Review of Environmental Factors

October 2023

Lachlan River Precinct Access Road Upgrade

Prepared for PARKES SHIRE COUNCIL

The Environmental Factor

Review of Environmental Factors – Lachlan River Precinct Access Road Upgrade

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This Report has been prepared by The Environmental Factor (TEF) on behalf of Parkes Shire Council (PSC or Council) to assess the matters affecting or likely to affect the environment by reason of the proposed upgrade works to the Lachlan River Precinct (LRP) access road in the Forbes Shire Council Local Government Area (LGA), NSW. This document is not intended to be utilised or relied upon by any persons other than PSC, nor to be used for any purpose other than that articulated above. Accordingly, TEF accepts no responsibility in any way whatsoever for the use of this report by any other persons or for any other purpose.

The information, statements, recommendations, and commentary (together the "Information") contained in this report have been prepared by TEF from material provided by PSC and from material provided by the NSW Department of Planning and the Environment (DPE) and the Commonwealth Department of Climate Change, Energy, the Environment and Water (DCCEEW), and through the assessment process.

This report has been developed in accordance with the *NSW Environmental Planning and Assessment Act 1979* (EP&A Act), the *NSW Environmental Planning and Assessment Regulation 2021* (EP&A Regulation) and the Department of Planning and Environment's (DPE) Guidelines for Division 5.1 assessments (DPE Guidelines) and demonstrates how the environmental factors specified in clause 171(2) of the EP&A Regulation were taken into account when considering the likely impact of the proposed activity. TEF has not sought any independent confirmation of the reliability, accuracy, or completeness of this information. It should not be construed that TEF has carried out any form of audit of the information which has been relied upon.

Accordingly, whilst the statements made in this report are given in good faith, TEF accepts no responsibility for any errors in the information provided by PSC, or any other sources utilised, nor the effect of any such errors on the analysis undertaken, suggestions provided, or this report.

Site conditions and legislative context for this project may change after the date of this report. TEF does not accept responsibility arising from, or in connection with, any change to the site conditions or changes to legislative requirements after the report is finalised. TEF is also not responsible for updating this report if site / legislative conditions change.

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Abbreviations

Abbreviation	Description
ABS	Australian Bureau of Statistics
ADD	Aboriginal Due Diligence
AOBV	Areas of Outstanding Biodiversity Value
AS	Australian Standard
ASC	Australian Soil Classification
ASS	Acid Sulfate Soils
AWS	Automatic Weather Station
BC Act	*Biodiversity Conservation Act 2016*
BoM	Bureau of Meteorology
BOS	Biodiversity Offset Scheme
BVM	Biodiversity Values Map
CEMP	Construction Environmental Management Plan
DCCEEW	Department of Climate Change, Energy, the Environment and Water (formerly DAWE)
DECC	Department of Energy and Climate Change
DEWHA	Department of the Environment, Water, Heritage and the Arts
DPI	Department of Primary Industries
DPE	Department of Planning and Environment (formerly OEH)
ELA	Eco Logical Australia
EP&A Act	*Environmental Planning and Assessment Act 1979*
EPA	Environmental Protection Authority
EPBC Act	*Environmental Protection and Biodiversity Conservation Act 1999*
ERPS	Eugowra Road Pumping Station
ERSED	Erosion and Sediment Control
ESD	Ecologically Sustainable Development
FM Act	*Fisheries Management Act 1994*
FSC	Forbes Shire Council
GBD	General Biosecurity Duty
GHG	Green House Gas
HBT	Hollow Bearing Tree
HTE	High Threat Exotic
ICNG	Interim Construction Noise Guidelines
KFH	Key Fish Habitat
LEP	Local Environmental Plan

Abbreviation	Description
LGA	Local Government Area
LLS Act	*Local Land Services Act 2013*
LLSA Act	*Local Land Services Amendment Act 2016*
LRP	Lachlan River Precinct
LRPS	Lachlan River Pumping Station
MNES	Matters of National Environmental Significance
NPW Act	*National Parkes and Wildlife Act 1974*
OEH	Office of Environment and Heritage
PCT	Plant Community Type
PMO	Project Management Office
POEO Act	Protection of the Environment Operations Act 1997
PSC	Parkes Shire Council
PV	Photovoltaic
PWSP	Parkes Water Sharing Plan
QA	Quality Assurance
RCP	Representative Concentration Pathway
REF	Review of Environmental Factors
RF Act	*Rural Fires Act 1997*
RM	Rising Main
RRG	River Red Gum
RWSD	Raw Water Storage Dam
SAII	Serious and Irreversible Impacts
SAP	Special Activation Precinct
SEPP	State Environmental Planning Policy
SIS	Species Impact Statement
TCP	Traffic Control Plan
TEC	Threatened Ecological Community
TEF	The Environmental Factor
TfNSW	Transport for New South Wales
TISEPP	*Transport and Infrastructure State Environmental Planning Policy 2021*
ToS	Tests of Significance
WM Act	*Water Management Act 2000*
WoNS	Weeds of National Significance
WTP	Waste Treatment Plant

Executive Summary

This Review of Environmental Factors (REF) has been prepared by The Environmental Factor (TEF), on behalf of Parkes Shire Council (PSC or Council). The report presents findings of the investigations undertaken into the potential environmental impacts of the proposed upgrade to the Lachlan River Precinct (LRP) access road, which involves sealing and widening the existing access track into the Lachlan River Pump Station (LRPS) compound, which serves as the entrance to 'Tallawalla' approximately 12 km east of the township of Forbes on The Escort Way in the Forbes Local Government Area (LGA), NSW (hereafter 'the Proposal).

The Proposal involves establishing an all-weather access road into the LRP, including the construction of a culvert (minimum DN300), with all works to be carried out in accordance with current Transport for NSW (TfNSW) Quality Assurance specifications and Australian Standards. The access road is designed to accommodate movements of prime movers and semi-trailers up to 19 m in length as they enter and exit the site from The Escort Way, a State Road managed by TfNSW.

This report has considered to the fullest extent possible the environmental impacts with potential to arise from the Proposal within the framework of Division 5.1 of the *Environmental Planning and Assessment Act 1997* (EP&A Act), and has considered:

- Impacts on Matters of National Environmental Significance (MNES) under the *Environmental Protection and Biodiversity Conservation Act* (EPBC Act) (refer Section 5.1 & Appendix B).
- Environmental impacts in accordance with s 5.5 of the EP&A Act and cl 171(2) of the *Environmental Planning and Assessment Regulation 2021* (EP&A Regulation) (refer Sections 3.2.4 and 4).
- Impacts on threatened species in accordance with s7.8 of the *Biodiversity Conservation Act 2016* (BC Act) and Part 7A Division 12 of the *Fisheries Management Act 1994* (FM Act) (Refer Sections 3.2.1 and 3.2.5).

This report identifies where proposed construction works could impact the surrounding environment. Construction activities and road works would occur within the existing road reserve of The Escort Way and the existing disturbed area of the LRP access road. Potential for environmental impacts arising from the Proposal includes typical construction impacts such as vegetation removal, impacts on native and exotic vegetation, woodland communities and habitats, additional traffic movements, changes to traffic flows, and disturbance to soils through earth works and excavation. Indirect impacts considered include noise and dust emissions generated during construction and operation as well as potential for erosion and sediment migration into surrounding drainage lines and waterways, through exposure of soils. In addition, there is the potential for cumulative impacts from other proposed works within and adjacent to the LRP, which currently includes the proposed underboring of the Escort Way, construction of the Lachlan River Pre-treatment Plant (LRPTP), establishment of a construction access road, upgrades to the existing LRPS and potential new production bore. This Proposal is intended to proceed along with others within the Parkes Water Security Program (PWSP). Each proposal is independent and may or may not proceed on its own merits, however there may be construction activities that occur in parallel, which could result in cumulative environmental and social impacts. Given that PSC are responsible for all associated proposals in the PWSP, the construction phase of this Proposal would be scheduled to minimise cumulative effects of the separate proposals in the Program proceeding at the same time.

The Subject Site occurs within and adjacent to The Escort Way road reserve in the Forbes LGA. The surrounding environment has been historically cleared, and native vegetation in the surrounding area is predominantly restricted to remnant roadside vegetation along The Escort Way and other roads and lanes in the locality, and

to the riparian corridor of the Lachlan River to the south. The surrounding area contains predominantly mixed use (cropping and grazing) agricultural farmland which has been mostly cleared of native vegetation. Some remnant scattered paddock trees occur in the locality, however these are sparse and generally not connected through the landscape.

Some area of gilgais and wetland areas occur to the north of the study area in adjacent agricultural land. Wetlands are mapped as occurring about 400 m to the north east of the site in adjacent farmland, and the Lachlan River occurs approximately 40 m to the south of the Study Area. The subject site extends approximately 200 m either direction along The Escort Way from the intersection with the existing LRP access road, and approximately 30 m into the LRP area within Lot 81 DP750183, a property known locally as 'Tallawalla'. Areas of Terrestrial Biodiversity, as per the Forbes Local Environmental Plan (LEP), are mapped as occurring within The Escort Way road reserve, and within the riparian corridor along the Lachlan River to the south. These areas are mapped both within and adjacent to the subject site.

Potential impact to Aboriginal heritage were assessed in accordance with the Aboriginal 'Due Diligence Code of Practice for the Protection of Aboriginal Objects in New South Wales via a site assessment conducted by Harrison Roachford of OzArk Environment and Heritage (OzArk) on 18th May 2023, together with Robert Clegg and Steve Parker representing the Wiradjuri Council of Elders. The assessment identified the presence of a scarred tree immediately to the north west of the existing access point, and one community interest tree within the study area. The due diligence assessment concluded the proposed works will have an impact on the ground surface, however, provided all safeguards included in the REF and ADD are adhered to, no Aboriginal objects or intact archaeological deposits are likely to be harmed by the Proposal. If the construction methodology or assessment impact footprint (subject site) are amended, re-assessment of the potential impacts to Aboriginal heritage would be required.

Impacts to threatened species, populations or endangered ecological communities are considered low, being associated with the clearing of approximately **0.18 ha** of native vegetation. Trees adjacent to the subject site are comprised of large, mature River Red Gum trees, one of which was recorded as containing hollows. Desktop assessment identified that up to eight (8) threatened species identified in the surrounding locality are considered to have a moderate likelihood of occurring, however Assessments of Significance completed concluded that significant impacts to these species, or their habitats is not anticipated. If the construction methodology or assessed impact footprint (subject site) are amended, re-assessment of the potential impacts to threatened biota would be required.

All work will be completed under the guidance of a Construction Environmental Management Plan (CEMP) to manage potential environmental impacts associated with the work. Once operational, the Proposal is not expected to cause any significant environmental or community impacts. The proposed infrastructure upgrade is anticipated to have positive socio-economic benefits for the local community, through the provision of improved water supply infrastructure. Given the nature, scale and extent of impacts, and assuming strict implementation of the environmental safeguards outlined in this REF, the Proposal is **unlikely to have a significant adverse impact** on the environment. It is considered that all matters affecting or likely to affect the environment by reason of the Proposal have been considered as required by s5.5 of the EP&A Act.

1 Introduction

The Environmental Factor (TEF) has been engaged by Parkes Shire Council (PSC) to undertake a Review of Environmental Factors (REF) to fully consider the environmental issues with the potential to arise from the proposed construction of an upgraded access road to connect the internal site layout of the Lachlan River Precinct (LRP or Precinct) to The Escort Way, approximately 12 km east of the township of Forbes, NSW in the Forbes Local Government Area (LGA) (hereafter the Proposal).

The access road would be exclusively used for approved vehicles, plant and machinery accessing the LRP, which includes the existing Lachlan River Pump Station (LRPS) and the proposed Lachlan River Pre-treatment Plant (LRPTP) which are both located within the Council owned property 'Tallawalla'. Council is also investigating a new production Bore, which would be established adjacent to the proposed LRPTP lagoons and the existing LRPS. The current access road Proposal aims to provide a sealed all weather (3.3 m to 3.5 m seal width) access point, including the construction of a culvert (minimum DN300), to the Precinct and associated infrastructure from The Escort Way arterial road, with all works to be carried out in accordance with current transport for NSW Quality Assurance (QA) specifications and Australian standards. The access road is designed to accommodate prime movers and semi-trailers up to 19 m in length, with site traffic during the operational phase expected to be minimal, including one (1) semi tanker per week, one (1) light vehicle per day and one (1) service truck every month.

The Proposal would occur in a diverse landscape, with surrounding land consisting of a combination of remnant native vegetation, water supply infrastructure, rural properties, agricultural land and The Escort Way highway, which connects the townships of Forbes and Eugowra and is an important State road that connects communities and businesses with the surrounding region.

This report has considered to the fullest extent possible the environmental impacts with potential to arise from the Proposal within the framework of Division 5.1 of the of the EP&A Act, and has considered:

- Impacts on Matters of National Environmental Significance (MNES) under the *Environmental Protection and Biodiversity Conservation Act 1999* (EPBC Act) (refer Section 5.1, Appendix B)
- Environmental impacts in accordance with s 5.5 of the EP&A Act and cl 171(2) of the *Environmental Planning and Assessment Regulation 2021* (EP&A Regulation) (refer Section 4)
- Impacts on threatened species in accordance with s 7.8 of *the Biodiversity Conservation Act 2016* (BC Act) and Part 7A Division 12 of the *Fisheries Management Act 1994* (FM Act) (refer Sections 3.2 and 4.7)

Concept design plans have been provided to display the location of the proposed construction area and works methodology (Appendix A).

1.1 Proposal Background

The Parkes Shire LGA is experiencing an increased water supply demand, arising from changing climatic conditions coupled with significant growth in the industrial and residential sectors. This has led PSC to propose undertaking a series of independent strategic water infrastructure initiatives aimed at supporting greater water security within Parkes and throughout the Central West region as part of the proposed future Special Activation Precinct (SAP) developments. This is known as the Parkes Water Security Program ('the Program'). The Program consists of a number of initiatives designed to increase water security without overly stressing the aquifer and riverine environments.

The proposed access road upgrade is intended to service the proposed construction of the pre-treatment plant adjacent to the existing LRPS; this pre-treatment facility is intended to significantly reduce the energy and resources required to treat river water once it reaches the Parkes Water Treatment Plant (WTP). The LRPS is also intended to be upgraded and augmented in 2023 / 2024; establishing permanent, all-weather access to the site will assist in the safe and efficient delivery of these packages of works.

The LRPS augmentation and pre-treatment plant environmental assessment, which together form part of the proposed Lachlan River Precinct, has been completed in May 2021 via the Eco Logical Australia (ELA) REF titled *'Lachlan River Pumping Station Augmentation, Pre-Treatment Plant and Solar Photovoltaic (PV) Array – Review of Environmental Factors'*. The REF did not, however, include assessment of the impacts associated with the proposed access road upgrade.

Access road construction works are proposed to commence in November 2023 with the works estimated to take 8-10 weeks. Works would be contained within the existing road reserve of The Escort Way and Council owned Lot 18 in DP 750183 ('Tallawalla').

1.1.1 Proposal objectives

The primary goal of the Proposal is to assist Council in providing greater water security within Parkes and throughout the Central West, through providing safe all-weather access to key pieces of infrastructure which will occur within the Precinct. The secondary objectives are to achieve this goal with minimal impact to native biota, neighbouring properties, other road users and the surrounding environment. This would be executed through pre-commencement impact boundary delineation, careful design and construction methodology including pre-clearing surveys, and site inductions for work personnel, in combination with implementation of the Environmental Safeguards provided in this report.

1.2 Terms and definitions

The terms and definitions used in this report are outlined in Table 1 below.

Table 1 Terms and definitions

Term	Definition
Subject Site	The area to be directly affected by the Proposal, including earthworks and vegetation clearing. Includes: • A total direct impact footprint of maximum 10 m width (5 m either side of centre line access road) has been assigned, to account for the design parameters identified in • Table 4. This includes the vegetation removal to accommodate access road. for a total area measuring **0.46 ha** of which native vegetation equals **0.18 ha**
Study Area	Includes the Subject Site (as described above) and any proximal areas that could be potentially directly or indirectly impacted by the Proposal. For the purposes of this report the Study Area encompasses the Subject Site, and 25 m buffer either side of the Subject Site. Measuring a combined total area **2.86 ha** of which native vegetation equals **2.11 ha.** The Subject Site and Study Area are shown in Figure 2.
The Locality	The area within 10 kilometres of the Subject Land (Figure 1).

2 Proposal Description

The Proposal, as assessed herein, constitutes the construction of an access road from the intersection of The Escort Way to the Lachlan River Precinct (LRP) on the Tallawalla property at Lot 81 DP750183. Council proposes to construct a sealed all-weather access road suitable for prime movers and semi-trailers, as per the current Australian transport for NSW QA specifications and Australian standards. The Proposal involves widening and sealing the existing informal access road used to access the LRPS. Assessment of the site has identified that a turning bay isn't required and no modifications to The Escort Way highway are required to accommodate trucks turning in / out of the property.

The following sections provide further detail on relevant aspects of the Proposal, including design development, options selection and proposed construction and operation activities as they apply to the Proposal. Concept design and proposed construction methodology have been included as Appendix A. Site details are included in Table 2.

Table 2 Site details

Site details	Description
Road name / Property name / Lot and DP	The Study Area (defined with other relevant definitions in Table 2 on the Escort way, immediately to the north of the Lachlan River on Council owned land Lot 81 DP750183 'Tallawalla', and within The Escort Way road reserve.
Closest crossroad(s)	• Parkes – Eugowra Road • Littles Road
Land zoning	RU 1 – Primary Production SP2 – Infrastructure
IBRA region	NSW South Western Slopes
IBRA sub region	Lower Slopes

2.1 Design principles

The core principles for the design and operation of the proposed access road are to facilitate ongoing access to Council's key water security infrastructure located within the LRP, with minimal impact to the surrounding native biota, any sensitive receivers in proximity to the subject site and other water users. The access road is designed such that it can accommodate a semi-trailer into the Precinct, as required for the removal of sludge from the proposed LRPTP lagoons. The design has been developed in accordance with the following design standards:

- TfNSW Technical Directions
- TfNSW Supplements to the Austroads Guides
- Austroads Guides
- TfNSW Delineation Manuals
- TfNSW Supplements to the Australian Standards
- Australian Standards

2.2 Justification for the proposed works

At present the LRP site has not been fully developed with current proposed infrastructure such as the LRPTP and production bore not yet approved for construction. The existing unsealed access road is predominantly used by small maintenance vehicles accessing the existing LRPS and associated infrastructure, however as the site is developed further, it is anticipated that a greater number of vehicles will use the road to access the precinct. The proposed access road has been designed to intersect the proposed loop road around the proposed LRPTP, allowing for heavy vehicles to access the site to perform maintenance, including sludge removal from the proposed lagoons as required.

Establishment of an upgraded, sealed, all-weather access road will ensure safe ingress and egress of construction fleet and operational machinery and vehicles.

2.3 Options considered

Council considered the following options for these works:

1. Upgrade the existing access road, as detailed in the proposed construction designs shown in Appendix A,
2. Construct a new access road adjacent to the existing unsealed access point, or
3. Do nothing and leaving the access road in its current condition.

Council elected to proceed with Option 1, to upgrade the existing access road as per TfNSW standards and thus improving the safety for road users and allowing the required vehicles safe, all weather access into the LRP. Option 2 was rejected, as it would require a greater level of environmental impact; large habitat trees and native vegetation within the road reserve would potentially require clearing. Option 3 was rejected as the road is an important piece of infrastructure for the local community. Allowing it to become more degraded and unsafe for users is not considered a viable option. In addition, Option 1 was considered the safest, most practical and economic option for the community, Council and its ratepayers.

2.4 Construction and Operation

The following sub-chapters describe the intended construction and operation methodologies that will be implemented as part of the Proposal.

2.4.1 Description of construction works

Council is proposing the following works:

- Site preparation works including removal of vegetation, removal of existing road surface and deposition of materials to achieve correct levels and drainage requirements.
- Trenching to accommodate a Ø300mm culvert
- Placement of the Ø300mm culvert, positioned such that water from the table drain adjacent to road will not be pushed on to The Escort Way
- Replacement of road shoulder with new DGS40 materials.
- Slope road shoulders at a gentle gradient to allow water runoff and reduce erosion
- Clearing of table drains within approved impact footprint.
- Application of granular road base pavement on shoulders (≤ 200 mm thick)

- Overlay 50 mm of DGB20 materials adding slag/lime additive and stabilize with existing materials up to a depth of 200 mm.
- Installing a 7 m bitumen spray seal with 14mm and 7mm gravel double/ double
- Installing guard rail, safety signage, guideposts, and line marking where required

The construction team will be comprised of approximately six (6) FTE people, plus ancillaries such as delivery drivers. Stockpiles and construction offices and amenities as appropriate will be established within precleared areas within the existing road reserve and LRP, where space allows.

The construction phase of the Proposal would include the activities outlined below:

Table 3 Types of works relevant to the Proposal

Types of works	Comments
Site preparation works	• Site demarcation. • Clearing of vegetation within the impact area. • Stockpiling and removal of waste green material. • Establishment of access routes for excavation and construction equipment, including placement of signage. • Establishment of layby areas, storage facilities and site office (if required).
Site levelling	• Removal of degraded existing road surface • Grubbing and stripping of topsoil • Site preparation including excavation and depositing soil/sand to achieve correct ground levels for road upgrades. • Stockpiling and removal of waste material including soil and road base
Road construction works	• Installing bitumen spray seal to the desired width • Formalisation of drainage structures along the length of the works area. • Trenching to accommodate a Ø300mm culvert • Placement of the Ø300mm reinforced concrete pipe (RCP) culvert
Site rehabilitation works	• Site restoration works to achieve correct levels to stabilise and prevent erosion. • Recycling/disposal of excess materials. • Spreading seed and planting trees to revegetate exposed soils (as required). • Monitoring of site to ensure revegetation measures are effective and no major erosion or long-term ecological damage occurs as a result of construction works.

Machinery proposed to be utilised for the works would include:

- 12- or 14-foot grader
- 18T Padfoot/smoothdrum rollers
- 18,000 L watercart
- 30 T excavator
- 5T excavator
- Bobcat/backhoe
- Gravel trucks (truck and dog trailer)
- Float truck (prime mover and low loader trailer)
- Crew trucks/utes
- An array of small plant, jumping-jacks, chainsaws, whipper snippers etc.

2.4.2 Design Constraints

The following design constraints have been identified:

- Requirement for the design solution to remain within the existing road corridor,
- Maintain the existing horizontal and vertical geometry (minor adjustments can be achieved), and
- Existing power poles are to be retained.

The design parameters for the Proposal are identified in

Table 4.

Table 4 Design Parameters

Parameter	Design
Road Classification	State Road
Design Speed (km/h)	110
Posted Speed (km/h)	110
Number of Lanes	2
Lane Width	Existing 3.3m to 3.5m
Shoulder Width (sealed)	Existing 0.4m to 0.5m
Verge (unsealed)	Existing 0.5m to 1m
Design Vehicle	19m truck and dog
Check vehicle	19m semi trailer

2.4.3 Operation of the Proposal

The operational phase of the Proposal, considered as part of this REF, includes assessment of impacts associated with use of the access road once construction and site restoration works are complete including paved all-weather road, and The Escort Way shoulder upgrade and any cumulative impacts the Proposal is likely to have on renewable and finite resources in terms of sustainability, ecology, climate change and the surrounding community.

The access road is designed to accommodate prime movers and semi-trailers up to 19 m in length, with site traffic during the operational phase expected to be minimal, including one (1) semi tanker per week, one (1) light vehicle per day and one (1) service truck every month. The operational phase of the Proposal is not anticipated to have any impacts additional to the existing environment and / or current land uses or traffic flows in the area.

2.5 Environmental safeguards

Throughout the environmental impact assessment undertaken in relation to the above Proposal, potential impacts on the environment were identified in relation to the following environmental 'categories':

- Applicable Acts and legislation
- Soils and Erosion
- Waterways
- Noise and Vibration

- Air Quality and Odour
- Non-Aboriginal Heritage
- Aboriginal Heritage
- Biodiversity
- Traffic and Transport
- Socio-economic Considerations
- Waste and Resource Use
- Visual Amenity
- Climate Change

Environmental Safeguards were then developed to address each of the identified impacts, to ensure that the residual impact upon the environment would not be significant. These Safeguards act as 'conditions of consent' for the Proposal and **must be implemented** as part of Proposal delivery (summary of which is provided as Appendix F). With these environmental protection measures, the Proposal does not have the potential to result in significant impacts within the above categories, which would have environmental, social and economic consequences for Council, as the consent authority for these works.

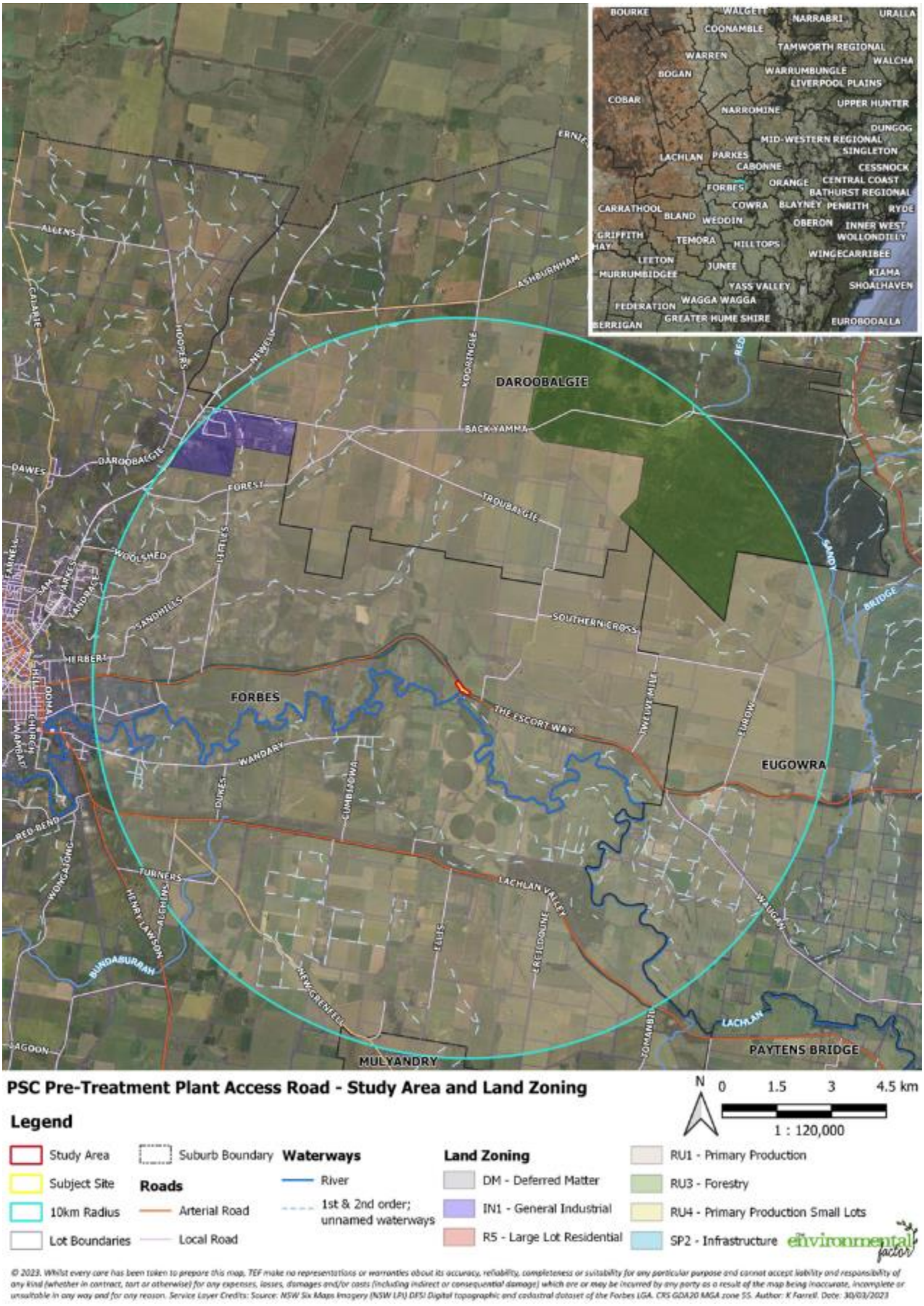

Figure 1 Regional context and land zoning

Figure 2 Study Area and Subject Site

3 Legislative Context

The following legislation, policies and guidelines applicable to the REF have been reviewed, and the implications have been assessed accordingly as part of this REF.

3.1 Commonwealth (Federal) Legislation

3.1.1 Environment Protection and Biodiversity Conservation Act 1999 (EPBC Act)

The EPBC Act ensures that actions likely to cause a significant impact on Matters of National Environmental Significance (MNES) undergo an assessment and approval process. Under the EPBC Act, an action includes a Proposal, undertaking or activity. An action that 'has, will have or is likely to have a significant impact on a matter of national environmental significance' is deemed to be a 'controlled action' and may not be undertaken without prior approval from the Australian Government Minister for the Environment (the 'Minister').

MNES include:

- World Heritage properties
- National Heritage places
- Wetlands of international importance
- Listed threatened species and ecological communities
- Listed migratory species
- Commonwealth marine areas
- Nuclear actions
- A water resource, in relation to coal seam gas development and large coal mining development.

The EPBC Act has been addressed in the current assessment through:

- Desktop review to determine the MNES that are predicted to occur within the locality of the proposed scheme and hence could occur, subject to the habitats present.
- General field surveys for threatened biota and migratory species listed under the Act.
- Identification of suitable impact mitigation and environmental management measures for threatened biota, where required.
- Assessment of potential impacts on MNES, if appropriate.

Potential impacts on relevant MNES must be subject to Tests of Significance pursuant to the EPBC Act Significant Impact Guidelines (DEWHA 2009). If a significant impact is considered likely, a referral under the EPBC Act must be submitted to the Commonwealth Minister for Environment.

This REF assesses the likelihood of MNES occurring within the locality of the Proposal, and their potential to be impacted by the Proposal (refer Section 4.7). Significant Impact Criteria Assessments were completed for EPBC Act listed biota considered at risk of impact as part of the Proposal (See Appendix D). No MNES are likely to be significantly impacted by the Proposal.

3.2 State (NSW) Legislation, Policies and Guidelines

3.2.1 Biodiversity Conservation Act 2016 (BC Act)

The purpose of the *Biodiversity Conservation Act 2016* (BC Act) is to maintain a healthy, productive and resilient environment for the greatest well-being of the community, now and into the future, consistent with the principles of ecologically sustainable development. In particular, the purpose of the BC Act (see section 1.3 of the BC Act) includes:

- to conserve biological diversity at bioregional and State scales (including declared areas of outstanding biodiversity value (AOBV)),
- to assess the extinction risk of species and ecological communities,
- to identify key threatening processes,
- to slow the rate of biodiversity loss, and
- to conserve threatened species.

Section 7.2 and 7.8 of the BC Act states that the determining authority must consider whether the proposed activity:

- is to be carried out in a declared AOBV,
- exceeds the biodiversity offsets scheme threshold if the biodiversity offsets scheme applies to the impacts of the development on biodiversity values, and/or
- is likely to significantly affect threatened species, populations or ecological communities, or their habitats.

Section 7.3 of the BC Act sets out the tests for determining whether a proposed activity is, or is likely to significantly affect threatened species or ecological communities, or their habitats.

Areas of Outstanding Biodiversity Value (AOBV)

The Proposal does not propose works on a listed AOBV, and no significant impacts to any threatened species have been identified.

Biodiversity offsets scheme

This is addressed below in relation to the *Biodiversity Conservation Regulation 2017*.

Impacts to threatened species, populations or ecological communities, or their habitats

Section 4.7 and Appendix B of this REF addresses potential impacts to threatened species and Threatened Ecological Communities (TEC) covered under the BC Act. Section 4.7 and Appendix C finds that the Proposal is not likely to have a significant affect on threatened species, populations or ecological communities, or their habitats.

3.2.2 Biodiversity Conservation Regulation 2017 (BC Regulation)

The BC Regulation provides a number of considerations and practices to be implemented as part of the framework under the BC Act. For example, the BC Regulation:

- Establishes the Biodiversity Values Map that identifies land with high biodiversity value, as defined by clause 7.3(3) of the BC Regulation

- Identifies thresholds for the clearing of land mapped on the Biodiversity Values Map
- Identifies the threshold levels for when the Biodiversity Offsets Scheme (BOS) will be triggered,
- Outlines principles applicable to the determination of serious and irreversible impacts (SAII) to biodiversity values,
- Outlines rules that govern the types of offsets that can be used to meet an offset obligation under the BOS,
- Biodiversity certification criteria.

Section 6.2(e) of the BC Act provides that the proponent of an activity that is assessed under Division 5.1, Part 5 of the EP&A Act can voluntarily opt out of the BOS. As above, the Proposal is being assessed under Division 5.1 of the EP&A Act, and PSC is the proponent. PSC has elected to opt out of the BOS.

3.2.3 Crown Land Management Act 2016

The objectives of the *Crown Land Management Act 2016* (**CLM Act**) are:

a) To provide for the ownership, use and management of the Crown Land of NSW, and
b) To provide clarity concerning the law applicable to Crown Land, and
c) To require environmental, social, cultural heritage and economic considerations to be taken into account in decision-making about Crown Land, and
d) To provide for the consistent, efficient, fair and transparent management of Crown Land for the benefit of the people of New South Wales, and
e) To facilitate the use of Crown land by the Aboriginal people of New South Wales because of the spiritual, social, cultural and economic importance of land to Aboriginal people and, where appropriate, to enable the co-management of dedicated or reserved Crown land, and
f) To provide for the management of Crown land having regard to the principles of Crown land management.

Where work is proposed on Crown land, the proponent of the proposed activity, must, obtain a right of access to the Crown land in accordance with the CLM Act.

No work is proposed to be undertaken on Crown Land, therefore approval from the NSW Crown Lands Department (Crown Lands) **is not required**.

3.2.4 Environmental Planning and Assessment Act 1979 (EP&A Act) and Environmental Planning and Assessment 2021 (EP&A Regulation 2021)

The *Environmental Planning and Assessment Act 1979* (EP&A Act) forms the legal and policy platform for the assessment and approval of works in NSW and aims to ensure that public authorities examine and take into account to the fullest extent possible all matters affecting or likely to affect the environment.

All development in NSW is assessed in accordance with the provisions of the EP&A Act and the *Environmental Planning and Assessment Regulation 2021* (EP&A Regulation).

The Proposal is being assessed under Division 5.1 of the EP&A Act. In accordance with s 5.5 of the EP&A Act, an REF examines and takes into account to the fullest extent possible all matters affecting or likely to affect the environment by reason of the Proposal. In considering the likely impact of the Proposal on the environment, the REF must consider the environmental factors specified in the DPE Guidelines (which simply adopt the factors specified in clause 171(2) of the EP&A Regulation).

Section 5.1 of the EP&A Act defines 'determining authority' as follows:

'determining authority means a Minister or public authority and, in relation to any activity, means the Minister or public authority by or on whose behalf the activity is or is to be carried out or any Minister or public authority whose approval is required in order to enable the activity to be carried out.'

The EP&A Act's definition of 'public authority' (section 1.4) includes: *'(a) a public or local authority constituted by or under an Act'.*

For the purposes of the Proposal, Council is the determining authority in accordance with the EP&A Act.

The duties of the determining authority are set out in Division 5.1 of the EP&A Act. Section 5.5 requires that a determining authority *'…examine and take into account to the fullest extent possible all matters affecting or likely to affect the environment by reason of that activity.'*

Section 5.7 provides that a determining authority shall not approve or carry out an activity that is likely to significantly affect the environment, unless it has considered an environmental impact statement in respect of the activity.

In addition, if the Proposal was to be carried out on an area of outstanding biodiversity value (AOBV), or if the determining authority decides the Proposal would be likely to significantly affect a threatened species, population or ecological community or its habitat, then it must:

- obtain and consider a species impact statement; and
- obtain the concurrence of the Environment Agency Head;
  or
- obtain and consider a biodiversity development assessment report,

(section 7.8 and 7.12(3) BC Act).

This REF examines and considers to the fullest extent possible all matters affecting or likely to affect the environment under Division 5.1 of the EP&A Act.

This REF has identified that the Proposal is not likely to significantly affect the environment (Section 4), as such, PSC will not need to obtain and consider an Environmental Impact Statement (EIS) before it carries out the Proposal (s 5.7 of the EP&A Act).

3.2.5 Fisheries Management Act 1994 (FM Act)

The *Fisheries Management Act 1994* (FM Act) aims to conserve threatened species, populations and ecological communities of fish and marine vegetation native to NSW and to promote ecologically sustainable development, including the conservation of biological diversity. It also aims to reduce the threats faced by native fish and marine vegetation in NSW.

Section 220ZW of the FM Act provides the Secretary may grant a licence authorising a person to take action that is likely to result in one of the following:

a) harm to a threatened species, population or ecological community,
b) damage to a critical habitat,
c) damage to a habitat of a threatened species, population or ecological community.

Section 220ZZ of the FM Act states if the action proposed to be taken by the applicant is not on land that is critical habitat, and the application for a licence is not accompanied by a species impact statement, the Secretary must determine whether the action proposed is likely to significantly affect threatened species, populations or ecological communities, or their habitats.

For the purposes of Division 5.1 of Part 5 of the EP&A Act, if a significant impact on a threatened species, population or ecological community is likely, a species impact statement must be completed and consultation with the NSW Department of Primary Industries (Fishing and Aquaculture) is required (section 221ZX).

A permit under the FM Act is required for any work that involves:

- Activities involving dredging and reclamation work
- Activities temporarily or permanently obstructing fish passage
- Using explosives, electrical devices or other dangerous substances in a waterway
- Harming marine vegetation

Permits are required for works within a third order (or higher) streams (based on the Strahler system of stream order classification), and first and second order streams that are known or likely to be habitat for listed threatened species, populations or communities.

No explosives or electrical devices will be used as part of the Proposal and there are no mapped waterways or Key Fish Habitat (KFH) within the study area, (refer Figure 7). Therefore, a permit from DPI Fisheries **is not required**.

3.2.6 Heritage Act 1997 (Heritage Act)

The *Heritage Act* seeks to identify and protect items of cultural heritage value. The Heritage Council of NSW makes decisions about the care and protection of heritage places and items that have been identified as being significant to the people of NSW.

Automatic protection is afforded to 'relics' under the Heritage Act, defined as:

'any deposit, artefact, object or material evidence that—

(a) relates to the settlement of the area that comprises New South Wales, not being Aboriginal settlement, and
(b) is of State or local heritage significance'.

Formerly the *Heritage Act* protected any 'relic' that was more than 50 years old. Now the age determination has been dropped from the *Heritage Act* and relics are protected according to their heritage significance assessment rather than purely on their age.

Excavation of land on which it is known or where there is reasonable cause to suspect that 'relics' will be exposed, moved, destroyed, discovered or damaged is prohibited unless ordered under an excavation permit (section 139 *Heritage Act*).

Local, and NSW State historic heritage registers were consulted as part of preparation of this REF (Section 4.5); no listed heritage sites were found within the study area and no sites were deemed at risk of damage from the Proposal.

3.2.7 Local Land Services Act 2013

The *Local Land Services Act 2013* (LLS Act) regulates the clearing of native vegetation on all land in NSW mapped as Category 2 – Regulated Land as mapped on the Native Vegetation Regulatory Map.

The *Local Land Services Amendment Act 2016* (LLSA Act), which amended the *Local Land Services Act 2013*, authorised the making of the *Land Management (Native Vegetation) Code 2018* (**Code**) (Div 5, Sch 1 of the LLSA Act). One of the aims of the Code is to authorise clearing of native vegetation on Category 2 regulated land under certain conditions and provide for the establishment and maintenance of set aside areas.

A review of the Native Vegetation Regulatory map (report generated 21/02/23) confirmed that the Study Area occurs on land mapped as unmarked / unclassified, Category 2 – Regulated Land coinciding with the Lachlan River, and Excluded land coinciding with The Escort Way. However, the clearing is to be carried out as part of an activity carried out by a determining authority, being PSC, after compliance with Part 5 of the EP&A Act, therefore the clearing is authorised under Division 3, 60O(b)(ii). Therefore, this has not been considered further within this report.

3.2.8 National Parks and Wildlife Act 1974 (NPW Act)

The *National Parks and Wildlife Act 1974* (NPW Act) provides for the statutory protection of Aboriginal cultural heritage places, objects and features. This legislation aims to protect and preserve Aboriginal heritage values.

Part 6 of this Act refers to Aboriginal objects and places and prevents persons from impacting on an Aboriginal place or relic, without consent or a permit. The proposed works will not impact upon any Aboriginal sites, assuming the Environmental Safeguards as outlined in Section 4.6.4 are followed.

Appendix E and Section 4.6 of this REF further addresses potential impacts and assessment undertaken on Aboriginal Heritage associated with the proposed works.

3.2.9 NSW Biosecurity Act 2015 (Biosecurity Act)

The *Biosecurity Act 2015* (NSW) (**Biosecurity Act**) outlines mandatory measures that persons are to take with respect to biosecurity matters including the management of weeds (Schedule 1 Biosecurity Act). Under the Biosecurity Act, the responsibilities for weed management by public and private landholders are consistent, reflecting that weed management is a shared community responsibility. The Biosecurity Act introduces the legally enforceable concept of a General Biosecurity Duty (GBD) (Part 3 of the Biosecurity Act). Priority weeds are listed within Regional Strategic Weed Management Plans, however the GBD is not restricted to listed weeds.

The Biosecurity Act is administered by NSW Department of Primary Industries (DPI) which determines the weed species covered by regulatory tools including Prohibited Matters, Control Orders and Biosecurity Zones. Existing Local Control Authorities (Councils) continue to be responsible for enforcing weed legislation.

In addition, Forbes Shire Council is included in the Central West Regional Strategic Weed Management Plan 2023-2027 The plan outlines priority weeds for the local region and develops a cooperative and coordinated response for the removal and containment of target weed species.

Given the proximity of the Proposal to previously disturbed roadside vegetation, and agricultural land, it is anticipated that construction works as part of the Proposal have the potential to introduce and spread weed seeds/spores and water mould (e.g. *Phytophthora cinnamomi*). The preparation of a future CEMP will need

include measures to ensure that the Proposal will adhere to both the Biosecurity Act and the requirements outlined in the Central West Regional Strategic Weed Management Plan 2023 – 2027 (Central West Local Land Services, 2022).

Priority weeds observed on site are described in Section 4.7.

3.2.10 NSW Guidelines for Controlled Activities on Waterfront Land (NSW DPI 2012)

Any works proposed within the defined riparian zone of a creek are to be carried out in accordance with the WM Act. Works undertaken on waterfront land (i.e., near a river, lake or estuary) require a controlled activity approval under Section 91 of the WM Act, unless defined as exempt.

The study area is not located within a defined riparian zone. Furthermore, Councils, as a defined public authority, are exempt from the need to gain a controlled activity approval pursuant to clause 41 of the WM Regulation.

3.2.11 Protection of the Environment Operations Act 1997 (POEO Act)

The *Protection of the Environment Operations Act 1997* (POEO Act) is administered by the Environment Protection Authority (EPA), which is an independent statutory authority and the primary environmental regulator for NSW. The POEO Act regulates and requires licensing for environmental protection, including for waste generation and disposal, and for water, air, land and noise pollution.

The objects of this Act are as follows—

a) to protect, restore and enhance the quality of the environment in New South Wales, having regard to the need to maintain ecologically sustainable development,
b) to provide increased opportunities for public involvement and participation in environment protection,
c) to ensure that the community has access to relevant and meaningful information about pollution,
d) to reduce risks to human health and prevent the degradation of the environment by the use of mechanisms that promote the following—
    i. pollution prevention and cleaner production,
    ii. the reduction to harmless levels of the discharge of substances likely to cause harm to the environment,
    iii. the elimination of harmful wastes,
    iv. the reduction in the use of materials and the re-use, recovery or recycling of materials,
    v. the making of progressive environmental improvements, including the reduction of pollution at source,
    vi. the monitoring and reporting of environmental quality on a regular basis,
e) to rationalise, simplify and strengthen the regulatory framework for environment protection,
f) to improve the efficiency of administration of the environment protection legislation,
g) to assist in the achievement of the objectives of the *Waste Avoidance and Resource Recovery Act 2001.*

The Proposal does not constitute activities that are likely to generate significant pollution; however, consideration of the prevention of water, air, land and noise pollution is provided herein (refer Sections 4.2, 4.3, 4.4 and 4.10).

3.2.12 Roads Act 1993

The *Roads Act 1993* regulates the use and management of public roads. Section 138 of the Roads Act requires that consent of the appropriate Roads Authority is obtained for certain work undertaken in, on or over a public road. Under Section 138 of the Roads Act:

1. A person must not—
    a. Erect a structure or carry out a work in, on or over a public road, or
    b. Dig up or disturb the surface of a public road, or
    c. Remove or interfere with a structure, work or tree on a public road, or
    d. Pump water into a public road from any land adjoining the road, or
    e. Connect a road (whether public or private) to a classified road,

Otherwise, than with the consent of the appropriate roads authority.

2. A consent may not be given with respect to a classified road except with the concurrence of Transport for New South Wales (TfNSW).

Pertaining to the above, Forbes Shire Council (FSC) is the appropriate roads authority for the section of The Escort Way within the Subject Site and would provide the necessary permits to the contractors prior to work commencing, if and as required.

The Escort Way is identified as a Classified Road as per the TfNSW Schedule of Classified Roads and Unclassified Regional Roads (identified as a *Main Road*). Therefore, as TfNSW roads will be impacted as part of this Proposal, Council are required to complete a Section 138 application, with FSC the consent authority, and concurrence must be sought with TfNSW.

3.2.13 Rural Fires Act 1997 (RF Act)

The RF Act came into force in 1997 to establish the NSW RFS and define its functions; to make provisions for the prevention, mitigation and suppression of rural fires; to repeal the *Bush Fires Act 1949*; to amend certain other Acts; and for other purposes. The objectives of this Act are to provide:

a) For the prevention, mitigation and suppression of bush and other fires in local government areas and other parts of the State.
b) For the co-ordination of bush firefighting and bush fire prevention throughout the State, and
c) For the protection of persons from injury or death, and property from damage, arising from fires, and
d) For the protection of infrastructure and environmental, economic, cultural, agricultural and community assets from damage arising from fires, and
e) For the protection of the environment by requiring certain activities referred to in paragraphs (a)–(c1) to be carried out having regard to the principles of ecologically sustainable development described in section 6 (2) of the POEO Act.

Section 63(1) and 63(2) of the RF Act stipulate it is the duty of a public authority to take all practicable steps to prevent the occurrence of bush fires on, and to minimise the danger of the spread of a bushfire on or from any land vested in or under its control or management.

The study area is not mapped as being within a designated bushfire prone area. There are no applicable bushfire prone land requirements for the Proposal, as the Proposal relates primarily to road infrastructure.

However, Council may consider restricting access to the adjacent Lachlan River Precinct (LRP) site on High or greater fire risk days.

3.2.14 State Environmental Planning Policy (Transport and Infrastructure) (Transport and Infrastructure SEPP) 2021

The Transport and Infrastructure SEPP consolidates and repeals the provisions of 4 SEPPS, which includes the previous Infrastructure SEPP (ISEPP) 2007. The SEPP consolidation is administrative, and no policy changes have been made. It has been undertaken in accordance with section 3.22 of the EP&A Act. As with the previous version, the Transport and Infrastructure SEPP aims to facilitate the effective delivery of infrastructure across the State, including for:

- Flood mitigation work (Division 7, Section 2.56)
- Parks and other public reserves (Division 12, Section 2.73)
- Roads and road infrastructure facilities (Division 17, Section 2.109)
- Sewerage systems (Division 18, Section 2.126)
- Soil conservation works (Division 19, Section 2.133)
- Stormwater management systems (Division 20, Section 2.137)
- Water supply systems (Division 24, Section 2.159)
- Waterway or foreshore management activities (Division 25, Section 2.165)

Each section of the SEPP provides for development that is permitted without consent.

The Transport and Infrastructure SEPP aims to facilitate the effective delivery of infrastructure across the State. Section 2.109 states that:

Development for the purpose of a road or road infrastructure facilities may be carried out by or on behalf of a public authority without consent on any land. Section 2.109(3) states that a reference to development for the purpose *road infrastructure facilities* includes a reference to development for any of the following purposes if the development is in connection with a road or road infrastructure facilities—

(a) construction works (whether or not in a heritage conservation area), including—
  (i) temporary buildings or facilities for the management of construction, if they are in or adjacent to a road corridor, and
  (ii) creation of embankments, and
  (iii) extraction of extractive materials and stockpiling of those materials, if—
    (A) the extraction and stockpiling are ancillary to road construction, or
    (B) the materials are used solely for road construction and the extraction and stockpiling take place in or adjacent to a road corridor, and
  (iv) temporary crushing or concrete batching plants, if they are used solely for road construction and are on or adjacent to a road corridor, and
  (v) temporary roads that are used solely during road construction,

(b) emergency works or routine maintenance works,

Note—

See section 2.7(4) regarding emergency works and routine maintenance works on land to which clauses 10 and 11 of *State Environmental Planning Policy (Coastal Management) 2018* apply.

(c) alterations or additions to an existing road (such as widening, narrowing, duplication or reconstruction of lanes, changing the alignment or strengthening of the road),

(d) environmental management works, if the works are in or adjacent to a road corridor.

The proposed works, which include alterations or additions to an existing road (such as widening, narrowing, duplication or reconstruction of lanes, changing the alignment or strengthening of the road) , are appropriately characterised as development for the purpose of a road or road infrastructure under the Transport and Infrastructure SEPP. Pursuant to section 2.109, the proposed works can be carried out as activities under Division 5.1 of the EP&A Act without development consent.

The Proposal is not located on land reserved under the *National Parks and Wildlife Act 1974* and does not affect land or development regulated by the *Coastal Management Act 2016*, *State Environmental Planning Policy (Resilience and Hazards) 2021,* or *State Environmental Planning Policy (Precincts—Regional) 2021.*

3.2.15 Water Management Act 2000 (WM Act)

The *Water Management Act 2000* (WM Act), administered by the Water division of NSW Department of Industry, Skills and Regional Development, aims to ensure that water resources are conserved and properly managed for sustainable use benefiting both present and future generations. It provides formal means for the protection and enhancement of the environmental qualities of waterways and their in-stream uses as well as to provide for protection of catchment conditions.

Council is exempt from s 91E(1) under the WM Act for Proposals approved under Division 5.1 of the EP&A Act, in relation to all controlled activities that it carries out in, on or under waterfront land (cl 41 *Water Management (General) Regulation 2018*). While exempt, it is still recommended that Council be aware of the WM Act and adhere to the associated guidelines.

3.3 Community and agency consultation

3.3.1 Stakeholder consultation

Council will continue to liaise with its agency stakeholders and members of the wider community throughout delivery of the construction and operational phases of the Proposal. Specifically, PSC will ensure all interested and affected parties including businesses, government agencies (particularly FSC and TfNSW), farming enterprises, landowners and residents within and in proximity to the Study Area are notified of the works at least fourteen (14) days prior to the commencement of work, and regular door to door verbal notifications will be given to affected landowners prior to works proceeding adjacent to their property.

3.3.2 Private landowner consent

Landowner consent is required to lodge an application for development consent. However, it is noted in Section 3.2.14 of this REF that as the proposed works are appropriately characterised as development under the Transport and Infrastructure SEPP, the provisions of the TISEPP apply. Therefore, the Proposal can be undertaken as an activity under Division 5.1 of Part 5 of the EP&A Act, following assessment by Council in accordance with that Division, and landowner consent is not required under the *Environmental Planning and Assessment Act 1979*.

The Proposal is to be undertaken on land within Council owned freehold land, and the road reserve (Council-owned land), therefore land acquisition is not required, however, Council intends to liaise with any landholders with potential to be impacted by the works to ensure adequate engagement is undertaken, and, where appropriate, rectification works are completed.

3.3.3 Mitigation of impacts during construction and operation

The assessment completed within this REF has concluded that socio-economic impacts are expected to be minimal, confined to the construction phase and are not likely to significantly negatively affect residents in proximity to the Subject Site.

Road users of The Escort Way adjacent to the LRP will be temporarily affected by the Proposal, with access hindered during construction works. However it is not anticipated that The Escort Way will be fully closed during the Proposal's construction phase; rather, a single lane of traffic with reduced speed limit will remain operable at all times. Appropriate traffic control plan and a road occupancy license will be implemented.

As noted in the Executive Summary, Section 2 'Proposal Description', Section 6 'Certification' and in the Environmental Safeguards developed for the Proposal (Appendix F), all work will be completed under the guidance of a CEMP to manage and minimise potential environmental impacts associated with the work. Additionally, once operational, the Proposal is not anticipated to result in any additional ongoing significant environmental or community impacts.

Given this conclusion, the likely impacts on surrounding residents are anticipated to be limited to the construction period. The CEMP will list the responsibility of PSC, the Project Management Office (PMO) and the appointed Contractor(s) to develop and distribute notification to local residents before, during and after the construction period. The adequate notification period for residents is fourteen (14) days prior to works commencement.

Table 5 Proposed local resident notifications

Impact/mitigation	Stakeholder	Notifications
Noise, dust	Adjacent rural & residential landowners	• Notifications to adjacent landowners; traffic management plans, noise monitoring protocols, working hours • Person to person contact to notify rural landowners of any dust anticipated to settle in adjacent farm dams.
Traffic and access	Local traffic	• Advertisement in local papers (Forbes Advocate), social media and FSC website advising of changed traffic conditions and delivery of construction loads.
Working Hours	Local residents	• Letterbox drop of notification listing working hours, and measures to manage local impacts; lighting, truck deliveries and noise onsite.

Section 4 of this REF describes the site-specific environmental impacts and proposed environmental safeguards required to manage any impact during construction to be included in the CEMP.

3.3.4 Agency consultation and concurrent requirements

It is understood that Council will be undertaking all stakeholder engagement and community consultation activities internally, as per their community consultation plan. This includes liaison with TfNSW and FSC pertaining to the Section 138 application and concurrence from FSC as stipulated under the Roads Act (refer Section 3.2.12).

3.3.5 Requirement to publicly display REF

As per the EP&A Regulations, determining authorities must keep the REF documentation including any appendices or addenda and make available for public access once a determination has been made. The EP&A Regulation Clause 171(4) requires the REF to be published on the determining authority's website or the NSW Planning Portal for an activity with:

- A capital investment value of more than $5 million or,
- An approval or permit for activity that requires approval under:
    - FM Act sections 144, 201, 205 or 219, or
    - Heritage Act 1977 section 57, or
    - National Parks and Wildlife Act 1974 section 90 or
    - Protection of the Environment operations Act 1997 sections 47-49 or 122, or
- If the determining authority considers it to be in the public interest.

There are allowances for exceptional circumstances where publication is not required; this is at the Planning Secretary's discretion. If the REF is to be published, the determining authority must place all relevant information on the determining authority's website or the NSW Planning Portal prior to the commencement of works.

Certain parts of the REF document may be sensitive, such as sensitive cultural information requested to be redacted by Aboriginal parties or cyber security impacts and mitigation measures. In these instances, the REF document content can be redacted where required. The REF document (excluding sensitive information) needs to be available online.

4 Environmental Assessment

This chapter describes the potential key environmental impacts associated with the Proposal during both construction and operation and the site-specific Environmental Safeguards which are to be implemented as part of the Proposal to ameliorate any potential impacts identified. A summary of the Environmental Safeguards has been provided in Appendix F.

4.1 Soils and Erosion

4.1.1 Existing environment

The Subject Site is largely devoid of vegetation, as it constitutes an existing access track which has been previously cleared and compacted from repeated traffic movement. Directly adjacent to the Subject Site and within the surrounding road reserve, vegetation cover over soils was generally good, and subsequently soils were identified as stable and intact.

Cleared patches of soil, and gravelled areas occur along the existing LRP access track. Large stands of native vegetation occur in the wider Study Area, particularly along the Lachlan River and within the road reserve along the Escort Way.

NSW (Mitchell) Landscape Soils

The Study Area is classified as 'Lachlan-Bland Channels and Floodplains' Mitchell Landscape for the entirety of the Study Area (Figure 3).

The Lachlan-Bland Channels landscape is described as having a general elevation of 200 – 280 m with a local relief of <10 m. The land is extensively cleared and cropped with grey cracking clays with gilgai along channels and in swamps, and low levees of red-brown sand or loamy sand on stream banks, extensive red-brown structured texture-contrast soils on the plains.

These soils can both be associated with waterlogging, low fertility and hard-setting surfaces.

Acid Sulphate Soils

Acid sulphate soils (ASS) are generally only considered a problem along the coastal areas of NSW where ASL <10 m and around wetlands of inland NSW. Inland acid sulphate soils have also been associated with discharging saline groundwater, however their occurrence is limited.

Figure 4 shows the ASS potential within the Study Area (SEED, 2021). The site is mapped as Bn(p4) ASS in inland lakes, waterways, wetlands and riparian lands. Bn(p4) denotes the following:

- B = a low probability of occurrence
- n = Sodosols, Chromosols and Dermosols
- (p) = potential ASS (sulphidic material)
- (4) = No necessary analytical data are available, and classifier has little knowledge or experience with ASS, hence classification is provisional.

Australian Soil Classification

Figure 5 show the Australian Soil Classification (ASC, 2020) within 5 km of the Study Area. Chromosols make up the majority of the Study Area. Chromosols are characterised as having a strong texture contrast between A and B horizons and are typically not strongly acid or sodic. These soils are widespread throughout Australia, and are widespread throughout Australia, and are amongst the most widespread soils used for Agriculture in Australia. The area at the north east of the Study Area is mapped as Tenosols. Tenosols are characterised as having well structured, organic matter darkened surface horizons, but no significant pedologic development at depth.

4.1.2 Potential Soils and Erosion Impacts – Construction

This Proposal is intended to proceed along with others within the Program. Each proposal is independent and may or may not proceed on its own merits, however there may be construction activities that occur in parallel, which could result in cumulative soil and erosion impacts. Given that PSC are responsible for all associated proposals, the construction impacts of this Proposal will be scheduled to minimise any cumulative effects of the separate proposals in the Program proceeding at the same time.

Disturbance of the ground to accommodate the construction of the access road increases the risk of erosion, and subsequent sediment migration across the landscape. Road base will be imported into the site to ensure all-weather access to the site for the entire operational phase of the Proposal. The Proposal also involves installing a minimum 300 mm diameter culvert adjacent to The Escort Way to eliminate the risk of water escaping the existing table drain and pushing onto The Escort Way. The duration and intensity of rainfall during and after works will greatly influence the potential impacts to soils and contingency planning and preparation will be required to ensure these risks are minimised.

The estimated surface soil disturbance is calculated to be **0.5 ha** for the Proposal. Surface soil disturbance to accommodate the construction access upgrade increases the risk of erosion, and subsequent sediment migration across the landscape and into adjacent waterways. The duration and intensity of rainfall during and after works will greatly influence the potential impacts to soils and contingency planning and preparation will be required to ensure these risks are minimised.

High winds have the potential to create dust/sedimentation/deposition issues during the construction phase. There is potential for erosion if work sites are left exposed for long periods of time without adequate safety measures to prevent runoff/wind erosion.

Use of fuels and chemicals, construction materials and wastes may also pollute soils on the site.

4.1.3 Potential Soils and Erosion Impacts – Operation

There is the potential for the operation of the Proposal to increase ongoing risks to soils caused by erosion and sediment runoff following construction. Immediately following the completion of construction works and throughout the operation of the Proposal, regular checks would be required to ensure site rehabilitation works have been effective and erosion and sediment controls (including drainage) are holding. Where sediment runoff is noted, this must be ameliorated immediately. Unseasonably heavy rainfalls are predicted to continue into 2023 due to complex La Nina weather patterns, increasing the risk of surface water impacts including increased runoff. The environmental safeguards listed in Section 4.1.4 must be adhered to throughout the operational phase of the Proposal to minimise environmental and socioeconomic risk.

Table 6 Summary of soil and erosion impacts

Description	Y	N	Comments
Are there any known occurrences of salinity or acid sulfate soils in the area?	X		Yes, see Figure 4. Bn(p4) ASS occur throughout the Study Area, which are denoted as low probability of occurrence/potential ASS.
Does the Proposal involve the disturbance of large areas (e.g. >2 ha) for earthworks?		X	The Proposal involves the disturbance to an area of approximately **0.5h**a.
Does the site have constraints for erosion and sedimentation controls such as steep gradients, narrow corridors or is located on private property?		X	The Subject Site is predominantly flat, and located within the road reserve and Council owned Lot 81 in DP 750183 ('Tallawalla')

Plate 1 bare and exposed soils within the Subject Site adjacent to the LRP.

Plate 2 existing LRPS access to be widened and sealed.

4.1.4 Environmental Safeguards – Soil and Erosion

The environmental safeguard measures for Soils and Erosion outlined below are considered part of the Proposal and must be implemented. Safeguards include:

Construction

- No vegetation outside the approved direct impact footprint is to be impacted or removed; vegetation that is not approved for clearance is to be protected to ensure soils are not exposed unnecessarily.
- Minimize the length of time that soils are exposed by stabilising as soon as practical by seeding, spreading mulch or installing erosion control blanket as appropriate.
- All areas where groundcovers/vegetation are required to be removed will require careful management during construction due to the higher erosion risks, including:
    - Erosion and sediment (ERSED) control measures are to be implemented and maintained to:
        - prevent sediment moving off-site and sediment laden water entering any drainage lines, drain inlets, or dams; and
        - reduce water velocity and capture sediment on site.
    - ERSED controls are to be installed prior to the commencement of works and checked and maintained on a regular basis (including clearing of sediment from behind barriers).

    - ERSED control measures are not to be removed until the works are complete, and areas are stabilised.
- Stockpiles and machine parking will be on existing hardstand areas or existing cleared, exposed areas, to reduce impacts to ground covers and adjacent vegetation from sediment migration.
- Monitoring and response actions with regard to ERSED controls will be incorporated within the Construction Environmental Management Plan (CEMP) for the Proposal, to be enforced by the appointed Contractor.
- Vehicles are to use existing roadways and formed access where possible to prevent additional damage to the site, and to reduce the risk of tracking of sediments offsite.
- Works areas are to be stabilised using the most appropriate combination of the following measures, as soon as practical following disturbance:
    - Planting of native tubestock to assist in stabilising the site and creating a visually positive area for the local community.
    - Hydromulching, turfing or seeding with appropriate groundcover species on exposed areas including over exposed sections; and / or
    - Sealing exposed areas with appropriate material, e.g. concrete or bitumen.
- Sediment fences / strawbale filters or equivalent must be installed wherever water is predicted to enter / exit the works area.
- The maintenance of established stockpile sites during construction is to be in accordance with the Landcom/Department of Housing Managing Urban Stormwater, Soils and Construction Guidelines (the Blue Book) (Landcom 2004), including:
    - Stockpiles are recommended to be formed in accordance with the Blue Book Standard Drawing 4-1, and offsite/away from waterbodies.
    - Topsoil and subsoil are to be separated and protected from degradation, erosion or mixing with fill or waste. Materials are to be reused onsite where appropriate for infilling works, including re-spreading of topsoil as appropriate to enable rapid rehabilitation. Where onsite reuse cannot be accommodated, soil materials should be put to beneficial reuse elsewhere.
- If contaminated soils are encountered during construction, a site assessment is to be completed in accordance with Schedule A 'Recommended general process for assessment of site contamination' (NEPM 1999).
- If contaminated soils are encountered, they will be managed (and if necessary excavated, contained, treated and disposed of) in accordance with the law and relevant EPA and Council guidance.
- All chemical usage and storage during construction is to be in line with legislated requirements, to prevent Pollution of Land, which is prohibited under Section 142 A of the POEO Act.

Operation

- Monitoring of the site is to be undertaken to ensure ERSED controls remain in place until the site is re-stabilised, and to ensure no sediment is washed into any waterways following construction and before revegetation efforts are completed.
- Maintenance of vegetative cover on all exposed surfaces (not to be covered by road base/seal) to be undertaken to ensure the stability of soils on site into the future.
- Infill planting or additional spreading of appropriate ground-cover mixture and/or hydromulch to be undertaken by Council during the 12-month establishment period until the planting areas are stabilized. Infill planting and ongoing maintenance will then be handed over to Council to ensure long-term stability of the site.

Given environmental safeguards are implemented and maintained, it is not anticipated that the Proposal would result in significant impacts to Soil and Erosion.

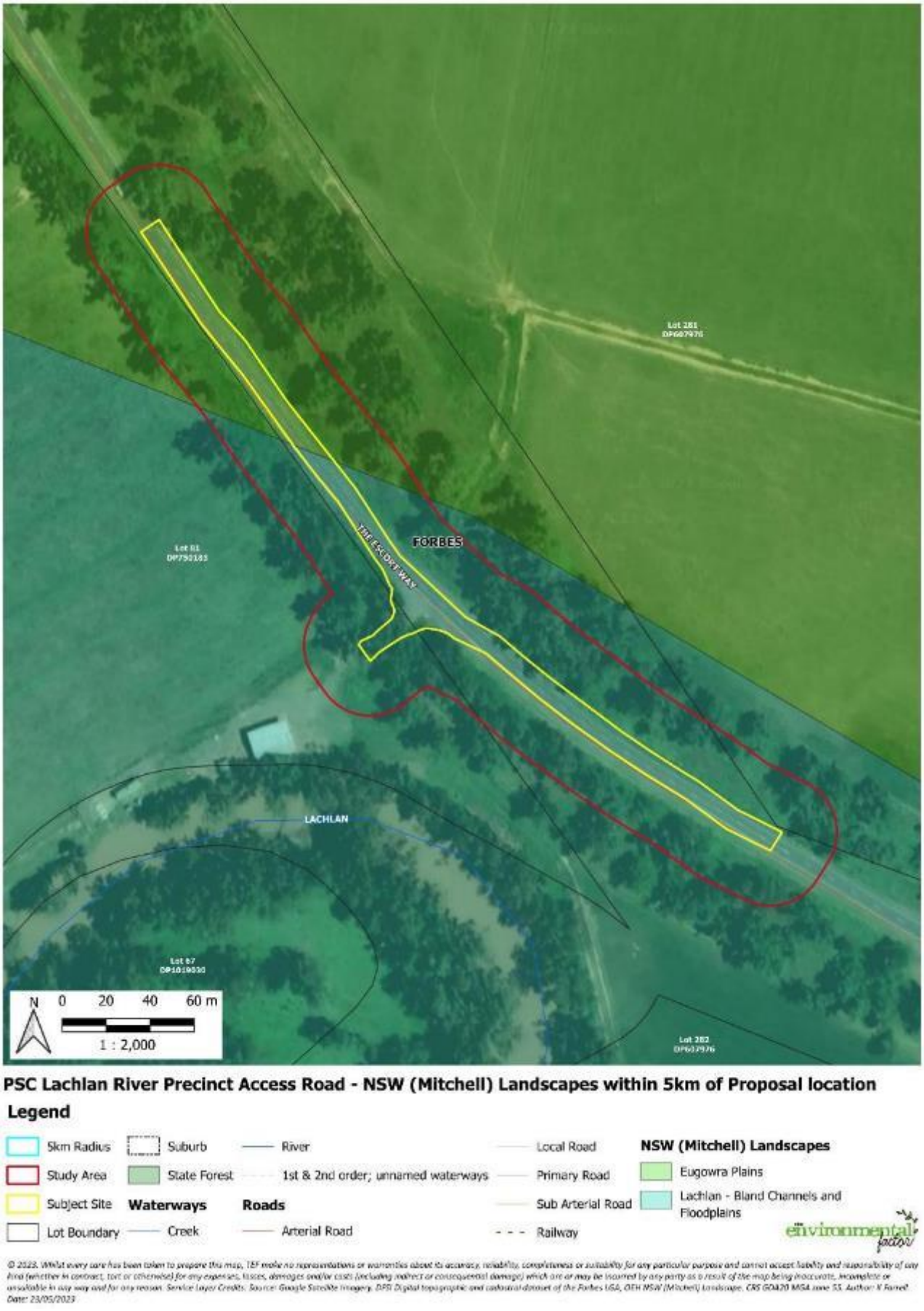

Figure 3 NSW (Mitchell) Landscapes occurring within 5km of the Study Area.

PSC Lachlan River Precinct Access Road - Acid Sulphate Soils within 5km of Proposal location

Legend

5km Radius	Suburb	River	Local Road	**Acid Sulphate Soils**
Study Area	State Forest	1st & 2nd order; unnamed waterways	Primary Road	An(p4)
Subject Site	**Waterways**	**Roads**	Sub Arterial Road	Bn(p4)
Lot Boundary	Creek	Arterial Road	Railway	Cq(p4)

Figure 4 Acid Sulphate Soils potential mapped as occurring within 5 km of the Study Area.

PSC Lachlan River Precinct Access Road - Acid Sulphate Soils within 5km of Proposal location

Legend

5km Radius
Study Area
Subject Site
Lot Boundary
Suburb
State Forest
Waterways
Creek
River
1st & 2nd order; unnamed waterways
Roads
Arterial Road
Local Road
Primary Road
Sub Arterial Road
Railway
Australian Soil Classification
Chromosols
Tenosols (Alluvial)

Figure 5 Australian Soil Classifications within 5 km radius of Study Area

4.2 Surface and Groundwater

4.2.1 Existing environment

The Lachlan River, mapped as containing Key Fish Habitat KFH, passes approximately 50 m to the south of the Study Area at the nearest point. No other waterways are mapped as occurring within the Study Area. The Subject Site is largely flat, with the entire site mapped as containing shallow groundwater resources that could be sensitive to trenching and easily contaminated (Figure 7). Wetlands (which are also classed as KFH) are mapped as occurring approximately 500 m to the north east of the Study Area. Given the isolation of the wetlands and absence of drainage lines, TEF sought clarification from DPI Fisheries to determine whether the wetlands contain KFH. Upon review, DPI Fisheries have however determined the mapped wetlands to be unsuitable for KFH, and no longer consider this area to contain KFH.

The proposal is within The Lachlan River Precinct, an area known for frequent flooding. There is a floodway within the Study Area, with a flood marker present used to indicate flood water passing over the road during a major flood event. It is however noted, due to the scope of the project that no significant impact will be made to the existing floodway.

The Proposal is located within the Lachlan River catchment (refer Figure 6), adjacent to the Lachlan River, which is identified as a major regulated river. There are a number of relevant water quality objectives that require consideration, including but not limited to: aquatic ecosystems; visual amenity; livestock water supply; homestead water supply; irrigation water supply; and drinking water at point of supply – groundwater.

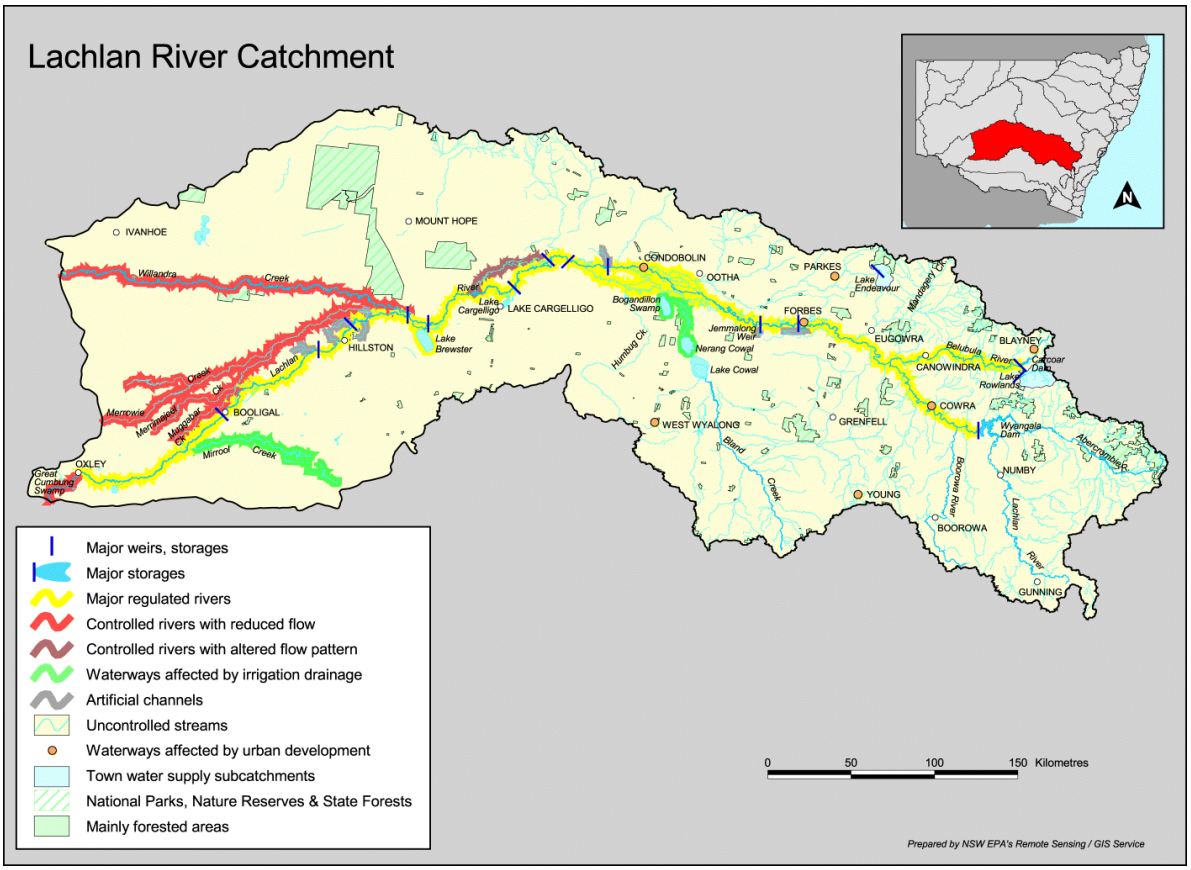

Figure 6 Lachlan River Catchment

4.2.2 Potential Surface and Groundwater Impacts – Construction

This Proposal is intended to proceed along with others within the Program. Each proposal is independent and may or may not proceed on its own merits, however there may be construction activities that occur in parallel, which could result in cumulative surface and groundwater impacts. Given that PSC are responsible for all associated proposals, the construction impacts of this Proposal will be scheduled to minimise any cumulative effects of the separate proposals in the Program proceeding at the same time.

Potential impacts to surface waters relate directly to erosion and increased sedimentation during construction. There is also the potential for spills of fuels and other contaminants arising from plant and machinery, which could enter surface waters during any works completed in proximity to drainage lines and waterways. Groundwater vulnerability mapping indicates sensitive ground water receivers throughout the entire Study Area.

4.2.3 Potential Surface and Groundwater Impacts – Operation

If ERSED measures and best practice design principles are adhered to, and the site is fully stabilized following construction works, impacts to waterways as part of operation of the Proposal are anticipated to be negligible.

Table 7 Waterways impacts summary (adapted from Div 1 (2.13) TISEPP 'Consultation Requirements')

Description	Y	N	Comments
Are the works located within or adjacent to a waterbody or wetland? Waters are defined under Protection of the Environment Operations Act 1997 and water land and wetlands under section 198A of the Fisheries Management Act 1994 and include rivers, streams, lakes, lagoons and constructed waterways, and dams.		X	No waterbodies or wetlands mapped as occurring within the Subject Site or Study Area
Is a Fisheries Permit required? Part 7 Fisheries Permits are automatically required for any third order (or higher) stream under the Fisheries Management Act 1994 (FM Act).		X	Works will not impact any areas confirmed as KFH and no dredging, reclamation, blockage of fish passage or use of explosives are included in the Proposal.
Will the proposed works be undertaken on a bridge?		X	No bridge work included within the proposal
Are the works likely to require the extraction of water from a local water source (not mains)?		X	A water cart may be required to dampen soils during construction activities; water would be transported to site from an approved Council source.
Is the site identified as High or Moderate Groundwater Vulnerability?	X		Refer Figure 7. The entire site mapped as containing shallow groundwater resources that could be sensitive to trenching and easily contaminated
Are the proposed works likely to have an effect on the surrounding water quality? This can include sediment migration, dust, and potential risks of fuel or chemical spills, to both surface and ground waters.		X	Potential for dust deposition in farm dams and sediment migration off-site. Provided that the Safeguards outlined in Section 4.2.4 are adhered to, potential risk of fuel or chemical spill is low.

Description	Y	N	Comments
Does the Proposal involve connection to, and use of a substantial volume of water from, any part of a water supply system owned by a Council?		X	A water cart may be required to dampen soils during construction activities; water would be transported to site from an approved Council source. Construction and operation are not anticipated to consume substantial volumes from Council's supply system.
Does the Proposal involve the connection to, and a substantial impact on the capacity of, any part of a sewerage system owned by Council	X		Proposal does not include any works on any part of a sewerage system owned by Council.
Is the Proposal likely to have a substantial impact on stormwater management services provided by Council	X		Proposal does not include the construction of, or upgrades to, any stormwater management system provided by Council.
Are the works being carried out on flood liable land? (Written notification to the State Emergency Service may be required if the activity is a relevant provision under Division 1 (2.13) of the Transport and Infrastructure SEPP)		X	EPI mapping does not identify the Study Area as located in a flood area. Major flooding in recent years does however confirm the Study Area can be prone to flooding.
Is the Proposal being carried out on land that is within a coastal vulnerability area and is inconsistent with a certified coastal management program?		X	Works are not being carried out on land within a coastal vulnerability area.

4.2.4 Environmental Safeguards – Surface and Groundwater

The environmental safeguard measures for Surface and Groundwater outlined below are considered part of the Proposal and must be implemented. Safeguards include:

Construction

- If 'dirty' site water is collected from within the direct impact footprint, it is to be redirected to filtration devices to trap sediments and other pollutants, and dissipate flow velocities, prior to discharging to the surrounding environment. Drainage and runoff should be controlled in such a way that no foreign substrates or materials leave the site.
- 'Clean' water from outside the Study Area is to be diverted around the site, to avoid contamination and to prevent scour/erosion of the site during rainfall events during construction.
- Works to be completed in dry times (i.e. times of no current or predicted rainfall) to reduce the risk of pollutants and sediments being washed into nearby waterways or other surface waters.
- Appropriate erosion and sediment (ERSED) controls are to be installed and maintained during construction, to ensure sediment and pollutant laden surface water runoff does not enter adjacent waterways/drainage lines.
- All litter, including cigarette butts and food wrappers, are to be collected in a suitable receptacle and disposed of appropriately throughout the construction phase to ensure these do not end up polluting waters of aquatic environments.
- Re-fuelling of plant and equipment is to occur offsite, or in impervious bunded areas located a minimum of 40 metres from drains, drainage lines or dams.

- Vehicle wash-down and/or cement truck washout (if required) is to occur offsite unless it forms part of sediment control, where it is to occur in a suitably bunded area with controlled run-off.
- Monitoring of water quality is to be undertaken within culverts/waterways downstream of the site during and immediately following rainfall events, to identify if ERSED controls are functioning as intended. Visual inspections should be undertaken by an appropriately qualified person/s to determine if water is turbid, or if there is evidence of petrochemicals or other pollutants present as a consequence of construction activities.
- Segregate and stockpile topsoil removed from the area a minimum of 40 m from any waterway and on a flat, stable area. Use measures such as silt fences and holding ponds to prevent stockpile runoff from entering waterways.
- Biosecurity and water health protection measures should be implemented throughout the construction phase, including:
    - Machinery should arrive on site in a clean, washed condition, free of fluid leaks, pests and/or weeds/spores;
    - Regular weed control should be undertaken in disturbed areas throughout the construction period to prevent weed spread into waterways, if notifiable/listed weed material is present; and
    - Ensure all pesticide/herbicides used are registered for use within a waterway, as per NSW DPI guidelines. Alternatively, opt to remove weeds mechanically where possible.
- Spill response protocols for plant, equipment and chemicals used or stored on site during construction are to be available and accessible at all times to prevent and minimise potential for Pollution of Waters (s120 POEO Act).
- A Soil and Water Management Plan will be developed as part of the CEMP for the Proposal, detailing:
    - Water quality parameters to be adhered to (e.g., turbidity)
    - Appropriate monitoring locations and frequency
    - Location and types of ERSED controls
    - Proposed revegetation and stabilisation measures to be undertaken.

Operation

- Continue to undertake a water quality monitoring program in line with Council's requirements until all sites are completely stabilised; monitoring should include details of proposed baseline and downstream/dam water quality following any heavy rainfall.
- Subject Site rehabilitation, including removal of weeds and revegetation using appropriate native species, is to be undertaken to ensure soil stability and prevention of sediment runoff from the site into the future. Revegetation must be maintained with a survival rate of >80%.

Given environmental safeguards are implemented and maintained, it is not anticipated that the Proposal would result in significant impacts to surface and groundwater.

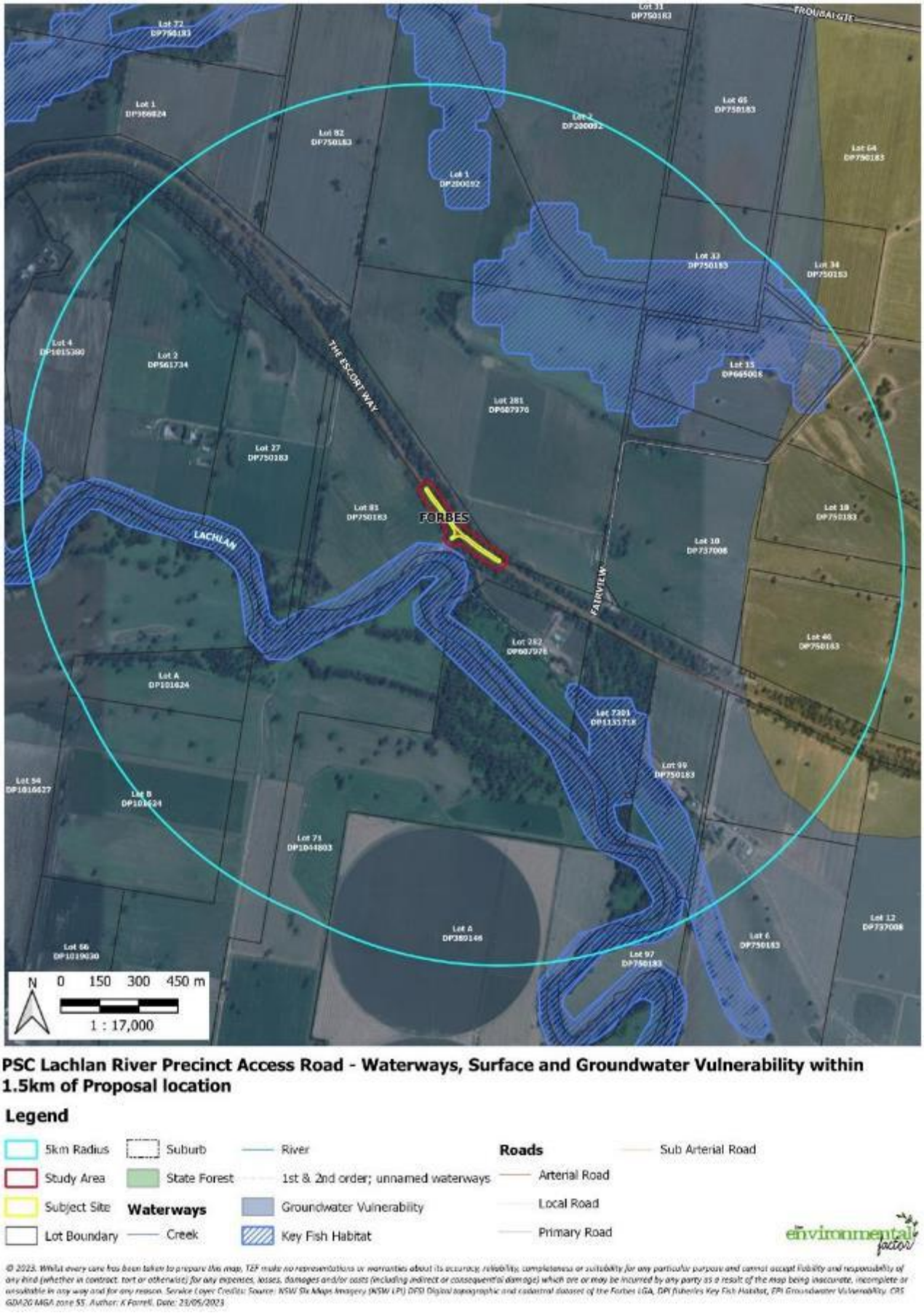

Figure 7 Waterways, surface and groundwater vulnerability within 1,500 m of the Subject Site

4.3 Noise and vibration

4.3.1 Existing environment

The Proposal occurs in a predominantly rural area, with background noise levels typically arising from farming machinery and activities, local traffic, anthropogenic noises, livestock, wildlife and inclement meteorological conditions (rain and wind).

The closest private residence is located approximately 350 m to the south east of the Subject Site, accessed via a sealed road from The Escort Way (refer Figure 8). There is one further resident within 1 km of the Subject Site, with the homestead identified approximately 900 m to the west of the Subject Site. There are no property entrances identified along the length of The Escort Way where works would occur. The Study Area is mapped as SP2 – Infrastructure following The Escort Way alignment, and RU1 – Primary Production adjacent to the road corridor. Most of the land adjacent to the Proposal is dedicated to cropping and is therefore vacant.

Cars and trucks travelling along The Escort Way are known to cause the main noise disturbance on site; however, noise observations are anecdotal / qualitative only, as no noise recording devices were used during the site assessment and no formal/specialised noise surveys have been completed as part of this REF.

4.3.2 Potential noise and vibration impacts – Construction

This Proposal is intended to proceed along with others within the Program. Each proposal is independent and may or may not proceed on its own merits, however there may be construction activities that occur in parallel, which could result in cumulative noise and vibration impacts. Given that PSC are responsible for all associated proposals, the construction impacts of this Proposal will be scheduled to minimise any cumulative effects of the separate proposals in the Program proceeding at the same time.

Noise impacts during construction are anticipated to arise from increased heavy vehicle and plant movements; vegetation clearing and grubbing as required; excavators and other mechanical equipment including general engine noise and reverse alert beepers are expected as part of the construction phase. These noise impacts are anticipated to be short in duration and confined to the construction phase. Assuming the mitigation measures outlined in Section 4.3.4 are adhered to and early and effective community consultation is carried out, the Proposal is unlikely to cause significant disruption or constitute intrusive noise. Native species that are nesting, breeding or fledging are at risk of disruption by the noise and vibration generated by the Proposal.

4.3.3 Potential noise and vibration impacts - Operation

The LRP access road is not anticipated to generate significant additional noise or vibration during the operational phase, beyond existing levels. Ongoing maintenance activities and any future repair work do have the potential to generate noise as part of operations, however this is not anticipated to be significant.

Table 8 Summary of Noise and Vibration impacts

Description	Y	N	Comments
Are there any noise sensitive areas near the location of the proposed works? i.e., < 500m at nearest point, that may be affected by the works e.g. church, school, hospital, residences	X		There is one private residence within 500m of the Proposal.

Description	Y	N	Comments
Are the proposed works going to be undertaken during standard working hours detailed below? **Monday – Friday: 7:00am to 6:00pm** **Saturday: 8:00am to 1:00pm** **Sunday and Public Holidays:** No work	X		Proposed construction hours are as follows: **Normal construction:** • Monday to Friday: 7:00 am to 6:00 pm • Saturday: 8:00 am to 1:00 pm • Sunday and Public Holidays: No work
Is any explosive blasting required for the proposed works?		X	No need for blasting or rock breaking is required for the proposed works.
Is there potential for ongoing operational noise to be generated post completion of works?	X		The proposed access road will generate ongoing operational noise; however, this is not anticipated to be an increase on existing levels.

4.3.4 Environmental safeguards – Noise and Vibration

The Environmental Safeguards for Noise and Vibration are considered part of the Proposal and must be implemented. Safeguards include:

Construction:

- Noise emissions should be considered in terms of the Interim Construction Noise Guideline (ICNG) (Department of Energy and Climate Change (DECC) 2009).
- Noise impacts to the local community will be limited to recommended standard working hours as detailed in the Interim Construction Noise Guideline 2009 (ICNG). All activities and Proposal works, including the arrival and departure of vehicles delivering or removing materials to or from the site, shall be carried out between the hours of:
    - 7:00am to 6:00pm Monday to Friday,
    - 8:00am to 1:00pm Saturdays, and
    - No work Sunday and Public Holiday
- Communication of intentions and timeframes to neighbouring properties will be undertaken in order to minimise misconceptions, uncertainty and negative reactions to noise. The site supervisor should supply a contact number to aid in community liaison.
- All noise and vibration complaints are to be handled in a timely manner in accordance with requirements under the POEO Act.
- The appointed contractor will incorporate Noise and Vibration Management strategies in the CEMP, and suitably induct all staff operating machinery on the site to ensure the standard working hours are adhered to, and that machinery movement (revving, reverse beepers) is kept to a minimum. This management plan must include the general noise and vibration management practices (AS 2436-2010).
- Plant deliveries and site access will occur quietly and efficiently, with parking allowed only within designated areas located away from nearby sensitive receivers.
- Simultaneous operation of high-level noise generating machinery should be avoided by operating at contrasting times or increasing the distance between the plant and the nearest identified receiver.
- High noise generating activities, such as jack hammering, should be carried out in continuous blocks, not exceeding three (3) hours with a minimum respite period between blocks of one (1) hour.

- Low-pitch tonal beepers should be installed where possible and reversing minimised on site.
- All engine covers are to be closed and machines that are not in use, shut down.
- Where possible, high noise generating activities such as loading and unloading and material dumps should be located as far as possible from the nearest receptors, except by prior arrangement.
- Contractors and project managers to make reasonable efforts to time works to avoid and/or minimise noise impacts during prime breeding season (Spring) for the majority of native species residing in the area which may be sensitive to noise and vibration during breeding and fledging.
- Strong community reaction may occur where the noise levels reach 75 dB, known as the highly noise affected level. If this level is reached, respite periods may be enforced, and community consultation is to occur to determine least sensitive periods and/or if the community is prepared to accept a longer construction period in exchange for restrictions on construction times.

Operation

No further Safeguards were considered necessary for the operation phase of the Proposal. Operation of the access road is not likely to result in any significant ongoing noise impacts beyond general maintenance and repair works.

Given environmental safeguards are implemented and maintained, it is not anticipated that the Proposal would result in significant impacts to Noise and Vibration.

PSC Lachlan River Precinct Access Road - Sensitive Receivers within 1km of Proposal location

Legend

1km Radius
Study Area
Subject Site
Lot Boundary
Suburb
State Forest
Waterways
Creek
River
1st & 2nd order; unnamed waterways
Roads
Arterial Road
Local Road
Primary Road
Sub Arterial Road
Railway
Private Residence

Figure 8 Sensitive receivers within a 1 km radius of the Proposal

4.4 Air quality

4.4.1 Existing environment

Long-term meteorological data for the surrounding area is available from the Bureau of Meteorology (BoM) operated Automatic Weather Station (AWS) at the Forbes Airport. The Forbes AWS is located approximately 7 km west of Forbes and records observations of a range or meteorological data including temperature, humidity and rainfall, wind speed and wind direction.

Temperature data recorded at the Forbes Airport AWS indicates that January is the hottest month of the year, with a mean daily maximum temperature of 34.5°C. July is the coolest month with a mean daily maximum temperature of 14.7°C. March is the wettest month with an average rainfall of 55.5 mm falling over almost 4.3 days. According to long-term records, there are on average 56 rain days per year, with a mean annual rainfall of approximately 493 mm. Forbes experiences a moisture deficit, with evaporation exceeding rainfall for all months, excluding June and July. The increased moisture deficit of the hotter months increases the dust erosion potentials of exposed areas and therefore has important implications for fugitive dust control during the construction phase.

Weather conditions onsite on the 20th of March 2023 were hot and dry with no precipitation observed (Table 9).

Table 9 Weather conditions preceding, during and following field surveys (weather station:065103 Forbes Airport AWS)

Date	Temperature (˚C)		Rain (mm)	Max wind gust	
	Minimum	Maximum		Speed km/hr	Direction
17/03/2023	12.3	32.7	0	30	W
18/03/2023	12.4	37.8	0	50	NNW
19/03/2023	15.5	41.1	0	31	N
20/03/2023	17.0	39.8	0	48	SE
21/03/2023	17.5	30.1	0	41	NNE
22/03/2023	16.6	25.3	10.0	39	SSW
23/03/2023	16.3	25.9	7.0	41	WSW

Forbes and the surrounding area generally enjoy clean air; a lack of heavy industry and a low concentration of vehicles ensures that pollutant levels are relatively low. The primary air pollution emissions sources that contribute to existing ambient air quality levels in the area include:

- Wind generated dust from exposed areas within the locality;
- Dust emissions from agricultural activities;
- Dust entrainment due to vehicle movements along unsealed and sealed town and rural roads with high silt loadings;
- Diesel and petrol fuel combustion emissions from road and non-road sources;
- Seasonal emissions from household wood burning; and
- Episodic emissions from dust storms and vegetation fires (local and regional).

4.4.2 Potential Air Quality impacts – Construction

This Proposal is intended to proceed along with others within the Program. Each proposal is independent and may or may not proceed on its own merits, however there may be construction activities that occur in parallel, which could result in cumulative air quality impacts. Given that PSC are responsible for all associated proposals, the construction impacts of this Proposal will be scheduled to minimise any cumulative effects of the separate proposals in the Program proceeding at the same time.

Potential impacts to air quality may arise from airborne dust particles generated during earthworks, stockpiling and managing topsoil, transport and handling of soils and equipment, as well as the use of construction vehicles emitting exhaust fumes. The extent of air pollution generated during construction depends on a number of factors, including the type of machinery used, construction techniques, weather conditions and the cumulative effect of other construction activities in the near vicinity (e.g. agricultural activities such as ploughing).

The impacts are anticipated to be of short duration and minor in nature and are not expected to have a large or prolonged impact on air quality in the area.

4.4.3 Potential Air Quality impacts – Operation

Following the stabilisation of disturbed ground, the Proposal is not anticipated to have an impact on air quality in the area during the operational phase. The upgrade of the existing access road from unsealed to an all-weather sealed surface is anticipated to reduce the level of dust created by vehicle movements compared with existing levels during the operational phase.

Table 10 Summary of Air Quality impacts

Description	Y	N	Comments
Are the proposed works likely to result in large areas (>2ha) of exposed soils?		X	The total direct impact area is 0.46 ha. All areas of exposed soil will be rehabilitated following construction through revegetation or laying of road base to stabilise exposed soils.
Are there any dust sensitive receivers located within the vicinity of the proposed works (<500m away at nearest point) during the construction period (i.e., church, school, hospital, residences)?	X		One private residence has been identified within 500 m of the Proposal
Is there likely to be an emission to air of dust, smoke, steam or vehicle emissions?	X		Yes; the Study Area and locality contain fine, friable soils likely to result in dust emissions once disturbed. Safeguards should effectively ameliorate any emissions if correctly adhered to.

4.4.4 Environmental safeguards – air quality

The Environmental Safeguards for Noise and Vibration are considered part of the Proposal and must be implemented. Safeguards include:

Construction

- Council must undertake community engagement and liaison, to set expectations for the works schedule and likely air quality impacts arising as part of the works, particularly prior to works commencing.
- Daily visual construction dust monitoring should occur, with works to cease if dust plumes are occurring that have potential to impact areas outside the direct impact footprint.
- Speed limits of 40 km / hr or slower are to be enforced on access tracks and across the site during dry weather to keep dust to a minimum.
- An adequate water supply is to be provided on the construction site for effective dust/particulate matter suppression/mitigation. If synthetic dust suppressants are used, they must be biodegradable in nature and non-toxic for waterways.
- Earthworks and exposed areas/soil stockpiles are to be revegetated using appropriate native species to stabilise surfaces as soon as practicable to reduce risk of dust emissions from wind erosion.
- Only vegetation that has been approved for removal may be removed or otherwise impacted; intact vegetation stabilises soils and keeps dust to a minimum.
- Vegetation and other materials are not to be burnt on site, unless the vegetation material is a weed that prohibits transportation and disposal by other means.
- Vehicles transporting waste or other materials that may produce odours or dust are to be covered during transit.
- Tracking of machinery carrying soil/spoil through nearby townships is to be avoided where possible.
- Stockpiles or areas that may generate dust are to be managed to suppress dust emissions.
- Dampening of exposed soils will be undertaken during weather conditions conducive to visible dust formation.
- Construction plant and equipment will be maintained in a good working condition in order to limit impacts on air quality through vehicle emissions.
- Fuel operated plant and equipment will not be left idle when not in use.
- Regular site inspections will be undertaken as part of air quality monitoring, and inspection results recorded by Council's Principal Contractor.
- Any dust complaints received during construction will be duly investigated in accordance with Council's requirements under the POEO Act.
- Any exceptional incidents that cause dust and/or air emissions, either on or off site, will be recorded, and the action taken to resolve the situation recorded in the site management logbook.

Operation

- Council is to conduct regular road maintenance activities to ensure the road surface doesn't deteriorate, resulting in emissions to air.
- Any exposed areas revegetated during construction are to be monitored and maintained until the areas are fully stabilised to reduce risk of erosion and dust emissions, as well as dust settling on nearby native vegetation.

Given environmental safeguards are implemented and maintained, it is not anticipated that the Proposal would result in significant impacts to air quality.

4.5 Non-Aboriginal heritage

4.5.1 Existing environment

Forbes has a rich cultural history, traditionally home to the Wiradjuri people, with a population boom related to the discovery of gold in the region in the early 1960's. The town has a number of important stock routes passing through, as well as a history of agriculture since the 1860's. The dominant land use throughout the Forbes region is agriculture including farming and grazing, which are fundamental to the local economy. Disturbance regimes associated with the land uses of the Study Area include vegetation clearing, cropping and grazing, access tracks, and residential dwellings.

Despite the Forbes region having a diverse and well recorded cultural history, a search of the Heritage Council of NSW administered heritage databases and the Forbes Local Environmental Plan (LEP) 2013 returned no records of historical heritage sites within 1 km of the Study Area.

4.5.2 Potential impacts to non-Aboriginal Heritage – Construction

Due to the small scale of the Proposal, located in previously disturbed cropped land and with existing access tracks, it is highly unlikely that any items of non-Aboriginal Heritage would be discovered while constructing the access road and clearing the groundcover within the Subject Site.

No impacts to known surrounding heritage sites are anticipated, as none occur within close proximity to the Subject Site. There is, however, always potential for the works to uncover unanticipated finds. The environmental safeguards outlined in Section 4.5.4 will provide additional protection and further decrease the risk of any such damage.

4.5.3 Potential impacts to Non-Aboriginal Heritage - Operation

No impacts to non-Aboriginal heritage are anticipated in the operation phase of the Proposal.

Table 11 Non-Aboriginal Heritage impacts summary

Description	Y	N	Comments
Are there any items of non-Aboriginal heritage located within the vicinity (1km) of the proposed works?		X	None identified
If yes, list the item(s) and their heritage significance (i.e., s170 register, Council Register, State Heritage Register, National Heritage Register).	N/A		
Is the development on, or reasonably likely to have an impact on, a part of the Willandra Lakes Region World Heritage Property (if so, consultation is required with the World Heritage Advisory Committee and Heritage NSW),		X	Proposal is not located in proximity to the Willandra Lakes Region World Heritage Property
Is the Proposal likely to affect the heritage significance of a local heritage item, or of a heritage conservation area, that is not also a State heritage item, in a way that is more than minor or inconsequential?		X	No potential impacts to local heritage items or areas identified. No registered sites in proximity to the Proposal

Description	Y	N	Comments
Is further assessment of the potential impact on a listed heritage item required? And has this assessment been provided along with written notification to the local Council for the area in which the heritage item is located?		X	No further assessment required

4.5.4 Environmental safeguards – non-Aboriginal Heritage

The Environmental Safeguards for non-Aboriginal Heritage are considered part of the Proposal and must be implemented. Safeguards include:

Construction

- The proposed works must be contained to the area assessed during the construction. If the proposed location is amended, further archaeological assessment may be necessary to determine if the proposed works will impact any items of historical significance.
- If archaeological remains or items defined as relics under the NSW Heritage Act 1977 are uncovered during the works, all works must cease in the vicinity of the material/find and Council's Manager Strategic Planning and Environmental Officer are to be contacted immediately.
- Council's workers and all staff must be made aware of the heritage sites and place that occur within the area and all care must be taken to avoid interference with and damage to these sites.
- Any newly discovered heritage sites must be clearly fenced/flagged with removable flagging or other temporary means to delineate their presence and in order to prevent them being harmed during the construction process.

Operation

No further safeguards were considered necessary for non-Aboriginal heritage for the operational phase of the Proposal.

Given environmental safeguards are implemented and maintained, it is not anticipated that the Proposal would result in significant impacts to non-Aboriginal heritage.

4.6 Aboriginal heritage

4.6.1 Existing environment

The Wiradjuri are known to have permanently inhabited this area of the Central West for around 40,000 years or more, with the Lachlan River serving as a significant and central feature to the First Nations people. Today the Forbes region is a culturally rich and diverse community that celebrates the rich Aboriginal Heritage, as evidenced by a number of sculptures, and the Forbes Wiradjuri Dreaming Centre (WDC) adjacent to Lake Forbes, initiated by the Forbes Wiradjuri Community to promote Wiradjuri culture and stories. The WDC is a unique hub for educating the community and hosting cultural events, meetings and workshops by local Aboriginal volunteers.

The site contains a large corridor of disturbance through the centre of the Study Area being the Escort Way roadway and associated historical modifications for drainage and road shoulder areas. The areas that remain undisturbed from an archaeological perspective include the vegetated road reserve on either side of the road, within the archaeological study area (identified in Figure 9).

Potential impacts to Aboriginal heritage were assessed in accordance with the Aboriginal 'Due Diligence Code of Practice for the Protection of Aboriginal Objects in New South Wales via a site assessment conducted by Harrison Rochford of OZArk Environment and Heritage (OzArk) on 18th May 2023, together with Robert Clegg and Steve Parker representing the Wiradjuri Council of Elders. The assessment identified the presence of a scarred tree immediately to the north west of the archaeological study area, and one (1) community interest tree within the archaeological study area, as shown on Figure 9. Surveys confirmed that the previously identified Potential Archaeological Deposit (PAD), site 43-3-0108, is unlikely to occur within the archaeological study area. In addition, an addendum ADD assessment was included to encompass the proposed PTP area to the west of the underbore site. The addendum that includes this expanded impact area has also been considered and included in this REF (Appendix E).

The due diligence assessment concluded the proposed works will have an impact on the ground surface, however, no Aboriginal objects or intact archaeological deposits are likely to be harmed by the Proposal.

4.6.2 Potential Aboriginal Heritage Impacts – Construction

A tree of Aboriginal community interest has been identified within the study area (refer Figure 9), and a scarred tree approximately 15 m north west of the study area have been identified following field investigations by OzArk in May 2023 (refer Appendix E). Safeguards identified in Section 4.6.4 must be adhered to avoid any direct impacts to these Aboriginal heritage items.

4.6.3 Potential Aboriginal Heritage Impacts – Operation

No impacts to places, artefacts or Aboriginal Heritage sites are expected during use/operation of the Proposal.

Table 12 Aboriginal Heritage impacts summary

Description	Y	N	Comments
Are the works likely to disturb previously undisturbed areas of the landscape? Check for good camping sites (flat, near water, availability of bush foods), mountain ridges, spurs or vantage points or rocky	X		Area of undisturbed road reserve within the subject site. This archaeological study area (Figure 9) was assessed by OzArk on 18/05/2023

Description	Y	N	Comments
outcrops that may have ceremonial significance, and the presence of stone tools, shells or other evidence of human occupation.			
Has an AHIMS register search been conducted?	X		Yes. Refer Appendix E
Are there any known items of Aboriginal Heritage near the works area (< 1km)?	X		OzArk identified two (2) items during field surveys in May 2023, in addition to the previously recorded PAD (site 43-3-0108). Refer Appendix E
Is consultation with stakeholders required? E.g., the Local Aboriginal Land Council		X	No – Consultation with OzArk was conducted, with a member of the Wiradjuri Council of Elders present for the site assessment. The assessment determined that no harm to Aboriginal Heritage is anticipated provided Safeguards in Section 4.6.4 are adhered to.
Is a National Parks and Wildlife Act Section 90 Permit (Aboriginal Heritage Impact Permit – AHIP) required for Aboriginal items potentially impacted by the works?		X	No known Aboriginal Heritage items occur in the subject site, and subsequently none would be impacted as a result of the Proposal provided the safeguards outlined in this REF are adhered to.

4.6.4 Environmental Safeguards – Aboriginal Heritage

The Environmental Safeguards Aboriginal Heritage are considered part of the Proposal and must be implemented. Safeguards include:

- All land ground disturbance activities must be confined to within the archaeological study area, as this will eliminate the risk of harm to Aboriginal objects in adjacent landforms. Should the parameters of the Proposal extend beyond the assessed area shown in Figure 9, then further archaeological assessment will be required before works can proceed.
- All staff and contractors involved in the proposed work should be made aware of the legislative protection requirements for all Aboriginal sites and objects.
- All staff and visitors should be inducted to site to ensure they are aware of the possible presence of sensitive Aboriginal heritage items located within the vicinity of the work site, and the protective measures that should remain in place throughout the works.
- Should unanticipated archaeological material be encountered during site works, all work must cease and an archaeologist contacted to make an assessment of the find. Further archaeological assessment and Aboriginal community consultation may be required prior to the recommencement of works. Any objects confirmed to be Aboriginal in origin must be reported to Heritage NSW.
- If during works Aboriginal artefacts or skeletal material are discovered, all work should cease and the procedures in the Unanticipated Finds Protocol (Appendix 2 of the ADD) should be followed.
- If any human remains are found, all works should stop immediately, the site should be secured and NSW police contacted immediately.
- The information in the ADD meets the requirements of the Due Diligence Code of Practice for the Protection of Aboriginal Objects in New South Wales. It should be retained as shelf documentation

for five (5) years as it may be used to support a defence against prosecution in the event of unanticipated harm to Aboriginal objects.

- Specific management measures for the archaeological items recorded within the archaeological study area are as follows:
  - Escort Way ST 1 and the community interest tree are within close proximity to the subject site but can be avoided by the proposed works. To ensure that the risk of inadvertent harm to the site and the community interest tree is minimised, the following management measures should be adhered to during works:
    - The northern boundary of the works area on the eastern side of the Escort Way should be demarcated by temporary, high visibility flagging to contain all construction activities. The fencing alignment shown on Figure 4 1 is preferable as it does not identify Escort Way ST 1 as an Aboriginal object that is visible from the road, which reduces the risk of vandalism.
    - The location of Escort Way ST 1 and the community interest tree should be marked on all construction plans as no-go areas.
    - Fencing to contain the construction area per Figure 4 1 will also facilitate the avoidance of the community interest tree.
  - Site 43-3-0108
    - No specific management measures are required to minimise the risk of inadvertent access to the remaining PAD area at site 43-3-0108 as it is outside the study area. The existing property boundary fence between the site and the road corridor is sufficient.

Given environmental safeguards are implemented and maintained, it is not anticipated that the Proposal would result in significant impacts to Aboriginal heritage.

PSC PTP Access Road upgrade - Aboriginal Heritage within 500m of proposal location

Legend

- Study area
- Subject site
- Lot boundary

OzArk study areas

- 2022 PTP study area
- 2023 access works study area
- Addendum study area
- AHIP C001096
- Site 43-3-0108 PAD buffer
- ACHA artefacts

Aboriginal Heritage items (OzArk)

- Community Interest Tree
- Escort Way ST1

Waterways

- River
- 1st & 2nd order; unnamed waterways

Roads

- Arterial Road

Figure 9 Aboriginal Heritage within 500m of the Proposal

4.7 Biodiversity

4.7.1 Existing environment

The Subject Site occurs within and adjacent to The Escort Way in the Forbes LGA. The surrounding environment has been subjected to historical clearing for agriculture and is highly disturbed. Native vegetation in the surrounding area is predominantly restricted to remnant roadside vegetation along The Escort Way and other roads and lanes in the locality, and to the riparian corridor of the Lachlan River to the south. The surrounding area contains predominantly mixed use (cropping and grazing) agricultural farmland which has been mostly cleared of native vegetation. Some remnant scattered paddock trees are evident via satellite imagery, however these are sparse and not connected through the landscape. Some area of gilgais and wetland areas was observed via satellite imagery to the north of the Subject Site in adjacent agricultural land.

Wetlands are mapped as occurring about 700 m to the north of the site in adjacent farmland, and the Lachlan River occurs approximately 50 m to the south of the site. The Subject Site extends from The Escort Way, approximately 30 m to the south where it terminates within the property boundary of Lot 81 DP750183.

Areas of mapped Terrestrial Biodiversity (as mapped in the Forbes Local Environmental Plan (LEP)) are mapped as occurring along The Escort Way roadside reserve, and within the riparian corridor along the Lachlan River to the south. These areas are mapped both within and adjacent to the Subject Site.

Flora

Remnant woodland within the road reserve of 'The Escort Way' was identified as follows:

- PCT 80 - *Western Grey Box - White Cypress Pine tall woodland on loam soil on alluvial plains of NSW South Western Slopes Bioregion and Riverina Bioregion*
- PCT 5 - *River Red Gum herbaceous-grassy very tall open forest wetland on inner floodplains in the lower slopes sub-region of the NSW South Western Slopes Bioregion and the eastern Riverina Bioregion*. This community is predominantly restricted to the riparian corridor of the Lachlan River, and extends onto floodplains in the assessment area.
- PCT 201 – *Fuzzy Box Woodland on alluvial brown loam soils mainly in the NSW South Western Slopes Bioregion*

Within the Subject Site, canopy vegetation was comprised of River Red Gums (*Eucalyptus camaldulensis*) only, and subsequently conformed to PCT 5. Areas of PCT 201 were recorded on the northern side of The Escort Way, opposite the Subject Site, and areas of PCT 80 were recorded to the east and the west of the Subject Site.

Vegetation within the Subject Site, and within the road reserve of The Escort Way in vicinity to the Subject Site, is highly degraded and dominated by exotic weeds. The road reserve of The Escort Way in the Subject Site was covered predominantly in the exotic shrub *Sida rhombifolia* (Paddy's Lucerne), and exotic forbs such as *Lactuca serriola* (Prickly Lettuce), *Solanum elaeagnifolium* (Silverleaf Nightshade), *Eragrostis cilianensis* (Stinkgrass), *Echium plantagineum* (Pattersons Curse) and *Alternanthera pungens* (Khakie weed). No native shrub layer was present.

Priority Weeds

No flora species identified within the Subject Site are listed NSW Priority Weeds, or Weeds of National Significance (WoNS), however two (2) species of High Threat Weeds (HTEs) were identified as follows:

- Silverleaf nightshade (*Solanum elaeagnifolium*)
- Bathurst burr (*Xanthuim spinosum*)

Steps should be undertaken to control and reduce the spread of exotic weeds throughout the Study Area, particularly during the construction phase.

Flora identified within and adjacent to the Subject Site is presented in Table 13 below.

Plate 7 LRP Access Track (Subject Site) showing PCT 5

Plate 8 River Red Gum to be removed from eastern side of the Subject Site

Plate 9 River Red Gum overhanging Subject Site – to be limb lopped

Plate 10 River Red Gum to be removed from north western section of the Subject Site

Plate 7 Large hollow in the Study Area adjacent to the Lachlan River

Plate 8 Exotic dominated road reserve of The Escort Way

Table 13 Recorded flora species

Scientific name	Common name	Status
Alternanthera pungens	Khaki Weed	E
Chenopodium album	Fat Hen	E
Chloris truncata	Windmill Grass	N (GG)
Conyza bonariensis	Flaxleaf Fleabane	E
Echium plantagineum	Patterson's Curse	E
Enteropogon acicularis	Curly Windmill Grass	N (GG)
Eragrostis cilianensis	Stinkgrass	E
Eucalyptus camaldulensis	Eucalyptus camaldulensis population in the Hunter catchment	N (T)
Eucalyptus conica	Fuzzy Box	N (T)
Eucalyptus melliodora	Yellow Box	N (T)
Lactuca serriola	Prickly Lettuce	E
Lepidium africanum	Common Peppercress	E
Rumex crispus	Curled Dock	E
Schinus areira	Pepper Tree	E
Sida rhombifolia	Paddy's Lucerne	E
Solanum elaeagnifolium	Silver-leaved Nightshade	HTE
Solanum nigrum	Black-berry Nightshade	E
Verbena bonariensis	Purpletop	E
Xanthium orientale	Californian Burr	E
Xanthium spinosum	Bathurst Burr	HTE

E = Exotic, HTE = High Threat Exotic, N = Native, T= Tree, GG = Grass, F = Forb

Fauna

Fauna habitat within the Subject Site consisted of remnant woodland present along The Escort Way, and the riparian corridor of the Lachlan River to the south. A number of large trees, including habitat trees (hollow-bearing or containing nests) were observed within woodland in the road reserve and along the riparian corridor. In particular, hollow-bearing trees (HBTs) were concentrated along the banks of the Lachlan River.

Surveys undertaken identified eleven fauna species, all of which are native including twelve (12) bird species and one (1) amphibian species heard calling in the nearby waterway. These species are listed in Table 14 below

Table 14 Fauna species recorded during field surveys

Scientific name	Common name	NSW Status	EPBC Status
Birds			
Cracticus tibiae	Australian Magpie	-	-
Chenonetta jubata	Australian Wood Duck	-	-
Coracina novaehollandiae	Black-faced Cuckoo-shrike	-	-
Platycercus eximius	Eastern Rosella	-	-
Eolophus roseicapillus	Galah	-	-
Rhipidura albiscapa	Grey Fantail	-	-
Colluricincla harmonica	Grey Shrike-thrush	-	-
Manorina melanocephala	Noisy Miner	-	-
Cacatua galerita	Sulphur-crested Cockatoo	-	-
Malurus cyaneus	Superb Fairy-wren	-	-
Rhipidura leucophrys	Willie Wagtail	-	-
Acanthiza chrysorrhoa	Yellow-rumped Thornbill	-	-
Reptiles			
Pseudonaja textilis	Eastern Brown Snake	-	-

Conservation Significance

No threatened species and/or ecological communities were recorded within the Subject Site during surveys, however the following threatened ecological communities were recorded along The Escort Way in the Study Area, adjacent to the Subject Site:

- *Fuzzy Box Woodland on alluvial Soils of the South Western Slopes, Darling Riverine Plains and Brigalow Belt South Bioregions* – (Fuzzy Box Woodland) BC Act listed **Endangered Ecological Community (EEC)**
- *Inland Grey Box Woodland in the Riverina, NSW South Western Slopes, Cobar Peneplain, Nandewar and Brigalow Belt South Bioregions - (*Grey Box Woodland) – BC Act listed **Endangered Ecological Community (EEC)**

No further threatened species were observed during site assessments, however based on the habitat assessments undertaken, an additional nine (9) threatened species were considered as having the potential to be impacted by the Proposal:

- Superb Parrot, *Polytelis swainsonii*, Vulnerable under the BC and EPBC Act
- Brown Treecreeper (eastern sub-species)*, Climacteris picumnus victoriae,* Vulnerable under the BC Act
- Black-chinned Honeyeater, *Melithreptus gularis gularis*, Vulnerable under the BC Act
- Dusky Woodswallow, *Artamus cyanopterus cyanopterus*, Vulnerable under the BC Act
- Little Lorikeet, *Glossopsitta pusilla*, Vulnerable under the BC Act
- Speckled Warbler, *Chthonicola sagittate*, Vulnerable under the BC Act
- Turquoise Parrot, *Neophema pulchella*, Vulnerable under the BC Act
- Varied Sitella, *Daphoenositta chrysoptera*, Vulnerable under the BC Act
- Koala, *Phascolarctos cinereus*, Endangered under the BC and EPBC Act

Plate 3: LRP Access Track (Subject Site) showing PCT 5

Plate 4 River Red Gum to be removed from eastern side of the Subject Site

Plate 5 River Red Gum overhanging Subject Site – to be limb lopped

Plate 6 River Red Gum to be removed from north western section of the subject site

Plate 7 Large hollow in the Study Area adjacent to the Lachlan River

Plate 8 Exotic dominated road reserve of The Escort Way

4.7.2 Potential biodiversity impacts – Construction

This Proposal is intended to proceed along with others within the Program. Each proposal is independent and may or may not proceed on its own merits, however there may be construction activities that occur in parallel, which could result in cumulative impacts to biodiversity. Given that PSC are responsible for all associated proposals, the construction impacts of this Proposal will be scheduled to minimise any cumulative effects of the separate proposals in the Program proceeding at the same time.

Approximately **0.18 ha** of native vegetation occurs within the Subject Site (canopy only) and would be impacted as a result of the proposed works. This includes the removal of three (3) mature River Red Gum (RRG) trees, and limb-lopping impacts to one (1) RRG tree overhanging the proposed access track. No trees to be removed contain hollows. The RRG to be limb lopped contains hollows, however these are not present on the limb to be impacted and the hollows would be retained.

No threatened species and/or ecological communities were recorded within the Subject Site during surveys, however threatened species considered likely to occur (as described above and in Appendix B) have been assessed for potential impacts.

It is considered the Proposal has a moderate likelihood of potential direct and/or indirect impacts on the for nine (9) threatened species identified above, due to the likelihood that the species may utilise the site for foraging purposes either regularly or transiently. Tests of significance for nine (9) threatened species with a moderate or higher likelihood of being impacted by the Proposal were prepared in accordance with Section 1.7 of the EP&A Act and the EPBC Act Matters of National Environmental Significance – Significant Impact Criteria Guidelines (DEWHA, 2009). These assessments have concluded that the Proposal is unlikely to have a significant negative effect on the threatened species occurring within the impact footprint (Appendix B). given that the removal of habitat features (nests and hollows) does not occur, it is considered unlikely that the Proposal would result in significant impacts to any species.

No direct impacts to aquatic habitats are likely to result from the Proposal due to the small nature of the proposed works, given that environmental safeguards relating to surface and groundwater contamination are adhered to.

Indirect impacts to biodiversity are expected to be minimal due to the short-term nature of the proposed works. It is not expected that clearing and construction noise and dust levels would be significant enough to impact species or ecological communities. There is a risk that the Proposal could further introduce and spread weeds and other pathogens to the site, and safeguard measures have been outlined in Section 4.7.4 to minimise this.

Key Threatening Processes (KTP) relating to the Proposal can be seen in Table 15.

It is recommended that a qualified ecologist is present to conduct pre-clearing surveys immediately prior to vegetation removal, to assess for any potential fauna habitat, and subsequently fauna presence (threatened or otherwise), in order to minimise impacts. If habitat features are identified, these must be assessed for the potential to result in detrimental impacts to a threatened species if present. If a significant impact to threatened species is unlikely, habitat can be removed under the supervision of a qualified ecologist to rescue any potentially occurring fauna.

Further mitigation measures proposed for these works include timing of clearing to occur outside of key breeding times (Spring) where practicable, sediment and erosion control, stockpiling and earthworks in line with Bluebook requirements, and adherence to strict hygiene procedures.

Table 15 Key Threatening processes related to the Proposal

KTP	Status	Comment
Clearing of native vegetation	BC Act; EPBC Act	The Proposal would result in the clearing and modification of potentially **0.17 ha** of low-quality native woodland comprised of four (4) River Red Gum trees and exotic groundcover vegetation. The clearing of this vegetation would comprise an increase in the operation of this KTP. The CEMP would include measures to minimise impacts on native vegetation and potentially threatened flora and fauna.
Invasion of plant communities by perennial exotic grasses	BC Act	The Study Area is highly degraded by exotic weeds, and there is the potential for perennial exotic grasses to further invade native vegetation through disturbance during construction of the proposal. Mitigation measures outlined in Section 4.7.4 are likely to effectively limit the operation of this KTP.
Infection of native plants by *Phytophthora cinnamomi*	BC Act; EPBC Act	Construction activities have the potential to introduce the root-rot fungus Phytophthora cinnamomi into the broader Study Area, which could lead to dieback of vegetation. Mitigation measures are likely to effectively limit the operation of this KTP.
Introduction and establishment of Exotic Rust Fungi of the order *Pucciniales* pathogenic on plants of the family *Myrtaceae*	BC Act	Construction activities have the potential to introduce Myrtle Rust to the Study Area. Mitigation measures are likely to effectively limit the operation of this KTP.

4.7.3 Potential Biodiversity Impacts – Operation

No operational impacts to flora or fauna are anticipated as a result of the Proposal.

Table 16 Biodiversity impacts summary

Description	Y	N	Comments
Are the proposed works likely to involve the removal, pruning or damage to any vegetation including, grass cover, shrubs, trees or Endangered Ecological Communities?	X		The removal of three (3) RRG trees and the limb lopping of one (1) RRG tree is required to allow for the construction of the proposal. ToS have been prepared for the nine (9) threatened species with the potential to be impacted as a result of the proposed works.
Please list the number of trees and/or hollows to be removed as part of the proposed works.	X		The removal of three (3) RRG trees and the limb lopping of one (1) RRG tree is required. No hollows would be removed
Are the works taking place in a roadside area designated as high or medium conservation value vegetation?	X		Remnant roadside vegetation are mapped as Environmentally Sensitive Land on the Terrestrial Biodiversity Map in the Parkes LEP 2012
Are there any threatened, endangered, or native flora and/or fauna located within the vicinity of the proposed works?	X		Nine (9) threatened species were considered as having the potential to be impacted as a result of the proposal (refer Appendix B). ToS have been prepared for these species and have determined that no significant impacts would occur.

4.7.4 Environmental Safeguards - Biodiversity

The Environmental Safeguards for Biodiversity are considered part of the Proposal and must be implemented. Safeguards include:

Timing of vegetation clearing

- Where practicable, it is recommended to time the works outside of key breeding season (Spring) for the majority of native species likely to utilise the site for breeding to avoid nest abandonment, injury or death to native fauna (winter if possible). Some owls breed within late winter, however no large tree hollows suitable for nesting owls will be directly impacted by the works.
- A preclearing inspection should be completed immediately prior to vegetation clearing commencing to determine which species are utilising the site at the time of works.

Tree removal

- Preclearing surveys must be undertaken prior to the commencement of any clearing works.
- No hollow bearing trees have been assessed as requiring removal.
- Clearly delineate vegetation to be removed/retained with the assistance of an ecologist, or similarly qualified professional, and induct all site personnel as to the approved extent of clearing. Ensure that no clearing of vegetation occurs outside of the marked boundary and retain mature trees and overhanging limbs wherever possible.
- Ensure the presence or availability of an ecologist or fauna spotter catcher at all times during pre-clearing and clearing activities to remove and relocate wildlife as necessary, and to immediately attend to any wildlife that are injured as a result of works.
- Where practical, felled trees and removed logs should be placed strategically and in proximity to the work site to provide refuge and potential habitat in the understorey whilst ensuring no further damage

to surrounding vegetation. Placement of logs and felled trees will also aid in the regeneration of the area.

- Where additional vegetation removal is proposed this must first be assessed to consider the cumulative impacts against the approved clearance footprint, and if appropriate supervised by a qualified ecologist.

Habitat Protection

- The presence of a suitably qualified arborist is recommended during earthworks occurring near retained trees to avoid rootzones impacts.
- Ensure all work crew understand the importance of habitat features onsite. Avoid impact to all habitat within the subject site wherever possible.
- Any weeds or species of concern are to be removed from the subject site and disposed of in accordance with best practice guidelines, and Council is to be notified.

Rehabilitation

- Any required revegetation activities will be undertaken using native species sourced from local seed wherever possible. Areas to be re-seeded may be marked in the CEMP as a record of rehabilitation efforts made. Vegetation cover should be returned to the site within a reasonably practicable timeframe post clearing to reduce soil exposure and loss.

General

- Vehicles and machinery to work from the sealed road and are not to extend beyond the direct impact footprint.
- All soils to be stockpiled at designated stockpile locations away from waterways, drainage lines and native vegetation in a cleared area, within pre-approved zones. Ensure these are appropriately stabilized in accordance with the 'Blue Book' (Landcom 2004).
- Appropriate erosion and sediment migration reduction/control measures should be in place.
- Where possible, heavy vehicles are not to be parked under tree drip lines/ leaf canopy to avoid compaction of soil, which is damaging to mature native trees and can cause dieback or tree mortality. Existing verges and cleared areas are to be used for parking as a first priority.
- All machinery and vehicles are to be clean and inspected prior to arriving on-site to reduce the spread of weeds and disease (e.g. *Phytophthora cinnamomi*) to the site.
- Strict hygiene protocols, including vehicle inspections, washdown and toolbox talks addressing weed management, must be followed to ensure that no environmental weeds spread around during works or are introduced to site as a result of the proposed works. If weeds are accidentally transported to site, or identified during construction activities, all weed material should be immediately contained and removed from site.
- Declared weeds must be managed according to requirements under the Biosecurity Act 2015. It is recommended that all Weeds of National Significance should be managed to ensure they do not spread, and where possible eradicated.
- Heavy vehicles are not to be parked under tree drip lines/ leaf canopy to avoid compaction of soil, which is damaging to mature trees and can cause dieback or tree mortality.

Operation

- Ongoing monitoring of planted vegetation will be undertaken to ensure adequate survival rates and to identify whether infill plantings should be undertaken.

Given environmental safeguards will be implemented and maintained, it is not anticipated that the Proposal would result in significant impacts to Biodiversity.

Figure 10 Biodiversity survey effort

4.8 Traffic and Transport

4.8.1 Existing environment

The Subject Site includes both a section of The Escort Way and the area immediately to the south of The Escort Way. The Escort way is an arterial road linking Forbes to Orange via Eugowra that experiences local traffic by rural residents and regular thoroughfare of farm machinery, trucks and heavy vehicles. The current speed limit is 110 km/hr and this will remain following completion of the construction phase of the Proposal.

During the site inspections, trucks and smaller vehicles travelling between regional towns were observed travelling at high speeds along The Escort Way. During construction of the LRP access road, and throughout the operational phase of the LRP, traffic management and delineation will be required as a key element in improving road user perception and navigation through the project limit of works.

The Escort Way currently has an approximate 6.6m to 7m wide seal, which is considered appropriate for the safe passage of vehicles on high flow roads.

4.8.2 Potential traffic and transport impacts – Construction

This Proposal is intended to proceed along with others within the Program. Each proposal is independent and may or may not proceed on its own merits, however there may be construction activities that occur in parallel, which could result in cumulative traffic and transport impacts. Given that PSC are responsible for all associated proposals, the construction impacts of this Proposal will be scheduled to minimise any cumulative effects of the separate proposals in the Program proceeding at the same time.

Traffic control will be required during construction to facilitate the movement of traffic and allow for safe thoroughfare on the affected section of road. Consequently, delays affecting road users may be experienced during the construction phase of the project. This also has implications in relation to socio-economic factors, discussed in Section 4.9.2. There are no private property access points or driveways identified within the Study Area that would be directly impacted, however it is anticipated that during construction access along the affected section of The Escort Way would be slowed or inconvenienced. The existing access into the LRP is expected to be disrupted during construction works; alternative arrangements for access will need to be made for Council maintenance and operational staff.

4.8.3 Potential traffic and transport impacts – Operation

Once the access road construction is completed, the impact on the road for traffic and transport is anticipated to be positive with improved safety measures including suitable space for a semi-trailer to turn in or out of the Precinct from either direction without crossing to the other lane, and improved roadside furniture, including signposts, guideposts, and guardrails. The access road is designed to accommodate prime movers and semi-trailers up to 19 m in length, with site traffic during the operational phase expected to be minimal, including one (1) semi tanker per week, one (1) light vehicle per day and one (1) service truck every month.

Table 17 Impacts to Traffic and Transport summary

Description	Y	N	Comments
Are the proposed works likely to result in major detours or disruptions to traffic flow (vehicular,		X	It is anticipated that traffic flow will be disrupted during construction, however, the disruption will be

Description	Y	N	Comments
cycle and pedestrian) or access to properties or businesses?			short-term, and at least one lane of traffic will be open at all times.
Will there be any permanent major detours made as a consequence of the works?		X	The Proposal will not result in any permanent major detours.
Does the proposal involve excavation that is not minor or inconsequential of the surface of, or a footpath adjacent to, a road for which a Council is the roads authority under the Roads Act 1993 (if the public authority that is carrying out the development, or on whose behalf it is being carried out, is not responsible for the maintenance of the road or footpath)	X		The access road will require excavation affecting both The Escort Way, and the area immediately south of The Escort Way, using imported material. This will restrict access to the site for the duration of the construction works
Does the Proposal involve the installation of a temporary structure on, or the enclosing of, a public place that is under a Council's management or control that is likely to cause a disruption to pedestrian or vehicular traffic that is not minor or inconsequential		X	The Proposal is likely to cause a disruption to vehicular traffic using The Escort Way that is not considered inconsequential.
Is the proposal likely to generate traffic that will strain the capacity of the road system in an LGA?		X	Proposal is anticipated to result in additional movement of construction vehicles during the construction phase. However, this is expected to be minor and confined to the construction period.

4.8.4 Environmental safeguards - traffic and transport

The environmental safeguard measures for Traffic and Transport outlined below are considered part of the Proposal and must be implemented and maintained. Safeguards include:

Construction

- Prior notice shall be given to landowners along The Escort Way to notify residents of the works to be completed, their timing and duration. Notification can be provided by various means including letterbox distribution, local paper (the Forbes Advocate) and through the FSC website. All consultation and notification should occur with enough time before works to allow residents to modify their travel plans (1 – 2 weeks prior to commencement).
- Council's appointed contractor will consider the location of designated parking areas, stockpile locations, construction laydown sites, site offices, and access routes carefully with regard to creating inconveniences to residents, and to the other environmental constraints.
- Works are to minimise impacts to residents/landholders by maintaining vehicular access in one (1) direction at all times using traffic controls as appropriate.
- A Traffic Control Plan (TCP) is to be developed in accordance with Australian Standards (AS 1742.3 – Traffic Control Devices for Works on Roads) and Roads and Maritime Traffic Control at Worksites manual to identify appropriate signage (and location) to advise motorist of upcoming changes in the road network. Any variation to the layout of the TCP on site is to be recorded and certified by accredited Roads and Maritime personnel.

- All road signs and marking will be in accordance with the TfNSW Guide to Signs and Markings; Australian Standards AS1742 and AS1743; and the Australian Roads Guide to Traffic Management.
- Traffic and transport complaints are to be monitored and addressed promptly where practicable.

Given environmental safeguards will be implemented and maintained, it is not anticipated that the Proposal would result in significant impacts to Traffic and Transport.

4.9 Socio-economic considerations

4.9.1 Existing environment

The Forbes LGA is a rural community with a population of approximately 9319 people (ABS, 2021) and a population density of 0.99 persons per square kilometre. In the 2021 Census, of the 9319 people in the Forbes LGA, 50.6% were female and 49.4% were male. The median age of people in Forbes was cited as 42 years, and the average number of people per household was 2.4.

There were 4,312 people who reported being in the labour force in the week before the Census night in Forbes. Of these 61.0% were employed full time, 29.5% part time, and 3.8% were unemployed. The largest industry of employment is Secondary Education, employing 4.8% of the workforce, followed by Primary Education, employing 3.7%, and Grain-Sheep or Grain-Beef Cattle Farming, employing 3.4% of the labour population.

Parkes is a rural community with a population of over 14,361 (ABS, 2021) and a population density of 2.43 persons per square kilometre. Copper Ore Mining is the number one employment industry in the Parkes LGA, employing 5.0% of the population, followed by Aged Care Residential Services, employing 3.7% of the population, and State Government Administration, employing 3.3% of the labour population.

The Study Area is located on both PSC owned land, and within and adjacent to The Escort Way, a classified state road, surrounded by agricultural land adjacent the Lachlan River, approximately 12 km east of the Forbes township. The Proposal involves altering the existing LRP access road to facilitate construction traffic and future access to the water treatment lagoons.

There are a no private property driveways located within the road section to be impacted (Figure 8).

4.9.2 Potential socio-economic impacts- Construction

This Proposal is intended to proceed along with others within the Program. Each proposal is independent and may or may not proceed on its own merits, however there may be construction activities that occur in parallel, which could result in cumulative socio-economic impacts. Given that PSC are responsible for all associated proposals, the construction impacts of this Proposal will be scheduled to minimise any cumulative effects of the separate proposals in the Program proceeding at the same time.

During the construction phase of the Proposal, it is expected that local contractors from Forbes and/or Parkes regions will be employed. Contractors will be employed over a period of 8-10 weeks to complete all facets of the Proposal. The Proposal is being partly funded by Critical Drought Relief funding, and it is anticipated that contractors will provide income to local cafes, businesses, and accommodation providers throughout the duration of the construction.

Due to the relative isolation of the site, it is not anticipated that any local residents will be directly impacted during the construction phase, with the closest private residences located approximately 350 m to the south east of the Study Area, accessed via a gravel road from The Escort Way. The ‘Ulmarra’ homestead is identified approximately 900 m to the west of the Study Area, and the ‘Springfield’ homestead is identified approximately 1.4 km to the south of the Study Area, both accessed via a gravel road from The Escort Way.

Employment of local sub-contractors to undertake works, and adequate consultation and discussion with local communities could have positive socio-economic impacts during the construction phase.

Further detail of predicted socio-economic impacts arising from Traffic and Transport (Section 4.8), Noise and Vibration (Section 4.3), Waste and Resource Use (Section 4.10) and impacts to Visual Amenity (Section 4.11) are discussed in other chapters of this report.

4.9.3 Potential socio-economic impacts – Operation

The operation of the access road, as part of the overarching Parkes Town Water Security Program is anticipated to provide positive socio-economic impacts during its operation as it provides the residents of Parkes with critical drought security water.

The completed LRP access road is anticipated to have a positive long-term socio-economic benefit for the local community, through the provision of increased safety for motorists, tourists, local commuters and agricultural workers moving along this section of The Escort Way, in conjunction with the operation of the LRP and subsequent heavy vehicles turning in and out of the facility.

Table 18 Socio-economic Considerations impacts summary 9adapted from Div 1) 2.13)TISEPP 'Consultation Requirements')

Description	Y	N	Comments
Are the proposed works likely to impact on local business, require any property acquisition, or alter any access or parking arrangements for properties (either temporarily or permanently)?		X	Temporary disruption to local traffic, residents and tourists. No property access or changes to traffic conditions or access/parking arrangements anticipated.
Is the development adjacent to land reserved under the National Parks and Wildlife Act 1974 or to land acquired under Part 11 of that Act (if so, consultation is required with the Office of Environment and Heritage)		X	Proposal is not adjacent to any land managed by National Parks.
Is the development on land in Zone C1 National Parks and Nature Reserves or in a land use zone that is equivalent to that zone, other than land reserved under the (if so, consultation is required with National Parks and Wildlife Act 1974 the Office of Environment and Heritage)		X	Proposal is not being completed on any land zoned C1.
Does the development comprise a fixed or floating structure in or over navigable waters(if so, consultation will be required with Transport for NSW)		X	Proposal does not involve any fixed or floating structures in or over navigable waters.
Is the development located on defence communications facility buffer land within the meaning of clause 5.15 of the Standard Instrument (if so, consultation is required with the Secretary of the Commonwealth Department of Defence, Note— Defence communications facility buffer land is located around the defence communications facility near Morundah. See the Defence Communications Facility Buffer Map referred to in		X	Proposal is not being carried out on defence communications facility buffer land.

Description	Y	N	Comments
clause 5.15 of Lockhart Local Environmental Plan 2012, Narrandera Local Environmental Plan 2013 and Urana Local Environmental Plan 2011			
Is the development on land in a mine subsidence district within the meaning of the Mine Subsidence Compensation Act 1961—(if so, consultation is required with the Mine Subsidence Board)		X	Proposal is not being carried out within a mapped mine subsidence district within the meaning of the *Mine Subsidence Compensation Act 1961*
Is the development within a Western City operational area specified in the Western Parkland City Authority Act 2018, Schedule 2 with a capital investment value of $30 million or more — (if so, consultation is required with the Western Parkland City Authority constituted under that Act)		X	Proposal is not being carried out within the Western City operational area.

4.9.4 Environmental safeguards – socio-economic considerations

The Environmental Safeguards for Socio-economic impacts are considered part of the Proposal and must be implemented. Safeguards include:

- Considerate construction practices are to be implemented at all times during works, including the construction site is to be left in a clean and tidy manner at the end of each workday, and noise, air quality and visual amenity impacts are to be kept to a minimum.
- All materials purchased for the Proposal are to be of highest quality and most sustainable as possible, to reduce impacts to community and ratepayers through replacement of low-quality or faulty equipment in the future.
- Quality assurance is to be applied to all aspects of the Proposal, including design and construction to ensure best value for the local community.
- Disruption of traffic/private property access is to be minimised wherever possible and clear communication and planning between construction crew and landowners is to be undertaken.
- Community engagement is to be undertaken to obtain feedback on concerns, and address issues as they arise.
- Construction machinery and work vehicles to be discretely parked when not in use to reduce visual impact and ensure safe pullover is available where possible.

Given environmental safeguards will be implemented and maintained, it is not anticipated that the Proposal would result in significant impacts as a result of Socio-economic impacts.

4.10 Waste and resource use

4.10.1 Existing environment

The Subject Site includes both remnant native bushland within the road reserve and cleared areas for the existing LRPS access road and The Escort Way road reserve. The broader area includes mixed use agricultural pasture cropping, with patches of remnant woodland. During the March 2023 site visit it was noted the Study Area was generally tidy, with minor anthropogenic disturbance, excluding fencing, road construction and associated resource including signage; minimal disturbance in the form of discarded waste was observed on site and the area was considered generally tidy.

The current operation of the area as the Lachlan River Pumping Station site, cropping paddock and general agricultural enterprise would result in minor wastes and use of finite resources such as fuels and electricity.

4.10.2 Potential waste and resource use – Construction

The Proposal is not anticipated to generate a significant amount of waste, with a net import of construction materials.

Waste products generated by the construction phase of the Proposal include but are not limited to:

- Soils and spoil, and excess civil construction materials,
- Cleared vegetation,
- Packaging,
- Domestic and general waste, and
- Bitumen road seal where it is cut along road shoulders.

During construction a small number of light vehicles and plant will be required to convey personnel to site and undertake the works (e.g. excavation, lifting/movement of equipment and materials). Where possible, local contractors will be engaged, and construction materials sourced from nearby fill and/or locally. Pollution and greenhouse gas (GHG) emissions from construction machinery/vehicles operating on site must also be reduced wherever possible to minimise cumulative impacts on climate and air quality.

Other than rock/fill materials and vegetative waste, the majority of the materials utilised in the works will be non-renewable, finite resources. Their use would diminish the availability of some resources for future use and contribute to pollution and greenhouse gas emissions through both direct use of fuels and the embodied energy used in their production, and in association with the disposal of related waste products. The use of fossil fuels would also contribute to impacts on climate and air quality.

Construction works would require:

- Concrete (for new culverts if required and other structures),
- Bitumen aggregates,
- Select fill (where soil is not suitable for reuse),
- Water (potable, raw and reclaimed effluent where appropriate / if available).

Any additional material that may be required would be sourced from legally operating commercial suppliers and manufacturers within the area. Where feasible, material with recycled content will be sourced.

Energy consumption associated with the proposed works would include electricity and fuel. Electricity would be required to power site compounds and / or portable traffic lights and would be supplied from a portable generator. Fuel would also be required to power construction plant and other vehicles.

Any construction wastes / contaminated materials will need to be handled carefully so as not to impact upon any sensitive environmental areas within the Study Area, and to ensure Council undertakes its responsibilities as environmental custodians, and to care for the health and safety of their employees, contractors and constituents. All wastes will be managed in accordance with the POEO Act and in accordance with EPA and Council guidelines.

The closest waste facility is identified as the Forbes Recycling and Waste Depot on Daroobalgie Road, where recyclable materials can be sent for sorting and processing. To achieve higher levels of landfill diversion, it is critical to identify what materials can be recycled and where, so that appropriate arrangements can be made with service providers – other construction wastes may need to be transported farther afield to be recycled and avoid landfill. Regional collaboration amongst Council waste authorities and other industry partners may be required in order to maximise recycling and resource recovery efforts for the project.

4.10.3 Potential waste and resource use – Operation

No waste products will be generated as part of operation of the Proposal, however, there is a small risk of domestic litter from road users, and illegally dumped rubbish may continue to occur during the operation of the upgraded intersection.

Table 19 Waste Impacts summary

Description	Y	N	Comments
Are the proposed works likely to generate >200 tonnes of waste material (contaminated and /or non-contaminated material)?		X	No; most excavated material will be reused in road construction and / or remediation
Are the proposed works likely to require a Licence from NSW EPA for waste?		X	No; the works do not and will not require discharges to the environment
Will the ongoing operation of the site post completion of works generate significant amount of waste?		X	No additional ongoing waste is expected to be generated post construction

4.10.4 Environmental safeguards – Waste and Resource Use

The Environmental Safeguards for Waste and Resource use are considered part of the Proposal and must be implemented. Safeguards include:

- Resource management hierarchy principles are to be followed; namely, the avoidance, reduction, reuse and recycling of resources.
- If stockpile or laydown sites are required in locations that have not been considered as occurring within the impact footprint as part of this REF, additional approval/assessment may need to be sought prior to any clearing taking place.
- Requirements under the Landcom (2004) stockpile management procedure must be observed, including correct placement of earth banks (with sedimentation ponds) to divert water around

stockpiles if placed on a slope, and/or filter fences erected below stockpiles to capture any sediment moving offsite.

- Bulk project waste (e.g. clean virgin excavated natural material or clean fill) sent to a site not owned by Council (excluding DPE licensed landfills) for land disposal is to have prior formal written approval from the landowner.
- Waste is not to be burnt on site and all general waste will be contained and disposed of at suitable waste facilities.
- Where possible, materials with recycled content will be sourced, and minimum quantities ordered to reduce wastage.
- If contamination is encountered during construction, a site assessment must be undertaken in accordance with the *Protection of the Environment Operations Act 1997* (POEO Act).
- Toilets will be provided for construction workers for the duration of the works to prevent human wastes entering the waterway.
- Waste management for construction projects should be undertaken in accordance with the NSW Waste Avoidance and Resource Recovery Act 2001. The objectives of the Act are:
    - To encourage the most efficient use of resources and to reduce environmental harm in accordance with the principles of Ecologically Sustainable Development (ESD),
    - To ensure that resource management options are considered against a hierarchy of the following order: Avoidance of unnecessary resource consumption, Resource recovery (including reuse, reprocessing, recycling and energy recovery), Disposal.
    - To provide for the continual reduction in waste generation,
    - To minimise the consumption of natural resources and the final disposal of waste by encouraging the avoidance of waste and the reuse and recycling of waste,
    - To ensure that industry shares with the community the responsibility for reducing and dealing with waste,
    - To ensure the efficient funding of waste and resource management planning, programs and service delivery,
    - To achieve integrated waste and resource management planning, programs and service delivery on a State-wide basis,
    - To assist in the achievement of the objectives of the Protection of the Environment Operations Act 1997.
- Don’t over-order – ensure quantities are carefully calculated and ordered so as to minimise waste. Where construction materials are leftover, these are to be beneficially used on other projects, or stored by Council until such a need arises.

Given environmental safeguards will be implemented and maintained, it is not anticipated that the Proposal would result in significant impacts to Waste and Resource Use.

4.11 Visual amenity

4.11.1 Existing environment

The Study Area is located in a rural area with both native bushland in the adjacent road reserves and cleared paddocks. The general amenity along The Escort Way is pleasant with remnant native vegetation, minimal litter and tidy property entryways present.

Plate 9 LRPS existing entrance

Plate 10 Adjacent agricultural grazing land

4.11.2 Potential impacts to visual amenity- Construction

This Proposal is intended to proceed along with others within the Program. Each proposal is independent and may or may not proceed on its own merits, however there may be construction activities that occur in parallel, which could result in cumulative impacts to visual amenity. Given that PSC are responsible for all associated proposals, the construction impacts of this Proposal will be scheduled to minimise any cumulative effects of the separate proposals in the Program proceeding at the same time.

The visual amenity of the Study Area will be temporarily affected as works are completed. Short-term impacts to visual amenity during construction may include earthworks and removal of vegetation as well as the presence of construction machinery and equipment and stockpile and compound sites. Increased large vehicle traffic, temporary infrastructure works, road widening, line marking, and installation of any safety rails will also detract from the existing visual environment. Due to the relatively minor scale of works and the low density of dwellings occurring along the section of The Escort Way to be impacted, visual amenity impacts during construction are anticipated to be generally low.

4.11.3 Potential impacts to visual amenity – Operation

Operation of the Proposal would not involve any additional visible infrastructure at the site that would impact on the visual environment of the immediate area. The proposed access road will formalise the existing gravel LRP access road, therefore visual amenity will be maintained or improved, through provision of a road with improved safety. Temporary, visually unappealing barriers and signs would be removed post construction, with all exposed soils re-stabilised with ERSED controls and revegetation where appropriate. Overall, the proposed road upgrade is not expected to have a significant lasting impact on the visual amenity of the site.

Table 20 Visual Amenity impacts summary table (adapted from Div 1 (2.13) TISEPP 'Consultation Requirements')

Description	Y	N	Comments
Are the proposed works likely to have an impact on the visual amenity of the surrounding area? (i.e., removal of vegetation, stockpile sites, road widening etc.)	X		Temporary construction presence that may be visible from The Escort Way. Minor removal of vegetation within the road reserve.
Will the development increase the amount of artificial light in the night sky and that is on land within the dark sky region as identified on the dark sky region map? (note – the Dark Sky Region is land within 200 km of the Siding Spring Observatory.		X	Proposal will not increase the amount of artificial light in the sky. No floodlights or installation of lighting included in the Proposal.

4.11.4 Environmental safeguards – Visual Amenity

The environmental safeguard measures for Visual Amenity below are considered part of the Proposal and must be implemented and maintained. Safeguards include:

- Works are to be completed in a single phase, to ensure visual impacts are kept to a short period.
- Considerate construction practices are to be implemented at all times, to ensure the works areas are neat and visually not offensive, including to be kept free from rubbish, and stockpile sites actively managed.
- No additional, unauthorized clearing or destruction of vegetation is to occur.
- Vehicles are to be parked in designated areas only.
- Cleared, bare patches of ground that form part of the works are to be revegetated and restored following cessation of works.
- Obvious and intrusive signs/machinery/equipment are to be removed from the site at the first opportunity.
- Appropriate consultation will continue to be undertaken to inform businesses and residents of planned works, timing, and potential visual impacts.
- Any complaints received regarding visual amenity at the site are to be dealt with and rectified as soon as possible.

Operation

- Obvious and intrusive signs/machinery/equipment are to be removed from the site at the first opportunity.
- Any complaints received regarding visual amenity at the site are to be dealt with and rectified as soon as possible.

Given environmental safeguards will be implemented and maintained, it is not anticipated that the Proposal would result in significant impacts to Visual Amenity.

4.12 Climate Change

4.12.1 Existing environment

Long-term meteorological data for the surrounding area is available from the nearby Bureau of Meteorology (BoM) Forbes Airport Automated Weather Station (AWS). The weather station is located approximately 22 km west of the Subject Site and records observations of several meteorological data including temperature, humidity and rainfall, wind speed and wind direction.

Long-term climate statistics for the area are presented in Table 23. The area has a mild climate with an average annual maximum temperature of 24.5 degrees Celsius. January is the hottest month, with a mean maximum temperature of 34.5 degrees Celsius and July is the coldest month, experiencing a mean maximum temperature of 14.7 degrees Celsius.

Rainfall is typically uniform across the seasons, with some variability experienced from year to year. March is recorded as the wettest month with an average rainfall of 55.5 mm falling, with April the driest month at 28.7 mm. The yearly average stands at 493 mm of rain.

Table 21 Mean maximum temperature and average rainfall (Forbes Airport AWS)

Observation	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
Mean observations													
Maximum Temperature (°C)	34.5	32.7	29.3	24.7	19.4	15.5	14.7	16.5	20.7	25.2	29.1	31.9	24.5
Rainfall (mm)	33.3	51.5	55.5	28.7	32.4	49.8	38.6	33.5	40.6	41.6	45	51.3	493.0

Climate Change Predictions

The NSW Government Office of Environment and Heritage (OEH) AdaptNSW division 'Climate Change snapshot' for Central West and Orana, states that the region is projected to continue to warm during the near future (2020 – 2039) and far future (2060 – 2079), compared to recent years (1990 – 2009). There is very high confidence that the average temperatures will increase across seasons. Warming is projected to be on average about 0.7°C in the near future, increasing to about 2.1°C in the far future. The number of hot days is projected to increase and the number of cold nights is projected to decrease.

Climate change projections are presented for emission scenarios that will impact the degree to which the climate is altered in the future; each of these is referred to as a 'representative concentration pathway' (RCP) and is representative of the concentration of global GHG emissions in the atmosphere under different emissions scenarios. For example, if GHG emissions are mitigated and reduced, the scenario is for 'low emissions' and is referred to as RCP 2.6; conversely, if little effort is made to reduce emissions and the current scenario is continued globally, a 'high emissions' concentration is referred to as RCP 8.5, indicating a high concentration of GHG emissions in the atmosphere moving forward, with potentially devastating impacts by the year 2100.

Under a high emissions scenario (RCP8.5), NSW and the ACT can expect an average annual temperature increase of around 1.4 - 2.3 °C, whereas large and sustained reductions in global GHG emissions (RCP2.6) reduce projected warming to around 0.7 - 1.4 °C. Specifically for Parkes, under emissions scenario RCP 8.5 for

the projected time period of 2090, an increase in temperature of 4.2 °C is expected, combined with a drop of -12 % for rainfall (Climate Change in Australia, Analogues Explorer, 2021).

Parkes and Forbes currently experience an average of 20–30 hot days each year; an additional 20 to 30 hot days are projected for these areas.

Parkes, Forbes and Cowra are predicted to experience an increase in rainfall across Summer, Autumn and Winter, and a decrease in Spring; rainfall changes are associated with changes in extremes, such as floods and droughts. The changes to water quality, potential for erosion and sediment migration, damage to infrastructure and localized flooding complications are associated with these sudden or extreme changes.

The Subject Site does not occur within a designated bushfire prone area (NSW Rural Fire Service, 2021) however with a harsher fire-weather climate predicted in the future (high confidence), improved water security in the area will help to ensure the safety of the community.

4.12.2 Potential impacts to climate change- Construction

Throughout the construction phase of the project there will be use of in-demand materials. Use of these materials diminishes the availability of some resources for future use and contributes to pollution and GHG emissions through both direct use of fuels and the embodied energy used in the production of construction materials, and in association with the disposal of related waste products. The use of fossil fuels would also contribute to impacts on climate and air quality. While these impacts would be negligible on global or national scales, efficient resource use should be adopted as a general operating principle, including use of locally sourced materials and locally based construction crews to reduce 'carbon miles' and increase efficiencies.

4.12.3 Potential impacts to climate change - Operation

No climate change impacts are expected during use/operation of the upgraded LRP access road.

4.12.4 Environmental safeguards – Climate Change

The environmental safeguard measures for Climate Change outlined below are considered part of the Proposal and must be implemented. Safeguards include:

Construction

- Resource management hierarchy principles are to be followed:
  - Avoid unnecessary resource consumption as a priority.
  - Avoidance is followed by resource recovery (including reuse of materials, reprocessing, recycling and energy recovery); and
  - Disposal is undertaken as a last resort (in accordance with the Waste Avoidance & Resource Recovery Act 2001).
- Council may elect to make a contribution to an accredited carbon offset program to offset greenhouse gas emissions.
- Quality assurance and life cycle of materials are to be considered when purchasing, to ensure the newly built infrastructure is resilient and structurally sound.
- Local resources are to be used wherever possible, to reduce waste and increase efficiencies and to encourage local economies with fewer 'carbon miles'.

Operation

- All upgrades are to be monitored and maintained per Council's routine road management strategy, to ensure lifecycle of upgraded road features extended and to reduce wastage from neglect / inadequate maintenance.

Given environmental safeguards will be implemented and maintained, it is not anticipated that the Proposal would result in significant impacts to Climate Change.

5 Consideration of State and Commonwealth environmental factors

This section considers the Proposal against key legislation and government policy. This section does not describe the legislation and policy in detail and guidance provided here does not constitute legal advice.

5.1 Matters of National Environmental Significance

Under the environmental assessment provisions of the Environment Protection and Biodiversity Conservation Act 1999 (EPBC Act), the following Matters of National Environmental Significance (MNES) are required to be considered to assist in determining whether the Proposal should be referred to the Australian Government Department of Climate Change, Energy, The Environment and Water (DCCEEW).

Table 22 Compliance with the EPBC Act

Factor	Impact
Any impact on a World Heritage property? State whether the Proposal would impact on a World Heritage property.	Nil
Any impact on a National Heritage place? State whether or not the Proposal would impact on a National Heritage place.	Nil
Any impact on a wetland of international importance?	Nil
Any impact on a listed threatened species or communities?	No significant impacts, refer Section 0 & Appendix D
Any impacts on listed migratory species?	Unlikely, refer section 0
Any impact on a Commonwealth marine area?	Nil
Any impact on the Great Barrier Reef Marine Park?	Nil
Does the Proposal involve a nuclear action (including uranium mining)?	Nil
Additionally, any impact (direct or indirect) on Commonwealth land?	Nil

5.2 Compliance with the EP&A Regulation 2021 Checklist

The factors which need to be taken into account when considering the environmental impact of an activity are listed in Clause 171(2) of the Environmental Planning and Assessment Regulation 2021. Those factors have been taken into account when assessing the likely impacts of the Proposal on the natural and built environment in this REF and are summarised in Table 23 below.

Table 23 Summary of compliance with the EP&A Regulation 2021 checklist

Environmental Factor	Will there be an impact?	Comments
(a) Any environmental impact on a community?	Yes	Construction: Minor traffic delays for the community are possible during construction.

Environmental Factor	Will there be an impact?	Comments
		Operation: Positive outcomes for the community are anticipated, through increased safety of the precinct access point.
(b) Any transformation of a locality?	Yes, minor	Construction: excavation and construction works within and adjacent to a public road will cause localised, temporary impacts. Removal of smaller trees adjacent to The Escort Way will alter the landscape. Operation: minor changes to the environment with the presence of an upgraded access road.
(c) Any environmental impact on the ecosystems of a locality?	Yes, minor	Construction: Minor impact to groundcover and some canopy vegetation of ecosystem present, though not significant. Minor short-term indirect impacts to adjacent vegetation possible, not deemed significant (Section 0). Operation: after access road construction completed, the overall use and quality of the road anticipated to be returned to previous condition
(d) Any reduction of the aesthetic, recreational, scientific or other environmental quality or value of a locality?	No	Construction: clearance of native vegetation and earthworks likely to temporarily reduce aesthetic value of the site. Operation: after road upgrade completed, the overall use and quality of the road is anticipated to be returned to previous condition. .
(e) Any effect on a locality, place or building having aesthetic, anthropological, archaeological, architectural, cultural, historical, scientific or social significance or other special value for present generations?	No	The Aboriginal Due Diligence assessment (Appendix E) concluded the proposed works will have an impact on the ground surface, however, provided all safeguards included in this REF are adhered to, no Aboriginal objects or intact archaeological deposits are likely to be harmed by the Proposal.
(f) Any impact on habitat of any protected fauna (within the meaning of the National Parks and Wildlife Act 1974)?	Yes	Construction: Minor impacts to native species are expected (Refer Section 0), however this is not anticipated to be significant provided the Environmental Safeguards are adhered to. Operation: no removal of protected habitat is expected as part of operation of the new access road.
(g) Any endangering of any species of animal, plant or other form of life, whether living on land, in water or in the air?	No	Construction: no significant impacts on flora and fauna are considered likely as a result of the Proposal Operation: no significant impacts on flora and fauna are considered likely as part of operation of the Proposal.

Environmental Factor	Will there be an impact?	Comments
(h) Any long-term effects on the environment?	Yes, minor	Construction: no long-term effects on the environment expected provided environmental safeguards are implemented and site is fully stabilised and rehabilitated following completion of construction activities. Operation: no long-term effects on the environment expected provided environmental safeguards are implemented and site is fully stabilised and rehabilitated.
(i) Any degradation of the quality of the environment?	No	Construction: no degradation of the quality of the environment expected provided environmental safeguards are implemented and site is rehabilitated following construction works. Operation: degradation of environmental quality not expected from Proposal operation provided site is monitored and maintained for soil stability.
(j) Any risk to the safety of the environment?	No	Construction: risk to safety of the environment moderate provided environmental safeguards are implemented. Operation: the Proposal is designed and engineered to reduce risk to environmental safety through upgrades that will increase the safety of the road at the LRP intersection
(k) Any reduction in the range of beneficial uses of the environment?	No	Construction: site access will be limited during construction, which will impact on the range of beneficial uses of the area. Operation: future use of the site will be improved through easier/safer access.
(l) Any pollution of the environment?	No	Construction: minor. Temporary generation of pollutants such as sediment, noise dust and vehicular emissions expected. Operation: pollution of the environmental not expected from Proposal operation assuming the site is fully stabilised following completion of construction and maintained during operation.
(m) Any environmental problems associated with the disposal of waste?	No	Construction: the Proposal is not expected to generate substantial amounts of waste from construction activities. Operation: assuming upgraded access point is engineered to a high standard and doesn't degrade or deteriorate, generation of problematic waste products into the environmental not expected from Proposal operation.

Environmental Factor	Will there be an impact?	Comments
(n) Any increased demands on resources, natural or otherwise which are, or are likely to become, in short supply?	Yes, minor	Construction: minor increase associated with the use of non-renewable construction resources. The Proposal includes use of in-demand resources, including fossil fuels. Operation: Any maintenance and future upgrades/modifications will require in-demand resources.
(o) Any cumulative environmental effect with other existing or likely future activities?	No	The Proposal is anticipated to have localized, minor and short-term impacts on the environment assuming all Environmental Safeguards are implemented. Council, as the Proponent, can schedule other construction works within the works program such that the risk from potential cumulative impacts is reduced.
(p) Any impact on coastal processes and coastal hazards, including those under proposed climate change conditions	No	Construction: not on the coast Operation: not on the coast
(q) Any applicable local strategic planning statement, regional strategic plan or district management plan made under Division 3.1 of the Act	Yes	PSC Community Strategic Plan: Parkes Shire 2035+. The CSP contains objective 2.31 – Ensure local and regional roads are safe, well-constructed and maintained and objective 3.41 – provide essential water and sewer infrastructure to meet the needs of our growing community.
(r) Any other relevant environmental factors	No	Construction: other factors considered include community, business and stakeholder consultation. Operation: no other factors have been considered other than those listed above.

6 Certification

This REF provides a true and fair review of the Proposal in relation to its likely effects on the environment. It addresses to the fullest extent possible all matters affecting or likely to affect the environment as a result of the Proposal.

This report has been developed in accordance with the NSW Environmental Planning and Assessment Regulation 2021 (EP&A Regulation) and the Department of Planning and Environment's Guidelines for Division 5.1 assessments (DPE Guidelines) and demonstrates how the environmental factors specified in subsection (2) clause 171 of the EP&A Regulation were taken into account when considering the likely impact of the proposed activity.

The assessment has concluded that the proposed works as described in this REF, providing all proposed management measures and Safeguards are implemented, will not result in a significant impact on the environment. An Environmental Impact Statement (EIS) is not required.

The proposed works will not result in a significant impact on any declared critical habitat, threatened species, populations or ecological communities or their habitats. Therefore, a Species Impact Statement (SIS) is not required.

The proposed works are not being carried out on Commonwealth land, are unlikely to affect any Commonwealth land, or have any significant impact on any Matters of National Environmental Significance.

All proposed work contemplated as part of the Proposal will be completed under the guidance of a Construction Environmental Management Plan (CEMP) to manage and minimise potential environmental impacts, particularly ecological impacts, associated with the proposed work. Once operational, the Proposal is not expected to cause any significant environmental or community impacts.

I certify that I have reviewed and endorsed the contents of this REF document, and, to the best of my knowledge, it is in accordance with the EP&A Act, the EP&A Regulation and the Guidelines approved under clause 170 of the EP&A Regulation, and the information it contains is neither false nor misleading.

Prepared by:	Reviewed and Endorsed for Certification by:
Name: Graham Stirling	Name: Emily Cotterill
Title: Project Manager	Title: Director & Principal Consultant
Date: 24/10/23	Date: 15-Nov-2023 | 15:07 AEDT

Determiner declaration and approval

I have reviewed this REF and determine that the Proposal will not have a significant impact on the environment and can proceed subject to the controls outlined in this REF.

Name: Andrew Francis

Title: Director Infrastructure

Date: 16-Nov-2023 | 12:09 AEDT

DocuSigned by:
Andrew Francis
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7 References

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Climate Change in Australia, 2023; Climate Analogues https://www.climatechangeinaustralia.gov.au/en/Proposalions-tools/climate-analogues/analogues-explorer/

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DPIE 2023 NSW Government Vegetation Regulatory Map https://www.lmbc.nsw.gov.au/Maps/index.html?viewer=NVRMapDPIE 2023 Bionet Wildlife Atlas Threatened species records, which holds data from a number of custodians.

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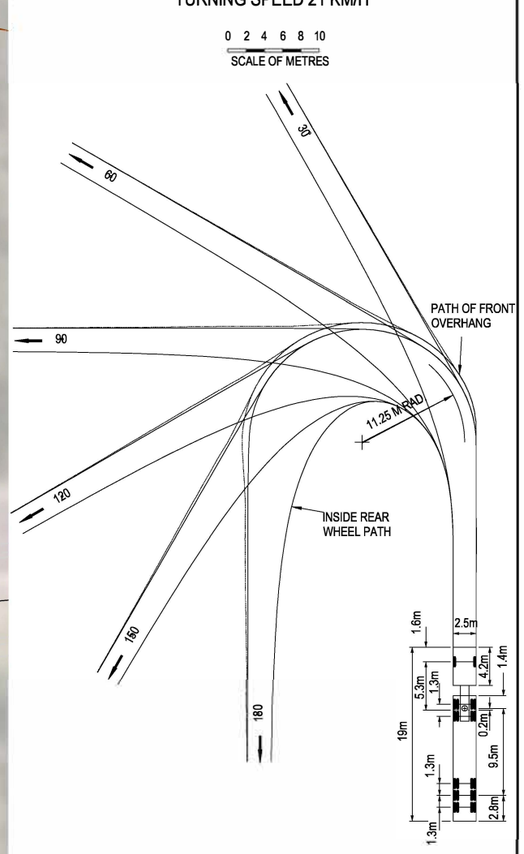
8 Appendices

Appendix	Description
Appendix A	Design Drawings
Appendix B	Threatened Species Likelihood of Occurrence
Appendix C	Tests of Significance (BC Act)
Appendix D	Significant Impact Criteria Assessments
Appendix E	Aboriginal Due Diligence Assessment Report
Appendix F	Summary of Environmental Safeguards

Appendix A Design Drawings



NOTES:

1. LOCATE FACE OF KERBS AT LEAST 0.6 M CLEAR OF WHEEL PATHS.
2. ALLOW 0.6 M CLEARANCE OUTSIDE PATH OF OVERHANG AND ENSURE THAT THIS AREA IS KEPT FREE OF ROAD FURNITURE.
3. THE OUTSIDE EDGE OF THE SWEPT PATH REMAINS WITHIN THE PAVED AREA

NOT FOR CONSTRUCTION

THIS DRAWING MAY BE PREPARED IN COLOUR AND MAY BE INCOMPLETE IF COPIED

50mm ON A3 SIZE ORIGINAL

DRAWING FILE LOCATION / NAME: C:\Data\Worksets\Escort Way Intersection Upgrade\dgn\07-Drawing Production\D-PLAN-RES2211 .35.96 - GE.dgn	DESIGN LOT CODE	DESIGN MODEL FILE(S) USED FOR DOCUMENTATION OF THIS DRAWING	PLOT DATE / TIME: 21.08.2023
PLOT BY: ZachWalgers	CLIENT: PARKES SHIRE COUNCIL	FORBES SHIRE COUNCIL THE ESCORT WAY THE ESCORT WAY ACCESS UPGRADE LACHLAN RIVER WATER TREATMENT PRECINCT GENERAL ARRANGEMENT SWEPT PATHS	A3

EXTERNAL REFERENCE FILES	REV	DATE	AMENDMENT / REVISION DESCRIPTION	WVR No.	APPROVAL

SCALES ON A3 SIZE DRAWING	DRAWINGS / DESIGN PREPARED BY
0 5 10 15 20 SCALE 1:500m	RIGORE ENGINEERING SERVICES
CO-ORDINATE SYSTEM: MGA ZONE 55	HEIGHTDATUM: AHD
PREPARED BY: Rigore Pty Ltd	

	TITLE	NAME	DATE
	DRAWN	Z. WALGERS	21.08.2023
	DRG CHECK	J. GORRIE	21.08.2023
	DESIGN	Z. WALGERS	21.08.2023
	DESIGN CHECK	J. GORRIE	21.08.2023
	PROJECT MNGR	A. ELLIOTT	21.08.2023
	CLIENT REP	A. ELLIOTT	21.08.2023

PREPARED FOR: PARKES SHIRE COUNCIL

RIGORE REGISTRATION No.: RES2211.39.96			VOL: 1
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Appendix B Threatened Species Likelihood of Occurrence

The below assessment includes national and state significant species from the following sources:

- Bionet Atlas of NSW Wildlife
- DAWE database (PMST search)
- Current survey
- Search area is 10 km radius.
- Not considered further pelagic seabirds, shorebirds, sandpipers, turtles, whales, sharks - no preferred marine or coastal habitat in Study Area.

All habitat information is taken from NSW DPIE and Commonwealth DAWE Threatened Species profiles (DPIE 2022 DAWE 2022) unless otherwise stated. The codes used in this table are:

- CE – Critically Endangered
- E – Endangered
- V – Vulnerable
- EP – Endangered Population
- C – CAMBA
- J – JAMBA
- R – ROKAMBA
- CEEC – Critically Endangered Ecological Community
- EEC – Endangered Ecological Community
- Mi – Migratory species

Table 24 Likelihood of occurrence definitions

Likelihood of occurrence	Definition
Known	Species recorded in the Subject Site.
Likely	Species previously recorded within a 10 kilometre radius of the Subject Site and suitable habitat occurs within the Subject Site.
Possible	Species previously recorded within a 10 kilometre radius of the Subject Site but only marginal suitable habitat recorded. OR Species not previously recorded within a 10 kilometre radius of the Subject Site, but the Proposal footprint is within the species known distribution and suitable habitat occurs within the Subject Site.
Unlikely	Species previously recorded within a 10 kilometre radius of the Subject Site but no suitable habitat recorded.
Nil	Species not previously recorded within a 10 kilometre radius of the Subject Site and no suitable habitat occurs in the area.

Table 25 Likelihood of impact definitions

Likelihood of impact	Definition
Nil	Species / community will not be impacted by the Proposal.
Low	Species / community is unlikely to be impacted by the Proposal.
Moderate	Species / community is known or likely to occur within the Study Area however the Proposal does not impact on important habitat resources.
High	Species / community is known or likely to occur within the Study Area and the Proposal will impact on important habitat resources.

Scientific name	Common name	BC Status	EPBC Status	Source	Habitat requirements (OEH 2020b)	Justification
Anseranas semipalmata	Magpie Goose	V	-	2	The Magpie Goose is still relatively common in the Australian northern tropics, but had disappeared from south-east Australia by 1920 due to drainage and overgrazing of reed swamps used for breeding. Since the 1980s there have been an increasing number of records in central and northern NSW. Vagrants can follow food sources to south-eastern NSW. Mainly found in shallow wetlands (less than 1 m deep) with dense growth of rushes or sedges. Equally at home in aquatic or terrestrial habitats; often seen walking and grazing on land; feeds on grasses, bulbs and rhizomes. Activities are centred on wetlands, mainly those on floodplains of rivers and large shallow wetlands formed by run-off; breeding can occur in both summer and winter dominated rainfall areas and is strongly influenced by water level; most breeding now occurs in monsoonal areas; nests are formed in trees over deep water; breeding is unlikely in south-eastern NSW.	**Possible** The species has been recorded in the locality **NIL** No habitat likely to support the species would be impacted
Anthochaera phrygia	Regent Honeyeater	CE	CE	2	The Regent Honeyeater mainly inhabits temperate woodlands and open forests of the inland slopes of south-east Australia. Birds are also found in drier coastal woodlands and forests in some years. Once recorded between Adelaide and the central coast of Queensland, its range has contracted dramatically in the last 30 years to between north-eastern Victoria and south-eastern Queensland. There are only three known key breeding regions remaining: north-east Victoria (Chiltern-Albury), and in NSW at Capertee Valley and the Bundarra-Barraba region. In NSW the distribution is very patchy and mainly confined to the two main breeding areas and surrounding fragmented woodlands. In some years flocks converge on flowering coastal woodlands and forests.	**Possible** The species has been recorded in the locality **NIL** No habitat likely to support the species would be impacted
Aphelocephala leucopsis	Southern Whiteface	-	V		Southern Whiteface occur across most of mainland Australia south of the tropics. The species lives in a wide range of open woodlands and shrublands where there is an understorey of grasses or shrubs, or both. These areas are usually dominated by acacias or eucalypts on ranges, foothills and lowlands, and plains. Favours relatively undisturbed habitat with low tree densities and an herbaceous understorey litter cover. The species almost exclusively forages on the ground, mainly feeding on insects, spiders and seeds, largely gleaned from the bare	**Unlikely** The species has not previously been recorded in the locality **NIL** No habitat likely to support the species would be impacted

Scientific name	Common name	BC Status	EPBC Status	Source	Habitat requirements (OEH 2020b)	Justification
					ground or leaf litter. Birds build large bulky domed nests of grass, bark and roots, usually in a living or dead trees with hollows or crevices, although sometimes in low bushes. Breeds from July to October throughout most of the species range.	
Apus pacificus	Fork-tailed Swift	-	Mi	2	Recorded in all regions of NSW. Non- breeding, and almost exclusively aerial while in Australia. Occurs over urban and rural areas as well as areas of native vegetation.	**Possible** The species has been recorded in the locality **NIL** No habitat likely to support the species would be impacted
Artamus cyanopterus cyanopterus	Dusky Woodswallow	V	-	67	The Dusky Woodswallow is widespread from the coast to inland, including the western slopes of the Great Dividing Range and farther west. It is often recorded in woodlands and dry open sclerophyll forests, and has also been recorded in shrublands, heathlands regenerating forests and very occasionally in moist forests or rainforests. The understorey is typically open with sparse eucalypt saplings, acacias and other shrubs, often with coarse woody debris. It is also recorded in farmland, usually at the edges of forest or woodland or in roadside remnants or wind breaks with dead timber. The nest is an open shallow untidy cup frequently built in an open hollow, crevice or stump. Although Dusky Woodswallows have large home ranges, individuals may spend most of their time in about a 2 ha range and defend an area about 50 m around the nest. Dusky Woodswallows prefer larger remnants over smaller remnants. Competitive exclusion by Noisy Miners (Manorina melanocephala) is a significant threat to this species.	**Likely** The species has been recorded in the locality **Moderate** Habitat likely to support the species would be impacted

Scientific name	Common name	BC Status	EPBC Status	Source	Habitat requirements (OEH 2020b)	Justification
Botaurus poiciloptilus	Australasian Bittern	E	E	1	Australasian Bitterns are widespread but uncommon over south-eastern Australia. In NSW they may be found over most of the state except for the far north-west. The Species favours permanent freshwater wetlands with tall, dense vegetation, particularly bullrushes (Typha spp.) and spikerushes (Eleocharis spp.), it hides during the day amongst dense reeds or rushes and feed mainly at night on frogs, fish, yabbies, spiders, insects and snails. The species may construct feeding platforms over deeper water from reeds trampled by the bird; platforms are often littered with prey remains.	**Possible** The species has been recorded in the locality **NIL** No habitat likely to support the species would be impacted
Calidris ferruginea	Curlew Sandpiper	E	CE		The Curlew Sandpiper is distributed around most of the Australian coastline (including Tasmania). It occurs along the entire coast of NSW, particularly in the Hunter Estuary, and sometimes in freshwater wetlands in the Murray-Darling Basin. Inland records are probably mainly of birds pausing for a few days during migration. The Curlew Sandpiper breeds in Siberia and migrates to Australia (as well as Africa and Asia) for the non-breeding period, arriving in Australia between August and November, and departing between March and mid-April. It generally occupies littoral and estuarine habitats, and in New South Wales is mainly found in intertidal mudflats of sheltered coasts. It also occurs in non-tidal swamps, lakes and lagoons on the coast and sometimes inland.	**Unlikely** The species has not previously been recorded in the locality **NIL** No habitat likely to support the species would be impacted

Scientific name	Common name	BC Status	EPBC Status	Source	Habitat requirements (OEH 2020b)	Justification
Callocephalon fimbriatum	Gang-gang Cockatoo	V	E		The Gang-gang Cockatoo is distributed from southern Victoria through south- and central-eastern New South Wales. In New South Wales, the Gang-gang Cockatoo is distributed from the south-east coast to the Hunter region, and inland to the Central Tablelands and south-west slopes. It occurs regularly in the Australian Capital Territory. It is rare at the extremities of its range, with isolated records known from as far north as Coffs Harbour and as far west as Mudgee. In spring and summer, generally found in tall mountain forests and woodlands, particularly in heavily timbered and mature wet sclerophyll forests. In autumn and winter, the species often moves to lower altitudes in drier more open eucalypt forests and woodlands, particularly box-gum and box-ironbark assemblages, or in dry forest in coastal areas and often found in urban areas. May also occur in sub-alpine Snow Gum (Eucalyptus pauciflora) woodland and occasionally in temperate rainforests. Favours old growth forest and woodland attributes for nesting and roosting. Nests are located in hollows that are 10 cm in diameter or larger and at least 9 m above the ground in eucalypts.	**Unlikely** The species has not previously been recorded in the locality **NIL** No habitat likely to support the species would be impacted
Calyptorhynchus lathami	Glossy Black-Cockatoo	V	V		The species is uncommon although widespread throughout suitable forest and woodland habitats, from the central Queensland coast to East Gippsland in Victoria, and inland to the southern tablelands and central western plains of NSW, with a small population in the Riverina. An isolated population exists on Kangaroo Island, South Australia. Inhabits open forest and woodlands of the coast and the Great Dividing Range where stands of sheoak occur. Black Sheoak (Allocasuarina littoralis) and Forest Sheoak (A. torulosa) are important foods. Inland populations feed on a wide range of sheoaks, including Drooping Sheoak, Allocasuaraina diminuta, and A. gymnathera. Belah is also utilised and may be a critical food source for some populations.	**Unlikely** The species has not previously been recorded in the locality **NIL** No habitat likely to support the species would be impacted

Scientific name	Common name	BC Status	EPBC Status	Source	Habitat requirements (OEH 2020b)	Justification
Certhionyx variegatus	Pied Honeyeater	V	-	1	Widespread throughout acacia, mallee and spinifex scrubs of arid and semi-arid Australia. Occasionally occurs further east, on the slopes and plains and the Hunter Valley, typically during periods of drought. Inhabits wattle shrub, primarily Mulga (Acacia aneura), mallee, spinifex and eucalypt woodlands, usually when shrubs are flowering; feeds on nectar, predominantly from various species of emu-bushes (Eremophila spp.); also from mistletoes and various other shrubs (e.g. Grevillea spp.); also eats saltbush fruit, berries, seed, flowers and insects.	**Possible** The species has been recorded in the locality **NIL** No habitat likely to support the species would be impacted
Chthonicola sagittata	Speckled Warbler	V	-	151	The Speckled Warbler has a patchy distribution throughout south-eastern Queensland, the eastern half of NSW and into Victoria, as far west as the Grampians. The species is most frequently reported from the hills and tablelands of the Great Dividing Range, and rarely from the coast. The Speckled Warbler lives in a wide range of Eucalyptus dominated communities that have a grassy understorey, often on rocky ridges or in gullies. Typical habitat would include scattered native tussock grasses, a sparse shrub layer, some eucalypt regrowth and an open canopy. Large, relatively undisturbed remnants are required for the species to persist in an area.	**Likely** The species has been recorded in the locality **Moderate** Habitat likely to support the species would be impacted
Circus assimilis	Spotted Harrier	V	-	8	Occurs throughout the Australian mainland, except in densely forested or wooded habitats of the coast, escarpment and ranges. Individuals disperse widely in NSW and comprise a single population. Occurs in grassy open woodland including Acacia and mallee remnants, inland riparian woodland, grassland and shrub steppe. It is found most commonly in native grassland, but also occurs in agricultural land, foraging over open habitats including edges of inland wetlands. Preys on terrestrial mammals (eg bandicoots, bettongs, and rodents), birds and reptile, occasionally insects and rarely carrion. Builds a stick nest in a tree and lays eggs in spring (or sometimes autumn), with young remaining in the nest for several months.	**Possible** The species has been recorded in the locality **NIL** No habitat likely to support the species would be impacted

Scientific name	Common name	BC Status	EPBC Status	Source	Habitat requirements (OEH 2020b)	Justification
Climacteris picumnus victoriae	Brown Treecreeper (eastern subspecies)	V	V	206	Endemic to eastern Australia and occurs in eucalypt forests and woodlands of inland plains and slopes of the Great Dividing Range. It is less commonly found on coastal plains and ranges. Mainly inhabits woodlands dominated by stringybarks or other rough-barked eucalypts, usually with an open grassy understorey, sometimes with one or more shrub species; also found in mallee and River Red Gum (Eucalyptus camaldulensis) Forest bordering wetlands with an open understorey of acacias, saltbush, lignum, cumbungi and grasses. Sedentary, considered to be resident in many locations throughout its range; present in all seasons or year-round at many sites; territorial year-round. Up to 80% of the diet is comprised of ants; other invertebrates (including spiders, insects larvae, moths, beetles, flies, hemipteran bugs, cockroaches, termites and lacewings) make up the remaining percentage; nectar from Mugga Ironbark (Eucalyptus sideroxylon) and paperbarks, and sap from an unidentified eucalypt are also eaten. Hollows in standing dead or live trees and tree stumps are essential for nesting. Breeds in pairs or co-operatively in territories which range in size from 1.1 to 10.7 ha (mean = 4.4 ha).	**Likely** The species has previously been recorded in the locality **Moderate** Habitat likely to support the species would be impacted
Daphoenositta chrysoptera	Varied Sittella	V	-	9	The Varied Sittella is sedentary and inhabits most of mainland Australia except the treeless deserts and open grasslands. Distribution in NSW is nearly continuous from the coast to the far west. The Varied Sittella's population size in NSW is uncertain but is believed to have undergone a moderate reduction over the past several decades. Inhabits eucalypt forests and woodlands, especially those containing rough-barked species and mature smooth-barked gums with dead branches, mallee and Acacia woodland. Feeds on arthropods gleaned from crevices in rough or decorticating bark, dead branches, standing dead trees and small branches and twigs in the tree canopy.	**Likely** The species has been recorded in the locality **Moderate** Habitat likely to support the species would be impacted

Scientific name	Common name	BC Status	EPBC Status	Source	Habitat requirements (OEH 2020b)	Justification
Epthianura albifrons	White-fronted Chat	V		4	The White-fronted Chat is found across the southern half of Australia, from southernmost Queensland to southern Tasmania, and across to Western Australia as far north as Carnarvon. Found mostly in temperate to arid climates and very rarely sub-tropical areas, it occupies foothills and lowlands up to 1000 m above sea level. In NSW, it occurs mostly in the southern half of the state, in damp open habitats along the coast, and near waterways in the western part of the state. Along the coastline, it is found predominantly in saltmarsh vegetation but also in open grasslands and sometimes in low shrubs bordering wetland areas. Gregarious species, usually found foraging on bare or grassy ground in wetland areas, singly or in pairs. They are insectivorous, feeding mainly on flies and beetles caught from or close to the ground.	**Possible** The species has been recorded in the locality **NIL** No habitat likely to support the species would be impacted
Falco hypoleucos	Grey Falcon	V	V	8	The Grey Falcon is sparsely distributed in NSW, chiefly throughout the Murray-Darling Basin, with the occasional vagrant east of the Great Dividing Range. The breeding range has contracted since the 1950s with most breeding now confined to arid parts of the range. There are possibly less than 5000 individuals left. Population trends are unclear, though it is believed to be extinct in areas with more than 500mm rainfall in NSW. Usually restricted to shrubland, grassland and wooded watercourses of arid and semi-arid regions, although it is occasionally found in open woodlands near the coast. Also occurs near wetlands where surface water attracts prey.	**Possible** The species has been recorded in the locality **NIL** No habitat likely to support the species would be impacted
Falco subniger	Black Falcon	V	-	9	Mostly occurring inland NSW. Inhabits woodland, shrubland and grassland in arid and semi-arid zones including agricultural land with scattered remnant trees. Usually associated with wetlands as they look for prey, and use standing dead trees to use as lookout posts. Habitat choice is often influenced by food availability.	**Possible** The species has been recorded in the locality **NIL** No habitat likely to support the species would be impacted

Scientific name	Common name	BC Status	EPBC Status	Source	Habitat requirements (OEH 2020b)	Justification
Glossopsitta pusilla	Little Lorikeet	V	-	7	The Little Lorikeet is distributed widely across the coastal and Great Divide regions of eastern Australia from Cape York to South Australia. NSW provides a large portion of the species' core habitat, with lorikeets found westward as far as Dubbo and Albury. Nomadic movements are common, influenced by season and food availability, although some areas retain residents for much of the year and 'locally nomadic' movements are suspected of breeding pairs. The species forages primarily in the canopy of open Eucalyptus forest and woodland, yet also finds food in Angophora, Melaleuca and other tree species. Riparian habitats are particularly used, due to higher soil fertility and hence greater productivity.	**Likely** The species has been recorded in the locality **Moderate** Habitat likely to support the species would be impacted
Grantiella picta	Painted Honeyeater	V	V		Nomadic, occurring in low densities across most of NSW. Highest concentrations and almost all breeding occur on inland slopes of the Great Dividing Range. Inhabits Boree, Brigalow and Box Gum woodlands and Box-Ironbark forests. Specialist forager on the fruits of mistletoes, preferably of the Amyema genus. Nests in outer tree canopy. A specialist feeder on the fruits of mistletoes growing on woodland eucalypts and acacias. Prefers mistletoes of the genus Amyema.	**Unlikely** The species has not previously been recorded in the locality **NIL** No habitat likely to support the species would be impacted
Haliaeetus leucogaster	White-bellied Sea-Eagle	V	-	1	Distributed along the Australian coastline and well inland along rivers and wetlands, it's widespread in eastern NSW. Foraging habitat consists of coastal seas, rivers, fresh and saline lakes, lagoons, reservoirs and terrestrial habitats such as grasslands. Diet consists of waterbirds, turtles and fish. Resident pairs are territorial and occupy nesting territories of hundreds of hectares. Breeding habitat consists of large trees within mature open forest, gallery forest or woodland and reported that they avoid nesting near urban areas. Nest trees are typically large emergent eucalypts and often have emergent dead branches or large dead trees nearby which are used as 'guard roosts'. Nests are large structures built from sticks and lined with leaves or grass.	**Possible** The species has been recorded in the locality **NIL** No habitat likely to support the species would be impacted

Scientific name	Common name	BC Status	EPBC Status	Source	Habitat requirements (OEH 2020b)	Justification
Hieraaetus morphnoides	Little Eagle	V	-	13	The Little Eagle is found throughout the Australian mainland excepting the most densely forested parts of the Dividing Range escarpment. It occurs as a single population throughout NSW. Occupies open eucalypt forest, woodland or open woodland. Sheoak or Acacia woodlands and riparian woodlands of interior NSW are also used.	**Possible** The species has been recorded in the locality **NIL** No habitat likely to support the species would be impacted
Hirundapus caudacutus	White-throated Needletail	-	V	2	The White-throated Needletail is widespread in eastern and south-eastern Australia. In eastern Australia, it is recorded in all coastal regions of Queensland and NSW, extending inland to the western slopes of the Great Divide and occasionally onto the adjacent inland plains. A large proportion of the White-throated Needletails of the nominate subspecies would occur in Australia as non-breeding visitors. Most White-throated Needletails spend the non-breeding season in Australasia, mainly in Australia, and occasionally in New Guinea and New Zealand, though it has been suggested that some may overwinter in parts of South-East Asia. As the Needletails that occur in Australia migrate from breeding areas in the Northern Hemisphere, they would be affected by global threats.	**Possible** The species has been recorded in the locality **NIL** No habitat likely to support the species would be impacted
Lathamus discolor	Swift Parrot	E	CE	9	Breeds in Tasmania during spring and summer, migrating in the autumn and winter months to south-eastern Australia from Victoria and the eastern parts of South Australia to south-east Queensland. In NSW mostly occurs on the coast and south west slopes. On the mainland they occur in areas where eucalypts are flowering profusely or where there are abundant lerp (from sap-sucking bugs) infestations. Favoured feed trees include winter flowering species such as Swamp Mahogany Eucalyptus robusta, Spotted Gum Corymbia maculata, Red Bloodwood C. gummifera, Mugga Ironbark E. sideroxylon, and White Box E. albens. Commonly used lerp infested trees include Inland Grey Box E. microcarpa, Grey Box E. moluccana and Blackbutt E. pilularis.	**Possible** The species has been recorded in the locality **NIL** No habitat likely to support the species would be impacted

Scientific name	Common name	BC Status	EPBC Status	Source	Habitat requirements (OEH 2020b)	Justification
Leipoa ocellata	Mallee Fowl	E	V		Occurs in semi-arid to arid mallee country in the south-west of NSW. Its NSW stronghold is centred on Mallee Cliffs NP, extending east to Balranald and with scattered records north to Mungo NP. There are also populations near Dubbo (Goonoo forest). Occasional records exist from the Pilliga, around Cobar and Goulburn River NP. Predominantly inhabit mallee communities, preferring the tall, dense and floristically-rich mallee found in higher rainfall (300 - 450 mm mean annual rainfall) areas. Utilises mallee with a spinifex understorey, but usually at lower densities than in areas with a shrub understorey. Less frequently found in other eucalypt woodlands, such as Inland Grey Box, Ironbark or Bimble Box Woodlands with thick understorey, or in other woodlands such dominated by Mulga or native Cypress Pine species. Prefers areas of light sandy to sandy loam soils and habitats with a dense but discontinuous canopy and dense and diverse shrub and herb layers.	**NIL** The species has not previously been recorded in the locality and no habitat occurs **NIL** No habitat likely to support the species would be impacted
Lophochroa leadbeateri	Major Mitchell's Cockatoo	V	E		In NSW Major Mitchell's Cockatoo is found across the arid and semi-arid inland and is regularly as far east as about Bourke and Griffith, and sporadically further east than that. The species inhabits a wide range of treed and treeless inland habitats, always within easy reach of water. It feeds mostly on the ground, especially on the seeds of native and exotic melons and on the seeds of species of saltbush, wattles and cypress pines.	**Unlikely** The species has not previously been recorded in the locality **NIL** No habitat likely to support the species would be impacted

Scientific name	Common name	BC Status	EPBC Status	Source	Habitat requirements (OEH 2020b)	Justification
Melanodryas cucullata cucullata	Hooded Robin	V	E	27	The Hooded Robin is widespread, found across Australia, except for the driest deserts and the wetter coastal areas - northern and eastern coastal Queensland and Tasmania. However, it is common in few places, and rarely found on the coast. It is considered a sedentary species, but local seasonal movements are possible. The south-eastern form (subspecies cucullata) is found from Brisbane to Adelaide and throughout much of inland NSW, with the exception of the extreme north-west, where it is replaced by subspecies picata. Two other subspecies occur outside NSW. Prefers lightly wooded country, usually open eucalypt woodland, acacia scrub and mallee, often in or near clearings or open areas. Requires structurally diverse habitats featuring mature eucalypts, saplings, some small shrubs and a ground layer of moderately tall native grasses.	**Possible** The species has been recorded in the locality **NIL** No habitat likely to support the species would be impacted
Melithreptus gularis gularis	Black-chinned Honeyeater	V	-	19	Extends south from central Queensland, through NSW, Victoria into south eastern South Australia, though it is very rare in the last state. In NSW it is widespread, with records from the tablelands and western slopes of the Great Dividing Range to the north-west and central-west plains and the Riverina. It is rarely recorded east of the Great Dividing Range, although regularly observed from the Richmond and Clarence River areas. It has also been recorded at a few scattered sites in the Hunter, Central Coast and Illawarra regions, though it is very rare in the latter. Occupies mostly upper levels of drier open forests or woodlands dominated by box and ironbark eucalypts, especially Mugga Ironbark (Eucalyptus sideroxylon), White Box (E. albens), Inland Grey Box (E. microcarpa), Yellow Box (E. melliodora), Blakely's Red Gum (E. blakelyi) and Forest Red Gum (E. tereticornis).	**Likely** The species has been recorded in the locality **Moderate** Habitat likely to support the species would be impacted
Neophema chrysostoma	Blue-winged Parrot	-	V		Blue-winged Parrots breed on mainland Australia south of the Great Dividing Range in Victoria, South Australia and Tasmania. During the non-breeding period, from autumn to early spring, birds are recorded in western New South Wales and sometimes south-eastern NSW, particularly on the southern migration. Birds inhabit a range of habitats from coastal, sub-coastal and inland areas through to semi-arid zones. They tend to favour grasslands and grassy woodlands and are often	**Unlikely** The species has not previously been recorded in the locality **NIL**

Scientific name	Common name	BC Status	EPBC Status	Source	Habitat requirements (OEH 2020b)	Justification
					found near wetlands. Can also be found in altered environments such as airfields, golf-courses and paddocks. Forage mainly near or on the ground for seeds of a wide range of native and introduced grasses, herbs and shrubs. Nests are made in hollows, preferably with a vertical opening, in live or dead trees or stumps, in eucalypt forests and woodlands within the breeding range.	No habitat likely to support the species would be impacted
Neophema pulchella	Turquoise Parrot	V	-	44	The Turquoise Parrot's range extends from southern Queensland through to northern Victoria, from the coastal plains to the western slopes of the Great Dividing Range. Lives on the edges of eucalypt woodland adjoining clearings, timbered ridges and creeks in farmland.	**Likely** The species has been recorded in the locality **Moderate** Habitat likely to support the species would be impacted
Ninox connivens	Barking Owl	V	-	2	The Barking Owl is found throughout continental Australia except for the central arid regions. The owls sometimes extend their home range into urban areas, hunting birds in garden trees and insects attracted to streetlights. Extensive wildfires in 2019-20 reduced habitat quality further, burnt many old, hollow-bearing trees needed as refuge by prey species and reduced the viability of some regional owl populations. The species inhabit woodland and open forest, including fragmented remnants and partly cleared farmland. It is flexible in its habitat use, and hunting can extend in to closed forest and more open areas. Sometimes able to successfully breed along timbered watercourses in heavily cleared habitats (e.g. western NSW) due to the higher density of prey found on these fertile riparian soils. The species typically roost in shaded portions of tree canopies, including tall midstorey trees with dense foliage such as Acacia and Casuarina species.	**Possible** The species has been recorded in the locality **NIL** No habitat likely to support the species would be impacted
Numenius madagascariensis	Eastern Curlew	-	CE		The Eastern Curlew is widespread in coastal regions in the north-east and south of Australia, including Tasmania, and scattered in other coastal areas. It is rarely seen inland. It breeds in Russia and north-eastern China. On passage, they are commonly seen in Japan, Korea and Borneo. Small numbers visit New Zealand. The Eastern Curlew is found on intertidal mudflats and sandflats, often with beds of seagrass, on sheltered coasts, especially estuaries, mangrove swamps, bays, harbours and lagoons.	**Unlikely** The species has not previously been recorded in the locality **NIL** No habitat likely to support the species would be impacted

Scientific name	Common name	BC Status	EPBC Status	Source	Habitat requirements (OEH 2020b)	Justification
Oxyura australis	Blue-billed Duck	V	-	1	The Blue-billed Duck is endemic to south-eastern and south-western Australia. It is widespread in NSW, but most common in the southern Murray-Darling Basin area. The species disperses during the breeding season to deep swamps up to 300 km away, and is generally only during summer or in drier years that they are seen in coastal areas. The Blue-billed Duck prefers deep water in large permanent wetlands and swamps with dense aquatic vegetation. The species is completely aquatic, swimming low in the water along the edge of dense cover. It will fly if disturbed, but prefers to dive if approached.	**Possible** The species has been recorded in the locality **NIL** No habitat likely to support the species would be impacted

Scientific name	Common name	BC Status	EPBC Status	Source	Habitat requirements (OEH 2020b)	Justification
Pachycephala inornata	Gilbert's Whistler	V	-	20	The Gilbert's Whistler is sparsely distributed over much of the arid and semi-arid zone of inland southern Australia, from the western slopes of NSW to the Western Australian wheatbelt. The eastern population extends from the central NSW mallee (Yathong, Nombinnie and Round Hill NRs), south and east through the Cocoparra Range to Pomingalama Reserve (near Wagga Wagga) then north through the South West Slopes east as far as Cowra and Burrendong Dam, to the Goonoo reserves (with scattered records as far north as Pilliga). Occasional records are also made of this species in the Capertee Valley. The species is also recorded in River Red Gum forests along the Murray River valley between Mathoura and Wentworth, with the eastern populations (between Mathoura and Barham) apparently isolated from other NSW populations. West of Swan Hill, this population may interact with populations found to the north of the Murray River west of Balranald and as far north as the Scotia country (Tarawi NR and Scotia Sanctuary). The Gilbert's Whistler occurs in a range of habitats within NSW, though the shared feature appears to be a dense shrub layer. It is widely recorded in mallee shrublands, but also occurs in box-ironbark woodlands, Cypress Pine and Belah woodlands and River Red Gum forests, though at this stage it is only known to use this habitat along the Murray, Edwards and Wakool Rivers. Within the mallee the species is often found in association with an understorey of spinifex and low shrubs including wattles, hakeas, sennas and hop-bushes. In woodland habitats, the understorey comprises dense patches of shrubs, particularly thickets of regrowth Callitris pine. Parasitic 'cherries' (Exocarpus species) appear to be an important habitat component in Belah and Red Gum communities, though in the latter case other dense shrubs, such as Lignum and wattles, are also utilised.	**Possible** The species has been recorded in the locality **NIL** No habitat likely to support the species would be impacted

Scientific name	Common name	BC Status	EPBC Status	Source	Habitat requirements (OEH 2020b)	Justification
Petroica boodang	Scarlet Robin	V	-	1	The Scarlet Robin is found from south east Queensland to south east South Australia and also in Tasmania and south west Western Australia. In NSW, it occurs from the coast to the inland slopes. After breeding, some Scarlet Robins disperse to the lower valleys and plains of the tablelands and slopes. Some birds may appear as far west as the eastern edges of the inland plains in autumn and winter. The Scarlet Robin lives in dry eucalypt forests and woodlands. The understorey is usually open and grassy with few scattered shrubs. This species lives in both mature and regrowth vegetation. It occasionally occurs in mallee or wet forest communities, or in wetlands and tea-tree swamps.	**Possible** The species has been recorded in the locality **NIL** No habitat likely to support the species would be impacted
Petroica phoenicea	Flame Robin	V	-	3	The Flame Robin is endemic to south eastern Australia, and ranges from near the Queensland border to south east South Australia and also in Tasmania. In NSW, it breeds in upland areas and in winter, many birds move to the inland slopes and plains. It is likely that there are two separate populations in NSW, one in the Northern Tablelands, and another ranging from the Central to Southern Tablelands. Breeds in upland tall moist eucalypt forests and woodlands, often on ridges and slopes. Prefers clearings or areas with open understoreys. The groundlayer of the breeding habitat is dominated by native grasses and the shrub layer may be either sparse or dense.	**Possible** The species has been recorded in the locality **NIL** No habitat likely to support the species would be impacted

Scientific name	Common name	BC Status	EPBC Status	Source	Habitat requirements (OEH 2020b)	Justification
Polytelis swainsonii	Superb Parrot	V	V	20	The Superb Parrot is found throughout eastern inland NSW. On the South-western Slopes their core breeding area is roughly bounded by Cowra and Yass in the east, and Grenfell, Cootamundra and Coolac in the west. Birds breeding in this region are mainly absent during winter, when they migrate north to the region of the upper Namoi and Gwydir Rivers. The other main breeding sites are in the Riverina along the corridors of the Murray, Edward and Murrumbidgee Rivers where birds are present all year round. In the Riverina the birds nest in the hollows of large trees (dead or alive) mainly in tall riparian River Red Gum Forest or Woodland. On the South West Slopes nest trees can be in open Box-Gum Woodland or isolated paddock trees. Species known to be used are Blakely's Red Gum, Yellow Box, Apple Box and Red Box. Inhabit Box-Gum, Box-Cypress-pine and Boree Woodlands and River Red Gum Forest.	**Likely** The species has been recorded in the locality **Moderate** Habitat likely to support the species would be impacted
Pomatostomus temporalis temporalis	Grey-crowned Babbler (eastern subspecies)	V	-	36	The eastern subspecies (temporalis occurs from Cape York south through Queensland, NSW and Victoria and formerly to the south east of South Australia. This subspecies also occurs in the Trans-Fly Region in southern New Guinea. In NSW, the eastern sub-species occurs on the western slopes of the Great Dividing Range, and on the western plains reaching as far as Louth and Balranald. It also occurs in woodlands in the Hunter Valley and in several locations on the north coast of NSW. It may be extinct in the southern, central and New England tablelands. Inhabits open Box-Gum Woodlands on the slopes, and Box-Cypress-pine and open Box Woodlands on alluvial plains. Woodlands on fertile soils in coastal regions.	**Possible** The species has been recorded in the locality **NIL** No habitat likely to support the species would be impacted
Rostratula australis	Australian Painted Snipe	E	E	1	In NSW many records of the Australian Painted Snipe are from the Murray-Darling Basin including the Paroo wetlands, Lake Cowal, Macquarie Marshes, Fivebough Swamp and more recently, swamps near Balldale and Wanganella. Other important locations with recent records include wetlands on the Hawkesbury River and the Clarence and lower Hunter Valleys. The species prefers fringes of swamps, dams and nearby marshy areas where there is a cover of grasses, lignum, low scrub or open timber.	**Possible** The species has been recorded in the locality **NIL** No habitat likely to support the species would be impacted

Scientific name	Common name	BC Status	EPBC Status	Source	Habitat requirements (OEH 2020b)	Justification
Stagonopleura guttata	Diamond Firetail	V	V	36	The Diamond Firetail is endemic to south-eastern Australia, extending from central Queensland to the Eyre Peninsula in South Australia. It is widely distributed in NSW, with a concentration of records from the Northern, Central and Southern Tablelands, the Northern, Cental and South Western Slopes and the North West Plains and Riverina. Not commonly found in coastal districts, though there are records from near Sydney, the Hunter Valley and the Bega Valley. This species has a scattered distribution over the rest of NSW, though is very rare west of the Darling River. Found in grassy eucalypt woodlands, including Box-Gum Woodlands and Snow Gum Eucalyptus pauciflora Woodlands. Also occurs in open forest, mallee, Natural Temperate Grassland, and in secondary grassland derived from other communities. Often found in riparian areas (rivers and creeks), and sometimes in lightly wooded farmland.	**Possible** The species has been recorded in the locality **NIL** No habitat likely to support the species would be impacted
Stictonetta naevosa	Freckled Duck	V	-	1	The Freckled Duck is found primarily in south-eastern and south-western Australia, occurring as a vagrant elsewhere. It breeds in large temporary swamps created by floods in the Bulloo and Lake Eyre basins and the Murray-Darling system, particularly along the Paroo and Lachlan Rivers, and other rivers within the Riverina. The duck is forced to disperse during extensive inland droughts when wetlands in the Murray River basin provide important habitat. The species may also occur as far as coastal NSW and Victoria during such times. Prefer permanent freshwater swamps and creeks with heavy growth of Cumbungi, Lignum or Tea-tree. During drier times they move from ephemeral breeding swamps to more permanent waters such as lakes, reservoirs, farm dams and sewage ponds.	**Possible** The species has been recorded in the locality **NIL** No habitat likely to support the species would be impacted
Fish						

Scientific name	Common name	BC Status	EPBC Status	Source	Habitat requirements (OEH 2020b)	Justification
Bidyanus bidyanus	Silver Perch	E	CE		Silver Perch are a moderate to large freshwater fish native to the Murray-Darling river system. They were once widespread and abundant throughout most of the Murray-Darling river system. They have now declined to low numbers or disappeared from most of their former range. Only one remaining secure and self-sustaining population occurs in NSW in the central Murray River downstream of Yarrawonga weir, as well as several anabranches and tributaries.	**Nil** Species not previously recorded, and no species habitat present (waterways) in study area **NIL** No habitat likely to support the species would be impacted
Maccullochella macquariensis	Trout Cod	E	E		The Trout Cod is endemic to the southern Murray-Darling river system, including the Murrumbidgee and Murray Rivers, and the Macquarie River in central NSW. The species was once widespread and abundant in these areas but has undergone dramatic declines in its distribution and abundance over the past century. The last known reproducing population of Trout Cod is confined to the Murray River below Yarrawonga downstream to Tocumwal.	**Nil** Species not previously recorded, and no species habitat present (waterways) in study area **NIL** No habitat likely to support the species would be impacted
Maccullochella peelii	Murray Cod	-	V		Occurs throughout the Murray-Darling Basin. Can live in a wide range of habitats, from clear, rocky streams in the upper western slopes regions of New South Wales to the slow flowing, turbid rivers and billabongs of the western plains. Generally, they are found in waters up to 5m deep and in sheltered areas with cover from rocks, timber or overhanging banks. The presence of wood debris has been shown to be the primary factor determining Murray cod presence.	**Nil** Species not previously recorded, and no species habitat present (waterways) in study area **NIL** No habitat likely to support the species would be impacted
Macquaria australasica	Macquarie Perch	V	E		Occurs in the upper reaches of the Lachlan, Murrumbidgee and Murray Rivers, and in parts of the Hawkesbury and Shoalhaven catchment areas. Inhabits river and lake habitats, especially the upper reaches of rivers and their tributaries. Requires clear water with deep, rocky holes and abundant cover (including aquatic vegetation, woody debris, large boulders and overhanging banks). Spawning occurs in spring and summer in shallow upland streams or flowing sections of river systems.	**Nil** Species not previously recorded, and no species habitat present (waterways) in study area **NIL**

Scientific name	Common name	BC Status	EPBC Status	Source	Habitat requirements (OEH 2020b)	Justification
						No habitat likely to support the species would be impacted
Flora						
Androcalva procumbens		V	V		Mainly confined to the Dubbo-Mendooran-Gilgandra region, but also in the Pilliga and Nymagee areas and recent collections from the Upper Hunter. Grows on sandy soils, often on roadsides. Has been recorded in Tumbledown Red Gum and Mugga Ironbark communities, Broombush scrub, under mallee eucalypts with a Common Fringe-myrtle understorey, and in a recently burnt Ironbark and Callitris area. Also in Eucalyptus fibrosa subsp. nubila, Tumbledown Red Gum, White Box and White Cypress Pine woodlands north of Dubbo.	**Unlikely** The species has not previously been recorded in the locality **NIL** No habitat likely to support the species would be impacted
Austrostipa metatoris	A spear-grass	V	V		Most records occur in the Murray Valley with sites including Cunninyeuk Station, Stony Crossing, Kyalite State Forest (now part of Murrumbidgee Valley Regional Park) and Lake Benanee. Scattered records also occur in central NSW including Lake Cargelligo, east of Goolgowi, Condobolin and south west of Nymagee. Otherwise only known from near Bordertown in south east South Australia, where it may be locally extinct. Grows in sandy areas of the Murray Valley; habitats include sandhills, sandridges, undulating plains and flat open mallee country, with red to red-brown clay-loam to sandy-loam soils. Associated species include Eucalyptus populnea, E. intertexta, Callitris glaucophylla, Casuarina cristata, Santalum acuminatum and Dodonaea viscosa.	**Unlikely** The species has not previously been recorded in the locality **NIL** No habitat likely to support the species would be impacted

Scientific name	Common name	BC Status	EPBC Status	Source	Habitat requirements (OEH 2020b)	Justification
Austrostipa wakoolica	A spear-grass	E	E	2	Confined to the floodplains of the Murray River tributaries of central-western and south-western NSW, with localities including Manna State Forest, Matong, Lake Tooim, Merran Creek, Tulla, Cunninyeuk and Mairjimmy State Forest (now part of South West Woodland Nature Reserve). Grows on floodplains of the Murray River tributaries, in open woodland on grey, silty clay or sandy loam soils; habitats include the edges of a lignum swamp with box and mallee; creek banks in grey, silty clay; mallee and lignum sandy-loam flat; open Cypress Pine forest on low sandy range; and a low, rocky rise.	**Possible** The species has been recorded in the locality **NIL** No habitat likely to support the species would be impacted
Diuris tricolor	Pine Donkey Orchid	V	-	1	Sporadically distributed on the western slopes of NSW, extending from south of Narrandera all the way to the north of NSW. Localities in the south include Red Hill north of Narrandera, Coolamon, and several sites west of Wagga Wagga. Condobolin-Nymagee road, Wattamondara towards Cowra, Eugowra, Girilambone, Dubbo and Cooyal, in the Central West. Pilliga SCA, Pilliga National Park and Bibblewindi State Forest in the north and Muswellbrook in the east. Disturbance regimes are not known, although the species is usually recorded from disturbed habitats. Associated species include Callitris glaucophylla, Eucalyptus populnea, Eucalyptus intertexta, Ironbark and Acacia shrubland. The understorey is often grassy with herbaceous plants such as Bulbine species.	**Possible** The species has been recorded in the locality **NIL** No habitat likely to support the species would be impacted

Scientific name	Common name	BC Status	EPBC Status	Source	Habitat requirements (OEH 2020b)	Justification
Lepidium aschersonii	Spiny Peppercress	V	V		Not widespread, occurring in the marginal central-western slopes and north-western plains regions of NSW (and potentially the south western plains). In the north of the State recent surveys have recorded a number of new sites including Brigalow Nature Reserve, Brigalow State Conservation Area, Leard State Conservation Area and Bobbiwaa State Conservation Area. Also known from the West Wyalong in the south of the State. Records from Barmedman and Temora areas are likely to be no longer present. Approximately 50% of the total Lepidium aschersonii recorded for Australia occurs in NSW. Found on ridges of gilgai clays dominated by Brigalow (Acacia harpophylla), Belah (Casuarina cristata), Buloke (Allocasuarina luehmanii) and Grey Box (Eucalyptus microcarpa). In the south has been recorded growing in Bull Mallee (Eucalyptus behriana). Often the understorey is dominated by introduced plants. The species grows as a a component of the ground flora, in grey loamy clays. Vegetation structure varies from open to dense, with sparse grassy understorey and occasional heavy litter.	**Unlikely** The species has not previously been recorded in the locality **NIL** No habitat likely to support the species would be impacted
Lepidium monoplocoides	Winged Peppercress	E	E		Widespread in the semi-arid western plains regions of NSW. Collected from widely scattered localities, with large numbers of historical records but few recent collections. Also previously recorded from Bourke, Cobar, Urana, Lake Cargelligo, Balranald, Wanganella and Deniliquin. Recorded more recently from the Hay Plain, south-eastern Riverina, and from near Pooncarie. Occurs on seasonally moist to waterlogged sites, on heavy fertile soils, with a mean annual rainfall of around 300-500 mm. Predominant vegetation is usually an open woodland dominated by Allocasuarina luehmannii (Bulloak) and/or eucalypts, particularly Eucalyptus largiflorens (Black Box) or Eucalyptus populnea (Poplar Box). The field layer of the surrounding woodland is dominated by tussock grasses. Recorded in a wetland-grassland community comprising Eragrostis australasicus, Agrostis avenacea, Austrodanthonia duttoniana, Homopholis proluta, Myriophyllum crispatum, Utricularia dichotoma and Pycnosorus globosus, on waterlogged grey-brown clay. Also recorded from a Maireana pyramidata shrubland.	**Unlikely** The species has not previously been recorded in the locality **NIL** No habitat likely to support the species would be impacted

Scientific name	Common name	BC Status	EPBC Status	Source	Habitat requirements (OEH 2020b)	Justification
Prasophyllum petilum	Tarengo Leek Orchid	E	E		Occurs at 4 sites in NSW (Captains Flat Cemetery, Ilford Cemetery, Steves TSR at Delegate and Tarengo TSR near Boorowa). Also at Hall in ACT. Grows on relatively fertile soils in grassy woodland or natural grassland. Occurs in relatively moist, poorly drained areas.	**Unlikely** The species has not previously been recorded in the locality **NIL** No habitat likely to support the species would be impacted
Prasophyllum sp. Wybong (C.Phelps ORG 5269)	-	-	CE		Distributed within the Border Rivers (Gwydir, Namoi, Hunter), Central Rivers and Central West Natural Resource Management Regions. The species is known to occur in open eucalypt woodland and grassland. The species can be found in the EPBC listed threatened ecological community White-box Yellow-box Blakely's Red Gum Grassy Woodland and Derived Native Grassland (TSSC, 2009).	**Unlikely** The species has not previously been recorded in the locality **NIL** No habitat likely to support the species would be impacted
Swainsona murrayana	Slender Darling-pea	V	V		Found throughout NSW , it has been recorded in the Jerilderie and Deniliquin areas of the southern riverine plain, the Hay plain as far north as Willandra National Park, near Broken Hill and in various localities between Dubbo and Moree. Occurs in grassland, herbland and open Black-box woodland. Associated with low chenopod shrubs Maireana species, wallaby-grass Austrodanthonia species and spear grass Austrostipa species. Flowers from spring to early summer. Grows on heavy grey or brown clay, loam, or red cracking clays. Grows in a variety of vegetation types including bladder saltbush, black box and grassland communities on level plains, floodplains and depressions and is often found with Maireana species. Plants have been found in remnant native grasslands or grassy woodlands that have been intermittently grazed or cultivated.	**Unlikely** The species has not previously been recorded in the locality **NIL** No habitat likely to support the species would be impacted

Scientific name	Common name	BC Status	EPBC Status	Source	Habitat requirements (OEH 2020b)	Justification
Swainsona recta	Small Purple-pea	E	E		Small Purple-pea was recorded historically from places such as Carcoar, Culcairn and Wagga Wagga where it is probably now extinct. Populations still exist in the Queanbeyan and Wellington-Mudgee areas. Over 80% of the southern population grows on a railway easement. It is also known from the ACT and a single population of four plants near Chiltern in Victoria. Before European settlement Small Purple-pea occurred in the grassy understorey of woodlands and open-forests dominated by Blakely's Red Gum Eucalyptus blakelyi, Yellow Box E. melliodora, Candlebark Gum E. rubida and Long-leaf Box E. goniocalyx. Grows in association with understorey dominants that include Kangaroo Grass Themeda australis, poa tussocks Poa spp. and spear-grasses Austrostipa spp.	**Unlikely** The species has not previously been recorded in the locality **NIL** No habitat likely to support the species would be impacted
Thesium australe	Austral Toadflax	V	V		Found in small, scattered populations along the east coast, northern and southern tablelands. Occurs in grassland or grassy woodland, and is often found in association with Kangaroo Grass.	**Unlikely** The species has not previously been recorded in the locality **NIL** No habitat likely to support the species would be impacted
Tylophora linearis	-	V	E		Majority of records occur in the central western region. Records from Goonoo, Pillaga West, Pillaga East, Bibblewindi, Cumbil and Eura State Forests, Coolbaggie NR, Goobang NP and Beni SCA. Also has been recorded Hiawatha State Forest near West Wyalong in the south and there are old records as far north as Crow Mountain near Barraba and near Glenmorgan in the western Darling Downs. Grows in dry scrub and open forest. Recorded from low-altitude sedimentary flats in dry woodlands of Eucalyptus fibrosa, Eucalyptus sideroxylon, Eucalyptus albens, Callitris endlicheri, Callitris glaucophylla and Allocasuarina luehmannii.	**Unlikely** The species has not previously been recorded in the locality **NIL** No habitat likely to support the species would be impacted
Amphibians						

Scientific name	Common name	BC Status	EPBC Status	Source	Habitat requirements (OEH 2020b)	Justification
Crinia sloanei	Sloane's Froglet	V	E		Sloane's Froglet has been recorded from widely scattered sites in the floodplains of the Murray-Darling Basin, with the majority of records in the Darling Riverine Plains, NSW South Western Slopes and Riverina bioregions in New South Wales. It has not been recorded recently in the northern part of its range and has only been recorded infrequently in the southern part of its range in NSW. At a number of sites where records are verified by museum specimens, the species has not been subsequently detected during more recent frog surveys in the vicinity (e.g. Holbrook, Nyngan, Wagga Wagga and Tocumwal). The low number of sites, low number of recorded individuals per site, and the low proportion of records of this species in regional surveys all indicate that a moderately low number of mature individuals exist. The apparent loss from previous recorded sites and decline in recording rates indicates that this is not just a rare or uncommonly encountered species, but that there has been a reduction in population size and range. It is typically associated with periodically inundated areas in grassland, woodland and disturbed habitats.	**Unlikely** The species has not previously been recorded in the locality **NIL** No habitat likely to support the species would be impacted
Mammals						
Chalinolobus dwyeri	Large-eared Pied Bat	V	V		The Large-eared Pied Bat is found mainly in areas with extensive cliffs and caves, from Rockhampton in Queensland south to Bungonia in the NSW Southern Highlands. It is generally rare with a very patchy distribution in NSW. There are scattered records from the New England Tablelands and North West Slopes. The species roosts in caves (near their entrances), crevices in cliffs, old mine workings and in the disused, bottle-shaped mud nests of the Fairy Martin (Petrochelidon ariel), frequenting low to mid-elevation dry open forest and woodland close to these features. Females have been recorded raising young in maternity roosts (c. 20-40 females) from November through to January in roof domes in sandstone caves and overhangs. It is found in well-timbered areas containing gullies.	**Unlikely** The species has not previously been recorded in the locality **NIL** No habitat likely to support the species would be impacted

Scientific name	Common name	BC Status	EPBC Status	Source	Habitat requirements (OEH 2020b)	Justification
Dasyurus maculatus	Spotted-tailed Quoll	V	E	1	The range of the Spotted-tailed Quoll has contracted considerably since European settlement. It is now found in eastern NSW, eastern Victoria, south-east and north-eastern Queensland, and Tasmania. Only in Tasmania is it still considered relatively common. The species has been recorded across a range of habitat types, including rainforest, open forest, woodland, coastal heath and inland riparian forest, from the sub-alpine zone to the coastline. Individual animals use hollow-bearing trees, fallen logs, small caves, rock outcrops and rocky-cliff faces as den sites. Females occupy home ranges of 200-500 hectares, while males occupy very large home ranges from 500 to over 4000 hectares. Are known to traverse their home ranges along densely vegetated creeklines.	**Possible** The species has been recorded in the locality **NIL** No habitat likely to support the species would be impacted
Nyctophilus corbeni	South-eastern Long-eared Bat	V	V		Overall, the distribution of the south eastern form coincides approximately with the Murray Darling Basin with the Pilliga Scrub region being the distinct stronghold for this species. Inhabits a variety of vegetation types, including mallee, bulloke Allocasuarina leuhmanni and box eucalypt dominated communities, but it is distinctly more common in box/ironbark/cypress-pine vegetation that occurs in a north-south belt along the western slopes and plains of NSW and southern Queensland.	**Unlikely** The species has not previously been recorded in the locality **NIL** No habitat likely to support the species would be impacted
Phascolarctos cinereus	Koala	E	E	1	The Koala has a fragmented distribution throughout eastern Australia from north-east Queensland to the Eyre Peninsula in South Australia. In New South Wales, koala populations are found on the central and north coasts, southern highlands, southern and northern tablelands, Blue Mountains, southern coastal forests, with some smaller populations on the plains west of the Great Dividing Range. The species inhabit eucalypt woodlands and forests, and feed on the foliage of more than 70 eucalypt species and 30 non-eucalypt species, but in any one area will select preferred browse species.	**Possible** The species has been recorded in the locality **NIL** No habitat likely to support the species would be impacted

Scientific name	Common name	BC Status	EPBC Status	Source	Habitat requirements (OEH 2020b)	Justification
Pseudomys novaehollandiae	New Holland mouse	-	V		The New Holland Mouse has a fragmented distribution across Tasmania, Victoria, New South Wales and Queensland. Genetic evidence indicates that the New Holland Mouse once formed a single continuous population on mainland Australia and the distribution of recent subfossils further suggest that the species has undergone a large range contraction since European settlement. Known to inhabit open heathlands, woodlands and forests with a heathland understorey and vegetated sand dunes. It is a social animal, living predominantly in burrows shared with other individuals.	**Unlikely** The species has not previously been recorded in the locality **NIL** No habitat likely to support the species would be impacted
Pteropus poliocephalus	Grey-headed Flying-fox	V	V		Grey-headed Flying-foxes are generally found within 200 km of the eastern coast of Australia, from Rockhampton in Queensland to Adelaide in South Australia. In times of natural resource shortages, they may be found in unusual locations. The species occur in subtropical and temperate rainforests, tall sclerophyll forests and woodlands, heaths and swamps as well as urban gardens and cultivated fruit crops. Roosting camps are generally located within 20 km of a regular food source and are commonly found in gullies, close to water, in vegetation with a dense canopy.	**Unlikely** The species has not previously been recorded in the locality **NIL** No habitat likely to support the species would be impacted
Reptiles						
Aprasia parapulchella	Pink-tailed Worm Lizard	V	V		Populations occur in the Queanbeyan/Canberra district, Cooma, Yass, Bathurst, Albury and West Wyalong areas. Inhabits grassland and open woodland with substantial embedded rock cover in sunny situations. Recorded in both native and non-native grasslands. Usually recorded under small rocks (150 - 600 mm basal area) shallowly embedded in the soil (2 - 5 cm, and use ant burrows under these rocks.	**Unlikely** The species has not previously been recorded in the locality **NIL** No habitat likely to support the species would be impacted
Hemiaspis damelii	Grey Snake	E	E		Distributed throughout the eastern interior, from central inland New South Wales, north to coastal areas near Rockhampton in Queensland (Cogger 2000; Hobson 2003; Wilson and Swan 2010; Hobson 2012). Hemiaspis damelii favours woodlands (typically brigalow Acacia harpophylla and belah Casuarina cristata), usually on heavier, cracking clay soils, particularly in association with water bodies or in areas with	**Unlikely** The species has not previously been recorded in the locality **NIL**

Scientific name	Common name	BC Status	EPBC Status	Source	Habitat requirements (OEH 2020b)	Justification
					small gullies and ditches (gilgais) (Wilson and Swan 2010; Hobson 2012). (QLD Gov - Targeted Species Survey Guidelines - 2023)	No habitat likely to support the species would be impacted

Appendix C Tests of Significance (BC Act)

Section 1.7 of the EP&A Act lists considerations that must be taken into account in the determination of the significance of potential impacts of a proposed Proposal on 'threatened species, populations or ecological communities (or their habitats)' listed under the BC Act. The Test of Significance is used to determine whether a Proposal is 'likely' to impose 'a significant effect' on threatened biota and thus whether a Species Impact Statement (SIS) is required. Should the Test of Significance conclude that there is likely to be a 'significant effect' on a listed species, population or endangered ecological community, an SIS must be prepared or participation in the Biodiversity Offset Scheme.

Biodiversity Conservation Act 2016 Part 7.3 sets out the following Test of Significance considerations which must be addressed to determine whether a significant impact is likely to occur.

The following species and TEC's are all listed under the BC Act and have been assessed due to their potential to be impacted by the proposal:

Scientific Name	Common name	BC Act	Summary of Assessment of Significance
Birds – foraging habitat loss			
Polytelis swainsonii	Superb Parrot	V	No significant effect
Melithreptus gularis gularis	Black-chinned Honeyeater	V	No significant effect
Climacteris picumnus	Brown Treecreeper (eastern subspecies)	V	No significant effect
Daphoenositta chrysoptera	Varied sittella	V	No significant effect
Neophema pulchella	Turquoise Parrot	V	No significant effect
Artamus cyanopterus cyanopterus	Dusky Woodswallow	V	No significant effect
Glossopsitta pusilla	Little Lorikeet	V	No significant effect
Chthonicola sagittata	Speckled Warbler	V	No significant effect

Little Lorikeet, *Glossopsitta pusilla* – Vulnerable, Superb Parrot, *Polytelis swainsonii – Vulnerable,* Turquoise Parrot, *Neophema pulchella* – Vulnerable

These species have been grouped together based on similar habitat requirements

In the case of a threatened species, whether the proposed development or activity is likely to have an adverse effect on the life cycle of the species such that a viable local population of the species is likely to be placed at risk of extinction,

Little Lorikeet, Superb Parrot and Turquoise Parrot require open woodland habitats with tree hollows for nesting sites. Each species has specific requirements as to the location, type and size of these sites.

- **Little Lorikeet:** Roosts in treetops often distant from feeding areas. Nests in proximity to feeding areas if possible, most typically selecting hollows in the limb or trunk of smooth-barked Eucalypts. Nesting

season from May to September. Entrance is small (3 cm) and usually high above the ground (2–15 m). These nest sites are often used repeatedly for decades, suggesting that preferred sites are limited. Riparian trees often chosen, including species like *Allocasuarina.*

- **Superb Parrot:** Typically nest in colonies and return to the same location over generations. During the summer they return from wintering in northern NSW to breed. Nest trees can be in open Box-Gum Woodland or isolated paddock trees. Species known to be used are Blakely's Red Gum, Yellow Box, Apple Box and Red Box, among others. Found to forage in grassy box woodland up to 10km from the nesting site.
- **Turquoise Parrot:** Lives on the edges of eucalypt woodland adjoining clearings, timbered ridges and creeks in farmland. Prefers to feed in the shade of trees and spends most of the day on the ground searching for the seeds or grasses and herbaceous plants. This species forages quietly and can be quite tolerant of disturbance. Nests in tree hollows, logs or posts, from August to December.

The above listed species are likely to occur and persist in the assessment area and broader locality, as suitable habitat occurs within the Study Area, as well as within the broader locality. Local records for **Superb Parrot** occur as recently as 2020, and more than 20 years past for both **Little Lorikeet** and **Turquoise Parrot**. Although these records are not recent, it is likely that these species persist within the less disturbed areas in the broader locality and will opportunistically utilise habitat resources present within the Subject Site.

There are three habitat trees with the potential to be removed to make way for the expansion of the current access road, which will cause a reduction in the availability of possible foraging habitat for these species. No tree hollows were recorded in the three trees to be removed, and no evidence of nesting by any of these species was observed during surveys within the Subject Site, however targeted surveys were not undertaken. One hollow was observed in one tree that is proposed to be limb lopped, but the hollow will be unaffected by the works. The Subject Site is along an existing roadway and is subject to traffic and disturbance and not likely to be a key breeding area for these species. Therefore, it is considered unlikely the proposal would have an adverse effect on the life cycle of the species such that a viable local population of these species would be placed at risk of extinction.

In the case of an endangered ecological community or critically endangered ecological community, whether the proposed development or activity:

i. **is likely to have an adverse effect on the extent of the ecological community such that its local occurrence is likely to be placed at risk of extinction, or**
ii. **is likely to substantially and adversely modify the composition of the ecological community such that its local occurrence is likely to be placed at risk of extinction,**

Not applicable to these threatened species.

In relation to the habitat of a threatened species or ecological community:

i. **the extent to which habitat is likely to be removed or modified as a result of the proposed development or activity, and**
ii. **whether an area of habitat is likely to become fragmented or isolated from other areas of habitat as a result of the proposed development or activity, and**
iii. **the importance of the habitat to be removed, modified, fragmented or isolated to the long-term survival of the species or ecological community in the locality,**

Approximately **0.18 ha** of native vegetation is to be directly impacted as part of the proposed works consisting of low quality native vegetation including **three (3)** habitat trees to be removed and **one (1)** hollow bearing

tree to be partially limb-lopped. The habitat and trees proposed to be removed or modified are likely to be utilised by this group of woodland parrot species for foraging and/or potentially nesting resources. As works will be occurring immediately alongside an existing section of road, this habitat is likely only to be utilised in a transient and opportunistic way by these species and is unlikely to be heavily used for breeding purposes due to ongoing disturbance.

Further habitat fragmentation or isolation is unlikely to occur as the proposed impacts are to be undertaken along an existing road edge with minimal additional widening occurring.

There is an area of preferred habitat in Back Yamma State Forest 6.5 km to the north-east of the subject land which contains good quality woodland vegetation and provides ample viable habitat for these species to persist away from the road edge. Although the vegetation within this Subject Site may form a fauna corridor for these species, this vegetation corridor does not connect to Back Yamma State Forest or with any other large tracts of remnant vegetation and is not forming a corridor between any other isolated habitat. Instead, it connects other similar roadside vegetation corridors and vegetation associated within the Lachlan River. It is likely that the habitat resources associated with vegetation and the Lachlan River tributary network within the broader locality provide refuge and shelter corridors between Back Yamma State Forest and this road corridor.

Clearing of vegetation contributes to ongoing fragmentation of habitat, however these woodland parrot species are highly mobile and will be largely unaffected by any minor fragmentation of habitat. As the vegetation to be removed occurs within an existing road corridor with existing disturbance and fragmentation issues, and no isolation is likely to occur, the proposed works and associated impacts are unlikely to negatively affect the long-term survival of these birds within the locality.

Whether the proposed development or activity is likely to have an adverse effect on any declared area of outstanding biodiversity value (either directly or indirectly),

The site does not support any declared registered areas of outstanding biodiversity.

Whether the proposed development or activity is or is part of a key threatening process or is likely to increase the impact of a key threatening process.

The following listed Key threatening processes have the potential to occur or increase as a result of the proposal, if appropriate mitigation measures are not implemented:

- Clearing of native vegetation
- Invasion of plant communities by perennial exotic grasses
- Infection of native plants by Phytophthora cinnamomic
- Introduction and establishment of Exotic Rust Fungi of the order Pucciniales, pathogenic on plants of the family Myrtaceae
- Anthropogenic climate change

Conclusion

Environmental safeguards that form part of this proposal will ensure direct and indirect impacts to these species are avoided or minimised. Any trees containing nests will be avoided or surveyed prior to felling for occupation, with those occupied left until the nests are abandoned. Retention of Key habitat features within the impact footprint has also been recommended, and Preclearing surveys will also identify the presence of any threatened fauna utilising the habitat features of the site prior to clearing to help avoid impacts to these species. Due to the relatively small area of suitable habitat resources to be removed, the existing fragmentation and disturbance level within these areas of habitat, the availability of high-quality habitat

within the accessible range of these highly mobile species, and the tendency for these birds to prefer nest sites at a distance from human disruption, it is therefore deemed the proposed works are unlikely to significantly affect this group of Woodland Parrot species.

Woodland Birds:

Black-chinned Honeyeater, *Melithreptus gularis gularis* – Vulnerable, Brown Treecreeper (eastern subspecies), *Climacteris picumnus* – Vulnerable, Speckled Warbler, *Chthonicola sagittata* – Vulnerable, Dusky Woodswallow, *Artamus cyanopterus cyanopterus* – Vulnerable, Varied Sittella, *Daphoenositta chrysoptera* – Vulnerable

These species have been grouped together based on similar habitat requirements.

In the case of a threatened species, whether the proposed development or activity is likely to have an adverse effect on the life cycle of the species such that a viable local population of the species is likely to be placed at risk of extinction,

The woodland birds listed above all have confirmed records within the locality in the last 10 years, and rely on habitat resources identified within the Study Area in order to survive and reproduce. These species utilise woodland areas and edges with diverse grassy and shrubby understorey for foraging and nesting opportunities. Insects are gleaned from the air, under bark, or within debris and fallen timber resources. Contiguous vegetation is preferred by these species to allow ease of movement throughout home ranges and habitat resources.

Although up to **0.18 ha** of native vegetation will be directly impacted as part of works, this vegetation adjoins an existing road and thus is already likely avoided by most native wildlife. The vegetation to be cleared is not likely to be favored by these species for breeding purposes due to ongoing disturbance by traffic. The vegetation within this road corridor is partially connected by remnant and regenerating vegetation to a large tract of contiguous favored habitat within Back Yamma State Forest in the broader locality, which provides additional suitable habitat for these species to persist and breed away from human disturbance. Thus, the proposed works are unlikely to impact these species such that it places them at further risk of extinction. There may be disturbance to foraging resources, however this is unlikely to result in local extinction of these species.

In the case of an endangered ecological community or critically endangered ecological community, whether the proposed development or activity:

- **i. is likely to have an adverse effect on the extent of the ecological community such that its local occurrence is likely to be placed at risk of extinction, or**
- **ii. is likely to substantially and adversely modify the composition of the ecological community such that its local occurrence is likely to be placed at risk of extinction,**

Not applicable to these threatened species.

In relation to the habitat of a threatened species or ecological community:

- **iii. (i) the extent to which habitat is likely to be removed or modified as a result of the proposed development or activity, and**
- **iv. (ii) whether an area of habitat is likely to become fragmented or isolated from other areas of habitat as a result of the proposed development or activity, and**
- **v. (iii) the importance of the habitat to be removed, modified, fragmented or isolated to the long-term survival of the species or ecological community in the locality,**

Approximately **0.18 ha** of native vegetation is to be directly impacted as part of the proposed works consisting of low quality native vegetation. As works will be occurring immediately alongside an existing section of road, this habitat is likely only to be utilised in a transient and opportunistic way by these species and is unlikely to be heavily used for breeding purposes due to ongoing disturbance.

Further habitat fragmentation or isolation is unlikely to occur as the proposed impacts are to be undertaken along an existing road edge with minimal additional widening occurring.

There is an area of preferred habitat in Back Yamma State Forest 6.5 km to the north-east of the subject land which contains good quality woodland vegetation and provides ample viable habitat for these species to persist away from the road edge. Although the vegetation within this Subject Site may form a fauna corridor for these species, this vegetation corridor does not connect to Back Yamma State Forest or with any other large tracts of remnant vegetation and is not forming a corridor between any other isolated habitat. Instead, it connects other similar roadside vegetation corridors and vegetation associated within the Lachlan River. It is likely that the habitat resources associated with vegetation and the Lachlan River tributary network within the broader locality provide refuge and shelter corridors between Back Yamma State Forest and this road corridor.

Clearing of vegetation contributes to ongoing fragmentation of habitat, however woodland birds are largely unaffected by this fragmentation of habitat where no isolation is occurring. As the vegetation to be removed occurs within an existing road corridor with existing disturbance and fragmentation issues, and no isolation is likely to occur, the proposed works and associated impacts are unlikely to negatively affect the long-term survival of these birds within the locality.

Whether the proposed development or activity is likely to have an adverse effect on any declared area of outstanding biodiversity value (either directly or indirectly),

The site does not support any declared Areas of Outstanding Biodiversity Value (formerly critical habitat).

Whether the proposed development or activity is or is part of a key threatening process or is likely to increase the impact of a key threatening process.

The following Key Threatening Processes of relevance to these species have the potential to increase as a result of the proposed pre-treatment plant access road upgrade along The Escort Way if the appropriate measures are not implemented and adhered to:

- Clearing of native vegetation
- Invasion of plant communities by perennial exotic grasses
- Infection of native plants by Phytophthora cinnamomic
- Introduction and establishment of Exotic Rust Fungi of the order Pucciniales, pathogenic on plants of the family Myrtaceae
- Anthropogenic climate change

Conclusion

Environmental safeguards that form part of this proposal will ensure direct and indirect impacts to these species are avoided or minimised. Any trees containing nests will be avoided or surveyed prior to felling for occupation, with those occupied left until the nests are abandoned. Due to the relatively small area of suitable resources to be removed, the existing fragmentation and disturbance level within these areas of habitat, the availability of high-quality habitat within the accessible range of these species, and the tendency for these birds to prefer nest sites at a distance from human disruption, it is therefore deemed the proposed works are unlikely to significantly affect this group of Woodland bird species.

Appendix D Significant Impact Criteria Assessments (EPBC Act)

Assessments of significance have been provided for threatened biota of concern to provide an indication of the potential level of impact of the proposal based on past records and habitats present. The following assessments have relied on species habitat information and records available via OEH Saving Our Species, DEE SPRAT profiles unless otherwise stated.

The following species listed under the EPBC Act are included in this assessment:

Scientific Name	Common name	EPBC Act	Summary of Assessment of Significance
Climacteris picumnus	Brown Treecreeper (eastern subspecies)	V	No significant impact
Polytelis swainsonii	Superb Parrot	V	No significant impact

The Assessment of Significance concluded that a significant impact to these species is unlikely. Consequently, a Referral to the Minister is not warranted.

Brown Treecreeper (eastern subspecies) – Vulnerable, Superb Parrot, *Polytelis swainsonii* – Vulnerable

These species have been grouped together based on similar habitat requirements

An action is likely to have a significant impact on a vulnerable species if there is a real chance or possibility that it would:

Lead to a long-term decrease in the size of an important population of a species,

No important population of these species has been recorded within the Study Area. One-hundred-and-nineteen (119) records of the Superb Parrot and two-hundred-and-six (206) records of the Brown Treecreeper (eastern subspecies) occur within 20km of the Subject site but no records of this species exist within the Study Area.

No important population of these species are known to occur within 20 km of the Study Area, however suitable habitat for the species occurs throughout the Study Area and broader locality. With the removal of three (3) habitat trees and modification of one (1) hollow-bearing tree, and up to **0.18 ha** of native vegetation containing habitat preferred by these species, some potential foraging habitat for the species is to be removed. However, the species were not observed to be utilising these resources during the site survey. Significant Habitat features present within the Subject Site have been recommended for retention (RR), with targeted surveys for these species recommended if these trees are to be removed to ensure impacts to the species are avoided. One (1) hollow-bearing tree is proposed to be limb-lopped and the hollow will be retained. Given the relatively small areas of vegetation to be removed, with tracts of contiguous remnant vegetation present within the locality, the proposal is deemed unlikely to affect the life cycle of Superb Parrots and Brown Treecreepers (eastern subspecies) such that a viable important population is likely to be placed at risk of extinction.

Reduce the area of occupancy of the species,

A high number of recent records of these species occurs within the locality. Three (3) habitat trees are likely to be removed within an estimated **0.18 ha** of native vegetation to be directly impacted. Significant Habitat features present within the subject site have recommended for retention (RR), with targeted surveys for these species recommended if these trees are to be removed to ensure impacts to these species are avoided. Given the relatively small area of potentially suitable habitat to be impacted as a result of this proposal, the highly mobile nature of the species, the availability suitable habitat within the immediate study area along with large tracts of relatively undisturbed preferred habitat within the Back Yamma State Forest located in the broader locality, it is deemed the Proposal is unlikely to reduce the area of occupancy of these species to a significant extent.

Fragment an existing population into two or more populations,

It is likely that the Superb Parrots and Brown Treecreepers (eastern subspecies) observed in recent records in the locality form part of a population which occupy the study area and broader locality. However, these species are highly mobile and the proposal will not isolate an area of potential habitat. The Proposal is therefore deemed unlikely to fragment an existing population of these species into two or more populations.

Adversely affect habitat critical to the survival of a species,

The land to be cleared is directly adjacent to an existing road. Larger tracts of suitable habitat occur within the broader locality. Therefore, the Proposal is unlikely to adversely affect habitat that is critical to the survival of the species.

Disrupt the breeding cycle of a population,

No potential breeding habitat will be affected by the Proposal. One (1) hollow was identified within the subject site during the field survey and this is proposed to be retained in order to not impact any breeding habitat for this species. It is therefore determined that the proposal is unlikely to disrupt the breeding cycle of the populations of Superb Parrot and Brown Treecreeper (eastern subspecies).

Modify, destroy, remove, isolate or decrease the availability or quality of habitat to the extent that the species is likely to decline,

Approximately **three (3)** habitat trees have the potential to be removed and **one (1)** hollow bearing tree has the potential to be modified, along with approximately **0.18 ha** of native vegetation, which is an insignificant proportion of total available native vegetation within the immediate study area. The impact to this vegetation is unlikely to impact the foraging/feeding ability/success of the Superb Parrot or Brown Treecreeper (eastern subspecies) persisting within the broader locality, as these species are highly mobile and large tracts of preferred suitable habitat occurs within the broader locality. Therefore, it is deemed unlikely that the Proposal is unlikely to modify, destroy, isolate or decrease the availability of quality habitat such that it places these vulnerable species into further decline.

Result in invasive species that are harmful to a critically endangered or endangered species becoming established in the endangered or critically endangered species' habitat,

The study area was observed to contain high levels of weed invasion during surveys. Provided environmental safeguards that form part of this Proposal are strictly adhered to, no further invasive species are expected to become established as a result of the proposed works.

Introduce disease that may cause the species to decline,

No evidence of existing disease was present within the study area during surveys. Environmental safeguards that form part of the Proposal are aimed at minimising or avoiding the possibility of disease being introduced to the Study Area are a result of the proposed works. Therefore, as long as mitigation measures are strictly adhered to, no diseases are anticipated to become established as a result of the proposed works.

Interferes substantially with the recovery of the species.

A number of recent records exist for these species within the broader locality. Large tracts of suitable habitat occur within the broader locality along with smaller remnant woodland patches occurring on private land holdings, road reserves along the Lachlan River within the assessment area. The species were not observed to be utilising the study area during the site survey. It is therefore determined that the Proposal is unlikely to substantially interfere with the recovery of Superb Parrot and Brown Treecreepers (eastern subspecies).

Conclusion

Given the above, it is deemed unlikely that Superb Parrot or Brown Treecreeper (eastern subspecies) will be significantly impacted by the proposed works. However, there is potential for breeding and foraging habitat to be utilised along The Escort Way within the subject site. It is critical that the Environmental safeguards that form part of this proposal are adhered to as this will ensure direct and indirect impacts to these species are avoided or minimised.

Appendix E Aboriginal Due Diligence Assessment Report

View southeast towards the proposed Lachlan River Pre-Treatment Plant entrance.

ABORIGINAL DUE DILIGENCE ASSESSMENT REPORT

ADDITIONAL WORKS – LACHLAN RIVER PRE-TREATMENT PLANT

FORBES, NSW

JUNE 2023

Report prepared by

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Acknowledgement

OzArk acknowledge the traditional custodians of the area on which this assessment took place and pay respect to their beliefs, cultural heritage, and continuing connection with the land. We also acknowledge and pay respect to the post-contact experiences of Aboriginal people with attachment to the area and to the Elders, past and present, as the next generation of role models and vessels for memories, traditions, culture and hopes of local Aboriginal people.

EXECUTIVE SUMMARY

OzArk Environment & Heritage (OzArk) has been engaged Parkes Shire Council (the proponent) to complete an Aboriginal heritage due diligence assessment for access upgrade works associated with the proposed Lachlan River Pre-Treatment Plant (the proposal).

The proposal includes two construction activities: upgrades to the access driveway at the Eugowra Road Pumping Station and the under boring of three water pipelines beneath Eugowra Road, north of the driveway.

The study area for the assessment includes a 300 x 100 metre (m) area of the Escort Way (Eugowra Road) road corridor adjacent to the Eugowra Road Pumping Station.

The visual inspection of the study area was undertaken by OzArk Archaeologist Harrison Rochford on 18 May 2023 with Rob Clegg and Steve Parker of the Wiradjuri Council of Elders.

One modified tree was identified at the northeast of the study area on the eastern side of the Escort Way. The tree (Escort Way ST 1) is approximately 50 m northwest of the nearest impacts associated with the proposal and can be avoided during works. Another tree with scarring on it was examined during the visual inspection. Although the scarring was not determined to be cultural in origin, this tree has been recorded as a community interest tree and will also be avoided during works (**Section 3**).

The undertaking of the due diligence process resulted in the conclusion that the proposed works will have an impact on the ground surface, however, no Aboriginal objects or intact archaeological deposits will be harmed by the proposal. This moves the proposal to the following outcome:

> *Aboriginal Heritage Impact Permit (AHIP) application not necessary. Proceed with caution. If any Aboriginal objects are found, stop work, and notify Heritage NSW (02) 9873 8500 (heritagemailbox@environment.nsw.gov.au). If human remains are found, stop work, secure the site, and notify NSW Police and Heritage NSW.*

To ensure the greatest possible protection to the area's Aboriginal cultural heritage values, the following recommendations are made:

1) The proposed work may proceed at the study area without further archaeological investigation under the following conditions:
    a) All land and ground disturbance activities must be confined to within the study area. Should the parameters of the proposal extend beyond the assessed areas, then further archaeological assessment may be required.
    b) The management measures described in **Section 4** must be enacted to minimise the risk of inadvertent harm to Escort Way ST 1 and the community interest tree.

c) All staff and contractors involved in the proposed work should be made aware of the legislative protection requirements for all Aboriginal sites and objects.

2) This assessment has concluded that there is a low likelihood that the proposed work will adversely harm Aboriginal cultural heritage items or sites. If during works, however, Aboriginal artefacts or skeletal material are noted, all work should cease and the procedures in the *Unanticipated Finds Protocol* (**Appendix 2**) should be followed.

3) Inductions for work crews should include a cultural heritage awareness procedure to ensure they recognise Aboriginal artefacts (see **Appendix 3**) and are aware of the legislative protection of Aboriginal objects under the National Parks and Wildlife Act 1974 (NPW Act) and the contents of the *Unanticipated Finds Protocol.*

4) The information presented here meets the requirements of the *Due Diligence Code of Practice for the Protection of Aboriginal Objects in New South Wales*. It should be retained as shelf documentation for five years as it may be used to support a defence against prosecution in the event of unanticipated harm to Aboriginal objects.

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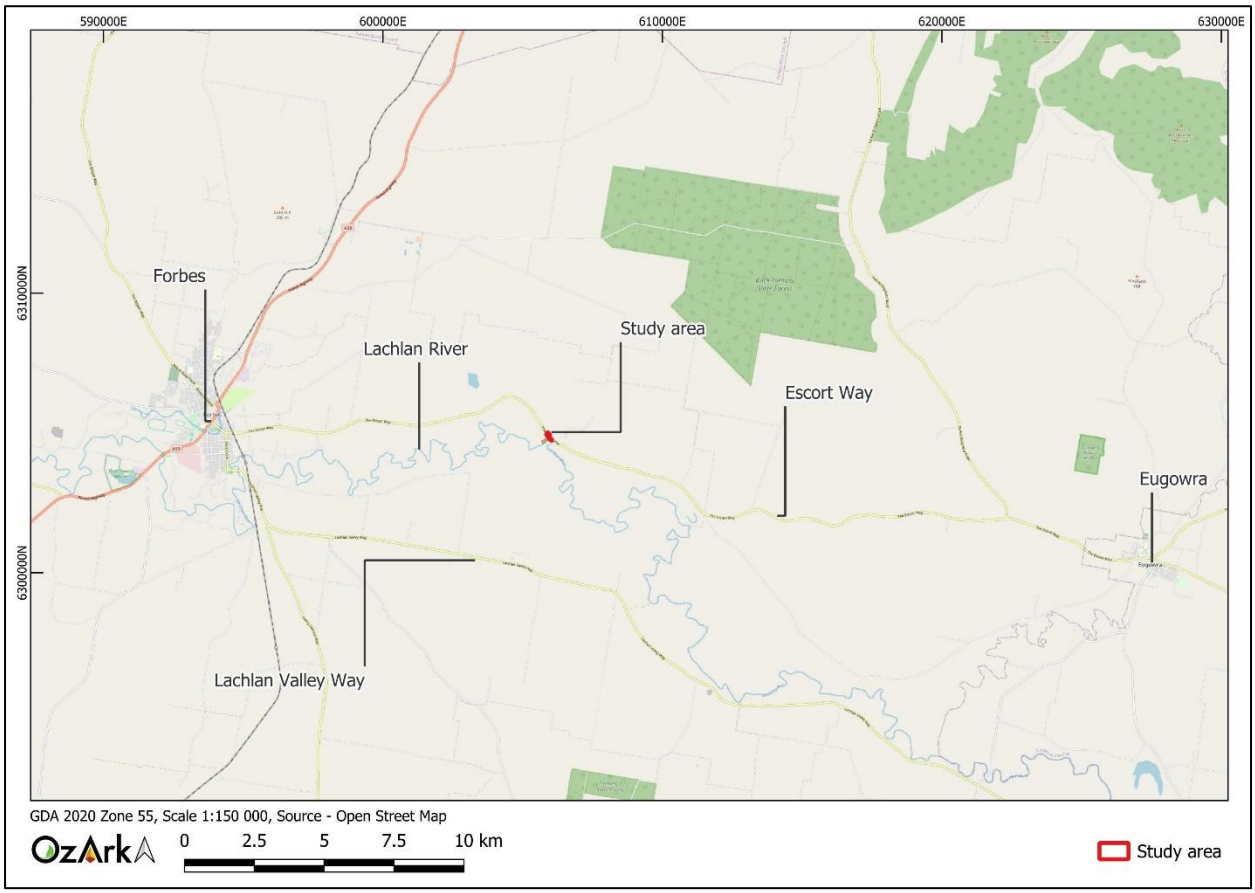
1 INTRODUCTION

1.1 BRIEF DESCRIPTION OF THE PROPOSAL

OzArk Environment & Heritage (OzArk) has been engaged Parkes Shire Council (the proponent) to complete an Aboriginal heritage due diligence assessment for access upgrade works associated with the proposed Lachlan River Pre-Treatment Plant (the proposal). The proposal is in the Forbes Shire Council Local Government Area (LGA) (**Figure 1-1**).

Figure 1-1. Map showing the location of the proposal.



1.2 STUDY AREA

The study area for the assessment includes a 300 x 100 metre (m) area of the Escort Way (Eugowra Road) road corridor adjacent to the Eugowra Road Pumping Station.

The study area is situated on a flat plain landform adjacent to the Lachlan River. The study area includes the road verge of The Escort Way and the driveway into the Eugowra Road Pumping Station. Vegetation at the study area comprises open box and gum woodland. The study area is shown on **Figure 1-2**.

1.3 PROPOSED WORKS

The proposal includes two construction activities: upgrades to the access driveway at the Eugowra Road Pumping Station and the under boring of three water pipelines beneath Eugowra Road, north of the driveway.

The driveway access upgrades will involve widening and resurfacing the existing driveway, establishing short slip lanes for merging on to Eugowra Road and the removal or pruning of vegetation in the road corridor.

The proposed water pipeline installation will under bore three 750 mm diameter pipes perpendicular to Eugowra Road to connect the proposed Lachlan River Pre-Treatment Plant lagoons to the existing pipeline on the eastern side of Eugowra Road.

Figure 1-2: Aerial showing the study area.

1.4 BACKGROUND

The location of the proposed Lachlan River Pre-Treatment Plant (PTP), adjacent to the study area, has been subject to three heritage assessments for the Parkes Shire Council (PSC) since 2001 that are relevant to the current proposal. These studies are: OzArk 2015, EcoLogical 2022 and OzArk 2022.

OzArk 2015. *Aboriginal Heritage Assessment: Parkes Water and Wastewater Augmentation Project*

An Aboriginal heritage assessment was conducted by OzArk in 2015 for the Eugowra Road Pumping Station, 50 m to the west of the current study area. This assessment recorded one low-density artefact scatter along the terrace landform of the Lachlan River. The site, PSC Pump Station OS1 with PAD (AHIMS Site 43-3-0108), comprised ten artefacts recorded across a 100 x 30 m area. A precautionary buffer area of approximately 200 x 100 m was made for the site. This site buffer is mapped on **Figure 1-3** and extends into the current study area.

An Aboriginal Heritage Impact Permit (AHIP) for Site 43-3-0108 was issued to the Parkes Shire Council in April 2015. The approximate AHIP area is shown on **Figure 1-3**. The artefact scatter has since been salvaged. All surface artefacts were collected with the assistance of the Peak Hill Local Aboriginal Land Council (LALC). This AHIP remains active until 2025 and partially overlaps the current study area.

EcoLogical 2022. *Parkes Town Water Security Program Project 1 Aboriginal Cultural Heritage Assessment*

Since the AHIP was issued, another heritage assessment was conducted in late 2021 for the proposed construction of a 9-kilometre (km) water pipeline by Parkes Shire Council (EcoLogical 2022). The pipeline extends across the western boundary of the study area and the AHIP area. The assessment included a test excavation program that completed 24 test pits on the same plains landform as Aboriginal site 43-3-0108 (OnSite CHM 2022). No Aboriginal objects were recovered during the test excavation program.

OzArk 2022. Aboriginal Due Diligence Report: Proposed Lachlan River Pre-Treatment Plant

An Aboriginal heritage due diligence assessment for the proposed Lachlan River PTP, that will be adjacent to the current study area, was completed in 2022 (OzArk 2022). It was determined that the site extent for Lachlan River PSC OS1 (AHIMS site 43-3-0108) included a 'precautionary buffer' that had been placed around the Aboriginal objects recorded by OzArk (2015) and salvaged under AHIP C0001096 later in 2015. In reconsidering this buffer, OzArk 2022 noted the absence of recorded artefacts during recent test excavations (OnSite CHM 2022) and determined that the appropriate site extent for Lachlan River PSC OS1 should be confined

to areas that are not within landforms modified by agricultural disturbance or the 2015 salvage program. This area is shown on **Figure 2-4**.

Figure 1-3. Showing the AHIP area in relation to the study area.

1.5 ASSESSMENT APPROACH

Aboriginal cultural heritage

The desktop and visual inspection component for the study area follows the *Due Diligence Code of Practice for the Protection of Aboriginal Objects in New South Wales* (due diligence; DECCW 2010). The field inspection followed the *Guide to Investigating, Assessing and Reporting on Aboriginal Cultural Heritage in New South Wales* (OEH 2011).

2 ABORIGINAL DUE DILIGENCE ASSESSMENT

2.1 INTRODUCTION

Section 57 of the National Parks and Wildlife Regulation 2019 (NPW Regulation) made under the *National Parks and Wildlife Act 1974* (NPW Act) advocates a due diligence process to determining likely impacts on Aboriginal objects. Carrying out due diligence provides a defence to the offence of harming Aboriginal objects and is an important step in satisfying Aboriginal heritage obligations in NSW.

2.2 DEFENCES UNDER THE NPW REGULATION 2019

2.2.1 Low impact activities

The first step before application of the due diligence process itself is to determine whether the proposed activity is a "low impact activity" for which there is a defence in the NPW Regulation. The exemptions are listed in Section 58 of the NPW Regulation (DECCW 2010: 6).

The proposed works will require excavation, tree removal and disturbance of the ground surface for under boring. These activities are not defined as "low impact" activities under the NPW Regulation, so the Due Diligence process must be applied.

2.2.2 Disturbed lands

The NPW Regulation Section 58 (DECCW 2010: 18) define disturbed land as follows:

> *Land is disturbed if it has been the subject of a human activity that has changed the land's surface, being changes that remain clear and observable.*
>
> *Examples include ploughing, construction of rural infrastructure (such as dams and fences), construction of roads, trails and tracks (including fire trails and tracks and walking tracks), clearing vegetation, construction of buildings and the erection of other structures, construction or installation of utilities and other similar services (such as above or below ground electrical infrastructure, water or sewerage pipelines, stormwater drainage and other similar infrastructure) and construction of earthworks.*

Although some sections of the study area, such as the existing Eugowra Road, could be considered 'disturbed land' under the above definition, the proposed works are not low impact activities and the disturbed lands defence would not apply. Further, mature trees are present.

In summary, it is determined that the proposal must be assessed under the Due Diligence Code of Practice. The reasoning for this determination is set out in **Table 2-1**.

Table 2-1: Determination of whether Due Diligence Code of Practice applies.

Item	Reasoning	Answer
Is the activity to be assessed under Division 4.7 (state significant development) or Division 5.2 (state significant infrastructure) of the EP&A Act?	The proposal will be assessed under Part 5 of the EP&A Act.	No
Is the activity exempt from the NPW Act or NPW Regulation?	The proposal is not exempt under this Act or Regulation.	No
Do either or both apply: Is the activity in an Aboriginal place? Have previous investigations that meet the requirements of this Code identified Aboriginal objects?	The activity will not occur in an Aboriginal place. No previous investigations have been undertaken for this proposal.	No
Is the activity a low impact one for which there is a defence in the NPW Regulation?	The proposal is not a low impact activity for which there is a defence in the NPW Regulation.	No
Is the activity occurring entirely within areas that are assessed as 'disturbed lands'?	The proposal is not entirely within areas of high modification.	No
Due Diligence Code of Practice assessment is required		

2.3 APPLICATION OF THE DUE DILIGENCE CODE OF PRACTICE TO THE PROPOSAL

To follow the generic due diligence process, a series of steps in a question/answer flowchart format (DECCW 2010: 10) are applied to the proposed impacts and the study area, and the responses documented.

2.3.1 Step 1

Will the activity disturb the ground surface or any culturally modified trees?

Yes, the proposal will impact the ground surface and may impact culturally modified trees, if they are present.

The proposed works will require excavation, tree removal and under boring. These activities will impact the ground surface and could harm culturally modified trees, if there are any present within the study area. Mature trees do appear to be present in the study area.

2.3.2 Step 2a

Are there any relevant confirmed site records or other associated landscape feature information on AHIMS?

Yes, there is a previously recorded site relevant to the study area.

A search of the Aboriginal Heritage Information Management System (AHIMS) on 15 September 2022 was completed over a 10 x 10 km search area centred on the study area (GDA Zone 55 Eastings: 601000–611000, Northings 6299400–6309400). The search returned seven results for previously recorded Aboriginal sites within the search area.

Figure 2-1 shows all previously recorded sites in relation to the study area and **Table 2-2** shows the types of sites that are close to the study area. Modified trees are the most frequently recorded site type within the search area (86%, n=6).

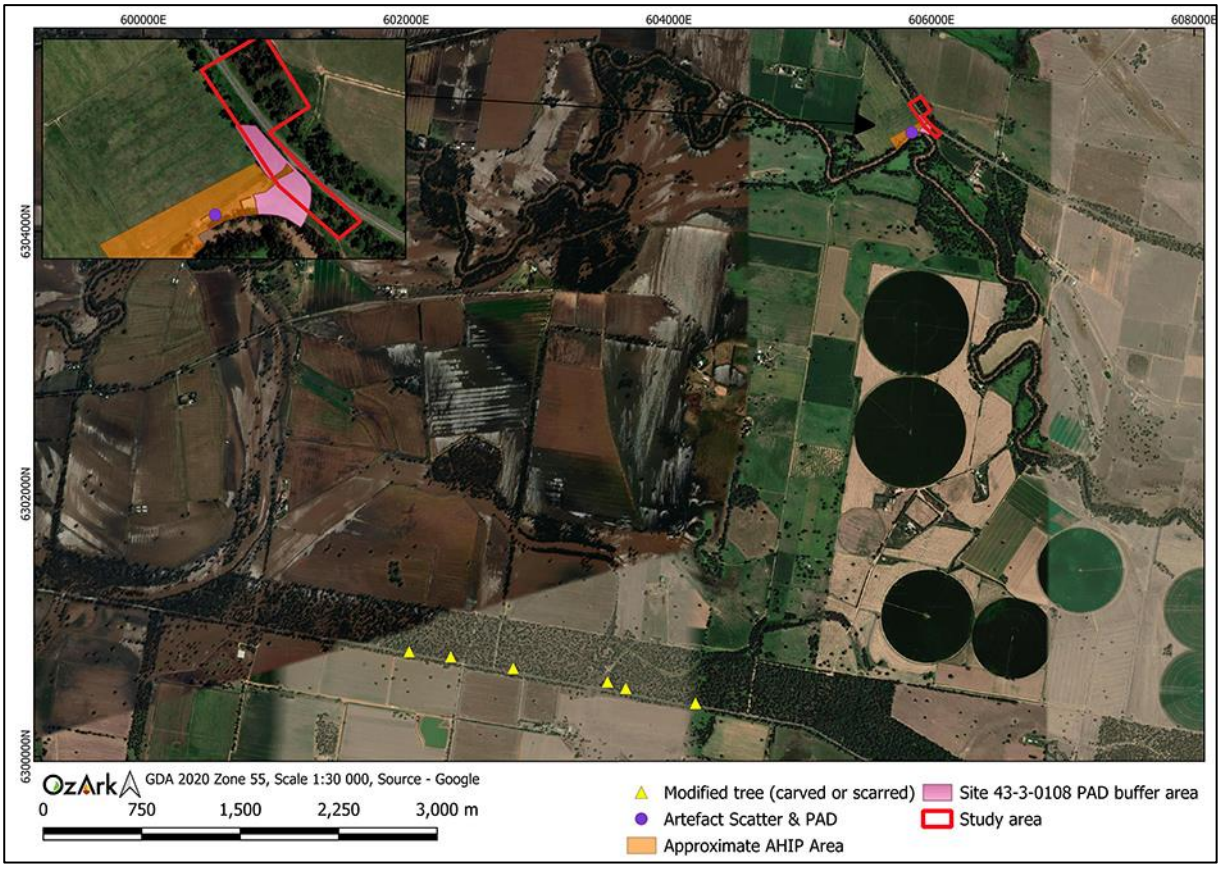
The artefact scatter with a Potential Archaeological Deposit (PAD) is site 43-3-0108. This site has been partially destroyed and surface artefacts have been salvaged, however the identified PAD extends into the study area, indicating that some archaeological potential may be present. Review of the site documentation revealed that the PAD extent was delineated as a buffer zone to the identified site than as a landform-based PAD declaration. This site is discussed further in **Section 2.3.6**.

The AHIMS results indicate that modified trees are the most likely site type to be present within the study area. However, the proximity of a small artefact scatter to the study area also indicates that stone artefact sites may also be present.

Table 2-2: Site types and frequencies of AHIMS sites near the study area.

Site Type	Number	% Frequency
Modified tree (scarred or carved)	6	86
Artefact Scatter & PAD	1	14
Total	**7**	**100**

Figure 2-1: Previously recorded sites in relation to the study area.



2.3.3 Step 2b

Are there any other sources of information of which a person is already aware?

No, there are no other sources of information that would indicate the presence of Aboriginal objects in the study area.

Ethnographic context

The proposal is located in the centre of Wiradjuri country (Tindale 1974). The Wiradjuri tribal area extends as far north as Gilgandra, as far east as Lithgow and as far west as Hay. It is the largest tribal and linguistic group in NSW by land size and incorporates a large section of the central tablelands and central west regions of NSW (Horton 1996).

The ethnographic information recorded by colonial explorers in the region, such as Oxley and Cunningham in the early 1800s, indicates that Wiradjuri people near the Lachlan River lived in both small groups and some larger groups that comprised of up to 120 individuals. Wiradjuri people and hunted local species of kangaroo, emu, and possum as a source of food. Fishing was also utilised to sustain the population with both mussels and freshwater fish being caught by women who used moveable dams made of grasses to direct fish, making them easier to catch (Kass 2003:6).

Archaeological Context

OzArk 2016

A 2016 study analysing Aboriginal site distribution across the central west of NSW concluded that Aboriginal sites are more likely to be found in Channel and Floodplain landscapes (OzArk 2016). Scarred trees were found to be the most common site type within these landscapes.

Sloping landscapes were also found to contain a relatively large number of Aboriginal sites with artefacts scatters most commonly associated with this type of landscape.

The report also found a strong correlation between site location and proximity to water.

The study area is situated on the Lachlan-Bland Channels and Floodplains landscape unit (Mitchell 2002), which was categorised as a Channel and Floodplain type in the study. As the results of the OzArk study indicate that Channel and Floodplain landscapes have the highest correlation with Aboriginal site identification, this suggest an increased likelihood for sites to be present within the study area.

OzArk 2015

A 2015 study located one previously unrecorded artefact scatter and PAD that extends into the current study area (Site 43-3-0108). The artefact scatter consisted of eight individual artefacts located within 50 m of each other across a 100 x 30 m area, however none were located within

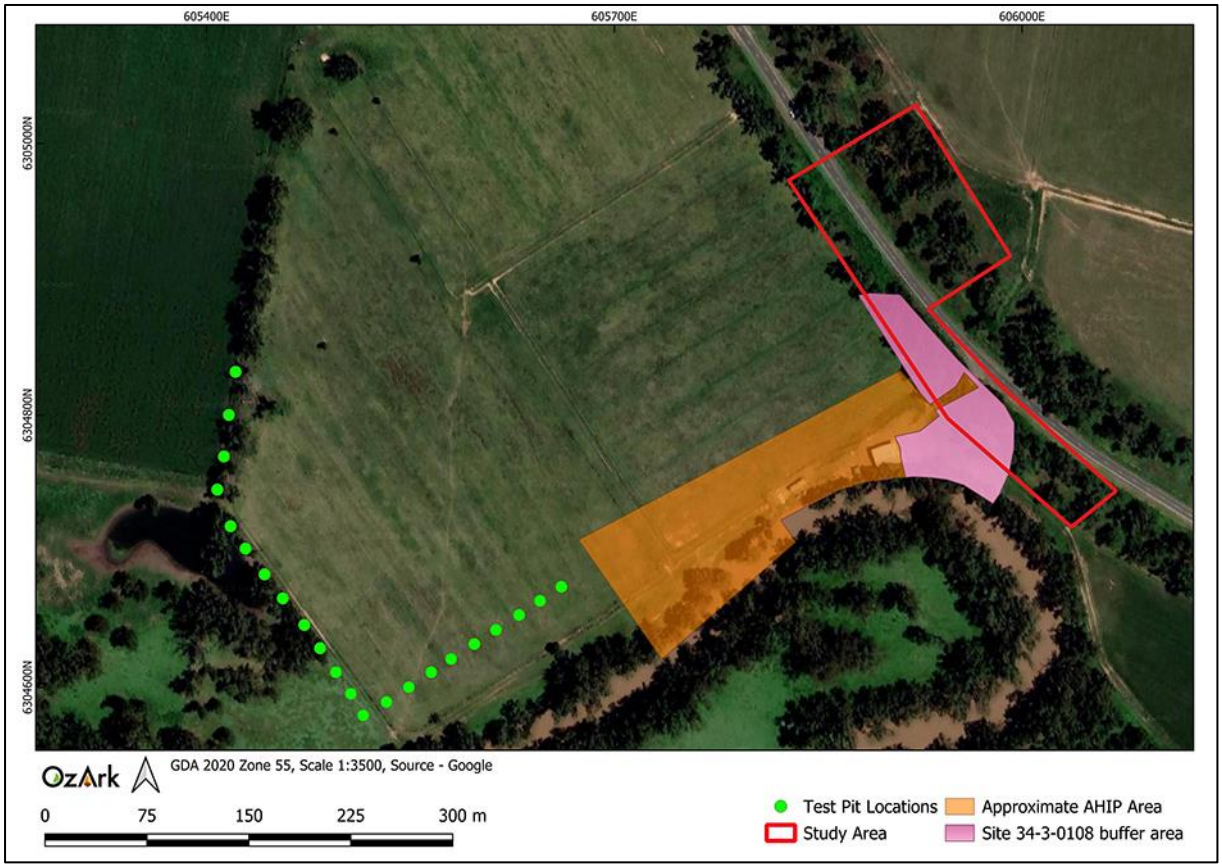
the current study area. A precautionary buffer area of approximately 200 x 100 m was made for the site.

EcoLogical 2022

As part of the Parkes Town Water Security Program, EcoLogical assessed a 9 km pipeline easement which extends through both the current study area and the existing AHIP area. As part of this assessment, a test excavation program was completed by OnSite CHM and Wiradjuri site officers led by Rob Clegg.

A total of 24 (50 x 50 cm) test pits were excavated at 20 m intervals along the proposed alignment parallel to the Lachlan River in late 2021 (**Figure 2-2**). The test pit excavations did not record any Aboriginal artefacts. The report concluded that the results of the test excavations suggested the PAD (Site 43-3-0108) held no further potential for Aboriginal objects (EcoLogical 2022: 20).

Figure 2-2. Location of test pits relative to study area.



Implications for the study area

The ethnohistoric context of the study area indicates that Wiradjuri people's use of the land has left a signature on the landscape through sites such as modified trees and artefact scatters. The Lachlan River is known to have been an important resource and a feature of the cultural landscape, indicating that there is a heightened likelihood for Aboriginal sites at the south of the study area closest to the Lachlan River.

Previous assessments have recorded Aboriginal objects along the Lachlan River adjacent to the study area. Although the Aboriginal objects at Site 43-3-0108 have been salvaged, the buffer area extends into the study area and required visual inspection.

2.3.4 Step 2c

Are there any landscape features that are likely to indicate presence of Aboriginal objects?

Yes, portions of the study area contain landforms with identified archaeological sensitivity.

The study area is within 200 m of a waterway (the Lachlan River) which classifies it as a landform with identified archaeological sensitivity under the Due Diligence code.

The study area consists of a plains landform located adjacent to the Lachlan River. Modification to this landform has taken place during the construction of Eugowra Road and the driveway to the Eugowra Road Pumping Station however, the overall level of disturbance that these impacts have caused is unclear.

The study area is situated in the Lachlan-Bland Channels and Floodplains landscape, which has a soil profile that generally consists of structured red-brown texture contrast clay loams (Mitchell 2002: 92). This soil profile on the elevated terrace is likely to have been well draining and contain sought-after locations for habitation, although inundation is also possible and frequent in some areas.

Vegetation across the study area would have consisted of an open woodland of white cypress pine, grey box and river red gums along the channel of the Lachlan River. It appears that this vegetation may be relatively intact within margins of the Eugowra Road corridor.

2.3.5 Step 3

Can harm to Aboriginal objects or disturbance of archaeologically sensitive landscape features be avoided?

No. Landforms with identified archaeological sensitivity may be impacted by the proposal.

The proposed works at the driveway to the Eugowra Road Pumping Station will impact landforms with identified archaeological sensitivity.

2.3.6 Step 4

Does a desktop assessment and visual inspection confirm that there are Aboriginal objects or that they are likely?

One Aboriginal object was identified within the study area, but it can be avoided by the proposal.

The visual inspection of the study area was undertaken by OzArk Archaeologist Harrison Rochford on 18 May 2023 with Rob Clegg and Steve Parker of the Wiradjuri Council of Elders.

Ground Surface Visibility (GSV) was low across the study area (0-10%) due to high grasses and thick leaf litter (**Plate 1**). No areas of PAD were identified, despite the buffer to the PAD of site 43-3-0108 extending into the study area. The coverage of the inspection team is shown on **Figure 2-3**.

One modified tree was identified at the northeast of the study area on the eastern side of the Escort Way. The tree is approximately 50 m northwest of the nearest impacts associated with the proposal and can be avoided during works. The location of Escort Way ST 1 in relation to the study area is shown on **Figure 2-4**.

Figure 2-3: Visual inspection results.

Discussion

The identification of a modified tree conforms to the predictive model developed for the study area. The site type is well represented in the area surrounding the study area and reliably associated with proximity to major waterways in the regional archaeological data.

The PAD buffer area associated with site 43-3-0108 within the study area was inspected and determined to have low archaeological potential. The study area is within a road corridor and on either side of the existing gravel driveway. Disturbances within this include buried services (**Plate 2**) to the south of the driveway and minor earthworks for table drains within 10 m of the Escort Way. A small area to the west of the study area, between the Lachlan River and the buried pipeline along the western edge of the study area, was noted to have been subject to less ground disturbance (**Plate 3**). This area has archaeological potential and should be considered as the current extent of the PAD associated with site 43-3-0108, as the remaining PAD buffer area has either been impacted under the AHIP or comprises disturbed land with low potential for archaeological deposits, as indicated by the results of EcoLogical (2022). This remnant PAD area is shown on **Figure 2-4**.The AHIMS site card for site 43-3-0108 will be updated to reflect the results of this further assessment.

A ‘no’ answer for Step 4, results in the following outcome (DECCW 2010):

> *AHIP* (Aboriginal Heritage Impact Permit) *application not necessary. Proceed with caution. If any Aboriginal objects are found, stop work and notify Heritage NSW (02) 9873 8500 (heritagemailbox@environment.nsw.gov.au). If human remains are found, stop work, secure the site and notify NSW Police and Heritage NSW.*

Figure 2-4: Recorded site and remaining PAD area associated with Aboriginal site 43-3-0108.

2.4 CONCLUSION

The due diligence process has resulted in the outcome that an Aboriginal Heritage Impact Permit (AHIP) is not required. The reasoning behind this determination is set out in **Table 2-3**.

Table 2-3: Due Diligence Code of Practice application.

Step	Reasoning	Answer
Step 1 Will the activity disturb the ground surface or any culturally modified trees?	The proposed works will disturb the ground surface through under boring and construction works widening the access driveway. The proposal may impact mature, native vegetation and therefore assessment of the vegetation to determine whether culturally modified trees are present was required.	Yes
If the answer to Step 1 is 'yes', proceed to Step 2		
Step 2a Are there any relevant records of Aboriginal heritage on AHIMS to indicate presence of Aboriginal objects?	AHIMS indicated that there is an Aboriginal site recording relevant to the study area. A precautionary PAD area associated with Site 43-3-0108 overlaps with the study area.	No
Step 2b Are there other sources of information to indicate presence of Aboriginal objects?	There are no other sources of information to indicate that Aboriginal objects are likely in the study area.	No
Step 2c Will the activity impact landforms with archaeological sensitivity as defined by the Due Diligence Code?	Landforms with identified archaeological sensitivity are present as parts of the study area are within 200 m of 'waters'.	Yes
If the answer to any stage of Step 2 is 'yes', proceed to Step 3		
Step 3 Can harm to Aboriginal objects listed on AHIMS or identified by other sources of information and/or can the carrying out of the activity at the relevant landscape features be avoided?	The proposal will impact landforms with archaeological sensitivity as identified in the Due Diligence Code: landforms within 200 m of 'waters'.	No
If the answer to Step 3 is 'no', a visual inspection is required. Proceed to Step 4.		
Step 4 Does the visual inspection confirm that there are Aboriginal objects or that they are likely?	The visual inspection recorded one Aboriginal object (a modified tree) within the study area. Impact to the tree can be avoided. Landforms with identified archaeological sensitivity that were identified at a desk-top level were found during the inspection to have low archaeological potential.	No
Conclusion		
AHIP not necessary. Proceed with caution.		

3 ABORIGINAL HERITAGE SITES AND ITEMS OF INTEREST RECORDED

3.1 ABORIGINAL HERITAGE SITE RECORDED

One previously unrecorded Aboriginal site was identified during the visual inspection: Escort Way ST 1. **Table 3-1** summarises the main features of this site.

Table 3-1: Escort Way ST 1 site features.

Site Name	Coordinates (GDA)	Site type	Scar dimensions (cm)
Escort Way ST 1	605884E 6305001N	Modified tree (scarred)	90 x 24 x 10

Escort Way ST 1

Site Type: Modified tree

GPS coordinates: GDA Zone 55 605884E 6305001N

Location of Site: The site is situated on plain north of the Lachlan River within the road reserve of the Escort Way, 12 km east of Forbes. The site is 790 m northwest of the intersection of the Escort Way and Fairview Road, 25 m from the fog line of the Escort Way (**Figure 3-1**).

Description of Site: The site consists of a River Red Gum with one south-facing scar. The scar is 90 centimetres (cm) in height, 24 cm in width and 10 cm deep. The tree is approximately 15 m is height with a 2.5 m circumference at the base of the trunk.

The scar has a possible axe mark at the base. The scar is close (goes into) the current ground level but there was speculation about large-scale flooding over time that has deposited alluvium and elevated the ground surface above what it may have been in the past.

Figure 3-1: Escort Way ST 1. View of site and detail of the scar.

1. View north to Escort Way ST 1.

2. View of the rectangular scar on Escort Way ST 1.

3. Detail showing the location of the possible axe mark at the base of the scar.

4. Possible axe mark

3.2 ITEM OF INTEREST RECORDED

Community interest tree

Site Type: Tree of interest to the Aboriginal community.

GPS coordinates: GDA Zone 55 605902E 6304984N

Location and description: The tree is approximately 25 m south of Escort Way ST 1 (**Figure 4-1**). There is a large, irregular scar facing southeast on the tree. The scar does conform to the accepted characteristics of cultural modification scars and is not considered by OzArk to be an Aboriginal object. Th Aboriginal community representatives would prefer, however, that this tree was not harmed as a precautionary measure.

Figure 3-2: Community interest tree.

1. View north to the community interest tree.

2. View of the unclear termination of the scar at the base of the tree.

3.3 ASSESSMENT OF SIGNIFICANCE

3.3.1 Introduction

The appropriate management of cultural heritage items is usually determined based on their assessed significance, as well as the likely impacts of any proposed developments. Cultural, scientific, aesthetic and historical significance are identified as baseline elements of significance assessment, and it is through the combination of these elements that the overall cultural heritage values of a site, place or area are resolved.

Social or Cultural Value

This area of assessment concerns the importance of a site or features to the relevant cultural group: in this case the Aboriginal community. Aspects of social value include assessment of sites, items, and landscapes that are traditionally significant or that have contemporary importance to the Aboriginal community. This importance involves both traditional links with specific areas, as well as an overall concern by Aboriginal people for their sites generally and the continued protection of these. This type of value may not be in accord with interpretations made by the archaeologist: a site may have low archaeological value but high social value, or vice versa.

Archaeological/Scientific Value

Assessing a site in this context involves placing it into a broader regional framework, as well as assessing the site's individual merits in view of current archaeological discourse. This type of value relates to the ability of a site to answer current research questions and is also based on a site's condition (integrity), content and representativeness.

The overriding aim of cultural heritage management is to preserve a representative sample of the archaeological resource. This will ensure that future research within the discipline can be based on a valid sample of the past. Establishing whether a site can contribute to current research also involves defining 'research potential'. Questions regularly asked when determining significance are: can this site contribute information that no other site can? Is this site representative of other sites in the region?

Aesthetic Value

This refers to the sensory, scenic, architectural and creative aspects of the place. It is often closely linked with the social values. It may consider form, scale, colour, texture and material of the fabric or landscape, and the smell and sounds associated with the place and its use (Burra Charter 2013).

Historic Value

Historic value refers to the associations of a place with a historically important person, event, phase or activity in an Aboriginal community. Historic places do not always have physical

evidence of their historical importance (such as structures, planted vegetation or landscape modifications). They may have 'shared' historic values with other (non-Aboriginal) communities.

Places of post-contact Aboriginal history have generally been poorly recognised in investigations of Aboriginal heritage. Consequently, the Aboriginal involvement and contribution to important regional historical themes is often missing from accepted historical narratives. This means it is often necessary to collect oral histories along with archival or documentary research to gain enough understanding of historic values.

3.4 ASSESSED SIGNIFICANCE OF THE RECORDED SITES

Table 3-2 presents a summary of the significance assessment of Aboriginal cultural heritage sites recorded during this assessment. Further details of each of the assessment criteria are provided below.

Social or Cultural Value

Rob Clegg and Steve Parker, representing the Wiradjuri Council of Elders during the site inspection, noted that all scarred trees have high cultural significance. They described a scarred tree further east along the Escort Way that has three scars on it and is thought to be a boundary marker between tribal or clan groups. It was not thought that Escort Way ST 1 was a boundary marker tree of that type, but rather evidence of bark extraction for a functional purpose (such as a coolamon).

Archaeological/Scientific Value

Although Escort Way ST 1 is in good condition, it is common site type in the region. There are no specific features of the site that make it a representative example for the site type and the site does not hold potential for further research. As such, it has low archaeological/scientific value.

Aesthetic Value

Escort Way ST 1 is within a road corridor and does not have significant aesthetic values.

Historic Value

There are no known associations between Escort Way ST 1 and significant historical figures or values.

Table 3-2: Aboriginal cultural heritage: significance assessment.

Site Name	Social or Cultural Value	Archaeological / Scientific Value	Aesthetic Value	Historic Value
Escort Way ST 1	High	Low	Low	None

3.5 LIKELY IMPACTS TO ABORIGINAL HERITAGE FROM THE PROPOSAL

Although Escort Way ST 1 is within the study area for the current project, the proponent, PSC, has noted that they can protect the tree during construction. This will require the fencing off of the tree from the construction zone to ensure no inadvertent impacts, as per **Section 3.6.**

Table 3-3 presents a summary of potential impacts to Aboriginal cultural heritage associated with the proposal.

Table 3-3: Aboriginal cultural heritage: impact assessment.

Site Name	Type of Harm (Direct/Indirect / None)	Degree of Harm (Total/Partial / None)	Consequence of Harm (Total/Partial/No Loss of Value)
Escort Way ST 1	None	None	None

4 MANAGEMENT MEASURES

4.1 ESCORT WAY ST 1 AND THE COMMUNITY INTEREST TREE

Escort Way ST 1 and the community interest tree are within the study area but can be avoided by the proposed works. To ensure that the risk of inadvertent harm to the site and the community interest tree is minimised, the following management measures should be adhered to during works:

- The northern boundary of the works area on the eastern side of the Escort Way should be demarcated by temporary, high visibility flagging to contain all construction activities. The fencing alignment shown on **Figure 4-1** is preferable as it does not identify Escort Way ST 1 as an Aboriginal object that is visible from the road, which reduces the risk of vandalism.
- The location of Escort Way ST 1 and the community interest tree should be marked on all construction plans as no-go areas.
- Fencing to contain the construction area per **Figure 4-1** will also facilitate the avoidance of the community interest tree

4.2 SITE 43-3-0108

- No specific management measures are required to minimise the risk of inadvertent access to the remaining PAD area at site 43-3-0108 as it is outside the study area. The existing property boundary fence between the site and the road corridor is sufficient.

Figure 4-1: Proposed fencing location near Escort Way ST 1.

5 RECOMMENDATIONS

The undertaking of the due diligence process resulted in the conclusion that the proposed works will have an impact on the ground surface, however, no Aboriginal objects or intact archaeological deposits will be harmed by the proposal. This moves the proposal to the following outcome:

> *AHIP application not necessary. Proceed with caution. If any Aboriginal objects are found, stop work, and notify Heritage NSW (02) 9873 8500 (heritagemailbox @environment.nsw.gov.au). If human remains are found, stop work, secure the site, and notify NSW Police and Heritage NSW.*

To ensure the greatest possible protection to the area's Aboriginal cultural heritage values, the following recommendations are made:

1) The proposed work may proceed at the study area without further archaeological investigation under the following conditions:
    a) All land and ground disturbance activities must be confined to within the study area. Should the parameters of the proposal extend beyond the assessed areas, then further archaeological assessment may be required.
    b) The management measures described in **Section 4** must be enacted to minimise the risk of inadvertent harm to Escort Way ST 1 and the community interest tree.
    c) All staff and contractors involved in the proposed work should be made aware of the legislative protection requirements for all Aboriginal sites and objects.
2) This assessment has concluded that there is a low likelihood that the proposed work will adversely harm Aboriginal cultural heritage items or sites. If during works, however, Aboriginal artefacts or skeletal material are noted, all work should cease and the procedures in the *Unanticipated Finds Protocol* (**Appendix 2**) should be followed.
3) Inductions for work crews should include a cultural heritage awareness procedure to ensure they recognise Aboriginal artefacts (see **Appendix 3**) and are aware of the legislative protection of Aboriginal objects under the NPW Act and the contents of the *Unanticipated Finds Protocol.*
4) The information presented here meets the requirements of the *Due Diligence Code of Practice for the Protection of Aboriginal Objects in New South Wales*. It should be retained as shelf documentation for five years as it may be used to support a defence against prosecution in the event of unanticipated harm to Aboriginal objects.

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PLATES

Plate 1: View north along the Escort Way at the existing driveway within the study area.

Plate 2: View south along the western edge of the study area. The long grass at the right of frame indicates the alignment of a buried water pipeline.

Plate 3: View north across the discrete area of undisturbed land between the pipeline and the Lachlan River designated as PAD.

APPENDIX 1: AHIMS SEARCH RESULTS

Office of Environment & Heritage

NSW GOVERNMENT

AHIMS Web Services (AWS)

Extensive search - Site list report

Your Ref/PO Number : 1451 Cap and bore

Client Service ID : 234895

SiteID	SiteName	Datum	Zone	Easting	Northing	Context	Site Status	SiteFeatures	SiteTypes	Reports
08-1-0008	Onepah 2a	AGD	55	379109	6777244	Open site	Valid	Artefact : -		
	Contact	Recorders	Peter Peckham					Permits		
08-1-0009	Onepah 8	AGD	55	393021	6763982	Open site	Valid	Artefact : -, Ceremonial Ring (Stone or Earth) : -, Hearth : 2		
	Contact	Recorders	Peter Peckham					Permits		
07-3-0004	Tenterfield-Dumaresq IF 2	GDA	55	353060	6778276	Open site	Valid	Artefact : -		
	Contact	Recorders	OzArk Environmental and Heritage Management,Mr Dea Churcher					Permits		
08-4-0022	ERM WR01	GDA	55	362631	6704300	Open site	Valid	Artefact : -		
	Contact	Recorders	ERM					Permits		
08-1-0003	Bungonia Reserve	AGD	55	308600	6756500	Open site	Valid	Aboriginal Ceremony and Dreaming : -		905,1060
	Contact	Recorders	Jane Balme					Permits		
08-1-0004	Tarwoona Downs Site 2	AGD	55	369500	6764000	Open site	Valid	Artefact : -	Open Camp Site	905
	Contact	Recorders	Mr Allan Lance					Permits		
08-1-0005	Tarwoona Downs Site 1	AGD	55	371500	6764000	Open site	Valid	Artefact : -	Open Camp Site	905
	Contact	Recorders	Mr Allan Lance					Permits		
08-4-0008	LILA DMR 7;	AGD	55	378960	6698130	Open site	Valid	Artefact : -	Open Camp Site	3550
	Contact	Recorders	Mr John Appleton					Permits		
08-4-0009	LILA DMR 8;	AGD	55	379300	6698420	Open site	Valid	Artefact : -	Open Camp Site	3550
	Contact	Recorders	Mr John Appleton					Permits		
08-4-0010	LILA DMR 9;	AGD	55	379690	6698690	Open site	Valid	Artefact : -	Open Camp Site	3550
	Contact	Recorders	Mr John Appleton					Permits		
08-4-0011	LILA DMR 10;	AGD	55	382490	6701220	Open site	Valid	Artefact : -	Open Camp Site	3550
	Contact	Recorders	Mr John Appleton					Permits		
08-4-0012	Lila DMR 11;	AGD	55	382670	6701320	Open site	Valid	Artefact : -	Open Camp Site	3550
	Contact	Recorders	Mr John Appleton					Permits		
08-4-0013	LILA DMR 12;	AGD	55	382920	6701390	Open site	Valid	Artefact : -	Open Camp Site	3550
	Contact	Recorders	Mr John Appleton					Permits		
08-4-0014	LILA DMR 13;	AGD	55	383850	6701510	Open site	Valid	Artefact : -	Isolated Find	3550
	Contact	Recorders	Mr John Appleton					Permits		
08-4-0015	LILA DMR 14;	AGD	55	383230	6701910	Open site	Valid	Artefact : -	Open Camp Site	3550
	Contact	Recorders	Mr John Appleton					Permits		
08-4-0016	LILA DMR 15;	AGD	55	384000	6701500	Open site	Valid	Artefact : -	Open Camp Site	3550
	Contact	Recorders	Mr John Appleton					Permits		

Report generated by AHIMS Web Service on 19/07/2016 for Stephanie Rusden for the following area at Datum :GDA, Zone : 55, Eastings : 298475 - 395739, Northings : 6697678 - 6779807 with a Buffer of 0 meters. Additional Info : Survey. Number of Aboriginal sites and Aboriginal objects found is 28

This information is not guaranteed to be free from error or omission. Office of Environment and Heritage (NSW) and its employees disclaim liability for any act done or omission made on the information and consequences of such acts or omission.

Page 1 of 2

APPENDIX 2: ABORIGINAL HERITAGE: UNANTICIPATED FINDS PROTOCOL

An Aboriginal artefact is anything which is the result of past Aboriginal activity. This includes stone (artefacts, rock engravings etc.), plant (culturally scarred trees) and animal (if showing signs of modification, i.e., smoothing, use). Human bone (skeletal) remains may also be uncovered while onsite.

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Protocol to be followed if previously unrecorded or unanticipated Aboriginal object(s) are encountered:

1. If any Aboriginal object is discovered and/or harmed in, or under the land, while undertaking the proposed development activities, the proponent must:
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    c. Secure the area to avoid further harm to the Aboriginal object
    d. Notify Heritage NSW as soon as practical on (02) 9873 8500 (heritagemailbox @environment.nsw.gov.au), providing any details of the Aboriginal object and its location; and
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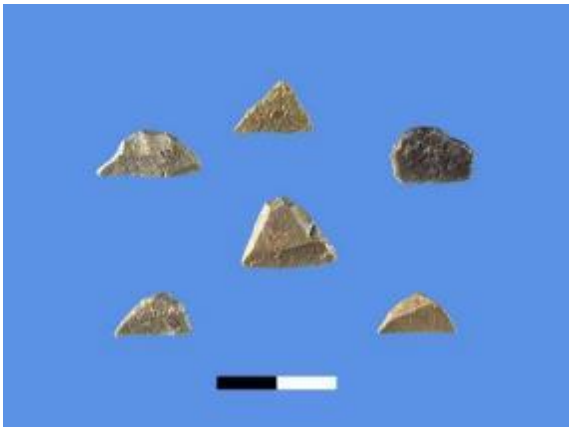
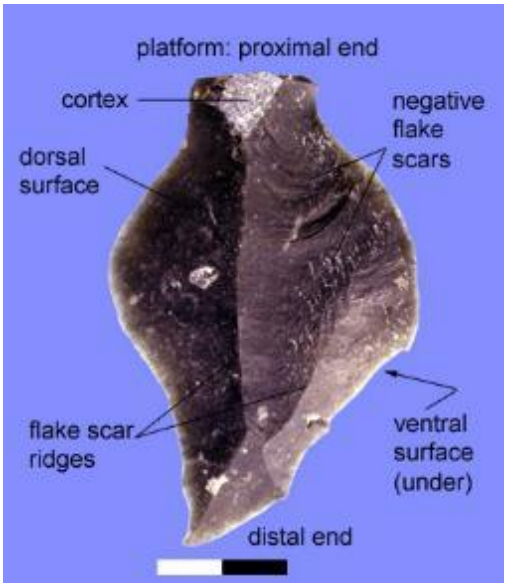
3. Cooperate with the appropriate authorities and relevant Aboriginal community representatives to facilitate:
    a. The recording and assessment of the find(s)
    b. The fulfilment of any legal constraints arising from the find(s), including complying with Heritage NSW directions
    c. The development and implementation of appropriate management strategies, including consultation with stakeholders and the assessment of the significance of the find(s).
4. Where the find(s) are determined to be Aboriginal object(s), recommencement of work in the area of the find(s) can only occur in accordance with any consequential legal requirements and after gaining written approval from Heritage NSW (normally an Aboriginal Heritage Impact Permit).

APPENDIX 3: ABORIGINAL HERITAGE: ARTEFACT IDENTIFICATION

<table>
<tr><td>  </td><td>  </td></tr>
<tr><td>A retouched silcrete flake</td><td>A quartz flake</td></tr>
<tr><td>  </td><td>  </td></tr>
<tr><td>Microliths (scale = 1 cm)</td><td>Volcanic flakes</td></tr>
<tr><td> 
</td><td>  </td></tr>
<tr><td>Flake characteristics (scale = 1 cm)</td><td>A mudstone/tuff core from which flakes have been removed</td></tr>
</table>

View east across the addendum study area.

ADDENDUM
ABORIGINAL HERITAGE DUE DILIGENCE ASSESSMENT REPORT

LACHLAN RIVER PRE-TREATMENT PLANT

FORBES LGA, NSW

OCTOBER 2023

Report prepared by

OzArk Environment & Heritage

for Parkes Shire Council

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DOCUMENT CONTROLS

Proponent	Parkes Shire Council
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Acknowledgement

OzArk acknowledge the traditional custodians of the area on which this assessment took place and pay respect to their beliefs, cultural heritage, and continuing connection with the land. We also acknowledge and pay respect to the post-contact experiences of Aboriginal people with attachment to the area and to the Elders, past and present, as the next generation of role models and vessels for memories, traditions, culture and hopes of local Aboriginal people.

EXECUTIVE SUMMARY

OzArk Environment & Heritage (OzArk) has been engaged by Parkes Shire Council (PSC, the proponent) to complete an addendum Aboriginal due diligence heritage assessment for the proposed access upgrade works associated with the Lachlan River Pre-Treatment Plant (the proposal).

The addendum study area comprises approximately 16 hectares (ha) of land to the north of the proposed PTP. The addendum study area includes a cleared section of The Escort Way road corridor and a small section of a cleared, cropped paddock. OzArk (2023) assessed the southern road access route and road corridor to the Lachlan PTP area. The current report is an addendum to the 2023 assessment.

The due diligence process has resulted in the conclusion that although the proposed works will impact the ground surface, no known Aboriginal objects or archaeologically sensitive landforms will be affected.

A 'no' answer for Questions 2 a-c of the due diligence process results in the following outcome (DECCW 2010: 10):

> *AHIP (Aboriginal Heritage Impact Permit) application not necessary. Proceed with caution. If any Aboriginal objects are found, stop work, and notify Heritage NSW (02) 9873 8500 (heritagemailbox@environment.nsw.gov.au). If human remains are found, stop work, secure the site, and notify NSW Police and Heritage NSW.*

To ensure the greatest possible protection to the area's Aboriginal cultural heritage values, the following recommendations are made:

1) The proposed work may proceed without further archaeological investigation, provided that all land and ground disturbance activities must be confined to within the addendum study area.

2) This assessment has concluded that there is a low likelihood that the proposed work will adversely harm Aboriginal cultural heritage items or sites. If during works, however, Aboriginal artefacts or skeletal material are noted, all work should cease and the procedures in the *Unanticipated Finds Protocol* (**Appendix 1**) should be followed.

3) Inductions for work crews should include a cultural heritage awareness procedure to ensure they recognise Aboriginal artefacts (see **Appendix 2**) and are aware of the legislative protection of Aboriginal objects under the *National Parks and Wildlife Act 1973* (NPW Act) and the contents of the *Unanticipated Finds Protocol.*

4) The information presented here meets the requirements of the *Due Diligence Code of Practice for the Protection of Aboriginal Objects in New South Wales*. It should be retained

as shelf documentation for five years as it may be used to support a defence against prosecution in the event of unanticipated harm to Aboriginal objects.

CONTENTS

FIGURES

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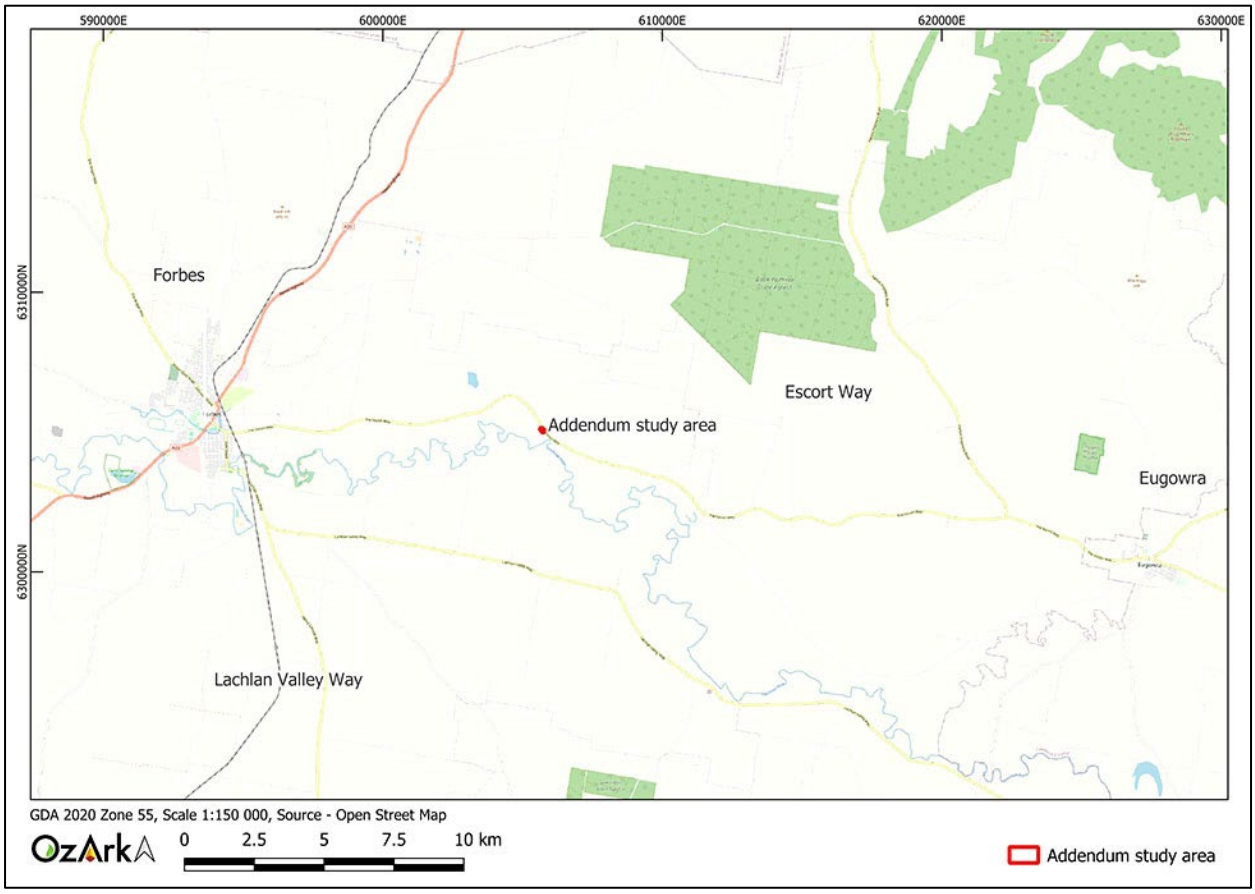
1 INTRODUCTION

1.1 BRIEF DESCRIPTION OF THE PROPOSAL

OzArk Environment & Heritage (OzArk) has been engaged by Parkes Shire Council (PSC, the proponent) to complete an addendum Aboriginal heritage due diligence assessment for the proposed access upgrade works associated with the Lachlan River Pre-Treatment Plant (the proposal). The proposal is in the Forbes Shire Local Government Area (LGA) (**Figure 1-1**).

This report is an addendum to OzArk (2023) which assessed the access route to the Lachlan River Pre-Treatment Plant (PTP). Following the completion of OzArk (2023) an additional access point at the northern end of the proposed PTP was required. This additional access point is the 'addendum study area' and is assessed in this report.

Figure 1-1. Map showing the location of the proposal.



1.2 ADDENDUM STUDY AREA

The addendum study area comprises approximately 16 hectares (ha) of land to the north of the proposed PTP. The addendum study area includes a cleared section of The Escort Way road corridor and a small section of a cleared, cropped paddock. The addendum study area in relation to the previous Due Diligence assessments (OzArk 2022 and OzArk 2023) is shown on **Figure 1-2**.

1.3 BACKGROUND

OzArk (2022) assessed the paddock to the south of the current addendum study area, where the main works for the Lachlan PTP will be completed. This assessment concluded that the previously recorded Aboriginal site PSC Pump Station OS1 with PAD (AHIMS Site 43-3-0108) did not remain valid within the 2022 study area due to the salvage that had been completed in 2015. See OzArk 2022 for more information.

OzArk (2023) assessed the road access route and road corridor to the Lachlan PTP area. One Aboriginal site was recorded during the assessment, Escort Way ST 1. The current report is an addendum to the 2023 assessment.

1.4 ASSESSMENT APPROACH

The desktop assessment of the study area follows the *Due Diligence Code of Practice for the Protection of Aboriginal Objects in New South Wales* (due diligence; DECCW 2010).

Figure 1-2: Aerial showing the addendum study area in relation to previous assessments.

2 ABORIGINAL DUE DILIGENCE ASSESSMENT

2.1 INTRODUCTION

Section 57 of the National Parks and Wildlife Regulation 2019 (NPW Regulation) made under the *National Parks and Wildlife Act 1974* (NPW Act) advocates a due diligence process to determining likely impacts on Aboriginal objects. Carrying out due diligence provides a defence to the offence of harming Aboriginal objects and is an important step in satisfying Aboriginal heritage obligations in NSW.

2.2 DEFENCES UNDER THE NPW REGULATION 2019

2.2.1 Low impact activities

The first step before application of the due diligence process itself is to determine whether the proposed activity is a “low impact activity” for which there is a defence in the NPW Regulation. The exemptions are listed in Section 58 of the NPW Regulation (DECCW 2010: 6).

The proposal will require excavation and disturbance of the ground surface to establish an additional access point to the proposed location of the Lachlan PTP. These activities are not defined as “low impact” activities under the NPW Regulation, so the Due Diligence process must be applied.

2.2.2 Disturbed lands

Relevant to this process is the assessed levels of previous land-use disturbance.

The NPW Regulation Section 58 (DECCW 2010: 18) define disturbed land as follows:

> *Land is disturbed if it has been the subject of a human activity that has changed the land’s surface, being changes that remain clear and observable.*
>
> *Examples include ploughing, construction of rural infrastructure (such as dams and fences), construction of roads, trails and tracks (including fire trails and tracks and walking tracks), clearing vegetation, construction of buildings and the erection of other structures, construction or installation of utilities and other similar services (such as above or below ground electrical infrastructure, water or sewerage pipelines, stormwater drainage and other similar infrastructure) and construction of earthworks.*

Although some sections of the study area, such as the Escort Way, could be considered ‘disturbed land’, the entirety of the study area has not been modified in a ‘clear and observable’ manner. In summary, it is determined that the proposal must be assessed under the Due Diligence Code of Practice. The reasoning for this determination is set out in **Table 2-1**.

Table 2-1: Determination of whether Due Diligence Code of Practice applies.

Item	Reasoning	Answer
Is the activity to be assessed under Division 4.7 (state significant development) or Division 5.2 (state significant infrastructure) of the EP&A Act?	The proposal will be assessed under Part 5 of the EP&A Act.	No
Is the activity exempt from the NPW Act or NPW Regulation?	The proposal is not exempt under this Act or Regulation.	No
Do either or both apply: Is the activity in an Aboriginal place? Have previous investigations that meet the requirements of this Code identified Aboriginal objects?	The activity will not occur in an Aboriginal place. No previous investigations have been undertaken for this proposal.	No
Is the activity a low impact one for which there is a defence in the NPW Regulation?	The proposal is not a low impact activity for which there is a defence in the NPW Regulation.	No
Is the activity occurring entirely within areas that are assessed as 'disturbed lands'?	The proposal is not entirely within areas of high modification.	No
Due Diligence Code of Practice assessment is required		

2.3 APPLICATION OF THE DUE DILIGENCE CODE OF PRACTICE TO THE PROPOSAL

To follow the generic due diligence process, a series of steps in a question/answer flowchart format (DECCW 2010: 10) are applied to the proposed impacts and the study area, and the responses documented.

2.3.1 Step 1

Will the activity disturb the ground surface or any culturally modified trees?

Yes, the proposal will impact the ground surface but will not impact culturally modified trees.

The proposal will require excavation and ground disturbance to construct the access point and track. There are no trees within the study area, so there will be no potential impacts to modified trees.

2.3.2 Step 2a

Are there any relevant confirmed site records or other associated landscape feature information on AHIMS?

No, there are no previously recorded sites within the addendum study area.

The results of the AHIMS searches including the addendum study area are summarised in OzArk (2023). There are no previously recorded AHIMS sites within the addendum study area.

2.3.3 Step 2b

Are there any other sources of information of which a person is already aware?

No, there are no other sources of information that would indicate the presence of Aboriginal objects in the addendum study area.

There are no known cultural values pertaining directly to the location of the proposed work, or any other sources of information suggesting that Aboriginal objects are likely.

Refer to Section 2.3.3 of OzArk (2023) for detailed information on the local and regional archaeological context the region, including the addendum study area.

2.3.4 Step 2c

Are there any landscape features that are likely to indicate presence of Aboriginal objects?

No, the addendum study area does not contain landforms with identified archaeological sensitivity.

The Due Diligence Code of Practice (DECCW 2010) refers to several landscape features which have higher potential to contain Aboriginal objects. These include:

- Within 200 m of waters
- Located within a sand dune system
- Located on a ridge top, ridge line or headland
- Located within 200 m below or above a cliff face
- Within 20 m of or in a cave, rock shelter, or a cave mouth

The only potentially relevant landscape feature to the addendum study area is ‘waters’. However, as the Lachlan River is 275 m south of the study area at the closest point, the addendum study area is considered to not contain archaeologically sensitive landforms as defined by the Due Diligence Code.

A visual inspection of the study area is not required and did not take place, although views of the addendum study area have been provided by the proponent (**Plate 1** and **Plate 2**). These images confirm the expected landform characteristics of the addendum study area, as developed by the comprehensive assessment of the adjacent landforms by OzArk (2022) and OzArk (2023), see **Figure 1-2**.

A ‘no’ answer for Question 2 a-c, results in the following outcome (DECCW 2010: 10):

> *AHIP* (Aboriginal Heritage Impact Permit) *application not necessary. Proceed with caution. If any Aboriginal objects are found, stop work, and notify Heritage NSW*

(02) 9873 8500 (heritagemailbox@environment.nsw.gov.au). If human remains are found, stop work, secure the site, and notify NSW Police and Heritage NSW.

2.4 CONCLUSION

The due diligence process has resulted in the outcome that an Aboriginal Heritage Impact Permit (AHIP) is not required. The reasoning behind this determination is set out in **Table 2-2**.

Table 2-2: Due Diligence Code of Practice application.

Step	Reasoning	Answer
Step 1 Will the activity disturb the ground surface or any culturally modified trees?	The proposed works will disturb the ground surface through track construction. The proposal will not impact mature, native vegetation and therefore will not harm culturally modified trees.	Yes
If the answer to Step 1 is 'yes', proceed to Step 2		
Step 2a Are there any relevant records of Aboriginal heritage on AHIMS to indicate presence of Aboriginal objects?	AHIMS indicated that there are no Aboriginal sites within the study area.	No
Step 2b Are there other sources of information to indicate presence of Aboriginal objects?	There are no other sources of information to indicate that Aboriginal objects are likely in the study area.	No
Step 2c Will the activity impact landforms with archaeological sensitivity as defined by the Due Diligence Code?	Landforms with identified archaeological sensitivity are not present as the addendum study area is over 200 m from the Lachlan River.	No
Conclusion		
AHIP not necessary. Proceed with caution.		

3 MANAGEMENT RECOMMENDATIONS

The undertaking of the due diligence process resulted in the conclusion that the proposed works will have an impact on the ground surface, however, no Aboriginal objects or intact archaeological deposits will be harmed by the proposal. This moves the proposal to the following outcome:

> *AHIP application not necessary. Proceed with caution. If any Aboriginal objects are found, stop work, and notify Heritage NSW (02) 9873 8500 (heritagemailbox@environment.nsw.gov.au). If human remains are found, stop work, secure the site and notify NSW Police and Heritage NSW.*

To ensure the greatest possible protection to the area's Aboriginal cultural heritage values, the following recommendations are made:

1) The proposed work may proceed without further archaeological investigation, provided that all land and ground disturbance activities must be confined to within the addendum study area.
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REFERENCES

Burra Charter 2013 — International Council on Monuments and Sites 2013. *The Burra Charter: The Australia ICOMOS Charter for Places of Cultural Significance*.

DECCW 2010 — DECCW. 2010. *Due Diligence Code of Practice for the Protection of Aboriginal Objects in NSW*. Department of Environment, Climate Change and Water, Sydney.

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OEH 2011 — Office of Environment and Heritage. 2011. *Guide to Investigating, Assessing and Reporting on Aboriginal Cultural Heritage in New South Wales.* Department of Environment, Climate Change and Water, Sydney.

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OzArk 2023 — OzArk Environment and Heritage 2023. *Aboriginal Due Diligence Report: Additional Lachlan PTP Area.* Report to Parkes Shire Council.

PLATES

Plate 1: View east across the access between the paddock (right) and The Escort Way at the addendum study area.

Plate 2: View north at the addendum study area.

APPENDIX 1: ABORIGINAL HERITAGE: UNANTICIPATED FINDS PROTOCOL

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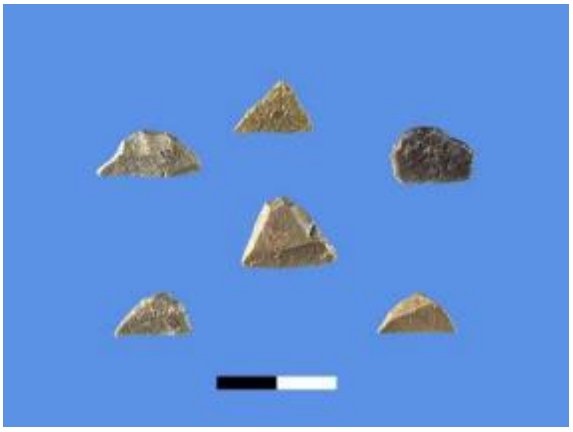
APPENDIX 2: ABORIGINAL HERITAGE: ARTEFACT IDENTIFICATION

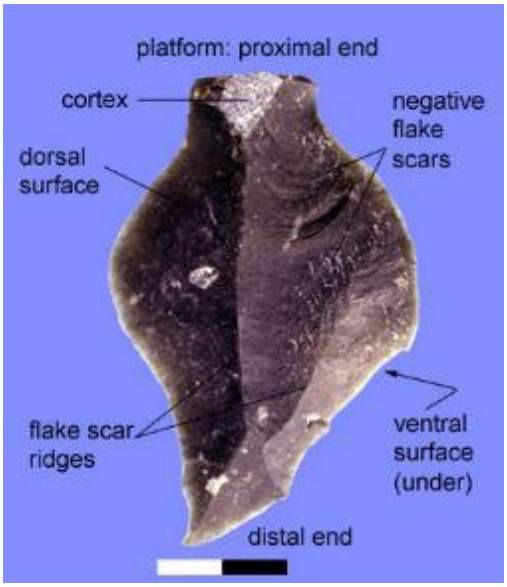
A retouched silcrete flake

A quartz flake



Microliths (scale = 1 cm)

Volcanic flakes



Flake characteristics (scale = 1 cm)

A mudstone/tuff core from which flakes have been removed

Appendix F Summary of Environmental Safeguards

Soils and Erosion

Construction

- No vegetation outside the approved direct impact footprint is to be impacted or removed; vegetation that is not approved for clearance is to be protected to ensure soils are not exposed unnecessarily.
- Minimize the length of time that soils are exposed by stabilising as soon as practical by seeding, spreading mulch or installing erosion control blanket as appropriate.
- All areas where groundcovers/vegetation are required to be removed will require careful management during construction due to the higher erosion risks, including:
    - Erosion and sediment (ERSED) control measures are to be implemented and maintained to:
        - prevent sediment moving off-site and sediment laden water entering any drainage lines, drain inlets, or dams; and
        - reduce water velocity and capture sediment on site.
    - ERSED controls are to be installed prior to the commencement of works and checked and maintained on a regular basis (including clearing of sediment from behind barriers).
    - ERSED control measures are not to be removed until the works are complete, and areas are stabilised.
- Stockpiles and machine parking will be on existing hardstand areas or existing cleared, exposed areas, to reduce impacts to ground covers and adjacent vegetation from sediment migration.
- Monitoring and response actions with regard to ERSED controls will be incorporated within the Construction Environmental Management Plan (CEMP) for the Proposal, to be enforced by the appointed Contractor.
- Vehicles are to use existing roadways and formed access where possible to prevent additional damage to the site, and to reduce the risk of tracking of sediments offsite.
- Works areas are to be stabilised using the most appropriate combination of the following measures, as soon as practical following disturbance:
    - Planting of native tubestock to assist in stabilising the site and creating a visually positive area for the local community.
    - Hydromulching, turfing or seeding with appropriate groundcover species on exposed areas including over exposed sections; and / or
    - Sealing exposed areas with appropriate material, e.g. concrete or bitumen.
- Sediment fences / strawbale filters or equivalent must be installed wherever water is predicted to enter / exit the works area.
- The maintenance of established stockpile sites during construction is to be in accordance with the Landcom/Department of Housing Managing Urban Stormwater, Soils and Construction Guidelines (the Blue Book) (Landcom 2004), including:
    - Stockpiles are recommended to be formed in accordance with the Blue Book Standard Drawing 4-1, and offsite/away from waterbodies.
    - Topsoil and subsoil are to be separated and protected from degradation, erosion or mixing with fill or waste. Materials are to be reused onsite where appropriate for infilling works, including re-spreading of topsoil as appropriate to enable rapid rehabilitation. Where onsite reuse cannot be accommodated, soil materials should be put to beneficial reuse elsewhere.

- If contaminated soils are encountered during construction, a site assessment is to be completed in accordance with Schedule A 'Recommended general process for assessment of site contamination' (NEPM 1999).
- If contaminated soils are encountered, they will be managed (and if necessary excavated, contained, treated and disposed of) in accordance with the law and relevant EPA and Council guidance.
- All chemical usage and storage during construction is to be in line with legislated requirements, to prevent Pollution of Land, which is prohibited under Section 142 A of the POEO Act.

Operation

- Monitoring of the site is to be undertaken to ensure ERSED controls remain in place until the site is re-stabilised, and to ensure no sediment is washed into any waterways following construction and before revegetation efforts are completed.
- Maintenance of vegetative cover on all exposed surfaces (not to be covered by road base/seal) to be undertaken to ensure the stability of soils on site into the future.
- Infill planting or additional spreading of appropriate ground-cover mixture and/or hydromulch to be undertaken by Council during the 12-month establishment period until the planting areas are stabilized. Infill planting and ongoing maintenance will then be handed over to Council to ensure long-term stability of the site.

Surface and Groundwater

Construction

- If 'dirty' site water is collected from within the direct impact footprint, it is to be redirected to filtration devices to trap sediments and other pollutants, and dissipate flow velocities, prior to discharging to the surrounding environment. Drainage and runoff should be controlled in such a way that no foreign substrates or materials leave the site.
- 'Clean' water from outside the Study Area is to be diverted around the site, to avoid contamination and to prevent scour/erosion of the site during rainfall events during construction.
- Works to be completed in dry times (i.e. times of no current or predicted rainfall) to reduce the risk of pollutants and sediments being washed into nearby waterways or other surface waters.
- Appropriate erosion and sediment (ERSED) controls are to be installed and maintained during construction, to ensure sediment and pollutant laden surface water runoff does not enter adjacent waterways/drainage lines.
- All litter, including cigarette butts and food wrappers, are to be collected in a suitable receptacle and disposed of appropriately throughout the construction phase to ensure these do not end up polluting waters of aquatic environments.
- Re-fuelling of plant and equipment is to occur offsite, or in impervious bunded areas located a minimum of 40 metres from drains, drainage lines or dams.
- Vehicle wash-down and/or cement truck washout (if required) is to occur offsite unless it forms part of sediment control, where it is to occur in a suitably bunded area with controlled run-off.
- Monitoring of water quality is to be undertaken within culverts/waterways downstream of the site during and immediately following rainfall events, to identify if ERSED controls are functioning as intended. Visual inspections should be undertaken by an appropriately qualified person/s to determine if water is turbid, or if there is evidence of petrochemicals or other pollutants present as a consequence of construction activities.

- Segregate and stockpile topsoil removed from the area a minimum of 40 m from any waterway and on a flat, stable area. Use measures such as silt fences and holding ponds to prevent stockpile runoff from entering waterways.
- Biosecurity and water health protection measures should be implemented throughout the construction phase, including:
    - Machinery should arrive on site in a clean, washed condition, free of fluid leaks, pests and/or weeds/spores;
    - Regular weed control should be undertaken in disturbed areas throughout the construction period to prevent weed spread into waterways, if notifiable/listed weed material is present; and
    - Ensure all pesticide/herbicides used are registered for use within a waterway, as per NSW DPI guidelines. Alternatively, opt to remove weeds mechanically where possible.
- Spill response protocols for plant, equipment and chemicals used or stored on site during construction are to be available and accessible at all times to prevent and minimise potential for Pollution of Waters (s120 POEO Act).
- A Soil and Water Management Plan will be developed as part of the CEMP for the Proposal, detailing:
    - Water quality parameters to be adhered to (e.g., turbidity)
    - Appropriate monitoring locations and frequency
    - Location and types of ERSED controls
    - Proposed revegetation and stabilisation measures to be undertaken.

Operation

- Continue to undertake a water quality monitoring program in line with Council's requirements until all sites are completely stabilised; monitoring should include details of proposed baseline and downstream/dam water quality following any heavy rainfall.
- Subject Site rehabilitation, including removal of weeds and revegetation using appropriate native species, is to be undertaken to ensure soil stability and prevention of sediment runoff from the site into the future. Revegetation must be maintained with a survival rate of >80%.

Noise and Vibration

Construction:

- Noise emissions should be considered in terms of the Interim Construction Noise Guideline (ICNG) (Department of Energy and Climate Change (DECC) 2009).
- Noise impacts to the local community will be limited to recommended standard working hours as detailed in the Interim Construction Noise Guideline 2009 (ICNG). All activities and Proposal works, including the arrival and departure of vehicles delivering or removing materials to or from the site, shall be carried out between the hours of:
    - 7:00am to 6:00pm Monday to Friday,
    - 8:00am to 1:00pm Saturdays, and
    - No work Sunday and Public Holiday
- Communication of intentions and timeframes to neighbouring properties will be undertaken in order to minimise misconceptions, uncertainty and negative reactions to noise. The site supervisor should supply a contact number to aid in community liaison.

- All noise and vibration complaints are to be handled in a timely manner in accordance with requirements under the POEO Act.
- The appointed contractor will incorporate Noise and Vibration Management strategies in the CEMP, and suitably induct all staff operating machinery on the site to ensure the standard working hours are adhered to, and that machinery movement (revving, reverse beepers) is kept to a minimum. This management plan must include the general noise and vibration management practices (AS 2436-2010).
- Plant deliveries and site access will occur quietly and efficiently, with parking allowed only within designated areas located away from nearby sensitive receivers.
- Simultaneous operation of high-level noise generating machinery should be avoided by operating at contrasting times or increasing the distance between the plant and the nearest identified receiver.
- High noise generating activities, such as jack hammering, should be carried out in continuous blocks, not exceeding three (3) hours with a minimum respite period between blocks of one (1) hour.
- Low-pitch tonal beepers should be installed where possible and reversing minimised on site.
- All engine covers are to be closed and machines that are not in use, shut down.
- Where possible, high noise generating activities such as loading and unloading and material dumps should be located as far as possible from the nearest receptors, except by prior arrangement.
- Contractors and project managers to make reasonable efforts to time works to avoid and/or minimise noise impacts during prime breeding season (Spring) for the majority of native species residing in the area which may be sensitive to noise and vibration during breeding and fledging.
- Strong community reaction may occur where the noise levels reach 75 dB, known as the highly noise affected level. If this level is reached, respite periods may be enforced, and community consultation is to occur to determine least sensitive periods and/or if the community is prepared to accept a longer construction period in exchange for restrictions on construction times.

Operation

No further Safeguards were considered necessary for the operation phase of the Proposal. Operation of the access road is not likely to result in any significant ongoing noise impacts beyond general maintenance and repair works.

Air Quality

Construction

- Council must undertake community engagement and liaison, to set expectations for the works schedule and likely air quality impacts arising as part of the works, particularly prior to works commencing.
- Daily visual construction dust monitoring should occur, with works to cease if dust plumes are occurring that have potential to impact areas outside the direct impact footprint.
- Speed limits of 40 km / hr or slower are to be enforced on access tracks and across the site during dry weather to keep dust to a minimum.
- An adequate water supply is to be provided on the construction site for effective dust/particulate matter suppression/mitigation. If synthetic dust suppressants are used, they must be biodegradable in nature and non-toxic for waterways.
- Earthworks and exposed areas/soil stockpiles are to be revegetated using appropriate native species to stabilise surfaces as soon as practicable to reduce risk of dust emissions from wind erosion.

- Only vegetation that has been approved for removal may be removed or otherwise impacted; intact vegetation stabilises soils and keeps dust to a minimum.
- Vegetation and other materials are not to be burnt on site, unless the vegetation material is a weed that prohibits transportation and disposal by other means.
- Vehicles transporting waste or other materials that may produce odours or dust are to be covered during transit.
- Tracking of machinery carrying soil/spoil through nearby townships is to be avoided where possible.
- Stockpiles or areas that may generate dust are to be managed to suppress dust emissions.
- Dampening of exposed soils will be undertaken during weather conditions conducive to visible dust formation.
- Construction plant and equipment will be maintained in a good working condition in order to limit impacts on air quality through vehicle emissions.
- Fuel operated plant and equipment will not be left idle when not in use.
- Regular site inspections will be undertaken as part of air quality monitoring, and inspection results recorded by Council's Principal Contractor.
- Any dust complaints received during construction will be duly investigated in accordance with Council's requirements under the POEO Act.
- Any exceptional incidents that cause dust and/or air emissions, either on or off site, will be recorded, and the action taken to resolve the situation recorded in the site management logbook.

Operation

- Council is to conduct regular road maintenance activities to ensure the road surface doesn't deteriorate, resulting in emissions to air.
- Any exposed areas revegetated during construction are to be monitored and maintained until the areas are fully stabilised to reduce risk of erosion and dust emissions, as well as dust settling on nearby native vegetation.

Aboriginal Heritage

- All land ground disturbance activities must be confined to within the archaeological study area, as this will eliminate the risk of harm to Aboriginal objects in adjacent landforms. Should the parameters of the Proposal extend beyond the assessed area shown in Figure 9, then further archaeological assessment will be required before works can proceed.
- All staff and contractors involved in the proposed work should be made aware of the legislative protection requirements for all Aboriginal sites and objects.
- All staff and visitors should be inducted to site to ensure they are aware of the possible presence of sensitive Aboriginal heritage items located within the vicinity of the work site, and the protective measures that should remain in place throughout the works.
- Should unanticipated archaeological material be encountered during site works, all work must cease and an archaeologist contacted to make an assessment of the find. Further archaeological assessment and Aboriginal community consultation may be required prior to the recommencement of works. Any objects confirmed to be Aboriginal in origin must be reported to Heritage NSW.
- If during works Aboriginal artefacts or skeletal material are discovered, all work should cease and the procedures in the Unanticipated Finds Protocol (Appendix 2 of the ADD) should be followed.

- If any human remains are found, all works should stop immediately, the site should be secured and NSW police contacted immediately.
- The information in the ADD meets the requirements of the Due Diligence Code of Practice for the Protection of Aboriginal Objects in New South Wales. It should be retained as shelf documentation for five (5) years as it may be used to support a defence against prosecution in the event of unanticipated harm to Aboriginal objects.
- Specific management measures for the archaeological items recorded within the archaeological study area are as follows:
    - Escort Way ST 1 and the community interest tree are within close proximity to the subject site but can be avoided by the proposed works. To ensure that the risk of inadvertent harm to the site and the community interest tree is minimised, the following management measures should be adhered to during works:
        - The northern boundary of the works area on the eastern side of the Escort Way should be demarcated by temporary, high visibility flagging to contain all construction activities. The fencing alignment shown on Figure 4 1 is preferable as it does not identify Escort Way ST 1 as an Aboriginal object that is visible from the road, which reduces the risk of vandalism.
        - The location of Escort Way ST 1 and the community interest tree should be marked on all construction plans as no-go areas.
        - Fencing to contain the construction area per Figure 4 1 will also facilitate the avoidance of the community interest tree.
    - Site 43-3-0108
        - No specific management measures are required to minimise the risk of inadvertent access to the remaining PAD area at site 43-3-0108 as it is outside the study area. The existing property boundary fence between the site and the road corridor is sufficient.

Biodiversity

Timing of vegetation clearing

- Where practicable, it is recommended to time the works outside of key breeding season (Spring) for the majority of native species likely to utilise the site for breeding to avoid nest abandonment, injury or death to native fauna (winter if possible). Some owls breed within late winter, however no large tree hollows suitable for nesting owls will be directly impacted by the works.
- A preclearing inspection should be completed immediately prior to vegetation clearing commencing to determine which species are utilising the site at the time of works.

Tree removal

- Preclearing surveys must be undertaken prior to the commencement of any clearing works.
- No hollow bearing trees have been assessed as requiring removal.
- Clearly delineate vegetation to be removed/retained with the assistance of an ecologist, or similarly qualified professional, and induct all site personnel as to the approved extent of clearing. Ensure that no clearing of vegetation occurs outside of the marked boundary and retain mature trees and overhanging limbs wherever possible.

- Ensure the presence or availability of an ecologist or fauna spotter catcher at all times during pre-clearing and clearing activities to remove and relocate wildlife as necessary, and to immediately attend to any wildlife that are injured as a result of works.
- Where practical, felled trees and removed logs should be placed strategically and in proximity to the work site to provide refuge and potential habitat in the understorey whilst ensuring no further damage to surrounding vegetation. Placement of logs and felled trees will also aid in the regeneration of the area.
- Where additional vegetation removal is proposed this must first be assessed to consider the cumulative impacts against the approved clearance footprint, and if appropriate supervised by a qualified ecologist.

Habitat Protection

- The presence of a suitably qualified arborist is recommended during earthworks occurring near retained trees to avoid rootzones impacts.
- Ensure all work crew understand the importance of habitat features onsite. Avoid impact to all habitat within the subject site wherever possible.
- Any weeds or species of concern are to be removed from the subject site and disposed of in accordance with best practice guidelines, and Council is to be notified.

Rehabilitation

- Any required revegetation activities will be undertaken using native species sourced from local seed wherever possible. Areas to be re-seeded may be marked in the CEMP as a record of rehabilitation efforts made. Vegetation cover should be returned to the site within a reasonably practicable timeframe post clearing to reduce soil exposure and loss.

General

- Vehicles and machinery to work from the sealed road and are not to extend beyond the direct impact footprint.
- All soils to be stockpiled at designated stockpile locations away from waterways, drainage lines and native vegetation in a cleared area, within pre-approved zones. Ensure these are appropriately stabilized in accordance with the 'Blue Book' (Landcom 2004).
- Appropriate erosion and sediment migration reduction/control measures should be in place.
- Where possible, heavy vehicles are not to be parked under tree drip lines/ leaf canopy to avoid compaction of soil, which is damaging to mature native trees and can cause dieback or tree mortality. Existing verges and cleared areas are to be used for parking as a first priority.
- All machinery and vehicles are to be clean and inspected prior to arriving on-site to reduce the spread of weeds and disease (e.g. *Phytophthora cinnamomi*) to the site.
- Strict hygiene protocols, including vehicle inspections, washdown and toolbox talks addressing weed management, must be followed to ensure that no environmental weeds spread around during works or are introduced to site as a result of the proposed works. If weeds are accidentally transported to site, or identified during construction activities, all weed material should be immediately contained and removed from site.

- Declared weeds must be managed according to requirements under the Biosecurity Act 2015. It is recommended that all Weeds of National Significance should be managed to ensure they do not spread, and where possible eradicated.
- Heavy vehicles are not to be parked under tree drip lines/ leaf canopy to avoid compaction of soil, which is damaging to mature trees and can cause dieback or tree mortality.

Operation

- Ongoing monitoring of planted vegetation will be undertaken to ensure adequate survival rates and to identify whether infill plantings should be undertaken.

Traffic and Transport

Construction

- Prior notice shall be given to landowners along The Escort Way to notify residents of the works to be completed, their timing and duration. Notification can be provided by various means including letterbox distribution, local paper (the Forbes Advocate) and through the FSC website. All consultation and notification should occur with enough time before works to allow residents to modify their travel plans (1 – 2 weeks prior to commencement).
- Council's appointed contractor will consider the location of designated parking areas, stockpile locations, construction laydown sites, site offices, and access routes carefully with regard to creating inconveniences to residents, and to the other environmental constraints.
- Works are to minimise impacts to residents/landholders by maintaining vehicular access in one (1) direction at all times using traffic controls as appropriate.
- A Traffic Control Plan (TCP) is to be developed in accordance with Australian Standards (AS 1742.3 – Traffic Control Devices for Works on Roads) and Roads and Maritime Traffic Control at Worksites manual to identify appropriate signage (and location) to advise motorist of upcoming changes in the road network. Any variation to the layout of the TCP on site is to be recorded and certified by accredited Roads and Maritime personnel.
- All road signs and marking will be in accordance with the TfNSW Guide to Signs and Markings; Australian Standards AS1742 and AS1743; and the Australian Roads Guide to Traffic Management.
- Traffic and transport complaints are to be monitored and addressed promptly where practicable.

Socio-economic considerations

- Considerate construction practices are to be implemented at all times during works, including the construction site is to be left in a clean and tidy manner at the end of each workday, and noise, air quality and visual amenity impacts are to be kept to a minimum.
- All materials purchased for the Proposal are to be of highest quality and most sustainable as possible, to reduce impacts to community and ratepayers through replacement of low-quality or faulty equipment in the future.
- Quality assurance is to be applied to all aspects of the Proposal, including design and construction to ensure best value for the local community.
- Disruption of traffic/private property access is to be minimised wherever possible and clear communication and planning between construction crew and landowners is to be undertaken.

- Community engagement is to be undertaken to obtain feedback on concerns, and address issues as they arise.
- Construction machinery and work vehicles to be discretely parked when not in use to reduce visual impact and ensure safe pullover is available where possible.

Waste and Resource Use

- Resource management hierarchy principles are to be followed; namely, the avoidance, reduction, reuse and recycling of resources.
- If stockpile or laydown sites are required in locations that have not been considered as occurring within the impact footprint as part of this REF, additional approval/assessment may need to be sought prior to any clearing taking place.
- Requirements under the Landcom (2004) stockpile management procedure must be observed, including correct placement of earth banks (with sedimentation ponds) to divert water around stockpiles if placed on a slope, and/or filter fences erected below stockpiles to capture any sediment moving offsite.
- Bulk project waste (e.g. clean virgin excavated natural material or clean fill) sent to a site not owned by Council (excluding DPE licensed landfills) for land disposal is to have prior formal written approval from the landowner.
- Waste is not to be burnt on site and all general waste will be contained and disposed of at suitable waste facilities.
- Where possible, materials with recycled content will be sourced, and minimum quantities ordered to reduce wastage.
- If contamination is encountered during construction, a site assessment must be undertaken in accordance with the *Protection of the Environment Operations Act 1997* (POEO Act).
- Toilets will be provided for construction workers for the duration of the works to prevent human wastes entering the waterway.
- Waste management for construction projects should be undertaken in accordance with the NSW Waste Avoidance and Resource Recovery Act 2001. The objectives of the Act are:
    - To encourage the most efficient use of resources and to reduce environmental harm in accordance with the principles of Ecologically Sustainable Development (ESD),
    - To ensure that resource management options are considered against a hierarchy of the following order: Avoidance of unnecessary resource consumption, Resource recovery (including reuse, reprocessing, recycling and energy recovery), Disposal.
    - To provide for the continual reduction in waste generation,
    - To minimise the consumption of natural resources and the final disposal of waste by encouraging the avoidance of waste and the reuse and recycling of waste,
    - To ensure that industry shares with the community the responsibility for reducing and dealing with waste,
    - To ensure the efficient funding of waste and resource management planning, programs and service delivery,
    - To achieve integrated waste and resource management planning, programs and service delivery on a State-wide basis,
    - To assist in the achievement of the objectives of the Protection of the Environment Operations Act 1997.

- Don't over-order – ensure quantities are carefully calculated and ordered so as to minimise waste. Where construction materials are leftover, these are to be beneficially used on other projects, or stored by Council until such a need arises.

Visual Amenity

- Works are to be completed in a single phase, to ensure visual impacts are kept to a short period.
- Considerate construction practices are to be implemented at all times, to ensure the works areas are neat and visually not offensive, including to be kept free from rubbish, and stockpile sites actively managed.
- No additional, unauthorized clearing or destruction of vegetation is to occur.
- Vehicles are to be parked in designated areas only.
- Cleared, bare patches of ground that form part of the works are to be revegetated and restored following cessation of works.
- Obvious and intrusive signs/machinery/equipment are to be removed from the site at the first opportunity.
- Appropriate consultation will continue to be undertaken to inform businesses and residents of planned works, timing, and potential visual impacts.
- Any complaints received regarding visual amenity at the site are to be dealt with and rectified as soon as possible.

Operation

- Obvious and intrusive signs/machinery/equipment are to be removed from the site at the first opportunity.
- Any complaints received regarding visual amenity at the site are to be dealt with and rectified as soon as possible.

Climate Change

Construction

- Resource management hierarchy principles are to be followed:
    - Avoid unnecessary resource consumption as a priority.
    - Avoidance is followed by resource recovery (including reuse of materials, reprocessing, recycling and energy recovery); and
    - Disposal is undertaken as a last resort (in accordance with the Waste Avoidance & Resource Recovery Act 2001).
- Council may elect to make a contribution to an accredited carbon offset program to offset greenhouse gas emissions.
- Quality assurance and life cycle of materials are to be considered when purchasing, to ensure the newly built infrastructure is resilient and structurally sound.
- Local resources are to be used wherever possible, to reduce waste and increase efficiencies and to encourage local economies with fewer 'carbon miles'.

Operation

- All upgrades are to be monitored and maintained per Council's routine road management strategy, to ensure lifecycle of upgraded road features extended and to reduce wastage from neglect / inadequate maintenance.

Lachlan River Precinct Access Road Upgrade

Review of Environmental Factors

Environmental Assessment Checklist

24/10/2023

Environmental Assessment Checklist – Lachlan River Precinct Access Road

Table 1 Document verification and approval

Version	Checklist Prepared By			Client Review			Legal Review		
	Name	Title & Organisation	Date	Name	Title & Organisation	Date	Name	Title & Organisation	Date
V_0.1 - Draft	Graham Stirling	Project Manager, The Environmental Factor	25/07/23	S Coates	Environment & Sustainability Manager (PSC)	15/08/23			
V_1.0 Final	Graham Stirling	Project Manager, The Environmental Factor	24/10/23						

Table 2 Proposal details

Item	Comments
Description of proposed activity	Upgrade to the Lachlan River Precinct (LRP) access road, which involves sealing and widening the existing access track into the Lachlan River Pump Station (LRPS) compound, which serves as the entrance to 'Tallawalla' approximately 12 km east of the township of Forbes on The Escort Way in the Forbes Local Government Area (LGA), NSW (hereafter 'the Proposal). The Proposal involves establishing an all-weather access road into the LRP, including the construction of a culvert (minimum DN300) with all works to be carried out in accordance with current Transport for NSW (TfNSW) Quality Assurance specifications and Australian Standards. The access road is designed to

Item	Comments
	accommodate movements of prime movers and semi-trailers up to 19 m in length as they enter and exit the site from The Escort Way, a State Road managed by TfNSW.
Site description	Works would occur on the Escort way and immediately to the north of the Lachlan River on Council owned land Lot 81 DP750183 'Tallawalla', and within The Escort Way road reserve.
Approvals pathway	**REF under Part 5 div 5.1 of the EP&A Act**
Basis for REF	The proposed activity is able to be carried out without development consent under clause 2.108 of the *State Environmental Planning Policy (Transport and Infrastructure) 2021*, being "*Development for the purpose of a road or road infrastructure facilities may be carried out by or on behalf of a public authority without consent on any land".* On that basis an REF is required under Division 5.1, Part 5 of the *Environmental Planning and Assessment Act 1979* (NSW).
Environmental assessment summary	
Does the REF examine and take into account to the fullest extent possible all matters affecting or likely to affect the environment by reason of the proposed activity?	Yes ☑ No ☐
Is the proposed activity likely to significantly affect the environment?	Yes ☐ No ☒

Item	Comments
Environmental Factors taken into account	**REF section reference**
(a) Soils and Erosion	Chapter 4.1
(b) Surface and Groundwater	Chapter 4.2
(c) Noise and Vibration	Chapter 4.3
(d) Air Quality	Chapter 4.4
(e) Non-Aboriginal Heritage	Chapter 4.5
(f) Aboriginal Heritage	Chapter 4.6
(g) Biodiversity	Chapter 4.7
(h) Traffic and Transport	Chapter 4.8
(i) Socio-economic Considerations	Chapter 4.9

Item	Comments
(j) Waste and Resource Use	Chapter 4.10
(k) Visual Amenity	Chapter 4.11
(l) Climate Change	Chapter 4.12
Other approvals required?	
EPBC Act referral	Yes ☐ No ☒
Roads Act, s 138	Yes ☑ No ☐
EPL	Yes ☐ No ☒
Crown Land Licence	Yes ☐ No ☒