Review of Environmental Factors

Durbin Street Bridge

Quality solutions. Sustainable future.

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Prepared for: Tamworth Regional Council

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UPR	Description	Issued By	Date Issued
4740-1011	Version 1	Michelle Campione-van Zetten	15/12/2023
4740-1015	Version 2	Michelle Campione-van Zetten	20/05/2024

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Executive Summary

Proponent and Determining Authority	Tamworth Regional Council
Background	Tamworth Regional Council (TRC) propose to replace a timber bridge (Durbin Street Bridge) on Durbin Street, Nundle within the Tamworth Regional Local Government Area (LGA), as part of the Timber Bridge Replacement Program. The existing structure would be removed and replaced with a concrete box culvert.
Location	Durbin Street Bridge is located on Durbin Street, approximately 1 km from the intersection of Nundle Road, Oakenville Street, and Jenkins Street, which are the main roads intersection in Nundle, NSW. The town of Nundle is located approximately 46 km southeast of Tamworth
Statutory and Planning Framework	All relevant statutory planning instruments have been examined in relation to the proposed bridge replacement works. Development consent is not required for the proposal by virtue of Section 2.109 of the SEPP (Transport and Infrastructure). However, the proposal becomes an 'Activity' for the purposes of Part 5, Division 5.1 of the *Environmental Planning and Assessment Act 1979* (EP&A Act) and is subject to an environmental impact assessment (this REF).
Environmental Assessment	A comprehensive environmental assessment of the proposed Activity has been undertaken. Some minor impacts would occur as a result of the Activity; however, no significant or long-term adverse impacts are expected. To help ensure that the extent of impacts is limited and that unavoidable impacts are managed and minimised, safeguards and mitigation measures have been recommended and would be implement and monitored. The Activity is considered justified taking into account the potential and residual environmental impacts, including the associated safeguards and mitigation measures. The Activity is in accordance with ecologically sustainable development (ESD) principles and consistent with the objectives of the EP&A Act. As the potential environmental impacts of the Activity are not likely to be significant, it is not necessary for an Environmental Impact Statement to be prepared under Division 5.1, Subdivision 3 of the EP&A Act or approval to be sought from the Minister for Planning under Division 5.2 of the EP&A Act. The Activity is unlikely to significantly affect threatened species or ecological communities or their habitats, within the meaning of the *Biodiversity Conservation Act 2016* or *Fisheries Management Act 1994* and therefore a Species Impact Statement is not required. The Activity is also not expected to affect Commonwealth land or have a significant impact on any matters of national environmental significance. Accordingly, the proposed Activity does not require referral to the Australian Government Department of Climate Change, Energy, the Environment and Water.
Justification and Conclusion	The Activity would improve access and safety for the crossing of Durbin Street over Oakenville Creek. With effective implementation of the safeguards of this Review of Environmental Factors, the Activity is considered unlikely to have any significant environmental impacts.

1. Introduction

1.1 Background and Activity Identification

Tamworth Regional Council (TRC) propose to remove and replace the existing Durbin Street Bridge on Durbin Street, Nundle within the Tamworth Regional Local Government Area (LGA) as part of the Timber Bridge Replacement Program. The existing structure is in poor condition and would be demolished and replaced with a concrete box culvert. The replacement would improve the accessibility of the road and improve safety.

All construction and operational activities associated with replacement of the bridge, including laydown areas and ancillary works, is referred to herein as 'the Activity'.

1.2 Purpose of this Report

The purpose of this Review of Environmental Factors (REF) is to describe the Activity, assess and document the likely impacts of the Activity on the environment, detail safeguards and mitigation measures to be implemented, and to determine whether or not the Activity can proceed. For the purposes of this work TRC is the proponent and determining authority under Division 5.1 of the *Environmental Planning and Assessment Act 1979* (EP&A Act).

The description of the proposed works and assessment of associated environmental impacts has been undertaken in the context of section 171 of the Environmental Planning and Assessment Regulation 2021, *Guidelines for Division 5.1 Assessments* (DPE, 2022), the *Biodiversity Conservation Act 2016* (BC Act), the *Fisheries Management Act 1994* (FM Act) and the Commonwealth Government's *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act).

In doing so the REF helps to fulfil the requirements of section 5.5 of the EP&A Act, which requires TRC as the determining authority to examine and consider to the fullest extent possible all matters affecting or likely to affect the environment by reason of the Activity.

The findings of the REF would be considered when assessing:

- Whether the Activity is likely to have a significant impact on the environment and therefore the necessity for an environmental impact statement to be prepared under Division 5.1, Subdivision 3 of the EP&A Act or approval to be sought from the Minister for Planning under Division 5.2 of the EP&A Act.
- The significance of any impact on threatened species as defined by the BC Act and/ or FM Act, in section 1.7 of the EP&A Act and therefore the requirement for a Species Impact Statement or a Biodiversity Development Assessment Report.
- The potential for the Activity to significantly impact a matter of national environmental significance, including nationally listed threatened biodiversity matters, or the environment of Commonwealth land, and determine the need to make a referral to the Australian Government Department of Climate Change, Energy, the Environment and Water for a decision on whether assessment and approval is required under the EPBC Act.

2. Description of the Activity

2.1 Site Location

The Activity would be located on Durbin Street, approximately 155 m east of Oakenville Creek Road, and consist of works within the road reserve and within Oakenville Creek, as shown in **Plate 2.1** to **Plate 2.4**. Oakenville Creek was dry at the time of the site inspection (refer to **Plate 2.5** and **Plate 2.6**). The Activity location is approximately 1 km from the intersection of Nundle Road, Oakenville Street, and Jenkins Street, which are the main roads intersection in Nundle, NSW. The town of Nundle is located approximately 46 km southeast of Tamworth (refer to **Illustration 2.1**).

The locality surrounding the Activity consists of rural residential properties, agricultural landscape, and forested areas.

A site plan is provided in **Illustration 2.2**.

Plate 2.1 View of bridge and Durbin Street facing east

Plate 2.2 View of bridge and Durbin Street facing west

Plate 2.3 View of bridge and Oakenville Creek facing south

Plate 2.4 View of bridge and Oakenville Creek facing north

Plate 2.5 View of Oakenville Creek dry at time of site visit

Plate 2.6 View of Oakenville Creek dry at time of site visit

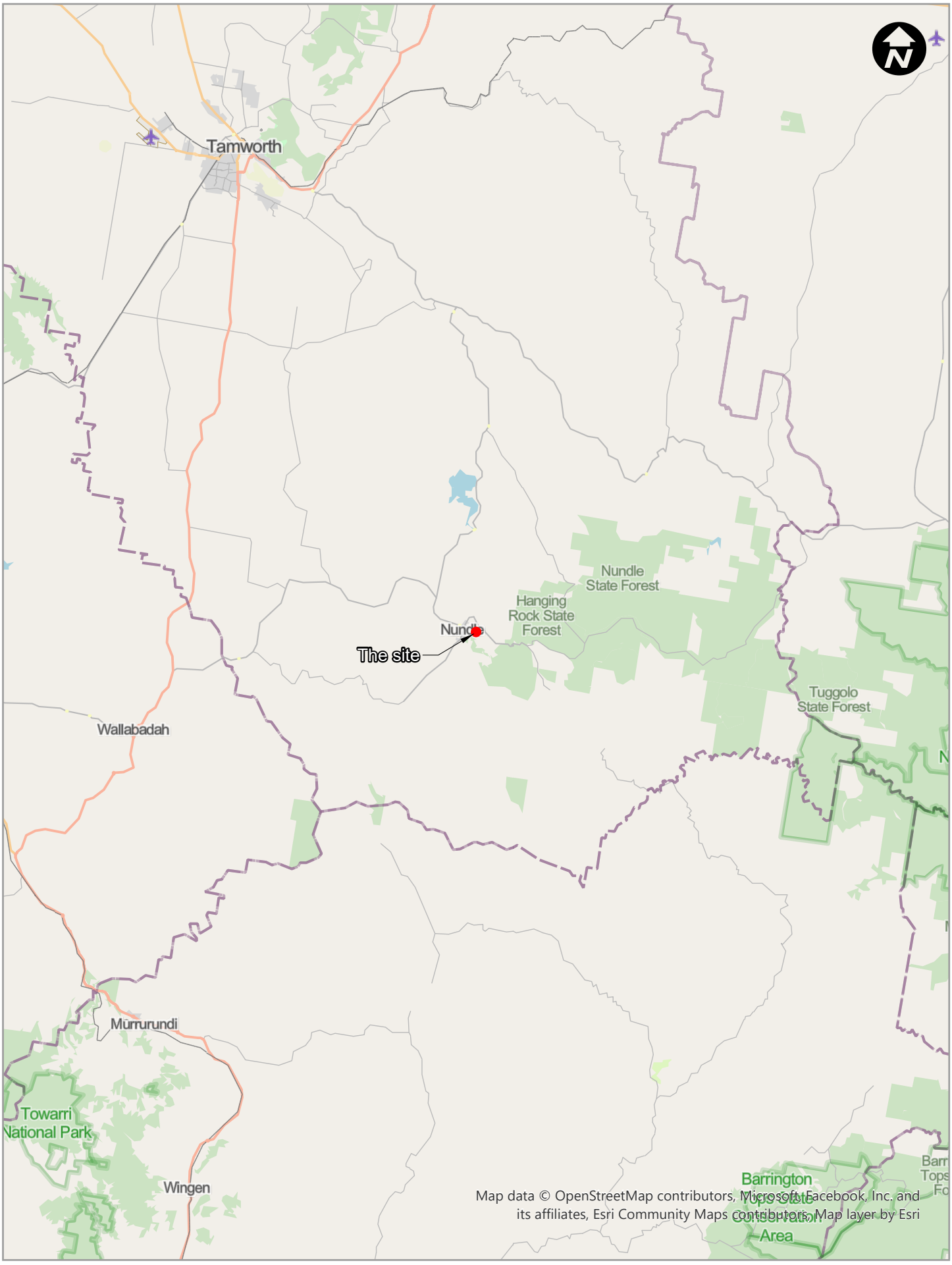
Plate 2.7 Area proposed for compound/ laydown on northern side of Durbin Street, west of bridge

2.2 The Activity

The Activity would be to remove the existing timber bridge and replace it with a concrete box culvert structure with a 100-year design life. The existing bridge is a low height bridge that sits above the Oakenville Creek and is in a condition that requires replacement. The new box culvert would be set 300 mm below the exiting creek bed level and allowed to silt up naturally over time. The Activity would include installation of scour protection on either side of the new box culvert and sealing the road in 3 m wide by 10 m long approaches on either side of the crossing.

The Activity would mostly be undertaken within the Durbin Street Road reserve. West of the bridge the cadastral line for the adjacent property sits approximately 20 m back from the existing road, with a fence to delineate the boundary. This wider section of the road reserve north of Durbin Street and a section adjacent to the road south of the street would be used as a compound and material storage area (refer to **Illustration 2.2**). Installation of the box culvert and the scour protection works would extend into the creek; approximately 10 m to the north and approximately 5 m to the south.

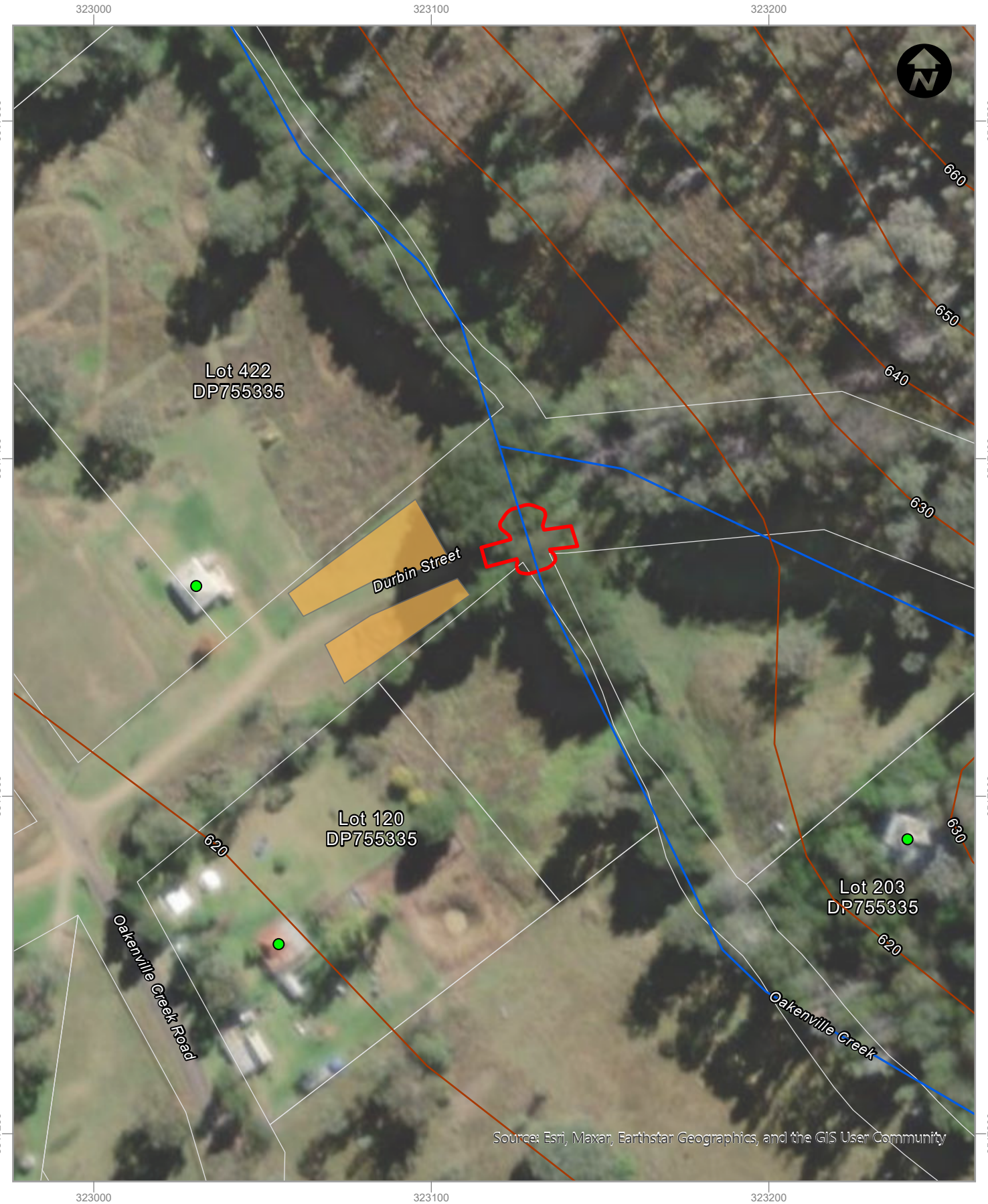
Design drawings have been provided at **Appendix A**.



0 10 km

Site Locality - Illustration 2.1

Information shown is for illustrative purposes only
Drawn by: AEA Checked by: AB Reviewed by: MCZ
Source of base data: Open Street Map
Date: 12/12/2023



LEGEND

- Extent of work
- Cadastre
- Proposed compound storage
- Contours at 10m intervals
- Watercourse
- Sensitive Receiver

0 30 Metres

The Site - Illustration 2.2

Information shown is for illustrative purposes only
Drawn by: AEA Checked by: AB Reviewed by: MCZ
Source of base data: ESRI World Imagery
Date: 12/12/2023

2.3 Consideration of Selection and Options Considered

A culvert is a cost-effective option for this location and context. The existing Durbin Street bridge has a span of approximately 10 m and is low above the creek bed (refer to **Plate 2.3** and **Plate 2.4**). Oakenville Creek was dry at the time of the site visit and is suspected to have intermittent flow (refer to **Plate 2.5** and **Plate 2.6**). Concrete box culverts are an appropriate choice for waterways that are not expected to have permanent significant flow, where spans are relatively short, and the distance between the design road level and the bed level of the waterway is small.

Oakenville Creek at Durbin Street Bridge is mapped as key fish habitat. To improve conditions for fish crossing, the culvert would be set 300 mm below the existing creek bed level and allowed to silt up over time. This approach has been supported by NSW Department of Primary Industries (DPI) Fisheries.

2.3.1 Alternative Options Considered

Do Nothing

The existing Durbin Street bridge is in poor condition and potentially poses a safety risk to residents. Leaving the bridge as is would likely result in it becoming unserviceable and allowing it to continue to deteriorate could possibly be negligent.

Maintain Existing

Ongoing maintenance or rehabilitation is not typically considered a viable option to extend the life of a timber structure, and at significant cost, would likely result in only a short increase in life span. For the Durbin Street Bridge, rehabilitation of the deteriorated timber members and the cost/ benefit of such action represents a poor return on investment.

Replace with Single Span Bridge

Replacing the existing Durbin Street Bridge with a single span bridge was considered; however, this option was considered to be cost prohibitive for the scenario.

Replace with Concrete Box Culvert (Preferred Option)

The NSW Government's Fixing Country Bridges program provides an opportunity for Council to replace failing rural infrastructure with modern concrete structures which are designed for a 100-year life span with no significant maintenance requirements. The concrete box culvert is a low-cost, low-maintenance crossing that is well suited to short, low traffic spans and is the preferred option for this location and context.

2.4 Construction Methodology

2.4.1 Construction Methods

The construction works methods are described as follows:

- Establish to site.
- Set up erosion and sedimentation control in accordance with management plans, REF and fisheries permit.
- Demolition of existing bridge.
- Excavation and blinding for new precast culvert base slabs.
- Precast base slab and culvert installation.

- Apron slab, wingwalls and headwall form, reinforce and pour.
- Scour protection installation.
- Culvert sub soil installation and backfill.
- Road pavement reinstatement.
- Road sealing.
- Wheel stop, signs and lines installation.
- Site remediation and demobilisation of site.

2.4.2 Plant and Equipment

The main plant and equipment required for the works may include (but not be limited to):

- Large excavator.
- Small excavator.
- Trucks.
- Skid steer.
- Grader.
- Watercart.
- Rollers and trench roller.
- Wheel loader.
- Concrete agitator.
- Concrete pump for concrete pours.
- Mobile crane / Franer for base slab and culvert installation.

2.4.3 Construction Duration and Work Hours

Construction activities would be undertaken in accordance with standard construction work hours:

- Monday to Friday 7:00 am to 6:00 pm.
- Saturday 8:00 am to 1:00 pm.
- Sunday and Public Holidays No work.

The work is proposed to commence in early 2024 and is expected to take four weeks to complete.

2.4.4 Ancillary Facilities

A site compound and material stockpile area would be placed within the formed road reserve along Durbin Street, to the north and south of the road, to the west of the bridge (refer to **Illustration 2.2**). Plant and equipment would be parked and stored within the road reserve along Durbin Street near the bridge and within the proposed site compound.

Ancillary facilities have been included within the overall scope and environmental considerations undertaken as part of this assessment. The impact assessment and recommended mitigation measures in this REF would also be applicable to any ancillary facilities.

2.4.5 Utility/ Services Adjustment

No utility or services adjustments would be anticipated or expected for the Activity.

2.5 Tree Removal

The Activity would require the removal of two mature trees (one native River Oak and one exotic Large-leaved Privet), for the installation of the culvert and scour protection. No tree removal will be required within the site compound and stockpile areas, which will be located on already cleared areas of the road reserve. Discussion of biodiversity impacts can be found in **Section 5.1** of this REF.

2.6 Traffic Control

The Activity would require Durbin Street to be closed to traffic traveling to the east of the bridge. Durbin Street continues for approximately 250 m beyond the bridge to service one residence. Pedestrian access would be allowed for the residents beyond the Activity to reach their property and a car parking location for their vehicle would be designated in the road reserve west of the Activity. Demolition and culvert installation, which would block vehicular access, is anticipated to take approximately six to eight working days.

2.7 Spoil Material

Spoil material would be generated from the Activity where sediment and rock are removed. This material would be reused for the Activity works where possible and relevant. Any surplus material will be disposed of at a licensed waste recovery facility or reused in accordance with relevant beneficial reuse resource recovery exemptions.

2.8 Acquisition

Some of the scour protection works appear to extend into Lot 118 DP 755335 as per the design drawings (refer to **Appendix A**). Illustration 2.2 places some of the scour protection works also extending into Lot 7006 DP96507. As such, minor land acquisition may be required for the Activity, or alternatively an agreement with the landowner. The extent of potentially affected private land would be confirmed as part of a boundary survey. If required, TRC would undertake any acquisition process in consultation with the landowner and in accordance with the *Land Acquisition (Just Terms Compensation) Act 1991*.

3. Statutory Planning Framework

3.1 Environmental Planning and Assessment Act 1979

The Activity does not require development consent, however, it requires environmental assessment and approval pursuant to Division 5.1 and Section 5.5 of the EP&A Act whereby determining authorities, when assessing activities under Part 5, Division 5.1, must examine and take into account, to the fullest extent possible, all matters affecting or likely to affect the environment by reason of that activity. To ensure the Activity adequately addresses the requirements of Section 5.5, an assessment of the Activity's consistency with relevant EPIs including State Environmental Planning Policies (SEPPs) and Local Environmental Plans (LEPs) has been completed.

3.2 State Environmental Planning Policies

3.2.1 State Environmental Planning Policy (Transport and Infrastructure) 2021

State Environmental Planning Policy (Transport and Infrastructure) 2021 (Transport and Infrastructure SEPP) aims to facilitate the effective delivery of infrastructure across the State and allows certain development by or on behalf of public authorities to be undertaken without consent.

Section 2.109 of the Transport and Infrastructure SEPP permits development on any land for the purpose of a road or road infrastructure facilities to be carried out by or on behalf of a public authority without consent. As the proposal is appropriately characterised as development for the purposes of a road or road infrastructure facilities and is to be carried out by or on behalf TRC (a public authority), it can be assessed under Division 5.1 of the EP&A Act. Development consent is therefore not required, and the proposal is defined as an 'Activity' for the purposes of Part 5, Division 5.1 of EP&A Act.

The Activity is not located on land reserved under the *National Parks and Wildlife Act 1974* and does not affect land mapped as Coastal Wetland or Littoral Rainforest under the State Environmental Planning Policy (Resilience and Hazards) 2021. The Activity is not development identified as State or Regional development under Chapter 2 of State Environmental Planning Policy (Planning Systems) 2021.

Part 2.2, Division 1 of the Transport and Infrastructure SEPP contains provisions for public authorities to consult with local councils and other public authorities prior to the commencement of certain types of development unless there is an exception. Consultation as required by Transport and Infrastructure SEPP is discussed in **Section 4** of this REF.

3.2.2 State Environmental Planning Policy (Biodiversity & Conservation) 2021

State Environmental Planning Policy (Biodiversity and Conservation) 2021 came into force on 1 March 2022 and incorporated the repealed provisions of SEPP (Koala Habitat Protection) 2020, SEPP (Koala Habitat Protection) 2021, and the Vegetation in non-rural areas SEPP, amongst others.

Chapter 4 of the Biodiversity and Conservation SEPP applies to land zoned RU4 in Local Government Areas (LGA) which are listed in Schedule 2 of the SEPP, including the Tamworth Regional LGA.

The aim of the Koala Habitat Protection 2021 chapter from the Biodiversity and Conservation SEPP is to:

> *encourage the conservation and management of areas of natural vegetation that provide habitat for koalas to support a permanent free-living population over their present range and reverse the current trend of koala population decline.*

Chapter 4 of Biodiversity and Conservation SEPP only applies to Part 4 development applications under the EP&A Act. As the proposal is an Activity under Part 5, Division 5.1 of the EP&A Act, the chapter does not technically apply. It is Council's responsibility, however, to consider environmental issues relating to their works to the fullest extent possible, including impacts on Koalas. An assessment of the impacts of the Activity on biodiversity (including Koalas) is provided in **Section 5.1**.

3.2.3 State Environmental Planning Policy (Resilience and Hazards) 2021

Chapter 4 of the State Environmental Planning Policy (Resilience and Hazards) 2021 deals with Remediation of Land.

A search of the contaminated land database (NSW Environment Protection Authority, 2023) was undertaken for the Tamworth Regional LGA. No records were found in proximity to the Activity area (refer to **Appendix B**). No cattle dip sites are known within the Tamworth Regional LGA.

The site is not declared to be 'significantly contaminated land' under Part 3 of the *Contaminated Land Management Act 1997* (CLM Act) and is not subject to a 'management order' within the meaning of the CLM Act.

There is no proposed change of use, the site is unlikely to be contaminated from past activities, and the Activity is unlikely to disturb contaminated land. Overall, the site is considered suitable for the Activity.

The site is not in the coastal zone and not affected by the provisions of Chapter 2 (Coastal Management) of State Environmental Planning Policy (Resilience and Hazards) 2021.

3.3 Local Environmental Plans

The Activity is located within the Tamworth Regional LGA, and the Tamworth Regional Local Environmental Plan 2010 (TRLEP) applies. In accordance with the TRLEP, the Activity is located on land zoned RU4 Primary Production Small Lots.

The objectives of RU4 Zone are:

- *To enable sustainable primary industry and other compatible land uses.*
- *To encourage and promote diversity and employment opportunities in relation to primary industry enterprises, particularly those that require smaller lots or that are more intensive in nature.*
- *To minimise conflict between land uses within this zone and land uses within adjoining zones.*

The Activity would replace bridge infrastructure on a local road which connects rural localities. The proposed Activity is consistent with the zone objectives and is precluded from requiring consent as it is permitted without consent pursuant to Sections 2.109 of the Transport and Infrastructure SEPP.

3.4 Other NSW Legislation

Table 3.2 below lists other NSW legislation relevant to the assessment of the Activity and comments on their implications for the Activity.

Table 3.1 NSW Legislation

Legislation	Section(s)	Comment
Environmental Planning and Assessment Act 1979 (as amended)	Section 1.7	Section 1.7 of the EP&A Act relates to the application of Part 7 of the *Biodiversity Conservation Act 2016* (BC Act) and Part 7A of the *Fisheries Management Act 1994* (FM Act). Biodiversity has been assessed in **Section 5.1**. The Activity is unlikely to have a significant impact on biodiversity or threatened species or communities.
	Section 5.5	The determining authority in its consideration of an activity shall examine and consider, to the fullest extent possible, all matters affecting or likely to affect the environment by reason of that activity. This assessment provides Council with the information required in regard to the environment to assess the Activity.
Environmental Planning and Assessment Regulation 2021	Section 171	As per Section 171(1) the environmental factors specified in the *Guidelines for Division 5.1 Assessments* issued under Section 170, have been considered in **Section 5**. It is not expected that the Activity would result in a significant impact.
Fisheries Management Act 1994	Section 200	A permit is required when carrying out dredging and reclamation work on water land. As the site is mapped as key fish habitat, a permit under Part 7 of the FM Act is required. TRC would obtain a permit prior to works commencing.
	Sections 219-220	A permit is required when barriers to the movement of fish including water course crossings are to be constructed or modified. The Activity will require temporary blocking of fish passage during construction. A permit would be obtained prior to commencing any activities that block fish passage.
	Section 205	The Activity is not within a marine environment and no marine vegetation would be affected.
Protection of the Environment Operations Act 1997		No Protection of the Environment Policies (PEPs) are relevant to the Activity. No licenses would be required pursuant to the *Protection of the Environment Operations Act 1997*. TRC and/ or contractors working on behalf of TRC are required to notify EPA when a 'pollution incident' occurs that is likely to impact upon the environment.
	Section 115	It is an offence to negligently dispose of waste in a manner that harms the environment. Waste would be managed in accordance with the *Waste Avoidance and Resource Recovery Act 2001.* The Activity would aim to reduce the environmental impact of dumping waste and include mechanisms to recover resources and reduce the production of waste where possible.
	Section 120	It is an offence to pollute any waters of the State. This REF includes safeguard and mitigation measures to minimise the risk of the Activity resulting in pollution of waters.
National Parks and Wildlife Act 1974	Sections 87(1), 90	The Activity occurs on disturbed land and the provisions of the Act are unlikely to be triggered by the Activity (refer to **Section 5.2**). Works would cease if any potential artefact or place of significance is encountered during the Activity; and TRC and

Legislation	Section(s)	Comment
		Tamworth Local Aboriginal Land Council (LALC) would be notified immediately.
Biodiversity Conservation Act 2016	Schedules 1, 2 and 3	Threatened species and communities have been assessed in accordance with the BC Act. No significant impact is expected. Refer to **Section 5.1**.
Biosecurity Act 2015		The Department of Primary Industries (DPI) biosecurity risk weed declarations for the north west, including the Tamworth Regional LGA, lists numerous weed species. There are no priority weed species listed under the *Biosecurity Act 2015* that occur within the work footprint.
Heritage Act 1977		Searches of the State Heritage Register, State Heritage Inventory and TRLEP heritage listings were undertaken. The searches located multiple heritage items within the town of Nundle, however, none of the heritage items are within 1 km of the Activity. No adverse impacts to heritage are expected. Refer to **Section 5.3**.
Crown Land Management Act 2016		Based on mapping from the NSW Planning Portal Spatial Viewer, it appears part of the site is mapped as Crown Land. However, an alternative Crown Land mapping source does not indicate that the site is Crown Land. Council should consult with Crown lands to confirm and determine if a licence is required, and if so, obtain this prior to works.
Roads Act 1993	Section 138	Section 138 of the *Roads Act 1993* requires approval from the relevant road's authority for the erection of a structure, or the carrying out of work in, on or over a public road, or the digging up or disturbance of the surface of a road. However, Council is both the proponent and relevant roads authority in this instance.
Water Management Act 2000	Section 91 (2) & 91 (E). Section 41 of the Water Management (General) Regulation 2018	Works within water lands or those comprising of extraction or management of water may be subject to approval if they constitute a 'controlled activity'. However, public authorities are exempt from a controlled activity approval. Extraction of water is not proposed. If it were, an access licence may be required under s56.

3.5 Commonwealth Legislation

3.5.1 Environmental Protection and Biodiversity Conservation Act 1999

Under the Commonwealth *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act), any action that has, or is likely to have, a significant impact on matters of national environmental significance or other aspects of the environment, such as on commonwealth land, may progress only with approval of the Commonwealth Minister for the Department of Climate Change, Energy, the Environment and Water (DCCEEW) under Part 9 of the EPBC Act. There are no matters of national environmental significance or Commonwealth land that would be significantly affected by the proposed Activity and therefore no Commonwealth referral or approval is necessary for the Activity (refer to **Section 7.2**).

3.5.2 Native Title Act 1993

A search of the National Native Title Register confirmed there is one registration for Native Title Claim by the Gomeroi People (Tribunal File No: NC2011/006/ Federal Court file no. NSD37/2019) that includes the Activity area (refer to **Appendix C**).

It is noted that Native Title can generally only be claimed on certain areas of land or water, for example on vacant or unallocated Crown land but not on residential freehold land or public works, like roads (Native Title Tribunal undated). Council would abide by any relevant native title requirements as necessary under the *Native Title Act 1993*.

3.6 Confirmation of Statutory Position

An assessment of the relevant statutory provisions and planning instruments has concluded that the proposed Activity can be carried out as development without consent under the State Environmental Planning Policy (Transport and Infrastructure) 2021 and can be assessed and determined under Part 5, Division 5.1 of the EP&A Act.

A comprehensive environmental assessment of all matters affecting or likely to affect the environment by reason of that Activity has been undertaken pursuant to Section 5.5 of the EP&A Act (refer to **Section 56**), including the factors outlined in the Division 5.1 Guidelines approved under Section 170 and as required by Section 171(1) of the EP&A Regulation 2021 (refer **Section 7.1**).

The Activity described will not affect declared areas of outstanding biodiversity value or Wilderness Areas. This REF has determined that the Activity is unlikely to significantly affect threatened species or ecological communities or their habitats, within the meaning of the *Biodiversity Conservation Act 2016* or *Fisheries Management Act 1994* and therefore a Species Impact Statement (or Biodiversity Development Assessment Report (BDAR) if the proponent elected) is not required. The Activity is also unlikely to affect Commonwealth land or have a significant impact on any matters of national environmental significance in relation to the EPBC Act and therefore does not require referral to or approval of the Australian Government.

Given the impacts of the Activity are not likely to be significant, an Environmental Impact Statement (EIS) is not required under Section 5.7 of the EP&A Act, nor is approval required from the Minister for Planning under Division 5.2 of the EP&A Act.

The Activity is not State Significant Development or State Significant Infrastructure as declared in State Environmental Planning Policy (Planning Systems) 2021.

4. Notification and Consultation

4.1 Community Consultation

Consultation with the landowners at Lot 118 DP 755335 has occurred in regard to their access to their property during the Activity construction works. The agreement is for TRC to allow pedestrian access from the west side of the bridge during the demolition and culvert installation, which is anticipated to be approximately six to eight working days.

No other community consultation has been undertaken to date. Notice of proposed works and road changes would be given to adjoining/ affected properties and road users prior to works commencing. Roadworks and changed access conditions would be detailed on Council's website, via road signage, and on social media.

As previously noted, minor property acquisition could be required to undertake the works. Properties that are subject to acquisitions will be directly contacted by Council and a deal negotiated for either maintenance easement access or acquisition. If required, Council would undertake this process in consultation with the landowners and in accordance with the *Land Acquisition (Just Terms Compensation) Act 1991*.

4.2 State Environmental Planning Policy (Transport and Infrastructure) 2021 – Consultation

Transport and Infrastructure SEPP aims to facilitate the effective delivery of infrastructure across the State. Part 2 of the Transport and Infrastructure SEPP contains provisions for public authorities to consult with local councils and other public authorities prior to the commencement of certain types of development.

Pursuant to Section 2.17 (1)(c) (exceptions) of the Transport and Infrastructure SEPP, Sections 2.10–2.12 and 2.14 do not apply with respect to the Activity to the extent that (as relevant), they would require notice to be given to a council or public authority that is carrying out the development or on whose behalf it is being carried out. Given the Activity is being carried out by or on behalf of TRC, and Council is the determining authority, these sections do not apply.

Section 2.13 contains provisions requiring consultation with the State Emergency Service (SES) for development with impacts on flood liable land, including development without consent under Division 17 (roads and traffic). As the land is not mapped as flood liable land under the Flood Planning Map TRLEP 2011, notice is not required.

No consultation with other public authorities is triggered under Section 2.15 of the Transport and Infrastructure SEPP.

Section 2.16 (Consideration of Planning for Bush Fire Protection) of the Transport and Infrastructure SEPP is not applicable to the Activity.

No consultation is required with other agencies or public authorities under Part 2 Division 1 of Transport and Infrastructure SEPP.

4.3 Aboriginal Community

The proposed Activity is to take place within an area which has been disturbed and modified. No significant risk or impact to Aboriginal heritage is expected. Consultation with the Aboriginal community is not required under point 5 (p.3) of the document *Due Diligence Code of practice for the protection of Aboriginal Objects 2010* (Department of Environment, Climate Change and Water, 2010; refer to **Section 5.2** for further details).

5. Environmental Assessment

5.1 Biodiversity

5.1.1 Existing Environment

Department of Planning and Environment (DPE) BioNet Atlas of NSW Wildlife and Commonwealth EPBC Act Protected Matters Search Tool (PMST) database searches were completed in November 2023. BioNet searches encompassed a 20 km x 20 km grid centred on the site and PMST searches encompassed a 10 km radius on the site.

5.1.1.1 BioNet Atlas Search

BioNet search results identified records of seven threatened flora species and 11 threatened fauna species listed under the BC Act (10 of which are also listed in the EPBC Act) within the search area (refer to **Appendix D**). The search results also identified 20 Threatened Ecological Communities (TECs) listed under the BC Act (including six of which are also listed under the EPBC Act) have been recorded within the search area.

5.1.1.2 EPBC Protected Matters Report

The Protected Matters Search Tool identified threatened species (35 fauna, 13 flora) and six TECs listed under the EPBC Act as being likely to occur within 10 km of the site. Relevant species are included in the potential occurrence assessments in **Appendix E**.

A total of 11 migratory species listed under the EPBC Act were identified within the search area. The site does not comprise Australian Government Department of Climate Change, Energy, the Environment and Water (DCCEEW) defined important migratory habitat for any of these species and therefore EPBC Act listed migratory species are not considered a constraint for the Activity.

5.1.1.3 Areas of Outstanding Biodiversity Value

The site does not contain or adjoin any areas of Areas of Outstanding Biodiversity Value as listed under the BC Act.

5.1.1.4 Key Fish Habitat/ Fisheries NSW Spatial Data

The waterway 'Oakenville Creek' which traverses the site is mapped as Key Fish Habitat (KFH). No mapped threatened species habitat under the FM Act occurs within the site. A review of threatened species, threatened populations, and endangered ecological communities (EECs) listed under the FM Act found that the site is associated with the EEC: Aquatic ecological community in the natural drainage systems of the lowland catchment of the Darling River. The study area is not associated with any other FM Act listed threatened entities.

5.1.1.5 Wildlife Corridors

The site does not form part of a regional or subregional wildlife corridor as per Scotts (2003). However, this site does provide stepping-stone connectivity values within the broader landscape (particularly for birds), which has been highly modified and subject to historical land clearing.

5.1.1.6 Vegetation

Low condition PCT 84 River Oak - Rough-barked Apple - red gum - box riparian tall woodland (wetland) of the Brigalow Belt South Bioregion and Nandewar Bioregion

The canopy in this community is dominated by River Oak (*Casuarina cunninghamiana subsp. cunninghamiana*). The midstratum is dominated by Large-leaved Privet (*Ligustrum lucidum*)*. Additionally, one *Prunus sp.** sapling occurred within the site. The groundcover in this community is dominated by Periwinkle (*Vinca major*)*. Other groundcover species on site comprised Spear Thistle (*Cirsium vulgare*)*, Water Cress (*Nasturtium officinale*)*, Lamb's Tongues (*Plantago lanceolata*)*, Wild Oats (*Avena fatua*)*, and Cocksfoot (*Dactylis glomerata*)*.

Exotic Dominated Vegetation

This community lacks a canopy and midstratum layer. The groundcover in this community comprises Spear Thistle, Common Sowthistle (*Sonchus oleraceus*)*, Indian Hedge Mustard (*Sisymbrium orientale*)*, Bluebell (*Wahlenbergia sp.*), Caper Spurge (*Euphorbia lathyris*)*, Lamb's Tongues*, Wild Oats*, Praire Grass (*Bromus catharticus*)*, Cocksfoot*, Rat's Tail Fescue (*Vulpia myuros*)*, Mayne's Pest (*Glandularia aristigera*)*, and Trailing Lantana (*Lantana montevidensis*)*.

This community does not conform to any native PCT.

Plate 5.1 Photo of low condition PCT 84 within the site

Plate 5.2 Photo of exotic dominated vegetation within the site

5.1.1.7 Threatened Flora

No threatened flora species were detected during the site assessment. A potential occurrence assessment was completed and determined that no threatened flora species are likely to occur at the site (refer to **Appendix E**).

5.1.1.8 Threatened Ecological Communities

No threatened ecological communities occur on or adjacent to site.

5.1.1.9 Priority Weeds

There are no priority weed species listed under the *Biosecurity Act 2015* that occur within the site. All weed species within the site have a General Biosecurity duty under the Biosecurity Act which involves the following measures:

All pest plants are regulated with a general biosecurity duty to prevent, eliminate or minimise any biosecurity risk they may pose. Any person who deals with any plant, who knows (or ought to know) of any biosecurity risk, has a duty to ensure the risk is prevented, eliminated or minimised, so far as is reasonably practicable.

5.1.1.10 Fauna Habitat

The site provides marginal low condition foraging habitat for fauna species in the form of River Oaks and groundcover. No fauna were observed during the site inspection and no habitat trees occur within the site.

Microbat Roost Habitat (Culvert)

One wooden bridge, allowing passage of Oakenville Creek, occurs within the construction footprint. The bridge was inspected for the presence of roosting microbats or evidence of use by microbats. The bridge did not provide any potential roost habitat due to large gaps between planks exposing the bridge any potential roost locations to the environment (refer to **Plate 5.3** and **Plate 5.4**). No evidence of microbat usage was detected.

Plate 5.3 Photo of underside of Durbin Street Bridge

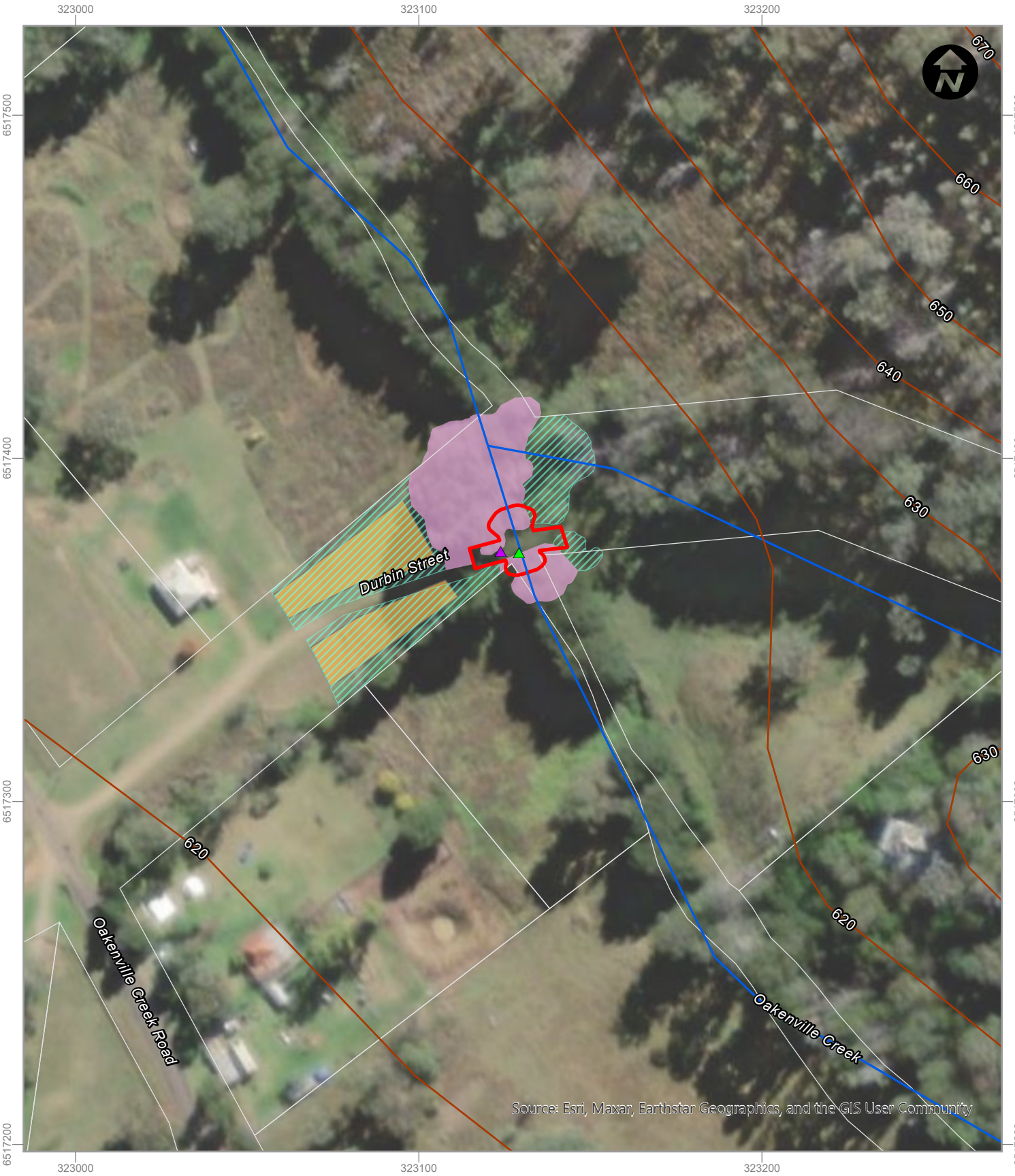
Plate 5.4 Photo of decking gaps on Durbin Street Bridge

Threatened Fauna

No threatened fauna species were found during the site inspection. No migratory species listed under the EPBC Act were recorded at the site.

The threatened species potential occurrence assessment (refer to **Appendix E**) identified that the study area provides potential foraging habitat (no potential breeding habitat occurs at the site) for the Little Eagle (*Hieraaetus morphnoides*).

A test of significance has been completed for this species at **Appendix F**.



LEGEND

- Extent of work
- Cadastre
- Proposed compound storage

Trees for removal

- Large-leaved Prevet (Ligustrum lucidum)
- River Oak (Casuarina cunninghamiana subsp. cunninghamiana)

- Exotic dominated vegetation
- Low condition PCT 84 River Oak - Rough-barked Apple - red gum - box riparian tall woodland (wetland) of the Brigalow Belt South Bioregion and Nandewar Bioregion
- Contours at 10m intervals
- Watercourse

0 30 Metres

Vegetation Mapping - Illustration 5.1

Information shown is for illustrative purposes only
Drawn by: AEA Checked by: AB Reviewed by: MCZ
Source of base data: ESRI World Imagery
Date: 12/12/2023

5.1.2 Potential Impacts

Potential direct biodiversity impacts of the Activity include:

- Removal of up to 0.02 ha of low condition PCT 84.
- Removal of two mature trees (one native River Oak and one exotic Large-leaved Privet).
- Mortality or injury to fauna during vegetation clearing.
- Removal of potential low condition foraging habitat for the threatened Little Eagle.

Potential indirect biodiversity impacts of the Activity include:

- Habitat degradation of adjacent habitat due to potential clearing phase impacts (e.g., erosion and sedimentation impacts or chemical spills).
- Edge effects degrading habitat adjacent to the site. This impact is unlikely to be detrimental to the habitat value of adjacent habitat for a range of species given the location of the sites along the road reserve and previously grazed and cleared agricultural land (thus subject to existing edge effects).
- Unintentional spread of noxious/ environmental weeds.
- Unintentional spread of propagules or plant disease by way of plant and machinery particularly: Phytophthora (Phytophthora cinnamomi) a soil-borne plant pathogen.
- Myrtle rust (Puccinia psidii) a fungal disease which infects plants in the Myrtaceae family.

5.1.3 Conclusion

These impacts are relatively low in a local context and may be managed with a relatively high confidence such that biodiversity impacts may be minimised with the implementation of safeguards. The Activity is considered unlikely to have a significant impact on any threatened species, endangered populations or ecological communities listed under the BC Act, EPBC Act or FM Act.

5.1.4 Safeguards and Mitigation Measures

The following safeguards and mitigation measures will be implemented in order to prevent adverse impacts relating to biodiversity:

1. The works footprint would be clearly delineated where it adjoins the PCTs to prevent unnecessary disturbance or accidental clearing.
2. Vegetation removal is to be kept to the minimum extent required to undertake the works.
3. If fauna are present, works would stop until the animal voluntarily vacates the site; or a spotter-catcher or ecologist would be contacted to undertake fauna capture and relocation. If threatened species are present (e.g., koala), works would stop, and an ecologist contacted to determine the most appropriate course of action.
4. If unexpected, threatened flora or fauna is detected, then stop works immediately and notify the TRC Project Manager who would then contact an ecologist to determine the most appropriate course of action.
5. Contact an animal rescue agency/ wildlife care group or vet if native fauna are injured. WIRES Central Northern: 1300 094 737.
6. Trees would be directionally felled away from adjacent intact vegetation to avoid unnecessary damage.
7. Ensure all plant, equipment and personnel are free of soil and potential weed propagules prior to being brought to the site or leaving the site, in accordance with the Saving Our Species Hygiene Guidelines (DPIE, 2020).
8. Wash down and disinfect vehicles used off-road, or plant, equipment (including hand tools) and boots that have the potential to transport weeds and pathogens before being used on other sites, in accordance with the Saving Our Species Hygiene Guidelines (DPE, 2020).

9. No parking of equipment, machinery, or vehicles under the drip line of trees.
10. Disturbance to watercourses will be minimised as much as practicable and works will be scheduled to coincide with periods of low or no flow.
11. Environmental safeguards would be communicated to all construction personnel as part of an Environmental Site Induction and repeated where appropriate at Toolbox Sessions prior to commencement of relevant work components.

5.2 Aboriginal Heritage

5.2.1 Existing Environment

A basic search of the Aboriginal Heritage Information Management System (AHIMS) (NSW Department of Planning and Environment) was undertaken on 4 December 2023 with a 1 km buffer around the site (refer to **Appendix G**). The search did not identify any registered items/ places of Aboriginal significance.

The area to the north of the bridge has undergone additional disturbance by being used as a track for equipment when the creek is dry (refer to **Plate 5.5**).

Plate 5.5 View of disturbed creek bed and banks north of Durbin Street Bridge

5.2.2 Potential Impacts

The *Due Diligence Code of Practice for the Protection of Aboriginal Objects in NSW* (Department of Climate Change, Energy, the Environment and Water, 2010) provides an assessment process to determine if the proposed activity may harm Aboriginal objects and to determine whether an Aboriginal Heritage Impact Permit (AHIP) is required. An overview of an application of the Due Diligence Code of Practice for the Protection of Aboriginal Objects is presented at **Table 5.1**.

Table 5.1 Generic Due Diligence Process

Step		Comment
1	Will the activity disturb the ground surface or any culturally modified trees? Disturbed land is defined under the code as:	The ground surface would be disturbed by the Activity; however, the construction works would occur within the disturbed land of the road reserve and where the existing bridge was constructed. A site compound and laydown area has been

	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.*	proposed to the west of the bridge location on land that has previously been cleared of vegetation as part of the road reserve. Therefore, the site is already modified and disturbed, including the location of the site compound and laydown area. The new culvert crossing would be constructed within the existing disturbed road alignment and the scour protection would occur in an area that would have been previously disturbed when the existing bridge was constructed and partly in an area that undergoes continued disturbance. No culturally modified trees would be disturbed.
2	Are there any: a) Relevant confirmed site records or other associated landscape feature information on AHIMS? and/ or b) Any other sources of information of which a person is already aware? and/ or c) Landscape features that are likely to indicate presence of Aboriginal objects? Landscape features 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. ■ Is on land that is not disturbed land. If after completing steps 2a and 2b it is reasonable to conclude that there are no known Aboriginal objects or a low probability of objects occurring in the area of the proposed activity, you can proceed with caution without applying for an AHIP.	a) An AHIMS search was undertaken for the site. Search results indicate that there are no Aboriginal sites or Aboriginal places recorded within 1 km of the Activity (refer to **Appendix G**). b) Previous Aboriginal Cultural Heritage Assessment Reports (ACHARs) have been undertaken for other sites associated with the Fixing Country Bridges program in the Tamworth Regional LGA. Findings from those reports concluded low probability of objects occurring within the waterway/ creek beds and immediate banks. When within 200 m of water, the increase in the likelihood of finding Aboriginal artefacts is when the location is above the flood channel. c) While the works are located near a watercourse, the works are not located within a sand dune system, ridge top, ridge line or headland. The site is not within 200 m of a cliff face or within 20 m of a cave, rock shelter or cave mouth. The land upon which the Activity is proposed is unlikely to retain any potential undiscovered archaeological sites or heritage items.

Given the above, it is reasonable to conclude that there are no known Aboriginal site/ objects at the site, and it is unlikely that objects/ sites would occur. The due diligence process indicates the proposed Activity is not anticipated to impact upon Aboriginal heritage and can proceed without further assessment or applying for an Aboriginal Heritage Impact Permit (AHIP).

Safeguards and mitigation measures would be implemented to minimise potential adverse impacts to any undiscovered items of Aboriginal heritage.

5.2.3 Safeguards and Mitigation Measures

The following safeguards and mitigation measures will be implemented in order to prevent adverse impacts to any items of Aboriginal heritage:

12. All personnel working on site will be inducted and receive information on the required process, should a potential Aboriginal object be found.
13. Unexpected Aboriginal objects remain protected by the NPW Act. If any such objects, or potential objects, are uncovered in the course of the activity, work in the vicinity must cease, and Heritage NSW, and T LALC be contacted for advice.
14. If suspected Aboriginal objects have been uncovered as a result of construction within the Activity area, the following actions must be undertaken:
    a. work in the surrounding area is to stop immediately and records are made of the finds via project incident reporting procedures;
    b. a temporary fence is to be erected around the site and appropriate controls put in place to ensure that no additional ground disturbance happens in the vicinity of the find;
    c. an appropriately qualified archaeological consultant and a representative of the Tamworth LALC are to be engaged to identify the material and provide an initial assessment of the significance of the object and the likely nature and extent of any associated archaeological sites;
    d. if the material is found to be of Aboriginal origin, the find must be reported on the AHIMS database;
    e. in the event that the aboriginal objects are considered to have been damaged or disturbed, the incident must be reported through the NSW Environment hotline, and
    f. works may only recommence after advice from Heritage NSW on the requirement for an AHIP or where design, engineer or construction measures are identified to mitigate further damage to the Aboriginal site.
15. If suspected human remains are discovered and/ or harmed in, on or under the land within the Activity area, the following actions must be undertaken:
    a. The remains must not be harmed/ further harmed.
    b. Immediately cease all works at that particular location.
    c. Secure the area so as to avoid further harm to the remains.
    d. Notify the nearest Police Station (Tamworth) as soon as practicable and provide any details of the remains and their location.
    e. If the remains are found to be of Aboriginal origin and the police do not wish to investigate the site for criminal activities, the Aboriginal community (Tamworth LALC) and Heritage NSW (Parramatta) should be notified and consulted as to how the remains should be dealt with.
    f. Do not recommence any work at the Activity site until after an agreement is reached between all parties, provided it is in accordance with all parties' statutory obligations.

5.3 Non-Aboriginal (European) Heritage

5.3.1 Existing Environment

Searches of the Australian Heritage Database (Department of Climate Change, Energy, the Environment and Water, 2023), the NSW State Heritage Inventory database (NSW Department of Planning and Environment, 2023), and environmental heritage schedule of the TRLEP (Schedule 5) were undertaken. The searches did not locate any statutory listed heritage items within or proximate to the Activity (refer to **Appendix H**). The closest heritage items are located within Nundle; the closest being the church on Gill Street (I268) approximately 965 m west of the Activity.

The location of the replacement culvert is within a previously disturbed footprint of the existing bridge. The risk of unexpected non-Aboriginal heritage items occurring on site is low due to the disturbed nature of the site.

5.3.2 Potential Impacts

The Activity would not impact any known non-Aboriginal heritage sites or items. The main potential non-Aboriginal heritage impact is associated with unexpected finds, which is also considered low risk and can be managed.

5.3.3 Safeguards and Mitigation Measures

The following safeguards and mitigation measures will be implemented in order to prevent adverse impacts to any items of non-Aboriginal heritage:

16. Should non-Aboriginal heritage items be uncovered during works, all works in the vicinity of the find will cease and TRC and NSW Heritage will be contacted. Works will not re-commence until appropriate clearance has been received.
17. If any items defined as relics under the *NSW Heritage Act 1977* are uncovered during the works, all works will cease in the vicinity of the find and TRC Project Manager will be contacted immediately. Works will not re-commence until appropriate clearance has been received.

5.4 Visual

5.4.1 Existing Environment

The existing environment within the vicinity of the Activity is disturbed agricultural land with forested area occurring along the riparian zone. The wider area surrounding the Activity consists of rural residential properties, agricultural landscape, and forested areas. The quality of the visual environment associated with the Activity is moderate with value at a local scale.

5.4.2 Potential Impacts

There would be temporary local visual impacts during construction as a result of the presence of machinery, plant and equipment, and general construction activities. This is considered temporary and short-term in nature.

Following construction, the visual amenity of the Activity area would have been subject to limited change. The low timber bridge would be replaced with a concrete culvert, scour protection, and sections of sealed road, resulting in a modest change of look at the crossing. However, as the existing bridge is low and in line with the road, and the culvert would be in line as well, the level of the approach would be similar. Some of the existing vegetation within the site would be removed; in particular the vegetation around the bridge as required to install the culvert and one tree requires removal.

The Activity is expected to result in a minor visual impact. The aesthetic of a dirt track road with a timber bridge is different to a sealed section with a concrete culvert. The culvert and sealed road would potentially look more imposing at the creek crossing, however the existing timber bridge in disrepair is also not visually appealing. Overall, the visual quality of the environment is considered to undergo limited visual change following completion of the Activity the local visual character and values remaining intact.

5.4.3 Safeguards and Mitigation Measures

The following safeguards and mitigation measures will be implemented to prevent and/ or minimise adverse impacts relating to visual amenity:

18. Upon completion of the works, any works areas will be restored to an acceptable visual state.
19. All sites will be maintained, kept free of rubbish and cleaned up at the end of each workday.

5.5 Bush Fire

5.5.1 Existing Environment

According to the NSW Planning Portal Spatial Viewer (NSW Department of Customer Service, 2020) the Activity area at the existing bridge and adjacent land to the east is mapped as predominantly containing Vegetation Category 1. The area where the compound and laydown area would be located is mapped as predominantly Vegetation Category 3, with some Vegetation Buffer immediately to the west (refer to Figure 5.1). Vegetation Category 1 is considered to be the highest risk for bush fire. Vegetation Category 3 is considered to be medium bush fire risk vegetation. Vegetation Category 1 is considered to be the highest risk for bush fire and has the highest combustibility and likelihood of forming fully developed fires including heavy ember production (NSW Rural Fire Service, 2015).

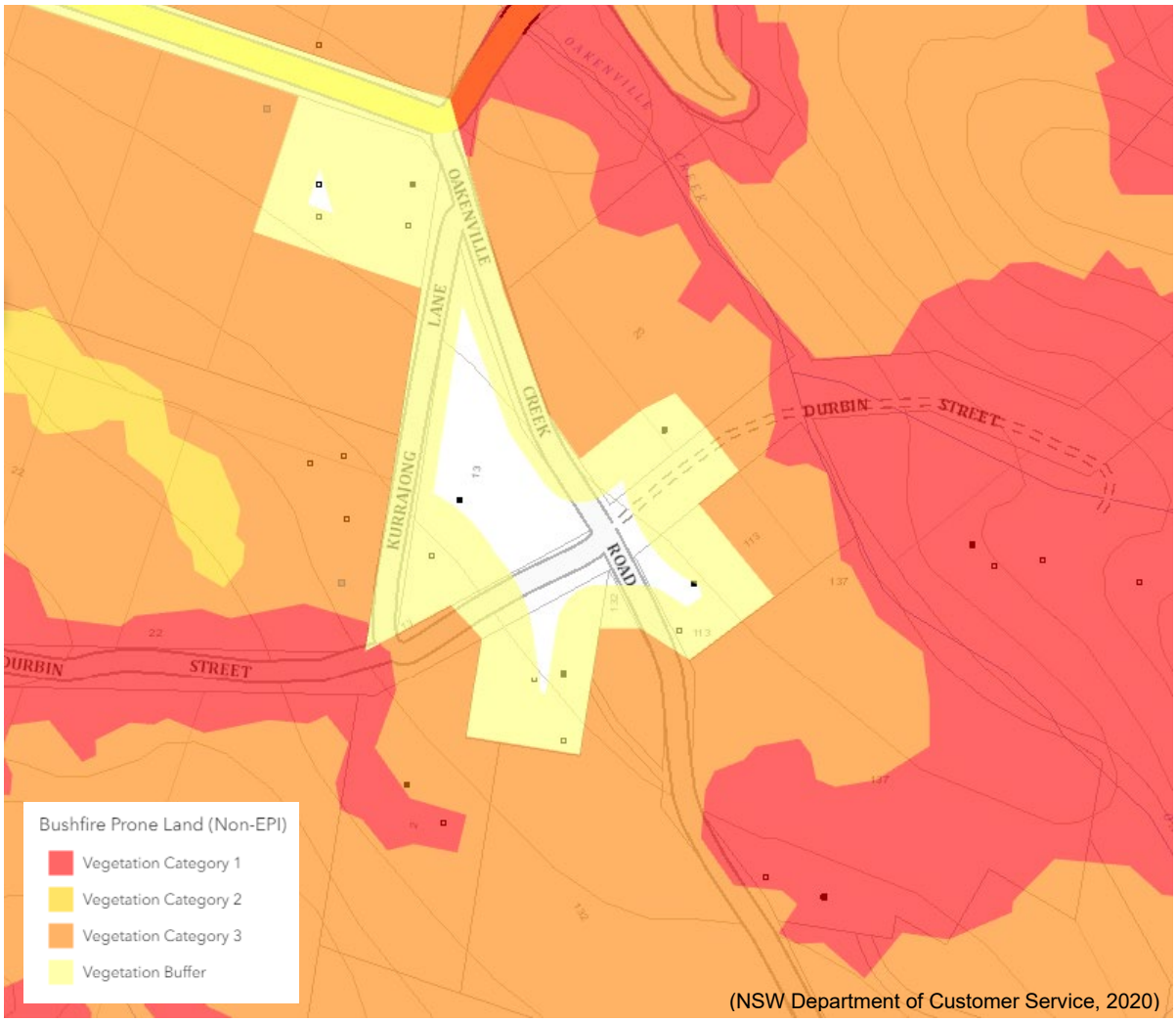


Figure 5.1 Activity area Bush Fire Risk Map

5.5.2 Potential Impacts

Given the site context and the nature of the Activity, the expected risk from bush fire is considered relatively minor. Evacuation routes via established roads would be utilised in an emergency situation.

For the property that is located east of the Activity, the residents would be allowed pedestrian access around the site for the duration of the demolition of the existing bridge and installation of the concrete culvert; approximately six to eight working days. A safeguard and mitigation measure to allow for the resident's vehicle to be parked within the road reserve on the western side of the Activity has been included to maintain evacuation capabilities for the resident.

The Activity is not a Special Fire Protection Purpose and does not require a bushfire safety authority under Section 100B of the *Rural Fires Act 1997*. The Activity is not considered to increase bushfire risk.

5.5.3 Safeguards and Mitigation Measures

The following safeguards and mitigation measures will be implemented in order to prevent adverse impacts relating to bushfire:

20. Pedestrian access will be allowed for the residents beyond the Activity on Durbin Street with a car parking location for their vehicle designated within the road reserve on the western side of the Activity. The parking location is to be always kept clear of construction equipment and materials during the period of time the property is inaccessible by Durbin Street.
21. Works that are likely to cause a fire, such as general purpose hot works (welding, grinding or gas cutting), or any activity that is likely to produce a spark or flame are not to be carried on days with an elevated fire danger or a total fire ban in effect.
22. A fire extinguisher will be available on machinery for quick response if ignition occurs. All personnel will be made aware of the location of the extinguisher and trained in its effective deployment.
23. The contractor/ site manager is to maintain awareness of bushfire emergency information, in particular during a bushfire danger period, and be aware of all current bushfire alerts in the wider vicinity of the Activity area.

5.6 Soils, Erosion and Contamination

5.6.1 Existing Environment

A search of the contaminated land record of notices (NSW Environment Protection Authority, 2023) was undertaken to identify the potential presence of contaminated land within the Activity. No known contaminated land exists within or proximate to the Activity (refer to **Appendix B**).

A search of the cattle dip site locator database (NSW Department of Primary Industries, 2023) was undertaken to identify the potential presence of operating or historical cattle dip sites within the Activity. No known operating or historical cattle dip sites exist within or proximate to the Activity.

A search of the Naturally Occurring Asbestos database (Department of Regional NSW, 2015) was undertaken to identify the potential presence of naturally occurring asbestos soils and regolith within the Activity. No known naturally occurring asbestos soils or regolith exist within or proximate to the Activity. The search did identify Geological Units with LOW asbestos potential are mapped approximately 750 m to the east of the Activity (refer to **Figure 5.2**), however, it is unlikely the Activity would encounter this formation.

Figure 5.2 Map of Naturally Occurring Asbestos database in surrounding area to the Activity

In accordance with TRLEP, the site is not mapped as being within or near an area identified as containing Acid Sulfate Soils. Therefore, an Acid Sulfate Soils Management Plan is not required for the Activity.

A search of the SEED Statewide land and soil mapping indicates that the Activity area is likely dominated by Chromosols (refer to **Figure 5.3**). Chromosols are characterised by strong texture contrast between the surface horizons and the clay subsoil horizons and are not strongly acidic or sodic. These soils can be susceptible to soil structure decline.

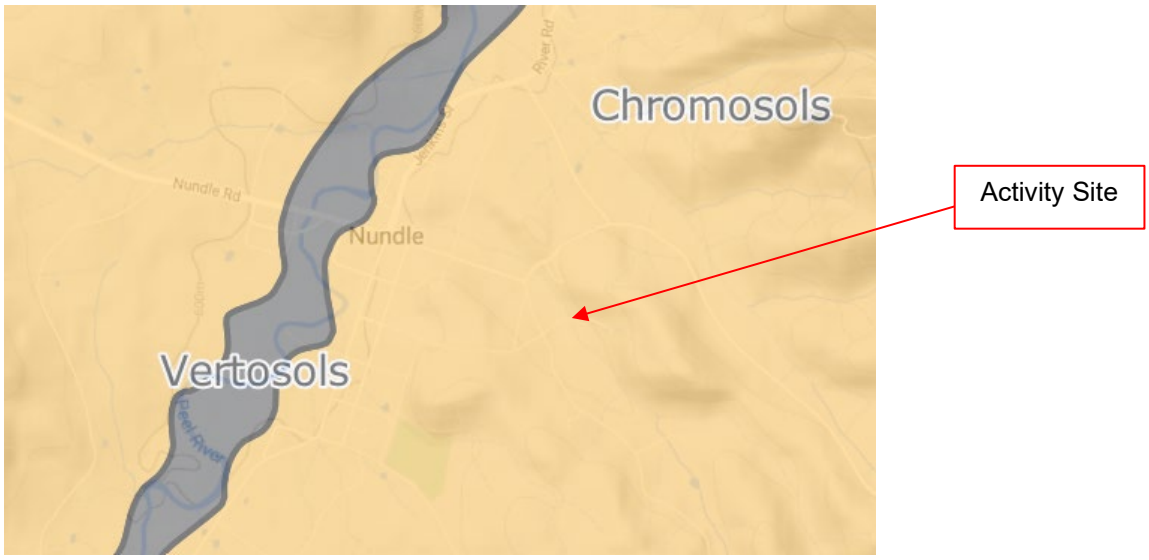


Figure 5.3 Statewide land and soil mapping at Activity

5.6.2 Potential Impacts

5.6.2.1 Land Contamination

The Activity would impact a previously modified area that has historically been disturbed for the installation of the existing bridge and road. There is no proposed change in land use, nor evidence to suggest that contamination is likely to be present. Standard construction measures and safeguards would be implemented to ensure that any unexpected exposure of contaminated material would be dealt with effectively and in accordance with EPA and/ or TRC policy and guidelines.

During construction, spills of lubricants, oils, and fuels may impact the soils locally. The potential impacts to land contamination as a result of the Activity are limited to the construction phase, and no significant increase in contamination risk is anticipated as a result of the Activity post construction.

5.6.2.2 Soil and Erosion Control

There is the potential for the Activity to impact soils and water resources during the construction phase. The key risks would be from erosion and sedimentation, and ground disturbance. Nundle township sits within a relatively localised flat area adjacent to the Peel River and to the west of the Activity, while at a broader scale is in a hilly terrain. The Activity is located in a transition point between the steeper slopes upwards to the east and a gentler slope down towards Nundle to the west. Oakenville Creek travels through the Activity site from the southeast to converge with the Peel River approximately 1.3 km to the northwest.

There is risk of erosion and sedimentation as a result of the works. Safeguards are required to manage erosion and sedimentation risks associated with the construction phase of the Activity. An erosion and sediment control plan would be prepared for the Activity and implemented before the works commence.

5.6.3 Safeguards and Mitigation Measures

The following safeguards and mitigation measures will be implemented in order to prevent adverse impacts relating to soils, erosion and contamination:

24. The storage of hazardous materials and refuelling/maintenance of construction plant and equipment will be undertaken at the western side of the compound/ laydown areas, at least 40 m from drainage lines and waterways, and in clearly marked designated areas that are designed to contain spills and leaks.
25. TRC and EPA will be notified immediately in response to incidents causing or threatening actual or potential harm to the environment in accordance with Section 148 of the PoEO Act (via EPA Environment Line on 131 555).
26. Only clean equipment and vehicles will be used, with equipment being cleaned down before being brought to the site.
27. Erosion and sediment controls will be implemented in accordance with *Managing Urban Stormwater, Soils and Construction* (the Blue Book) (Landcom, 2004) and will be maintained to prevent sediment moving off-site and sediment laden water entering any water course during the construction process. Disturbed areas are to be stabilised as soon as practical.
28. A site-specific erosion and sediment control plan will be developed, approved, and implemented prior to commencement of the works.
29. Works will only commence once all erosion and sediment controls have been established. The controls will be maintained in place until the works are complete, and all exposed erodible materials are stabilised.
30. Regularly check and maintain erosion and sedimentation control measures.

31. Where possible, avoid works during forecast high rainfall events and plan works to occur during periods of no or low flow.
32. Surplus material and excess spoil must be stockpiled, tested, classified (in accordance with Schedule 1 of the *Protection of Environment Operations Act 1997* (PoEO Act) and disposed of in accordance with the waste classification requirements.

5.7 Water Quality and Flooding

5.7.1 Existing Environment

The Activity crosses Oakenville Creek (refer to **Illustration 2.2**), which travels through the site from the southeast to converge with the Peel River approximately 1.3 km to the northwest. The Oakenville Creek is mapped as key fish habitat (NSW Department of Primary Industries, 2023).

The waterways are not located within the Flood Planning Area as described in the TRLEP.

5.7.2 Potential Impacts

The Activity could present risks to Oakenville Creek and downstream waterways if not managed effectively. Construction activities that could present a risk to sensitive environments in the broader landscape include:

- Erosion and sediment disturbance that could disperse from the site and impact local drainage lines and waterways.
- Turbidity and sedimentation of local aquatic habitats and waterways.
- Pollution of local water quality (both ground and surface water) from pollutants from machinery and construction materials and spills.
- A variety of dispersible liquid materials would be used which pose a potential pollutant threat to local water quality. These liquids include, but are not limited to, diesel, unleaded petrol, machinery oils and lubricants. The nature of these liquids and their ability to disperse away from the work site means that they could have a negative impact on ground or surface water on or adjacent to the site, especially during rain.
- Concrete materials and concrete laden wastewaters have the potential to enter drainage lines and waterways, where they may result in elevated pH, increased concentrations of phosphates, nitrates, and heavy metals (e.g., lead), and higher levels of turbidity in nearby waterways.
- Periods of high rainfall or flood could exacerbate potential water quality impacts if works are in progress during such an event.

Whilst the Activity could pose these risks, such risks can be suitably avoided, minimised, and managed by implementing appropriate mitigation measures. With appropriate mitigation measures in place during construction, the Activity is considered unlikely to present significant risk to nearby water environments in the surrounding area. The Activity would not adversely affect the biophysical, hydrological, or ecological integrity of the waterways in the surrounding area, nor would it significantly impact or alter the quantity and quality of surface and ground water flows to and from such.

The Activity would not alter the hydrological or flooding regime of the area.

The potential impacts to water quality as a result of the Activity are limited to the construction phase, and no significant increase in risk of impact to water quality, nor riparian or wetland environments, is anticipated as a result of the Activity post construction.

5.7.3 Safeguards and Mitigation Measures

The following safeguards and mitigation measures will be implemented to prevent and/ or minimise adverse impacts relating to water quality and flooding:

33. Visual monitoring of local water quality (i.e. turbidity, hydrocarbon spills/ slicks) within the Activity site and adjacent area will be undertaken on a regular basis to identify any potential spills or deficient erosion and sediment controls during construction.
34. No waste and/ or wastewater will be discharged directly or indirectly in waterways.
35. Cleaning or washing will not occur near waterways or drainage lines.
36. A concrete washout area and facilities will be located away from waterways and drainage lines and wash down water is to be contained within a designated impervious bund. Excess concrete is to be removed from site.
37. A spill containment kit will be available during the works. All personnel will be made aware of the location of the kit and trained in its effective deployment.
38. The Council and EPA will be notified immediately in response to incidents causing or threatening actual or potential harm to the environment in accordance with section 148 of the PoEO Act (via EPA Environment Line on 131 555).

5.8 Noise and Vibration

5.8.1 Existing Environment

The site is located within a rural locality and subject to existing noise associated with agricultural activities and traffic noise from the smaller Oakenville Creek Road to the west and Old Hanging Rock Road/ Barry Road to the north. The nearest sensitive receivers (dwellings) are located approximately 95 m west of the Activity, 135 m southwest, and 150 m southeast of the site on Lot 422 DP755335, Lot 120 DP755335, and Lot 203 DP755335, respectively (refer to **Illustration 2.2**).

5.8.2 Potential Impacts

Noise from the Activity would be typical of that associated with road construction work and would result from the use of plant and machinery, work vehicles, earthworks, and infrastructure installation.

Under the EPA's Interim Construction Noise Guidelines:

- The noise management level for works during the recommended standard hours is background + 10 dB(A). Above this noise level, the proponent needs to implement all feasible and reasonable work practices, as defined in the Guideline, to minimise noise impacts.
- For works outside the recommended standard hours, the noise management level is background + 5 dB(A).
- The highly noise-affected level of LAeq 75 dB(A) represents the point above which there may be strong community reaction to noise and indicates a need to consider other feasible and reasonable ways to reduce noise, such as restricting the times of very noisy works to provide respite to affected residences.

A distance-based assessment of noise has been undertaken using the Transport for NSW Construction and Maintenance Noise Estimator Tool (TfNSW 2022; refer to **Appendix I**). The background noise was determined to be 30 dB(A). The assessment found that moderately intrusive noise levels (50 dB(A)) would affect sensitive receivers within a distance of 175 m of the Activity during the construction phase and notification in the form of a letterbox drop or equivalent is recommended to the three closest sensitive receivers. Given the distance to sensitive receivers, noise would be audible however no significant noise impacts are expected.

Adverse vibration impacts resulting from the Activity are not expected based on the recommended minimum working distances for vibration intensive plant (TfNSW 2022) and separation from the nearest sensitive receiver/ structure.

The Activity would be of a short-term duration and all works would be undertaken during standard construction hours. Appropriate noise and vibration management measures would be documented in a Construction Environmental Management Plan (CEMP) and implemented to minimise the impact and ensure receivers are informed of the works.

No long-term adverse noise and vibration impacts are expected to result from the Activity.

5.8.3 Safeguards and Mitigation Measures

The following safeguards and mitigation measures will be implemented to prevent and/ or minimise adverse impacts relating to noise and vibration:

39. The sensitive receivers at Lot 422 DP755335, Lot 120 DP755335, and Lot 203 DP755335 (refer to **Illustration 2.1**) would be given advance notice (minimum 5 days) of the works and potential disruptions including details of the work activities, time periods over which these will occur, impacts, and mitigation measures.
40. Construction activities will be undertaken in within standard construction hours:

    - Monday to Friday 7:00 am to 6:00 pm.
    - Saturday 8:00 am to 1:00 pm.
    - Sundays or public holidays No work

41. Where practicable, noise control should occur at the source and modifications to noise control should be investigated and implemented, such as sourcing low noise power tools or hydraulic or electrically controlled equipment instead of petrol or pneumatic equipment.
42. The most appropriately sized tool for the respective job will be used, keeping in mind that the smaller the tool, the less potential noise generated.
43. All vehicles and equipment will be turned off and not left idling when not required for work uses.
44. All plant will be fitted with appropriate exhaust systems to ensure compliance with pollution and noise emission standards.
45. Any noise complaints will be recorded and include suitable identification/ description of the noise source (e.g., continual/ impulsive) and general location of the complaint. Any noise complaints will be investigated and actioned as required.

5.9 Traffic, Access and Parking

5.9.1 Existing Environment

The Activity would include replacing a bridge on Durbin Street with a concrete culvert. This section of the road is a rural road (unsealed) with no posted speed limit. The section of Durbin Street beyond the Activity services one residential property (Lot 203 DP755335).

5.9.2 Potential Impacts

The Activity would result in the remaining section of Durbin Street to the east to be closed during construction, with no traffic. Therefore, a Traffic Control Plan is not required to detour road users.

Pedestrian access would be allowed for the residents of the property to the east of the Activity. A car parking location will need to be designated in the road reserve to allow for their vehicle to remain on the west side of the Activity since the location is rural and they will need to travel by car.

Disturbance to local traffic during the construction phase would be temporary and not significant. No operation phase traffic impacts are expected.

Appropriate community and emergency service notification is required prior to works commencing to advise of changed conditions. In particular, the situation for accessing Lot 203 DP755335 in an emergency.

The Activity would have a long-term positive impact for local traffic by maintaining road infrastructure and improving safety.

5.9.3 Safeguards and Mitigation Measures

The following safeguards and mitigation measures will be implemented to prevent and/ or minimise adverse impacts relating to traffic, access and parking:

46. Pedestrian access will be allowed for the residents beyond the Activity on Durbin Street with a car parking location for their vehicle designated within the road reserve on the western side of the Activity. The parking location is to be always kept clear of construction equipment and materials during the period of time the property is inaccessible by Durbin Street.
47. Regard to public safety will be maintained at all times.
48. Appropriate advanced notification and signage advising of the road/ access changes will be provided to inform the community/ road users.
49. Prior notification will be provided to emergency services providers, advising of the temporary road closure and of the access restrictions to Lot 203 DP755335.

5.10 Air Quality

5.10.1 Existing Environment

The Activity is located in a rural and waterway environment. Potential airborne particles within the locality are largely restricted to minor dust generated by vehicle movements and agricultural activities in the broader landscape.

5.10.2 Potential Impacts

The Activity may temporarily affect air quality in a very minor way through exhaust emissions from machinery and associated transportation. There may also be minor dust generated during earthworks and the removal of sediments. Given the temporary duration of the works and nature of the Activity, the level of potential impact is not considered significant and can be managed or minimised through implementation of standard mitigation measures.

The Activity would contribute to greenhouse gas emissions to a minor extent via the emissions from construction vehicles, as well as the consumption of materials requiring carbon emissions. Given the scale of the works, the influence on greenhouse gas emissions will be negligible. However, it is appropriate to implement measures that can reduce or minimise such effects.

5.10.3 Safeguards and Mitigation Measures

The following safeguards and mitigation measures will be implemented to prevent and/ or minimise adverse impacts relating to air quality:

50. Vegetation or other materials will not to be burnt on site.

51. Vehicles transporting waste or other materials that may produce odours or dust will be covered during transportation.
52. Construction works will not be carried out during strong winds or in weather conditions where high levels of dust or air borne particulates are likely.
53. Machinery and vehicles not in use during construction will be turned off and not left to unnecessarily run idle.
54. Vehicles, machinery and equipment will be maintained in accordance with manufacturer's specifications in order to meet the requirements of the *Protection of the Environment Operations Act 1997* and associated regulation.

5.11 Waste

5.11.1 Existing Environment

The existing timber bridge would be removed as part of the Activity.

5.11.2 Potential Impacts

Waste generated from the construction of the Activity may include, but is not limited to:

- Bridge demolition materials.
- Packaging materials.
- General site rubbish.
- Oils and grease from machinery.
- Spoil material from excavation.

Waste has the potential to disperse into the surrounding environment and cause potential harm to stock and terrestrial and aquatic flora and fauna. Waste products may also transport contaminants that may degrade local water quality (e.g. fuels, lead-based paint and oils). This risk can be reduced and managed through the implementation of safeguards.

5.11.3 Safeguards and Mitigation Measures

The following safeguards and mitigation measures will be implemented to prevent and/ or minimise adverse impacts relating to waste:

55. 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).
    - Disposal is undertaken as a last resort (in accordance with the *Waste Avoidance & Resource Recovery Act 2001*).
56. Working areas will be maintained, kept free of rubbish, and cleaned up at the end of each day.
57. Waste material will not be left on-site once the works have been completed.
58. Ensure the responsible environmental management of wastes that cannot be avoided and promote opportunities for the re-use of waste products where appropriate.
59. Waste will be disposed of at a licensed waste or recycling facility as appropriate.

5.12 Socio-economic

5.12.1 Existing Environment

The Activity site comprises the existing Durbin Street Bridge on Durbin Street; a rural, unsealed road which provides access to a property beyond the bridge. The road and associated infrastructure is of socio-economic value for the immediately local residents.

5.12.2 Potential Impacts

The Activity would be mostly located within the existing road formation and does not require any permanent realignment of the road. Subject to confirmation of the property boundary, minor acquisition may be required however this would be minimal and is not expected to adversely affect the landowners. If required, Council would undertake this process in consultation with the landowner and in accordance with the *Land Acquisition (Just Terms Compensation) Act 1991*. This is a very minor negative socio-economic impact of the project given the context and scale.

The Activity would take approximately 4 weeks to complete, weather permitting, with the road closed during this time. No businesses or school buses would be impacted by the closure. To minimise impacts on the affected residents, pedestrian access would be allowed, and a car parking location would be designated in the road reserve west of the Activity. A sidetrack is not considered an economical option.

Following completion of the Activity, normal operation of Durbin Street would resume and there would be no operational impacts to transport. The replacement culvert would benefit the local residents by replacing the existing dilapidated timber bridge with structurally sound and safe long-life concrete crossing.

Further assessment is proposed in **Section 5.9** about traffic impacts and mitigation measures.

Given the nature of the Activity and the site context no other adverse long-term socio-economic impacts are anticipated.

Overall, the Activity would have a positive socio-economic impact by maintaining the local road infrastructure and safety.

5.12.3 Safeguards and Mitigation Measures

The following safeguards and mitigation measures will be implemented to prevent and/ or minimise adverse socio-economic impacts:

60. Contractors/ workers will be mindful of the needs of the adjacent residents.
61. Any potentially impacted parties or landholders will be consulted prior to construction with a goal of minimising or eliminating any adverse impacts.
62. Any changes to public or private roads (including private driveways) as a result of the works will be reinstated to an acceptable standard upon completion of the works.

5.13 Climate Change

5.13.1 Existing Environment

Human activities, such as the burning of fossil fuels, the clearing of land, and the production of food, have warmed the atmosphere, ocean, and land since pre-industrial times (Eyring, et al., 2021).

Anthropogenic greenhouse gas emissions and their associated impacts on the climate are listed as a key threatening process under the EPBC Act (Department of Climate Change, Energy, the Environment and Water, 2022) and the *Threatened Species Conservation Act 1995*.

5.13.2 Potential Impacts

As well as impacting on biodiversity (refer to **Section 5.1**), the clearing of vegetation would locally reduce the amount of carbon dioxide otherwise captured during photosynthesis.

In additional to placing greater strain on existing waste infrastructure (refer to **Section 5.11**), any waste not beneficially reused would indirectly require additional carbon emissions for either its remanufacture or transport.

The Activity would also contribute to carbon emissions and anthropogenic climate change to a minor extent via the production of greenhouse gas emissions by construction equipment and traffic.

Given the scale of the works, the influence on emissions and climate change would be negligible. However, it is appropriate to implement measures that can reduce or minimise cumulative emissions and related effects.

5.13.3 Safeguards and Mitigation Measures

The following safeguards and mitigation measures will be implemented to prevent and/ or minimise adverse impacts relating to climate change:

63. Vehicles and equipment will be switched off when not required for direct construction activities.

5.14 Ecologically Sustainable Development

The objectives of the EP&A Act require that the principles of Ecologically Sustainable Development (ESD) are considered and evaluated in the environmental assessment process and in the determination of a development application. Whilst a development application is not required for this project, consideration of these principles is useful.

5.14.1 Precautionary Principle

The EP&A Regulation 2021 defines the precautionary principle as the following:

> *If there are threats of serious or irreversible environmental damage, lack of full scientific certainty should not be used as a reason for postponing measures to prevent environmental degradation.*

To satisfy the precautionary principle, this REF has conducted a thorough analysis of potential environmental, economic, and social concerns. This assessment has identified and examined potential impacts and developed appropriate mitigation measures and safeguards to help avoid and/ or minimise impacts and safeguard the environment. Considering this assessment's findings, the Activity is unlikely to impose significant and/or long-term adverse impacts on the environment, economy, or community. The safeguards and mitigation measures outlined in this REF would be implemented to ensure sound environmental outcomes in all aspects of the Activity.

5.14.2 Inter-generational Equity

The EP&A Regulation 2021 defines inter-generational equity as the following:

> *That the present generation should ensure that the health, diversity and productivity of the environment are maintained or enhanced for the benefit of future generations.*

The Activity would not significantly affect the viability of threatened species, or any TECs or other environmental resources including water, soil, and air. Therefore, local environmental values would not be substantially adversely affected by the Activity and would be maintained for future generations. The Activity would have positive socio-economic effects at a local scale in relation to maintenance of access and safety of existing road infrastructure.

5.14.3 Conservation of Biological Diversity and Ecological Integrity

The EP&A Regulation 2021 defines the conservation of biological diversity and ecological integrity as the following:

> *That conservation of biological diversity and ecological integrity should be a fundamental consideration.*

The impacts to ecological integrity and conservation of biological diversity at the site have been assessed as part of this REF. No threatened species, endangered populations or TECs are likely to be significantly affected by the Activity. No populations of native species are likely to be made locally rare or unviable as a result of the Activity. Consequently, the ecological integrity and biological diversity would be maintained locally.

5.14.4 Improved Valuation, Pricing and Incentive Mechanisms

The EP&A Regulation 2021 defines improved valuation, pricing and incentive mechanisms as the following:

> *That environmental factors should be included in the valuation of assets and services.*

It is difficult to assign a monetary value to the environment of a locality or to environmental resources not considered for commercial use. The proponent has taken an approach to manage the potential environmental impacts of the Activity by identifying appropriate measures and safeguards to avoid or mitigate adverse environmental effects. This would ensure that the integrity of the environment is not degraded, is managed and where possible enhanced.

5.15 Cumulative Impacts

Under Section 171 of the EP&A Regulation 2021, any cumulative environmental effect with other existing or likely future activities must be taken into account when assessing the impact of an activity for the purposes of Part 5 of the EP&A Act.

The Activity is expected to add to a number of cumulative impacts including resource consumption, vegetation clearing and generation of greenhouse gas emissions (e.g. through operation of vehicles and equipment, use of resources). However, the relevant safeguards and mitigation measures stated throughout **Section 5** and the methodology for completion of the Activity aim to minimise the extent to which it contributes to cumulative adverse environmental impacts. There are no other known significant developments or works that would coincide with the proposed Activity and have the potential to result in adverse cumulative amenity and environmental impacts. No significant cumulative impacts are expected.

6. Environmental Management

6.1 Summary of Safeguards and Mitigation Measures

The following table provides a summary of the mitigation measures detailed in this report that would be implemented for the Activity. The identified measures would be incorporated by the Contractor into a detailed CEMP prior to commencement of works, which also outlines how risks would be minimised and the construction processes would be undertaken and managed. The objective of the CEMP is to outline parameters for site management practices during construction. All construction staff and site personnel would be inducted and made aware of their obligations working on the project, their environmental responsibilities, and the safeguard measures to avoid and minimise potential impacts. Induction and toolbox talks would commence early in the program and continue as new personnel/ contractors are engaged.

Table 6.1 Summary of Safeguards and Mitigation Measures

Environmental Attribute	Safeguards/ Mitigation Measures
Biodiversity	1. The works footprint would be clearly delineated where it adjoins the PCTs to prevent unnecessary disturbance or accidental clearing. 2. Vegetation removal is to be kept to the minimum extent required to undertake the works. 3. If fauna are present, works would stop until the animal voluntarily vacates the site; or a spotter-catcher or ecologist would be contacted to undertake fauna capture and relocation. If threatened species are present (e.g., koala), works would stop, and an ecologist contacted to determine the most appropriate course of action. 4. If unexpected, threatened flora or fauna is detected, then stop works immediately and notify the TRC Project Manager who would then contact an ecologist to determine the most appropriate course of action. 5. Contact an animal rescue agency/ wildlife care group or vet if native fauna are injured. WIRES Central Northern: 1300 094 737. 6. Trees would be directionally felled away from adjacent intact vegetation to avoid unnecessary damage. 7. Ensure all plant, equipment and personnel are free of soil and potential weed propagules prior to being brought to the site or leaving the site, in accordance with the Saving Our Species Hygiene Guidelines (DPIE, 2020). 8. Wash down and disinfect vehicles used off-road, or plant, equipment (including hand tools) and boots that have the potential to transport weeds and pathogens before being used on other sites, in accordance with the Saving Our Species Hygiene Guidelines (DPE, 2020). 9. No parking of equipment, machinery, or vehicles under the drip line of trees. 10. Disturbance to watercourses will be minimised as much as practicable and works will be scheduled to coincide with periods of low or no flow. 11. Environmental safeguards would be communicated to all construction personnel as part of an Environmental Site Induction and repeated where appropriate at Toolbox Sessions prior to commencement of relevant work components.
Aboriginal Heritage	12. All personnel working on site will be inducted and receive information on the required process, should a potential Aboriginal object be found. 13. Unexpected Aboriginal objects remain protected by the NPW Act. If any such objects, or potential objects, are uncovered in the course of the activity, work in the vicinity must cease, and Heritage NSW, and T LALC be contacted for advice.

Environmental Attribute	Safeguards/ Mitigation Measures
	14. If suspected Aboriginal objects have been uncovered as a result of construction within the Activity area, the following actions must be undertaken: a. work in the surrounding area is to stop immediately and records are made of the finds via project incident reporting procedures; b. a temporary fence is to be erected around the site and appropriate controls put in place to ensure that no additional ground disturbance happens in the vicinity of the find; c. an appropriately qualified archaeological consultant and a representative of the Tamworth LALC are to be engaged to identify the material and provide an initial assessment of the significance of the object and the likely nature and extent of any associated archaeological sites; d. if the material is found to be of Aboriginal origin, the find must be reported on the AHIMS database; e. in the event that the aboriginal objects are considered to have been damaged or disturbed, the incident must be reported through the NSW Environment hotline, and f. works may only recommence after advice from Heritage NSW on the requirement for an AHIP or where design, engineer or construction measures are identified to mitigate further damage to the Aboriginal site. 15. If suspected human remains are discovered and/ or harmed in, on or under the land within the Activity area, the following actions must be undertaken: a. The remains must not be harmed/ further harmed. b. Immediately cease all works at that particular location. c. Secure the area so as to avoid further harm to the remains. d. Notify the nearest Police Station (Tamworth) as soon as practicable and provide any details of the remains and their location. e. If the remains are found to be of Aboriginal origin and the police do not wish to investigate the site for criminal activities, the Aboriginal community (Tamworth LALC) and Heritage NSW (Parramatta) should be notified and consulted as to how the remains should be dealt with. f. Do not recommence any work at the Activity site until after an agreement is reached between all parties, provided it is in accordance with all parties' statutory obligations.
Non-Aboriginal Heritage	16. Should non-Aboriginal heritage items be uncovered during works, all works in the vicinity of the find will cease and TRC and NSW Heritage will be contacted. Works will not re-commence until appropriate clearance has been received. 17. If any items defined as relics under the *NSW Heritage Act 1977* are uncovered during the works, all works will cease in the vicinity of the find and TRC Project Manager will be contacted immediately. Works will not re-commence until appropriate clearance has been received.
Visual	18. Upon completion of the works, any works areas will be restored to an acceptable visual state 19. All sites will be maintained, kept free of rubbish and cleaned up at the end of each workday.
Bushfire	20. Pedestrian access will be allowed for the residents beyond the Activity on Durbin Street with a car parking location for their vehicle designated within the road reserve on the western side of the Activity. The parking location is to be always kept clear of construction equipment and materials during the period of time the property is inaccessible by Durbin Street.

Environmental Attribute	Safeguards/ Mitigation Measures
	21. Works that are likely to cause a fire, such as general purpose hot works (welding, grinding or gas cutting), or any activity that is likely to produce a spark or flame are not to be carried on days with an elevated fire danger or a total fire ban in effect. 22. A fire extinguisher will be available on machinery for quick response if ignition occurs. All personnel will be made aware of the location of the extinguisher and trained in its effective deployment. 23. The contractor/ site manager is to maintain awareness of bushfire emergency information, in particular during a bushfire danger period, and be aware of all current bushfire alerts in the wider vicinity of the Activity area.
Soils, Erosion and Contamination	24. The storage of hazardous materials and refuelling/maintenance of construction plant and equipment will be undertaken at the western side of the compound/ laydown areas, at least 40 m from drainage lines and waterways, and in clearly marked designated areas that are designed to contain spills and leaks. 25. TRC and EPA will be notified immediately in response to incidents causing or threatening actual or potential harm to the environment in accordance with Section 148 of the PoEO Act (via EPA Environment Line on 131 555). 26. Only clean equipment and vehicles will be used, with equipment being cleaned down before being brought to the site. 27. Erosion and sediment controls will be implemented in accordance with *Managing Urban Stormwater, Soils and Construction* (the Blue Book) (Landcom, 2004) and will be maintained to prevent sediment moving off-site and sediment laden water entering any water course during the construction process. Disturbed areas are to be stabilised as soon as practical. 28. A site-specific erosion and sediment control plan will be developed, approved, and implemented prior to commencement of the works. 29. Works will only commence once all erosion and sediment controls have been established. The controls will be maintained in place until the works are complete, and all exposed erodible materials are stabilised. 30. Regularly check and maintain erosion and sedimentation control measures. 31. Where possible, avoid works during forecast high rainfall events and plan works to occur during periods of no or low flow. 32. Surplus material and excess spoil must be stockpiled, tested, classified (in accordance with Schedule 1 of the *Protection of Environment Operations Act 1997* (PoEO Act) and disposed of in accordance with the waste classification requirements.
Water Quality and Flooding	33. Visual monitoring of local water quality (i.e. turbidity, hydrocarbon spills/ slicks) within the Activity site and adjacent area will be undertaken on a regular basis to identify any potential spills or deficient erosion and sediment controls during construction. 34. No waste and/ or wastewater will be discharged directly or indirectly in waterways. 35. Cleaning or washing will not occur near waterways or drainage lines. 36. A concrete washout area and facilities will be located away from waterways and drainage lines and wash down water is to be contained within a designated impervious bund. Excess concrete is to be removed from site. 37. A spill containment kit will be available during the works. All personnel will be made aware of the location of the kit and trained in its effective deployment. 38. The Council and EPA will be notified immediately in response to incidents causing or threatening actual or potential harm to the

Environmental Attribute	Safeguards/ Mitigation Measures
	environment in accordance with section 148 of the PoEO Act (via EPA Environment Line on 131 555).
Noise and Vibration	39. The sensitive receivers at Lot 422 DP755335, Lot 120 DP755335, and Lot 203 DP755335 (refer to **Illustration 2.1**) would be given advance notice (minimum 5 days) of the works and potential disruptions including details of the work activities, time periods over which these will occur, impacts, and mitigation measures. 40. Construction activities will be undertaken in within standard construction hours: – Monday to Friday 7:00 am to 6:00 pm. – Saturday 8:00 am to 1:00 pm. – No work on Sundays or public holidays. 41. Where practicable, noise control should occur at the source and modifications to noise control should be investigated and implemented, such as sourcing low noise power tools or hydraulic or electrically controlled equipment instead of petrol or pneumatic equipment. 42. The most appropriately sized tool for the respective job will be used, keeping in mind that the smaller the tool, the less potential noise generated. 43. All vehicles and equipment will be turned off and not left idling when not required for work uses. 44. All plant will be fitted with appropriate exhaust systems to ensure compliance with pollution and noise emission standards. 45. Any noise complaints will be recorded and include suitable identification/ description of the noise source (e.g., continual/ impulsive) and general location of the complaint. Any noise complaints will be investigated and actioned as required.
Traffic, Access and Parking	46. Pedestrian access will be allowed for the residents beyond the Activity on Durbin Street with a car parking location for their vehicle designated within the road reserve on the western side of the Activity. The parking location is to be always kept clear of construction equipment and materials during the period of time the property is inaccessible by Durbin Street. 47. Regard to public safety will be maintained at all times. 48. Appropriate advanced notification and signage advising of the road/ access changes will be provided to inform the community/ road users. 49. Prior notification will be provided to emergency services providers, advising of the temporary road closure and of the access restrictions to Lot 203 DP755335.
Air Quality	50. Vegetation or other materials will not to be burnt on site. 51. Vehicles transporting waste or other materials that may produce odours or dust will be covered during transportation. 52. Construction works will not be carried out during strong winds or in weather conditions where high levels of dust or air borne particulates are likely. 53. Machinery and vehicles not in use during construction will be turned off and not left to unnecessarily run idle. 54. Vehicles, machinery and equipment will be maintained in accordance with manufacturer's specifications in order to meet the requirements of the *Protection of the Environment Operations Act 1997* and associated regulation.
Waste	55. 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).

Environmental Attribute	Safeguards/ Mitigation Measures
	– Disposal is undertaken as a last resort (in accordance with the *Waste Avoidance & Resource Recovery Act 2001*). 56. Working areas will be maintained, kept free of rubbish, and cleaned up at the end of each day. 57. Waste material will not be left on-site once the works have been completed. 58. Ensure the responsible environmental management of wastes that cannot be avoided and promote opportunities for the re-use of waste products where appropriate. 59. Waste will be disposed of at a licensed waste or recycling facility as appropriate.
Socio-economic	60. Contractors/ workers will be mindful of the needs of the adjacent residents. 61. Any potentially impacted parties or landholders will be consulted prior to construction with a goal of minimising or eliminating any adverse impacts. 62. Any changes to public or private roads (including private driveways) as a result of the works will be reinstated to an acceptable standard upon completion of the works.
Climate Change	63. Vehicles and equipment will be switched off when not required for direct construction activities.

6.2 Licensing and Other Approvals

As Oakenville Creek at the Activity is mapped as key fish habitat, a permit under Part 7 of the FM Act will be required.

7. Summary of Consideration of Environmental Factors

7.1 Environmental Factors to be Considered

As part of its obligation under Section 5.5 of the EP&A Act, the determining authority is required to take into account, to the fullest extent possible, all matters likely to affect the environment. This REF has considered the relevant assessment considerations in the Division 5.1 Guidelines approved under Section 170, and as per Section 171(1), of the EP&A Regulation, as provided below. **Table 7.1** provides a summary of the key issues relevant to each factor and a summarised assessment.

Table 7.1 Environmental Factors for Consideration as per the Division 5.1 Guidelines

	Factor	Impact
a	**Any environmental impact on a community**	
	The community would not be affected by declines in the local environment as a result of the Activity. Mitigation measures have been designed to reduce environmental impacts on the community to negligible levels.	**Nil to Negligible**
b	**Any transformation of a locality**	
	The Activity will result in a very minor change to the locality.	**Minor**
c	**Any environmental impact on the ecosystems of a locality**	
	No vegetation of significance will be removed to allow for the Activity. The impact of that vegetation removal is discussed in this REF. Extensive mitigation measures have been designed to reduce environmental impacts.	**Minor**
d	**Any reduction of the aesthetic, recreational, scientific, or other environmental quality or value of a locality**	
	Although the aesthetic quality will be different, it is expected that the reduction in aesthetic quality of the locality will be negligible. No reduction in the quality of the environment will occur due to the mitigation measures detailed in this REF. No significant changes to the locality will occur.	**Negligible**
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 or future generations**	
	The Activity will not impact existing land uses. There will be no significant impacts to heritage, visual amenity, or social significance and as such impacts are therefore considered to be negligible.	**Nil to Negligible**
f	**Any impact on the habitat of protected animals (within the meaning of the *Biodiversity Conservation Act 2016*)**	
	With effective implementation of the mitigation measures provided in this REF, the Activity is not considered likely to have a significant negative impact on the habitat of any other protected fauna.	**Nil to Negligible**
g	**Any endangering of any species of animal, plant, or other form of life, whether living on land, in water or in the air**	
	With effective implementation of the mitigation measures provided in this REF, the Activity is not considered likely to significantly endanger any species of animal, plant, or other form of life.	**Nil to Negligible**

	Factor	Impact
h	**Any long-term effects on the environment**	
	No negative long-term impacts will occur in the locality given the implementation of the proposed mitigation measures in this REF.	**Nil to Negligible**
i	**Any degradation of the quality of the environment**	
	Degradation of the quality of the environment is not expected. With the mitigation measures in this REF, any impacts are unlikely to be substantial.	**Negligible**
j	**Any risk to the safety of the environment**	
	No negative long-term impacts will occur in the locality given the implementation of the mitigation measures in this REF.	**Nil to Negligible**
k	**Any reduction in the range of beneficial uses of the environment**	
	The Activity will not result in any reduction in the range of beneficial uses of the environment.	**Nil**
l	**Any pollution of the environment**	
	The Activity has minor potential to affect water quality during the works. The mitigation measures will minimise the duration and impact. Given the proposed safeguards and mitigation measures detailed in this REF and all waste being disposed within an appropriate/ approved waste disposal facility, pollution to the environment will be minimised.	**Minor**
m	**Any environmental problems associated with the disposal of waste**	
	Any wastes would be disposed of in a manner which would not damage or disturb any native flora or fauna or the physical environment. The disposal of such waste would be within a waste management facility in accordance with EPA approved methods of waste disposal. Mitigation measures detailed in this REF would protect the environment from problems associated with waste disposal.	**Nil to Negligible**
n	**Any increased demands on resources (natural or otherwise) that are, or are likely to become, in short supply**	
	The Activity does not create any demand for resources that are in short supply nor is it likely to result in an increased demand on any natural resources that are likely to become in short supply.	**Negligible**
o	**Any cumulative environmental effect with other existing or likely future activities**	
	The Activity would have nil to negligible cumulative impacts (e.g., resource consumption; greenhouse gas emissions; vegetation loss) but is unlikely to significantly contribute to any cumulative impacts.	**Nil to Negligible**
p	**Any impact on coastal processes and coastal hazards, including those under projected climate change conditions**	
	The Activity could contribute to cumulative impacts to a negligible extent (e.g., greenhouse gas emissions, consumption of resources) contributing to climate change and associated impacts, however there would be no direct impact on coastal process or hazards.	**Nil to Negligible**
q	**Any applicable local strategic planning statement, regional strategic plan or district strategic plan made under Division 3.1 of the Act**	
	Not applicable	**Nil**
r	**Any other relevant environmental factors**	

	Factor	Impact
	Nil	**Nil**

7.2 Environment Protection and Biodiversity Conservation Act 1999 (Commonwealth Legislation)

The EPBC Act protects/ regulates matters of national environmental significance (MNES), including:

- World Heritage.
- National heritage places.
- Wetlands of international importance.
- Nationally threatened species and ecological communities.
- Migratory species.
- Commonwealth marine areas.
- The Great Barrier Reef Marine Park.
- Nuclear actions (including uranium mining).
- A water resource, in relation to coal seam gas development and large coal mining development.

Under the EPBC Act, a referral is required to the Australian Government for proposed 'actions that have the potential to significantly impact on matters of national environmental significance or the environment of Commonwealth land'. A database search was completed on 14 November 2023 encompassing a 10 km radius search area from the centre of the proposed Activity (refer to **Appendix D**). Search results following the site assessment are considered in **Table 7.2**.

Table 7.2 EPBC Act Considerations

Matter	Impact
Any impact on a World Heritage property?	
No World Heritage properties occur at or proximal to the site.	Nil
Any impact on a National Heritage place?	
No World Heritage properties occur at or proximal to the site.	Nil
Any impact on a wetland of international importance?	
Three wetlands of international importance (Ramsar Sites) were identified in the database search, being Banrock station wetland complex, Riverland, and the coorong, and lakes alexandrina and albert wetland. All three of these sites are located in South Australia and are far from the Activity. None of the wetlands are anticipated to be impacted.	Nil
Any impact on nationally threatened species and ecological communities?	
Habitat for 6 TECs, 48 threatened species and 11 migratory species were listed within the 10 km search area. No Commonwealth listed threatened flora, fauna or TECs are likely to be significantly affected by the Activity (refer to biodiversity assessment at **Section 5.1**) and mitigation measures have been provided to minimise any potential impacts. No marine habitat would be impacted.	Negligible
Any impact on a Nationally Important Wetland?	
No nationally important wetlands occur at or near the site. Nationally Important Wetlands are not likely to be affected by the Activity.	Nil
Any impact on Migratory species?	

Matter	Impact
Based on the minor nature of the works, no listed migratory species are likely to be significantly affected by the Activity (refer to **Section 5.1**).	Nil to Negligible
Any impact on a Commonwealth marine area?	
No Commonwealth marine areas occur at or near the site.	Nil
Any impact on the Great Barrier Reef Marine Park?	
The Great Barrier Reef Marine Park is distant from the site.	Nil
Does the Proposal involve a nuclear action (including uranium mining)?	
The Activity does not involve a nuclear action.	Nil
Any impact on a water resource, in relation to coal seam gas development and large coal mining development?	
The Activity does not involve any impact on a water resource, in relation to coal seam gas development and large mining development.	Nil
Additionally, any impact (direct or indirect) on Commonwealth land?	
The Activity is not expected to impact upon such land.	Nil

The assessment of the impact of the Activity on MNES and the environment of Commonwealth land has found that there is unlikely to be significant impact on relevant MNES. Accordingly, the Activity does not require referral to the Australian Government Department of Climate Change, Energy, the Environment and Water (DCCEEW).

8. Conclusion and Certification

The Activity is the replacement of the existing timber Durbin Street Bridge with a concrete culvert.

The Activity is permitted without development consent and subject to assessment under Part 5, Division 5.1 of the EP&A Act. This REF has examined and taken into account to the fullest extent possible all matters affecting or likely to affect the environment by reason of the proposed Activity. The Activity would result in some impacts; however, these are not likely to be significant and can be effectively managed/ ameliorated through the implementation of the safeguards and mitigation measures recommended in this REF.

The Activity described will not affect areas of outstanding biodiversity value or Wilderness Areas. The Activity is unlikely to significantly affect threatened species or ecological communities or their habitats, within the meaning of the *Biodiversity Conservation Act 2016* or *Fisheries Management Act 1994* and therefore a Species Impact Statement (or Biodiversity Development Assessment Report (BDAR) if the Proponent elected) is not required. The Activity is also unlikely to affect Commonwealth land or have a significant impact on any matters of national environmental significance in relation to the EPBC Act.

I certify to the best of my knowledge that:

- this REF provides a true and fair review of the Activity in relation to its potential effects on the environment, and
- the assessment satisfies the requirements of Sections 5.5 to 5.7 of the EP&A Act, the EP&A Regulation 2021, including Section 171 and the *Guidelines for Division 5.1 Assessments* approved under Section 170 of the EP&A Regulation, and other relevant legislation and guidelines, and
- the assessment has been adequately completed, and
- subject to the inclusion of the safeguards/ measures included in this REF, it is reasonable to conclude that the project will not likely have a significant impact on the environment during both the construction and operation phases, and
- given the impacts of the Activity are not likely to be significant, an Environmental Impact Statement is not required under Section 5.7 of the EP&A Act, and
- a Species Impact Statement or BDAR is not required, and
- the Activity does not warrant/ require referral to the Australian Department of Agriculture, Water and the Environment under the EPBC Act, and
- the Activity is not State Significant Infrastructure and does not require approval under Division 5.2 of the EP&A Act.

REF Prepared by	
Signature:	
Name:	Michelle Campione-van Zetten
Position:	Environmental Planner
REF Reviewed by	
Signature:	
Name:	Jacob Sickinger
Position:	Senior Environmental Planner

9. Determining Authority Sign Off

Determining Authority Certification

☒ 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 section 170 of the EP&A Regulation, and the information it contains is neither false nor misleading. Based on the completed REF and my knowledge of the project, the assessment has been adequately completed, the project has predictable impacts which would not be significant, the conclusion as to the likely environmental impact of the project is reasonable, and the project can proceed subject to the relevant measures and conditions in this REF, any approval, license, or permit.

☐ The project requires additional environmental assessment.

Reasons:

Enter Reasons.

☐ The project should not proceed in its current form.

Reasons:

NOTE: A site visit may be required depending on the level of confidence and risk to the environment.

REF reviewed and endorsed by:	Mark Gardiner		
Signature		**Date:**	8 August 2024
Name	Peter Resch		
Position	Director Regional Services		
Determining Authority Name	Tamworth Regional Council		

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Appendix A

Design Drawings

DURBIN STREET

TAMWORTH REGIONAL COUNCIL

DURBIN STREET BRIDGE REPLACEMENT

DURBIN STREET, NUNDLE, OVER OAKENVILLE CREEK

DRAWING SCHEDULE

1. COVER SHEET
2. ROAD DESIGN - LONG SECTION AND PLAN
3. ROAD DESIGN - CROSS SECTIONS
4. GENERAL ARRANGEMENT - SHEET A
5. GENERAL ARRANGEMENT - SHEET B
6. APRON SLAB DETAILS
7. WINGWALL DETAILS
8. HEADWALL DETAILS
9. BAR DIAGRAM

SURVEY

REGIONAL SERVICES DIRECTORATE SURVEY & DESIGN, 1500 DETAIL
APPROX AHD MAG2020, DATED 08/08/2020

DESIGN STANDARDS

AS 1597.2:2013
AS 3600:2018
AS 5100.2:2017
AS 5100.5:2017

GENERAL

BRIDGE SERVICES A SINGLE PROPERTY AND IS CONSIDERED A PROPERTY ACCESS BRIDGE FOR ASSET RISK ASSESSMENT

DESIGN TRAFFIC LOADING:
SM1600
No OF DESIGN LANES: 1
DESIGN TRAFFIC SPEED: 60km/h

TRAFFIC BARRIER

CASTELLATED KERBERS & WHEEL STOPS

DESIGN LIFE

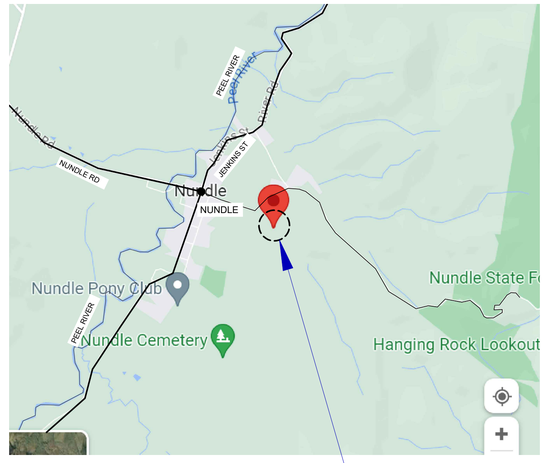
100 YEARS

EXPOSURE CLASSIFICATION

CONCRETE ELEMENT - B1

HYDRAULICS

CAPACITY TO MATCH EXISTING
20 YEARS ARI
PEAK FLOW=6.8 m^3/s PRIOR TO OVER TOPPING
MAXIMUM OUTLET VELOCITY=2.8 m/s



SITE OF WORK

LOCALITY PLAN
(NOT TO SCALE)

FOR CONSTRUCTION

A	10/10/2023	ISSUE FOR CONSTRUCTION	JR	DM	CR
ISSUE	DATE	AMENDMENT DESCRIPTION	PREP	CHECK	AUTH

THIS DRAWING IS CONFIDENTIAL AND SHALL ONLY BE USED FOR THE PURPOSE OF THE NOMINATED PROJECT

	PREPARED	CHECKED
DESIGN	G.HOOK	D. MERRIKIN
DRAWING	J. REN	D. MERRIKIN

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BRIDGE KNOWLEDGE

Tamworth REGIONAL COUNCIL
TAMWORTH REGIONAL COUNCIL

DURBIN STREET — TAMWORTH REGIONAL COUNCIL
EXISTING DURBIN STREET BRIDGE REPLACEMENT
OVER OAKENVILLE CREEK
NEW CULVERT CONSTRUCTION
COVER SHEET

DRAWING SET No	BKP416-TRC
DRAWING No	DRG-001
ISSUE STATUS	ISSUE FOR CONSTRUCTION
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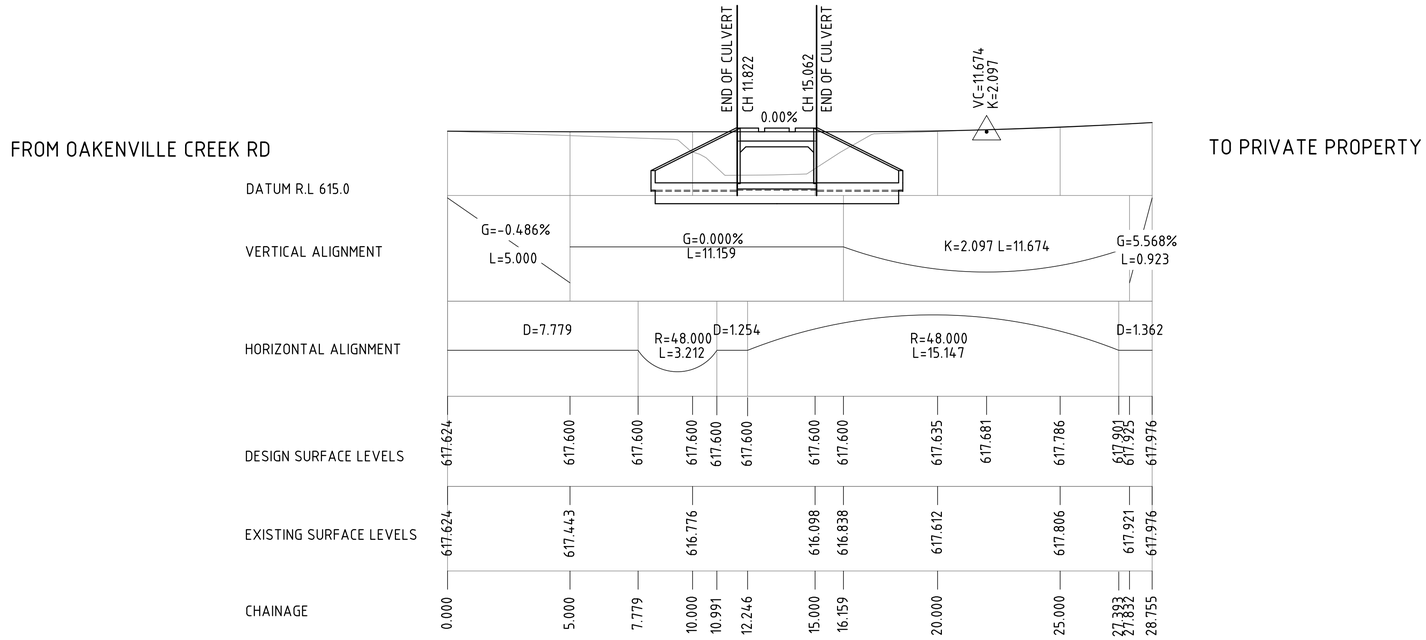
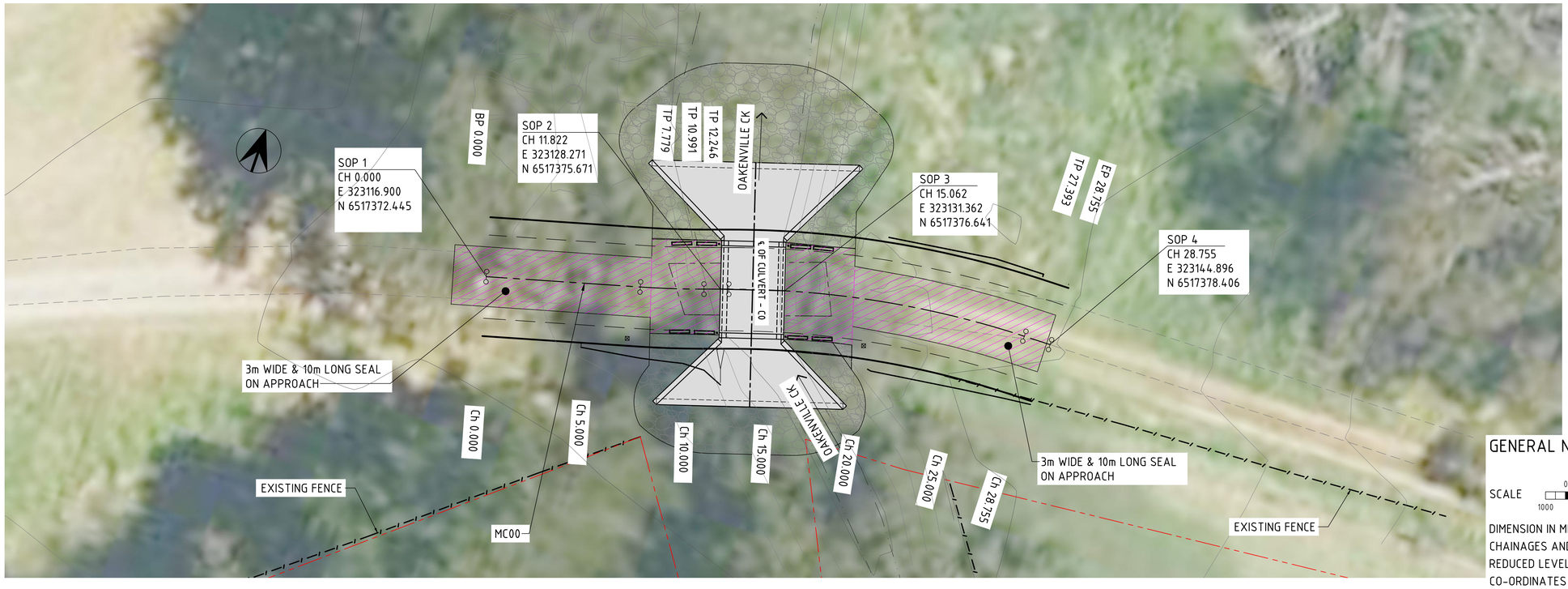
No SHEETS	9
SHEET No	01



LONG SECTION - ALONG MC00



PLAN

GENERAL NOTES

SCALE 0 2500 5000mm (1000) OR AS SHOWN.

DIMENSION IN MILLIMETRES.
CHAINAGES AND REDUCED LEVELS ARE IN METRES.
REDUCED LEVELS ARE TO THE AUSTRALIAN HEIGHT DATUM.
CO-ORDINATES ARE TO MGA ZONE 56.

FOR CONSTRUCTION

ISSUE	DATE	AMENDMENT DESCRIPTION	PREP	CHECK	AUTH
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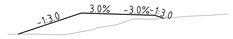
TAMWORTH REGIONAL COUNCIL

DURBIN STREET
TAMWORTH REGIONAL COUNCIL

EXISTING DURBIN STREET BRIDGE REPLACEMENT OVER OAKENVILLE CREEK NEW CULVERT CONSTRUCTION

ROAD DESIGN - LONG SECTION AND PLAN

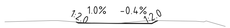
DRAWING SET No	BKP416-TRC
DRAWING No	DRG-002
ISSUE STATUS	ISSUE FOR CONSTRUCTION
ISSUE	A
No SHEETS	9
SHEET No	02



R.L. 610.000

DESIGN LEVELS	615.969		617.690	617.600	617.510	617.259
EXISTING LEVELS	615.969		616.163	616.778	617.196	617.259
DIFFERENCE LEVELS	0.000		1.527	0.822	0.314	0.000
DESIGN OFFSETS	-8.162		-3.000	0.000	3.000	3.752

10.000



R.L. 610.000

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DIFFERENCE LEVELS	0.000		-0.073	-0.020	-0.240	0.000
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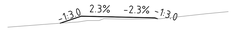
25.000



R.L. 610.000

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EXISTING LEVELS	617.094		617.235	617.443	617.453	617.456
DIFFERENCE LEVELS	0.000		0.432	0.157	0.080	0.000
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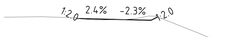

R.L. 610.000

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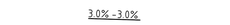
DIFFERENCE LEVELS	0.000		-0.023	0.023	-0.336	0.000
DESIGN OFFSETS	-3.081		-3.000	0.000	3.000	3.544

20.000

R.L. 610.000

DESIGN LEVELS	617.654		617.624	617.594
EXISTING LEVELS	617.654		617.624	617.594
DIFFERENCE LEVELS	0.000		0.000	0.000
DESIGN OFFSETS	-3.000		0.000	3.000

00.000



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15.000

R.L. 610.000

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DIFFERENCE LEVELS	0.000		0.000	0.000
DESIGN OFFSETS	-3.000		0.000	3.000

28.755

GENERAL NOTES

SCALE 0 2500 5000 10000mm OR AS SHOWN.

DIMENSION IN MILLIMETRES.
CHAINAGES AND REDUCED LEVELS ARE IN METRES.
REDUCED LEVELS ARE TO THE AUSTRALIAN HEIGHT DATUM.
CO-ORDINATES ARE TO MGA ZONE 56.

FOR CONSTRUCTION

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A	10/10/2023	ISSUE FOR CONSTRUCTION	JR	DM	CR

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	PREPARED	CHECKED
DESIGN	G.HOOK	D. MERRIKIN
DRAWING	J. REN	D. MERRIKIN

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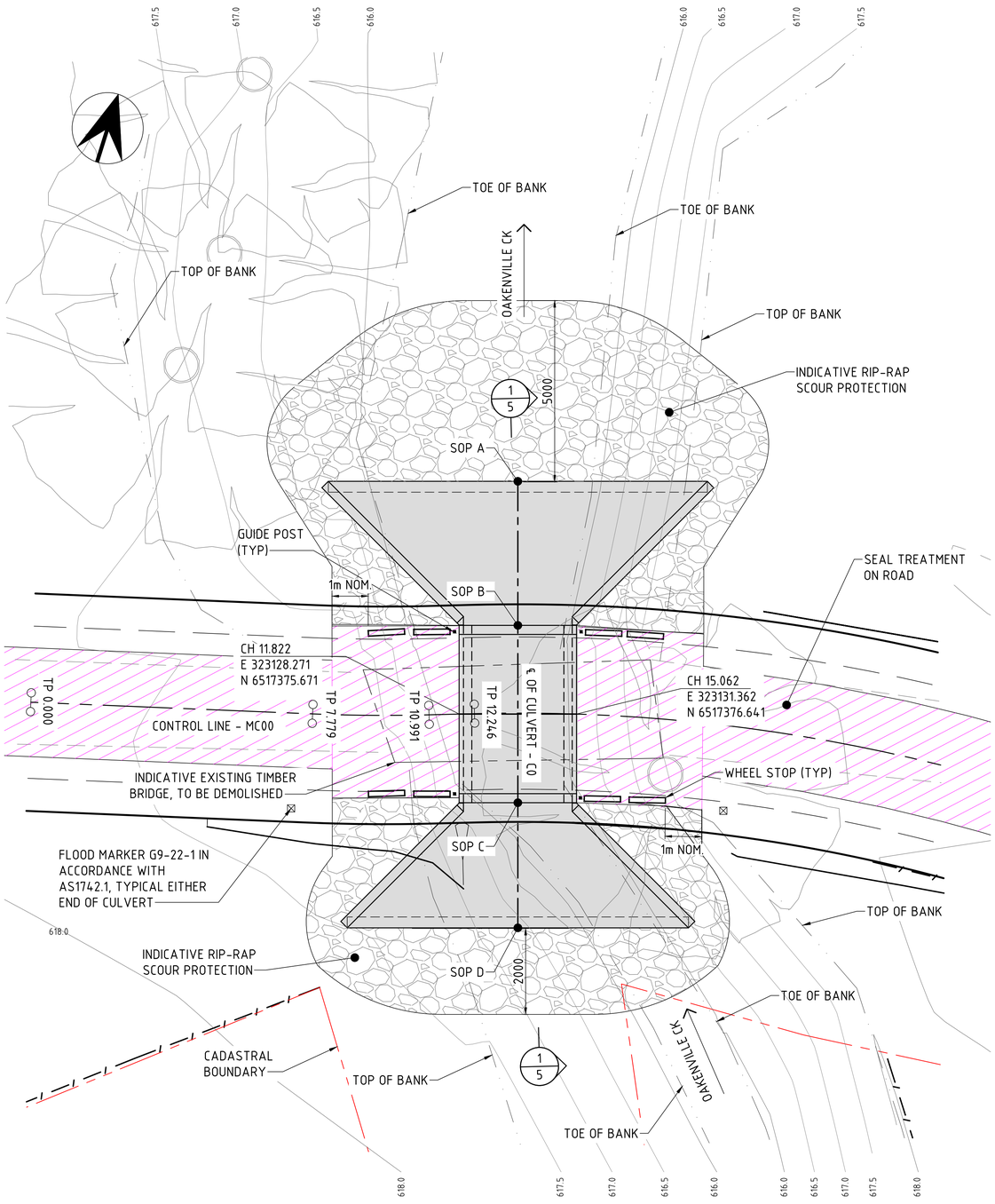
TAMWORTH REGIONAL COUNCIL

DURBIN STREET — TAMWORTH REGIONAL COUNCIL

EXISTING DURBIN STREET BRIDGE REPLACEMENT OVER OAKENVILLE CREEK NEW CULVERT CONSTRUCTION

ROAD DESIGN - CROSS SECTIONS

DRAWING SET No	BKP416-TRC
DRAWING No	DRG-003
ISSUE STATUS	ISSUE FOR CONSTRUCTION
ISSUE	A
No SHEETS	9
SHEET No	03



PLAN

GENERAL NOTES

SCALE: 0 1000 2000 3000 4000 5000mm (1000 500) OR AS SHOWN.

DIMENSIONS ARE IN MILLIMETRES.
CHAINAGES, COORDINATES AND REDUCED LEVELS ARE IN METRES.
REDUCED LEVELS ARE RELATED TO AUSTRALIAN HEIGHT DATUM.
THE LOCATION OF ALL EXISTING SERVICES IS TO BE CONFIRMED ON SITE PRIOR TO FOUNDATION TREATMENT AND CONSTRUCTION OF BASE SLAB, HEADWALL AND WINGWALLS.
PRECAST CROWN UNITS, HEADWALL AND BASESLAB TO BE DESIGNED AND CERTIFIED BY THE MANUFACTURER IN ACCORDANCE WITH AS 1597.2.
THE TRAFFIC LOADING MUST BE SM1600 IN ACCORDANCE WITH AS5100 BRIDGE DESIGN AND RMS PROJECT SPECIFICATIONS R11, R16 AND B115.
PRECAST CROWN UNIT, HEADWALL AND BASESLAB CONCRETE EXPOSURE CLASSIFICATION MUST BE B1 IN ACCORDANCE WITH AS5100.
MINIMUM 28 DAY CONCRETE STRENGTH MUST BE 50MPa.
NOMINAL COVER MUST BE 30mm BASED ON RIGID FORMWORK WITH INTENSE COMPACTION AND NO CURING COMPOUNDS USED.
CROWN UNITS TO BE BUTTED TOGETHER WHEN PLACED WITH 10mm NOMINAL GAP BETWEEN BUTTED FACES.
ALL BACKFILL MUST BE IN ACCORDANCE WITH RMS PROJECT SPECIFICATIONS R11, B30 AND R44.
DIFFERENTIAL LOADING OF THE CULVERTS DURING THE BACKFILL OPERATION TO BE AVOIDED, AS PER CL 5.6 OF AS 1597.2.
COMPACTION OF THE SELECT FILL WITHIN 1500mm OF THE REAR OF THE BOX CULVERT AND WINGWALLS IS RESTRICTED TO LIGHT COMPACTION EQUIPMENT, SUCH AS HAND-OPERATED EQUIPMENT WITH AN EQUIVALENT STATIC WEIGHT OF LESS THAN 10kN OR VIBRATORY PLATE COMPACTORS (MAXIMUM 125kg MASS). ANY ADDITIONAL LOADING OR PLANT WILL REQUIRE APPROVAL FROM THE PRINCIPAL. LEVEL OF COMPACTION TO BE ACHIEVED IN ACCORDANCE WITH PROJECT SPECIFICATION R11.
LIFTING LUGS IN PRECAST ELEMENTS, MUST BE HOT DIP GALVANISED.
LIFTING DESIGN INCLUDING DESIGN OF LIFTING ANCHORS TO BE UNDERTAKEN BY THE PRECAST SUPPLIER.
LIFTING LUGS TO BE MORTAR FILLED ONCE PRECAST ELEMENTS PLACED.
DESIGN, CONSTRUCTION AND INSTALLATION OF HANDRAILS MUST MEET THE REQUIREMENTS OF AS1657.
ACTUAL FILL HEIGHT AT ANY SECTION OF CULVERT MUST NOT EXCEED THE MAXIMUM DESIGN FILL HEIGHT.
SUBGRADE TO BE VERIFIED BY PRINCIPAL PRIOR TO CASTING BASE SLAB. UNSUITABLE SUBGRADE TO BE REPLACED WITH 300mm OF GEOTEXTILE WRAPPED ROCK AND 300mm SELECT FILL.
RRPM's TO BE PROVIDED ON THE BLUNT END OF EACH OF END WHEEL STOPS FOR VISIBILITY.

SOP DENOTES SETOUT POINT

PCBC DENOTES PRECAST CONCRETE BOX CULVERT

◆ DENOTES CONCRETE DIMENSIONS TO BE CHECKED AND ADJUSTED IF NECESSARY TO SUIT ACTUAL PRECAST CONCRETE CROWN UNITS

TABLE 1 - SET OUT POINTS ALONG C0

SET OUT POINTS (SOP)	CHAINAGE ON CONTROL LINE	COORDINATES EASTING	COORDINATES NORTHING
SOP A	0.000	E 323127.895	N 6517382.279
SOP B	3.972	E 323129.084	N 6517378.489
SOP C	8.862	E 323130.548	N 6517373.823
SOP D	12.312	E 323131.581	N 6517370.532

TABLE 2 - ASSUMED PRECAST CONCRETE CROWN UNIT DIMENSIONS

FAMILY SEQUENCE	NOMINAL SIZE◆	OVERALL WIDTH◆	OVERALL HEIGHT◆	OVERALL LENGTH◆	LEG THICKNESS AT BASE◆
UNIT 1 & 2	3000x1500	3240	1735	2440	120

FOR CONSTRUCTION

A	10/10/2023	ISSUE FOR CONSTRUCTION	JR	DM	CR
ISSUE	DATE	AMENDMENT DESCRIPTION	PREP	CHECK	AUTH

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DESIGN	G.HOOK	D. MERRIKIN
DRAWING	J. REN	D. MERRIKIN

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BRIDGE KNOWLEDGE

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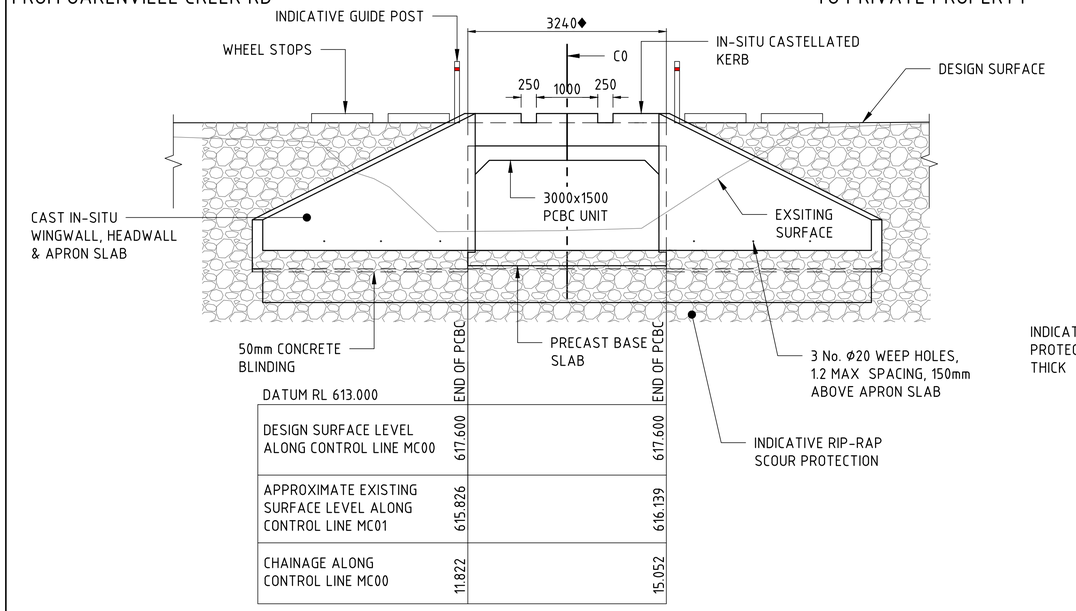
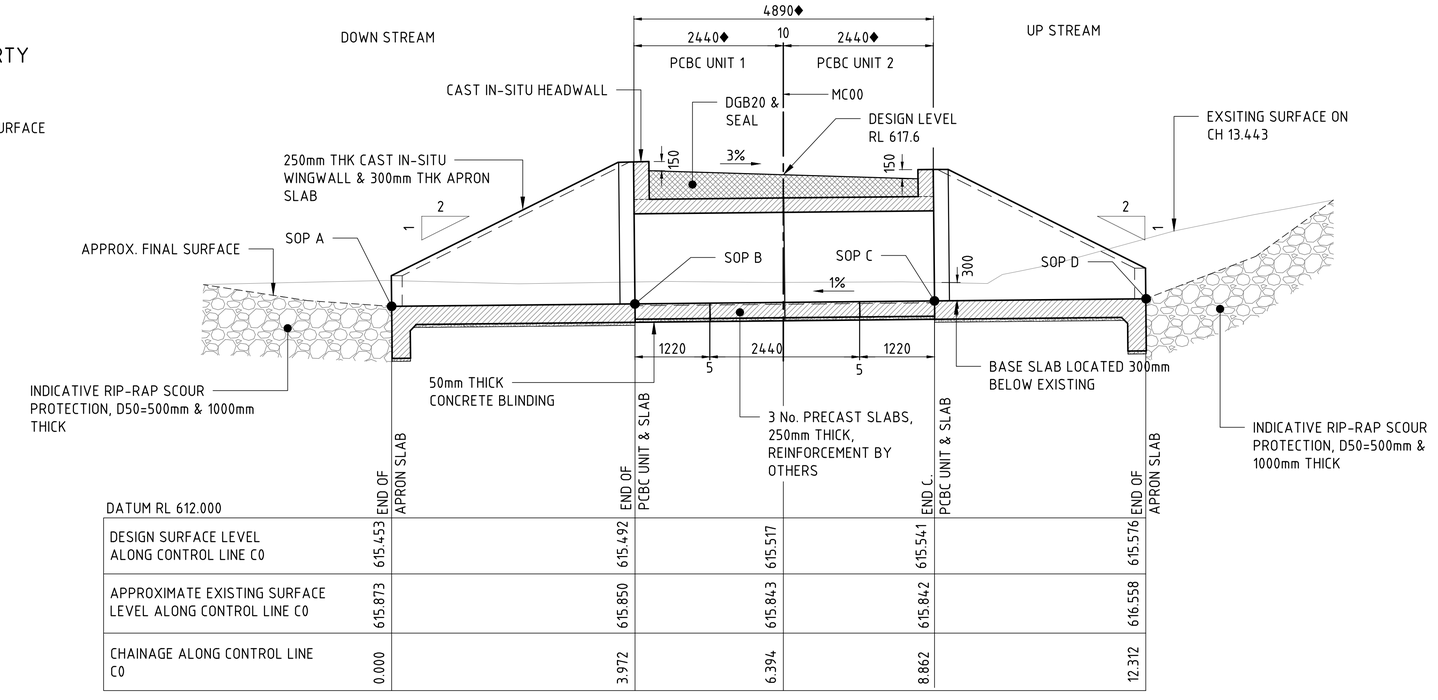
NEW CULVERT CONSTRUCTION
GENERAL ARRANGEMENT - SHEET A

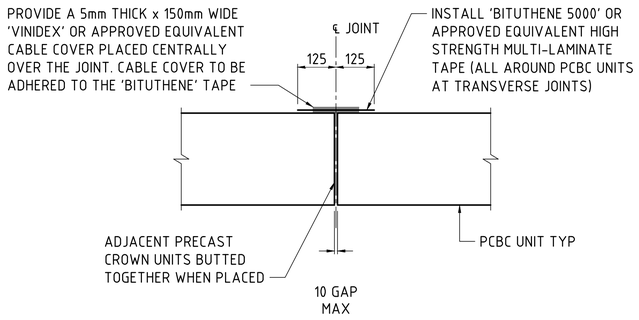
DRAWING SET No BKP416-TRC
DRAWING No DRG-004
ISSUE STATUS ISSUE FOR CONSTRUCTION
ISSUE A | No SHEETS 9 | SHEET No 04



ELEVATION - ALONG MC00

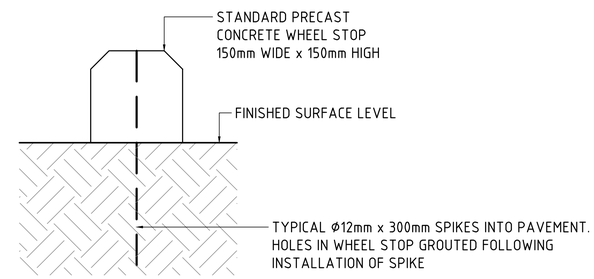


SECTION 1/5



TYPICAL PCBC UNIT JOINT DETAIL

0 0.1 0.2 0.3 0.4 0.5m
0.1



TYPICAL WHEEL STOP DETAIL

0 100 200mm
50 25

GENERAL NOTES

SCALE 0 1000 2000mm (500) OR AS SHOWN.

FOR OTHER GENERAL NOTES RELATING TO THIS SHEET, SEE SHEET No.4.

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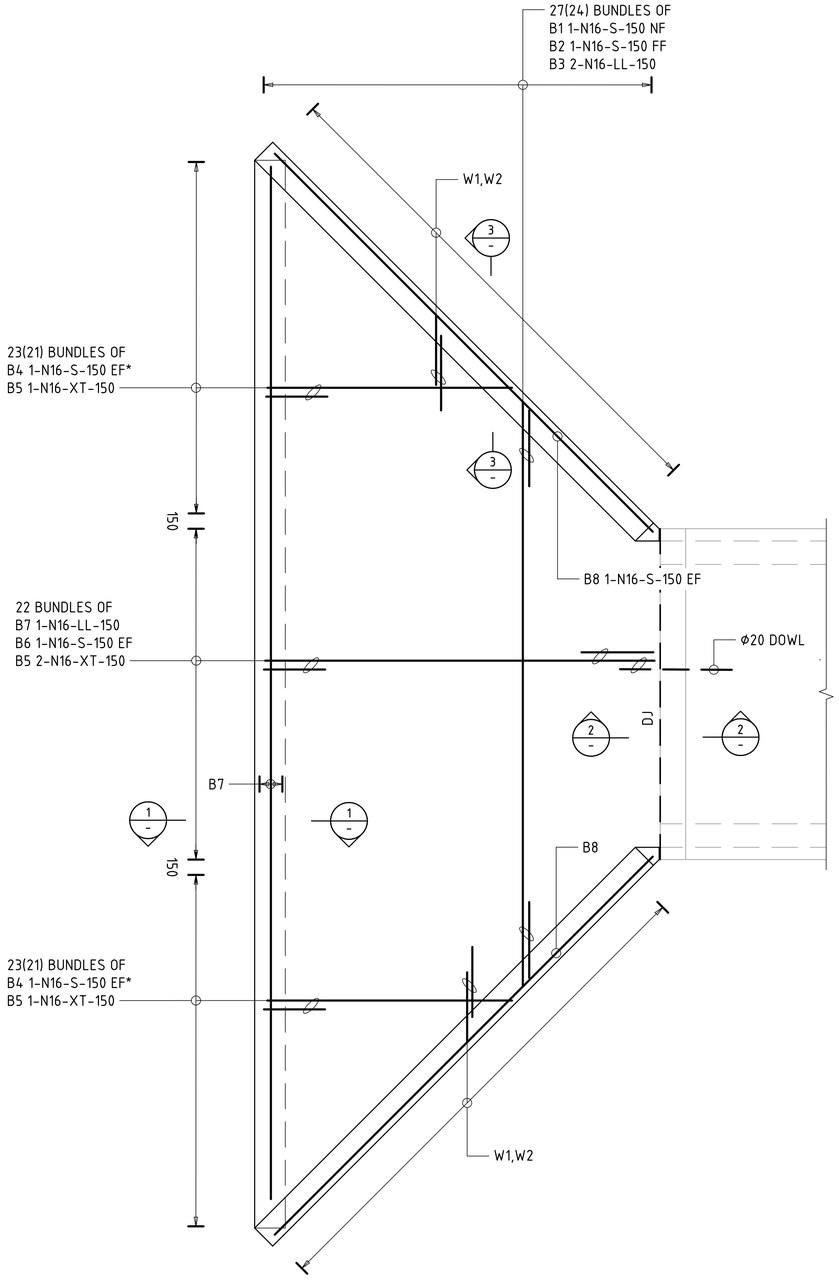
NEW CULVERT CONSTRUCTION

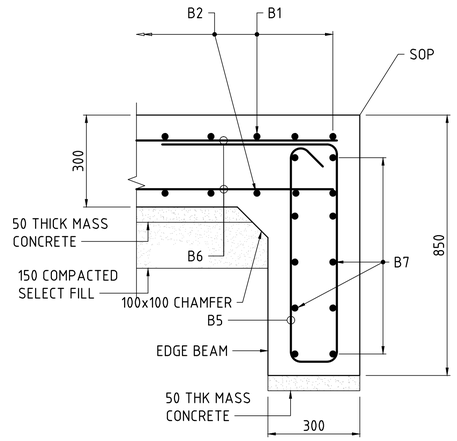
GENERAL ARRANGEMENT - SHEET B

DRAWING SET No	BKP416-TRC
DRAWING No	DRG-005
ISSUE STATUS	ISSUE FOR CONSTRUCTION
ISSUE	A
No SHEETS	9
SHEET No	05

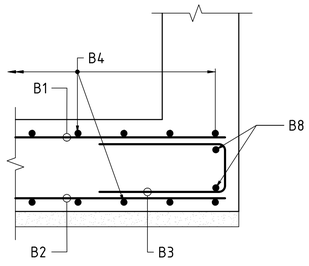


PLAN

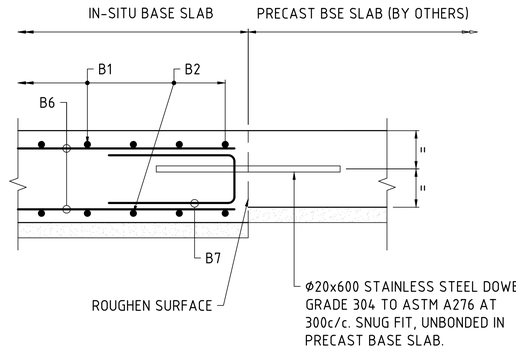
DIMENSIONS (OR NUMBERS) OF UP STREAM SIDE ARE SHOWN IN BRACKETS



SECTION 1 –



SECTION 3 –



DOWELLED JOINT DETAIL 'DJ'

SECTION 2 –

GENERAL NOTES

SCALE 0 0.5 1 1.5 2.0m (0.5) OR AS SHOWN

ALL CONCRETE WORKS MUST COMPLY WITH TfNSW SPECIFICATION B80.
CONCRETE EXPOSURE CLASSIFICATION: B1
MINIMUM 28 DAY COMPRESSIVE STRENGTH OF MASS CONCRETE MUST BE 20MPa.
EDGES MUST BE CHAMFERED 20x20 AND RE-ENTRANT ANGLES FILLETED 20x20 UNLESS SPECIFIED OTHERWISE.
WHERE CAST AGAINST BLINDING THE NOMINATED COVER MUST BE INCREASED BY AN ADDITIONAL 10mm.
UNLESS SPECIFIED OTHERWISE REINFORCEMENT MUST BE GRADE D500N IN ACCORDANCE WITH AS/NZS 4671.
UNLESS SPECIFIED OTHERWISE ON THE DRAWINGS LAPS ON ADJACENT BARS ON ANY FACE TO BE STAGGERED (OFFSET) BY NO LESS THAN THE LAP LENGTH. UNLESS OTHERWISE SPECIFIED, THE MINIMUM DEVELOPMENT LENGTHS AND LENGTHS OF LAPS MUST BE:

BAR SIZE	N12	N16	N20	N24	N28
a) HORIZONTAL BARS WITH >300mm OF CONCRETE CAST BELOW THE BAR:	500	700	1000	1350	1700
b) OTHER BARS:	400	550	750	1050	1300

* DENOTES VARIABLE LENGTH BAR.
NCF DENOTES NO CHAMFER OR FILLET.
SOP DENOTES SETOUT POINT.
CJ DENOTES CONSTRUCTION JOINT, SURFACE TO BE PREPARED APPROPRIATELY IN ACCORDANCE WITH PROJECT SPECIFICATION B80.
◆ DENOTES CONCRETE DIMENSIONS TO BE CHECKED AND ADJUSTED IF NECESSARY TO SUIT ACTUAL PRECAST CONCRETE CROWN UNITS

FOR CONSTRUCTION

							PREPARED	CHECKED
						DESIGN	G.HOOK	D. MERRIKIN
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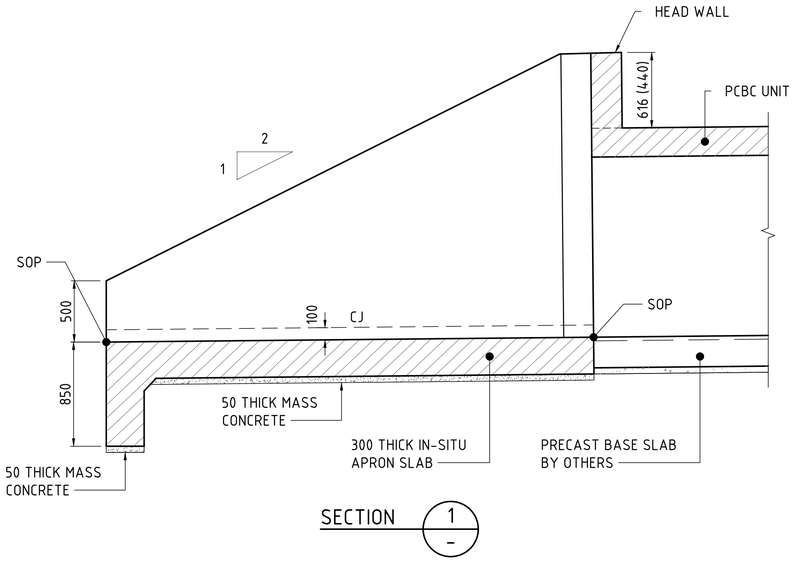
EXISTING DURBIN STREET BRIDGE REPLACEMENT
OVER OAKENVILLE CREEK
NEW CULVERT CONSTRUCTION

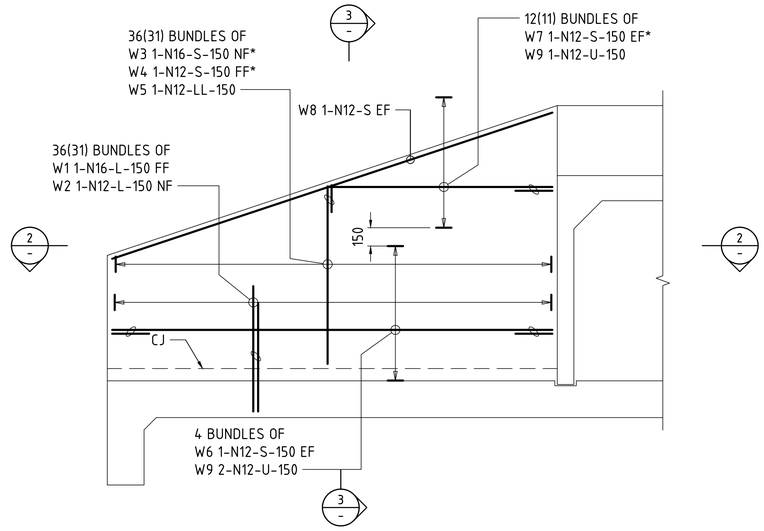
APRON SLAB DETAILS

DRAWING SET No BKP416-TRC
DRAWING No DRG-006
ISSUE STATUS ISSUE FOR CONSTRUCTION
ISSUE A | No SHEETS 9 | SHEET No 06



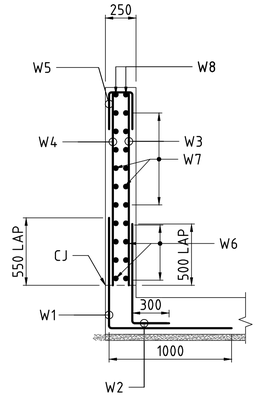
SECTION 1

DIMENSIONS (OR NUMBERS) OF UPSTREAM SIDE ARE SHOWN IN BRACKETS

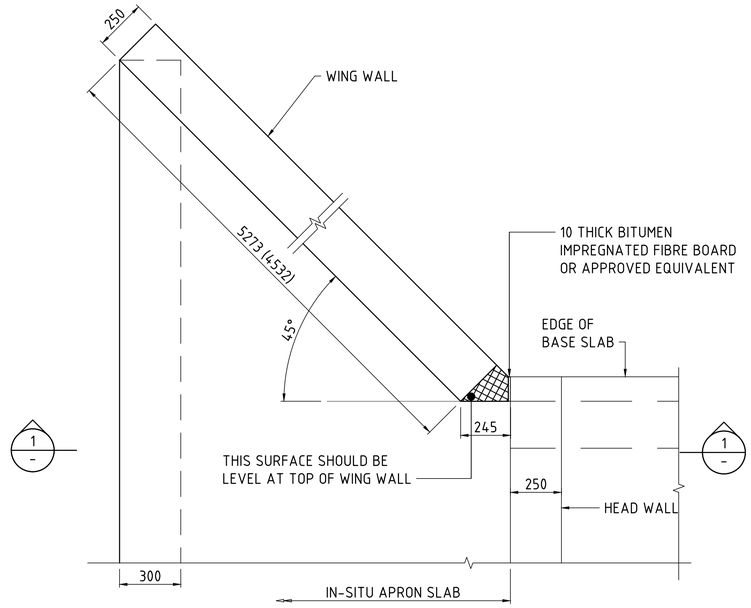


REINFORCEMENT ELEVATION

DIMENSIONS (OR NUMBERS) OF UPSTREAM SIDE ARE SHOWN IN BRACKETS



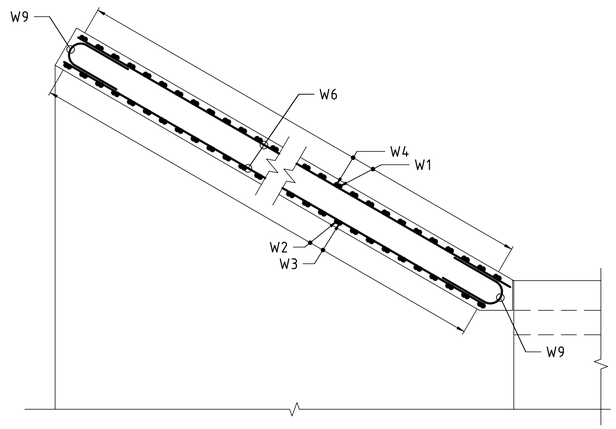
SECTION 3



WINGWALL UPSTAND DETAIL

DIMENSION OF WINGWALL ON UPSTREAM SIDE SHOWN IN BRACKET

0 250 500mm
100



SECTION 2

GENERAL NOTES

SCALE 0 0.5 1 1.5 2.0m (0.5) OR AS SHOWN

ALL CONCRETE WORKS MUST COMPLY WITH TfNSW SPECIFICATION B80.
CONCRETE EXPOSURE CLASSIFICATION: B1
MINIMUM 28 DAY COMPRESSIVE STRENGTH OF MASS CONCRETE MUST BE 20MPa.
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						DESIGN	G.HOOK	D. MERRIKIN
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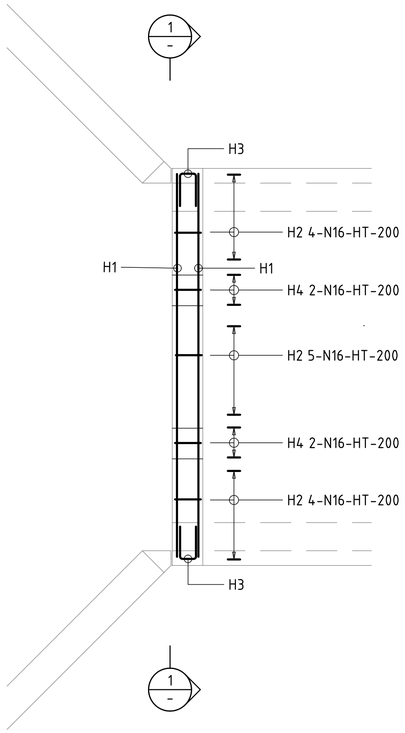
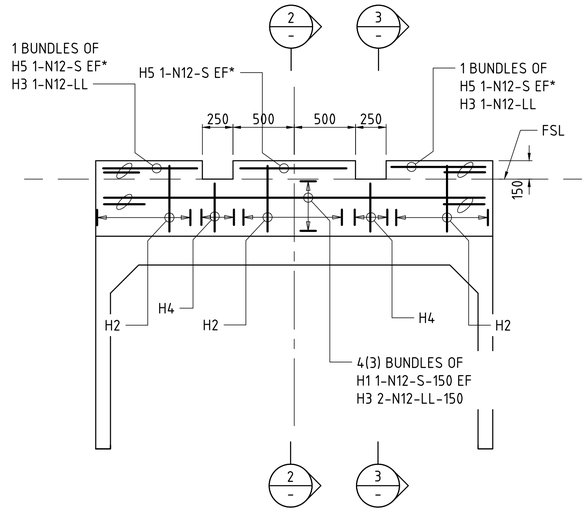
NEW CULVERT CONSTRUCTION
WINGWALL DETAILS

DRAWING SET No	BKP416-TRC
DRAWING No	DRG-007
ISSUE STATUS	ISSUE FOR CONSTRUCTION
ISSUE A	No SHEETS 9 | SHEET No 07



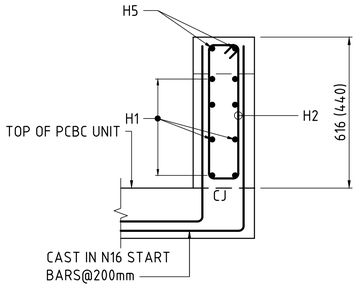
HEAD WALL PLAN

HEADWALLS ON BOTH SIDES ARE SIMILAR



SECTION 1 –

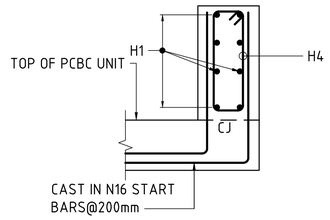
NUMBERS ON UPSTREAM SIDE ARE SHOWN IN BRACKETS



SECTION 2 –

0 250 500mm

100



SECTION 3 –

0 250 500mm

100

DIMENSION OF HEADWALL ON UPSTREAM SIDE IS SHOWN IN BRACKET

GENERAL NOTES

SCALE 0 500 1000mm (250) OR AS SHOWN

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HEADWALL DETAILS

DRAWING SET No BKP416-TRC
DRAWING No DRG-008
ISSUE STATUS ISSUE FOR CONSTRUCTION
ISSUE A | No SHEETS 9 | SHEET No 08

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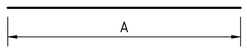
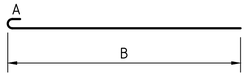
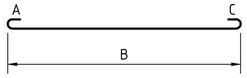
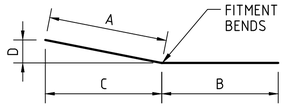
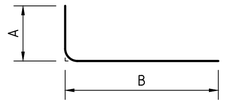
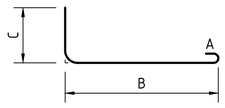
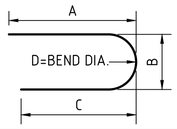
S	
H	
HH	
V	
L	
LH	
U	

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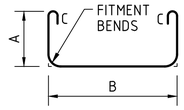
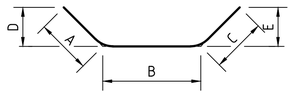
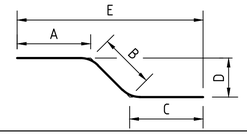
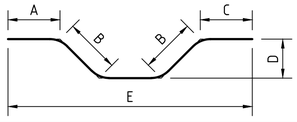
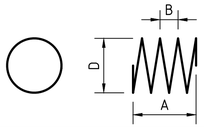
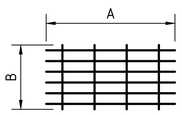
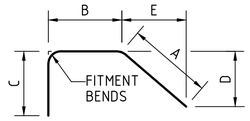
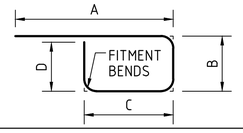
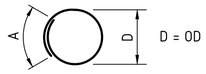
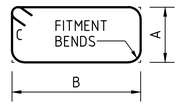
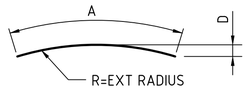
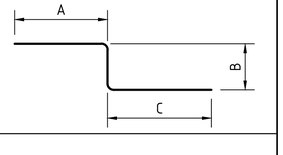
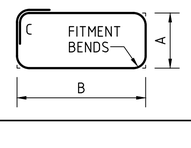
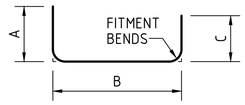
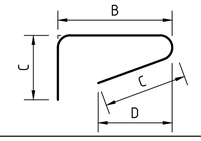
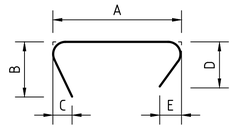
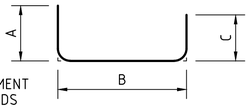
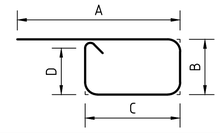
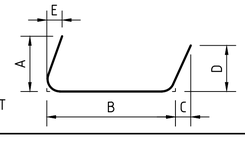
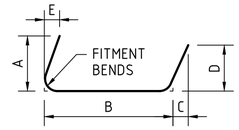
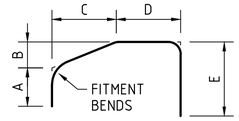
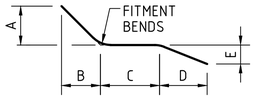
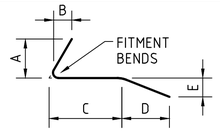
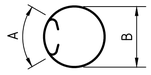
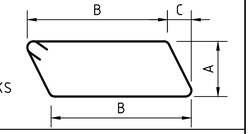
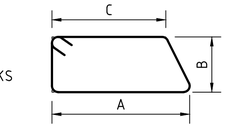
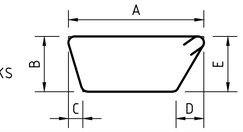
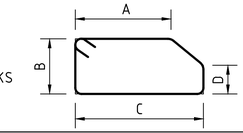
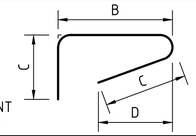
SH	
VV	
J	
JJ	
SP	
F	 'A' IS IN THE DIRECTION OF THE MAIN BARS

SHAPE CODE	AUSTRALIAN STANDARD SHAPE
VL	
XT	
CT	
HT	
R	
RC	
T	

SHAPE CODE	ROADS AND MARITIME SERVICES STANDARD SHAPE
LF	
LA	
AA	
VF	 FITMENT BENDS
XH	 FITMENT BENDS AND HOOK
AF	 FITMENT BENDS

SHAPE CODE	ROADS AND MARITIME SERVICES STANDARD SHAPE
AV	
LG	
KH	
KL	
ST	 FITMENT HOOKS
AF	FITMENT BENDS

SHAPE CODE	ROADS AND MARITIME SERVICES STANDARD SHAPE
TT	 FITMENT BENDS AND HOOKS
PT	 FITMENT BENDS AND HOOKS
QT	 FITMENT BENDS AND HOOKS
GT	 FITMENT BENDS AND HOOKS
KF	 FITMENT BENDS

BAR MARKING LEGEND

THE METHOD USED TO DESCRIBE REINFORCEMENT ON THE DRAWINGS IS AS FOLLOWS:

A1-10-N16-S-300EF

- INFORMATION FOR PLACING
- SPACE ALONG LIMIT LINE
- BAR SHAPE CODE
- BAR SIZE IN MILLIMETRES
- BAR STRUCTURAL PROPERTIES
- NUMBER OF BARS IN THE SET
- BAR NUMBER IN SEQUENCE
- STRUCTURE ELEMENT DENOTATION

WHERE THE BAR SPACING IS APPROXIMATE ONLY, THE FOLLOWING FORMAT TO BE USED:

A1 10-N16-S-300EF APPROX

GENERAL NOTES

STRUCTURE ELEMENT DENOTATION:
- **A** - FOR CAST IN-PLACE ABUTMENT
- **Q** - FOR PRECAST CONCRETE PILE
- **F** - FOR PRECAST CONCRETE FORMWORK
- **P** - FOR CAST IN-PLACE PIER

INFORMATION FOR PLACING:
- **NF** - NEAR FACE
- **FF** - FAR FACE
- **EF** - EACH FACE

REINFORCEMENT NOTES

1. AUSTRALIAN STANDARD BAR SHAPES ARE IN ACCORDANCE WITH AS 1100.501.
2. BAR SIZE IS THE NOMINAL DIAMETER IN MILLIMETRES, OR THE AS/NZS 4671 FABRIC NUMBER.
3. THE GRADE OF REINFORCEMENT, IF NOT STATED ON THE DRAWINGS, MUST BE D500N TO AS/NZS 4671.
4. WHERE SHOWN ON THE DRAWINGS, "W" TO DENOTE PLAIN ROUND REINFORCING BARS EQUIVALENT TO GRADE R500L TO AS/NZS 4671.
5. WHERE SHOWN ON THE DRAWINGS, RL AND SL TO DENOTE WELDED REINFORCING FABRIC (RECTANGULAR AND SQUARE), RESPECTIVELY.
6. DIMENSIONS SHOWN ON BAR SHAPES DIAGRAMS ARE MEASURED FROM THE OUTSIDE FACES OF THE BARS AND ARE IN MILLIMETRES.
7. THE INCLUDED ANGLE OF ANY BEND TO BE A RIGHT ANGLE IF NO DIMENSION SHOWN.
8. BARS OF DIAMETER GREATER THAN 24mm MUST NOT BE REBENT.
9. BAR BENDING AND HOOK DETAILS MUST BE IN ACCORDANCE WITH SECTION 5.13 OF AS 5100-BRIDGE DESIGN.

FOR CONSTRUCTION

A	10/10/2023	ISSUE FOR CONSTRUCTION	JR	DM	CR
ISSUE	DATE	AMENDMENT DESCRIPTION	PREP	CHECK	AUTH

THIS DRAWING IS CONFIDENTIAL AND SHALL ONLY BE USED FOR THE PURPOSE OF THE NOMINATED PROJECT

	PREPARED	CHECKED
DESIGN	G.HOOK	D. MERRIKIN
DRAWING	J. REN	D. MERRIKIN

bk. bridge knowledge. ENGINEERING CONSULTING SERVICES

BRIDGE KNOWLEDGE

Tamworth REGIONAL COUNCIL

TAMWORTH REGIONAL COUNCIL

DURBIN STREET — TAMWORTH REGIONAL COUNCIL

EXISTING DURBIN STREET BRIDGE REPLACEMENT OVER OAKENVILLE CREEK NEW CULVERT CONSTRUCTION

BAR SHAPE DIAGRAM

DRAWING SET No	BKP416-TRC
DRAWING No	DRG-009
ISSUE STATUS	ISSUE FOR CONSTRUCTION
ISSUE	A
No SHEETS	9
SHEET No	09

Appendix B

Contaminated Land Database Search

Search results

Your search for:LGA: TAMWORTH REGIONAL COUNCIL

Matched 11 notices relating to 5 sites.

Search Again

Refine Search

Suburb	Address	Site Name	Notices related to this site
DURI	13 Railway AVENUE	Duri Store	1 current
SOUTH TAMWORTH	251 - 253 Goonoo Goonoo ROAD	Coles Express Tamworth	4 current
TAMWORTH	115 Marius STREET	Elgas Depot (former gasworks)	2 current
TAMWORTH	49 GUNNEDAH ROAD	Gunnedah Road Site	2 former
WOOLOMIN	65 Nundle ROAD	Woolomin Gold Rush Store	2 former

Page 1 of 1

5 December 2023

For business and industry

For local government

Contact us

131 555 (tel:131555)

Online (https://www.epa.nsw.gov.au/about-us/contact-us/feedback)

info@epa.nsw.gov.au (mailto:info@epa.nsw.gov.au)

EPA Office Locations (https://www.epa.nsw.gov.au/about-us/contact-us/locations)

Accessibility (https://www.epa.nsw.gov.au/about-us/contact-us/website-service-standards/help-index)
Disclaimer (https://www.epa.nsw.gov.au/about-us/contact-us/website-service-standards/disclaimer)
Privacy (https://www.epa.nsw.gov.au/about-us/contact-us/website-service-standards/privacy)
Copyright (https://www.epa.nsw.gov.au/about-us/contact-us/website-service-standards/copyright)

Find us on

Appendix C

Native Title Search

National Native Title Tribunal

Application Details

Back to search results >

Gomeroi People (NC2011/006)

Application name	Gomeroi People
Tribunal file no.	NC2011/006
Federal Court file no.	NSD37/2019
Application type	Claimant
Date filed	20/12/2011
State or Territory	New South Wales
Area description	Northwest NSW
Approximate area size (sq km)	111317.5443
Local government area(s)	Coonamble Shire Council, Gilgandra Shire Council, Glen Innes Severn Shire Council, Gunnedah Shire Council, Gwydir Shire Council, Inverell Shire Council, Liverpool Plains Shire Council, Mid-Western Regional Council, Moree Plains Shire Council, Muswellbrook Shire Council, Narrabri Shire Council, Tamworth Regional Council, Upper Hunter Shire Council, Uralla Shire Council, Walcha Council, Walgett Shire Council, Warrumbungle Shire Council, Armidale Regional Council
Representative A/TSI body area(s)	New South Wales
Applicant's representative	NTSCORP Limited
Registration decision status	Accepted for registration
Dates registered on the Register of Native Title Claims	Registered from 20/01/2012
Notification status	Notification Complete
Notification date(s)	16/05/2012 to 15/08/2012
Application status	Active **> More information on Federal Court website**

Schedule extract and attachments

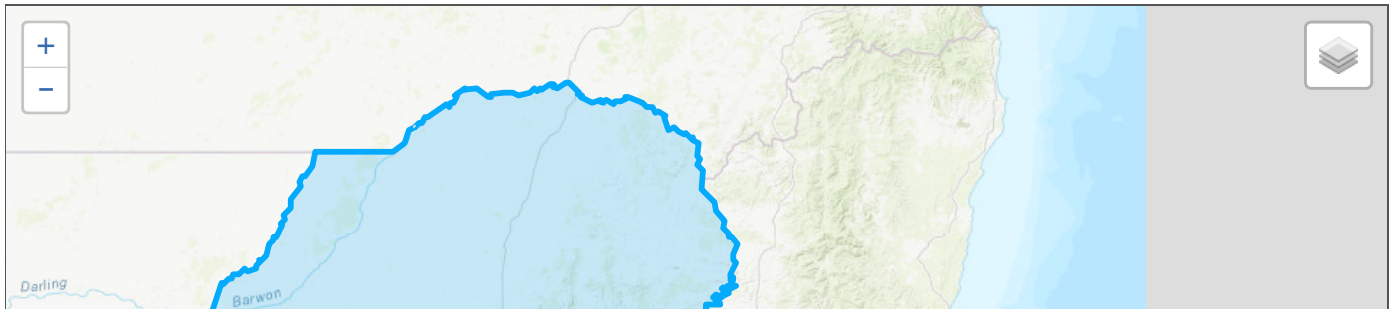
Schedule extract	**SNTAExtract_NC2011_006**
Schedule extract attachment/s	**NC2011_006 Map of the area covered by the application** **NC2011_006 External boundary description**

Registration Decision(s)

Tribunal file no.	Decision result	Decision type	Decision date	Reason for decision	Link to Register
NC2011/006-2	Accepted	Full Decision	24/07/2023	pdf rtf	**> Register Details**
NC2011/006-1	Accepted	Full Decision	20/01/2012	pdf rtf	

Determination(s)

No determinations of native title have been made for this application



View this map in NTV:> **NC2011/006**

Accessibility | Copyright and disclaimer | Privacy | Online Security

PUBLIC INTEREST DISCLOSURE SCHEME | FOI Disclosure Log | Information Publication Scheme

National Native Title Tribunal

Register of Native Title Claims Details

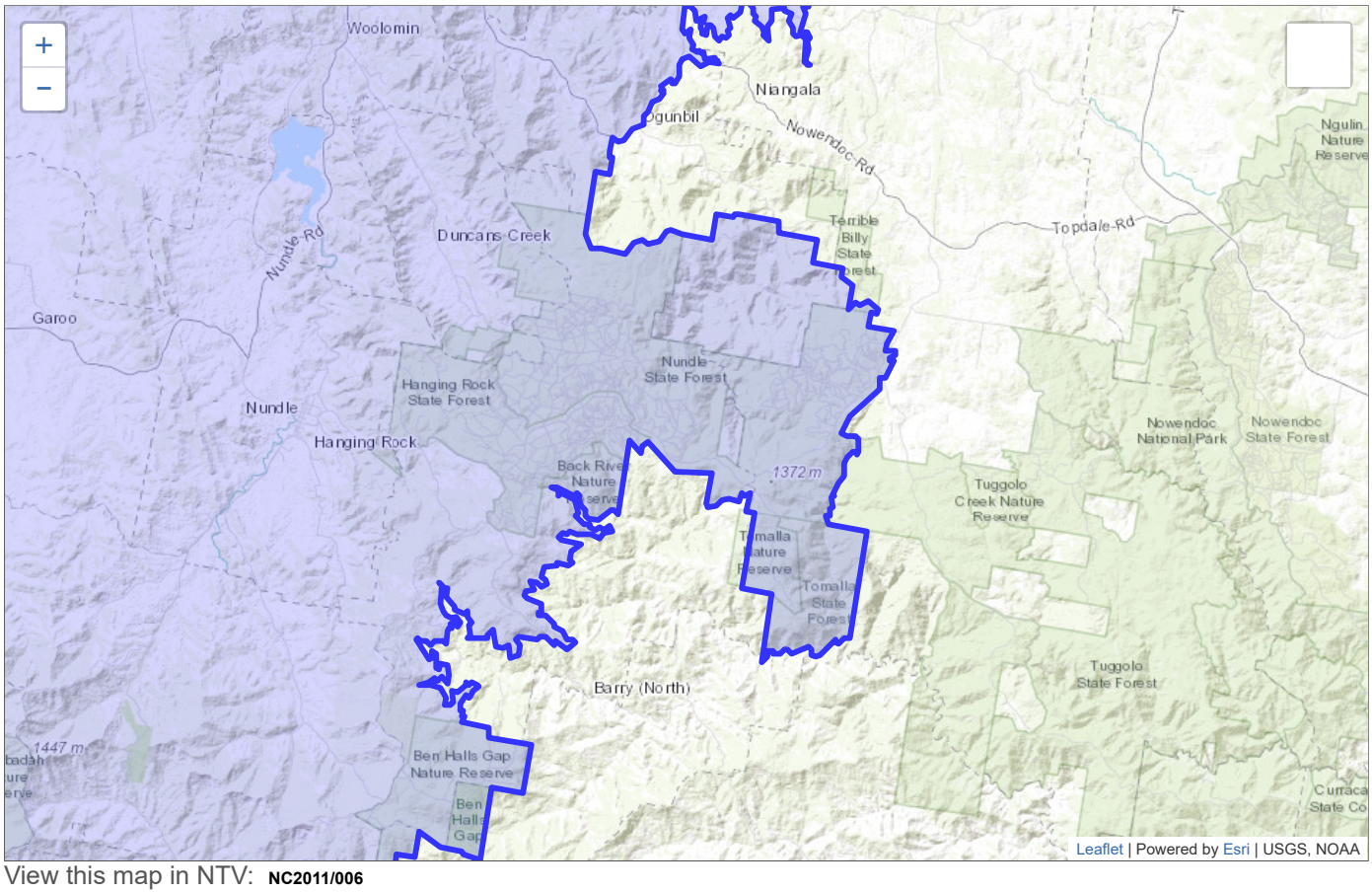
Back to search results

NC2011/006 - Gomeroi People

Tribunal file no.	NC2011/006
Federal Court file no.	NSD37/2019
Application name	Gomeroi People
State or Territory	New South Wales;
Representative A/TSI body area(s)	New South Wales
Local government area(s)	Armidale Regional Council,Coonamble Shire Council,Gilgandra Shire Council,Glen Innes Severn Shire Council,Gunnedah Shire Council,Gwydir Shire Council,Inverell Shire Council,Liverpool Plains Shire Council,Mid-Western Regional Council,Moree Plains Shire Council,Muswellbrook Shire Council,Narrabri Shire Council,Tamworth Regional Council,Upper Hunter Shire Council,Uralla Shire Council,Walcha Council,Walgett Shire Council,Warrumbungle Shire Council
Date filed	20/12/2011
Date claim entered on Register	20/01/2012

Register extract and attachments

Register extract	**RNTCExtract_NC2011_006.pdf**
Register extract attachment/s	**NC2011_006 Map of the area covered by the application.pdf** **NC2011_006 Details of any s251BA conditions.pdf** **NC2011_006 External boundary description.pdf**



View this map in NTV: **NC2011/006**

Appendix D

Biodiversity Desktop Searches

Data from the BioNet Atlas website, which holds records from a number of custodians. The data are only indicative and cannot be considered a comprehensive inventory, and may contain errors and omissions. Species listed under the Sensitive Species Data Policy may have their locations denatured (^ rounded to 0.1°C; ^^ rounded to 0.01°C. Copyright the State of NSW through the Department of Planning, Industry and Environment.
Search criteria : Public Report of all Valid Records of Threatened (listed on BC Act 2016) or Commonwealth listed Plants in selected area [North: -31.36 West: 151.04 East: 151.24 South: -31.56] returned a total of 39 records of 7 species.
Report generated on 14/11/2023 2:20 PM

Kingdom	Class	Family	Species Code	Scientific Name	Exotic	Common Name	NSW status	Comm. status	Records	Info
Plantae	Flora	Apocynaceae	9456	*Tylophora linearis*			V	E	1	
Plantae	Flora	Myrtaceae	4134	*Eucalyptus nicholii*		Narrow-leaved Black Peppermint	V	V	1	
Plantae	Flora	Myrtaceae	10888	*Eucalyptus oresbia*		Small-fruited Mountain Gum	V		31	
Plantae	Flora	Myrtaceae	9164	*Eucalyptus rubida subsp. barbigerorum*		Blackbutt Candlebark	V	V	2	
Plantae	Flora	Orobanchaceae	5954	*Euphrasia arguta*			E4A	CE	2	
Plantae	Flora	Poaceae	4895	*Dichanthium setosum*		Bluegrass	V	V	1	
Plantae	Flora	Santalaceae	5871	*Thesium australe*		Austral Toadflax	V	V	1	

Data from the BioNet Atlas website, which holds records from a number of custodians. The data are only indicative and cannot be considered a comprehensive inventory, and may contain errors and omissions. Species listed under the Sensitive Species Data Policy may have their locations denatured (^ rounded to 0.1°C; ^^ rounded to 0.01°C. Copyright the State of NSW through the Department of Planning, Industry and Environment.
Search criteria : Public Report of all Valid Records of Threatened (listed on BC Act 2016) or Commonwealth listed Animals in selected area [North: -31.36 West: 151.04 East: 151.24 South: -31.56] returned a total of 1,293 records of 11 species.
Report generated on 14/11/2023 2:17 PM

Kingdom	Class	Family	Species Code	Scientific Name	Exotic	Common Name	NSW status	Comm. status	Records	Info
Animalia	Amphibia	Hylidae	3168	*Litoria booroolongensis*		Booroolong Frog	E1,P	E	1247	
Animalia	Amphibia	Hylidae	3303	*Litoria daviesae*		Davies' Tree Frog	V,P		5	
Animalia	Aves	Accipitridae	0225	*Hieraaetus morphnoides*		Little Eagle	V,P		2	
Animalia	Aves	Strigidae	0248	^^*Ninox strenua*		Powerful Owl	V,P,3		1	
Animalia	Aves	Tytonidae	9924	^^*Tyto tenebricosa*		Sooty Owl	V,P,3		1	
Animalia	Aves	Petroicidae	0380	*Petroica boodang*		Scarlet Robin	V,P		1	
Animalia	Aves	Petroicidae	0382	*Petroica phoenicea*		Flame Robin	V,P		2	
Animalia	Mammalia	Dasyuridae	1008	*Dasyurus maculatus*		Spotted-tailed Quoll	V,P	E	13	
Animalia	Mammalia	Phascolarctidae	1162	*Phascolarctos cinereus*		Koala	E1,P	E	5	
Animalia	Mammalia	Pseudocheiridae	1133	*Petauroides volans*		Southern Greater Glider	E1,P	E	15	
Animalia	Mammalia	Vespertilionidae	1372	*Falsistrellus tasmaniensis*		Eastern False Pipistrelle	V,P		1	

Data from the BioNet Atlas website, which holds records from a number of custodians. The data are only indicative and cannot be considered a comprehensive inventory, and may contain errors and omissions. Species listed under the Sensitive Species Data Policy may have their locations denatured (^ rounded to 0.1°C; ^^ rounded to 0.01°C. Copyright the State of NSW through the Department of Planning, Industry and Environment. Search criteria : Public Report of all Valid Records of Threatened (listed on BC Act 2016) or Commonwealth listed Communities in selected area [North: -31.36 West: 151.04 East: 151.24 South: -31.56] returned 0 records for 20 entities.
Report generated on 14/11/2023 2:22 PM

Kingdom	Class	Family	Species Code	Scientific Name	Exotic	Common Name	NSW status	Comm. status	Records	Info
Community				*Ben Halls Gap Sphagnum Moss Cool Temperate Rainforest*		Ben Halls Gap Sphagnum Moss Cool Temperate Rainforest		CE	K	
Community				*Brigalow within the Brigalow Belt South, Nandewar and Darling Riverine Plains Bioregions*		Brigalow within the Brigalow Belt South, Nandewar and Darling Riverine Plains Bioregions	E3		K	
Community				*Carex Sedgeland of the New England Tableland, Nandewar, Brigalow Belt South and NSW North Coast Bioregions*		Carex Sedgeland of the New England Tableland, Nandewar, Brigalow Belt South and NSW North Coast Bioregions	E3		K	
Community				*Howell Shrublands in the New England Tableland and Nandewar Bioregions*		Howell Shrublands in the New England Tableland and Nandewar Bioregions	E3		P	
Community				*Hunter Valley Vine Thicket in the NSW North Coast and Sydney Basin Bioregions*		Hunter Valley Vine Thicket in the NSW North Coast and Sydney Basin Bioregions	E3		P	

Community	*Inland Grey Box Woodland in the Riverina, NSW South Western Slopes, Cobar Peneplain, Nandewar and Brigalow Belt South Bioregions*	Inland Grey Box Woodland in the Riverina, NSW South Western Slopes, Cobar Peneplain, Nandewar and Brigalow Belt South Bioregions	E3		K	
Community	*Lowland Rainforest in the NSW North Coast and Sydney Basin Bioregions*	Lowland Rainforest in the NSW North Coast and Sydney Basin Bioregions	E3		K	
Community	*Lowland Rainforest of Subtropical Australia*	Lowland Rainforest of Subtropical Australia		CE	K	
Community	*Lowland Rainforest on Floodplain in the New South Wales North Coast Bioregion*	Lowland Rainforest on Floodplain in the New South Wales North Coast Bioregion	E3		K	
Community	*Montane Peatlands and Swamps of the New England Tableland, NSW North Coast, Sydney Basin, South East Corner, South Eastern Highlands and Australian Alps bioregions*	Montane Peatlands and Swamps of the New England Tableland, NSW North Coast, Sydney Basin, South East Corner, South Eastern Highlands and Australian Alps bioregions	E3		K	
Community	*Mount Kaputar high elevation and dry rainforest land snail and slug community in the Nandewar and Brigalow Belt South Bioregions*	Mount Kaputar high elevation and dry rainforest land snail and slug community in the Nandewar and Brigalow Belt South Bioregions	E3		K	
Community	*Natural grasslands on basalt and fine-textured alluvial plains of northern New South Wales and southern Queensland*	Natural grasslands on basalt and fine-textured alluvial plains of northern New South Wales and southern Queensland		CE	K	

Community	*New England Peppermint (Eucalyptus nova-anglica) Grassy Woodlands*	New England Peppermint (Eucalyptus nova-anglica) Grassy Woodlands		CE	K	
Community	*New England Peppermint (Eucalyptus nova-anglica) Woodland on Basalts and Sediments in the New England Tableland Bioregion*	New England Peppermint (Eucalyptus nova-anglica) Woodland on Basalts and Sediments in the New England Tableland Bioregion	E4B		K	
Community	*Ribbon Gum—Mountain Gum—Snow Gum Grassy Forest/Woodland of the New England Tableland Bioregion*	Ribbon Gum—Mountain Gum—Snow Gum Grassy Forest/Woodland of the New England Tableland Bioregion	E3		P	
Community	*Semi-evergreen Vine Thicket in the Brigalow Belt South and Nandewar Bioregions*	Semi-evergreen Vine Thicket in the Brigalow Belt South and Nandewar Bioregions	E3		K	
Community	*Upland Wetlands of the Drainage Divide of the New England Tableland Bioregion*	Upland Wetlands of the Drainage Divide of the New England Tableland Bioregion	E3		P	
Community	*Weeping Myall Woodlands*	Weeping Myall Woodlands		E	K	
Community	*White Box - Yellow Box - Blakely's Red Gum Grassy Woodland and Derived Native Grassland in the NSW North Coast, New England Tableland, Nandewar, Brigalow Belt South, Sydney Basin, South Eastern Highlands, NSW South Western Slopes, South East Corner and*	White Box - Yellow Box - Blakely's Red Gum Grassy Woodland and Derived Native Grassland in the NSW North Coast, New England Tableland, Nandewar, Brigalow Belt South, Sydney Basin, South Eastern Highlands, NSW South Western Slopes, South East Corner and	E4B		K	

Community	*White Box-Yellow Box-Blakely's Red Gum Grassy Woodland and Derived Native Grassland*	White Box-Yellow Box-Blakely's Red Gum Grassy Woodland and Derived Native Grassland	CE	K	

EPBC Act Protected Matters Report

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

Report created: 14-Nov-2023

Summary

Matters of National Environment Significance

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

World Heritage Properties:	None
National Heritage Places:	None
Wetlands of International Importance (Ramsar	3
Great Barrier Reef Marine Park:	None
Commonwealth Marine Area:	None
Listed Threatened Ecological Communities:	6
Listed Threatened Species:	48
Listed Migratory Species:	11

Other Matters Protected by the EPBC Act

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

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

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

Commonwealth Lands:	4
Commonwealth Heritage Places:	None
Listed Marine Species:	19
Whales and Other Cetaceans:	None
Critical Habitats:	None
Commonwealth Reserves Terrestrial:	None
Australian Marine Parks:	None
Habitat Critical to the Survival of Marine Turtles:	None

Extra Information

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

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

Details

Matters of National Environmental Significance

Wetlands of International Importance (Ramsar Wetlands) [Resource Information]

Ramsar Site Name	Proximity	Buffer Status
Banrock station wetland complex	1000 - 1100km upstream from Ramsar site	In feature area
Riverland	900 - 1000km upstream from Ramsar site	In feature area
The coorong, and lakes alexandrina and albert wetland	1100 - 1200km upstream from Ramsar site	In feature area

Listed Threatened Ecological Communities [Resource Information]

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

Community Name	Threatened Category	Presence Text	Buffer Status
Ben Halls Gap Sphagnum Moss Cool Temperate Rainforest	Critically Endangered	Community may occur within area	In buffer area only
Lowland Rainforest of Subtropical Australia	Critically Endangered	Community may occur within area	In buffer area only
Natural grasslands on basalt and fine-textured alluvial plains of northern New South Wales and southern Queensland	Critically Endangered	Community likely to occur within area	In feature area
New England Peppermint (Eucalyptus nova-anglica) Grassy Woodlands	Critically Endangered	Community may occur within area	In feature area
Weeping Myall Woodlands	Endangered	Community may occur within area	In feature area
White Box-Yellow Box-Blakely's Red Gum Grassy Woodland and Derived Native Grassland	Critically Endangered	Community likely to occur within area	In feature area

Listed Threatened Species [Resource Information]

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

Scientific Name	Threatened Category	Presence Text	Buffer Status

Scientific Name	Threatened Category	Presence Text	Buffer Status
BIRD			
Anthochaera phrygia Regent Honeyeater [82338]	Critically Endangered	Foraging, feeding or related behaviour likely to occur within area	In feature area
Aphelocephala leucopsis Southern Whiteface [529]	Vulnerable	Species or species habitat likely to occur within area	In feature area
Botaurus poiciloptilus Australasian Bittern [1001]	Endangered	Species or species habitat may occur within area	In feature area
Calidris ferruginea Curlew Sandpiper [856]	Critically Endangered	Species or species habitat may occur within area	In feature area
Callocephalon fimbriatum Gang-gang Cockatoo [768]	Endangered	Species or species habitat may occur within area	In buffer area only
Calyptorhynchus lathami lathami South-eastern Glossy Black-Cockatoo [67036]	Vulnerable	Species or species habitat likely to occur within area	In feature area
Climacteris picumnus victoriae Brown Treecreeper (south-eastern) [67062]	Vulnerable	Species or species habitat likely to occur within area	In feature area
Erythrotriorchis radiatus Red Goshawk [942]	Endangered	Species or species habitat may occur within area	In feature area
Falco hypoleucos Grey Falcon [929]	Vulnerable	Species or species habitat likely to occur within area	In feature area
Grantiella picta Painted Honeyeater [470]	Vulnerable	Species or species habitat likely to occur within area	In feature area
Hirundapus caudacutus White-throated Needletail [682]	Vulnerable	Species or species habitat known to occur within area	In feature area

Scientific Name	Threatened Category	Presence Text	Buffer Status
Lathamus discolor			
Swift Parrot [744]	Critically Endangered	Species or species habitat may occur within area	In feature area
Melanodryas cucullata cucullata			
South-eastern Hooded Robin, Hooded Robin (south-eastern) [67093]	Endangered	Species or species habitat likely to occur within area	In feature area
Neophema chrysostoma			
Blue-winged Parrot [726]	Vulnerable	Species or species habitat may occur within area	In feature area
Polytelis swainsonii			
Superb Parrot [738]	Vulnerable	Species or species habitat may occur within area	In feature area
Rostratula australis			
Australian Painted Snipe [77037]	Endangered	Species or species habitat likely to occur within area	In feature area
Stagonopleura guttata			
Diamond Firetail [59398]	Vulnerable	Species or species habitat known to occur within area	In feature area
CRUSTACEAN			
Euastacus gamilaroi			
Gamilaroi Crayfish, Gamilaroi Spiny Crayfish, Hanging Rock Crayfish [83144]	Endangered	Species or species habitat known to occur within area	In buffer area only
FISH			
Maccullochella peelii			
Murray Cod [66633]	Vulnerable	Species or species habitat likely to occur within area	In buffer area only
FROG			
Litoria booroolongensis			
Booroolong Frog [1844]	Endangered	Species or species habitat known to occur within area	In feature area
Litoria daviesae			
Davies' Tree Frog [78964]	Vulnerable	Species or species habitat known to occur within area	In buffer area only
Mixophyes balbus			
Stuttering Frog, Southern Barred Frog (in Victoria) [1942]	Vulnerable	Species or species habitat may occur within area	In buffer area only

Scientific Name	Threatened Category	Presence Text	Buffer Status
MAMMAL			
Chalinolobus dwyeri Large-eared Pied Bat, Large Pied Bat [183]	Vulnerable	Species or species habitat likely to occur within area	In feature area
Dasyurus maculatus maculatus (SE mainland population) Spot-tailed Quoll, Spotted-tail Quoll, Tiger Quoll (southeastern mainland population) [75184]	Endangered	Species or species habitat known to occur within area	In feature area
Notamacropus parma Parma Wallaby [89289]	Vulnerable	Species or species habitat may occur within area	In feature area
Nyctophilus corbeni Corben's Long-eared Bat, South-eastern Long-eared Bat [83395]	Vulnerable	Species or species habitat likely to occur within area	In feature area
Petauroides volans Greater Glider (southern and central) [254]	Endangered	Species or species habitat known to occur within area	In feature area
Petaurus australis australis Yellow-bellied Glider (south-eastern) [87600]	Vulnerable	Species or species habitat likely to occur within area	In feature area
Petrogale penicillata Brush-tailed Rock-wallaby [225]	Vulnerable	Species or species habitat may occur within area	In buffer area only
Phascolarctos cinereus (combined populations of Qld, NSW and the ACT) Koala (combined populations of Queensland, New South Wales and the Australian Capital Territory) [85104]	Endangered	Species or species habitat known to occur within area	In feature area
Pseudomys novaehollandiae New Holland Mouse, Pookila [96]	Vulnerable	Species or species habitat may occur within area	In feature area
Pteropus poliocephalus Grey-headed Flying-fox [186]	Vulnerable	Foraging, feeding or related behaviour known to occur within area	In feature area
PLANT			

Scientific Name	Threatened Category	Presence Text	Buffer Status
Asterolasia beckersii Dungowan Starbush [90354]	Critically Endangered	Species or species habitat may occur within area	In buffer area only
Cadellia pentastylis Ooline [9828]	Vulnerable	Species or species habitat may occur within area	In buffer area only
Cryptostylis hunteriana Leafless Tongue-orchid [19533]	Vulnerable	Species or species habitat may occur within area	In buffer area only
Cynanchum elegans White-flowered Wax Plant [12533]	Endangered	Species or species habitat may occur within area	In buffer area only
Dichanthium setosum bluegrass [14159]	Vulnerable	Species or species habitat known to occur within area	In feature area
Diuris pedunculata Small Snake Orchid, Two-leaved Golden Moths, Golden Moths, Cowslip Orchid, Snake Orchid [18325]	Endangered	Species or species habitat likely to occur within area	In feature area
Eucalyptus nicholii Narrow-leaved Peppermint, Narrow-leaved Black Peppermint [20992]	Vulnerable	Species or species habitat likely to occur within area	In feature area
Eucalyptus rubida subsp. barbigerorum Blackbutt Candlebark [64618]	Vulnerable	Species or species habitat may occur within area	In feature area
Euphrasia arguta [4325]	Critically Endangered	Species or species habitat likely to occur within area	In feature area
Haloragis exalata subsp. velutina Tall Velvet Sea-berry [16839]	Vulnerable	Species or species habitat known to occur within area	In feature area
Pomaderris brunnea Rufous Pomaderris, Brown Pomaderris [16845]	Vulnerable	Species or species habitat may occur within area	In feature area

Scientific Name	Threatened Category	Presence Text	Buffer Status
Prasophyllum sp. Wybong (C.Phelps ORG 5269)			
a leek-orchid [81964]	Critically Endangered	Species or species habitat may occur within area	In feature area
Thesium australe			
Austral Toadflax, Toadflax [15202]	Vulnerable	Species or species habitat known to occur within area	In feature area
REPTILE			
Aprasia parapulchella			
Pink-tailed Worm-lizard, Pink-tailed Legless Lizard [1665]	Vulnerable	Species or species habitat may occur within area	In feature area
Myuchelys purvisi			
Purvis' Turtle [89459]	Endangered	Species or species habitat may occur within area	In buffer area only
Uvidicolus sphyrurus			
Border Thick-tailed Gecko, Granite Belt Thick-tailed Gecko [84578]	Vulnerable	Species or species habitat likely to occur within area	In feature area

Listed Migratory Species		[Resource Information]	
Scientific Name	Threatened Category	Presence Text	Buffer Status
Migratory Marine Birds			
Apus pacificus			
Fork-tailed Swift [678]		Species or species habitat likely to occur within area	In feature area
Migratory Terrestrial Species			
Hirundapus caudacutus			
White-throated Needletail [682]	Vulnerable	Species or species habitat known to occur within area	In feature area
Monarcha melanopsis			
Black-faced Monarch [609]		Species or species habitat may occur within area	In feature area
Motacilla flava			
Yellow Wagtail [644]		Species or species habitat may occur within area	In feature area
Myiagra cyanoleuca			
Satin Flycatcher [612]		Species or species habitat likely to occur within area	In feature area

Scientific Name	Threatened Category	Presence Text	Buffer Status
Rhipidura rufifrons			
Rufous Fantail [592]		Species or species habitat known to occur within area	In feature area
Migratory Wetlands Species			
Actitis hypoleucos			
Common Sandpiper [59309]		Species or species habitat may occur within area	In feature area
Calidris acuminata			
Sharp-tailed Sandpiper [874]		Species or species habitat may occur within area	In feature area
Calidris ferruginea			
Curlew Sandpiper [856]	Critically Endangered	Species or species habitat may occur within area	In feature area
Calidris melanotos			
Pectoral Sandpiper [858]		Species or species habitat may occur within area	In feature area
Gallinago hardwickii			
Latham's Snipe, Japanese Snipe [863]		Species or species habitat known to occur within area	In feature area

Other Matters Protected by the EPBC Act

Commonwealth Lands [Resource Information]

The Commonwealth area listed below may indicate the presence of Commonwealth land in this vicinity. Due to the unreliability of the data source, all proposals should be checked as to whether it impacts on a Commonwealth area, before making a definitive decision. Contact the State or Territory government land department for further information.

Commonwealth Land Name	State	Buffer Status
Commonwealth Trading Bank of Australia		
Commonwealth Land - Commonwealth Trading Bank of Australia [12985]	NSW	In buffer area only
Communications, Information Technology and the Arts - Telstra Corporation Limited		
Commonwealth Land - Australian Telecommunications Commission [12987]	NSW	In buffer area only
Commonwealth Land - Australian Telecommunications Commission [12986]	NSW	In buffer area only
Commonwealth Land - Telstra Corporation Limited [15440]	NSW	In buffer area only

Listed Marine Species [Resource Information]

Scientific Name	Threatened Category	Presence Text	Buffer Status
Bird			
Actitis hypoleucos Common Sandpiper [59309]		Species or species habitat may occur within area	In feature area
Apus pacificus Fork-tailed Swift [678]		Species or species habitat likely to occur within area overfly marine area	In feature area
Bubulcus ibis as Ardea ibis Cattle Egret [66521]		Species or species habitat may occur within area overfly marine area	In feature area
Calidris acuminata Sharp-tailed Sandpiper [874]		Species or species habitat may occur within area	In feature area
Calidris ferruginea Curlew Sandpiper [856]	Critically Endangered	Species or species habitat may occur within area overfly marine area	In feature area
Calidris melanotos Pectoral Sandpiper [858]		Species or species habitat may occur within area overfly marine area	In feature area
Chalcites osculans as Chrysococcyx osculans Black-eared Cuckoo [83425]		Species or species habitat likely to occur within area overfly marine area	In feature area
Gallinago hardwickii Latham's Snipe, Japanese Snipe [863]		Species or species habitat known to occur within area overfly marine area	In feature area
Haliaeetus leucogaster White-bellied Sea-Eagle [943]		Species or species habitat likely to occur within area	In feature area
Hirundapus caudacutus White-throated Needletail [682]	Vulnerable	Species or species habitat known to occur within area overfly marine area	In feature area

Scientific Name	Threatened Category	Presence Text	Buffer Status
[Lathamus discolor](#) Swift Parrot [744]	Critically Endangered	Species or species habitat may occur within area overfly marine area	In feature area
[Merops ornatus](#) Rainbow Bee-eater [670]		Species or species habitat may occur within area overfly marine area	In feature area
[Monarcha melanopsis](#) Black-faced Monarch [609]		Species or species habitat may occur within area overfly marine area	In feature area
[Motacilla flava](#) Yellow Wagtail [644]		Species or species habitat may occur within area overfly marine area	In feature area
[Myiagra cyanoleuca](#) Satin Flycatcher [612]		Species or species habitat likely to occur within area overfly marine area	In feature area
[Neophema chrysostoma](#) Blue-winged Parrot [726]	Vulnerable	Species or species habitat may occur within area overfly marine area	In feature area
[Pterodroma cervicalis](#) White-necked Petrel [59642]		Species or species habitat may occur within area	In feature area
[Rhipidura rufifrons](#) Rufous Fantail [592]		Species or species habitat known to occur within area overfly marine area	In feature area
[Rostratula australis as Rostratula benghalensis (sensu lato)](#) Australian Painted Snipe [77037]	Endangered	Species or species habitat likely to occur within area overfly marine area	In feature area

Extra Information

Regional Forest Agreements [Resource Information]

Note that all areas with completed RFAs have been included. Please see the associated resource information for specific caveats and use limitations associated with RFA boundary information.

RFA Name	State	Buffer Status
North East NSW RFA	New South Wales	In feature area

EPBC Act Referrals [Resource Information]

Title of referral	Reference	Referral Outcome	Assessment Status	Buffer Status
Controlled action				
Hills of Gold Wind Farm	2019/8535		Assessment	In buffer area only
Chaffey Dam Augmentation and Safety Upgrade, NSW	2012/6523	Controlled Action	Post-Approval	In buffer area only
Not controlled action				
Improving rabbit biocontrol: releasing another strain of RHDV, sthrn two thirds of Australia	2015/7522	Not Controlled Action	Completed	In feature area
Not controlled action (particular manner)				
Aerial baiting for wild dog control	2006/2713	Not Controlled Action (Particular Manner)	Post-Approval	In feature area

Caveat

1 PURPOSE

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

The report contains the mapped locations of:

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

2 DISCLAIMER

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

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

3 DATA SOURCES

Threatened ecological communities

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

Threatened, migratory and marine species

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

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

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

4 LIMITATIONS

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

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

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

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

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

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

Acknowledgements

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

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

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

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

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Appendix E

Potential Occurrence Assessment

Threatened Species Potential Occurrence Assessment - Overview

A potential of occurrence assessment was completed to assess the likelihood of occurrence of threatened species or populations at the subject site. All threatened biodiversity identified in background research were considered. The assessment is based on the habitat profile for the species and other habitat information in the Threatened Species Profile Database (Environment Energy and Science Group). The assessment also takes into consideration the dates and locations of nearby records and information about species populations in the locality.

Table E1 Threatened Flora Likelihood of Occurrence Criteria

Likelihood	Criteria
Known	The species was observed in the subject site either during the current survey or during another survey less than one year prior.
High	A species has a high likelihood of occurrence if: ■ the subject site contains or forms part of a large area of high-quality suitable habitat that has not been subject to recent disturbance (e.g. fire), the species is known to form a persistent soil seedbank and the species has been recorded recently (within 10 years) in the locality. ■ the species is a cryptic flowering species that has been recorded recently (within 10 years) in the locality and has a large area of high-quality potential habitat within the construction footprint that was not seasonally targeted by surveys.
Moderate	A species has a moderate likelihood of occurrence if: the species: ■ has a large area of high-quality suitable habitat in the subject site that has not been subject to recent disturbance (e.g. fire) ■ the species is known to form a persistent soil seedbank, but ■ the species has not been recorded recently (within 10 years) in the locality. the species: ■ has a small area of high-quality suitable habitat or a large area of marginal habitat in the subject site That has not been subject to recent disturbance (e.g. fire) ■ the species is known to form a persistent soil seedbank ■ the species has been recorded recently (within 10 years) in the locality ■ the species is a cryptic flowering species, with a small area of high-quality potential habitat or a large area of marginal habitat within the activity footprint, that was not seasonally targeted by surveys.
Low	A species has a low likelihood of occurrence if: ■ it is not a cryptic species, nor a species known to have a persistent soil seedbank species and was not detected despite targeted searches. ■ the species is a cryptic flowering species, with a small area of high-quality potential habitat or a large area of marginal habitat within the activity footprint, that was not seasonally targeted by surveys as the species has not been recorded within 50 years in the locality.
None	Suitable habitat is absent from the subject site.

Table E2 Threatened Flora Potential Occurrence Assessment

Scientific Name	Common Name	BC Act	EPBC Act	Habitat Requirement	Potential Occurrence/ Subject Species
Asterolasia beckersii	Dungowan Starbush	CE	CE	Only one extant population, Dungowan Dam, SE of Tamworth. Rocky alluvial soil along a creekbank dominated by River Oak (*Casuarina cunninghamiana*) with or without Manna Gum (*Eucalyptus viminalis*). Also recorded in locations with overstorey trees dominated by Messmate Stringybark (*Eucalyptus obliqua*) and Mountain Manna Gum (*E. nobilis*) with or without Narrow-leaved Peppermint (*E. radiata ssp. sejuncta*).	Low – Field surveys did not record the species in the site. No BioNet records within the locality. Test of significance not required.
Cadellia pentastylis	Ooline	V	V	Forms a closed or open canopy mixing with eucalypt and cypress pine species. There appears to be a strong correlation between the presence of Ooline and low- to medium-nutrient soils of sandy clay or clayey consistencies, with a typical soil profile having a sandy loam surface layer, grading from a light clay to a medium clay with depth.	Low – Field surveys did not record the species in the site. No BioNet records within the locality. Test of significance not required.
Cryptostylis hunteriana	Leafless Tongue-orchid	V	V	Does not have well defined habitat and is known from a range of communities, including swamp-heath and woodland.	Low – Field surveys did not record the species in the site. No BioNet records within the locality. Test of significance not required.
Cynanchum elegans	White-flowered Wax Plant	E	E	Dry, littoral or subtropical rainforest, and occasionally in scrub or woodland.	None - No suitable habitat occurs. No BioNet records within the locality. Test of significance not required.
Dichanthium setosum	Bluegrass	V	V	In NSW, occurs on the New England Tablelands, North West Slopes and Plains and the Central Western Slopes of NSW, in moderately disturbed areas such as cleared woodland, grassy roadside remnants and highly disturbed pasture.	Low – Field surveys did not record *Dichanthium spp.* within the site. Test of significance not required.
Diuris pedunculata	Small Snake Orchid	E	E	Grassy sclerophyll forests, dry sclerophyll woodlands, grassy sclerophyll woodlands, grasslands, riparian areas, and swampy forests.	Low – Field surveys did not record the species in the site. No BioNet records within the locality. Test of significance not required.
Eucalyptus nicholii	Narrow-leaved Peppermint	V	V	Grassy or sclerophyllous woodland on shallow relatively infertile soils on shales and slates.	None - No suitable habitat occurs. Test of significance not required.
Eucalyptus oresbia	Small-fruited Mountain Gum	V	-	Found at altitudes between 800 and 1100 m in very steep valleys and deeply incised creeklines with	None - No suitable habitat occurs. Test of significance not required.

Scientific Name	Common Name	BC Act	EPBC Act	Habitat Requirement	Potential Occurrence/ Subject Species
				primarily south to southwest exposure (i.e. warm yet moist).	
Eucalyptus rubida subsp. barbigerorum	Blackbutt Candlebark	V	V	Woodland on medium or high fertility soils. Known from scattered populations on the New England Tablelands from Guyra to the Tenterfield area.	None - No suitable habitat occurs. Test of significance not required.
Euphrasia arguta	-	CE	CE	Known from three sites in/ near Nundle State Forest in eucalypt forest with a mixed grass and shrub understorey. Habitat includes open forest country around Bathurst in subhumid places, grassy country near Bathurst and in meadows near rivers.	None - No suitable habitat occurs. Test of significance not required.
Haloragis exalata subsp. velutina	Tall Velvet Sea-berry	V	V	Damp places near watercourses, also in woodland and steep rocky slopes of gorges.	Low – Field surveys did not record the species in the site. No BioNet records within the locality. Test of significance not required.
Pomaderris brunnea	Brown Pomaderris	E	V	Brown Pomaderris grows in moist woodland or forest on clay and alluvial soils of flood plains and creek lines.	Low – Field surveys did not record the species in the site. No BioNet records within the locality. Test of significance not required.
Prasophyllum sp. Wybong	-	-	CE	Known to occur in open eucalypt woodland and grassland	Low – Field surveys did not record the species in the site. No BioNet records within the locality. Test of significance not required.
Thesium australe	Austral Toadflax	V	V	Grassland or grassy eucalypt woodland where *Themeda australis* is predominant, on grassy headlands.	None - No suitable habitat occurs. Test of significance not required.
Tylophora linearis	-	V	E	*Tylophora linearis* grows in dense shrublands occasionally overtopped by Callitris glaucophylla and various species of Eucalyptus. Not previously recorded in Northern Rivers CMA area.	None - No suitable habitat occurs. Test of significance not required.

V = Vulnerable; E = Endangered; CE = Critically Endangered

Table E3 Threatened Fauna Likelihood of Occurrence Criteria

Likelihood	Criteria
Recorded	The species was observed in the subject site either during the current survey or during another survey less than one year prior.
High	A species has a high likelihood of occurrence if: ■ the subject site contains or forms part of a large area of high-quality suitable habitat ■ important habitat elements (i.e. for breeding or important life cycle periods such as winter foraging periods) are abundant within the subject site ■ the species has been recorded recently in similar habitat in the locality ■ the subject site is likely to support resident populations or to contain habitat that is visited by the species during regular seasonal movements or migration.
Moderate	A species has a moderate likelihood of occurrence if: ■ the subject site contains or forms part of a small area of high-quality suitable habitat ■ the subject site contains or forms part of a large area of marginal habitat ■ important habitat elements (i.e. for breeding or important life cycle periods such as winter foraging periods) are sparse or absent within the subject site ■ the subject site is unlikely to support resident populations or to contain habitat that is visited by the species during regular seasonal movements or migration but is likely to be used occasionally during seasonal movements and/ or dispersal.
Low	A species has a low likelihood of occurrence if: ■ potentially suitable habitat exists but the species has not been recorded recently (previous 10 years) in the locality despite intensive survey (i.e. the species is considered to be locally extinct) ■ the species is considered to be a rare vagrant, likely only to visit the subject site very rarely; e.g. during juvenile dispersal or exceptional climatic conditions (e.g. extreme drought conditions in typical habitat of inland birds).
None	Suitable habitat is absent from the subject site.

Table E4 Threatened Fauna Potential Occurrence Assessment

Scientific Name	Common Name	BC Act	EPBC Act	Habitat Requirement	Potential Occurrence/ Subject Species
Amphibians					
Litoria booroolongensis	Booroolong Frog	E	E	Permanent streams with some fringing vegetation cover such as ferns, sedges or grasses.	None - No suitable habitat. Test of significance not required.
Litoria daviesae	Davies' Tree Frog	V	-	Davies' Tree Frog occurs in permanent, slow-flowing small streams above 400 m elevation, mostly in the headwaters of eastern-flowing streams (although it does occur in the headwaters of the western-flowing Peel River).	None - No suitable habitat. Test of significance not required.
Mixophyes balbus	Stuttering Frog	E	V	Cool rainforest, moist eucalypt forest and occasionally along creeks in dry eucalypt forest. Typically, at elevations between 200 m and 1420 m above sea level in their northern range.	Low - Outside of known and predicted ranges for the species. No BioNet records within the locality. Test of significance not required.
Birds					
Anthochaera phrygia	Regent Honeyeater	CE	CE	Dry open forest and woodland with an abundance of nectar-producing eucalypts, particularly box-ironbark woodland, swamp mahogany forests, and riverine sheoak woodlands.	Low - Preferred habitat is absent from the site and the species would not be dependent on the available habitat within the site. No BioNet records within the locality. Test of significance not required.
Aphelocephala leucopsis	Southern Whiteface	-	V	Open woodlands and shrublands where there is an understorey of grasses or shrubs, or both. These areas are usually in habitats dominated by acacias or eucalypts on ranges, foothills and lowlands, and plains. Individuals may move into wetter areas outside of their normal range during drought years	Low - Preferred habitat is absent from the site and the species would not be dependent on the available habitat within the site. No BioNet records within the locality. Test of significance not required.
Botaurus poiciloptilus	Australasian Bittern	E	E	Permanent freshwater wetlands with tall dense vegetation, particularly bullrushes and spikerushes.	None - No suitable habitat. No BioNet records within the locality. Test of significance not required.

Scientific Name	Common Name	BC Act	EPBC Act	Habitat Requirement	Potential Occurrence/ Subject Species
Callocephalon fimbriatum	Gang-gang Cockatoo	V	E	Wetter forests and woodlands, timbered watercourses, coastal scrub.	Low - The species would not be dependent on the available habitat within the site. No BioNet records within the locality. Test of significance not required.
Calidris ferruginea	Curlew Sandpiper	E	CE, M	Tidal mudflats, sandy ocean shores and occasionally inland freshwater or salt-lakes.	None - No suitable habitat. No BioNet records within the locality. Test of significance not required.
Calyptorhynchus lathami lathami	South Eastern Glossy Black-Cockatoo	V	V	Sheoaks in coastal forests and woodlands, timbered watercourses, and moist and dry eucalypt forests of the coast and the Great Divide up to 1,000 m. Hollow nesters. In central NSW, a very high preference for *E.crebra* among other *Eucalyptus*, living or dead trees, >8m above ground, in branches >30 cm diam, steeply angled.	Low – Marginal foraging habitat in the form of Casuarina spp., however, the species is unlikely be dependent on the available habitat within the site and is only likely to occur irregularly whilst foraging in greater locality. No BioNet records within the locality. Test of significance not required.
Erythrotriorchis radiatus	Red Goshawk	CE	E	Open woodland and forest, preferring a mosaic of vegetation types, a large population of birds as a source of food, and permanent water. Typically found in riparian habitats along or near watercourses or wetlands. In NSW, preferred habitats include mixed subtropical rainforest, Melaleuca swamp forest and riparian Eucalyptus forest of coastal rivers. Population in NSW is naturally small (probably only one pair) and lies at extreme of the natural range of the species in Australia.	Low - Outside of known and predicted ranges for the species. No BioNet records within the locality. Test of significance not required.
Falco hypoleucos	Grey Falcon	V	V	The Grey Falcon is sparsely distributed in NSW, chiefly throughout the Murray-Darling Basin, with the occasional vagrant east of the Great Dividing Range. Frequents timbered lowland plains, particularly Acacia shrublands with watercourses, but also hunts in tussock grassland and open woodland, feeding almost entirely on small birds and rarely small mammals. Nests in tall trees such	Low - Outside of known and predicted ranges for the species. No BioNet records within the locality. Test of significance not required.

Scientific Name	Common Name	BC Act	EPBC Act	Habitat Requirement	Potential Occurrence/ Subject Species
				as E.camaldulensis and E.coolabah, reusing other raptors nests.	
Grantiella picta	Painted Honeyeater	V	V	Boree, Brigalow and Box-Gum Woodlands and Box-Ironbark Forests. Specialist feeder on the fruits of mistletoes growing on woodland eucalypts and acacias. Prefers mistletoes of the genus Amyema.	Low - Preferred habitat is absent from the site and the species would not be dependent on the available habitat within the site. No BioNet records within the locality. Test of significance not required.
Hieraaetus morphnoides	Little Eagle	V	-	Open eucalypt forest, woodland or open woodland. Sheoak or acacia woodlands and riparian woodlands of interior NSW are also used.	**Moderate** - Potential foraging habitat. Recorded within locality. **Test of significance completed**.
Hirundapus caudacutus	White-throated Needletail	-	V	Most often recorded aerial foraging above wooded areas, including open forest and rainforest, and may also fly between trees or in clearings, below the canopy. Breeding does not occur in Australia.	Low - Preferred habitat is absent from the site and the species would not be dependent on the available habitat within the site. No BioNet records within the locality. Test of significance not required.
Lathamus discolor	Swift Parrot	E	CE	On mainland Australia foraging occurs where eucalypts are flowering profusely or where abundant lerp infestations occur. Favoured feed trees include winter flowering species such as Swamp Mahogany Eucalyptus robusta, Spotted Gum Corymbia maculata, Red Bloodwood C. gummifera, Forest Red Gum E. tereticornis, Mugga Ironbark E. sideroxylon, and White Box E. albens. Commonly used lerp infested trees include Inland Grey Box E. microcarpa, Grey Box E. moluccana, Blackbutt E. pilularis and Yellow Box E. melliodora.	Low - Preferred habitat is absent from the site and the species would not be dependent on the available habitat within the site. No BioNet records within the locality. Test of significance not required.
Melanodryas cucullata cucullata	Hooded Robin (south-eastern form)	V	E	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.	Low - Preferred habitat is absent from the site and the species would not be dependent on the available habitat within the site. No BioNet records within the

Scientific Name	Common Name	BC Act	EPBC Act	Habitat Requirement	Potential Occurrence/ Subject Species
					locality. Test of significance not required.
Neophema chrysostoma	Blue-winged Parrot	V	V	Blue-winged parrots breed in Tasmania, coastal south-eastern South Australia and southern Victoria. During the breeding season (spring and summer), birds occupy eucalypt forests and woodlands. Outside of the breeding range, habitat critical to the survival of this species includes foraging and staging habitats found from coastal, sub-coastal and inland areas, right through to semi-arid zones including grasslands, grassy woodlands and semi-arid chenopod shrubland with native and introduced grasses, herbs and shrubs; and wetlands both near the coast and in semi-arid zones used for foraging and staging.	Low - Preferred habitat is absent from the site and the species would not be dependent on the available habitat within the site. No BioNet records within the locality. Test of significance not required.
Ninox strenua	Powerful Owl	V	-	Woodland and open forest to tall moist forest and rainforest. Requires large tracts of forest or woodland habitat but may also occur in fragmented landscapes.	Low - Preferred habitat is absent from the site and the species would not be dependent on the available habitat within the site. Test of significance not required.
Petroica boodang	Scarlet Robin	V	-	Dry eucalypt forests and woodlands with an open and grassy understorey with few scattered shrubs. Both mature and regrowth vegetation are utilised; habitat usually contains abundant logs and fallen timber.	Low - Preferred habitat is absent from the site and the species would not be dependent on the available habitat within the site. Test of significance not required.
Petroica phoenicea	Flame Robin	V	-	Breeds in upland tall moist eucalypt forests and woodlands, often on ridges and slopes; prefers clearings or areas with open understoreys. Breeding habitat is dominated by native grasses and the shrub layer may be either sparse or dense. In winter, birds migrate to drier more open habitats in the lowlands (i.e. valleys below the ranges, and to the western slopes and plains).	Low - Preferred habitat is absent from the site and the species would not be dependent on the available habitat within the site. Test of significance not required.
Polytelis swainsonii	Superb Parrot	V	V	Inhabit Box-Gum, Box-Cypress-pine and Boree Woodlands and River Red Gum Forest.	Low - Outside of known and predicted ranges for the species. No BioNet records within the locality. Test of significance not required.

Scientific Name	Common Name	BC Act	EPBC Act	Habitat Requirement	Potential Occurrence/ Subject Species
Rostratula australis	Australian Painted Snipe	E	E	Well-vegetated shallows and margins of wetlands, dams, sewage ponds, wet pastures, marshy areas, irrigation systems, lignum, tea-tree scrub, and open timber.	None - No suitable habitat. No BioNet records within the locality. Test of significance not required.
Stagonopleura guttata	Diamond Firetail	V	V	Grassy eucalypt woodlands, open forest, mallee, temperate grassland, and secondary grassland derived from other communities, riparian areas, and sometimes in lightly wooded farmland.	Low - Preferred habitat is absent from the site and the species would not be dependent on the available habitat within the site. No BioNet records within the locality. Test of significance not required.
Tyto tenebricosa	Sooty Owl	V	-	Dry, subtropical, and warm temperate rainforests and wet eucalypt forests. Nest in large tree hollows.	Low - Preferred habitat is absent from the site and the species would not be dependent on the available habitat within the site. Test of significance not required.
Fish					
Maccullochella peelii	Murray Cod	-	V	Warm water habitats that range from clear, rocky streams to slow flowing turbid rivers and billabongs.	None - No suitable habitat. No BioNet records within the locality. Test of significance not required.
Invertebrates					
Euastacus gamilaroi	Gamilaroi Crayfish	-	E	Endemic to north-central eastern New South Wales, generally over 1000 m above sea level. Excavates burrows in the stream bed or bank, often having a single entrance under rocks, logs, or roots. Appears to occupy areas away from fast-flowing waters, with adults inhabiting deeper pools and juveniles detected in the shallower areas.	None - No suitable habitat. No BioNet records within the locality. Test of significance not required.

Scientific Name	Common Name	BC Act	EPBC Act	Habitat Requirement	Potential Occurrence/ Subject Species
Mammals					
Chalinolobus dwyeri	Large-eared Pied Bat	V	V	Near cave entrances and crevices in cliffs.	Low - Preferred habitat is absent from the site and the species would not be dependent on the available habitat within the site. No BioNet records within the locality. Test of significance not required.
Dasyurus maculatus	Spotted-tailed Quoll	V	E	Dry and moist eucalypt forests and rainforests, fallen hollow logs, large rocky outcrops.	Low - Preferred habitat is absent from the site and the species would not be dependent on the available habitat within the site. Test of significance not required.
Falsistrellus tasmaniensis	Eastern False Pipistrelle	V	-	Moist and dry eucalypt forest and rainforest, particularly at high elevations.	Low - Preferred habitat is absent from the site and the species would not be dependent on the available habitat within the site. Test of significance not required.
Nyctophilus corbeni	Corben's Long-eared Bat	V	V	Mallee, bulloke and box eucalypt dominated communities, more common in box/ ironbark/ cypress-pine vegetation, inhabiting tree hollows, crevices, and under loose bark.	Low - Preferred habitat is absent from the site and the species would not be dependent on the available habitat within the site. No BioNet records within the locality. Test of significance not required.
Petauroides volans	Southern Greater Glider	E	E	Ranges and coastal plains of eastern Australia, where it inhabits a variety of eucalypt forests and woodlands. Feeds on Eucalyptus leaves, with some buds and flowers, favoured species vary regionally. Prefers large hollows in large old trees.	Low - Preferred habitat is absent from the site and the species would not be dependent on the available habitat within the site. Test of significance not required.
Petaurus australis australis	Yellow-bellied Glider (south-eastern)	V	V	Tall mature eucalypt forest generally in areas with high rainfall and nutrient rich soils. Dens in tree hollows of	Low - Preferred habitat is absent from the site and

Scientific Name	Common Name	BC Act	EPBC Act	Habitat Requirement	Potential Occurrence/ Subject Species
				large trees, often in family groups. Forest type preferences vary with latitude and elevation; mixed coastal forests to dry escarpment forests in the north; moist coastal gullies and creek flats to tall montane forests in the south.	the species would not be dependent on the available habitat within the site. No BioNet records within the locality. Test of significance not required.
Petrogale penicillata	Brush-tailed Rock Wallaby	E	V	North-facing cliffs and dry eucalypt forest and woodland, inhabiting rock crevices, caves, overhangs during the day, and foraging in grassy areas nearby at night.	Low - Preferred habitat is absent from the site and the species would not be dependent on the available habitat within the site. No BioNet records within the locality. Test of significance not required.
Phascolarctos cinereus	Koala	E	E	Appropriate food trees in forests and woodlands and treed urban areas. Ideally rainfall 700-1500 mm but can be found in more extreme environments. Home ranges for individuals vary widely from 3-500 ha. Utilise more than 400 species of tree, with localised preferences.	Low - Preferred habitat is absent from the site and the species would not be dependent on the available habitat within the site. Test of significance not required.
Pseudomys novaehollandiae	New Holland Mouse	-	V	Occurs in open heathlands, open woodlands with a heathland understorey, and vegetated sand dunes.	Low - Preferred habitat is absent from the site and the species would not be dependent on the available habitat within the site. No BioNet records within the locality. Test of significance not required.
Pteropus poliocephalus	Grey-headed Flying-fox	V	V	Subtropical and temperate rainforests, tall sclerophyll forests and woodlands, heaths and swamps as well as urban gardens and cultivated fruit crops.	Low - Preferred habitat is absent from the site and the species would not be dependent on the available habitat within the site. No BioNet records within the locality. Test of significance not required.
Reptiles					

Scientific Name	Common Name	BC Act	EPBC Act	Habitat Requirement	Potential Occurrence/ Subject Species
Aprasia parapulchella	Pink-tailed Legless Lizard	V	V	Inhabits sloping, open woodland areas with predominantly native grassy groundlayers, particularly those dominated by Kangaroo Grass (Themeda australis).	Low - Preferred habitat is absent from the site and the species would not be dependent on the available habitat within the site. No BioNet records within the locality. Test of significance not required.
Myuchelys purvisi	Manning River Helmeted Turtle	E	E	Preference for relatively shallow, clear, continuously fast-flowing rivers with rocky and sandy substrates. Boulder beds in pools 2-3 m deep and submerged logs are used as shelter sites by individuals or small aggregations of turtles.	None - No suitable habitat. Test of significance not required.
Uvidicolus sphyrurus	Border Thick-tailed Gecko	V	V	Dry sclerophyll open forest and woodland associated with outcrops of granite, basalt, sandstone, and metamorphic rocks.	Low - Preferred habitat is absent from the site and the species would not be dependent on the available habitat within the site. No BioNet records within the locality. Test of significance not required.

V = Vulnerable; E = Endangered; CE = Critically Endangered

Appendix F

Tests of Significance (BC Act and FM Act)

BC Act Assessment of Significance for Threatened Fauna

Tests of significance ('five-part tests') under Section 7.3 of the BC Act have been completed below for the Little Eagle.

a) 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 Little Eagle is found throughout the Australian mainland. It occurs as a single population throughout NSW and Occupies open eucalypt forest, woodland, or open woodland. Sheoak or Acacia woodlands and riparian woodlands of interior NSW are also used. Little Eagles Nest in tall living trees within a remnant vegetation patch, where pairs build a large stick nest in winter. The Little Eagle predominantly preys on birds, reptiles, small mammals, and occasionally large insects and carrion.

Threatening processes for this species include:

- Secondary poisoning from rabbit baiting.
- Clearing and degradation of foraging and breeding habitat.

Potential Impacts of the Activity

The Activity would result in the loss of 0.02 ha of potential foraging habitat for the Little Eagle. The subject vegetation comprises a relatively minor amount of potential foraging habitat (<0.01%) within 2 km of the site. No breeding habitat in the form of nest trees will be impacted. Construction phase impacts (bridge upgrade works) would be short term and would not hinder movement of the species or significantly affect foraging or breeding habitat in a local context.

The Activity is unlikely to significantly impact the Little Eagle, hence the Activity is not considered likely to adversely affect the life cycle of the species in such way that a viable local population is likely to be placed at risk of extinction.

b) 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,

No threatened ecological communities occur, no further assessment required.

c) 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

The Activity would require the removal of up to 0.02 ha of riparian woodland. This would only impact <0.01% of low condition habitat for the Little Eagle. This habitat occurs along a linear section of road and is subject to existing edge effects. Given that clearing would mostly be contained to the existing road corridor and the availability of similar or better-quality foraging, dispersal, and roosting/ nesting habitats nearby in the locality; the impacts to habitat by the Activity is unlikely to have any significant or long-term impacts on foraging or nesting habitat.

(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

Habitat at the site is already fragmented due to previous clearing for road/ bridge construction and maintenance. The activity would not significantly increase the current level of fragmentation or isolate habitat for the Little Eagle.

(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,

The habitat to be removed comprises low condition riparian habitat where there has been historic fragmentation due to road and bridge construction. No barriers to dispersal for the Little Eagle would be created due to the Activity. The habitat to be removed is unlikely to be of significant importance to the Little Eagle.

d) 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),

No areas of outstanding biodiversity value have been declared within the Tamworth Regional LGA.

e) 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.

A key threatening process (KTP) is a process that threatens, or may have the capability to threaten, the survival or evolutionary development of species or ecological communities. The current list of KTP under the BC Act, and whether the Activity is recognised as a KTP is shown in **Table F.2** below.

Table F.2 Key Threatening Processes

Key Threatening Process (as per Schedule 4 of the BC Act)	Is the development or activity proposed of a class of development or activity that is recognised as a threatening process?		
	Likely	Possible	Unlikely
Aggressive exclusion of birds by noisy miners (*Manorina melanocephala*)			✓
Alteration of habitat following subsidence due to longwall mining			✓
Alteration to the natural flow regimes of rivers and streams and their floodplains and wetlands			✓
Anthropogenic climate change			✓
Bushrock removal			✓
Clearing of native vegetation	✓		
Competition and grazing by the feral European Rabbit (*Oryctolagus cuniculus*)			✓
Competition and habitat degradation by feral goats (*Capra hircus*)			✓
Competition from feral honeybees (*Apis mellifera*)			✓
Death or injury to marine species following capture in shark control programs on ocean beaches			✓
Entanglement in or ingestion of anthropogenic debris in marine and estuarine environments			✓
Forest eucalypt dieback associated with over-abundant psyllids and bell miners			✓

Key Threatening Process (as per Schedule 4 of the BC Act)	Is the development or activity proposed of a class of development or activity that is recognised as a threatening process?		
	Likely	Possible	Unlikely
Habitat degradation and loss by Feral Horses, *Equus caballus*			✓
Herbivory and environmental degradation caused by feral deer			✓
High frequency fire resulting in the disruption of life cycle processes in plants and animals and loss of vegetation structure and composition			✓
Importation of red imported fire ants (*Solenopsis invicta*)			✓
Infection by *Psittacine circoviral* (beak and feather) disease affecting endangered psittacine species and populations			✓
Infection of frogs by amphibian chytrid causing the disease chytridiomycosis			✓
Infection of native plants by *Phytophthora cinnamomi*			✓
Introduction and Establishment of Exotic Rust Fungi of the order Pucciniales pathogenic on plants of the family Myrtaceae			✓
Introduction of the large earth bumblebee (*Bombus terrestris*)			✓
Invasion and establishment of exotic vines and scramblers		✓	
Invasion and establishment of Scotch Broom (*Cytisus scoparius*)			✓
Invasion and establishment of the Cane Toad (*Bufo marinus*)			✓
Invasion, establishment and spread of Lantana (*Lantana camara*)			✓
Invasion of native plant communities by African Olive (*Olea europaea L. subsp. cuspidata*)			✓
Invasion of native plant communities by *Chrysanthemoides monilifera*			✓
Invasion of native plant communities by exotic perennial grasses		✓	
Invasion of the Yellow Crazy Ant (*Anoplolepis gracilipes*) into NSW			✓
Loss and degradation of native plant and animal habitat by invasion of escaped garden plants, including aquatic plants			✓
Loss of hollow-bearing trees			✓
Loss or degradation (or both) of sites used for hill-topping by butterflies			✓
Predation and hybridisation by feral dogs (*Canis lupus familiaris*)			✓
Predation by the European Red Fox (*Vulpes vulpes*)			✓
Predation by the feral cat (*Felis catus*)			✓
Predation by *Gambusia holbrooki* (Plague Minnow or Mosquito Fish)			✓
Predation by the Ship Rat (*Rattus rattus*) on Lord Howe Island			✓

Key Threatening Process (as per Schedule 4 of the BC Act)	Is the development or activity proposed of a class of development or activity that is recognised as a threatening process?		
	Likely	Possible	Unlikely
Predation, habitat degradation, competition and disease transmission by feral pigs (*Sus scrofa*)			✓
Removal of dead wood and dead trees	✓		

The Activity is such that two KTPs are considered likely to be contributed to.

Clearing of Native Vegetation: Clearing is defined as the destruction of a sufficient proportion of one or more strata (layers) within a stand or stands of native vegetation so as to result in the loss, or long-term modification, of the structure, composition and ecological function of stand or stands. The proposal would have a relatively minor contribution to this KTP. Considering the relatively small area (<0.01%) of native vegetation to be removed within 2 km of the site, it is unlikely that the proposal would contribute significantly to this KTP.

Removal of Dead Wood and Dead Trees: The proposal would require the dead wood from within low condition PCT 84. No dead trees are proposed for the Activity and impacts to this KTP would be restricted to removal of dead wood. Considering the dead wood proposed for removal along an existing disturbed road corridor, it is unlikely that the proposal would contribute significantly to this KTP more broadly.

Conclusion

It is considered unlikely that the local population of Little Eagles would be placed at significant risk of extinction as a result of the Activity considering:

- The Activity would require the removal of up to 0.02 ha of riparian woodland comprising <0.01% of low condition habitat for Little Eagles within the locality (within 2 km of the site).
- The disturbed nature of the site along an existing road corridor that is subject to historic fragmentation.
- The availability of similar or better-quality foraging, dispersal, and roosting/ nesting habitats nearby in the locality.
- No barriers to dispersal for the Little Eagle would be created due to the Activity.

FM Act 7 Part Test of Significance

A Test of Significance pursuant to Section 220ZZ of the *Fisheries Management Act 1994* (FM Act) has been prepared for the *Aquatic ecological community in the natural drainage systems of the lowland catchment of the Darling River* Endangered Ecological Community (EEC).

a) in the case of a threatened species, whether the action proposed 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.

No threatened species under the FM Act are a potential occurrence at the site. No further consideration is required.

b) in the case of an endangered population, whether the action proposed is likely to have an adverse effect on the life cycle of the species that constitutes the endangered population such that a viable local population of the species is likely to be placed at risk of extinction,

No endangered populations occur at site, no further consideration is required.

c) In the case of an endangered ecological community, or critically endangered ecological community whether the action proposed:

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.

The disturbance to the creek within site limits involves the clearing of exotic weeds within the road, not consistent with aquatic plants within the proposed EEC. Construction would ultimately have minimal effect on the community post works with no blockage of fish passage at any stage of works. Hence works would not have an adverse effect on the extent of the ecological community, nor would it substantially or adversely modify the composition of the EEC such that its local occurrence is placed at risk of extinction.

d) in relation to the habitat of a threatened species, population or ecological community:

i) the extent to which habitat is likely to be removed or modified as a result of the action proposed,

Potential habitat removal or modification:

- Removal of low condition habitat.
- Habitat degradation of adjacent habitat due to potential clearing phase impacts (e.g., erosion and sedimentation impacts or chemical spills).
- Unintentional introduction or spread or introduction of weeds.
- Unintentional introduction or spread of propagules or plant disease by way of plant and machinery.

These impacts are minimal in the context of Oakenville Creek given the safeguards outlined in **Section 5**.

ii) whether an area of habitat is likely to become fragmented or isolated from other areas of habitat as a result of the proposed action, and

Fragmentation at the end of construction would be similar to the pre-construction conditions. Hence, habitat at the site is unlikely to become fragmented or isolated from other areas of habitat as a result of the proposed action.

iii) the importance of the habitat to be removed, modified, fragmented or isolated to the long-term survival of the species, population or ecological community in the locality.

The habitat within site is highly degraded and was absent of water at the time it was surveyed. The habitat is expected to be of little importance and the scope of works is expected to be short term and of minor disturbance to the creek. With a limited reduction in habitat value during construction, post construction any reduced habitat value is expected be recovered. No habitat important to the long-term survival of the ecological community within the site limits would be adversely affected by the activity.

e) whether the action proposed is likely to have an adverse effect on critical habitat (either directly or indirectly)

The Activity is not within an area of critical habitat listed under the FM Act.

f) whether the action proposed is consistent with the objectives or actions of a recovery plan or threat abatement plan,

This question pertains to threatened species. No threatened species under the FM Act are a potential occurrence at the site. No further consideration is required.

g) whether the action proposed constitutes or is part of a key threatening process or is likely to result in the operation of, or increase the impact of, a key threatening process.

Key threatening processes listed in Schedule 6 of the FM Act include:

- Current shark meshing program in NSW waters.
- Hook and line fishing in areas important for the survival of threatened fish species.
- Human-caused climate change.
- Instream structures and other mechanisms that alter natural flow.
- Introduction of non-indigenous fish and marine vegetation to the coastal waters of New South Wales.
- The introduction of fish to fresh waters within a river catchment outside their natural range.
- The removal of large woody debris from NSW rivers and streams.
- The degradation of native riparian vegetation along New South Wales water courses.

The Activity is not considered characteristic any listed KTPs. Works would be of short duration and natural flow is unlikely to be hindered.

On this basis the degree that the Activity would contribute to any threatening process is not considered likely to place the Aquatic ecological community at significant risk of extinction.

Appendix G

AHIMS Search Results

AHIMS Web Services (AWS)
Search Result

Your Ref/PO Number : Durbin Street Bridge 1 km

Client Service ID : 845939

GeoLINK Consulting Pty Ltd

PO Box 1446

Coffs Harbour New South Wales 2450

Attention: Michelle Campione-Van Zetten

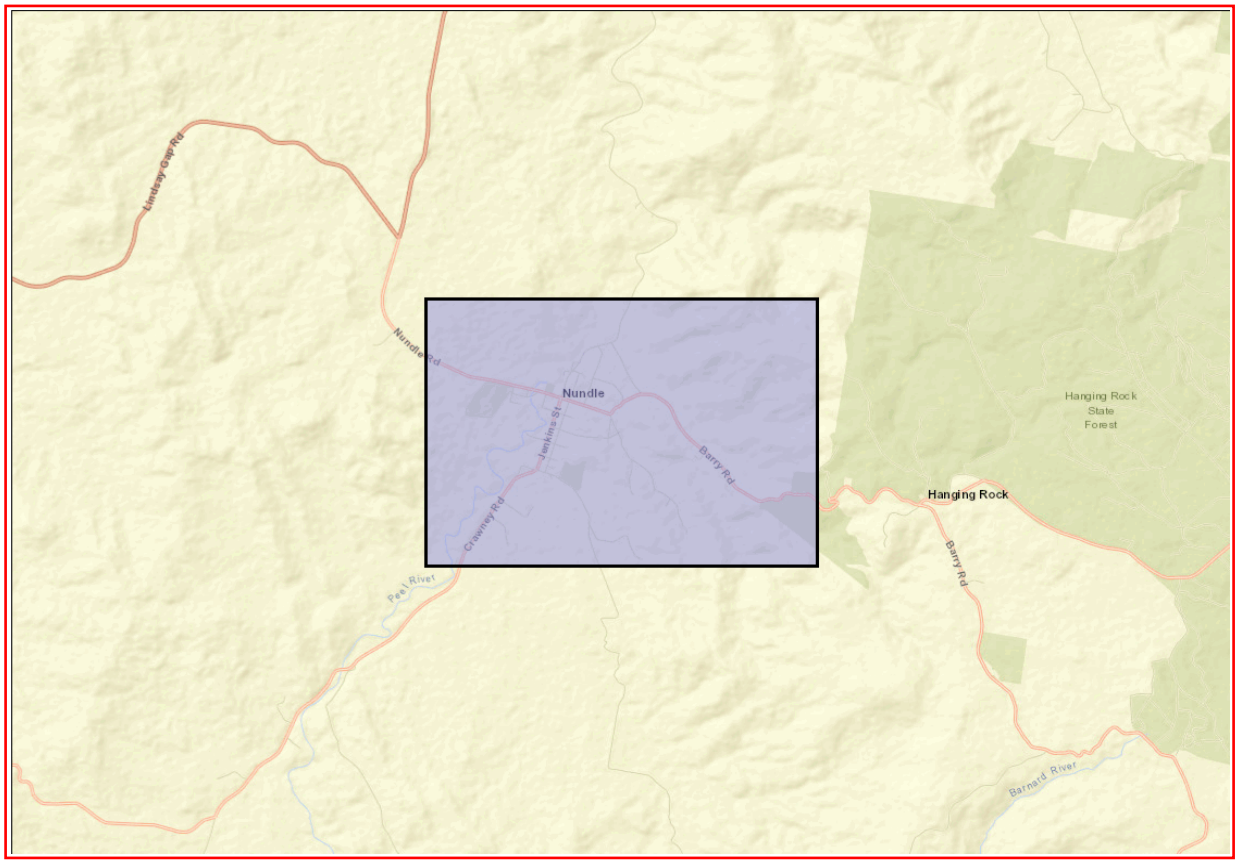
Email: mcampione-vanzetten@geolink.net.au

Date: 04 December 2023

Dear Sir or Madam:

AHIMS Web Service search for the following area at Lat, Long From : -31.4838, 151.1065 - Lat, Long To : -31.4472, 151.1683, conducted by Michelle Campione-Van Zetten on 04 December 2023.

The context area of your search is shown in the map below. Please note that the map does not accurately display the exact boundaries of the search as defined in the paragraph above. The map is to be used for general reference purposes only.



A search of Heritage NSW AHIMS Web Services (Aboriginal Heritage Information Management System) has shown that:

0	**Aboriginal sites are recorded in or near the above location.**
0	**Aboriginal places have been declared in or near the above location. ***

If your search shows Aboriginal sites or places what should you do?

- You must do an extensive search if AHIMS has shown that there are Aboriginal sites or places recorded in the search area.
- If you are checking AHIMS as a part of your due diligence, refer to the next steps of the Due Diligence Code of practice.
- You can get further information about Aboriginal places by looking at the gazettal notice that declared it. Aboriginal places gazetted after 2001 are available on the NSW Government Gazette (https://www.legislation.nsw.gov.au/gazette) website. Gazettal notices published prior to 2001 can be obtained from Heritage NSW upon request

Important information about your AHIMS search

- The information derived from the AHIMS search is only to be used for the purpose for which it was requested. It is not be made available to the public.
- AHIMS records information about Aboriginal sites that have been provided to Heritage NSW and Aboriginal places that have been declared by the Minister;
- Information recorded on AHIMS may vary in its accuracy and may not be up to date. Location details are recorded as grid references and it is important to note that there may be errors or omissions in these recordings,
- Some parts of New South Wales have not been investigated in detail and there may be fewer records of Aboriginal sites in those areas. These areas may contain Aboriginal sites which are not recorded on AHIMS.
- Aboriginal objects are protected under the National Parks and Wildlife Act 1974 even if they are not recorded as a site on AHIMS.
- This search can form part of your due diligence and remains valid for 12 months.

Level 6, 10 Valentine Ave, Parramatta 2150
Locked Bag 5020 Parramatta NSW 2124
Tel: (02) 9585 6345

ABN 34 945 244 274
Email: ahims@environment.nsw.gov.au
Web: www.heritage.nsw.gov.au

Appendix H

Heritage Database Search

Search Results

56 results found.

ANZ Bank 429-433 Peel St	Tamworth, NSW, Australia	(Registered) Register of the National Estate (Non-statutory archive)
Attunga Geological Site Attunga Halls Creek Rd	Attunga, NSW, Australia	(Registered) Register of the National Estate (Non-statutory archive)
Attunga State Forest Ornithological Area Inlet Rd	Attunga, NSW, Australia	(Indicative Place) Register of the National Estate (Non-statutory archive)
Australia Arms Hotel Group Holroyd St	Moore, NSW, Australia	(Registered) Register of the National Estate (Non-statutory archive)
Ben Halls Gap State Forest Morrisons Gap Rd	Ben Halls Gap via Nundle, NSW, Australia	(Registered) Register of the National Estate (Non-statutory archive)
Ben Halls Gap State Forest (part) Morrisons Gap Rd	Nundle, NSW, Australia	(Removed from Register or IL) Register of the National Estate (Non-statutory archive)
Bendemeer Public Cemetery Bendemeer Watsons Creek Rd	Bendemeer, NSW, Australia	(Indicative Place) Register of the National Estate (Non-statutory archive)
Black Snake Gold Mine Nundle Rd	Hanging Rock via Nundle, NSW, Australia	(Indicative Place) Register of the National Estate (Non-statutory archive)
Blair Graves 7 Aurora St	Bendemeer, NSW, Australia	(Indicative Place) Register of the National Estate (Non-statutory archive)
Borah Creek Rail Bridge Tamworth Barraba Railway Line	Upper Manilla, NSW, Australia	(Registered) Register of the National Estate (Non-statutory archive)

Bowling Alley Point Geological Site	Bowling Alley Point, NSW, Australia	(Registered) Register of the National Estate (Non-statutory archive)
Calala Cottage 138-144 Denison St	West Tamworth, NSW, Australia	(Registered) Register of the National Estate (Non-statutory archive)
Carinya Garden 156 Carthage St	Tamworth, NSW, Australia	(Registered) Register of the National Estate (Non-statutory archive)
Church of England School and School Masters Residence (former) 63 Bridge St	WestTamworth, NSW, Australia	(Indicative Place) Register of the National Estate (Non-statutory archive)
Dominican Convent Group 223-227 Marius St	Tamworth, NSW, Australia	(Registered) Register of the National Estate (Non-statutory archive)
Dominican Convent School 223-227 Marius St	Tamworth, NSW, Australia	(Removed from Register or IL) Register of the National Estate (Non-statutory archive)
Dominican Convent and Chapel 223-227 Marius St	Tamworth, NSW, Australia	(Registered) Register of the National Estate (Non-statutory archive)
Goonoo Goonoo Chapel New England Hwy	Goonoo Goonoo, NSW, Australia	(Registered) Register of the National Estate (Non-statutory archive)
Goonoo Goonoo Complex New England Hwy	Goonoo Goonoo, NSW, Australia	(Registered) Register of the National Estate (Non-statutory archive)
Goonoo Goonoo Fountain New England Hwy	Goonoo Goonoo, NSW, Australia	(Registered) Register of the National Estate (Non-statutory archive)
Goonoo Goonoo Post Office and Old Store New England Hwy	Goonoo Goonoo, NSW, Australia	(Registered) Register of the National Estate (Non-statutory archive)

Goonoo Goonoo Woolshed New England Hwy	Goonoo Goonoo, NSW, Australia	(Registered) Register of the National Estate (Non-statutory archive)
Horsley Private Cemetery Glenbarra Rd	Horsley via Manilla, NSW, Australia	(Indicative Place) Register of the National Estate (Non-statutory archive)
Indigenous Place	Glendon via Bendemeer, NSW, Australia	(Registered) Register of the National Estate (Non-statutory archive)
Indigenous Place	Moonbi, NSW, Australia	(Registered) Register of the National Estate (Non-statutory archive)
Indigenous Place	Moore Creek, NSW, Australia	(Registered) Register of the National Estate (Non-statutory archive)
Indigenous Place	Tamworth, NSW, Australia	(Registered) Register of the National Estate (Non-statutory archive)
Lands Office 25 Fitzroy St	Tamworth, NSW, Australia	(Registered) Register of the National Estate (Non-statutory archive)
Linton Nature Reserve Barraba Kingstown Rd	Barraba, NSW, Australia	(Registered) Register of the National Estate (Non-statutory archive)
Macdonald River Road Bridge New England Hwy	Bendemeer, NSW, Australia	(Registered) Register of the National Estate (Non-statutory archive)
Mechanics Institute (former) 87-93 Brisbane St	Tamworth, NSW, Australia	(Registered) Register of the National Estate (Non-statutory archive)
Mount Kaputar National Park Narrabri Bingara Rd	Narrabri, NSW, Australia	(Registered) Register of the National Estate (Non-statutory archive)

Namoi River Road Bridge Manilla St	Manilla, NSW, Australia	(Registered) Register of the National Estate (Non-statutory archive)
Nundle Courthouse (former) and Police Station Jenkins St	Nundle, NSW, Australia	(Registered) Register of the National Estate (Non-statutory archive)
Oaky Creek Rail Bridge Tamworth Barraba Railway Line	Barraba, NSW, Australia	(Registered) Register of the National Estate (Non-statutory archive)
Oxley Park Endeavour Dr	Tamworth, NSW, Australia	(Registered) Register of the National Estate (Non-statutory archive)
Peel River Rail Bridge Peel St	Tamworth, NSW, Australia	(Registered) Register of the National Estate (Non-statutory archive)
Power House Monument 248 Marius St	Tamworth, NSW, Australia	(Indicative Place) Register of the National Estate (Non-statutory archive)
Royce Cottage Museum 197 Manilla St	Manilla, NSW, Australia	(Registered) Register of the National Estate (Non-statutory archive)
Somerton Road Travelling Stock Route (part) Lower Somerton Rd	Manilla, NSW, Australia	(Registered) Register of the National Estate (Non-statutory archive)
St Nicholas Catholic Church 18 White St	Tamworth, NSW, Australia	(Registered) Register of the National Estate (Non-statutory archive)
Tamworth Council Chambers and Town Hall (former) 214 Peel St	Tamworth, NSW, Australia	(Registered) Register of the National Estate (Non-statutory archive)
Tamworth Gaol (former) 154 Johnston St	Tamworth, NSW, Australia	(Indicative Place) Register of the National Estate (Non-statutory archive)

Tamworth Hospital (Main Block only) 31 Dean St	Tamworth, NSW, Australia	(Registered) Register of the National Estate (Non-statutory archive)
Tamworth Post Office 402A Peel St	Tamworth, NSW, Australia	(Registered) Register of the National Estate (Non-statutory archive)
Tamworth Post Office 402A Peel St	Tamworth, NSW, Australia	(Listed place) Commonwealth Heritage List
Tamworth Primary School Upper St	Tamworth, NSW, Australia	(Registered) Register of the National Estate (Non-statutory archive)
Tamworth Town Hall 28-30 Fitzroy St	Tamworth, NSW, Australia	(Rejected Place) Register of the National Estate (Non-statutory archive)
Upper Dungowan Uniting Church Nowendal Rd	Dungowan, NSW, Australia	(Indicative Place) Register of the National Estate (Non-statutory archive)
Warrabah National Park Namoi River Rd	Kingstown, NSW, Australia	(Registered) Register of the National Estate (Non-statutory archive)
Warrabah Nature Reserve (former) Namoi River Rd	Kingstown, NSW, Australia	(Registered) Register of the National Estate (Non-statutory archive)
Watsons Creek Nature Reserve	Watsons Creek, NSW, Australia	(Indicative Place) Register of the National Estate (Non-statutory archive)
Weabonga Geological Site	Woolomin, NSW, Australia	(Registered) Register of the National Estate (Non-statutory archive)
Wesley Uniting Church 144 Marius St	Tamworth, NSW, Australia	(Rejected Place) Register of the National Estate (Non-statutory archive)

Winton Cemetery Woodland Remnant New Winton Rd	Tamworth, NSW, Australia	(Registered) Register of the National Estate (Non-statutory archive)
Woolomin Geological Site	Woolomin, NSW, Australia	(Registered) Register of the National Estate (Non-statutory archive)

Report Produced: Fri Dec 8 11:21:56 2023

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Appendix I

Construction Noise Estimator

Distanced Based Assessment (Noisiest Plant)

Please pick from drop-down list in orange cells

Noise area category		R0
RBL or L_{A90} Background level (dB(A))	**Day**	30
	Evening	30
	Night	30
$L_{Aeq(15minute)}$ Noise Mangement Level (dB(A))	**Day**	40
	Day (OOHW)	35
	Evening	35
	Night	35
Noisiest plant		Concrete Truck
Is there line of sight to receiver?		Yes

Steps for Screening Assessment:
1. Schedule noisy works to occur in standard hours where possible or before 11pm and implement Standard Measures.
2. Select the representative noise area category (cell C8). The worksheet titled 'Representative Noise Environ.' provides a number of examples to help select the noise area category.
3. Select the noisiest plant (cell C15). If not found in drop-down list, refer to 'Source List' and select a representative plant with equivalent sound power level.
4. Is there line of sight to receiver? Select the appropriate scenario from the drop down list (cell C17). Solid barrier can be in the form of road cutting, solid construction hoarding, acoustic curtain, timber lapped and capped fence, shipping container, site office, etc. Please note that vegetation and trees are not considered to be a form of solid barrier.
5. Determine if there are any receivers within the affected distance (undeveloped or developed areas) for each relevant time period (cells C24 to C33 for residential receiver or cells F40 to F89 for non-residential receivers)
   (a) If there are no affrected receivers within the affected distance and the project's impact duration is less than 3 weeks: document the background noise levels, noise management levels and the affected distances for the noisiest plant in an internal memo or letter.
   (b) if there are no affected receivers within the affected distance and the project's impact duration is more than 3 weeks: proceed to use the estimator to predict noise levels at the worst affected receiver, then document background noise levels, noise management levels and the predicted noise levels from the noisiest plant at the worst affected receiver in an internal memo or letter.
   (c) if there are a few affected receivers and the project's impact duration is greater than three and less than six weeks: proceed to use the estimator to predict noise levels and mitigation measures at all receivers to inform the consultation.
   (d) proceed with the following steps to undertake a distance based assessment if there are a few affected receivers or many affected receivers and the project's impact duration is less than 3 weeks .
   (e) undertake a detailed noise assessment if there are a few affected receivers and the project's impact duration is greater than 6 weeks or there are many receivers and the project's impact duration is greater than 3 weeks.

(Note that suitable noise management levels for other noise-sensitive businesses not identified in the Construction Noise Estimator should be

Steps for Distance Based Assessment:
6. Identify the affected distance corresponding to the NML (see step #5).
7. Identify and implement standard mitigation measures where feasible and reasonable. Include any shielding implemented as part of the standard mitigation measures by changing the selection in the 'Is there line of sight to receiver' drop-down list.
8. Identify if there are any receivers that are within the additional mitigation measures distances and identify feasible and reasonable measures at each receiver (rows 24 to 33 & columns D to columns R for residential receiver or rows 40 to 89 & columns G to R for non residential receiver).
9. Where night works are involved, identify sleep disturbance affected distance (cells S27 and S32).
10. Document the outcomes of these steps.

Abbreviation	Measure
N	Notification (letterbox drop or equivalent
SN	Specific notifications
PC	Phone calls
IB	Individual briefings
RO	Respite offer
R1	Respite period 1
R2	Respite period 2
DR	Duration respite
AA	Alternative accommodation
V	Verification

Note that spot check verification of noise levels and individual briefings are not required for projects with less than 3 weeks impact duration

Note: If the subject plant cannot be found on the drop down list of noisiest plant (cell C16), then choose one with equivalent sound power level and make a note in the assessment memo / report. See 'Sources' worksheet for all plant contained in the database.

Residential receiver

			$L_{Aeq(15minute)}$ noise level above background (L_{A90})											$L_{Aeq(15minute)}$ 75 dB(A) or greater (Highly affected)			Sleep disutrbance L_{Amax} 65 dB(A)
			5 to 10 dB(A)			10 to 20 dB(A)			20 to 30 dB(A)			> 30 dB(A)					
			Noticeable			Clearly audible			Moderately intrusive			Highly intrusive					
		Affected distance (m)	Measures	Within distance (m)	Mitigation level (dB(A))	Measures	Within distance (m)	Mitigation level (dB(A))	Measures	Within distance (m)	Mitigation level (dB(A))	Measures	Within distance (m)	Mitigation level (dB(A))	Measures	Within distance (m)	Mitigation level (dB(A))	Affected distance (m)
Undeveloped green fields, rural areas with isolated dwellings	**Day**	365							N	175	50	N	75	60	N, PC, RO	20	75	
	Day (OOHW)	525				N, R1, DR	365	40	N, R1, DR	175	50	N, R1, DR, PC, SN	75	60	N, PC, RO	20	75	
	Evening	525				N, R1, DR	365	40	N, R1, DR	175	50	N, R1, DR, PC, SN	75	60	N, PC, RO	20	75	
	Night	525	N	525	35	N, R2, DR	365	40	N, PC, SN, R2, DR	175	50	AA, N, PC, SN, R2, DR	75	60	N, PC, RO	20	75	95
	Highly Affected	20													N, PC, RO	20	75	
Developed settlements (urban and suburban) or over water	**Day**	460							N	200	50	N	85	60	N, PC, RO	20	75	
	Day (OOHW)	690				N, R1, DR	460	40	N, R1, DR	200	50	N, R1, DR, PC, SN	85	60	N, PC, RO	20	75	
	Evening	690				N, R1, DR	460	40	N, R1, DR	200	50	N, R1, DR, PC, SN	85	60	N, PC, RO	20	75	
	Night	690	N	690	35	N, R2, DR	460	40	N, PC, SN, R2, DR	200	50	AA, N, PC, SN, R2, DR	85	60	N, PC, RO	20	75	105
	Highly Affected	20													N, PC, RO	20	75	