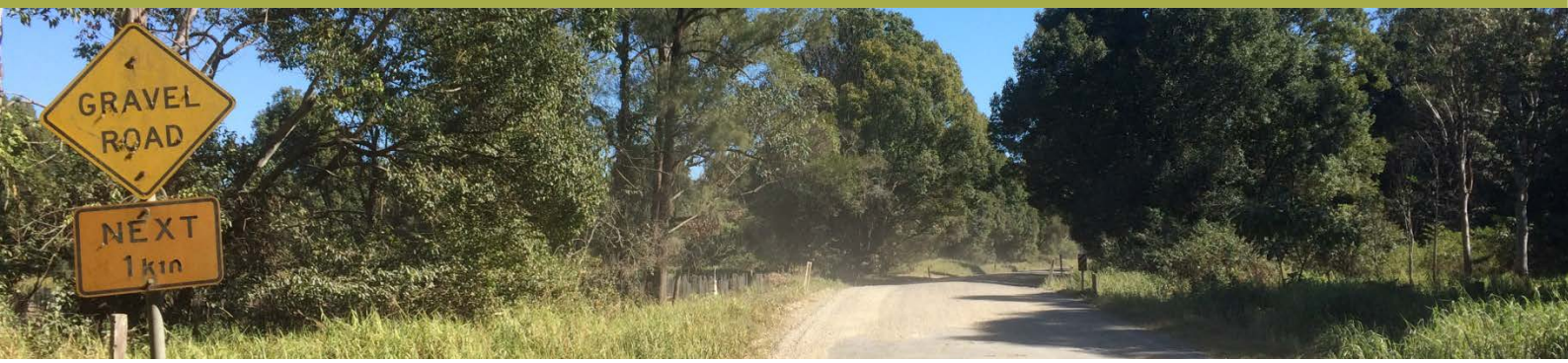
Review of Environmental Factors

Grays Lane Upgrade, Tyagarah



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The Proposal

GeoLINK has been engaged by Byron Shire Council (BSC) to prepare a Review of Environmental Factors (REF) for road improvements to Grays Lane, Tyagarah. The works include raising and sealing 830 metres of gravel road and improvements to an additional 60 metre section of sealed road.

Need for the Proposal

The Proposal is required to improve existing road conditions and provide for flood immunity. The existing gravel portion of the road is in poor condition, generates high levels of dust (impeding visibility) and has poor flood immunity.

Proposal Objectives

The primary objectives of the Proposal are:

- To provide an improved driving surface for residents;
- To reduce flood damage to the road surface; and
- To reduce number of days the road is closed due to flooding each year.

Statutory and Planning Framework

All relevant statutory planning instruments have been examined in relation to the Proposal. Development consent is not required for the subject activity by virtue of Clause 94 of State Environmental Planning Policy (Infrastructure) 2007(ISEPP). However, the Proposal becomes an 'activity' for the purposes of Part 5 of the *Environmental Planning and Assessment Act 1979* (EP&A Act) and is subject to an environmental impact assessment (such as this REF).

Community and Stakeholder Consultation

Consultation with affected land owners would be undertaken prior to undertaking the works.

Environmental Impacts

The main environmental impacts of the Proposal are associated with minor tree removal from the road verges and the potential for increased Koala mortality due to increased vehicle speeds once the road is operational. Risks associated with these issues would be suitably managed through effective implementation of the safeguards of this REF and appropriate design.

Other potential environmental impacts would be generally minor in nature. A variety of safeguards have been developed to minimise the risk and magnitude of potential impacts posed by the Proposal to the environment. The Proposal would have positive environmental impacts with regard to elimination of dust hazards.

Justification and Conclusion

The Proposal would result in a significantly improved road at Grays Lane by providing improved flood immunity and resolving dust issues. With effective implementation of the mitigation measures of this REF, the Proposal is considered unlikely to have any significant environmental impacts.

1. Introduction

1.1 Proposal Identification

Byron Shire Council (BSC) proposes to upgrade a section of Grays Lane, Tyagarah. The works include raising and sealing 830 metres of gravel road and improvements to an additional 60 metre section of sealed road. The subject section of Grays Lane is located to the east of the existing Pacific Highway in Tyagarah (refer to **Illustrations 1.1** and **1.2**). Tyagarah is located on the NSW Far North Coast, within the BSC Local Government Area (LGA). Grays Lane crosses two watercourses within the works zone, both of which are spanned by three box culverts. The eastern watercourse is Simpsons Creek, mapped as key fish habitat.

The proposed works involve:

- Establish a site compound.
- Implement environmental controls.
- Tree removal.
- Profile existing materials, mixing and reapplication of materials.
- Filling and compacting to raise road levels.
- Concrete alterations to culvert headwalls to allow road levels to be raised.
- Seal the road surface.
- Sign installation and line marking.
- Site clean-up and decommissioning of site compound.

The overall aim of the proposed works is to improve existing road conditions and provide for flood immunity.

For this assessment, the site includes:

- Footprint of the proposed Grays Lane upgrade.
- Footprint of the proposed site compound.

A summary of the site locality details is provided within **Table 1.1**.

Table 1.1 Site Locality Summary

Site Commonly Known As:	Grays Lane			
Street Address:	*No:*	-	*Street name:*	Grays Lane
	Town, village or locality:		Tyagarah	
Title Reference:	*Lot and deposited plan (or strata plan):*		Grays Lane road reserve	
Site Reference:	*Easting: (6 digits)*	553364	*Northing: (7 digits)*	6836330
	Nearest cross street or streets:		Grays Lane and Old Brunswick Road	

1.2 Background

The works are proposed for three main reasons:

- To provide an improved driving surface for residents;
- To reduce flood damage to the road surface; and
- To reduce number of days the road is closed due to flooding each year.

1.3 Purpose of Report

This Review of Environmental Factors (REF) has been prepared by GeoLINK on behalf of BSC. For the purposes of these works, BSC is the proponent and the determining authority under Part 5 of the *Environmental Planning and Assessment Act 1979* (EP&A Act).

The purpose of the REF is to describe the Proposal, to document the likely impacts of the Proposal on the environment, and to detail protective measures to be implemented.

The description of the proposed works and associated environmental impacts have been undertaken in context of clause 228 of the Environmental Planning and Assessment Regulation 2000, the *Threatened Species Conservation Act 1995* (TSC Act), the *Fisheries Management Act 1994* (FM Act), and the Australian Government's *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act). In doing so, the REF helps to fulfil the requirements of section 111 of the EP&A Act, that BSC examines 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 under Part 5.1 of the EP&A Act.
- The significance of any impact on threatened species as defined by the TSC Act and/ or FM Act, in section 5A of the EP&A Act and therefore the requirement for a Species Impact Statement
- The potential for the Proposal to significantly impact a matter of national environmental significance or Commonwealth land and the need to make a referral to the Australian Government Department of the Environment and Energy for a decision by the Commonwealth Minister whether assessment and approval is required under the EPBC Act.

Information shown is for illustrative purposes only

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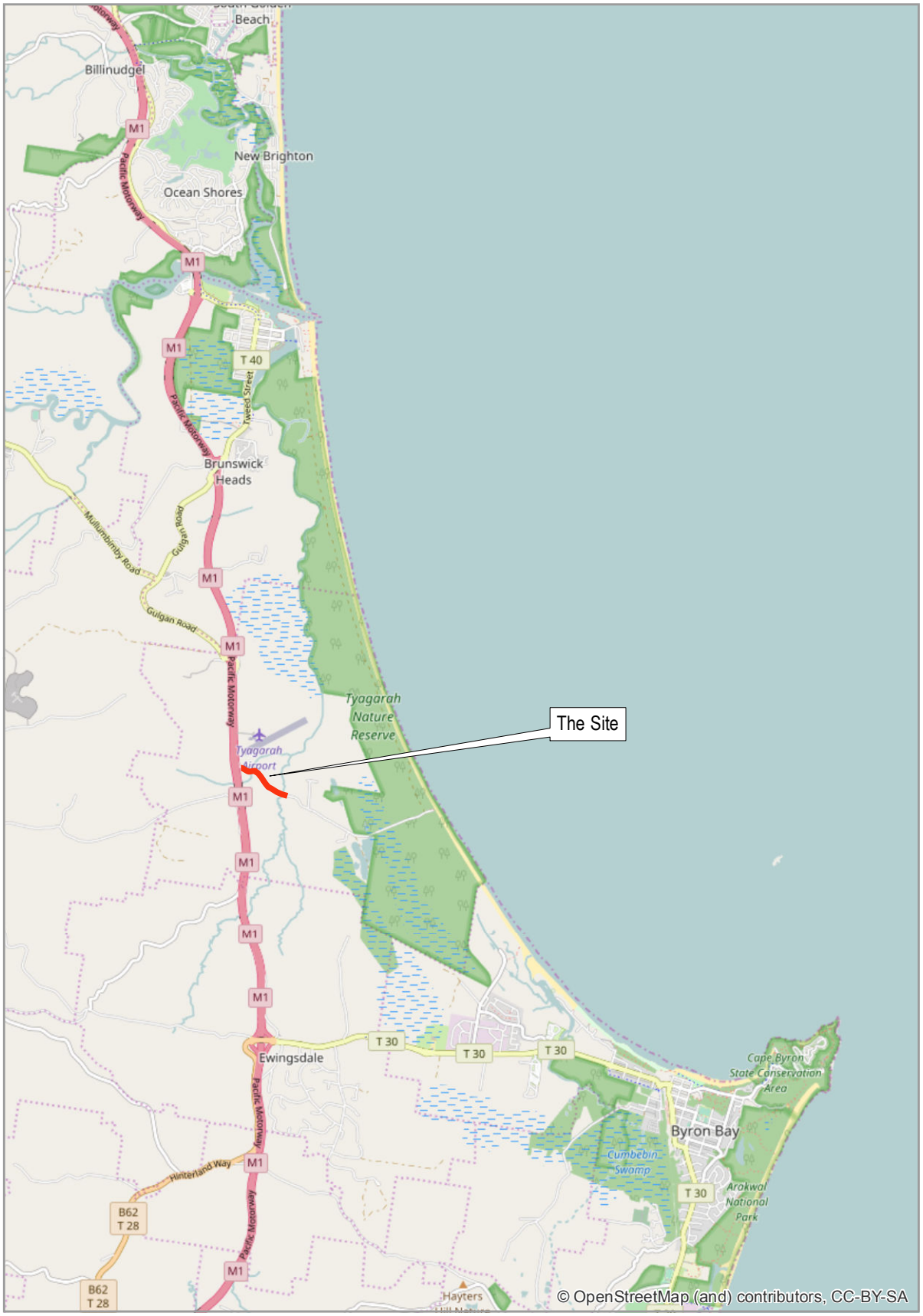
Source of base data: OpenStreetMap



0 2 Km

North

Site Locality

GeoLINK environmental management and design

Grays Lane Upgrade - Review of Environmental Factors
2919-1005

Illustration 1.1

Information shown is for illustrative purposes only

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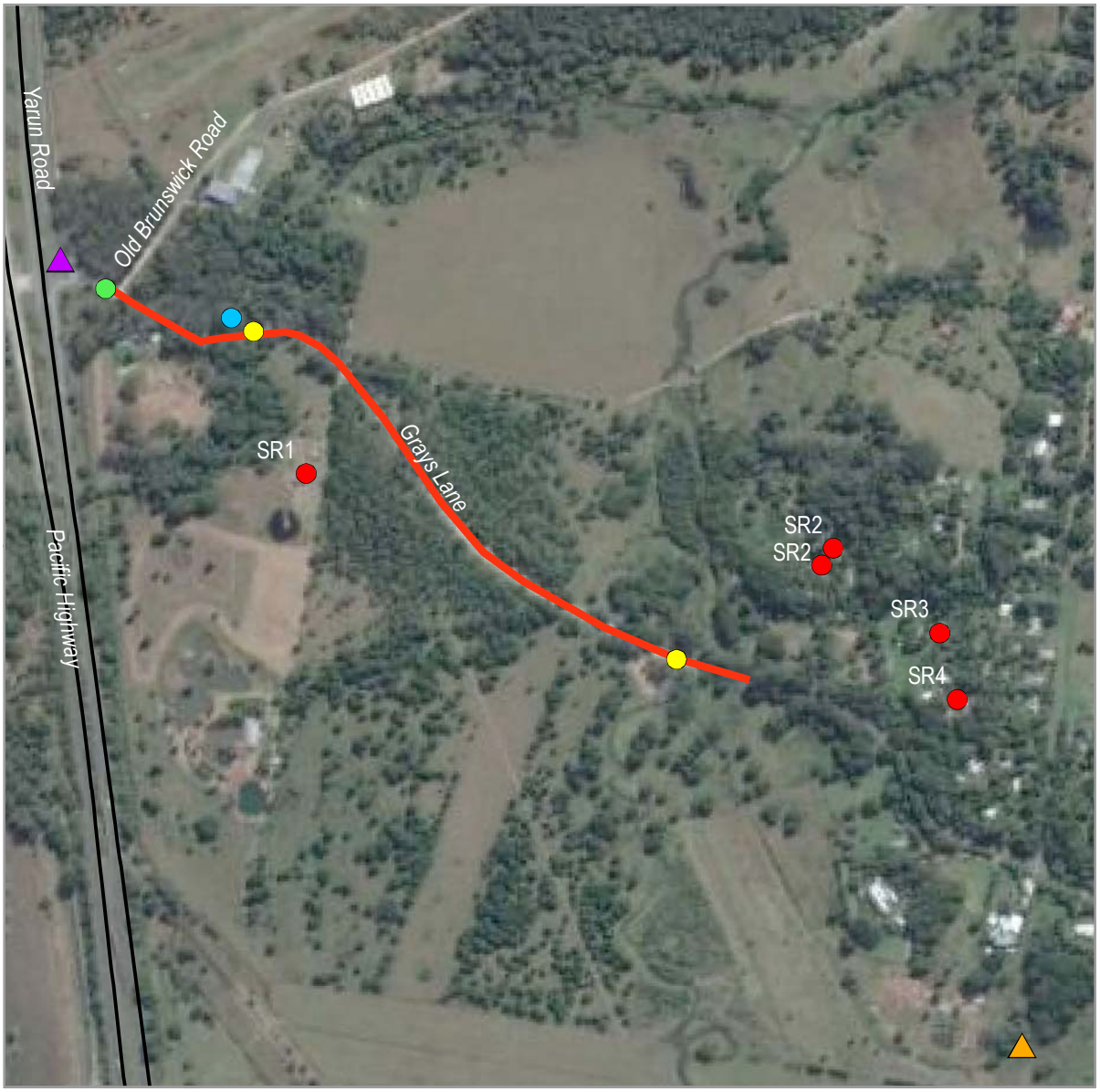
Source of base data: Google Earth



LEGEND

- The site
- Compound site
- Heaths dip site
- Sensitive receiver
- Culvert crossing
- Dead tree
- Green-leaved Rose Walnut (Endangered - TSC Act)
- Road

North

0 150

The Site

2. Description of the Proposal

2.1 The Proposal

2.1.1 Works Required

The Proposal is for upgrading approximately 890 metres of Grays Lane, Tyagarah. The works include raising and sealing 830 metres of gravel road and improvements to an additional 60 metre section of sealed road. Photographs of the site are shown at **Plates 2.1** - **2.6**.

Council has allowed for three different scenarios in the concept plans (refer to **Appendix A**):

1. Filling and sealing with minimal overlay.
2. Filling and sealing with batter extents of 2.8 metres.
3. Filling and sealing with batter extents of 3.0 metres.

Prior to completing the site assessments, a registered surveyor pegged out the batter boundaries based on an extent of 3 metres (ie. the maximum extent) to allow accurate field assessment. An assessment of the various scenarios is provided at **Section 2.5**.

The proposed work involves (refer to **Appendix A**):

- Establish a site compound.
- Implement environmental controls.
- Tree removal.
- Profile existing materials, mixing and reapplication of materials.
- Filling and compacting to raise road levels.
- Concrete alterations to culvert headwalls to allow road levels to be raised.
- Seal the road surface.
- Sign installation and line marking.
- Site clean-up and decommissioning of site compound.

2.1.2 Site Compound/ Stockpile Area

A temporary site compound/ stockpile area would be established within the cleared grassed area at the entry to Grays Lane between Yarun Road and the Pacific Highway (refer to **Plate 2.4**).

2.1.3 Environmental Controls and Permits

Erosion and sediment controls would be designed and implemented prior to undertaking the Proposal. The controls would be maintained during the construction phase of the Proposal and would not be removed until the site has been suitably stabilised.

No works are required within either of the watercourses and the works are not characteristic of activities in Part 7 of the *Fisheries Management Act 1994* (FM Act), ie:

- Activities involving dredging and reclamation work;
- Harming of marine vegetation;

- Activities with potential to block fish passage; and
- Activities using explosives or electrical devices in a waterway.

As such, there would be no disturbance to fish habitat and a permit under the FM Act is not required.

2.1.4 Tree Removal

To allow for construction of the Proposal, an estimated 22 native trees would require removal as follows:

- Blackwood (*Acacia melanoxylon*) x 2
- Broad-leaved Paperbark (*Melaleuca quinquenervia*) x 5
- Cheese Tree (*Glochidion ferdinandi*) x 2
- Creek Sandpaper Fig (*Ficus coronata*) x 1
- Forest Red Gum (*Eucalyptus tereticornis*) x 2
- Small-leaved Fig (*Ficus obliqua*) x 2
- Swamp Box (*Lophostemon suaveolens*) x 5
- Tuckeroo (*Cupaniopsis anacardioides*) x 1
- Umbrella Cheese Tree (*Glochidion sumatranum*) x 1
- Willow Bottlebrush (*Callistemon salignus*) x 1

Tree loss is based on trees > 3 metres in height. Loss has been assumed for three Swamp Box around the eastern culvert, and a leaning Blackwood at ch 220 (this tree is outside the works area, but should be removed for safety reasons). The majority of the trees to be removed are semi-mature, and no mature or old-growth trees require removal. Up to seven dead trees (mostly poisoned Camphor Laurel) would also require removal; including a large stump at the entry to Grays Lane (refer to **Plate 2.6**). None of the trees or dead trees to be removed contain significant habitat features (eg. hollows, active nests or dreys).

2.1.5 Filling and Battering

Filling and battering would be required for the Proposal, as shown at the concept plans at **Appendix A**.

2.1.6 Sealing

Sealing of the road surface would be either a two coat seal (spray followed by granule application) or hot mix bitumen seal.

2.1.7 Site Clean-up

At the completion of the works, the site compound would be decommissioned and all areas of the works stabilised to at least a pre-construction condition. This would include providing ground cover on exposed soils resulting from the Proposal and ensuring all excess material and waste has been removed from the site.

Plate 2.1 Entry to Grays Lane with survey peg indicating limit of batter

Plate 2.2 Typical view of Grays Lane

Plate 2.3 Trees on batter edge which require removal (circled), adjacent to disturbed rainforest

Plate 2.4 Proposed compound site between Yarun Road and the Pacific Highway

Plate 2.5 Culvert at Simpsons Creek

Plate 2.6 Dead tree at entry to Grays Lane which would require removal

2.2 Construction Activities

2.2.1 Construction Hours and Duration

Works would be undertaken during standard hours detailed below:

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

The work is proposed to be undertaken within the 2017-2018 financial year. Dates of commencement and duration of the works are not yet known.

2.2.2 Plant and Equipment

The main equipment and plant required would include:

- Excavator
- Grader
- Chainsaws and chipper
- Transport trucks (e.g. for equipment and materials)
- Compactor
- Bitumen truck
- Dump trucks

Key materials associated with works include fill and bitumen.

2.2.3 Source of Materials

Materials would be sourced locally from licensed quarries and operators. All materials would be certified uncontaminated and environmentally safe.

2.3 Public Utility Adjustment

The Proposal does not require any public utility adjustment.

2.4 Property Acquisition

Property acquisition would not be required as part of the Proposal.

2.5 Summary Review

Based on the site assessment, the Proposal is unlikely to result in any significant environmental impacts from the construction phase. While the minimal treatment proposed as scenario 1 would result in reduced tree loss than under scenarios 2 and 3, there is likely to be reduced flood immunity achieved from this design. As reducing flooding impacts and periods of road closure are key objectives of the project, it is considered that scenario 3 (filling and battering to 3 metres width) is the best outcome to achieve the desired objectives.

While an indirect impact of the works would be the potential for increased risks to Koalas from increased vehicle speeds; adoption of any of the scenarios would not alleviate this issue. In combination with the low number of Koala feed trees to be affected by scenario 3 (2 x Forest Red Gum); potential impacts to Koalas are likely to be low and mitigation measures have been prescribed to minimise potential impacts.

3. Statutory and Planning Framework

3.1 State Environmental Planning Policies

3.1.1 State Environmental Planning Policy (Infrastructure) 2007

State Environmental Planning Policy (Infrastructure) 2007 (ISEPP) aims to facilitate the effective delivery of infrastructure across the State.

Clause 94 of ISEPP permits development on any land for the purpose of road or road infrastructure facilities activities to be carried out by or on behalf of a public authority without consent.

The proposed works meet the definition of 'road infrastructure facilities' which means:

(a) tunnels, ventilation shafts, emergency accessways, vehicle or pedestrian bridges, causeways, road-ferries, retaining walls, toll plazas, toll booths, security systems, bus lanes, transit lanes, transitways, transitway stations, rest areas and road related areas (within the meaning of the Road Transport Act 2013),

As the Proposal is for road infrastructure facilities and is to be carried out on behalf of a public authority, it can be assessed under Part 5 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 affect land or development regulated by *State Environmental Planning Policy No. 14 - Coastal Wetlands, State Environmental Planning Policy No. 26 - Littoral Rainforests, State Environmental Planning Policy (State and Regional Development) 2011 or State Environmental Planning Policy (State Significant Precincts) 2005.*

Part 2 of the ISEPP contains provisions for public authorities to consult with local councils and other public authorities prior to the commencement of certain types of development. Consultation as required by ISEPP is discussed in **Section 4** of this REF.

3.1.2 State Environmental Planning Policy 14 – Coastal Wetlands

SEPP 14 aims to ensure that coastal wetlands are preserved and protected in the environmental and economic interests of the state. The closest SEPP 14 Coastal Wetland (ID18) is located approximately 1.7 km east of the site. It is not expected that the Proposal would impact on any areas of SEPP 14 Coastal Wetland.

3.1.3 State Environmental Planning Policy 26 – Littoral Rainforest

SEPP 26 aims to provide a mechanism for the consideration of applications for development that is likely to damage or destroy littoral rainforest areas with a view to the preservation of those areas in their natural state. The closest SEPP 26 Littoral Rainforest (ID50273) is located approximately 7.6 km north of the site. It is not expected that the Proposal would impact on any areas of SEPP 26 Littoral Rainforest.

3.1.4 State Environmental Planning Policy 44 – Koala Habitat Protection

SEPP 44 aims to encourage the conservation and management of natural vegetation areas that provide habitat for Koalas, to ensure permanent free-living populations would be maintained over their present range. Clause 6 of SEPP 44 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 Council's responsibility however, to consider environmental issues relating to their works to the fullest extent possible, including impacts on Koalas.

The most westerly portion of the site is adjacent to an area of forest dominated by the schedule 2 feed tree species, Forest Red Gum (*Eucalyptus tereticornis*), and therefore comprises potential Koala habitat. Koalas are well known from the locality and the *Byron Coast Koala Habitat Study* (Biolink 2012) classifies the Myocum – Tyagarah population as one of two major Koala population centres in the coastal portion of the shire, with the subject vegetation mapped as Primary habitat. The extent of this habitat within the road reserve is very small and hence the Proposal would not comprise core Koala habitat as defined in the Policy.

The Proposal requires the removal of two Koala feed trees (Forest Red Gum); which would have negligible impacts on Koala habitat in the locality. However, once operational, improved road conditions at Grays Lane is likely to result in increased vehicle speeds (despite the road being an 80 km/ hr limited road), which may result in increased potential for Koala roadkill or injury. This ongoing operational aspect of the Proposal has been considered in this REF and mitigation measures developed to specifically address this issue (refer to **Section 5.1**).

3.2 Local Environmental Plans

The Proposal is located within BSC LGA. The Proposal is located on land that is affected by the Byron Local Environmental Plan (LEP) 2014 and is zoned *RU2 Rural Landscape* under the Byron LEP 2014. A small portion of the western part of the road reserve is zoned as DM (Deferred Matter).

The Proposal would not impact on the objectives of the *RU2 Rural Landscape* zone and is precluded from requiring development consent under Clause 94 of the ISEPP. The proposed works are not in proximity to a heritage item or heritage conservation area under the Byron LEP 2014.

No development control plans apply to the Proposal.

3.3 NSW Legislation

Table 3.1 lists other NSW legislation relevant to the assessment of the Proposal and comments on their implications for the Proposal.

Table 3.1 NSW Legislation

Legislation	*Section(s)*	*Comment*
Environmental Planning and Assessment Act 1979	5A	Seven-part tests of significance must be taken into account in deciding whether there is likely to be a significant effect on threatened species, populations or ecological communities, or their habitats. A Koala population occurs in the Tyagarah locality; hence a seven-part test has been prepared. The assessment determined that the Proposal is unlikely to have a significant impact on the local Koala population.
	Sections 111-112	The determining authority, in its consideration of an activity shall examine and take into account to the fullest extent possible all matters affecting or likely to affect the environment by reason of that activity. This assessment provides BSC with the information required in regards to the environment to assess the Proposal.
Environmental Planning and Assessment Regulation 2000	Clause 228	Clause 228 factors have been considered to assess the likely impacts of the Proposal on the natural and built environment (refer to **Appendix B**). It is not expected that the Proposal would result in a significant impact on any matters.
Fisheries Management Act 1994	Section 200	A permit is required when carrying out dredging and reclamation work on land that is periodically inundated by water. No such works would be required.
	Sections 219-220	A permit is required when barriers to the movement of fish including water course crossings are to be constructed or modified. No barriers to fish movement would occur as part of the proposal.
	Sections 204-205	A permit is required to harm marine vegetation. The Proposal does not involve harming marine vegetation.
	Schedules 4, 4A, 5 and 6	While Simpsons Creek is mapped as potential habitat for the Purple Spotted Gudgeon, the works would have no impact on this habitat, and would actually improve habitat values by reducing dust and therefore improving water quality. The Proposal is considered unlikely to have a significant impact on any threatened aquatic species or communities listed under Schedules 4, 4A, 5 and 6 of the FM Act.
Heritage Act 1977		Searches of the State Heritage Register and State Heritage Inventory were undertaken in July 2017. No registered heritage items are located within or adjoining the site.
National Parks and Wildlife Act 1974	Sections 118D(2)(b)(ii)	It is an offence to cause damage to habitat of threatened species, endangered populations or endangered ecological communities unless it was essential for the carrying out of an activity in accordance with an approval of a determining authority within the meaning of Part 5 of that Act if the determining authority has complied with that Part. This REF forms the Part 5 assessment however every measure would be implemented to minimise impacts to habitat of threatened species, endangered populations or endangered ecological communities.
	Sections 87(1), 90	The provisions of the Act are unlikely to be triggered by the Proposal. Works would cease if an artefact or place of significance is disturbed or encountered during the Proposal. Jali Local Aboriginal Land Council (LALC), the Arakwal Corporation and

Legislation	Section(s)	Comment
		OEH Cultural Heritage Division would be notified immediately.
Biosecurity Act 2015		In NSW, the administration of weed control is the responsibility of the Minister for Primary Industries under the *Biosecurity Act 1993*. The Act is implemented and enforced by the Local Control Authority for the area, usually local government or NSW Agencies. Rous County Council is the Local Control Authority which includes BSC. One biosecurity risk weed species occurs at the site (Lantana) at low frequencies.
Protection of the Environment Operations Act 1997		There are no Protection of the Environment Policies (PEPs) that are relevant to the Proposal. No licenses would be required pursuant to the *Protection of the Environment Operations Act 1997*. BSC and/ or contractors working on behalf of Council are required to notify OEH when a 'pollution incident' occurs that is likely to impact upon the environment.
	Section 115	It is an offence to negligently dispose of waste in a manner that harms the environment. Waste would be managed in accordance with the *Waste Avoidance and Resource Recovery Act 2001*. The Proposal would aim to reduce the environmental impact of dumping waste and include mechanisms to recover resources and reduce the production of waste where possible.
	Section 120	It is an offence to pollute any waters of the State. The REF includes safeguard and mitigations measures to ensure that the Proposal does not result in pollution of waters.
	Section 143	Any stockpiling of material within private property requires a section 143 notice under the POEO Act.
Threatened Species Conservation Act 1995	Schedules 1, 1A, 2 and 3	Schedules of threatened species, populations and ecological communities were checked and are unlikely to be significantly impacted upon by the Proposal (refer to **Section 5.1**). While Grays Lane is known habitat for Koalas, only two Koala feed trees would be impacted by the works. A Green-leaved Rose Walnut (Endangered – TSC Act) occurs within 8 metres of the works footprint on private property (Lot 193 DP755692), and would not be affected by the Proposal. Adjacent lowland rainforest on Lot 193 would similarly not be affected by the Proposal.
Water Management Act 2000	Section 91 (2)	Works within water lands or those comprising of extraction or management of water may be subject to approval if they constitute a 'controlled activity'. BSC is, however, exempt from the need to obtain a Controlled Activity Approval.

3.4 Commonwealth Legislation

Under the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) a referral is required to the Australian Government for proposed 'actions that have the potential to significantly impact on matters of national environmental significance or the environment of Commonwealth land. These are considered in **Appendix C** and **Section 5.1** of the REF.

The assessment of the Proposal's impact on matters of national environmental significance and the environment of Commonwealth land found that there is unlikely to be a significant impact on relevant matters of national environmental significance. Accordingly, the Proposal has not been referred to the Commonwealth Government Department of the Environment and Energy.

3.5 Confirmation of Statutory Position

All relevant statutory planning instruments have been examined in relation to the Proposal. As indicated above, development consent is not required for the subject activity by virtue of Clause 94 of ISEPP. However, the Proposal becomes an 'activity' for the purposes of Part 5 of the EP&A Act and is subject to an environmental assessment.

4. Consultation

4.1 Community Involvement

Four residences are located within 200 metres of the site (refer to **Illustration 1.2**); residents at these locations would be notified of the Proposal at least two weeks prior to undertaking the works.

4.2 ISEPP Consultation

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

Consultation with Council is required in accordance with Clause 14 and 15 of ISEPP. As Council is the proponent and extensive consultation has been undertaken throughout the process to determine the proposed methodology, ISEPP consultation requirements have been satisfied.

The Proposal does not trigger any additional public authority consultation requirements pursuant to Clause 16 of ISEPP.

4.3 Government Agency and Stakeholder Involvement

No consultation with any government agencies has been completed for the Proposal.

4.4 Ongoing or Future Consultation

No further ongoing or future consultation is required.

5. Environmental Assessment

5.1 Biodiversity

5.1.1 Existing Environment

5.1.1.1 Desktop Review

OEH BioNet search

Searches were undertaken of the OEH Bionet Atlas of NSW Wildlife database on 26/07/2017 to identify threatened species recorded within a 10 km x 10 km search area of the site (refer to **Appendix D**). Nineteen threatened flora species, 51 threatened fauna species and 11 endangered ecological communities (EECs) have been recorded within the search area.

EPBC Protected Matters Report

The Protected Matters Search Tool (PMST) identified 84 threatened species (28 flora and 56 fauna species) listed under the EPBC Act as species that are likely to occur or may occur within 5 km of the site, or have habitat that is likely to or may occur within the search area (refer to **Appendix E**). Relevant species are included in the potential occurrence assessments in **Appendix F**.

A total of 52 migratory species listed under the EPBC Act were identified within the search area by the PMST. The site does not comprise Australian Government Department of Environment and Energy (DoEE) defined important habitat for any of these species and therefore EPBC Act listed migratory species are not considered a constraint for the Proposal.

One threatened ecological community listed under the EPBC Act was identified within the search area by the PMST: Lowland Rainforest of Subtropical Australia.

Critical Habitat

A search of the Register of Critical Habitat indicates that the site does not contain or adjoin any areas of listed critical habitat.

Wildlife Corridors

The subject section of Grays Lane does not form part of any OEH mapped regional wildlife corridors.

High Conservation Value Vegetation

The western part of the site is mapped as High Conservation Value vegetation in the Byron LEP on the basis of primary Koala habitat and adjacent rainforest.

Key and Threatened Fish Habitat

Simpsons Creek, which passes under the culvert near the eastern extent of works (where the unsealed section meets the bitumen) is mapped by DPI as Key Fish Habitat and is also mapped as habitat for the Purple Spotted Gudgeon (*Mogurnda adspera*).

5.1.1.2 Flora

The Proposal occurs within and adjacent to three broad vegetation communities (refer to **Table 5.1**). A large area of planted Flooded Gum (*Eucalyptus grandis*) also occurs at Lot 1 DP286372. Native vegetation communities are assigned an equivalent Plant Community Type (PCT) based on the VIS classification.

Table 5.1 Vegetation communities

	Description	***PCT***
1	**Open forest (Forest Red Gum)** Forest Red Gum community with sparse midstorey and disturbed ground layer.	*PCT841 Forest Red Gum grassy open forest of the coastal ranges of the NSW North Coast Bioregion*
2	**Disturbed rainforest** Rainforest with emergent Flooded Gum. Gaps in the canopy occur from poisoning of mature Camphor Laurel.	*PCT1569 Flooded Gum - Brush Box - Tallowwood mesic tall open forest on ranges of the lower North Coast* [in part]
3	**Grassland** Grasses (Broad-leaved Paspalum, Setaria, Para Grass) and weeds (Camphor Laurel and Small-leaved Privet, Lantana) along road verges.	No equivalent

5.1.1.3 Biosecurity Risk Weeds

One biosecurity risk weed species for the BSC LGA occurs infrequently at the site (Lantana).

5.1.1.4 Threatened Flora

One threatened flora species was recorded during the site inspection – a single immature Green-leaved Rose Walnut (*Endiandra muelleri* subsp. *bracteata*) occurs in the western portion of the site within the disturbed rainforest on Lot 193. This tree occurs >8 metres from the edge of the works and would not be affected. The tree is marked with pink flagging tape.

5.1.1.5 Endangered Ecological Communities

Vegetation at/ adjacent to the site is characteristic of two EECs:

- *Subtropical Coastal Floodplain Forest of the New South Wales North Coast Bioregion* (Community 1 – open forest dominated by Forest Red Gum on Lot 391 DP724670 and Lot 193).
- *Lowland Rainforest in the NSW North Coast and Sydney Basin Bioregions* (Community 2 - L Disturbed rainforest on Lot 193). Subtropical rainforest is also listed under the EPBC Act as the critically endangered community *Lowland Rainforest of Subtropical Australia* (LRSA). While detailed survey of this rainforest patch was not completed, it is likely to meet condition thresholds for LRSA (Patch type B), as it is greater than one hectare in area, contains residual trees (and shows signs of regeneration), has a canopy of >70%, is floristically diverse and native vegetation comprises >50% (refer to Threatened Species Scientific Committee 2011).

5.1.1.6 Fauna

A range of common bird species were observed (Figbird, Lewin's Honeyeater, Olive-backed Oriole, Pied Butcherbird, Golden Whistler, Eastern Yellow Robin, Torresian Crow, Eastern Whipbird).

5.1.1.7 Threatened Fauna

No threatened fauna were observed at the site during the inspection, however Koalas are known from the locality and are likely to utilise Red Gum forest at the eastern end of the site. As such, a seven-part test of significance has been prepared in accordance with Section 5A of the EP&A Act (refer to **Appendix G**). The assessment determined that the Proposal is not expected to result in a significant impact to the local Koala population.

5.1.1.8 Fisheries

The Proposal poses minor risks to aquatic species/ habitat (eg. through degraded water quality, sedimentation and erosion). Mitigation measures detailed in this REF would reduce potential negative impacts as a result of the Proposal, including habitat within Simpsons Creek for the Purple Spotted Gudgeon.

5.1.1.9 Conclusion

The Proposal is considered unlikely to have a significant impact on any threatened species, endangered populations or ecological communities under the TSC Act, EPBC Act or FM Act.

5.1.2 Potential Impacts

The main potential impacts of the Proposal include:

- Removal of up to 22 native trees, seven dead trees, including works on the margins of two EECs which support threatened flora and fauna. However as all adjacent areas of vegetation would remain unaffected it is unlikely that this minor vegetation loss would significantly affect local biodiversity or any threatened species or communities.
- General human disturbance from construction noise and human presence for fauna in the road reserve and adjacent habitat areas. However this is not anticipated to be a significant impact given the nature and duration of the works and modified nature of the site.
- Potential degradation of the water quality and aquatic habitat within Simpsons Creek and the western watercourse.
- Increased potential for injury to or mortality of native fauna (particularly Koalas) from vehicle collision. As previously stated, once sealed and operational, vehicle speeds are likely to increase along Grays Lane, hence posing increased risk of injury or mortality to native fauna (particularly Koalas). While Grays Lane has a posted speed limit of 80 km/ hr, it is highly that vehicles would exceed this speed regularly, particularly considering the long straights in the road. However, the majority of vehicle movements along Grays Lane are likely to occur during daytime hours (for beach access) when Koalas are typically inactive, with evening and daytime traffic likely to be significantly lower (ie. residents only). On this basis, risks to Koalas can be managed by targeted signage based on adoption of Koala mitigation strategies used in Tweed Shire (refer to **Appendix H**).
- Potential to introduce weed propagules to the site.

5.1.3 Safeguards

The following safeguards would be implemented in order to prevent adverse impacts relating to biodiversity:

1. Install and maintain appropriate sediment control measures.
2. Prior to commencing tree removal, visually check affected trees for the presence of Koalas. If a Koala is present in any tree to be removed (or is within 20 metres of any tree to be removed), works would cease in this area, and 24 hours would be provided for the animal to move of its own volition.
3. The large stump at the entry to Grays Lane would be inspected for any resident fauna (eg. Carpet Pythons) prior to removal. If fauna are present they would be removed by an ecologist or wildlife carer.
4. The extent of clearing would be clearly defined by temporary fencing or barrier mesh.
5. All vegetation removed would be chipped on site and used in erosion control or batter stabilisation.
6. Biosecurity risk weeds would be managed according to requirements under the *Biosecurity Act 2015.*
7. All plant, equipment and personnel would be free of soil and potential weed propagules prior to being brought to the site.
8. Wash down and disinfect vehicles used off-road, or plant, equipment (including hand tools) and boots that have the potential to transport weeds and pathogens before being used on other sites.
9. Should injured fauna be found on the site, local wildlife care groups and/ or local veterinarians would be contacted immediately and arrangements made for the immediate welfare of the animal. The phone number of the local WIRES group (ph: 1800 094 737) or Northern Rivers Wildlife Carers (ph: 6628 1866) would be known to the project foremen.
10. Environmental safeguards would be communicated to all construction personnel as part of an Environmental Site Induction, and repeated where appropriate at Toolbox Sessions prior to commencement of relevant work components.
11. At conclusion of the works, Koala safety signage and pavement treatments would be installed as per **Appendix H**.

5.2 Heritage

5.2.1 Existing Environment

The site is located within Arakwal country and Bundjalung of Byron Bay Aboriginal Corporation (Arakwal) are the traditional custodians of the land. The site is also located within land of Jali Local Aboriginal Land Council. An Aboriginal Heritage Information Management System (AHIMS) search was undertaken for the site and adjoining land. Search results indicate that there are no registered sites within and adjoining the works area (refer to **Appendix I**).

Searches of the DoEE Australian Heritage database, OEH State Heritage Branch database and Schedule 5 of Byron LEP 2014 were undertaken in relation to the Proposal (refer to **Appendix J**). The searches identified one heritage item in proximity to the works area – Cornwell House (17 Foxs Lane). The works would have no potential for impacts to Cornwell House.

5.2.2 Potential Impacts

Damage to heritage items could result from the Proposal if such items occur undiscovered at the site; however this is a very low risk. The footprint of the proposed works area is located within the highly disturbed road and verges; which have been subject to extensive ground disturbance and excavation associated with previous maintenance. Safeguards are provided to ensure any heritage items uncovered during the Proposal are not significantly affected.

5.2.3 Safeguards

The following safeguards and management measures would be implemented in order to prevent adverse impacts to any items of Indigenous or European heritage:

12. All personnel working on site would receive training in their responsibilities under the NPW Act.
13. If Aboriginal heritage objects are uncovered during the works, all works in the vicinity of the find would cease. Council's Project Manager, Jali LALC, Arakwal Corporation and OEH would be contacted immediately. Works in the vicinity of the find would not re-commence until clearance has been received from Council's Project Manager and OEH.
14. Should non-Indigenous heritage items be uncovered during works, all works in the vicinity of the find would cease and Council's Heritage Officer and the State Heritage Office would be contacted. Works would not re-commence until appropriate clearance has been received.
15. If any items defined as relics under the NSW *Heritage Act 1977* are uncovered during the works, all works would cease in the vicinity of the find and Council's Heritage Officer and the Project Manager would be contacted immediately.

5.3 Visual

5.3.1 Existing Environment

The existing environment within the vicinity of the site includes surrounding agricultural land which comprises paddocks, scattered trees and a small woodlot. The small area of forested vegetation at the western end of Grays Lane is the only substantial area of native vegetation.

5.3.2 Potential Impacts

The Proposal would involve construction of a new permanent road surface within the same alignment as the current road. The impact of the Proposal is therefore considered broadly consistent with conditions which currently occur. Removal of up to 22 native trees and seven dead trees is required. This represents a minor permanent variation from the current visual environment at the site given the abundance of roadside vegetation in the locality.

Construction phase of the Proposal would require establishment of a site compound including the presence of works crew, plant and equipment; representing a short term variation in the visual environment at the entry to Grays Lane.

5.3.3 Safeguards

The following safeguards and management measures would be implemented to ameliorate the potential impacts relating to visual amenity:

16. All working areas would be maintained, kept free of rubbish and cleaned up at the end of each working day.
17. Soil disturbance would be minimised where possible.

5.4 Water Quality and Soils

5.4.1 Existing Environment

The site comprises flat land of low relief on the Tyagarah floodplain. According to Morand (1994), the soil type associated with the site is Tyagarah (ty); consisting of deep (>150 cm) well drained Podzols and acid peats near barrier systems. This soil type is very strongly acid and has low water holding capacity with a permanently high water table.

Online contamination searches were undertaken for the site on 25 August 2017 including the EPA Contaminated Land and DPI Dip Site registers (refer to **Appendix K**). The searches did not identify any registered contamination items within the works area, however 'Heaths' dip site is located approximately 500 metres south-east of the site within Lot 1 DP1034025 (refer to **Illustration 1.2** and **Appendix K**).

OEH acid sulphate soil (ASS) risk maps record the site as having a low probability of ASS occurrence. ASS mapping in the Byron LEP indicates the eastern portion of the site occurs within an area of class 3 ASS (ie. which may be encountered if works occur more than 1 metre below the natural ground surface or if the watertable is likely to be lowered more than 1 metre below the natural ground surface). Given the road has already been disturbed and filled with road base it is unlikely that ASS would occur. The works would not require any excavation such that ASS may be encountered.

5.4.2 Potential Impacts

Potential impacts to water quality and soils that could arise from the Proposal include:

- Dust and sediment disturbance that may impact Simpsons Creek and the western watercourse.
- Importation of contaminated or dispersive material to the site.
- Pollution of local water quality (both ground and surface water) from pollutants from machinery and construction materials and spills.
- A variety of dispersible liquid materials would be used which pose a potential pollutant threat to local water quality. These liquids include but are not limited to diesel, unleaded petrol, machinery oils and lubricants. The nature of these liquids and their ability to disperse away from the work site means that they could have a negative impact on ground or surface water on or adjacent to the site, especially during rain.

5.4.3 Safeguards

The following safeguards and management measures would be implemented in order to prevent adverse impacts to water quality and soils:

18. A Construction Environmental Management Plan (CEMP) would be prepared to guide the implementation of environmental impact mitigation measures, identify key roles and responsibilities for environmental monitoring and methods of reporting incidents.
19. Erosion and sediment controls would be implemented in accordance with the Landcom/ Department of Housing Managing Urban Stormwater, Soils and Construction Guidelines (the Blue Book) and ensure any water diversion or control outlets associated with the site compound/ stockpile do not result in scouring.
20. Works would only commence once all erosion and sediment controls have been established. The controls would be maintained in place until the works are complete and all exposed erodible materials are stable.
21. Erosion and sedimentation controls would be checked and maintained (including clearing of sediment from behind barriers) on a regular basis (including after any precipitation events) and records kept and provided on request.
22. All sediment control measures would be checked and repaired or re-installed (if required) if heavy rainfall was forecast.
23. Imported materials would be sourced as clean-fill from an approved site.
24. Disturbance of natural sediments and vegetation would be minimised.
25. A spill containment kit would be available at all times. All personnel would be made aware of the location of the kit and trained in its effective deployment.
26. Water utilised for cleaning of tools would be minimised and obtained from a licensed location or town water supply.
27. Only clean equipment and vehicles would be used, with equipment being cleaned down before being brought to the site.
28. All equipment would be maintained in good working order and operated according to manufacturer's specifications.
29. Upon completion of the works and usage of the site compound/ stockpile area, this area would be re-established to similar existing conditions.

5.5 Noise and Vibration

5.5.1 Existing Environment

The site is located within the rural locality of Tyagarah. This area is subject to noise emission associated with agricultural activities including cattle grazing and machinery associated with agricultural activities in addition to noise from Tyagarah Airfield. Traffic noise emission is also generated from Grays Lane and the Pacific Motorway. As summarised in **Table 5.1**, four sensitive receivers are located within 200 metres of the site including rural residences and horticultural establishments (refer to **Illustration 1.2**).

Table 5.1 Sensitive receivers within 200 m of the site

Sensitive Receiver	*ID*	*Distance from Site (metres)*
Rural residence Lot 2 DP1229068	SR1	90
Rural residence (x2) Lot 11 DP286372	SR2	125
Rural residence Lot 6 DP286372	SR3	180
Rural residence Lot 5 DP286372	SR4	180

5.5.2 Potential Impacts

Noise and vibration is expected from the use of a variety of construction vehicles and machinery as part of the Proposal. The noisiest activities are regarded to be operation of the grader and roller when preparing the road surface.

Noise mitigation is typically required to alleviate any potential impacts and ensure the proposed works are consistent with the EPA's Interim Construction Noise Guidelines.

Under the EPA's Interim Construction Noise Guidelines:

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

Information within the NSW EPA website suggests that review of predicted noise levels for some recent major construction projects indicated that a level of 75 dB(A) would not likely be triggered on many projects.

Given the scale and methodology of the proposed works it is highly unlikely that the Proposal would result in a highly noise-affected level of LAeq 75 dB(A) at any sensitive receiver. It is considered unlikely that local residents would be substantially affected by the noise and vibration generated by the Proposal, which would predominantly be undertaken during standard construction work hours. Noise generated by the works would not significantly impact on the surrounding habitat. No long term adverse noise impacts are expected to result from the Proposal.

5.5.3 Safeguards

The following mitigation measures would be implemented in order to prevent adverse noise and vibration impacts:

30. All equipment would be well maintained in accordance with the manufacturer's specifications.
31. The most appropriately sized tool for the respective job would be used; keeping in mind that the smaller the tool, the less noise is generated.
32. All plant would be fitted with appropriate exhaust systems to ensure compliance with pollution and noise emission standards.
33. All vehicles and equipment would be turned off and not left idling when not required for work uses.
34. Construction activities would be restricted to the following times where possible:
    - Monday to Friday 7:00 am to 6:00 pm.
    - Saturday 8:00 am to 1:00 pm.
    - No work would take place on Sundays or Public Holidays.
35. Best practice mitigation and management measures would be used to minimise construction noise impacts at sensitive residential receivers; guided by the EPA's Interim Construction Noise Guidelines.
36. Sensitive receivers within 200 metres of the Proposal would be notified of the proposed works and the duration of such works at least two weeks prior to commencement. All notified receivers would be provided with a contact telephone number for any complaints/ updates associated with the proposed works.
37. Noise complaints would be recorded, including suitable identification/ description of the noise source (eg. continual/ impulsive) and general location of the complaint. Any noise complaints would be investigated and actioned as required.

5.6 Traffic and Access

5.6.1 Existing Environment

Machinery and personnel would access the site via Grays Lane. No alternative access locations occur.

5.6.2 Potential Impacts

Traffic access along Grays Lane would be maintained during construction, by lane closure and traffic controls. Some minor delays to residents, beach users and tourists would occur during the construction period. No extended periods of delay are expected.

5.6.3 Safeguards

The following safeguards and management measures would be implemented in order to prevent adverse impacts relating to traffic and access:

38. Where possible, current traffic movements would be maintained during the works.
39. Regard to public safety would be maintained at all times.
40. Appropriate signage would be erected and details would be confirmed by appropriate Council personnel responsible for site safety during the Proposal.

5.7 Air Quality

5.7.1 Existing Environment

The site is located along Grays Lane at Tyagarah, a rural setting where the air quality is generally good. However, the unsealed section of Grays Lane generates substantial quantities of dust, which lowers air quality when vehicle movements along Grays Lane are high (typically during daylight house when people access the beach and Tyagarah Nature Reserve).

5.7.2 Potential Impacts

The Proposal would generate dust during the construction process and may cumulatively contribute to generating exhaust emissions locally adversely affecting air quality. Dust generation would be managed with effective implementation of appropriate safeguards. The Proposal would provide a long term environmental improvement to air quality in the locality as the works would eliminate a significant dust source to residents and the environment.

5.7.3 Safeguards

The following mitigation measures would be implemented in order to prevent adverse impacts to air quality:

41. Dust suppression (eg. wetting down) would be completed for the duration of the works.
42. Vegetation or other materials would not be burnt on site.
43. Vehicles transporting waste or other materials that may produce dust would be covered during transportation.
44. Vehicles, machinery and equipment would be maintained in accordance with manufacturer's specifications in order to meet the requirements of the *Protection of the Environment Operations Act 1997* and associated regulations.
45. Vehicles and equipment would be switched off when not operating.
46. Debris and waste would be immediately collected into appropriate storage facilities and removed from the site as soon as practical to ensure light-weight material is not dispersed by wind gusts.

5.8 Social

5.8.1 Existing Environment

Grays Lane provides the only traffic route option for local residents and agricultural activities at Tyagarah between the Pacific Highway and Black Rock Road.

5.8.2 Potential Impacts

Traffic access along Grays Lane would be maintained during the construction process, with traffic controls restricting traffic flow to a single lane. No lengthy delays to road users would result from traffic controls. Some minor visual and noise impacts are expected during the works.

5.8.3 Safeguards

The following safeguards and management measures would be implemented in order to prevent adverse social impacts:

47. Traffic controls would be implemented to minimise delays to road users.
48. Complaints received would be recorded and attended to promptly in accordance with the BSC policy.
49. In accordance with the *Work Health and Safety Act 2011*, workers would be provided with appropriate safety clothing and equipment. Supervisory staff and any visitors to the work area would also be required to wear protective clothing. Works personnel would be provided with or expected to have protective equipment and appropriate training.

5.9 Waste

5.9.1 Existing Environment

Waste generated from the Proposal is expected to include:

- Bitumen and road base removed from the sealed portion of Grays Lane.
- Packaging materials (e.g. machinery oil/ lubricant packaging, etc), off-cuts, etc.
- Vegetative material from tree removal.

5.9.2 Potential Impacts

Uncontained waste has the potential to disperse into the surrounding environment and cause visual impacts and potential harm to aquatic flora and fauna. Waste products may also transport contaminants that may degrade local water quality (eg. fuels, lead-based paint and oils).

The Proposal would be undertaken to ensure minimal impacts are generated from waste material produced on site by ensuring that all waste is collected and disposed of or recycled in accordance with BSC waste disposal protocols and OEH guidelines. Bitumen removed from the eastern end of Grays Lane would be mixed into the gravel used to raise the road levels, as such, minimal waste would leave the site. No materials would be used in a manner that poses a risk to public safety.

5.9.3 Safeguards

The following safeguards and management measures would be implemented in order to prevent adverse impacts in relation to waste generated by the Proposal:

50. Resource management hierarchy principles would 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.
51. Waste material would not be left on site once the works have been completed.
52. Non-recyclable wastes would be collected and disposed of at licenced waste facilities only.
53. Any contaminated waste generated by the Proposal would be disposed of in accordance with the EPA approved methods of waste disposal.

6. Environmental Management

6.1 Construction Environmental Management Plan (CEMP)

A CEMP would be prepared to describe safeguards and management measures identified. This plan would provide a framework for establishing how these measures would be implemented and who would be responsible for their implementation.

The CEMP would be prepared prior to commencement of works and must be reviewed and certified by Council's Project Officer, prior to the commencement of any on-site works. The CEMP would be a working document, subject to ongoing change and updated as necessary to respond to specific requirements.

6.2 Summary of Safeguards and Management Measures

Environmental safeguards outlined in this document aim to minimise any potential adverse impacts arising from the proposed works on the surrounding environment. The safeguards and management measures are summarised in **Table 6.1**.

Table 6.1 Summary of Site Specific Environmental Safeguards

No.	*Impact*	*Environmental Safeguard*
5.1	Biodiversity	1. To be entered following BSC review
5.2	Heritage	2.
5.3	Visual	3.
5.4	Water quality and soils	4.
5.5	Noise and vibration	5.
5.6	Traffic and access	6.
5.7	Air quality	7.
5.8	Social	8.
5.9	Waste	9.

6.3 Licensing and Approvals

Table 6.2 provides an assessment of licences, permits or approvals required prior to commencement of the Proposal.

Table 6.2 Checklist of Approvals, Licences and Permits

Item	*Locations that may trigger an external approval, licence or permit*	*Check one*	
6.1	Working in an area containing endangered, threatened, vulnerable or protected species, populations, ecological communities or critical habitat (flora and fauna). – *Office of Environment and Heritage (OEH), Department of Primary Industries (Fisheries and Aquaculture).*	☒ Yes	☐ No
6.2	Working on land reserved under the *National Parks and Wildlife Act* (e.g. National Park, Nature Reserve, Aboriginal area, wilderness area, conservation area or wild river). – *OEH (National Parks and Wildlife Service).*	☐ Yes	☒ No
6.3	Working in an area of national environmental significance (RAMSAR Wetlands, threatened species, migratory birds, World Heritage, National Heritage, Nature Reserve, etc) or on Commonwealth land or marine area. – *Department of Environment and Energy (Commonwealth).*	☐ Yes	☒ No
6.4	Working within an area that is subject to any conservation agreement entered into under the *National Parks and Wildlife Act 1974.* – *OEH (National Parks and Wildlife Service), Arakwal Corporation.*	☐ Yes	☒ No
6.5	Working within an area that is subject to any plan of management under the *National Parks and Wildlife Act 1974.* – *OEH (National Parks and Wildlife Service), Arakwal Corporation.*	☐ Yes	☒ No
6.6	Working within an area that is subject to any joint management agreement under the *National Parks and Wildlife Act 1974.* – *OEH (National Parks and Wildlife Service), Arakwal Corporation.*	☐ Yes	☒ No
6.7	Working in an area subject to a joint management agreement entered into under the *Threatened Species Conservation Act 1995.* – *OEH (National Parks and Wildlife Service).*	☐ Yes	☒ No
6.8	Working in an area subject to a biobanking agreement entered into under Part 7A of the *Threatened Species Conservation Act 1995* that applies to the whole or part of the land to which the activity relates. – *OEH (National Parks and Wildlife Service).*	☐ Yes	☒ No
6.9	Working in an aquatic reserve or in marine vegetation such as seagrass, mangroves, saltmarsh, etc. – *Department of Primary Industries (Fisheries and Aquaculture), NSW Marine Parks, OEH.*	☐ Yes	☒ No

Item	Locations that may trigger an external approval, licence or permit	Check one	
6.10	Working in a Marine Park declared under the *Marine Parks Act.* – *NSW Marine Parks.*	☐ Yes	☒ No
6.11	Dredging or reclamation of water (Note that councils do not need approval for a controlled activity under the *Water Management Act 2000*). – *Department of Primary Industries (Fisheries and Aquaculture and/or Office of Water), Roads and Maritime Services.*	☐ Yes	☒ No
6.12	Enlarge, deepen or sink a new water bore. – *Department of Primary Industries (Office of Water).*	☐ Yes	☒ No
6.13	An activity that will pollute water (e.g. dewatering). – *NSW Environment Protection Authority.*	☐ Yes	☒ No
6.14	Working within the curtilage of a 'Heritage Place' or 'Heritage Item' identified on the Byron LEP Heritage Schedule, the State Heritage Register or the National Heritage List. – *Australian Heritage Council, NSW Heritage Council, OEH, Byron Shire Council.*	☐ Yes	☒ No
6.15	Working within a 'heritage conservation area' identified in Byron LEP Schedule 5 Environmental Heritage – Part 2. – *Byron Shire Council.*	☐ Yes	☒ No
6.16	Working where a 'Relic' is likely to be discovered (e.g. Archaeological Zoning Plans). – *NSW Heritage Council or OEH.*	☐ Yes	☒ No
6.17	Working near Aboriginal relics or places where an Aboriginal Heritage Impact Permit (AHIP) may be required. – *Local Aboriginal Land Council, Arakwal Corporation, OEH (National Parks and Wildlife Service).*	☐ Yes	☒ No
6.18	An activity comprising a fixed or floating structure in or over a navigable waterway. – *NSW Roads and Maritime Services.*	☐ Yes	☒ No
6.19	An activity comprising work on Crown land not subject to a plan of management. – *NSW Trade and Investment (Crown Lands).*	☐ Yes	☒ No
6.20	Working at sites at which asbestos or asbestos-containing materials exist. (Determine if a licence or exemption will be required). – *NSW WorkCover.*	☐ Yes	☒ No

As noted in Item 6.1 of **Table 6.2**, the works occur adjacent to EECs which provide habitat for one known flora species (Green-leaved Rose Walnut) and one known fauna species (Koala). No significant impacts to any threatened species or communities would occur as a result of the works, and a permit is not required from OEH.

7. Conclusion

The Proposal involves raising and sealing 830 metres of Grays Lane and improvements to an additional section of sealed road which is flood prone. The Proposal would significantly improve road conditions by making Grays Lane safer for traffic, improving flood immunity and eliminating significant dust generation from the unsealed portion of the road.

The Proposal is subject to assessment under Part 5 of the EP&A Act. The REF has examined and taken into account to the fullest extent possible all matters affecting or likely to affect the environment by reason of the proposed activity. This has included consideration of critical habitat, impacts on threatened species, populations and ecological communities and their habitats and other protected fauna and native plants.

The Proposal design has been developed following consultation with Tweed Shire Council regarding signage and mitigation for Koalas. Recommended mitigation measures would ameliorate potential impacts such as water quality impacts, fauna mortality and disturbance to EECs. The Proposal would have a positive impact on water quality (and potential threatened fish habitat) by significantly reducing current high dust levels.

The environmental impacts of the Proposal are not likely to be significant and therefore it is not necessary for an Environmental Impact Statement to be prepared and approval to be sought for the Proposal from the Minister for Planning under Part 5.1 of the EP&A Act. The Proposal is unlikely to affect threatened species, populations or ecological communities or their habitats, within the meaning of the *Threatened Species Conservation Act 1995* or *Fisheries Management Act 1994* and therefore a Species Impact Statement is not required. The Proposal is also unlikely to affect Commonwealth land or have an impact on any matters of national environmental significance and therefore referral to the Australian DoEE is also not required.

8. Decision

8.1 Person who Prepared this REF

I certify to the best of my knowledge that:

- I have completed this REF, and
- The assessment meets the requirements of sections 5A, 111 and 112 of the EP&A Act, clause 228 of the EP&A Regulation and other relevant legislation and guidelines, and
- The information contained in this REF is not materially misleading, and
- My assessment has been adequately completed, and
- My conclusion as to the likely environmental and community impact of the project is reasonable, and is likely to be ☒ **LOW** ☐ **MODERATE** ☐ **HIGH** *(check one)*, and
- I am satisfied that, subject to the inclusion of the mitigation measures included in this REF, the project would not have a significant impact on the environment during both the construction and operation phases, and
- An Environmental Impact Statement is not required, and
- A Species Impact Statement is not required.

Signature:		***Date:***	18/08/2017
Name (print):	Ian Colvin		
Position:	Senior Ecologist		
Site Inspected:	Yes	***Date:***	11/08/2017

9. QA and Sign Off

9.1 Determining officer – Manager or Director who Verifies this REF

I certify to the best of my knowledge and on behalf of Byron Shire Council that:

☐ Based on the completed REF and my knowledge of the project, the assessment has been adequately completed, the project has minor and predictable impacts, the conclusion as to the likely environmental impact of the project is reasonable and the project can proceed subject to the relevant control measures and conditions in this REF, any approval, licence or permit.

☐ The project requires additional environmental assessment because:

there are HIGH environmental scores (rating equal to or greater than 10).

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

Signature:		***Date:***	
Name (print):	Phillip Holloway		
Position:	Director – Infrastructure Services		
Site Inspected:	No	***Date:***	N/A

References

Department of Environment and Energy [DoEE] (2017). Australian Heritage Database [Online]. Available (http://www.environment.gov.au/cgi-bin/ahdb/search.pl) [Assessed 2017].

Morand, D.T., (1994). *Soil Landscapes of the Lismore-Ballina*, Department of Conservation and Land Management, Sydney.

NSW DPI Cattle Dip Site Locator (2016). Cattle Dip Site Locator for Byron LGA [Online]. Available (http://www.dpi.nsw.gov.au/agriculture/livestock/health/specific/cattle/ticks/cattle-dip-site-locator) [Accessed 2017].

NSW EPA Contaminated Land Register (2017). *Contaminated Land Register for Byron LGA* [Online]. Available: (http://www.epa.nsw.gov.au/prclmapp/searchregister.aspx) [Accessed 2017].

NSW Heritage Office (2017). State Heritage Register [Online]. Available: (http://www.heritage.nsw.gov.au/07_subnav_09.htm) publisher [Assessed 2017].

Threatened Species Scientific Committee (TSSC) (2011). *Commonwealth Listing Advice on Lowland Rainforest of Subtropical Australia*. Department of Sustainability, Environment, Water, Population and Communities. Canberra, ACT: Department of Sustainability, Environment, Water, Population and Communities. Available from: http://www.environment.gov.au/biodiversity/threatened/communities/pubs/101-listing-advice.pdf

Terms and Acronyms

AHIMS	Aboriginal Heritage Information Management System.
Biodiversity	First coined in 1988 as a contraction of biological diversity; diversity traditionally referring to species richness and species abundance. Biodiversity has been defined subsequently as encompassing biological variety at genetic, species and ecosystem scales (DASETT 1992). The maintenance of biodiversity, at all levels, is acknowledged internationally as a high conservation priority, and is protected by the International Convention on Biological Diversity 1992.
CEMP	Construction Environmental Management Plan. An element of an Environmental Management Plan that addresses the control, training and monitoring measures to be implemented during the construction phase of a project in order to avoid, minimise or ameliorate potentially adverse impacts identified during environmental assessments.
Conservation	The management of natural resources in a way that would benefit both present and future generations.
DoEE	Australian Government Department of the Environment and Energy.
DPI Fisheries	NSW Department of Primary Industries (Fisheries).
EIA	Environmental impact assessment.
EIS	Environmental Impact Statement (required by section 112 of the EP&A Act).
EMP	Environmental Management Plan.
EP&A Act	*Environmental Planning and Assessment Act 1979* (NSW). Provides the legislative framework for land use planning and development assessment in NSW.
EP&A Regulation	Environmental Planning and Assessment Regulation 2000.
EPBC Act	*Environment Protection and Biodiversity Conservation Act 1999* (Commonwealth). Provides for the protection of the environment, especially matters of national environmental significance, and provides a national assessment and approvals process.
Ecologically Sustainable Development (ESD)	Ecologically sustainable development. Development which uses conserves and enhances the resources of the community so that ecological processes on which life depends, are maintained and the total quality of life, now and in the future, can be increased.

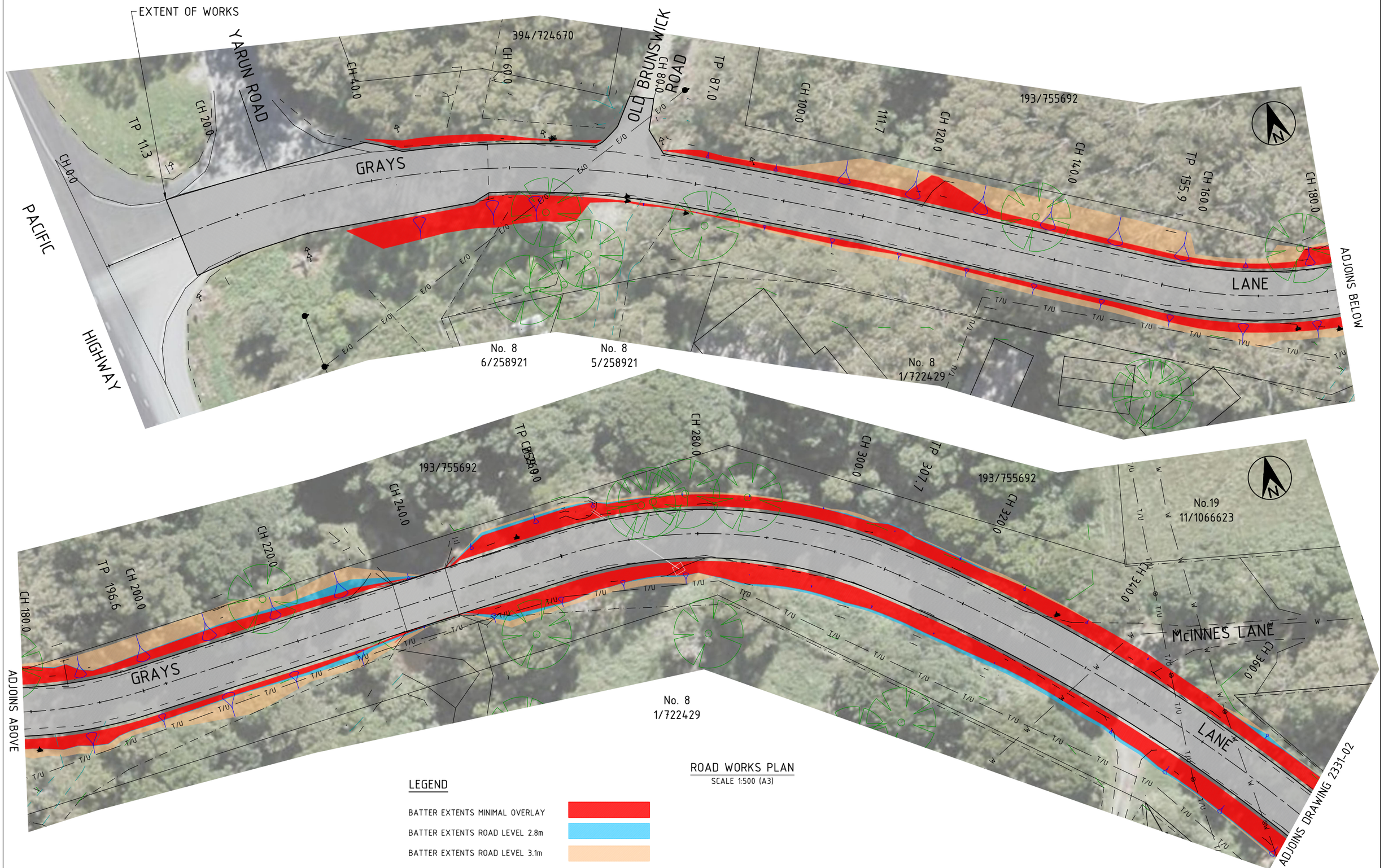
Endangered species	Those plant and animal species listed under Part 1 of Schedule 1 of the NSW *Threatened Species Conservation Act 1995* or listed as endangered under Subdivision A of Division 1 of Part 13 of the Commonwealth *Environment Protection and Biodiversity Conservation Act 1999*.
Environment	The physical, biological, cultural, economic and social characteristics of an area, region or site.
Environmental management	That part of the overall management system which includes organisational structure, planning activities, responsibilities, procedures, processes and resources for developing, implementing, achieving, reviewing and maintaining environmental policy (Refer to related term Environmental Management System).
Fauna	Animals
Flora	Plants
Heritage (cultural heritage)	A term which encompasses Aboriginal and European sites and material remains (cultural resources).
FM Act	*Fisheries Management Act 1994* (NSW).
ISEPP	State Environmental Planning Policy (Infrastructure) 2007.
KTP	Key Threatening Process.
LEP	Local Environmental Plan. A type of planning instrument made under Part 3 of the EP&A Act.
LGA	Local Government Area.
Monitor	The checking of impacts of a proposal or an existing activity in order to improve or evaluate environmental management practices; To check the efficiency and effectiveness of the environmental impact assessment process; To determine if the requirements of environmental legislation and associated regulations are being met.
MNES	Matters of National environmental significance.
NPW Act	*National Parks and Wildlife Act 1974* (NSW).
OEH	Office of Environment and Heritage.
POEO Act	*Protection of the Environment Operations Act 1997*.
Risk	Likelihood of a specific undesirable event occurring within a specified period or in specified circumstances. Listed as a frequency or probability.
REF	Review of Environmental Factors.

Terrestrial	Of or pertaining to the land as distinct from the water.
Threatened species	Animals or plants listed as endangered or vulnerable under the NSW *Threatened Species Conservation Act 1995* or the Commonwealth *Environment Protection and Biodiversity Conservation Act 1999*.
Visibility	Measure of extent to which particular components of a development may be visible from surrounding areas.
Vulnerable species	Those plant and animal species listed under Part 1 of Schedule 2 of the NSW *Threatened Species Conservation Act 1995* or listed as vulnerable under Subdivision A of Division 1 of Part 13 of the Commonwealth *Environment Protection and Biodiversity Conservation Act 1999*.
Weed	Naturalised, non-indigenous plant species which may be biosecurity risk weeds, environmental weeds or any other generally undesirable introduced species.

Copyright and Usage

Appendix A

Design Drawings



ROAD WORKS PLAN

SCALE 1:500 (A3)

LEGEND

- BATTER EXTENTS MINIMAL OVERLAY
- BATTER EXTENTS ROAD LEVEL 2.8m
- BATTER EXTENTS ROAD LEVEL 3.1m

PRELIMINARY
NOT FOR CONSTRUCTION

ISSUE	AMENDMENT DETAILS	DRAWN	CHECK	DATE
C	ORIGINAL ISSUE	D.M.	J.F.	23.05.17

ACAD FILE No:

SCALE: A1 SHEET 1:250, A3 SHEET 1:500
0 2.5 5 10 15 20 25 m

USE FIGURED DIMENSIONS ONLY. DO NOT SCALE.

INFRASTRUCTURE SERVICES
COUNCIL OFFICES
70-90 STATION STREET,
MULLUMBIMBY NSW 2482.
PHONE 02 66267000
FAX 02 66843018
WEBSITE www.byron.nsw.gov.au

Byron Shire Council

APPROVED ..... DATE .....

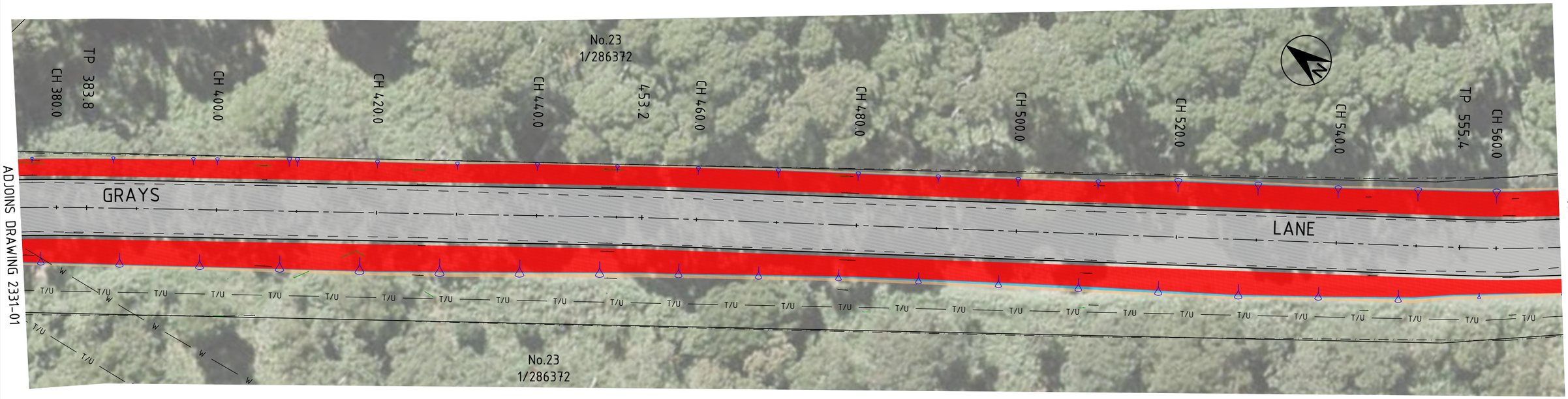
DESIGNED	D.M.	23.05.17
DRAWN	D.M.	23.05.17
CHECKED	J.F.	23.05.17
HORIZONTAL DATUM		ISG
VERTICAL DATUM		AHD

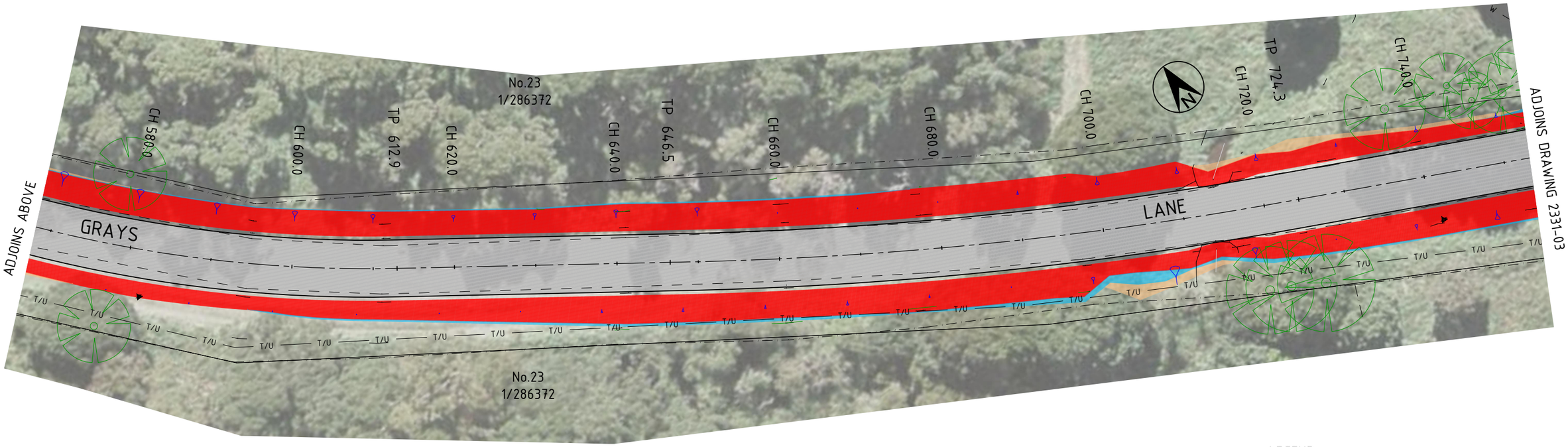
PROJECT: **PAVEMENT REHABILITATION AND FLOODWAY CONSTRUCTION GRAYS LANE TYAGARAH**

PLAN TITLE: **ROAD WORKS PLAN**

PROJECT NUMBER: **2331**

DRAWING NUMBER	ISSUE
2331-01	C





ROAD WORKS PLAN

SCALE 1:500 (A3)

LEGEND

- BATTER EXTENTS MINIMAL OVERLAY
- BATTER EXTENTS ROAD LEVEL 2.8m
- BATTER EXTENTS ROAD LEVEL 3.1m

PRELIMINARY
NOT FOR CONSTRUCTION

ISSUE	AMENDMENT DETAILS	DRAWN	CHECK	DATE
C	ORIGINAL ISSUE	D.M.	J.F.	23.05.17

ACAD FILE No:

SCALE: A1 SHEET 1:250, A3 SHEET 1:500
0 2.5 5 10 15 20 25 m

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APPROVED ..... DATE .....

DESIGNED	D.M.	23.05.17
DRAWN	D.M.	23.05.17
CHECKED	J.F.	23.05.17
HORIZONTAL DATUM		ISG
VERTICAL DATUM		AHD

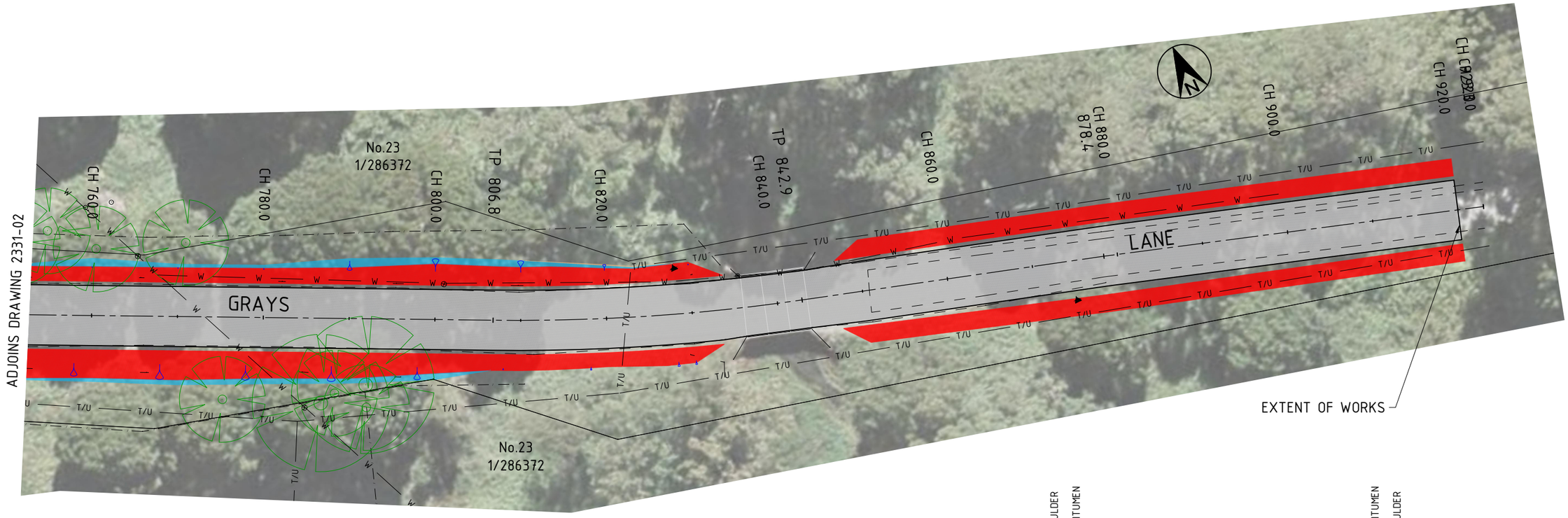
PROJECT: **PAVEMENT REHABILITATION AND FLOODWAY CONSTRUCTION GRAYS LANE TYAGARAH**

PROJECT NUMBER: **2331**

PLAN TITLE: **ROAD WORKS PLAN**

DRAWING NUMBER: **2331-02**

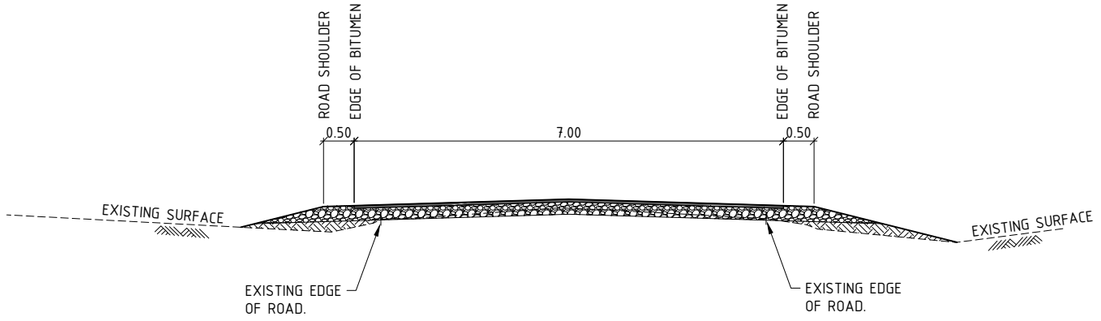
ISSUE: **C**



ROAD WORKS PLAN
SCALE 1:500 (A3)

LEGEND

- BATTER EXTENTS MINIMAL OVERLAY
- BATTER EXTENTS ROAD LEVEL 2.8m
- BATTER EXTENTS ROAD LEVEL 3.1m



TYPICAL SECTION MINIMAL OVERLAY
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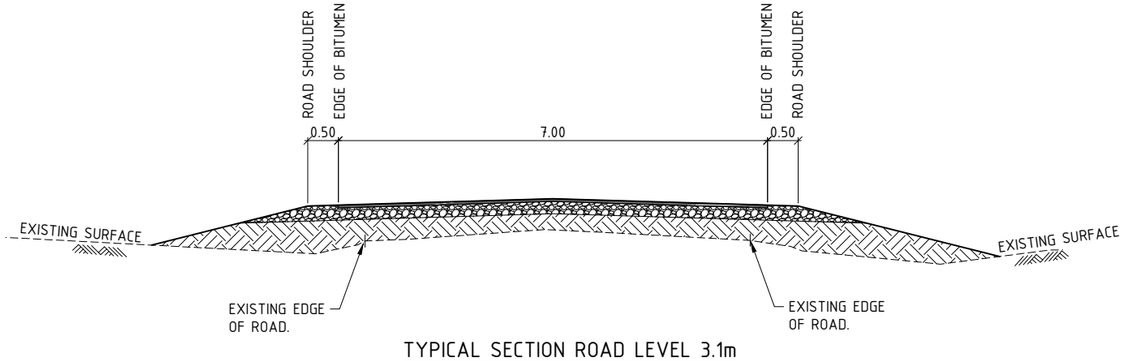
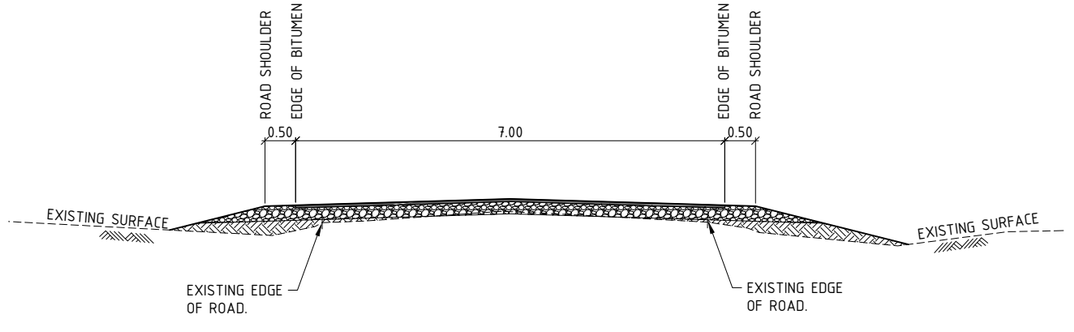


TYPICAL SECTION ROAD LEVEL 3.1m
SCALE 1:100 (A3)



TYPICAL SECTION ROAD LEVEL 2.8m
SCALE 1:100 (A3)

PRELIMINARY
NOT FOR CONSTRUCTION

ISSUE	AMENDMENT DETAILS	DRAWN	CHECK	DATE
C	ORIGINAL ISSUE	D.M.	J.F.	23.05.17

SCALE: A1 SHEET 1:250, A3 SHEET 1:500
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SCALE: A1 SHEET 1:50, A3 SHEET 1:100
0 0.5 1 2 3 4 5 m
USE FIGURED DIMENSIONS ONLY. DO NOT SCALE.

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DESIGNED	D.M.	23.05.17
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HORIZONTAL DATUM		ISG
VERTICAL DATUM		AHD

PROJECT: **PAVEMENT REHABILITATION AND FLOODWAY CONSTRUCTION GRAYS LANE TYAGARAH**

PROJECT NUMBER: **2331**

PLAN TITLE: **ROAD WORKS PLAN**

DRAWING NUMBER: **2331-03**

ISSUE: **C**

ACAD FILE No:

Appendix B

Consideration of Clause 228(2) Factors

Clause 228(2) Checklist

In addition to the requirements of the *Is an EIS required?* guideline as detailed in the REF, the following factors, listed in clause 228(2) of the Environmental Planning and Assessment Regulation 2000, have also been considered to assess the likely impacts of the Proposal on the natural and built environment.

	Factor	***Impact***
a	**Any environmental impact on a community**	
	The community would not be affected through declines in the local environment as a result of the Proposal. Extensive mitigation measures have been designed to reduce environmental impacts on the community to negligible levels (refer to **Section 5**).	Negligible
b	**Any transformation of a locality**	
	Temporary transformations comprise: ■ Construction and operation of site compound/ stockpile. ■ Presence and operation of heavy machinery. ■ Removal of up to 22 native trees and seven dead trees. ■ Potential for increased vehicle speeds once operational, hence increasing risks to local Koalas.	Minor negative short impact. Minor long-term impact.
c	**Any environmental impact on the ecosystems of the locality**	
	The ecosystems of the locality would not be affected through declines in local environmental values (e.g. biodiversity, physical environment) as a result of the Proposal. Extensive mitigation measures have been designed to reduce environmental impacts (refer to **Section 5**).	Negligible
d	**Any reduction of the aesthetic, recreational, scientific or other environmental quality or value of a locality**	
	It is not likely that the aesthetic, recreational, scientific or other environmental qualities or value of the locality would be impacted by the Proposal in the long term. No reduction in the quality of environmental values associated with noise, water, soil and air quality or significant decreases in biodiversity are likely to occur due to the design of the works methodology and the mitigation measures provided in **Section 5** of this REF.	Negligible
e	**Any effect on a locality, place or building having aesthetic, anthropological, archaeological, architectural, cultural, historical, scientific or social significance or other special value for present or future generations**	
	Grays Lane provides access to properties located along Grays Lane and Tyagarah Nature Reserve. There are no other aesthetic, anthropological, archaeological, architectural, cultural, historical, scientific or social significance associations relevant to the Proposal.	Negligible
f	**Any impact on the habitat of protected fauna (within the meaning of the *National Parks and Wildlife Act 1974*)**	
	The Proposal introduces the potential for negative impacts on Koalas within the locality due to potential for increased risk of vehicle strike. With effective implementation of the safeguards provided in **Section 5** of this REF, the Proposal is not considered likely to have a significant negative impact on the habitat of any other protected fauna.	Minor long-term impact.
g	**Any endangering of any species of animal, plant or other form of life whether living on land, in water or in the air**	
	With effective implementation of the safeguards provided in **Section 5** of	Minor long-term

	Factor	*Impact*
	this REF, the Proposal is not considered likely to significantly endanger any species of animal, plant or other form of life during the construction phase. As noted, during the operation phase there is potential for increased risk of vehicle strike to Koalas in the locality. Specific mitigation measures have been prepared to minimise this risk.	impact.
h	**Any long-term effects on the environment**	
	No significant negative long term impacts are considered likely with effective implementation of the proposed mitigation measures in **Section 5** of this REF. Conversely the Proposal is expected to result in positive long-term effects on the environment by eliminating dust pollution.	Positive long-term impacts.
i	**Any degradation of the quality of the environment**	
	No significant degradation of the quality of the environment is expected with effective implementation of the safeguards in **Section 5** of this REF.	Potential negative but safeguards available to alleviate significant adverse impacts.
j	**Any risk to the safety of the environment**	
	The Proposal is unlikely to pose any significant risk to the safety of the environmental attributes outlined in **Section 5**. Any possible impacts would be minimised with the implementation of the safeguards in **Section 5** of this REF.	Potential negative but safeguards available to alleviate significant adverse impacts.
k	**Any reduction in the range of beneficial uses of the environment**	
	The Proposal is not likely to result in any reduction in the range of beneficial uses of the environment.	Nil
l	**Any pollution of the environment**	
	Waste materials, fuel spills and sediment have the potential to cause pollution to the environment. However, given the proposed safeguards detailed in **Section 5** of this REF, pollution to the environment is unlikely to occur.	Potential minor negative. Safeguards available to reduce the risk of pollution.
m	**Any environmental problems associated with the disposal of waste**	
	All waste generated by the Proposal 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 Council and OEH approved methods of waste disposal. Safeguards detailed in **Section 5** of this REF would protect the environment from problems associated with all waste disposal.	Nil
n	**Any increased demands on resources (natural or otherwise) that are likely to become in short supply**	
	The Proposal 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. Council would attempt to draw supplies and resources from established suppliers having appropriate environmental approvals and standards.	Nil

	Factor	*Impact*
o	**Any cumulative environmental effect with other existing or likely future activities**	
	The Proposal would have minor cumulative impacts (eg. resource consumption), but is unlikely to significantly contribute to any cumulative impacts.	Minor negative
p	**Any impact on coastal processes and coastal hazards, including those under projected climate change conditions**	
	The Proposal would have minor cumulative impacts (e.g. carbon emissions, consumption of resources) contributing to climate change.	Minor negative

Appendix C

Assessment of Matters of National Environmental Significance

Matters of National Environmental Significance

Under the environmental assessment provisions of the *Environment Protection and Biodiversity Conservation Act 1999*, the following matters of national environmental significance and impacts on Commonwealth land are required to be considered to assist in determining whether the Proposal should be referred to the Australian Government Department of the Environment and Energy.

	Factor	***Impact***
a	**Any impact on a World Heritage Property?**	
	The Proposal is not in proximity (5 km search radius) to any World Heritage Properties and as such the Proposal does not impact on any World Heritage Properties.	Nil
b	**Any impact on a National Heritage place?**	
	The Proposal is not in proximity (5 km search radius) to any National Heritage places and as such the Proposal does not impact on any National Heritage places.	Nil
c	**Any impact on a wetland of international importance?**	
	The Proposal is not in proximity (5 km search radius) to any Wetlands of International Significance (Ramsar Sites), and as such the Proposal does not impact on any Wetlands of International Significance.	Nil
d	**Any impact on a listed threatened species or communities?**	
	One threatened ecological communities (Lowland Rainforest of Subtropical Australia) and 84 threatened species (28 flora and 56 fauna species) are listed as occurring within 5 km of the site. The vegetation present does not conform to the definition of Lowland Rainforest of Subtropical Australia. Koalas are listed as Vulnerable in the EPBC Act and are known to occur at the site. Mitigation measures have been provided (refer to **Section 5.1**) to minimise any potential impacts to Koalas in the locality, through targeted signage to reduce the risk of vehicle strike. No other commonwealth listed threatened flora, fauna or ecological communities however are likely to be significantly affected by the Proposal (refer to **Section 5.1**).	Low
e	**Any impacts on listed migratory species?**	
	Fifty-two listed migratory species are listed as occurring within 5 km of the site. No commonwealth listed migratory species however are likely to be significantly affected by the Proposal (refer to **Section 5.1**).	Nil
f	**Does the proposal involve a nuclear action (including uranium mining)?**	
	The Proposal does not involve a nuclear action.	Nil
g	**Any impact on a Commonwealth marine area?**	
	The Proposal is not in proximity (5 km search radius) to any Commonwealth marine areas and as such the Proposal does not impact upon any Commonwealth marine areas.	Nil
h	**Additionally, any impact (direct or indirect) on Commonwealth land?**	
	Two areas of Commonwealth land (Australian Telecommunications Commission, Telstra) are listed as occurring within 5 km of the site. The Proposal is not expected to impact upon this land.	Nil

Appendix D

BioNet Results

Data from the BioNet Atlas of NSW Wildlife website, which holds records from a number of custodians. The data are only indicative and cannot be considered comprehensive inventory, and may contain errors and omissions. Species listed under the Sensitive Species Data Policy may have their locations denatured (^ rounded to 0.1Â°; ^^ rounded to 0.01Â°). Copyright the State of NSW through the Office of Environment and Heritage. Search criteria : Public Report of all Val Records of Threatened (listed on TSC Act 1995) Plants in selected area [North: -28.55 West: 153.5 East: 153.6 South: -28.65] returned a total of 122 records of species.

Report generated on 10/08/2017 6:54 PM

Kingdom	Class	Family	Species Code	Scientific Name	Exotic	Common Name	NSW status	Comm. status	Records
Plantae	Flora	Cunoniaceae	10943	*^Davidsonia jerseyana*		Davidson's Plum	E1,P,2	E	2
Plantae	Flora	Euphorbiaceae	8333	*Fontainea australis*		Southern Fontainea	V,P	V	1
Plantae	Flora	Fabaceae (Mimosoideae)	3711	*Acacia bakeri*		Marblewood	V,P		8
Plantae	Flora	Fabaceae (Mimosoideae)	7757	*Archidendron hendersonii*		White Lace Flower	V,P		17
Plantae	Flora	Flacourtiaceae	3114	*Xylosma terrae-reginae*		Queensland Xylosma	E1,P		4
Plantae	Flora	Lauraceae	3477	*Cryptocarya foetida*		Stinking Cryptocarya	V,P	V	9
Plantae	Flora	Lauraceae	8480	*Endiandra muelleri subsp. bracteata*		Green-leaved Rose Walnut	E1,P		4
Plantae	Flora	Meliaceae	3682	*Owenia cepiodora*		Onion Cedar	V,P	V	1
Plantae	Flora	Menispermaceae	3691	*Tinospora tinosporoides*		Arrow-head Vine	V,P		23
Plantae	Flora	Myrtaceae	11894	*Gossia fragrantissima*		Sweet Myrtle	E1,P	E	2
Plantae	Flora	Myrtaceae	4290	*Syzygium hodgkinsoniae*		Red Lilly Pilly	V,P	V	6
Plantae	Flora	Myrtaceae	4292	*Syzygium moorei*		Durobby	V,P	V	22

Plantae	Flora	Orchidaceae	6672	*^Geodorum densiflorum*	Pink Nodding Orchid	E1,P,2		2
Plantae	Flora	Poaceae	4776	*Arthraxon hispidus*	Hairy Jointgrass	V,P	V	1
Plantae	Flora	Polypodiaceae	8156	*^^Drynaria rigidula*	Basket Fern	E1,P,3		2
Plantae	Flora	Proteaceae	5354	*Floydia praealta*	Ball Nut	V,P	V	2
Plantae	Flora	Proteaceae	5446	*Macadamia tetraphylla*	Rough-shelled Bush Nut	V,P	V	12
Plantae	Flora	Rubiaceae	8297	*Randia moorei*	Spiny Gardenia	E1,P	E	1
Plantae	Flora	Argophyllaceae	3224	*Corokia whiteana*	Corokia	V,P	V	3

Data from the BioNet Atlas of NSW Wildlife website, which holds records from a number of custodians. The data are only indicative and cannot be considered comprehensive inventory, and may contain errors and omissions. Species listed under the Sensitive Species Data Policy may have their locations denatured (^ rounded to 0.1Â°; ^^ rounded to 0.01Â°). Copyright the State of NSW through the Office of Environment and Heritage. Search criteria : Public Report of all Val Records of Threatened (listed on TSC Act 1995) Animals in selected area [North: -28.55 West: 153.5 East: 153.6 South: -28.65] returned a total of 1,982 recorc 51 species.

Report generated on 10/08/2017 6:55 PM

Kingdom	Class	Family	Species Code	Scientific Name	Exotic	Common Name	NSW status	Comm. status	Records
Animalia	Amphibia	Myobatrachidae	3137	*Crinia tinnula*		Wallum Froglet	V,P		136
Animalia	Amphibia	Hylidae	3166	*Litoria aurea*		Green and Golden Bell Frog	E1,P	V	2
Animalia	Amphibia	Hylidae	3202	*Litoria olongburensis*		Olongburra Frog	V,P	V	31
Animalia	Reptilia	Cheloniidae	2007	*Chelonia mydas*		Green Turtle	V,P	V	3
Animalia	Aves	Columbidae	0025	*Ptilinopus magnificus*		Wompoo Fruit-Dove	V,P		6
Animalia	Aves	Columbidae	0021	*Ptilinopus regina*		Rose-crowned Fruit-Dove	V,P		52
Animalia	Aves	Columbidae	0023	*Ptilinopus superbus*		Superb Fruit-Dove	V,P		2
Animalia	Aves	Procellariidae	8993	*Pterodroma neglecta neglecta*		Kermadec Petrel (west Pacific subspecies)	V,P	V	1
Animalia	Aves	Procellariidae	0955	*Pterodroma nigripennis*		Black-winged Petrel	V,P		1
Animalia	Aves	Ciconiidae	0183	*Ephippiorhynchus asiaticus*		Black-necked Stork	E1,P		39
Animalia	Aves	Ardeidae	0197	*Botaurus poiciloptilus*		Australasian Bittern	E1,P	E	1
Animalia	Aves	Ardeidae	0196	*Ixobrychus flavicollis*		Black Bittern	V,P		15
Animalia	Aves	Accipitridae	0218	*Circus assimilis*		Spotted Harrier	V,P		1
Animalia	Aves	Accipitridae	0226	*Haliaeetus leucogaster*		White-bellied Sea-Eagle	V,P	C	12
Animalia	Aves	Accipitridae	0225	*Hieraaetus morphnoides*		Little Eagle	V,P		53
Animalia	Aves	Accipitridae	0230	*^^Lophoictinia isura*		Square-tailed Kite	V,P,3		2

Animalia	Aves	Accipitridae	8739	*^^Pandion cristatus*	Eastern Osprey	V,P,3		7
Animalia	Aves	Falconidae	0238	*Falco subniger*	Black Falcon	V,P		3
Animalia	Aves	Gruidae	0177	*Grus rubicunda*	Brolga	V,P		2
Animalia	Aves	Rallidae	0053	*Amaurornis moluccana*	Pale-vented Bush-hen	V,P		3
Animalia	Aves	Burhinidae	0174	*Burhinus grallarius*	Bush Stone-curlew	E1,P		1
Animalia	Aves	Burhinidae	0175	*Esacus magnirostris*	Beach Stone-curlew	E4A,P		5
Animalia	Aves	Haematopodidae	0131	*Haematopus fuliginosus*	Sooty Oystercatcher	V,P		1
Animalia	Aves	Haematopodidae	0130	*Haematopus longirostris*	Pied Oystercatcher	E1,P		22
Animalia	Aves	Jacanidae	0171	*Irediparra gallinacea*	Comb-crested Jacana	V,P		13
Animalia	Aves	Scolopacidae	0161	*Calidris ferruginea*	Curlew Sandpiper	E1,P	CE,C,J,K	2
Animalia	Aves	Scolopacidae	0165	*Calidris tenuirostris*	Great Knot	V,P	CE,C,J,K	2
Animalia	Aves	Laridae	0117	*Sternula albifrons*	Little Tern	E1,P	C,J,K	9
Animalia	Aves	Cacatuidae	0265	*^Calyptorhynchus lathami*	Glossy Black-Cockatoo	V,P,2		9
Animalia	Aves	Psittacidae	0260	*Glossopsitta pusilla*	Little Lorikeet	V,P		1
Animalia	Aves	Strigidae	0246	*^^Ninox connivens*	Barking Owl	V,P,3		5
Animalia	Aves	Tytonidae	0252	*^^Tyto longimembris*	Eastern Grass Owl	V,P,3		18
Animalia	Aves	Tytonidae	0250	*^^Tyto novaehollandiae*	Masked Owl	V,P,3		1
Animalia	Aves	Alcedinidae	0327	*Todiramphus chloris*	Collared Kingfisher	V,P		1
Animalia	Aves	Artamidae	8519	*Artamus cyanopterus cyanopterus*	Dusky Woodswallow	V,P		1
Animalia	Aves	Monarchidae	0376	*Carterornis leucotis*	White-eared Monarch	V,P		2
Animalia	Aves	Estrildidae	0652	*Stagonopleura guttata*	Diamond Firetail	V,P		46
Animalia	Mammalia	Dasyuridae	1045	*Planigale maculata*	Common Planigale	V,P		17

Animalia	Mammalia	Phascolarctidae	1162	*Phascolarctos cinereus*	Koala	V,P	V	1299
Animalia	Mammalia	Potoroidae	1175	*Potorous tridactylus*	Long-nosed Potoroo	V,P	V	14
Animalia	Mammalia	Pteropodidae	1290	*Nyctimene robinsoni*	Eastern Tube-nosed Bat	V,P		1
Animalia	Mammalia	Pteropodidae	1280	*Pteropus poliocephalus*	Grey-headed Flying-fox	V,P	V	30
Animalia	Mammalia	Pteropodidae	1294	*Syconycteris australis*	Common Blossom-bat	V,P		15
Animalia	Mammalia	Emballonuridae	1321	*Saccolaimus flaviventris*	Yellow-bellied Sheathtail-bat	V,P		1
Animalia	Mammalia	Vespertilionidae	1346	*Miniopterus australis*	Little Bentwing-bat	V,P		48
Animalia	Mammalia	Vespertilionidae	1834	*Miniopterus schreibersii oceanensis*	Eastern Bentwing-bat	V,P		18
Animalia	Mammalia	Vespertilionidae	1357	*Myotis macropus*	Southern Myotis	V,P		6
Animalia	Mammalia	Vespertilionidae	1336	*Nyctophilus bifax*	Eastern Long-eared Bat	V,P		15
Animalia	Mammalia	Vespertilionidae	1361	*Scoteanax rueppellii*	Greater Broad-nosed Bat	V,P		4
Animalia	Mammalia	Balaenopteridae	1575	*Megaptera novaeangliae*	Humpback Whale	V,P	V	1
Animalia	Gastropoda	Camaenidae	I002	*Thersites mitchellae*	Mitchell's Rainforest Snail	E1	CE	2

Appendix E

Protected Matters Search Tool Results

Australian Government
Department of the Environment and Energy

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.

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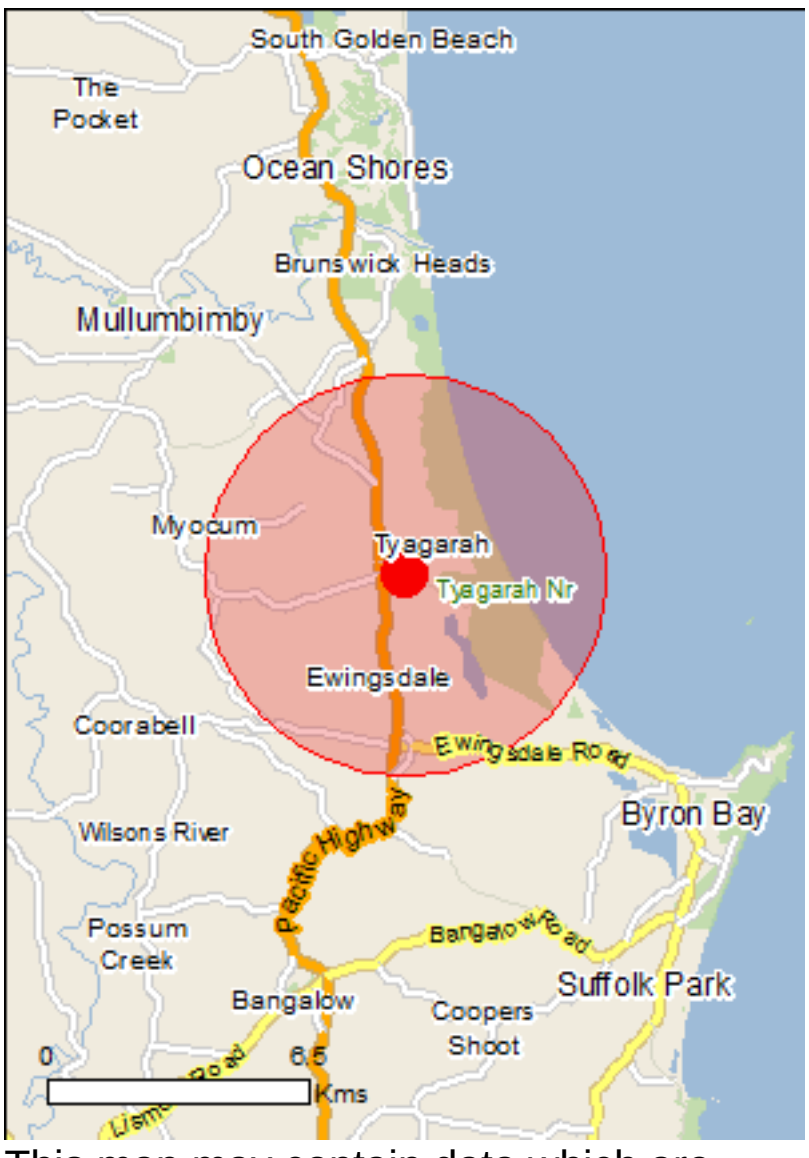

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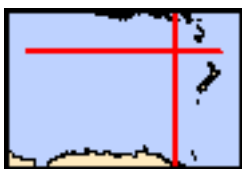
Coordinates

Buffer: 5.0Km



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:	None
Great Barrier Reef Marine Park:	None
Commonwealth Marine Area:	None
Listed Threatened Ecological Communities:	1
Listed Threatened Species:	84
Listed Migratory Species:	52

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:	2
Commonwealth Heritage Places:	None
Listed Marine Species:	90
Whales and Other Cetaceans:	12
Critical Habitats:	None
Commonwealth Reserves Terrestrial:	None
Commonwealth Reserves Marine:	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:	1
Regional Forest Agreements:	1
Invasive Species:	38
Nationally Important Wetlands:	None
Key Ecological Features (Marine)	None

Details

Matters of National Environmental Significance

Listed Threatened Ecological Communities [Resource Information]

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

Name	Status	Type of Presence
Lowland Rainforest of Subtropical Australia	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	Foraging, feeding or related behaviour likely to occur within area
Botaurus poiciloptilus Australasian Bittern [1001]	Endangered	Species or species habitat known to occur within area
Calidris canutus Red Knot, Knot [855]	Endangered	Species or species habitat known to occur within area
Calidris ferruginea Curlew Sandpiper [856]	Critically Endangered	Species or species habitat known to occur within area
Cyclopsitta diophthalma coxeni Coxen's Fig-Parrot [59714]	Endangered	Species or species habitat may occur within area
Diomedea antipodensis Antipodean Albatross [64458]	Vulnerable	Species or species habitat may occur within area
Diomedea antipodensis gibsoni Gibson's Albatross [82270]	Vulnerable	Species or species habitat may occur within area
Diomedea epomophora Southern Royal Albatross [89221]	Vulnerable	Species or species habitat may occur within area
Diomedea exulans Wandering Albatross [89223]	Vulnerable	Species or species habitat may occur within area
Erythrotriorchis radiatus Red Goshawk [942]	Vulnerable	Species or species habitat likely to occur within area
Fregetta grallaria grallaria White-bellied Storm-Petrel (Tasman Sea), White-bellied Storm-Petrel (Australasian) [64438]	Vulnerable	Species or species habitat likely to occur

Name	Status	Type of Presence within area
Lathamus discolor Swift Parrot [744]	Critically Endangered	Species or species habitat may occur within area
Limosa lapponica baueri Bar-tailed Godwit (baueri), Western Alaskan Bar-tailed Godwit [86380]	Vulnerable	Species or species habitat known to occur within area
Limosa lapponica menzbieri Northern Siberian Bar-tailed Godwit, Bar-tailed Godwit (menzbieri) [86432]	Critically Endangered	Species or species habitat may occur within area
Macronectes giganteus Southern Giant-Petrel, Southern Giant Petrel [1060]	Endangered	Species or species habitat may occur within area
Macronectes halli Northern Giant Petrel [1061]	Vulnerable	Species or species habitat may occur within area
Numenius madagascariensis Eastern Curlew, Far Eastern Curlew [847]	Critically Endangered	Species or species habitat known to occur within area
Pachyptila turtur subantarctica Fairy Prion (southern) [64445]	Vulnerable	Species or species habitat known to occur within area
Phoebetria fusca Sooty Albatross [1075]	Vulnerable	Species or species habitat may occur within area
Poephila cincta cincta Southern Black-throated Finch [64447]	Endangered	Species or species habitat may occur within area
Pterodroma leucoptera leucoptera Gould's Petrel, Australian Gould's Petrel [26033]	Endangered	Species or species habitat may occur within area
Pterodroma neglecta neglecta Kermadec Petrel (western) [64450]	Vulnerable	Foraging, feeding or related behaviour may occur within area
Rostratula australis Australian Painted Snipe [77037]	Endangered	Species or species habitat may occur within area
Thalassarche cauta cauta Shy Albatross, Tasmanian Shy Albatross [82345]	Vulnerable	Species or species habitat may occur within area
Thalassarche cauta steadi White-capped Albatross [82344]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
Thalassarche eremita Chatham Albatross [64457]	Endangered	Species or species habitat may occur within area
Thalassarche impavida Campbell Albatross, Campbell Black-browed Albatross [64459]	Vulnerable	Species or species habitat may occur within area
Thalassarche melanophris Black-browed Albatross [66472]	Vulnerable	Species or species habitat may occur within area
Thalassarche salvini Salvin's Albatross [64463]	Vulnerable	Species or species habitat may occur within area

Name	Status	Type of Presence
Turnix melanogaster		
Black-breasted Button-quail [923]	Vulnerable	Species or species habitat may occur within area
Fish		
Epinephelus daemelii		
Black Rockcod, Black Cod, Saddled Rockcod [68449]	Vulnerable	Species or species habitat likely to occur within area
Frogs		
Litoria olongburensis		
Wallum Sedge Frog [1821]	Vulnerable	Species or species habitat known to occur within area
Insects		
Phyllodes imperialis smithersi		
Pink Underwing Moth [86084]	Endangered	Breeding may occur within area
Mammals		
Balaenoptera musculus		
Blue Whale [36]	Endangered	Species or species habitat may occur within area
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 likely to occur within area
Eubalaena australis		
Southern Right Whale [40]	Endangered	Species or species habitat likely to occur within area
Megaptera novaeangliae		
Humpback Whale [38]	Vulnerable	Species or species habitat known 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 may 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
Potorous tridactylus tridactylus		
Long-nosed Potoroo (SE mainland) [66645]	Vulnerable	Species or species habitat known to occur within area
Pseudomys novaehollandiae		
New Holland Mouse, Pookila [96]	Vulnerable	Species or species habitat likely to occur within area
Pteropus poliocephalus		
Grey-headed Flying-fox [186]	Vulnerable	Foraging, feeding or related behaviour known to occur within area
Xeromys myoides		
Water Mouse, False Water Rat, Yirrkoo [66]	Vulnerable	Species or species habitat likely to occur within area
Other		
Thersites mitchellae		
Mitchell's Rainforest Snail [66774]	Critically Endangered	Species or species habitat known to occur within area

Name	Status	Type of Presence
Plants		
Acronychia littoralis Scented Acronychia [8582]	Endangered	Species or species habitat likely to occur within area
Allocasuarina defungens Dwarf Heath Casuarina [21924]	Endangered	Species or species habitat likely to occur within area
Allocasuarina thalassoscopica [21927]	Endangered	Species or species habitat likely to occur within area
Arthraxon hispidus Hairy-joint Grass [9338]	Vulnerable	Species or species habitat known to occur within area
Baloghia marmorata Marbled Balogia, Jointed Baloghia [8463]	Vulnerable	Species or species habitat may occur within area
Bulbophyllum globuliforme Miniature Moss-orchid, Hoop Pine Orchid [6649]	Vulnerable	Species or species habitat may occur within area
Corokia whiteana [17820]	Vulnerable	Species or species habitat likely to occur within area
Cryptocarya foetida Stinking Cryptocarya, Stinking Laurel [11976]	Vulnerable	Species or species habitat known to occur within area
Cryptostylis hunteriana Leafless Tongue-orchid [19533]	Vulnerable	Species or species habitat may occur within area
Cynanchum elegans White-flowered Wax Plant [12533]	Endangered	Species or species habitat may occur within area
Davidsonia jerseyana Davidson's Plum [67219]	Endangered	Species or species habitat likely to occur within area
Desmodium acanthocladum Thorny Pea [17972]	Vulnerable	Species or species habitat likely to occur within area
Diospyros mabacea Red-fruited Ebony, Silky Persimmon, Ebony [18548]	Endangered	Species or species habitat likely to occur within area
Diploglottis campbellii Small-leaved Tamarind [21484]	Endangered	Species or species habitat likely to occur within area
Endiandra floydii Floyd's Walnut [52955]	Endangered	Species or species habitat likely to occur within area
Endiandra hayesii Rusty Rose Walnut, Velvet Laurel [13866]	Vulnerable	Species or species habitat likely to occur within area
Floydia praealta Ball Nut, Possum Nut, Big Nut, Beefwood [15762]	Vulnerable	Species or species habitat likely to occur within area
Gossia fragrantissima Sweet Myrtle, Small-leaved Myrtle [78867]	Endangered	Species or species habitat likely to occur within area

Name	Status	Type of Presence
Macadamia integrifolia Macadamia Nut, Queensland Nut Tree, Smooth-shelled Macadamia, Bush Nut, Nut Oak [7326]	Vulnerable	Species or species habitat may occur within area
Macadamia tetraphylla Rough-shelled Bush Nut, Macadamia Nut, Rough-shelled Macadamia, Rough-leaved Queensland Nut [6581]	Vulnerable	Species or species habitat known to occur within area
Ochrosia moorei Southern Ochrosia [11350]	Endangered	Species or species habitat likely to occur within area
Owenia cepiodora Onionwood, Bog Onion, Onion Cedar [11344]	Vulnerable	Species or species habitat likely to occur within area
Phaius australis Lesser Swamp-orchid [5872]	Endangered	Species or species habitat likely to occur within area
Randia moorei Spiny Gardenia [10577]	Endangered	Species or species habitat likely to occur within area
Sophora fraseri [8836]	Vulnerable	Species or species habitat likely to occur within area
Syzygium hodgkinsoniae Smooth-bark Rose Apple, Red Lilly Pilly [3539]	Vulnerable	Species or species habitat likely to occur within area
Syzygium moorei Rose Apple, Coolamon, Robby, Durobby, Watermelon Tree, Coolamon Rose Apple [12284]	Vulnerable	Species or species habitat likely to occur within area
Thesium australe Austral Toadflax, Toadflax [15202]	Vulnerable	Species or species habitat likely to occur within area
Reptiles		
Caretta caretta Loggerhead Turtle [1763]	Endangered	Breeding known to occur within area
Chelonia mydas Green Turtle [1765]	Vulnerable	Species or species habitat known to occur within area
Delma torquata Adorned Delma, Collared Delma [1656]	Vulnerable	Species or species habitat may occur within area
Dermochelys coriacea Leatherback Turtle, Leathery Turtle, Luth [1768]	Endangered	Congregation or aggregation known to occur within area
Eretmochelys imbricata Hawksbill Turtle [1766]	Vulnerable	Species or species habitat known to occur within area
Lepidochelys olivacea Olive Ridley Turtle, Pacific Ridley Turtle [1767]	Endangered	Breeding likely to occur within area
Natator depressus Flatback Turtle [59257]	Vulnerable	Species or species habitat known to occur within area
Sharks		
Carcharias taurus (east coast population) Grey Nurse Shark (east coast population) [68751]	Critically Endangered	Species or species habitat known to occur within area

Name	Status	Type of Presence
Carcharodon carcharias White Shark, Great White Shark [64470]	Vulnerable	Species or species habitat known to occur within area
Rhincodon typus Whale Shark [66680]	Vulnerable	Species or species habitat may 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		
Anous stolidus Common Noddy [825]		Species or species habitat likely to occur within area
Apus pacificus Fork-tailed Swift [678]		Species or species habitat likely to occur within area
Ardenna carneipes Flesh-footed Shearwater, Fleshy-footed Shearwater [82404]		Species or species habitat likely to occur within area
Calonectris leucomelas Streaked Shearwater [1077]		Species or species habitat known to occur within area
Diomedea epomophora Southern Royal Albatross [89221]	Vulnerable	Species or species habitat may occur within area
Diomedea exulans Wandering Albatross [89223]	Vulnerable	Species or species habitat may occur within area
Fregata ariel Lesser Frigatebird, Least Frigatebird [1012]		Species or species habitat known to occur within area
Fregata minor Great Frigatebird, Greater Frigatebird [1013]		Species or species habitat likely to occur within area
Macronectes giganteus Southern Giant-Petrel, Southern Giant Petrel [1060]	Endangered	Species or species habitat may occur within area
Macronectes halli Northern Giant Petrel [1061]	Vulnerable	Species or species habitat may occur within area
Phoebetria fusca Sooty Albatross [1075]	Vulnerable	Species or species habitat may occur within area
Sternula albifrons Little Tern [82849]		Breeding likely to occur within area
Thalassarche cauta Tasmanian Shy Albatross [89224]	Vulnerable*	Species or species habitat may occur within area
Thalassarche melanophris Black-browed Albatross [66472]	Vulnerable	Species or species habitat may occur within area
Migratory Marine Species		
Balaena glacialis australis Southern Right Whale [75529]	Endangered*	Species or species habitat likely to occur within area

Name	Threatened	Type of Presence
Balaenoptera edeni Bryde's Whale [35]		Species or species habitat may occur within area
Balaenoptera musculus Blue Whale [36]	Endangered	Species or species habitat may occur within area
Carcharodon carcharias White Shark, Great White Shark [64470]	Vulnerable	Species or species habitat known to occur within area
Caretta caretta Loggerhead Turtle [1763]	Endangered	Breeding known to occur within area
Chelonia mydas Green Turtle [1765]	Vulnerable	Species or species habitat known to occur within area
Dermochelys coriacea Leatherback Turtle, Leathery Turtle, Luth [1768]	Endangered	Congregation or aggregation known to occur within area
Dugong dugon Dugong [28]		Species or species habitat may occur within area
Eretmochelys imbricata Hawksbill Turtle [1766]	Vulnerable	Species or species habitat known to occur within area
Lamna nasus Porbeagle, Mackerel Shark [83288]		Species or species habitat may occur within area
Lepidochelys olivacea Olive Ridley Turtle, Pacific Ridley Turtle [1767]	Endangered	Breeding likely to occur within area
Manta alfredi Reef Manta Ray, Coastal Manta Ray, Inshore Manta Ray, Prince Alfred's Ray, Resident Manta Ray [84994]		Species or species habitat known to occur within area
Manta birostris Giant Manta Ray, Chevron Manta Ray, Pacific Manta Ray, Pelagic Manta Ray, Oceanic Manta Ray [84995]		Species or species habitat may occur within area
Megaptera novaeangliae Humpback Whale [38]	Vulnerable	Species or species habitat known to occur within area
Natator depressus Flatback Turtle [59257]	Vulnerable	Species or species habitat known to occur within area
Orcinus orca Killer Whale, Orca [46]		Species or species habitat may occur within area
Rhincodon typus Whale Shark [66680]	Vulnerable	Species or species habitat may occur within area
Sousa chinensis Indo-Pacific Humpback Dolphin [50]		Species or species habitat likely to occur within area
Migratory Terrestrial Species		
Cuculus optatus Oriental Cuckoo, Horsfield's Cuckoo [86651]		Species or species habitat may occur within area
Hirundapus caudacutus White-throated Needletail [682]		Species or species

Name	Threatened	Type of Presence
		habitat known to occur within area
[Monarcha melanopsis](#) Black-faced Monarch [609]		Species or species habitat known to occur within area
[Monarcha trivirgatus](#) Spectacled Monarch [610]		Species or species habitat known to occur within area
[Motacilla flava](#) Yellow Wagtail [644]		Species or species habitat known to 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 likely to occur within area
[Calidris acuminata](#) Sharp-tailed Sandpiper [874]		Species or species habitat known to occur within area
[Calidris canutus](#) Red Knot, Knot [855]	Endangered	Species or species habitat known to occur within area
[Calidris ferruginea](#) Curlew Sandpiper [856]	Critically Endangered	Species or species habitat known to occur within area
[Calidris melanotos](#) Pectoral Sandpiper [858]		Species or species habitat known to occur within area
[Gallinago hardwickii](#) Latham's Snipe, Japanese Snipe [863]		Foraging, feeding or related behaviour may occur within area
[Gallinago megala](#) Swinhoe's Snipe [864]		Foraging, feeding or related behaviour likely to occur within area
[Gallinago stenura](#) Pin-tailed Snipe [841]		Foraging, feeding or related behaviour likely to occur within area
[Limosa lapponica](#) Bar-tailed Godwit [844]		Species or species habitat known to occur within area
[Numenius madagascariensis](#) Eastern Curlew, Far Eastern Curlew [847]	Critically Endangered	Species or species habitat known to occur within area
[Numenius minutus](#) Little Curlew, Little Whimbrel [848]		Foraging, feeding or related behaviour likely to occur within area
[Pandion haliaetus](#) Osprey [952]		Breeding known to occur within area
[Tringa nebularia](#) Common Greenshank, Greenshank [832]		Species or species habitat likely to occur

Name	Threatened	Type of Presence 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 - 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 likely to occur within area
Anous stolidus Common Noddy [825]		Species or species habitat likely to occur within area
Anseranas semipalmata Magpie Goose [978]		Species or species habitat may occur within area
Apus pacificus Fork-tailed Swift [678]		Species or species habitat likely to occur within area
Ardea alba Great Egret, White Egret [59541]		Species or species habitat known 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 canutus Red Knot, Knot [855]	Endangered	Species or species habitat known to occur within area
Calidris ferruginea Curlew Sandpiper [856]	Critically Endangered	Species or species

Name	Threatened	Type of Presence
		habitat known to occur within area
Calidris melanotos Pectoral Sandpiper [858]		Species or species habitat known to occur within area
Calonectris leucomelas Streaked Shearwater [1077]		Species or species habitat known to occur within area
Catharacta skua Great Skua [59472]		Species or species habitat may occur within area
Cuculus saturatus Oriental Cuckoo, Himalayan Cuckoo [710]		Species or species habitat may occur within area
Diomedea antipodensis Antipodean Albatross [64458]	Vulnerable	Species or species habitat may occur within area
Diomedea epomophora Southern Royal Albatross [89221]	Vulnerable	Species or species habitat may occur within area
Diomedea exulans Wandering Albatross [89223]	Vulnerable	Species or species habitat may occur within area
Diomedea gibsoni Gibson's Albatross [64466]	Vulnerable*	Species or species habitat may occur within area
Fregata ariel Lesser Frigatebird, Least Frigatebird [1012]		Species or species habitat known to occur within area
Fregata minor Great Frigatebird, Greater Frigatebird [1013]		Species or species habitat likely to occur within area
Gallinago hardwickii Latham's Snipe, Japanese Snipe [863]		Foraging, feeding or related behaviour may occur within area
Gallinago megala Swinhoe's Snipe [864]		Foraging, feeding or related behaviour likely to occur within area
Gallinago stenura Pin-tailed Snipe [841]		Foraging, feeding or related behaviour 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]		Species or species habitat known to occur within area
Lathamus discolor Swift Parrot [744]	Critically Endangered	Species or species habitat may occur within area
Limosa lapponica Bar-tailed Godwit [844]		Species or species habitat known to occur within area
Macronectes giganteus Southern Giant-Petrel, Southern Giant Petrel [1060]	Endangered	Species or species habitat may occur within

Name	Threatened	Type of Presence
		area
Macronectes halli Northern Giant Petrel [1061]	Vulnerable	Species or species habitat may occur within area
Merops ornatus Rainbow Bee-eater [670]		Species or species habitat may occur within area
Monarcha melanopsis Black-faced Monarch [609]		Species or species habitat known to occur within area
Monarcha trivirgatus Spectacled Monarch [610]		Species or species habitat known to occur within area
Motacilla flava Yellow Wagtail [644]		Species or species habitat known to occur within area
Myiagra cyanoleuca Satin Flycatcher [612]		Species or species habitat known to occur within area
Numenius madagascariensis Eastern Curlew, Far Eastern Curlew [847]	Critically Endangered	Species or species habitat known to occur within area
Numenius minutus Little Curlew, Little Whimbrel [848]		Foraging, feeding or related behaviour likely to occur within area
Pachyptila turtur Fairy Prion [1066]		Species or species habitat known to occur within area
Pandion haliaetus Osprey [952]		Breeding known to occur within area
Phoebetria fusca Sooty Albatross [1075]	Vulnerable	Species or species habitat may occur within area
Puffinus carneipes Flesh-footed Shearwater, Fleshy-footed Shearwater [1043]		Species or species habitat likely to 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 may occur within area
Sterna albifrons Little Tern [813]		Breeding likely to occur within area
Thalassarche cauta Tasmanian Shy Albatross [89224]	Vulnerable*	Species or species habitat may occur within area
Thalassarche eremita Chatham Albatross [64457]	Endangered	Species or species habitat may occur within area
Thalassarche impavida Campbell Albatross, Campbell Black-browed Albatross [64459]	Vulnerable	Species or species habitat may occur within area
Thalassarche melanophris Black-browed Albatross [66472]	Vulnerable	Species or species

Name	Threatened	Type of Presence
		habitat may occur within area
Thalassarche salvini Salvin's Albatross [64463]	Vulnerable	Species or species habitat may occur within area
Thalassarche steadi White-capped Albatross [64462]	Vulnerable*	Foraging, feeding or related behaviour likely to occur within area
Tringa nebularia Common Greenshank, Greenshank [832]		Species or species habitat likely to occur within area
Fish		
Acentronura tentaculata Shortpouch Pygmy Pipehorse [66187]		Species or species habitat may occur within area
Campichthys tryoni Tryon's Pipefish [66193]		Species or species habitat may occur within area
Corythoichthys amplexus Fijian Banded Pipefish, Brown-banded Pipefish [66199]		Species or species habitat may occur within area
Corythoichthys ocellatus Orange-spotted Pipefish, Ocellated Pipefish [66203]		Species or species habitat may occur within area
Festucalex cinctus Girdled Pipefish [66214]		Species or species habitat may occur within area
Filicampus tigris Tiger Pipefish [66217]		Species or species habitat may occur within area
Halicampus grayi Mud Pipefish, Gray's Pipefish [66221]		Species or species habitat may occur within area
Hippichthys cyanospilos Blue-speckled Pipefish, Blue-spotted Pipefish [66228]		Species or species habitat may occur within area
Hippichthys heptagonus Madura Pipefish, Reticulated Freshwater Pipefish [66229]		Species or species habitat may occur within area
Hippichthys penicillus Beady Pipefish, Steep-nosed Pipefish [66231]		Species or species habitat may occur within area
Hippocampus kelloggi Kellogg's Seahorse, Great Seahorse [66723]		Species or species habitat may occur within area
Hippocampus kuda Spotted Seahorse, Yellow Seahorse [66237]		Species or species habitat may occur within area
Hippocampus planifrons Flat-face Seahorse [66238]		Species or species habitat may occur within area
Hippocampus trimaculatus Three-spot Seahorse, Low-crowned Seahorse, Flat-faced Seahorse [66720]		Species or species habitat may occur within area
Hippocampus whitei White's Seahorse, Crowned Seahorse, Sydney		Species or species

Name	Threatened	Type of Presence
Seahorse [66240]		habitat may occur within area
Lissocampus runa Javelin Pipefish [66251]		Species or species habitat may occur within area
Maroubra perserrata Sawtooth Pipefish [66252]		Species or species habitat may occur within area
Micrognathus andersonii Anderson's Pipefish, Shortnose Pipefish [66253]		Species or species habitat may occur within area
Micrognathus brevirostris thorntail Pipefish, Thorn-tailed Pipefish [66254]		Species or species habitat may occur within area
Microphis manadensis Manado Pipefish, Manado River Pipefish [66258]		Species or species habitat may occur within area
Solegnathus dunckeri Duncker's Pipehorse [66271]		Species or species habitat may occur within area
Solegnathus hardwickii Pallid Pipehorse, Hardwick's Pipehorse [66272]		Species or species habitat may occur within area
Solegnathus spinosissimus Spiny Pipehorse, Australian Spiny Pipehorse [66275]		Species or species habitat may occur within area
Solenostomus cyanopterus Robust Ghostpipefish, Blue-finned Ghost Pipefish, [66183]		Species or species habitat may occur within area
Solenostomus paegnius Rough-snout Ghost Pipefish [68425]		Species or species habitat may occur within area
Solenostomus paradoxus Ornate Ghostpipefish, Harlequin Ghost Pipefish, Ornate Ghost Pipefish [66184]		Species or species habitat may occur within area
Stigmatopora nigra Widebody Pipefish, Wide-bodied Pipefish, Black Pipefish [66277]		Species or species habitat may occur within area
Syngnathoides biaculeatus Double-end Pipehorse, Double-ended Pipehorse, Alligator Pipefish [66279]		Species or species habitat may occur within area
Trachyrhamphus bicoarctatus Bentstick Pipefish, Bend Stick Pipefish, Short-tailed Pipefish [66280]		Species or species habitat may occur within area
Urocampus carinirostris Hairy Pipefish [66282]		Species or species habitat may occur within area
Vanacampus margaritifer Mother-of-pearl Pipefish [66283]		Species or species habitat may occur within area
Mammals		
Dugong dugon Dugong [28]		Species or species habitat may occur within area
Reptiles		

Name	Threatened	Type of Presence
Astrotia stokesii Stokes' Seasnake [1122]		Species or species habitat may occur within area
Caretta caretta Loggerhead Turtle [1763]	Endangered	Breeding known to occur within area
Chelonia mydas Green Turtle [1765]	Vulnerable	Species or species habitat known to occur within area
Dermochelys coriacea Leatherback Turtle, Leathery Turtle, Luth [1768]	Endangered	Congregation or aggregation known to occur within area
Eretmochelys imbricata Hawksbill Turtle [1766]	Vulnerable	Species or species habitat known to occur within area
Hydrophis elegans Elegant Seasnake [1104]		Species or species habitat may occur within area
Lepidochelys olivacea Olive Ridley Turtle, Pacific Ridley Turtle [1767]	Endangered	Breeding likely to occur within area
Natator depressus Flatback Turtle [59257]	Vulnerable	Species or species habitat known to occur within area
Pelamis platurus Yellow-bellied Seasnake [1091]		Species or species habitat may occur within area

Whales and other Cetaceans		[Resource Information]
Name	Status	Type of Presence
Mammals		
Balaenoptera acutorostrata Minke Whale [33]		Species or species habitat may occur within area
Balaenoptera edeni Bryde's Whale [35]		Species or species habitat may occur within area
Balaenoptera musculus Blue Whale [36]	Endangered	Species or species habitat may occur within area
Delphinus delphis Common Dophin, Short-beaked Common Dolphin [60]		Species or species habitat may occur within area
Eubalaena australis Southern Right Whale [40]	Endangered	Species or species habitat likely to occur within area
Grampus griseus Risso's Dolphin, Grampus [64]		Species or species habitat may occur within area
Megaptera novaeangliae Humpback Whale [38]	Vulnerable	Species or species habitat known to occur within area
Orcinus orca Killer Whale, Orca [46]		Species or species habitat may occur within area
Sousa chinensis Indo-Pacific Humpback Dolphin [50]		Species or species habitat likely to occur

Name	Status	Type of Presence
		within area
Stenella attenuata Spotted Dolphin, Pantropical Spotted Dolphin [51]		Species or species habitat may occur within area
Tursiops aduncus Indian Ocean Bottlenose Dolphin, Spotted Bottlenose Dolphin [68418]		Species or species habitat likely to occur within area
Tursiops truncatus s. str. Bottlenose Dolphin [68417]		Species or species habitat may occur within area

Extra Information

State and Territory Reserves [Resource Information]

Name	State
Tyagarah	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
Anas platyrhynchos Mallard [974]		Species or species habitat likely to occur within area
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
Lonchura punctulata Nutmeg Mannikin [399]		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

Name	Status	Type of Presence
Frogs		
Rhinella marina Cane Toad [83218]		Species or species habitat likely to 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
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 norvegicus Brown Rat, Norway Rat [83]		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 within area
Vulpes vulpes Red Fox, Fox [18]		Species or species habitat likely to occur within area
Plants		
Alternanthera philoxeroides Alligator Weed [11620]		Species or species habitat likely to occur within area
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 plumosus Climbing Asparagus-fern [48993]		Species or species habitat likely to occur within area
Cabomba caroliniana Cabomba, Fanwort, Carolina Watershield, Fish Grass, Washington Grass, Watershield, Carolina Fanwort, Common Cabomba [5171]		Species or species habitat likely to occur within area
Chrysanthemoides monilifera Bitou Bush, Boneseed [18983]		Species or species

Name	Status	Type of Presence
		habitat likely to occur within area
Chrysanthemoides monilifera subsp. rotundata Bitou Bush [16332]		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
Eichhornia crassipes Water Hyacinth, Water Orchid, Nile Lily [13466]		Species or species habitat likely to occur within area
Genista sp. X Genista monspessulana Broom [67538]		Species or species habitat may occur within area
Lantana camara Lantana, Common Lantana, Kamara Lantana, Large-leaf Lantana, Pink Flowered Lantana, Red Flowered Lantana, Red-Flowered Sage, White Sage, Wild Sage [10892]		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
Protasparagus densiflorus Asparagus Fern, Plume Asparagus [5015]		Species or species habitat likely to occur within area
Protasparagus plumosus Climbing Asparagus-fern, Ferny Asparagus [11747]		Species or species habitat likely to occur within area
Sagittaria platyphylla Delta Arrowhead, Arrowhead, Slender Arrowhead [68483]		Species or species habitat likely to occur within area
Salvinia molesta Salvinia, Giant Salvinia, Aquarium Watermoss, Kariba Weed [13665]		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
Reptiles		
Hemidactylus frenatus Asian House Gecko [1708]		Species or species habitat likely to occur within area

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

-28.60222 153.55139

Acknowledgements

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

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

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

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

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Appendix F

Threatened Species Potential Occurrence

Table F.1 Potential Occurrence for Threatened Fauna Species

Scientific Name	*Common Name*	*Status*		*Habitat Requirement*	*Suitability of Site Habitat*	*Potential Occurrence & Requirement for Assessment of Significance*
		TSC Act	*EPBC Act*			
AMPHIBIANS						
Crinia tinnula	Wallum Froglet	V	-	Acid paperbark and sedge swamps known as 'wallum', this is a banksia-dominated lowland heath ecosystem characterised by acidic waterbodies.	No suitable habitat present	Unlikely. No further assessment required.
Litoria aurea	Green and Golden Bell Frog	E	V	Amongst vegetation in and around permanent swamps, lagoons, farm dams and on flood-prone river flats, particularly where there are bullrushes or spikerushes.	No suitable habitat present	Unlikely. No further assessment required.
Litoria olongburensis	Olongburra Frog	V	V	Paperbark swamps and sedge swamps of the coastal 'wallum' country amongst sedges and rushes.	No suitable habitat present	Unlikely. No further assessment required.
REPTILES						
Chelonia mydas	Green Turtle	V	V	Marine species	No suitable habitat present	Unlikely. No further assessment required.
Caretta caretta	Loggerhead Turtle	E	E	Marine species	No suitable habitat present	Unlikely. No further assessment required.
Delma torquata	Collared Delma	-	V	Usually inhabits eucalypt dominated woodland and open forest where it is associated with suitable micro-habitats ie. exposed rocky outcrops.	No suitable habitat present	No OEH records in locality. Unlikely. No further assessment required.
Dermochelys coriacea	Leathery Turtle	V	V	Marine species	No suitable habitat present	Unlikely. No further assessment required.
Eretmochelys imbricata	Hawksbill Turtle	-	V	Marine species	No suitable habitat present	Unlikely. No further assessment required.
Lepidochelys olivacea	Olive Ridley Turtle	-	V	Marine species	No suitable habitat present	Unlikely. No further assessment required.

Scientific Name	Common Name	Status		Habitat Requirement	Suitability of Site Habitat	Potential Occurrence & Requirement for Assessment of Significance
		TSC Act	EPBC Act			
Natator depressus	Flatback Turtle	-	V	Marine species	No suitable habitat present	Unlikely. No further assessment required.
BIRDS						
Amaurornis molucanna	Pale-vented Bush-hen	V	-	Variety of coastal wetlands from wetlands, mangroves, lagoons and swamps to river margins and creeks running through rainforest.	No suitable habitat present	Unlikely. No further assessment required.
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.	No suitable habitat present	No OEH records in locality. Unlikely. No further assessment required.
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.	No suitable habitat present	Unlikely. No further assessment required.
Botaurus poiciloptilus	Australasian Bittern	E	E	Permanent freshwater wetlands with tall dense vegetation, particularly bullrushes and spikerushes.	No suitable habitat present	Unlikely. No further assessment required.
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.	No suitable habitat present	Unlikely. No further assessment required.
Calidris canutus	Red Knot	-	E	Marine species	No suitable habitat present	No OEH records in locality. Unlikely. No further assessment required.
Calidris ferruginea	Curlew Sandpiper	CE	CE	Marine species	No suitable habitat present	Unlikely. No further assessment required.

Scientific Name	Common Name	Status		Habitat Requirement	Suitability of Site Habitat	Potential Occurrence & Requirement for Assessment of Significance
		TSC Act	EPBC Act			
Calidris tenuirostris	Great Knot	V	-	Marine species	No suitable habitat present	Unlikely. No further assessment required.
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.	No suitable habitat present	Unlikely. No further assessment required.
Carterornis leucotis	White-eared Monarch	V	-	Coastal rainforest, swamp forest and wet eucalypt forest, prefers edges where trees frequently covered with vines.	No suitable habitat present	Unlikely. No further assessment required.
Circus assimilis	Spotted Harrier	V	-	Grassy open woodland, inland riparian woodland, grassland and shrub steppe.	No suitable habitat present	Unlikely. No further assessment required.
Cyclopsitta diophthalma coxeni	Coxen's Fig-parrot	CE	E	Drier rainforests and adjacent wet eucalypt forest, wetter lowland also wetter lowland rainforests.	No suitable habitat present	No OEH records in locality. Unlikely. No further assessment required.
Diomedea antipodensis	Antipodean Albatross	-	V	Marine species	No suitable habitat present	No OEH records in locality. Unlikely. No further assessment required.
Diomedea antipodensis gibsoni	Gibson's Albatross	V	V	Marine species	No suitable habitat present	No OEH records in locality. Unlikely. No further assessment required.
Diomedea epomophora	Southern Royal Albatross	-	V	Marine species	No suitable habitat present	No OEH records in locality. Unlikely. No further assessment required.
Diomedea exulans	Wandering Albatross	E	V	Marine species	No suitable habitat present	No OEH records in locality. Unlikely. No further assessment

Scientific Name	Common Name	Status		Habitat Requirement	Suitability of Site Habitat	Potential Occurrence & Requirement for Assessment of Significance
		TSC Act	EPBC Act			
						required.
Ephippiorhynchus asiaticus	Black-necked Stork	E	-	Swamps, mangroves, mudflats, dry floodplains.	No suitable habitat present	Unlikely. No further assessment required.
Erythrotriorchis radiatus	Red Goshawk	CE	V	Along or near watercourses, swamp forest and woodlands on the coastal plain.	No suitable habitat present	No OEH records in locality. Unlikely. No further assessment required.
Esacus magnirostris	Beach Stone-curlew	CE	-	Tidal flats at the mouth of estuaries or on open beaches.	No suitable habitat present	Unlikely. No further assessment required.
Falco subniger	Black Falcon	V	-	Widely, but sparsely, distributed in New South Wales, mostly occurring in inland regions.	No suitable habitat present	Unlikely. No further assessment required.
Fregetta grallaria grallaria	White-bellied Storm-Petrel	V	V	Marine species	No suitable habitat present	No OEH records in locality. Unlikely. No further assessment required.
Glossopsitta pusilla	Little Lorikeet	V	-	Distributed in forests and woodlands from the coast to the western slopes of the Great Dividing Range, extending westwards to the vicinity of Albury, Parkes, Dubbo and Narrabri.	No suitable habitat present	Unlikely. No further assessment required.
Grus rubicunda	Brolga	V	-	Shallow swamps, floodplains, grasslands and pastoral lands, usually in pairs or parties.	No suitable habitat present	Unlikely. No further assessment required.
Haematopus fuliginosus	Sooty Oystercatcher	V	-	Intertidal rocky and coral reefs, mostly ocean shores.	No suitable habitat present	Unlikely. No further assessment required.
Haematopus longirostris	Pied Oystercatcher	E	-	Open beaches, intertidal flats, sandbanks and occasionally rocky headlands.	No suitable habitat present	Unlikely. No further assessment required.
Haliaeetus leucogaster	White-bellied Sea-eagle	V	-	Around the Australian coastline and inland along rivers and wetlands of the	No suitable habitat present	Unlikely. No further assessment required.

Scientific Name	Common Name	Status		Habitat Requirement	Suitability of Site Habitat	Potential Occurrence & Requirement for Assessment of Significance
		TSC Act	EPBC Act			
				Murray Darling Basin.		
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.	No suitable habitat present	Unlikely. No further assessment required.
Irediparra gallinacea	Comb-crested Jacana	V	-	Among vegetation floating on slow-moving rivers and permanent lagoons, swamps, lakes and dams.	No suitable habitat present	Unlikely. No further assessment required.
Ixobrychus flavicollis	Black Bittern	V	-	Dense vegetation fringing and in streams, swamps, tidal creeks and mudflats, particularly amongst swamp sheoaks and mangroves.	No suitable habitat present	Unlikely. No further assessment required.
Lathamus discolor	Swift Parrot	E	CE	Forests, woodlands, plantations, and banksias.	No suitable habitat present	Unlikely. No further assessment required.
Limosa lapponica baueri	Bar-tailed Godwit	-	V	Marine species	No suitable habitat present	No OEH records in locality. Unlikely. No further assessment required.
Limosa lapponica menzbieri	Bar-tailed Godwit	-	V	Marine species	No suitable habitat present	No OEH records in locality. Unlikely. No further assessment required.
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 range can extend over at least 100 km^2.	No suitable habitat present	Unlikely. No further assessment required.
Macronectes giganteus	Southern Giant Petrel	E	E	Marine species	No suitable habitat present	No OEH records in locality. Unlikely. No further assessment required.

Scientific Name	Common Name	Status		Habitat Requirement	Suitability of Site Habitat	Potential Occurrence & Requirement for Assessment of Significance
		TSC Act	EPBC Act			
Macronectes halli	Northern Giant Petrel	V	V	Marine species	No suitable habitat present	No OEH records in locality. Unlikely. No further assessment required.
Ninox connivens	Barking Owl	V	-	Eucalypt woodland, open forest, swamp woodlands and timber along watercourses.	No suitable habitat present	Unlikely. No further assessment required.
Numenius madagascariensis	Eastern Curlew	-	CE	Marine species	No suitable habitat present	No OEH records in locality. Unlikely. No further assessment required.
Pachyptila turtur subantarctica	Fairy Prion	-	V	Marine species	No suitable habitat present	No OEH records in locality. Unlikely. No further assessment required.
Pandion cristatus	Eastern Osprey	V	-	Forages for fish in fresh, brackish or saline waters of rivers, lakes, estuaries with suitable nesting sites nearby.	No suitable habitat present	Unlikely. No further assessment required.
Phoebetria fusca	Sooty Albatross	V	V	Marine species	No suitable habitat present	No OEH records in locality. Unlikely. No further assessment required.
Poephila cincta cincta	Black-throated Finch (southern)	PE	E	Extinct in NSW	No suitable habitat present	No OEH records in locality. Unlikely. No further assessment required.
Pterodroma leucoptera leucoptera	Gould's Petrel	V	V	Marine species	No suitable habitat present	No OEH records in locality. Unlikely. No further assessment required.
Ptilinopus	Wompoo Fruit-	V	-	Rainforests, low-elevation moist eucalypt	Potential habitat present on Lot	Unlikely to utilise road

Scientific Name	Common Name	Status		Habitat Requirement	Suitability of Site Habitat	Potential Occurrence & Requirement for Assessment of Significance
		TSC Act	EPBC Act			
magnificus	dove			forest, and Brush Box forests.	193	reserve. No further assessment required.
Pterodroma neglecta neglecta	Kermadec Petrel	V	V	Marine species	No suitable habitat present	Unlikely. No further assessment required.
Pterodroma nigripennis	Black-winged Petrel	V	V	Marine species	No suitable habitat present	Unlikely. No further assessment required.
Ptilinopus regina	Rose-crowned Fruit-dove	V	-	Subtropical and dry rainforest, moist eucalypt forest and swamp forest.	Potential habitat present on Lot 193	Unlikely to utilise road reserve. No further assessment required.
Ptilinopus superbus	Superb Fruit-dove	V	-	Subtropical and dry rainforest, moist eucalypt forest and swamp forest.	Potential habitat present on Lot 193	Unlikely to utilise road reserve. No further assessment required.
Rostratula australis	Australian Painted Snipe	E	V	Well-vegetated shallows and margins of wetlands, dams, sewage ponds, wet pastures, marshy areas, irrigation systems, lignum, tea-tree scrub, and open timber.	No suitable habitat present	No OEH records in locality. Unlikely. No further assessment required.
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.	No suitable habitat present	Unlikely. No further assessment required.
Sternula albifrons	Little Tern	E	-	Marine species	No suitable habitat present	Unlikely. No further assessment required.
Thalassarche cauta cauta	Shy Albatross	V	V	Marine species	No suitable habitat present	Unlikely. No further assessment required.
Thalassarche cauta steadi	White-capped Albatross	V	V	Marine species	No suitable habitat present	Unlikely. No further assessment required.
Thalassarche eremita	Chatham Albatross	-	V	Marine species	No suitable habitat present	Unlikely. No further assessment required.

Scientific Name	Common Name	Status		Habitat Requirement	Suitability of Site Habitat	Potential Occurrence & Requirement for Assessment of Significance
		TSC Act	EPBC Act			
Thalassarche impavida	Campbell Albatross	-	V	Marine species	No suitable habitat present	Unlikely. No further assessment required.
Thalassarche melanophris	Black-browed Albatross	V	V	Marine species	No suitable habitat present	Unlikely. No further assessment required.
Thalassarche salvini	Salvin's Albatross	V	V	Marine species	No suitable habitat present	Unlikely. No further assessment required.
Todiramphus chloris	Collared Kingfisher	V	-	Restricted to mangroves and other estuarine habitats, occur about mouths of larger coastal rivers.	No suitable habitat present	Unlikely. No further assessment required.
Turnix melanogaster	Black-breasted Button-quail	E	V	Drier rainforests and vine scrubs, often in association with Hoop Pine and a deep moist leaf litter layer.	No suitable habitat present	No OEH records in locality. Unlikely. No further assessment required.
Tyto longimembris	Eastern Grass Owl	V	-	Areas of tall grass, including tussocks in swampy areas, grassy plains, swampy heath, cane grass, sedges on flood plains.	No suitable habitat present	Unlikely. No further assessment required.
Tyto novaehollandiae	Masked Owl	V	-	Dry eucalypt forest and woodlands.	No suitable habitat present	Unlikely. No further assessment required.
MAMMALS						
Balaenoptera musculus	Blue Whale	E	E	Marine species	No suitable habitat present	Unlikely. No further assessment required.
Chalinolobus dwyeri	Large-eared Pied Bat	V	V	Near cave entrances and crevices in cliffs.	No suitable habitat present	No OEH records in locality. Unlikely. No further assessment required.
Dasyurus maculatus maculatus	Spotted-tailed Quoll	V	E	Dry and moist eucalypt forests and rainforests, fallen hollow logs, large rocky outcrops.	No suitable habitat present	No OEH records in locality. Unlikely. No further assessment required.

Scientific Name	Common Name	Status		Habitat Requirement	Suitability of Site Habitat	Potential Occurrence & Requirement for Assessment of Significance
		TSC Act	EPBC Act			
Eubalaena australis	Southern Right Whale	V	E	Marine species	No suitable habitat present	Unlikely. No further assessment required.
Megaptera novaeangliae	Humpback Whale	V	V	Marine species	No suitable habitat present	Unlikely. No further assessment required.
Miniopterus australis	Little Bentwing-bat	V	-	Moist eucalypt forest, rainforest and dense coastal scrub.	Potential foraging habitat occurs. No roosting habitat for this species would be impacted.	Possible. However, as this species would only use the habitat on-site to forage on occasion, a seven-part test of significance is not required (DEC 2008).
Miniopterus schreibersii oceanensis	Eastern Bentwing-bat	V	-	Forest or woodland, roost in caves, old mines and stormwater channels.	Potential foraging habitat occurs. No roosting habitat for this species would be impacted.	Possible. However, as this species would only use the habitat on-site to forage on occasion, a seven-part test of significance is not required (DEC 2008).
Myotis macropus	Southern Myotis	V	-	Bodies of water, rainforest streams, large lakes, reservoirs.	Potential foraging habitat occurs. No roosting habitat for this species would be impacted.	Possible. However, as this species would only use the habitat on-site to forage on occasion, a seven-part test of significance is not required (DEC 2008).
Nyctimene robinsoni	Eastern Tube-nosed Bat	V	-	Streamside habitats within coastal subtropical rainforest and moist eucalypt forests with well developed rainforest understorey.	No suitable habitat present	Unlikely. No further assessment required.
Nyctophilus bifax	Eastern Long-eared Bat	V	-	Lowland subtropical rainforest and wet and swamp eucalypt forest, extending to	Potential foraging habitat occurs. No roosting habitat for this species	Possible. However, as this species would only

Scientific Name	Common Name	Status		Habitat Requirement	Suitability of Site Habitat	Potential Occurrence & Requirement for Assessment of Significance
		TSC Act	EPBC Act			
				adjacent moist eucalypt forest.	would be impacted.	use the habitat on-site to forage on occasion, a seven-part test of significance is not required (DEC 2008).
Petauroides volans	Greater Glider	-	V	Ranges and coastal plains of eastern Australia, where it inhabits a variety of eucalypt forests and woodlands.	No suitable habitat present	No OEH records in locality. Unlikely. No further assessment required.
Petrogale penicillata	Brush-tailed Rock Wallaby	V	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.	No suitable habitat present	No OEH records in locality. Unlikely. No further assessment required.
Phascolarctos cinereus	Koala	V	V	Appropriate food trees in forests and woodlands, and treed urban areas.	Known habitat occurs	Possible. **Seven-part test of significance required.**
Planigale maculata	Common Planigale	V	-	Rainforest, eucalypt forest, heathland, marshland, grassland and rocky areas with surface cover close to water.	No suitable habitat present (too disturbed)	Unlikely. No further assessment required.
Potorous tridactylus tridactylus	Long-nosed Potoroo	V	V	Cool temperate rainforest, moist and dry forests, and wet heathland, inhabiting dense layers of grass, ferns, vines and shrubs.	No suitable habitat present	Unlikely. No further assessment required.
Pseudomys novaehollandiae	New Holland Mouse	-	V	Occurs in open heathlands, open woodlands with a heathland understorey, and vegetated sand dunes.	No suitable habitat present	No OEH records in locality. Unlikely. No further assessment required.
Pteropus poliocephalus	Grey-headed Flying-fox	V	V	Subtropical and temperate rainforests, tall sclerophyll forests and woodlands, heaths and swamps as well as urban gardens and cultivated fruit crops.	Broadly suitable vegetation for foraging present in broader study area. No known roosting habitat for this species would be	Possible. However, as this species would only use the habitat on-site to forage on occasion,

Scientific Name	Common Name	Status		Habitat Requirement	Suitability of Site Habitat	Potential Occurrence & Requirement for Assessment of Significance
		TSC Act	EPBC Act			
					impacted.	a seven-part test of significance is not required (DEC 2008).
Saccolaimus flaviventris	Yellow-bellied Sheathtail-bat	V	-	Forages in a variety of habitats, roosts in tree hollows and buildings.	Potential foraging habitat occurs. No roosting habitat for this species would be impacted.	Possible. However, as this species would only use the habitat on-site to forage on occasion, a seven-part test of significance is not required (DEC 2008).
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.	Potential foraging habitat occurs. No roosting habitat for this species would be impacted.	Possible. However, as this species would only use the habitat on-site to forage on occasion, a seven-part test of significance is not required (DEC 2008).
Syconycteris australis	Common Blossom-bat	V	-	Littoral rainforest and feeds on flowers in adjacent heathland and paperbark swamps.	No suitable habitat present	Unlikely. No further assessment required.
Xeromys myoides	Water Mouse	-	V		Not recorded in NSW	No OEH records in locality. Unlikely. No further assessment required.
INVERTEBRATES						
Phyllodes imperialis (southern subspecies)	Pink Underwing Moth	E	E	Found in undisturbed subtropical rainforest below 600 m. Breeding habitat is restricted to areas where the caterpillar's food plant, *Carronia multisepalea*, grows in a collapsed shrub-like form.	No suitable habitat present	No OEH records in locality. Unlikely. No further assessment required.

Scientific Name	*Common Name*	*Status*		*Habitat Requirement*	*Suitability of Site Habitat*	*Potential Occurrence & Requirement for Assessment of Significance*
		TSC Act	*EPBC Act*			
Thersites mitchellae	Mitchell's Rainforest Snail	E	CE	Remnant areas of lowland subtropical rainforest and swamp forest on alluvial soils, found amongst leaf litter on the forest floor.	No suitable habitat present	Unlikely. No further assessment required.

V = Vulnerable, E = Endangered, CE = Critically Endangered, PE = Presumed Extinct

Table F.2 Potential Occurrence for Threatened Flora Species

Scientific Name	Common Name	Status		Habitat Requirement	Suitability of Site Habitat	Potential Occurrence & Requirement for Assessment of Significance
		TSC Act	EPBC Act			
Acacia bakeri	Marblewood	V	-	Lowland subtropical rainforest and adjacent wet sclerophyll eucalypt forest.	Not suitable	Not recorded in site survey, which was adequate to identify presence of this species at the site. Therefore, seven-part test of significance not required.
Acronychia littoralis	Scented Acronychia	E	E	Littoral rainforest on sand.	Not suitable	No OEH records in locality. Not recorded in site survey, which was adequate to identify presence of this species at the site. Therefore, seven-part test of significance not required.
Allocasuarina defungens	Dwarf Heath Casuarina	E	E	Tall heath on sand, also on clay and sandstone.	Not suitable	No OEH records in locality. Not recorded in site survey, which was adequate to identify presence of this species at the site. Therefore, seven-part test of significance not required.
Allocasuarina thalassoscopica		-	E	In graminoid low heath, on coastal flats or on rhyolite or granite outcrops close to the coast.	Not suitable	No OEH records in locality. Not recorded in site survey, which was adequate to identify presence of this species at the site. Therefore, seven-part test of significance not required.
Archidendron hendersonii	White Laceflower	V	-	Riverine and lowland subtropical rainforest and littoral rainforest.	Not suitable	Not recorded in site survey, which was adequate to identify presence of this species at the site. Therefore, seven-part test of significance not required.
Arthraxon hispidus	Hairy-joint Grass	V	V	Moist shady places in or on the edges of rainforest and wet eucalypt forest, often near creeks or swamps.	Not suitable	Not recorded in site survey, which was adequate to identify presence of this species at the site. Therefore, seven-part test of significance not required.
Baloghia marmorata	Marbled Balogia	V	V	Subtropical rainforest on soils derived from basalt.	Not suitable	No OEH records in locality. Not recorded in site survey, which was adequate to identify presence of this species at the site. Therefore, seven-part test of significance not required.
Bulbophyllum	Miniature	V	V	Grows on Hoop Pines in upland	Not suitable	No OEH records in locality. Not recorded in site

Scientific Name	Common Name	Status		Habitat Requirement	Suitability of Site Habitat	Potential Occurrence & Requirement for Assessment of Significance
		TSC Act	EPBC Act			
globuliforme	Moss-orchid			subtropical rainforest.		survey, which was adequate to identify presence of this species at the site. Therefore, seven-part test of significance not required.
Corokia whiteana	Corokia	V	V	Boundaries between wet eucalypt forest and warm temperate rainforest up to 800 m, associated with Brush Box and littoral rainforest on the coast.	Not suitable	Not recorded in site survey, which was adequate to identify presence of this species at the site. Therefore, seven-part test of significance not required.
Cryptocarya foetida	Stinking Cryptocarya	V	V	Littoral rainforest in sandy soils, mature trees known on basalt soils.	Not suitable	Not recorded in site survey, which was adequate to identify presence of this species at the site. Therefore, seven-part test of significance not required.
Cryptostylis hunteriana	Leafless Tongue-orchid	V	V	Does not have well defined habitat and is known from a range of communities, including swamp-heath and woodland.	Not suitable	No OEH records in locality. Not recorded in site survey, which was adequate to identify presence of this species at the site. Therefore, seven-part test of significance not required.
Cynanchum elegans	White-flowered Wax Plant	E	E	Dry, littoral or subtropical rainforest, and occasionally in scrub or woodland.	Not suitable	No OEH records in locality. Not recorded in site survey, which was adequate to identify presence of this species at the site. Therefore, seven-part test of significance not required.
Davidsonia jerseyana	Davidson's Plum	E	E	Lowland subtropical rainforest and wet eucalypt forest at low altitudes (below 300 m).	Not suitable	Not recorded in site survey, which was adequate to identify presence of this species at the site. Therefore, seven-part test of significance not required.
Desmodium acanthocladum	Thorny Pea	V	V	Fringes of riverine subtropical and dry rainforest on basalt-derived soils at low elevations.	Not suitable	No OEH records in locality. Not recorded in site survey, which was adequate to identify presence of this species at the site. Therefore, seven-part test of significance not required.
Diospyros mabacea	Red-fruited Ebony	E	E	Usually grows as an understorey tree in lowland subtropical	Not suitable	No OEH records in locality. Not recorded in site survey, which was adequate to identify presence

Scientific Name	Common Name	Status		Habitat Requirement	Suitability of Site Habitat	Potential Occurrence & Requirement for Assessment of Significance
		TSC Act	EPBC Act			
				rainforest, often close to rivers. Soils are generally basalt-derived or alluvial.		of this species at the site. Therefore, seven-part test of significance not required.
Diploglottis campbellii	Small-leaved Tamarind	E	E	Riverine and subtropical rainforest and Brush Box forest, some trees isolated in paddocks and roadsides.	Not suitable	No OEH records in locality. Not recorded in site survey, which was adequate to identify presence of this species at the site. Therefore, seven-part test of significance not required.
Drynaria rigidula	Basket Fern	E	-	Grows on plants, rocks or ground in rainforest and moist eucalypt forest.	Not suitable	Not recorded in site survey, which was adequate to identify presence of this species at the site. Therefore, seven-part test of significance not required.
Endiandra floydii	Floyd's Walnut	E	E	Warm temperate or subtropical rainforest with Brush Box overstorey, and in regrowth rainforest and Camphor Laurel forest.	Not suitable	No OEH records in locality. Not recorded in site survey, which was adequate to identify presence of this species at the site. Therefore, seven-part test of significance not required.
Endiandra hayesii	Rusty Rose Walnut	V	-	Sheltered moist gullies in subtropical and warm temperate rainforest on alluvium or basalt.	Not suitable	No OEH records in locality. Not recorded in site survey, which was adequate to identify presence of this species at the site. Therefore, seven-part test of significance not required.
Endiandra muelleri ssp. *bracteata*	Green-leaved Rose Walnut	E	-	Subtropical rainforest or wet eucalypt forest, chiefly at lower altitudes.	Recorded	A single tree was recorded. S**even-part test of significance required.**
Floydia praealta	Ball Nut	V	V	Riverine and subtropical rainforest, usually soils derived from basalt.	Not suitable	Not recorded in site survey, which was adequate to identify presence of this species at the site. Therefore, seven-part test of significance not required.
Fontainea australis	Southern Fontainea	V	V	Lowland subtropical rainforest, usually on basaltic alluvial flats, and also in cooler subtropical rainforest in the Nightcap Range.	Not suitable	Not recorded in site survey, which was adequate to identify presence of this species at the site. Therefore, seven-part test of significance not required.

Scientific Name	Common Name	Status		Habitat Requirement	Suitability of Site Habitat	Potential Occurrence & Requirement for Assessment of Significance
		TSC Act	EPBC Act			
Geodorum densiflorum	Pink Nodding Orchid	E	-	Dry eucalypt forest at lower altitudes on coastal sand.	Not suitable	Not recorded in site survey, which was adequate to identify presence of this species at the site. Therefore, seven-part test of significance not required.
Gossia fragrantissima	Sweet Myrtle	E	E	Dry subtropical and riverine rainforest, isolated plants can be found in paddocks from regrowth mostly on basalt-derived soils.	Not suitable	Not recorded in site survey, which was adequate to identify presence of this species at the site. Therefore, seven-part test of significance not required.
Macadamia integrifolia	Macadamia Nut	-	V	Subtropical rainforest.	Not suitable	Not recorded in NSW. Therefore, seven-part test of significance not required.
Macadamia tetraphylla	Rough-leaved Queensland Nut	V	V	Subtropical rainforest usually near the coast.	Marginally suitable	Not recorded in site survey, which was adequate to identify presence of this species at the site. Therefore, seven-part test of significance not required.
Ochrosia moorei	Southern Ochrosia	E	E	Riverine and lowland subtropical rainforest.	Not suitable	No OEH records in locality. Not recorded in site survey, which was adequate to identify presence of this species at the site. Therefore, seven-part test of significance not required.
Owenia cepiodora	Onion Cedar	V	V	Subtropical and dry rainforest.	Not suitable	Not recorded in site survey, which was adequate to identify presence of this species at the site. Therefore, seven-part test of significance not required.
Phaius australis	Lesser Swamp-orchid	E	E	Swampy grassland or swampy forest including rainforest, eucalypt or paperbark forest mostly in coastal areas.	Not suitable	No OEH records in locality. Not recorded in site survey, which was adequate to identify presence of this species at the site. Therefore, seven-part test of significance not required.
Randia moorei	Spiny Gardenia	E	E	Subtropical, riverine, littoral and dry rainforest, with Hoop Pine and Brush Box canopy.	Not suitable	Not recorded in site survey, which was adequate to identify presence of this species at the site. Therefore, seven-part test of significance not required.
Sophora fraseri	Brush Sophora	V	V	Moist situations near rainforest.	Not suitable	No OEH records in locality. Not recorded in site

Scientific Name	Common Name	Status		Habitat Requirement	Suitability of Site Habitat	Potential Occurrence & Requirement for Assessment of Significance
		TSC Act	EPBC Act			
						survey, which was adequate to identify presence of this species at the site. Therefore, seven-part test of significance not required.
Syzygium hodgkinsoniae	Red Lilly Pilly	V	V	Riverine and subtropical rainforest on rich alluvial or basaltic soils.	Marginally suitable	Marginally possible. However, not recorded in site survey, which was adequate to identify presence of this species at the site. Therefore, seven-part test of significance not required.
Syzygium moorei	Durobby	V	V	Subtropical and riverine rainforest.	Marginally suitable	Marginally possible. However, not recorded in site survey, which was adequate to identify presence of this species at the site. Therefore, seven-part test of significance not required.
Thesium australe	Austral Toadflax	V	V	Grassland or grassy eucalypt woodland where Themeda australis is predominant, on grassy headlands.	Not suitable	No OEH records in locality. Not recorded in site survey, which was adequate to identify presence of this species at the site. Therefore, seven-part test of significance not required.
Tinospora tinosporoides	Arrow-head Vine	V	-	Wetter subtropical rainforest, including littoral rainforest, on fertile, basalt-derived soils.	Not suitable	Not recorded in site survey, which was adequate to identify presence of this species at the site. Therefore, seven-part test of significance not required.
Xylosma terrae-reginae	Queensland Xylosma	E	-	Littoral and subtropical rainforest on coastal sands derived from metasediments.	Not suitable	Not recorded in site survey, which was adequate to identify presence of this species at the site. Therefore, seven-part test of significance not required.

V = Vulnerable, E = Endangered

Appendix G

Seven-part Test of Significance

Seven-part Tests of Significance

Based on the results of the site inspection and potential occurrence assessment (refer to **Appendix F**), assessments of significance for the following species and communities have been completed:

Flora

- Green-leaved Rose Walnut

EECs

- Subtropical Coastal Floodplain Forest of the New South Wales North Coast Bioregion (Subtropical Coastal Floodplain Forest)
- Lowland Rainforest in the NSW North Coast and Sydney Basin Bioregions (Lowland Rainforest)

Fauna

- Koala

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

Green-leaved Rose Walnut

The Green-leaved Rose Walnut occurs in subtropical and warm temperate rainforests and Brush Box forests, including regrowth and highly modified forms of these habitats. Records are usually from poorer soils derived from sedimentary, metamorphic or acid volcanic rocks. Flowering and fruiting has been observed from November to May.

Threatening processes for this species include:

- Clearing and fragmentation of habitat for coastal development.
- Clearing and fragmentation of habitat for agriculture.
- Infestation of habitat by weeds.
- Clearing and fragmentation of habitat for road-works.
- Frequent fire.
- Disturbance from recreational users in reserve areas.
- Forestry related activities within wet sclerophyll forest habitat.
- Damage from domestic stock.
- Habitat loss and fragmentation as a result of infrastructure development including powerline construction.

Potential Impacts of the Proposal

The Proposal would result in the minor loss of vegetation (22 native trees); the Green-leaved Rose Walnut would not be impacted by the works and would be retained within adjacent vegetation on private property. On this basis it would be highly unlikely that an adverse effect on the life cycle of the Green-leaved Rose Walnut would occur such that a viable local population of the species is likely to be placed at risk of extinction.

Koala

The Koala has a fragmented distribution throughout eastern Australia from north-east Queensland to the Eyre Peninsula in South Australia. In New South Wales it mainly occurs on the central and north coasts, with populations on the western side of the Great Dividing Range.

Habitat consists of eucalypt woodlands and forests, in which the Koala feeds on more than 70 eucalypt species and 30 non-eucalypt species. Preferred browse species are differ across regions. Koalas are inactive for most of the day and do most of their feeding and moving during the night. Although predominantly arboreal, Koalas would descend and traverse open ground to move between trees. Home range size varies with quality of habitat, ranging from less than 2 hectares to several hundred hectares in size. Generally solitary, the Koala has complex social hierarchies based on a dominant male with a territory that overlaps that of several females, with sub-ordinate males on the periphery. Females breed at two years of age and produce one young per year.

Three principle tree species are preferred by Koalas within the Byron LGA: Forest Red Gum (*Eucalyptus tereticornis*), Swamp Mahogany (*E. robusta*) and Tallowwood (*E. microcorys*).

Threatening processes for this species include:

- Loss, modification and fragmentation of habitat.
- Predation by feral and domestic dogs.
- Intense fires that scorch or kill the tree canopy.
- Road-kills.
- Human-induced climate change, especially drought.

Potential Impacts of the Proposal

The Proposal would result in the minor loss of vegetation (22 native trees) with two preferred Koala feed trees (Forest Red Gum) removed. The proposal would also increase the risk of Koala roadkill once operational. Given that primary Koala habitat within the locality would not be affected, the Proposal represents a negligible reduction of habitat which may be utilised by the Koala. Implementation of mitigation measures to reduce the risk of roadkill would alleviate the risks on local Koalas. On this basis it would be highly unlikely that an adverse effect on the life cycle of the Koala would occur such that a viable local population of the species is likely to be placed at risk of extinction.

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

No endangered populations have been declared under the TSC Act in the southern portion of Byron Shire. The Koala population north of the Brunswick River would not be effected by the Proposal.

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

(i) is likely to have an adverse effect on the extent of the ecological community such that its local occurrence is likely to be placed at risk of extinction, or

(ii) is likely to substantially and adversely modify the composition of the ecological community such that its local occurrence is likely to be placed at risk of extinction,

Two EECs occur at the site, with impacts as follows:

- Subtropical Coastal Floodplain Forest: minor loss of several trees (<10) along disturbed edge flanking Grays Lane.
- Lowland Rainforest: minor loss of several trees (<5) along disturbed edge flanking Grays Lane.

The tree removal required for the works is negligible in the context of both communities and would have no impacts on the occurrence or composition of either community in a local context.

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

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

The Proposal would result in minor tree loss along disturbed edges of roadside vegetation. This would not remove or modify any habitat of significance to either of the EECS or the subject threatened species.

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

Habitat at the site is already fragmented from previous clearing and roadworks. The minor tree removal required for the Proposal would not fragment habitat for either of the EECS or the subject threatened species.

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

The habitat removal is minor and is not a significant component of either EEC or the habitat range of either of the subject threatened species.

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

No critical habitat is listed in Byron LGA.

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

Part 4 of the TSC Act states *"The object of a recovery plan is to promote the recovery of the threatened species, population or ecological community to which it relates to a position of viability in nature."* Any action which adversely affects threatened species or their habitat, or contributes to relevant key threatening processes (KTP) may be interpreted as being inconsistent with this general objective.

Approved recovery plans have been prepared under the TSC Act for the Green-leaved Rose Walnut and Koala. The proposal does not affect the aims or proposed actions of any of the prepared recovery plans, threat abatement plans or recovery actions for any of the subject species as part of the Save Our Species conservation program.

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

A KTP is defined under the TSC Act as a process that threatens, or may have the capability to threaten, the survival or evolutionary development of species, populations or ecological communities. KTPs listed under the TSC Act (and whether the Proposal is recognised as a KTP) are shown in **Table G.1**.

Table G.1 Key Threatening Processes

Listed Key Threatening Process (as described in the final determination of the Scientific Committee to list the threatening process)	***Is the development or activity proposed of a class of development or activity that is recognised as a threatening process?***		
	Likely	***Possible***	***Unlikely***
Alteration of habitat following subsidence due to longwall mining			✓
Aggressive exclusion of birds by noisy miners (*Manorina melanocephala*)			✓
Alteration of habitat following subsidence due to longwall mining			✓
Alteration to the natural flow regimes of rivers and streams and their floodplains and wetlands			✓
Anthropogenic climate change			✓
Bush rock removal			✓
Clearing of native vegetation	✓		
Competition and grazing by the feral European Rabbit (*Oryctolagus cuniculus*)			✓
Competition and habitat degradation by feral goats (*Capra hircus*)			✓
Competition from feral honeybees (*Apis mellifera*)			✓
Death or injury to marine species following capture in shark control programs on ocean beaches			✓
Entanglement in or ingestion of anthropogenic debris in marine and estuarine environments			✓
Forest Eucalypt dieback associated with over-abundant psyllids and bell miners			✓
High frequency fire resulting in the disruption of life cycle processes in plants and animals and loss of vegetation structure and composition			✓
Herbivory and environmental degradation caused by feral deer			✓
Importation of red imported fire ants (*Solenopsis invicta*)			✓
Infection by *Psittacine circoviral* (beak and feather) disease affecting endangered psittacine species and populations			✓
Infection of frogs by amphibian chytrid causing the disease chytridiomycosis			✓
Infection of native plants by *Phytophthora cinnamomi*			✓
Introduction and Establishment of Exotic Rust Fungi of the order Pucciniales pathogenic on plants of the family Myrtaceae			✓
Introduction of the large earth bumblebee (*Bombus terrestris*)			✓
Invasion and establishment of exotic vines and scramblers			✓
Invasion and establishment of Scotch broom (*Cytisus scoparius*)			✓
Invasion and establishment of the Cane Toad (*Bufo marinus*)			✓
Invasion, establishment and spread of *Lantana camara*			✓
Invasion of native plant communities by African Olive (*Olea europaea L. subsp. cuspidata*)			✓
Invasion of native plant communities by *Chrysanthemoides monilifera* (bitou bush and boneseed)			✓
Invasion of native plant communities by exotic perennial grasses			✓
Invasion of the yellow crazy ant (*Anoplolepis gracilipes*) into NSW			✓

Listed Key Threatening Process (as described in the final determination of the Scientific Committee to list the threatening process)	***Is the development or activity proposed of a class of development or activity that is recognised as a threatening process?***		
	Likely	***Possible***	***Unlikely***
Loss and degradation of native plant and animal habitat by invasion of escaped garden plants, including aquatic plants			✓
Loss of hollow-bearing trees		✓	
Loss or degradation (or both) of sites used for hill-topping by butterflies			✓
Predation and hybridisation of feral dogs (*Canis lupus familiaris*)			✓
Predation by the European red fox (*Vulpes vulpes*)			✓
Predation by the feral cat (*Felis catus*)			✓
Predation by *Gambusia holbrooki* Girard, 1859 (Plague Minnow or Mosquito Fish)			✓
Predation by the Ship Rat (*Rattus rattus*) on Lord Howe Island			✓
Predation, habitat degradation, competition and disease transmission by feral pigs (*Sus scrofa*)			✓
Removal of dead wood and dead trees	✓		✓

The Proposal would contribute to the KTPs 'clearing of native vegetation' and 'Removal of dead wood and dead trees'. Clearing is defined under the TSC Act as '*the destruction of a sufficient proportion of one or more strata (layers) within a stand or stands of native vegetation so as to result in the loss, or long-term modification, of the structure, composition and ecological function of stand or stands'*. The minor vegetation loss required for the Proposal is unlikely to result in any long-term modification of the structure, composition and ecological function of Forest Red Gum and Lowland rainforest communities at the site.

As noted, the Proposal would result in the loss of up to 22 native trees and seven dead trees (including one hollow stump). The work as proposed would not result in any significant habitat loss for any of the subject species or communities in a local context.

Conclusion
It is considered unlikely that local populations of either of the subject species or communities would be placed at significant risk of extinction as a result of the Proposal.

Appendix H

Koala Mitigation Measures

Grays Lane Upgrade – Koala Mitigation Measures

To reduce the potential for vehicle collisions with Koalas due to a likelihood of increased speeding on the sealed road surface, several mitigation measures are recommended:

1. The speed limit for Grays Lane (80 km/ hr) would be clearly displayed at the entry to Grays Lane and at the eastern extent of the works.

2. At the entry to Grays Lane and at a location west of the culvert crossing Simpsons Creek, 'Koala Zone' pavement treatments would be stencilled on the road surface (refer to **Plate H.1**). This method has been used by Tweed Shire Council at Clothiers Creek Road and achieved a substantial reduction in speeding cars. The pavement treatment is derived from the Queensland Department of Transport and Main Roads (DTMR) *Wildlife signage guidelines* (DTMR 2015), as shown at **Figure H.1**.

3. A variable message sign (refer to **Plate H.2**) would be installed at the entry to Grays Lane. Variable message signs have been installed at Clothiers Creek Road as part of the Koala mitigation package. The sign messages are consistently changed so that information is new and relevant (eg. during the breeding season) so drivers are always seeing new information.

Traffic calming devices such as speed bumps or rumble strips are not recommended as they are only suitable for lower speed roads.

While not strictly necessary, installation of a Koala grid at the entry to Grays Lane may also be helpful to reduce the potential for any animals straying out onto the Pacific Highway (a known 'black spot'' for Koala collisions). This would work in well with existing Koala exclusion fencing along either side of Grays Lane.

Koala grids are increasingly being used for this purpose by Roads and Maritime Service on Pacific Highway upgrades and have also been used in Lismore Shire (Skyline Road). Roads and Maritime Service are about to commence installation of Koala grids at a number of areas north of the site, as per a recent REF by GeoLINK - http://www.rms.nsw.gov.au/projects/northern-nsw/koala-grids/index.html.

However, Koala grids may also have reduced effectiveness when poorly sited or maintained, and the following issues should be considered:

- Companion fencing would be effective and complementary and would be appropriately maintained (eg. removal of branches, weed growth controlled).
- In sandy/ low lying areas which are prone to flooding, grids may fill up with sediment and do not function effectively once in this state.
- Grids do not exclude dogs (relevance dependant on specific application).
- Grids may impede public safety (eg. for pedestrians/ bike riders).

While the works are being completed, it is a good opportunity for Koala grid installation in terms of efficiencies and cost reduction. However, based on some of the issues noted above, further consultation with Councils biodiversity officers and Roads and Maritime Service is advised.

Plate H.1 Pavement treatment at Clothiers Creek Road (Source: Tweed Shire Council)

Plate H.2 Variable message sign (and pavement treatment) at Clothiers Creek Road (Source: Tweed Shire Council)

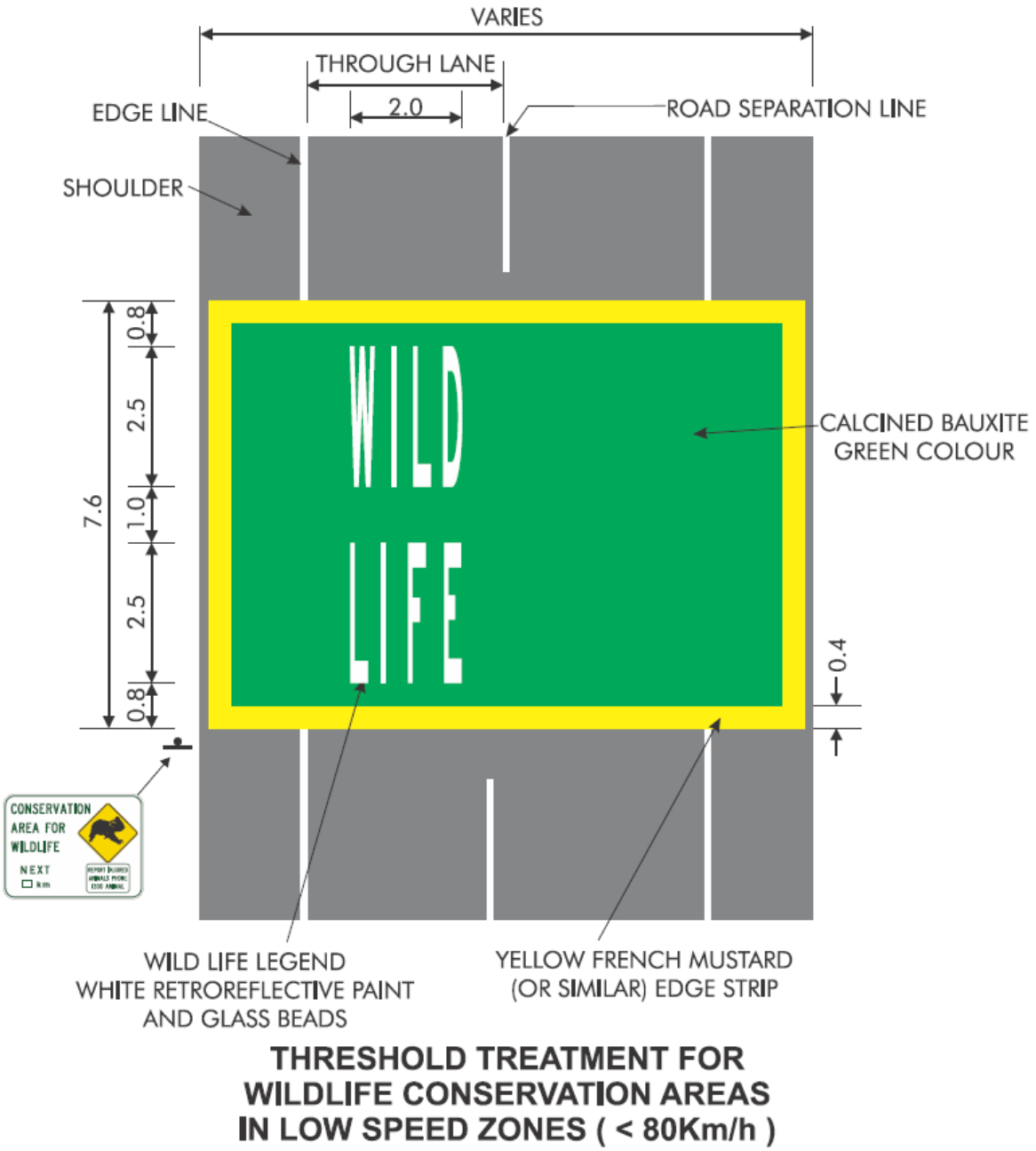

Figure H.1 Specifications for pavement treatment (DTMR 2015)

Appendix I

AHIMS Results

AHIMS Web Services (AWS)
Search Result

Purchase Order/Reference : Grays Lane

Client Service ID : 296087

Ian Colvin

Level 1 64 Ballina Street
Lennox Head New South Wales 2478

Attention: Ian Colvin

Email: icolvin@geolink.net.au

Date: 15 August 2017

Dear Sir or Madam:

AHIMS Web Service search for the following area at Lot : 1, DP:DP286372 with a Buffer of 200 meters, conducted by Ian Colvin on 15 August 2017.

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 the Office of the Environment and Heritage AHIMS Web Services (Aboriginal Heritage Information Management System) has shown that:

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

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

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

Important information about your AHIMS search

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

3 Marist Place, Parramatta NSW 2150
Locked Bag 5020 Parramatta NSW 2220
Tel: (02) 9585 6380 Fax: (02) 9873 8599

ABN 30 841 387 271
Email: ahims@environment.nsw.gov.au
Web: www.environment.nsw.gov.au

Appendix J

Heritage Search Results

Search Results

No results found.

Enter at least one search criterion.

Search Hints

Search | Reset form

Place name

Street name

Town or suburb: Tyagarah

State: New South Wales

Country

Advanced search options

List: All Lists

Different lists will provide different status and class options

Local Government Area

Place ID number

Legal status: --All--

Class: --All--

Keyword Search

Description | Statement of Significance | Place history

Latitude/Longitude

N

Latitude 1

Longitude 1 | S | Longitude 2

W | E | Latitude 2 | E | E

S | S

Wholly within region

Wholly or partially within region

Longitude coordinates should be entered as ddd.mm.ss
Latitude coordinates should be entered as dd.mm.ss

Map Ref No

1:100,000 eg 2357
1:250,000 eg SF-50-01

Search Hints

- Not all fields need to be filled in. The fewer you fill in the more results you will get.
- If you cannot find a place, check spelling and try alternative names. Reduce the number of words that you include and use fewer fields.
- The Local Government field used on its own will provide a comprehensive list of places in an area.

Search for NSW heritage

Return to search page where you can refine/broaden your search.

Statutory listed items

Information and items listed in the State Heritage Inventory come from a number of sources. This means that there may be several entries for the same heritage item in the database. For clarity, the search results have been divided into three sections.

- **Section 1** - contains Aboriginal Places declared by the **Minister for the Environment** under the National Parks and Wildlife Act. This information is provided by the Heritage Division.
- **Section 2** - contains heritage items listed by the **Heritage Council of NSW** under the NSW Heritage Act. This includes listing on the State Heritage Register, an Interim Heritage Order or protected under section 136 of the NSW Heritage Act. This information is provided by the Heritage Division.
- **Section 3** - contains items listed by **local councils** on Local Environmental Plans under the Environmental Planning and Assessment Act, 1979 and **State government agencies** under s.170 of the Heritage Act. This information is provided by local councils and State government agencies.

Section 1. Aboriginal Places listed under the National Parks and Wildlife Act.

Your search did not return any matching results.

Section 2. Items listed under the NSW Heritage Act.

Your search did not return any matching results.

Section 3. Items listed by Local Government and State Agencies.

Your search returned 1 record.

Item name	Address	Suburb	LGA	Information source
Cornwell House	17 Foxs Lane	Tyagarah	Byron	LGOV

There was a total of 1 records matching your search criteria.

Key:
LGA = Local Government Area
GAZ= NSW Government Gazette (statutory listings prior to 1997), HGA = Heritage Grant Application, HS = Heritage Study, LGOV = Local Government, SGOV = State Government Agency.
Note: While the Heritage Division seeks to keep the Inventory up to date, it is reliant on State agencies and local councils to provide their data. Always check with the relevant State agency or local council for the most up-to-date information.

Appendix K

Contaminated Land and Dip Site Results

Healthy Environment, Healthy Community, Healthy Business

Home Contaminated land Record of notices

Search results

Your search for:LGA: Byron Shire Council

Matched 7 notices relating to 6 sites.

Search Again

Refine Search

Suburb	Address	Site Name	Notices related to this site
BANGALOW	Ashton STREET	Dip 4057 Bangalow Saleyards	1 current
BYRON BAY	Corner Beachcomber Drive and Cooper STREET	Dip 4207 Byron Bay	1 current
FEDERAL	3-6 Federal DRIVE	Federal General Store	1 current
MAIN ARM	Upper Main Arm ROAD	Dip 5393 Tooland	1 current
MULLUMBIMBY	Left Bank ROAD	Dip 4944 Mooyabil	1 former
SUFFOLK PARK	Cnr Broken Head Road & Beech DRIVE	Suffolk Park dip site	2 former

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25 July 2017

NSW GOVERNMENT | Department of Primary Industries

Cattle dip site locator

Dip site location

Dip name	HEATHS	Note: Map references are for 25,000 series topographic and co-ordinates are in AGD66 AMG zone 56	
Road	GRAYS LANE	**Mapsheet**	9640-IV-N
Town/Locality	TYAGARAH	**Easting**	554370
Council	BYRON	**Northing**	6835500
Parish	BRUNSWICK	**County**	ROUS

Dip site status

IMPORTANT NOTE: *Cattle dip site information provided by NSW DPI is based on our own hard copy files representing currently known data. NSW DPI is not a public consent authority for the development of land containing cattle dip sites. It is possible that the physical conditions of a cattle dip site - including soil, structures, access and usage - may have been changed due to extreme natural events or landowner and developer actions that NSW DPI cannot be aware of. For more specific and accurate status information a physical inspection should be made and enquiries should always be directed to the appropriate Shire Council.*

Dip Status

Land Type

Explanation of status terms (http://www.dpi.nsw.gov.au/animals-and-livestock/beef-cattle/health-and-disease/parasititic-and-protozoal-diseases/ticks/cattle-dip-site-locator?sq_content_src=%2BdXJsPWh0dHAlM0ElMkYlMkZidGMuZHBpLm5zdy5nb3YuYXUlMkZEaXAlMkZFeHBsYWluJr

Chemical Details

IMPORTANT NOTE: *Chemical history has been retrieved from a copied laboratory log. In some cases it may be confirmed by entries in the hard copy lease folder but generally the chemical record is based on this single lab document. It is possible that there are inaccuracies as well as errors made*

Chemicals used in dip bath	Date first used
ARSENIC	2/51
DDT	1/61
DIOXATHION	10/62
DIOXATHION CHLORDIMEFORM	11/73
AMITRAZ	1/77

Current Details

Current Chemical	NONE
Dip bath status/contents	CAPPED

New search (http://www.dpi.nsw.gov.au/animals-and-livestock/beef-cattle/health-and-disease/parasititic-and-protozoal-diseases/ticks/cattle-dip-site-locator?sq_content_src=%2BdXJsPWh0dHAlM0ElMkYlMkZidGMuZHBpLm5zdy5nb3YuYXUlMkYmYWxsPTE%3D) | Back