HW9 s1705 – 1720 Glenburnie

Minor Works Review of Environmental Factors

Kamilaroi Country

Transport for NSW | August 2022

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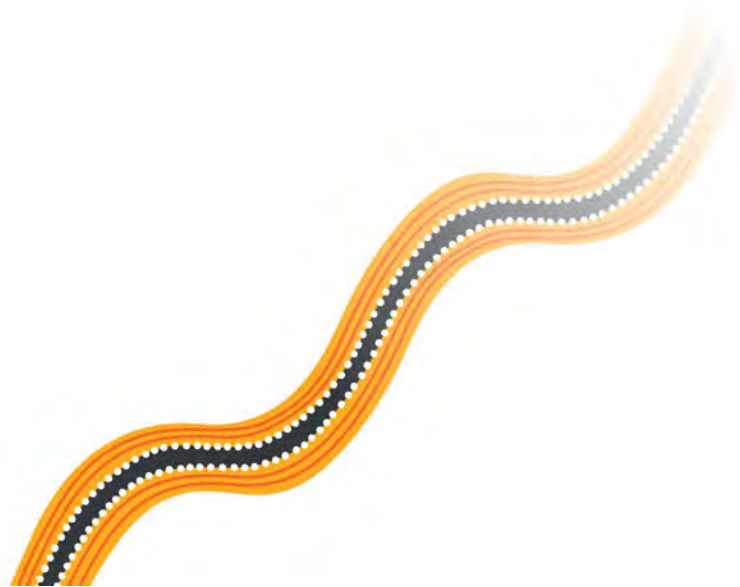
Acknowledgement of Country

Transport for NSW acknowledges the Kamilaroi people who are the traditional custodians of the land on which the Glenburnie Project is proposed.

We pay our respects to their Elders past and present and celebrate the diversity of Aboriginal people and their ongoing cultures and connections to the lands and waters of NSW.

Many of the transport routes we use today – from rail lines, to roads, to water crossings – follow the traditional Songlines, trade routes and ceremonial paths in Country that our nation's First Peoples followed for tens of thousands of years.

Transport for NSW is committed to honouring Aboriginal peoples' cultural and spiritual connections to the land, waters and seas and their rich contribution to society.



HW9 s1705 – 1720 Glenburnie

Review of environmental factors

Transport for NSW | August 2022

Prepared by GeoLINK Consulting Pty Ltd and Transport for NSW

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Document controls

Approval and authorisation

Title	HW9 s1705 – 1720 Glenburnie Minor works review of environmental factors
Accepted on behalf of Transport for NSW by:	Mitchel Ingram Project/Contract Manager
Signed:	[redacted]
Dated:	29/09/22

Document status

Document status	Date	Prepared by	Reviewed by
4215-1005 (Draft 1)	13/06/2022	Theresa Choi (GeoLINK)	Simon Williams (GeoLINK)
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4215-1010 (Final)	29/09/2022	Theresa Choi (GeoLINK)	Simon Williams (GeoLINK)

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1. Introduction

The purpose of the Minor Works review of environmental factors (REF) is to describe the proposal, to document the likely impacts of the proposal on the environment, to detail mitigation measures to be implemented and to determine whether or not the proposal can proceed. For the purposes of this work Transport for NSW (Transport) 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 including that Transport examine and take into account 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 proposal is likely to have a significant impact on the environment and therefore the necessity for an environmental impact statement to be prepared and approval to be sought from the Minister for Planning and Public Spaces 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 proposal to significantly impact a matter of national environmental significance, including nationally listed threatened biodiversity matters, or the environment of Commonwealth land. Where a significant impact is considered likely on nationally listed biodiversity matters, either the proposal must be reconsidered, or a Project REF must be prepared.

2. The proposal

2.1 Description

2.1.1 Proposal location

Location details	
Title	Willow Tree to Uralla Safety Works Glenburnie
File number	A40938856
Road name and number	New England Highway (HW9)
Closest cross road(s):	New England Highway (HW9), Glenburnie Road
Chainage of works:	Segments 1705 – 1720 plus ties in with adjacent segments
Local government area:	Tamworth Regional, Uralla
Transport for NSW region:	North Region

2.1.2 Description of proposed work

Transport for NSW (TfNSW) proposes to upgrade a 4.55 km section of the New England Highway (HW9) at Kentucky, NSW, approximately 18 km south of Uralla. This assessment is informed by Issue For Construction (IFC) Design Plans.

The scope for the project includes:

- Widening sealed shoulder width to min 1 m desired up to 3 m and 1 m Wide Centre Line Treatment (WCLT).
- Rehabilitation of the existing pavement in segments 1717 and 1720.
- Culvert extensions, potential replacements only if required, lining treatments if required. Noting that drainage structure works are minimal for this project as there are only four road-sized culverts over the entire project length. Refer to below section on drainage structure works for more specific details.
- Culvert desilting, inlet/outlet desilting, and inlet/outlet re-stabilisation via rock or jute matt lining as appropriate.
- Longitudinal SO kerb (concrete dish drain) adjacent to some of the cuttings where nominated in the design, bedding on a No Fines Concrete (NFC) with trench drain for subsurface drainage.
- Installation of new flexible guardrail roadside safety barriers.
- Earthworks/embankment widening in some locations to achieve the desired safer cross section.
- Vegetation removal including approximately 273 trees >10 cm DBH for safety reasons. Of the 273 trees for removal, 143 are within the existing disturbed zone, and 130 outside the existing disturbed zone
- Removal of regrowth vegetation to maintain table drain functionality, maintain safe site distances, and for roadside safety hazards.
- Removal of general regrowth vegetation in the disturbed zone under what is permissible in accordance with environmental assessment for routine and minor works and applicable standard safeguards. For example, regrowth vegetation <10 years old growing within table drains and the existing disturbed zone.
- Removal of mature trees some of which are outside the disturbed zone. Refer to vegetation removal scope. This is required to achieve the desired safer road cross section. Alignment deviations and safety barrier treatments will be adopted to minimise this impact as much as practically possible.

- Maintenance of existing table drains/catch drains involving, desilting where needed, erosion prevention treatments where needed such as geofabric and rock lining, or jute mesh as appropriate to the location considering longitudinal grade and catchment.
- New sprayed seal wearing surface and line marking.
- Roadside signage maintenance or improvements as identified throughout the design process.

Below is a summary of the general work methodology:

1. Establish site compound
2. Implement traffic management plans
3. Delineate no go zones and any vegetation to be protected
4. Install sediment and erosion controls
5. Mulch long grass and regrowth vegetation within disturbed zone
6. Establish spoil site including sed and erosion controls
7. Extend culverts and culvert inlet/outlet treatments as per scope
8. Construct SO kerbs and trench drains below SO kerbs
9. Undertake earthworks to construct embankment widenings where required
10. Construct the shoulder widenings, strip and remove top layer of verge material containing organic matter. Replace with DGB20.
11. Undertake pavement rehabs in 500 m sections, progressively sealing the works before constructing the next section
12. Reseal prep Heavy Patch pavement on the non-rehabilitated segments where required
13. Seal the surface with a bituminous sprayed seal (primerseal)
14. Undertake any required table drain maintenance as the works progress through the sections
15. Install roadside safety barriers
16. Install new/replace/relocated roadside signage as required
17. Install pavement delineation, longitudinal, and transverse line marking,
18. Disestablish site
19. Final seal approximately 12 months later
20. Install pavement delineation, longitudinal, and transverse line marking
21. Install retro-reflective raised pavement markers (RPMs)

Equipment/Machinery to be used include:

- Rollers
- Graders
- Front end loaders
- Skid steel loaders
- Backhoe
- Excavators
- Trucks – Tippers, spreaders, truck and dogs, floats
- Road Profilers
- Pulleys/Mixers
- Bitumen sprayers
- Bitumen tankers
- Watercarts
- Wood chippers
- Stump grinders
- EWPs
- Chainsaws

- Concrete saws for culvert works
- Tractor brooms
- Street sweepers and suction trucks
- Post drivers for guardrail installation
- Forklift/material handler

Work will be carried out during the below working hours:

- 7am to 6pm Monday to Fridays
- 7am to 6pm Saturdays
- Sundays and public Holidays – No work

Exceptions to the above working hours include:

- Emergency works, such as that needed after heavy rainfall to restore a safe road surface.
- Dust suppression which is required over weekends, public holidays, and holiday periods

2.1.3 Objectives of works

The objective of the road safety improvement work is to improve the safety of the subject segments on New England Highway (HW9) at Kentucky. The objective would be achieved through select tree removal, pavement widening, including WCLT and wider shoulders and associated culvert works.

The improvements under this project will improve the safety of this section of highway significantly and overall contribute towards the reductions of fatalities and serious injuries on the New England Highway into the future.

2.1.4 Ancillary facilities

Ancillary facilities		
Will the proposal require the use or installation of a compound site? Three potential locations have been identified for a compound site: • Registered stockpile Site Nth 9/027 Standbye Hill Stockpile site approximately 1.2 km south of the Glenburnie project located in segment 1690 LHS • Segment 1705 at Standbye rest area. Located on the northbound side approximately half way through the segment. (Latitude -30.753071° Longitude 151.384044°) • Segment 1720/1725 that has been a previous construction spoil site. Location is at the segment marker on both the north and south bound sides. (Latitude -30.736736° Longitude 151.418044°) The site compound will include, a site office, meal rooms, toilet blocks, shipping containers for secured storage, heavy vehicle parking, light vehicle parking, material storage, refuelling, and concrete wash out within bunded area.	☑ Yes	☐ No
Will the proposal require the use or installation of a stockpile site? The following existing and registered stockpile sites will be utilised for the project (refer to **Illustration 2.1** and **Illustration 2.2)**. • Registered stockpile Site Nth 9/027 Standbye Hill Stockpile site approximately 1.2 km south of the Glenburnie project located in segment 1690 LHS.	☑ Yes	☐ No

Ancillary facilities		
• Registered stockpile Site Nth 9/028 South Old Wollun Rd Stockpile site located within the project segment 1720 RHS • Registered Stockpile Site Nth9/029 Kentucky Truck Parking Stockpile site approximately 2.5 km north of the Glenburnie project located on LHS segment 1735 The stockpile sites will be used for temporary storage of materials generated throughout the project. These may include: • Mulch/woodchip • Unprocessed vegetation awaiting chipping/mulching • Reclaimed road pavement material • Mill road base material • General spoil awaiting transfer to spoil site or repurposing • Sealing aggregates • Unsuitable material such as wet subgrade material awaiting further transfer • General solid waste awaiting transfer to landfill • Precast concrete drainage products, pipes, headwalls, pits, etc		
Are any other ancillary facilities required (e.g, temporary plants, parking areas, access tracks)? **Spoil Sites** No suitable spoils site was identified within the project length without required significant vegetation removal. Therefore, it is planned to utilise existing spoil sites which have been assessed during other environmental assessments as noted below. • Segment 1750 and continuing into segment 1755 on the northbound side approximately 8.5 km starting just north of Hillcrest Road and finishing at culvert 509531. This is within the existing disturbed zone. The areas is approximately 4,500 m^2 and could cater for an estimated 6,000 m^3. Refer to **Illustration 2.1**. This spoil site has been assessed as part of the Thunderbolts Rock Step 2 memo and Biodiversity Assessment Report. • Segment 1756 on the northbound side at starting approximately 9.97 km into segment and finishing north of culvert 509536. With culvert 509534 we would stop before the culvert and start on the other side as there is no plan to do any works on the culvert. Culverts 509535 and 509536 will be extended on the outlet sides to accommodate spoil. This spoil site is within the existing disturbed zone. The area is approximately 6,000 m^2 (500 x 12 m) and could cater for an estimated 15,000 m^3. This spoil site has been assessed as part of the Thunderbolts Rock Step 2 memo and Biodiversity Assessment Report. • Segment 1635 Carlisle Gully. This spoil site has been assessed as part of the Carlisle Gully/Rimbanda Project MWREF and Biodiversity Assessment Report and has remaining capacity of approximately 8000 m^3. This is located 8 km south of the project. **Plant Parking Areas** The following suitable plant parking locations that have been identified:	☑ Yes	☐ No

Ancillary facilities

- Segment 1705 approximately 375 m into segment on the left hand side (Lat -30.754716° Long 151.379955°)
- Segment 1705 approximately 780 m into segment on the left hand side (Lat -30.753014° Long 151.383806°)
- Segment 1715 approximately 835 m into segment on the left hand side (Lat -30.744904° Long 151.397343°)
- Segment 1717 approximately 920 m into segment on the right hand side (Lat -30.740565° Long 151.406878°)
- Segment 1720/1725 at the segment marker both sides of the road (Lat -30.736657° Long 151.418042°)
- Any of the nominated compound site, stockpile sites, and spoil sites
- On the shoulder/verge of the within the existing road reserve if a safe location, not under dripline of trees, and does not result in any mud tracking back onto the road

Figure 2-1 View north-east of existing spoil site and proposed compound site at Segment 1720/1725 southbound

Figure 2-2 View north-east of plant parking site at segment 1705 approximately 375 m into segment on the left hand side (Lat -30.754716° Long 151.379955°)

Figure 2-3 View north-west of proposed plant parking site and compound site Standbye Rest Area at segment 1705 approximately 780 m into segment on the left hand side (Lat -30.753014° Long 151.383806°)

2.1.5 Proposed date of commencement

The project is programmed and funded for delivery in the 22/23 financial year. At the time of writing this MWREF the works program indicates construction commencing October 2022.

The project duration is estimated to be 4-6 months, weather permitting.

2.2 Need and options

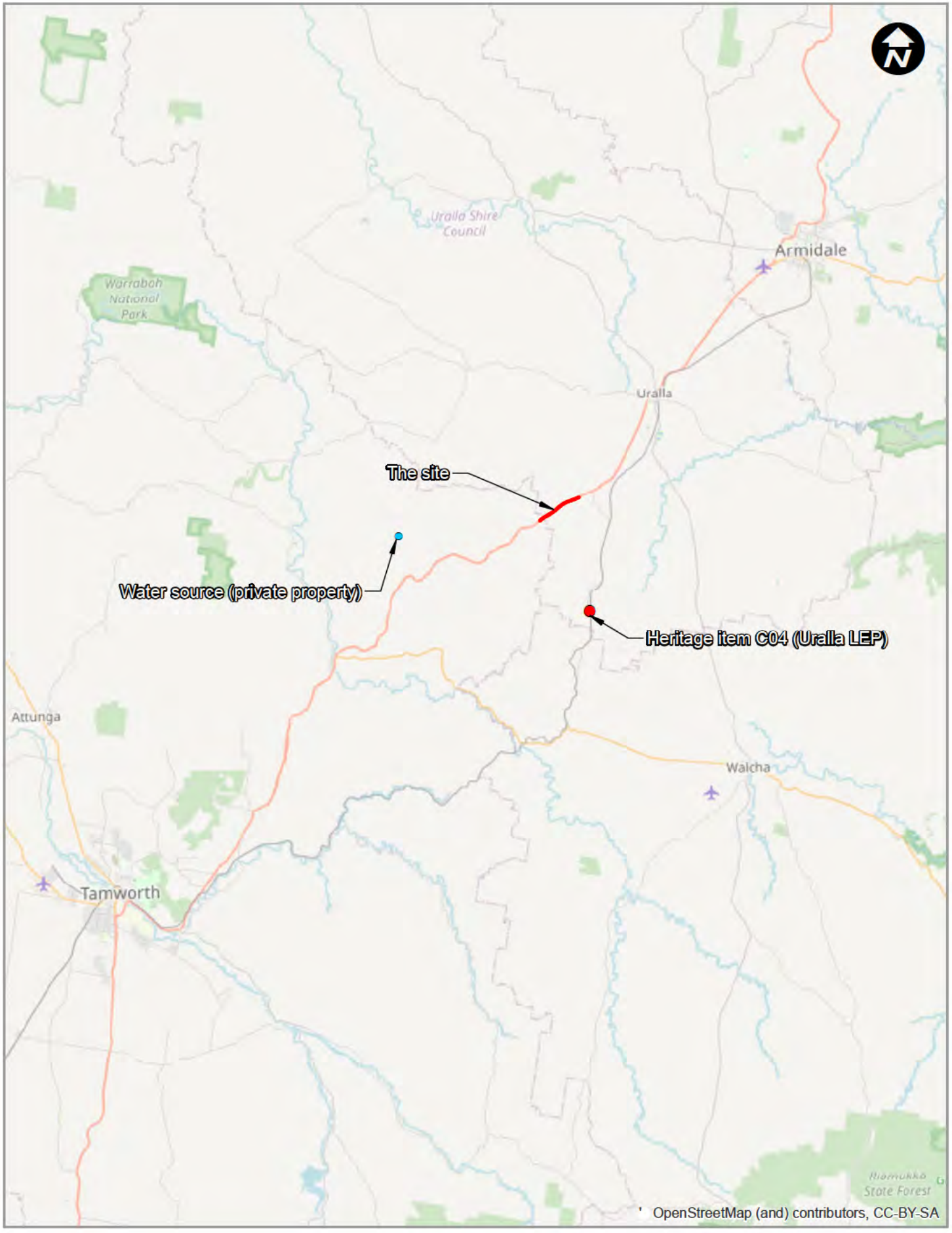
2.2.1 Options considered

The options considered for the proposal included:

Option 1 - 'Do nothing'. The 'do nothing' approach does not address the issue of the road safety of the subject sections of New England Highway at Kentucky. As such, it does not address the objectives of the project.

Option 2 - 'Carry out road safety improvements'. This option is the preferred option. Installing additional pavement and WCLT would ensure an improvement to the safety of the subject section of the New England Highway. This provides the following benefits:

- Reduce the cost of maintenance along the New England Highway
- Improve road safety for road users
- Provide a new road surface to meet the existing and future freight needs along this section of the New England Highway
- Support regional and local economic development.



0 10 km

Location of Works - Illustration 2.1

GeoLINK environmental management and design

HW9 s1705-1720 Glenburnie Minor Works Review of Environmental Factors
4215-1006

Information shown is for illustrative purposes only
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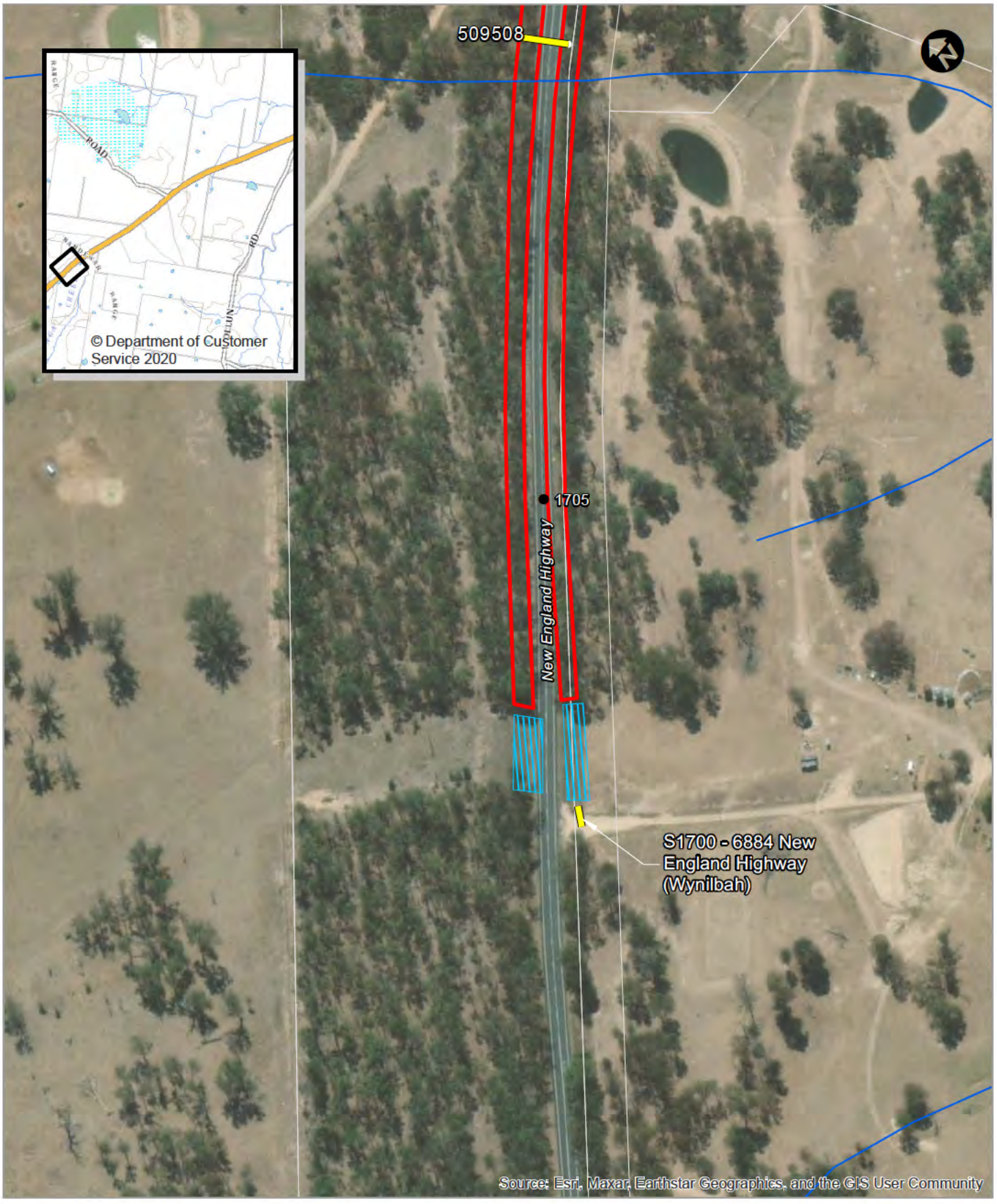
Source of base data: OpenStreetMap
Date: 27/07/2022



LEGEND

Area of works | Plant parking | Watercourse | Segment marker

Cadastre | Culvert

0 50 Metres

Works Area
Illustration 2.2 - Sheet 1 of 10

Information shown is for illustrative purposes only
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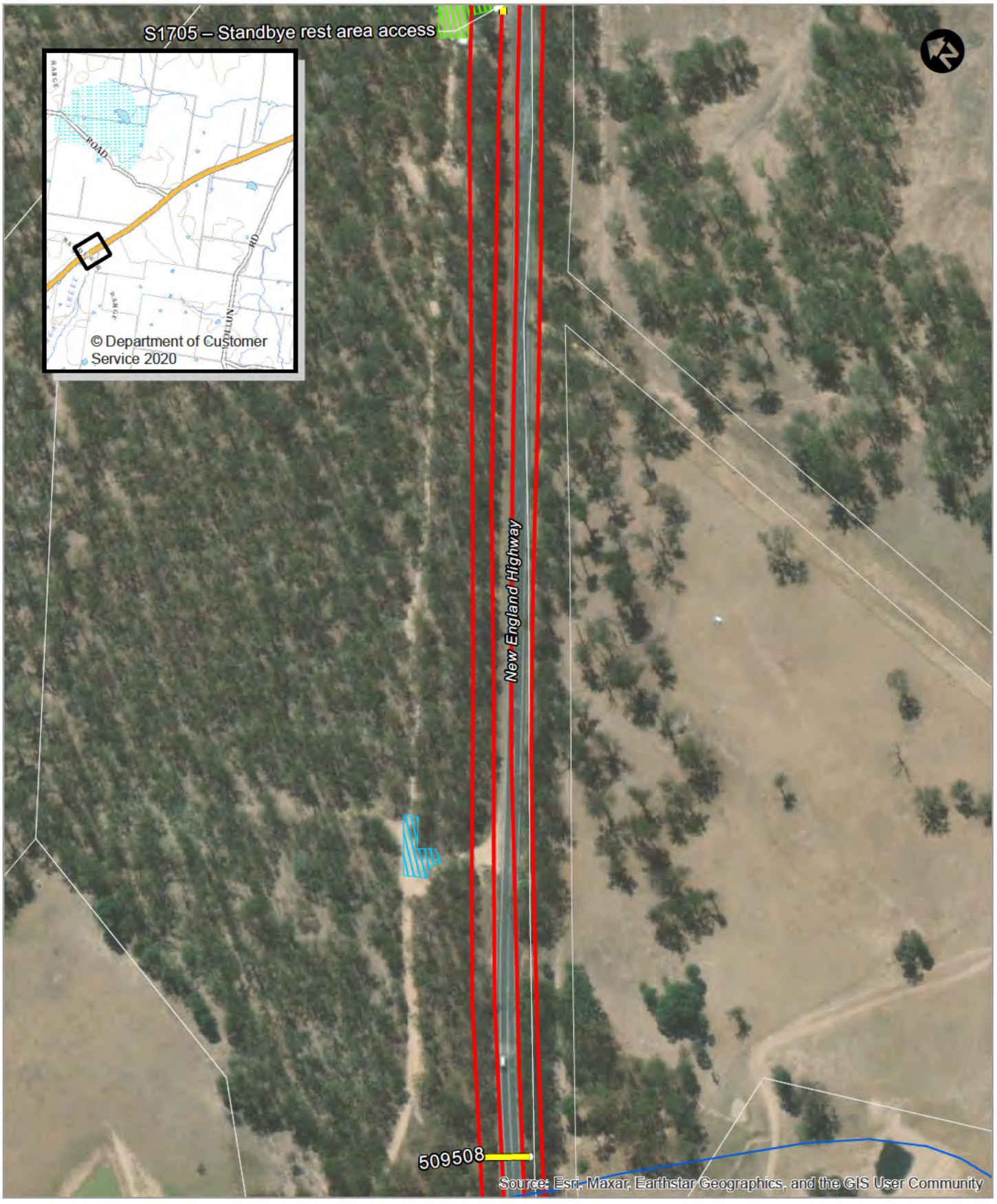
Date: 27/07/2022



LEGEND

- Area of works
- Cadastre
- Plant parking
- Plant parking / compound site
- Watercourse
- Culvert

0 50 Metres

Works Area
Illustration 2.2 - Sheet 2 of 10

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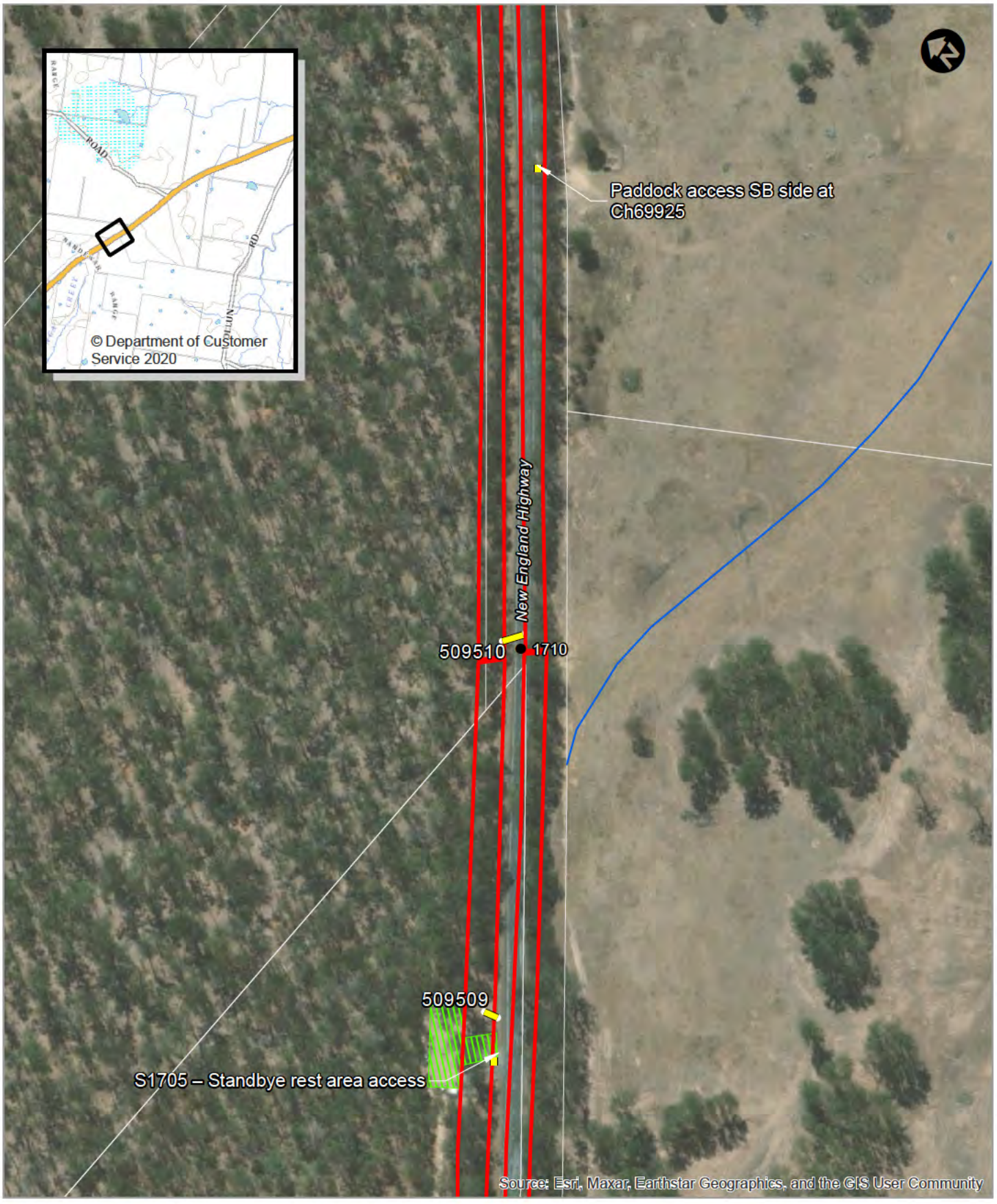

LEGEND

Area of works
Cadastre
Plant parking / compound site
Watercourse
Culvert
Segment marker

0 50 Metres

Works Area
Illustration 2.2 - Sheet 3 of 10

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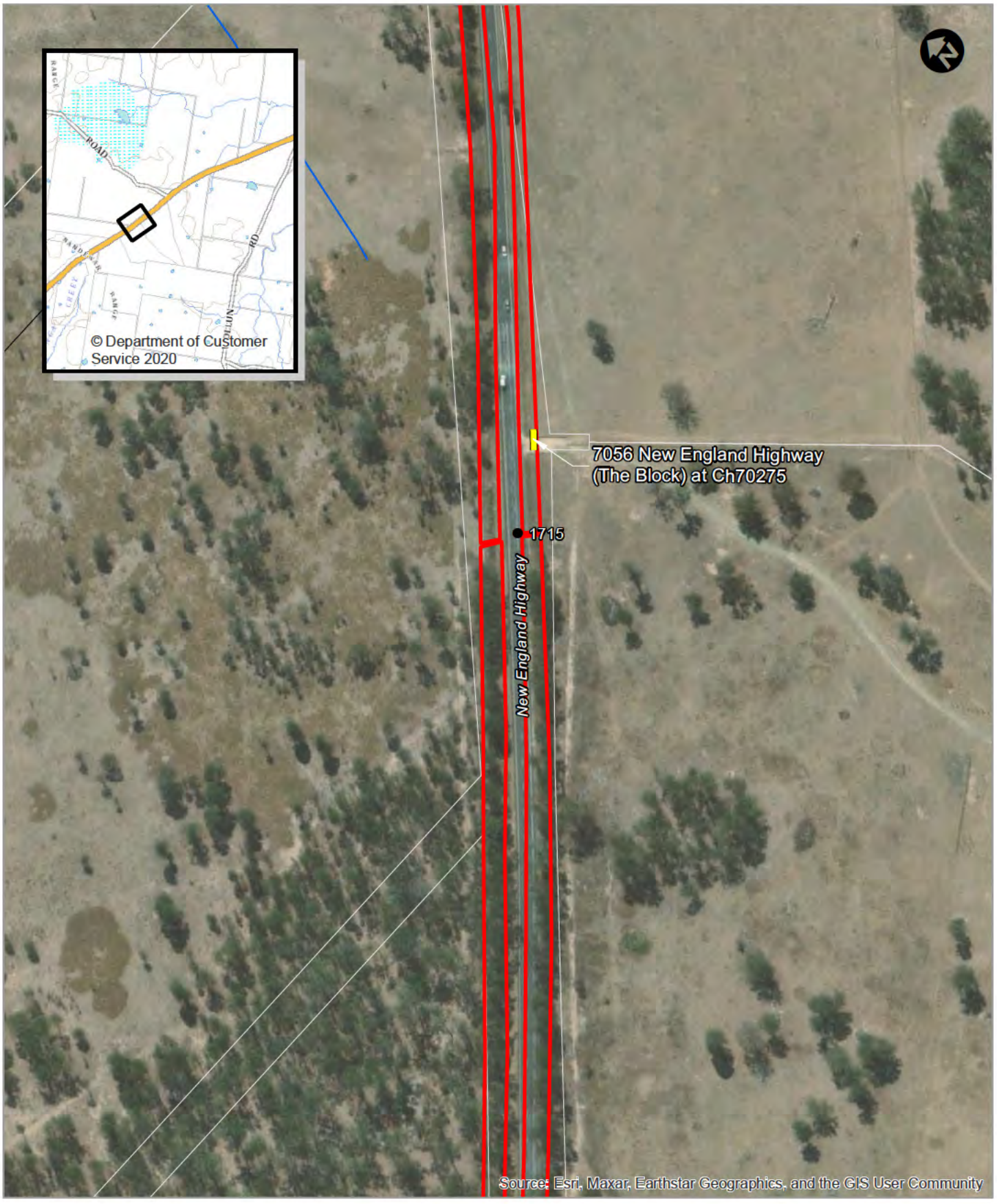

LEGEND

- Area of works
- Cadastre
- Watercourse
- Culvert
- Segment marker

0 50 Metres

Works Area
Illustration 2.2 - Sheet 4 of 10

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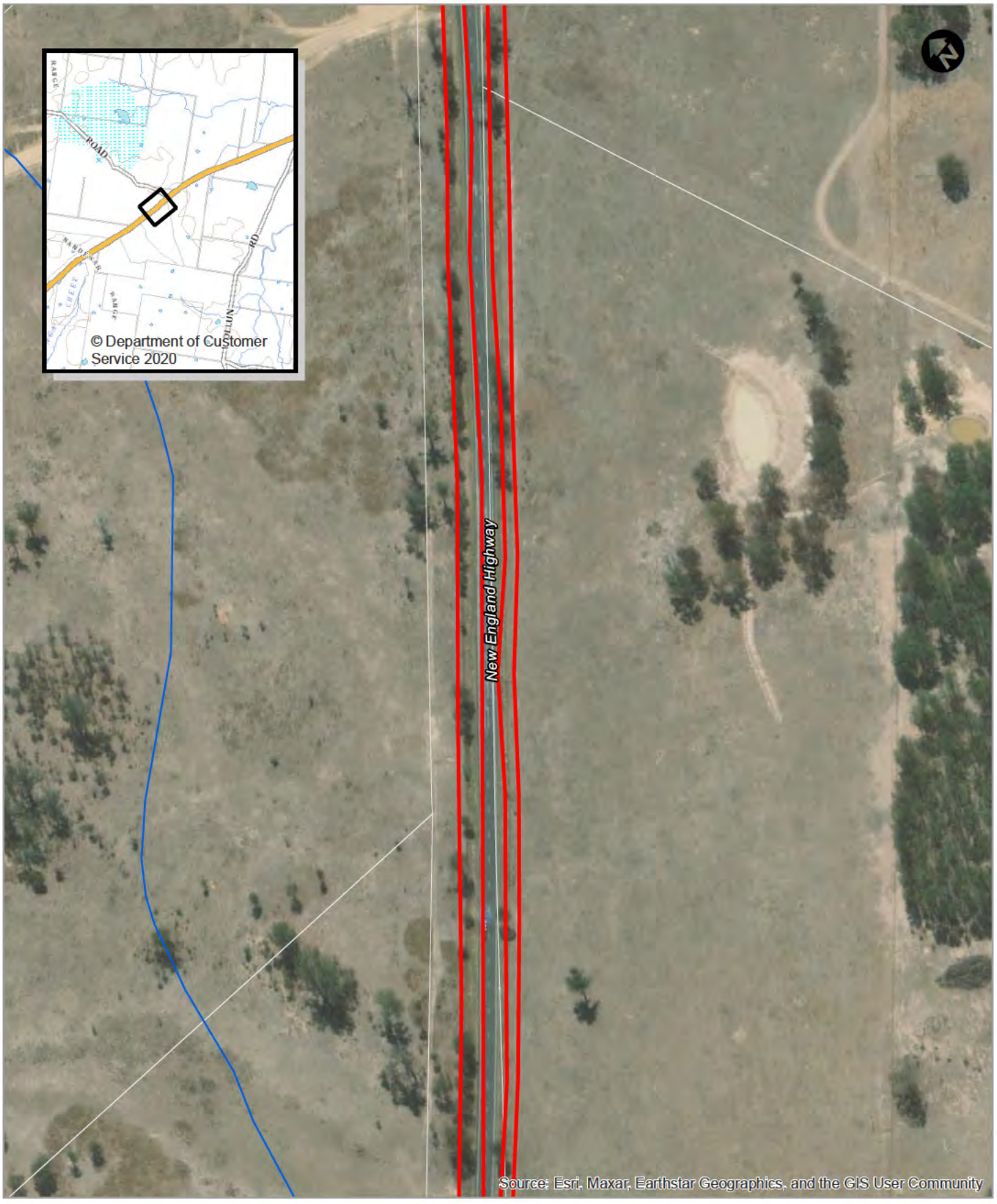

LEGEND

Area of works
Cadastre
Watercourse

0 50 Metres

Works Area
Illustration 2.2 - Sheet 5 of 10

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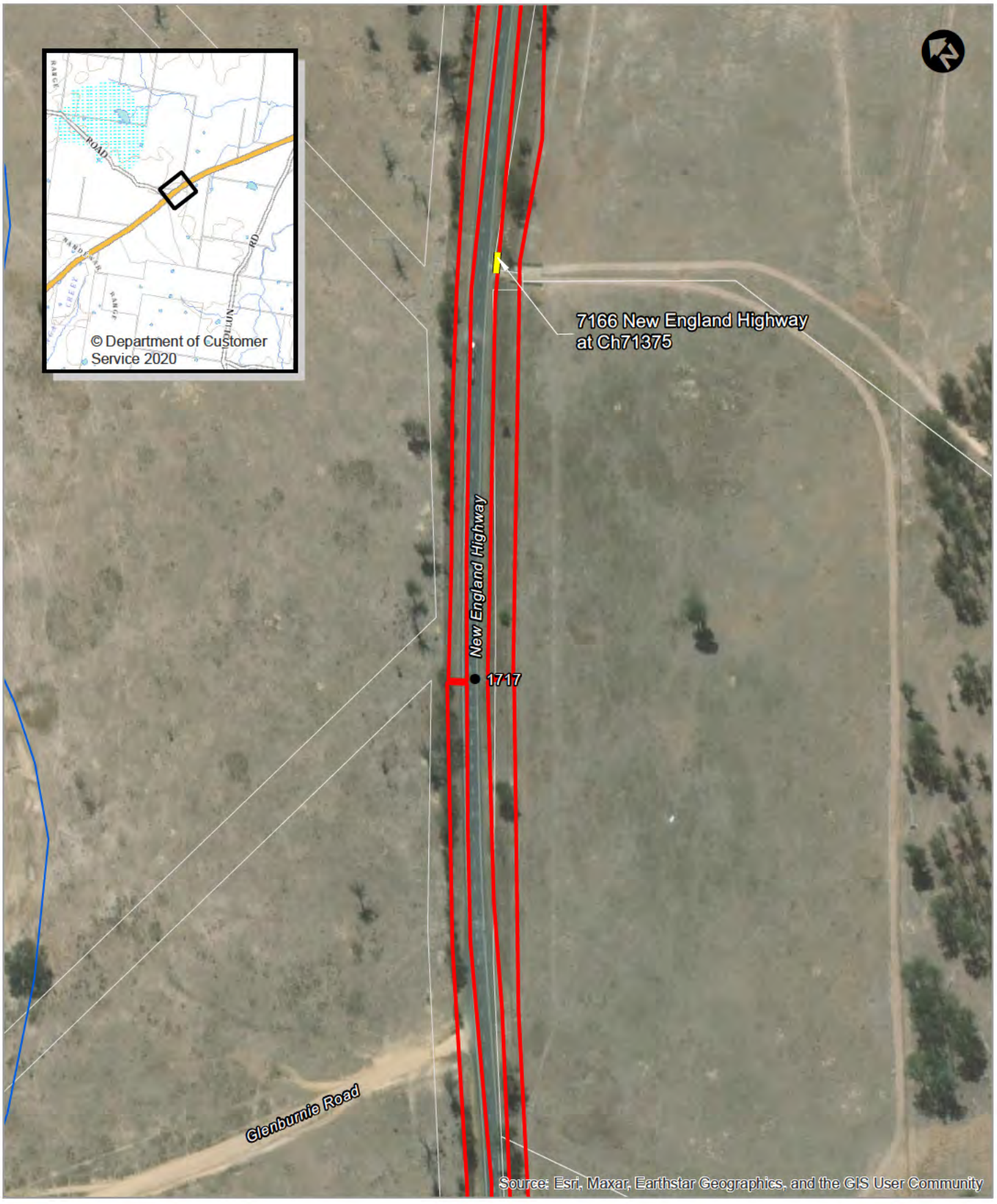

LEGEND

- Area of works
- Cadastre
- Watercourse
- Culvert
- Segment marker

0 50 Metres

Works Area
Illustration 2.2 - Sheet 6 of 10

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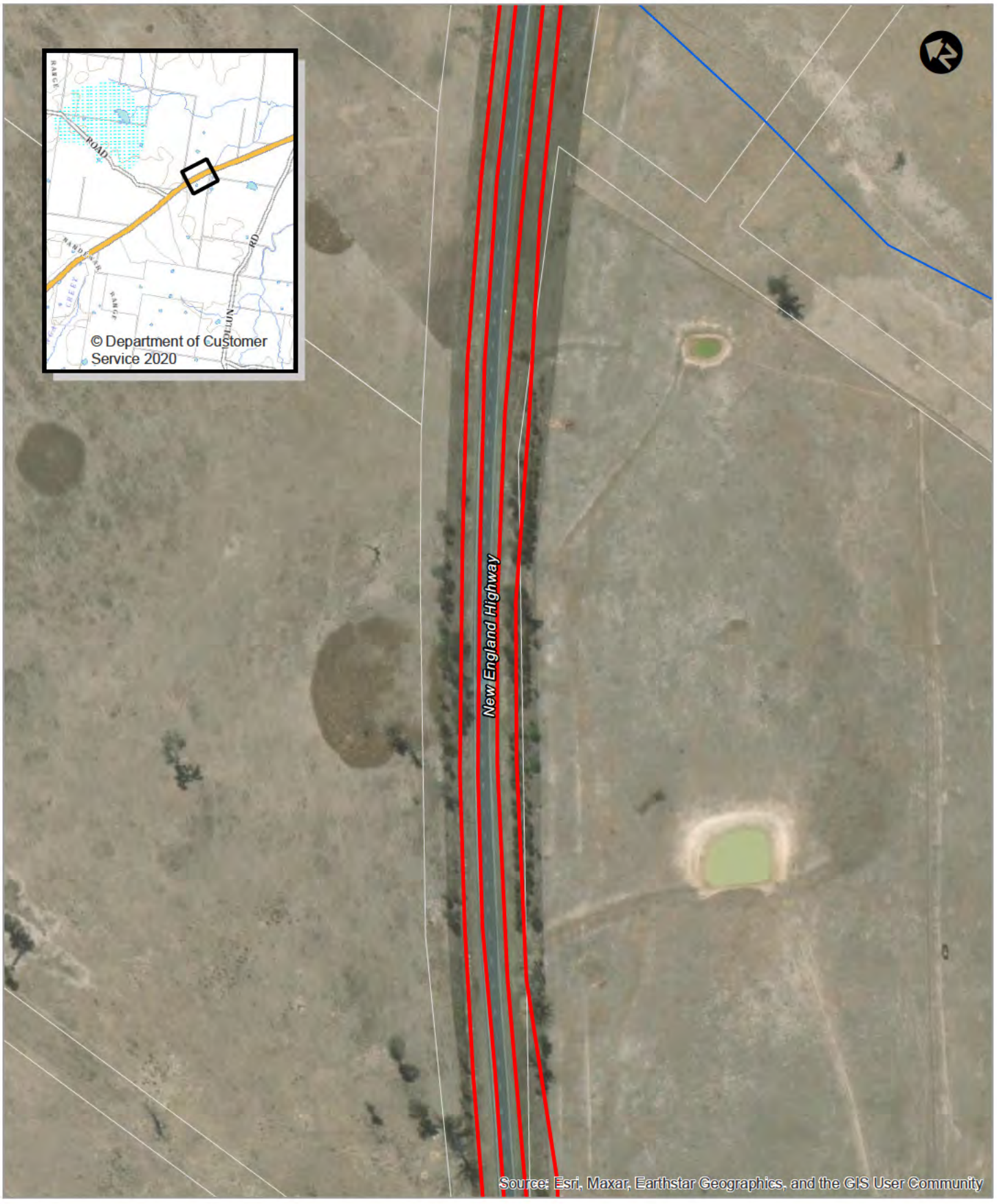

LEGEND

Area of works
Cadastre
Watercourse

0 50 Metres

Works Area
Illustration 2.2 - Sheet 7 of 10

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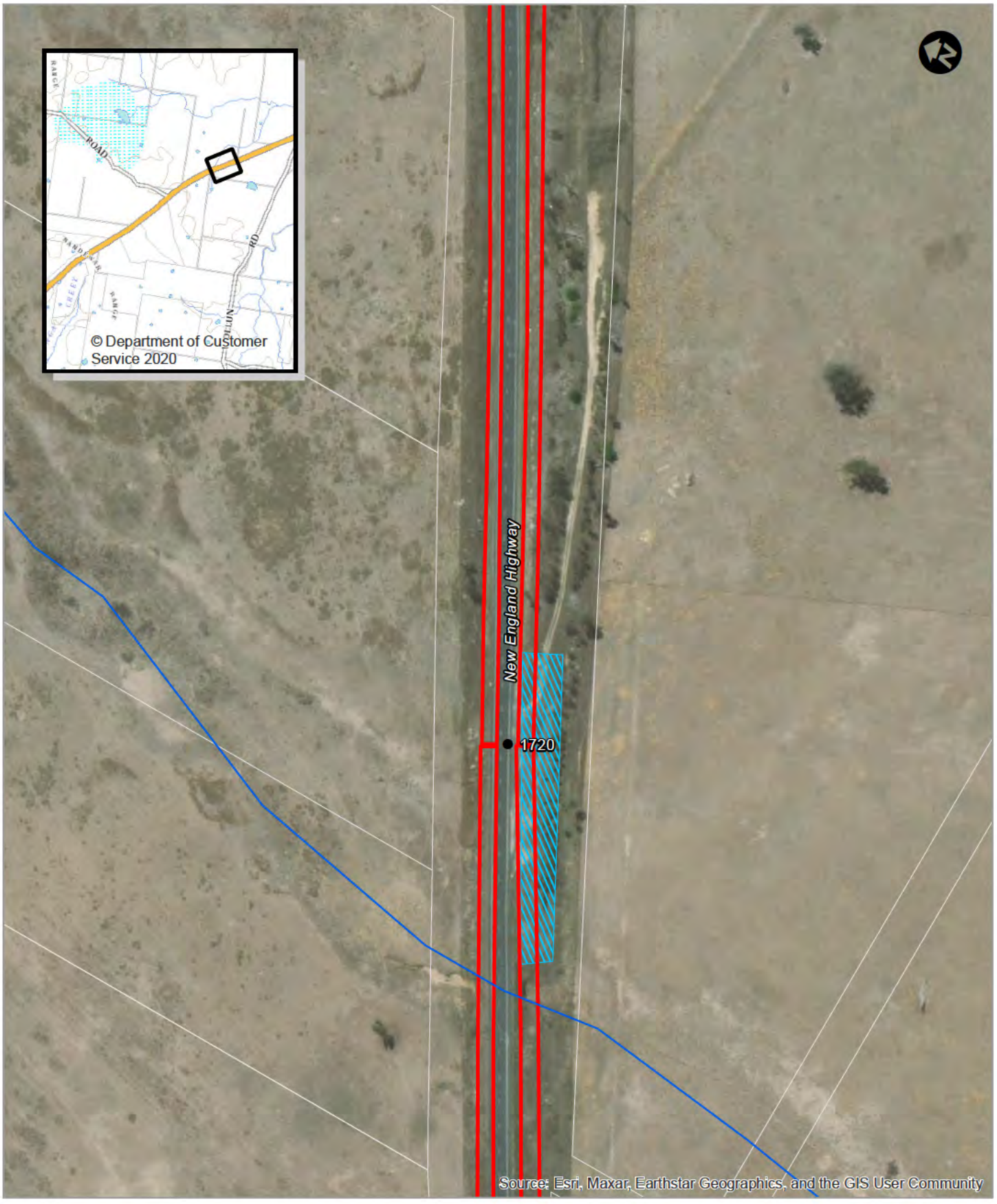

LEGEND

Area of works | Plant parking | Watercourse | Segment marker | Cadastre

0 50 Metres

Works Area
Illustration 2.2 - Sheet 8 of 10

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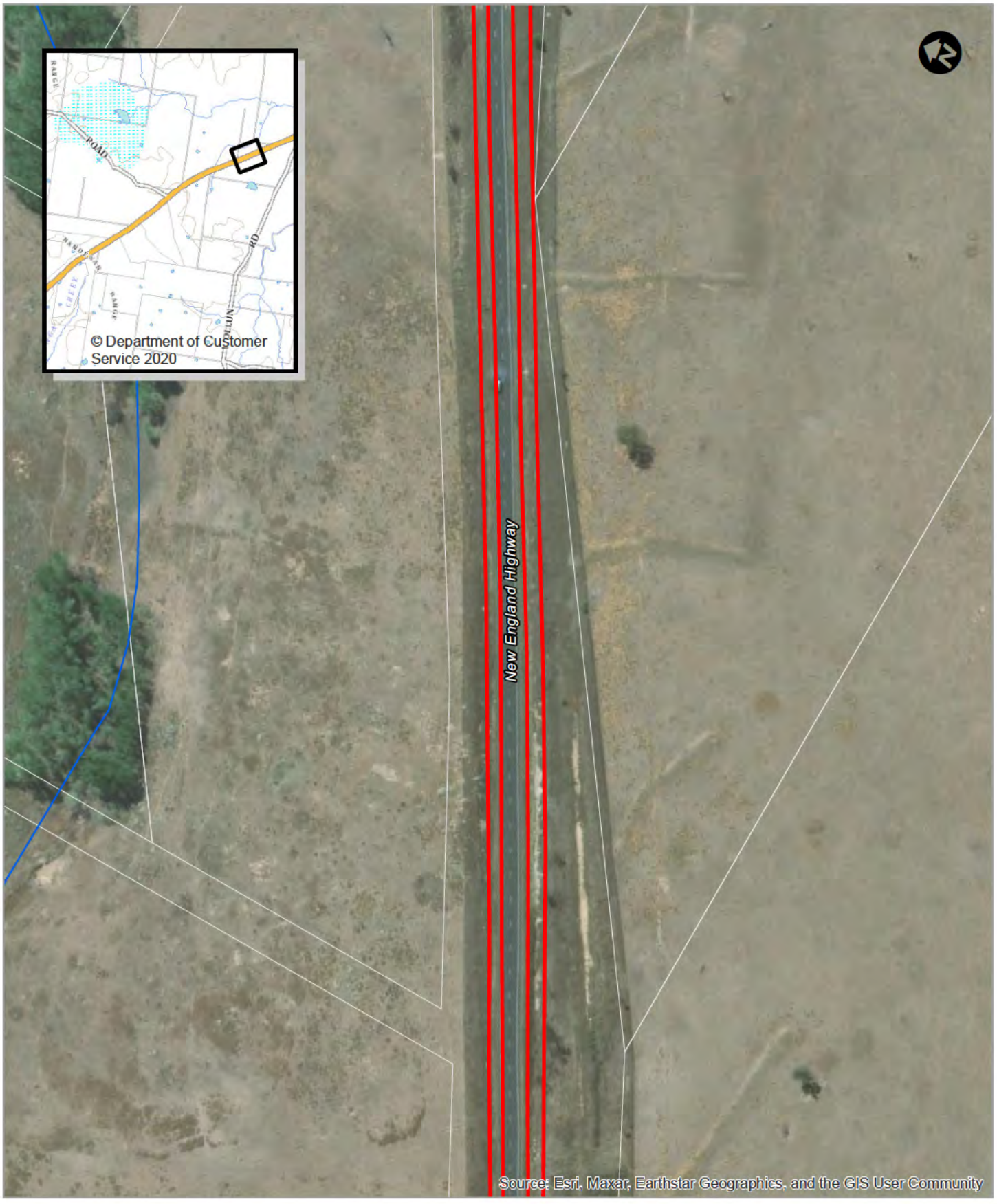

LEGEND

Area of works
Cadastre
Watercourse

0 50 Metres

Works Area
Illustration 2.2 - Sheet 9 of 10

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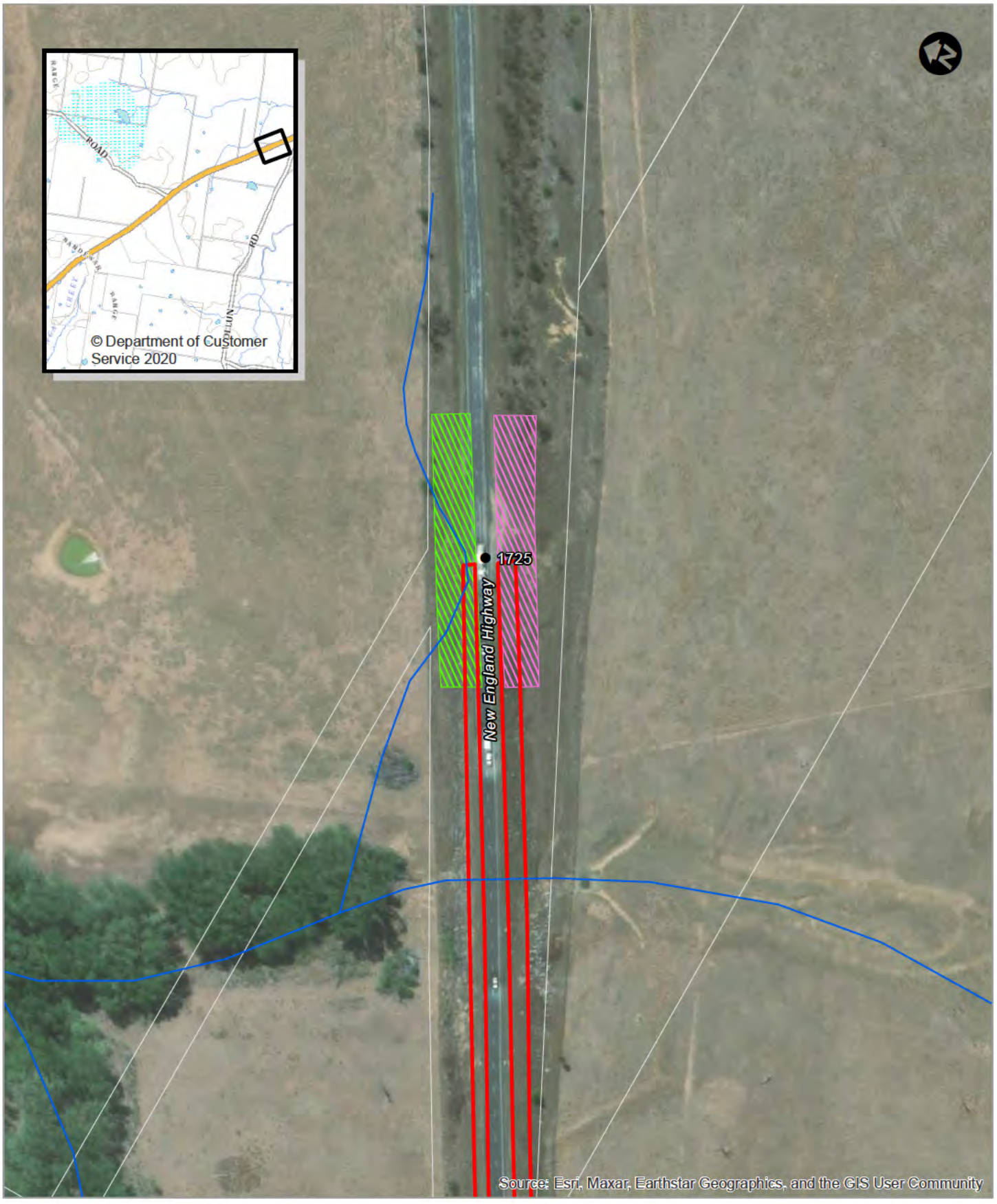

LEGEND

- Area of works
- Cadastre
- Compound site
- Plant parking / compound site
- Watercourse
- Segment marker

0 50 Metres

Works Area
Illustration 2.2 - Sheet 10 of 10

Information shown is for illustrative purposes only
Drawn by: AB Checked by: RE Reviewed by: TJC
Source of base data: ESRI World Imagery
Date: 27/07/2022

2.2.2 Justification for the proposal

This project is to install a 1 m WCLT with a minimum of 1 m shoulders however, up to 3 m is desired where achievable. The road pavement in segments 1717 and 1720 will be rehabilitated as part of the works. The segments are showing some defects these include block cracking, crocodile cracking, and potholes. This is allowing moisture into the pavement which needs to be rectified to prevent further deterioration of the road surface. The pavement rehabilitation and heavy patching works will ensure the serviceability and functionality of the pavement into the future.

Safety barriers will be installed where warranted to protect against roadside hazards such as trees, embankments, and culvert drop edge hazards. Improved shoulder width will be beneficial for all road users by creating a recoverable area outside the travel lane. Other advantages include improved safety for maintenance works and in the event of break downs. These treatments will improve the safety of this section of highway and overall contribute towards the reductions of fatalities and serious injuries on the New England Highway into the future.

2.3 Statutory and planning framework

2.3.1 State Environmental Planning Policy (Transport and Infrastructure) 2021

The State Environmental Planning Policy (Transport and Infrastructure) 2021 (SEPP (Transport and Infrastructure)) aims to facilitate the effective delivery of infrastructure across the state, including for roads and road infrastructure facilities. Section 2.108 of the SEPP (Transport and Infrastructure) 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 of Transport, it can be assessed under Division 5.1 of the EP&A Act. Development consent from council is not required.

The proposal is not located on land reserved under the *National Parks and Wildlife Act 1974* and does not require development consent or approval under State Environmental Planning Policy (Resilience and Hazards) 2021, State Environmental Planning Policy (State Significant Precincts) 2005 or State Environmental Planning Policy (Planning Systems) 2021.

2.3.2 Other relevant legislation and environmental planning instruments

A schedule of other legislation relevant to assessment of the proposal is provided at **Table 2.1**, including comments on implications for the proposal.

Table 2.1: Relevant legislation

Legislation	Section(s)	Comment
Protection of the Environment Operations Act 1997		No Protection of the Environment Policies are relevant to the proposal. No licenses would be required pursuant to the *Protection of the Environment Operations Act 1997*. TfNSW and/or contractors working on behalf of TfNSW are required to notify the appropriate regulatory authorities, including the Environmental Protection Authority (EPA), when a 'pollution incident' occurs

Legislation	Section(s)	Comment
		that is likely to impact upon the environment.
	Section 143	Any stockpiling of material within private property requires a Section 143 notice. The activity does not involve stockpiling of material within private property.
National Parks and Wildlife Act 1974	Sections 87(1), 90	The provisions of the Act are unlikely to be triggered by the proposal.
Biodiversity Conservation Act 2016	Schedules 1, 2 and 3	The activity would not significantly impact any threatened flora or fauna species listed in the BC Act. Removal of approximately 0.06 hectares of PCT 567: Broad-leaved Stringybark - Yellow Box shrub/grass open forest of the New England Tableland Bioregion would be required. The activity would incrementally contribute to the listed Key Threatening Process (KTP) *clearing of native vegetation* and *removal of dead wood and dead trees*. However, given the proposed extent of clearing, impacts are not considered significant. No other KTPs would be noticeably contributed to by the proposal. Section 7.3 of the BC Act requires a test of significance ('five-part test') for determining whether a proposed development or activity is likely to significantly affect threatened species or ecological communities, or their habitats. Five-part tests have been completed for Bluegrass, Silky Swainson-pea, *Prasophyllum* sp. *Wybong* and Small Snake Orchid (refer to **Section 3.7**). The test of significance concluded the activity would not significantly affect habitat for the threatened species.
State Heritage Act 1977		Searches of the State Heritage Register, State Heritage Inventory and LEP heritage listings were undertaken. No local or state listed heritage/archaeological items occur at the site.

Legislation	Section(s)	Comment
		As discussed in **Section 6**, no impact to non-Aboriginal heritage, including local heritage and archaeological sites listed under the TRLEP 2010 or ULEP 2012 would occur.
Water Management Act 2000	S91 (2) S56	Work within water lands or those comprising of extraction or management of water may be subject to approval if they constitute a 'controlled activity'. The works do not constitute a controlled activity.
Local Land Services Act 2013	Part 5A Land Management (native vegetation)	Provisions of the Act apply to clearing native vegetation in rural parts of the State. Pursuant to Section 60O (Clearing authorised under other legislation), for the purposes of this Part, the clearing of native vegetation in a regulated rural area is authorised under other legislation in any of the following cases: *(b) Other planning authorisation - the clearing was:* *(ii) an activity carried out by a determining authority within the meaning of Part 5 of that Act after compliance with that Part, or* *(iii) authorised by an approval of a determining authority within the meaning of Part 5 of that Act granted after compliance with that Part.* As the activity is a Part 5 Activity, the vegetation clearing provisions of the *Local Land Services Act 2013* do not apply.
Environment Protection and Biodiversity Conservation Act 1999		Under the environmental assessment provisions of the EPBC Act, matters of national environmental significance are required to be considered to assist in determining whether the activity be referred to the Australian Government Department of Agriculture, Water and the Environment (DAWE). No matters of national environmental significance are considered likely to be significantly affected by the proposal, hence referral is not required (refer to **Section 4.2**).

Legislation	Section(s)	Comment
Native Title (NSW) Act 1994	Section 103	The Activity is largely within the existing road reserve. The site is not located within land subject to an active registration for Native Title

Is the Land Potential Koala Habitat?

Chapter 3 of the State Environmental Planning Policy (Biodiversity & Conservation) 2021 (formerly State Environmental Planning Policy (Koala Habitat Protection) 2020) aims 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.

The SEPP (Biodiversity & Conservation) 2021 defines potential Koala habitat as "areas of native vegetation where Schedule 1 trees constitute at least 15% of the total number of trees in the upper or lower strata of the tree component".

No Schedule 2 listed trees were present on site. On this basis, potential Koala habitat does not occur, and the Policy requires no further consideration.

Safeguards to minimise impacts on fauna, including the Koala, are provided in **Section 3.7**.

Local Environmental Plans

The sites of the proposed work occur within Tamworth Regional local government area (LGA) and Uralla LGA and thus Tamworth Regional Local Environmental Plan (TRLEP 2010) and Uralla LEP (ULEP 2012) apply. Under both TRLEP 2010 and ULEP 2012, the site is zoned as RU1 Primary Production. The objectives of this zone are:

- To encourage sustainable primary industry production by maintaining and enhancing the natural resource base.
- To encourage diversity in primary industry enterprises and systems appropriate for the area.
- To minimise the fragmentation and alienation of resource lands.
- To minimise conflict between land uses within this zone and land uses within adjoining zones.
- To permit subdivision only where it is considered by the Council to be necessary to maintain or increase agricultural production.
- To restrict the establishment of inappropriate traffic generating uses along main road frontages.
- To ensure sound management of land which has an extractive or mining industry potential and to ensure that development does not adversely affect the extractive industry.
- To permit development for purposes where it can be demonstrated that suitable land or premises are not available elsewhere.

The proposed activity is not inconsistent with objectives of the zones, however as the activity affects the existing road, the activity would not hinder the achievement of the zoning objectives or its intent.

The activity, in connection with a road and road infrastructure facilities, is permitted without consent on any land under section 2.108 of SEPP (Transport and Infrastructure) (refer **Section 2.3.1**), and therefore the consent requirements of the TRLEP 2010 and Uralla LEP 2012 and associated development control plans do not apply.

2.4 Community and agency consultation

2.4.1 SEPP (Transport and Infrastructure) consultation

Part 2.2 of the SEPP (Transport and Infrastructure) contains provisions for public authorities to consult with local councils and other public authorities prior to the commencement of certain types of development. This is detailed below:

Is consultation with Council required under sections 2.10 - 2.12 and 2.14 of SEPP (Transport and Infrastructure)?		
Are the works likely to have a substantial impact on the stormwater management services which are provided by council?	☐ Yes	☑ No
Are the works likely to generate traffic to an extent that will strain the capacity of the existing road system in a local government area?	☐ Yes	☑ No
Will the works involve connection to a council owned sewerage system? If so, will this connection have a substantial impact on the capacity of the system?	☐ Yes	☑ No
Will the works involve connection to a council owned water supply system? If so, will this require the use of a substantial volume of water? Water for construction will be sourced from mains at Uralla and Bendemeer using a standpipe. The volumes required would generally be within the range of that for similar road construction. Water will also be sourced from a dam on private property located at Lot 1 DP1141264, accessed from Green Valley Road (refer to **Illustration 2.1**).	☐ Yes	☑ No
Will the works involve the installation of a temporary structure on, or the enclosing of, a public place which is under local council management or control? If so, will this cause more than a minor or inconsequential disruption to pedestrian or vehicular flow?	☐ Yes	☑ No
Will the works involve more than a minor or inconsequential excavation of a road or adjacent footpath for which council is the roads authority and responsible for maintenance?	☐ Yes	☑ No
Is there a local heritage item (that is not also a state heritage item) or a heritage conservation area in the study area for the works? If yes, does a heritage assessment indicate that the potential impacts to the heritage significance of the item/area are more than minor or inconsequential?	☐ Yes	☑ No
Is the proposal within the coastal vulnerability area and is inconsistent with a certified coastal management program applying to that land? Note: See interactive map here: *Coastal management mapping (nsw.gov.au)*. Note the coastal vulnerability area has not yet been mapped. Note: a certified coastal zone management plan is taken to be a certified coastal management program.	☐ Yes	☑ No/NA

Is consultation with Council required under sections 2.10 - 2.12 and 2.14 of SEPP (Transport and Infrastructure)?		
Are the works located on flood liable land? If so, will the works change flooding patterns to more than a minor extent? Note: Flood liable land means land that is susceptible to flooding by the probable maximum flood event, identified in accordance with the principles set out in the manual entitled *Floodplain Development Manual: the management of flood liable* land published by the New South Wales Government.	☐ Yes	☑ No

Is consultation with a public authority (other than Council) required under sections 2.13, 2.15 and 2.16 of SEPP (Transport and Infrastructure)?		
Are the works located on flood liable land? (to any extent) (SEPP (Transport and Infrastructure) s2.13) If so, do the works comprise more than minor alterations or additions to, or the demolition of, a building, emergency works or routine maintenance? Note: Flood liable land means land that is susceptible to flooding by the probable maximum flood event, identified in accordance with the principles set out in the manual entitled *Floodplain Development Manual: the management of flood liable* land published by the New South Wales Government.	☐ Yes	☑ No/NA
Are the works adjacent to a national park, nature reserve or other area reserved under the *National Parks and Wildlife Act 1974*, or on land acquired under that Act?	☐ Yes	☑ No
Are the works on land in Zone E1 National Parks and Nature Reserves or in a land use zone equivalent to that zone?	☐ Yes	☑ No
Are the works for the purpose of residential development, an educational establishment, a health services facility, a correctional facility or group home in bush fire prone land?	☐ Yes	☑ No
Would the works increase the amount of artificial light in the night sky and that is on land within the dark sky region as identified on the dark sky region map? (Note: the dark sky region is within 200 kilometres of the Siding Spring Observatory)	☐ Yes	☑ No
Are the works on buffer land around the defence communications facility near Morundah? (Note: refer to Defence Communications Facility Buffer Map referred to in clause 5.15 of Lockhart LEP 2012, Narrandera LEP 2013 and Urana LEP 2011).	☐ Yes	☑ No
Are the works on land in a mine subsidence district within the meaning of the *Mine Subsidence Compensation Act 1961*?	☐ Yes	☑ No

2.4.2 Other agency and community consultation

The following community consultation will be undertaken, in line with standard communication process for projects with the Community and Stakeholder Engagement team:

- Letter box drops one week prior to commencement of construction to all residents within 340 m of the works footprint
- VMS messaging one week prior to commencement of construction to notify through travellers
- Traffic Alert

Water for construction may be sourced from a dam on private property located at Lot 1 DP1141264, accessed from Green Valley Road (refer to **Illustration 2.1**). TfNSW is required to ensure the dam is within harvestable rights and obtain permission from the landowner.

Part of the works are mapped as Travelling Stock Reserve (TSR) (Reserve No. R22252), a Category 3 TSR, located in the North West Local Land Services (LLS) region. TfNSW would consult with the relevant land manager should TfNSW deem it necessary.

3. Environmental assessment

This section provides a detailed description of the potential environmental impacts associated with the construction and operation of the proposal. All aspects of the environmental potentially impacted upon by the proposal are considered. This includes consideration of the factors specified in section 171 of the Environmental Planning and Assessment Regulation 2021. The matters of national environmental significance under the Commonwealth *Environment Protection and Biodiversity Conservation Act 1999* are also considered in **Section 5**. Site-specific safeguards are provided to ameliorate the identified potential impacts.

3.1 Soil

Description of existing environmental and potential impacts		
Are there any known occurrences of salinity or acid sulfate soils in the area?	☐ Yes	☑ No
Does the proposal involve the disturbance of large areas (eg >2ha) for earthworks?	☐ Yes	☑ No
Does the site have constraints for erosion and sedimentation controls such as steep gradients or narrow corridors?	☐ Yes	☑ No
Are there any sensitive receiving environments that are located in or nearby the likely proposal area or that would likely receive stormwater discharge from the proposal? Sensitive receiving environments include (but are not limited to) wetlands, state forests, national parks, nature reserves, rainforests, drinking water catchments). The study area occurs approximately 350 m west of Looanga Creek and 1.2 km south of Kentucky Creek. The proposed work is for minor road works including select culvert improvements which may result in stormwater runoff. However, given the distance of the site to the waterway, this is unlikely to have a significant impact. However, work proximal to waterways could pose a risk of pollution, and erosion and sedimentation. Appropriate measures to prevent pollution and implementation of an erosion and sediment control plan, as required, would form part of the mitigation measures to minimise any potential risks and impacts (refer to **Section 5**).	☐ Yes	☑ No
Is there any evidence within or nearby the likely footprint of potential contamination? Online contamination searches were undertaken for the site on 4 April 2022 including the EPA Contaminated Land and DPI Dip Site registers (refer to **Appendix A**). The searches did not identify any registered contamination items within or adjacent to the works area.	☐ Yes	☑ No
Is the likely proposal footprint in or nearby highly sloping landform?	☐ Yes	☑ No
Is the proposals likely to result in more than 2.5 ha (area) of exposed soil?	☐ Yes	☑ No

Description of existing environmental and potential impacts
The proposed activity is likely to result in some soil disturbance during vegetation removal, machinery access and activity associated with the road works. Disturbed soils have the potential to disperse via wind and water. However, it is not expected that this would significantly impact the surrounding environment and can be readily managed with relevant mitigation measures. A progressive erosion and sediment control plan (ESCP) for each site would be in place, as required, as part of the CEMP and the safeguards below. Soil disturbance would be minimised where possible. The safeguards listed below would minimise any potential erosion or sedimentation risks at each site. The proposed activity would have positive outcomes in terms of road safety and maintenance.

Safeguards

Safeguards to be implemented are:

1. Erosion and sediment control measures are to be implemented and maintained to:
   - Prevent sediment moving off-site and sediment laden water entering any water course, drainage lines, or drain inlets
   - Reduce water velocity and capture sediment on site
   - Minimise the amount of material transported from site to surrounding pavement surfaces
   - Divert clean water around the site
   - (in accordance with the Landcom/Department of Housing Managing Urban Stormwater, Soils and Construction Guidelines (the Blue Book)) [TfNSW safeguard E1]
2. Erosion and sedimentation controls are to be checked and maintained on a weekly basis or after 10 mm of rainfall (including clearing of sediment from behind barriers) and records kept and provided on request. [TfNSW safeguard E2].
3. Erosion and sediment control measures are not to be removed until the works are complete and areas are stabilised. [TfNSW safeguard E3].
4. Work areas are to be stabilised progressively during the works. [TfNSW safeguard E4].
5. A progressive erosion and sediment control plan is to be prepared for the works. [TfNSW safeguard E5].
6. The maintenance of established stockpile sites is to be in accordance with the Roads and Maritime Services Stockpile Site Management Guideline (EMS-TG-10). [TfNSW safeguard E6].
7. An environmental management plan is prepared in accordance with the specifications set out in the QA Specification G36 –Environmental Protection (Management System), QA Specification G38 – Soil and Water Management (Soil and Water Plan), QA Specification G40 – Clearing and Grubbing, QA Specification G10 - Traffic Management and implemented prior to the commencement of works. [TfNSW safeguard G2].

3.2 Waterways and water quality

Description of existing environment and potential impacts		
Is the proposal located within, adjacent to or near a waterway? The study area occurs approximately 350 m west of Looanga Creek and 1.2 km south of Kentucky Creek. Within the study area, no significant mapped creeks or streams occur. Approximately four mapped small unnamed ephemeral streams (stream order 1 and 2) occur within the study area and cross the existing road corridor through culverts that drain into Kentucky and Looanga Creeks.	☑ Yes	☐ No

Description of existing environment and potential impacts		
The site generally occurs within the road reserve, and would involve maintenance and/or improvements to the following culverts: Transverse culverts: • S1705 Culvert 509508 • S1705 Culvert 509509 • S1705 Culvert 509510 • S1717 Bridge Sized Culvert 9319 • S1717 Bridge Sized Culvert 11221 Driveway access culverts: • S1705 – Standbye Rest Area Access • S1705 – Road Reserve Access at Ch70850 • S1710 – Paddock Access SB Side at Ch69925 • S1715 – 7056 New England Highway (The Block) at Ch70275 • S1717 – 7166 New England Highway at Ch71375 The proposed work is for minor road works and culvert upgrades which may result in stormwater runoff. However, given the distance of the site to the waterways, this is unlikely to have a significant impact. However, work in proximity to waterways could pose a risk of pollution, and erosion and sedimentation. Appropriate measures to prevent pollution and implementation of an erosion and sediment control plan, as required, would form part of the mitigation measures to minimise any potential risks and impacts (refer to **Section 5**).		
Is the location known to flood or be prone to water logging? The works are not mapped in Tamworth Regional Council's (TRC) or Uralla Shire Council's Flood Studies. Given the minor nature of the works, it is expected the works would not change flooding patterns to more than a minor extent.	☐ Yes	☑ No
Is the proposal located within or immediately adjacent to the area managed by WaterNSW covered by chapter 8 of State Environmental Planning Policy (Biodiversity and Conservation) 2021? Note: See map here: *Sydney drinking water catchment map*.	☐ Yes	☑ No
Would the proposal be undertaken on a bridge or ferry?	☐ Yes	☑ No
Is the proposal likely to require the extraction of water from a local water course (not mains)? Water for construction will be sourced from mains at Uralla and Bendemeer using a standpipe. The volumes required would generally be within the range of that for similar road construction. Other options include sourcing water from a dam on private property located at Lot 1 DP1141264, accessed from Green Valley Road (refer to **Illustration 2.1**).	☐ Yes	☑ No
The site occurs in the road reserve and approximately four mapped small, unnamed ephemeral streams (stream order 1 and 2) occur within the study area and cross the existing road corridor through culverts. The main threat to local waterways and water quality would be erosion and sedimentation and potential pollution of local water quality (both ground and surface water) from suspended solids and pollutants from machinery, materials and spills and any waste generated from work. These pollutants include, but are not limited to, diesel, unleaded petrol, machinery oils, and organic materials causing water turbidity. The		

nature of these liquids/materials and their ability to disperse away from the site means that they could have a negative impact on water quality on and adjacent to the sites/downstream.

The work is for minor removal of terrestrial vegetation and road works associated with the minor realignment of the intersection and are not expected to pose a high risk to water quality if appropriate measures are in place to avoid or minimise such risk. The safeguards listed below would serve this purpose to avoid and minimise potential negative impacts to waterways and water quality.

Safeguards

Safeguards to be implemented are:

8. There is to be no release of dirty water into drainage lines and/or waterways. [TfNSW safeguard W1].
9. Visual monitoring of local water quality (i.e., turbidity, hydrocarbon spills/slicks) is to be undertaken on a regular basis to identify any potential spills or deficient silt curtains or erosion and sediment controls. [TfNSW safeguard W2].
10. Water quality control measures are to be used to prevent any materials (e.g.: concrete, grout, sediment etc) entering drain inlets or waterways. [TfNSW safeguard W3].
11. Measures to control pollutants from stormwater and spills would be investigated and incorporated in the pavement drainage system at locations where it discharges to the receiving drainage lines. Measures aimed at reducing flow rates during rain events and potential scour would also be incorporated in the design of the pavement drainage system. [TfNSW safeguard W4].
12. Excess debris from cleaning and washing is removed using hand tools. [TfNSW safeguard W5].
13. All fuels, chemicals and liquids are to be stored in an impervious bunded area a minimum of 50 metres away from:
    - Rivers, creeks or any areas of concentrated water flow
    - Flooded or poorly drained areas
    - Slopes above 10%. [TfNSW safeguard R1].
14. Refuelling of plant and equipment is to occur in impervious bunded areas located a minimum of 50 metres from drainage lines or waterways. Double bunding is required where it is not possible to locate refuelling areas a minimum of 50 metres from drainage lines or waterways. [TfNSW safeguard R2].
15. Cleaning of spray bars (or equivalent equipment) is to occur in suitable areas (e.g., not table drains) and not cause water pollution. is to occur in suitable areas (e.g., not table drains) and not cause water pollution. [TfNSW safeguard R4].
16. Vehicle wash down and/or cement truck washout is to occur in a designated bunded area. [TfNSW safeguard R5].
17. An emergency spill kit is to be kept on site at all times and maintained throughout the construction work. The spill kit must be appropriately sized for the volume of substances at the work site. [TfNSW safeguard R6].
18. If an incident (e.g., spill) occurs, the Transport for New South Wales Environmental Incident Classification and Reporting Procedure is to be followed and the Transport for New South Wales Contract Manager notified as soon as practicable. [TfNSW safeguard R7].
19. Emergency contacts will be kept in an easily accessible location on vehicles, vessels, plant and site office. All workers will be advised of these contact details and procedures. [TfNSW safeguard R8].
20. All workers will be advised of the location of the spill kit and trained in its use. [TfNSW safeguard R10].
21. Vehicles, vessels and plant must be properly maintained and regularly inspected for fluid leaks. [TfNSW safeguard R11].

3.3 Noise and vibration

Description of existing environmental and potential impacts		
Are there any residential properties or other noise sensitive areas near the location of the proposal that may be affected by the work (ie church, school, hospital):		
During construction? Noise would be associated with the construction phase of the project and would not endure for the long-term. Noise is expected from general construction activity and the use of a variety of construction vehicles and machinery as part of the Activity (refer to **Section 2.1.2**). The noisiest activities are considered to be operation of concrete saws for culvert works. The TfNSW Construction and Maintenance Noise Estimator Tool – Distance Based Assessment (Noisiest Plant) was used based on the noisiest plant being a concrete saw in the noise area category R1 (refer to **Appendix B**). The results suggest all sensitive receivers within 340 m of the work should be notified. One resident (Lot 3/DP630955) is located approximately 215 m south of the proposed footprint. No other residents, offices or retail outlets occur within this distance.	☑ Yes	☐ No
During operation?	☐ Yes	☑ No
Is the proposal going to be undertaken only during standard working hours? Standard working hours Monday-Friday: 7:00 am to 6.00 pm Saturday: 8.00 am to 1.00 pm Sunday and Public Holidays: no work Work will be carried out during the below working hours: 7 am to 6 pm Monday to Fridays 7 am to 6 pm Saturdays (working in an isolated rural environment) Sundays and public Holidays – No work Exceptions to the above working hours include: • Emergency works, such as that needed after heavy rainfall to restore a safe road surface. • Dust suppression which is required over weekends, public holidays, and holiday periods The safeguards listed below would avoid and minimise potential negative impacts of noise from works scheduled to be undertaken outside the standard working hours.	☐ Yes	☑ No
Is any explosive blasting required for the proposal?	☐ Yes	☑ No
Would construction noise or vibration from the proposal affect sensitive receivers? As outlined above, no significant noise or vibration impacts are expected. Where possible, noise generating machinery would be minimised. Identified	☐ Yes	☑ No

Description of existing environmental and potential impacts		
safeguards would aim to minimise potential impacts and ensure that noise and vibration from the proposed activity would not adversely impact nearby residents and the community.		
Would operation of the proposal alter the noise environment for sensitive receivers? This might include, but not be limited to, altering the line or level of an existing carriageway, changing traffic flow, adding extra lanes, increasing traffic volume, increasing the number of heavy vehicles, removing obstacles that provide shielding including changing the angle of view of the traffic, changing the type of pavement, increasing traffic speeds by more than 10km/hr or installing audio-tactile line markings. No significant additional noise impacts are expected.	☐ Yes	☑ No
Would the proposal result in vibration being experienced by any surrounding properties or infrastructure during operation? Vibration would be associated with the construction phase of the project and would not endure for the long-term. Vibration is expected from general construction activity and the use of a variety of construction vehicles and machinery as part of the Activity (refer to **Section 2.1.2**). The activities that may contribute to vibration are considered to be operation of excavators, rollers and graders. The impact is expected to be minor in nature and temporary.	☐ Yes	☑ No
Noise and vibration resulting from the proposed activity is expected to occur during proposed road works due to the use of machinery. The TfNSW Construction and Maintenance Noise Estimator Tool – Distance Based Assessment (Noisiest Plant) was used based on the noisiest plant being a concrete saw in the noise area category R1 (refer to **Appendix B**). The results suggest all sensitive receivers within 340 m of the work should be notified. One resident (Lot 3/DP630955) is located approximately 215 m south of the proposed footprint. No other residents, offices or retail outlets occur within this distance. Additionally, the temporary duration and context of the environment (near relatively busy roads) would mean that noise impacts would be both relatively minor and temporary. No significant noise or vibration impacts are expected. Identified safeguards would aim to minimise potential impacts and ensure that noise and vibration from the proposed activity would not adversely impact nearby residents and the community.		

Safeguards

Safeguards to be implemented are:

22. Works to be carried out during work hours of 7:00 am to 6:00 pm Monday to Friday; 7:00 am to 6:00 pm Saturdays. Any work that is performed outside these work hours or on Sundays or public holidays must have measures in place to minimise noise impacts [Additional safeguard].
23. Noise impacts are to be minimised in accordance with TfNSW Construction Noise Estimator. [TfNSW safeguard N2].
24. Measures, including allowing adequate distance that rollers and other vibration producing equipment can come to adjacent buildings and/or using non vibration producing equipment, to minimise or prevent vibration impacts. [TfNSW safeguard N3].

3.4 Air Quality

Description of existing environmental and potential impacts		
Is the proposal likely to result in large areas (>2 ha) of exposed soils?	☐ Yes	☑ No
Are there any dust sensitive receivers located within the vicinity of the proposal during the construction period? The nearest sensitive receiver is located approximately 215 m south of the works (refer to **Illustration 2.2**). The minor nature and extent of the work is not expected to generate large dust emissions and would not significantly impact nearby sensitive receivers.	☐ Yes	☑ No
Is there likely to be an emission to air during construction? The proposed activity would generate minor amounts of dust as part of the work due to road works, machinery operation, operation of stockpiles and minor clearing of vegetation. Significant dust is not expected, and standard measures can readily reduce dust generation. Exhaust emissions would also be generated through the use of machinery and equipment which burn fossil fuels. This would be of a minor nature, especially compared to emissions generated locally by traffic using various roads.	☑ Yes	☐ No
There are no other anticipated air quality impacts.		

Safeguards

Safeguards to be implemented are:

25. Measures (including watering or covering exposed areas) are to be used to minimise or prevent air pollution and dust. [TfNSW safeguard A1].
26. Vegetation or other materials are not to be burnt on site. [TfNSW safeguard A3].
27. Vehicles and vessels transporting waste or other materials that may produce odours or dust are to be covered during transportation. [TfNSW safeguard A4].
28. Stockpiles or areas that may generate dust are to be managed to suppress dust emissions in accordance with the Transport for New South Wales Stockpile Site Management Guideline (EMS-TG-10). [TfNSW safeguard A5].

3.5 Aboriginal heritage

Description of existing environmental and potential impacts		
Would the proposal involve disturbance in any area that has not been subject to previous ground disturbances? The work would occur within various road reserves and has generally been subject to past disturbance.	☐ Yes	☑ No
Have online Aboriginal Heritage Information Management System (AHIMS) searches been completed? A search of the AHIMS Web Services was conducted as part of the PACHCI undertaken by the Northern Region's A/ Aboriginal Cultural Heritage Officer. The search did not identify any significant Aboriginal places or sites in the	☑ Yes	☐ No

Description of existing environmental and potential impacts		
immediate project area. The assessment/clearance letter based on the PACHCI is provided in **Appendix C**.		
Is there potential for the proposal to impact on any items of Aboriginal heritage? The project is unlikely to harm known Aboriginal objects or places.	☐ Yes	☑ No
Would the proposal involve the removal of mature native trees? The removal of trees and vegetation has been outlined in Section **3.7**. A range of trees, including mature trees would be removed and/or trimmed. The PACHCI did not identify any concerns associated with this work. No scarred trees were identified within the survey area.	☑ Yes	☐ No
Would the proposals impact on any features that may indicate any potential archaeological remains? [The assessment/clearance letter based on the PACHCI (**Appendix C**) and prepared by the Northern Region's A/Aboriginal Cultural Heritage Advisor has confirmed that the study area does not contain landscape features that indicate the presence of Aboriginal objects, based on the (former) Office of Environment and Heritage's Due diligence Code of Practice for the Protection of Aboriginal objects in NSW and the TfNSW (formerly Roads and Maritime Services) procedure.	☐ Yes	☑ No
Is the proposal consistent with the requirements of the legacy Roads and Maritime Procedure for Aboriginal cultural heritage consultation and investigation (PACHCI)? [The assessment/clearance letter based on the PACHCI (see **Appendix C**) states that the works that will be undertaken in an area that was assessed as being unlikely to have an impact on Aboriginal cultural heritage. The activity can proceed.	☑ Yes	☐ No
No other Aboriginal heritage issues or impacts are relevant to the proposed activity and the assessment/ clearance letter at **Appendix C** confirms the works can proceed.		

Safeguards

Safeguards to be implemented are:

29. If Aboriginal heritage items are uncovered during the work, all work in the vicinity of the find must cease and the TfNSW Aboriginal Cultural Heritage Officer and Regional Environment Manager contacted immediately. Steps in the *Transport for NSW (formerly Roads and Maritime Services) Standard Management Procedure: Unexpected Heritage Items* must be followed (TfNSW safeguard B1).
30. If the scope of the project or methodology changes, the TfNSW Aboriginal Cultural Heritage Advisor and regional environmental staff are to be contacted to reassess any potential impacts on Aboriginal cultural heritage (additional safeguard).

3.6 Non-Aboriginal heritage

Description of existing environmental and potential impacts		
Have online heritage database searches been completed? • Transport (including legacy Roads and Maritime) section 170 register • NSW Heritage database • Commonwealth EPBC heritage list • Australian Heritage Places Inventory • Local Environmental Plan(s) heritage items No state, national or world heritage listed items/places occur at or near the site. No locally listed heritage items occur at the site. Overall, no impact to non-Aboriginal heritage would occur.	☑ Yes	☐ No
Are there any items of non-Aboriginal heritage or heritage conservation areas listed on relevant heritage databases/registers that are located within the vicinity of the proposal?	☐ Yes	☑ No
Are there any items of potential non-Aboriginal heritage significance which are not listed on relevant heritage databases/registers that are in the vicinity of the proposal?	☐ Yes	☑ No
Is the proposal likely to occur in or near features that indicate potential archaeological remains?	☐ Yes	☑ No
Overall, the proposed activity would not impact any listed heritage items, their value, character or integrity. Appropriate measures would be in place for unexpected finds as identified in the safeguards below.		

Safeguards

Safeguards to be implemented are:

29. If unexpected heritage items are uncovered during the works, all works must cease in the vicinity of the material/find and the steps in the Transport for New South Wales Standard Management Procedure: Unexpected Heritage Items must be followed. Transport for New South Wales Senior Environment Specialist - Heritage must be contacted immediately. [TfNSW safeguard H2].

3.7 Biodiversity

Description of existing environmental and potential impacts		
Have relevant database searches been carried out? The following searches were completed: • NSW BioNet • Commonwealth EPBC Act - Protected Matters Search Tool (PMST). Biodiversity database search results were completed in September 2021 and are provided in the Biodiversity Assessment Report in **Appendix D**. BioNet Atlas results indicate 13 threatened flora species and 44 threatened fauna species have been recorded within the search area and potential	☑ Yes	☐ No

Description of existing environmental and potential impacts		
habitat occurs for up to 12 threatened ecological communities (TECs). Relevant species/ communities are included in the potential occurrence assessments in the BAR. PMST results identified habitat for 18 threatened flora species and five threatened ecological communities within the search area (refer to BAR in **Appendix D**). A search of the Priority Weeds for the Northern Tablelands and North West regions in NSW Weedwise was undertaken in September 2021. One ID'd.		
Did the database searches identify any endangered ecological communities, threatened flora and/or threatened or protected fauna, or migratory species in or within the vicinity of the proposed works? Both Commonwealth and State listed matters must be considered. Database searches and the potential for threatened species to occur within habitat at or adjacent to the site has been considered in the Biodiversity Assessment Report in **Appendix D.**	☐ Yes	☑ No
Is the proposal likely to impact nationally listed threatened species, ecological communities or migratory species? The proposal would result in the removal of 0.06 ha of the following TECs: • 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 Riverina Bioregions (BC Act) • White Box - Yellow Box -Blakely's Red Gum Grassy Woodland and Derived Native Grassland in the New England Tableland Bioregions (EPBC Act) No threatened flora species were recorded during the surveys. No threatened fauna species were recorded at the site. However, there is potential for 12 threatened fauna species to occur based on available site habitats. It was determined that the proposal is unlikely to significantly affect any species, communities or their habitat listed under the BC Act or the EPBC Act (refer to **Appendix D** and **Section 4.2**). Based on the impact of 0.06 ha of PCT 567, which corresponds to White Box-Yellow Box-Blakely's Red Gum Grassy Woodland and Derived Native Grassland (listed as Critically Endangered) and associated threatened species habitat, the proposal does trigger the TfNSW offset guidelines, offsets are required.	☑ Yes	☐ No
Would the proposal require the removal of any other vegetation? The proposal would result in removal of approximately 0.06 hectares of PCT 567: Broad-leaved Stringybark -Yellow Box shrub/grass open forest of the New England Tableland Bioregion. This is based on the IFC footprint as shown in **Appendix D**.	☑ Yes	☐ No
Would the proposal affect any tree hollows or hollow logs? One hollow-bearing tree has been identified for removal. This hollow-bearing trees identified for removal within the study area has potential to be used as	☑ Yes	☐ No

Description of existing environmental and potential impacts		
nesting or roosting habitat for five woodland birds, two predatory birds, three microbats or two arboreal mammals (refer to Section 4.3 of **Appendix D**). Based on the impact of 0.06 ha of PCT 567, which corresponds to White Box-Yellow Box-Blakely's Red Gum Grassy Woodland and Derived Native Grassland (listed as Critically Endangered) and associated threatened species habitat, the proposal does trigger the TfNSW offset guidelines, offsets are required.		
Are there any known areas of outstanding biodiversity value or areas mapped as 'littoral rainforest' or 'coastal wetland' under chapter 2 of State Environmental Planning Policy (Resilience and Hazards) 2021 (SEPP (Resilience and Hazards)) in or within the vicinity of the proposed work?	☐ Yes	☑ No
Would the proposal provide any additional barriers to the movement of wildlife? The proposed roadside clearing of vegetation within a modified landscape would not result in any significant increase in the fragmentation of fauna and flora habitats.	☐ Yes	☑ No
Would the proposal disturb any natural waterways or aquatic habitat? Approximately four mapped small ephemeral streams (stream order 1 and 2) occur within the study area and cross the existing road corridor through culverts. Potential impacts from erosion or sedimentation are unlikely with relevant Safeguards implemented.	☐ Yes	☑ No
Would the proposal disturb any crevices or other locations (such as on bridges and culverts) for potential bat habitat? The following culverts have been identified as a potential, opportunistic roosting (non-breeding) site for microbats: • C11221 • C509508 • Paddock Access SB Side at Ch69925 • Road Reserve Access at Ch70850 With the implementation of relevant safeguards, the proposed Activity is expected to minimise the risk of injury/mortality to native fauna during culvert works.	☑ Yes	☐ No
Threatened flora: No threatened flora species were recorded within the work footprint at any of the sites. ***Weeds:*** One weed species identified in the study area during field surveys is listed as a priority weed under the Biosecurity Act 2015 for the North West and Northern Tablelands regions occur; blackberry (Rubus fruticosus sp. aggregate) Roadside weed management (including poisoning) would be undertaken by TfNSW as part of the proposed activity. Weeds would be managed as per the safeguards below. ***Threatened fauna:*** No threatened fauna species were recorded.		

Description of existing environmental and potential impacts

Statutory assessment:

Based on the results of the field assessment and potential occurrence assessments, tests of significance ('five-part tests') under Section 7.3 of the Biodiversity Conservation Act 2016 have been completed (refer to **Appendix D**). The test of significance concluded that the activity would not significantly impact on any threatened species or ecological communities.

Safeguards

Safeguards to be implemented are:

30. There is to be no disturbance or damage to threatened species or areas of outstanding value. [TfNSW safeguard F1].
31. Works are not to harm threatened fauna (including where they inhabit bridges or other structures e.g., timber fence posts or maritime piles). [TfNSW safeguard F2].
32. If unexpected threatened fauna or flora species are discovered, stop works immediately and follow the Transport for New South Wales Unexpected Threatened Species Find Procedure in the Transport for New South Wales Biodiversity Guidelines 2011 – Guide 1 (Pre-clearing process). [TfNSW safeguard F3].
33. Vegetation that has been protected or planted as part of offset works provided as part of an approved project (e.g., in association with fauna crossings) is not to be removed. [TfNSW safeguard F4].
34. All pathogens (e.g., Chytid, Myrtle Rust and Phytophthora) are to be managed in accordance with the Transport for New South Wales Biodiversity Guidelines - Guide 7 (Pathogen Management) and DECC Statement of Intent 1: Infection of native plants by Phytophthora cinnamomi (for Phytophthora). Machinery, plant and equipment is to be cleaned prior to entering the site. [TfNSW safeguard F5].
35. Declared noxious weeds are to be managed according to requirements under the *Biosecurity Act, 2015* and Guide 6 (Weed Management) of the Roads and Maritime Services Biodiversity Guidelines 2011. [TfNSW safeguard F6].
36. Fauna handling must be carried out in accordance with the requirements the Transport for New South Wales Biodiversity Guidelines - Guide 9 (Fauna Handling) [TfNSW safeguard F7].
37. Works are not to create an ongoing barrier to the movement of wildlife. [TfNSW safeguard F8].
38. Pruning of mature trees is to be in accordance with Part 5 of the Australian Standard 4373-2007 Pruning of amenity trees. [TfNSW safeguard F9].
39. Exclusion zones will be set up at the limit of clearing and pathogens will be managed in accordance with *Guide 2: Exclusion zones* of the *Biodiversity Guidelines: Protecting and managing biodiversity on RTA projects* (RTA, 2011). [additional safeguard from BAR].
40. Undertake pre-culvert removal/replacement works survey to determine extent and presence/absence of microbats prior to construction. If present microbats are to be excluded by an ecologist as follows:
    a. Installing exclusion devices (such as valves, curtains) prior to culvert removal/replacement works to discourage microbats from returning to the culvert/s
    b. Filling empty gaps within the culverts while microbats are out foraging for the night (if access inside the culvert is permitted)
    c. Daytime inspections immediately prior to works at each culvert, attempting to capture any remaining bats
    d. Consideration of provision alternative roosting habitat. [additional safeguard from BAR].
41. Pre-clearing surveys will be undertaken in accordance with Guide 1: Pre-clearing process of the Biodiversity Guidelines: Protecting and managing biodiversity on RTA projects (RTA, 2011) [additional safeguard from BAR].

42. Native vegetation will be re-established in accordance with Guide 3: Re-establishment of native vegetation of the Biodiversity Guidelines: Protecting and managing biodiversity on RTA projects (RTA, 2011) [additional safeguard from BAR].
43. The unexpected species find procedure is to be followed under *Biodiversity Guidelines: Protecting and managing biodiversity on RTA projects* (RTA, 2011) if threatened ecological communities, not assessed in the biodiversity assessment, are identified in the proposal site [additional safeguard from BAR].
44. Habitat removal will be undertaken in accordance with Guide 4: Clearing of vegetation and removal of bushrock of the Biodiversity Guidelines: Protecting and managing biodiversity on RTA projects (RTA, 2011) [additional safeguard from BAR].
45. Habitat will be replaced or re-instated (where required) in accordance with Guide 5: Re-use of woody debris and bushrock and Guide 8: Nest boxes of the Biodiversity Guidelines: Protecting and managing biodiversity on RTA projects (RTA, 2011) [additional safeguard from BAR].

3.8 Trees

Description of existing environmental and potential impacts		
Does the proposal involve pruning, trimming or removal of any tree/s? Select trees would be removed and/or pruned for the works (refer to **Appendix D**). Approximately 273 trees >10 cm DBH and dead stags will be removed for safety reasons, of which 143 of these trees are within the existing disturbed zone. Minor disturbances including trimming of trees and limbs which are close to the road verge will also be undertaken. The removal of mature native trees would be kept to the minimum required to meet the objective of the road work. Refer to **Section 3.7** for further details regarding vegetation removal.	☑ Yes	☐ No
Do the trees form part of a streetscape, an avenue or roadside planting?	☐ Yes	☑ No
Have the trees been planted by a community group, Landcare group or by council or is the tree a memorial or part of a memorial group e.g. has a plaque?	☐ Yes	☑ No
Do the trees form part of a heritage listing or have other heritage value?	☐ Yes	☑ No

Safeguards

Safeguards to be implemented are:

46. Parking of vehicles and storage of plant/equipment is to occur on existing paved areas. Where this is not possible, vehicles and plant/equipment are to be kept away from environmentally sensitive areas and outside the dripline of trees [TfNSW safeguard G4].
47. Pruning of mature trees is to be in accordance with Part 5 of the Australian Standard 4373-2007 Pruning of amenity trees. [TfNSW safeguard F9].
48. An environmental management plan is prepared in accordance with the specifications set out in the QA Specification G36 –Environmental Protection (Management System), QA Specification G38 – Soil and Water Management (Soil and Water Plan), QA Specification G40 – Clearing and Grubbing, QA Specification G10 - Traffic Management and implemented prior to the commencement of works. [TfNSW safeguard G2].

3.9 Traffic and transport

Description of existing environmental and potential impacts		
Is the proposal likely to result in detours or disruptions to traffic flow (vehicular, cycle and pedestrian) or access during construction? The majority of the work would occur on the existing roadway, shoulders and road reserve. During construction, traffic would be reduced to the following: • During construction hours: one lane alternate flow with 40/60 roadwork speed limits. • Out of construction hours: both lanes open (continuous flow) with 60 km/h speed limit (unsealed surfaces). Traffic delays of up to five minutes may be experienced, as per standard condition of the road occupancy licence (ROL). This would be of minor impact and inconvenience to road users. Traffic control and the movement of machinery and personnel would be undertaken under an approved Traffic Guidance Scheme (TGS).	☑ Yes	☐ No
Is the proposal likely to result in detours or disruptions to traffic flow (vehicular, cycle and pedestrian) or access during operation?	☐ Yes	☑ No
Is the proposal likely to affect any other transport nodes or transport infrastructure (e.g. bus stops, bus routes) in the surrounding area? Or result in detours or disruptions to traffic flow (vehicular, cycle and pedestrian) or access during operation?	☐ Yes	☑ No
Only minor and temporary traffic disruptions, in the form of traffic control, may occur where required for the works. Such impacts would be minor and temporary, and all work would be undertaken under an approved TGS where required.		

Safeguards

Safeguards to be implemented are:

49. Where possible, current traffic movements and property accesses are to be maintained during the works. Any disturbance is to be minimised to prevent unnecessary traffic delays. [TfNSW safeguard T1].
50. A Traffic Guidance Scheme will be prepared in accordance with the 'Traffic Control at Worksites Manual issue 6.1 2022' (RTA, 2010a) and *Australian Standard 1742.3 Manual of uniform control devices*. [TfNSW safeguard T3].

3.10 Socio-economic

Description of existing environmental and potential impacts		
Is the proposal likely to impact on local business? The existing roadway provides a valued traffic route option for local residences, businesses, schools and agricultural activities in the region. The works would cause some minor temporary disruption to vehicular traffic flow along these subject roads. Some minor temporary disruption to vehicular traffic access for residences is possible, including for vehicles entering/leaving New England Highway. This is not expected to be significant and would be of a temporary nature. Potential impacts can be managed through the implementation of safeguards.	☐ Yes	☑ No
Is the proposal likely to require any property acquisition?	☐ Yes	☑ No
Is the proposal likely to alter any access for properties (either temporarily or permanently)?	☐ Yes	☑ No
Is the proposal likely to alter any on-street parking arrangements (either temporarily or permanently)?	☐ Yes	☑ No
Is the proposal likely to change pedestrian movements or pedestrian access (either temporarily or permanently)?	☐ Yes	☑ No
Is the proposal likely to impact on any items or places of social value to the community (either temporarily or permanently)?	☐ Yes	☑ No
Is the proposal likely to reduce or change visibility of any businesses, farms, tourist attractions or the like (either temporarily or permanently)?	☐ Yes	☑ No
Potential socio-economic impacts associated with the proposed activity would be very minor and temporary at worst. The work relates to improving road safety. This would be of benefit to local and regional road users.		

Safeguards

Safeguards to be implemented are:

51. Notification is to be given to affected community members prior to the works taking place. The notification is to include:
    - Details of the planned roadworks
    - The duration of works and working hours, including planned out of hours works
    - Any changed traffic or access arrangements
    - How to lodge a complaint or obtain more information
    - Contact name and details.

    Notification should be a minimum of 7 calendar days prior to the start of works. [TfNSW safeguard C1].
52. All complaints are to be recorded on a complaints register and attended to promptly. [TfNSW safeguard C2].

53. Existing access for nearby and adjoining properties is to be maintained at all times during the works unless otherwise agreed to by the affected property owner. [TfNSW safeguard C3].
54. The community must be notified of all work outside standard hours which have the potential to impact noise sensitive receivers. Notification zones must be determined using the TfNSW Maintenance Noise Estimator. Notification requirements must comply with the RMS Construction Noise and Vibration Guideline. [TfNSW safeguard C4].

3.11 Landscape character and visual amenity

Description of existing environmental and potential impacts		
Is the proposed work over or near an important physical or cultural element or landscape? (e.g. heritage items and areas, distinctive or historic built form, National Parks, conservation areas, scenic highways etc)?	☐ Yes	☑ No
Would the proposal obstruct or intrude upon the character or views of a valued landscape or urban area. For example, locally significant topography, a rural landscape or a park, a river, lake or the ocean or a historic or distinctive townscape or landmark?	☐ Yes	☑ No
Would the proposal require the removal of mature trees or stands of vegetation, either native or introduced? Trees and vegetation would be removed as detailed in **Section 3.7** and **3.8.** The proposed activity is part of road works and associated work and is limited to the road reserve, with the exception of private property access where required. No significant landscape or visual amenity impact is expected.	☑ Yes	☐ No
Would the proposal result in large areas of shotcrete visible from the road or adjacent properties?	☐ Yes	☑ No
Would the proposal involve new noise walls or visible changes to existing noise walls?	☐ Yes	☑ No
Would the proposal involve the removal or reuse of large areas of road corridor, landscape, either verges or medians?	☐ Yes	☑ No
Would the proposal involve substantial changes to the appearance of a bridge (including piers, girders, abutments and parapets) that are visible from the road or residential areas?	☐ Yes	☑ No
If involving lighting, would the proposal create unwanted light spillage on residential properties at night (in construction or operation)?	☐ Yes	☑ No
Would any new structures or features to be constructed result in over-shadowing to adjoining properties or areas?	☐ Yes	☑ No
Select removal of mature trees along the roadside would result in some minor and localised visual change. However, this would be limited and would not be detrimental to the surrounding landscape character or visual amenity.		

Safeguards

Safeguards to be implemented are:

55. If the scope of the works changes at any time, review under the Roads and Maritime Services Environmental assessment procedure for routine and minor works (EIAPO5- 1) and complete any further requirements prior to undertaking works associated with the changed scope. [TfNSW safeguard G1].
56. No new access tracks to be created for the works. [TfNSW safeguard G3].

3.12 Waste

Description of existing environmental and potential impacts		
Is the proposal likely to generate >200 tonnes of waste material (contaminated and /or non-contaminated material)?	☐ Yes	☑ No
Is the proposal likely to require a licence from EPA?	☐ Yes	☑ No
Is the proposal likely to require the removal of asbestos?	☐ Yes	☑ No

The proposed activity would result in construction waste from the removal of the existing roadbase and culverts, including unsalvageable headwalls, as well as packaging and general waste. It is anticipated that the waste would be taken to a licenced waste facility (e.g., Tamworth or Uralla waste resource management facility). A Waste Management Plan must be prepared prior to works, which would address the characterisation of waste in accordance with EPA guidelines prior to disposal, particularly for culvert desilting, wet material and potential contaminants if hydrocarbon sheen/odour detected.

There would also be minor vegetation removal as part of the work, including mulching of regrowth vegetation. It is anticipated that most vegetation that is removed would be retained on site and be used:

- As large logs for supplementary habitat, distributed randomly within the road reserve.
- To aid with rehabilitation around any access tracks created and/or used. Vegetation that is mulched and/or chipped will be spread under retained trees in road reserve.

Any vegetative waste that cannot be reused on site would be chipped and taken to a licenced green waste processing facility. Vegetative waste potentially contaminated with weeds would be identified, stockpiled separately and transported for disposal.

No significant waste management issues are anticipated.

Safeguards

Safeguards to be implemented are:

57. A Waste Management Plan must be prepared that follows the TfNSW Technical Guide: Management of road construction and maintenance waste. [TfNSW safeguard M1].
58. 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). [TfNSW safeguard M3].

59. If vegetation is to be mulched and transported off site for beneficial reuse, it is to be assessed for the presence of weeds, pest, and other disease and a Mulch Management Plan prepared in accordance with the TfNSW Technical Procedure: Mulch Management. [TfNSW safeguard M4].
60. Bulk project waste (e.g., fill) sent to a site not owned by the TfNSW (excluding EPA licensed landfills and resource recovery facilities) is to have prior formal written approval from the landowner, in accordance with Environmental Direction No. 20 – Legal Off-site Disposal of Roads and Maritime Services Waste. This includes waste transported for reuse, recycling, disposal or stockpiling. [TfNSW safeguard M5].
61. If coal tar asphalt is identified and is to be removed, it is to be disposed of to landfill in accordance with TfNSW Environmental Direction No.21 – Coal Tar Asphalt Handling and Disposal. [TfNSW safeguard M6].
62. There is to be no disposal or re-use of construction waste on to other land. [TfNSW safeguard M7].
63. Waste is not to be burnt on site. [TfNSW safeguard M8].
64. Waste material, other than vegetation and tree mulch, is not to be left on site once the works have been completed. [TfNSW safeguard M9].
65. Working areas are to be maintained, kept free of rubbish and cleaned up at the end of each working day. [TfNSW safeguard M10].
66. Standard RMD Waste Management Processes to apply including waste register where applicable (Additional safeguard).

4. Consideration of State and Commonwealth environmental factors

4.1 Environmental Planning and Assessment Regulation 2021 checklist

The following factors, listed in section 171(2) of the Environmental Planning and Assessment Regulation 2021, have been considered to assess the likely impacts of the proposal on the natural and built environment. This consideration is required to comply with sections 5.5 and 5.7 of the EP&A Act.

Environmental factor	Impact
(a) Any environmental impact on a community? The proposed activity may cause minor temporary environmental impacts on the community (e.g., if temporary traffic control is required resulting in minor delays), however the potential impacts would be minimised with the implementation of the safeguards as detailed in this REF. The work would have no environmental impact on a community in the long-term and road users would benefit from this maintenance.	The proposed activity could have minor negative temporary impacts The proposed activity would also have moderate long-term positive impacts
(b) Any transformation of a locality? Temporary transformations comprise of general construction work, machinery on site and select tree clearing activities. After completion of the work, permanent transformations comprise of a wider pavement, including WCLT and wider shoulders. Safety barriers would also be installed. No significant transformation of the locality is likely.	Minor negative short-term impacts Minor long-term impact
(c) Any environmental impact on the ecosystems of a locality? The proposed activity would have potential minor environmental impacts on the ecosystems of a locality as a result of minor vegetation removal and minor culvert works, however the potential impacts would be minimised with the implementation of the safeguards given in **Section 3** of this REF.	Minor and long-term decline in amount of native vegetation. Minor and short-term impacts to waterways.
(d) Any reduction of the aesthetic, recreational, scientific or other environmental quality or value of a locality? Effective implementation of the mitigation measures provided in **Section 3** would ensure that the minor negative effects of the proposed activity (i.e. minor removal of roadside vegetation, road and culvert improvements) would not significantly affect the aesthetic, recreational, scientific or other environmental quality or value of the locality.	Minor short-term during construction Negligible to minor long term impact
(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 proposed activity is largely confined to the road reserve. The site does not exhibit the above values. The proposed activity would not adversely affect any of the above listed values. The relevant aboriginal group would be consulted as part of the proposed work.	Nil

Environmental factor	Impact
(f) Any impact on habitat of any protected animals (within the meaning of the *Biodiversity Conservation Act 2016*)? As outlined in **Section 3.7**, the proposed activity would result in the minor loss/modification of some native vegetation, which provides habitat of varying value for native fauna. Based on the impact of 0.06 ha of PCT 567, which corresponds to White Box-Yellow Box-Blakely's Red Gum Grassy Woodland and Derived Native Grassland (listed as Critically Endangered) and associated threatened species habitat, the proposal does trigger the TfNSW offset guidelines, offsets are required. However, the activity is unlikely to have a significant negative impact on habitats of protected fauna. The work would be undertaken following the safeguards provided in **Section 3** of this REF and BAR in **Appendix D**.	Minor negative Mitigation measures available to minimise potential impacts
(g) Any endangering of any species of animal, plant or other form of life, whether living on land, in water or in the air? Given the nature of the proposed methods and safeguards in **Section 3** of this REF, such impacts are considered unlikely and not of a level that would endanger any species of animal, plant or other form of life.	Nil
(h) Any long-term effects on the environment? The proposed activity would result in some long-term effects from minor vegetation removal, though this would not significantly affect the local environment. Based on the impact of 0.06 ha of PCT 567, which corresponds to White Box-Yellow Box-Blakely's Red Gum Grassy Woodland and Derived Native Grassland (listed as Critically Endangered) and associated threatened species habitat, the proposal does trigger the TfNSW offset guidelines, offsets are required. Other long-term environmental effects would not be substantial with implementation of the mitigation measures detailed in **Section 3** of this REF. The work would ensure the long-term safety of road infrastructure.	Minor negative Positive
(i) Any degradation of the quality of the environment? The minor negative environmental impacts associated with the proposed activity would not significantly degrade the quality of the local environment, especially with effective implementation of the safeguards in **Section 3** of this REF	Minor negative
(j) Any risk to the safety of the environment? All impacts associated with the proposed activity would be minimised with the implementation of the safeguards in **Section 3**. Overall, the activity is considered unlikely to pose any significant risk to the safety of the local environment. The proposed activity would have a positive impact for motorists and road users as it would support the safety of road infrastructure.	Potential short-term minor Negative Long-term positive socioeconomic outcome
(k) Any reduction in the range of beneficial uses of the environment? No short or long-term reduction in the range of beneficial uses of the environment is expected as a result of the proposed activity.	Nil

Environmental factor	Impact
(l) Any pollution of the environment? Waste materials, fuel spills, particulate matter and sediment have the potential to cause pollution to the environment. However, given the proposed safeguards detailed in **Section 3** of this REF and the nature and methodology proposed for the work, pollution to the environment is unlikely to occur.	Potential minor negative Mitigation measures available to avoid and minimises potential risks/ impacts
(m) Any environmental problems associated with the disposal of waste? All waste generated by the proposed activity 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 waste would be in accordance with EPA approved methods of waste disposal. Any reuse of vegetative waste would be done in a manner that does not pose a risk to the environment or receiving waters. Safeguards detailed in **Section 3** of this REF would protect the environment from problems associated with all waste disposal.	Potential minor negative Mitigation measures available to avoid and minimises potential risks/ impacts
(n) Any increased demands on resources, natural or otherwise which are, or are likely to become, in short supply? The proposed 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.	Nil
(o) Any cumulative environmental effect with other existing or likely future activities? The work would have a minor cumulative negative effect due to the required road improvement works and associated clearing of select trees. However, the impacts of the proposed activity are not substantial and would not impose a significant effect locally or regionally. Additionally, the mitigation measures detailed in **Section 3** would ensure such impacts are minimised.	Minor negative
(p) Any impact on coastal processes and coastal hazards, including those under projected climate change conditions? The proposed activity would not affect nor be affected by coastal processes or coastal hazards.	Nil
(q) Any impact on applicable local strategic planning statements, regional strategic plans or district strategic plans made under the Act, Division 3.1? The proposal broadly supports the following regional and local plans by providing a reliable and safe road network within the Tamworth and Uralla LGAs: Regional plans • New England North West Regional Plan • Namoi Unlimited Strategic Regional Plan • A 20-Year Economic Vision for Regional NSW • Lower North West Economic Development Strategy • Namoi Region Road Network Strategy • The Namoi Catchment Sustainability Plan	Positive

Environmental factor	Impact
Local plans • The 2017-2027 Community Strategic Plan (CSP) • City Growth Corridor Plan • Sports/Entertainment Precinct Plan • Tamworth Global Gateway Park Draft Structure Plan **Tamworth Tomorrow 2016-2021**	
(r) Any impact on other relevant environmental factors? There are no other relevant environmental factors.	Nil

4.2 Matters of National Environmental Significance checklist

Under the environmental assessment provisions of the EPBC Act, the following matters of national environmental significance are required to be considered to:

- Assist in determining whether the proposal should be referred to the Australian Government Department of Agriculture, Water and the Environment
- For nationally listed threatened species, ecological communities and migratory species, whether the impacts are significant and should be assessed via a Project REF.

Factor	Impact
(a) Any impact on a World Heritage property? No World Heritage Property occurs near the site.	Nil
(b) Any impact on a National Heritage place? No National Heritage Property occurs near the site.	Nil
(c) Any impact on a wetland of international importance (often called 'Ramsar' wetlands)? No Wetlands of International Importance are listed within 10 km of the site or would be affected by the activity. Three Wetlands of International significance (Banrock station wetland complex, Riverland and The Coorong, and Lakes Alexandrina and Albert Wetland) occur more than 10 km from the site. The Activity is distant from all these areas and as such does not impact on any Wetlands of International Significance.	Nil
(d) Any impact on nationally threatened species, ecological communities or migratory species? The proposal would result in the removal of 0.06 ha of the following TECs: • 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 Riverina Bioregions (BC Act) • White Box - Yellow Box -Blakely's Red Gum Grassy Woodland and Derived Native Grassland in the New England Tableland Bioregions (EPBC Act)	Nil

Factor	Impact
No threatened flora species were recorded during the surveys. No threatened fauna species were recorded at the site. However, there is potential for 12 threatened fauna species to occur based on available site habitats. It was determined that the proposal is unlikely to significantly affect any species, communities or their habitat listed under the BC Act or the EPBC Act (refer to **Appendix D**). No listed threatened species or communities are likely to be significantly affected by the activity (refer to **Section 3.7**).	
(e) Any impact on a Commonwealth marine area? The nature of the activity is such that no significant impact on a Commonwealth marine area is considered likely.	Nil
(f) Does the proposal involve a nuclear action (including uranium mining)? The activity does not involve a nuclear action.	Nil
Additionally, any impact (direct or indirect) on the environment of Commonwealth land? No Commonwealth Land would be directly or indirectly affected by the activity.	Nil

5. Summary of safeguards and environmental management measures

This section provides a summary of the site specific environmental safeguards and management measures identified in described in **Sections 3** and **4** of this REF. These safeguards will be implemented to reduce potential environmental impacts throughout construction and operation. A framework for managing the potential impacts is provided with reference to environmental management plans and relevant Transport QA specifications. Any potential licence and/or approval requirements required prior to construction are also listed

Table 5-1: Summary of site-specific safeguards for proposed work

Safeguards for the proposed work	
Soil	1. Erosion and sediment control measures are to be implemented and maintained to: – Prevent sediment moving off-site and sediment laden water entering any water course, drainage lines, or drain inlets – Reduce water velocity and capture sediment on site – Minimise the amount of material transported from site to surrounding pavement surfaces – Divert clean water around the site – (in accordance with the Landcom/Department of Housing Managing Urban Stormwater, Soils and Construction Guidelines (the Blue Book)) [TfNSW safeguard E1] 2. Erosion and sedimentation controls are to be checked and maintained on a weekly basis or after 10 mm of rainfall (including clearing of sediment from behind barriers) and records kept and provided on request. [TfNSW safeguard E2]. 3. Erosion and sediment control measures are not to be removed until the works are complete and areas are stabilised. [TfNSW safeguard E3]. 4. Work areas are to be stabilised progressively during the works. [TfNSW safeguard E4]. 5. A progressive erosion and sediment control plan is to be prepared for the works. [TfNSW safeguard E5]. 6. The maintenance of established stockpile sites is to be in accordance with the Roads and Maritime Services Stockpile Site Management Guideline (EMS-TG-10). [TfNSW safeguard E6]. 7. An environmental management plan is prepared in accordance with the specifications set out in the QA Specification G36 –Environmental Protection (Management System), QA Specification G38 – Soil and Water Management (Soil and Water Plan), QA Specification G40 – Clearing and Grubbing, QA Specification G10 - Traffic Management and implemented prior to the commencement of works. [TfNSW safeguard G2].
Waterways and water quality	8. There is to be no release of dirty water into drainage lines and/or waterways. [TfNSW safeguard W1].

Safeguards for the proposed work	
	9. Visual monitoring of local water quality (i.e., turbidity, hydrocarbon spills/slicks) is to be undertaken on a regular basis to identify any potential spills or deficient silt curtains or erosion and sediment controls. [TfNSW safeguard W2]. 10. Water quality control measures are to be used to prevent any materials (e.g.: concrete, grout, sediment etc) entering drain inlets or waterways. [TfNSW safeguard W3]. 11. Measures to control pollutants from stormwater and spills would be investigated and incorporated in the pavement drainage system at locations where it discharges to the receiving drainage lines. Measures aimed at reducing flow rates during rain events and potential scour would also be incorporated in the design of the pavement drainage system. [TfNSW safeguard W4]. 12. Excess debris from cleaning and washing is removed using hand tools. [TfNSW safeguard W5]. 13. All fuels, chemicals and liquids are to be stored in an impervious bunded area a minimum of 50 metres away from: – Rivers, creeks or any areas of concentrated water flow – Flooded or poorly drained areas – Slopes above 10%. [TfNSW safeguard R1]. 14. Refuelling of plant and equipment is to occur in impervious bunded areas located a minimum of 50 metres from drainage lines or waterways. Double bunding is required where it is not possible to locate refuelling areas a minimum of 50 metres from drainage lines or waterways. [TfNSW safeguard R2]. 15. Cleaning of spray bars (or equivalent equipment) is to occur in suitable areas (e.g., not table drains) and not cause water pollution. is to occur in suitable areas (e.g., not table drains) and not cause water pollution. [TfNSW safeguard R4]. 16. Vehicle wash down and/or cement truck washout is to occur in a designated bunded area. [TfNSW safeguard R5]. 17. An emergency spill kit is to be kept on site at all times and maintained throughout the construction work. The spill kit must be appropriately sized for the volume of substances at the work site. [TfNSW safeguard R6]. 18. If an incident (e.g., spill) occurs, the Transport for New South Wales Environmental Incident Classification and Reporting Procedure is to be followed and the Transport for New South Wales Contract Manager notified as soon as practicable. [TfNSW safeguard R7]. 19. Emergency contacts will be kept in an easily accessible location on vehicles, vessels, plant and site office. All workers will be advised of these contact details and procedures. [TfNSW safeguard R8]. 20. All workers will be advised of the location of the spill kit and trained in its use. [TfNSW safeguard R10]. 21. Vehicles, vessels and plant must be properly maintained and regularly inspected for fluid leaks. [TfNSW safeguard R11].

Safeguards for the proposed work	
Noise and vibration	22. Works to be carried out during work hours (i.e. 7:00 am to 6:00 pm Monday to Friday; and 7:00 am to 6:00 pm Saturdays). Any work that is performed outside normal work hours or on Sundays or public holidays must have measures in place to minimise noise impacts [TfNSW safeguard N1]. 23. Noise impacts are to be minimised in accordance with TfNSW Construction Noise Estimator. [TfNSW safeguard N2]. 24. Measures, including allowing adequate distance that rollers and other vibration producing equipment can come to adjacent buildings and/or using non vibration producing equipment, to minimise or prevent vibration impacts. [TfNSW safeguard N3].
Air quality	25. Measures (including watering or covering exposed areas) are to be used to minimise or prevent air pollution and dust. [TfNSW safeguard A1]. 26. Vegetation or other materials are not to be burnt on site. [TfNSW safeguard A3]. 27. Vehicles and vessels transporting waste or other materials that may produce odours or dust are to be covered during transportation. [TfNSW safeguard A4]. 28. Stockpiles or areas that may generate dust are to be managed to suppress dust emissions in accordance with the Transport for New South Wales Stockpile Site Management Guideline (EMS-TG-10). [TfNSW safeguard A5].
Aboriginal heritage	29. If Aboriginal heritage items are uncovered during the work, all work in the vicinity of the find must cease and the TfNSW Aboriginal Cultural Heritage Officer and Regional Environment Manager contacted immediately. Steps in the *Transport for NSW (formerly Roads and Maritime Services) Standard Management Procedure: Unexpected Heritage Items* must be followed (TfNSW safeguard B1). 30. If the scope of the project or methodology changes, the TfNSW Aboriginal Cultural Heritage Advisor and regional environmental staff are to be contacted to reassess any potential impacts on Aboriginal cultural heritage (additional safeguard).
Non-Aboriginal heritage	31. Works to be carried out in accordance with the approved Conservation Management Plan for the heritage item (where available). [TfNSW safeguard H1]. 32. If unexpected heritage items are uncovered during the works, all works must cease in the vicinity of the material/find and the steps in the Transport for New South Wales Standard Management Procedure: Unexpected Heritage Items must be followed. Transport for New South Wales Senior Environment Specialist - Heritage must be contacted immediately. [TfNSW safeguard H2].

Safeguards for the proposed work	
Biodiversity	33. There is to be no disturbance or damage to threatened species or areas of outstanding value. [TfNSW safeguard F1]. 34. Works are not to harm threatened fauna (including where they inhabit bridges or other structures e.g., timber fence posts or maritime piles). [TfNSW safeguard F2]. 35. If unexpected threatened fauna or flora species are discovered, stop works immediately and follow the Transport for New South Wales Unexpected Threatened Species Find Procedure in the Transport for New South Wales Biodiversity Guidelines 2011 – Guide 1 (Pre-clearing process). [TfNSW safeguard F3]. 36. Vegetation that has been protected or planted as part of offset works provided as part of an approved project (e.g., in association with fauna crossings) is not to be removed. [TfNSW safeguard F4]. 37. All pathogens (e.g., Chytid, Myrtle Rust and Phytophthora) are to be managed in accordance with the Transport for New South Wales Biodiversity Guidelines - Guide 7 (Pathogen Management) and DECC Statement of Intent 1: Infection of native plants by Phytophthora cinnamomi (for Phytophthora). Machinery, plant and equipment is to be cleaned prior to entering the site. [TfNSW safeguard F5]. 38. Declared noxious weeds are to be managed according to requirements under the *Biosecurity Act, 2015* and Guide 6 (Weed Management) of the Roads and Maritime Services Biodiversity Guidelines 2011. [TfNSW safeguard F6]. 39. Fauna handling must be carried out in accordance with the requirements the Transport for New South Wales Biodiversity Guidelines - Guide 9 (Fauna Handling) [TfNSW safeguard F7]. 40. Works are not to create an ongoing barrier to the movement of wildlife. [TfNSW safeguard F8]. 41. Pruning of mature trees is to be in accordance with Part 5 of the Australian Standard 4373-2007 Pruning of amenity trees. [TfNSW safeguard F9]. 42. All activities are to be carried out to avoid spreading marine pests including: – Removal of weeds, animals or sediment from equipment and disposal to an appropriate waste receptacle or facility – Disposal of sewage and bilge water at an approved pump out facility [TfNSW safeguard F12]. 43. Exclusion zones will be set up at the limit of clearing and pathogens will be managed in accordance with *Guide 2: Exclusion zones* of the *Biodiversity Guidelines: Protecting and managing biodiversity on RTA projects* (RTA, 2011). [additional safeguard from BAR]. 44. Undertake pre-culvert removal/replacement works survey to determine extent and presence/absence of microbats prior to construction. If present microbats are to be excluded by an ecologist as follows:

Safeguards for the proposed work	
	a. Installing exclusion devices (such as valves, curtains) prior to culvert removal/replacement works to discourage microbats from returning to the culvert/s b. Filling empty gaps within the culverts while microbats are out foraging for the night (if access inside the culvert is permitted) c. Daytime inspections immediately prior to works at each culvert, attempting to capture any remaining bats d. Consideration of provision alternative roosting habitat. [additional safeguard from BAR]. 45. Pre-clearing surveys will be undertaken in accordance with Guide 1: Pre-clearing process of the Biodiversity Guidelines: Protecting and managing biodiversity on RTA projects (RTA, 2011) [additional safeguard from BAR]. 46. Native vegetation will be re-established in accordance with Guide 3: Re-establishment of native vegetation of the Biodiversity Guidelines: Protecting and managing biodiversity on RTA projects (RTA, 2011) [additional safeguard from BAR]. 47. The unexpected species find procedure is to be followed under *Biodiversity Guidelines: Protecting and managing biodiversity on RTA projects* (RTA, 2011) if threatened ecological communities, not assessed in the biodiversity assessment, are identified in the proposal site [additional safeguard from BAR]. 48. Habitat removal will be undertaken in accordance with Guide 4: Clearing of vegetation and removal of bushrock of the Biodiversity Guidelines: Protecting and managing biodiversity on RTA projects (RTA, 2011) [additional safeguard from BAR]. 49. Habitat will be replaced or re-instated (where required) in accordance with Guide 5: Re-use of woody debris and bushrock and Guide 8: Nest boxes of the Biodiversity Guidelines: Protecting and managing biodiversity on RTA projects (RTA, 2011) [additional safeguard from BAR].
Trees	50. Parking of vehicles and storage of plant/equipment is to occur on existing paved areas. Where this is not possible, vehicles and plant/equipment are to be kept away from environmentally sensitive areas and outside the dripline of trees [TfNSW safeguard G4]. 51. Pruning of mature trees is to be in accordance with Part 5 of the Australian Standard 4373-2007 Pruning of amenity trees. [TfNSW safeguard F9]. 52. An environmental management plan is prepared in accordance with the specifications set out in the QA Specification G36 –Environmental Protection (Management System), QA Specification G38 – Soil and Water Management (Soil and Water Plan), QA Specification G40 – Clearing and Grubbing, QA Specification G10 - Traffic Management and implemented prior to the commencement of works. [TfNSW safeguard G2].

Safeguards for the proposed work	
Traffic and transport	53. Where possible, current traffic movements and property accesses are to be maintained during the works. Any disturbance is to be minimised to prevent unnecessary traffic delays. [TfNSW safeguard T1]. 54. A Traffic Guidance Scheme will be prepared in accordance with the 'Traffic Control at Worksites Manual issue 6.1 2022' (RTA, 2010a) and *Australian Standard 1742.3 Manual of uniform control devices*. [TfNSW safeguard T3].
Socio-economic	55. Notification is to be given to affected community members prior to the works taking place. The notification is to include: – Details of the planned roadworks – The duration of works and working hours, including planned out of hours works – Any changed traffic or access arrangements – How to lodge a complaint or obtain more information – Contact name and details. Notification should be a minimum of 7 calendar days prior to the start of works. [TfNSW safeguard C1]. 56. All complaints are to be recorded on a complaints register and attended to promptly. [TfNSW safeguard C2]. 57. Existing access for nearby and adjoining properties is to be maintained at all times during the works unless otherwise agreed to by the affected property owner. [TfNSW safeguard C3]. 58. The community must be notified of all work outside standard hours which have the potential to impact noise sensitive receivers. Notification zones must be determined using the TfNSW Maintenance Noise Estimator. Notification requirements must comply with the RMS Construction Noise and Vibration Guideline. [TfNSW safeguard C4].
Landscape character and visual amenity	59. If the scope of the works changes at any time, review under the Roads and Maritime Services Environmental assessment procedure for routine and minor works (EIAPO5- 1) and complete any further requirements prior to undertaking works associated with the changed scope. [TfNSW safeguard G1]. 60. No new access tracks to be created for the works. [TfNSW safeguard G3].
Waste	61. A Waste Management Plan must be prepared that follows the TfNSW Technical Guide: Management of road construction and maintenance waste. [TfNSW safeguard M1]. 62. Resource management hierarchy principles are to be followed: – Avoid unnecessary resource consumption as a priority

Safeguards for the proposed work	
	– 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). [TfNSW safeguard M3]. 63. If vegetation is to be mulched and transported off site for beneficial reuse, it is to be assessed for the presence of weeds, pest, and other disease and a Mulch Management Plan prepared in accordance with the TfNSW Technical Procedure: Mulch Management. [TfNSW safeguard M4]. 64. Bulk project waste (e.g., fill) sent to a site not owned by the TfNSW (excluding EPA licensed landfills and resource recovery facilities) is to have prior formal written approval from the landowner, in accordance with Environmental Direction No. 20 – Legal Off-site Disposal of Roads and Maritime Services Waste. This includes waste transported for reuse, recycling, disposal or stockpiling. [TfNSW safeguard M5]. 65. If coal tar asphalt is identified and is to be removed, it is to be disposed of to landfill in accordance with TfNSW Environmental Direction No.21 – Coal Tar Asphalt Handling and Disposal. [TfNSW safeguard M6]. 66. There is to be no disposal or re-use of construction waste on to other land. [TfNSW safeguard M7]. 67. Waste is not to be burnt on site. [TfNSW safeguard M8]. 68. Waste material, other than vegetation and tree mulch, is not to be left on site once the works have been completed. [TfNSW safeguard M9]. 69. Working areas are to be maintained, kept free of rubbish and cleaned up at the end of each working day. [TfNSW safeguard M10]. 70. Standard RMD Waste Management Processes to apply including waste register where applicable (Additional safeguard).

5.1 Licensing and approvals

No licences and/or approvals are required for the proposal.

5.2 Other requirements

Requirement		
Environmental management plan to be sent to SMES for review. Environmental management plan (CEMP) to be sent to SESO for review prior to commencement of works.	☐ Yes	☑ No

6. Certification, review and decision

6.1 Certification

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

Prepared by:

[redacted]

Theresa Choi
Environmental Scientist
GeoLINK
Date: 10/06/2022

Minor Works REF reviewed by:

[redacted]

Simon Williams
Director
GeoLINK
Date: 10/06/2022

6.2 Environment staff review

The Minor Works REF has been reviewed and considered against the requirements of sections 5.5 and 5.7 of the EP&A Act.

In considering the proposal this assessment has examined and taken into account to the fullest extent possible, all matters affecting or likely to affect the environment by reason of that activity as addressed in the Minor Works REF and associated information. This assessment is considered to be in accordance with the factors required to be considered under section 171 of the Environmental Planning and Assessment Regulation 2021.

[The proposal described in the Minor Works REF will have some environmental impacts which can be ameliorated satisfactorily. Having regard to the safeguard and management measures proposed, this assessment has considered that these impacts are unlikely to be significant and therefore an approval for the proposal does not need to be sought under Division 5.2 of the EP&A Act.

The assessment has considered the potential impacts of the activity on areas of outstanding value and on threatened species, ecological communities or their habitats for both terrestrial and aquatic species as defined by the *Biodiversity Conservation Act 2016* and the *Fisheries Management Act 1994*.

The proposal described in the Minor Works REF will not affect areas of outstanding value. The activity described in the Minor Works REF will not significantly affect threatened species ecological communities or their habitats. Therefore a species impact statement is not required.

The assessment has also addressed the potential impacts on the activity on matters of national environmental significance and any impacts on the environment of Commonwealth land and concluded that there will be no significant impacts. Therefore there is no need for a referral to be made to the Australian Government Department of Agriculture, Water and the Environment for a decision by the Commonwealth Minister for the Environment on whether assessment and approval is required under the *Environment Protection and Biodiversity Conservation Act 1999*.

The Minor Works REF is considered to meet all relevant requirements.

Reviewed by:

[redacted]

Chris Wicks
Senior Environment and Sustainability Officer

6.3 Environment staff recommendation

It is recommended that the proposal to upgrade a 4.55 km section of the New England Highway (HW9) at Kentucky as described in this Minor Works REF proceed subject to the implementation of all safeguards identified in the Minor Works REF and compliance with all other relevant statutory approvals, licences, permits and authorisations.

The Minor Works REF has examined and taken into account to the fullest extent possible all matters likely to affect the environment by reason of the activity and established that the activity is not likely to significantly affect the environment or threatened species, ecological communities or their habitats.

The Minor Works REF has concluded that there will be no significant impacts on matters of national environmental significance or any impacts on the environment of Commonwealth land.

The Minor Works REF determination will remain current for five years until July 2027 at which time it shall lapse if works have not been physically commenced. The pre-construction checklist must be completed prior to the commencement of any works.

Recommended by:

[redacted]

Greg Collins
Environment and Sustainability Manager

Noted by:

[redacted]

Mitchel Ingram
Project/Contract Manager

6.4 Determination

In accordance with the above recommendation and sections 5.5 and 5.7 of the EP&A Act, I determine that Transport for NSW may:

- proceed with the activity

[redacted] 07/10/2022

David Pattison
Senior Manager Project Services North

Appendix A

Contamination Searches

Department of Primary Industries

Cattle dip site locator

This search retrieved 0 dip sites.

For more information about each dip site, click on the name below.

Dip name	Road	Town/Locality	Council

Find dip sites

Dip name

Road

Town/Locality Bendemeer

Council ---select all---

Search

The information contained in this web page is based on knowledge and understanding at the time of writing. However, because of advances in knowledge, users are reminded of the need to ensure that information upon which they rely is up to date and to check currency of the information with the appropriate officer of Industry& Investment NSW or the user's independent adviser.

Home Public registers Contaminated land record of notices

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

4 April 2022

Search results

Your search for:LGA: URALLA SHIRE COUNCIL

Matched 4 notices relating to 1 site.

Search Again
Refine Search

Suburb	Address	Site Name	Notices related to this site
URALLA	Walcha ROAD	Koppers Australia	4 former

Page 1 of 1

4 April 2022

Appendix B

TfNSW Construction and Maintenance Noise Estimator Tool – Distance Based Assessment (Noisiest Plant) Results

Distanced Based Assessment (Noisiest Plant)

Please pick from drop-down list in orange cells

Noise area category		R1
RBL or L_{A90} Background level (dB(A))	Day	40
	Evening	35
	Night	30
$L_{Aeq(15minute)}$ Noise Mangement Level (dB(A))	Day	50
	Day (OOHW)	45
	Evening	40
	Night	35
Noisiest plant		Concrete Saw
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) Noticeable			10 to 20 dB(A) Clearly audible			20 to 30 dB(A) Moderately intrusive			> 30 dB(A) 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	340							N	160	60	N	70	70	N, PC, RO	40	75	
	Day (OOHW)	490				N, R1, DR	340	50	N, R1, DR	160	60	N, R1, DR, PC, SN	70	70	N, PC, RO	40	75	
	Evening	705				N, R1, DR	490	45	N, R1, DR	235	55	N, R1, DR, PC, SN	110	65	N, PC, RO	40	75	
	Night	1010	N	1010	35	N, R2, DR	705	40	N, PC, SN, R2, DR	340	50	AA, N, PC, SN, R2, DR	160	60	N, PC, RO	40	75	160
	Highly Affected	40													N, PC, RO	40	75	
Developed settlements (urban and suburban) or over water	Day	425							N	185	60	N	75	70	N, PC, RO	45	75	
	Day (OOHW)	635				N, R1, DR	425	50	N, R1, DR	185	60	N, R1, DR, PC, SN	75	70	N, PC, RO	45	75	
	Evening	940				N, R1, DR	635	45	N, R1, DR	280	55	N, R1, DR, PC, SN	120	65	N, PC, RO	45	75	
	Night	1355	N	1355	35	N, R2, DR	940	40	N, PC, SN, R2, DR	425	50	AA, N, PC, SN, R2, DR	185	60	N, PC, RO	45	75	185
	Highly Affected	45													N, PC, RO	45	75	

Non-residential receiver
Undeveloped green fields, rural areas with isolated dwellings

			$L_{Aeq(15minute)}$ noise level above NML						LAeq(15minute) 75 dB(A) or greater (Highly affected)		
	Standard hours		<10 dB(A)			10 to 20 dB(A)					
	Period	NML	Affected distance (m)	Measure	Within distance (m)	Mitigation level (dB(A))	Measure	Within distance (m)	Mitigation level (dB(A))	Measure	Within distance (m)	Mitigation level (dB(A))
Classroom at schools and other educational institutions	Day	55	235				N	110	65	N, PC, RO	40	75
Hospital wards and operating theatres	Day	65	110							N, PC, RO	40	75
Place of worship	Day	55	235				N	110	65	N, PC, RO	40	75
Active recreation	Day	65	110							N, PC, RO	40	75
Passive recreation	Day	60	160				N	70	70	N, PC, RO	40	75
Industrial premise	Day	75	40							N, PC, RO	40	75
Offices, retail outlets	Day	70	70							N, PC, RO	40	75

			$L_{Aeq(15minute)}$ noise level above NML											
	OOHW		< 5 dB(A)			5 to 15 dB(A)			15 to 25 dB(A)			> 25 dB(A)		
	Period	NML	Affected distance (m)	Measure	Within distance (m)	Mitigation level (dB(A))	Measure	Within distance (m)	Mitigation level (dB(A))	Measure	Within distance (m)	Mitigation level (dB(A))	Measure	Within distance (m)	Mitigation level (dB(A))
Hospital wards and operating theatres	Evening	65	110				N, R1, DR	70	70	N, R1, DR	22	80	N, R1, DR, PC, SN	7	90
	Night	65	110	N	110	65	N, R2, NR	70	70	N, PC, SN, R2, DR	22	80	AA, N, PC, SN, R2, DR	7	90
Place of worship	Evening	55	235				N, R1, DR	160	60	N, R1, DR	70	70	N, R1, DR, PC, SN	22	80
	Night	55	235	N	235	55	N, R2, NR	160	60	N, PC, SN, R2, DR	70	70	AA, N, PC, SN, R2, DR	22	80
Active recreation	Evening	65	110				N, R1, DR	70	70	N, R1, DR	22	80	N, R1, DR, PC, SN	7	90
Passive recreation	Evening	60	160				N, R1, DR	110	65	N, R1, DR	40	75	N, R1, DR, PC, SN	13	85
Industrial premise	Evening	75	40				N, R1, DR	22	80	N, R1, DR	7	90	N, R1, DR, PC, SN	2	100
	Night	75	40	N	40	75	N, R2, NR	22	80	N, PC, SN, R2, DR	7	90	AA, N, PC, SN, R2, DR	2	100
Offices, retail outlets	Evening	70	70				N, R1, DR	40	75	N, R1, DR	13	85	N, R1, DR, PC, SN	4	95
	Night	70	70	N	70	70	N, R2, NR	40	75	N, PC, SN, R2, DR	13	85	AA, N, PC, SN, R2, DR	4	95

Non-residential receiver
Developed settlements (urban and suburban) or over water

			$L_{Aeq(15minute)}$ noise level above NML						LAeq(15minute) 75 dB(A) or greater (Highly affected)		
	Standard hours		<10 dB(A)			10 to 20 dB(A)					
	Period	NML	Affected distance (m)	Measure	Within distance (m)	Mitigation level (dB(A))	Measure	Within distance (m)	Mitigation level (dB(A))	Measure	Within distance (m)	Mitigation level (dB(A))
Classroom at schools and other educational institutions	Day	55	280				N	120	65	N, PC, RO	45	75
Hospital wards and operating theatres	Day	65	120							N, PC, RO	45	75
Place of worship	Day	55	280				N	120	65	N, PC, RO	45	75
Active recreation	Day	65	120							N, PC, RO	45	75
Passive recreation	Day	60	185				N	75	70	N, PC, RO	45	75
Industrial premise	Day	75	45							N, PC, RO	45	75
Offices, retail outlets	Day	70	75							N, PC, RO	45	75

			$L_{Aeq(15minute)}$ noise level above NML											
	OOHW		< 5 dB(A)			5 to 15 dB(A)			15 to 25 dB(A)			> 25 dB(A)		
	Period	NML	Affected distance (m)	Measure	Within distance (m)	Mitigation level (dB(A))	Measure	Within distance (m)	Mitigation level (dB(A))	Measure	Within distance (m)	Mitigation level (dB(A))	Measure	Within distance (m)	Mitigation level (dB(A))
Hospital wards and operating theatres	Evening	65	120				N, R1, DR	75	70	N, R1, DR	25	80	N, R1, DR, PC, SN	8	90
	Night	65	120	N	120	65	N, R2, NR	75	70	N, PC, SN, R2, DR	25	80	AA, N, PC, SN, R2, DR	8	90
Place of worship	Evening	55	280				N, R1, DR	185	60	N, R1, DR	75	70	N, R1, DR, PC, SN	25	80
	Night	55	280	N	280	55	N, R2, NR	185	60	N, PC, SN, R2, DR	75	70	AA, N, PC, SN, R2, DR	25	80
Active recreation	Evening	65	120				N, R1, DR	75	70	N, R1, DR	25	80	N, R1, DR, PC, SN	8	90
Passive recreation	Evening	60	185				N, R1, DR	120	65	N, R1, DR	45	75	N, R1, DR, PC, SN	14	85
Industrial premise	Evening	75	45				N, R1, DR	25	80	N, R1, DR	8	90	N, R1, DR, PC, SN	3	100
	Night	75	45	N	45	75	N, R2, NR	25	80	N, PC, SN, R2, DR	8	90	AA, N, PC, SN, R2, DR	3	100
Offices, retail outlets	Evening	70	75				N, R1, DR	45	75	N, R1, DR	14	85	N, R1, DR, PC, SN	5	95
	Night	70	75	N	75	70	N, R2, NR	45	75	N, PC, SN, R2, DR	14	85	AA, N, PC, SN, R2, DR	5	95

Appendix C

Heritage Searches

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)

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Search Results

28 results found.

Balala Station Gardens Kingstown Rd	Uralla, NSW, Australia	(Registered) Register of the National Estate (Non-statutory archive)
Balala Station Homestead, Outbuildings and Cemetery Kingstown Rd	Uralla, NSW, Australia	(Registered) Register of the National Estate (Non-statutory archive)
Bundarra Police Station and Courthouse (former) 33 Bendemeer St	Bundarra, NSW, Australia	(Registered) Register of the National Estate (Non-statutory archive)
Catholic Convent (former) Bridge St	Uralla, NSW, Australia	(Indicative Place) Register of the National Estate (Non-statutory archive)
Deeargee Woolshed Gostwyck-Hillview Rd	Gostwyck, NSW, Australia	(Registered) Register of the National Estate (Non-statutory archive)
Frazier Family Cemetery on Rockdale Ferris La	Saumarez Ponds via Armidale, NSW, Australia	(Indicative Place) Register of the National Estate (Non-statutory archive)
Gillis Barber / Bike Shop, Billiard Saloon and Dwelling (former) 45 Bridge St	Uralla, NSW, Australia	(Indicative Place) Register of the National Estate (Non-statutory archive)
Gondwana Rainforests of Australia	Lismore, NSW, Australia	(Declared property) World Heritage List
Gondwana Rainforests of Australia	Lismore, NSW, Australia	(Listed place) National Heritage List
Gostwyck Elm Avenues Gostwyck Rd	Gostwyck, NSW, Australia	(Registered) Register of the National Estate (Non-statutory archive)
Gostwyck Homestead & Outbuildings Gostwyck Rd	Gostwyck, NSW, Australia	(Indicative Place) Register of the National Estate (Non-statutory archive)

Gostwyck Homestead Gardens	Gostwyck Rd	Uralla, NSW, Australia	(Indicative Place) Register of the National Estate (Non-statutory archive)
Gwydir River Road Bridge	Bendemeer St	Bundarra, NSW, Australia	(Registered) Register of the National Estate (Non-statutory archive)
Indigenous Place		Harwood via Yarrowyck, NSW, Australia	(Indicative Place) Register of the National Estate (Non-statutory archive)
Indigenous Place		Ramah via Tenterden, NSW, Australia	(Indicative Place) Register of the National Estate (Non-statutory archive)
Indigenous Place		Yarrowyck, NSW, Australia	(Registered) Register of the National Estate (Non-statutory archive)
Macleay Gorges Wilderness Area	Kunderang Trl	Armidale, NSW, Australia	(Indicative Place) Register of the National Estate (Non-statutory archive)
McCrossins Store (former)	33 Salisbury St	Uralla, NSW, Australia	(Rejected Place) Register of the National Estate (Non-statutory archive)
Mount Mutton Goldfield	Bundarra Rd	Uralla, NSW, Australia	(Indicative Place) Register of the National Estate (Non-statutory archive)
Mount Yarrowyck Nature Reserve		Yarrowyck, NSW, Australia	(Registered) Register of the National Estate (Non-statutory archive)
Old Uralla Cemetery	Uralla Sq	Uralla, NSW, Australia	(Indicative Place) Register of the National Estate (Non-statutory archive)
Oxley Wild Rivers National Park	Oxley Hwy	Wollomombi, NSW, Australia	(Indicative Place) Register of the National Estate (Non-statutory archive)

Salisbury Court Walcha Rd	Uralla, NSW, Australia	(Registered) Register of the National Estate (Non-statutory archive)
Salisbury Court Garden Walcha Road	Uralla, NSW, Australia	(Registered) Register of the National Estate (Non-statutory archive)
Saumarez Homestead and Outbuildings Tanglewood Rd	Armidale, NSW, Australia	(Registered) Register of the National Estate (Non-statutory archive)
St Nicholas Church of England Invergowrie Rd	Saumarez Ponds via Armidale, NSW, Australia	(Registered) Register of the National Estate (Non-statutory archive)
Uralla Courthouse Hill St	Uralla, NSW, Australia	(Registered) Register of the National Estate (Non-statutory archive)
Vickers Family Cemetery on Goldsworth Goldsworth Rd	Rocky River, NSW, Australia	(Indicative Place) Register of the National Estate (Non-statutory archive)

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NSW GOVERNMENT | Heritage NSW

Heritage Search Result

Date: 04/04/2022

Item Name	Location	LGA	SHR Id	Item Type	Record Owner
Abbey, The	43-45 Rowan Street MANILLA NSW 2346	Tamworth Regional		Built	LGOV
Airlie House at Airlie Station	Airlie Station Road BENDEMEER NSW 2355	Tamworth Regional		Built	LGOV
Airlie Station Fireplace	Airlie Station Road BENDEMEER NSW 2355	Tamworth Regional		Built	LGOV
Airlie Station Woolshed	Airlie Station Road BENDEMEER NSW 2355	Tamworth Regional		Unknown	LGOV
All Saints Church of England	70 Jenkins Street NUNDLE NSW 2340	Tamworth Regional		Built	LGOV
'Angelsea' Residence	Woodsreef Road BARRABA NSW 2347	Tamworth Regional		Built	LGOV
ANZ Bank Building	429 Peel Street TAMWORTH NSW 2340	Tamworth Regional		Built	LGOV
Anzac Park Gates	Brisbane Street TAMWORTH NSW 2340	Tamworth Regional		Archaeological-Terrestrial	LGOV
Anzac Park Gazebo	Brisbane Street TAMWORTH NSW 2340	Tamworth Regional		Built	LGOV
Attunga Cemetery	Ridge Street ATTUNGA NSW 2345	Tamworth Regional		Archaeological-Terrestrial	LGOV
Attunga Hall	Attunga Street ATTUNGA NSW 2345	Tamworth Regional		Built	LGOV
Attunga Hotel	1-3 Attunga Street ATTUNGA NSW 2345	Tamworth Regional		Built	LGOV
Attunga Silos	Attunga Street ATTUNGA NSW 2345	Tamworth Regional		Built	LGOV
Attunga Youth Hall	11-15 Attunga Street ATTUNGA NSW 2345	Tamworth Regional		Built	LGOV
Australian Winter Cereal Collection	Calala Lane TAMWORTH NSW 2340	Tamworth Regional		Movable / Collection	SGOV

Bank	129 Queen Street BARRABA NSW 2347	Tamworth Regional		Built	LGOV
Bank of New South Wales Building	147 Manilla Street MANILLA NSW 2346	Tamworth Regional		Built	LGOV
Baptist Church	86 Carthage Street TAMWORTH NSW 2340	Tamworth Regional		Built	LGOV
Barraba Cemetery	West Street BARRABA NSW 2347	Tamworth Regional		Archaeological-Terrestrial	LGOV
Barraba Central School - Buildings B001, B002 and B004	Gotha Street BARRABA NSW 2347	Tamworth Regional		Built	SGOV
Barraba Central School - Buildings B001, B002 and B004	Gotha Street BARRABA NSW 2347	Tamworth Regional		Built	SGOV
Barraba Creek Bridge	Secondary Road 63 BARRABA NSW 2347	Tamworth Regional		Built	SGOV
Barraba District Hospital	Gotha Street BARRABA NSW 2347	Tamworth Regional		Built	LGOV
Barraba Primary School	Gotha Street BARRABA NSW 2347	Tamworth Regional		Built	LGOV
Barraba Senior Citizens Centre	50 Fitzroy Street BARRABA NSW 2347	Tamworth Regional		Built	LGOV
Barraba Showground and Racecourse	Mulwaree Road BARRABA NSW 2347	Tamworth Regional		Built	LGOV
Bective Station	Oxley Highway BECTIVE NSW 2340	Tamworth Regional		Complex / Group	LGOV
Bective Station - Laundry	Oxley Highway BECTIVE NSW 2340	Tamworth Regional		Built	LGOV
Bective Station - Salt Shed and Butchers Hut	Oxley Highway BECTIVE NSW 2340	Tamworth Regional		Built	LGOV
Bective Station - Shearing Shed and Herefed Stud Sheds	Oxley Highway BECTIVE NSW 2340	Tamworth Regional		Built	LGOV
Bendemeer Café	141-143 Caroline Street BENDEMEER NSW 2355	Tamworth Regional		Unknown	LGOV
Bendemeer Hotel	112-130 Caroline Street BENDEMEER NSW 2355	Tamworth Regional		Built	LGOV
Bendemeer Police Station	157 Caroline Street BENDEMEER NSW 2355	Tamworth Regional		Built	LGOV

Bendemeer Police Station and Official Residence	Aurora Street and Caroline Street, corner Of BENDEMEER NSW 2355	Tamworth Regional		Built	SGOV
Bendemeer Public Cemetery	Caroline Street BENDEMEER NSW 2355	Tamworth Regional		Archaeological-Terrestrial	LGOV
Bendemeer Public School	Charles Street BENDEMEER NSW 2355	Tamworth Regional		Built	LGOV
Bendemeer Public School - Building B00A	17-27 Charles Street BENDEMEER NSW 2355	Tamworth Regional		Built	SGOV
Bendemeer Public School - Building B00A	17-27 Charles Street BENDEMEER NSW 2355	Tamworth Regional		Built	SGOV
Bendemeer Station	New England Highway BENDEMEER NSW 2355	Tamworth Regional		Built	LGOV
Bendemeer Station - Blacksmiths Store	New England Highway BENDEMEER NSW 2355	Tamworth Regional		Built	LGOV
Bendemeer Station - Grave of Thomas Perry	New England Highway BENDEMEER NSW 2355	Tamworth Regional		Built	LGOV
Bendemeer Station - Woolshed	New England Highway BENDEMEER NSW 2355	Tamworth Regional		Built	LGOV
Bendemeer Town Hall	87-89 Caroline Street BENDEMEER NSW 2355	Tamworth Regional		Built	LGOV
Bendemeer Uniting Church	135-139 Caroline Street (Corner) BENDEMEER NSW 2355	Tamworth Regional		Built	LGOV
Black Snake Gold Mine	Nundle Road HANGING ROCK NSW 2340	Tamworth Regional		Archaeological-Terrestrial	LGOV
Blair Graves - Within Haning	155 Caroline Street BENDEMEER NSW 2355	Tamworth Regional		Archaeological-Terrestrial	LGOV
Bon Accord	Oxley Highway BECTIVE NSW 2340	Tamworth Regional		Built	LGOV
Bowling Alley Point Dungowan Parish General Cemetery	BOWLING ALLEY POINT NSW 2340	Tamworth Regional		Archaeological-Terrestrial	LGOV

Bowling Alley Point Geological Site	BOWLING ALLEY POINT NSW 2340	Tamworth Regional		Landscape	LGOV
Bowling Alley Point School	BOWLING ALLEY POINT NSW 2340	Tamworth Regional		Built	LGOV
Bowling Alley Point Union Church	BOWLING ALLEY POINT NSW 2340	Tamworth Regional		Built	LGOV
Brick Culvert	461.579km West Tamworth to Uralla Railway NEMINGHA NSW 2340	Tamworth Regional		Built	SGOV
Brick Culvert	490.809km West Tamworth to Uralla Railway WOOLBROOK NSW 2354	Tamworth Regional		Built	SGOV
Bridges Over Railway at Tintinhull	New England Highway South TINTINHULL NSW 2352	Tamworth Regional		Built	LGOV
Brigalow Reserve	Oxley Highway BECTIVE NSW 2340	Tamworth Regional		Landscape	LGOV
Burkes Bridge Loders Gully Creek	New England Highway NEMINGHA NSW 2340	Tamworth Regional		Built	SGOV
Butcher Shop	195 Manilla Street MANILLA NSW 2346	Tamworth Regional		Built	LGOV
Catholic Church	Britten Street WEABONGA NSW 2340	Tamworth Regional		Built	LGOV
Cellar Storeroom for Coach and Horses Inn	New England Highway MOONBI NSW 2353	Tamworth Regional		Built	LGOV
Central Hotel	330-334 Peel Street TAMWORTH NSW 2340	Tamworth Regional		Built	LGOV
Chaffey Dam	Peel River TAMWORTH NSW 2340	Tamworth Regional		Built	SGOV
Chinese Pioneers Memorial Garden	197 Manilla Street MANILLA NSW 2346	Tamworth Regional		Archaeological-Terrestrial	LGOV
Christ Church Anglican	Ridge Street ATTUNGA NSW 2345	Tamworth Regional		Built	LGOV
Church	63 Gill Street NUNDLE NSW 2340	Tamworth Regional		Built	LGOV
Clifton Hall	100 Queen Street BARRABA NSW 2347	Tamworth Regional		Built	LGOV

Commercial Building	226 Peel Street TAMWORTH NSW 2340	Tamworth Regional		Built	LGOV
Commercial Hotel	136 Queen Street BARRABA NSW 2347	Tamworth Regional		Built	LGOV
Commonwealth Bank Building	404 Peel Street TAMWORTH NSW 2340	Tamworth Regional		Built	LGOV
Community Centre	214 Peel Street TAMWORTH NSW 2340	Tamworth Regional		Built	LGOV
Cottage	37 Griffin Avenue EAST TAMWORTH NSW 2340	Tamworth Regional		Complex / Group	LGOV
Cottage	39 Griffin Avenue EAST TAMWORTH NSW 2340	Tamworth Regional		Complex / Group	LGOV
Cottage	46 Griffin Avenue EAST TAMWORTH NSW 2340	Tamworth Regional		Complex / Group	LGOV
Cottage	47 Griffin Avenue EAST TAMWORTH NSW 2340	Tamworth Regional		Complex / Group	LGOV
Cottage	48 Griffin Avenue EAST TAMWORTH NSW 2340	Tamworth Regional		Complex / Group	LGOV
Cottage	51 Griffin Avenue EAST TAMWORTH NSW 2340	Tamworth Regional		Complex / Group	LGOV
Cottage	56 Griffin Avenue EAST TAMWORTH NSW 2340	Tamworth Regional		Complex / Group	LGOV
Courthouse Hotel	232 Peel Street TAMWORTH NSW 2340	Tamworth Regional		Built	LGOV
Courthouse Hotel	85 Manilla Street MANILLA NSW 2346	Tamworth Regional		Built	LGOV
Courthouse Museum	38-40 Jenkins Street NUNDLE NSW 2340	Tamworth Regional		Built	LGOV
Dalblair Homestead	Dalblair Lane WINTON NSW 2344	Tamworth Regional		Built	LGOV
Daruka Station	80 Wyndham Close DARUKA NSW 2340	Tamworth Regional		Built	LGOV
Dingley Dell Uniques	Main Road UPPER MANILLA NSW 2346	Tamworth Regional		Built	LGOV

Dominican Roman Catholic Convent	Marius Street TAMWORTH NSW 2340	Tamworth Regional	00122	Built	HNSW
Dungowan Cemetery	Ogunbil Road DUNGOWAN NSW 2340	Tamworth Regional		Archaeological-Terrestrial	LGOV
Dungowan Memorial Hall	Nowendoc Road DUNGOWAN NSW 2340	Tamworth Regional		Built	LGOV
Dungowan Public School	137 Ogunbil Road DUNGOWAN NSW 2340	Tamworth Regional		Built	SGOV
Dungowan Public School	137 Ogunbil Road DUNGOWAN NSW 2340	Tamworth Regional		Built	SGOV
Dungowan Public School	Dungowan Creek Road DUNGOWAN NSW 2340	Tamworth Regional		Built	LGOV
Dungowan Store, Post Office and Residence	Nundle Road DUNGOWAN NSW 2340	Tamworth Regional		Unknown	LGOV
Durham	Calala Lane TAMWORTH NSW 2340	Tamworth Regional		Movable / Collection	SGOV
Duri Community Hall	2 Duri Street DURI NSW 2344	Tamworth Regional		Built	LGOV
Duri Public School - Buildings B00B and B00E and Movable Item	Duri-Dungowan Road DURI NSW 2344	Tamworth Regional		Built	SGOV
Duri Silos	Duri Street DURI NSW 2344	Tamworth Regional		Built	LGOV
Dwelling	30-32 Darling Street TAMWORTH NSW 2340	Tamworth Regional		Built	LGOV
East Tamworth Station Pedestrian Bridge	Bourke Street TAMWORTH NSW 2340	Tamworth Regional		Built	LGOV
Eastern Railway Viaduct	Peel Street TAMWORTH NSW 2340	Tamworth Regional		Built	LGOV
Entrance to Endeavour Drive, Street Lights	Endeavour Drive TAMWORTH NSW 2340	Tamworth Regional		Built	LGOV
Factory	Corner Court Street MANILLA NSW 2346	Tamworth Regional		Built	LGOV
Farrer Memorial Agricultural High School - Buildings B00A-B00E, B00G, B00H, B00K, B00R, B00W, B0DA, B0SB and Landscape	585 Calala Lane CALALA NSW 2340	Tamworth Regional		Built	SGOV

Five Head Stamping Battery	Niangala Common NIANGALA NSW 2354	Tamworth Regional		Built	LGOV
Former Anglican Church	Mitchell Street WEABONGA NSW 2340	Tamworth Regional		Built	LGOV
Former Bendemeer Butchery and Residence	113 Caroline Street BENDEMEER NSW 2355	Tamworth Regional		Built	LGOV
Former Brewery Building	130-138 Peel Street TAMWORTH NSW 2340	Tamworth Regional		Complex / Group	LGOV
Former Butchery	Nundle Road DUNGOWAN NSW 2340	Tamworth Regional		Built	LGOV
Former Catholic Church	Cnr Tangaratta and Warral Streets DURI NSW 2344	Tamworth Regional		Built	LGOV
Former Commonweath Bank - Curlew	11 Singh Street WOOLBROOK NSW 2354	Tamworth Regional		Built	LGOV
Former Court House	127 Queen Street BARRABA NSW 2347	Tamworth Regional		Built	LGOV
Former Manvell's Bakery	Nundle Road DUNGOWAN NSW 2340	Tamworth Regional		Built	LGOV
Former Post Office - Craiggwan	Lower Watsons Creek Road WATSONS CREEK NSW 2355	Tamworth Regional		Built	LGOV
Former Square Man Hotel and Old Flour Mill	165-169 Peel Street TAMWORTH NSW 2340	Tamworth Regional		Built	LGOV
Former Store - Gunadoo	Corner of Glen Barra Road WATSONS CREEK NSW 2355	Tamworth Regional		Built	LGOV
Former Store and Old Butcher Shop	Healy Street NIANGALA NSW 2354	Tamworth Regional		Built	LGOV
General Store and Stable	109-111 Caroline Street BENDEMEER NSW 2355	Tamworth Regional		Built	LGOV
German Machine Gun, Rotary Park	Manilla Street MANILLA NSW 2346	Tamworth Regional		Movable / Collection	LGOV
Gidley Storage (wheat silos)	Wallamore Road GIDLEY NSW 2340	Tamworth Regional		Built	LGOV

Girl Guides Manilla	68 Court Street MANILLA NSW 2346	Tamworth Regional		Built	LGOV
Glen Innes Courthouse	Grey Street GLEN INNES NSW 2370	Tamworth Regional		Built	SGOV
Glenview - Residence	Garthowen Road ATTUNGA NSW 2345	Tamworth Regional		Built	LGOV
Goonoo Goonoo Station - Group of Buildings	Goonoo Goonoo New England Highway TAMWORTH NSW 2340	Tamworth Regional		Built	LGOV
Grandstand (at race track)	Britten Road TAMWORTH NSW 2340	Tamworth Regional		Built	LGOV
Great War Memorial (Clock Tower)	Queen and Maude Streets Intersection BARRABA NSW 2347	Tamworth Regional		Built	LGOV
Group of Shops	235-237 Peel Street TAMWORTH NSW 2340	Tamworth Regional		Complex / Group	LGOV
Group of Shops	239 Peel Street TAMWORTH NSW 2340	Tamworth Regional		Complex / Group	LGOV
Group of Shops	164 Peel Street TAMWORTH NSW 2340	Tamworth Regional		Complex / Group	LGOV
Hallsville Hall	Manilla Road HALLSVILLE NSW 2340	Tamworth Regional		Built	LGOV
Hallsville Methodist Church (Former)	Manilla Road HALLSVILLE NSW 2340	Tamworth Regional		Built	LGOV
Hallsville Methodist Church Cemetery	Manilla Road HALLSVILLE NSW 2340	Tamworth Regional		Archaeological-Terrestrial	LGOV
Hallsville Public School	Manilla Road HALLSVILLE NSW 2340	Tamworth Regional		Built	LGOV
Hanging Rock Historic Cemetery	Forest Way HANGING ROCK NSW 2340	Tamworth Regional		Archaeological-Terrestrial	LGOV
Haning	Longford Retreat Road BENDEMEER NSW 2355	Tamworth Regional		Built	LGOV
Herbarium	Calala Lane TAMWORTH NSW 2340	Tamworth Regional		Movable / Collection	SGOV
Hospital - Allambie	100 Marius Street NORTH TAMWORTH NSW 2340	Tamworth Regional		Built	LGOV

Hotel	117-123 Queen Street BARRABA NSW 2347	Tamworth Regional		Built	LGOV
Hotel & Shops	395-401 Peel Street TAMWORTH NSW 2340	Tamworth Regional		Built	LGOV
Hotel Tattersalls	146-148 Peel Street TAMWORTH NSW 2340	Tamworth Regional		Built	LGOV
House	29 Parry Street WEST TAMWORTH NSW 2340	Tamworth Regional		Built	LGOV
House	48-50 Peel Street TAMWORTH NSW 2340	Tamworth Regional		Built	LGOV
House	66A Napier Street TAMWORTH NSW 2340	Tamworth Regional		Built	LGOV
House	King George V Avenue TAMWORTH NSW 2340	Tamworth Regional		Built	LGOV
House	116 North Street TAMWORTH NSW 2340	Tamworth Regional		Built	LGOV
House	130 North Street TAMWORTH NSW 2340	Tamworth Regional		Complex / Group	LGOV
House	132 North Street TAMWORTH NSW 2340	Tamworth Regional		Complex / Group	LGOV
House	144 Marius Street TAMWORTH NSW 2340	Tamworth Regional		Built	LGOV
House	50 White Street TAMWORTH NSW 2340	Tamworth Regional		Complex / Group	LGOV
House	204-208 Marius Street TAMWORTH NSW 2340	Tamworth Regional		Built	LGOV
House	29 Napier Street TAMWORTH NSW 2340	Tamworth Regional		Complex / Group	LGOV
House	31 Napier Street TAMWORTH NSW 2340	Tamworth Regional		Complex / Group	LGOV
House	28 Piper Street NORTH TAMWORTH NSW 2340	Tamworth Regional		Built	LGOV

House	42 Raglan Street TAMWORTH NSW 2340	Tamworth Regional		Built	LGOV
House	64 Raglan Street TAMWORTH NSW 2340	Tamworth Regional		Built	LGOV
House	10 Rawson Avenue TAMWORTH NSW 2340	Tamworth Regional		Complex / Group	LGOV
House	14 Rawson Avenue TAMWORTH NSW 2340	Tamworth Regional		Complex / Group	LGOV
House	19 Rawson Avenue TAMWORTH NSW 2340	Tamworth Regional		Complex / Group	LGOV
House	21 Rawson Avenue TAMWORTH NSW 2340	Tamworth Regional		Complex / Group	LGOV
House	23 Rawson Avenue TAMWORTH NSW 2340	Tamworth Regional		Complex / Group	LGOV
House	62 Rawson Avenue TAMWORTH NSW 2340	Tamworth Regional		Built	LGOV
House	35 Roderick Street TAMWORTH NSW 2340	Tamworth Regional		Built	LGOV
House	65 Roderick Street TAMWORTH NSW 2340	Tamworth Regional		Built	LGOV
House	79 Roderick Street TAMWORTH NSW 2340	Tamworth Regional		Built	LGOV
House	24 Upper Street TAMWORTH NSW 2340	Tamworth Regional		Built	LGOV
House	86 Marius Street TAMWORTH NSW 2340	Tamworth Regional		Built	LGOV
House	123 Marius Street TAMWORTH NSW 2340	Tamworth Regional		Built	LGOV
House	2-24 King George V Avenue TAMWORTH NSW 2340	Tamworth Regional		Built	LGOV

House	16 Macquarie Street NORTH TAMWORTH NSW 2340	Tamworth Regional		Complex / Group	LGOV
House	18 Macquarie Street TAMWORTH NSW 2340	Tamworth Regional		Complex / Group	LGOV
House	68 Griffin Avenue EAST TAMWORTH NSW 2340	Tamworth Regional		Built	LGOV
House	94 Griffin Avenue TAMWORTH NSW 2340	Tamworth Regional		Complex / Group	LGOV
House	96 Griffin Avenue TAMWORTH NSW 2340	Tamworth Regional		Complex / Group	LGOV
House	59 Fitzroy Street TAMWORTH NSW 2340	Tamworth Regional		Built	LGOV
House	76 Fitzroy Street TAMWORTH NSW 2340	Tamworth Regional		Built	LGOV
House	96 Fitzroy Street TAMWORTH NSW 2340	Tamworth Regional		Built	LGOV
House	98 Fitzroy Street TAMWORTH NSW 2340	Tamworth Regional		Built	LGOV
House	122 Fitzroy Street TAMWORTH NSW 2340	Tamworth Regional		Built	LGOV
House	33 Hill Street TAMWORTH NSW 2340	Tamworth Regional		Built	LGOV
House	43 Hill Street TAMWORTH NSW 2340	Tamworth Regional		Built	LGOV
House	65 Hill Street TAMWORTH NSW 2340	Tamworth Regional		Built	LGOV
House	123 Brisbane Street TAMWORTH NSW 2340	Tamworth Regional		Built	LGOV
House	129 Brisbane Street TAMWORTH NSW 2340	Tamworth Regional		Built	LGOV
House	38 Bourke Street NORTH TAMWORTH NSW 2340	Tamworth Regional		Built	LGOV

House	100-102 Bourke Street NORTH TAMWORTH NSW 2340	Tamworth Regional		Built	LGOV
House	141A-141B Brisbane Street TAMWORTH NSW 2340	Tamworth Regional		Built	LGOV
House	149 Brisbane Street TAMWORTH NSW 2340	Tamworth Regional		Built	LGOV
House	43 Carthage Street TAMWORTH NSW 2340	Tamworth Regional		Built	LGOV
House	45 Carthage Street TAMWORTH NSW 2340	Tamworth Regional		Built	LGOV
House	47 Carthage Street TAMWORTH NSW 2340	Tamworth Regional		Built	LGOV
House	64 Carthage Street TAMWORTH NSW 2340	Tamworth Regional		Built	LGOV
House	75 Carthage Street TAMWORTH NSW 2340	Tamworth Regional		Built	LGOV
House	77 Carthage Street TAMWORTH NSW 2340	Tamworth Regional		Built	LGOV
House	79 Carthage Street TAMWORTH NSW 2340	Tamworth Regional		Built	LGOV
House	81 Carthage Street TAMWORTH NSW 2340	Tamworth Regional		Built	LGOV
House	134 Carthage Street TAMWORTH NSW 2340	Tamworth Regional		Built	LGOV
House	138 Carthage Street TAMWORTH NSW 2340	Tamworth Regional		Built	LGOV
House	140 Carthage Street TAMWORTH NSW 2340	Tamworth Regional		Built	LGOV
House	142 Carthage Street TAMWORTH NSW 2340	Tamworth Regional		Built	LGOV

House	150 Carthage Street TAMWORTH NSW 2340	Tamworth Regional		Built	LGOV
House	153 Carthage Street TAMWORTH NSW 2340	Tamworth Regional		Built	LGOV
House	170 Carthage Street TAMWORTH NSW 2340	Tamworth Regional		Built	LGOV
House	178 Carthage Street TAMWORTH NSW 2340	Tamworth Regional		Built	LGOV
House	15 Church Street WEST TAMWORTH NSW 2340	Tamworth Regional		Built	LGOV
House	65 Church Street WEST TAMWORTH NSW 2340	Tamworth Regional		Built	LGOV
House	75 Church Street WEST TAMWORTH NSW 2340	Tamworth Regional		Complex / Group	LGOV
House	77 Church Street WEST TAMWORTH NSW 2340	Tamworth Regional		Complex / Group	LGOV
House	79 Church Street WEST TAMWORTH NSW 2340	Tamworth Regional		Complex / Group	LGOV
House	95 Crown Street WEST TAMWORTH NSW 2340	Tamworth Regional		Built	LGOV
House	97 Crown Street WEST TAMWORTH NSW 2340	Tamworth Regional		Built	LGOV
House	61 Darling Street TAMWORTH NSW 2340	Tamworth Regional		Complex / Group	LGOV
House	63 Darling Street TAMWORTH NSW 2340	Tamworth Regional		Complex / Group	LGOV
House	65 Darling Street TAMWORTH NSW 2340	Tamworth Regional		Complex / Group	LGOV
House	67 Darling Street TAMWORTH NSW 2340	Tamworth Regional		Complex / Group	LGOV
House	69 Darling Street TAMWORTH NSW 2340	Tamworth Regional		Complex / Group	LGOV

House	67 Denison Street WEST TAMWORTH NSW 2340	Tamworth Regional		Built	LGOV
House	89 Denison Street WEST TAMWORTH NSW 2340	Tamworth Regional		Complex / Group	LGOV
House	91 Denison Street WEST TAMWORTH NSW 2340	Tamworth Regional		Complex / Group	LGOV
House	99 Denison Street WEST TAMWORTH NSW 2340	Tamworth Regional		Built	LGOV
House	89 Carthage Street TAMWORTH NSW 2340	Tamworth Regional		Built	LGOV
House	102 Brisbane Street TAMWORTH NSW 2340	Tamworth Regional		Built	LGOV
House	92 Carthage Street TAMWORTH NSW 2340	Tamworth Regional		Built	LGOV
House	94-96 Carthage Street TAMWORTH NSW 2340	Tamworth Regional		Built	LGOV
House	95 Carthage Street TAMWORTH NSW 2340	Tamworth Regional		Built	LGOV
House	100 Carthage Street TAMWORTH NSW 2340	Tamworth Regional		Built	LGOV
House	8 Darling Street TAMWORTH NSW 2340	Tamworth Regional		Complex / Group	LGOV
House	10 Darling Street TAMWORTH NSW 2340	Tamworth Regional		Complex / Group	LGOV
House	16 Darling Street TAMWORTH NSW 2340	Tamworth Regional		Built	LGOV
House	93 Denne Street WEST TAMWORTH NSW 2340	Tamworth Regional		Built	LGOV
House	95 Denne Street WEST TAMWORTH NSW 2340	Tamworth Regional		Complex / Group	LGOV

House	115 Denne Street WEST TAMWORTH NSW 2340	Tamworth Regional		Built	LGOV
House	98 Goonan Street TAMWORTH NSW 2340	Tamworth Regional		Built	LGOV
House	14 Gipps Street WEST TAMWORTH NSW 2340	Tamworth Regional		Built	LGOV
House	15 Gipps Street TAMWORTH NSW 2340	Tamworth Regional		Complex / Group	LGOV
House	17 Gipps Street TAMWORTH NSW 2340	Tamworth Regional		Complex / Group	LGOV
House	48 White Street TAMWORTH NSW 2340	Tamworth Regional		Complex / Group	LGOV
House	19 Gipps Street WEST TAMWORTH NSW 2340	Tamworth Regional		Complex / Group	LGOV
House	21 Gipps Street WEST TAMWORTH NSW 2340	Tamworth Regional		Complex / Group	LGOV
House	22 Gipps Street WEST TAMWORTH NSW 2340	Tamworth Regional		Built	LGOV
House	26 Gipps Street WEST TAMWORTH NSW 2340	Tamworth Regional		Built	LGOV
House	38 Upper Street TAMWORTH NSW 2340	Tamworth Regional		Built	LGOV
House	40 Upper Street TAMWORTH NSW 2340	Tamworth Regional		Built	LGOV
House	44 Upper Street TAMWORTH NSW 2340	Tamworth Regional		Built	LGOV
House	55 Upper Street TAMWORTH NSW 2340	Tamworth Regional		Complex / Group	LGOV
House	57 Upper Street TAMWORTH NSW 2340	Tamworth Regional		Complex / Group	LGOV
House	59 Upper Street TAMWORTH NSW 2340	Tamworth Regional		Complex / Group	LGOV
House	83 Upper Street TAMWORTH NSW 2340	Tamworth Regional		Built	LGOV

House	89 Upper Street TAMWORTH NSW 2340	Tamworth Regional		Built	LGOV
House	117 Upper Street TAMWORTH NS	Tamworth Regional		Built	LGOV
House	119 Upper Street TAMWORTH NS	Tamworth Regional		Complex / Group	LGOV
House	121 Upper Street TAMWORTH NSW 2340	Tamworth Regional		Complex / Group	LGOV
House	King George V Avenue TAMWORTH NSW 2340	Tamworth Regional		Built	LGOV
House	34 White Street TAMWORTH NSW 2340	Tamworth Regional		Built	LGOV
House	46 White Street TAMWORTH NSW 2340	Tamworth Regional		Complex / Group	LGOV
House	46A White Street TAMWORTH NSW 2340	Tamworth Regional		Complex / Group	LGOV
House	47 White Street TAMWORTH NSW 2340	Tamworth Regional		Built	LGOV
House	52 White Street TAMWORTH NSW 2340	Tamworth Regional		Complex / Group	LGOV
House	56 White Street TAMWORTH NSW 2340	Tamworth Regional		Built	LGOV
House	77 White Street TAMWORTH NSW 2340	Tamworth Regional		Built	LGOV
House	79 White Street TAMWORTH NSW 2340	Tamworth Regional		Built	LGOV
House - Avondale	66 Napier Street TAMWORTH NSW 2340	Tamworth Regional		Built	LGOV
House - Broms-grove	72 White Street EAST TAMWORTH NSW 2340	Tamworth Regional		Built	LGOV
House - Calala	138-144 Denison Street WEST TAMWORTH NSW 2340	Tamworth Regional		Complex / Group	LGOV
House - Carrick	120 Denison Street WEST TAMWORTH NSW 2340	Tamworth Regional		Built	LGOV
House - Girrawilla	62 Napier Street TAMWORTH NSW 2340	Tamworth Regional		Built	LGOV

House - Glen Evilly	53-55 White Street TAMWORTH NSW 2340	Tamworth Regional		Built	LGOV
House - Glen Moor	106 Brisbane Street TAMWORTH NSW 2340	Tamworth Regional		Built	LGOV
House - Glenbrook	28 Nundle Road TAMWORTH NSW 2340	Tamworth Regional		Built	LGOV
House - Marius Cottage	112 Marius Street TAMWORTH NSW 2340	Tamworth Regional		Built	LGOV
House - Minna-murra	69 White Street TAMWORTH NSW 2340	Tamworth Regional		Built	LGOV
House - Salona	90 Carthage Street TAMWORTH NSW 2340	Tamworth Regional		Built	LGOV
House - St Austel	130 Marius Street TAMWORTH NSW 2340	Tamworth Regional		Built	LGOV
House - Strathmore	11 Gipps Street WEST TAMWORTH NSW 2340	Tamworth Regional		Built	LGOV
House - The Cottage	141 Marius Street TAMWORTH NSW 2340	Tamworth Regional		Built	LGOV
House - The Pines	28 Hill Street TAMWORTH NSW 2340	Tamworth Regional		Built	LGOV
House beside Retreat Theatre	63 Bridge Street WEST TAMWORTH NSW 2340	Tamworth Regional		Built	LGOV
House -Shield Hill	32 Upper Street TAMWORTH NSW 2340	Tamworth Regional		Built	LGOV
Houses	51 & 53 Upper Street TAMWORTH NSW 2340	Tamworth Regional		Complex / Group	LGOV
Imperial Hotel	181-195 Marius Street TAMWORTH NSW 2340	Tamworth Regional		Built	LGOV
Imperial Hotel	230 Manilla Street MANILLA NSW 2346	Tamworth Regional		Built	LGOV
Insect and Associates Collection	Calala Lane TAMWORTH NSW 2340	Tamworth Regional		Movable / Collection	SGOV

Ivanhoe Residence	37 Edward Street BARRABA NSW 2347	Tamworth Regional		Built	LGOV
Jacob's Building (Barraba Information Centre)	114-116 Queen Street BARRABA NSW 2347	Tamworth Regional		Built	LGOV
Jenkins St Antiques	83 Jenkins Street NUNDLE NSW 2340	Tamworth Regional		Built	LGOV
Jenkins St Guest House	85 Jenkins Street NUNDLE NSW 2340	Tamworth Regional		Built	LGOV
Junction of Manilla And Namoi Rivers	River Street MANILLA NSW 2346	Tamworth Regional		Complex / Group	LGOV
King George V Avenue of Memorial English Oaks	King George V Memorial Avenue TAMWORTH NSW 2340	Tamworth Regional	01922	Landscape	HNSW
Kissing Gate	Limbri Village - Railway Land LIMBRI NSW 2352	Tamworth Regional		Built	LGOV
Kootingal Hotel	18-20 Gate Street KOOTINGAL NSW 2352	Tamworth Regional		Built	LGOV
Kootingal Police Station	Denman Avenue KOOTINGAL NSW 2352	Tamworth Regional		Built	LGOV
Kootingal Public School	Denman Avenue KOOTINGAL NSW 2352	Tamworth Regional		Built	LGOV
Kootingal Public School - Buildings B00B-B00G	Denman Avenue KOOTINGAL NSW 2352	Tamworth Regional		Built	SGOV
Kootingal Public School - Buildings B00B-B00G	Denman Avenue KOOTINGAL NSW 2352	Tamworth Regional		Built	SGOV
Kootingal War Memorial	Gate Street KOOTINGAL NSW 2352	Tamworth Regional		Built	LGOV
Kootingal/ Moonbi Cemetery	Limbri Road (Corner) KOOTINGAL NSW 2352	Tamworth Regional		Archaeological-Terrestrial	LGOV
Lands Office	25 Fitzroy Street TAMWORTH NSW 2340	Tamworth Regional		Built	LGOV
Limbri Church	17 Church Street LIMBRI NSW 2352	Tamworth Regional		Built	LGOV

Limbri Gatehouse	Limbri Road (Corner) LIMBRI NSW 2352	Tamworth Regional		Built	LGOV
Limbri School	Limbri Road KOOTINGAL NSW 2352	Tamworth Regional		Built	LGOV
Limbri Store and Post Office (Former)	Corner of Limbri Road LIMBRI NSW 2352	Tamworth Regional		Built	LGOV
Longford Station	Lonngford Retreat Road BENDEMEER NSW 2355	Tamworth Regional		Built	LGOV
Loomberah War Memorial Hall	Dungowan Road (Corner) LOOMBERAH NSW 2340	Tamworth Regional		Built	LGOV
Main Block	Dean Street TAMWORTH NSW 2340	Tamworth Regional		Built	SGOV
Main Group of Hospital Buildings	31 Dean Street TAMWORTH NSW 2340	Tamworth Regional		Complex / Group	LGOV
Main School Building - Calrossy	140 Brisbane Street TAMWORTH NSW 2340	Tamworth Regional		Built	LGOV
Manilla And District Soldiers Memorial Hall	193 Manilla Street MANILLA NSW 2346	Tamworth Regional		Built	LGOV
Manilla Cemetery	Namoi River Road MANILLA NSW 2346	Tamworth Regional		Archaeological-Terrestrial	LGOV
Manilla Central School	Arthur Street MANILLA NSW 2346	Tamworth Regional		Built	LGOV
Manilla Central School - Buildings B00A, B00B, B00D and B00F	Arthur Street MANILLA NSW 2346	Tamworth Regional		Built	SGOV
Manilla Central School - Buildings B00A, B00B, B00D and B00F	Arthur Street MANILLA NSW 2346	Tamworth Regional		Built	SGOV
Manilla Courthouse	Corner Manilla Street MANILLA NSW 2346	Tamworth Regional		Built	LGOV
Manilla Courthouse	Court Street MANILLA NSW 2346	Tamworth Regional		Built	SGOV
Manilla Historical Cemetery	River Street MANILLA NSW 2346	Tamworth Regional		Archaeological-Terrestrial	LGOV
Manilla Masonic Centre	56 Court Street MANILLA NSW 2346	Tamworth Regional		Built	LGOV
Manilla Motors	240 Manilla Street MANILLA NSW 2346	Tamworth Regional		Built	LGOV

Manilla Official Residence 1	27 Court Street MANILLA NSW 2346	Tamworth Regional		Built	SGOV
Manilla Official Residence 2	62 Manilla Street MANILLA NSW 2346	Tamworth Regional		Built	SGOV
Manilla Pharmacy Building	204-206 Manilla Street MANILLA NSW 2346	Tamworth Regional		Built	LGOV
Manilla Post Office	164 Manilla Street MANILLA NSW 2346	Tamworth Regional		Built	LGOV
Manilla railway underbridges	Tamworth-Barraba railway MANILLA NSW 2346	Tamworth Regional	01045	Built	HNSW
Manilla River Bridge	Fossickers Way UPPER MANILLA NSW 2346	Tamworth Regional		Built	SGOV
Manilla River Bridge	Main Road 63 BARRABA NSW 2347	Tamworth Regional		Built	SGOV
Manilla RSL	Court Street MANILLA NSW 2346	Tamworth Regional		Built	LGOV
Manilla Showground	River Street MANILLA NSW 2346	Tamworth Regional		Built	LGOV
Manilla Street Clock	Cross Manilla and Strafford Sts MANILLA NSW 2346	Tamworth Regional		Built	LGOV
Manilla, Namoi River Underbridge and timber floodplain viaducts	Railway Location, Barraba Line, 501.047 Kms. MANILLA NSW 2346	Tamworth Regional		Built	SGOV
Marius Cottage (disposed 2004)	112 Marius Street TAMWORTH NSW 2340	Tamworth Regional		Built	SGOV
Marius Cottage (disposed 2004)	112 Marius Street TAMWORTH NSW 2340	Tamworth Regional		Built	SGOV
Masonic Temple	462-464 Peel Street TAMWORTH NSW 2340	Tamworth Regional		Built	LGOV
Matilda Park	Appleby Lane APPLEBY NSW 2340	Tamworth Regional		Complex / Group	LGOV
Mechanics Institute	87 Brisbane Street TAMWORTH NSW 2340	Tamworth Regional		Built	LGOV

Monument	Peel Street TAMWORTH NSW 2340	Tamworth Regional		Archaeological-Terrestrial	LGOV
Monuments at the Tamworth Cemetery	Showground Road TAMWORTH NSW 2340	Tamworth Regional		Archaeological-Terrestrial	LGOV
Moonbi Lookout	New England Highway MOONBI NSW 2353	Tamworth Regional		Unknown	LGOV
Moonbi War Memorial Hall	Gill Street MOONBI NSW 2353	Tamworth Regional		Built	LGOV
Moonby House	New England Highway North, Located Within Moonbi Retirement Village KOOTINGAL NSW 2352	Tamworth Regional		Built	LGOV
Moonby House	New England Highway KOOTINGAL NSW 2352	Tamworth Regional	00061	Built	HNSW
Moonby House Graves	New England Highway North Located Within Moonbi Retirement Village KOOTINGAL NSW 2352	Tamworth Regional		Built	LGOV
Moonby House Out House	New England Highway North, Located Within Moonbi Retirement Village KOOTINGAL NSW 2352	Tamworth Regional		Built	LGOV
Moore Creek Dam	Moore Creek (4Wd Access Only Off Upper Moore Creek Road and Access (4Wd?) Off New England Highway - Gully Road) MOORE CREEK NSW 2340	Tamworth Regional		Built	LGOV
Moore Creek War Memorial Hall	Upper Moore Creek Road MOORE CREEK NSW 2340	Tamworth Regional		Built	LGOV
Morrow's Row (Group)	1-21 Savoy Street BARRABA NSW 2347	Tamworth Regional		Complex / Group	LGOV

Namoi River Bridge	Secondary Road 63 MANILLA NSW 2346	Tamworth Regional		Built	LGOV
Namoi River Bridge	63 Manilla Street MANILLA NSW 2346	Tamworth Regional		Built	LGOV
Namoi River Bridge at Manilla	Secondary Road 63 MANILLA NSW 2346	Tamworth Regional		Built	SGOV
Nandewar Historical Society Building	71 Queen Street BARRABA NSW 2347	Tamworth Regional		Built	LGOV
National Australia Bank Building	400-402 Peel Street TAMWORTH NSW 2340	Tamworth Regional		Built	LGOV
Nemingha Anglican Church	Nundle Road NEMINGHA NSW 2340	Tamworth Regional		Built	LGOV
Nemingha School (Former)	Nundle Road NEMINGHA NSW 2340	Tamworth Regional		Built	LGOV
Nemingha War Memorial Hall/Nemingha Reserve	Kootingal Road NEMINGHA NSW 2340	Tamworth Regional		Built	LGOV
New England Credit Union Building	168 Manilla Street MANILLA NSW 2346	Tamworth Regional		Built	LGOV
Niangala Cemetery	Niangala - Weabonga Road NIANGALA NSW 2354	Tamworth Regional		Archaeological-Terrestrial	LGOV
Niangala War Memorial Hall and Reserve	Niangala Road NIANGALA NSW 2354	Tamworth Regional		Built	LGOV
Niangala Weir	Niangala - Weabonga Road NIANGALA NSW 2354	Tamworth Regional		Built	LGOV
Nundle Cemetery	Nundle Creek Road NUNDLE NSW 2340	Tamworth Regional		Archaeological-Terrestrial	LGOV
Nundle Memorial Hall	101 Jenkins Street NUNDLE NSW 2340	Tamworth Regional		Built	LGOV
Nundle Police Station	Gill Street, Corner Durban Street and Jenkins Street NUNDLE NSW 2340	Tamworth Regional		Built	SGOV
Nundle Post Office	91 Jenkins Street NUNDLE NSW 2340	Tamworth Regional		Built	LGOV
Nundle Public School	Jenkins Street NUNDLE NSW 2340	Tamworth Regional		Built	LGOV

Nundle Public School - Buildings B00A, B00E and B00G	93-97 Jenkins Street NUNDLE NSW 2340	Tamworth Regional		Built	SGOV
Nundle Public School - Buildings B00A, B00E and B00G	93-97 Jenkins Street NUNDLE NSW 2340	Tamworth Regional		Built	SGOV
Nundle Shire Office	58 Jenkins Street NUNDLE NSW 2340	Tamworth Regional		Built	LGOV
Oaky Creek Bridge	Secondary Road 63 COBBADAH NSW 2347	Tamworth Regional		Built	SGOV
Odgers and McClelland Exchange Stores	81 Jenkins Street NUNDLE NSW 2340	Tamworth Regional		Built	LGOV
Office Building	12A Bourke Street TAMWORTH NSW 2340	Tamworth Regional		Built	LGOV
Ogunbil Brick Shearing Shed and Silo	Ogunbil Road OGUNBIL NSW 2340	Tamworth Regional		Built	LGOV
Old Baker and Residence	62 Attunga Street ATTUNGA NSW 2345	Tamworth Regional		Built	LGOV
Old Church Boutique	92 Jenkins Street NUNDLE NSW 2340	Tamworth Regional		Built	LGOV
Old Convent Building	223-227 Marius Street TAMWORTH NSW 2340	Tamworth Regional		Complex / Group	LGOV
Old Cottage (To rear of Trainview WOO-008)	Daisy Street WOOLBROOK NSW 2354	Tamworth Regional		Built	LGOV
Old Courthouse Building	212 Peel Street TAMWORTH NSW 2340	Tamworth Regional		Built	LGOV
Old Courthouse Kitchen	Frappell Street WEABONGA NSW 2340	Tamworth Regional		Built	LGOV
Old Flour Mill	175-179 Peel Street TAMWORTH NSW 2340	Tamworth Regional		Built	LGOV
Old Gowrie School Site	Gowrie Road GOWRIE NSW 2340	Tamworth Regional		Built	LGOV
Old Hotel Building	143-145 Marius Street TAMWORTH NSW 2340	Tamworth Regional		Built	LGOV
Old Piallamore School Residence	Nundle Road PIALLAMORE NSW 2340	Tamworth Regional		Built	LGOV
Old Post Office, Glenlui	1265 Manilla Road HALLSVILLE NSW 2340	Tamworth Regional		Built	LGOV

Old School	Bithramere Lane BITHRAMERE NSW 2340	Tamworth Regional		Built	LGOV
Old St. Joseph's School Site [Site Plan also indicating relationship between old	Nundle Road DUNGOWAN NSW 2340	Tamworth Regional		Archaeological-Terrestrial	LGOV
Original Bendemeer Post Office (Former)	99-102 Caroline Street BENDEMEER NSW 2355	Tamworth Regional		Unknown	LGOV
Original building	Court Street MANILLA NSW 2346	Tamworth Regional		Built	SGOV
Original Manilla Hospital Building	Court Street MANILLA NSW 2346	Tamworth Regional		Built	LGOV
Oxley Memorial Anchor	Manilla Road (Corner) HALLSVILLE NSW 2340	Tamworth Regional		Built	LGOV
Peel Inn	89 Jenkins Street NUNDLE NSW 2340	Tamworth Regional		Built	LGOV
Police Station (Former)	40 Attunga Street ATTUNGA NSW 2345	Tamworth Regional		Built	LGOV
Port Stephens Cutting, Hand Laid Stone	Nowendoc Road NIANGALA NSW 2354	Tamworth Regional		Built	LGOV
Post Office	402A Peel Street TAMWORTH NSW 2340	Tamworth Regional		Built	LGOV
Post Office Hotel	146 Manilla Street MANILLA NSW 2346	Tamworth Regional		Built	LGOV
Power House Motel	248 Marius Street TAMWORTH NSW 2340	Tamworth Regional		Built	LGOV
Quirindi Courthouse	George Street QUIRINDI NSW 2343	Tamworth Regional		Built	SGOV
Railway Bridge	Peel Street TAMWORTH NSW 2340	Tamworth Regional		Built	LGOV
Railway House	20 Darling Street TAMWORTH NSW 2340	Tamworth Regional		Built	LGOV
Regent Cinema	3-5 Brisbane Street TAMWORTH NSW 2340	Tamworth Regional		Built	LGOV
Residence	72 Caroline Street BENDEMEER NSW 2355	Tamworth Regional		Built	LGOV

Residence	50 Caroline Street BENDEMEER NSW 2355	Tamworth Regional		Built	LGOV
Residence	14 Hill Street MANILLA NSW 2346	Tamworth Regional		Built	LGOV
Residence	5 Hill Street MANILLA NSW 2346	Tamworth Regional		Built	LGOV
Residence	8 Hill Street MANILLA NSW 2346	Tamworth Regional		Built	LGOV
Residence	272 Manilla Street MANILLA NSW 2346	Tamworth Regional		Built	LGOV
Residence	105 Court Street MANILLA NSW 2346	Tamworth Regional		Built	LGOV
Residence	113 Court Street MANILLA NSW 2346	Tamworth Regional		Built	LGOV
Residence	78 Court Street MANILLA NSW 2346	Tamworth Regional		Built	LGOV
Residence	92 Court Street MANILLA NSW 2346	Tamworth Regional		Built	LGOV
Residence	94 Court Street MANILLA NSW 2346	Tamworth Regional		Built	LGOV
Residence	98 River Street MANILLA NSW 2346	Tamworth Regional		Built	LGOV
Residence	83 River Street MANILLA NSW 2346	Tamworth Regional		Built	LGOV
Residence	67 Strafford Street MANILLA NSW 2346	Tamworth Regional		Built	LGOV
Residence	50 Strafford Street MANILLA NSW 2346	Tamworth Regional		Built	LGOV
Residence	751 Barry Road HANGING ROCK NSW 2340	Tamworth Regional		Built	LGOV
Residence	Ratcliffe Avenue MANILLA NSW 2346	Tamworth Regional		Built	LGOV
Residence	227 Manilla Street MANILLA NSW 2346	Tamworth Regional		Built	LGOV
Residence	125 Manilla Street MANILLA NSW 2346	Tamworth Regional		Built	LGOV
Residence	119-121 Manilla Street MANILLA NSW 2346	Tamworth Regional		Built	LGOV

Residence	44 Market Street MANILLA NSW 2346	Tamworth Regional		Built	LGOV
Residence	78 Strafford Street MANILLA NSW 2346	Tamworth Regional		Built	LGOV
Residence	79 Strafford Street MANILLA NSW 2346	Tamworth Regional		Built	LGOV
Residence	68 Strafford Street MANILLA NSW 2346	Tamworth Regional		Built	LGOV
Residence	57 Strafford Street MANILLA NSW 2346	Tamworth Regional		Built	LGOV
Residence	80 Rowan Street MANILLA NSW 2346	Tamworth Regional		Built	LGOV
Residence	42 Strafford Street MANILLA NSW 2346	Tamworth Regional		Built	LGOV
Residence	94 Rowan Street MANILLA NSW 2346	Tamworth Regional		Built	LGOV
Residence	106 Rowan Street MANILLA NSW 2346	Tamworth Regional		Built	LGOV
Residence	64 Namoi Street MANILLA NSW 2346	Tamworth Regional		Built	LGOV
Residence	104 Namoi Street MANILLA NSW 2346	Tamworth Regional		Built	LGOV
Residence	67 Namoi Street MANILLA NSW 2346	Tamworth Regional		Built	LGOV
Residence	73 Namoi Street MANILLA NSW 2346	Tamworth Regional		Built	LGOV
Residence	96 Arthur Street MANILLA NSW 2346	Tamworth Regional		Built	LGOV
Residence	94 Arthur Street MANILLA NSW 2346	Tamworth Regional		Built	LGOV
Residence	79 Jenkins Street NUNDLE NSW 2340	Tamworth Regional		Built	LGOV
Residence	194-196 Manilla Street MANILLA NSW 2346	Tamworth Regional		Built	LGOV
Residence	48 Queen Street BARRABA NSW 2347	Tamworth Regional		Built	LGOV
Residence	86-88 Nundle Road WOOLOMIN NSW 2340	Tamworth Regional		Built	LGOV

Residence	Munroo Street WOOLOMIN NSW 2340	Tamworth Regional		Built	LGOV
Residence	69 Cherry St BARRABA NSW 2347	Tamworth Regional		Built	LGOV
Residence	43 Gotha Street BARRABA NSW 2347	Tamworth Regional		Built	LGOV
Residence	25 Cooper Street BARRABA NSW 2347	Tamworth Regional		Built	LGOV
Residence	11 Alice Street BARRABA NSW 2347	Tamworth Regional		Built	LGOV
Residence	34 Maude Street BARRABA NSW 2347	Tamworth Regional		Built	LGOV
Residence	38 Maude Street BARRABA NSW 2347	Tamworth Regional		Built	LGOV
Residence	97 Fitzroy Street BARRABA NSW 2347	Tamworth Regional		Built	LGOV
Residence	63 Fitzroy Street BARRABA NSW 2347	Tamworth Regional		Built	LGOV
Residence	53 Fitzroy Street BARRABA NSW 2347	Tamworth Regional		Built	LGOV
Residence	24 Alice Street BARRABA NSW 2347	Tamworth Regional		Built	LGOV
Residence	29 Rodney Street BARRABA NSW 2347	Tamworth Regional		Built	LGOV
Residence	31 Henry Street BARRABA NSW 2347	Tamworth Regional		Built	LGOV
Residence	55 Edward Street BARRABA NSW 2347	Tamworth Regional		Built	LGOV
Residence	26 Savoy Street BARRABA NSW 2347	Tamworth Regional		Built	LGOV
Residence - Police Station	62 Manilla Street MANILLA NSW 2346	Tamworth Regional		Built	LGOV
Residence - The Church	Gowrie Road GOWRIE NSW 2340	Tamworth Regional		Built	LGOV
Residence 'Avonlea'	13 Railway Parade MANILLA NSW 2346	Tamworth Regional		Built	LGOV

Residence 'Mayvale'	Mayvale, Rushes Creek Road MANILLA NSW 2346	Tamworth Regional		Built	LGOV
Residence 'Ngundi'	64 Rowan Street MANILLA NSW 2346	Tamworth Regional		Built	LGOV
Retreat Main House	Kingstown Road RETREAT NSW 2355	Tamworth Regional		Built	LGOV
Retreat Old Granite Store	Kingstown Road RETREAT NSW 2355	Tamworth Regional		Built	LGOV
Riverview - Residence	14 Singh Street WOOLBROOK NSW 2354	Tamworth Regional		Built	LGOV
Roman Catholic Church	Ridge Street ATTUNGA NSW 2345	Tamworth Regional		Built	LGOV
Royal Hotel	153-159 Manilla Street MANILLA NSW 2346	Tamworth Regional		Built	LGOV
Royce Cottage	197 Manilla Street MANILLA NSW 2346	Tamworth Regional		Built	LGOV
Royce Cottage, Yarramanbully School and Chinese Pioneer Memorial Gardens	197 Manilla Street MANILLA NSW 2346	Tamworth Regional		Unknown	LGOV
School Residence	327 Meldorn Lane HALLSVILLE NSW 2340	Tamworth Regional		Built	LGOV
Scout Hall	Strafford Street MANILLA NSW 2346	Tamworth Regional		Built	LGOV
Service Station	73 Queen Street BARRABA NSW 2347	Tamworth Regional		Built	LGOV
Sheba Dam Gatekeeper's Slab Cottage	Barry Road Sheba Dam HANGING ROCK NSW 2340	Tamworth Regional		Archaeological-Terrestrial	LGOV
Shop	83 Queen Street BARRABA NSW 2347	Tamworth Regional		Built	LGOV
Shop	200 Manilla Street MANILLA NSW 2346	Tamworth Regional		Built	LGOV
Shop	99 Queen Street BARRABA NSW 2347	Tamworth Regional		Built	LGOV
Shop	92-94 Queen Street BARRABA NSW 2347	Tamworth Regional		Built	LGOV
Shop	79 Queen Street BARRABA NSW 2347	Tamworth Regional		Built	LGOV

Shop	265-267 Peel Street TAMWORTH NSW 2340	Tamworth Regional		Built	LGOV
Shop	277 Peel Street TAMWORTH NSW 2340	Tamworth Regional		Built	LGOV
Shop and Library	102-108 Queen Street BARRABA NSW 2347	Tamworth Regional		Built	LGOV
Shopfront Glass	78-80 Brisbane Street TAMWORTH NSW 2340	Tamworth Regional		Built	LGOV
Shops	465-469 Peel Street TAMWORTH NSW 2340	Tamworth Regional		Complex / Group	LGOV
Shops	103-105 Manilla Street MANILLA NSW 2346	Tamworth Regional		Built	LGOV
Silverweir Homestead	Appleby Lane APPLEBY NSW 2340	Tamworth Regional		Built	LGOV
Slab Hut	Bloomfield Street SOMERTON NSW 2340	Tamworth Regional		Built	LGOV
Slab Hut near Calala	138-144 Denison Street TAMWORTH NSW 2340	Tamworth Regional		Built	LGOV
Somerton Cemetery	Being Point SOMERTON NSW 2340	Tamworth Regional		Archaeological-Terrestrial	LGOV
Somerton Police Station	Bloomfield Street SOMERTON NSW 2340	Tamworth Regional		Built	LGOV
Somerton Post Office and General Store (Former)	Scotland Street SOMERTON NSW 2340	Tamworth Regional		Built	LGOV
Somerton Public School	Milkmaid Streets (Corner) SOMERTON NSW 2340	Tamworth Regional		Built	LGOV
Somerton Public School - Buildings B00A-B00C	Scotland Road SOMERTON NSW 2340	Tamworth Regional		Built	SGOV
Somerton Public School - Buildings B00A-B00C	Scotland Road SOMERTON NSW 2340	Tamworth Regional		Built	SGOV
Somerton Racecourse	Racecourse Road SOMERTON NSW 2340	Tamworth Regional		Built	LGOV

Somerton War Memorial Hall	Scotland Street (Corner) SOMERTON NSW 2340	Tamworth Regional		Built	LGOV
Split Rock Dam	Manilla River MANILLA NSW 2346	Tamworth Regional		Built	SGOV
St Andrews Anglican Church	Denman Avenue (Corner) KOOTINGAL NSW 2352	Tamworth Regional		Built	LGOV
St Andrews Church	152-154 Marius Street TAMWORTH NSW 2340	Tamworth Regional		Built	LGOV
St Andrews Presbyterian Church	Rowan Street MANILLA NSW 2346	Tamworth Regional		Built	LGOV
St Joseph's Catholic Convent (Former)	Nundle Road DUNGOWAN NSW 2340	Tamworth Regional		Unknown	LGOV
St Martins Anglican Church	Nundle Road PIALLAMORE NSW 2340	Tamworth Regional		Built	LGOV
St Nicholas Church	18 White Street TAMWORTH NSW 2340	Tamworth Regional		Built	LGOV
St. Johns Anglican Parish	Woodsreef Road WOODSREEF NSW 2347	Tamworth Regional		Built	LGOV
St. John's Catholic Church Hall and Residence	58-64 Fitzroy Street BARRABA NSW 2347	Tamworth Regional		Built	LGOV
St. John's Church	102 Carthage Street TAMWORTH NSW 2340	Tamworth Regional		Built	LGOV
St. Laurence's Church of England, Church Vicarage, Parish Hall	52-54 Fitzroy Street BARRABA NSW 2347	Tamworth Regional		Built	LGOV
St. Luke's Uniting Church	Sandy Road (Corner) KOOTINGAL NSW 2352	Tamworth Regional		Built	LGOV
St. Mark's Anglican Church	Scotland Street SOMERTON NSW 2340	Tamworth Regional		Built	LGOV
St. Mary's Anglican Church	50-52 Frederick Street WOOLOMIN NSW 2340	Tamworth Regional		Built	LGOV
St. Mathew's Presbyterian Church	Scotland Road SOMERTON NSW 2340	Tamworth Regional		Built	LGOV
St. Michaels Church (Roman Catholic)	Nundle Road DUNGOWAN NSW 2340	Tamworth Regional		Built	LGOV

St. Paul's Church	63 Bridge Street WEST TAMWORTH NSW 2340	Tamworth Regional		Built	LGOV
St. Peter's Catholic Church	15 Innes Street NUNDLE NSW 2340	Tamworth Regional		Built	LGOV
St. Stevens Anglican Church	Caroline Street BENDEMEER NSW 2355	Tamworth Regional		Built	LGOV
St. Thomas Anglican Church	Nowendoc Road DUNGOWAN NSW 2340	Tamworth Regional		Built	LGOV
Stratharlie	Oxley Highway West SOMERTON NSW 2340	Tamworth Regional		Built	LGOV
Sulcor Limestone Mine Kilns	Sulcor Road ATTUNGA NSW 2345	Tamworth Regional		Built	LGOV
Swamp Creek Bridge	New England Highway GOONOO GOONOO NSW 2340	Tamworth Regional		Built	SGOV
Tamworth Centre for Crop Improvement	Calala Lane TAMWORTH NSW 2340	Tamworth Regional		Complex / Group	SGOV
Tamworth Correctional Centre	Dean Street, corner 154 Johnston Street TAMWORTH NSW 2340	Tamworth Regional		Complex / Group	SGOV
Tamworth Correctional Centre	152-160 Johnston Street TAMWORTH NSW 2340	Tamworth Regional		Complex / Group	LGOV
Tamworth Correctional Centre - Administration	Dean Street, corner 154 Johnston Street TAMWORTH NSW 2340	Tamworth Regional		Built	SGOV
Tamworth Correctional Centre - Cell Block	Dean Street, corner 154 Johnston Street TAMWORTH NSW 2340	Tamworth Regional		Built	SGOV
Tamworth Correctional Centre - Dry Cell	Dean Street, corner 154 Johnston Street TAMWORTH NSW 2340	Tamworth Regional		Built	SGOV
Tamworth Correctional Centre - Gatehouse & Visitors	Dean Street, corner 154 Johnston Street TAMWORTH NSW 2340	Tamworth Regional		Built	SGOV

Tamworth Correctional Centre - Internal Administration Buildings	Dean Street, corner 154 Johnston Street TAMWORTH NSW 2340	Tamworth Regional		Built	SGOV
Tamworth Correctional Centre - Walls & Towers	Dean Street, corner 154 Johnston Street TAMWORTH NSW 2340	Tamworth Regional		Built	SGOV
Tamworth Court House	Marius and Fitzroy Street TAMWORTH NSW 2340	Tamworth Regional		Built	SGOV
Tamworth East Zone Substation	Cockburn Street TAMWORTH NSW 2340	Tamworth Regional		Complex / Group	SGOV
Tamworth Gatekeeper's residence	20 Darling Street TAMWORTH NSW 2340	Tamworth Regional		Built	SGOV
Tamworth Hotel	147 Marius Street TAMWORTH NSW 2340	Tamworth Regional		Built	LGOV
Tamworth House	34 Bourke Street NORTH TAMWORTH NSW 2340	Tamworth Regional		Built	LGOV
Tamworth Peel Barracks	Peel Street (cnr) TAMWORTH NSW 2340	Tamworth Regional	00550	Built	HNSW
Tamworth Post Office	Fitzroy Street TAMWORTH NSW 2340	Tamworth Regional	01421	Built	HNSW
Tamworth Primary School and Residence	Upper Street TAMWORTH NSW 2340	Tamworth Regional		Built	LGOV
Tamworth Public School - Buildings B00D and B00M	Upper Street EAST TAMWORTH NSW 2340	Tamworth Regional		Built	SGOV
Tamworth Public School - Buildings B00D and B00M	Upper Street EAST TAMWORTH NSW 2340	Tamworth Regional		Built	SGOV
Tamworth rail bridge over Peel River	Main Northern railway 454.125 km TAMWORTH NSW 2340	Tamworth Regional	01058	Built	HNSW
Tamworth Railway Footbridge	455.040km Northern Railway Line, Bourke Street TAMWORTH NSW 2340	Tamworth Regional		Built	SGOV
Tamworth Railway Station	Marius Street TAMWORTH NSW 2340	Tamworth Regional		Built	SGOV

Tamworth Railway Station	100 Brisbane Street TAMWORTH NSW 2340	Tamworth Regional		Complex / Group	LGOV
Tamworth Railway Station, yard group and movable relics	Main Northern railway TAMWORTH NSW 2340	Tamworth Regional	01260	Complex / Group	HNSW
Tamworth West Public School - Buildings B00A, B00F, B00H and B00J	65 Bridge Street WEST TAMWORTH NSW 2340	Tamworth Regional		Built	SGOV
Tamworth West Public School - Buildings B00A, B00F, B00H and B00J	65 Bridge Street WEST TAMWORTH NSW 2340	Tamworth Regional		Built	SGOV
Tamworth West Public School - Buildings B00A, B00F, B00H and B00J	65 Bridge Street WEST TAMWORTH NSW 2340	Tamworth Regional		Built	SGOV
Tamworth, Former Station Master's Residence	34 Bourke Street TAMWORTH NSW 2340	Tamworth Regional		Built	SGOV
Tamworth, Peel River Underbridge	454.125km Northern Railway Line TAMWORTH NSW 2340	Tamworth Regional		Built	SGOV
Tamworth, Peel Street Underbridge	454.187km Northern Line, Peel Street TAMWORTH NSW 2340	Tamworth Regional		Built	SGOV
Tarpoly Creek Railway Bridge	Main Road 63 BARRABA NSW 2347	Tamworth Regional		Built	LGOV
Tarpoly Creek Railway Underbridge	Manilla Road BARRABA NSW 2347	Tamworth Regional		Built	SGOV
The Claypan and Fuller Gallery	74 Queen Street BARRABA NSW 2347	Tamworth Regional		Built	LGOV
Timber Bridge over Macdonald River	Havannah Street BENDEMEER NSW 2355	Tamworth Regional		Built	LGOV
Timbumburi Public School - Building B00D	542 Kia Ora Lane TIMBUMBURI NSW 2340	Tamworth Regional		Built	SGOV
Timbumburi Public School - Building B00D	542 Kia Ora Lane TIMBUMBURI NSW 2340	Tamworth Regional		Built	SGOV
Timbumburi School	RMB 539 New England Highway South TIMBUMBURI NSW 2340	Tamworth Regional		Built	LGOV

Tintinhull Public School	Tintinhull Road TINTINHULL NSW 2352	Tamworth Regional		Built	LGOV
Tintinhull Public School - Building B00A and B00F (Residence)	85 Tintinhull Road TINTINHULL NSW 2352	Tamworth Regional		Built	SGOV
Tintinhull Public School - Building B00A and B00F (Residence)	85 Tintinhull Road TINTINHULL NSW 2352	Tamworth Regional		Built	SGOV
Tobacco Kiln	73-95 King George Avenue TAMWORTH NSW 2340	Tamworth Regional		Built	LGOV
Tobacco Kiln	119-139 King George Avenue TAMWORTH NSW 2340	Tamworth Regional		Built	LGOV
Tobacco Kiln	Scott Road TAMWORTH NSW 2340	Tamworth Regional		Built	LGOV
Town Hall	26-28 Fitzroy Street TAMWORTH NSW 2340	Tamworth Regional		Built	LGOV
Trainview - Residence	Back Woolbrook Road WOODSREEF NSW 2347	Tamworth Regional		Built	LGOV
Treloar Building	85-87 Queen Street BARRABA NSW 2347	Tamworth Regional		Built	LGOV
Tyrone Residence	10 Limbri Road KOOTINGAL NSW 2352	Tamworth Regional		Built	LGOV
Uniting Church	53-55 Queen Street BARRABA NSW 2347	Tamworth Regional		Built	LGOV
Uniting Church	Strafford Street MANILLA NSW 2346	Tamworth Regional		Built	LGOV
Uniting Church Hall	Strafford Street MANILLA NSW 2346	Tamworth Regional		Built	LGOV
Upper Manilla, Borah Creek Underbridge	516.834km, West Tamworth To Barraba Railway UPPER MANILLA NSW 2346	Tamworth Regional		Built	SGOV
Victoria Hotel	82 Queen Street BARRABA NSW 2347	Tamworth Regional		Built	LGOV
Walcha Courthouse	Apsley Street WALCHA NSW 2354	Tamworth Regional		Built	SGOV

War Memorial	Gipps Street TAMWORTH NSW 2340	Tamworth Regional		Archaeological-Terrestrial	LGOV
Weabonga Cemetery	Weabonga Road WEABONGA NSW 2340	Tamworth Regional		Archaeological-Terrestrial	LGOV
Weabonga Hall	Mitchell Street WEABONGA NSW 2340	Tamworth Regional		Unknown	LGOV
Weabonga School	Mitchell Street Mitchell Street Mitchell Street WEABONGA NSW 2340	Tamworth Regional		Built	LGOV
Wells	Scott Road TAMWORTH NSW 2340	Tamworth Regional		Archaeological-Terrestrial	LGOV
Wells and Pumping Station off Peel River	Scott Road TAMWORTH NSW 2340	Tamworth Regional		Archaeological-Terrestrial	LGOV
Wesleyan Church and House	144 Marius Street TAMWORTH NSW 2340	Tamworth Regional		Built	LGOV
West Retreat	Longford Retreat Road RETREAT NSW 2355	Tamworth Regional		Built	LGOV
West Retreat Bridge	Retreat Road RETREAT NSW 2355	Tamworth Regional		Built	LGOV
West Tamworth Railway Station	In Street WEST TAMWORTH NSW 2340	Tamworth Regional		Built	SGOV
West Tamworth Railway Station	In and Outs Streets WEST TAMWORTH NSW 2340	Tamworth Regional		Built	LGOV
Western Railway Viaduct	Peel Street TAMWORTH NSW 2340	Tamworth Regional		Built	LGOV
Winton Cemetery	Old Winton Road WINTON NSW 2344	Tamworth Regional		Archaeological-Terrestrial	LGOV
Wold's Buildings	84-88 Queen Street BARRABA NSW 2347	Tamworth Regional		Built	LGOV
Woodsreef Cemetery	Old Bundarra Road WOODSREEF NSW 2347	Tamworth Regional		Archaeological-Terrestrial	LGOV
Woolbrook rail bridge over McDonald River	Main Northern Railway WOOLBROOK NSW 2354	Walcha	01067	Built	HNSW

Woolbrook War Memorial Hall	Limbri-woolbrook Road WOOLBROOK NSW 2354	Tamworth Regional		Built	LGOV
Wyaralong Homestead	Manilla Road ATTUNGA NSW 2345	Tamworth Regional		Built	LGOV
Yaccamunda - Airlie Station	Property - Airlie Station Rocky Gully Road BENDEMEER NSW 2355	Tamworth Regional		Built	LGOV
Yarramanbully School Building	197 Manilla Street MANILLA NSW 2346	Tamworth Regional		Built	LGOV
Yellow Box Stand	Calala Lane TAMWORTH NSW 2340	Tamworth Regional		Unknown	SGOV

NSW GOVERNMENT | Heritage NSW

Heritage Search Result

Date: 04/04/2022

Item Name	Location	LGA	SHR Id	Item Type	Record Owner
Abington Station	Thunderbolts Way ABINGTON NSW 2350	Uralla		Built	LGOV
Alma Park	Queen and Hill Streets URALLA NSW 2358	Uralla		Complex / Group	LGOV
Arding Church and Grounds	Hawthorne Drive ARDING NSW 2358	Uralla		Built	LGOV
Balala Station Homestead	Kingstown and Balala Roads BALALA NSW 2358	Uralla		Complex / Group	LGOV
Beehive Well	178 Ferris Lane SAUMAREZ PONDS NSW 2350	Uralla		Built	LGOV
Bridge over Gwydir River	Bendemeer Street BUNDARRA NSW 2359	Uralla		Built	LGOV
Bridge over Gwydir River - double entry with 2540040	Bendemeer Street BUNDARRA NSW 2359	Uralla		Built	LGOV
Bridge over Gwydir River at Bundarra	Regional Road 73 BUNDARRA NSW 2359	Uralla		Built	SGOV
Bundarra Commercial Precinct Heritage Conservation Area	Bendemeer Street BUNDARRA NSW 2359	Uralla		Conservation Area	LGOV
Bundarra Police Station & Courthouse	Oliver Street BUNDARRA NSW 2359	Uralla	00229	Complex / Group	HNSW
Bundarra Police Station and Courthouse (Former)	31 Bendemeer Street BUNDARRA NSW 2359	Uralla		Built	LGOV
Cemetery	John Street (Uralla Square) URALLA NSW 2358	Uralla		Complex / Group	LGOV
Cemetery Ground	178 Ferris Lane SAUMAREZ PONDS NSW 2350	Uralla		Complex / Group	LGOV
Church and Grounds	Lana-Retreat Road BALALA NSW 2358	Uralla		Complex / Group	LGOV

Court House (Former)	7A Hill Street URALLA NSW 2358	Uralla		Built	LGOV
Dangar's Lagoon	Thunderbolts Way (Main Road 73) - 4km south of Uralla URALLA NSW 2358	Uralla		Landscape	LGOV
Dangars Falls and Salisbury Waters Gorge	Dangarsleigh Road MIHI NSW 2358	Uralla		Complex / Group	LGOV
Deeargee Woolshed	1081 Gostwyck Road GOSTWYCK NSW 2358	Uralla		Built	LGOV
Gostwyck Memorial Chapel and Precinct, Gostwyck Station	979 Gostwyck Road GOSTWYCK NSW 2358	Uralla		Complex / Group	LGOV
House	13 Bridge Street URALLA NSW 2358	Uralla		Built	LGOV
House	35 and 37 Maitland Street URALLA NSW 2358	Uralla		Built	LGOV
House	26 Maitland Street URALLA NSW 2358	Uralla		Built	LGOV
House - Eliza	37 King Street URALLA NSW 2358	Uralla		Built	LGOV
House - Gartshore	16 Salisbury Street URALLA NSW 2358	Uralla		Built	LGOV
House - Rothsay	31 Maitland Street URALLA NSW 2358	Uralla		Built	LGOV
House - Wongaleigh	18 Bridge Street URALLA NSW 2358	Uralla		Built	LGOV
House (Former Commercial Hotel and Ship and Star Hotel)	24 Bridge Street URALLA NSW 2358	Uralla		Built	LGOV
House (Former Courthouse Hotel)	112 Bridge Street URALLA NSW 2358	Uralla		Built	LGOV
House and Garden	31 John Street URALLA NSW 2358	Uralla		Built	LGOV
Literary Institute Building (Former)	30 Salisbury Street URALLA NSW 2358	Uralla		Built	LGOV
Masonic Hall	28 Maitland Street URALLA NSW 2358	Uralla		Built	LGOV
McCrossin's Mill	29 Salisbury Street URALLA NSW 2358	Uralla		Complex / Group	LGOV

McCrossin's Mill Precinct	29-31 Salisbury Street URALLA NSW 2358	Uralla	00161	Built	HNSW
McDonald's Saw, Plane Mill and House	29 Tomline Street BUNDARRA NSW 2359	Uralla		Complex / Group	LGOV
Mt Beef	New England Highway URALLA NSW 2358	Uralla		Landscape	LGOV
Mt Mutton	Thunderbolts Way URALLA NSW 2358	Uralla		Landscape	LGOV
New England Brass and Iron Lace Foundry	4 East Street URALLA NSW 2358	Uralla		Built	LGOV
New England Brass and Iron Lace Foundry	6 East Street URALLA NSW 2358	Uralla	01455	Built	HNSW
Oddfellows Hall (Former)	67 Bridge Street URALLA NSW 2358	Uralla		Built	LGOV
Old Stable Building	31 Salisbury Street URALLA NSW 2358	Uralla		Built	LGOV
Pottery Club	15 Hill Street URALLA NSW 2358	Uralla		Built	LGOV
Presbyterian Manse (Former)	30 Bridge Street URALLA NSW 2358	Uralla		Built	LGOV
Railway Gatekeeper's Cottage (Former)	1 East Street URALLA NSW 2358	Uralla		Built	LGOV
Rocky River Goldmining Precinct Heritage Conservation Area	ROCKY RIVER NSW 2358	Uralla		Conservation Area	LGOV
Rocky River Public School	354 Thunderbolts Way ROCKY RIVER NSW 2358	Uralla		Complex / Group	SGOV
Rocky River Public School	354 Thunderbolts Way ROCKY RIVER NSW 2358	Uralla		Complex / Group	SGOV
Roman Catholic Church Group	1 Maitland Street URALLA NSW 2358	Uralla		Complex / Group	LGOV
Roman Catholic Church Group - Convent	14 Bridge Street URALLA NSW 2358	Uralla		Built	LGOV
Roman Catholic Church Group - Presbytery	14 Bridge Street (facing Wood Street) URALLA NSW 2358	Uralla		Built	LGOV
Roman Catholic Church Group - School Building A	14 Bridge Street URALLA NSW 2358	Uralla		Built	LGOV

Roman Catholic Church Group - School Building B	14 Bridge Street URALLA NSW 2358	Uralla		Built	LGOV
Roman Catholic Church Group - St Joseph's Church	14 Bridge Street URALLA NSW 2358	Uralla		Complex / Group	LGOV
Salisbury Court	3031 Thunderbolts Way SALISBURY PLAINS NSW 2358	Uralla		Complex / Group	LGOV
Showground	8 King Street URALLA NSW 2358	Uralla		Complex / Group	LGOV
St David's Presbyterian Church (Former)	26 Bridge Street URALLA NSW 2358	Uralla		Built	LGOV
St John's Anglican Church and Vicarage	75 Bridge Street (fronting Park Street) URALLA NSW 2358	Uralla		Built	LGOV
St John's Anglican Church	12 Park Street URALLA NSW 2358	Uralla		Built	LGOV
St John's Vicarage and Tree	12 Park Street URALLA NSW 2358	Uralla		Built	LGOV
St Mary's Roman Catholic Church	5 Oliver Street BUNDARRA NSW 2359	Uralla		Built	LGOV
St Nicholas Church and Grounds	132 Dumaresq Road SAUMAREZ PONDS NSW 2350	Uralla		Built	LGOV
Suspension Bridge across Salisbury Waters	Gostwyck Road (420 metres north of Munsie Bridge) GOSTWYCK NSW 2358	Uralla		Built	LGOV
The Captain Thunderbolt Sites	Various URALLA NSW 2358	Uralla	01889	Complex / Group	HNSW
The Captain Thunderbolt Sites - Blanch's Royal Oak Inn	New England Highway URALLA NSW 2358	Uralla		Archaeological-Terrestrial	HNSW
The Captain Thunderbolt Sites - Thunderbolt's Death Site	KENTUCKY NSW 2354	Uralla		Landscape	HNSW
The Captain Thunderbolt Sites - Thunderbolt's Grave	Uralla Square URALLA NSW 2358	Uralla		Landscape	HNSW
The Captain Thunderbolt Sites - Thunderbolt's Rock	New England Highway URALLA NSW 2358	Uralla		Landscape	HNSW

Torryburn Station	3589 Kingstown Road TORRYBURN NSW 2421	Uralla		Complex / Group	LGOV
Uniting Church	29 Maitland Street (corner Hill Street) URALLA NSW 2358	Uralla		Built	LGOV
Uralla Commercial Precinct Heritage Conservation Area	Bridge Street URALLA NSW 2358	Uralla		Conservation Area	LGOV
Uralla Police Station and Official Residence 2	7 Hill Street URALLA NSW 2358	Uralla		Built	SGOV
Uralla Post Office	11 Hill Street URALLA NSW 2358	Uralla		Built	LGOV
Uralla Railway Station	Duke Street URALLA NSW 2358	Uralla		Built	SGOV
Uralla Railway Station group	Main Northern railway URALLA NSW 2358	Uralla	01275	Complex / Group	HNSW
Uralla Railway Station Group	3 Hill Street URALLA NSW 2358	Uralla		Complex / Group	LGOV
Uralla, Barleyfields Road Gatekeepers Residence	Barleyfields Road (555.648 Km Main Northern Line) URALLA NSW 2358	Uralla		Built	SGOV
Veterinary Clinic	116 Bridge Street URALLA NSW 2358	Uralla		Built	LGOV
Wallaby Rocks, Lower Wallaby Rocks and Great Falls	Kingstown Road, Gwydir River (Wallaby Rocks - 100m upstream, Lower Wallaby Rocks - 650m downstream and Great Falls - 1,000m downstream, of bridge) URALLA NSW 2358	Uralla		Complex / Group	LGOV
Wollun Village Precinct Heritage Conservation Area	Wollun Road WOLLUN NSW 2354	Uralla		Conservation Area	LGOV
Young's Water Race	Thunderbolts Way ROCKY RIVER NSW 2358	Uralla		Complex / Group	LGOV

Transport Roads & Maritime Services

Date: 01/07/2022

Attention: Mitchel Ingram
Project Manager
76 Victoria Street
Grafton, NSW 2460.

Dear Mitchel,

Preliminary assessment results for proposed for HWY09 New England Highway, S1700 to S1720 Glenburnie Road – pavement rehabilitation program.

Based on Stage 1 of the *Procedure for Aboriginal cultural heritage consultation and investigation* (PACHCI). The recommended works is pavement rehabilitation that will be undertaken in the area and was assessed as being unlikely to have an impact on Aboriginal cultural heritage.

The assessment is based on the following due diligence considerations:

- The project is unlikely to harm known Aboriginal objects or places.
- The AHIMS search **did not** indicate known Aboriginal objects or places in the immediate project areas; however, there will be no direct impacts of the identified Aboriginal sites that have been highlighted in the area.
- The study area **does not** contain landscape features that indicate the presence of Aboriginal objects, based on the Office of Environment and Heritage's ***Due diligence Code of Practice for the Protection of Aboriginal objects in NSW*** and the Roads and Maritime Services' procedure.
- The cultural heritage potential of the study area appears to be reduced due to past disturbance.
- There is an absence of sandstone rock outcrops likely to contain Aboriginal art.

Safeguards

Your project may proceed in accordance with the environmental impact assessment process, as relevant, and all other relevant approvals. If there are any changes, please contact me and your environmental team to reassess any potential impacts on Aboriginal cultural heritage.

If any potential Aboriginal objects (including skeletal remains) are discovered during the project, all works in the vicinity of the find must cease. Follow the steps outlined in the Roads and Maritime Services ***Unexpected Heritage Items, Heritage Procedure 02, November 2015.***

Project Description

Segments 1705-1720 are located on the New England Highway approximately 15 kilometres South of Uralla. The project length is 4.55 kilometres and includes approximately 42,250 m² of existing pavement surface area. There are 5 segments within the project:

Segment 1705 – Standbye Hill
Segment 1710 – Standbye Hill Rest Area
Segment 1715 – Glenburnie Road
Segment 1717 – Glenburnie Road North
Segment 1720 – Kentucky Station South

The road configuration is 2 lane 2 way undivided for all 5 segments.

The project is joint funded through safety funding from the Willow Tree to Uralla program and flexible pavement rehabilitation program. The rehab funding source is for achieving a renewed 20-year pavement life for segments 1717-1720 with segment 1715 also being considering for rehab. The safety funding contributes towards achieving Wide Centreline Treatment (WCLT), new and or altered roadside safety barriers, and shoulder widening.

Project scope

The scope for the project includes:

- Widening sealed shoulder width to min 1m desired up to 3.0 metre and 1.0 metre WCLT
- Rehabilitation of the existing pavement in segments 1717 and 1720
- Culvert extensions, potential replacements only if required, lining treatments if required. Noting that drainage structure works are minimal for this project as there are only 4 road sized culverts over the entire project length. Refer to below section on drainage structure works for more specific details.
- Culvert desilting, inlet/outlet desilting, and inlet/outlet re-stabilisation via rock or jute matt lining as appropriate
- Longitudinal SO kerb (concrete dish drain) adjacent to some of the cuttings where nominated in the design, bedding on a No Fines Concrete (NFC) with trench drain for subsurface drainage
- Installation of new flexible guardrail roadside safety barriers
- Earthworks/embankment widening in some locations to achieve the desired safer cross section
- Removal of regrowth vegetation to maintain table drain functionality, maintain safe site distances, and for roadside safety hazards.
- Removal of general regrowth vegetation in the disturbed zone under what is permissible in accordance with environmental assessment for routine and minor works and applicable standard safeguards. For example, regrowth vegetation <10 years old growing within table drains and the existing disturbed zone
- Removal of mature trees some of which are outside the disturbed zone. Refer to vegetation removal scope. This is required to achieve the desired safer road cross section. Alignment deviations and safety barrier treatments will be adopted to minimise this impact as much as practically possible.
- Maintenance of existing table drains/catch drains involving, desilting where needed, erosion prevention treatments where needed such as geofabric and rock lining, or jute mesh as appropriate to the location considering longitudinal grade and catchment.
- New sprayed seal wearing surface and line-marking
- Roadside signage maintenance or improvements as identified throughout the design process

Figure 1 - photo of current proposal

AHIMS

An AHIMS search was completed for the identified area and did not identify any significant Aboriginal places/sites.

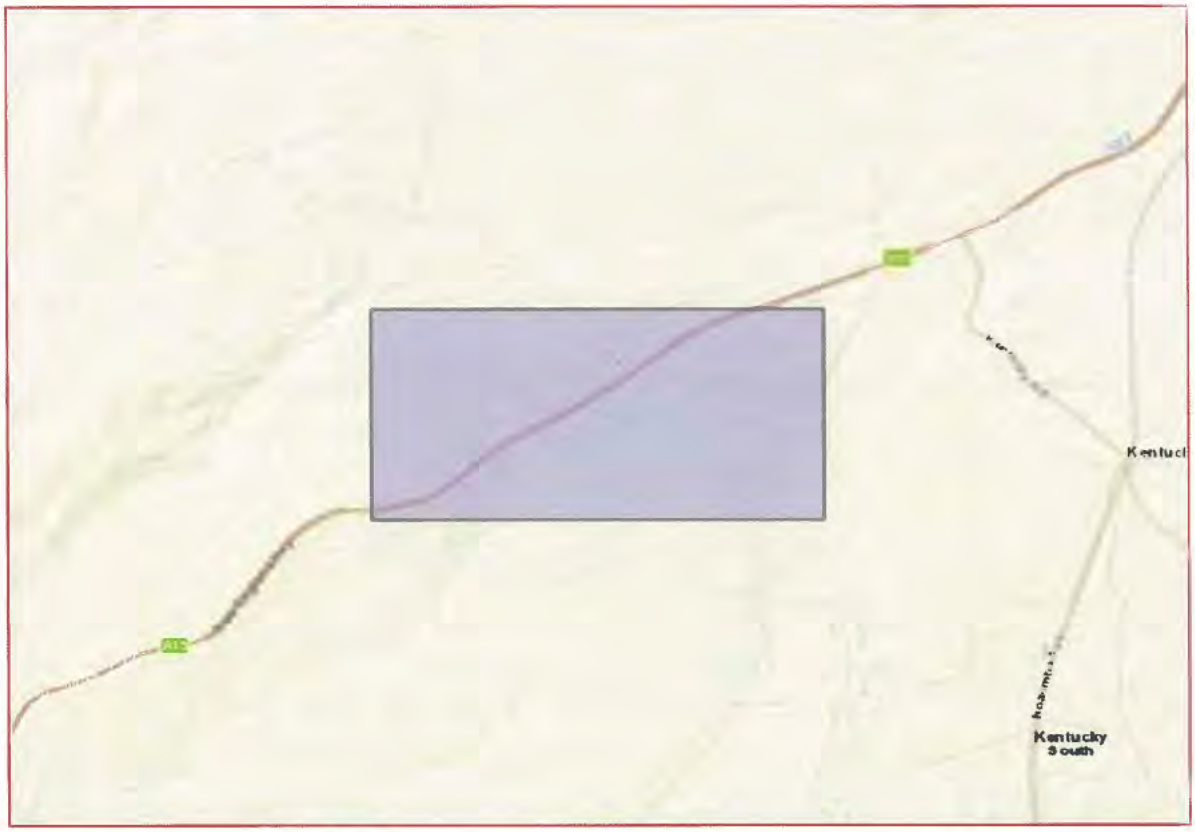
The location of the project is not within any Native Title determination area and is within the Armidale Local Aboriginal Land Council boundary.

For additional cultural heritage support, please contact Aboriginal Engagement – Team North.

Figure 3 – AHIMS search

AHIMS Web Service search for the following area at Lat, Long From : -30.765, 151.363 - Lat, Long To : -30.74, 151.416, conducted by Leslie Hoskins on 30 May 2022.

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. *

Yours sincerely

[redacted]

Lance Randall
A/Aboriginal Cultural Heritage Officer
76 Victoria Street
Grafton, NSW 2460.

Attachment A

Transport Roads & Maritime Services

Activity checklist

Procedure for Aboriginal cultural heritage consultation and investigation – Resource 1

1. Project details

Project name: HWY09 New England Highway, Segment 1700 to Segment 1720 Glenburnie Road – pavement rehabilitation program.

Name of Project Manager:	Mitchel Ingram
Name of Environment Officer:	Chris Wicks
Name of Communications Officer:	David Bancroft
Name of Aboriginal Cultural Heritage Advisor:	Lance Randall
Project WBS:	P.0069923.04.001.004

2. Purpose of this assessment

This resource provides a checklist of actions associated with the four stages of the *Procedure for Aboriginal cultural heritage consultation and investigation.*

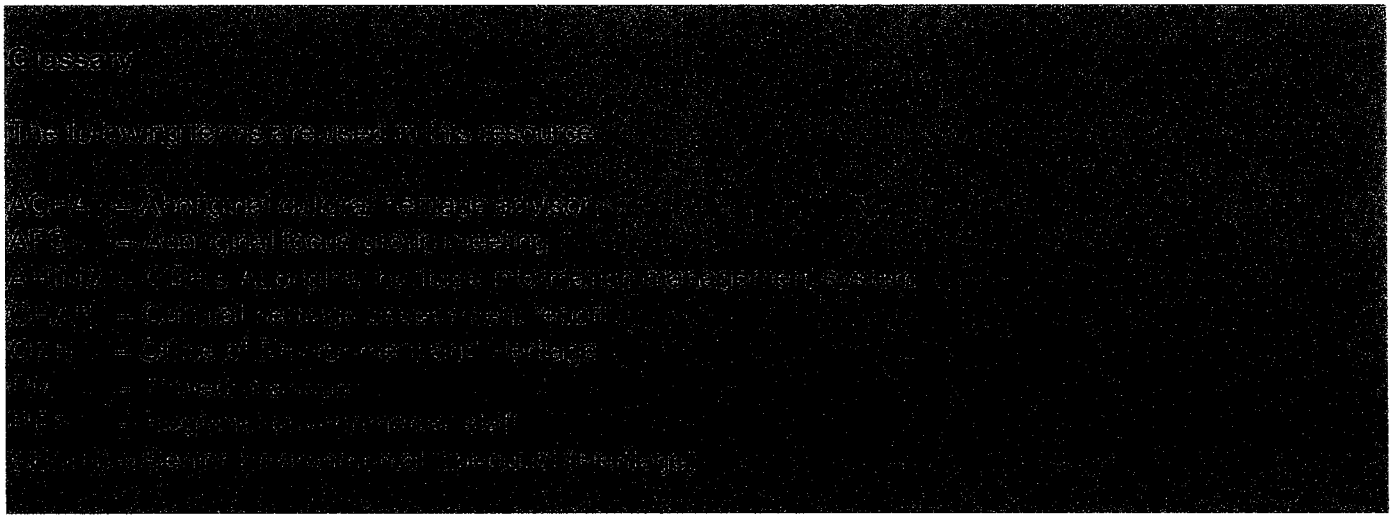
It can be used to:

- Assist Roads and Maritime Services staff to ensure that the appropriate actions have been completed for a particular project.
- Demonstrate that the Roads and Maritime Services have been duly diligent in considering potential harm to Aboriginal cultural heritage prior to project implementation.

A copy of this checklist must be kept on the project file.

3. Project Justification

Segments 1705-1720 are located on the New England Highway approximately 15km South of Uralla. The project length is 4.55 kilometres and includes approximately 42,250m² of existing pavement surface area.



4. Action checklist

Stage	Action	Completed ☑	Date completed and signature
Stage 1	**Action 1:** Is the activity exempt development in accordance with the *Environmental assessment procedure for routine and minor works*? If **yes**, the project may proceed in accordance with all other relevant approvals. If **no**, proceed to Action 2.	☑	No
	Action 2: Undertake a Basic Search of AHIMS. Are sites located in the study area? If **yes**, undertake an Extensive Search.	☑	**30/05/2022** Leslie Hoskins
	Action 3: Provide project details and AHIMS results to ACHA and RES.	☑	**Information outlined in assessment**
	Action 4: ACHA and RES to advise PM whether the project is likely to harm Aboriginal objects or places.	☒	
	Outcomes: Are known or potential impacts to objects or places likely? If **no**, proceed in accordance with all other relevant approvals and environmental impact assessment processes. If **yes**, proceed to Stage 2. Note: For large or complex projects, it may not be feasible to do a Stage 2 survey. Has a cultural heritage constraints mapping been suggested instead? If **yes**, engage an archaeologist and Aboriginal stakeholders to prepare this.	**No impacts – proceed with works**	**04/07/2022 Lance Randall.** [redacted]

Appendix D

Biodiversity Assessment Report

Willow Tree to Uralla – HW9 s1700 – 1720 Glenburnie

Biodiversity Assessment Report

Transport for NSW | August 2022

NSW GOVERNMENT

BLANK PAGE

Willow Tree to Uralla – HW9 s1700 – 1720 Glenburnie

Biodiversity Assessment Report

Transport for NSW | August 2022

Prepared by GeoLINK

GeoLINK
environment | engineering | planning | design

Executive summary

Transport for NSW (TfNSW) proposes to undertake pavement widening works to improve traffic safety along a section of New England Highway. The proposal involves formation widening and curve correction within segment 1700 - 1720 of the New England Highway.

The objectives of the proposed works are to:

- Achieve a desired safer cross section
- Improve road safety via treatments such as wide centreline treatment, wider shoulders and safety barriers
- Treat the existing pavement to achieve a renewed 20-year design life

Based on the site assessment and consideration of the work required, the following biodiversity matters are relevant to the proposal:

- The study area comprises remnant vegetation associated with New England Highway road reserve. This vegetation is in low to high condition however has been historically disturbed by grazing, current road operations and maintenance, and is subject to roadside weed incursions.
- The proposal would result in removal of approximately 0.06 hectares of PCT 567 Broad-leaved Stringybark - Yellow Box shrub/grass open forest of the New England Tableland Bioregion (low to high condition)
- PCT 567 (moderate and high condition only) within the study area is representative of a Threatened Ecological Community (TEC) listed under the BC Act and EPBC Act (White Box - Yellow Box - Blakely's Red Gum Grassy Woodland and Derived Native Grassland in the New England Tableland Bioregions (BC Act) and White Box-Yellow Box-Blakely's Red Gum Grassy Woodland and Derived Native Grassland (EPBC Act)). The proposal would result in removal of approximately 0.06 hectares of TEC.
- No threatened flora species were recorded during the surveys. However, considering the limitations of the survey, Bluegrass, Silky Swainson-pea, *Prasophyllum* sp. *Wybong* and Small Snake Orchid are considered potential occurrences at the site.
- No threatened fauna species were recorded at the site. However, there is potential for several threatened fauna species to occur based on available site habitats.
- A number of mitigation measures have been recommended to manage potential impacts relating to biodiversity
- It was determined that the proposal is unlikely to significantly affect any species, communities or their habitat listed under the *Biodiversity Conservation Act 2016* (BC Act) or the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act). Therefore, a Species Impact Statement (SIS) or a Biodiversity Development Assessment Report (BDAR) is not required, nor is the proposal subject to the EPBC Act Strategic Assessment.
- The proposal does trigger TfNSW offset thresholds and therefore offsets are required.

Contents

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Glossary of terms for this template

Definitions	
Biodiversity offsets	Management actions that are undertaken to achieve a gain in biodiversity values on areas of land in order to compensate for losses to biodiversity values from the impacts of development (OEH 2017).
Construction footprint	The area to be directly impacted by the proposal during construction activities. Analogous with subject land (see definition for subject land).
Cumulative impact	The impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions. Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time. Refer to Clause 228(2) of the EP&A Regulation 2000 for cumulative impact assessment requirements.
Direct impact	Direct impacts on biodiversity values include those related to clearing native vegetation and threatened species habitat, and impacts on biodiversity values prescribed by the Biodiversity Conservation Regulation 2017 (the BC Regulation) (BAM 2017)
Habitat	An area or areas occupied, or periodically or occasionally occupied, by a species, population or ecological community, including any biotic or abiotic component.
Indirect impact	Indirect impacts include but not limited to: (a) indirect impacts on adjacent vegetation and habitat during construction (b) indirect impacts on adjacent vegetation and habitat during operation (c) impacts on adjacent vegetation and habitat arising from a change in land-use patterns (BAM 2017)
Local population	The population that occurs in the study area. In cases where multiple populations occur in the study area or a population occupies part of the study area, impacts on each subpopulation must be assessed separately (OEH 2017).
MNES	A matter of national environmental significance (MNES) protected by a provision of Part 3 of the EPBC Act
Mitchell landscape	Landscapes with relatively homogeneous geomorphology, soils and broad vegetation types, mapped at a scale of 1:250,000 (OEH 2014).
Mitigation	Action to reduce the severity of an impact (OEH 2014).
Mitigation measure	Any measure that facilitates the safe movement of wildlife and/or prevents wildlife mortality or injury.
Native vegetation	(a) trees (including any sapling or shrub or any scrub), (b) understorey *plants*, (c) groundcover (being any type of herbaceous vegetation), (d) *plants* occurring in a wetland. A *plant* is native to New South Wales if it was established in New South Wales before European settlement (BC Act).

Definitions	
OEH BAM Calculator	An online application of the Biodiversity Assessment Method (BAM). The calculator uses the rules and calculations outlined in the BAM and allows the user to apply the BAM at a site and observe the results of the assessment.
Operational footprint	The area that will be subject to ongoing operational impacts from the proposal. This includes the road, surrounding safety verges and infrastructure, fauna connectivity structures and maintenance access tracks and compounds.
Population	A group of organisms, all of the same species, occupying a particular area (BAM 2017).
Proposal area/ proposal site/ development footprint	The area of land that is directly impacted on by the proposal that is being assessed under the EP&A Act, including access roads, and areas used to store construction materials (OEH 2014). It includes the construction and operational areas for the proposal.
Study area	The area directly affected by the development and any additional areas likely to be affected by the development, either directly or indirectly (OEH 2014).
Target species	A species has been identified within the study area or is considered to have a moderate to high likelihood of occurrence and may be impacted by the proposal.

Abbreviations	
BC Act	Biodiversity Conservation Act 2017
BOS	Biodiversity Offset Scheme under the BC Act
CEEC	Critically Endangered Ecological Community
CEMP	Construction Environmental Management Plan
DoEE	Department of Environment and Energy
DP&E	Department of Planning and Environment
DPI	Department of Primary Industries
EEC	Endangered ecological community
EPBC Act	Environmental Protection and Biodiversity Conservation Act 1999 (Commonwealth).
FM Act	Fisheries Management Act 1994 (NSW)
GDE	Groundwater dependent ecosystems
IBRA	Interim Biogeographically Regionalisation of Australia
MNES	Matters of National Environmental Significance
OEH	Office of Environment and Heritage
PCT	Plant Community Type
REF	Review of Environmental Factors
SEPP	State Environmental Planning Policy

Abbreviations	
TECs	Threatened Ecological Communities
TBDC	Threatened Biodiversity Data Collection
VEC	Vulnerable Ecological Community
VIS	Vegetation information system

1. Introduction

1.1 Proposal background

Transport for NSW (TfNSW) proposes to undertake road widening works to improve traffic safety along a section of New England Highway (A15) approximately 15 km southwest of Uralla (refer to **Illustration 1-1**) comprising segments 1700 - 1720.

There are six segments that make up this site:

- S1700
- S1705 – Standbye
- S1710 – Standbye Rest Area
- S1715 – Glenburnie Road
- S1717 – Glenburnie Road North
- S1720 – Kentucky Station South

The objectives of the proposed works are to:

- Achieve the desired safer cross section.
- Improve road safety via treatments such as wide centreline treatment, wider shoulders and safety barriers.
- Treat the existing pavement to achieve a renewed 20 year design life.

The proposal involves formation widening, guardrail installation, earthworks, SO kerb installation, and general maintenance/ repairs within segment. The overall length of the site is 5.15 km and includes approximately 60,600 m^2 of existing pavement surface area. The road configuration of the site is two lane, two way, undivided roads. This site is generally bordered by farmland and native regrowth vegetation.

The improvements under this proposal will improve the safety of this section of highway significantly and overall contribute towards the reductions of fatalities and serious injuries on the New England Highway into the future. The proposal is programmed for delivery early 2022-2023 financial year, with an estimated project duration of four to six months.

1.2 The proposal

The proposal includes undertaking the following works within the subject segments:

- Widening sealed shoulder width to a minimum of 1 m, up to 3 m and 1 m WCLT.
- Rehabilitation of the existing pavement in segments 1717 and1720.
- Culvert extensions, potential replacements only if required, lining treatments if required. Noting that drainage structure works are minimal for this project as there are only four road-sized culverts over the entire project length.
- Culvert desilting, inlet/outlet desilting, and inlet/outlet re-stabilisation via rock or jute mat lining, as appropriate.
- Longitudinal SO kerb (concrete dish drain) adjacent to some of the cuttings, where nominated in the design, bedding on a No Fines Concrete (NFC) with trench drain for subsurface drainage.
- Installation of new flexible guardrail roadside safety barriers.
- Earthworks/embankment widening in some locations to achieve the desired safer cross section.

- Removal of regrowth vegetation to maintain table drain functionality, maintain safe site distances, and for roadside safety hazards.
- Removal of general regrowth vegetation in the disturbed zone under what is permissible in accordance with environmental assessment for routine and minor works and applicable standard safeguards. For example, regrowth vegetation <10 years old growing within table drains and the existing disturbed zone.
- Removal of mature trees some of which are outside the disturbed zone. Refer to vegetation removal scope. This is required to achieve the desired safer road cross section. Alignment deviations and safety barrier treatments will be adopted to minimise this impact as much as practically possible.
- Maintenance of existing table drains/catch drains involving desilting where needed, erosion prevention treatments where needed such as geofabric and rock lining, or jute mesh as appropriate to the location considering longitudinal grade and catchment.
- New sprayed seal wearing surface and linemarking.
- Roadside signage maintenance or improvements as identified throughout the design process.

A summary of the general work methodology is as follows:

- Establish site compound
- Implement traffic management plans
- Delineate no go zones and any vegetation to be protected
- Install sediment and erosion controls
- Mulch long grass and regrowth vegetation within disturbed zone
- Establish spoil site including erosion and sediment controls
- Extend culverts and culvert inlet/outlet treatments as per scope
- Construct SO kerbs and trench drains below SO kerbs
- Undertake earthworks to construct embankment widenings where required
- Construct the shoulder widenings, strip and remove top layer of verge material containing organic matter
- Replace with DGB20
- Undertake pavement rehabs in 500 m sections, progressively sealing the works before constructing the next section
- Reseal prepare Heavy Patch pavement on the non-rehabilitated segments where required
- Seal the surface with a bituminous sprayed seal (primerseal)
- Undertake any required table drain maintenance as the works progress through the sections
- Install roadside safety barriers
- Install new/replace/relocated roadside signage as required
- Install pavement delineation, longitudinal, and transverse linemarking
- Disestablish site
- Final seal approximately 12 months later
- Install pavement delineation, longitudinal, and transverse linemarking
- Install retro-reflective raised pavement markers (RPMs)

For this assessment, the proposal site (the site) is considered to be the entire fenced road reserve within the subject segment of the New England Highway (refer to **Illustration 1-2**). The study area consists of the site and any adjacent areas that are likely to be impacted, either directly or indirectly by the proposal within the road reserve. The construction footprint of the proposal is based on the outer extents of the road design (refer to **Illustration 1-2**).

Temporary Stockpile Sites

The following existing and registered stockpile sites will be utilised for the project:

- Registered stockpile Site Nth 9/027 Standbye Hill Stockpile site approximately 600 m south of the Glenburnie project located in segment 1690 LHS.
- Registered stockpile Site Nth 9/028 South Old Wollun Rd Stockpile site located within the project segment 1720 RHS.
- Registered Stockpile Site Nth9/029 Kentucky Truck Parking Stockpile site approximately 2.5 km north of Glenburnie project located on LHS segment 1735.

1.3 Legislative context

A Step 2 memo is to be prepared to satisfy TfNSW duties under s.5.5 of the *Environmental Planning and Assessment Act 1979* (EP&A Act) to *"examine and take into account to the fullest extent possible all matters affecting or likely to affect the environment by reason of that activity"* and s.5.7 in making decisions on the likely significance of any environmental impacts. This biodiversity impact assessment forms part of the Step 2 memo being prepared for the project and assesses the biodiversity impacts of the proposal to meet the requirements of the EP&A Act.

Sections 7.2 A of the *Biodiversity Conservation Act 2016* (BC Act) and Part 7A of the *Fisheries Management Act 1994* (FM Act) require that the significance of the impact on threatened species and endangered ecological communities is assessed using a test of significance. Where a significant impact is likely to occur, a species impact statement (SIS) must be prepared in accordance with the Director-General's requirements, or a Biodiversity Development Assessment Report (BDAR) must be prepared by an accredited assessor in accordance with the Biodiversity Assessment Method (BAM).

In September 2015, a "strategic assessment" approval was granted by the Federal Minister in accordance with the EPBC Act. The approval applies to TfNSW activities being assessed under Part 5.1 (formerly Part 5) of the EP&A Act with respect to potential impacts on nationally listed threatened species, ecological communities and migratory species.

As a result, TfNSW proposals assessed via a Step 2 Memo:

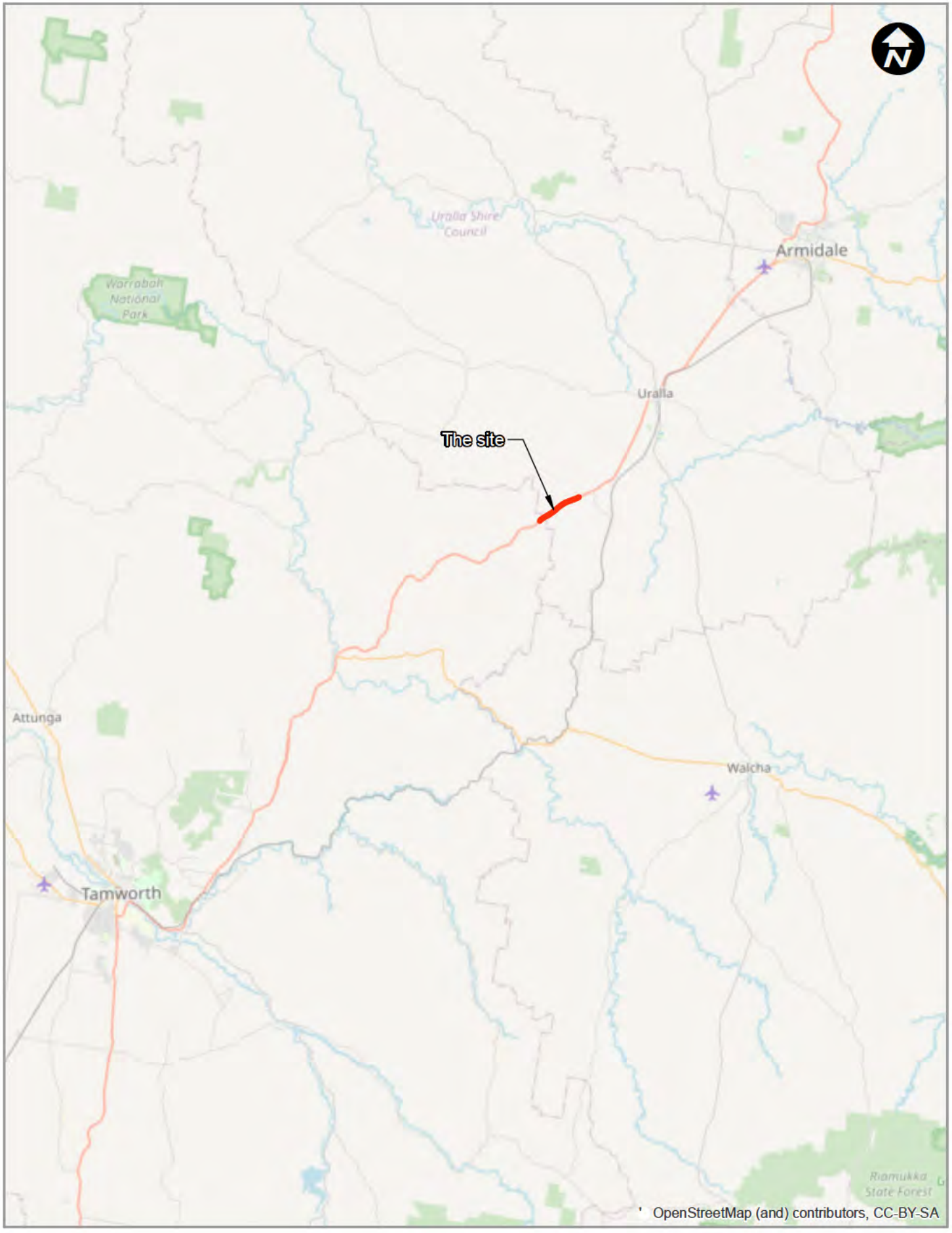
- must address and consider potential impacts on nationally listed threatened species, populations, ecological communities and migratory species, including application of the *"avoid, minimise, mitigate and offset"* hierarchy
- do not require referral to the Federal Department of Agriculture, Water and the Environment for these matters, even if the activity is likely to have a significant impact.

To assist with this, assessments are required in accordance with the *Matters of National Environmental Significance: Significant impact guidelines 1.1. Environment Protection and Biodiversity Conservation Act 1999* (DoE 2013).

1.4 Definitions used in this report

The following definitions have been used throughout this BAR:

- **The proposal** – as described in **Section 1.2** and shown in **Illustration 1-2**.
- **Impact area** – this includes all areas to be directly impacted by the proposal, including the direct impact area of proposed design and construction footprint (i.e. associated ancillary infrastructure and laydown areas).
- **Study area** – the impact area and adjacent areas of vegetation and associated habitat surveyed as part of this investigation that may be subject to direct or indirect impacts as a result of the proposal.
- **The locality** – 10 km buffer of the study area (database area search buffers are detailed in **Table 2-2**).



0 10 km

Proposal Context - Illustration 1.1

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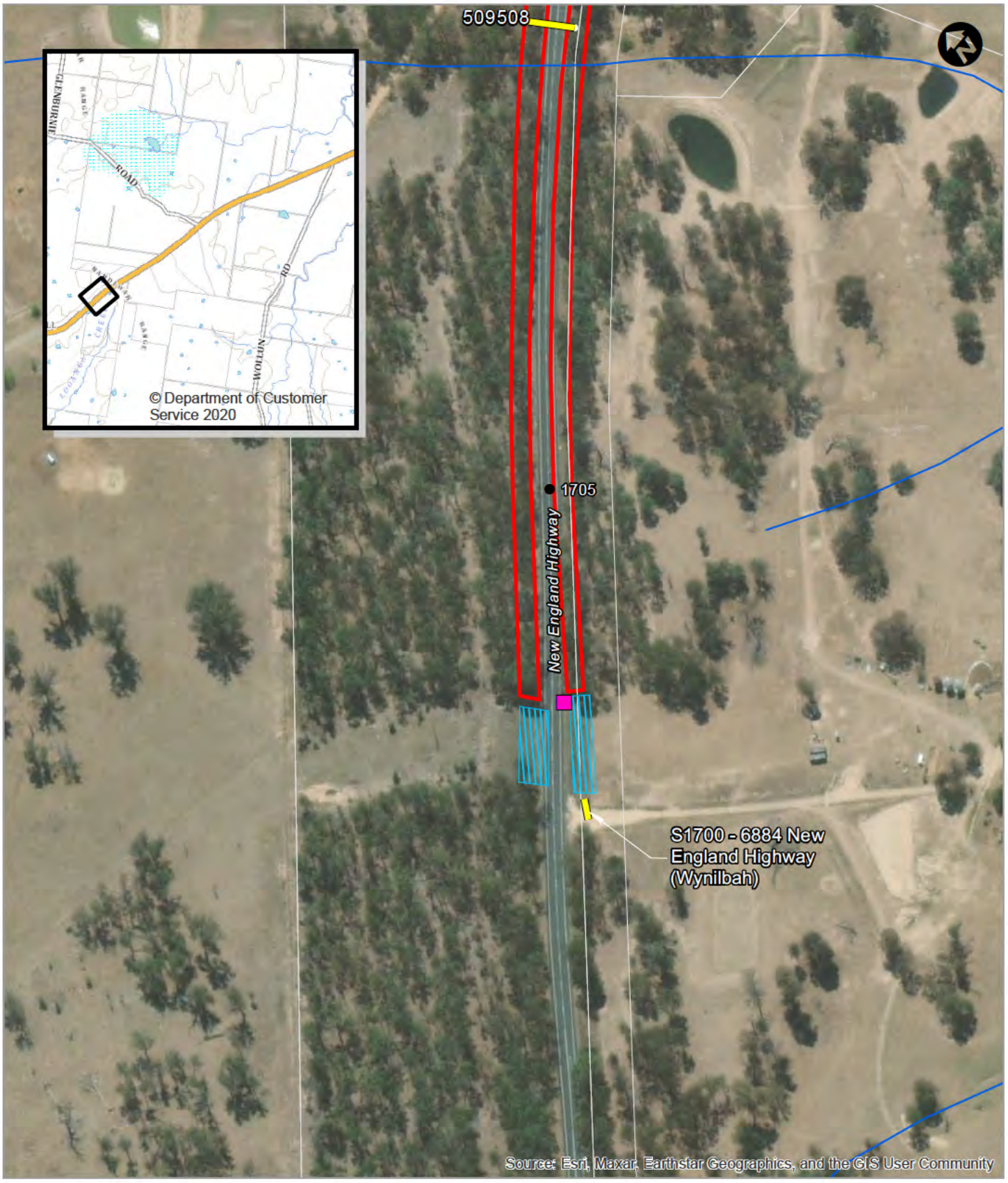
Revision: B



LEGEND

- Assessment area
- Cadastre
- Plant parking
- Watercourse
- Culvert
- Segment marker
- Glenburnie start

0 50 Metres

The Proposal - Illustration 1.2
Sheet 1 of 10

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Source of base data: ESRI World Imagery
Date: 26/07/2022
Revision: B

LEGEND

- Assessment area
- Cadastre
- Plant parking
- Plant parking / compound site
- Watercourse
- Culvert

0 50 Metres

The Proposal - Illustration 1.2
Sheet 2 of 10

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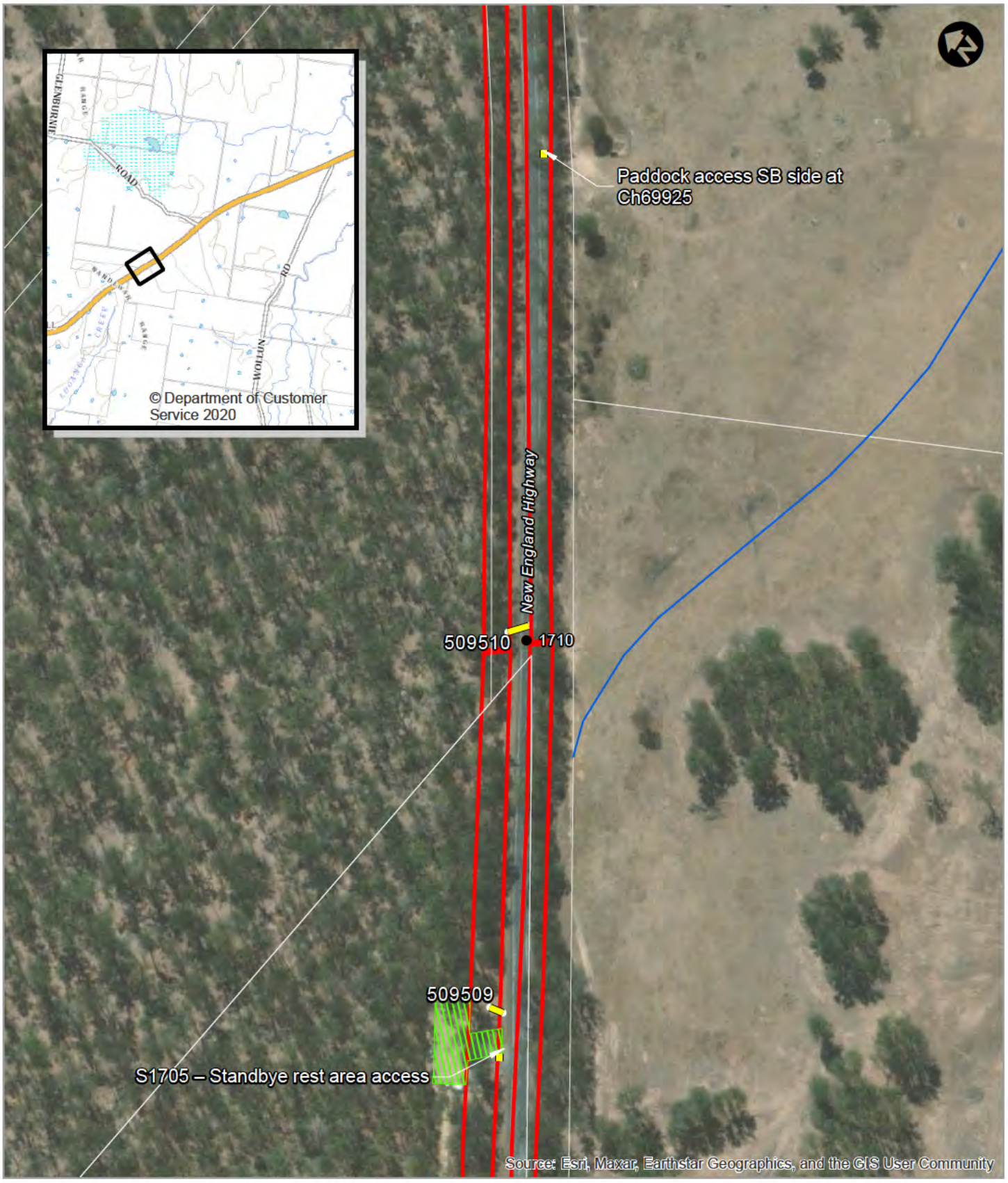

LEGEND

- Assessment area
- Cadastre
- Plant parking / compound site
- Watercourse
- Culvert
- Segment marker

0 50 Metres

The Proposal - Illustration 1.2
Sheet 3 of 10

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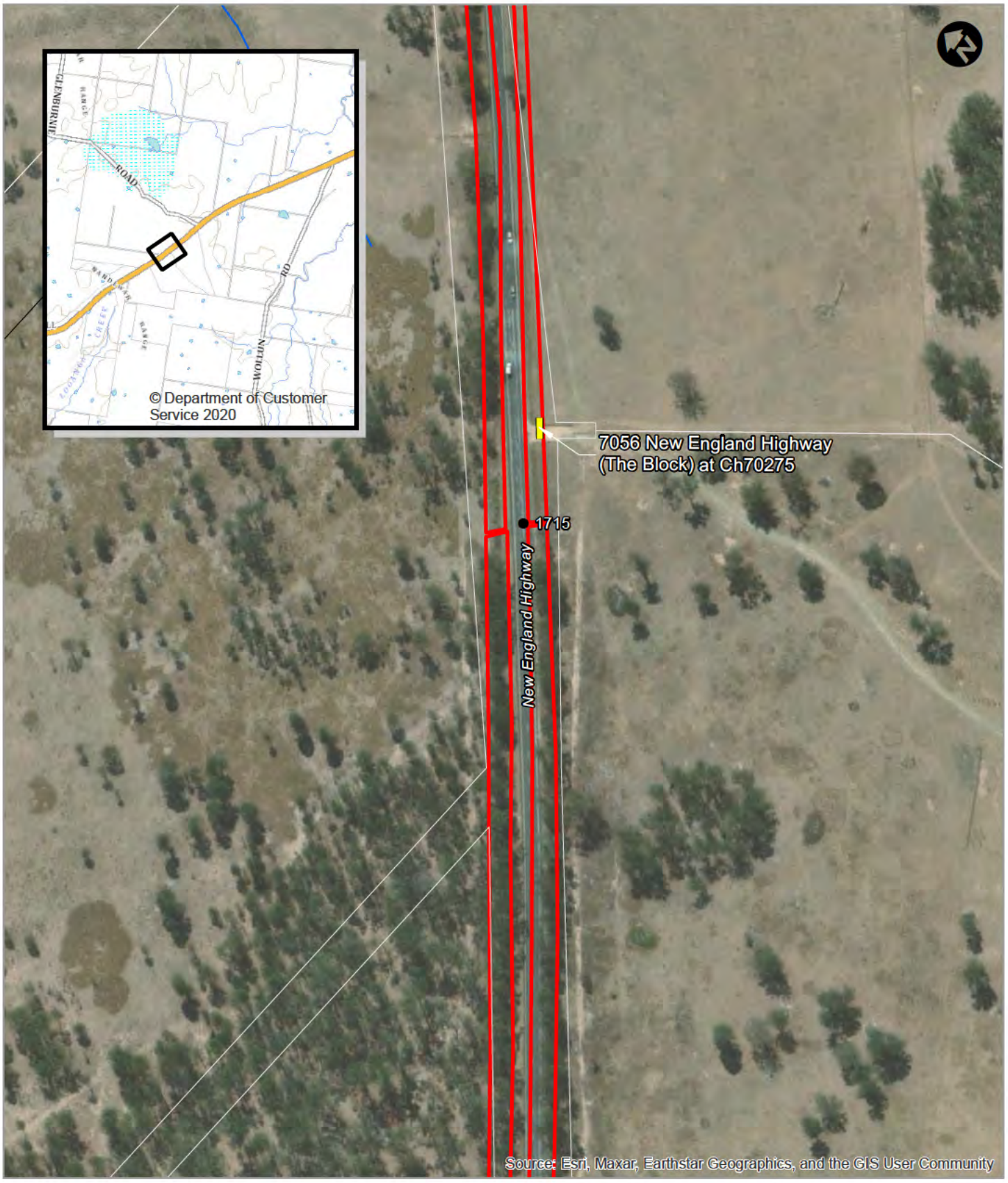

LEGEND

- Assessment area
- Cadastre
- Watercourse
- Culvert
- Segment marker

0 50 Metres

The Proposal - Illustration 1.2
Sheet 4 of 10

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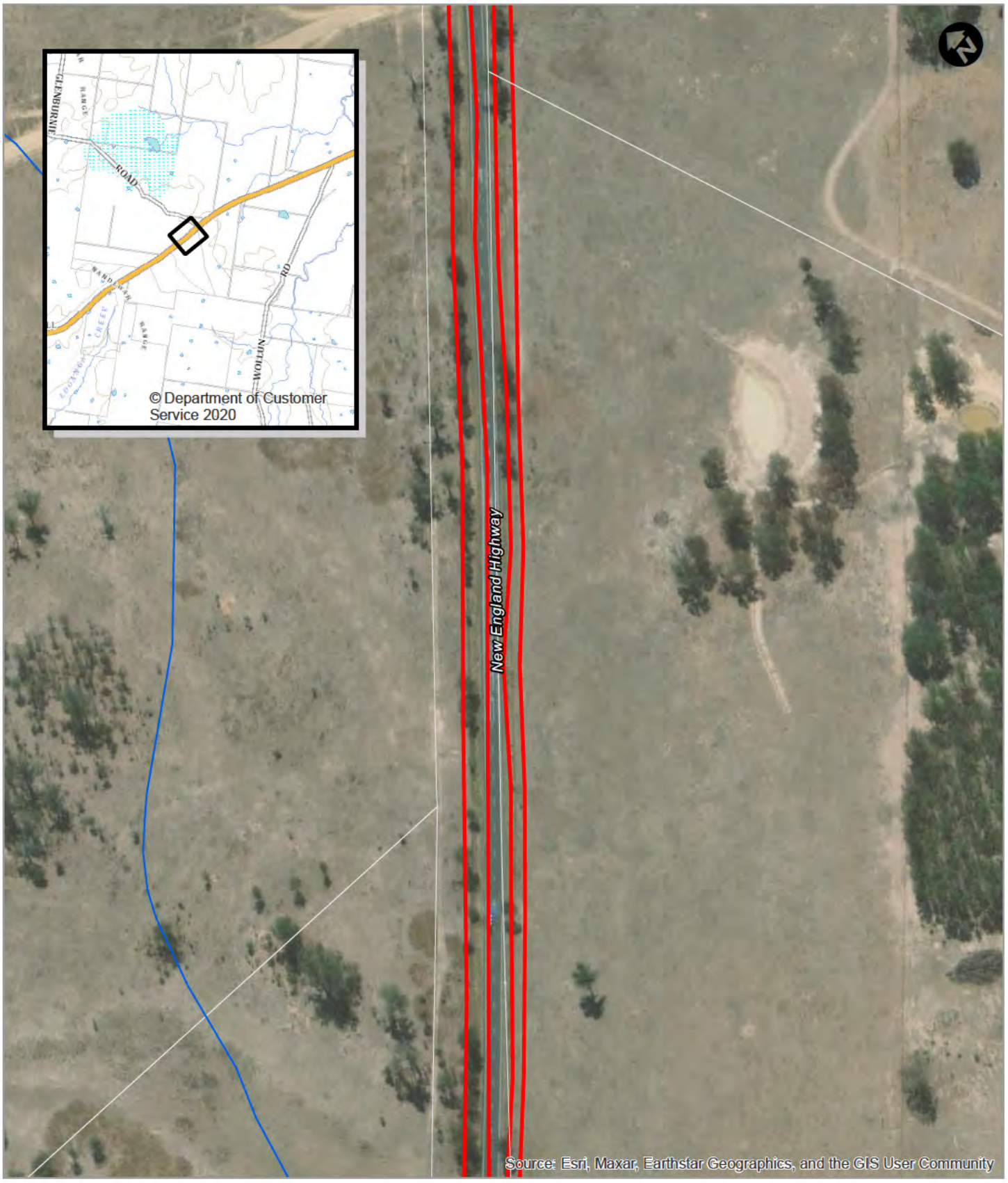

LEGEND

Assessment area
Watercourse
Cadastre

0 50 Metres

The Proposal - Illustration 1.2
Sheet 5 of 10

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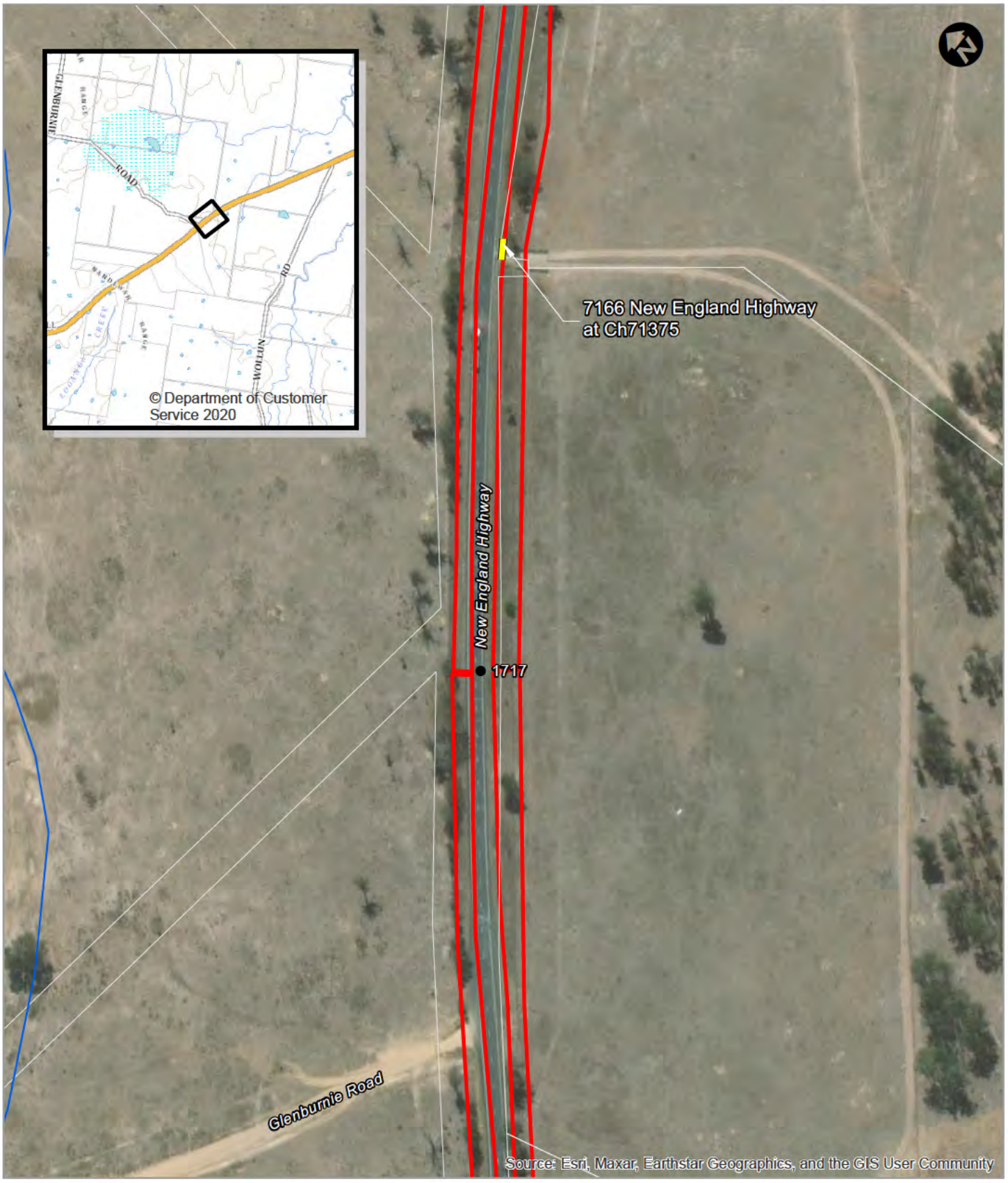

LEGEND

- Assessment area
- Cadastre
- Watercourse
- Culvert
- Segment marker

0 50 Metres

The Proposal - Illustration 1.2
Sheet 6 of 10

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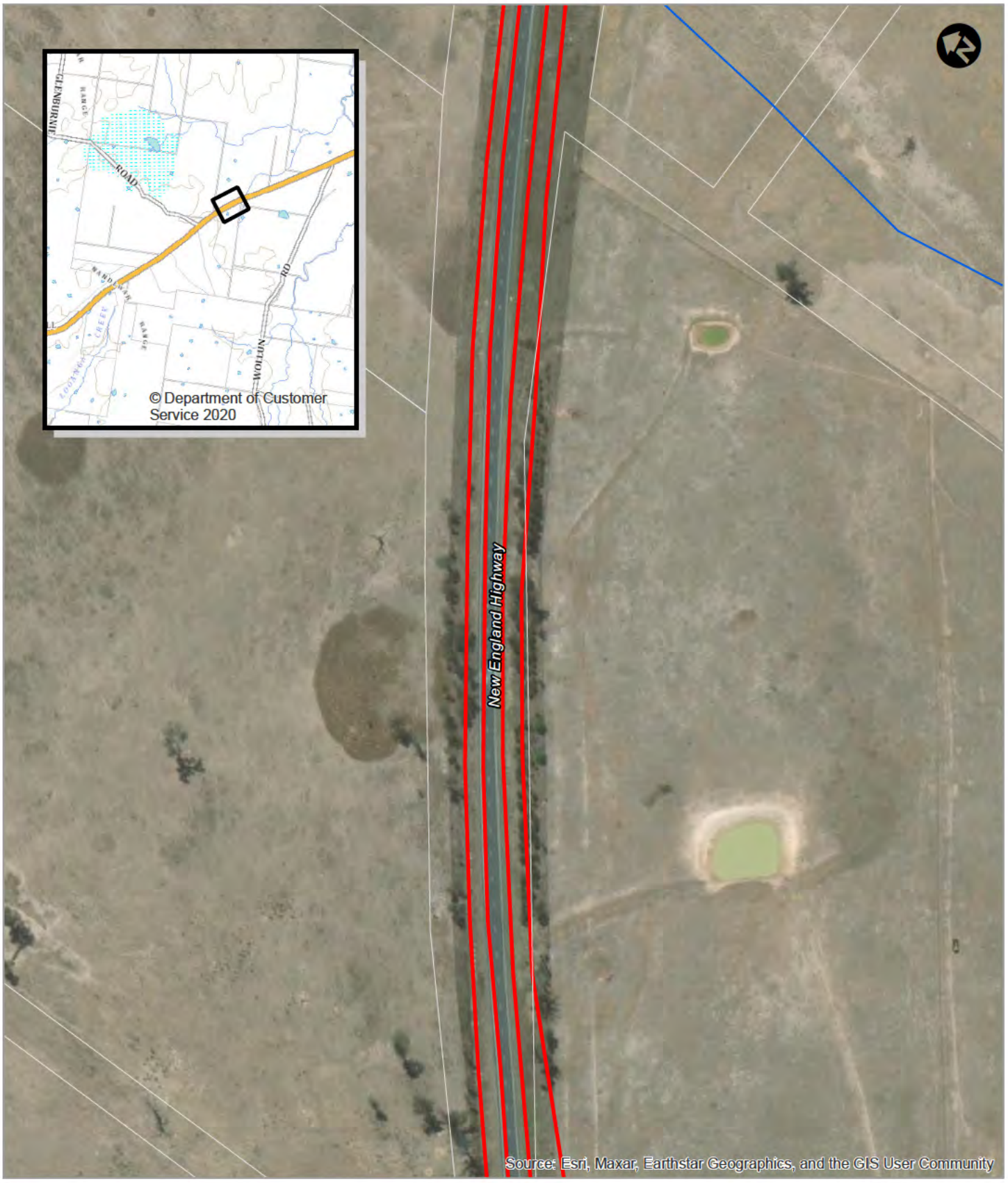

LEGEND

Assessment area
Watercourse
Cadastre

0 50 Metres

The Proposal - Illustration 1.2
Sheet 7 of 10

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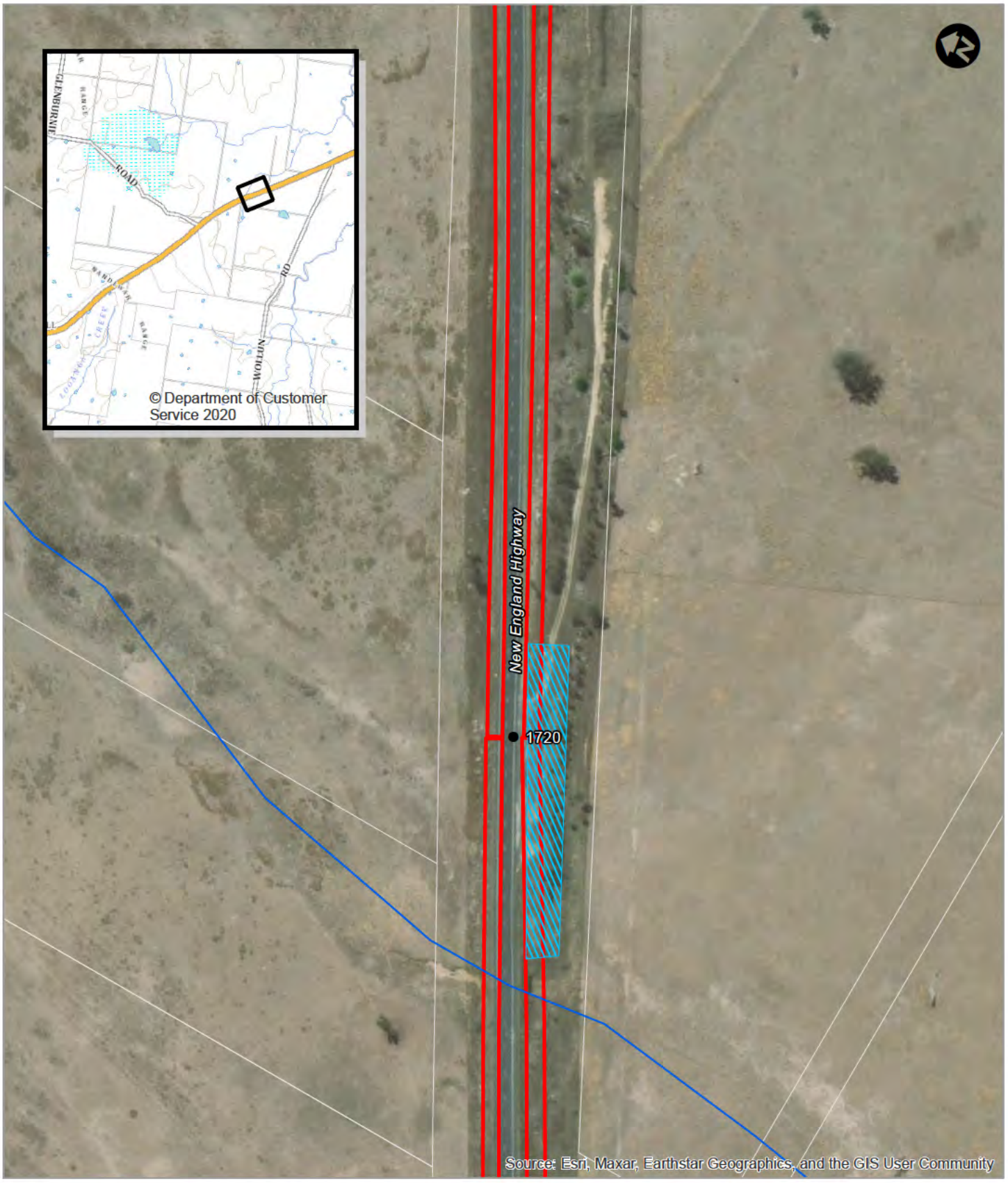

LEGEND

- Assessment area
- Cadastre
- Plant parking
- Watercourse
- Segment marker

0 50 Metres

The Proposal - Illustration 1.2
Sheet 8 of 10

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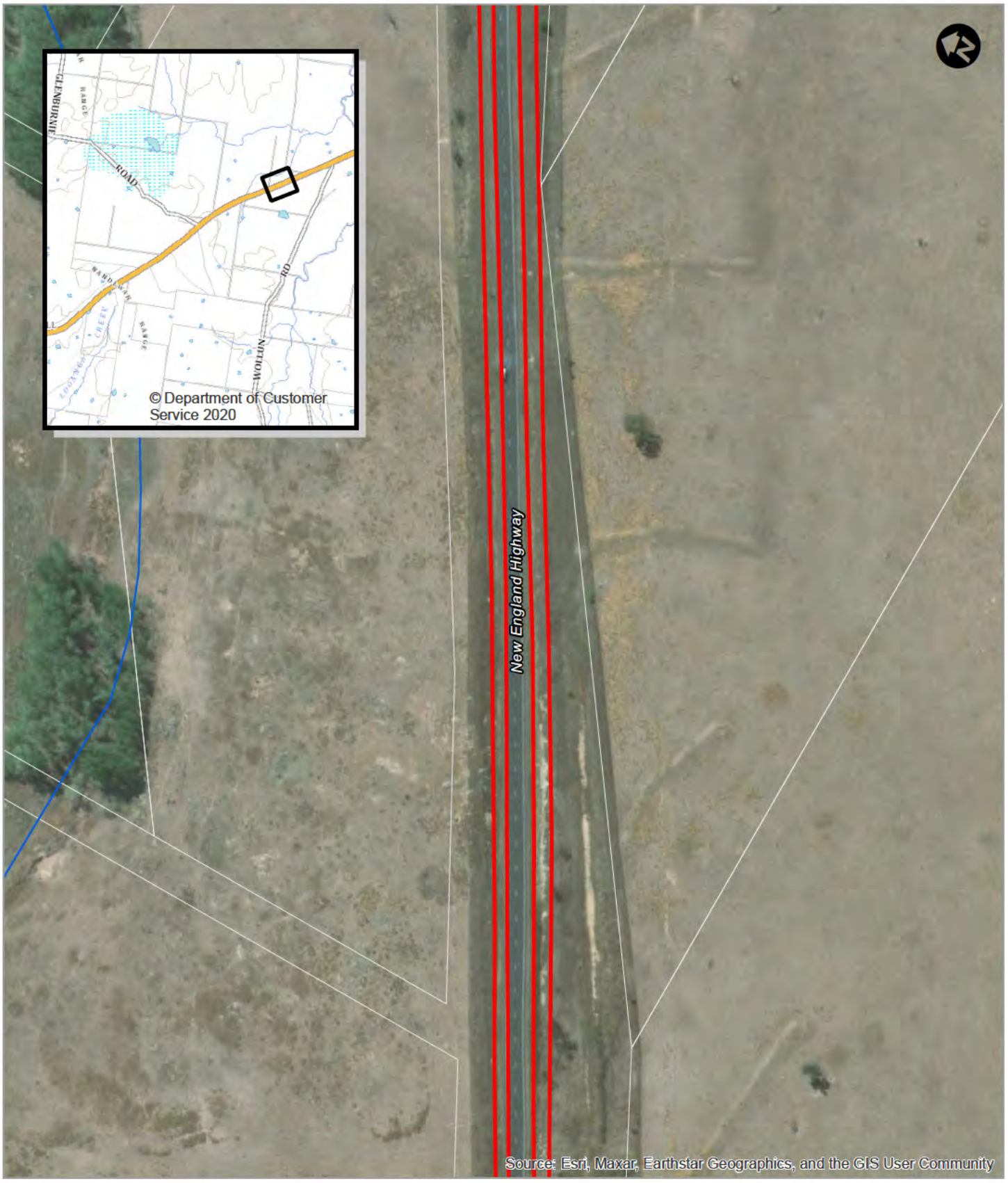

LEGEND

Assessment area
Watercourse
Cadastre

0 50 Metres

The Proposal - Illustration 1.2
Sheet 9 of 10

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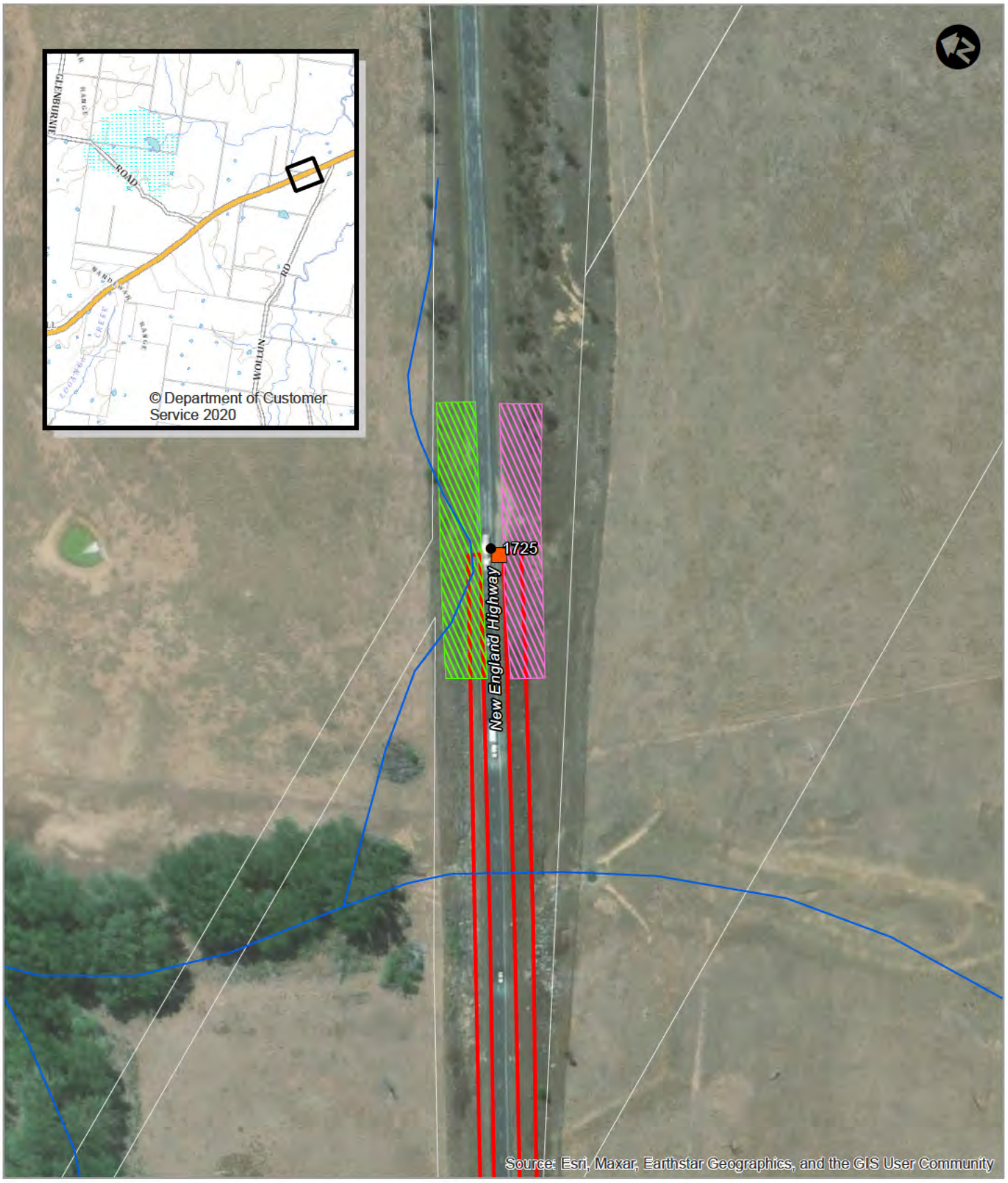

LEGEND

- Assessment area
- Cadastre
- Compound site
- Plant parking / compound site
- Watercourse
- Segment marker
- Glenburnie end

0 50 Metres

The Proposal - Illustration 1.2
Sheet 10 of 10

Information shown is for illustrative purposes only
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Source of base data: ESRI World Imagery
Date: 26/07/2022
Revision: B

2. Methods

2.1 Personnel

Qualifications and experience of personnel involved in the assessment is provided in **Table 2-1**.

Table 2-1: Qualifications and experience of personnel

Name	Qualifications	Position	Role
Theresa Choi	Bachelor of Environmental Science (Biology)	Environmental Scientist	Field surveys and BAR content
Ben Millan	Bachelor of Zoology	Ecologist	Field survey
David Havilah	Bachelor of Science (Biology)	Senior Ecologist	Review of BAR

2.2 Background research

To guide targeted field surveys, searches of the databases listed in **Table 2-2** were completed. Database search results are provided at **Annexure A**.

Table 2-2: Summary of database searches undertaken

Source	Database name	Accessed	Search areas	Date conducted
DPIE/OEH	BioNet	http://www.bionet.nsw.gov.au/	20 km x 20 km grid centred on the site	14/09/2021
	Areas of Outstanding Biodiversity Value	https://www.environment.nsw.gov.au/topics/animals-and-plants/biodiversity	Uralla LGA/Tamworth Regional Council	14/09/2021
	Vegetation Information System	http://www.environment.nsw.gov.au/NSWVCA20PRapp/LoginPR.aspx	Yarrowyck-Kentucky Downs/Eastern Nandewar subregion	14/09/2021
NSW Department of Primary Industries (DPI)	Fisheries Spatial Data Portal	https://webmap.industry.nsw.gov.au/Html5Viewer/index.html?viewer=Fisheries_Data_Portal	Uralla LGA/Tamworth Regional Council	20/09/2021
	Key Fish habitat mapping	https://webmap.industry.nsw.gov.au/Html5Viewer/index.html?viewer=Fisheries_Data_Portal	Uralla LGA/Tamworth Regional Council	20/09/2021

Source	Database name	Accessed	Search areas	Date conducted
	NSW Weedwise	http://weeds.dpi.nsw.gov.au/	Uralla LGA/Tamworth Regional Council	14/09/2021
	Register of critical habitat	http://www.dpi.nsw.gov.au/fisheries/species-protection/conservation/what/register	NSW	14/09/2021
Australian Government Department of Agriculture, Water and the Environment	Protected Matters Search Tool (PMST) for Matters of National Environmental Significance (MNES)	http://www.environment.gov.au/epbc/protected-matters-search-tool	10 km radius of the site	14/09/2021
	Directory of important wetlands	http://www.environment.gov.au/cgi-bin/wetlands/search.pl?smode=DOIW	20 km x 20 km grid centred on the site	14/09/2021
Australian Government Bureau of Meteorology	Atlas of Groundwater Dependent Ecosystems (GDE)	http://www.bom.gov.au/water/groundwater/gde/map.shtml	20 km x 20 km grid centred on the site	20/09/2021
DPIE/OEH Seed datasets	Coastal Wetlands (SEPP Coastal Management 2018)	https://mapprod1.environment.nsw.gov.au/arcgis/rest/services/Planning/SEPP/MapServer	The site	20/09/2021
	Littoral Rainforests (SEPP Coastal Management 2018)	https://mapprod1.environment.nsw.gov.au/arcgis/rest/services/Planning/SEPP/MapServer	The site	20/09/2021

2.3 Habitat assessment

A preliminary evaluation of the likelihood of occurrence of threatened flora, fauna and populations within the study area based on background research was undertaken. This evaluation considers the broad habitat types within the study area, ecology of threatened species/populations and occurrence of local records. The initial habitat assessment forms the basis for targeted surveys and consideration of potential impacts of the proposal and was revised upon completion of the field surveys.

2.4 Field survey

The site was assessed on 15 December 2021 by environmental scientist Theresa Choi and ecologist Ben Millan. The assessment utilised the following methodology over nine hours in the field:

- Recording trees within the site.
- Mapping vegetation communities on the site and where possible assigning a Plant Community Type (PCT) in accordance with the DPIE/BCD BioNet Vegetation Classification database.
- Random meander of the site and compilation of a flora inventory.
- Targeted survey for any threatened flora and/or Threatened Ecological Communities (TEC) following threatened species searches).
- Record the occurrence and extent of any priority weeds listed in the NSW *Biosecurity Act 2015.*
- Survey by visual inspection using binoculars of hollow-bearing trees.
- Opportunistic survey of all fauna based on visual or aural observations.

Weather conditions during the surveys were mild and fine, with zero millimetres of rain recorded in the previous 24 hours for the 14 December and zero millimetres for the 13 December (Bureau of Meteorology, 2022b).

Areas assessed included all vegetation within the fenced road reserve with broader consideration of adjoining vegetation outside this area (refer **Illustration 1-2**).

2.4.1 Vegetation surveys

The vegetation surveys focused on mapping native and non-native vegetation types and assessing the likelihood of threatened flora species to utilise habitats available within the study area. This was completed using a combination of the following methods:

- random meanders
- rapid point assessments

No plot-based surveys were undertaken given the disturbed nature of vegetation present and the linear nature of vegetation within the road reserve. Data on geology, dominant canopy species, native species richness, vegetation structure and condition were collected across the study area during field surveys to validate and refine this existing vegetation classifications to determine their associated PCT (if possible) in accordance with the BioNet Vegetation Classification System (Environment Energy and Science, 2021b).

2.4.2 Targeted flora surveys

Targeted searches were completed for threatened flora species identified by the potential occurrence assessment (refer to **Annexure B**) as having a moderate to high likelihood of occurrence within areas of suitable habitat. Any species that could not be reliably identified/or may have been overlooked in the survey was presumed to occur at the site and therefore subject to a test of significance (refer to **Annexure C**).

Where possible, surveys followed methods described in OEH's NSW Guideline for surveying threatened plants (OEH 2016), and the Draft survey guidelines for Australia's threatened orchids *http://www.environment.gov.au/resource/draft-survey-guidelines-australias-threatened-orchids*.

2.4.3 Targeted fauna surveys

Subject species for targeted fauna surveys were identified as those threatened fauna species that have a moderate to high likelihood of occurrence at the site (refer to **Annexure B**).

Fauna habitat assessments

Fauna habitat assessments were undertaken to assess the likelihood of threatened species of animals (those species known or predicted to occur within the locality from the literature and database review) occurring within the study area.

Fauna habitat assessments were the primary assessment tool in assessing whether threatened species were likely to occur within the study area. Fauna habitat characteristics assessed included:

- structure and floristics of the canopy, understorey and ground vegetation, including the presence of flowering and fruiting trees providing potential foraging resources
- presence of hollow-bearing trees providing roosting and breeding habitat for arboreal mammals, large forest owls, birds and reptiles
- presence of the ground cover vegetation, leaf litter, rock outcrops and fallen timber and potential to provide protection for ground-dwelling mammals, reptiles and amphibians
- presence of waterways (ephemeral or permanent) and water bodies
- presence of man-made structures (e.g. culverts) for roosting/breeding microbats

The site comprises a previously disturbed and modified roadside environment that is generally lacking in key habitat attributes required to sustain a local breeding population of threatened forest fauna. Consequently, only limited targeted fauna surveys were completed. Any species that could not be adequately surveyed according to threatened species survey guidelines was assumed to occur.

Diurnal bird survey

Diurnal bird surveys were completed within the study area by actively walking through the site (transect) over a period of 20 minutes. All birds were identified to the species level, either through direct observation or identification of calls. Birds were also recorded opportunistically during all other surveys.

Koala assessment

The preferred Koala feed trees, Blakely's Red Gum (*Eucalyptus blakelyi*) and Rough-barked Apple (*Angophora floribunda*) occurs within the proposal footprint. Scattered trees within the proposal area provide a potential foraging and refuge resource for any dispersing animals in the locality.

Opportunistic recording of fauna species and evidence of fauna activity

Opportunistic sightings of animals were recorded during field surveys. Evidence of animal activity, such as scats, diggings, scratch marks, nests/dreys, burrows etc, was also noted. This provided indirect information on animal presence and activity. During these surveys, a hand-held GPS was used to record the locations of:

- hollow-bearing trees
- active nest trees
- important aquatic habitat

Fauna survey efforts included visual canopy searches using binoculars and inspections of potential roosting habitat for threatened microbats within culverts.

2.4.4 Aquatic surveys

The habitat value of each waterway (i.e. habitat sensitivity and classification of waterways for fish passage) was characterised in accordance with NSW DPI (Fisheries) document *Policy and Guidelines for fish habitat conservation and management* (NSW DPI (Fisheries) 2013).

2.4.5 Summary of survey effort and limitations

The survey effort undertaken for the fieldwork is summarised below in **Table 2-3**.

Table 2-3: Survey effort

Field technique	Species	Location	Person hours	Date
Habitat assessment	Threatened species habitat	Entire site	8	15/12/2021
Random meander	Target threatened flora species (refer to **Annexure B**) and veg mapping	Entire site	8	15/12/2021
Targeted diurnal bird survey	Potentially occurring threatened bird species (refer to **Annexure B**)	Entire site	2	15/12/2021
Canopy inspection using binoculars	Koala	Preferred food trees	Random searches while conducting site inspection	15/12/2021

The assessment of trees proposed for removal were limited to trees of DBH >10 cm.

While aspects of the fauna survey effort were not in accordance with the (working) draft, Threatened Biodiversity Survey and Assessment Guidelines (DEC 2004), the modified nature of the roadside environment justify the effort expended. While the survey only provides a 'snapshot' of fauna usage during the spring period, the techniques utilised provide suitable sampling for a range of fauna occurring within a modified roadside environment. Based on local fauna records and vegetation/habitat mapping, predictions of fauna usage can be made with a reasonable level of confidence.

Although every effort was made to undertake a full flora inventory, there is a possibility that occurrences of some of the smaller cryptic threatened flora species potentially occurring in the locality were inadvertently overlooked. Consequently, these species were assumed to be present.

No major tree or shrub species were in flower at the time of survey and hence fauna nectar resources at the site were scarce.

3. Existing environment

This section provides an overview of the existing environment and potential ecological constraints of the study area based on the desktop analysis and field assessment completed.

3.1 Landscape context

An overview of landscape features associated with the study area are presented in **Table 3-1**.

Table 3-1: Landscape features and planning information

Landscape feature	Occurrence in study area
IBRA bioregion	New England Tablelands
IBRA subregion	Yarrowyck-Kentucky Downs, Eastern Nandewar
NSW landscape regions (Mitchell landscapes)	Moonbi – Walcha Granites
Local Government Area (LGA)	Uralla Shire Council, Tamworth Regional Council
Local Land Service (LLS) region	Northern Tablelands
Botanical subregion	Northern Tablelands
Rivers, streams and estuaries	Within the study area no significant mapped creeks or streams occur. Approximately three mapped small ephemeral and permanent streams (stream order 1-2) occur within the study area and cross the existing road corridor through culverts.
Important and local wetlands	No important or local wetlands in study area
Connectivity features	The site partially occurs within a potential subregional fauna corridor in the Nandewar region as per Scotts (2003) (refer to **Section 4.6**). Overall, the landscape has been fragmented due to agricultural practices (i.e. cropping and clearing for livestock). The proposal will not be exacerbating fragmentation within the study area.
Areas of geological significance and soil hazard features	No areas of geological significance and soil hazard features occur in the study area
Areas of outstanding biodiversity value	There are no declared areas of outstanding biodiversity value located in the Uralla/Tamworth LGA.

3.2 Vegetation (plant community types)

Vegetation at the site is comprised of weedy road verge and PCT 567 *Broad-leaved Stringybark - Yellow Box shrub/grass open forest of the New England Tableland Bioregion* regrowth forming the road reserve of the New England Highway.

3.2.1 PCT 567 Broad-leaved Stringybark - Yellow Box shrub/grass open forest of the New England Tableland Bioregion (high condition)

Vegetation formation: Grassy Woodlands
Vegetation class: New England Grassy Woodlands
PCT: 567
Conservation status: 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 Riverina Bioregions (BC Act and EPBC Act)
Estimate of percent cleared: 62 percent
Condition: High. Structurally intact system with native understory and overstorey.

Description: The overstorey comprises Broad-leaved Stringybark (*Eucalyptus caliginosa*), Silver-top Stringybark (*Eucalyptus laevopinea*), Blakely's Red Gum (*Eucalyptus blakelyi*), and Rough-barked Apple (*Angophora floribunda*) with less frequent patches of Apple Box (Eucalyptus bridgesiana) and Yellow Box (*Eucalyptus melliodora*). The mid-storey comprises Hickory Wattle (*Acacia implexa*), Australian Indigo (*Indigofera australis*), and Bitter-pea (*Daviesia latifolia*). The understorey comprises Chocolate Lily (*Dichopogon strictus*), Common Fringe-lily (*Thysanotus tuberosus*), Bluebell (*Wahlenbergia spp.*), Bracken (*Pteridium esculentum*), Spiny-headed Mat-rush (*Lomandra longifolia*), Blady Grass (*Imperata cylindrica*), Kangaroo grass (*Themeda triandra*), and Native Raspberry (*Rubus parvifolius*).

Exotic species present in this community include a minor occurrence of Quaking Grass (*Briza maxima*) *.

3.2.2 PCT 567 Broad-leaved Stringybark - Yellow Box shrub/grass open forest of the New England Tableland Bioregion (moderate condition)

Vegetation formation: Grassy Woodlands
Vegetation class: New England Grassy Woodlands
PCT: 567
Conservation status: 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 Riverina Bioregions TEC (BC Act and EPBC Act)
Estimate of percent cleared: 62 percent
Condition: Moderate. Derived native grassland with predominantly native groundcover and canopy absent or low canopy cover.

Description: The overstorey comprises occasional Rough-barked Apple, White Box (*Eucalyptus albens*), Blakely's Red Gum, Broad-leaved Stringybark, Silver-top Stringybark and Yellow Box. The mid-storey comprises scattered Bitter-pea. The understorey comprises approximately 50% native species, dominated by Kangaroo Grass, with moderate occurrences of Chocolate Lily, Common Fringe-lily, Bluebell, Bracken, Blady Grass, and Native Raspberry.

Exotic species present in this community include Wild Carrot (*Daucus carota*) *, White Clover (*Trifolium repens*)*, Lamb's Tongues (*Plantago lanceolata*)*, Quaking Grass*, African Lovegrass (*Eragrostis curvula*)*, Blackberry (*Rubus fruticosus sp. agg.*)**, and Purpletop (*Verbena bonariensis*)*.

3.2.3 PCT 567 Broad-leaved Stringybark - Yellow Box shrub/grass open forest of the New England Tableland Bioregion (low condition)

Vegetation formation: Grassy Woodlands
Vegetation class: New England Grassy Woodlands
PCT: 567
Conservation status: N/A
Estimate of percent cleared: 62 percent
Condition: Low. Derived native grassland with predominately exotic groundcover and canopy absent or low canopy cover.

Description: The overstorey is largely absent but occasional, scattered regrowth Rough-barked Apple, Blakely's Red Gum, Broad-leaved Stringybark, Silver-top Stringybark, and Yellow Box occurs. The mid-storey comprises occasional Tea Tree (*Leptospermum spp.*) with weedy incursions of Apple (*Malus domestica*) * and Blackberry (*Rubus fruticosus* sp. *aggregate*)**. The understorey mainly comprises exotic weeds such as Wild Carrot*, White Clover*, Lamb's Tongues*, Wild Oats* (*Avena fatua*) *, Quaking Grass*, African Lovegrass*, Tall Fescue (*Festuca elatior**), Great Mullein (*Verbascum thapsus subsp. thapsus*)* and Purpletop* with occasional Chocolate Lily, Bluebell, Bracken, Blady Grass, and Kangaroo Grass.

Plate 3-1: PCT 567 (high condition) in study area

Plate 3-2: PCT 567 (moderate condition) in study area

Plate 3-3: PCT 567 (low condition) in study area

3.2.4 Miscellaneous ecosystems

Non-native vegetation which did not align to any recognised PCT in NSW was assigned to a '*Miscellaneous ecosystem referred to as highly disturbed areas with no or limited native vegetation*'.

Parts of the study area dominated by exotic grasses and other weeds were classed as highly disturbed areas with no or limited native vegetation, these areas were predominately along the immediate edges of the road verge (0.1 m – 0.5 m) or where large areas of infestations of *Rubus fruticosus* sp. agg. * (Blackberry*) occurred. The understorey comprises Wild Carrot*, White Clover*, Lamb's Tongues*, Wild Oats*, Quaking Grass*, African Lovegrass*, Tall Fescue*, Blackberry**, Great Mullein*, and Purpletop*

**Denotes exotic species.*

*** Exotic species listed under the Biosecurity Act for the Uralla LGA and/or Tamworth LGA.*

3.2.5 Native Plantings

Native Plantings occurred at a select location within the assessment area. These plantings comprise *Callistemon spp.*, *Eucalyptus spp.*, and *Leptospermum spp.*

3.2.6 Weeds

Blackberry (*Rubus fruticosus sp. aggregate*) listed under the Biosecurity Act for the Uralla LGA and Tamworth LGA occurs on-site as minor infestations associated with grassy roadside areas.

Biosecurity measures for Blackberry: Uralla LGA

Prohibition on certain dealings. Must not be imported into the state, sold, bartered, exchanged or offered for sale. All species in the *Rubus fruiticosus* species aggregate have this requirement, except for the varietals Black Satin, Chehalem, Chester Thornless, Dirksen Thornless, Loch Ness, Murrindindi, Silvan, Smooth Stem, and Thornfree.

Regional Recommended Measure:

Land managers should mitigate the risk of new weeds being introduced to their land. Land managers should mitigate spread from their land. The plant should not be bought, sold, grown, carried or released into the environment.

Biosecurity measures for Blackberry: Tamworth LGA

Prohibition on certain dealings. Must not be imported into the state, sold, bartered, exchanged or offered for sale. All species in the *Rubus fruiticosus* species aggregate have this requirement, except for the varietals Black Satin, Chehalem, Chester Thornless, Dirksen Thornless, Loch Ness, Murrindindi, Silvan, Smooth Stem, and Thornfree

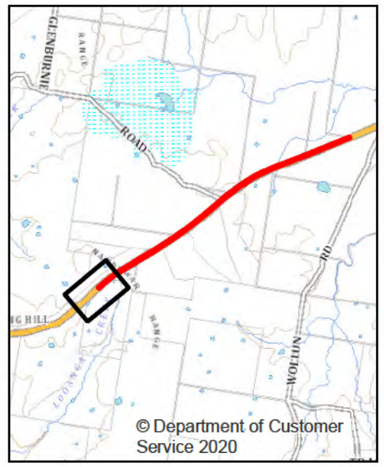
Regional Recommended Measure:

An exclusion zone is established for all lands in the region, except the core infestation area comprising the Gwydir Shire council, Liverpool Plains Shire council and Tamworth Regional council

Whole of region: The plant should not be bought, sold, grown, carried or released into the environment.

Exclusion zone: Land managers should mitigate the risk of new weeds being introduced to their land; land managers should mitigate spread from their land.

Core infestation: Land managers reduce impacts from the plant on priority assets.



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- PCT 567 Broad-leaved Stringybark - Yellow Box shrub/grass open forest of the New England Tableland Bioregion (low condition)
- PCT 567 Broad-leaved Stringybark - Yellow Box shrub/grass open forest of the New England Tableland Bioregion (moderate condition)
- White Box - Yellow Box - Blakely's Red Gum Grassy Woodland and Derived Native Grassland in the New England Tableland Bioregions TEC (BC Act) and White Box-Yellow Box-Blakely's Red Gum Grassy Woodland and Derived Native Grassland (EPBC Act)
- Blackberry infestation
- Plant parking
- Culverts
- Watercourse
- Segment marker
- Hollow-bearing trees
- Glenburnie start

0 50 Metres

Vegetation Map - Illustration 3.1
Sheet 1 of 7

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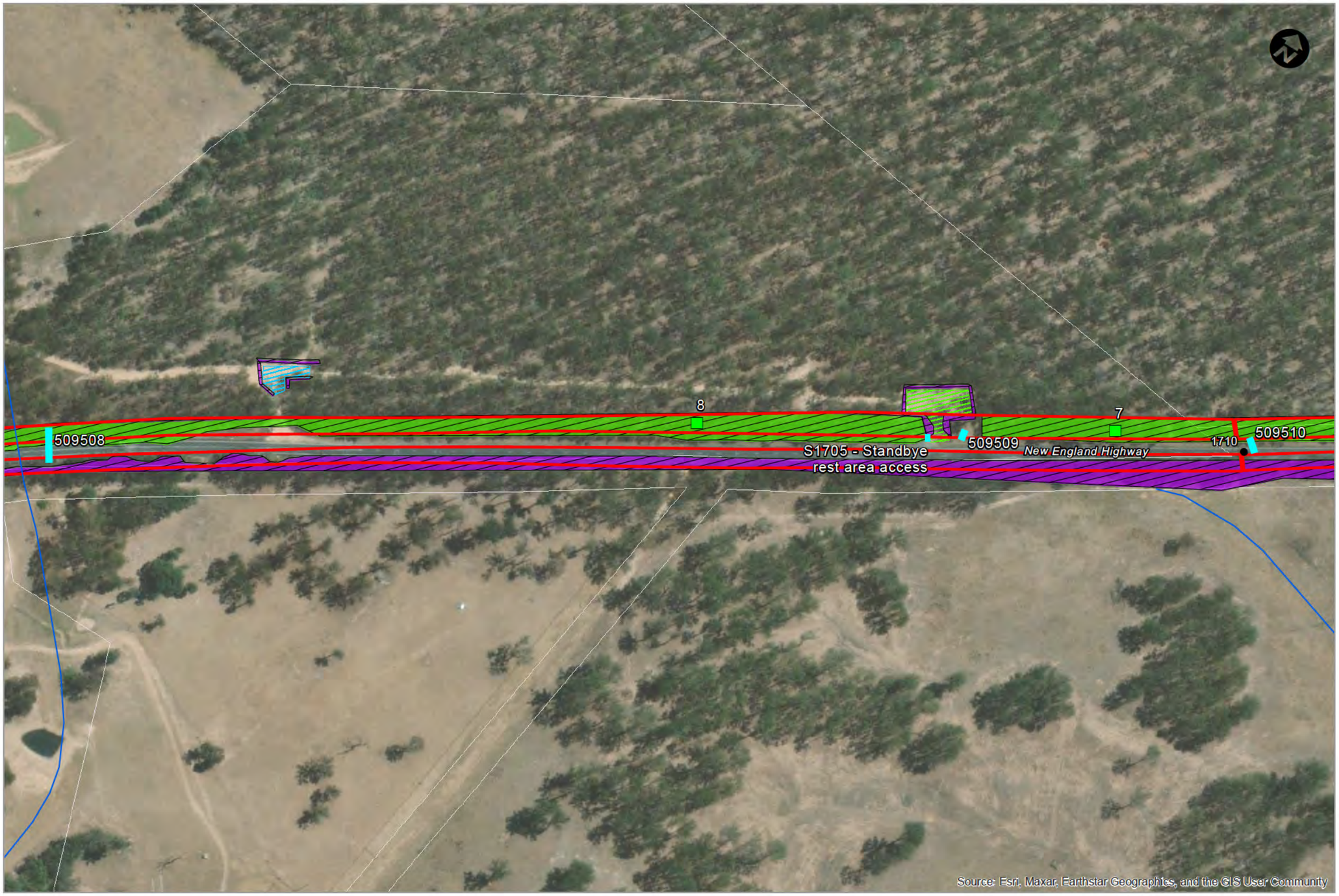

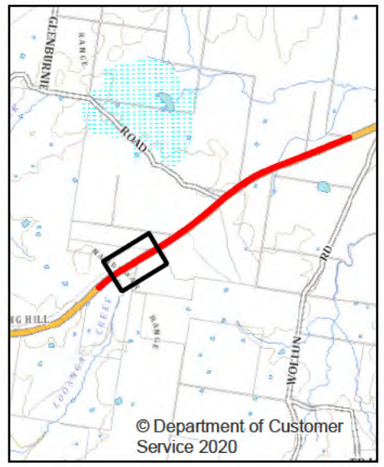

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- Plant parking
- Plant parking / compound site
- Culverts
- Watercourse
- Segment marker
- Hollow-bearing trees

0 50 Metres

Vegetation Map - Illustration 3.1
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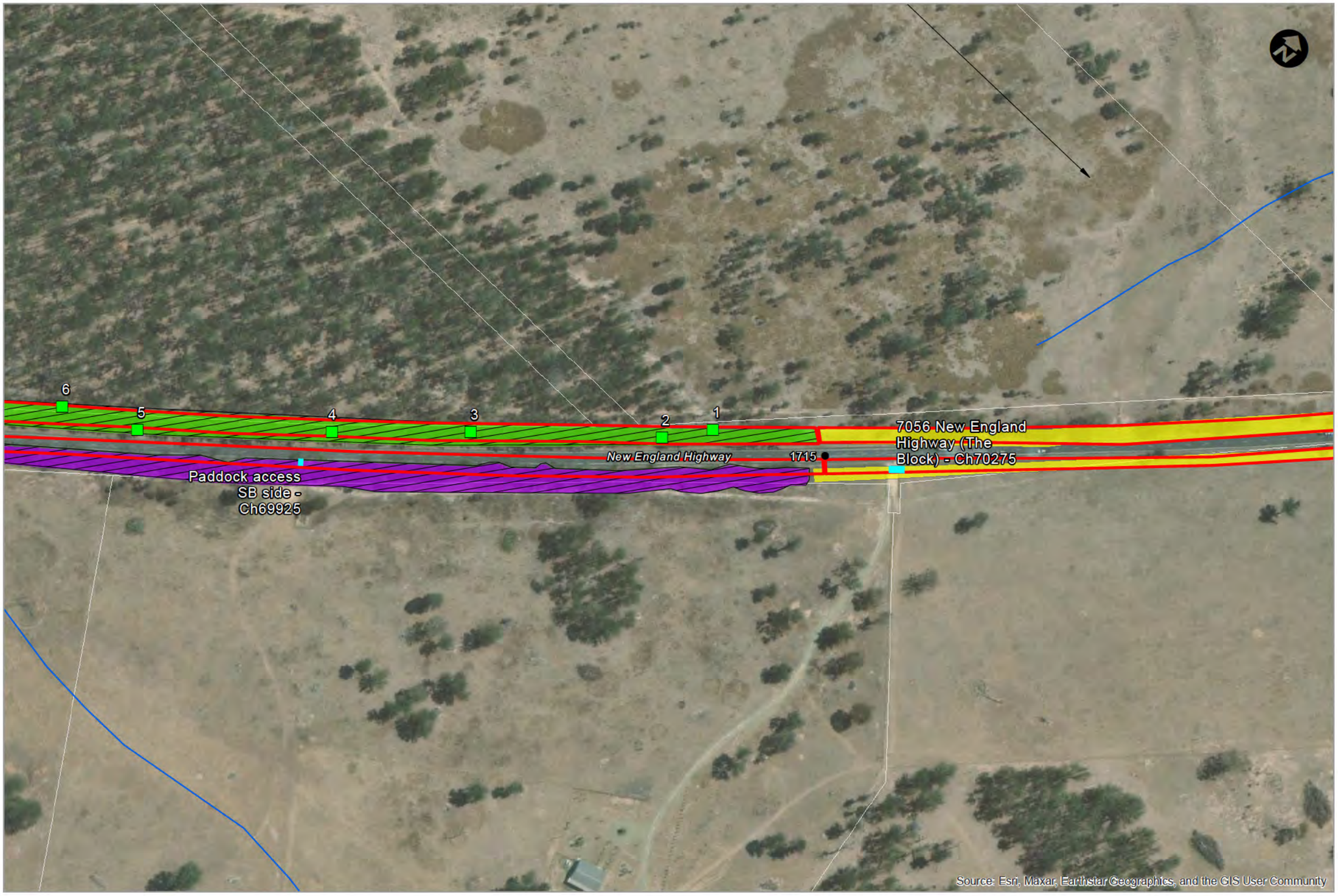

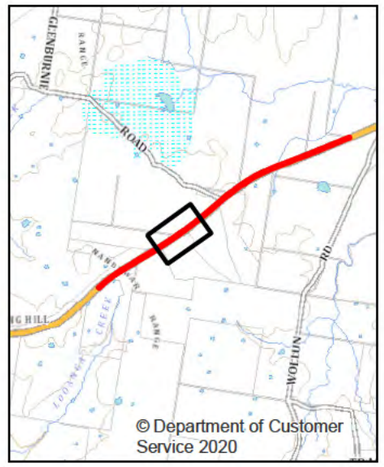

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- Culverts
- Watercourse
- Segment marker
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0 50 Metres

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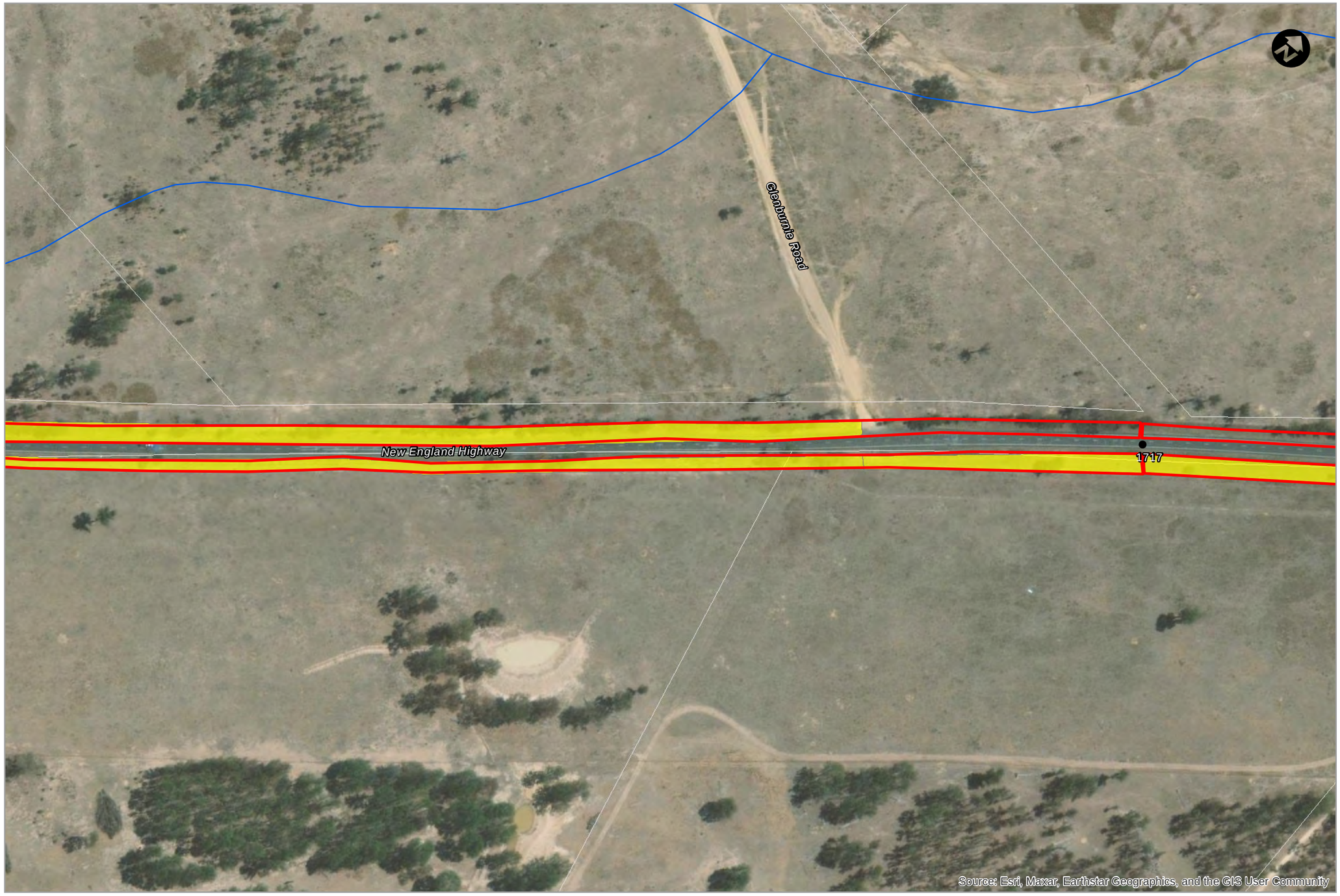

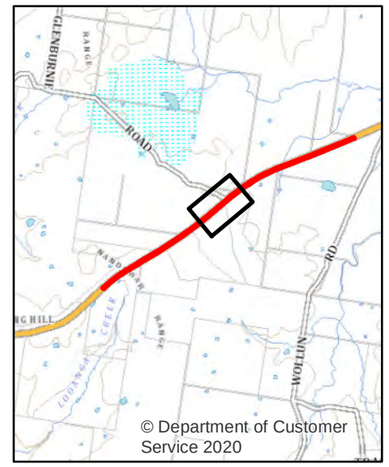

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LEGEND

- Assessment area
- Cadastre
- PCT 567 Broad-leaved Stringybark - Yellow Box shrub/grass open forest of the New England Tableland Bioregion (low condition)
- Watercourse
- Segment marker

0 50 Metres

Vegetation Map - Illustration 3.1
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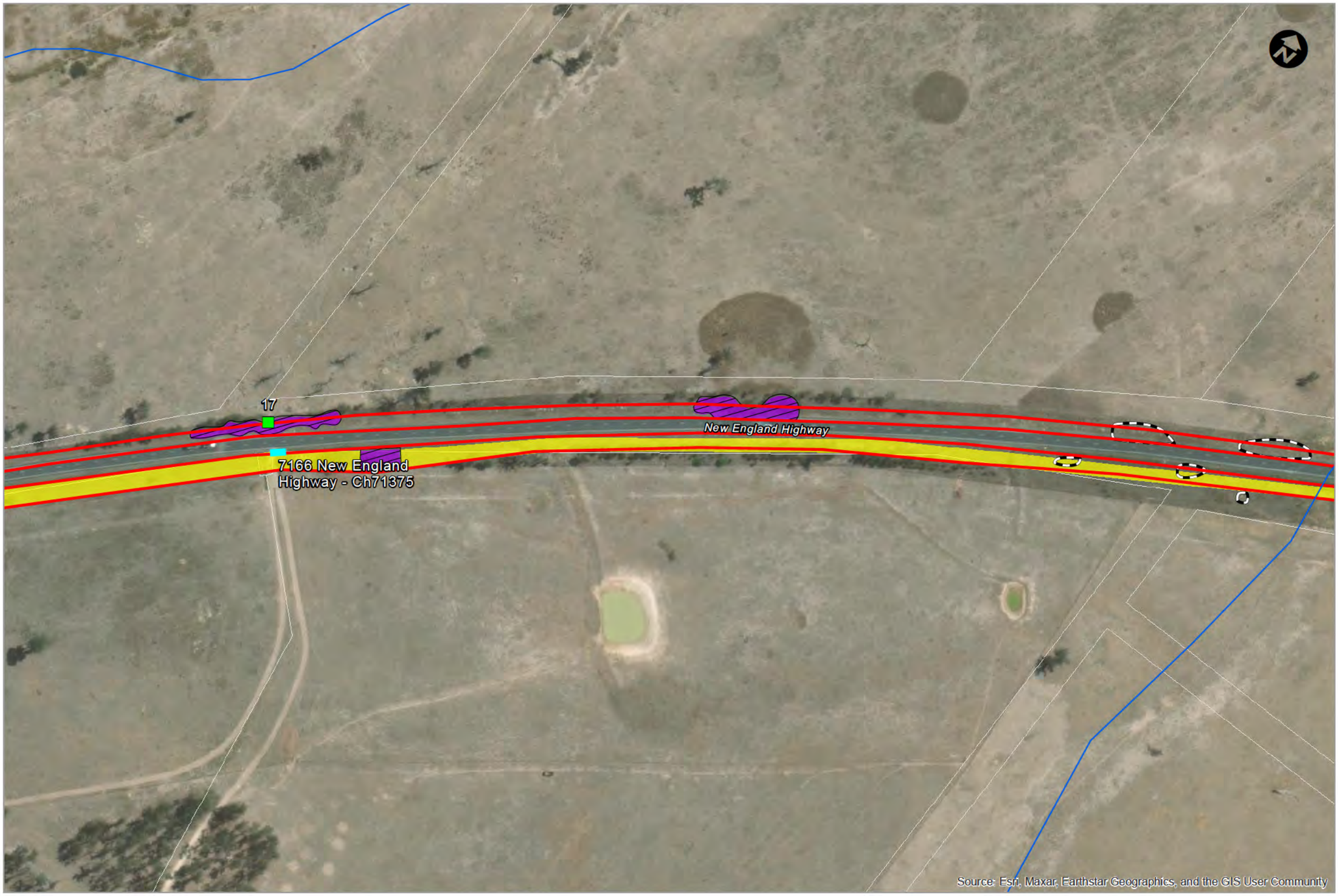

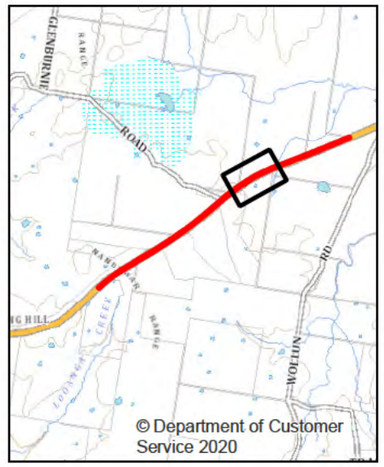

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- Blackberry infestation
- Culverts
- Watercourse
- Hollow-bearing trees

0 50 Metres

Vegetation Map - Illustration 3.1
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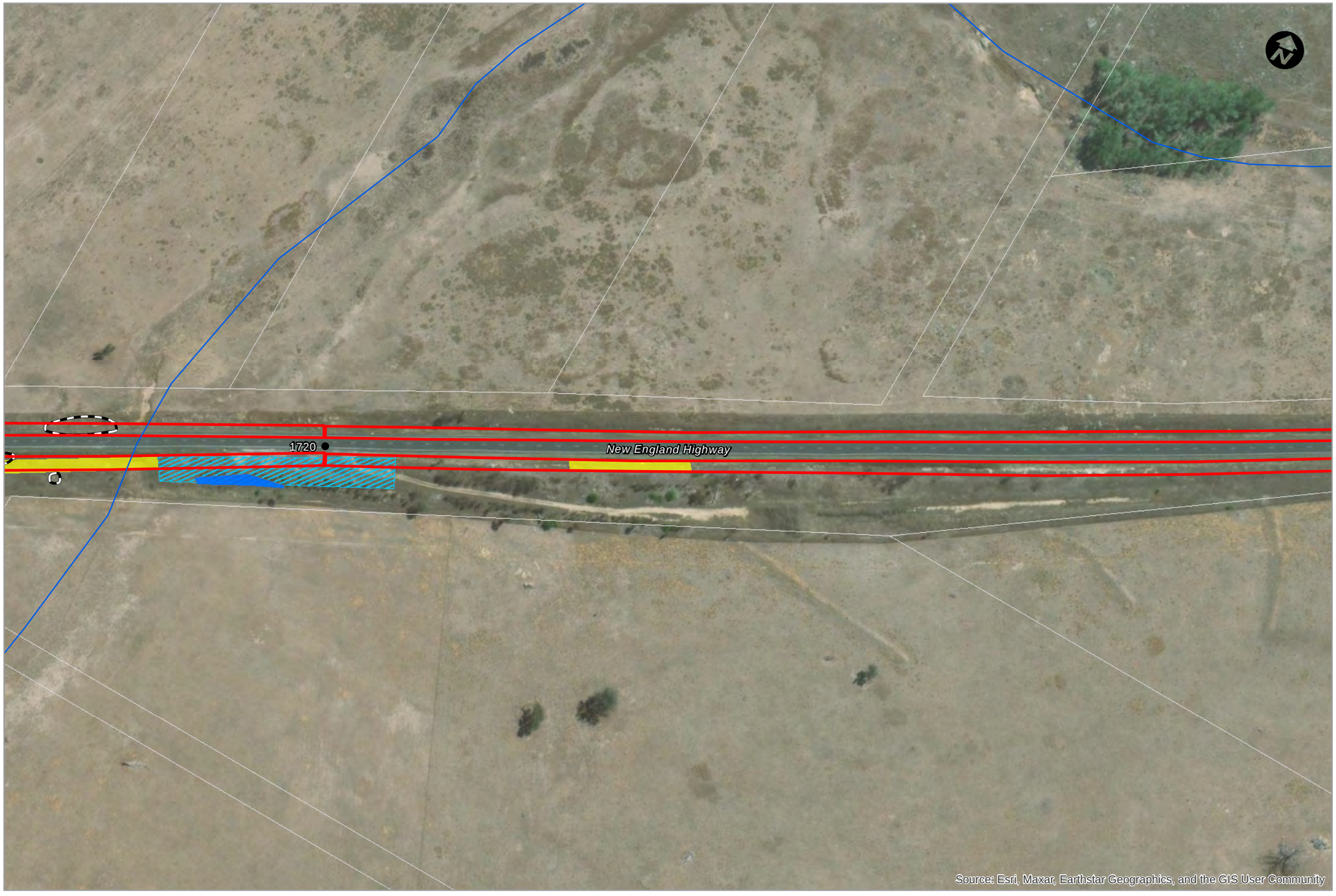

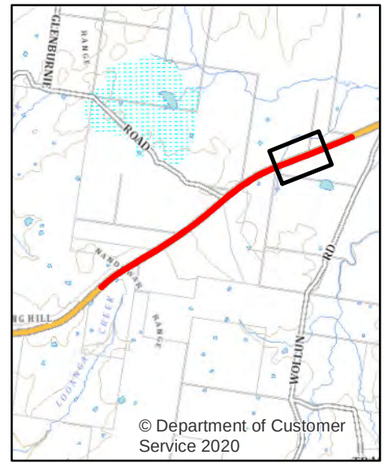

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LEGEND

- Assessment area
- Cadastre
- Native plantings
- PCT 567 Broad-leaved Stringybark - Yellow Box shrub/grass open forest of the New England Tableland Bioregion (low condition)
- Blackberry infestation
- Plant parking
- Watercourse
- Segment marker

0 50 Metres

Vegetation Map - Illustration 3.1
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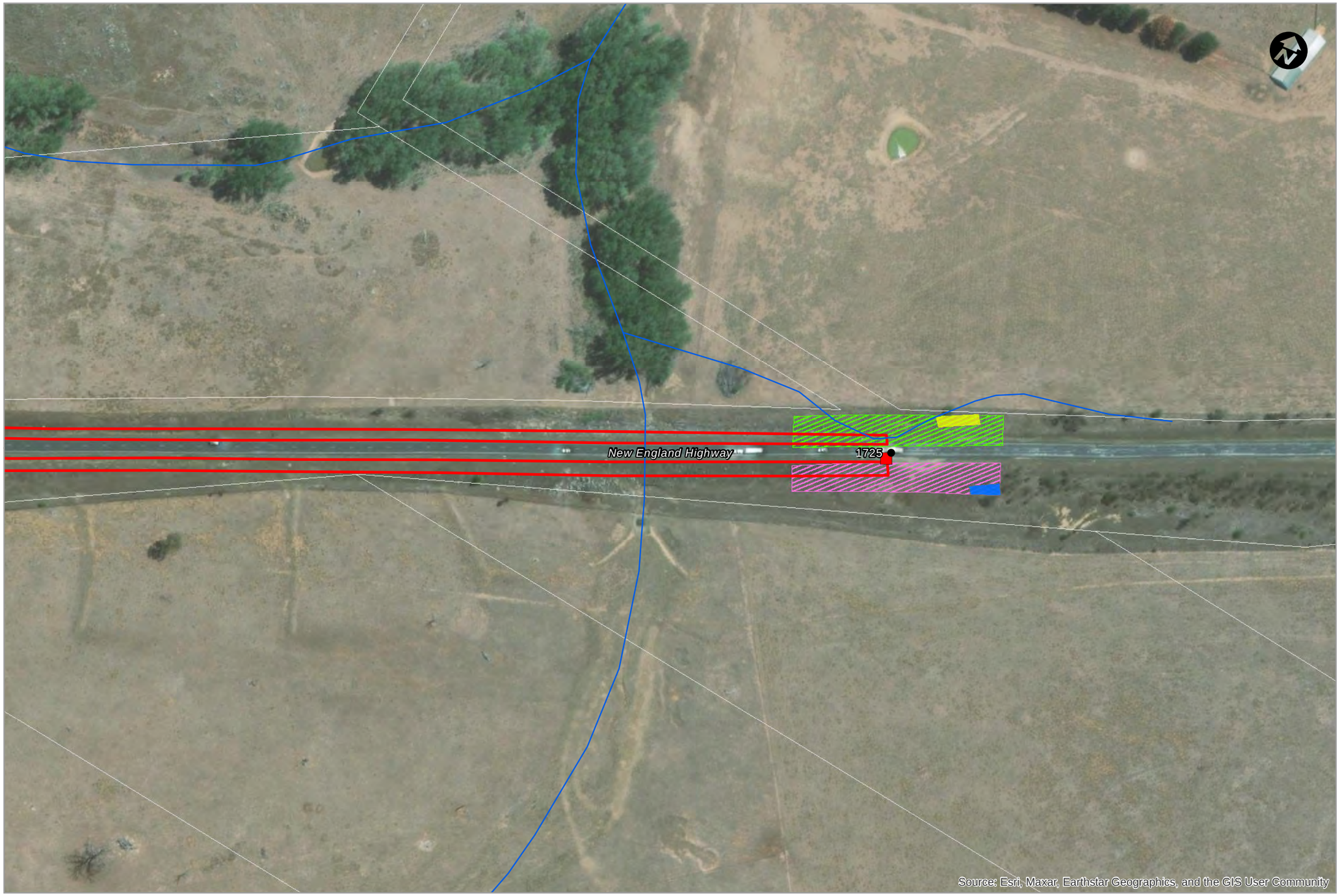

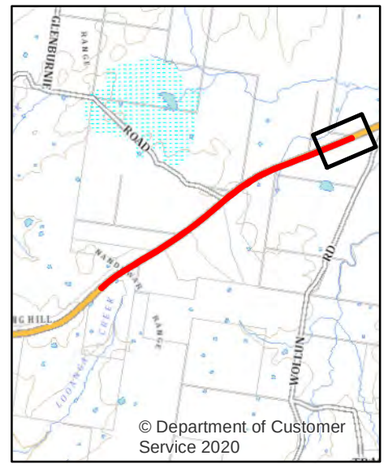

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LEGEND

- Assessment area
- Cadastre
- Native plantings
- PCT 567 Broad-leaved Stringybark - Yellow Box shrub/grass open forest of the New England Tableland Bioregion (low condition)
- Compound site
- Plant parking / compound site
- Watercourse
- Segment marker
- Glenburnie end

0 50 Metres

Vegetation Map - Illustration 3.1
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3.3 Fauna habitat

The site provides low to moderate quality habitat for some fauna species due to the patches of native vegetation, presence of fallen timber, and feeding resources. However, the study area does have some disturbance, particularly the immediate roadside verge. Habitat values of the site are summarised as follows:

- Majority of the study area is partially disturbed (particularly the immediate road verge) with exotic vegetation occurring in areas due to the road reserve and historical clearing in the locality. Areas of vegetation patches where trees and shrubs occur provide potential shelter and foraging (fruit, nectar, pollen, insect) opportunities for birds, reptiles and terrestrial mammals, however, due to the site's limited connectivity to larger higher quality vegetation patches, these patches are likely utilised more often by highly mobile species (i.e. birds or large macropods) or species which are well adapted to disturbed environments.
- Culverts within the construction footprint were assessed for the potential of microbat habitat. Three of these may be used opportunistically by microbats, however, are unlikely significant roosting habitat (refer to **Table 3-2**). These culverts and an additional two culverts require inspection as a precaution, as they were not able to be surveyed.
- Presence of Myrtaceous trees (i.e. *Eucalyptus* species), provide potential foraging (fruit, nectar, pollen, insect) resources for locally occurring birds, microbats and arboreal mammals. One of these trees were identified to contain limb hollows of medium size (refer to **Table 3-3**), which may be utilised by hollow dependant fauna species (i.e. microbats and small mammals). The site's lack of connectivity from large patches of remnant native vegetation, may limit the potential for large arboreal mammals to regularly occur or rely on these areas, but instead may still be utilised by hollow-dependant fauna species on an intermittent basis.
- Exotic vegetation dominated by the presence of exotic grasses and herbaceous weeds, surrounding the ancillary areas and laydown areas. Disturbed habitat is predominately utilised by open country bird and mammal species for foraging purposes. These patches were heavily dominated with exotic species and as a result were in degraded condition as they lacked the important microhabitat features such as native tussocks, open rocky patches, fallen timber and old growth trees with large hollows.

With the implementation of relevant safeguards, the proposed Activity is expected to minimise the risk of injury/mortality to native fauna during works.

Table 3-2: Culvert Features

TfNSW culvert number / Culvert ID	Feature	No. Cells	Culvert Diameter (mm)	Microbat Roosting Features and/or Evidence of Occurrence	Inspection required prior to works	Culverts impacted by works	Latitude	Longitude
9319	Pipe culvert	8	750	Could not access	Yes	Yes	-	-
11221	Pipe culvert	5	750	Medium joint gaps	Yes	Yes	-30.74066805	151.4061008
509508	Pipe culvert	1	900	Small joint gaps	Yes	Yes	-30.75566	151.37888
509509	Pipe culvert	1	450	Nil	No	Yes	-30.75304	151.38406
509510	Pipe culvert	1	750	Nil	No	Yes	-30.75226	151.38569

TfNSW culvert number / Culvert ID	Feature	No. Cells	Culvert Diameter (mm)	Microbat Roosting Features and/or Evidence of Occurrence	Inspection required prior to works	Culverts impacted by works	Latitude	Longitude
7056 New England Highway (The Block) at Ch70275	Pipe culvert	1	300	Nil	No	Yes	-30.74939228	151.3910486
7166 New England Highway at Ch71375	Pipe culvert	1	450	Nil	No	Yes	-30.74326406	151.4000637
Paddock Access SB Side at Ch69925	Pipe culvert	1	450	Medium joint gaps	Yes	Yes	-30.75130868	151.3877979
Road Reserve Access at Ch70850	Pipe culvert	1	450	Could not locate	Yes	Yes	-	-
S1705 – Standbye Rest Area Access	Pipe culvert	1	450	Nil	No	No	-30.75318761	151.383874

*Should culvert be impacted by works, inspection required

Table 3-3: Hollow-bearing trees in Assessment Area

ID	Common name	Other name	Hollow	Remove	Tree Height (m)	DBH (cm)	Total Hollows	Limb Hollow			Trunk Hollow			Nests	Comments
								Small	Medium	Large	Small	Medium	Large		
1	Stag	-	Yes	No	8	40	3	-	2	-	-	-	1	-	-
2	Stag	-	Yes	Yes	12	30	4	-	4	-	-	-	-	-	-
3	Blakely's Red Gum	*Eucalyptus blakelyi*	Yes	No	16	60	1	-	-	-	-	-	1	-	-
4	Blakely's Red Gum	*Eucalyptus blakelyi*	Yes	No	18	60	2	-	2	-	-	-	-	-	-
5	Blakely's Red Gum	*Eucalyptus blakelyi*	Yes	No	14	50	2	-	-	-	2	-	-	-	-
6	Stag	-	Yes	No	10	50	2	-	2	-	-	-	-	-	-
7	Blakely's Red Gum	*Eucalyptus blakelyi*	Yes	No	16	100	1	-	1	-	-	-	-	-	-
8	Stag	-	Yes	No	16	40	1	1	-	-	-	-	-	-	-
9	Blakely's Red Gum	*Eucalyptus blakelyi*	Yes	No	10	40	1	-	1	-	-	-	-	-	-
10	Blakely's Red Gum	*Eucalyptus blakelyi*	Yes	No	16	110	1	-	1	-	-	-	-	-	-
11	Stag	-	Yes	No	4	100	1	-	-	-	-	-	1	-	-

3.4 Aquatic habitat

Waterways traverse the site as follows:

- One ephemeral first order stream, a tributary to Kentucky Creek
- One ephemeral second order stream, a tributary to Kentucky Creek
- Looanga Creek which intersects the New England Highway as a first order stream. This waterway acts as a tributary to Rocky Gully.

The watercourses are unlikely to provide any significant habitat for FM Act listed threatened aquatic species due to their ephemeral nature and poor quality. While no mapped KFH occurs in the study area, general consideration of safeguards around sedimentation and erosion control should be undertaken. A review of the fisheries spatial data portal did not indicate any potential habitat for threatened fish species in any waterways in the study area.

3.5 Groundwater dependent ecosystems

Groundwater dependent ecosystems (GDEs) are communities of plants, animals and other organisms whose extent and life processes are dependent on groundwater (NSW Department of Planning Industry and Environment, 2021). When considering GDEs, groundwater is generally defined as the saturated zone of the regolith (the layer of loose rock resting on bedrock, constituting the surface of most land) and its associated capillary fringe, however it excludes soil water held under tension in soil pore spaces (the unsaturated zone or vadose zone) (Eamus et al., 2006).

GDEs include a diverse range of ecosystems from those entirely dependent on groundwater to those that may use groundwater while not having a dependency on it for survival (i.e. ecosystems or organisms that use groundwater opportunistically or as a supplementary source of water)(Hatton & Evans, 1998). Eamus et al., (2006) considers the following broad classes of these ecosystems:

- Aquifer and cave ecosystems, where stygofauna (groundwater-inhabiting organisms) may reside within the groundwater resource. The hyporheic zones (see ecosystem 5 in **Figure 3-1**) of rivers and floodplains are also included in this category because these ecotones often support stygobites (obligate groundwater inhabitants).
- All ecosystems dependent on the surface expression of groundwater. This category includes base-flow rivers and streams, wetlands (see ecosystems 2 and 3 in **Figure 3-1**), some floodplains and mound springs and estuarine seagrass beds. While it is acknowledged that plant roots are generally below ground, this class of groundwater dependant ecosystems requires a surface expression of groundwater, which may, in many cases, then soak below the soil surface and thereby become available to plant roots.
- All ecosystems dependent on the subsurface presence of groundwater, often accessed via the capillary fringe (non-saturated zone above the saturated zone of the water table) when roots penetrate this zone. This class includes terrestrial ecosystems such as River Red Gum (*Eucalyptus camaldulensis*) forests on the Murray–Darling basin (see ecosystems 1 and 4 in **Figure 3-1**). No surface expression of groundwater is required in this class of groundwater dependant ecosystems.

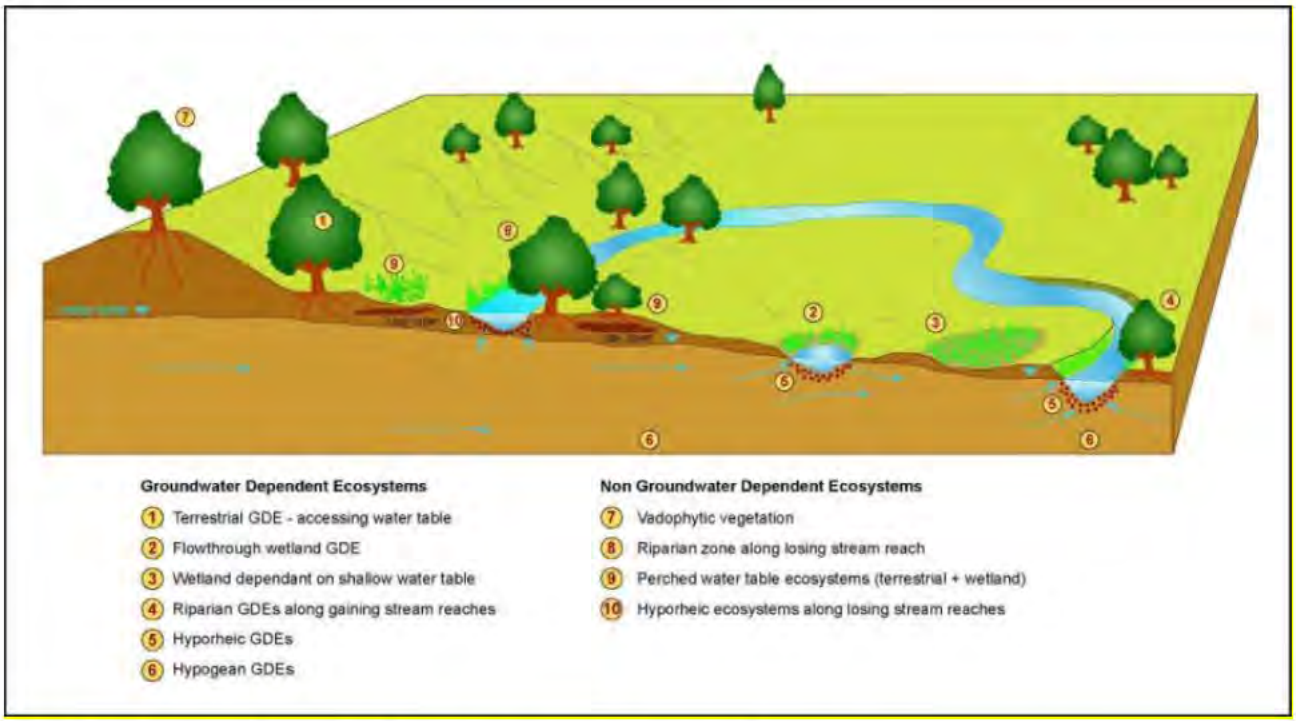


Figure 3-1: Conceptual biophysical model of groundwater dependent ecosystems

GDEs possess a range of values, including being important and sometimes rare ecosystems in themselves, as well as providing important ecosystem services such as water purification (NSW Department of Planning Industry and Environment, 2021).

The dependence (or interaction) of the vegetation communities identified within the proposal footprint, on groundwater was determined by aligning them with the groundwater dependant ecosystem types identified by Eamus *et al*. (2006) (**Figure 3-1**).

The site is located within the Namoi River catchment with ecosystems most likely fed by surface rather than groundwater. This is supported by groundwater dependent ecosystem (GDE) mapping covering the locality that indicates that the vegetation communities present are a low probability of being GDEs (Bureau of Meteorology 2018).

4. Threatened biodiversity

This section provides an overview of the threatened species, populations and communities recorded or considered likely to use habitat in the study area. Threatened biodiversity is listed as Protected, Vulnerable, Endangered or Critically Endangered under the NSW BC Act and FM Act. Threatened biodiversity listed under the Commonwealth EPBC Act is detailed in **Section 5**.

4.1 Threatened ecological communities

One vegetation community, PCT 567 (moderate and high condition only) within the study area is representative of a Threatened Ecological Community (TEC) listed under the BC Act (**Table 4-1**). The location of the White Box - Yellow Box - Blakely's Red Gum Grassy Woodland TEC is shown in **Illustration 3-1.**

The areas mapped as PCT 567 (low condition) were not determined to be a TEC (BC Act) due to a predominately exotic groundcover and low natural regeneration potential (DECC 2007).

Table 4-1: Plant community types listed under the BC Act

Name of plant community	Condition	BC Act	Area (ha) within assessment area
White Box - Yellow Box - Blakely's Red Gum Grassy Woodland and Derived Native Grassland in the New England Tableland Bioregions	High	Critically Endangered	4 ha
White Box - Yellow Box - Blakely's Red Gum Grassy Woodland and Derived Native Grassland in the New England Tableland Bioregions	Moderate	Critically Endangered	4 ha

4.2 Threatened flora

No threatened flora species listed under the BC Act or EPBC Act were recorded within the study area.

With the exception of Bluegrass, Silky Swainson-pea and Small Snake Orchid (refer to **Table 4-2**), potentially occurring threatened flora species were readily identifiable at the time the site survey was conducted and therefore were assigned a low likelihood of occurrence on the basis that they were not recorded in this site survey (refer to **Annexure B**).

The aforementioned species are cryptic and often difficult to detect so have been assumed to be present at the site. It is noted that habitat for these species on the site is associated with areas of PCT 567 however, it is noted that the majority of habitat is poor due to the high level of disturbance and larger areas of better-quality habitat that are present in the locality of the site.

Table 4-2: Habitat assessment and surveys results - flora

Scientific name	Common name	BC Act status	Potential occurrence
Dichanthium setosum	Bluegrass	V	Moderate (assumed present)
Diuris pedunculata	Small Snake Orchid	E	Moderate (assumed present)
Swainsona sericea	Silky Swainson-pea	V	Moderate (assumed present)

4.3 Threatened fauna

No threatened fauna species listed under the BC Act or EPBC Act were recorded in the study area during the site assessment. Based on the desktop analysis and habitat present, ten species assessed as having a moderate or higher likelihood of occurrence within the study area were further considered (refer to **Table** 4-3 and **Annexure B**).

Table 4-3: Threatened fauna listed under BC Act with moderate or higher likelihood of occurrence in study area

Scientific name	Common name	BC Act[1]	Likelihood of occurrence
Woodland Birds (5)			
Climacteris picumnus victoriae	Brown Treecreeper	V	**Moderate** – potential foraging habitat. Recorded within locality.
Daphoenositta chrysoptera	Varied Sittella	V	
Glossopsitta pusilla	Little Lorikeet	V	
Petroica boodang	Scarlet Robin	V	
Petroica phoenicea	Flame Robin	V	
Predatory birds (2)			
Lophoictinia isura	Square-tailed Kite	V	**Moderate** – potential foraging habitat. Recorded within locality.
Hieraaetus morphnoides	Little Eagle	V	
Mammals – microbats (3)			
Miniopterus orianae oceanensis	Large Bent-winged Bat	V	**Moderate** – potential foraging and roosting habitat. Recorded within locality.
Saccolaimus flaviventris	Yellow-bellied Sheathtail-bat	V	
Nyctophilus corbeni	Corben's Long-eared Bat	V	
Mammals - arboreal (2)			
Petaurus norfolcensis	Squirrel Glider	V	**Moderate** – potential foraging habitat. Recorded within locality.
Phascolarctos cinereus	Koala	V	**Moderate** – likely to utilise parts of the site on occasion as part of broader foraging areas

1) V = Vulnerable under the BC Act

4.4 Areas of outstanding biodiversity value

There are no declared areas of outstanding biodiversity value located in the Uralla LGA or Tamworth LGA.

4.5 Wildlife connectivity corridors

The site partially occurs within a potential subregional fauna corridor in the Nandewar region as per Scotts (2003). There are no listed focal species listed for this mapped corridor. As the works occur within a previously disturbed road corridor, the minor extent of the works would not significantly affect the movement of fauna within the corridor.

4.6 SEPP Koala Habitat Protection 2021

State Environmental Planning Policy (Koala Habitat Protection) 2021 aims 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.

The Koala SEPP 2021 reinstates the policy framework of SEPP Koala Habitat Protection 2019 to 83 Local Government Areas (LGA) in NSW. At this stage SEPP 2021 only applies to all zones in the following LGAs: Metropolitan Sydney (Blue Mountains, Campbelltown, Hawkesbury, Ku-Ring-Gai, Liverpool, Northern Beaches, Hornsby, Wollondilly) and the Central Coast LGA. In all other identified LGAs, Koala SEPP 2021 does not apply to land zoned RU1 Primary Production, RU2 Rural Landscape or RU3 Forestry. For all RU1, RU2 and RU3 zoned land outside of the Sydney Metropolitan Area and the Central Coast, Koala SEPP 2020 continues to apply.

Land at the site is zoned as RU1 and hence SEPP 2020 continues to apply. The Clause 6 of the SEPP states that the SEPP applies only to land ‘in relation to which a development application has been made’. Clause 94 of ISEPP precludes the proposal from requiring consent therefore Part 2 of SEPP 44 does not apply to the proposal. It is TfNSW policy, however, to consider environmental issues relating to their work to the fullest extent possible, including impacts on Koalas.

The policy defines potential Koala habitat as areas of native vegetation where Schedule 2 trees constitute at least 15 per cent of the total number of trees in the upper or lower strata of the tree component. No Schedule 2 listed tree was present on site and only two koala feed trees (Blakely’s Red Gum and Rough-Barked Apple) occurred at the site. Consequently, potential Koala habitat does not occur, and the Policy requires no further consideration.

5. Matters of National Environmental Significance

Matters of National Environmental Significance (MNES), listed under the EPBC Act, are addressed in this section. The following biodiversity MNES protected under the EPBC Act were considered for their relevance to the proposal:

- wetlands of international importance (Ramsar) (EPBC Act sections 16 and 17B)
- listed threatened species and communities (EPBC Act sections 18 and 18A)
- listed migratory species (EPBC Act sections 20 and 20A).

5.1 Wetlands of international importance

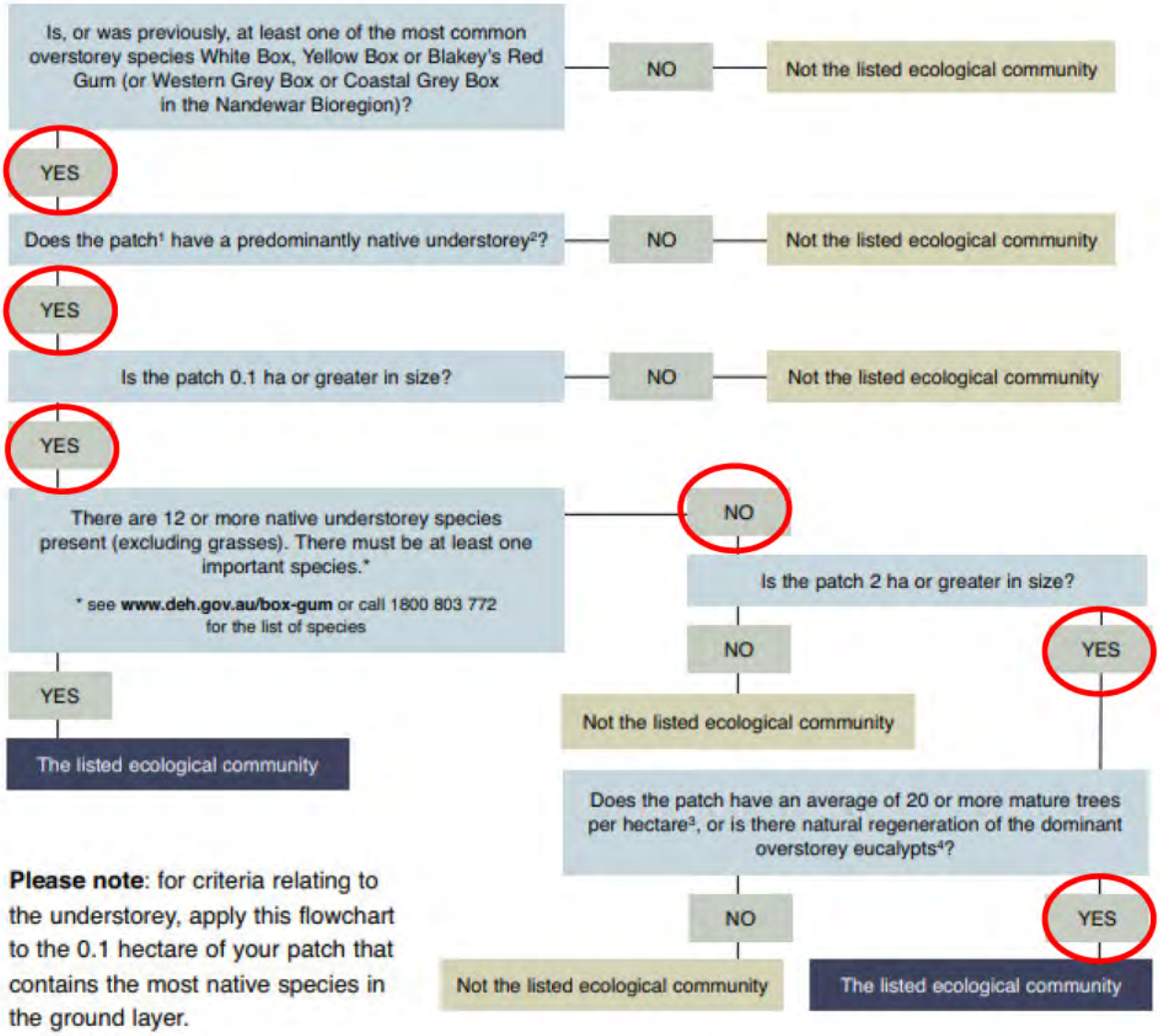
No wetlands of international importance occur within the study area or broader locality.

5.2 EPBC listed Threatened Ecological Communities

Results of the protected matters database search identified five TECs listed under the EPBC Act as being likely to occur within the locality as follows:

- Natural grasslands on basalt and fine-textured alluvial plains of northern NSW and southern Queensland (listed as Critically Endangered)
- New England Peppermint (*Eucalyptus nova-anglica*) Grassy Woodlands (Listed as Critically Endangered)
- Upland Wetlands of the New England Tablelands (New England Tableland Bioregion) and the Monaro Plateau (South Eastern Highlands Bioregion) (listed as Endangered)
- Weeping Myall Woodlands (listed as Endangered)
- White Box-Yellow Box-Blakely's Red Gum Grassy Woodland and Derived Native Grassland (listed as Critically Endangered).

Of these five TECs, the study area contained vegetation corresponding to the EPBC Act listed White Box-Yellow Box-Blakely's Red Gum Grassy Woodland and Derived Native Grassland TEC. Within the study area PCT 567: Broad-leaved Stringybark - Yellow Box shrub/grass open forest of the New England Tableland Bioregion (high and moderate condition) forms part of this TEC as they support Blakely's Red Gum as a dominate tree species and were 2 ha or greater (DEH 2006). To be considered consistent with the Critically Endangered listing under the EPBC Act, the vegetation must be consistent with the criteria outlined in the EPBC Act policy statement 3.5 – White box – Yellow box – Blakely's Red Gum Grassy Woodlands and Derived Native Grasslands (Department of the Environment and Heritage, 2006) and as summarised in **Figure 5-1**.



Please note: for criteria relating to the understorey, apply this flowchart to the 0.1 hectare of your patch that contains the most native species in the ground layer.

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[1] Patch – a patch is a continuous area containing the ecological community (areas of other ecological communities such as woodlands dominated by other species are not included in a patch). In determining patch size it is important to know what is, and is not, included within any individual patch. The patch is the larger of:

- an area that contains five or more trees in which no tree is greater than 75 m from another tree, or
- the area over which the understorey is predominantly native.

Patches must be assessed at a scale of 0.1 ha (1000m^2) or greater.

[2] A predominantly native ground layer is one where at least 50 per cent of the perennial vegetation cover in the ground layer is made up of native species. The best time of the year to determine this is late autumn when the annual species have died back and have not yet started to regrow. (At other times of the year, you can determine whether something is perennial or not is if it is difficult to pull out of the soil. Annual species pull out very easily.)

[3] Mature trees are trees with a circumference of at least 125 cm at 130 cm above the ground.

[4] Natural regeneration of the dominant overstorey eucalypts when there are mature trees plus regenerating trees of at least 15 cm circumference at 130 cm above the ground.

Figure 5-1: Commonwealth White Box - Yellow Box - Blakely's Red Gum Grassy Woodland and Derived Native Grassland criteria

5.3 EPBC listed threatened species

5.3.1 Threatened flora species

The database searches identified 18 threatened flora species listed under the EPBC Act that have the potential to occur in the locality of the study area (refer to **Annexure B**).

Field surveys were undertaken in December 2021 which occurs during acceptable survey period for the majority of cryptic flowering species. Field investigations did not record any threatened flora species within the study area, however, as a precaution, the following threatened flora species listed under the EPBC Act were assumed present:

- Bluegrass
- Small Snake Orchid
- *Prasophyllum* sp. *Wybong*.

5.3.2 Threatened fauna species

Results of the PMST identified 25 threatened fauna species listed as threatened under the EPBC Act as occurring or considered likely to occur in the proposal locality (refer to **Annexure B**). Of these, two threatened fauna species were assessed as having a moderate – high likelihood of occurring in the study area based on available habitat, mobility and known occurrences in the wider locality (**Table 5-1**).

Table 5-1: Threatened fauna species listed under the EPBC Act with a moderate or higher likelihood of occurrence

Scientific Name	Common Name	EPBC Act[1]	Likelihood of occurrence
Phascolarctos cinereus	Koala	V	**Moderate** – likely to utilise parts of the site on occasion as part of broader foraging areas.
Nyctophilus corbeni	Corben's Long-eared Bat	V	**Moderate** – likely to utilise parts of the site on occasion as part of broader foraging areas. Potential opportunistic roosting habitat on site.

1) V = Vulnerable under the BC Act

EPBC Koala Habitat Assessment

The Koala was not recorded in the study area during the field assessment informing this report, however, several records in the greater locality for this species were returned from the Atlas of NSW Wildlife database (Environment Energy and Science, 2021a). Despite not recording any individuals within the study area, due to records of the species within the locality and as a precautionary measure an EPBC Koala Habitat Assessment was undertaken.

Koala Habitat Assessment Tool

The Koala Habitat Assessment Tool within the '*EPBC Act referral guidelines for the vulnerable Koala*' (Department of the Environment, 2014) was used to determine whether Koala habitat in the study area classifies as 'habitat critical to the survival of the Koala' (**Figure 5-2**). To be classified as habitat critical to the survival of the Koala vegetation must score 5 or above using the habitat assessment tool. A summary of the key assessment criteria (inland population criteria) and scoring for the study area against the referral guidelines is provided in **Table 5-2** and shown in **Figure 5-2**.

It should be noted that Koala SEPP 2020 is applicable to the land zoning and LGA in which the proposal occurs in and therefore was used as the determination for Koala Schedule 2 feed tree species.

Koala habitat in the study area scored 3 out of 10 (**Table 5-2**) using the Koala Habitat Assessment Tool. Therefore, habitat in the study area is not likely to constitute habitat critical to the survival of the species.

Table 5-2: EPBC Koala habitat assessment tool

Attribute	Score	Habitat appraisal	
Koala occurrence	2	Desktop	Two recent records (<5 yrs) exist within the locality (10 km) of the site (BioNet 2021). Records also occur within the greater locality (10-20 km) and are either >5 yrs or occur >10 km from the impact area.
		On-site	No Koala individuals or traces of Koalas (scats, scratching etc.) were recorded in the study area during field surveys.
Vegetation structure and composition	0	Desktop	Not applicable.
		On-site	Koala SEPP 2020 is applicable to the land zoning and LGAs in which the proposal occurs in and therefore was used as the determination for Koala Schedule 2 feed tree species. Field assessment did not identify any Schedule 2 Koala SEPP 2020 food tree species within the study area.
Habitat connectivity	0	The study area is not part of contiguous landscape ≥300 ha.	
Key existing threats	1	Desktop	Evidence of infrequent or irregular Koala mortality from vehicle strike or dog attack in locality (10 km).
		On-site	The status of wild dog populations and level of predation is not known. No evidence of Koala activity or mortality from vehicle strike was observed in the study area during field surveys.
Recovery value	0	The study area occurs as vegetation along the existing New England Highway and consists of a *Eucalyptus* dominant grassy woodland. The study area is subject to existing edge effects and fragmentation, with large expanses of habitat cleared in the locality for agricultural land use, effectively isolating the study area from large habitat remnants. It is unlikely that the study area is of sufficient size to provide habitat that is reliant for a sub-population of Koalas or breeding individuals. It is also unlikely that the proposal would further exacerbate fragmentation than what already occurs and therefore unlikely to further limit the movement of Koalas throughout the locality. Therefore, it is unlikely the habitat within the study area is important for the recovery actions for Koalas.	
Total score	**3**	**Decision: a score of 3 obtained, therefore study area is not likely to contain critical habitat for Koala.**	

Attribute	Score	Inland	Coastal
Koala occurrence	+2 (high)	Evidence of one or more koalas within the last 5 years.	Evidence of one or more koalas within the last 2 years.
	+1 (medium)	Evidence of one or more koalas within 2 km of the edge of the impact area within the last 10 years.	Evidence of one or more koalas within 2 km of the edge of the impact area within the last 5 years.
	0 (low)	None of the above.	None of the above.
Vegetation composition	+2 (high)	Has forest, woodland or shrubland with emerging trees with 2 or more known koala food tree species, **OR** 1 food tree species that alone accounts for >50% of the vegetation in the relevant strata.	Has forest or woodland with 2 or more known koala food tree species, **OR** 1 food tree species that alone accounts for >50% of the vegetation in the relevant strata.
	+1 (medium)	Has forest, woodland or shrubland with emerging trees with only 1 species of known koala food tree present.	Has forest or woodland with only 1 species of known koala food tree present.
	0 (low)	None of the above.	None of the above.
Habitat connectivity	+2 (high)	Area is part of a contiguous landscape ≥ 1000 ha.	Area is part of a contiguous landscape ≥ 500 ha.
	+1 (medium)	Area is part of a **contiguous landscape** < 1000 ha, but ≥ 500 ha.	Area is part of a contiguous landscape < 500 ha, but ≥ 300 ha.
	0 (low)	None of the above.	None of the above.
Key existing threats	+2 (high)	Little or no evidence of koala mortality from vehicle strike or dog attack at present in areas that score 1 or 2 for koala occurrence. Areas which score 0 for koala occurrence and have no dog or vehicle threat present	
	+1 (medium)	Evidence of infrequent or irregular koala mortality from vehicle strike or dog attack at present in areas that score 1 or 2 for koala occurrence, **OR** Areas which score 0 for koala occurrence and are likely to have some degree dog or vehicle threat present.	
	0 (low)	Evidence of frequent or regular koala mortality from vehicle strike or dog attack in the study area at present, **OR** Areas which score 0 for koala occurrence and have a significant dog or vehicle threat present.	
Recovery value	+2 (high)	Habitat is likely to be important for achieving the interim recovery objectives for the relevant context, as outlined in Table 1.	
	+1 (medium)	Uncertain whether the habitat is important for achieving the interim recovery objectives for the relevant context, as outlined in Table 1.	
	0 (low)	Habitat is unlikely to be important for achieving the interim recovery objectives for the relevant context, as outlined in Table 1.	

Figure 5-2: Assessment of habitat critical to the survival of the Koala

A comparison of the Proposal's potential impacts was assessed against Figure 2 of the '*EPBC Act referral guidelines for the vulnerable Koala'* (Department of the Environment, 2014) to determine where impacts were likely to be adverse. As illustrated in **Figure 5-2**, it was concluded that the proposal is unlikely to have habitat that is critical to the species. It is also unlikely that the proposal would have an adverse impact on the species due to the following:

- Study area does not occur in an '*Area of Regional Koala Significance*' (Department of Planning Industry and Environment, 2018)
- The study area is partially disturbed within the immediate road reserve and habitat is fragmented, with large expanses of habitat cleared in the proposal locality for agricultural land use, partially isolating the majority of the study area from large habitat remnants
- The proposal will not fragment or impact habitat that is important to the recovery objectives for the species within the locality
- The proposal impacts to vegetation largely involve minor widening of the existing road corridor and trimming & removal of selected Eucalypt trees which pose a danger to road users and operation.

The EPBC Act significant impact assessment concluded that the proposal is unlikely to have a significant impact on the Koala (**Annexure A**).

5.4 Listed Migratory species

Migratory species are protected under international agreements to which Australia are a signatory, including JAMBA, CAMBA, RoKAMBA and the Bonn Convention on the Conservation of Migratory Species of Wild Animals. Migratory species are considered MNES and are protected under the EPBC Act.

Based on the PMST and other desk-top database searches, 14 migratory species have been recorded or have suitable habitat within the wider locality of the study area (**Annexure A**).

The PMST retrieved a number of bird species that are estuarine or freshwater wetland frequenting species and for which there was no suitable habitat within the study area.

Whilst terrestrial, and marine migratory species of bird may potentially use the study area, the site would not be classed as 'important habitat' as defined by the '*Significant Impact Guidelines 1.1 – Matters of National Environmental Significance*' (Department of the Environment, 2013b) as the site did not contain:

- Habitat utilised by a migratory species occasionally or periodically within a region that supports an ecological significant proportion of the population of the species
- Habitat utilised by a migratory species which is at the limit of the species range
- Habitat within an area where the species is declining

As such, it is not likely that the proposal would significantly affect migratory species and therefore this group has not been considered further.

6. Impact assessment

This section contains a description of the potential impacts of the proposal on biodiversity.

6.1 Avoidance and minimisation

Efforts have been made to ensure that the hierarchy of avoid and minimise was undertaken for the proposal.

- Avoid in the first instance – e.g. positioning of ancillary sites to utilise cleared and disturbed areas and avoid areas of native vegetation
- Minimise impacts - minimising impacts by way of implementing proposed biodiversity mitigation measures

The construction process for the proposal would continue to apply the principles of avoid and minimise. Any residual biodiversity impacts would be offset according to the RMS Guideline for Biodiversity Offsetting (TfNSW 2016).

6.2 Construction impacts

6.2.1 Removal of vegetation

The proposal would require removal/disturbance of vegetation adjacent to the edge of roadside pavement on each side of the existing road (2-5 m). This area of disturbance is predominately exotic grasses and already highly disturbed. In addition to the immediate road verge disturbance, approximately 273 trees >10 cm DBH and dead stags will be removed for safety reasons. Of the 273 trees for removal, 143 are within the existing disturbed zone, and 130 outside the existing disturbed zone. Minor disturbances including trimming of trees and limbs which are close to the road verge will also be undertaken.

Ancillary and stockpile areas are predominately situated in cleared and disturbed areas, however, small disturbances to native vegetation are likely to occur within some sites.

Overall, the works would result in the removal and disturbance of one native vegetation community, being PCT 567 as detailed in **Table 6-1**.

Table 6-1: Impacts on native vegetation communities

Plant community type (PCT)	Status		Proposal area (ha)
	BC Act	EPBC Act	
PCT 567 Broad-leaved Stringybark - Yellow Box shrub/grass open forest of the New England Tableland Bioregion	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 Riverina Bioregions	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 Riverina Bioregions	0.06 ha
Total			**0.06 ha**

While the proposed vegetation removal constitutes the Key Threatening Processes (KTP) Clearing of Native Vegetation and removal of dead wood and dead trees (as listed in the BC Act), the magnitude to which the proposal contributes to these KTPs is negligible in a local context. Mitigation measures to reduce the risk of direct impacts to native vegetation adjacent to the site are provided in **Section 7**.

6.2.2 Removal of threatened fauna habitat

The results of the threatened fauna potential occurrence assessment in **Annexure C** indicated several threatened fauna species were considered potential occurrences within the study area and therefore have potential to be impacted by the proposal. These species are detailed in **Table 6-2**.

The proposal would remove approximately 0.06 hectares of PCT 567. A portion of this vegetation provides potential habitat for potentially occurring threatened fauna species, including:

- Potential foraging habitat for a number of threatened bird species
- Potential foraging habitat for predatory birds (opportunistic usage only)
- Foraging habitat for the Koala (likely to be non-breeding, opportunistic usage only)
- Potential foraging habitat for the Squirrel Glider
- Potential foraging and roosting habitat for microbats (opportunistic roosting only, no overwintering/breeding habitat) in the form of two hollow-bearing trees proposed for removal and up to five culverts (refer to **Section 3.3**)

The construction footprint generally comprises degraded habitats with only limited threatened fauna habitat value in higher quality patches. There are a limited number of mature trees present (>50 cm DBH) and only 11 hollow-bearing trees were recorded within the construction footprint. The fauna habitat directly affected by the proposal is negligible in a local context.

Table 6-2: Impacts on threatened fauna and fauna habitat

Scientific name	Likelihood of occurrence	Impacted by proposal?	Potential impact
Woodland Birds (5)			
Brown Treecreeper	**Moderate** – potential foraging habitat. Recorded within locality.	Yes	Loss of potential foraging habitat comprising 0.06 ha of PCT 567.
Varied Sittella		Yes	
Little Lorikeet		Yes	
Scarlet Robin		Yes	
Flame Robin		Yes	
Predatory birds (2)			
Square-tailed Kite	**Moderate** – potential foraging habitat. Recorded within locality.	Yes	Loss of potential foraging habitat comprising 0.06 ha of PCT 567.
Little Eagle		Yes	
Mammals – microbats (3)			
Corben's Long-eared Bat	**Moderate** – potential foraging and roosting habitat. Recorded within locality.	Yes	Loss of potential foraging habitat comprising 0.06 ha of PCT 567. Impacts to opportunistic roost habitat in the form of up to five culverts
Large Bent-winged Bat		Yes	
Yellow-bellied Sheathtail-bat		Yes	
Mammals - arboreal (2)			
Squirrel Glider	**Moderate** – potential foraging habitat. Recorded within locality.	Yes	Loss of potential foraging habitat comprising 0.06 ha of PCT 567.
Koala	**Moderate** – likely to utilise parts of the site on occasion as part of broader foraging areas	Yes	

6.2.3 Removal of threatened flora

Although no threatened flora species were recorded in the site survey, based on available site habitats and detectability, Bluegrass, Silky Swainson-pea, *Prasophyllum* sp. *Wybong* and Small Snake Orchid could not be discounted from occurring at the site (refer to **Annexure C**). Impacts on these species comprise removal of potential habitat (refer to **Table 6-3**), associated with areas of grassy woodland.

Table 6-3: Impacts on threatened flora

Threatened species	Status		Habitat or individuals to be impacted	Habitat or individuals in the study area
	BC Act	EPBC Act		
Bluegrass	V	V	0.06 ha	~0.06 ha
Small Snake Orchid	E	E	0.06 ha	~0.06 ha
Silky Swainson-pea	V	-	0.06 ha	~0.06 ha
Prasophyllum sp. *Wybong*	-	E	0.06 ha	~0.06 ha

While the proposed vegetation removal constitutes the Key Threatening Process (KTP) Clearing of Native Vegetation (as listed in the BC Act) the magnitude to which the proposal contributes to this KTP is relatively minor in a local context as PCT 567 is common in the road reserve locally. Mitigation measures to reduce the risk of direct impacts to threatened flora are provided in **Section 7**.

6.2.4 Aquatic impacts

Short-term minor and localised impacts during the proposed works may occur via the risk of sedimentation of waterways. Mitigation measures requiring erosion and sediment controls would limit this impact.

Mitigation measures to reduce the risk of indirect impacts to waterways from the proposal are included in **Section 7**.

6.2.5 Injury and mortality

Fauna injury or death has the greatest potential to occur during construction when vegetation clearing would occur. The extent of this impact would be proportionate to the extent of vegetation that is cleared. Less mobile species (e.g. ground dwelling reptiles and frogs), or those that are nocturnal and nest or roost in trees during the day (e.g. arboreal mammals and microchiropteran bat species), may find it difficult to rapidly move away from the clearing when disturbed.

Wildlife may also become trapped in or may choose to shelter in machinery that is stored in the study area overnight. If these animals were to remain inside the machinery, or under the wheels or tracks, they may be injured or may die once the machinery is in use.

Mitigation measures to reduce the potential for fauna mortality or injury are provided within **Section 7**.

6.3 Indirect/operational impacts

6.3.1 Wildlife connectivity and habitat fragmentation

Proposed roadside clearing of vegetation within a partially cleared and modified landscape would not result in any significant increase in the fragmentation of fauna and flora habitats within the study area and the works proposed would not result in any barriers to fauna dispersal.

Considering the relatively minor increase in the width of the cleared corridor, fauna dispersal across the New England Highway would not be substantially adversely affected by the proposal (particularly for highly mobile fauna groups such as birds and microbats). No increase in roadkill would be expected during operation, as the proposal would only result in a minor increase in the sealed pavement width (and hence distance across which fauna must traverse). Consequently, the proposal is unlikely to significantly affect the dispersal of any fauna groups and no permanent barriers to movement would occur.

Likewise, the potential for genetic transfer between sub-populations of potentially occurring threatened flora is unlikely to be negatively impacted by the proposal, given that the proposal would result in only a minor increase in the width of the existing highway corridor and that the mobility of insect pollinators for threatened flora would be unaffected.

6.3.2 Edge effects on adjacent native vegetation and habitat

The proposal would result in a minor increase in edge effects by way of vegetation removal and the resulting new fringe of exposed vegetation. Edge effects that may occur include potential for increased exposure of sensitive vegetation to wind and heat and weed infiltration.

However, considering that vegetation within the study area is currently subject to a range of edge effects from the existing cleared and modified corridor of the New England Highway, any increases relating to the proposal would not be significant.

6.3.3 Invasion and spread of weeds

Environmental and agricultural weeds are common along the disturbed roadside environment of the New England Highway throughout the study area. Blackberry (*Rubus fruticosus* sp. *aggregate*) listed under the Biosecurity Act for the Uralla LGA and Tamworth LGA occurs on-site as minor infestations associated with roadside grassed areas.

The works are unlikely to result in the spread of weeds provided that relevant mitigation measures relating to machinery hygiene protocols are effectively implemented (refer to **Section 7**).

6.3.4 Invasion and spread of pests

While a variety of pest species may occur in the locality (e.g. Feral Dog, Feral Cat, Red Fox, European Rabbit), the proposal would not result in any potential to increase conditions such that pest species would become more prevalent.

6.3.5 Invasion and spread of pathogens and disease

With the adoption of standard hygiene measures (refer to **Section 7**) for plant during construction, it is unlikely that pathogens or diseases would be introduced to the site.

6.3.6 Changes to hydrology

The works do not involve any substantial excavation or redirecting of the surface water flow to an extent that changes to hydrology would occur.

6.3.7 Noise, light and vibration

During the works, a temporary increase in noise and vibration in proximity to the site is expected in association with machinery. However, it would be expected that fauna species in close proximity to the existing road alignment are habituated to noise (and vibration to an extent) and that the proposal would not increase these impacts to a level that fauna breeding or behaviour would be significantly impacted. Once operational, there will not be an increase in these impacts above what is already experienced at the site.

No significant increase in light impacts would be expected, either during the proposed works or during future operation along New England Highway.

6.3.8 Groundwater dependent ecosystems

Groundwater dependent ecosystem (GDE) mapping covering the locality indicates that the vegetation communities present are a low probability of being GDEs (Bureau of Meteorology 2020). Furthermore, changes to groundwater flows are unlikely to occur as a result of the proposed works.

6.4 Cumulative impacts

Cumulative impacts of road upgrade and maintenance projects along New England Highway at the locality and in the broader region would mostly relate to habitat loss and modification. However, as most individual projects each generally impact on relatively small areas of the previously disturbed road reserve/adjacent areas, and that similar and better-quality habitats are relatively widespread in adjacent areas (such as travelling stock reserves (TSRs) conservation reserves) this project would be considered unlikely to cumulatively result in any significant impacts to local biodiversity.

7. Mitigation

A range of mitigation measures are presented in **Table 7-1** and would be implemented prior to construction, during construction and during post construction phases of the proposal. These measures have been developed to mitigate the potential impacts of the proposal on protected flora and fauna and threatened species and communities that occur in the study area.

Table 7-1: Mitigation measures

Impact	Mitigation measures	Timing and duration	Likely efficacy of mitigation	Residual impacts anticipated
Threatened species protection	If unexpected, threatened fauna or flora species are discovered, stop works immediately and follow the Roads and Maritime Services Unexpected Threatened Species Find Procedure in the Roads and Maritime Services Biodiversity Guidelines 2011 – Guide 1 (Pre-clearing process).	Prior to construction and during construction	Proven	None
	The works are not to harm threatened fauna (including fauna occupying bridges and other structures)	Prior to construction and during construction	Effective	
	There is to be no disturbance or damage to threatened species or areas of outstanding value.	Prior to construction and during construction	Effective	
	Undertake pre-culvert removal/replacement works survey to determine extent and presence/absence of microbats prior to construction. If present microbats are to be excluded by an ecologist as follows: a. Installing exclusion devices (such as valves, curtains) prior to culvert removal/replacement works to discourage microbats from returning to the culvert/s b. Filling empty gaps within the culverts while microbats are out foraging for the night (if access inside the culvert is permitted) c. Daytime inspections immediately prior to works at each culvert, attempting to capture any remaining bats d. Consideration of provision alternative roosting habitat.	Prior to construction	Effective	
	Habitat removal will be undertaken in accordance with *Guide 4: Clearing of vegetation and removal of bushrock* of the *Biodiversity Guidelines: Protecting and managing biodiversity on RTA projects* (RTA, 2011).	During construction	Effective	

Impact	Mitigation measures	Timing and duration	Likely efficacy of mitigation	Residual impacts anticipated
	Habitat will be replaced or re-instated (where required) in accordance with *Guide 5: Re-use of woody debris and bushrock* and *Guide 8: Nest boxes* of the *Biodiversity Guidelines: Protecting and managing biodiversity on RTA projects* (RTA, 2011).	During construction	Effective	
Removal of native vegetation	Vegetation that has been protected or planted during offset works provided as part of an approved project (e.g. in association with fauna crossings) is not to be removed.	Prior to construction and during construction	Effective	Loss of potential fauna and flora habitat comprising 0.06ha of PCT 567.
	Pruning of mature trees is to be in accordance with *Part 5 of the Australian Standard 4373-2007 Pruning of amenity trees*.	During construction	Effective	
	Pre-clearing surveys will be undertaken in accordance with *Guide 1: Pre-clearing process* of the *Biodiversity Guidelines: Protecting and managing biodiversity on RTA projects* (RTA, 2011).	Prior to construction	Effective	
	Native vegetation will be re-established in accordance with *Guide 3: Reestablishment of native vegetation* of the *Biodiversity Guidelines: Protecting and managing biodiversity on RTA projects* (RTA, 2011). Post construction	Post construction	Effective	
	The unexpected species find procedure is to be followed under *Biodiversity Guidelines: Protecting and managing biodiversity on RTA projects* (RTA, 2011) if threatened ecological communities, not assessed in the biodiversity assessment, are identified in the proposal site.	During construction	Effective	
Edge effects on adjacent native vegetation and habitat	Exclusion zones will be set up at the limit of clearing in accordance with *Guide 2: Exclusion zones* of the *Biodiversity Guidelines: Protecting and managing biodiversity on RTA projects* (RTA, 2011).	During construction	Effective	None
Injury and mortality of fauna	Fauna handling must be carried out in accordance with the requirements the Roads and Maritime Services Biodiversity Guidelines - Guide 9 (Fauna Handling).	During construction	Effective	None

Impact	Mitigation measures	Timing and duration	Likely efficacy of mitigation	Residual impacts anticipated
Invasion and spread of weeds	Declared noxious weeds are to be managed according to requirements under the *Biosecurity Act, 2015* and Guide 6 (Weed Management) of the Roads and Maritime Services Biodiversity Guidelines 2011	During construction	Effective	None
Invasion and spread of pathogens and disease	All pathogens (e.g. Chytid, Myrtle Rust and Phytophthora) are to be managed in accordance with the Roads and Maritime Services Biodiversity Guidelines - Guide 7 (Pathogen Management) and DECC Statement of Intent 1: Infection of native plants by *Phytophthora cinnamomi* (for Phytophthora).	During construction	Effective	None
Wildlife movement	Works are not to create an ongoing barrier to the movement of wildlife.	During construction	Effective	None

8. Assessments of significance

The proposal is being assessed under the EP&A Act. Section 5.5 of the EP&A Act requires that a determining authority examine and consider to the fullest extent possible all matters affecting or likely to affect the environment by reason of the proposal, and that assessment of significance is undertaken to assess the likelihood of significant impact upon threatened species, populations or ecological communities listed under the BC Act. The test for determining whether the proposal is likely to affect threatened species, populations or ecological communities or their habitats is in Section 7.3 of the BC Act. For threatened biodiversity listed under the EPBC Act, significance assessments have been completed in accordance with the *EPBC Act Policy Statement 1.1 Significant Impact Guidelines* (Department of the Environment, 2013b).

Assessments of significance have been conducted for each threatened species, population or ecological community recorded or considered to have a moderate to high likelihood of occurrence in the study area (refer to **Annexure B**). Combined assessments of significance have been conducted for groups of species that have similar life history and habitat requirements (e.g. woodland birds) (refer to **Annexure C**).

Assessments of significance have been undertaken in accordance with the following published guidelines:

- Threatened Species Test of Significance Guidelines
- Significant Impact Guidelines 1.1 – Matters of National Environmental Significance for EPBC Act listed biodiversity (Department of the Environment, 2013b)
- Referral guidelines for species listed under the EPBC Act (Department of the Environment and Energy, 2017).

The assessments concluded that the proposal would be unlikely to significantly increase the risk of extinction for any of the subject threatened species (refer to **Table 8-1**).

Table 8-1: Summary of outcome of assessment of significance for threatened entities

Threatened species	BC Act[1]	EPBC Act[2]	Outcome of Assessment	
			BC Act	EPBC Act
Threatened woodland birds				
Brown Treecreeper	V	-	Not significant	N/A
Varied Sittella	V	-	Not significant	N/A
Little Lorikeet	V	-	Not significant	N/A
Scarlet Robin	V	-	Not significant	N/A
Flame Robin	V	-	Not significant	N/A
Threatened predatory birds				
Square-tailed Kite	V	-	Not significant	N/A
Little Eagle	V	-	Not significant	N/A
Threatened microbats				
Corben's Long-eared Bat	V	V	Not significant	N/A

Threatened species	BC Act[1]	EPBC Act[2]	Outcome of Assessment	
			BC Act	EPBC Act
Large Bent-winged Bat	V	-	Not significant	N/A
Yellow-bellied Sheathtail-bat	V	-	Not significant	N/A
Threatened arboreal mammals				
Squirrel Glider	V	-	Not significant	N/A
Koala	V	V	Not significant	Not significant

1) Vulnerable (V), Critically Endangered (CE) as listed under the BC Act
2) Vulnerable (V), Critically Endangered (CE) as listed under the EPBC Act.

9. Offset strategy

9.1 Quantification of impacts

Transport for NSW is committed to offsetting impacts associated with the proposal in line with its biodiversity offsetting guidelines (TfNSW, 2016) and in general accordance with the BCD principles for the use of biodiversity offsets in NSW. The quantification of vegetation loss is outlined in **Annexure E**.

Transport for NSW will provide biodiversity offsets or, where offsets are not reasonable or feasible, supplementary measures for impacts that exceed the following thresholds (refer to **Table 9-1**).

Table 9-1: Summary of TfNSW Biodiversity Offset Guidelines

Description of activity or impact	Consider offsets or supplementary measures
Activities in accordance with TfNSW Environmental assessment procedure: Routine and Minor Works (RTA 2011)	**No**
Works on cleared land, plantations, exotic vegetation where there are no threatened species or habitat present	**No**
Works involving clearing of vegetation planted as part of a road corridor landscaping program (this includes where threatened species or species comprising listed ecological communities have been used for landscaping purposes)	**No** – vegetation has not been planted as part of a road corridor landscaping program.
Works involving clearing of national or NSW listed critically endangered ecological communities (CEEC): ▪ Where there is any clearing of an CEEC in moderate to good condition	**Yes** – clearing of 0.06 ha of White Box-Yellow Box-Blakely's Red Gum Grassy Woodland and Derived Native Grassland (listed as Critically Endangered)
Works involving clearing of nationally listed threatened ecological community (TEC) or nationally listed threatened species habitat: ▪ Where clearing >1 ha of a TEC or habitat in moderate to good condition	**No**
Works involving clearing of NSW endangered or vulnerable ecological community: ▪ Where clearing > 5 ha or where the ecological community is subject to an SIS	**No**
Works involving clearing of NSW listed threatened species habitat where the species is a species credit species as defined in the OEH Threatened Species Profile Database (TSPD): ▪ Where clearing > 1ha or where the species is the subject of an SIS	**Yes** – clearing 0.06 ha of PCT 567 of which species credit species habitat impacted.

Description of activity or impact	Consider offsets or supplementary measures
Works involving clearing of NSW listed threatened species habitat and the species is an ecosystem credit species as defined in OEH's Threatened Species Profile Database (TSPD): ▪ Where clearing > 5 ha or where the species is the subject of an SIS	**No** – clearing is < 5 ha
Type 1 or Type 2 key fish habitats (as defined by NSW Fisheries): ▪ Where there is any net loss of habitat	**No** – no disturbance of type 1 or 2 key fish habitat.

Based on the impact of 0.06 ha of PCT 567, which corresponds to White Box-Yellow Box-Blakely's Red Gum Grassy Woodland and Derived Native Grassland (listed as Critically Endangered) and associated threatened species habitat, the proposal does trigger the TfNSW offset guidelines, offsets are required.

10. Conclusion

Based on the site assessment and consideration of the work required, the following biodiversity matters apply to the proposal:

- The study area comprises remnant vegetation associated with New England Highway road reserve. This vegetation is in fair condition however has been historically disturbed by grazing, current road operations and maintenance, and is subject to roadside weed incursions.
- The proposal would result in removal of approximately 0.06 hectares of PCT 567 Broad-leaved Stringybark - Yellow Box shrub/grass open forest of the New England Tableland Bioregion (low, moderate and high condition), which includes 0.06 ha of White Box - Yellow Box - Blakely's Red Gum Grassy Woodland and Derived Native Grassland in the New England Tableland Bioregions TEC (BC Act) and 0.06 ha of White Box-Yellow Box-Blakely's Red Gum Grassy Woodland and Derived Native Grassland (EPBC Act).
- No threatened flora species were recorded during the surveys. However, considering the limitations of the survey, Bluegrass, *Prasophyllum* sp. *Wybong*, *Swainsona sericea* and Small Snake Orchid are considered potential occurrences at the site.
- No threatened fauna species were recorded at the site. However, there is potential for several threatened fauna species to occur based on available site habitats.
- A number of mitigation measures have been recommended to manage potential impacts relating to biodiversity.
- It was determined that the proposal is unlikely to significantly affect any species, communities or their habitat listed under the Biodiversity Conservation Act 2016 (BC Act) or the Environment Protection and Biodiversity Conservation Act 1999 (EPBC Act). Therefore, a Species Impact Statement (SIS) or a Biodiversity Development Assessment Report (BDAR) is not required, nor is the proposal subject to the EPBC Act Strategic Assessment.
- The proposal does trigger TfNSW offset thresholds and therefore offsets are required.

11. References

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Annexure A

Database search results

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 : Licensed Report of all Valid Records of Threatened (listed on BC Act 2016) or Commonwealth listed Animals in selected area [North: -30.45 West: 150.96 East: 151.69 South: -31.08] returned a total of 3,367 records of 45 species.
Report generated on 14/09/2021 4:56 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	80	
Animalia	Reptilia	Chelidae	2825	*Myuchelys bellii*		Western Sawshelled Turtle, Bell's Turtle	E1,P	V	1336	
Animalia	Reptilia	Carphodactylidae	2139	*Uvidicolus sphyrurus*		Border Thick-tailed Gecko	V,P	V	6	
Animalia	Aves	Megapodiidae	0008	*Alectura lathami*		Australian Brush-turkey population in the Nandewar and Brigalow Belt South Bioregions	E2,P		1	
Animalia	Aves	Anseranatidae	0199	*Anseranas semipalmata*		Magpie Goose	V,P		4	
Animalia	Aves	Anatidae	0216	*Oxyura australis*		Blue-billed Duck	V,P		12	
Animalia	Aves	Anatidae	0214	*Stictonetta naevosa*		Freckled Duck	V,P		7	
Animalia	Aves	Apodidae	0334	*Hirundapus caudacutus*		White-throated Needletail	P	V,C,J,K	6	
Animalia	Aves	Ciconiidae	0183	*Ephippiorhynchus asiaticus*		Black-necked Stork	E1,P		4	
Animalia	Aves	Accipitridae	0218	*Circus assimilis*		Spotted Harrier	V,P		5	
Animalia	Aves	Accipitridae	0226	*Haliaeetus leucogaster*		White-bellied Sea-Eagle	V,P		5	

Animalia	Aves	Accipitridae	0225	*Hieraaetus morphnoides*	Little Eagle	V,P		33	
Animalia	Aves	Accipitridae	0230	*Lophoictinia isura*	Square-tailed Kite	V,P,3		8	
Animalia	Aves	Falconidae	0238	*Falco subniger*	Black Falcon	V,P		6	
Animalia	Aves	Burhinidae	0174	*Burhinus grallarius*	Bush Stone-curlew	E1,P		1	
Animalia	Aves	Rostratulidae	0170	*Rostratula australis*	Australian Painted Snipe	E1,P	E	1	
Animalia	Aves	Cacatuidae	0265	^^*Calyptorhynchus lathami*	Glossy Black-Cockatoo	V,P,2		4	
Animalia	Aves	Psittacidae	0260	*Glossopsitta pusilla*	Little Lorikeet	V,P		35	
Animalia	Aves	Psittacidae	0309	*Lathamus discolor*	Swift Parrot	E1,P,3	CE	8	
Animalia	Aves	Psittacidae	0302	*Neophema pulchella*	Turquoise Parrot	V,P,3		1	
Animalia	Aves	Strigidae	0246	*Ninox connivens*	Barking Owl	V,P,3		2	
Animalia	Aves	Strigidae	0248	*Ninox strenua*	Powerful Owl	V,P,3		4	
Animalia	Aves	Tytonidae	0250	*Tyto novaehollandiae*	Masked Owl	V,P,3		22	
Animalia	Aves	Climacteridae	8127	*Climacteris picumnus victoriae*	Brown Treecreeper (eastern subspecies)	V,P		357	
Animalia	Aves	Acanthizidae	0504	*Chthonicola sagittata*	Speckled Warbler	V,P		23	
Animalia	Aves	Meliphagidae	0603	*Anthochaera phrygia*	Regent Honeyeater	E4A,P	CE	12	
Animalia	Aves	Meliphagidae	0598	*Grantiella picta*	Painted Honeyeater	V,P	V	2	
Animalia	Aves	Meliphagidae	8303	*Melithreptus gularis gularis*	Black-chinned Honeyeater (eastern subspecies)	V,P		4	

Animalia	Aves	Pomatostomidae	8388	*Pomatostomus temporalis temporalis*	Grey-crowned Babbler (eastern subspecies)	V,P		1	
Animalia	Aves	Neosittidae	0549	*Daphoenositta chrysoptera*	Varied Sittella	V,P		18	
Animalia	Aves	Artamidae	8519	*Artamus cyanopterus cyanopterus*	Dusky Woodswallow	V,P		38	
Animalia	Aves	Petroicidae	8367	*Melanodryas cucullata cucullata*	Hooded Robin (south-eastern form)	V,P		20	
Animalia	Aves	Petroicidae	0380	*Petroica boodang*	Scarlet Robin	V,P		27	
Animalia	Aves	Petroicidae	0382	*Petroica phoenicea*	Flame Robin	V,P		1	
Animalia	Aves	Estrildidae	0652	*Stagonopleura guttata*	Diamond Firetail	V,P		25	
Animalia	Mammalia	Dasyuridae	1008	*Dasyurus maculatus*	Spotted-tailed Quoll	V,P	E	17	
Animalia	Mammalia	Phascolarctidae	1162	*Phascolarctos cinereus*	Koala	V,P	V	744	
Animalia	Mammalia	Petauridae	1137	*Petaurus norfolcensis*	Squirrel Glider	V,P		4	
Animalia	Mammalia	Pteropodidae	1280	*Pteropus poliocephalus*	Grey-headed Flying-fox	V,P	V	434	
Animalia	Mammalia	Emballonuridae	1321	*Saccolaimus flaviventris*	Yellow-bellied Sheathtail-bat	V,P		4	
Animalia	Mammalia	Vespertilionidae	1353	*Chalinolobus dwyeri*	Large-eared Pied Bat	V,P	V	1	
Animalia	Mammalia	Vespertilionidae	1372	*Falsistrellus tasmaniensis*	Eastern False Pipistrelle	V,P		19	
Animalia	Mammalia	Vespertilionidae	T315	*Nyctophilus corbeni*	Corben's Long-eared Bat	V,P	V	1	
Animalia	Mammalia	Vespertilionidae	1361	*Scoteanax rueppellii*	Greater Broad-nosed Bat	V,P		4	

Animalia	Mammalia	Miniopteridae	3330	*Miniopterus orianae oceanensis*	Large Bent-winged Bat	V,P	20

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 : Licensed Report of all Valid Records of Threatened (listed on BC Act 2016) or Commonwealth listed Plants in selected area [North: -30.45 West: 150.96 East: 151.69 South: -31.08] returned a total of 184 records of 13 species.
Report generated on 14/09/2021 4:56 PM

Kingdom	Class	Family	Species Code	Scientific Name	Exotic	Common Name	NSW status	Comm. status	Records	Info
Plantae	Flora	Brassicaceae	1822	*Lepidium hyssopifolium*		Aromatic Peppercress	E1	E	3	
Plantae	Flora	Euphorbiaceae	7735	*Bertya ingramii*		Narrow-leaved Bertya	E1	E	1	
Plantae	Flora	Fabaceae (Faboideae)	8538	*Swainsona sericea*		Silky Swainson-pea	V		5	
Plantae	Flora	Fabaceae (Mimosoideae)	9405	*Acacia pubifolia*		Velvet Wattle	E1	V	11	
Plantae	Flora	Myrtaceae	9126	*Callistemon pungens*				V	7	
Plantae	Flora	Myrtaceae	4123	*Eucalyptus mckieana*		McKie's Stringybark	V	V	28	
Plantae	Flora	Myrtaceae	4134	*Eucalyptus nicholii*		Narrow-leaved Black Peppermint	V	V	21	
Plantae	Flora	Myrtaceae	9164	*Eucalyptus rubida subsp. barbigerorum*		Blackbutt Candlebark	V	V	3	
Plantae	Flora	Myrtaceae	9522	*Homoranthus prolixus*		Granite Homoranthus	V	V	6	
Plantae	Flora	Orchidaceae	4450	*^^Diuris pedunculata*		Small Snake Orchid	E1,P,2	E	5	
Plantae	Flora	Poaceae	4895	*Dichanthium setosum*		Bluegrass	V	V	44	

Plantae	Flora	Rutaceae	14856	*Zieria odorifera subsp. warrabahensis*		E4A		40	
Plantae	Flora	Santalaceae	5871	*Thesium australe*	Austral Toadflax	V	V	10	

Australian Government

Department of Agriculture, Water and the Environment

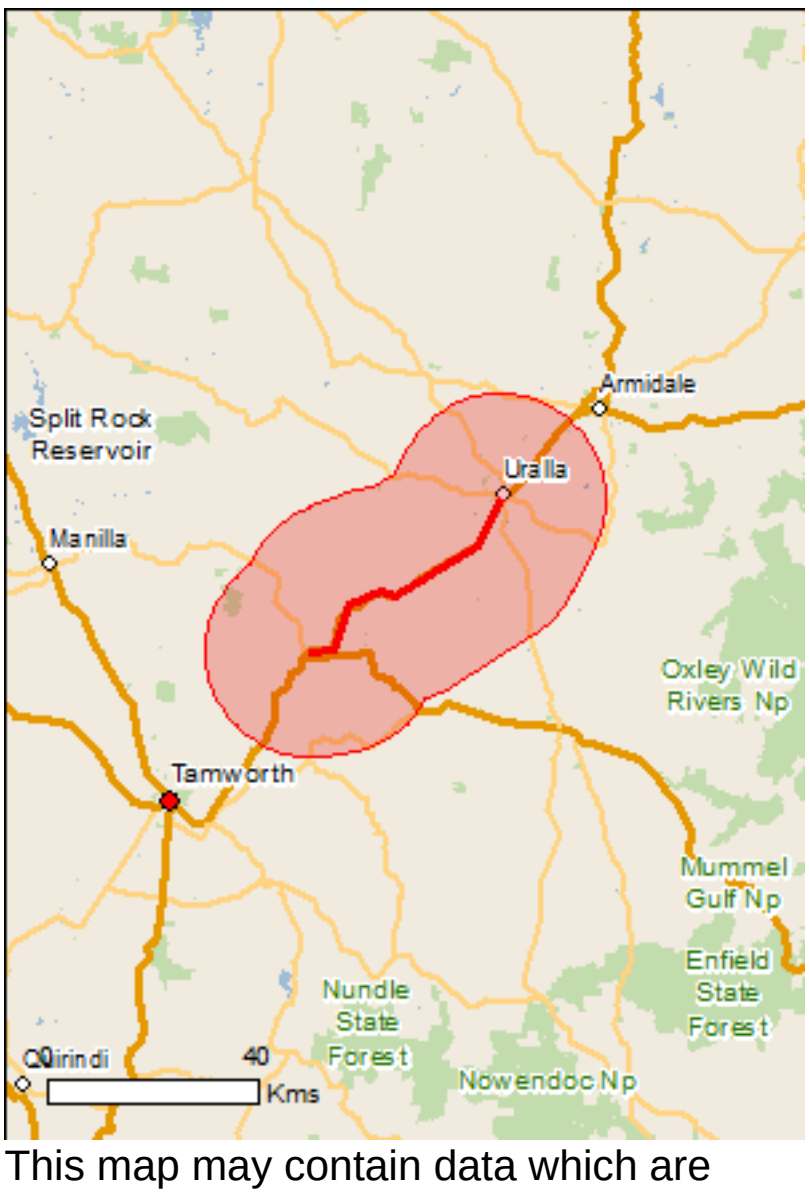
EPBC Act Protected Matters Report

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.

Information on the coverage of this report and qualifications on data supporting this report are contained in the caveat at the end of the report.

Information is available about Environment Assessments and the EPBC Act including significance guidelines, forms and application process details.

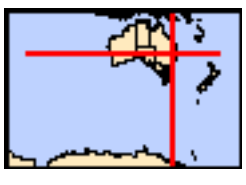
Report created: 14/09/21 17:04:48



This map may contain data which are ©Commonwealth of Australia (Geoscience Australia), ©PSMA 2015

Coordinates

Buffer: 20.0Km



Summary

Matters of National Environmental 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:	4
Great Barrier Reef Marine Park:	None
Commonwealth Marine Area:	None
Listed Threatened Ecological Communities:	5
Listed Threatened Species:	43
Listed Migratory Species:	14

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 http://www.environment.gov.au/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 Land:	4
Commonwealth Heritage Places:	None
Listed Marine Species:	20
Whales and Other Cetaceans:	None
Critical Habitats:	None
Commonwealth Reserves Terrestrial:	None
Australian Marine Parks:	None

Extra Information

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

State and Territory Reserves:	3
Regional Forest Agreements:	1
Invasive Species:	38
Nationally Important Wetlands:	1
Key Ecological Features (Marine)	None

Details

Matters of National Environmental Significance

Wetlands of International Importance (Ramsar) [Resource Information]

Name	Proximity
Banrock station wetland complex	1000 - 1100km
Gwydir wetlands: gingham and lower gwydir (big leather) watercourses	200 - 300km upstream
Riverland	900 - 1000km upstream
The coorong, and lakes alexandrina and albert wetland	1100 - 1200km

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.

Name	Status	Type of Presence
Natural grasslands on basalt and fine-textured alluvial plains of northern New South Wales and southern Queensland	Critically Endangered	Community may occur within area
New England Peppermint (Eucalyptus nova-anglica) Grassy Woodlands	Critically Endangered	Community likely to occur within area
Upland Wetlands of the New England Tablelands (New England Tableland Bioregion) and the Monaro Plateau (South Eastern Highlands Bioregion)	Endangered	Community likely to occur within area
Weeping Myall Woodlands	Endangered	Community may occur within area
White Box-Yellow Box-Blakely's Red Gum Grassy Woodland and Derived Native Grassland	Critically Endangered	Community likely to occur within area

Listed Threatened Species [Resource Information]

Name	Status	Type of Presence
Birds		
Anthochaera phrygia Regent Honeyeater [82338]	Critically Endangered	Species or species habitat known to occur within area
Botaurus poiciloptilus Australasian Bittern [1001]	Endangered	Species or species habitat may occur within area
Calidris ferruginea Curlew Sandpiper [856]	Critically Endangered	Species or species habitat likely to occur within area
Charadrius leschenaultii Greater Sand Plover, Large Sand Plover [877]	Vulnerable	Species or species habitat may occur within area
Erythrotriorchis radiatus Red Goshawk [942]	Vulnerable	Species or species habitat likely to occur within area
Falco hypoleucos Grey Falcon [929]	Vulnerable	Species or species habitat likely to occur within area
Grantiella picta Painted Honeyeater [470]	Vulnerable	Species or species

Name	Status	Type of Presence
		habitat likely to occur within area
Hirundapus caudacutus White-throated Needletail [682]	Vulnerable	Species or species habitat known to occur within area
Lathamus discolor Swift Parrot [744]	Critically Endangered	Species or species habitat likely to occur within area
Polytelis swainsonii Superb Parrot [738]	Vulnerable	Species or species habitat may occur within area
Rostratula australis Australian Painted Snipe [77037]	Endangered	Species or species habitat likely to occur within area
Fish		
Maccullochella peelii Murray Cod [66633]	Vulnerable	Species or species habitat known to occur within area
Frogs		
Litoria booroolongensis Booroolong Frog [1844]	Endangered	Species or species habitat known to occur within area
Litoria castanea Yellow-spotted Tree Frog, Yellow-spotted Bell Frog [1848]	Critically Endangered	Species or species habitat likely to occur within area
Litoria piperata Peppered Tree Frog [1827]	Vulnerable	Species or species habitat may occur within area
Mammals		
Chalinolobus dwyeri Large-eared Pied Bat, Large Pied Bat [183]	Vulnerable	Species or species habitat likely to occur within 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
Nyctophilus corbeni Corben's Long-eared Bat, South-eastern Long-eared Bat [83395]	Vulnerable	Species or species habitat likely to occur within area
Petauroides volans Greater Glider [254]	Vulnerable	Species or species habitat may occur within area
Petrogale penicillata Brush-tailed Rock-wallaby [225]	Vulnerable	Species or species habitat likely to occur within area
Phascolarctos cinereus (combined populations of Qld, NSW and the ACT) Koala (combined populations of Queensland, New South Wales and the Australian Capital Territory) [85104]	Vulnerable	Species or species habitat known to occur within area
Pteropus poliocephalus Grey-headed Flying-fox [186]	Vulnerable	Foraging, feeding or related behaviour known to occur within area
Plants		
Acacia pubifolia Velvet Wattle [19799]	Vulnerable	Species or species habitat may occur within area
Arthraxon hispidus Hairy-joint Grass [9338]	Vulnerable	Species or species habitat likely to occur

Name	Status	Type of Presence within area
Bertya ingramii a shrub [21383]	Endangered	Species or species habitat known to occur within area
Cadellia pentastylis Ooline [9828]	Vulnerable	Species or species habitat likely to occur within area
Callistemon pungens [55581]	Vulnerable	Species or species habitat known to occur within area
Dichanthium setosum bluegrass [14159]	Vulnerable	Species or species habitat likely to occur within area
Diuris pedunculata Small Snake Orchid, Two-leaved Golden Moths, Golden Moths, Cowslip Orchid, Snake Orchid [18325]	Endangered	Species or species habitat known to occur within area
Eucalyptus caleyi subsp. ovendenii Ovenden's Ironbark [56193]	Vulnerable	Species or species habitat may occur within area
Eucalyptus mckieana McKie's Stringybark [20199]	Vulnerable	Species or species habitat known to occur within area
Eucalyptus nicholii Narrow-leaved Peppermint, Narrow-leaved Black Peppermint [20992]	Vulnerable	Species or species habitat likely to occur within area
Eucalyptus rubida subsp. barbigerorum Blackbutt Candlebark [64618]	Vulnerable	Species or species habitat may occur within area
Euphrasia arguta [4325]	Critically Endangered	Species or species habitat likely to occur within area
Haloragis exalata subsp. velutina Tall Velvet Sea-berry [16839]	Vulnerable	Species or species habitat may occur within area
Homoranthus prolixus [55198]	Vulnerable	Species or species habitat known to occur within area
Leionema lachnaeoides [64924]	Endangered	Species or species habitat likely to occur within area
Prasophyllum sp. Wybong (C.Phelps ORG 5269) a leek-orchid [81964]	Critically Endangered	Species or species habitat may occur within area
Thesium australe Austral Toadflax, Toadflax [15202]	Vulnerable	Species or species habitat known to occur within area
Tylophora linearis [55231]	Endangered	Species or species habitat may occur within area
Reptiles		
Aprasia parapulchella Pink-tailed Worm-lizard, Pink-tailed Legless Lizard [1665]	Vulnerable	Species or species habitat may occur within area
Uvidicolus sphyrurus Border Thick-tailed Gecko, Granite Belt Thick-tailed Gecko [84578]	Vulnerable	Species or species habitat known to occur

Name	Status	Type of Presence within area
Wollumbinia belli Bell's Turtle, Western Sawshelled Turtle, Namoi River Turtle, Bell's Saw-shelled Turtle [86071]	Vulnerable	Species or species habitat known to occur within area

Listed Migratory Species [Resource Information]

* Species is listed under a different scientific name on the EPBC Act - Threatened Species list.

Name	Threatened	Type of Presence
Migratory Marine Birds		
Apus pacificus Fork-tailed Swift [678]		Species or species habitat likely to occur within area
Migratory Terrestrial Species		
Hirundapus caudacutus White-throated Needletail [682]	Vulnerable	Species or species habitat known to occur within area
Monarcha melanopsis Black-faced Monarch [609]		Species or species habitat may occur within area
Motacilla flava Yellow Wagtail [644]		Species or species habitat may occur within area
Myiagra cyanoleuca Satin Flycatcher [612]		Species or species habitat known to occur within area
Rhipidura rufifrons Rufous Fantail [592]		Species or species habitat known to occur within area
Migratory Wetlands Species		
Actitis hypoleucos Common Sandpiper [59309]		Species or species habitat may occur within area
Calidris acuminata Sharp-tailed Sandpiper [874]		Species or species habitat known to occur within area
Calidris ferruginea Curlew Sandpiper [856]	Critically Endangered	Species or species habitat likely to occur within area
Calidris melanotos Pectoral Sandpiper [858]		Species or species habitat may occur within area
Charadrius leschenaultii Greater Sand Plover, Large Sand Plover [877]	Vulnerable	Species or species habitat may occur within area
Gallinago hardwickii Latham's Snipe, Japanese Snipe [863]		Species or species habitat likely to occur within area
Pandion haliaetus Osprey [952]		Species or species habitat may occur within area
Tringa nebularia Common Greenshank, Greenshank [832]		Species or species habitat may occur within area

Other Matters Protected by the EPBC Act

Commonwealth Land [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.

Name
Commonwealth Land - Australian Telecommunications Commission
Commonwealth Land - Australian Telecommunications Corporation
Commonwealth Land - Commonwealth Scientific & Industrial Research Organisation
Commonwealth Land - Telstra Corporation Limited

Listed Marine Species [Resource Information]

* Species is listed under a different scientific name on the EPBC Act - Threatened Species list.

Name	Threatened	Type of Presence
Birds		
Actitis hypoleucos Common Sandpiper [59309]		Species or species habitat may occur within area
Apus pacificus Fork-tailed Swift [678]		Species or species habitat likely to occur within area
Ardea ibis Cattle Egret [59542]		Species or species habitat may occur within area
Calidris acuminata Sharp-tailed Sandpiper [874]		Species or species habitat known to occur within area
Calidris ferruginea Curlew Sandpiper [856]	Critically Endangered	Species or species habitat likely to occur within area
Calidris melanotos Pectoral Sandpiper [858]		Species or species habitat may occur within area
Charadrius leschenaultii Greater Sand Plover, Large Sand Plover [877]	Vulnerable	Species or species habitat may occur within area
Chrysococcyx osculans Black-eared Cuckoo [705]		Species or species habitat known to occur within area
Gallinago hardwickii Latham's Snipe, Japanese Snipe [863]		Species or species habitat likely to occur within area
Haliaeetus leucogaster White-bellied Sea-Eagle [943]		Species or species habitat known to occur within area
Hirundapus caudacutus White-throated Needletail [682]	Vulnerable	Species or species habitat known to occur within area
Lathamus discolor Swift Parrot [744]	Critically Endangered	Species or species habitat likely to occur within area
Merops ornatus Rainbow Bee-eater [670]		Species or species habitat may occur within area

Name	Threatened	Type of Presence
Monarcha melanopsis Black-faced Monarch [609]		Species or species habitat may occur within area
Motacilla flava Yellow Wagtail [644]		Species or species habitat may occur within area
Myiagra cyanoleuca Satin Flycatcher [612]		Species or species habitat known to occur within area
Pandion haliaetus Osprey [952]		Species or species habitat may occur within area
Rhipidura rufifrons Rufous Fantail [592]		Species or species habitat known to occur within area
Rostratula benghalensis (sensu lato) Painted Snipe [889]	Endangered*	Species or species habitat likely to occur within area
Tringa nebularia Common Greenshank, Greenshank [832]		Species or species habitat may occur within area

Extra Information

State and Territory Reserves [Resource Information]

Name	State
Watsons Creek	NSW
Watsons Creek	NSW
Watsons Creek	NSW

Regional Forest Agreements [Resource Information]

Note that all areas with completed RFAs have been included.

Name	State
North East NSW RFA	New South Wales

Invasive Species [Resource Information]

Weeds reported here are the 20 species of national significance (WoNS), along with other introduced plants that are considered by the States and Territories to pose a particularly significant threat to biodiversity. The following feral animals are reported: Goat, Red Fox, Cat, Rabbit, Pig, Water Buffalo and Cane Toad. Maps from Landscape Health Project, National Land and Water Resouces Audit, 2001.

Name	Status	Type of Presence
Birds		
Acridotheres tristis Common Myna, Indian Myna [387]		Species or species habitat likely to occur within area
Alauda arvensis Skylark [656]		Species or species habitat likely to occur within area
Anas platyrhynchos Mallard [974]		Species or species habitat likely to occur within area

Name	Status	Type of Presence
Carduelis carduelis European Goldfinch [403]		Species or species habitat likely to occur within area
Columba livia Rock Pigeon, Rock Dove, Domestic Pigeon [803]		Species or species habitat likely to occur within area
Passer domesticus House Sparrow [405]		Species or species habitat likely to occur within area
Streptopelia chinensis Spotted Turtle-Dove [780]		Species or species habitat likely to occur within area
Sturnus vulgaris Common Starling [389]		Species or species habitat likely to occur within area
Turdus merula Common Blackbird, Eurasian Blackbird [596]		Species or species habitat likely to occur within area
Frogs		
Rhinella marina Cane Toad [83218]		Species or species habitat may occur within area
Mammals		
Bos taurus Domestic Cattle [16]		Species or species habitat likely to occur within area
Canis lupus familiaris Domestic Dog [82654]		Species or species habitat likely to occur within area
Capra hircus Goat [2]		Species or species habitat likely to occur within area
Equus caballus Horse [5]		Species or species habitat likely to occur within area
Felis catus Cat, House Cat, Domestic Cat [19]		Species or species habitat likely to occur within area
Feral deer Feral deer species in Australia [85733]		Species or species habitat likely to occur within area
Lepus capensis Brown Hare [127]		Species or species habitat likely to occur within area
Mus musculus House Mouse [120]		Species or species habitat likely to occur within area
Oryctolagus cuniculus Rabbit, European Rabbit [128]		Species or species habitat likely to occur within area
Rattus rattus Black Rat, Ship Rat [84]		Species or species habitat likely to occur within area
Sus scrofa Pig [6]		Species or species habitat likely to occur

Name	Status	Type of Presence
		within area
Vulpes vulpes Red Fox, Fox [18]		Species or species habitat likely to occur within area
Plants		
Anredera cordifolia Madeira Vine, Jalap, Lamb's-tail, Mignonette Vine, Anredera, Gulf Madeiravine, Heartleaf Madeiravine, Potato Vine [2643]		Species or species habitat likely to occur within area
Asparagus aethiopicus Asparagus Fern, Ground Asparagus, Basket Fern, Sprengi's Fern, Bushy Asparagus, Emerald Asparagus [62425]		Species or species habitat likely to occur within area
Asparagus asparagoides Bridal Creeper, Bridal Veil Creeper, Smilax, Florist's Smilax, Smilax Asparagus [22473]		Species or species habitat likely to occur within area
Asparagus plumosus Climbing Asparagus-fern [48993]		Species or species habitat likely to occur within area
Cytisus scoparius Broom, English Broom, Scotch Broom, Common Broom, Scottish Broom, Spanish Broom [5934]		Species or species habitat likely to occur within area
Dolichandra unguis-cati Cat's Claw Vine, Yellow Trumpet Vine, Cat's Claw Creeper, Funnel Creeper [85119]		Species or species habitat likely to occur within area
Genista sp. X Genista monspessulana Broom [67538]		Species or species habitat may occur within area
Lycium ferocissimum African Boxthorn, Boxthorn [19235]		Species or species habitat likely to occur within area
Nassella neesiana Chilean Needle grass [67699]		Species or species habitat likely to occur within area
Nassella trichotoma Serrated Tussock, Yass River Tussock, Yass Tussock, Nassella Tussock (NZ) [18884]		Species or species habitat likely to occur within area
Opuntia spp. Prickly Pears [82753]		Species or species habitat likely to occur within area
Pinus radiata Radiata Pine Monterey Pine, Insignis Pine, Wilding Pine [20780]		Species or species habitat may occur within area
Rubus fruticosus aggregate Blackberry, European Blackberry [68406]		Species or species habitat likely to occur within area
Salix spp. except S.babylonica, S.x calodendron & S.x reichardtii Willows except Weeping Willow, Pussy Willow and Sterile Pussy Willow [68497]		Species or species habitat likely to occur within area
Senecio madagascariensis Fireweed, Madagascar Ragwort, Madagascar Groundsel [2624]		Species or species habitat likely to occur within area
Solanum elaeagnifolium Silver Nightshade, Silver-leaved Nightshade, White Horse Nettle, Silver-leaf Nightshade, Tomato Weed, White Nightshade, Bull-nettle, Prairie-berry, Satansbos, Silver-leaf Bitter-apple, Silverleaf-nettle, Trompillo [12323]		Species or species habitat likely to occur within area

Nationally Important Wetlands	[Resource Information]
Name	State
New England Wetlands	NSW

Caveat

The information presented in this report has been provided by a range of data sources as acknowledged at the end of the report.

This report is designed to assist in identifying the locations of places which may be relevant in determining obligations under the Environment Protection and Biodiversity Conservation Act 1999. It holds mapped locations of World and National Heritage properties, Wetlands of International and National Importance, Commonwealth and State/Territory reserves, listed threatened, migratory and marine species and listed threatened ecological communities. Mapping of Commonwealth land is not complete at this stage. Maps have been collated from a range of sources at various resolutions.

Not all species listed under the EPBC Act have been mapped (see below) and therefore a report is a general guide only. Where available data supports mapping, the type of presence that can be determined from the data is indicated in general terms. People using this information in making a referral may need to consider the qualifications below and may need to seek and consider other information sources.

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.

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

Where very little information is available for 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 reliable distribution mapping methods are used to update these distributions as time permits.

Only selected species covered by the following provisions of the EPBC Act have been mapped:

- migratory and
- marine

The following species and ecological communities have not been mapped and do not appear in reports produced from this database:

- threatened species listed as extinct or considered as vagrants
- some species and ecological communities that have only recently been listed
- some terrestrial species that overfly the Commonwealth marine area
- migratory species that are very widespread, vagrant, or only occur in small numbers

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

- non-threatened seabirds which have only been mapped for recorded breeding sites
- seals which have only been mapped for breeding sites near the Australian continent

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

Coordinates

-30.872563 151.168408,-30.869027 151.205487,-30.804763 151.232953,-30.785889 151.288571,-30.794147 151.311917,-30.718028 151.453366,-30.649528 151.491818

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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Annexure B

Likelihood of occurrence

Table B 1: 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 proposal 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 proposal 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 B 2: Habitat assessment – threatened flora

Scientific name	Common name	BC Act	EPBC Act	Habitat requirements	Source	Likelihood of occurrence
Acacia pubifolia	Velvet Wattle	E	V	Rocky granite hillsides, in sandy, stony or loamy soil in eucalypt-scrub woodland or Eucalyptus-Callitris forest, and shrubby woodland on granite (Hunter Catchment only).	PMST, BioNet	Low - Field surveys did not record the species in the study area. No suitable habitat occurs.
Arthraxon hispidus	Hairy Jointgrass	-	V	Moist shady places in or on the edges of rainforest and wet eucalypt forest, often near creeks or swamps.	PMST	Low - Field surveys did not record the species in the study area. No suitable habitat occurs.
Bertya ingramii	Narrow-leaved Bertya	E	E	Among rocks or in thin soils close to cliff-edges in dry woodland with she-oaks, wattles and tea-trees. Occurs only on the New England Tablelands.	PMST, BioNet	Low - Field surveys did not record the species in the study area. No suitable habitat occurs.
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.	PMST	Low - Field surveys did not record the species in the study area. No suitable habitat occurs.
Callistemon pungens		-	V	In or near rocky watercourses, usually in sandy creek beds on granite or sometimes on basalt.	PMST, BioNet	Low - Field surveys did not record the species in the study area. No suitable habitat occurs.
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.	PMST, BioNet	Moderate - Field surveys did not record the species in the study area. However, there is suitable habitat at the study site and this species is known to be cryptic. **Test of significance completed.**

Scientific name	Common name	BC Act	EPBC Act	Habitat requirements	Source	Likelihood of occurrence
Diuris pedunculata	Small Snake Orchid	E	E	Grassy sclerophyll forests, dry sclerophyll woodlands, grassy sclerophyll woodlands, grasslands, riparian areas, and swampy forests.	PMST, BioNet	Moderate - Field surveys did not record the species in the study area. However, there is suitable habitat at the study site and this species is known to be cryptic. **Test of significance completed.**
Eucalyptus caleyi subsp. Ovendenii	Ovenden's Ironbark	V	V	Grows in grassy woodland on dry, shallow soils of moderate fertility.	PMST	Low - Field surveys did not record the species in the study area. No suitable habitat occurs.
Eucalyptus mckieana	McKie's Stringybark	V	V	Eucalyptus mckieana is found in grassy open forest or woodland on poor sandy loams, most commonly on gently sloping or flat sites.	PMST, BioNet	Low - Field surveys did not record the species in the study area.
Eucalyptus nicholii	Narrow-leaved Peppermint	V	V	Grassy or sclerophyllous woodland on shallow relatively infertile soils on shales and slates.	PMST, BioNet	Low - Field surveys did not record the species in the study area.
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.	PMST, BioNet	Low - Field surveys did not record the species in the study area.
Euphrasia arguta	-	PCE	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.	PMST	Low - Field surveys did not record the species in the study area. No suitable habitat occurs.
Haloragis exalata subsp. velutina	Tall Velvet Sea-berry	V	V	Damp places near watercourses, also in woodland and steep rocky slopes of gorges.	PMST	Low - Field surveys did not record the species in the study area. No suitable habitat occurs.
Homoranthus prolixus	Granite Homoranthus	V	V	Occurs in woodland and heath on shallow sandy skeletal soil on and around granite or acid volcanic outcrops.	PMST, BioNet	Low - Field surveys did not record the species in the study area.

Scientific name	Common name	BC Act	EPBC Act	Habitat requirements	Source	Likelihood of occurrence
Leionema lachnaeoides		E	E	Habitat vegetation is montane heath and commonly includes Eu*calyptus stricta, Allocasuarina nana, Dillwynia retorta, Epacris microphylla and Caustis flexuosa.*	PMST	Low - Field surveys did not record the species in the study area. No suitable habitat occurs.
Lepidium hyssopifolium	Aromatic Peppercress	E	E	In NSW the species was known to have occurred in both woodland with a grassy understorey and in grassland. The species may be a disturbance opportunist, as it was discovered at the most recently discovered site (near Bungendore) following soil disturbance. The cryptic and non-descript nature (appearing like several weed species) of the species makes it hard to detect.	BioNet	Low - Field surveys did not record the species in the study area. No suitable habitat occurs.
Prasophyllum sp. Wybong (C.Phelps ORG 5269)	-	-	CE	Known to occur in open eucalypt woodland and grassland	PMST	Moderate - Field surveys did not record the species in the study area. However, there is suitable habitat at the study site and this species is known to be cryptic. **Test of significance completed.**
Swainsona sericea	Silky Swainson-pea	V	-	Found in Natural Temperate Grassland and Snow Gum Eucalyptus pauciflora Woodland on the Monaro. Found in Box-Gum Woodland in the Southern Tablelands and South West Slopes. Sometimes found in association with cypress-pines Callitris spp.	BioNet	Moderate - Field surveys did not record the species in the study area. However, there is suitable habitat at the study site and this species is known to be cryptic. **Test of significance completed.**
Thesium australe	Austral Toadflax	-	V	Grassland or grassy eucalypt woodland where *Themeda australis* is predominant, on grassy headlands.	PMST, BioNet	Low - Field surveys did not record the species in the study area. No suitable habitat occurs.

Scientific name	Common name	BC Act	EPBC Act	Habitat requirements	Source	Likelihood of occurrence
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.	PMST	Low - Field surveys did not record the species in the study area. No suitable habitat occurs.
Zieria odorifera subsp. Warrabahensis		CE	-	It is found in both heath and *Eucalyptus prava/Callitris endlicheri* layered woodland on granite outcrops	BioNet	Low - Field surveys did not record the species in the study area. No suitable habitat occurs.
V = Vulnerable; E = Endangered; CE = Critically Endangered						

Table B 3: Fauna likelihood of occurrence criteria

Likelihood	Criteria
Recorded	The species was observed in the study area during the current survey
High	It is highly likely that a species inhabits the study area and is dependent on identified suitable habitat (i.e. for breeding or important life cycle periods such as winter flowering resources), has been recorded recently in the locality (10 km) and is known or likely to maintain resident populations in the study area. Also includes species known or likely to visit the study area during regular seasonal movements or migration.
Moderate	Potential habitat is present in the study area. Species unlikely to maintain sedentary populations; however, may seasonally use resources within the study area opportunistically or during migration. The species is unlikely to be dependent (i.e. for breeding or important life cycle periods such as winter flowering resources) on habitat within the study area, or habitat is in a modified or degraded state. Includes cryptic flowering flora species that were not seasonally targeted by surveys and that have not been recorded.
Low	It is unlikely that the species inhabits the study area and has not been recorded recently in the locality (10 km). It may be an occasional visitor, but habitat similar to the study area is widely distributed in the local area, meaning that the species is not dependent (i.e. for breeding or important life cycle periods such as winter flowering resources) on available habitat. Specific habitat is not present in the study area, or the species are a non-cryptic perennial flora species that were specifically targeted by surveys and not recorded.
None	Suitable habitat is absent from the study area. Based on a field assessment of the habitat constraints or microhabitats on the study area, the habitat is identified as being substantially degraded such that the species is unlikely to utilise the study area (or specific vegetation zones), or an expert report that is prepared that states the species is unlikely to be present on the study area or specific vegetation zones.

Table B 4: Habitat assessment – threatened fauna

Scientific name	Common name	BC Act	EPBC Act	Habitat requirements	Source	Likelihood of occurrence
Amphibians						
Litoria booroolongensis	Booroolong Frog	E	E	Permanent streams with some fringing vegetation cover such as ferns, sedges or grasses.	PMST, BioNet	Low – No suitable habitat occurs.
Litoria castanea	Yellow-spotted Tree Frog	CE	E	Require large permanent ponds or slow flowing 'chain-of-ponds' streams with abundant emergent vegetation such as bulrushes and aquatic vegetation.	PMST	Low – No suitable habitat occurs.
Litoria piperata	Peppered Tree Frog	CE	V	Found in streamside vegetation and under rocks and fallen timber along rocky streams flowing eastward from the Tablelands.	PMST	Low – No suitable habitat occurs.
Birds						
Anseranas semipalmata	Magpie Goose	V	-	Shallow wetlands (<1 m deep), large swamps and dams with dense growth of rushes or sedge.	BioNet	Low – No suitable habitat occurs.
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.	PMST, BioNet	Low – No suitable habitat occurs.
Artamus cyanopterus cyanopterus	Dusky Woodswallow	V	-	Woodlands and dry open sclerophyll forests, usually dominated by eucalypts; also recorded in shrublands, heathlands and various modified habitats.	BioNet	Low – No suitable habitat occurs.

Scientific name	Common name	BC Act	EPBC Act	Habitat requirements	Source	Likelihood of occurrence
Botaurus poiciloptilus	Australasian Bittern	E	E	Permanent freshwater wetlands with tall dense vegetation, particularly bullrushes and spikerushes.	PMST	Low – No suitable habitat occurs.
Burhinus grallarius	Bush Stone-curlew	E	-	Lightly timbered open forest and woodland, and partly cleared farmland with woodland remnants, preferring areas with dry leaf-litter, fallen timber and sparse ground cover.	BioNet	Low – No suitable habitat occurs.
Calidris ferruginea	Curlew Sandpiper	E	CE	Tidal mudflats, sandy ocean shores and occasionally inland freshwater or salt-lakes.	PMST	Low – No suitable habitat occurs.
Calyptorhynchus lathami	Glossy Black-Cockatoo	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.	BioNet	Low – No suitable habitat occurs.
Chthonicola sagittata	Speckled Warbler	V	-	Eucalyptus dominated communities with sparse shrubs and grassy understorey.	BioNet	Low – No suitable habitat occurs.
Circus assimilis	Spotted Harrier	V	-	Grassy open woodland, inland riparian woodland, grassland and shrub steppe.	BioNet	Low – No suitable habitat occurs.
Climacteris picumnus victoriae	Brown Treecreeper	V	-	Eucalypt forests and woodlands of inland plains and slopes of the Great Dividing Range, and less commonly on coastal plains and ranges.	BioNet	**Moderate** – potential habitat. Recorded within locality.
Daphoenositta chrysoptera	Varied Sittella	V	-	Inhabits eucalypt forests and woodlands, especially rough-barked species and mature smooth-barked gums with dead branches, mallee and Acacia woodland.	BioNet	**Moderate** – potential habitat. Recorded within locality.

Scientific name	Common name	BC Act	EPBC Act	Habitat requirements	Source	Likelihood of occurrence
Ephippiorhynchus asiaticus	Black-necked Stork	E	-	Swamps, mangroves, mudflats, dry floodplains.	BioNet	Low – No suitable habitat occurs.
Erythrotriorchis radiatus	Red Goshawk	CE	V	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.	PMST	Low – No suitable habitat occurs.
Falco hypoleucos	Grey Falcon	E	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.	PMST	Low – No suitable habitat occurs.
Falco subniger	Black Falcon	V	-	Widely, but sparsely, distributed in New South Wales, mostly occurring in inland regions. In NSW there is assumed to be a single population that is continuous with a broader continental population	BioNet	Low – No suitable habitat occurs.

Scientific name	Common name	BC Act	EPBC Act	Habitat requirements	Source	Likelihood of occurrence
Glossopsitta pusilla	Little Lorikeet	V	-	Forages in open Eucalyptus forest and woodland; also feeds on Angophora, Melaleuca and other tree species. Riparian habitats are particularly used, due to higher soil fertility and hence greater productivity.	BioNet	**Moderate** – potential habitat. Recorded within locality.
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.	PMST, BioNet	Low – No suitable habitat occurs.
Haliaeetus leucogaster	White-bellied Sea-eagle	V	-	Coastal habitats and around terrestrial wetlands characterised by the presence of large areas of open water (larger rivers, swamps, lakes, ocean). Habitats may include freshwater swamps, lakes, reservoirs, billabongs, saltmarsh and sewage ponds in addition to bays and inlets, beaches, reefs, lagoons, estuaries and mangroves.	BioNet	Low – No suitable habitat occurs.
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.	BioNet	**Moderate** – potential habitat. Recorded within locality.
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.	PMST, BioNet	Low – No suitable habitat occurs.

Scientific name	Common name	BC Act	EPBC Act	Habitat requirements	Source	Likelihood of occurrence
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.	PMST, BioNet	Low – No suitable habitat occurs.
Lophoictinia isura	Square-tailed Kite	V	-	Dry woodland and open forest, particularly along major rivers and belts of trees in urban or semi-urban areas. Home ranges can extend over at least 100 km2.	BioNet	**Moderate** – potential foraging habitat. Recorded within locality.
Melanodryas cucullata cucullata	Hooded Robin (south-eastern form)	V	-	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.	BioNet	Low – No suitable habitat occurs.

Scientific name	Common name	BC Act	EPBC Act	Habitat requirements	Source	Likelihood of occurrence
Melithreptus gularis gularis	Black-chinned Honeyeater (eastern subspecies)	V	-	Drier open forests or woodlands dominated by box and ironbark eucalypts, and open forests of smooth-barked gums, stringybarks, ironbarks and tea-trees.	BioNet	Low – No suitable habitat occurs.
Neophema pulchella	Turquoise Parrot	V	-	Favours open, grassy woodland with dead trees near permanent water. Also inhabits coastal heaths and pastures with exotic grasses and weeds, along roadsides and in orchards.	BioNet	Low – No suitable habitat occurs.
Ninox connivens	Barking Owl	V	-	Eucalypt woodland, open forest, swamp woodlands and timber along watercourses.	BioNet	Low – No suitable habitat occurs.
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.	BioNet	Low – No suitable habitat occurs.
Oxyura australis	Blue-billed Duck	V	-	Deep water in large permanent wetlands and swamps with dense aquatic vegetation.	BioNet	Low – No suitable habitat occurs.
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.	BioNet	**Moderate** – potential habitat. Recorded within locality.

Scientific name	Common name	BC Act	EPBC Act	Habitat requirements	Source	Likelihood of occurrence
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).	BioNet	**Moderate** – potential habitat. Recorded within locality.
Polytelis swainsonii	Superb Parrot	V	V	Inhabit Box-Gum, Box-Cypress-pine and Boree Woodlands and River Red Gum Forest.	PMST	Low – No suitable habitat occurs.
Pomatostomus temporalis temporalis	Grey-crowned Babbler	V	-	Open woodlands dominated by mature eucalypts, with regenerating trees, tall shrubs, and an intact ground cover of grass and forbs.	BioNet	Low – No suitable habitat occurs.
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.	PMST, BioNet	Low – No suitable habitat occurs.
Stagonopleura guttata	Diamond Firetail	V	-	Grassy eucalypt woodlands, open forest, mallee, temperate grassland, and secondary grassland derived from other communities, riparian areas, and sometimes in lightly wooded farmland.	BioNet	Low – No suitable habitat occurs.

Scientific name	Common name	BC Act	EPBC Act	Habitat requirements	Source	Likelihood of occurrence
Stictonetta naevosa	Freckled Duck	V	-	Permanent freshwater swamps and creeks with heavy growth of Cumbungi, Lignum or Tea-tree. In drier times they move from ephemeral breeding swamps to more permanent waters such as lakes, reservoirs, farm dams and sewage ponds.	BioNet	Low – No suitable habitat occurs.
Tyto novaehollandiae	Masked Owl	V	-	Dry eucalypt forest and woodlands.	BioNet	Low – No suitable habitat occurs.
Fish						
Maccullochella peelii	Murray Cod	-	V	Warm water habitats that range from clear, rocky streams to slow flowing turbid rivers and billabongs.	PMST	Low – No suitable habitat occurs.
Mammals						
Chalinolobus dwyeri	Large-eared Pied Bat	V	V	Near cave entrances and crevices in cliffs.	PMST, BioNet	Low – No suitable habitat occurs.
Dasyurus maculatus	Spotted-tailed Quoll	V	E	Dry and moist eucalypt forests and rainforests, fallen hollow logs, large rocky outcrops.	PMST, BioNet	Low – No suitable habitat occurs.
Falsistrellus tasmaniensis	Eastern False Pipistrelle	V	-	Moist and dry eucalypt forest and rainforest, particularly at high elevations.	BioNet	Low – No suitable habitat occurs.
Miniopterus orianae oceanensis	Large Bent-winged Bat	V	-	Forest or woodland, roost in caves, old mines and stormwater channels.	BioNet	**Moderate** – potential foraging and opportunistic roosting habitat. Recorded within locality.

Scientific name	Common name	BC Act	EPBC Act	Habitat requirements	Source	Likelihood of occurrence
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.	PMST, BioNet	**Moderate** – potential foraging and opportunistic roosting habitat. Recorded within locality.
Petauroides volans	Greater Glider	-	V	Ranges and coastal plains of eastern Australia, where it inhabits a variety of eucalypt forests and woodlands.	PMST	Low – No suitable habitat occurs.
Petaurus norfolcensis	Squirrel Glider	V	-	Blackbutt, bloodwood and ironbark eucalypt forest with heath understorey in coastal areas, and box-ironbark woodlands and River Red Gum forest inland.	BioNet	**Moderate** – potential habitat. Recorded within locality.
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.	PMST	Low – No suitable habitat occurs.
Phascolarctos cinereus	Koala	V	V	Appropriate food trees in forests and woodlands, and treed urban areas.	PMST, BioNet	**Moderate** – potential habitat. Recorded within locality.
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.	PMST, BioNet	Low – No suitable habitat occurs.

Scientific name	Common name	BC Act	EPBC Act	Habitat requirements	Source	Likelihood of occurrence
Saccolaimus flaviventris	Yellow-bellied Sheathtail-bat	V	-	Forages in a variety of habitats, roosts in tree hollows and buildings.	BioNet	**Moderate** – potential foraging and opportunistic roosting habitat. Recorded within locality.
Scoteanax rueppellii	Greater Broad-nosed Bat	V	-	Woodland through to moist and dry eucalypt forest and rainforest, though it is most commonly found in tall wet forest.	BioNet	**Low – No suitable habitat occurs.**
Reptiles						
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).	PMST	**Low – No suitable habitat occurs.**
Myuchelys bellii	Bells Turtle	E	V	Upper reaches and smaller tributaries of major rivers flowing through granitic bedrock, preferring narrow stretches of river, 30 to 40 m wide, with pools up to 3 m deep, and sandy and rocky. Riverbeds, with small beds of weed.	PMST, BioNet	**Low – No suitable habitat occurs.**
Uvidicolus sphyrurus	Border Thick-tailed Gecko	V	V	Dry sclerophyll open forest and woodland associated with outcrops of granite, basalt, sandstone and metamorphic rocks.	PMST, BioNet	**Low – No suitable habitat occurs.**
V = Vulnerable; E = Endangered; CE = Critically Endangered						

Annexure C

Assessments of significance

BC Act Assessments of significance

The proposed works would be assessed under Section 5.5 of the EP&A Act. As such, Section 7.3 of the BC Act outlines the 'test of significance' that is to be undertaken to assess the likelihood of significant impact upon threatened species or ecological communities listed under the BC Act. Assessments of significance have been completed for the following threatened species listed under the BC Act:

- Flora (Bluegrass, Small Snake Orchid, Silky Swainson-pea and White Box - Yellow Box - Blakely's Red Gum Grassy Woodland and Derived Native Grassland in the New England Tableland Bioregions)
- Woodland birds (Brown Treecreeper, Varied Sittella, Little Lorikeet, Scarlet Robin, Flame Robin)
- Predatory birds (Little Eagle, Square-tailed Kite)
- Arboreal mammals (Squirrel Glider & Koala)
- Microbats (Corben's Long-eared Bat, Large Bent-winged Bat, Yellow-bellied Sheathtail-Bat)

Flora and TEC

Threatened flora and the TEC have been grouped for assessment owing to family similarities, broadly overlap in ecology and habitat preferences, and potential impacts as result of the proposal. Threatened flora for this impact assessment include:

- Bluegrass
- Small Snake Orchid
- Silky Swainson-pea
- White Box - Yellow Box - Blakely's Red Gum Grassy Woodland and Derived Native Grassland in the New England Tableland Bioregions TEC

The following is to be taken into account for the purposes of determining whether a proposed development or activity is likely to significantly affect threatened species or ecological communities, or their habitats.

(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

Neither Bluegrass, Small Snake Orchid or Silky Swainson-pea were recorded in the site visit. However, these species can both be cryptic and potential habitat for the species was present at the site. The proposal would result in the direct loss of up to approximately 0.06 ha of PCT 567 *Broad-leaved Stringybark - Yellow Box shrub/grass open forest of the New England Tableland Bioregion* which comprises potential habitat for Bluegrass, Small Snake Orchid and Silky Swainson-pea in broad structural terms. No known populations occur in the study area. Considering that equivalent or better-quality habitat is present in the broader locality that will not be affected by the proposal, and that the proposal is unlikely to result in significant fragmentation or isolation of habitat for this species, it would be highly unlikely that an adverse effect on the life cycle of both species would occur such that a viable local population of either species 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

The local occurrence of the White Box - Yellow Box - Blakely's Red Gum Grassy Woodland and Derived Native Grassland in the New England Tableland Bioregions TEC is outlined below in Table C 1. The local occurrence of the TEC was estimated from broad scale vegetation mapping, specifically the State Vegetation Type Map: Border Rivers Gwydir / Namoi Region Version 2.0. VIS ID 4467 (State Government of NSW and Department of Planning, Industry and Environment 2015).

The estimates provided below in **Table C 1** provide an indication of the extent of the local occurrence of woodland patches. In all cases, the actual local occurrence is larger than estimated as not all patches of vegetation are mapped accurately.

Of importance to this assessment is that the proposed impacts are limited to minor disturbance and clearing on the margins of this community along the New England Highway. Impacts to this community largely involve minor widening of the existing road corridor and trimming & removal of selected Eucalypt trees which pose a danger to road users and operation. As such, the local occurrence of high quality intact or relatively intact White Box - Yellow Box - Blakely's Red Gum Grassy Woodland and Derived Native Grassland in the New England Tableland Bioregions TEC will largely not be affected. As such, the proposal is considered unlikely 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.

As can be seen from **Table C 1**, the proposal would not have an adverse effect on the extent of White Box - Yellow Box - Blakely's Red Gum Grassy Woodland and Derived Native Grassland in the New England Tableland Bioregions TEC, as a whole, such that the local occurrence of the TEC is likely to be placed at risk of extinction. The proportional and nature of impacts to the local occurrence of the TEC is very low and the proposal would not result in the local extinction of the TEC.

Table C 1: Estimation of the local occurrence of the TEC and proportional impact

Threatened ecological community	Potential impact (ha)	Local occurrence (within 10km of study area)	Proportional impact
White Box - Yellow Box - Blakely's Red Gum Grassy Woodland and Derived Native Grassland in the New England Tableland Bioregions	0.06 ha	PCT 567 Broad-leaved Stringybark - Yellow Box shrub/grass open forest of the New England Tableland Bioregion 0.06 ha mapped in the locality.	<0.01 % of the local occurrence of mapped TEC

The proposal is considered unlikely to substantially and adversely modify the composition of the White Box - Yellow Box - Blakely's Red Gum Grassy Woodland and Derived Native Grassland in the New England Tableland Bioregions TEC such that its local occurrences are placed at risk of extinction. The TEC already has an altered composition caused by a reduction in ecological function, as indicated by:

(a) invasion and establishment of exotic species

(b) degradation of habitat along edges of road reserve

(c) local small-scale fragmentation.

The proposal would remove part of an already modified and partially disturbed version of the White Box - Yellow Box - Blakely's Red Gum Grassy Woodland and Derived Native Grassland in the New England Tableland Bioregions TEC. This impact will not cause the local occurrence to be placed at risk of extinction. The composition of the TEC within the locality is predicted to remain as is after the implementation of the proposal.

(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 extent of predicted impacts to the threatened flora and TEC is shown in Table C 1. The proportional impact to the TEC is low.

(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

The proposal would result in only a minor increase in the width of the cleared corridor of the New England Highway. The existing landscape is substantially fragmented, consisting of a mosaic of grassy woodland, and cleared farmland. Post-works, the increase to vegetation fragmentation relating to the proposal would be of such a minor nature as to be negligible.

No area of habitat for any of the subject threatened flora and TEC would become substantially fragmented or isolated from other nearby areas of habitat as a result of the proposal.

Considering the above, a minor increase in the width of the cleared road corridor is unlikely to result in significant fragmentation or isolation of habitat for any of the subject species and TEC or result in a disruption to genetic transfer between potential occurrences that are dissected by the New England Highway.

(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,

Due to the conservation significance of the threatened flora and TEC, the remaining patches of these threatened flora and TEC within NSW are likely to be important for its survival. However, the patches within the study area are considered partly modified. Furthermore, no patches of vegetation in the study area have been recognised as priority conservation land or as part of core habitats or regional corridors by the BCD. As such, the patches within the study area can be considered less important than larger high-quality examples in the locality that retain higher levels of ecological integrity and function.

(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 in Uralla/ Tamworth 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 KTP is a process that threatens, or may have the capability to threaten, the survival or evolutionary development of species, population, or ecological community. Key threatening processes are listed under the BC Act and at the present there are currently 39 listed KTPs. With respect to threatened flora, the proposal is consistent with two KTPs being:

- clearing of native vegetation
- removal of dead wood and dead trees

The extent of native vegetation clearing, and habitat removal associated with the proposal is relatively small in terms of the available habitat for these species within the proposal locality. It is highly unlikely that the proposal would exacerbate the KTPs to the extent that it would be significant to the species and TEC.

Conclusion

In summary, the proposal is considered unlikely to result in a significant effect on threatened flora and TEC. Approximately 0.06 ha of potential habitat would be affected by the proposal. Given the extent of the works,

it is unlikely that the local population of any of the threatened flora species or TEC would be placed at significant risk of extinction as a result of the proposal.

Woodland birds

Threatened woodland birds have been grouped for assessment owing to family similarities, broadly overlap in ecology and habitat preferences, and potential impacts as result of the proposal. Threatened woodland birds for this impact assessment include:

- Brown Treecreeper (eastern subspecies) (*Climacteris picumnus victoriae)*
- Varied Sittella (*Daphoenositta chrysoptera)*
- Little Lorikeet (*Glossopsitta pusilla*)
- Scarlet Robin (*Petroica boodang*)
- Flame Robin (*Petroica phoenicea*)

All the above-mentioned species are listed as Vulnerable under the BC Act.

The following is to be taken into account for the purposes of determining whether a proposed development or activity is likely to significantly affect threatened species or ecological communities, or their habitats.

(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

No threatened woodland birds were observed during field investigation; however, these species have either been recorded in the locality (BioNet) or the presence of habitat associated with the species. As the site investigation was relatively short in nature and threatened woodland birds are not always easily detectable, this assessment is therefore based on the presence of potentially suitable habitat for likely threatened woodland birds. The proposal would impact on approximately 0.06 ha of known and potential habitat in the form of PCT 567. Threatened woodland birds using the study area are likely to be part of a viable population that extends through the locality and are likely to present in other parts of the locality as there is a reasonable amount of potentially suitable habitat in the form of grassy woodland habitat occurring in the locality. In addition, these species would not be solely restricted to this habitat but are known to utilise a number of other woodland habitats in the locality. Due to the narrow linear impact expected within an existing road reserve, it is considered unlikely that local population of threatened woodland birds would be restricted to the study area and the proposal is not likely to have an adverse effect on the life cycle of the species such 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

Not applicable.

(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

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

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

It is estimated that the proposal would impact on approximately 0.06 ha of potential habitat for threatened woodland birds in the form of PCT 567.

Habitat within the study area is already fragmented at a local scale by the existing road, adjacent roads, and agricultural development. Landscape scale fragmentation is unlikely to occur from the proposal as the work would involve removing vegetation from patch edges rather than breaking apart of large blocks of vegetation into many smaller patches. Importantly, the proposal would not result in the breaking apart of large blocks of high-quality habitats. No further habitat fragmentation on a landscape scale would occur because of the proposal. Isolation of habitats is likely to increase by a small extent as the distance between patches on either side of the road reserve would be marginally increased.

The proposal will not create a significant barrier to the movement of these species between areas of suitable habitat. The impact of 0.06 ha of potential habitat would present <1% of available habitat within locality. Higher quality habitat within the locality would still be accessible for these species. The quality and importance of habitat which may be impacted by activities is not considered to be significantly important for the long-term survival of any local population of these species.

(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),

The proposal will not impact on any declared area of outstanding biodiversity value.

(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 KTP is a process that threatens, or may have the capability to threaten, the survival or evolutionary development of species, population, or ecological community. Key threatening processes are listed under the BC Act and at the present there are currently 39 listed KTPs. With respect to threatened woodland birds, the proposal is consistent with three KTPs being:

- clearing of native vegetation
- removal of dead wood and dead trees

The extent of native vegetation clearing, and habitat removal associated with the proposal is relatively small in terms of the available habitat for these species within the proposal locality. It is unlikely that the proposal would exacerbate the KTPs to the extent that it would be significant to any of these species.

Conclusion

In summary, the proposal is considered unlikely to result in a significant effect on threatened woodland birds. Approximately 0.06 ha of potential habitat would be affected by the proposal. Threatened woodland birds using the study area are likely to be part of a viable population that extends through the locality and due to the narrow and linear impact expected within an existing disturbed road reserve corridor, it is considered unlikely that local population of threatened woodland birds would be restricted to the study area. Given the extent of potentially suitable habitat that exists in the locality and the very small proportional impact likely to occur from the proposal, potential impacts to threatened woodland birds are unlikely to be significant.

Birds of prey

Threatened birds of prey have been grouped for assessment owing to family similarities and overlap in ecology and habitat preferences, and potential impacts as result of the proposal. Threatened birds of prey for the impact assessment are:

- Square-tailed Kite (*Lophoictinia isura*)
- Little Eagle (*Hieraaetus morphnoides*).

The following is to be taken into account for the purposes of determining whether a proposed development or activity is likely to significantly affect threatened species or ecological communities, or their habitats.

(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

Threatened birds of prey were not recorded in the study area during surveys and therefore, this assessment is based on the presence of potentially suitable habitat. The proposal would impact approximately 0.06 ha of potential habitat in the form of PCT 567. Due to the mobility and large home range of these species and the general narrow and linear impact associated with the proposal, any identified population of threatened birds of prey would not be restricted to habitat within the study area. Threatened birds of prey using the study area are likely to be part of a viable population that extends through the proposal locality and are likely to be present in other parts of the locality as there is a large amount of potentially suitable habitat occurring in the locality. The proportional impact to this potential habitat is very small and considered negligible. Therefore, due to the narrow and linear impact expected within an existing road corridor, the proposal is not likely to have an adverse effect on the life cycle of the species such 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

Not applicable.

(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

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

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

It is estimated that the proposal would impact on approximately 0.06 ha of potential habitat for threatened birds of prey in the form of PCT 567. These habitats occurred on the verge of an existing disturbed road corridor.

Habitat within the study area is already fragmented at a local scale by the existing New England Highway, adjacent roads, and agricultural development. Landscape scale fragmentation is unlikely to occur from the proposal as the work would involve removing vegetation from patch edges rather than breaking apart of large blocks of vegetation into many smaller patches. Importantly, the proposal would not result in the

breaking apart of large blocks of high-quality habitats. No further habitat fragmentation on a landscape scale would occur because of the proposal. Isolation of habitats is likely to increase by a small extent as the distance between patches on either side of the road corridor would be increased. As the proposal impact area is largely confined to previously disturbed areas, the proposal would not adversely fragment or isolate any previously undisturbed patches of habitat. Furthermore, given these species' high mobility and that similar and likely more significant habitat occurs widely in the locality, it is considered unlikely that habitat would become further isolated or fragmented significantly beyond that currently existing in the study area and wider locality.

The proposal will impact approximately 0.06 ha of narrow and linear habitat in an existing disturbed road corridor. Impacts to vegetation largely involve minor widening of the existing road corridor and trimming & removal of selected Eucalypt trees which pose a danger to road users and operation. Although the loss of native vegetation would be an incremental loss of local habitat, the quality and importance is not considered to be significant to the long-term survival of any local population of threatened birds of prey.

(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),

The proposal will not impact on any declared area of outstanding biodiversity value.

(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 KTP is a process that threatens, or may have the capability to threaten, the survival or evolutionary development of species, population or ecological community. Key threatening processes are listed under the BC Act and at the present there are currently 39 listed KTPs. With respect to threatened birds of prey, the proposal is consistent with one KTP; being clearing of native vegetation. Although it is an incremental loss of suitable habitat in the locality, the extent of native vegetation clearing and habitat removal associated with the proposal is relatively small in terms of the available habitat for these species within the proposal locality.

Conclusion

In summary, the proposal is considered unlikely to result in a significant effect on threatened birds of prey. Approximately 0.06 ha of potential habitat would be affected by the proposal. Threatened birds of prey using the study area are likely to be part of a viable population that extends through the locality and due to the narrow and linear impact expected within an existing road corridor, it is considered unlikely that local population of threatened birds of prey would be restricted to the study area. Given the extent of potentially suitable habitat that exists in the locality and the very small proportional impact likely to occur from the proposal, any impacts to threatened birds of prey are unlikely to be significant.

Arboreal Mammals

Threatened arboreal mammals have been grouped for assessment owing to broadly overlap in ecology and habitat preferences, and potential impacts as result of the proposal. Threatened arboreal mammals for this impact assessment include:

- Squirrel Glider (*Petaurus norfolcensis*)
- Koala (*Phascolarctos cinereus)*.

Both species are listed as Vulnerable under the BC Act. The Koala is also listed as Vulnerable under the EPBC Act.

The following is to be taken into account for the purposes of determining whether a proposed development or activity is likely to significantly affect threatened species or ecological communities, or their habitats.

(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

Neither the Squirrel Glider or Koala were recorded in the study area during the field survey informing this report, however, the species is known to occur in the greater locality. Nevertheless, whilst the immediate road corridor was disturbed, remnant woodland corresponding to PCT 567 occurred therein. The proposal would impact 0.06 ha of habitat in the form of PCT 567, of which the impact would largely involve minor widening of the existing road corridor and trimming & removal of selected Eucalypt trees which pose a danger to road users and operation. Any population of Squirrel Glider or Koala potentially using the study area are likely to be part of a viable population extending throughout the locality and are likely to be present in other parts of the locality. Given the small amount of vegetation to be removed and the abundance of suitable woodland habitat nearby the proportional impact to this potential habitat is very small and therefore is considered negligible. Due to the narrow linear impact expected within an existing disturbed road corridor, it is considered unlikely that a local population of Squirrel Glider or Koala would be restricted to the study area and the proposal is not likely to have an adverse effect on the life cycle of either species such 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

Not applicable.

(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

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

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

It is estimated that proposal would impact on approximately 0.06 ha of potential habitat for both species in the form of PCT 567.

Habitat within the study area is already fragmented at a local scale by the existing highway, adjacent roads, and agricultural use. Landscape scale fragmentation is unlikely to occur from the proposal as the work would involve removing vegetation from patch edges rather than breaking apart of large blocks of vegetation into many smaller patches. Importantly, the proposal would not result in the breaking apart of large blocks of high-quality habitats. No further habitat fragmentation on a landscape scale would occur because of the proposal. Isolation of habitats is likely to increase by a small extent as the distance between patches on either side of the road corridor would be increased.

The habitat in the study area is not likely to be important to the long-term survival of the Squirrel Glider or Koala. No priority management areas or sites occur in the study area or locality. Impacts would largely

involve minor widening of the existing road corridor and trimming & removal of selected Eucalypt trees which pose a danger to road users and operation. Although the loss of native vegetation would be an incremental loss of local habitat, the quality and importance are not considered to be significant to the long-term survival of any local population of either species.

(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),

The proposal will not impact on any declared area of outstanding biodiversity value.

(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 KTP is a process that threatens, or may have the capability to threaten, the survival or evolutionary development of species, population or ecological community. Key threatening processes are listed under the BC Act and at the present there are currently 39 listed KTPs. With respect to both Squirrel Glider and Koala, the proposal is consistent with one KTP being:

- clearing of native vegetation

The extent of native vegetation clearing, and habitat removal associated with the proposal is relatively small in terms of the available habitat for these species within the proposal locality.

Conclusion

In summary, the proposal is considered unlikely to result in a significant impact on either the Squirrel Glider or Koala. Whilst 0.06 ha of potential habitat would be affected by the proposal, impact would largely involve minor widening of the existing road corridor and trimming & removal of selected Eucalypt trees which pose a danger to road users and operation. Both species are likely to use habitat that extends through the locality and due to the narrow and linear impact expected within an existing road corridor, it is considered unlikely that local population of either species would be restricted to the study area. Given the extent of potentially suitable habitat that exists in the locality and the very small proportional impact likely to occur from the proposal, is unlikely the proposal would have a significant to either species.

Microbats

Threatened microbats have been grouped for assessment owing to broadly overlap in ecology and habitat preferences, and potential impacts as result of the proposal. Threatened microbats for this impact assessment include:

- Corben's Long-eared Bat (*Nyctophilus corbeni*)
- Large Bent-winged Bat (*Miniopterus orianae oceanensis*)
- Yellow-bellied Sheathtail-bat (*Saccolaimus flaviventris*)

All the above-mentioned species are listed as Vulnerable under the BC Act.

The following is to be taken into account for the purposes of determining whether a proposed development or activity is likely to significantly affect threatened species or ecological communities, or their habitats.

(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

No threatened microbats were observed during field investigation; however, these species have either been recorded in the locality (BioNet) or the presence of habitat associated with the species. As the site investigation was relatively short in nature and threatened microbats are not always easily detectable, this

assessment is therefore based on the presence of potentially suitable habitat for likely threatened microbats. Approximately 0.06 ha of vegetation to be impacted provides foraging habitat for microchiropteran bats. Additionally, culverts with potential opportunistic roosting habitat would be impacted by the works. Whilst 0.06 ha of foraging and potential roosting habitat may be removed as part of the proposed action, an abundance of similar or high-quality roosting opportunities occur in the wider locality. The removal of 0.06 ha would represent <1% of available habitat for these species. These species would not be solely restricted to this habitat but are known to utilise a number of other open woodland habitats in the locality. The proportional impact to this potential habitat is very small. Due to the narrow linear impact expected within an existing road reserve, it is considered unlikely that local population of threatened microbats would be restricted to the study area and the proposal is not likely to have an adverse effect on the life cycle of the species such 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

Not applicable.

(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

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

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

It is estimated that proposal would impact on approximately 0.06 ha of potential habitat for threatened microbats in the form of PCT 567. In addition, up to five culverts with opportunistic roosting habitat would be impacted.

Habitat within the study area is already fragmented at a local scale by the existing road, adjacent roads, and agricultural development. Landscape scale fragmentation is unlikely to occur from the proposal as the work would involve removing vegetation from patch edges rather than breaking apart of large blocks of vegetation into many smaller patches. Importantly, the proposal would not result in the breaking apart of large blocks of high-quality habitats. No further habitat fragmentation on a landscape scale would occur because of the proposal. Isolation of habitats is likely to increase by a small extent as the distance between patches on either side of the road reserve would be marginally increased.

The proposal will not create a significant barrier to the movement of these species between areas of suitable habitat. The impact of 0.06 ha of potential habitat would present <1% of available habitat within locality. Higher quality habitat within the locality would still be accessible for these species. The quality and importance of habitat which may be impacted by activities is not considered to be significantly important for the long-term survival of any local population of these species.

(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),

The proposal will not impact on any declared area of outstanding biodiversity value.

(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 KTP is a process that threatens, or may have the capability to threaten, the survival or evolutionary development of species, population or ecological community. Key threatening processes are listed under the BC Act and at the present there are currently 39 listed KTPs. With respect to threatened microbats, the proposal is consistent with three KTPs being:

- clearing of native vegetation
- removal of dead wood and dead trees

The extent of native vegetation clearing, and habitat removal associated with the proposal is relatively small in terms of the available habitat for these species within the proposal locality. It is unlikely that the proposal would exacerbate the KTPs to the extent that it would be significant to any of these species.

Conclusion

Approximately 0.06 ha potential habitat in the form of PCT 567 and culverts, which may be used by these species for foraging and opportunistic roosting purposes. Habitat to be impacted occurs as vegetation along the existing highway/road reserve. The proposed action will not increase fragmentation, and given the high mobility of assessed species, the proposed action is unlikely to represent significant increases to habitat isolation and or fragmentation to these species. The habitat is not considered critical habitat to long term survival of these species within the locality. Given this, the Proposal is considered unlikely to lead to a significant impact on these species.

EPBC assessments

For threatened biodiversity listed under the EPBC Act, significance assessments have been completed in accordance with the *EPBC Act Policy Statement 1.1 Significant Impact Guidelines* (Department of Environment, 2013). These significance assessments have been prepared for the following threatened species:

Vulnerable Flora

- Bluegrass

Endangered Flora

- Small Snake Orchid
- *Prasophyllum* sp. *Wybong*

TEC

- White Box-Yellow Box-Blakely's Red Gum Grassy Woodland and Derived Native Grassland

Vulnerable Fauna

- Koala
- Corben’s Long-eared Bat

Vulnerable Flora – Bluegrass

Bluegrass is listed as Vulnerable under the EPBC Act. The following assessment has been undertaken following the Matters of National Environmental Significance, Significant Impact Guidelines 1.1. Under the Act, important populations are:

- **likely to be key source populations either for breeding or dispersal**
- **likely to be necessary for maintaining genetic diversity, and/or**

- **at or near the limit of the species range.**

Is this part of an important population?

An 'important population' is a population that is necessary for a species' long-term survival and recovery. This may include populations identified as such in recovery plans, and/or that are:

- key source populations either for breeding or dispersal
- populations that are necessary for maintaining genetic diversity, and/or
- populations that are near the limit of the species range.

No important population of Bluegrass occurs at the site. This species is cryptic and occurs in habitats such as cleared woodland, grassy roadside remnants and highly disturbed pasture.

An action is likely to have a significant impact on a vulnerable species if there is a real chance or possibility that it will result in one or more of the following:

Lead to a long-term decrease in the size of an important population of a species
Not applicable. No important population of Bluegrass occurs at the site.

Reduce the area of occupancy of an important population
Not applicable. No important population of Bluegrass occurs at the site.

Fragment an existing important population into two or more populations

Not applicable. No important population of Bluegrass occurs at the site.

Adversely affect habitat critical to the survival of a species
Bluegrass was not recorded in the site survey. The habitat affected occurs within a previously disturbed landscape. The vegetation proposed for removal consists of up to approximately 0.06 ha of vegetation ranging from low to high quality that is potential habitat for Bluegrass.

These site habitats are considered to be of relatively low importance to Bluegrass considering that equivalent or better habitat is present in the broader locality that can be utilised and that this habitat will not be affected by the proposal.

Disrupt the breeding cycle of an important population
Not applicable. No important population of Bluegrass occurs at the site.

Modify, destroy, remove or isolate or decrease the availability or quality of habitat to the extent that the species is likely to decline
The habitat affected occurs within a previously disturbed landscape. The vegetation proposed for removal consists of up to approximately 0.06 ha of vegetation that is potential habitat for Bluegrass.

These site habitats are considered to be of relatively low importance to the species considering that equivalent or better habitat is present in the broader locality that can be utilised and that this habitat will not be affected by the proposal.

Considering the above, the proposal is considered unlikely to modify, destroy, remove, isolate or decrease the availability or quality of habitat to the extent that the Bluegrass is likely to decline.

Result in invasive species that are harmful to a vulnerable species becoming established in the vulnerable species' habitat
The proposal is unlikely to assist invasive species harmful to the species to become established, particularly with the effective implementation of the recommended safeguards in relation to weed control and weed hygiene protocols.

Introduce disease that may cause the species to decline
The proposal is unlikely to introduce a disease that may cause the threatened flora to decline, particularly with the effective implementation of the recommended safeguards in relation to machinery hygiene protocols.

Interfere substantially with the recovery of the species
The proposal would not be an impediment to the overall recovery of these species, considering that the proposal is relatively minor in nature, and would involve the removal of only up to approximately 0.06 ha of low to high quality vegetation which is potential habitat, and that alternative habitat, both in the study area and broader locality, would not be substantially adversely affected by the proposal.

Endangered Flora – Small Snake Orchid, *Prasophyllum* sp. *Wybong*

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

Lead to a long-term decrease in the size of a population

Small Snake Orchid or *Prasophyllum* sp. *Wybong* were not recorded in the site survey. The potential habitat for this species to be removed at the site for the proposal consists of 0.06 ha of PCT 567 that is potential habitat for Small Snake Orchid or *Prasophyllum* sp. *Wybong*. This vegetation is in low to high condition.

The proposal is unlikely to lead to a long-term decrease in the size of o population of Small Snake Orchid or *Prasophyllum* sp. *Wybong* considering that only a relatively small area of potential habitat would be removed, and that equivalent or better habitat is present in the broader locality that can be utilised that will not be affected by the proposal.

Reduce the area of occupancy of the species

The proposal is unlikely to reduce the area of occupancy of the species considering that equivalent or better habitat is present in the broader locality that can be utilised and that this habitat will not be affected by the proposal.

Fragment an existing population into two or more populations

The proposal would result in only a minor increase in the fragmentation of the landscape. The existing landscape is substantially fragmented, consisting of a mosaic of forest remnants and cleared farmland. Post-works, the increase to vegetation fragmentation relating to the proposal would be of such a minor nature as to be negligible.

No area of habitat for the Small Snake Orchid or *Prasophyllum* sp. *Wybong* would become substantially fragmented or isolated from other nearby areas of habitat as a result of the proposal.

Considering the above, a minor increase in the width of the cleared road corridor is unlikely to result in significant fragmentation or isolation of habitat for the Small Snake Orchid or *Prasophyllum* sp. *Wybong* or result in a disruption to genetic transfer between potential occurrences.

Adversely affect habitat critical to the survival of a species

Small Snake Orchid or *Prasophyllum* sp. *Wybong* were not recorded in the site survey. The habitat affected occurs within a previously disturbed landscape. The vegetation proposed for removal consists of up to 0.06 ha of PCT 567 Broad-leaved Stringybark - Yellow Box shrub/grass open forest of the New England Tableland Bioregion that is potential habitat for Small Snake Orchid and *Prasophyllum* sp. *Wybong*. This vegetation ranges from low to high condition.

These site habitats are considered to be of relatively low importance to the Small Snake Orchid or *Prasophyllum* sp. *Wybong* considering that equivalent or better habitat is present in the broader locality that can be utilised and that this habitat will not be affected by the proposal.

Disrupt the breeding cycle of a population

The proposal is unlikely to result in significant fragmentation or isolation of habitat for the Small Snake Orchid or *Prasophyllum* sp. *Wybong* or result in a disruption to genetic transfer between potential occurrences.

Consequently, the proposal is unlikely to disrupt the breeding cycle of a population of the Small Snake Orchid or *Prasophyllum* sp. *Wybong*.

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

The habitat affected occurs within a previously disturbed landscape. The vegetation proposed for removal consists of up to 0.06 ha of PCT 567 Broad-leaved Stringybark - Yellow Box shrub/grass open forest of the New England Tableland Bioregion that is potential habitat for Small Snake Orchid and *Prasophyllum* sp. *Wybong.* This vegetation ranges from low to high condition.

These site habitats are considered to be of relatively low importance to the Small Snake Orchid or *Prasophyllum* sp. *Wybong* considering that equivalent or better habitat is present in the broader locality that can be utilised and that this habitat will not be affected by the proposal.

Considering the above, the proposal is considered unlikely to modify, destroy, remove, isolate or decrease the availability or quality of habitat to the extent that the Small Snake Orchid or *Prasophyllum* sp. *Wybong* is likely to decline.

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

The proposal is unlikely to assist invasive species harmful to the Small Snake Orchid or *Prasophyllum* sp. *Wybong* to become established, particularly with the effective implementation of the recommended safeguards in relation to weed control and weed hygiene protocols (refer to **Section 7**).

Introduce disease that may cause the species to decline, or

The proposal is unlikely to introduce a disease that may cause the Small Snake Orchid or *Prasophyllum* sp. *Wybong* to decline, particularly with the effective implementation of the recommended safeguards in relation to machinery hygiene protocols (refer to **Section 7**).

Interfere with the recovery of this species

The proposal would not be an impediment to the overall recovery of this species, considering that the proposal is relatively minor in nature, and would involve the removal of only up to 0.06 ha of potential habitat, and that alternative habitat, both in the study area and broader locality, would not be substantially adversely affected by the proposal.

White Box-Yellow Box-Blakely's Red Gum Grassy Woodland and Derived Native Grassland

An action is likely to have a significant impact on a Critically Endangered or Endangered ecological community if there is a real chance or possibility that it will:

Reduce the extent of an ecological community

Based on the estimated impact area, the proposal would result in the direct clearing of approximately 0.06 ha of White Box-Yellow Box-Blakely's Red Gum Grassy Woodland and Derived Native Grassland TEC. Impacts to this community would largely involve minor widening of the existing road corridor and trimming & removal of selected Eucalypt trees which pose a danger to road users and operation. The impact of 0.06 ha represents approximately 0.01% of the local occurrence of mapped PCT 567. The proportional impacts to the local occurrence of this TEC are likely to be low magnitude.

Fragment or increase fragmentation of an ecological community, for example by clearing vegetation for roads or transmission lines

Habitat fragmentation *per se* relates to the physical dividing up of once continuous habitats into separate smaller fragments. The proposal would not break apart continuous areas of the White Box-Yellow Box-Blakely's Red Gum Grassy Woodland and Derived Native Grassland TEC into separate smaller fragments. Habitat connectivity is expected to remain in a similar state after completion of the proposal and there is unlikely to be an alteration to existing community composition, altered species interactions, or altered ecosystem functioning in the locality due to the action. Habitat fragmentation is not considered an important impact of the action with regard to its context and intensity.

Adversely affect habitat critical to the survival of an ecological community

Existing habitat, where this community occurs, would be cleared for minor widening of the existing road corridor and trimming & removal of selected Eucalypt trees which pose a danger to road users and operation. This would result in the direct removal of about 0.06 ha of habitat. No very large patches would be impacted and only select trees would be removed so the proposal is considered unlikely to adversely affect habitat critical to the survival of the ecological community.

Modify or destroy abiotic (non-living) factors (such as water, nutrients, or soil) necessary for an ecological community's survival, including reduction of groundwater levels, or substantial alteration of surface water drainage patterns

Where the TEC would be removed by the action, all abiotic factors (i.e. water, nutrients and soil) would be permanently modified and/or destroyed through vegetation removal. Where minor works are to be undertaken (i.e. trimming of vegetation and selective remove of trees) it is unlikely that the works would significantly alter the abiotic factors necessary for the ecological community's survival.

Cause a substantial change in the species composition of an occurrence of an ecological community, including causing a decline or loss of functionally important species, for example through regular burning or flora or fauna harvesting

The composition of the TEC may be modified as a result of the action through weed invasion and removal of vegetation. The patch of the TEC to be impacted occurs on the edge of the existing road corridor which already experiences impact from weeds and therefore a reduction in ecological function. Alteration of species composition in the patch is considered unlikely to occur as it is already altered by past disturbance. The impacts are largely minor widening of the existing road corridor and trimming & removal of select Eucalypt trees, it is unlikely that these impacts would cause the substantial loss of functionally important species that the community would be placed a significant risk.

Cause a substantial reduction in the quality or integrity of an occurrence of an ecological community, including, but not limited to:

- **assisting invasive species, that are harmful to the listed ecological community, to become established**
- **causing regular mobilisation of fertilisers, herbicides or other chemicals or pollutants into the ecological community which kill or inhibit the growth of species in the ecological community**

Weed introduction and spread and the infection of native plants by *Phytophthora cinnamomi* have been identified as being spread by construction machinery. Phytophthora infects the roots of plants and has the potential to cause dieback. Machinery associated with vegetation clearance and subsequent construction for the proposal has the potential to introduce and transmit weed propagules and Phytophthora. This is a potential indirect impact through the spread and transmission of weeds and pathogens into retained habitat near the road. This can be mitigated through the development and implementation of suitable control measures for vehicle and plant hygiene but an impact, particularly from weeds, is likely. It is the intention to use current best practice hygiene and weed control protocols.

There will not be regular mobilisation of fertilisers, herbicides or other chemicals or pollutants into the TEC outside of the impact area.

Interfere with the recovery of an ecological community.

Due to the minor impacts associated with the proposal, the proposal will not significantly interfere with any of the identified recovery actions outlined in the National Recovery Plan for White Box-Yellow Box-Blakely's Red Gum Grassy Woodland and Derived Native Grassland (Department of Environment Climate Change and Water NSW, 2011).

Conclusion

After consideration of the factors above, an overall conclusion has been made that the action is unlikely to result in a significant impact to the White Box-Yellow Box-Blakely's Red Gum Grassy Woodland and Derived Native Grassland TEC. The predicted impacts to this TEC are likely to be minor and given that the community occurs along the existing road corridor it is unlikely that the proposal would cause a significant impact to the TEC as a whole.

Koala

The Koala (*Phascolarctos cinereus)* is listed as Vulnerable under the EPBC Act. The following assessment has been undertaken following the Matters of National Environmental Significance, Significant Impact Guidelines 1.1. Under the Act, important populations are:

- likely to be key source populations either for breeding or dispersal
- likely to be necessary for maintaining genetic diversity, and/or
- at or near the limit of the species range.

Is this part of an important population?

The Koala was not recorded in the study area during the field assessment informing this report, however, several records in the greater locality for this species were returned from the Atlas of NSW Wildlife database(Environment Energy and Science, 2021a). The study area does provide habitat which contain potential feed tree species, and the study area may be used on an intermittent basis during local movements, but it is not likely to represent important or critical habitat (refer to **Section 5.3.2**). Although the study area provides potential foraging habitat, similar habitat occurs more widely within the locality.

This species, if occurring within the study area, would not be at the limit of its known range; nor would the population there be likely to be a key source population or necessary for maintaining genetic diversity. Therefore, it is considered that a population of Koala, if present, is unlikely to be an ‘important population’.

An action is likely to have a significant impact on a vulnerable species if there is a real chance or possibility that it will result in one or more of the following:

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

Not applicable. Koala potentially occurring in the study area is not considered part of an important population.

Reduce the area of occupancy of an important population

Not applicable. Koala potentially occurring in the study area is not considered part of an important population.

Fragment an existing important population into two or more populations

Not applicable. Koala potentially occurring in the study area is not considered part of an important population.

Adversely affect habitat critical to the survival of a species

No critical habitat is listed for the Koala under the EPBC Act. However, the Koala Habitat Assessment Tool within the 'EPBC Act referral guidelines for the vulnerable Koala' was used to determine whether Koala habitat in the study area classifies as 'habitat critical to the survival of the Koala' (**Figure 5-2**). To be classified as habitat critical to the survival of the Koala vegetation must score 5 or above using the habitat assessment tool. A summary of the key assessment criteria and scoring for the study area against the referral guidelines is provided in **Table 5-2** and illustrated in **Figure 5-2**. Using the Koala Habitat Assessment Tool, Koala habitat in the study area scored 3 out of 10 (**Table 5-2**). Therefore, habitat in the study area is not likely to constitute habitat critical to the survival of the species. A comparison of the proposal's potential impacts was assessed against Figure 2 of the 'EPBC Act referral guidelines for the vulnerable Koala' to determine where impacts were likely to be adverse. As illustrated in **Figure 5-2**, it was concluded that the proposal is unlikely to have an adverse impact on the habitat critical for the species due to the following:

- Study area does not occur in an '*Area of Regional Koala Significance*'(Department of Environment and Energy, 2021)
- The study area is partially disturbed within the immediate road reserve and habitat is fragmented, with large expanses of habitat cleared in the proposal locality for agricultural land use, partially isolating the study area from large habitat remnants
- The proposal will not fragment or impact habitat that is important to the recovery objectives for the species within the locality.
- The proposal impacts to vegetation largely involve minor widening of the existing road corridor and trimming & removal of selected Eucalypt trees which pose a danger to road users and operation

Disrupt the breeding cycle of an important population

Not applicable. Koala potentially occurring in the study area is not considered part of an important population.

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

The proposal would impact on approximately 0.06 ha of habitat in the form of PCT 567. Any population of Koala potentially using the study area are likely to be part of a viable population extending throughout the locality and are likely to be present in other parts of the locality. The proportional impact to this potential habitat is considered small, which largely involves minor widening of the existing road corridor and trimming & removal of selected Eucalypt trees which pose a danger to road users and operation. Due to the narrow and linear impact expected within an existing road corridor, it is considered unlikely that a local population of Koala would be restricted to the study area. While a small amount potential marginal foraging habitat would be impacted, it is unlikely to be of an extent that would cause this species to decline.

Result in invasive species that are harmful to a vulnerable species becoming established in the vulnerable species' habitat

It is not likely that invasive species (such as introduced predators) that are harmful to the Koala would become further established as a result of the proposal.

Introduce disease that may cause the species to decline

It is unlikely that the proposal would significantly fragment a koala population to the point where dispersal is limited and therefore disease transmission between individuals is increased. As Chlamydia bacteria in Koalas and Koala Retrovirus is primarily transmitted between Koala individuals (DECC, 2008), it is unlikely that the proposal would introduce disease that may cause the species to decline.

Interfere substantially with the recovery of the species

A recovery plan for the Koala has not been prepared under the EPBC Act.

The proposal would not interfere with the Saving Our Species (OEH, 2017) recovery strategy or Approved Recovery Plan (DECC, 2008). The study area does not occur within any priority management or koala management areas for the species (OEH, 2017; DECC, 2008).

Conclusion

In summary, the proposal is considered unlikely to result in a significant impact to the Koala. Whilst approximately 0.06 ha of potential habitat would be affected by the proposal, the Koala was not recorded in the study area during the field surveys. Koalas potentially using the study area are likely to use habitat that extends through the locality and due to the narrow and linear impact expected within an existing disturbed road corridor, it is considered unlikely that a local population of Koala would be restricted to the study area. Therefore, the predicted impacts to the potential habitat for this species is likely to be minor given the mapped extent of similar vegetation in the locality. The impacts to this species are not considered to be important in regard to the context and intensity.

Corben's Long-eared Bat

The Corben's Long-eared Bat is listed as Vulnerable under the EPBC Act. The following assessment has been undertaken following the Matters of National Environmental Significance, Significant Impact Guidelines 1.1. Under the Act, important populations are:

- likely to be key source populations either for breeding or dispersal
- likely to be necessary for maintaining genetic diversity, and/or
- at or near the limit of the species range.

Is this part of an important population?

The Corben's Long-eared Bat was not recorded in the study area during the field assessment informing this report, however, a record in the greater locality for this species was returned from the Atlas of NSW Wildlife database(Environment Energy and Science, 2021a). The study area does provide habitat which would support microbat foraging and opportunistic roosting. The study area may be used on an intermittent basis during local movements, but it is not likely to represent important or critical habitat. Although the study area provides potential foraging and low-quality roosting habitat, similar or better-quality habitat occurs more widely within the locality.

This species, if occurring within the study area, would not be at the limit of its known range; nor would the population there be likely to be a key source population or necessary for maintaining genetic diversity. Therefore, it is considered that a population of Corben's Long-eared Bats, if present, is unlikely to be an 'important population'.

An action is likely to have a significant impact on a vulnerable species if there is a real chance or possibility that it will result in one or more of the following:

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

Not applicable. The potentially occurring Corben's Long-eared Bat in the study area is not considered part of an important population.

Reduce the area of occupancy of an important population

Not applicable. The potentially occurring Large-eared Pied Bat in the study area is not considered part of an important population.

Fragment an existing important population into two or more populations

Not applicable. The potentially occurring Corben's Long-eared Bat in the study area is not considered part of an important population.

Adversely affect habitat critical to the survival of a species

No overwintering (breeding) roost habitat would be impacted. Only a relatively small area (0.06 ha) of foraging and opportunistic roosting habitat, in the form of medium sized hollows, would be impacted by the proposal. The study area is partially disturbed within the immediate road reserve and habitat is fragmented, with large expanses of habitat cleared in the proposal locality for agricultural land use, partially isolating the study area from large habitat remnants.

The proposal will not fragment or impact habitat that is important to the recovery objectives for the species within the locality. The proposal impacts to vegetation largely involve minor widening of the existing road corridor and trimming & removal of selected Eucalypt trees which pose a danger to road users and operation.

Disrupt the breeding cycle of an important population

Not applicable. No overwintering (breeding) roost habitat will be impacted by the proposal. No important population of Corben's Long-eared Bats occurs at the site.

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

The proposal would impact on approximately 0.06 ha of foraging habitat, including medium sized hollows, in the form of PCT 567. Additionally, up to five one culvert with potential opportunistic (non-breeding) roosting habitat would be impacted. Any population of Corben's Long-eared Bat potentially using the study area are likely to be part of a viable population extending throughout the locality and are likely to be present in other parts of the locality. The proportional impact to this potential habitat is considered small, which largely involves minor widening of the existing road corridor and trimming & removal of select trees which pose a danger to road users and operation. Due to the narrow and linear impact expected within an existing road corridor, it is considered unlikely that a local population of Corben's Long-eared Bats would be restricted to the study area. While a small amount potential marginal foraging and roosting habitat would be impacted, it is unlikely to be of an extent that would cause this species to decline.

Result in invasive species that are harmful to a vulnerable species becoming established in the vulnerable species' habitat

It is not likely that invasive species (such as introduced predators) that are harmful to the Corben's Long-eared Bat would become further established as a result of the proposal.

Introduce disease that may cause the species to decline

It is unlikely that the proposal would introduce or spread a disease that may cause the species to decline.

Interfere substantially with the recovery of the species

While the proposal may impose a minor risk of negative direct or indirect impact to the subject species, the recovery of these species is unlikely to be substantially interfered with by the proposal.

Conclusion

In summary, the proposal is considered unlikely to result in a significant impact to the Corben's Long-eared Bat. Whilst approximately 0.06 ha of potential habitat would be affected by the proposal, the Corben's Long-eared Bat was not recorded in the study area during the field surveys. Corben's Long-eared Bats potentially using the study area are likely to use habitat that extends through the locality and due to the narrow and linear impact expected within an existing disturbed road corridor, it is considered unlikely that a

local population of Corben's Long-eared Bat would be restricted to the study area. Therefore, the predicted impacts to the potential habitat for this species is likely to be minor given the mapped extent of similar vegetation in the locality. The impacts to this species are not considered to be important in regard to the context and intensity.

Annexure D

Species recorded

Table D1 Recorded fauna

Taxa/Fauna group	Scientific Name	Common name	Status	
			BC Act	EPBC Act
Aves	*Corvus coronoides*	Australian Raven	-	-
Aves	*Platycercus elegans*	Crimson Rosella	-	-
Aves	*Platycercus eximius*	Eastern Rosella	-	-
Aves	*Eolophus roseicapilla*	Galah	-	-
Aves	*Cacatua galerita*	Sulphur-crested Cockatoo	-	-
Aves	*Rhipidura leucophrys*	Willie Wagtail	-	-

Annexure E

Vegetation Loss Spreadsheet

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W
1	Project	Region	LGA	client	LAT/LONG	PCT No.	EPBC status	BC status	m2 removed	No. trees not D/Z	Trees D/Z	Av. DBH	Av. Tree height	hollows	IBRA	IBRA sub region	NSW landscape	%veg cover	Landscape features/	*** tree volume loss	observer /consultant		
2	HW9 s1700 – 1720 Glenburnie	Uralla, Tamworth	Tamworth Regional	(Infrastructure Services	-30.742941, 151.400615	567	CE	CE	4	1		0.3	5	0	New Engla	Yarrowyck-Kentucky	Downs, Eastern	Nandewar		0.353429174	Theresa Choi (GeoLINK)		
3	HW9 s1700 – 1720 Glenburnie	Uralla, Tamworth	Tamworth Regional	(Infrastructure Services	-30.743252, 151.399886	567	CE	CE	2	1		0.4	3	0	New Engla	Yarrowyck-Kentucky	Downs, Eastern	Nandewar		0.376991118	Theresa Choi (GeoLINK)		
4	HW9 s1700 – 1720 Glenburnie	Uralla, Tamworth	Tamworth Regional	(Infrastructure Services	-30.745506, 151.396631	567	CE	CE	8	2		0.4	12	0	New Engla	Yarrowyck-Kentucky	Downs, Eastern	Nandewar		3.015928947	Theresa Choi (GeoLINK)		
5	HW9 s1700 – 1720 Glenburnie	Uralla, Tamworth	Tamworth Regional	(Infrastructure Services	-30.746219, 151.395428	567	CE	CE	2	1		0.3	8	0	New Engla	Yarrowyck-Kentucky	Downs, Eastern	Nandewar		0.565486678	Theresa Choi (GeoLINK)		
6	HW9 s1700 – 1720 Glenburnie	Uralla, Tamworth	Tamworth Regional	(Infrastructure Services	-30.746478, 151.395315	567	CE	CE	8	2		0.5	10	0	New Engla	Yarrowyck-Kentucky	Downs, Eastern	Nandewar		3.926990817	Theresa Choi (GeoLINK)		
7	HW9 s1700 – 1720 Glenburnie	Uralla, Tamworth	Tamworth Regional	(Infrastructure Services	-30.747068, 151.394305	567	CE	CE	2	2		0.2	5	0	New Engla	Yarrowyck-Kentucky	Downs, Eastern	Nandewar		0.314159265	Theresa Choi (GeoLINK)		
8	HW9 s1700 – 1720 Glenburnie	Uralla, Tamworth	Tamworth Regional	(Infrastructure Services	-30.747396, 151.393856	567	CE	CE	8	3		0.2	6	0	New Engla	Yarrowyck-Kentucky	Downs, Eastern	Nandewar		0.565486678	Theresa Choi (GeoLINK)		
9	HW9 s1700 – 1720 Glenburnie	Uralla, Tamworth	Tamworth Regional	(Infrastructure Services	-30.747868, 151.393120	567	CE	CE	4	2		0.2	4	0	New Engla	Yarrowyck-Kentucky	Downs, Eastern	Nandewar		0.251327412	Theresa Choi (GeoLINK)		
10	HW9 s1700 – 1720 Glenburnie	Uralla, Tamworth	Tamworth Regional	(Infrastructure Services	-30.747885, 151.393424	567	CE	CE	2	1		0.3	8	0	New Engla	Yarrowyck-Kentucky	Downs, Eastern	Nandewar		0.565486678	Theresa Choi (GeoLINK)		
11	HW9 s1700 – 1720 Glenburnie	Uralla, Tamworth	Tamworth Regional	(Infrastructure Services	-30.748444, 151.392519	567	CE	CE	2	1		0.3	10	0	New Engla	Yarrowyck-Kentucky	Downs, Eastern	Nandewar		0.706858347	Theresa Choi (GeoLINK)		
12	HW9 s1700 – 1720 Glenburnie	Uralla, Tamworth	Tamworth Regional	(Infrastructure Services	-30.749248, 151.390876	567	CE	CE	1	0	1	0.2	6	0	New Engla	Yarrowyck-Kentucky	Downs, Eastern	Nandewar		0	Theresa Choi (GeoLINK)		
13	HW9 s1700 – 1720 Glenburnie	Uralla, Tamworth	Tamworth Regional	(Infrastructure Services	-30.749661, 151.390294	567	CE	CE	4	2		0.2	8	0	New Engla	Yarrowyck-Kentucky	Downs, Eastern	Nandewar		0.502654825	Theresa Choi (GeoLINK)		
14	HW9 s1700 – 1720 Glenburnie	Uralla, Tamworth	Tamworth Regional	(Infrastructure Services	-30.749661, 151.390380	567	CE	CE	2	1		0.3	8	0	New Engla	Yarrowyck-Kentucky	Downs, Eastern	Nandewar		0.565486678	Theresa Choi (GeoLINK)		
15	HW9 s1700 – 1720 Glenburnie	Uralla, Tamworth	Tamworth Regional	(Infrastructure Services	-30.749921, 151.390090	567	CE	CE	2	1		0.3	10	0	New Engla	Yarrowyck-Kentucky	Downs, Eastern	Nandewar		0.706858347	Theresa Choi (GeoLINK)		
16	HW9 s1700 – 1720 Glenburnie	Uralla, Tamworth	Tamworth Regional	(Infrastructure Services	-30.750149, 151.389629	567	CE	CE	12	1		0.3	6	0	New Engla	Yarrowyck-Kentucky	Downs, Eastern	Nandewar		0.424115008	Theresa Choi (GeoLINK)		
17	HW9 s1700 – 1720 Glenburnie	Uralla, Tamworth	Tamworth Regional	(Infrastructure Services	-30.750160, 151.389584	567	CE	CE	10	4		0.4	12	4	New Engla	Yarrowyck-Kentucky	Downs, Eastern	Nandewar		6.031857895	Theresa Choi (GeoLINK)		
18	HW9 s1700 – 1720 Glenburnie	Uralla, Tamworth	Tamworth Regional	(Infrastructure Services	-30.750352, 151.389168	567	CE	CE	12	1		0.3	6	0	New Engla	Yarrowyck-Kentucky	Downs, Eastern	Nandewar		0.424115008	Theresa Choi (GeoLINK)		
19	HW9 s1700 – 1720 Glenburnie	Uralla, Tamworth	Tamworth Regional	(Infrastructure Services	-30.750397, 151.389079	567	CE	CE	12	2		0.3	8	0	New Engla	Yarrowyck-Kentucky	Downs, Eastern	Nandewar		1.130973355	Theresa Choi (GeoLINK)		
20	HW9 s1700 – 1720 Glenburnie	Uralla, Tamworth	Tamworth Regional	(Infrastructure Services	-30.750516, 151.389028	567	CE	CE	10	1		0.3	6	0	New Engla	Yarrowyck-Kentucky	Downs, Eastern	Nandewar		0.424115008	Theresa Choi (GeoLINK)		
21	HW9 s1700 – 1720 Glenburnie	Uralla, Tamworth	Tamworth Regional	(Infrastructure Services	-30.750548, 151.388892	567	CE	CE	4	1		0.3	8	0	New Engla	Yarrowyck-Kentucky	Downs, Eastern	Nandewar		0.565486678	Theresa Choi (GeoLINK)		
22	HW9 s1700 – 1720 Glenburnie	Uralla, Tamworth	Tamworth Regional	(Infrastructure Services	-30.750579, 151.388940	567	CE	CE	6	1		0.5	15	0	New Engla	Yarrowyck-Kentucky	Downs, Eastern	Nandewar		2.945243113	Theresa Choi (GeoLINK)		
23	HW9 s1700 – 1720 Glenburnie	Uralla, Tamworth	Tamworth Regional	(Infrastructure Services	-30.750633, 151.388639	567	CE	CE	8	1		0.4	8	0	New Engla	Yarrowyck-Kentucky	Downs, Eastern	Nandewar		1.005309649	Theresa Choi (GeoLINK)		
24	HW9 s1700 – 1720 Glenburnie	Uralla, Tamworth	Tamworth Regional	(Infrastructure Services	-30.750986, 151.388066	567	CE	CE	4	2		0.3	8	0	New Engla	Yarrowyck-Kentucky	Downs, Eastern	Nandewar		1.130973355	Theresa Choi (GeoLINK)		
25	HW9 s1700 – 1720 Glenburnie	Uralla, Tamworth	Tamworth Regional	(Infrastructure Services	-30.751657, 151.387062	567	CE	CE	6	0	2	0.2	8	0	New Engla	Yarrowyck-Kentucky	Downs, Eastern	Nandewar		0	Theresa Choi (GeoLINK)		
26	HW9 s1700 – 1720 Glenburnie	Uralla, Tamworth	Tamworth Regional	(Infrastructure Services	-30.752059, 151.386339	567	CE	CE	8	1		0.3	8	0	New Engla	Yarrowyck-Kentucky	Downs, Eastern	Nandewar		0.565486678	Theresa Choi (GeoLINK)		
27	HW9 s1700 – 1720 Glenburnie	Uralla, Tamworth	Tamworth Regional	(Infrastructure Services	-30.752321, 151.385353	567	CE	CE	6	1		0.2	5	0	New Engla	Yarrowyck-Kentucky	Downs, Eastern	Nandewar		0.157079633	Theresa Choi (GeoLINK)		
28	HW9 s1700 – 1720 Glenburnie	Uralla, Tamworth	Tamworth Regional	(Infrastructure Services	-30.752420, 151.385424	567	CE	CE	4	1		0.6	6	0	New Engla	Yarrowyck-Kentucky	Downs, Eastern	Nandewar		1.696460033	Theresa Choi (GeoLINK)		
29	HW9 s1700 – 1720 Glenburnie	Uralla, Tamworth	Tamworth Regional	(Infrastructure Services	-30.752440, 151.385264	567	CE	CE	4	1		0.4	10	0	New Engla	Yarrowyck-Kentucky	Downs, Eastern	Nandewar		1.256637061	Theresa Choi (GeoLINK)		
30	HW9 s1700 – 1720 Glenburnie	Uralla, Tamworth	Tamworth Regional	(Infrastructure Services	-30.752642, 151.384920	567	CE	CE	12	3		0.5	15	0	New Engla	Yarrowyck-Kentucky	Downs, Eastern	Nandewar		8.835729338	Theresa Choi (GeoLINK)		
31	HW9 s1700 – 1720 Glenburnie	Uralla, Tamworth	Tamworth Regional	(Infrastructure Services	-30.752665, 151.384771	567	CE	CE	1	2		0.2	4	0	New Engla	Yarrowyck-Kentucky	Downs, Eastern	Nandewar		0.251327412	Theresa Choi (GeoLINK)		
32	HW9 s1700 – 1720 Glenburnie	Uralla, Tamworth	Tamworth Regional	(Infrastructure Services	-30.752949, 151.384422	567	CE	CE	12	3		0.4	10	0	New Engla	Yarrowyck-Kentucky	Downs, Eastern	Nandewar		3.769911184	Theresa Choi (GeoLINK)		
33	HW9 s1700 – 1720 Glenburnie	Uralla, Tamworth	Tamworth Regional	(Infrastructure Services	-30.752998, 151.384205	567	CE	CE	4	3		0.4	8	0	New Engla	Yarrowyck-Kentucky	Downs, Eastern	Nandewar		3.015928947	Theresa Choi (GeoLINK)		
34	HW9 s1700 – 1720 Glenburnie	Uralla, Tamworth	Tamworth Regional	(Infrastructure Services	-30.753352, 151.383480	567	CE	CE	12	0	1	0.2	3	0	New Engla	Yarrowyck-Kentucky	Downs, Eastern	Nandewar		0	Theresa Choi (GeoLINK)		
35	HW9 s1700 – 1720 Glenburnie	Uralla, Tamworth	Tamworth Regional	(Infrastructure Services	-30.753388, 151.383269	567	CE	CE	7	3	1	0.2	6	0	New Engla	Yarrowyck-Kentucky	Downs, Eastern	Nandewar		0.565486678	Theresa Choi (GeoLINK)		
36	HW9 s1700 – 1720 Glenburnie	Uralla, Tamworth	Tamworth Regional	(Infrastructure Services	-30.753423, 151.383325	567	CE	CE	4	1	2	0.2	5	0	New Engla	Yarrowyck-Kentucky	Downs, Eastern	Nandewar		0.157079633	Theresa Choi (GeoLINK)		
37	HW9 s1700 – 1720 Glenburnie	Uralla, Tamworth	Tamworth Regional	(Infrastructure Services	-30.753443, 151.383161	567	CE	CE	5	2	1	0.3	5	0	New Engla	Yarrowyck-Kentucky	Downs, Eastern	Nandewar		0.706858347	Theresa Choi (GeoLINK)		
38	HW9 s1700 – 1720 Glenburnie	Uralla, Tamworth	Tamworth Regional	(Infrastructure Services	-30.753481, 151.383140	567	CE	CE	9	1	3	0.2	4	0	New Engla	Yarrowyck-Kentucky	Downs, Eastern	Nandewar		0.125663706	Theresa Choi (GeoLINK)		
39	HW9 s1700 – 1720 Glenburnie	Uralla, Tamworth	Tamworth Regional	(Infrastructure Services	-30.753499, 151.383103	567	CE	CE	12	0	5	0.3	6	0	New Engla	Yarrowyck-Kentucky	Downs, Eastern	Nandewar		0	Theresa Choi (GeoLINK)		
40	HW9 s1700 – 1720 Glenburnie	Uralla, Tamworth	Tamworth Regional	(Infrastructure Services	-30.753547, 151.383035	567	CE	CE	6	1	1	0.2	5	0	New Engla	Yarrowyck-Kentucky	Downs, Eastern	Nandewar		0.157079633	Theresa Choi (GeoLINK)		
41	HW9 s1700 – 1720 Glenburnie	Uralla, Tamworth	Tamworth Regional	(Infrastructure Services	-30.753590, 151.383049	567	CE	CE	9	1	2	0.2	3	0	New Engla	Yarrowyck-Kentucky	Downs, Eastern	Nandewar		0.09424778	Theresa Choi (GeoLINK)		
42	HW9 s1700 – 1720 Glenburnie	Uralla, Tamworth	Tamworth Regional	(Infrastructure Services	-30.753634, 151.382869	567	CE	CE	1	0	2	0.3	8	0	New Engla	Yarrowyck-Kentucky	Downs, Eastern	Nandewar		0	Theresa Choi (GeoLINK)		
43	HW9 s1700 – 1720 Glenburnie	Uralla, Tamworth	Tamworth Regional	(Infrastructure Services	-30.753650, 151.382863	567	CE	CE	12	0	2	0.2	6	0	New Engla	Yarrowyck-Kentucky	Downs, Eastern	Nandewar		0	Theresa Choi (GeoLINK)		
44	HW9 s1700 – 1720 Glenburnie	Uralla, Tamworth	Tamworth Regional	(Infrastructure Services	-30.753671, 151.382774	567	CE	CE	2	2	2	0.2	6	0	New Engla	Yarrowyck-Kentucky	Downs, Eastern	Nandewar		0.376991118	Theresa Choi (GeoLINK)		
45	HW9 s1700 – 1720 Glenburnie	Uralla, Tamworth	Tamworth Regional	(Infrastructure Services	-30.753710, 151.382623	567	CE	CE	10	0	4	0.2	4	0	New Engla	Yarrowyck-Kentucky	Downs, Eastern	Nandewar		0	Theresa Choi (GeoLINK)		
46	HW9 s1700 – 1720 Glenburnie	Uralla, Tamworth	Tamworth Regional	(Infrastructure Services	-30.753750, 151.382604	567	CE	CE	6	1	3	0.2	6	0	New Engla	Yarrowyck-Kentucky	Downs, Eastern	Nandewar		0.188495559	Theresa Choi (GeoLINK)		
47	HW9 s1700 – 1720 Glenburnie	Uralla, Tamworth	Tamworth Regional	(Infrastructure Services	-30.753775, 151.382529	567	CE	CE	4	2	2	0.2	4	0	New Engla	Yarrowyck-Kentucky	Downs, Eastern	Nandewar		0.251327412	Theresa Choi (GeoLINK)		
48	HW9 s1700 – 1720 Glenburnie	Uralla, Tamworth	Tamworth Regional	(Infrastructure Services	-30.753825, 151.382508	567	CE	CE	8	3	6	0.3	6	0	New Engla	Yarrowyck-Kentucky	Downs, Eastern	Nandewar		1.272345025	Theresa Choi (GeoLINK)		
49	HW9 s1700 – 1720 Glenburnie	Uralla, Tamworth	Tamworth Regional	(Infrastructure Services	-30.753871, 151.382451	567	CE	CE	1	0	3	0.2	6	0	New Engla	Yarrowyck-Kentucky	Downs, Eastern	Nandewar		0	Theresa Choi (GeoLINK)		
50	HW9 s1700 – 1720 Glenburnie	Uralla, Tamworth	Tamworth Regional	(Infrastructure Services	-30.753887, 151.382238	567	CE	CE	12	0	4	0.2	4	0	New Engla	Yarrowyck-Kentucky	Downs, Eastern	Nandewar		0	Theresa Choi (GeoLINK)		
51	HW9 s1700 – 1720 Glenburnie	Uralla, Tamworth	Tamworth Regional	(Infrastructure Services	-30.753932, 151.382188	567	CE	CE	5	4	2	0.2	6	0	New Engla	Yarrowyck-Kentucky	Downs, Eastern	Nandewar		0.753982237	Theresa Choi (GeoLINK)		
52	HW9 s1700 – 1720 Glenburnie	Uralla, Tamworth	Tamworth Regional	(Infrastructure Services	-30.753992, 151.382063	567	CE	CE	8	1	4	0.2	4	0	New Engla	Yarrowyck-Kentucky	Downs, Eastern	Nandewar		0.125663706	Theresa Choi (GeoLINK)		
53	HW9 s1700 – 1720 Glenburnie	Uralla, Tamworth	Tamworth Regional	(Infrastructure Services	-30.754014, 151.382036	567	CE	CE	8	2	2	0.3	6	0	New Engla	Yarrowyck-Kentucky	Downs, Eastern	Nandewar		0.848230016	Theresa Choi (GeoLINK)		
54	HW9 s1700 – 1720 Glenburnie	Uralla, Tamworth	Tamworth Regional	(Infrastructure Services	-30.754078, 151.381881	567	CE	CE	6	3	3	0.4	8	0	New Engla	Yarrowyck-Kentucky	Downs, Eastern	Nandewar		3.015928947	Theresa Choi (GeoLINK)		
55	HW9 s1700 – 1720 Glenburnie	Uralla, Tamworth	Tamworth Regional	(Infrastructure Services	-30.754120, 151.381852	567	CE	CE	9	3	3	0.3	8	0	New Engla	Yarrowyck-Kentucky	Downs, Eastern	Nandewar		1.696460033	Theresa Choi (GeoLINK)		
56	HW9 s1700 – 1720 Glenburnie	Uralla, Tamworth	Tamworth Regional	(Infrastructure Services	-30.754127, 151.381820	567	CE	CE	9	1	1	0.2	6	0	New Engla	Yarrowyck-Kentucky	Downs, Eastern	Nandewar		0.188495559	Theresa Choi (GeoLINK)		
57	HW9 s1700 – 1720 Glenburnie	Uralla, Tamworth	Tamworth Regional	(Infrastructure Services	-30.754143, 151.382350	567	CE	CE	8	0	1	0.2	4	0	New Engla	Yarrowyck-Kentucky	Downs, Eastern	Nandewar		0	Theresa Choi (GeoLINK)		
58	HW9 s1700 – 1720 Glenburnie	Uralla, Tamworth	Tamworth Regional	(Infrastructure Services	-30.754183, 151.381753	567	CE	CE	8	2		0.2	8	0	New Engla	Yarrowyck-Kentucky	Downs, Eastern	Nandewar		0.502654825	Theresa Choi (GeoLINK)		
59	HW9 s1700 – 1720 Glenburnie	Uralla, Tamworth	Tamworth Regional	(Infrastructure Services	-30.754207, 151.381712	567	CE	CE	9	2	3	0.3	6	0	New Engla	Yarrowyck-Kentucky	Downs, Eastern	Nandewar		0.848230016	Theresa Choi (GeoLINK)		
60	HW9 s1700 – 1720 Glenburnie	Uralla, Tamworth	Tamworth Regional	(Infrastructure Services	-30.754223, 151.381592	567	CE	CE	6	2	3	0.2	6	0	New Engla	Yarrowyck-Kentucky	Downs, Eastern	Nandewar		0.376991118	Theresa Choi (GeoLINK)		
61	HW9 s1700 – 1720 Glenburnie	Uralla, Tamworth	Tamworth Regional	(Infrastructure Services	-30.754298, 151.381486	567	CE	CE	8	3	3	0.3	8	0	New Engla	Yarrowyck-Kentucky	Downs, Eastern	Nandewar		1.696460033	Theresa Choi (GeoLINK)		
62	HW9 s1700 – 1720 Glenburnie	Uralla, Tamworth	Tamworth Regional	(Infrastructure Services	-30.754315, 151.381477	567	CE	CE	10	5		0.4	10	0	New Engla	Yarrowyck-Kentucky	Downs, Eastern	Nandewar		6.283185307	Theresa Choi (GeoLINK)		
63	HW9 s1700 – 1720 Glenburnie	Uralla, Tamworth	Tamworth Regional	(Infrastructure Services	-30.754381, 151.381315	567	CE	CE	10	1	2	0.3	6	0	New Engla	Yarrowyck-Kentucky	Downs, Eastern	Nandewar		0.424115008	Theresa Choi (GeoLINK)		
64	HW9 s1700 – 1720 Glenburnie	Uralla, Tamworth	Tamworth Regional	(Infrastructure Services	-30.754458, 151.381152	567	CE	CE	12	0	4	0.3	8	0	New Engla	Yarrowyck-Kentucky	Downs, Eastern	Nandewar		0	Theresa Choi (GeoLINK)		
65	HW9 s1700 – 1720 Glenburnie	Uralla, Tamworth	Tamworth Regional	(Infrastructure Services	-30.754469, 151.381201	567	CE	CE	4	0	2	0.4	6	0	New Engla	Yarrowyck-Kentucky	Downs, Eastern	Nandewar		0	Theresa Choi (GeoLINK)		
66	HW9 s1700 – 1720 Glenburnie	Uralla, Tamworth	Tamworth Regional	(Infrastructure Services	-30.754521, 151.381025	567	CE	CE	8	0	6	0.2	3	0	New Engla	Yarrowyck-Kentucky	Downs, Eastern	Nandewar		0	Theresa Choi (GeoLINK)		
67	HW9 s1700 – 1720 Glenburnie	Uralla, Tamworth	Tamworth Regional	(Infrastructure Services	-30.754554, 151.380979	567	CE	CE	3	0	4	0.3	5	0	New Engla	Yarrowyck-Kentucky	Downs, Eastern	Nandewar		0	Theresa Choi (GeoLINK)		
68	HW9 s1700 – 1720 Glenburnie	Uralla, Tamworth	Tamworth Regional	(Infrastructure Services	-30.754613, 151.380836	567	CE	CE	12	5	3	0.4	6	0	New Engla	Yarrowyck-Kentucky	Downs, Eastern	Nandewar		3.769911184	Theresa Choi (GeoLINK)		
69	HW9 s1700 – 1720 Glenburnie	Uralla, Tamworth	Tamworth Regional	(Infrastructure Services	-30.754652, 151.380727	567	CE	CE	1	0	2	0.1	3	0	New Engla	Yarrowyck-Kentucky	Downs, Eastern	Nandewar		0	Theresa Choi (GeoLINK)		
70	HW9 s1700 – 1720 Glenburnie	Uralla, Tamworth	Tamworth Regional	(Infrastructure Services	-30.754658, 151.380799	567	CE	CE	8	3	2	0.4	6	0	New Engla	Yarrowyck-Kentucky	Downs, Eastern	Nandewar		2.261946711	Theresa Choi (GeoLINK)		
71	HW9 s1700 – 1720 Glenburnie	Uralla, Tamworth	Tamworth Regional	(Infrastructure Services	-30.754668, 151.380663	567	CE	CE	10	3	4	0.3	5	0	New Engla	Yarrowyck-Kentucky	Downs, Eastern	Nandewar		1.060287521	Theresa Choi (GeoLINK)		
72	HW9 s1700 – 1720 Glenburnie	Uralla, Tamworth	Tamworth Regional	(Infrastructure Services	-30.754769, 151.380518	567	CE	CE	4	3		0.3	6	0	New Engla	Yarrowyck-Kentucky	Downs, Eastern	Nandewar		1.272345025	Theresa Choi (GeoLINK)		
73	HW9 s1700 – 1720 Glenburnie	Uralla, Tamworth	Tamworth Regional	(Infrastructure Services	-30.7547834, 151.3804472	567	CE	CE	10	1	4	0.2	8	0	New Engla	Yarrowyck-Kentucky	Downs, Eastern	Nandewar		0.251327412	Theresa Choi (GeoLINK)		
74	HW9 s1700 – 1720 Glenburnie	Uralla, Tamworth	Tamworth Regional	(Infrastructure Services	-30.754797, 151.380593	567	CE	CE	8	2	3	0.3	5	0	New Engla	Yarrowyck-Kentucky	Downs, Eastern	Nandewar		0.706858347	Theresa Choi (GeoLINK)		
75	HW9 s1700 – 1720 Glenburnie	Uralla, Tamworth	Tamworth Regional	(Infrastructure Services	-30.7548221, 151.3803861	567	CE	CE	10	3	2	0.4	10	0	New Engla	Yarrowyck-Kentucky	Downs, Eastern	Nandewar		3.769911184	Theresa Choi (GeoLINK)		
76	HW9 s1700 – 1720 Glenburnie	Uralla, Tamworth	Tamworth Regional	(Infrastructure Services	-30.7548529, 151.3802806	567	CE	CE	8	1	3	0.3	10	0	New Engla	Yarrowyck-Kentucky	Downs, Eastern	Nandewar		0.706858347	Theresa Choi (GeoLINK)		
77	HW9 s1700 – 1720 Glenburnie	Uralla, Tamworth	Tamworth Regional	(Infrastructure Services	-30.754890, 151.380557	567	CE	CE	2	1		0.3	8	0	New Engla	Yarrowyck-Kentucky	Downs, Eastern	Nandewar		0.565486678	Theresa Choi (GeoLINK)		
78	HW9 s1700 – 1720 Glenburnie	Uralla, Tamworth	Tamworth Regional	(Infrastructure Services	-30.7549363, 151.3802027	567	CE	CE	4	2		0.2	6	0	New Engla	Yarrowyck-Kentucky	Downs, Eastern	Nandewar		0.376991118	Theresa Choi (GeoLINK)		
79	HW9 s1700 – 1720 Glenburnie	Uralla, Tamworth	Tamworth Regional	(Infrastructure Services	-30.755043, 151.380459	567	CE	CE	6	3		0.3	6	0	New Engla	Yarrowyck-Kentucky	Downs, Eastern	Nandewar		1.272345025	Theresa Choi (GeoLINK)		
80	HW9 s1700 – 1720 Glenburnie	Uralla, Tamworth	Tamworth Regional	(Infrastructure Services	-30.75545, 151.3794107	567	CE	CE	1	1		0.2	5	0	New Engla	Yarrowyck-Kentucky	Downs, Eastern	Nandewar		0.157079633	Theresa Choi (GeoLINK)		
81	HW9 s1700 – 1720 Glenburnie	Uralla, Tamworth	Tamworth Regional	(Infrastructure Services	-30.755470, 151.379714	567	CE	CE	12	0	6	0.3	6	0	New Engla	Yarrowyck-Kentucky	Downs, Eastern	Nandewar		0	Theresa Choi (GeoLINK)		
82	HW9 s1700 – 1720 Glenburnie	Uralla, Tamworth	Tamworth Regional	(Infrastructure Services	-30.7554805, 151.3794251	567	CE	CE	1	1		0.2	6	0	New Engla	Yarrowyck-Kentucky	Downs, Eastern	Nandewar		0.188495559	Theresa Choi (GeoLINK)		
83	HW9 s1700 – 1720 Glenburnie	Uralla, Tamworth	Tamworth Regional	(Infrastructure Services	-30.755481, 151.379666	567	CE	CE	8	0	1	0.4	8	0	New Engla	Yarrowyck-Kentucky	Downs, Eastern	Nandewar		0	Theresa Choi (GeoLINK)		
84	HW9 s1700 – 1720 Glenburnie	Uralla, Tamworth	Tamworth Regional	(Infrastructure Services	-30.755514, 151.379361	567	CE	CE	8	0	4	0.3	8	0	New Engla	Yarrowyck-Kentucky	Downs, Eastern	Nandewar		0	Theresa Choi (GeoLINK)		
85	HW9 s1700 – 1720 Glenburnie	Uralla, Tamworth	Tamworth Regional	(Infrastructure Services	-30.755551, 151.379481	567	CE	CE	8	0	4	0.3	8	0	New Engla	Yarrowyck-Kentucky	Downs, Eastern	Nandewar		0	Theresa Choi (GeoLINK)		
86	HW9 s1700 – 1720 Glenburnie	Uralla, Tamworth	Tamworth Regional	(Infrastructure Services	-30.755590, 151.379434	567	CE	CE	8	0	5	0.3	8	0	New Engla	Yarrowyck-Kentucky	Downs, Eastern	Nandewar		0	Theresa Choi (GeoLINK)		
87	HW9 s1700 – 1720 Glenburnie	Uralla, Tamworth	Tamworth Regional	(Infrastructure Services	-30.755671, 151.379351	567	CE	CE	8	0	4	0.3	8	0	New Engla	Yarrowyck-Kentucky	Downs, Eastern	Nandewar		0	Theresa Choi (GeoLINK)		
88	HW9 s1700 – 1720 Glenburnie	Uralla, Tamworth	Tamworth Regional	(Infrastructure Services	-30.755853, 151.379052	567	CE	CE	4	0	1	0.4	6	0	New Engla	Yarrowyck-Kentucky	Downs, Eastern	Nandewar		0	Theresa Choi (GeoLINK)		
89	HW9 s1700 – 1720 Glenburnie	Uralla, Tamworth	Tamworth Regional	(Infrastructure Services	-30.756049, 151.378458	567	CE	CE	8	0	2	0.2	8	0	New Engla	Yarrowyck-Kentucky	Downs, Eastern	Nandewar		0	Theresa Choi (GeoLINK)		
90	HW9 s1700 – 1720 Glenburnie	Uralla, Tamworth	Tamworth Regional	(Infrastructure Services	-30.756088, 151.378368	567	CE	CE	2	1		0.2	4	0	New Engla	Yarrowyck-Kentucky	Downs, Eastern	Nandewar		0.125663706	Theresa Choi (GeoLINK)		
91	HW9 s1700 – 1720 Glenburnie	Uralla, Tamworth	Tamworth Regional	(Infrastructure Services	-30.7561331, 151.37828	567	CE	CE	2	1		0.3	8	0	New Engla	Yarrowyck-Kentucky	Downs, Eastern	Nandewar		0.565486678	Theresa Choi (GeoLINK)		

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W
1	**Project**	**Region**	**LGA**	**client**	**LAT/LONG**	**PCT No.**	**EPBC status**	**BC status**	**m2 removed**	**No. trees not D/Z**	**Trees D/Z**	**Av. DBH**	**Av. Tree height**	**hollows**	**IBRA**	**IBRA sub region**	**NSW landscape**	**%veg cover**	**Landscape features/**	***** tree volume loss**	**observer /consultant**		
92	HW9 s1700 – 1720 Glenburnie	Uralla, Tamworth	Tamworth Regional (	Infrastructure Services	-30.756250, 151.378334	567	CE	CE	10	0	2	0.2	6	0	New Engla	Yarrowyck-Kentucky Downs, Eastern	Nandewar			0	Theresa Choi (GeoLINK)		
93	HW9 s1700 – 1720 Glenburnie	Uralla, Tamworth	Tamworth Regional (	Infrastructure Services	-30.756648, 151.377812	567	CE	CE	12	3		0.3	8	0	New Engla	Yarrowyck-Kentucky Downs, Eastern	Nandewar			1.696460033	Theresa Choi (GeoLINK)		
94	HW9 s1700 – 1720 Glenburnie	Uralla, Tamworth	Tamworth Regional (	Infrastructure Services	-30.756766, 151.377629	567	CE	CE	6	0	1	0.4	12	0	New Engla	Yarrowyck-Kentucky Downs, Eastern	Nandewar			0	Theresa Choi (GeoLINK)		
95	HW9 s1700 – 1720 Glenburnie	Uralla, Tamworth	Tamworth Regional (	Infrastructure Services	-30.7567832, 151.3773194	567	CE	CE	1	1		0.2	5	0	New Engla	Yarrowyck-Kentucky Downs, Eastern	Nandewar			0.157079633	Theresa Choi (GeoLINK)		
96	NOTES							**Total**	**619**	**130**	**143**												
97	*	Rows highlighted in orange MUST be populated																					
98	*	Add additional data where possible																					
99	*	Where one large tree has been removed endevour to calculate volume V=Πr2*h																					
100	*	Where impacted area removed does not meet PCT definitions- detail closet PCT and surrounding area																					

About this release

Reference number	EIA-P05-G01-T05
Title	EIA template: Minor works review of environmental factors
Parent procedure	EIA-P05-2
Prepared by	Specialist (Planning and Assessment) Senior Specialist (Planning and Assessment)
Approved by	Director Environmental Policy, Planning and Assessment
Document location	Objective: Global Folder \ RMS Global Folder \ ENVIRONMENT \ Procedures \ Environment Planning and Assessment Procedures \ Environmental Planning and Assessment Procedures – EIA-P01 Routine and minor works
Document status	Version 4.1 April 2022

Version	Date	Revision description
1.0	05.01.09	First issue
1.1	20.08.09	Amendments to Section 1, Section 1.2 Section 2 and Section 5 – New sign-off for the environmental assessment contractor.
2.0	01/11/11	Table formatting and style amended throughout. Best practice updates. Changes based on legislation amendments.
2.1	13/07/12	Addition of Growth Centres SEPP consultation.
2.2	02/05/13	Update to Clause 228 checklist.
2.3	15/07/13	Update to Commonwealth Minister portfolio
2.4	27/07/15	Included Maritime references and updated hyperlinks
2.5	30/09/15	Update to incorporate requirements of EPBC Act strategic assessment
2.6	11/08/17	Various minor edits. Updated hyperlinks and reference to WaterNSW. Rebranded and made web accessible.
2.7	05/03/18	Update to incorporate legislative updates (EP&A Act, ISEPP, BC Act), agency name changes, RMS delegation title changes
2.8	05/06/18	Updated to incorporate legislative updates (Coastal Management SEPP), edits to Section 3.3 (Noise and vibration), Section 3.7 (Biodiversity) and Section 3.12 (Waste) and various minor edits.
2.9	03/09/18	Marco enabled checkboxes added to replace Word standard checkboxes and minor edits.
3.0	04/10/18	Updated to incorporate legislative updates (ISEPP)
4.0	23/02/22	Rebranded to meet current Transport for NSW Style Guide, updates to EP&A Regulation 2021 (including change from clause 228 to section 171) and addition of acknowledgement of Country.
4.1	4/04/2022	State Environmental Planning Policy updates (consolidated SEPPs 2021).