAMPs)	The OAMPs detail the specific active management, monitoring and reporting actions at each of the proposed action's offset sites to achieve the desired conservation outcomes. The following are OAMPs for each location: • Offset Area Management Plan: Benobble • Offset Area Management Plan: Undullah OAMP are supported by suitability assessments to describe offset values.
Appendix E	Consultation Summary Leaflet	On 6 April 2022, an overview and key insights summary in the form of a Consultation Summary Leaflet was distributed to all those who participated and registered for updates on the proposed action. Hard copies were provided to electoral offices, and on the proposed action web page.
Appendix F	Draft EPBC Approval Conditions	To assist DCCEEW with the assessment of this proposed action, the Proponent has developed a draft set of EPBC Approval Conditions with the intent to demonstrate both its understanding of the compliance matters required to avoid and minimise impacts on protected matters, also to assist in streamlining the generation of conditions throughout the final stages of the Assessment Phase leading up to the Minister's Decision.

This Preliminary Documentation summarises responses to the RFI and signposts to where further detailed information can be found within the attached Appendices.

The terminology provided in Table 2 is used throughout this document to describe the proposed action:

Table 2 Terminology used throughout Preliminary Documentation

Term	Purpose
Proposed action	The duplication of the existing rail corridor between Kuraby and Beenleigh Station from two to four tracks, including associated station and rail system upgrades.
Impact area	Area where direct impacts will occur which includes vegetation clearing to facilitate the proposed action (Figure 1). The Impact area covers an area of 194.45 ha and encompasses a matrix of native and non-native vegetation in various conditions, including urban and peri-urban areas, supporting diverse land uses such as residential, rural residential and commercial precincts. The proposed action is intersected by the Logan River along with other named and unnamed waterways, such as Scrubby Creek. Targeted field surveys were undertaken within and adjacent to the Impact area.
Indirect area	Areas assessed where indirect impacts have the potential to occur for relevant MNES, and will be included in offset acquittal
Study area	The study area represents the extent of the desktop searches. The study area represents a 5 km buffer around the approximate centre point of the Impact area as shown in Figure 1.
Buffer zones	Areas located outside the Impact area used to assess potential indirect impacts for relevant MNES, and where TMR commits to monitoring, mitigation and management measures throughout the construction of the proposed action.

2.0 Responses

2.1 Description of action

2.1.1 Proposed action background

The Gold Coast rail line connects Gold Coast City and Logan City with the Brisbane Central Business District (CBD) and plays a vital role in supporting the economic viability of the wider South East Queensland (SEQ) region, connecting jobs and workers, and businesses to other businesses. The rail line is subject to strong growth in passenger demand, driven by population growth in the Brisbane to Gold Coast corridor.

Currently, rail services on the Gold Coast and Beenleigh line are constrained by a single track in each direction on the 18.7 km section between Kuraby Station in the north and Beenleigh Station in the south, as shown in Figure 1. During peak periods, express services between Gold Coast and Brisbane must share this single track with all-stops trains between Kuraby and Beenleigh. This results in some all-stops Beenleigh trains being delayed, to allow the express services to pass.

Duplicating the 18.7 km of double track railway between Kuraby and Beenleigh will widen the existing rail corridor and straighten track sections to allow free movement of both all-stops and express trains, so services can run more frequently and reliably in the future. The proposed action will deliver modern and accessible stations between Kuraby and Beenleigh, making it easier for people to access the rail network, as well as removing the existing level crossings along this corridor, improving journey times and safety for road and rail users. It is also a significant and key infrastructure investment to prepare for the Brisbane 2032 Olympic and Paralympic Games.

2.1.2 Proposed action description

RFI 2.1	a.	a description of all components of the proposed action (early works and pre-construction, construction and operational), including the anticipated start and completion dates, stages and duration. This should include a detailed outline of the expected timing of any staged clearing over the construction period.
	b.	the location, boundaries, and size (in hectares) of the disturbance footprint, and of adjoining areas and vegetation and biodiversity corridors, which may be directly and/or indirectly impacted by the proposal, including from material stockpiles, vehicle access and associated activities.

The proposed action will increase the number of tracks from two to four, widening 18.7 km of existing rail corridor with track straightening between Kuraby and Beenleigh. This will allow the free movement of both all-stops and express trains, with services running more frequently and more reliably supporting the growing population and customer demand between Brisbane, Logan and the Gold Coast.

As shown in Figure 1, the Impact area encompasses 194.45 hectares (ha) to accommodate the key features of the proposed action:

- Duplication of 18.7 km of rail corridor and upgrades to associated rail systems between Kuraby and Beenleigh Stations resulting in an increase from two tracks to four tracks.
- Eight station upgrades including a station relocation (Trinder Park Station) to improve accessibility, safety and amenity, including platform straightening, new pedestrian bridges with lifts and improve bus stop, park 'n' ride and kiss 'n' ride facilities.
- Removal of existing rail level crossings at Trinder Park (Railway Parade), Holmview (Spanns Road) and Beenleigh (Holmview Road).
- Adjacent local road network alterations associated with the railway duplication.
- Dedicated active transport along the corridor.
- Extension of the cattle siding at Holmview Station.
- Dedicated rail maintenance access road adjacent to the rail corridor.

The proposed action is limited to construction only. The assessment provided in this Preliminary Documentation relates to construction impacts of the proposed action, giving consideration to the impacts facilitated by the operation of the railway upon completion of the proposed action. The proposed construction activities include:

- Site preparation works, including clearing and grubbing, earthworks, and establishment of temporary construction compounds and laydowns.
- Public Utility Plant (PUP) relocation work.
- Construction of new tracks, including bridges and associated drainage works.
- Roadworks (including minor road realignments resulting from track widening); and
- Station rebuilds (including upgrade and relocation of stations).

To provide clarity on party responsibilities, the OEMP (Appendix C) outlines specific roles and obligations for actions under the relevant sections. Notwithstanding this, the Proponent retain overall responsibility in terms of compliance with the EPBC approval and associated conditions.

The Impact area comprises 194.45 ha confining the proposed construction of permanent infrastructure and temporary construction compounds and laydown areas.

2.1.2.1 Existing environment

The proposed action extends over Brisbane City Council and Logan City Council local government areas (LGAs) predominantly characterised by the existing rail corridor within a highly modified urban setting. The proposed action will widen the existing operational rail corridor within a constrained and developed urban environment.

Within and surrounding the Impact area (within 5 km radius, or Study area), the existing land uses include low density and medium density residential areas, commercial and industrial districts, neighbourhood centres, sport and recreation facilities, rural area, and environmental management and conservation zones.

The proposed action will widen the existing rail corridor within a highly modified urban environment, with the Impact area comprising more than 90% of disturbed and previously cleared residential areas and industrial land, roads, railway corridors and stations, parklands (not vegetated), artificial wetlands and mixed regrowth and revegetation areas subject to historical broad scale clearing for agricultural purposes. The remaining Impact area (less than 10%) comprises undisturbed eucalypt woodland and native aquatic vegetation. In a regional context, the proposed action's impact to undisturbed (remnant) vegetation is expected to be minor, impacting approximately less than 0.001% of undisturbed (remnant) vegetation within the SEQ bioregion.

The proposed action intersects or encroaches on areas of bushland, especially adjacent to the existing alignment at Scrubby Creek, Logan River (Edens Landing) and at the proposed straightening of the alignment through Trinder Park (Acacia Forest Park). The Impact area also traverses several key parks and areas of remnant vegetation such as Acacia Forest Park (northern portion of Karawatha Forest) and Scrubby Creek. Outside of these areas, the 'Impact area' includes maintained landscaped areas and patchy Eucalyptus woodland to open forest, complex notophyll to microphyll vine forest and melaleuca, casuarina and eucalyptus open forest providing dispersed habitat values. The Impact area is bisected by the Logan River with various minor tributaries including Slacks Creek, Spring Creek and Scrubby Creek (Figure 1). Mapped and ground truthed biodiversity corridors and fauna movement corridors occur at Karawatha Forest Park, Gould Adams Park/Nealdon Park, Logan River and Albert River.

Key Biodiversity Areas and corridors are mapped within Appendix B (Figure 1) of the Supplementary MNES Report (Appendix B). Key changes to reduce the impact area in these Key Biodiversity Areas are presented in Section 2.1.4.

Figure 1 Proposed action Impact area

2.1.2.2 Proposed action construction activities

The proposed action is currently within competitive procurement phases which is forecast for completion Q1 2025. At the completion of this procurement phase, a Contract will be awarded that encompasses Design and Construction activities under an Alliance model. Given the proposed action is at Refined Reference Design stage, the definitive construction methods are yet to be finalised. The anticipated construction process for the proposed action encompasses the following activities:

- Enabling works:
  - Site facility and access establishment
  - Stockpile locations
  - PUP (water, sewer, communications) relocation and protection
  - Temporary public access arrangements.
- General corridor:
  - Civil works, comprising clearing and grubbing of sites, topsoil stripping, bulk earthworks (excavation, embankment), rock excavation and rock dowelling and capping, to facilitate construction of:
    - Rail maintenance access roads (RMARs)
    - Corridor fencing
    - Stormwater and drainage infrastructure
    - Active transport corridor (ATC)
  - Trackworks, comprising track delivery, installation, welding and grinding, turnout installation and rail tamping
  - Rail systems works, including overhead line equipment and signalling installation
  - Decommissioning redundant railway infrastructure.
- Stations and structures:
  - Demolition of bridges, buildings, platforms etc.
  - Construction of island and side platforms, lifts and overbridges and buildings and canopies.
  - Construction of rail bridges over roads, road bridges over rail and footbridges
  - Construction of duplicated rail bridges over Logan River and Scrubby Creek
  - Construction of retaining walls
  - Possible jetty works for Logan River rail bridge
  - Pier protection works for existing bridges.
- Precincts:
  - Upgrades to local road connections
  - New and upgraded bus stop, park ‘n’ ride and kiss ‘n’ ride facilities
  - New and upgraded pedestrian walkways.

2.1.2.3 Ancillary disturbance (access, firebreaks, fencing)

RFI 2.2	Further information is required as follows: a) (if relevant) a description with supporting figures detailing all site access roads and any other shared infrastructure to be constructed to facilitate the proposed action. b) (if relevant) mapped locations and size of any proposed fire breaks, and details of any proposed new or updated fire management plans as a result of the proposed action. Information about any proposed fencing, including: i. the location and purpose of all proposed fencing.

ii.	the characteristics of the fencing, i.e. height, length, wildlife proof measures etc.
iii.	whether the proposed fencing will provide a wildlife barrier to/from/within the proposed action area.
iv.	please support with maps, plans, diagrams whenever possible.

a) As the proposed action will occur within a highly developed and urbanised environment associated with the existing railway corridor, access to the Impact area will be readily available via main roads and local roads in and around the proposed action. No additional access routes will be required outside the Impact area.

The Impact area incorporates both permanent infrastructure and temporary works, including laydown and stockpile areas, required to facilitate construction of the proposed action. The specific location for material stockpiles, including storage volumes, heights and materials to be stockpiled, will be determined during Detailed Design phase; however, stockpiles will not be located outside the Impact area and identified Impact area.

b) Firebreaks

Fire breaks are considered in the standard design for rail corridor. As the rail corridor will be operated and maintained to the same standard as the current rail corridor, there will be no additional firebreaks or new Fire Management Plan required due to the proposed action.

In relation to the rail corridor, bushfire management is undertaken in accordance with QR's Bushfire Management Standard (MD-10-91) and Wildfire Management Plan (MD-17-48), accounting for potential for increased erosion, impacts to neighbouring properties and the surrounding landscape (QR MD-15-3 Standard – Vegetation Management SMS 1.1). Any new firebreaks on QR land will require environmental assessment in accordance with the Queensland Rail Environmental Process Manual Framework (MD-13-320) and consider vegetation assessment requirements as applicable.

Adjacent to the Impact area, Karawatha Park is the only park (under the jurisdiction of Brisbane City Council (BCC)) which has a Fire Management Plan and planned burn regimes. Other parks are too small for planned burn regimes and are currently managed under overarching fire management principals and policies *(BCC Fire Management staff pers comm March 2024).*

Karawatha Park's operational Fire Management Plan is updated every five years and proposed burn areas are displayed on the Councils website[1]. Council has fire-tracks/trails and access lines, a few of which are in proximity (within 300 m) of the existing rail corridor. The area east and west of Acacia Road forms part of the 13 ha Fire Management Block 1A. The proposed action will split this fire management block to the east of Acacia Road, providing access to both sections of bushland.

All of Logan City Council parks (such as Battle Park, Hugh Muntz Gardens, Gould Adams) do not have internal fire trails or tracks. Maintenance of existing pathways and mowing zones are the only form of fire management within these parks at present.

Permanent fencing

Rail, roads, residential and commercial lots within the broader landscape have introduced road-rail barriers, noise walls, fencing and fauna protection fencing.

The proposed action will install fauna fencing at key locations to aid terrestrial fauna movement and limit entry to the rail corridor as shown in Figure 3 of the OEMP (Appendix C). The locations for these have been informed by the TMR's Fauna Sensitive Transport Infrastructure Delivery manual (Department of Transport and Main Roads, 2024), field surveys, habitat mapping, further investigation work during Detailed Design phase and ongoing collaboration with the proposed action's design and delivery team.

The proposed action will widen an existing rail corridor and install a minimum 1,800 mm high chain link boundary fence and will be positioned on both sides of the corridor. Given the existing corridor has limited fauna exclusion fencing installed the proposed action will install exclusion fencing in Key Biodiversity Areas (in accordance with Appendix B of the OEMP); this will enhance the level of protection for fauna protection (exclusion from the rail corridor). The proposed action will not

[1] BCC Planned Burns (https://www.brisbane.qld.gov.au/community-and-safety/community-safety/disasters-and-emergencies/types-of-emergencies/bushfires/planned-burns#faqs)

introduce additional security fencing beyond current extent instead relocating and upgrading fencing on both sides of the widened rail corridor. The existing fencing in operational areas outside of Key Biodiversity Areas will be replaced with rail corridor fencing to an equivalent Queensland Rail (QR) standard.

The TMR standard drawing SD1603[2] - Fencing - Koala Proof Fence and Gate as referenced within Chapter 6, section 13 Fauna Exclusion Fencing of TMR's *Fauna Sensitive Transport Infrastructure Delivery manual* (Department of Transport and Main Roads, 2024) will be used as the rail corridor fencing base design where Koala / fauna exclusion fencing is proposed to be installed. An appropriately qualified and experienced ecologist will also be required to consider the Department of Environment, Tourism, Science & innovations (DETSI) Koala-sensitive Design Guideline 2022 and TMR's Fauna Sensitive Transport Infrastructure Delivery manual 2024 during the detailed design phase to ensure fencing is fit-for-purpose in Key Biodiversity Areas.

Where adjustments are proposed from the baseline fence design, these adjustments will be reviewed by an appropriately qualified and experienced ecologist for suitability in relation to the relevant MNES species. Where adjustments present hazards to these species, additional mitigation measures will be applied to reduce the risk to relevant MNES species. Barbed-wire occurrences in Key Biodiversity Areas based on the Asset Owner's Security Risk requirements will apply the following hierarchical treatment:

- Preferentially, remove hazard through avoidance of using barbed-wire
- Replace the top strand of barbed-wire with barbless wire
- Enhance visibility through plastic strand-wrapping or addition of electrical fence tape or similar
- Affix reflective discs/bat-tags at suitable spacings.

As a minimum requirement, fencing in Key Biodiversity Areas will be fauna exclusion fencing and incorporate reflective discs/bat tags (generally in accordance with Bat Conservation & Rescue QLD Inc. guidance document: Mitigating Barbed Wire Risk for Wildlife).

Temporary fencing

Where temporary fencing is required, it will replicate the SD1603 unless the SD1615[3] fencing design or suitable alternative is adopted as informed by an appropriately qualified and experienced ecologist. Wherever possible, permanent fencing will be installed.

Fauna friendly fencing and fauna movement measures to avoid impacts are summarised in the OEMP (Appendix C) and depicted in Appendix B and Figure 3 of the OEMP (Appendix C). The OEMP outlines the locations of fauna movement infrastructure based on current assessments and subject to further monitoring in accordance with the Fauna Monitoring Plan within the OEMP (Appendix C) undertaken prior to construction to inform the Detailed Design phase. No fauna crossing infrastructure will be allowed over the railway due to safety constraints relating to the electrified OHLE. Additionally, landscaping and revegetation of fauna passage surroundings will be in accordance with TMR's MRTS16 Landscape and Revegetation Specification.

Avoidance and mitigation measures are discussed in Section 2.4 of this report.

2.1.2.4 Operational phase activities

The proposed action is limited to construction only. Anticipated activities facilitated by construction of the proposed action encompass the following:

- Operation of approximately 18.7 km of rail corridor and upgrades to associated rail systems between Kuraby and Beenleigh Stations, doubling the operational capacity between Kuraby and Beenleigh Stations, increasing the volume and frequency of services.
- Maintenance access for ongoing management of the rail network by Queensland Rail.
- Operation of eight (8) upgraded stations, including the relocated Trinder Park Station, with:

[2] TMR Standard Drawing SD1603 link accessible here.
[3] TMR Standard Drawing SD1615 link accessible here.

  - improved accessibility, safety and amenity
  - platform straightening, new pedestrian bridges, new station buildings and new island platforms
  - updated station accessibility systems including hearing loops, CCTV and help points will comply with *Disability Discrimination Act 1992*
  - improved rail staff facilities and customer services
  - improved primary path of access from the station platforms to the surrounding precinct.
- Operation of new and upgraded Park 'n' Ride facilities, including:
  - improved bus facilities for transit interchange, new kiss 'n' ride facilities, and new *Disability Discrimination Act 1992* compliant parking
  - new station entrance at Beenleigh Station with improved pedestrian and traffic access, park 'n' ride and bus station with improved transit interchange and accessibility to the station via a raised concourse.
- Operation of an upgraded cattle siding at Holmview Station, including an extension of existing siding to full 680 m length.
- Provision of dedicated active transport corridor (ATC) along the rail corridor:
  - Average ATC width of 6 m
  - ATC facilities and paths to be linked by bridges to alternate between one side of the rail corridor and the other.
- Removal of rail level crossings at Trinder Park (Railway Parade), Holmview (Spanns Road) and Beenleigh (Holmview Road).

2.1.3 Proposed action timeframe

The proposed action remains a high priority for the Queensland Government to improve rail services between some of SEQ's fastest growing cities and deliver integrated transport outcomes for local communities. It is also a significant and key infrastructure investment to get ready for the Brisbane 2032 Olympic and Paralympic Games.

To achieve this milestone, Contract Award to the successful consortium occurred in Q1 2025 with the Detailed Design and Delivery phase of the proposed action commenced in 2025 achieving significant advances in design and refinement of the Impact area (refer Section 2.1.4) with delivery continuing to 2030, followed by testing and commissioning activities for the railway.

2.1.4 Proposed action updates

RFI 2.1	c.	a clear description of any material changes (e.g. total footprint, areas to be cleared) or planning changes (e.g. construction timeframes) between the referral and draft preliminary documentation submissions.

Since the EPBC Act referral (reference: EPBC 2022/09439) in December 2022 and Determination in April 2023, the Impact area has been revised following further design development, refinement of property acquisition, review of construction staging and methodology, stakeholder and asset owner input/feedback, design technical investigations, and targeted ecology surveys. Design development has been driven by finding alternative solutions to achieve:

- reductions in overall impacts to habitat for MNES.
- greater alignment with desired project, customer and community outcomes.
- simplified delivery by reducing project scope, complexity, cost, disruption and community impact.
- improved rail operations functionality, customer access to public transport, precinct integration and cross-corridor connectivity.

This has included detailed evaluation of construction methodology and staging outputs resulting in a better understanding of the actual permanent infrastructure footprint as well as the temporary construction and access footprints required. Temporary construction requirements are within the Impact area and access to the site will be from adjacent local and State controlled road networks.

As part of the EPBC Act referral in 2022, a Project area of 294.19 ha was identified based on information available at the time. Since the referral, significant effort has been undertaken to ground truth habitat for MNES. In addition to design refinements to avoid habitat for MNES, an updated understanding of habitat within the Impact area has resulted in refinement and substantial overall reduction in direct impacts to habitat for MNES.

Subsequently, the design has been influenced by design optioneering, refinement of properties during acquisition, review of construction staging and methodology, stakeholder and asset owner input/feedback, design technical investigations, and targeted ecology surveys. It is important to note that in the context of design refinements, the proposed action itself remains the same.

The ‘Impact area’ assessed and presented in this Preliminary Documentation is 194.45 ha reflecting a decrease of 99.74 ha (33.90%) following design refinements avoiding impacts to MNES.

Demonstrating the substantial reductions achieved through the design process, impact area reductions for each MNES assessed for potential significant impacts are summarised in Table 3.

An overview of the change between the referral and the current Impact area assessed in this Preliminary Documentation is compared in Figure 2, including annotation describing key changes to the layout and design. Further detail is provided in the following section.

The full assessment is provided in the Supplementary MNES Report at Appendix B.

Table 3 MNES impact avoided since EPBC Act referral (2022)

MNES	Potential habitat utilisation	Maximum Direct Impact area (ha)		Percent (%) reduction in impacts since Referral
		Referral submission (December 2022)	Revised Impact area	
Australian painted snipe (*Rostratula australis*)	Breeding (marginal), foraging and dispersal	2.31	0.98	**57.58%**
	Total	**2.31**	**0.98**	
Greater glider (southern and central) (southern & central) (*Petauroides volans)*	Breeding	32.03	21.40	33.19%
	Foraging	8.44	7.52	11.01%
	Dispersal	8.94	5.97	33.22%
	Total	**49.42**	**34.89**	**29.40%**
Grey-headed flying fox (*Pteropus poliocephalus*)	Breeding/Roosting	1.23	0.54	56.10%
	Foraging/Dispersal	65.93	42.60	35.39%
	Indirect impacts (Breeding/Roosting)	0.00	2.20	0.00%
	Total	**67.16**	**45.33**	**32.50%**
Koala (combined populations of Qld, NSW and the ACT) (*Phascolarctos cinereus*)	Breeding/Foraging	37.81	27.48	27.32%
	Shelter/Dispersal	139.34	80.27	42.39%
	Total	**177.15**	**107.74**	**39.18%**
Mary River cod (*Maccullochella mariensis*)	Breeding/ Foraging/ Dispersal	1.42	0.65	**54.23%**
	Total	**1.42**	**0.65**	
Regent honeyeater (*Anthochaera phrygia*)	Foraging and dispersal	64.80	42.28	**34.75%**
	Total	**64.80**	**42.28**	
South-eastern glossy black cockatoo (*Calyptorhynchus lathami lathami*)	Breeding	29.17	18.91	35.17%
	Breeding and Foraging	10.05	7.13	29.05%
	Foraging	2.47	2.19	11.34%

MNES	Potential habitat utilisation	Maximum Direct Impact area (ha)		Percent (%) reduction in impacts since Referral
		Referral submission (December 2022)	Revised Impact area	
	Dispersal	22.65	13.51	40.35%
	Total	**64.34**	**41.74**	**35.13%**
Spotted-tailed quoll (southern sub-species) (SE mainland population) (*Dasyurus maculatus maculatus*)	Breeding/ Foraging/ Dispersal	40.09	26.20	**36.88%**
	Total	**40.09**	**26.20**	
Subtropical floodplain eucalypt TEC	-	1.55	1.30	**16.13%**
	Total	**1.55**	**1.30**	
Swift parrot (*Lathamus discolor*)	Foraging and dispersal	64.80	42.28	**34.75%**
	Total	**64.80**	**42.28**	
White-throated needletail (*Hirundapus caudacutus)*	Foraging and dispersal	92.57	51.70	**44.15%**
	Total	**92.57**	**51.70**	
Yellow-bellied glider (south-eastern) (*Petaurus australis australis*)	Breeding	32.03	21.40	33.19%
	Foraging	8.44	7.52	11.01%
	Dispersal	8.94	5.97	33.22%
	Total	**49.42**	**34.89**	**29.40%**

Figure 2 Overall Impact area reduction from 2022 EPBC Act Referral to PD submission

As presented in the overview in Figure 2, ongoing design development and constructability reviews has led to key design refinements described below, with summaries of the more substantial refinements provided by:

- Revised layout of Kuraby Station to retain the existing three platforms and improve rail operations

  Design development for Kuraby Station in consultation with Brisbane City Council and Queensland Rail has resulted in updates to the road and rail design. The existing station platforms and rail crossovers have been retained to provide greater, longer-term operational resilience of the Gold Coast line, however the rail duplication now extends alongside Beenleigh Road, north of the Gateway Motorway. As part of these design refinements, minimisation of vegetation loss has been a primary consideration, particularly as part of the redesign and construction footprint/access requirements for the culvert extension under Beenleigh Road and current rail corridor. Options to improve fauna connectivity at this location are being further investigated, assisted by input from a suitably qualified ecologist (a core requirement throughout the design and future construction stages).

- Targeted flood immunity upgrades on the rail line at Spring Creek and Holmview

  The Proponent has undertaken further hydrologic modelling in consultation with Queensland Rail to ensure the proposed rail duplication provides suitable flood immunity. Targeted upgrades will be delivered at two key locations – Spring Creek and Holmview Creek – to provide tangible improvements to flood immunity and the overall operational resilience of the Beenleigh and Gold Coast lines within the limits of the proposed action. The Proponent is also proposing additional scour protection at the rail bridge over Logan River, and to raise new rail system assets along the corridor to further improve flood resilience and reduce disruption to customers.

- Closure of Spanns Road level crossing and local road upgrades to improve access

  The Spanns Road level crossing at Holmview will be closed and alternative local access provided through upgrades to the existing road network, as well as a new pedestrian connection over the rail line. This solution will cul-de-sac both sides of Spanns Road at the rail corridor and upgrade the intersections at Chapman Drive / Boundary Street and Boundary Street / Kokoda Street to improve road access and flood resilience for the community. This solution avoids residential properties otherwise impacted by the grade separation originally proposed at this location. The project team has been working closing with Logan City Council to ensure environmental constraints are fully considered, including avoidance of impacts to koala habitat and other vegetation, wherever possible.

- Woodridge Station pedestrian underpass access in lieu of an overpass

  Design development has led to inclusion of a 15 m wide underpass beneath Woodridge station (instead of an overpass) to improve cross corridor active transport connections and integration with Logan City Council’s Masterplan for this precinct, while maintaining Crime Prevention Through Environmental Design (CPTED) outcomes for the community. In addition to these changes, other updates around this station include local road works, grade changes and associated rail vertical alignment. There will be no impact on vegetation at this location.

- Beenleigh Station relocation 700 m north of its current location to better integrate with the local precinct and reduce disruption during construction

  Beenleigh Station will be relocated north-west approximately 700 m from its current location to better integrate with the existing precinct and improve connectivity and the walk-up catchment. This solution significantly reduces disruption during construction to the rail network and the local road network, commuters and the Beenleigh community, particularly by avoiding impacts to Beenleigh Town Square (discussed in the EPBC referral), as well as other works to replace the Alamein Street Bridge. While no MNES are impacted for this option, there are other environmental benefits, relating to reduced construction complexity and risks associated with a new tunnel.

- Trinder Park Station refinement to minimise environmental impacts

  As previously discussed in the EPBC referral (EPBC 2022/09439), an assessment of potential options for Trinder Park Station park 'n' ride facilities was completed as part of an earlier planning phase. The realignment of the rail corridor at this location is necessary to address the current

constraints including rail safety compliance and rail-line speed to ultimately achieve the required outcomes for the transport network. The relocation of Trinder Park Station will intersect Acacia Forest Park, which is adjacent to part of Karawatha Forest.

Design refinement at this location has been undertaken to further minimise impacts to Acacia Forest Park, community facilities and properties. As part of the business case for the proposed action, extensive demand modelling was completed, which identified an existing demand for train services at Trinder Park and forecast an increased demand in the medium to long-term planning horizons. As a result, Trinder Park station has been retained to service this demand. The current Trinder Park station is located very close to Woodridge station (less than one kilometre distance). The relocation of Trinder Park station further north (within Acacia Forest Park) provides an increased catchment for potential rail users, as well as improved rail operations, and will address the current and future demand for rail services in the area.

During the Refined Reference Design phase, alternative options were investigated for the park 'n' ride facility; positioning the park 'n' ride on the eastern side was identified as the preferred option. This results in less habitat fragmentation (compared to being located on the western side of the station); the station will be closer to residential areas and provide easier access for customers and bus services with the main residential catchment being located to the east of the rail corridor. The design footprint will also be reduced by a further ten percent (compared to the park ‘n ride facility being located on the western side of the station) further reducing vegetation impact.

Since the EPBC referral, options to improve fauna connectivity at this location (by way of dedicated fauna culvert, glider poles, fauna furniture or the like) are being further investigated. This is assisted by input from suitability qualified ecologists, which is a core requirement throughout future design and delivery phases of the proposed action. In addition to the above, since the EPBC referral, Smith Road overpass has been shifted to remove a service road. This has resulted in less vegetation now being impacted.

While a high level of conservatism in mapping for conservation significant species habitat has already been undertaken, refinement in the Impact area has resulted in an overall reduction for MNES species habitat potential being impacted. Specific focus is given to the Impact area reductions achieved within Key Biodiversity Areas described as ‘Major change areas’ for MNES with potential for significant impacts:

- Kuraby
- Acacia Forest Park
- Scrubby Creek/Gould Adams Park
- Beenleigh.

For the MNES with potential for significant impacts, the ‘Major change areas’ are presented in the following figures, with quantification of the Impact area changes at each of the Key Biodiversity Areas in Table 4:

Table 4 MNES Impact area changes in the Key Biodiversity Areas

MNES	Figure
Regent honeyeater	Kuraby (Figure 3A), Acacia Forest Park (Figure 3B), Scrubby Creek/Gould Adams Park (Figure 3C), Hugh Muntz Gardens, Beenleigh (Figure 3D).
Swift parrot	Kuraby (Figure 4A), Acacia Forest Park (Figure 4B), Scrubby Creek/Gould Adams Park (Figure 4C), Hugh Muntz Gardens, Beenleigh (Figure 4D).
Greater glider (southern and central) (southern & central)	Kuraby (Figure 5A), Acacia Forest Park (Figure 5B), Scrubby Creek/Gould Adams Park (Figure 5C), Hugh Muntz Gardens, Beenleigh (Figure 5D).
Koala (combined populations of Qld, NSW and the ACT)	Kuraby (Figure 6A), Acacia Forest Park (Figure 6B), Scrubby Creek/Gould Adams Park (Figure 6C), Hugh Muntz Gardens, Beenleigh (Figure 6D).

MNES	Figure
South-eastern Glossy Black-cockatoo	Kuraby (Figure 7A), Acacia Forest Park (Figure 7B), Scrubby Creek/Gould Adams Park (Figure 7C), Hugh Muntz Gardens, Beenleigh (Figure 7D).
Yellow-bellied glider (south-eastern)	Kuraby (Figure 8A), Acacia Forest Park (Figure 8B), Scrubby Creek/Gould Adams Park (Figure 8C), Hugh Muntz Gardens, Beenleigh (Figure 8D).
Grey-headed Flying-fox	Kuraby (Figure 9A), Acacia Forest Park (Figure 9B), Scrubby Creek/Gould Adams Park (Figure 9C), Hugh Muntz Gardens, Beenleigh (Figure 9D).

Figure 3 Overall Impact area reduction to regent honeyeater habitat from 2022 EPBC Act Referral to Revised Impact area

Figure 4 Overall Impact area reduction to swift parrot habitat from 2022 EPBC Act Referral to Revised Impact area

Figure 5 Overall Impact area reduction to greater glider habitat from 2022 EPBC Act Referral to Revised Impact area

Figure 6 Overall Impact area reduction to koala habitat from 2022 EPBC Act Referral to Revised Impact area

Figure 7 Overall Impact area reduction to glossy black cockatoo habitat from 2022 EPBC Act Referral to Revised Impact area

Figure 8 Overall Impact area reduction to yellow-bellied glider habitat from 2022 EPBC Act Referral to Revised Impact area

Figure 9 Overall Impact area reduction to grey-headed flying fox habitat from 2022 EPBC Act Referral to Revised Impact area

2.1.5 Relevant legislation

RFI 2.1	d.	details of any local or State Government planning scheme, or plan or policy under any local or State Government planning system that applies to the proposed action, or that the proponent reasonably believes are likely to apply, to the proposed action. Details should include: i. what environmental assessment of the proposed action has been, or is being, carried out under the scheme, plan or policy; ii. obtained approvals or additional approvals that are required, including application numbers; and iii. Known or estimated timelines for any additional approvals or permits required.

This Preliminary Documentation and its complementary reports have been developed in accordance with relevant Commonwealth and State legislation current at the time of writing, inclusive of associated policies and guidelines that are currently incorporated into the regulatory framework.

2.1.5.1 Commonwealth approvals

Environment Protection and Biodiversity Conservation Act 1999

The EPBC Act identifies 'nationally significant' animals, plants, habitats and places as MNES to be protected. The Impact area intersects locations with potential to support habitat for MNES. To assess potential impacts of land use changes and new developments, a Significant Impact Assessment (SIA) informed by desktop and field investigations was undertaken against the EPBC Act Significant Impact Guidelines, which indicates the proposed action is likely to have a significant impact on some MNES.

Under the EPBC Act, where a proposed action will have, or is likely to have, a significant impact on one or more MNES, the proponent must refer the proposed action to the Commonwealth Minister for Environment and Water to determine whether or not the proposed action is a 'Controlled Action'. Where a Controlled Action is approved by the Minister, the approval may include a range of conditions that seek to minimise or monitor the impact of the action on MNES values.

On 11 April 2023, a delegate of the Minister for the Environment and Water determined that the proposed action is a Controlled Action due to its potential to have a significant impact on listed threatened species and communities (sections 18 & 18A of the EPBC Act). Subsequently, an additional information request (required for assessment by Preliminary Documentation) was issued by DCCEEW on 4 May 2023. This Preliminary Documentation Report responds to the additional information request from DCCEEW.

Native Title Act 1993

The Native Title claimants for the proposed action Impact area are the Danggan Balun (Five Rivers) People and Gold Coast Native Title Group (Jabree Ltd).

The proposed action consists of existing rail corridor, freehold residential lots and road corridor. Native Title was verified with TMR's Native Title Unit (NTU) to ensure Native Title has been extinguished and/or the appropriate negotiations with Traditional Owners has taken place.

The NTU has assessed existing and/or potential Native Title rights and interests for the proposed action. In total, 624 parcels of land have been assessed within the proposed action area with 3 parcels of land remaining to be processed during Q1 2025. Of the parcels of land assessed, it was confirmed that Native Title rights and interests have been extinguished, except for four properties. Further information is available within section 2.6.4.

2.1.5.2 State approvals

State planning approval exemptions

The following State approval requirements are provided for transparency purposes. This is not a complete list. A comprehensive analysis of approval requirements will be undertaken at the Detailed Design phase in conjunction with the construction contractor. The Proponent anticipates residual planning approvals will be able to be achieved within a period of approximately 4-6 months for code assessable Development applications and potentially longer for Environmental Authorities (EAs) once the relevant applications have been lodged.

The proposed action will be exempt from certain approval requirements under the *Planning Act 2016* and *Planning Regulation 2017* (including local government planning schemes) because it involves government supported transport infrastructure and because it is being carried out by the State, represented by TMR. For example, exemptions from the following approval requirements will apply to the proposed action:

- local government planning scheme approval requirements, because development for the construction of government supported transport infrastructure (GSTI) is development that cannot be made assessable under a planning scheme: section 16 and Schedule 6 of the *Planning Regulation 2017* (Planning Regulation)
- operational work that is clearing of vegetation, will not be assessable where it is exempt clearing work for the construction or maintenance of "transport infrastructure" (listed in schedule 5, part 1, item 2) and it is GSTI that is exempt clearing work under Schedule 21, section 1(14)
- building work assessment requirements, because the building work will be carried out by or for the State or a public sector entity (to the extent the building work complies with the relevant provisions for the building work): schedule 7 of the Planning Regulation
- reconfiguring a lot that is acquired by the State for use as part of a rail transport corridor under section 240 of the *Transport Infrastructure Act 1994* which cannot be regulated under a planning scheme or by the Planning Regulation: schedule 6, Part 4, section 21(2) and schedule 10, part 14 of the Planning Regulation
- development on a State or local heritage place, which will be exempt where the development is carried out by the State: schedule 10, part 8 of the Planning Regulation
- development interfering with koala habitat in a koala priority area and a koala habitat area (or one of these), which will be exempted development where it is for infrastructure stated in schedule 5 ("transport infrastructure") if carried out by or for the State or a public sector entity.

Aboriginal Cultural Heritage Act 2003

The Impact area is located across land belonging to numerous Traditional Owner Groups. These include the Jagera People and Turrbal Association in the north, the Danggan Balun (Fiver Rivers) People through the central extent to Logan River and the Gold Coast Native Title Group in the southern extent.

Consultation with the relevant Traditional Owner groups will manage residual risk to heritage values. Recommendations from the surveys completed in 2023/2024 will feed into the Cultural Heritage Management Plans (CHMP), which will be carried forward into the construction phase and incorporated into the Construction Contractors EMP(C). The CHMPs will be completed in 2025. Also refer to section 2.6.4.

Queensland Heritage Act 1992

There are several listed heritage items in or within proximity to the Impact area under the Queensland Heritage Register, Queensland Rail Heritage Register, Logan City Council Heritage Register, and Brisbane City Council Heritage Register.

Where these heritage places cannot be avoided, further assessment will be required. Depending on the nature and extent of impacts, an approval or exemption may be required under Sections 71 or 72 of the Act. Consultation with relevant stakeholders responsible for managing identified historical heritage places will manage the residual risk to heritage places. Management measures resulting from stakeholder engagement will be carried forward into the construction phase and incorporated into the Construction Contractor's EMP(C).

***Acquisition of Land Act 1967* (AL Act)**

The proposed action will require property acquisitions, by way of negotiation or resumption under the AL Act within the Impact area. The Impact area has been developed based on the Refined Reference Design and includes allowance for future design progression as well as construction buffer and land use requirements (e.g. laydown areas). The design will be refined within the Impact area with consideration for potential impacts to environmental constraints including vegetation and habitat for conservation

significant species and interaction with waterways. As the Impact area encroaches privately held residential allotments, the requirement for land acquisition within the Impact area is being progressed concurrently with this assessment. The Proponent will continue to consult with property owners who may be subject to a partial or full land resumption as the design progresses.

***Biosecurity Act 2014* (Biosecurity Act)**

The proposed action will meet the General Biosecurity Obligations (GBO) through development of the EMP(C) to manage biosecurity risk during the construction phase. Located in Fire Ant Biosecurity Zone 2, the proposed action will detail approved Fire Ant high risk material disposal sites (key requirements incorporated into contract documents). Where movement controls cannot be adhered to, a Biosecurity Instrument Permit must also be obtained. This typically takes 20 business days. Similarly, GBO for weed management will also be carried through into the Construction Contractor's EMP(C) and upheld throughout construction.

***Environmental Protection Act 1994* (EP Act)**

The proposed action will comply with the general environmental duty, particularly when undertaking activities with the potential to cause environmental harm.

There are 81 lots within the Impact area that are listed on the Environmental Management Register (EMR). Soils within these lots may be contaminated due to use of contaminated fill during previous construction activities and/or contamination due to historic and existing use as a rail corridor. Contractual requirements have been included to ensure detailed contaminated land investigations through subsequent design phases of the proposed action will inform ongoing management and permitting through to construction.

In the construction phase, if the soil from a landholding listed on the EMR cannot be effectively treated or managed on-site and necessitates removal to an off-site location, the Construction Contractor must secure a soil disposal permit. This permit serves as official authorisation for the transportation of the soil to a designated licensed waste disposal or treatment facility. The application processing time for submitting a disposal permit is 10 business days.

If the proposed action triggers an environmental assessment for extractive or screening activities an environmental assessment for environmentally relevant activity (ERA) 16 – extractive or screening activities will be required. There is a Statutory timeframe of 55 business days associated with a project-specific environmental assessment application. Further time is required (up to 6 months is permitted) in the instance that additional information is requested.

Waste Reduction and Recycling Act 2011

Wastes and contaminated spoil are expected to be produced by the proposed action. The proposed action will quantify leviable wastes during Detailed Design to ensure funding is sufficient to cover the proposed action's waste levy liabilities. The Contractor will also be responsible for waste levy exemptions.

***Vegetation Management Act 1999* (VM Act)**

The proposed action is expected to impact mapped Regional Ecosystems (REs) and other regulated vegetation. As this is State Government Supported Transport Infrastructure, the proposed action is exempt from requiring a development approval for clearing of regulated vegetation for the construction or maintenance of infrastructure as provided under Schedule 21 of the *Planning Regulation 2017*.

***Nature Conservation Act 1992* (NC Act)**

The purpose of the *Nature Conservation Act 1992* is to conserve biodiversity by creating and managing protected areas, managing and protecting native wildlife, and managing the spread of non-native wildlife. The *Nature Conservation (Plants) Regulation 2020* and *Nature Conservation (Animals) Regulation 2020* lists species that are classed as protected wildlife in Queensland. The following conservation classes are defined in the NC Act: Extinct; Extinct in the Wild; Critically Endangered; Endangered; Vulnerable and Near Threatened.

***Nature Conservation (Plants) Regulation 2020* (NC Plants Reg)**

Ecological investigations were undertaken to identify NC Act-listed Critically Endangered, Endangered, Vulnerable or Near threatened (CREVNT) flora within the Impact area. Species confirmed within or directly adjacent the Impact area included angle-stemmed myrtle (*Gossia gonoclada*) and macadamia nut (*Macadamia integrifolia*). While macadamia nut was confirmed present, it was not considered to occur 'in the wild' (i.e. planted), therefore clearing permit requirements do not apply.

Exemptions apply for clearing outside of a high risk area on the flora survey trigger map; however, a flora survey and protected plant clearing permit is required for removing a protected plant or within 100 m of the plant. Under the Act an offset may be required as a condition of the permit approval to compensate for unavoidable impacts on a protected plant species in the wild. This will be informed by further surveys during Detailed Design phases. The approval process is 40 business days and clearing must be undertaken with two years (24 months) of submitting the flora survey report (and receiving exempt clearing notification/clearing permit).

***Nature Conservation (Animals) Regulation 2020* (NC Animals Reg)**

The proposed action will utilise the existing State-wide TMR Low-Risk Species Management Program (SMP) which expires on 15 June 2025 to protect and manage any breeding places (e.g. nests) for least concern species that may be established and require relocation prior to construction.

A High-Risk SMP may be required if colonial breeders or animal breeding places for CREVNT species are found in the Impact area. This will be informed by further surveys during the Detailed Design phase. This typically takes 40 business days.

***Planning Act 2016 (*Planning Act)**

The *Planning Act 2016* and associated *Planning Regulation 2017* is Queensland's principal planning and development legislation. It provides a framework for integrated and coordinated assessment of development activities to ensure impacts are managed in a way that is sustainable.

The Planning Act and the Planning Regulation regulate development approvals and assessments within Queensland, including (but not limited to) those triggered under the Queensland *Vegetation Management Act 1999* and Queensland *Fisheries Act 1994*. According to the Planning Act and the Planning Reg, a development is either accepted development, prohibited development, exempt development or assessable development.

Coastal Protection and Management Act 1995 (Coastal Act)

The proposed action will intersect and traverse tidal watercourses and associated Coastal Management District (CMD). The extent of marine plant communities within the Impact area is limited by urban development and the distance to tidal waters. The marine plant vegetation recorded in this survey was typically found in small, fragmented patches or as narrow fringes along waterways. Furthermore, most marine plants recorded were potential marine plant species occurring in areas that likely rarely experience tidal inundation. Therefore, the estimation of marine plant coverage in this survey is conservative in its adherence to the definition provided by State Code 11.

Consequently, the proposed action is also expected to impact areas of marine plants. Expected impacts to areas of marine plants will guide environmental design responses for infrastructure within tidal areas to support procurement of development approvals and compliance with accepted and performance outcomes under State legislation.

Pre-works notification of the intention to undertake work under within mapped CMDs / tidal areas must be submitted to Department of Environment, Tourism, Science and Innovation (DETSI) at least 5 business days (but no more than 20 business days) before work commences. Post work notification must be submitted to DETSI within 20 business days of completion of work under the code.

Fisheries Act 1994

The proposed action will intersect and traverse mapped fish passage waterways. Proposed bridge and culvert works will include structures with potential to meet criteria for permanent waterway barriers within fisheries waterways. Ecological investigations and hydraulic design will identify where existing infrastructure is deficient, where new infrastructure is required and guide environmental design responses for infrastructure within areas where fish passage is required to support procurement of

development approvals and/or compliance with Accepted Development Requirements for Waterway Barrier Works.

Environmental Offsets Act 2014 (Offsets Act)

Provisions exist under the Offsets Act to avoid the duplication of offsets conditions between Commonwealth and Queensland requirements. Under these provisions:

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

Acquired development approvals and associated conditions will be included in the construction contract documents and adopted by the Construction Contractor in their EMP(C). Code Assessable (Development Assessment (DA) Rules) timeframes apply (3-4 months excluding information requests).

***Water Act 2000 (*Water Act)**

The Proponent is an existing approved entity under the 'Riverine Protection Permit Exemption Requirements (RPP exemption)' (Schedule 2, Item 2 provides for 'a government department declared under the Public Service Act 2008'). Filling and excavation thresholds (150 m^3 and 500 m^3 respectively) apply only to landowners. As the Proponent does not fit the definition of a landowner, it is understood the above thresholds do not apply to works undertaken by the Proponent or their contractor(s).

The Proponent is also understood to be exempt from the clearing thresholds stipulated in the RPP exemption due to their overarching exemption under Schedule 21 of the Planning Reg for clearing regulated vegetation.

The proposed action is exempt from requiring a formal RRP exemption but must comply with 'minimum requirements' contained in section 4 of the RPP exemption requirements guidelines.

Under the Water Act a water licence must be acquired if a proposed action does not meet the exemption requirements for constructing authorities for the take of water without a water entitlement OSW/2020/5467 Version 4.01. If an exemption is relevant pre-work notification must be provided 10 business days before taking any water.

2.1.5.3 Local

The Proponent, representing the State, is exempt from complying with local laws made under the *Local Government Act 2009* (LG Act) and the *City of Brisbane Act 2010*. This means the Proponent is not required to comply with the LG Act, or local laws written by local governments (such as Brisbane City Council's Natural Assets Local Law 2003), in accordance with the *Acts Interpretation Act 1954*. The following sections outline the due diligence assessment process for the proposed action.

2.1.6 Description of intended land uses proposed as part of the completed development

RFI 4.1	Provide a description of the intended land uses proposed as part of the completed development, including of any proposed open space and/or conservation areas and associated ongoing activities, and details of the intended party that would be responsible for future management activities.

The proposed land use of the proposed action is a duplication of the existing rail corridor between Kuraby and Beenleigh Station from two to four tracks, including associated station and rail system upgrades. Whilst the proposed action does not incorporate future open space or conservation areas due to the nature of the linear corridor, design elements of the proposed action include the following features directed at the conservation of connectivity: fauna movement corridors and fauna movement infrastructure such as underpasses, culverts, fauna furniture, fencing and glider poles within the Impact area.

Operational activities such as the ongoing maintenance/management of built infrastructure and landscaping will be the responsibility of the asset owner, including Queensland Rail, along the rail corridor and train stations, and the relevant Council around local road connections and precincts.

2.2 Description of the environment and MNES

Assessment of habitat within and adjacent to the Impact area in response to the RFI from DCCEEW has been captured in the Supplementary MNES Report (included as Appendix B of this Preliminary Documentation response).

The following sections provide a summary of key information, however, given the depth of information requested from DCCEEW, summaries are to be understood in conjunction with the reports and sections signposted.

RFI 3.1	A description of any Matters of National Environmental Significance (MNES) (including but not limited to those listed in this request for information) that are known, likely or have the potential to occur in the proposed action area and adjacent areas.
RFI 3.2	For listed threatened species and ecological communities that have the potential, or are likely, to be present at and in the vicinity of the proposed action site (at minimum referencing PMST), including but not limited to those listed in this request for further information, this section must provide a likelihood of occurrence assessment based on the following: a) Information on the abundance, distribution, ecology and habitat preference of the species or communities (at minimum, this information must be drawn from the SPRAT profile, statutory documents and associated material) b) Quantification of the extent of habitat (including maps identifying known or potential habitat). c) Assessment of the quality and importance of known or potential habitat for the species or communities within the proposed action site and surrounding areas. d) Information detailing known populations or records within at least five kilometres of the development footprint and (if known) the size of these populations. e) Information on the survey methodology used, including a map/s of survey points or transects, how the survey points or transects were selected, when surveys were conducted (for example, dates, time of day, season, etc.) and search effort (e.g. 20 hours over eight days). f) An assessment of the adequacy of any surveys undertaken with reference to any relevant statutory documents and/or scientific literature. In particular, the extent to which these surveys were appropriate for the species and undertaken in accordance with relevant survey guidelines. g) Summarised results of all surveys undertaken, including field notes

A description of MNES known, likely or having potential to occur in the proposed action area and adjacent areas is provided in Section 4.0 and Appendix C of the Supplementary MNES report (Appendix B), including the likelihood of occurrence assessment completed for the proposed action. The assessment has utilised information related to species and community distribution, life history and ecological factors according to the following resources:

- Approved conservation advice, listing advice, recovery plans and policy statements and guidelines for listed threatened species and communities according to the Species Profile and Threats Database (Department of Climate Changes, Energy, the Environment and Water. [2022]. Species Profile and Threats Database. Retrieved from: http://www.environment.gov.au/cgi-bin/sprat/public/sprat.pl
- Atlas of Living Australia. (2022). *Spatial Portal*. Retrieved from Atlas of Living Australia. Retrieved from: https://spatial.ala.org.au/
- eBird Australia. (2022). *eBird*. Retrieved from The Cornell Lab of Ornithology. Retrieved from: https://ebird.org/home

Data collection methods are detailed in Section 2.0 of the Supplementary MNES Report (Appendix B).

The results concluded MNES known, likely or have the potential to occur in or directly adjacent to the Impact area include:

- One threatened ecological community (TEC)
- 11 listed threatened species including:
  - Three threatened flora species
  - Eight threatened fauna species

The results are summarised as follows:

Threatened ecological communities (TEC)

TEC Subtropical eucalypt floodplain forest and woodland of the New South Wales North Coast and South East Queensland bioregions (subtropical floodplain eucalypt TEC) is likely to occur within the following two locations within and/or adjacent to the Impact area:

- **Gould Adams Park/Battle Park**: Seven TEC patches (I-VII) ground truthed in good to moderate condition (classes B3, C1 and C2) within and adjacent to the Impact area with up to 1.30 ha direct impacts over four TEC patches (I – Class B3, IV – Class C1, V – Class B3 and VII – Class C1), and a 4.80 ha buffer zone assessed for indirect impacts (that is, 50 m from the boundary of clearing) for five patches (I – Class B3, III – Class B3, IV – Class C1, V – Class B3 and VII – Class C1).
- **Hugh Muntz Gardens: U**nlikely to directly or indirectly impact approximately 3.56 ha of subtropical floodplain eucalypt TEC occurring in Hugh Muntz Gardens (refer Appendix B, Figure 14 of the Supplementary MNES Report).

Targeted field surveys assessed a total of 1.30 ha of subtropical floodplain eucalypt TEC within the Impact area, and 4.80 ha assessed for potential indirect impacts within a 50 m buffer zone from the boundary of clearing as per the Approved Conservation Advice (Department of Climate Change Energy the Environment and Water, 2022). The TEC corresponds to two condition classes:

- Class B3 comprising 1.12 ha of direct impact and 3.75 ha of buffer zone across three patches
- Class C1 comprising 0.18 ha of direct impact and 1.06 ha of buffer zone across two patches.

Appropriate mitigation and management measures have been prescribed to ensure careful management of both direct and indirect impacts on the TEC.

Listed threatened flora species

- **Macadamia nut (*Macadamia integrifolia*)**, listed as Vulnerable under the EPBC Act
  - Two (2) individuals were recorded within the Impact area at separate locations (Lot 249 on RP172249 and Lot 12 on RP115813). Both species located in residential backyards and likely planted stock not considered to be ‘in the wild’ (Department of Environment and Science, 2020) (refer Appendix B, Figure 11, 2024) with 0.016 ha ground truthed habitat identified within the Impact area.
- **Angle-stemmed myrtle (*Gossia gonoclada*)**, listed as Endangered under the EPBC Act
  - One (1) individual was recorded within Lot 9 on SP307207 approximately 10 m west of the Impact area (refer Appendix B, Figure 11, 2024).
- **Scrub turpentine (*Rhodamnia rubescens*)**, listed as Critically Endangered under the EPBC Act
  - One (1) individual was recorded by GHD (2022) in Lot 2 on RP897149 approximately 10 m west outside of the proposed Impact area with 0.01 ha ground truthed habitat identified within the Impact area. The individual recorded was juvenile within a tree guard and in very poor health with only a few leaves remaining. Based on this, the species is not considered to be ‘in the wild’ and unlikely to become part of a self-sustaining ‘relatively natural ecological community’.

Listed threatened fauna species

Two (2) known (koala and grey-headed flying-fox) and eight (8) conservation significant fauna species have 'potential to occur' within the Impact area, as summarised in Table 5.

A high level of conservatism in mapping threatened fauna habitat has been undertaken as per habitat mapping rules detailed in Appendix D of Appendix B Supplementary MNES Report. In consultation with DCCEEW, shelter and dispersal habitat for koala has expanded to include remaining areas not considered foraging and breeding habitat, excluding railway corridors, major road reserve, noise walls, exclusion fencing, buildings and water.

Table 5 Conservation significant fauna species known or having potential to occur within the Impact area

Common name	Scientific name	EPBC Act	Source
Australian painted snipe	*Rostratula australis*	E	PMST, ALA, WildNet
Greater glider (southern and central)	*Petauroides volans*	E	PMST, ALA, WildNet
Mary River cod	*Maccullochella mariensis*	E	PMST
Regent honeyeater	*Anthochaera phrygia*	CE	PMST, ALA, WildNet
South-eastern glossy black cockatoo	*Calyptorhynchus lathami lathami*	V	PMST, ALA, WildNet
Spotted-tailed quoll (southern sub-species)	*Dasyurus maculatus maculatus*	E	PMST, ALA
Swift parrot	*Lathamus discolor*	CE	PMST, ALA, WildNet
Yellow-bellied glider (south eastern)	*Petaurus australis australis*	V	PMST
Koala	*Phascolarctos cinereus*	E	PMST, Known to occur from targeted field survey
Grey-headed flying fox	*Pteropus poliocephalus*	V	PMST, Known to occur from targeted field survey

2.3 Impact assessment

The assessment of the proposed action's impact on MNES is captured in the Supplementary MNES Report included as Appendix B. The following sections provide a summary of key information. Given the depth of information requested from DCCEEW, these summaries are to be considered in conjunction with the reports and sections signposted.

Using previous ecological assessments, desktop information and targeted field survey data, the potential presence and extent of conservation significant species and communities within the Impact area were assessed.

During the targeted field surveys, subtropical floodplain TEC and three conservation significant flora species were observed within or directly adjacent to the Impact area including macadamia nut, angle-stemmed myrtle and scrub turpentine. Two conservation significant fauna species including koala and grey-headed flying fox were observed within or directly adjacent to the Impact area. In addition, potential habitat for an additional 19 conservation significant fauna were assessed to occur within the Impact area.

A screening assessment was undertaken to assess the nature, likelihood, consequence and extent of the proposed action's potential impacts to conservation significant species and communities that were known or have the potential to occur. The screening assessment is provided in Section 7.0 of the Supplementary MNES Report (Appendix B).

Based on the findings of the screening assessment, SIAs were undertaken in accordance with the EPBC Act Policy Statement 1.1 Significant Impact Guidelines: Matters of National Environmental Significance (DCCEEW, 2013) for ten (10) conservation significant species and communities. The SIA

results indicate the proposed action has potential to result in significant impacts to koala, grey-headed flying fox, and south-eastern glossy black-cockatoo.

The SIA result indicates a significant impact to potential habitat for swift parrot and regent honeyeater is unlikely based on conservative assessment of habitat critical to survival of the species and based on an assessment against EPBC Act Policy Statement 1.1 Significant Impact Guidelines: Matters of National Environmental Significance (DCCEEW, 2013). This is because both species only sporadically forage in south-east Queensland when food resources in Victoria and New South Wales are scarce, there have been infrequent records in the past two decades in the south-east Queensland region, and the proposed action's removal of relatively thin areas of marginal habitat, with the retention of habitat in the immediate surrounds is unlikely to significantly impact these highly mobile and wide-ranging species.

With the above said, due to the presence of potential foraging and dispersal habitat within the Impact area considered habitat critical to the survival of the species, DCCEEW considers the proposed action may have a significant impact on the swift parrot and regent honeyeater.

While the Proponent remains of the view that such an impact is unlikely, to ensure DCCEEW's response is adequately addressed, the Proponent has considered these species as if the proposed action will have a significant impact. This commitment is reflected within all relevant documents within the revised Preliminary Documentation.

RFI 4.2	Include current maps and coordinates/shapefile of the proposed impact area and areas of habitat for MNES proposed to be retained. Maps must clearly identify development footprints, buffer zones, fauna movement corridors, and any conservation areas where impacts will be avoided, and areas of adjacent habitat that would be subject to indirect impacts, including areas that are to be retained within and adjacent to the site.

Mapping of the proposed action and habitat for MNES species within and adjacent to the Impact area is provided in Appendix B of the Supplementary MNES Report (refer Appendix B). The following figures are contained within the appendices of the Supplementary MNES Report (Appendix B):

- Appendix B Figure 1 shows the EPBC Impact area.
- Appendix B Figure 14 shows habitat for Subtropical floodplain eucalypt TEC and corresponding impact area and indirect impact area (buffer zones). For further details on buffer zones, refer to Section 2.3.2.1 and Section 6.5 of the MNES Supplementary Report.
- Appendix B Figure 18 shows the habitat for south-eastern glossy black cockatoo highlighting habitat for breeding, breeding/foraging, foraging, and dispersal.
- Appendix B Figure 15 shows the habitat for greater gliders as breeding, foraging and dispersal habitat highlighting direct impact areas and indirect impact areas (buffer zones). For further details on buffer zones, refer to Section 2.3.2.2 and Section 6.5 of the MNES Supplementary Report.
- Appendix B Figure 19 shows the habitat for grey-headed flying fox as breeding/roosting, foraging/dispersal habitat, highlighting direct impact areas and indirect impact areas (buffer zones). For further details on buffer zones, refer to Section 2.3.2.2 and Section 6.5 of the MNES Supplementary Report
- Appendix B Figure 20 shows the habitat for yellow-bellied glider as breeding, foraging, and dispersal habitats.
- Appendix B Figure 12 shows the habitat for regent honeyeater as foraging/dispersal area, as well as the impact area.
- Appendix B Figure 13 shows the habitat for swift parrot as foraging/dispersal area, as well as the impact area.
- Appendix G Figure 2 shows the fauna movement corridors for koala movement.
- Appendix G Figure 3 shows the fauna movement corridors for greater glider movement.

2.3.1 Assessment method

RFI 4.3	Details of any policy guidelines, relevant studies, surveys, or consultations with species experts/field specialists, which were not included in the referral or additional information provided in support of the referral.
RFI 4.5	Full justification of all discussions and conclusions based on the best available information, including relevant conservation advices, recovery plans, threat abatement plans, and other guidance documents, should be included if applicable departmental documents regarding listed threatened species.

Section 2.0 of the Supplementary MNES Report (Appendix B) details the methodology used to assess presence of and potential impacts to MNES, including resources used to support desktop assessment, previous studies, targeted field surveys completed post-referral and guidance used to assess significance of impacts.

Habitat mapping used to inform the impact assessment was based on desktop review and comprehensive field survey, including significant effort to ground truth habitat for MNES since referral. Where available, information from publicly available databases was used to develop habitat mapping, including reference to relevant species recovery plans (where available), referral guidelines, approved conservation advice, the Species Profile and Threats (SPRAT) database, management plans and peer-reviewed journal articles. Habitat assessments collected during the field surveys, species records (previous and survey records), and vegetation mapping informed potential habitat for MNES.

Assessments are based on the following best available information, including the following relevant conservation advice, recovery plans, threat abatement plans, and other guidance documents:

- Birdlife Australia, *Birdlife Data Zone* (2024)
- Conservation Advice for *Anthochaera phrygia* (Regent honeyeater) (Department of the Environment, 2015)
- Conservation Advice for *Calyptorhynchus lathami lathami* (South-eastern Glossy Black Cockatoo) (Department of Climate Change Energy the Environment and Water, 2022)
- Conservation Advice for *Dasyurus maculatus maculatus* (southeastern mainland population) (Spotted-tailed Quoll) (Threatened Species Scientific Committee, 2020)
- Conservation Advice for *Gossia gonoclada* (angle-stemmed myrtle) (Threatened Species Scientific Committee, 2016)
- Conservation advice for *Lathamus discolor* (swift parrot) (Threatened Species Scientific Committee, 2016)
- Conservation Advice for *Macadamia integrifolia* (macadamia nut) (Department of the Environment Water Heritage and the Arts, 2008)
- Conservation Advice for *Petauroides volans* (greater glider (southern and central)) Department of Climate Change Energy the Environment and Water, 2022)
- Conservation Advice for *Petaurus australis australis* (yellow bellied glider (south-eastern)) (Department of Agriculture, Water and the Environment, 2022)
- Conservation Advice for *Phascolarctos cinereus* (koala) combined populations of Queensland, New South Wales and the Australian Capital Territory (Department of Agriculture Water and the Environment, 2022a)
- Conservation Advice for *Gallinago hardwickii* (Latham's snipe) (Department of Climate Change Energy the Environment and Water, 2024)
- Conservation Advice for the Subtropical eucalypt floodplain forest and woodland of the New South Wales North Coast and South East Queensland bioregions (Department of Climate Change Energy the Environment and Water, 2022)

- EPBC Act Policy Statement 3.21: *Industry guidelines for avoiding, assessing and mitigating impacts on EPBC Act listed migratory shorebird species* (Department of the Environment and Energy, 2017)
- EPBC Act referral guideline for management actions in Grey-headed and Spectacled flying fox camps (Department of the Environment, 2015)
- EPBC Act referral guideline for the endangered koala (Department of Climate Change Energy the Environment and Water, 2023)
- Fauna Sensitive Transport Infrastructure Delivery Manual Volume 2 (Department of Transport and Main Roads, 2024)
- GHD subject matter expert peer review assessment of the Significant Impact assessment for the Subtropical floodplain eucalypt TEC (GHD, 2025)
- National light pollution guidelines for wildlife (Department of Climate Change Energy the Environment and Water, 2023)
- National recovery plan for the Grey-headed flying fox (Department of Agriculture, Water and Environment, 2021)
- National Recovery Plan for the Koala (*Phascolarctos cinereus)* (combined populations of Queensland, New South Wales and the Australian Capital Territory) (Department of Agriculture Water and the Environment, 2022)
- National Recovery Plan for the Regent Honeyeater (*Anthochaera phrygia*) ((Department of the Environment, 2016)
- National Recovery Plan for the Swift Parrot (*Lathamus discolor*) (Department of Climate Change, Energy, the Environment and Water, 2024)
- Biodiversity Assessment and Management (BAMM) bird experts undertook a peer review assessment.
- Review of Significant Impact Assessment for Regent Honeyeater and Swift Parret, Logan and Gold Coast Faster Rail Project (BAAM Ecological Consultants, 2024)
- Review of Undullah Offset Property for habitat sustainability for Regent Honeyeater and Swift Parrot, Logan and Gold Coast Faster Rail Project (BAAM Ecological Consultants, 2024a)
- Queensland Government South East Queensland—selected regional ecosystems (Queensland Government, 2024)
- Threat abatement plan for predation by feral cats (The Commonwealth of Australia, 2015)
- Threat abatement plan for predation by the European red fox (Department of the Environment Water Heritage and the Arts, 2008)
- TMR Koala-sensitive Design Guideline (Department of Environment and Science, 2019)
- Youngentob, Marsh and Skewes (2021), A review of koala habitat and assessment criteria and methods.

The following key changes have been made to improve habitat assessment:

- **Additional targeted field surveys** completed across areas within and adjacent to the Impact area culminating in thirty-seven (37) field survey events over the winter, summer and spring months of 2023 into 2024 – refer Section 2.5 of Appendix B Supplementary MNES Report.
- **Habitat mapping** with a high level of conservatism has been undertaken as per habitat mapping rules detailed in Appendix D of Appendix B Supplementary MNES Report. In consultation with DCCEEW, shelter and dispersal habitat for koala has expanded to include remaining areas not considered foraging and breeding habitat, excluding railway corridors, major road reserve, noise walls, exclusion fencing, buildings and water.

- **Hollows assessment** was undertaken within the Impact area (and Offset area) via visual assessment from the ground over four days within representative sites within each Assessment Unit (AU) containing mapped breeding habitat for Glossy Black-cockatoo. Hollows were not assessed within mapped dispersal habitat since this is primarily located within disturbed non-remnant vegetation and unlikely to contain suitable hollows. Results of Glossy Black Cockatoo hollows assessment at the impact site are provided within Appendix G Hollow Assessment within the Benobble Offset Area Management Plan (OAMP), according to AU, RE and condition.
- **Landscape connectivity modelling** was undertaken for koala, greater glider (southern and central) and yellow-bellied glider (south-eastern) to identify diffuse, channelled, and impeded movement patterns before the proposed action is undertaken (current state) and as a result of the proposed action (future state). Areas identified during landscape connectivity modelling to show potential impedance to koala and glider movement as a result of the proposed action are proposed to be mitigated with fauna connectivity infrastructure to be considered as part of Detailed Design for the proposed action and are provided as part of pre-construction (design) management measures.
- **Buffer zones** have been prescribed for conservation significant species and communities (for which an impact has been assessed as significant) and where the provision of buffer zones is considered ecologically relevant, refer to Section 6.4 of the Supplementary MNES report (Appendix B) for detailed justification and controls for each buffer zone. Approximately 21.83 ha of habitat for the following relevant conservation significant species / communities has been identified as buffer zones assessed for indirect impacts, management and monitoring.
  - Breeding and roosting habitat for grey-headed flying-fox – 300 m buffer zone is recommended to reduce disturbance to the breeding cycle of the species (Ecosure, 2021) and mitigate against indirect impacts such as weeds, pests, pathogens, dust, noise, light and vibration. A third camp located at Ridgewood Reserve, Edens Landing is 158 m outside of the Impact area. Indirect impacts are unlikely however, pre and during construction monitoring and adaptive management is recommended to be undertaken within the buffer zone. Of note, December 2024 monitoring of the Ridgewood Reserve, Edens Landing camp did not observe grey-headed flying-fox individuals. Recommendations based on references by Department of Transport and Main Roads, 2024) and Draft National Recovery for the Grey-headed Flying-fox *Pteropus poliocephalus* (Eby, 2009).
  - Breeding habitat for greater glider and yellow-bellied glider – highly sensitive to fragmentation, a 50 m buffer zone (as outlined in the New South Wales Environment Protection Authority - New protections for endangered southern gliders (Environment Protection Authority, 2018) will mitigate against indirect impacts such as introduced weeds, pests, pathogens and dust resulting in compromised vegetation quality of foraging resources and reduce disturbance to individuals (if they were to occur) from indirect impacts such as noise, light and vibration.
  - Subtropical eucalypt floodplain forest TEC – 50 m buffer zone as per the Approved Conservation Advice (Department of Climate Change Energy the Environment and Water, 2022) is recommended to protect the integrity of the remaining TEC and absorb indirect impacts such as erosion, sedimentation and the introduction / spread of introduced flora, fauna and pathogens.

2.3.2 Nature, likelihood, consequence and extent of impacts to MNES

RFI 4.4	Provide an assessment of the direct and indirect impacts within and surrounding the proposed action that may occur during construction and post-construction phases, including: a) The nature, likelihood, consequence and extent of impacts (including direct, indirect* and facilitated impacts**), including timing and whether the impact is temporary or permanent. This must include: i. The quantity of habitat to be impacted ii. the quality of the habitat impacted, with reference to any specialist species habitat such as hollow bearing trees, nest trees, refuge habitat, foraging and breeding habitat, sheltering or other microhabitat features relevant to the species iii. a quantification of the total individuals/populations affected, numbers of specialist species habitat affected (if applicable)

iv.	analysis of the indirect impacts such as fragmentation and/or functional loss of habitat, including consideration of a matters' sensitivities to edge effects.

The impact assessment detailed in Section 5.0 of the Supplementary MNES Report (Appendix B) includes assessment for the following direct and indirect impacts from the proposed action:

Construction phase direct impacts

- Vegetation clearing
  - Loss of conservation significant flora habitat
  - Loss of conservation significant fauna habitat
- Loss of fauna movement and habitat fragmentation
- Injury and mortality of fauna.

Construction phase indirect impacts – temporary within and adjacent to the proposed action boundary

- Introduction, spread of introduced flora and fauna (weeds and pests) and pathogens
- Noise, light and vibration
- Erosion, sediment runoff and alteration to hydrology
- Increased dust
- Potential risk of environmental spills.

Facilitated impacts

The proposed action is limited to construction only. Upon completion of the proposed action, impacts as a result of the operation of the proposed action are expected to be consistent with existing activity within the rail corridor and access/infrastructure associated with the Beenleigh and Gold Coast line. As part of the ongoing operation of the railway, potential impacts facilitated by the proposed action include:

- Changes in pedestrian movement to and from stations, potentially disrupting native fauna behaviour
- Potential increase in the incursion and spread of weeds, pest and pathogens
- Potential change fauna movement/behaviour with changes to existing culvert/bridge crossings
- Potential increase in fauna injury/mortality from vehicle strikes
- Potential increases in noise and, light (especially with upgraded stations) which may:
  - Increase disorientation and alteration in use of habitats and movement pathways
  - Alter predator-prey dynamics
  - Influence seasonal movement cycles of species.

An assessment of impacts facilitated by the proposed action is provided in the Supplementary MNES Report (Appendix B) and summarised in the following sections.

2.3.2.1 Threatened flora and ecological communities habitat impacts

Table 6 outlines maximum extent of impacts proposed to occur to threatened flora and ecological communities protected under the EPBC Act.

Table 6 Potential habitat loss to TEC and threatened flora

MNES	Maximum direct Impact area (ha)	
	EPBC Referral 2022	Revised Impact area
Subtropical floodplain eucalypt TEC	1.55	1.30

MNES	Maximum direct Impact area (ha)	
	EPBC Referral 2022	Revised Impact area
Angle-stemmed Myrtle (*Gossia gonoclada*)	0.00[4]	0.00
Macadamia nut[5] (*Macadamia integrifolia*)	0.19	0.016
Scrub turpentine (*Rhodamnia rubescens)*	0.16	0.01

Subtropical floodplain eucalypt TEC

The habitat or areas most critical to the survival of the ecological community are those patches that are in the best condition. These represent those parts of the ecological community that retain the highest diversity and most intact structure and ecological function and have the highest chance of persisting in the long-term. However, areas that otherwise meet the minimum condition thresholds are also important for the functioning and survival of the ecological community. These areas are critical to the survival of the ecological community: if they occur in locations or landscape positions that are particularly important for biodiversity or function; and/or contain suites of species, or habitat features, which are important in a regional or local context. They also have the potential to recover, or be restored, to a higher condition.

Field surveys verified two (2) REs occurring within the Impact area (REs 12.3.3, 12.3.3d) which potentially constitutes the TEC. However, targeted BioCondition field surveys were undertaken within the Impact area to assess vegetation condition and biodiversity values. Based off the BioCondition results, patches of this TEC were identified within and/or in proximity to the Impact area.

Targeted field surveys have determined the extent and condition of subtropical floodplain eucalypt TEC within and outside the EPBC proposed action boundary. The project design includes the Department's recommended 50 m buffer around the TEC, as detailed in Section 6.4, Table 33 of the Supplementary MNES Report (Appendix B). The updated extent, condition class, and buffer zone are shown in Figure 14 of Appendix B and Table 4 of Appendix F of the Supplementary MNES Report (refer Appendix B).

Habitat mapping for the subtropical floodplain eucalypt TEC, including critical habitat, has been refined to identify opportunities to avoid impacts. The potential significant impacts have been reassessed based on the updated impact area. Habitat critical to the species' survival is shown in Figure 12, Appendix B of the Supplementary MNES Report (Appendix B), and discussed in the SIA (Appendix F of Appendix B).

To minimise indirect impacts on MNES species and subtropical floodplain eucalypt TEC, habitat and vegetation buffers have been applied where ecologically relevant and significant. Justification for these buffer zones is detailed in Section 6.5 of the Supplementary MNES Report (Appendix B). A 50 m buffer zone (beyond the canopy of the outermost trees in the patch) as per the Approved Conservation Advice (Department of Climate Change Energy the Environment and Water, 2022) will be implemented to protect against edge effects and reduce indirect impact to adjacent TECs vegetation.

The TEC is particularly sensitive to edge effects due to its unique native species composition and environmental conditions. Key potential environmental impacts, such as the introduction of weeds, pests, pathogens, and vegetation disturbances, will be managed through reducing disturbance footprint wherever possible, suitable biosecurity protocols and reducing vehicle, plant and pedestrian access to the minimum needed for construction purposes in TEC areas. Rehabilitation and revegetation of areas no longer required for construction will further mitigate these impacts. Detailed management and monitoring measures for this buffer zone are provided in Table 31 of the Supplementary MNES Report (Appendix B) and within the OEMP (Appendix C).

After avoidance, minimisation and mitigation, the direct impacts are proposed to occur to a maximum of 1.30 ha over four TEC patches I, IV, V and VII. A buffer zone of 4.81 ha was applied for five TEC patches I, III, IV, V and VII to assess the potential for indirect impacts (for example, impacts arising from any new edge effects, alteration of hydrology, weed incursion). Potential impacts to subtropical floodplain eucalypt TEC corresponding to condition classes:

- Class B3: 1.12 ha direct impact and 3.75 ha indirect impact area across three patches; and

[4] This individual was observed approximately 14 m outside the impact area.
[5] Not occurring in the wild.

- Class C1: 0.18 ha direct impact ha and 1.06 ha indirect impact area across two patches.

Historic and current threats and degradation are evident in all TEC patches, with fragmentation leading to isolated patches in a modified urban landscape. As isolated patches, all TEC patches are currently exposed to indirect impacts including hydrological changes from adjacent urban/industrial development with edge effects, weed incursion, altered fire regimes, invasive fauna, disturbance from urbanisation and recreational activity and potentially urban heat island effects.

An assessment against the Significant Impact Guidelines for this TEC was conducted. The outcome of the SIA, contained within Appendix F of Appendix B, is that the proposed action is **unlikely to result in a significant impact** to the subtropical floodplain eucalypt TEC (refer to Section 3.1, Appendix F of Appendix B Supplementary MNES Report).

Angle stemmed myrtle

The angle-stemmed myrtle inhabits sloping metamorphic or flat alluvial terraces of largely permanent waterways, with tidal influence, at an elevation of 5 m to 70 m. The species prefers well-drained clay soils derived from metamorphosed sediments and Cainozoic or alluvial deposits.

One (1) individual was recorded during targeted flora surveys, located in Lot 9 on SP307207 approximately 14 m west of the Impact area. The individual is not proposed to be impacted by the proposed action.

Although this species is known from the surrounding area, the location of this individual does not meet the described habitat for these species. The species profile description for this habitat is steep slopes often in lowland riparian rainforest and notophyll vine forest, along permanent watercourses. This individual is unlikely to become part of a self-sustaining ‘relatively natural ecological community’ given it is located within a restricted area situated in-between residential dwellings and a cleared manicured lawn comprising of the existing rail corridor and historical stockpiling to be happening occasionally. This individual was located outside of the Impact area and is unlikely to be impacted by the proposed action.

Furthermore, habitat is already degraded as a result of ongoing development and land clearing, indicating that any population present is likely already impacted. These land practices are recognised as a threatening process and are likely to continue regardless of the proposed action.

An assessment against the Significant Impact Guidelines for Angle-stemmed myrtle this is provided in Section 3.4 and Table 9 of the SIA (refer Appendix F of Appendix B). The outcome of the SIA is the proposed action is unlikely to result in a significant impact on the species.

Macadamia nut

Macadamia nut is conserved in at least four small reserves in south-east Queensland. This species grows in remnant rainforest, including complex mixed notophyll forest, and prefers partially open areas such as rainforest edges. Macadamia nut occurs within the Northern Rivers (NSW) and South East Queensland Natural Resource Management Regions.

Six individuals were observed within the Impact area by GHD (2021) and AECOM (2024); however, individuals were characterised within landscape vegetation or residential areas considered to be ‘not in the wild’. A maximum of 0.016 ha of potential habitat occurs within the Impact area.

An assessment of the significance of impacts to this species is provided in Section 4.4 and Table 13 of the SIA (refer Appendix F of Appendix B Supplementary MNES report). The outcome of this assessment is the proposed action is unlikely to result in a significant impact on the species.

Furthermore, habitat is already degraded from ongoing land clearing and development, with a high density of *Lantana camara* present indicating a population present is likely already impacted. The presence of *Lantana camara* is recognised as a threatening process and is likely to persist regardless of the proposed action.

Scrub turpentine

Scrub turpentine inhabits all rainforest sub-forms except cool temperate rainforest and is a common pioneer species in eucalypt forests and adjacent transition zones of dry sclerophyll and grassy woodlands. The species occupies a range of volcanically derived and sedimentary soils and can be found in creekside riparian areas.

One individual was recorded by GHD (2021) as planted outside of its naturally occurring habitat and not considered 'in the wild'. The individual was juvenile within a tree guard and in very poor health. The species is very susceptible to *Austropuccinia psidii* (Myrtle rust) with the impact evident on this individual with only a few leaves remaining. Habitat for this species is recorded littoral, warm temperate and subtropical rainforest and wet sclerophyll forest usually on volcanic and sedimentary soils. Based on this, habitat within the Impact area is limited to riparian zones on alluvial soils. This species is unlikely to become part of a self-sustaining 'relatively natural ecological community'.

2.3.2.2 Threatened fauna habitat impacts

Maximum extent of impact proposed to occur for the EPBC Act-listed threatened fauna species is summarised in Table 7, which is divided into breeding, foraging, shelter (where applicable) and dispersal habitat.

Table 7 Potential habitat loss impacts to threatened fauna

MNES	EPBC Act status[1]	Likelihood	Potential habitat utilisation	Maximum direct Impact area (ha) per habitat	Total direct Impact area (ha) per species
Australian painted snipe (*Rostratula australis*)	E	Potential	Breeding (marginal), foraging and dispersal	0.98	0.98
Greater glider (southern & central) (*Petauroides volans)*	E	Potential	Breeding	21.40	34.89
			Foraging	7.52	
			Dispersal	5.97	
Grey-headed flying fox (*Pteropus poliocephalus*)	V	Known	Breeding/Roosting	0.54	45.33
			Foraging/Dispersal	42.60	
			Breeding/Roosting (Indirect Impact)	2.20	
Koala (combined populations of Qld, NSW and the ACT) (*Phascolarctos cinereus*)	E	Known	Breeding/Foraging	25.54	107.74
			Shelter/Dispersal	80.27	
			Functionally Lost (Breeding/Foraging)	1.94	
Mary River cod *(Maccullochella mariensis)*	E	Potential	Breeding/ Foraging/ Dispersal	0.65	0.65
Regent honeyeater (*Anthochaera phrygia*)	CE	Potential	Foraging and dispersal	42.28	42.28
South-eastern glossy black cockatoo (*Calyptorhynchus lathami lathami*)	V	Potential	Breeding	18.91	41.74
			Breeding and Foraging	7.13	
			Foraging	2.19	
			Dispersal	13.51	
Spotted-tailed quoll (southern sub-species) (SE mainland population) (*Dasyurus maculatus maculatus*)	E	Potential	Breeding/ Foraging/ Dispersal	26.20	26.20
Swift parrot (*Lathamus discolor*)	CE	Potential	Foraging and dispersal	42.28	42.28
White-throated needletail (*Hirundapus caudacutus)*	V, Mi	Likely	Foraging and dispersal	51.70	51.70

MNES	EPBC Act status[1]	Likelihood	Potential habitat utilisation	Maximum direct Impact area (ha) per habitat	Total direct Impact area (ha) per species
Yellow-bellied glider (south-eastern) (*Petaurus australis australis*)	V	Potential	Breeding	21.40	34.89
			Foraging	7.52	
			Dispersal	5.97	

Spotted-tailed quoll (southern sub-species) (SE mainland population) (*Dasyurus maculatus maculatus*)

The spotted-tailed quoll prefers relatively undisturbed mature wet forest, with potential den sites. It inhabits a variety of vegetation communities, including temperate and subtropical rainforests, wet sclerophyll forest, lowland forests, open and closed eucalypt woodlands, inland riparian and River Red Gum (*Eucalyptus camaldulensis*) forests and coastal heathlands. Spotted-tailed quolls shelter in fallen logs, boulder piles, burrows, tree hollows and occasionally under dwellings during the day.

This species is considered a potential occurrence within the Impact area due to the presence of marginal suitable habitat, mainly within the Karawatha Forest Park and a record (2004) occurring approximately 8.93 km from the Impact area.

A maximum of 26.20 ha of potential habitat is proposed to be impacted by the proposed action. All potential habitat is considered marginal due to the lack of structural diversity and complexity as well as potential denning sites. All potential habitat is functionally disconnected to protected areas in the wider region, separated by the existing railway corridor and/or motorways.

No evidence of this species including potential scats and signs were observed during the reconnaissance surveys and targeted habitat assessments. Field surveys conducted across 2023 included the recommended methodologies and effort is sufficient as per the species referral guidelines. Furthermore, cane toads were commonly recorded, which attributes to poisoning and in some cases death of the spotted-tail quoll. Due to the highly modified and disturbed urban landscape, the majority of remnant vegetation is considered to be unlikely important habitat (Department of the Environment, 2009) and is not located within an area of important populations (Department of Climate Change Energy the Environment and Water, 2023).

A SIA was not conducted, as the species, though significant, is unlikely to occur or are not known to occur within the area. Therefore, the criteria regarding the habitat being essential for life cycle requirements such as foraging, breeding, nesting, roosting, social behaviour patterns, or seed dispersal processes were not met.

Greater glider (southern & central) (*Petauroides volans sensu lato*)

The Greater glider (southern and central) occurs in Eucalyptus forests and woodlands. They inhabit hollow-bearing trees. The species potentially occurs within the Impact area based on the presence of suitable foraging and breeding habitat including records within the Study area. This species was not recorded during targeted field surveys.

Up to 42.15 ha of potential habitat will be impacted by the proposed action; 34.89 ha of direct impacts and 7.26 ha of buffer zone assessed for indirect impacts. Of this, 0.38 ha is considered functionally lost and compensated as direct impacts. Due to isolation from existing linear infrastructure in-between patches of habitat, the Impact area is unlikely to support dispersal and emigration from surrounding landscapes. Proxy values for hollow availability included trees with DBH greater than 50 cm as a surrogate for tree hollow availability, which can be challenging to detect in ground-based surveys, with high variability and low reliability among observers (Eyre et al., 2022).

Targeted surveys suggest the species is present at low abundance and/or habitat within the Impact area and it is used on an occasional or intermittent basis only. The paucity of records of greater glider (southern and central) within the desktop search extent support this view suggesting the species is generally scarce within the surrounding landscape.

To reduce and avoid indirect impacts on the greater glider, 50 m habitat and vegetation buffers have been applied to breeding habitat as ecologically relevant to ensuring residual impacts are mitigated,

providing added protection for the species. The proposed exclusion zone correlated with existing edge effect, which also indicate a 50 m buffer is effective in reducing environmental impacts, particularly in sensitive ecosystems supporting the greater glider. This buffer is consistent with recent amendments introduced in NSW that require a 50 m exclusion zone around known greater glider dens for the Coastal Integrated Forestry Operations Approvals (EPA, 2024). The justification for applying these buffer zones to ecologically relevant species and communities, including the greater glider, is detailed in Section 6.4 of the Supplementary MNES Report (Appendix B). These combined efforts reflect a robust framework for protecting endangered species while considering both forestry practices and environmental conservation.

At the referral stage, it was assessed that the proposed action had the potential to result in a significant impact to the greater glider (southern and central), as per EPBC Act referral 2022/09439 (8 December 2022). Since the referral, significant reductions to the Impact area have occurred, as well as targeted surveys and species-specific habitat mapping. As such, direct impacts to greater glider (southern and central) habitat have substantially reduced from 49.42 ha to 34.89 ha. An updated SIA for this species as per Table 7 was undertaken to reflect these changes.

As detailed in Section 3.2, Appendix F of Appendix B Supplementary MNES Report, the outcome of the updated SIA is that the proposed action is unlikely to result in a significant impact to the greater glider (southern and central), as the impact from the proposed action is unlikely to be important, notable or of consequence to the species, since:

- Highly conservative habitat mapping has been undertaken across the Impact area with impacts restricted to edges of fragmented habitat patches adjacent to the existing railway corridor, rather than dissecting or fragmenting core patches. Within the broader context, habitat critical to the survival of the species will persist, particularly in Key Biodiversity Areas such as Wally Tate Park, Karawatha Forest Park, Nealdon Park/Gould Adams Park and Hugh Muntz Gardens where species may preferentially use these larger contiguous habitat patches.
- While habitat critical to the survival of the species is mapped, the proposed action is unlikely to have a significant impact on this habitat (i.e. not causing impacts that are important, notable or of consequence), since:
    - Habitat primarily occurs within small-fragmented patches,
    - Habitat is unlikely to be a significant stepping stone for connectivity into the broader landscape
    - Where contiguous habitat for the species occurs at Wally Tate Park, Karawatha Forest Park, and Nealdon Park/Gould Adams Park, core high quality habitat will be retained. The habitat edges are proposed to be impacted, which are generally already impacted by high levels of disturbance, urbanisation and edge effects.
- There is a low likelihood the species occupies the Impact area, either now or in the future because the species is sensitive to fragmentation due to low dispersal ability and relatively small home ranges (Teresa J. Eyre, 2006), and most of the Impact area comprises sparse overlapping canopy cover and low density of hollow-bearing trees for breeding/denning.
- There are 17 greater glider (southern and central) records within 5 km of the Impact area. Many records contain high spatial uncertainty (approximately 3 km), however could be considered to primarily occur within Karawatha Forest Park. While some connectivity occurs between habitat within the Impact area and areas where gliders are known to occur within Karawatha Forest Park, habitat within the Impact area is a physical and genetic ‘dead end’ for the species, and is also surrounded by residential/industrial areas, powerlines, barbed wire fencing, and operational roads and railways. Due to this, greater glider (southern and central) is more likely to remain in core contiguous patches outside the Impact area, rather than disturbed and fragmented patches within the Impact area.
- A high level of threats already occurs within and surrounding the Impact area from habitat clearing and fragmentation, barbed wire fencing, competition with other arboreal mammal species and hollow dependent species such as the common brushtail possum and sulphur-crested cockatoo, predation by feral cats and European red foxes, as well as other indirect impacts from noise, light, vibration, urbanisation, and edge effects (DCCEEW, 2022).

- Live, hollow-bearing trees are thought to be a key habitat feature and limiting factor for the species (DCCEEW, 2022). Large, continuous tracts of mature woodland and forest with a minimum of 2-4 suitable hollows per 2 ha is considered essential for sustaining a population (DCCEEW, 2022). The quality of and extent of habitat and availability of live, hollow bearing trees is generally low, with a low density of suitable trees primarily occurring within small, fragmented patches adjacent the existing railway corridor generally associated with Acacia Forest Park and Nealdon/Goud Adams Park.
- No direct or indirect Greater glider (southern and central) evidence was observed during targeted and seasonal field surveys, despite significant survey effort meeting species survey requirements comprising 494 person hours of habitat assessments, spotlighting, and call playback, 3 nights of infrared thermal drone surveys, 14 days of Audiomoth acoustic recorders and 42 trap nights of motion sensing cameras (refer to Appendix B Supplementary MNES Report, Section 2.5.2.3, Table 9).

Yellow-bellied glider (south-eastern) (*Petaurus australis australis*)

The Yellow-bellied glider (south-eastern) occurs in eucalypt-dominated woodlands and forests, including both wet and dry sclerophyll forests. The subspecies shows a preference for large patches of mature old growth forest that provide suitable trees for foraging and shelter. There is also a clear preference for forests with a high proportion of winter-flowering and smooth-barked eucalypts. The subspecies is social and lives in family groups of two to six individuals, throughout an exclusive home range of approximately 50–65 ha. Hollow-bearing trees used by the species are primarily living, smooth-barked eucalypts of multiple species.

Tree hollows can be challenging to detect in ground-based surveys, with high variability and low reliability among observers (Eyre et al., 2022). Proxy values for hollow availability included trees with DBH greater than 50 cm as a surrogate for tree hollow availability due to its established correlation (Eyre et al., 2022) for the yellow-bellied glider.

The species potentially occurs within the Impact area based on the presence of suitable habitat. No individuals or evidence of sap extraction were observed during targeted field surveys. However, since multiple eucalypt species with a DBH over 50 cm were observed during field surveys including the presence of flowering eucalypt species, further assessment was recommended as DCCEEW relies on the presence of trees with a DBH over 50 cm to be used as a proxy indicator for breeding habitat for gliders in Queensland. Furthermore, riparian habitat may provide areas of refuge in times of natural disasters (i.e. fire and drought).

At the referral stage, it was assessed that the proposed action had the potential to result in a significant impact to the yellow-bellied glider (southeastern), as per EPBC Act referral 2022/09439 (8 December 2022). Since the referral, significant reductions to the Impact area have occurred, as well as targeted surveys and species-specific habitat mapping. As such, direct impacts to greater glider (southern and central) habitat have substantially reduced from 49.42 ha to 34.89 ha. An updated SIA for this species as per Table 7 was undertaken to reflect these changes.

As detailed in Section 4.3, Appendix F of Appendix B Supplementary MNES Report, the outcome of the updated SIA is that the proposed action is unlikely to result in a significant impact to the greater glider (southern and central), as the impact from the proposed action is unlikely to be important, notable or of consequence to the species, since:

- Highly conservative habitat mapping has been undertaken across the Impact area with impacts restricted to edges of habitat patches adjacent to the existing railway corridor, rather than dissecting or fragmenting core patches. Within the broader context, habitat critical to the survival of the species will persist, particularly in Key Biodiversity Areas such as Wally Tate Park, Karawatha Forest Park, Nealdon Park/Gould Adams Park and Hugh Muntz Gardens where species may preferentially use these larger contiguous habitat patches.
- While habitat critical to the survival of the species is mapped, the proposed action is unlikely to have a significant impact on this habitat (i.e. not causing impacts that are important, notable or of consequence), since:
    - Habitat primarily occurs within small-fragmented patches,

  - Habitat is unlikely to be a significant stepping stone for connectivity into the broader landscape
  - Where contiguous habitat for the species occurs at Wally Tate Park, Karawatha Forest Park, and Nealdon Park/Gould Adams Park, core high quality habitat will be retained. The habitat edges are proposed to be impacted, which are generally already impacted by high levels of disturbance, urbanisation and edge effects.

- There is a low likelihood the species occupies the Impact area, either now or in the future. This is because the species is considered to be sensitive to fragmentation due to low dispersal ability and relatively small home ranges (Teresa J. Eyre, 2006), and the majority of the Impact area comprises sparse overlapping canopy cover and low density of hollow-bearing trees for breeding/denning.
- While some connectivity occurs between habitat within the Impact area and areas where yellow-bellied glider is known to occur within Karawatha Forest Park, habitat within the Impact area is a physical and genetic 'dead end' for the species, and is also surrounded by residential/industrial areas, powerlines, barbed wire fencing, and operational roads and railways. Due to this, the yellow-bellied glider (south-eastern) is more likely to remain in core contiguous patches outside the Impact area, rather than disturbed and fragmented patches within the Impact area.
- A high level of threats already occurs within and surrounding the Impact area from habitat clearing and fragmentation, predation by European red foxes and/or feral cats and barbed wire fencing (DCCEEW, 2022).
- Key habitat features are considered to include sap trees, hollow-bearing trees for the species (DCCEEW, 2022). While sap tree species for yellow-bellied glider (south-eastern) occurs within the Impact area, none were observed to be actively used for sap feeding during targeted and seasonal field surveys. The quality of and extent of habitat and availability of live, hollow bearing trees is also generally low, with a low density of suitable trees primarily occurring within small, fragmented patches adjacent the existing railway corridor generally associated with Acacia Forest Park and Nealdon/Gould Adams Park.
- No direct or indirect yellow-bellied glider (south-eastern) evidence was observed during targeted and seasonal field surveys, despite significant survey effort that met species survey requirements comprising 494 person hours of habitat assessments, spotlighting, and call playback, 3 nights of infrared thermal drone surveys, 14 days of Audiomoth acoustic recorders and 42 trap nights of motion sensing cameras (refer to Appendix B Supplementary MNES Report, Section 2.5.2.3, Table 9).

Koala (combined populations of Qld, NSW and the ACT) (*Phascolarctos cinereus*)

Koalas inhabit in coastal and inland areas that typically characterised with Eucalyptus woodlands. Key habitat types identified as important to species recovery are large contiguous tracts of vegetation that buffer and provide connectivity to riparian corridors – all dominated by koala food trees (species within the *Eucalyptus, Corymbia, Angophora, Lophostemon, Leptospermum* and *Melaleuca* genera are considered to provide koala habitat). Within the Southeast Queensland bioregion, locally important koala food trees include *Eucalyptus tereticornis, Eucalyptus crebra* and *Eucalyptus propinqua*, all of which were identified within the Impact area.

Koalas are known to occur within the Impact area. The species will potentially breed, forage and disperse throughout non-remnant and remnant vegetation within the Impact area. Moreover, these vegetation communities may act as a refuge for dispersing individuals. Whilst majority of the habitat is poor quality, large patches of high-quality habitat occur in remnant areas specifically Karawatha Forest Park and Nealdon and Gould Adams Park.

A conservative approach to habitat mapping was applied, including:

- Large, connected areas of native vegetation, including forests and woodlands where logging has altered tree species composition; these areas may be remnant, regrowth or plantation vegetation.
- Small, isolated patches of native vegetation in rural, urban or peri-urban areas.
- Windbreaks and narrow areas of native vegetation along riparian areas or linear infrastructure.

- Isolated food and/or shelter trees (i.e. on farmlands, in suburban streetscapes, parks and yards)
- Forests or woodlands, roadside and rail vegetation and paddock trees, safe intervening ground matrix for travelling between trees and patches to forage and shelter and reproduce and access to vegetated corridors or paddock trees to facilitate movement between patches.

Based on the above definition, all koala food trees (those within the *Eucalyptus, Corymbia, Angophora, Lophostemon, Leptospermum* and *Melaleuca* genera) are considered to provide koala habitat. Within the Southeast Queensland bioregion, locally important koala food trees include *Eucalyptus tereticornis, Eucalyptus crebra* and *Eucalyptus propinqua*, all of which were identified within the Impact area.

The habitat mapping includes fragmented landscapes with scattered Eucalypt species, even in areas with existing barriers (e.g., rail infrastructure, highways, and public roads) and high levels of disturbance, such as noise, light, and weed infestations. All tree canopies were included in the mapping of koala habitat, covering remnant, HVR, regrowth, and non-remnant vegetation as habitat critical to the species' survival. The mapping approach is provided in Appendix D of Appendix B Supplementary MNES Report.

A maximum of 107.74 ha of habitat is proposed to be impacted by the proposed action. Given the peri-urban context of the Impact area, where it is noted that koalas rely on small patches of vegetation, there is a risk of notable habitat loss occurring. The management measures for the proposed action and evaluated against recovery actions outlined in relevant National Recovery Plans for MNES species and communities. Where species/communities Recovery Plans are unavailable, priority actions from species' Approved Conservation Advice have been sought. Supporting documents and the alignment of proposed measures with recovery action objectives is provided in Section 2.2.4 of the Supplementary MNES Report (Appendix B).

An assessment against the Significant Impact Guidelines for the koala this is provided in Section 3.3 and Table 9 of the SIA (refer Appendix F of Appendix B Supplementary MNES Report). The outcome of the SIA is the proposed action is likely to result in a significant impact to the koala. Suitable offset is provided to compensate for loss of breeding, foraging, shelter and dispersal habitats (refer Appendix D OAMP).

Grey-headed flying-fox (*Pteropus poliocephalus*)

The grey-headed flying fox requires foraging resources and roosting sites. It is a canopy-feeding frugivore and nectarivore, which utilises vegetation communities including rainforests, open forests, closed and open woodlands, Melaleuca spp. swamps and Banksia spp. woodlands. It also feeds on commercial fruit crops and on introduced tree species in urban areas. However, the primary food source is blossom from Eucalyptus and related genera.

Habitat critical to the survival of the grey-headed flying fox includes winter and spring flowering vegetation communities. Habitat critical to the survival of the grey-headed flying fox may also be vegetation communities not containing the above tree species but which:

- Contain native species that are known to be productive as foraging habitat during the final weeks of gestation, and during the weeks of birth, lactation and conception (August to May)
- Contain native species used for foraging and occur within 20 km of a nationally important camp as identified on the DCCEEW interactive flying fox web viewer, or
- Contain native and or exotic species used for roosting at the site of a nationally important grey-Headed Flying fox camp as identified on the DCCEEW interactive flying fox web viewer.

Habitat critical to the survival of the grey-headed flying-fox is considered inter spring foraging resources. Important winter and spring species including blue gum (*Eucalyptus tereticornis*) were observed within undisturbed vegetation within the Impact area. To be conservative, all habitat mapped within the Impact area has been considered habitat critical to the survival of the species. The proposed action has the potential to adversely impact a maximum of 45.33 ha of habitat that may be considered habitat critical to the survival of the species

Three existing grey-headed flying-fox camps occur within or near the Impact area; all occur in urban areas adjacent or nearby to roads, railways and other areas that contain high levels of disturbance, primarily noise and light pollution. These camps are not listed on the National Flying-fox Monitoring

Viewer and are unlikely to meet the criteria of a ‘nationally important camp’ as defined in the national recovery plan. However, flying-fox camps are persisting in areas that have consistent low-levels of disturbance that the camps have become habituated to.

The grey-headed flying-fox has been considered ecologically relevant for the provision of buffer zones given two grey-headed flying-fox camps (including juveniles) were observed within the Impact area and located at Voyager Drive, Kuraby and Jacaranda Avenue, Logan Central. One grey-headed flying-fox camp was observed approximately 158 m outside of the Impact area at Ridgewood Reserve, Edens Landing. Given this, construction activities may disturb/impact the breeding cycle of the species (Ecosure, 2021). A 300 m buffer has been applied adjacent to known roosts and breeding areas considered ecologically relevant and significant for the species (refer Chapter 10, Section 8.2 in DTMR Fauna Sensitive Transport Infrastructure). Justification for the application of buffer zones for ecologically relevant species and communities has been addressed in Section 6.5 of the Supplementary MNES Report (Appendix B).

Indirect impacts have the potential to occur to camps at Voyager Drive, Kuraby (1.78 ha) and Jacaranda Avenue, Logan Central (0.42 ha), but are unlikely to occur at Ridgewood Reserve, Edens Landing. Approximately 7.57 ha of breeding/roosting habitat at Ridgewood Reserve, Edens Landing occurs within the buffer zone outside the Impact area, and the buffer zone comprising sporadic foraging/dispersal habitat intersects the Impact area (Appendix B Figure 19 of the Supplementary MNES Report). Proposed works at the Ridgewood Reserve, Edens Landing are unlikely to cause indirect impacts, since works are approximately 200 m from the camp, works will be temporary, will carefully coordinate and manage high-impact activities, and will be undertaken at night wherever possible when grey-headed flying-fox are likely to be absent (when foraging).

An assessment against the Significant Impact Guidelines for grey-headed flying-fox is provided in Table 13 of the SIA (Appendix F of Appendix B Supplementary MNES Report). The outcome of the SIA is the proposed action has the potential to result in a significant impact to the grey-headed flying fox. A maximum of 0.54 ha of breeding and 42.60 ha of foraging and dispersal habitat is proposed to be directly impacted for the proposed action. In addition, up to 2.20 ha of breeding/roosting habitat may be indirectly impacted at Voyager Drive, Kuraby and Jacaranda Avenue, Logan.

Appendix B Supplementary MNES Report, Section 6.5 and Table 34, Appendix C OEMP, Table 9 and Appendix C OEMP, Appendix C Fauna Monitoring Plan (FMP) outlines management measures across the entire Impact area for noise, light and vibration specifically related to grey-headed flying-fox within the Impact area and breeding/roosting habitat within a 300 m buffer zone.

The species was confirmed present within the Impact area and surrounds during targeted field surveys. Suitable foraging habitat was widely observed within the Impact area with known mixed species flying fox colonies also located within the Impact area. As the species is known to disperse up to 40 km to forage, the Impact area is considered to represent likely foraging habitat.

An assessment against the Significant Impact Guidelines for this is provided in Section 4.2.11 and Table 11 of the SIA (Refer Appendix F of Appendix B). The outcome of the SIA is the proposed action is likely to result in a significant impact to the grey-headed flying fox.

Regent honeyeater (*Anthochaera phrygia*)

One ALA record dated 2020 occurs within the Study area. The record has high spatial uncertainty (2 km) and occurs 1 km east of the Impact area located on Overlord Place. Four WildNet records occur within the Study area, the most recent dated 1994.

While the Impact area has been modelled as ‘likely to occur’ for the species according to its recovery plan (Department of the Environment, 2016), it is considered the species has the ‘potential to occur’ due to marginal habitat occurring within the Impact area and one record from 4 years ago which occurs within the Study area. Habitat is considered marginal, due to the low densities of key foraging mistletoe resources, lack of box-ironbark woodland and no woodlands dominated by key trees species as outlined within the species’ recovery plan. Eucalypt woodlands and riparian areas that do occur are generally scattered throughout the Impact area in a highly degraded and urbanised environment.

No evidence of this species was observed during targeted field surveys. Field surveys conducted across 2023 included the recommended methodologies and the effort is sufficient as per the species referral guidelines.

Habitat mapping for the regent honeyeater, including habitat critical to the survival of the species, has been further refined to identify opportunities to avoid impacts to the species. The potential significant impacts for the species have also been reassessed based on the refined impact area. The area of habitat critical to the survival of the species is provided in Figure 12 of the Supplementary MNES Report (Appendix B) and discussed in the SIA (refer Appendix F of Appendix B).

A maximum of 42.28 ha of potential marginal habitat is proposed to be impacted by the proposed action. In a regional context, this reduction in available habitat is not considered notable since Impact area is not located within key breeding areas where the species is regularly recorded, according to the species' conservation advice available on the SPRAT database (Department of Climate Change, Energy, the Environment and Water, 2024).

Percent cover of food trees was assessed by adding the total cover of the suitable food trees (e.g. species and size) within the canopy and sub-canopy layer (e.g. T1, T2, T3). Suitable food tree species are those detailed within the National Recovery Plan for the Regent Honeyeater (DotE, 2016)

While foraging trees are rarely used for roosting, this does not exclude their occasional use, particularly when not flowering, at sapling stages, or in areas away from current foraging zones. According to BirdLife Australia (2024), the species has been recorded roosting in several Eucalyptus species (e.g., E. *melliodora*, E. *blakelyi*, and E. *crebra*), which are also known forage trees for the regent honeyeater. Since it is impossible to predict which, specific trees will be used for foraging at any given time, all native tree species were included in the assessment criteria.

The SIA result indicates a significant impact to potential habitat for regent honeyeater is unlikely based on conservative assessment of habitat critical to survival of the species, based on an assessment against DCCEEW's significant assessment guidelines.

With the above said, due to the presence of potential foraging and dispersal habitat within the impact area, DCCEEW considers that the proposed action may have a significant impact on the regent honeyeater. While the Proponent remains of the view that such an impact is unlikely, to ensure that DCCEEW's issues are adequately addressed, the Proponent has considered these species as if the proposed action will have a significant impact. This commitment is reflected within all relevant documents within the revised Preliminary Documentation.

Swift parrot (*Lathamus discolor*)

Swift parrots inhabit in woodlands and breed in tree-hollows in old-growth or other forest with suitable hollows, in proximity to the main food source, flowering Tasmanian blue gum. Non-breeding birds preferentially feed in inland box-ironbark and grassy woodlands, and coastal swamp mahogany (*E. robusta*) and spotted gum (*C. maculata*) woodland when in flower.

According to the species' National Recovery Plan (Department of Climate Change, Energy, the Environment and Water, 2024), key tree species in the mainland include Yellow Gum (*Eucalyptus leucoxylon*); Red Ironbark (*Eucalyptus tricarpa*); Mugga Ironbark (*Eucalyptus sideroxylon*); Grey Box (*Eucalyptus macrocarpa*); White Box (*Eucalyptus albens*); Yellow Box (*Eucalyptus melliodora*); Swamp Mahogany (*Eucalyptus robusta);* Forest Red Gum (*Eucalyptus tereticornis*); Blackbutt (*Eucalyptus pilularis*); and Spotted Gum (*Corymbia maculata*). DCEEW also states *"Corymbia Citriodora* is a regionally relevant substitution of *C. maculata"*, however, is not referenced as such in the superseded or updated recovery plan (Department of Climate Change, Energy, the Environment and Water, 2024). Foraging/dispersal habitat for the species comprising *Eucalyptus tereticornis, Eucalyptus robusta, Corymbia henryi* and *Corymbia citriodora* occurs within the Impact area. However, the Impact area is not considered a known priority habitat for conservation management of nesting and foraging resources. In addition, two ALA records dated 2014 occur within the Study area, one within Gould Adams Park approximately 537 m from the Impact area. As such, the species may occur within the Impact area as a vagrant and may sporadically/temporarily occur during winter flowering events.

Habitat mapping for the swift parrot, including habitat critical to the survival of the species, has been further refined to identify opportunities to avoid impacts to the species. The potential significant impacts for the species have been reassessed based on the refined impact area. The area of habitat critical to the survival of the species is provided in Figure 12 of the Supplementary MNES Report (Appendix B) and discussed in the SIA (refer Appendix F of Appendix B).

The percent cover of food trees was calculated by summing the total cover of suitable species and sizes within the canopy and sub-canopy layers (e.g., T1, T2, T3). Suitable food tree species, identified in the National Recovery Plan for the Swift Parrot (DCCEEW, 2024), are detailed in the updated MHQA Scoring Spreadsheet. Larger trees were considered to provide greater foraging value due to their potential to produce more flowers, making higher cover of foraging tree species a key indicator of food availability.

The SIA result indicates a significant impact to potential habitat for swift parrot is unlikely based on conservative assessment of habitat critical to survival of the species, based on an assessment against DCCEEW's significant assessment guidelines.

With the above said, due to the presence of potential foraging and dispersal habitat within the impact area, DCCEEW considers that the proposed action may have a significant impact on the swift parrot. While the Proponent remains of the view that such an impact is unlikely, to ensure that DCCEEW's issues are adequately addressed, the Proponent has considered these species as if the proposed action will have a significant impact. This commitment is reflected within all relevant documents within the revised Preliminary Documentation.

Australian painted snipe (*Rostratula australis*)

Australian painted snipe inhabits in shallow terrestrial freshwater habitats within wetlands, including temporary and permanent lakes, swamps and claypans. Nesting habitats were recorded near small islands with a combination of very shallow water, exposed mud, dense low cover and sometimes some tall dense cover.

The species is considered to potentially occur within the Impact area due to the presence of suitable habitat and 8 records occurring within the Study area. A maximum of 0.98 ha of potential habitat is proposed to be impacted by the proposed action.

The remaining habitat is considered marginal or of low value due to the absence or minimal presence of bare muddy margins, steep banks, little or no open water with tall or dense ground cover present including a high weed incursion predominantly consisting of Singapore daisy (*Sphagneticola trilobata*).

No individuals were observed during targeted field surveys. As such, it is likely that only a small number of dispersing individuals would utilise potential habitat on a transitory basis. Furthermore, areas of higher quality habitat occur in the wider area including State significant wetlands which are more likely to be utilised. A SIA was not conducted, as the species, though significant, are unlikely to occur or are not known to occur within the area. Therefore, the criteria regarding the habitat being essential for life cycle requirements such as foraging, breeding, nesting, roosting, social behaviour patterns, or seed dispersal processes were not met.

South-eastern glossy Black Cockatoo (*Calyptorhynchus lathami lathami*)

South-eastern glossy black cockatoos feed almost exclusively on the seeds of she oaks (*Allocasuarina* spp. and *Casuarina* spp.), usually relying on one or two species within a region. South-eastern glossy black cockatoos are hollow nesters, utilising large hollows in both living and dead Eucalyptus trees. The species usually occurs in pairs or in groups of three (made up of a breeding pair and their offspring), in woodlands. Habitat critical to the survival of the species is not defined however it is noted that the highly specialised diet and nesting habitats should be considered. Important populations are also not defined.

The species potentially occurs within the Impact area based on the presence of suitable breeding, foraging and dispersal habitat including a record (1993) occurring 200 m west of the Impact area. No evidence of this species including ort chewings were observed during targeted field surveys. However previous ecological surveys (GHD, 2021) did observe ort chewings within the Impact area.

An assessment against the Significant Impact Guidelines for this is provided Section 4.1 and Table 10 of the SIA (Appendix F of Appendix B Supplementary MNES Report). The outcome of the SIA is the proposed action has the potential to result in a significant impact to the south-eastern glossy black-cockatoo.

A maximum of 18.91 ha of breeding, 7.13 ha of breeding and foraging, 2.19 ha of foraging and 13.51 ha of dispersal habitat is proposed to be impacted for the proposed action. While the proposed action proposes to impact up to 41.74 ha of potential breeding, foraging and dispersal habitat, it is unlikely to fragment populations since the species is highly mobile and can fly up to 12 km to forage.

Habitat is also located in a landscape that has already experienced fragmentation from residential and industrial development, linear infrastructure and agricultural grazing. Large intact patches of potential habitat will remain in surrounding vegetation following the proposed action.

Indirect impacts include increased activity, light, noise, weeds, pests, pathogens and dust. However, these will be temporary and localised as the proposed action will be constructed in phases. Indirect impacts will be actively managed during phases as per the OEMP.

Tree DBH was used as a surrogate for hollow availability due to its established correlation (Eyre et al., 2022) for the Glossy Black Cockatoo as tree hollows can be challenging to detect in ground-based surveys, with high variability and low reliability among observers (Eyre et al., 2022). Method to assess number of suitable glossy black-cockatoo nesting trees comprised sampling number of eucalypts (living or dead) with DBH over 50 cm and containing at least one hollow which meet the following characteristics:

- Minimum of 8 m above the ground
- Located on branches with a diameter exceeding 30 cm
- Branch or stem inclination of no more than 45 degrees from vertical
- Entrance diameter greater than 15 cm.

Based on the impacted hollows, the Offset Area currently contains approximately 279 potential glossy black-cockatoo hollows, with an additional 31 replacement hollows to be installed across the various assessment units in line with specialist installation guidance to maximise success (refer Section 5.2.7 of Appendix D OAMP: Benobble). To avoid oversaturation of the hollows within the Offset Area, an assessment of current density vs maximum (undisturbed) density was undertaken. The number of large trees will only be improved through growth of existing large trees (i.e. addition of carved hollows will not improve scoring). However, while trees will grow naturally, as discussed within the OAMP, management measures proposed within the Offset Area (e.g. prescribed burns and protection from high intensity fires) will reduce the risk of tree death, in turn increasing the confidence in the number of large trees that would be present without the offset.

Latham’s snipe (*Gallinago hardwickii*)

Latham's snipe feeds in soft mudflats or shallow water typically at night, early morning, or evening. They shelter during the day in small wetlands including urban water bodies, saltmarshes, as well as creek edges, where there is adequate shallow flooded or inundated substrate. They also use crops and pasture. They mostly are found among dense cover comprising sedges, grasses, lignum, reeds, and rushes. The bird tends to disperse after dusk to forage over larger areas.

The species was confirmed present within the Impact area in suitable ground truthed wetland habitat. A maximum of 4.06 ha of habitat is proposed to be impacted by the proposed action. The remaining habitat is considered marginal or of low value due to the absence or minimal presence of bare muddy margins, steep banks, little or no open water with tall or dense ground cover present including a high weed incursion predominantly consisting of Singapore daisy (*Sphagneticola trilobata*).

The high-quality habitat was ground truthed to include areas of wetland habitat where the species is known to occur and may (at times) occur in sufficient numbers to be considered ‘important habitat’ for the species (with any area of habitat supporting 18 or more birds considered ‘important habitat’ for this species. Habitat is considered suitable for foraging and dispersal only as the species does not breed in Australia.

The area within proximity to the wetland currently comprises of cleared agriculture land with scattered trees therefore only minor vegetation clearing works will occur and some water extraction activities may be required. Where practicable, water extraction activities will only occur where supplies are abundant. As construction will occur in phases along the linear Impact area, it is unlikely habitat will be disturbed at one time allowing for individuals to move to avoid disturbed area.

A SIA was not conducted, as the species, though significant, are unlikely to occur or are not known to occur within the area. Therefore, the criteria regarding the habitat being essential for life cycle requirements such as foraging, breeding, nesting, roosting, social behaviour patterns, or seed dispersal processes were not met.

White-throated needle tail (*Hirundapus caudacutus*)

This species may potentially occur as a flyover species above the Impact area as multiple records occur. As habitat requirements for the species are not well-understood, all eucalypt woodland and forest within the Impact area is considered important habitat. However, as this species has a very large distribution across Australia and is constantly moving, only small numbers are expected to utilise the Impact area at one time. Furthermore, this species is predominately aerial and has broad habitat requirements, impacts are unlikely to affect the persistence of the species. In addition, it is likely vast areas of important habitat occur within the wider local area.

A maximum of 51.70 ha of potential habitat is proposed to be impacted. Whether the habitat is used to meet essential life cycle requirements (i.e. foraging, breeding, nesting, roosting, social behaviour patterns or seed dispersal processes)

A SIA was not conducted, as the species, though significant, are unlikely to occur or are not known to occur within the area. Therefore, the criteria regarding the habitat being essential for life cycle requirements such as foraging, breeding, nesting, roosting, social behaviour patterns, or seed dispersal processes were not met.

Mary River cod (*Maccullochella mariensis*)

The species is considered as potential to occur due to marginal habitat occurring within the Impact area. No records occur within the Study area and no individuals were observed during targeted field surveys.

A maximum of 0.65 ha of potential habitat is proposed to be impacted by the proposed action.

The likelihood of Mary River cod breeding at sites within the Impact area is highly unlikely given the distance of the sites from any known Mary River cod locations and an absence of suitable breeding habitat (large woody debris and undercut banks). The nearest stocking location to the Impact area is approximately 20km upstream of one site, however all other stocking locations were 60-160 km upstream with numerous hydrological impoundments between stocking and surveyed locations.

Given this, it was determined that Mary River cod presence at most sites was unlikely as there was not suitable habitat. In addition, the presence of exotics is likely to predate on Mary River cod fingerlings and compete for resources. The notable scarcity, if not total absence, of large woody debris and undercut banks at many of the study sites further decreases the chance of successful breeding within the Impact area.

A SIA was not conducted, as the species, though significant, are unlikely to occur or are not known to occur within the area. Therefore, the criteria regarding the habitat being essential for life cycle requirements such as foraging, breeding, nesting, roosting, social behaviour patterns, or seed dispersal processes were not met.

2.3.3 Significant impact assessment

The nature, likelihood and consequence of the impacts identified in Section 2.3.2.5 is discussed in detail in Section 7.0 of the Supplementary MNES Report (Appendix B).

Conservation significant flora, fauna and ecological communities have the potential to be impacted by the proposed action. The overall risk to these MNES values, which is a result of the proposed action having an ‘important, notable, or of consequence, having regard to its context or intensity’, will differ based on a combination of factors including the community or species’ ecological characteristics and the likely consequence of such impacts. As such, a screening assessment was undertaken in accordance with the risk framework approach and using information compiled for each species’ from the SPRAT database (Department of Climate Change Energy the Environment and Water, 2023) and other species-specific references.

This approach identified conservation significant flora, fauna and communities either with:

1. low risk of potential impacts from the proposed action activities, or
2. potential risk which requires further assessment with a Significant Impact Assessment in accordance with the *EPBC Act Policy Statement 1.1 Significant Impact Guidelines: Matters of*

National Environmental Significance (Department of the Environment, Water, Heritage and the Arts, 2013).

The findings of the screening assessment determined the following ten (10) MNES were identified as being at potential risk of being significantly impacted by the proposed action:

- Critically Endangered/Endangered species and communities:
  - Subtropical floodplain eucalypt TEC
  - Swift parrot
  - Greater glider
  - Koala
  - Angle-stemmed myrtle
  - Regent honeyeater
- Vulnerable species:
  - South-eastern glossy black cockatoo
  - Grey-headed flying-fox
  - Yellow-bellied glider (south-eastern)
  - Macadamia nut

SIAs were undertaken for conservation significant species and communities, with a potential risk as a result of the proposed action (see Appendix F of the Supplementary MNES Report (Appendix B)). Despite the implementation of mitigation measures, the proposed action has the potential to have significant impacts to five conservation significant species. The outcomes of the SIAs are summarised in Table 8.

Table 8 Summary of SIA

MNES	Impact area (ha)	SIA result
Critically Endangered Species		
Regent honeyeater	**42.28 total**	Unlikely[1]
Swift parrot	**42.28 total**	Unlikely[1]
Endangered Threatened Ecological Community and Species		
Subtropical floodplain eucalypt TEC	1.30 direct	Unlikely
	1.30 total	
	4.80 buffer zone	
Greater glider (southern and central)	34.89 direct, including functionally lost areas	Unlikely
	34.89 total	
	7.26 buffer zone	
Koala	107.74 total, including functionally lost areas	**Likely**
Angle-stemmed myrtle	**0.01 total**	Unlikely
Vulnerable Species		
South-eastern glossy black cockatoo	**41.74 total**	**Potential**
Grey-headed flying-fox	43.14 direct	**Potential**
	2.20 indirect	
	45.33 total	
Yellow-bellied glider (south-eastern)	34.89 direct, including functionally lost areas	Unlikely
	34.89 total	
	7.26 buffer zone	

MNES	Impact area (ha)	SIA result
Macadamia Nut	**0.016 total**	Unlikely

[1] The SIA result indicates a significant impact to potential habitat for regent honeyeater is unlikely based on conservative assessment of habitat critical to survival of the species, based on an assessment against DCCEEW's significant assessment guidelines. With the above said, due to the presence of potential foraging and dispersal habitat within the impact area, DCCEEW considers that the proposed action may have a significant residual impact on the regent honeyeater. While the Proponent remains of the view that such an impact is unlikely, to ensure that DCCEEW's issues are adequately addressed, the Proponent has considered these species as if the proposed action will have a significant residual impact.

2.3.4 Receiving habitat and species dispersal

RFI 4.4	Provide an assessment of the direct and indirect impacts within and surrounding the proposed action that may occur during construction and post-construction phases, including: b) Likely receiving habitat where impacted MNES will be dispersed to as a result of clearing and construction, and an assessment of the receiving areas capacity to support the displaced impacted MNES. c) A pre-clearance conceptual dispersal map of all relevant impacted MNES (i.e. excluding flying animals), verified in field wherever possible and supported by survey records. d) A conceptual post-construction dispersal/movement map of all relevant impacted MNES. e) A description of where areas of impacted MNES dispersal/movement will be maintained, limited and removed post construction. If areas of movement are to only be temporarily removed or limited, please provide timeframes

Assessment of direct and indirect impacts of construction of the proposed action are described in detail in Section 5.2 of the Supplementary MNES Report (Appendix B), including:

- Likely receiving habitat (Section 5.2.1.2.1)
- Dispersal movement pathways pre-clearance (described in Section 3.9) and post-construction (Section 5.4 and Appendix G).

The proposed action has the potential to impact on the connectivity of conservation significant fauna. The koala, greater glider (southern and central) and yellow-bellied glider are considered most at risk of connectivity impacts from developing the proposed action. A landscape connectivity model, informed by the targeted surveys, assessed the proposed action's potential impact to the movement patterns of these species. This model considers species dispersal pre- and post-construction to determine the proposed action's connectivity impacts.

The landscape connectivity modelling conducted within and around the Impact area considered both structural and functional connectivity. Modelling results are summarised below and further described in Appendix G of the Supplementary MNES Report (Appendix B), it assigns movement 'resistance' values to infrastructure and fauna habitats, identifying barriers and pathways for fauna movement. Yellow areas indicate unimpeded movement (diffusion), blue areas show channelled movement through conduits, and red areas highlight restricted movement.

Landscape connectivity modelling was conducted for koalas, greater gliders, and yellow-bellied gliders, as they are most at risk of connectivity impacts from the proposed action. The method effectively provided spatial and temporal analysis of species movement and ecological connectivity for linear infrastructure projects. Refer to Section 5.4 of the Supplementary MNES Report (Appendix B) for discussion on the potential impacts to koala and glider movement.

Based on landscape connectivity modelling and design work, pre-construction measures like fauna fencing, passageways, and fauna furniture have been strategically selected to ensure fauna connectivity. These measures, outlined in Section 6.2 of the Supplementary MNES Report (Appendix B), aim to avoid, minimize, and manage potential impacts on local connectivity and species movement, particularly for koalas, greater gliders, and yellow-bellied gliders.

The linear nature of the proposed action means that impacts will primarily occur along patch edges (and broadscale clearing of entire patches is generally unlikely to occur), and patch isolation is unlikely to be a key issue. Despite this, based on the landscape connectivity modelling results, the following locations have a potential risk to be impacted in terms of landscape connectivity post-construction:

- Kuraby State School

- Acacia Forest Park
- Anzac Park, Kingston
- Gould Adams Park/Nealdon Park
- Edens Landing Station.

Design management measures, outlined in the OEMP (Appendix C), are proposed to minimise and manage potential impacts to local scale connectivity and fauna movement, in particular for koala, greater glider (southern and central) and yellow-bellied glider. These measures include opportunities such as fauna underpasses, glider poles, and fauna fencing, which are subject to further investigations during the Detailed Design phase. Fauna movement measures are discussed in Section 2.4

2.3.5 Cumulative impacts

RFI 4.4	Provide an assessment of the direct and indirect impacts within and surrounding the proposed action that may occur during construction and post-construction phases, including: f) A local and regional scale analysis of likely impacts, with reference to the proposed action's potential contribution to cumulative impacts in the context of development patterns in the locality and region.

As described in Section 5.5 of the Supplementary MNES Report (Appendix B), the proposed action has the potential to contribute to cumulative impacts to MNES in the context of development patterns in the locality and region.

As part of the assessment of the proposed action, a local and regional scale analysis of likely impacts to MNES has been undertaken. This assessment considers the proposed action in the context of other concurrent developments at a local scale, as well as a vegetation scale analysis to consider the proposed action's impacts to MNES at a local and regional scale.

The proposed action primarily occurs within brownfield (rather than greenfield) areas supporting an urban matrix of residential areas, disturbed and undisturbed vegetation, parklands, roads, railways and industrial land. Proposed impacts to MNES would be limited to the narrow, linear alignment within the Impact area and primarily impact habitat patch edges.

In addition, while local cumulative impacts may occur to vegetation/habitat quality (e.g. edge effects), fauna diversity and available local resources, comprehensive measures to avoid, minimise, mitigate and manage impacts of the proposed action are provided within Section 6.0 of the Supplementary MNES Report (Appendix B) and the OEMP (Appendix C).

Local scale impacts to the MNES species known or likely to occur in the Impact area were assessed via SIAs (Appendix F of Appendix B Supplementary MNES Report). Based on assessment of impacts from the proposed action alongside cumulative impacts in the context of development patterns in the locality and region there are no significant regional scale cumulative impacts.

Full description of the analysis of the local and regional scale impacts to MNES populations from the proposed action is summarised in Section 5.5 of the Supplementary MNES Report (Appendix B).

2.3.6 Duration of impacts for MNES

RFI 4.4	Provide an assessment of the direct and indirect impacts within and surrounding the proposed action that may occur during construction and post-construction phases, including: g) An assessment of the likely duration of impacts to MNES as a result of the proposed action.

Direct clearing impacts to habitat during construction will be permanent in nature and will generally occur during the first year of construction. Indirect impacts during construction (such as light, noise and vibration) will be temporary in nature, with construction predicted to be for duration of up to five years between 2025 and 2030 (subject to program constraints including rail possession availability, weather delays, etc.). Where indirect impacts are ecologically relevant, buffer zones are provided to assess and monitor impacts for their duration.

2.3.7 Repeated impacts

RFI 4.4	Provide an assessment of the direct and indirect impacts within and surrounding the proposed action that may occur during construction and post-construction phases, including: h) An assessment of whether impacts are likely to be repeated, for example as part of maintenance.

The proposed action is limited to construction aspects of the proposed action, which will occur for approximately five (5) years between 2025 and 2030. The most substantial impact will result from vegetation clearing (i.e. <1 year duration). The remaining 4 to 5 years are construction activities that will have mitigation strategies as outlined in the OEMP (Appendix C). Upon completion of proposed action, operation and maintenance of the railway will be consistent with existing levels of disturbance.

Repeated impacts on MNES values during the maintenance phase of the proposed action are likely to be infrequent, mainly consisting of indirect impacts (e.g. noise and light) during periodic maintenance activities. These activities will occur within the rail corridor, access tracks and stations and include maintenance of fauna movement infrastructure, drainage inspections and maintenance (e.g. culverts) and regrowth control (predominantly ground slashing) to allow for the safe operation of trains and maintenance vehicles.

2.4 Avoidance, mitigation and management measures

The proposed approach to avoidance, minimisation and mitigation of impacts is detailed in the Supplementary MNES Report (Section 6.0 of Appendix B) and in the OEMP (Appendix C) corresponding to specific conservation guidance and design guidelines. To provide clarity on party responsibilities, the OEMP outlines specific roles and obligations for actions under the relevant sections.

To assist DCCEEW with the assessment of the proposed action, the Proponent has developed a draft set of EPBC Approval Conditions (Appendix F of Appendix B) with the intent to demonstrate both its understanding of the compliance matters required to avoid and minimise impacts on protected matters, and also assist in streamlining the generation of conditions throughout the final stages of the Assessment Phase leading up to the Minister's Decision.

RFI 5.1	Provide a consolidated assessment of all proposed measures to avoid and mitigate impacts, including those provided in the referral and any additional to those described in the referral. This should include: a) An assessment of avoidance, including: i. all efforts that have been made to avoid impacts to MNES, particularly in areas of connectivity and high value habitat. ii. where avoidance has not occurred, with full reasoning. iii. any remaining impacts to be mitigated to reduce the impacts on MNES. d) A description (including maps and imagery) of the location, boundaries and size of buffer areas or proposed exclusion zones, and details on how these areas will be enhanced, protected, and maintained. Also include a description of any fences or barriers which may be installed around areas where impacts will be avoided. e) Details of any ongoing mitigation and management measures, including but not limited to: i. Details about pre-clearance and clearance procedures to ensure that species are detected and managed to minimise mortality, stress, injury, or introduction of disease. ii. Information on any buffer zones between the construction footprint and remaining habitat in the referral area and adjacent to the site. iii. Measures to address the risk of MNES entering developed areas, and becoming trapped/isolated without resources for shelter. iv. Management of direct and indirect impacts for the Koala and other and other relevant MNES, due to increased likelihood of human presence, attacks by domestic dogs. v. Information on how the width of any proposed fauna movement corridors will satisfy the requirements of the species, as described in SPRAT profiles and statutory documents.

	vi.	Information on fauna safe road design and placement, including installation of Koala crossing warning signs, wildlife threshold marking on road (include maps and imagery).
	vii.	Details of how speed reduction is to be achieved (e.g., traffic calming devices) and plans showing the locations of each of these features and the manner in which they will be implemented).
	viii.	Other mitigation measures proposed for the mitigation of impacts to MNES movement and remaining habitat on and adjacent to the site.
RFI 5.2	For each measure proposed, indicate the: a) impact to be avoided and/or mitigated b) responsible party c) environmental outcomes to be achieved d) milestones / performance / completion criteria e) an evidence-based likelihood of success/risk assessment f) proposed monitoring and evaluation program. g) contingency measures.	

Mitigation measures for the proposed action are provided according to the hierarchy of mitigation:

1. **Avoid**: maximise use of disturbed areas, co-locate existing infrastructure and disturbance impact area, avoid vegetation clearing wherever feasible
2. **Minimise**: minimise or undertake partial (rather than full) vegetation clearing wherever feasible
3. **Mitigate**: implement measures to reduce or manage direct, indirect and cumulative impacts
4. **Remediate** and/or **rehabilitate:** progressively remediate and rehabilitate temporarily impacted vegetation and habitats
5. **Offset**: where significant residual impacts to MNES occur, the Proponent propose to deliver land-based environmental offsets. These requirements are addressed separately in the Offset Area Management Plan (OAMP)(Appendix D).

The OEMP (Appendix C) consolidates proposed measures to avoid and mitigate impacts to MNES during construction. The OEMP will be updated to incorporate changes resulting from the Detailed Design to present the objectives and measures to manage potential impacts to MNES from the proposed action. The OEMP is intended to guide the development of more detailed project-specific Construction Environmental Management Plans (EMP(C) prepared by the Design & Construction (D&C) Contractor prior to commencement of construction activities. The D&C Contractor will be required to incorporate the outcomes, performance criteria, monitoring and controls from the OEMP and any other pertinent information (e.g. conditions of approval, specifications, etc.) into a project-specific EMP(C) for approval by the Proponent prior to construction activities commencing.

The OEMP outlines the range of measures to be implemented to avoid, minimise and mitigate potential direct, indirect and facilitated impacts to conservation significant species and communities. These measures may be specific to a particular phase and/or occur across multiple phases. For each measure proposed, the OEMP outlines:

- Objective and issue
- Control
- Timing
- Responsibility
- Outcome
- Performance Criteria
- Monitoring and Evaluation Program
- Contingency Measures

The OEMP provides details of both general environmental controls for fauna and flora in addition to species-specific controls for MNES including mitigation measures to retain or improve connectivity in the form of indicative fauna passage locations and infrastructure.

2.4.1 Measures to avoid and mitigate impacts

RFI 5.1	Provide a consolidated assessment of all proposed measures to avoid and mitigate impacts, including those provided in the referral and any additional to those described in the referral. b) All proposed measures and outcomes of the avoidance and mitigation measures must be clearly listed, and follow the specific, measurable, achievable, relevant and timely (SMART) principle.

The recommendations of the OEMP (Appendix C) aim to provide guidance and management measures for identified environmental constraints with potential to impact on MNES species within the proposed action Impact area. As the proposed action is still in the Refined Reference Design phase, the details of the transport infrastructure and associated impacts require ongoing evaluation throughout the Detailed Design stages. The OEMP identifies the following key environmental factors for the proposed works:

- Flora and fauna
- Hydrology, erosion and water quality
- Nuisance (dust, noise, vibration and light).

Mitigation measures outlined in Table 9 of the OEMP (Appendix C) have been informed by recommendations made in the Supplementary MNES Report (Appendix B) in response to species-specific guidance and recommendations to avoid, minimise, mitigate and manage both direct and indirect impacts to MNES habitat. Adaptive and other management measures within this document are designed following the 'SMART' principle, being Specific, Measurable, Achievable, Relevant and Time bound.

The OEMP is intended to guide the development of more detailed project-specific Construction Environmental Management Plans (EMP(C) prepared by the Design & Construction (D&C) Contractor prior to commencement of construction activities. The EMP(C) will, at a minimum, cover key environmental factors at the site and provide an overview of mitigation measures to be adopted and their appropriate installation. The control actions outlined will be implemented where applicable unless alternative control measures are agreed with the Proponent.

The management measures for the proposed action and evaluated against recovery actions outlined in relevant National Recovery Plans for MNES species and communities. Where species/communities Recovery Plans are unavailable, priority actions from species' Approved Conservation Advice have been sought. Supporting documents and the alignment of proposed measures with recovery action objectives is provided in Section 2.2.4 of the Supplementary MNES Report (Appendix B).

Key avoidance and minimisation

The design has been influenced by design optioneering, refinement of properties during acquisition, review of construction staging and methodology, stakeholder and asset owner input/feedback, design technical investigations, and targeted ecology surveys.

In addition to the proposed action updates (outlined in section 2.1.4 of the Preliminary Documentation), the Environmental Team for the Proponent have worked closely with the Design and Delivery teams to investigate and assess various options to further reduce impacts on vegetation. Positively, the following design refinements have been implemented, resulting in a substantial reduction of impact to areas of ecological values for the proposed action:

- Design refinement has occurred at Acacia Forest Park estimating a 20% reduction in the Impact area.
- Design and construction refinement has occurred at Scrubby Creek with a focus on minimising impacts to environmental and ecological factors, estimating a 22% reduction in the Impact area
- Design refinement has occurred at Logan River and temporary works areas removed through liaison with the tenderers
- Design refinement has occurred at Beenleigh estimating a 55% reduction in the Impact area.
- Design refinement has occurred around Battle Park, which contains important Logan City Council (LCC) offsets. Changes to the rail maintenance access roads (RMAR) as well as the horizontal clearances to fence lines has resulted in reduction of impacts to the Council vegetation.

- A bridge crossing the rail corridor at Spann's Road and Church Road had previously contained spiral ramps, predominantly aimed at cycle users, which resulted in more land take and vegetation clearance. Following further design analysis, a modified option uses two separate ramps, one for cyclists and one for pedestrians, on the approaches to the bridge. This has resulted in less land take and vegetation removal, while providing for all users.
- Along the rail corridor, batter slopes have been changed from a 1:4 (25%) to a steeper 1:2 (50%) slope. While this has been a departure from QR standards for the treatment of batter slopes, this will result in less land take and impacts to adjacent vegetation.
- Retaining wall structures are now proposed adjacent to Edens Landing to further reduce vegetation clearing, loss of koala and grey-headed flying-fox habitat, maintain riparian fauna movement pathways, erosion and sedimentation to the Logan River, including an approximate 15 m buffer between the construction boundary and the Logan River. Although retaining walls were incorporated into the Refined Reference Design – which enabled a considerable footprint reduction in comparison to the initial design – throughout the Procurement Phase solutions were further verified to apply more traditional and cost-efficient rail earthworks option (i.e. cut-fill embankment) in this area. Importantly, this change has been able to maintain the footprint that the Retaining wall approach required, as such there is no change to the required footprint between retaining wall and traditional earthworks option in this area.
- Design refinement has resulted in the removal of Hugh Muntz Park from the project footprint therefore avoiding all direct and indirect impacts to Hugh Muntz Park (including the subtropical floodplain eucalypt TEC).
- Temporary construction laydown areas have been re-evaluated to look at further opportunities to minimise vegetation clearing, and avoid mapped and ground truthed biodiversity corridors, conservation significant flora, fauna and community habitat.
- A review of the Site Access Schedule (SAS) boundary has been undertaken, which represents both the temporary construction and permanent infrastructure areas. Based on the latest design information, property resumptions, and targeted surveys, has resulted in further refinement of the permanent and temporary areas being used. Vegetation clearing has been further reduced by utilising existing disturbed areas.
- Since the referral for the proposed action, significant reductions to the Impact area have occurred, as well as targeted surveys and species-specific habitat mapping. As such, direct impacts to greater glider (southern and central) habitat have substantially reduced from 49.42 ha to 34.89 ha.

As part of the concept design refinement process, the proponent has identified a range of structures to be further develop by the successful contractor following selection and contract award; specification of the structures and maps of proposed location will be developed as part of detailed design. The concept design considers appropriate civil engineering standards, Asset Owner requirements, constructability for such structures and post construction maintenance access requirements to ensure sufficient EPBC proposed action boundary was allocated and that no additional unintended impact will be caused by new structures. For example, retaining walls incorporated to minimise the width of the corridor and avoid vegetation impacts (opposed to a benched or filled embankment) can have potential for beneficial impacts on the koala, gliders, and other species.

Future designing activities will continue to incorporate not only the civil engineering standards, Asset Owner requirements (i.e. Queensland Rail) but importantly as stated previously the design will also incorporate the below fauna-related guidelines:

- TMR's Fauna Sensitive Transport Infrastructure Delivery manual
- DETSI Koala-sensitive Design Guideline 2022.

2.4.2 Effectiveness

RFI 5.1	Provide a consolidated assessment of all proposed measures to avoid and mitigate impacts, including those provided in the referral and any additional to those described in the referral. c) Provide an assessment of the predicted effectiveness of each proposed avoidance or mitigation measure, noting that the effectiveness of a particular assessment of effectiveness

	should be evidence based and include examples of demonstrated success of a particular measure to achieve the desired avoidance/mitigation outcome.

Table 13 of the OEMP (Appendix C) provides and assessment of the avoidance and mitigation measures. It predicts the likely effectiveness of the proposed measures in achieving environmental objectives by demonstrating their use in other instances. In general, the following understanding of effectiveness is applied based on the hierarchy of mitigation:

- High Effectiveness – direct impacts are avoided, no residual impact to species and/or habitats
- Moderate Effectiveness – direct and indirect impacts are minimised, no substantial recurring impact
- Low Effectiveness – minimal reduction in impact through control, survey and observation measures.

Overall, the measures proposed for the proposed action are considered to have a moderate to high effectiveness based on the Proponent's demonstrated experience in managing environmental impacts.

2.4.3 Statutory or policy basis

RFI 5.3	Any statutory or policy basis for the proposed measures, including reference to the SPRAT Database and relevant approved conservation advice, recovery plan or threat abatement plan, and a discussion on how the proposed measures are not inconsistent with relevant plans. For example, the National Recovery Plan for the Grey-headed Flying-fox states an objective to: *'to improve the Grey-headed Flying-foxes national population trend by reducing the impact of the threats outlined in this plan on Grey-headed Flying-foxes through habitat identification, protection, restoration and monitoring'* Please provide a discussion on how the proposed action is consistent with relevant species' recovery objectives or alternatively, how the proposed avoidance, mitigation/management and offsetting will compensate for any residual significant impact, thereby ensuring consistency with the objective for relevant EPBC Act species.

In addition to general controls, the OEMP (Appendix C) outlines MNES species-specific mitigation measures to manage potential impact to conservation significant flora, fauna and communities in Table 9. In Table 10 (Appendix C), mitigation is presented for each MNES species and has been informed by species-specific guidance such as the SPRAT Database and relevant approved conservation advice, recovery plans or threat abatement plans.

2.5 Offsets

RFI 6.1	Systematically describe how the proponent will provide offsets that meet the requirements of the EPBC Offsets Policy.

The Proponent has demonstrated avoidance and minimisation of potential impacts to conservation significant flora, fauna and ecological communities and commitment to provide suitable biodiversity offset to compensate significant residual impact for koala, grey-headed flying fox, south-eastern glossy black cockatoo, swift parrot and regent honeyeater in accordance with the Environmental Offsets Policy (Department of Sustainability, Environment, Water, Population and Communities, 2012).

Evidence-based justification is provided to support the suitability of the offset properties and associated management planning to support conservation gain based on the requirements of the MNES being compensated. Offset suitability discussed in Section 5 of the OAMPs addresses Offsets Policy guidance on the identification and assessment of suitable offsets; with full details of the suitability assessment provided in Appendix B of the OAMP (Appendix D of the Preliminary Documentation). Management planning and monitoring effectiveness in achieving interim performance criteria against baseline levels across each habitat quality metric is detailed in Section 6 of the OAMPs.

Offsets proposed for the significant impacted MNES is provided in Table 9 demonstrating sufficient acquittal for the proposed action. This commitment is reflected within the revised Preliminary Documentation, including:

- Appendix B Supplementary MNES Report
- Appendix D-1 Offset Area Management Plan: Benobble
- Appendix D-2 Offset Area Management Plan: Undullah.

Table 9 Offset proposed for significant impacts to MNES

MNES	Impact area (ha)			Offset available (%)	
	Direct	Indirect	Total	Benobble	Undullah
Koala	107.74	0.00	107.74	55.41%	98.13%
Grey-headed flying-fox	43.14	2.20	45.33	128.51%	230.83%
South-eastern glossy black-cockatoo	41.74 (28 hollows)	0.00	41.74	174.46% (31 hollows)	-
Swift parrot	42.28	0.00	42.28	48.09%	85.16%
Regent honeyeater	42.28	0.00	42.28	48.09%	85.16%

2.5.1 Summary of proposed environmental offset

RFI 6.2 If potential offset site/s are identified, as far as possible please provide:

a) A description of the proposed offset site(s) including location, size, condition, and relevant ecological/species habitat features, landscape context and cadastre boundaries of the offset site(s) (supported by mapping).
b) Information about how the proposed offset/s area will provide connectivity with other relevant habitats and biodiversity corridors.
c) Information how the proposed offset site/s contribute to relevant State and/or regional plan/s or initiatives for the conservation of the protected matter, for example Koala Priority Areas of Koala Habitat Restoration Areas.
d) Evidence of the presence of, or usage by, relevant MNES on, or adjacent to the proposed offset site(s), and the presence and quality of habitat for MNES on the proposed offset site.
e) An assessment of how the offset and impacts sites are like-for-like, i.e. the environmental values for the MNES at the offset are of the same type or equivalent to that affected by the proposed action.
f) The methodology, with justification and supporting evidence, used to inform the inputs of the Offsets Assessment Guide in relation to the offset site for each relevant MNES, including:
    i. total area of habitat (in hectares); and
    ii. habitat quality (as discussed in section 8)
    iii. time over which loss is averted (max. 20 years);
    iv. time until ecological benefit;
    v. risk of loss (%) without offset;
    vi. risk of loss (%) with offset; and
    vii. confidence in result (%).
g) Details and execution timing of the mechanism to legally secure the environmental offset/s (under Queensland legislation or equivalent) to provide enduring protection for the potential offset area/s against development incompatible with conservation.

In response to the RFI, two OAMPs have been developed for the Benobble and Undullah properties – refer Appendix D. As outlined in Table 9, the OAMPs demonstrate the available offset acquittal and active management to be implemented on these offset areas to compensate for significant impacts to koala, grey-headed flying fox, south-eastern glossy black cockatoo, swift parrot and regent honeyeater.

The Offset Area was assessed against the EPBC Act Environmental Offsets Policy (EOP), Commonwealth Offsets Assessment Guide (OAG) and the How to use the Offsets assessment guide (SEWPaC, 2012b). The OAMPs are designed to comply with Part 9 of the EPBC Act and detail the management strategies required to achieve no net loss by increasing the habitat quality of the area for the significantly impacted MNES values to a level at which it provides greater conservation value than its current form within the Impact area.

Habitat quality scoring within the Offset Area were undertaken using the same methodology implemented within the Impact area. This included the assessment of species habitat quality utilising the Modified Habitat Quality Assessment developed by DCCEEW and DES Guide to determining terrestrial habitat quality (version 1.2) (Department of Environment and Heritage Protection, 2017). DCCEEW Modified Habitat Quality Assessment is an unpublished method providing guidance on Habitat Quality determination for MNES based on the Guide to determining terrestrial habitat quality (version 1.2) (Department of Environment and Heritage Protection, 2017).

A description of the proposed offset site(s) including location, size, condition, and relevant ecological/species habitat features, landscape context and cadastre boundaries of the offset site(s) (supported by mapping) is presented in Section 3 of the OAMPs (Appendix D).

As outlined as potential conservation gains for protected matters (Section 3.3 of the OAMPs), the Offset Areas were selected based on factors considered important in improving the condition, viability and extent of habitat for the Target MNES, including connectivity with adjacent habitat in the greater landscape, with:

- Benobble offset site being within a regional biodiversity corridor possessing regional biodiversity values as identified by the SEQ Regional Plan (2023) and mapped as Priority Koala Habitat Area (DES, 2023).
- Undullah offset site providing a functional stepping stone connecting legally secured environmental offsets facilitating important wildlife movement along a north south corridor between Flagstone (8 km south) to Flinders Peak Conservation Park (approximately 5.5 km north).

Extensive field surveys were conducted to identify and characterise the presence, extent, and condition of target MNES values within the Offset Area; survey effort associated with habitat quality and suitability surveys is described in Section 4.1 of the OAMP. Suitability of the Offset Area is discussed in Section 5 of the OAMP with specific details on the presence and quality of habitat values for the relevant MNES within and adjacent to each of the proposed offset sites is provided in Section 5.1.3 of the OAMP.

For each MNES, there is almost a one for one replacement of habitat lost through the impact. The remainder of the offset provides habitat improvement. This blended approach provides shorter- and longer-term benefits to the MNES, while balancing risk of failure and habitat gains.

The methodology, with justification and supporting evidence, used to inform the inputs of the Offsets Assessment Guide in relation to the offset site for each relevant MNES, is included in Section 5 (Offset Suitability) and Section 5.2 (Offset acquittal) for each MNES, demonstrating habitat quality, time until ecological benefit, risk of loss and confidence in quality scores.

As demonstrated by Table 9 and OAMP (Appendix D), the Proponent has developed an offset portfolio to address offset requirements for significant impacts to MNES:

- Undulalh Offset Area, 640.6 ha across six land parcels, situated within the Scenic Rim Regional Council Local Government Area, approximately 20 km west of the township of Jimboomba and 39 km south-west of the Impact area. This area was strategically selected based on its potential to enhance the condition, viability and connectivity of habitat for Target MNES species, while also providing conservation gains.

  The Offset Area was assessed against the EOP and OAG for the Target MNES to contribute to offset requirements for four Target MNES (koala, grey-headed flying-fox, regent honeyeater and swift parrot) under the EPBC Act (refer Table 9).

- Benobble Offset Area, consisting of three land parcels totalling 356.65 ha, is located within the Scenic Rim Regional Council. Due to a history of extensive clearing, the site presents a mosaic of land conditions, including cleared areas, regrowth vegetation, and remnant vegetation with varying levels of degradation. These vegetated areas provide suitable habitat for relevant MNES species, with significant opportunities for habitat restoration and creation, including revegetation of canopy species and installation of hollows to support glossy black cockatoo breeding habitat.

  The Benobble property entirely acquits offset requirements for one Target MNES (glossy black-cockatoo) and contribute to offset requirements for four Target MNES (koala, grey-headed flying-fox, regent honeyeater and swift parrot) under the EPBC Act (refer Table 9).

The overall management objective of the Offset Areas is to increase the habitat quality of the area for the Target MNES values to a level at which it provides greater conservation value than its current form within the Impact area. The desired conservation outcome is to protect and restore habitat, active revegetation to increase habitat extent, resources and patch connectivity, and reduce threats so that viable populations for the five MNES species can be sustained. This is to be done by achieving the completion criteria by year 20, with interim performance targets at five-year intervals.

Specifically, to compensate for lost hollows with potential to provide breeding habitat for South-eastern Glossy Black-cockatoo, Hollowhog as a carved hollow specialist and experienced arborist to provide advice on suitable trees for receiving hollows, installation guidance and management strategies given the highly specific requirements of the species.

Specific, measurable, achievable, relevant and timely (SMART) offset completion criteria (i.e. environmental outcomes) to be achieved are identified in Section 6.6 of the OAMPs with interim (five-yearly) performance targets established per Assessment Unit in Appendix D.6 of the OAMPs to assess effectiveness of measures and adequate progress towards achieving the environmental outcomes for overall Habitat Quality Scores. Key updates to OAMPs include:

Ongoing monitoring actions identified in Section 7 of the OAMP target actions for each MNES guiding necessary adaptive management and tracking progress toward the desired outcomes. As such, legally securement and management of the Offset Area would substantially contribute to the preservation and improvement of local biodiversity values and assist in maintaining north-south wildlife movement.

In Appendix D OAMP, Section 6.2, details and execution timing of the mechanism to legally secure the environmental offset/s (under Queensland legislation or equivalent) to provide enduring protection for the potential offset area/s against development incompatible with conservation.

The Offset Area will be legally secured with a VDec under the VM Act, and/or via an appropriate alternative measure, such as a covenant pursuant to the *Land Title Act 1994*. Through the VDec, the Offset Area will become a Category A area on Queensland's regulated vegetation mapping. No application for the removal of the VDec would be made for the duration of the offset. Where a covenant is considered appropriate as a legal mechanism, and if required in addition to any VDec, the terms of any such covenant would be aimed at directly preserving the vegetation contemplated in this OAMP.

The application for legal security can only be submitted once the OAMP is approved. As such there may be a period of time between OAMP approval and formal legal security. During this time any clearing of the offset site will be prohibited by TMR.

An application for the appropriate legal security mechanism will be submitted within six months from the date of the EPBC Approval.

2.6 Economic and social matters

2.6.1 Projected economic costs and benefits

RFI 8.1	Provide details on the social and economic costs and/or benefits of undertaking the proposed action, including the basis for any estimations of costs and/or benefits. Where possible, please include the total economic capital investment and economic ongoing value of the proposed action.

As part of business case developed in the early planning phase for the proposed action, KPMG was engaged by the Proponent to undertake a detailed economic appraisal (KPMG 2021a). As part of this a cost benefit analysis was completed to assess and compare the incremental costs and benefits of the proposed action.

KPMG was also engaged by the Proponent to undertake a detailed Social Impact Evaluation for the proposed action. The Social Impact Evaluation was undertaken to assess the potential direct and indirect social impacts of the proposed action on the surrounding social environment resulting from construction and operation (KPMG 2021b).

The Social Impact Evaluation found that based on the social impact risk assessment, and with consideration of the potential mitigation strategies, one potentially material positive social impact was identified during construction and eleven during operation. These positive impacts are listed as follows:

- ECON2 – Employment and training opportunities (local) (construction)
- ECON5 – Enhanced network efficiency and productivity benefits
- ECON7 – Improved operational flexibility (greater network resilience)
- ECON8 – Improved access to employment opportunities
- SOC8 – Community connectivity
- SOC10 – Changes in landscape and enhancement of station amenity and aesthetic quality
- SOC14 – Enhanced safety and security at stations and the immediate surrounding environment
- SOC15 – Improved customer experience and quality of rail service
- SOC16 – Improved access to social infrastructure
- SOC17 – Improved safety at level crossings
- SOC18 – Improved corridor safety due to signalling upgrades (ETCS)
- POL1 – Improved equity of access to rail for all users (access for special needs, prams, elderly etc.).

Four potentially material negative social impacts were identified during construction and none during operation. These were namely:

- SOC6 – Temporary disruption to transport access
- ENV5 – Impact to areas of high ecological significance
- ENV2 – Noise pollution and vibration
- POL2 – Land acquisitions.

The Social Impact Evaluation noted impacts which can be monetised were included in the economic analysis, including the improved travel times, safety, and employment opportunities. It further noted a large number of impacts cannot be quantified for use in cost benefit or financial analysis but represent important societal expectations.

Procurement as part of the proposed action will encourage local business participation within the Brisbane City Council and Logan City Council LGAs, where practicable. This will help support the communities most impacted by the proposed action and will provide employment and economic benefits to communities with lower socio-economic environments and social equity.

Involving local industry in projects and capital asset acquisitions provides economic benefits to all parties and is crucial to the long-term development of Queensland's strategic manufacturing and service capability.

The additional rail capacity provided by the proposed action and the resulting predicted shift of individuals trips from private transport (car and road) to public transport (rail) provides significant benefits to road users. The savings for remaining road users represent a significant economic benefit.

During construction, the proposed action will provide both direct and indirect employment opportunities. Direct employment opportunities will be created during the construction phase of the proposed action as well as indirect employment through the provision of goods and services as inputs to the proposed action.

The proposed action will assist in managing the region's population growth in a sustainable and efficient manner, and as such supporting economic growth. It will incentivise public transport use by delivering more frequent and reliable services to better connect workers to jobs, businesses to each other and tourists to major attractions. Queensland Rail as the rail operator will have more flexibility in responding to potential network conflicts to keep services running on time. Customers will enjoy a better travel experience, with less crowding.

With more people catching the train, road congestion could be expected to reduce, leading to lower greenhouse gases and productivity gains from reduced road travel times and vehicle operating costs for business and freight trips.

Stations will be more accessible to everyone, including people with disabilities or mobility needs. An active transport corridor will run the full length of the alignment, and more people are likely to engage in incidental exercise getting to stations, leading to better health. Attractive, safer and more welcoming station precincts may also spark urban regeneration of surrounding areas for commercial or residential development.

Pockets of highly disadvantaged people live in close proximity to the rail line, particularly in Logan Central, Woodridge and Kingston. While most people are highly car dependent, and travel to work by car, a high proportion of people living in adjacent suburbs do not have access to a car. The proposed action will make it easier to walk, cycle or catch a bus to stations, making public transport a more viable option for residents of nearby suburbs. In the absence of the proposed action, these people could face higher cost transport options or be limited in their transport choices, which could result in social isolation. The proposed action will also improve access to social infrastructure such as education centres, and health and medical services.

Upgrading the Holmview cattle siding will avoid the need to decouple trains before loading cattle, improving freight efficiency and animal welfare outcomes for cattle freight transportation.

Strategies have been developed to avoid, minimise, mitigate and manage negative impacts in accordance with government and best practice standards. These range from developing management plans for construction impacts to conducting additional surveys and assessments of the natural environment prior to beginning works.

2.6.2 Related projects

RFI 8.2	Provide details on other projects that must be completed prior to the full (or part of) social and economic benefits to be realised. Identify if economic benefits and employment opportunities are in addition to what would have been expected if the action were not to take place.

The proposed action is not reliant on any other projects to enable the social and economic benefits discussed in Section 2.6.1. The Loganlea Station and Park ‘n’ Ride Relocation (LSR) project is situated within the EPBC proposed action boundary. The LSR project is a stand-alone project, with it’s own business case, funding and community consultation program, and will operate independently of the proposed action. The LSR project was referred to DCCEEW and received a ‘not controlled’ determination on 14 November 2022 (EPBC 2022/09348).

The economic benefits and opportunities described in Section 2.6.1 would not be realised in the event the proposed action does not proceed.

2.6.3 Public consultation

RFI 8.3	Provide details of any public stakeholder consultation activities, including the outcomes of those consultations.

The Proponent has undertaken extensive public stakeholder consultation activities since the EPBC referral submission (EPBC 2022/09439) which are summarised below.

Community engagement activities

The Proponent undertook early engagement with key stakeholders throughout 2021 as part of the business case phase. This included Logan City Council, Brisbane City Council, Queensland Rail, Department of Education, Department of Communities, Housing and Digital Economy, the Australian Government (through the National Faster Rail Agency) and elected representatives. In September and October 2021, an eight-week community engagement program took place as previously detailed in the EPBC referral (EPBC 2022/09439). Feedback from the community engagement activities in 2021 was used to inform refinements to the Reference Design.

In April 2022, following the 2021 engagement, an overview and key insights summary was distributed to all those who participated and registered for updates. A Consultation Summary leaflet is attached as Appendix E. Hard copies were provided to electoral offices, and on the proposed action web page.

In September 2022, an update was published online and issued to the proposed action mailing list, with hard copies sent to electorate offices. The next update was distributed in August 2023 via the same channels.

In November and December 2023, community engagement again took place, seeking community feedback on the proposed action's Refined Reference Design.

During the four-week engagement period, over 54,000 engagement flyers were letterbox dropped and handed out at five train stations; 11 in-person community drop-in sessions were held; and an online engagement hub was live. The engagement period was advertised via radio and print advertising, social media posts, awareness raising at stations, and via onboard train screens and passenger information displays at stations.

Thirteen different factsheets were used throughout the engagement period, providing information on the proposed action including station upgrades, level crossing removals, environment and cultural heritage, and active transport. Maps of key locations and a flythrough video were also available and these are now available on the proposed action web page.

More than 900 in person community interactions took place, with an additional 850+ interactions via email, phone call, online survey, formal submissions, and questions to the proposed action team.

Key outcomes from engagement activities

The comprehensive engagement process identified positive viewpoints and consistent support for the proposed action amongst most of the community and stakeholders canvassed. There is strong support for the station upgrades and accessibility improvements across the corridor as well as the safety improvements resulting from the level crossing removals.

The consultation process also highlighted several areas where the community wants more information about project impacts, including changes to the local road network, environment and property considerations and how disruptions will be managed during the construction phase.

Importantly, the feedback received from the community during this process reflected more positive than negative sentiment towards the proposed action.

A summary of 2023 engagement and consultation activities was released online to community and stakeholders.

Feedback received from engagement to date will help inform procurement activities, as well as further design development once contractors are appointed.

Engagement with stakeholders and the community is ongoing via the proposed action contact number (1800 957 066) and email inbox.

Karawatha Forest Protection Society (KFPS)

The Proponent has engaged with the Karawatha Forest Protection Society (KFPS) on a number of occasions since the business case phase. In December 2023, in conjunction with the recent community engagement on the Refined Reference Design, the Proponent met with representatives from KFPS and presented further details of the proposed action, the EPBC approval process and the ecological surveys being undertaken to demonstrate how the Proponent is assessing impacts to help inform design and construction mitigation measures and offset requirements.

The Proponent will continue to engage with KFPS as the proposed action progresses through the EPBC approval process and further phases of Detailed Design and construction. The mitigation measures for the Acacia Forest Park area (adjacent to Karawatha Forest), including native fauna hazard minimisation and connectivity, will be further assessed during the Detailed Design phase and shared with KFPS.

Property owner engagement

In August 2021, letters were sent to directly impacted property owners, introducing the proposed action and advising of a potential land requirement.

From September 2021, meetings were held with directly impacted property owners to explain the potential land requirement and associated acquisition process.

Ongoing consultation has taken place with directly impacted property owners via the proposed action's 1800 phone number and email inbox.

In October 2022, the Proponent wrote to impacted property owners explaining the option to apply for a voluntary early acquisition and advising the land required for the widened corridor had been gazetted as Future Railway Land.

In July and August 2023, the Proponent wrote to eligible property owners reminding them of the voluntary acquisition option.

In October 2023, the Proponent wrote to property owners newly impacted by the Refined Reference Design, advising of the impact and requesting they contact the Proponent to arrange meetings to discuss the process. Meetings with these property owners followed immediately after.

In November 2023, the Proponent wrote to impacted property owners advising compulsory acquisitions were about to commence and informing about the opportunity to arrange a meeting prior to Notices of Intention to Resume (NIR) being issued. The Proponent subsequently commenced the formal compulsory acquisition process with NIRs being issued to two of up to 12 tranches along the proposed action corridor.

Business engagement

From June 2023 onwards, the Proponent conducted an on-the-ground audit of businesses operating from properties both directly and indirectly impacted by the proposed action.

In conjunction with this ongoing audit, the Proponent has door knocked businesses in the area to introduce the proposed action and provide contact details for the proposed action, as well as provide updates and information relevant to individual stakeholders.

Following completion of the Refined Reference Design, the Proponent door knocked businesses in Beenleigh operating from properties either newly identified as being impacted by the proposed action or having impacts removed.

Engagement with stakeholders is ongoing via the proposed action's 1800-phone number and business email inbox.

Through door knocking activities, distinct precincts with unique needs and concerns have been identified, highlighting the need for an engagement hub / formal data collection process to assist in developing potential impact mitigation measures and activation opportunities. This is currently in development.

Elected representative engagement

The proposed action team provides regular briefings to federal, state and local elected representatives within the proposed action area. Briefings are scheduled at key proposed action milestones to provide updates and seek feedback on matters affecting the local area. Key matters of interest for these stakeholders include design progress, impacts to community, benefits and opportunities, property impacts, integration with other Projects in the area and community sentiment.

In 2023, over 20 briefings were provided to elected representatives.

In addition to formal briefings, the proposed action team is in regular contact with electorate offices via the proposed action phone number and email, to keep them up to date with activities in their area and to respond to constituent enquiries.

Council engagement

Engagement with BCC and LCC officers also continues to be positive.

In addition to quarterly meetings with the LCC CEO, technical officers engage with BCC and LCC officers at each stage of the design refinement process via:

- workshops
- meetings
- milestone reviews
- presentations.

Website

A dedicated web page has been live since the proposed action announcement in September 2021, to share information and updates with the community and provide contact details for enquiries and feedback: https://www.tmr.qld.gov.au/projects/programs/logan-and-gold-coast-faster-rail

2.6.4 Indigenous stakeholder engagement

RFI 8.4	Provide details of any consultation with Indigenous stakeholders. **Indigenous engagement:** a) Identify existing or potential native title rights and interests, including any areas and objects that are of particular significance to Indigenous peoples and communities, possibly impacted by the proposed action and the potential for managing those impacts.

The Proponent acknowledges the National Indigenous Australians Agency (NIAA) recommendations from the EPBC referral (EPBC 2022/09439), and is aware of the Guidance for proponents on best practice Indigenous engagement for environmental assessments under the EPBC Act (2016) and Engaging with First Nations People and Communities on Assessments and Approvals under the *Environment Protection and Biodiversity Conservation Act 1999* (2023 Interim guidance) documentation. The proposed action has considered these guidelines and recommendations while engaging with the Aboriginal Parties, as outlined below.

Existing and potential Native Title rights and interests

The Proponent's Native Title Unit has assessed existing and/or potential Native Title rights and interests for the proposed action. In total, 624 parcels of land have been assessed within the Impact area with 3 parcels of land remaining to be processed during Q1 2025. Of the parcels of land assessed, the Proponent's Native Title Unit confirms that Native Title rights and interests have been extinguished, with the exception of the following:

- Lot 263 CP890580 at address 25 Hawthorne Street Beenleigh;
- Lot 262 CP890581 at address 32-70 Hammel Street Beenleigh;
- Lot 911 SP168724 at address 186-216 Compton Road Woodridge; and,
- Logan River waterway.

Danggan Balun (Five Rivers) People, as the Native Title party for the first three lots, were made aware of the proposed action via the Proponent's Cultural Heritage process in mid-2023. The compulsory land acquisition process for these lots is scheduled to begin in May/June 2024 and will involve the issuing of a written Notice of Intention to Resume (NIR). Danggan Balun (Five Rivers) People will be provided with a Native Title notification of the compulsory acquisition of their Native Title rights and interests as part of the NIR process for these specific properties.

For the Logan River, the two Native Title parties include Gold Coast Native Title Group (Jabree Ltd) and Danggan Balun (Five Rivers) People. Formal notification of the acquisition and use of part of the Logan River Waterway will occur as part of the NIR process which is scheduled for May/June 2024.

The Proponent's Native Title Unit have also confirmed that there is no reserved tenure within the proposed action Impact area and that the Proponent has the ability to compulsorily acquire Native Title rights and interests under 24MD of the *Native Title Act 1993.* For this reason an Indigenous Land Use Agreements (ILUA) with the Native Title groups will not be required. Details regarding areas and objects that are of particular significance to Indigenous peoples and communities, possibly impacted by the

proposed action and the potential for managing those impacts, are covered off as part of this Native Title Assessment process in circumstances where procedural rights are required to be afforded. If Native Title is extinguished over an area, then there's no need to address this as part of a Native Title Assessment.

It is noted that the Aboriginal Cultural Heritage component has been addressed separately for areas and objects of significance, which is further discussed below.

RFI 8.4 Provide details of any consultation with Indigenous stakeholders.
Indigenous engagement:
b) Describe any Indigenous consultation that has been undertaken, or will be undertaken, in relation to the proposed action and their outcomes. This should include:
i. details regarding the specific Indigenous groups and Traditional Owners consulted and an indication of the areas, both tangible and intangible, of cultural significance across the project site; and
ii. a discussion about how impacts to areas and/or objects of Indigenous cultural significance (tangible and intangible) are avoided, mitigated or minimised.

Describe any state requirements for approval or conditions that apply, or that the proponent reasonably believes are likely to apply, to the proposed action with regards to Indigenous peoples and communities.

Indigenous consultation since EPBC referral & State requirements for approval

As previously detailed in the EPBC Referral (EPBC 2022/09439), the proposed action area encompasses areas of four Aboriginal Parties (Figure 2) including the Turrbal People and Jagera People #2 (located in the northern extent of the proposed action area), and Danggan Balun (Five Rivers) People and the Gold Coast Native Title Group (located in the central and southern extent of the proposed Impact area).

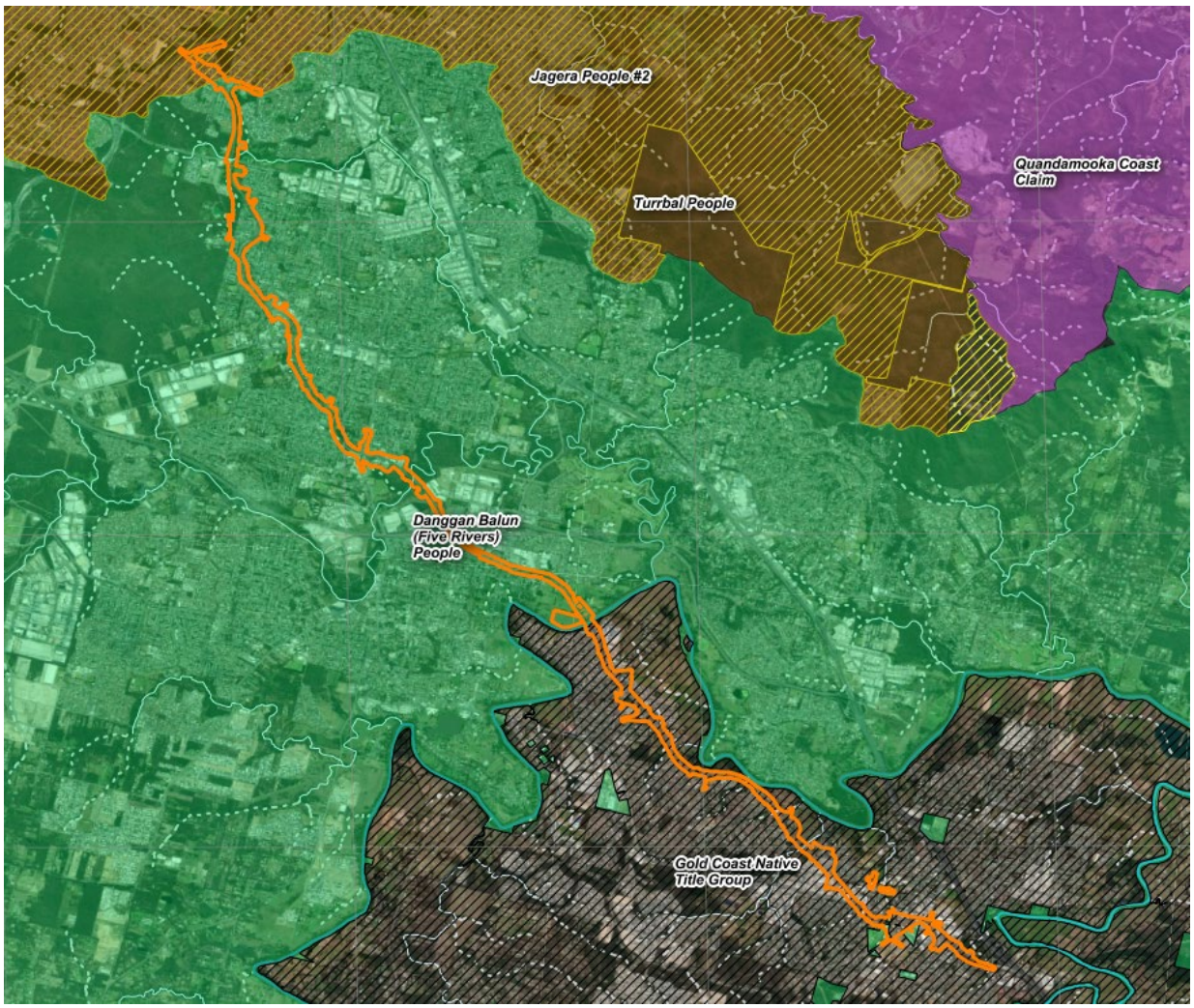

Figure 2 Aboriginal Parties in the area of the proposed action

A Cultural Heritage Risk Assessment (CHRA) was completed and discussed within the EPBC Referral (EPBC 2022/09439). The CHRA followed a standardised process in accordance with TMR's Cultural Heritage Organisational Policy (2015) and TMR's Cultural Heritage Process Manual (2015). These standards have been developed to ensure compliance with Federal and State heritage legislation and are consistently applied across all of the Proponent's projects throughout Queensland.

In line with TMR's standards, Aboriginal or Torres Strait Islander cultural heritage, which may exist within the Impact area, is protected under the *Aboriginal Cultural Heritage Act 2003* and the *Torres Strait Islander Cultural Heritage Act 2003*. Under these Acts, a person carrying out an activity must take all reasonable and practicable measures to ensure the activity does not harm Aboriginal or Torres Strait Islander cultural heritage ("duty of care"). This applies whether or not such places are recorded in an official register and whether or not they are located on private land.

In order to meet the duty of care, any land-use activity that will excavate, relocate, remove or potentially harm Aboriginal cultural heritage should not proceed without the agreement of the Aboriginal or Torres Strait Islander Party for the area, or by developing a Cultural Heritage Management Plan (CHMP) under Part 7 of the aforementioned Acts. Consultation with the Aboriginal or Torres Strait Islander party for an area may be necessary if there is a high risk that the activity may harm Aboriginal or Torres Strait Islander cultural heritage.

The Proponent has applied this duty of care for the proposed action. The CHRA process identified areas in the central and south of the Impact area as having a higher risk due to existing registered heritage sites, remnant vegetation and the potential for the proposed action to create new ground disturbance. As a result, the Proponent has consulted extensively with Danggan Balun (Five Rivers)

People and the Gold Coast Native Title Group regarding these areas. Conversely, the northern Impact areas are of substantially lower risk, due to the existing pre-disturbed and developed nature of these locations, which are predominately brownfield rail corridor surrounded by mixed residential and commercial land use, with the absence of registered heritage sites and remnant vegetation.

In line with the Queensland *Aboriginal Cultural Heritage Act 2003* and the Proponent's cultural heritage policies and procedures, given the low risk of the proposed action's northern area, further consultation with Turrbal People and Jagera People #2 for the purposes of developing a CHMP was not required. However, consultation remains open with all four parties in regards to indigenous engagement and inclusive of discussing economic opportunities for the proposed action (refer below).

Avoiding, minimising and management impacts

In relation to ensuring impacts to areas and/or objects of Indigenous cultural significance (tangible and intangible) are avoided, minimised, and mitigated/managed, the Proponent have engaged with the Danggan Balun (Five Rivers) People and Gold Coast Native Title Group to undertake site surveys during Q4 2023. These surveys identified discrete areas of archaeological potential which the parties elected to investigate further, however no sites of intangible values were recorded during the surveys. Based on the surveys, archaeological excavation programs by the Aboriginal Parties have commenced in Q1 2024 as informed by the survey findings. These excavation programs are ongoing at the time of writing.

The Proponent will be entering into statutory CHMPs under Part 7 of the *Aboriginal Cultural Heritage Act 2003* with the Danggan Balun (Five Rivers) People and Gold Coast Native Title Group located in the central and south areas of the Impact area to cover the construction phase of the works. The CHMPs are expected to be completed by Q3 2024.

CHMPs were selected over other compliance options due to the large-scale nature of the proposed action, the high cultural heritage risks and the assurance that CHMPs provide in the event of legislative changes.

The CHMPs with Danggan Balun (Five Rivers) People and Gold Coast Native Title Group aim to avoid harm to Indigenous Cultural Heritage and to the extent that harm cannot reasonably be avoided, to minimise the potential impacts on Indigenous Cultural Heritage Finds within the proposed action area by:

- maximising the Indigenous Party's direct involvement in the management of potential impact to Indigenous Cultural Heritage Finds in the proposed action area;
- demonstrating respect for Indigenous culture and Indigenous Cultural Heritage, by ensuring that all staff involved in the implementation of this CHMP and implementation of the construction of the proposed action, are aware of their responsibilities under this CHMP; and
- following the process outlined in the CHMP, should Indigenous Cultural Heritage Finds or Human Remains be identified during the proposed action works.

Importantly, an Unexpected Finds – Stop Works process will be implemented throughout construction and operations in all areas of the proposed action. As such, this provides a management approach in addition to the areas managed directly by CHMPs to ensure items of potential cultural significance are accounted for in the event they are encountered in areas of lower risk.

Indigenous procurement and employment

The Proponent is committed to working with First Nations people to achieve better life outcomes in health, education, employment and housing. To achieve these outcomes within Queensland Government policies, the Proponent applies the principles of the Queensland Procurement Policy 2023 (QPP 2023). Embedded within these principles are the requirement to support local jobs and businesses, deliver improved social outcomes and increase procurement with Aboriginal and/or Torres Strait Island businesses.

Additionally, the Proponent supports the policy objectives of the Queensland Indigenous (Aboriginal and Torres Strait Islander) Procurement Policy (QIPP) which are to:

- increase the capacity and capability of Indigenous businesses to successfully tender for Queensland Government Contracts;

- provide growth and development of a diverse and sustainable Indigenous business sector in Queensland by increasing the capacity and capability of Indigenous businesses to supply the Queensland Government but also to supply the private sector through supply chains and increased private sector demand; and,
- improve employment outcomes and opportunities for Aboriginal people and Torres Strait Islander people to participate in the Queensland Economy.

To achieve these goals, the Proponent has developed a robust set of requirements that support the QPP and the QIPP along with Australian Government requirements within the proposed action's tender and contract documents. This will support the engagement of local Small to Medium Enterprises and Indigenous suppliers in the delivery phase of the proposed action which includes:

- setting a target for purchasing from Indigenous enterprises;
- setting minimum Indigenous participation requirements; and,
- setting targets for indigenous employment.

The Proponent has developed an Indigenous Participation Plan (IPP) which will be submitted to the Department of Infrastructure, Transport, Regional Development, Communications and the Arts. The IPP supports the Australian Government's Indigenous Procurement Policy which has the primary purpose to stimulate Indigenous entrepreneurship, business and economic development and providing Indigenous Australians with increased opportunities to participate in the economy.

For the proposed action, an internal Indigenous Participation Plan is also being developed using ABS data and research into local Indigenous businesses. Contract specific requirements are also being developed to reflect the above-mentioned policy requirements.

2.7 Ecologically Sustainable Development (ESD)

RFI 9.1	Provide a description of how the proposed action meets the principles of ecologically sustainable development, as defined in section 3A of the EPBC Act. More information on ESD is available at http://www.environment.gov.au/about-us/esd/publications/national-esd-strategy.

The Proponent understands, and are committed to, meeting the intent of the EPBC Act and DCCEEW's requirements. The Proponent identified that this proposed action could significantly impact upon MNES, and subsequently it was referred to the Commonwealth Minister for the Environment and Water for a controlled action determination under the EPBC Act.

The ESD principle, as per Section 3A of the EPBC Act:

The following principles are principles of ecologically sustainable development:

a) decision-making processes should effectively integrate both long-term and short-term economic, environmental, social and equitable considerations;

b) if there are threats of serious or irreversible environmental damage, lack of full scientific certainty should not be used as a reason for postponing measures to prevent environmental degradation;

c) the principle of inter-generational equity—that the present generation should ensure that the health, diversity and productivity of the environment is maintained or enhanced for the benefit of future generations;

d) the conservation of biological diversity and ecological integrity should be a fundamental consideration in decision-making; and

e) improved valuation, pricing and incentive mechanisms should be promoted.

2.7.1 Long-term and short-term economic, environmental, social and equitable considerations

The proposed action strategically supports the Queensland Government's vision for the SEQ rail network to boost public transport patronage and to support more sustainable travel choices through reducing car usage via the delivery of active transport connections and upgraded stations. It lays the foundation for rail connection between Brisbane and the Gold Coast, consistent with the SEQ Rail Connect[6] and broader passenger rail agenda. The benefits of the proposed action are discussed further in Section 2.6.

The delivery of a linear infrastructure project such as the proposed action has the potential to cause some environmental and social disturbance. Temporary negative social impacts may also arise as a result of the proposed action (see Section 2.6). For people living or working close to the alignment, and travelling through the area, they may experience temporary construction-related exposure to visual amenity impacts, temporary disruption to transport access, and noise and vibration above baseline conditions. Local landowners may be impacted by property acquisition. Construction works will also impact some areas of high ecological significance. Strategies have been developed to avoid, minimise, mitigate and manage negative impacts in accordance with government and best practice standards. These range from developing management plans for construction impacts to conducting additional surveys and assessments of the natural environment prior to beginning works.

2.7.2 Threats of serious or irreversible environmental damage - Precautionary principle

Section 391 of the EPBC Act relates to the precautionary principle. Section 391(2) states that *the precautionary principle is that lack of full scientific certainty should not be used as a reason for postponing a measure to prevent degradation of the environment where there are threats of serious or irreversible environmental damage.*

A range of environmental investigations have been undertaken to best understand the potential impacts of the proposed action. This included an extensive program of field surveys (refer Section 2.5 Appendix B for summary of survey effort) by qualified ecologists, in compliance with relevant standards, to understand the existing environment and develop a strong understanding of any environmental degradation that would be caused by the proposed action and its activities.

Reference has been made to the relevant MNES Guidelines, Species Recovery Plans and Threat Abatement Plans for the relevant MNES to develop this understanding of the proposed action and reduce any uncertainty.

Several avoidance, mitigation and management measures have been proposed to minimise potential impacts. These avoidance, mitigation and management measures will be implemented during delivery of the proposed action, as described in the OEMP (Appendix C).

2.7.3 Inter-generational equity and conservation of biological diversity and ecological integrity

Ecological studies have been undertaken to identify potential adverse impacts on MNES. Where potential impacts cannot be avoided, mitigation measures have been identified to reduce the impact as far as practicable. Wherever reasonable and practicable, the proposed action has been designed to avoid or minimise potential impacts. Specific design responses achieved through the processes outlined above have resulted in the following inclusions in the Refined Reference Design and/or contract requirements for the subsequent design and construction phase of the proposed action:

- Fauna exclusion fencing has been proposed in targeted areas along the alignment of the proposed action in identified high value habitat areas to guide and convey fauna to proposed safe fauna movement infrastructure
- Fauna exclusion fencing will be incorporated into the rail corridor fencing design where Koala/fauna exclusion fencing is proposed. An appropriately qualified and experienced ecologist will review the Koala-sensitive Design Guideline 2022 and TMR's Fauna Sensitive Transport

[6] SEQ-Rail-Connect (3).pdf

Infrastructure Delivery manual during the detailed design phase to develop Project-specific Fauna Fencing Details. Wherever possible, permanent fencing will be installed.

  - The proposed fencing will serve as a protective measure to limit the likelihood of fauna entering the rail corridor and will be consistent with the fencing currently in place. As such it provides a barrier to the rail to mitigate injury/mortality but acts as a device to ensure safe passage to pre-existing connectivity pathways that have been retained by the proposed action.
  - Fencing locations provided within Appendix B of the OEMP (Appendix C) have been based on Key Biodiversity Areas (as defined in Section 8 of the OEMP (Appendix C))

- Any proposed adjustments to the baseline fence design will be assessed by a qualified ecologist for their suitability concerning relevant MNES species. If adjustments pose risks to these species, additional mitigation measures will be implemented to minimise risks as much as reasonably possible.
- Fauna exclusion fencing and fauna movement infrastructure will be designed to accommodate target fauna species based on ecological investigations within high value habitat areas adjacent to the alignment of the proposed action. Some design considerations include (but are not limited to):
  - Infrastructure vertical alignments and subsequent sizing of movement infrastructure
  - The type of infrastructure that currently exists (e.g. will the infrastructure upgrade require extension of culverts or duplication of a bridge)
  - Whether movement infrastructure is best placed over or under transport infrastructure
  - The presence of biodiversity corridors and existing fragmentation in the landscape
  - Whether the movement infrastructure is dedicated or serves a dual function for drainage.
- Park and ride facilities have been relocated east of the proposed rail alignment at Trinder Park to take advantage of areas which would otherwise be severed from Acacia Forest Park and ultimately serves to reduce fragmentation of mapped koala habitat caused by the proposed action
- New culverts proposed through the Trinder Park area have been aligned with Department of Agriculture and Fisheries (DAF) (QLD) waterways to comply with Accepted Development Requirements (ADR) (best practice), reduce culvert lengths and provide an alignment that is closer to existing flow regimes to avoid realignment of waterways
- All existing culverts requiring extension to accommodate the proposed action will be assessed against the ADR to ensure compliance with best practices for maintaining and enhancing fish passage where applicable
- Additional drainage channels are proposed at Trinder Park to facilitate the new culvert structures, reduce culvert lengths and to ensure flow regimes in surrounding watercourses are maintained
- A retaining wall structure has been included adjacent to Edens Landing to minimise additional clearing of habitat, including marine plants, and subsequent impacts to water quality through decreased stability to riparian areas. Although retaining walls were incorporated into the Refined Reference Design – which enabled a considerable footprint reduction in comparison to the initial design – throughout the Procurement Phase solutions were further verified to apply more traditional and cost-efficient rail earthworks option (i.e. cut-fill embankment) in this area. Importantly, this change has been able to maintain the footprint that the Retaining wall approach required, as such there is no change to the required footprint between retaining wall and traditional earthworks option in this area.

Design and construction mitigation responses to environmental risks will be further developed through the Detailed Design phase. The OEMP for the proposed action (Appendix C) further details the mitigation measures proposed. Any residual risks linked to the construction phase will be managed through the development of an EMP(C) by the construction contractor. The EMP(C) must be submitted to and deemed suitable by the Proponent prior to the commencement of any ground disturbance works.

The Proponent is committed to reducing potential impacts on protected matters through avoidance and mitigation measures with offsets employed as a secondary measure to ameliorate residual impacts. An Offset Area Management Plan has been developed to address Commonwealth offset policies, guidance, recovery plans and conservation advice. The proposed action is seeking to secure and manage direct land-based offsets to compensate for significant impacts. The areas of offsetting will be determined using Commonwealth Offset Assessment Guide.

By following the principles of avoiding, minimising, mitigating and offsetting impacts to MNES, the Proponent seek to allow for inter-generational equity in terms of diversity and productivity of the environment being maintained for future generations in the context of the urban setting the Impact area inhabits. In particular the development of fauna movement infrastructure and fauna fencing to maintain or improve connectivity has been a focus of design development.

2.7.4 Improved valuation and pricing of environmental resources

The matters outlined in section 2.6.1 and 2.7.1 represent inclusion in the Refined Reference Design and/or contract requirements for the subsequent design and construction phase of the proposed action to properly value the mitigation proposed to reduce impacts to MNES and appropriately value environmental resources. An offsets proposal has been developed to address Commonwealth offset policies, guidance, recovery plans and conservation advice. The proposed action is seeking to secure and manage direct land-based offsets to compensate for significant impacts. The areas of offsetting will be determined using Commonwealth Offset Assessment Guide.

2.8 Environmental record of the person proposing to take the action

Include details of any past or present proceedings under a Commonwealth, State or Territory law for the protection of the environment or the conservation and sustainable use of natural resources against:
RFI 10.1 the person proposing to take the action;
RFI 10.2 for an action for which a person has applied for a permit, the person making the application;

The Proponent has a satisfactory record of responsible environmental management. TMR, as the proponent, are highly experienced in the planning, delivery and operation of major transport infrastructure projects. The Proponent's primary responsibility is planning, building and maintaining Queensland's road, rail, freight, and maritime infrastructure. The Proponent delivers works in accordance with their comprehensive Environmental Processes Manual, which applies a risk-based approach to identify, assess and manage environmental risks. The Environmental Processes Manual is available to view on the Proponent website (Environmental management (Department of Transport and Main Roads) (tmr.qld.gov.au)).

The Proponent has not been subject to proceedings under the EPBC Act. Further, the Proponent has not been subject to any proceedings under State law as it is not possible for the State to sue the State.

RFI 10.3	if the person is a body corporate—the history of its executive officers in relation to environmental matters; and
RFI 10.4	if the person is a body corporate that is a subsidiary of another body or company (the parent body)—the history in relation to environmental matters of the parent body and its executive officers.

Not applicable – the Proponent is not a body corporate.

Appendix A

Cross Reference Table

Item	RFI (DCCEEW)	Location of response
1. The preliminary documentation must:		
1.1	Include a reference table indicating where to find the information fulfilling this request.	This table
1.2	Contain sufficient information to allow the Minister (or delegate) to make an informed decision on whether or not to approve, under Part 9 of the EPBC Act, the taking of the action for the purposes of each controlling provision. Contain sufficient information to enable interested stakeholders to understand the environmental consequences of the proposed development on matters of national environmental significance (MNES).	This document and supporting appendices.
1.3	Ensure all work and conclusions: a) are presented clearly, unambiguously, succinctly and objectively. Where there is a format that may present the information systematically, such as a table, please do so. b) are evidence based, and the evidence is provided. c) are supported by peer reviewed literature, with references provided, or expert opinion. d) use scientifically robust methodologies appropriate to the purpose, and e) describe and appropriately reference the methodology/ies chosen) detail why the methodology/s was selected, and state any limitations in the chosen approach. f) are, where appropriate, supported by maps, plans, diagrams, baseline surveys or other descriptive detail. For example, baseline surveys showing the extent of threats such as weed and feral animals present at the impact and/or offset site. g) demonstrate consideration of relevant documents* including Approved Listing Advice(s), Conservation Advice(s), Recovery Plan(s), Threat Abatement Plan(s) or comparable policy guidelines, and approved survey methods. h) appropriately reference all sources using the Harvard standard. The reference list must include the address of any internet pages used as data sources. *relevant documents include, but are not limited to, the resources found in the Species Profile and Threats Database (SPRAT database) and EPBC Act publications and resources.	Throughout this document and supporting appendices. Refer to Section 2.0 of Appendix B for assessment methodologies
1.4	Must avoid passive language (e.g. ‘may’ and ‘should’) and use active, clear commitments (e.g. ‘must’ and ‘will’) where appropriate.	This document
1.5	Be able to read as a stand-alone document and must include summaries of all relevant information further explained in appendices. Detailed technical information, studies or investigations necessary to support the main text should be attached as appendices to the main document.	This document and supporting appendices for detailed technical information.

Item	RFI (DCCEEW)	Location of response
2. If not previously provided in the referral documentation, the preliminary documentation must include:		
2.1	a) a description of all components of the proposed action (early works and pre-construction, construction and operational), including the anticipated start and completion dates, stages and duration. This should include a detailed outline of the expected timing of any staged clearing over the construction period. b) the location, boundaries, and size (in hectares) of the disturbance footprint, and of adjoining areas and vegetation and biodiversity corridors, which may be directly and/or indirectly impacted by the proposal, including from material stockpiles, vehicle access and associated activities. c) a clear description of any material changes (e.g. total footprint, areas to be cleared) or planning changes (e.g. construction timeframes) between the referral and draft preliminary documentation submissions. d) details of any local or State Government planning scheme, or plan or policy under any local or State Government planning system that applies to the proposed action, or that the proponent reasonably believes are likely to apply, to the proposed action. Details should include: i. what environmental assessment of the proposed action has been, or is being, carried out under the scheme, plan or policy; ii. obtained approvals or additional approvals that are required, including application numbers; and iii. Known or estimated timelines for any additional approvals or permits required.	a) Refer to Section 2.1.2, Section 2.1.3 and 2.1.4 in this document. b) Refer to Section 2.1.2 in this document. c) Refer to Section 2.1.4 in this document. d) Refer to Section 2.1.5 in this document.
2.2	Further information is required as follows: a) (if relevant) a description with supporting figures detailing all site access roads and any other shared infrastructure to be constructed to facilitate the proposed action. b) (if relevant) mapped locations and size of any proposed fire breaks, and details of any proposed new or updated fire management plans as a result of the proposed action. Information about any proposed fencing, including: i. the location and purpose of all proposed fencing. ii. the characteristics of the fencing, i.e. height, length, wildlife proof measures etc. iii. whether the proposed fencing will provide a wildlife barrier to/from/within the proposed action area. iv. please support with maps, plans, diagrams whenever possible.	a) Refer to Section 2.1.2.2 in this document. b) Refer to Section 2.1.2.3 in this document Identified locations for fauna fencing are in Appendix B of Appendix C OEMP.
3. If not previously provided in the referral documentation, specific matters this section must address include:		
3.1	A description of any Matters of National Environmental Significance (MNES) (including but not limited to those listed in this request for information) that are known, likely or have the potential to occur in the proposed action area and adjacent areas.	Refer to Section 2.2 in this document.

Item	RFI (DCCEEW)	Location of response
		Full response provided in Appendix B: Section 7.1 for summary of all MNES known, likely or have the potential to occur.
3.2	For listed threatened species and ecological communities that have the potential, or are likely, to be present at and in the vicinity of the proposed action site (at minimum referencing PMST), including but not limited to those listed in this request for further information, this section must provide a likelihood of occurrence assessment based on the following: a) Information on the abundance, distribution, ecology and habitat preference of the species or communities (at minimum, this information must be drawn from the SPRAT profile, statutory documents and associated material) b) Quantification of the extent of habitat (including maps identifying known or potential habitat). c) Assessment of the quality and importance of known or potential habitat for the species or communities within the proposed action site and surrounding areas. d) Information detailing known populations or records within at least five kilometres of the development footprint and (if known) the size of these populations. e) Information on the survey methodology used, including a map/s of survey points or transects, how the survey points or transects were selected, when surveys were conducted (e.g. dates, time of day, season, etc.) and search effort (e.g. 20 hours over eight days). f) An assessment of the adequacy of any surveys undertaken with reference to any relevant statutory documents and/or scientific literature. In particular, the extent to which these surveys were appropriate for the species and undertaken in accordance with relevant survey guidelines. g) Summarised results of all surveys undertaken, including field notes Please note: All information presented above must reference and address the information provided within the statutory documents (conservation advice, recovery plans and threat abatement plans) for the relevant species. Wherever possible, please present the above information in a systematic way, such as a table. Survey data should be as recent as possible and at minimum collected within the last five years. If adequate surveys of the proposed action site to confirm the presence/absence of the above listed threatened species and ecological communities are not undertaken, the department considers that, for the purposes of	Refer to Section 2.2 in this document. Full response provided in Section 4.0 in Appendix B and the full detail included in Appendix C Likelihood of occurrence assessment. Section 2.0 of Appendix B includes the detailed methodology for determining species occurrence including via desktop assessment and field survey methodologies.

Item	RFI (DCCEEW)	Location of response
	assessment under the EPBC Act, it may be appropriate to assume that those listed species and ecological communities are both present and abundant at the proposed site.	
4. If not previously provided in the referral documentation, the preliminary documentation must:		
4.1	Provide a description of the intended land uses proposed as part of the completed development, including of any proposed open space and/or conservation areas and associated ongoing activities, and details of the intended party that would be responsible for future management activities.	Refer to Section 2.1.6 of this document.
4.2	Include current maps and coordinates/shapefile of the proposed impact area and areas of habitat for MNES proposed to be retained. Maps must clearly identify development footprints, buffer zones, fauna movement corridors, and any conservation areas where impacts will be avoided, and areas of adjacent habitat that would be subject to indirect impacts, including areas that are to be retained within and adjacent to the site.	Refer to Section 2.3 in this document. Figures provided within Appendix B of Appendix B.
4.3	Details of any policy guidelines, relevant studies, surveys, or consultations with species experts/field specialists, which were not included in the referral or additional information provided in support of the referral.	Refer to Section 2.3.1 in this document for summary. Full response provided in Section 2.0 of Appendix B.
4.4	Provide an assessment of the direct and indirect impacts within and surrounding the proposed action that may occur during construction and post-construction phases, including: a) The nature, likelihood, consequence and extent of impacts (including direct, indirect* and facilitated impacts**), including timing and whether the impact is temporary or permanent. This must include: i. The quantity of habitat to be impacted ii. the quality of the habitat impacted, with reference to any specialist species habitat such as hollow bearing trees, nest trees, refuge habitat, foraging and breeding habitat, sheltering or other microhabitat features relevant to the species iii. a quantification of the total individuals/populations affected, numbers of specialist species habitat affected (if applicable) iv. analysis of the indirect impacts such as fragmentation and/or functional loss of habitat, including consideration of a matters' sensitivities to edge effects. b) Likely receiving habitat where impacted MNES will be dispersed to as a result of clearing and construction, and an assessment of the receiving areas capacity to support the displaced impacted MNES.	Summary provided in Sections 2.3.2 to 2.3.6 in this document. Full response provided in Sections 5.0 and 7.0 of Appendix B. a) i), ii) & iii) Refer to Section 5.2.1.1.1 and 5.2.1.2 of Appendix B a) iv-) Refer to Section 5.2.2 of Appendix B b) Section 5.2.1.2 of Appendix B

Item	RFI (DCCEEW)	Location of response
	c) A pre-clearance conceptual dispersal map of all relevant impacted MNES (i.e. excluding flying animals), verified in field wherever possible and supported by survey records. d) A conceptual post-construction dispersal/movement map of all relevant impacted MNES. e) A description of where areas of impacted MNES dispersal/movement will be maintained, limited and removed post construction. If areas of movement are to only be temporarily removed or limited, please provide timeframes. f) A local and regional scale analysis of likely impacts, with reference to the proposed action's potential contribution to cumulative impacts in the context of development patterns in the locality and region. g) An assessment of the likely duration of impacts to MNES as a result of the proposed action. h) An assessment of whether impacts are likely to be repeated, for example as part of maintenance. **Note: Please review the following policy statement, providing guidance on what impacts constitute a 'indirect consequences(s)', under paragraph 527E(1)(b) of the EPBC Act* ***Note: Facilitated impacts may include (but are not limited to) the risk of injury or mortality to MNES as a result of the introduction of domestic dogs in a residential area, vehicle strike as a result of increased residential car use and/or the development of domestic pools.*	c), d) & e) Appendix G of Appendix B f) Section 5.3 of Appendix B g) & h) Section 5.1 of Appendix B
4.5	Full justification of all discussions and conclusions based on the best available information, including relevant conservation advices, recovery plans, threat abatement plans, and other guidance documents, should be included if applicable departmental documents regarding listed threatened species.	Refer to Section 2.3.1 in this document for summary. Full response provided in Section 2.2 of Appendix B.
5. To clarify the proposed measures to avoid and mitigate impacts, the preliminary documentation must:		
5.1	Provide a consolidated assessment of all proposed measures to avoid and mitigate impacts, including those provided in the referral and any additional to those described in the referral. This should include: a) An assessment of avoidance, including: i. all efforts that have been made to avoid impacts to MNES, particularly in areas of connectivity and high value habitat. ii. where avoidance has not occurred, with full reasoning. iii. any remaining impacts to be mitigated to reduce the impacts on MNES. b) All proposed measures and outcomes of the avoidance and mitigation measures must be clearly listed, and follow the specific, measurable, achievable, relevant and timely (SMART) principle.	Refer to Section 2.4 in this document for summary. Full response provided in Appendix C. a) Section 6.1 of this document b) Appendix C Section 1.1 and 2.0

Item	RFI (DCCEEW)	Location of response
	c) Provide an assessment of the predicted effectiveness of each proposed avoidance or mitigation measure, noting that the effectiveness of a particular assessment of effectiveness should be evidence based and include examples of demonstrated success of a particular measure to achieve the desired avoidance/mitigation outcome. d) A description (including maps and imagery) of the location, boundaries and size of buffer areas or proposed exclusion zones, and details on how these areas will be enhanced, protected, and maintained. Also include a description of any fences or barriers which may be installed around areas where impacts will be avoided. e) Details of any ongoing mitigation and management measures, including but not limited to: i. Details about pre-clearance and clearance procedures to ensure that species are detected and managed to minimise mortality, stress, injury, or introduction of disease. ii. Information on any buffer zones between the construction footprint and remaining habitat in the referral area and adjacent to the site. iii. Measures to address the risk of MNES entering developed areas, and becoming trapped/isolated without resources for shelter. iv. Management of direct and indirect impacts for the Koala and other and other relevant MNES, due to increased likelihood of human presence, attacks by domestic dogs. v. Information on how the width of any proposed fauna movement corridors will satisfy the requirements of the species, as described in SPRAT profiles and statutory documents. vi. Information on fauna safe road design and placement, including installation of Koala crossing warning signs, wildlife threshold marking on road (include maps and imagery). vii. Details of how speed reduction is to be achieved (e.g., traffic calming devices) and plans showing the locations of each of these features and the manner in which they will be implemented). viii. Other mitigation measures proposed for the mitigation of impacts to MNES movement and remaining habitat on and adjacent to the site.	c) Section 2.4 of this document d) Appendix A of Appendix C includes Impact area boundary Appendix B of Appendix C includes indicative fauna fencing and connectivity infrastructure. e) Section 9 of Appendix C, and Appendix C of Appendix C
5.2	For each measure proposed, indicate the: a) impact to be avoided and/or mitigated b) responsible party c) environmental outcomes to be achieved d) milestones / performance / completion criteria e) an evidence-based likelihood of success/risk assessment f) proposed monitoring and evaluation program. g) contingency measures.	Refer to Section 2.4 in this document for summary. Full response provided in Section 9.1 of Appendix C.

Item	RFI (DCCEEW)	Location of response
5.3	Any statutory or policy basis for the proposed measures, including reference to the SPRAT Database and relevant approved conservation advice, recovery plan or threat abatement plan, and a discussion on how the proposed measures are not inconsistent with relevant plans. For example, the National Recovery Plan for the Grey-headed Flying-fox states an objective to: *'to improve the Grey-headed Flying-foxes national population trend by reducing the impact of the threats outlined in this plan on Grey-headed Flying-foxes through habitat identification, protection, restoration and monitoring'* Please provide a discussion on how the proposed action is consistent with relevant species' recovery objectives or alternatively, how the proposed avoidance, mitigation/management and offsetting will compensate for any residual significant impact, thereby ensuring consistency with the objective for relevant EPBC Act species.	Refer to Section 2.4.3 in this document for summary. Full response provided in Section 4.0 of Appendix C.
Note:	The department requires that all management plans must be provided to the Department for assessment with the draft Preliminary documentation. Management plans are also subject to additional cost recovery, and must be submitted with the attached signed fee nomination form. In exceptional circumstances where a management plan/s must be provided later, inform the Department as soon as possible.	N/A
6. Minimum Requirements for a draft Offset Management Strategy:		
6.1	Systematically describe how the proponent will provide offsets that meet the requirements of the EPBC Offsets Policy.	Refer to Section 2.5 in this document.
6.2	If potential offset site/s are identified, as far as possible please provide: a) A description of the proposed offset site(s) including location, size, condition, and relevant ecological/species habitat features, landscape context and cadastre boundaries of the offset site(s) (supported by mapping). b) Information about how the proposed offset/s area will provide connectivity with other relevant habitats and biodiversity corridors. c) Information how the proposed offset site/s contribute to relevant State and/or regional plan/s or initiatives for the conservation of the protected matter, for example Koala Priority Areas of Koala Habitat Restoration Areas. d) Evidence of the presence of, or usage by, relevant MNES on, or adjacent to the proposed offset site(s), and the presence and quality of habitat for MNES on the proposed offset site.	Refer to Section 2.5.1 in this document for summary. For a full response refer to the following within Appendix D (Undullah and Benobble): a) Section 3 b) Section 5.1.2 and Appendix B (Figure 10 (Undullah)) and Figure 11 (Benobble)

Item	RFI (DCCEEW)	Location of response
	e) An assessment of how the offset and impacts sites are like-for-like, i.e. the environmental values for the MNES at the offset are of the same type or equivalent to that affected by the proposed action. f) The methodology, with justification and supporting evidence, used to inform the inputs of the Offsets Assessment Guide in relation to the offset site for each relevant MNES, including: i. total area of habitat (in hectares); and ii. habitat quality (as discussed in section 8) iii. time over which loss is averted (max. 20 years); iv. time until ecological benefit; v. risk of loss (%) without offset; vi. risk of loss (%) with offset; and vii. confidence in result (%). g) Details and execution timing of the mechanism to legally secure the environmental offset/s (under Queensland legislation or equivalent) to provide enduring protection for the potential offset area/s against development incompatible with conservation.	c) Section 5.1.2 and Appendix B (Figure 10 (Undullah)) and Figure 11 (Benobble) d) Section 5 e) Section 4 and Section 6 f) Sections 4.2, Section 5.1.3.4 (Benobble), Section 5.2 (Undullah) and Appendix D g) Section 3.2
8. If not previously provided in the referral documentation, the preliminary documentation must:		
8.1	Provide details on the social and economic costs and/or benefits of undertaking the proposed action, including the basis for any estimations of costs and/or benefits. Where possible, please include the total economic capital investment and economic ongoing value of the project.	Refer to Section 2.6.1 in this document.
8.2	Provide details on other projects that must be completed prior to the full (or part of) social and economic benefits to be realised. Identify if economic benefits and employment opportunities are in addition to what would have been expected if the action were not to take place.	Refer to Section 2.6.1 and 2.6.2 in this document.
8.3	Provide details of any public stakeholder consultation activities, including the outcomes of those consultations.	Refer to Section 2.6.3 in this document.
8.4	Provide details of any consultation with Indigenous stakeholders. **Indigenous engagement** a) Identify existing or potential native title rights and interests, including any areas and objects that are of particular significance to Indigenous peoples and communities, possibly impacted by the proposed action and the potential for	Refer to Section 2.6.4 in this document.

Item	RFI (DCCEEW)	Location of response
	b) managing those impacts. c) Describe any Indigenous consultation that has been undertaken, or will be undertaken, in relation to the proposed action and their outcomes. This should include: i. details regarding the specific Indigenous groups and Traditional Owners consulted and an indication of the areas, both tangible and intangible, of cultural significance across the proposed action site; and ii. a discussion about how impacts to areas and/or objects of Indigenous cultural significance (tangible and intangible) are avoided, mitigated or minimised. The department considers that best practice consultation, in accordance with the Guidance for proponents on best practice Indigenous engagement for environmental assessments under the EPBC Act (2016) includes: ▪ identifying and acknowledging all relevant affected Indigenous peoples and communities; ▪ committing to early engagement; ▪ building trust through early and ongoing communication for the duration of the proposed action, including approvals, implementation and future management; ▪ setting appropriate timeframes for consultation; and ▪ demonstrating cultural awareness. Describe any state requirements for approval or conditions that apply, or that the proponent reasonably believes are likely to apply, to the proposed action with regards to Indigenous peoples and communities.	
9. If not previously provided in the referral, the preliminary documentation must:		
9.1	Provide a description of how the proposed action meets the principles of ecologically sustainable development, as defined in section 3A of the EPBC Act. More information on ESD is available at www.environment.gov.au/about-us/esd/publications/national-esd-strategy.	Refer to Section 2.7 in this document.
10. Include details of any past or present proceedings under a Commonwealth, State or Territory law for the protection of the environment or the conservation and sustainable use of natural resources against:		
10.1	the person proposing to take the action;	Refer to Section 2.8 in this document.
10.2	for an action for which a person has applied for a permit, the person making the application;	Refer to Section 2.8 in this document.

Item	RFI (DCCEEW)	Location of response
10.3	if the person is a body corporate—the history of its executive officers in relation to environmental matters; and	Refer to Section 2.8 in this document.
10.4	if the person is a body corporate that is a subsidiary of another body or company (the parent body)—the history in relation to environmental matters of the parent body and its executive officers.	Refer to Section 2.8 in this document.

Appendix B

Supplementary MNES Report

Appendix C

Overarching Environmental Mitigation Plan

Appendix D

Offset Area Management Plan

Appendix E

Consultation Summary Leaflet

Appendix F

Draft EPBC Approval Conditions