Review of Environmental Factors

George Bass Dr, Sylvan St & Kuppa Ave Roundabout – Malua Bay

May 2025

Version 1.2

eurobodalla shire council

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Contents

1. Environmental Safeguards Summary

Table 1: Summary of environmental safeguards to be implemented for more information see relevant sections contained in this document.

Safeguards for the proposed work	
General	• If the scope of the works changes at any time, review this REF to determine any new measures to take. • An environmental management plan is prepared and implemented prior to the commencement of works. • No new access tracks to be created for the works. • Parking of vehicles and storage of plant/equipment is to occur on existing paved areas. Where this is not possible, vehicles and plant/equipment are to be kept away from environmentally sensitive areas and outside the dripline of trees. • All project staff and contractors will be inducted on the environmental sensitivities of the work site(s) and relevant safeguards prior to commencement. • The Project Manager will be notified immediately of any complaints relating to management of environmental issues • To ensure compliance with Section 148(3) of the Protection of the Environment Operations Act 1997, the Council's Health and Building Manager must be notified of any pollution incidents that have caused or threaten material harm to the environment • The Asset Manager will be notified if damage occurs to an area (vegetation, etc) outside of the nominated work area
Soil	• Site management will incorporate best management erosion and sediment control practices such as those found in the Landcom's "Blue Book (4th Edition) on erosion and sediment control.

	• Linear silt stop fencing to be installed down slope of all affected areas and stockpiles. Silt fencing will be installed before any excavation begins. • Sandbags, hay bales wrapped in geotextile fabric etc. will be used to slow water flow and trap sediment. No straw bales are to be used. • All erosion and silt control devices will be visually inspected weekly to ensure effectiveness as well as after each rainfall event. • The rehabilitation of disturbed areas will be carried out progressively as construction stages are completed, and in accordance with Landcom's "Blue Book (4th Edition) on sediment and erosion control. • Construct temporary drainage structures in accordance with the 'Technical Guideline - Temporary Stormwater Drainage for Road Construction' (RMS 2011) • Overburden will be placed in the form of a bund upslope of the site where necessary to reduce surface water entering the site. • Stockpiles will be designed, established, operated and decommissioned in accordance with the RMS Stockpile Site Management Guidelines 2015.
Waterways and water quality	• Visual monitoring of local water quality (ie turbidity, hydrocarbon spills/slicks) is to be undertaken on a regular basis to identify any potential spills or deficient erosion and sediment controls. • Water quality control measures are to be used to prevent any materials (eg. concrete, grout, sediment etc) entering drain inlets or waterways. • Wash down should use potable water and excess debris removed using hand tools. Wash down waste must be filtered before release, and away from all waterways. • No dirty water may be released into drainage lines and/or waterways. • Prevent sediment moving off-site and sediment laden water entering any water course, drainage lines, or drain inlets.

	• Reduce water velocity and capture sediment on site. • Minimise the amount of material transported from site to surrounding pavement surfaces.
Air quality	• Measures to minimise or prevent air pollution or dust are to be used including watering or covering exposed areas. • Works are not to be carried out during strong winds or in weather conditions where high levels of dust or air borne particulates are likely • Vegetation or other materials are not to be burnt on site. • Vehicles and vessels transporting waste or other materials that may produce odours or dust are to be covered during transportation • Vehicles and equipment are to be maintained in good working order. • Monitor work areas and stockpiles for dust generation and seed/cover/spray to suppress. • Measures (including watering or covering exposed areas) are to be used to minimise or prevent air pollution and dust Do not leave vehicles idling
Aboriginal Heritage **STOP, MARK THE AREA, TAKE A PHOTO, REPORT!!!** **SENSITIVE INFORMATION REDACTED**	**Works to be conducted under conditions in AHIP 4924 & Associated Variation#1** **SENSITIVE INFORMATION REDACTED**
Non-Aboriginal Heritage **STOP, MARK THE AREA, TAKE A PHOTO, REPORT!!!** **Follow Unexpected Finds Protocol Appendix D**	Awareness: • All personnel working on site will receive training to ensure awareness of location of existing heritage items within the Study Area and immediate surrounds, and relevant statutory responsibilities.

	<u>Management of existing (known) items:</u> • There are no known Heritage items within the vicinity of the project area. <u>Unexpected Finds (Appendix D):</u> • If heritage items are uncovered during the works, **STOP, MARK THE AREA, TAKE A PHOTO, REPORT!!!** All works in the vicinity of the find must cease and the Project Manager and Environmental Officer contacted immediately. The Standard Management Procedure - Unexpected Heritage Items (RMS, 2015) must then be followed.
Biodiversity	<u>General:</u> • Identify measures to manage vegetation within the road reserve; • Detail appropriate management for the potential habitat of threatened flora and fauna species that will be indirectly impacted by the proposal. This may include fencing and signage. • Identify weed management strategies. • As part of the site induction process, provide all site personnel with information on the biodiversity values of the study area, including threatened species, no-go areas and responsibilities under relevant environmental legislation, including but not limited to the EP&A Act, BC Act and EPBC Act and associated management plans for individual species. • Should unexpected, threatened fauna be located at any time during construction, cease work immediately in the area to prevent further harm to the individual. Contact Council's Environmental Officer and a suitably qualified ecologist to determine if further assessment or management plans are required. <u>Clearing of Vegetation: Pre-clearing:</u> • Qualified fauna experts are required to conduct pre-clearing surveys and undertake fauna handling if required. This may include: ○ Hollow bearing tree survey;

	○ Stag-watching survey (targeted threatened bird species, arboreal mammals and microbats) in order to identify the number and type of nest boxes required and appropriate locations to install them. • Where clearing is required, establish exclusion zones in accordance with Guide 2 Exclusion Zones of Roads and Maritime Biodiversity Guidelines (RTA 2011) to ensure clearing does not extend beyond the approved area. • Trees that are to be trimmed (or removed if necessary) will be clearly marked. Any vegetation to be protected adjacent to the work area will be protected with exclusion fencing. • Exclusion fencing will be placed at or beyond the drip lines of the protected vegetation so as to prevent damage to their root systems. • Any trees with hollows are to be checked for native fauna prior to being removed. If any fauna is found, works will stop and WIRES will be contacted. Refer to any Council specific policy requirements for hollow bearing trees and amend mitigation measures accordingly. <u>Clearing of vegetation – general safeguards</u> • If any damage occurs to vegetation outside of the boundaries of the work site as a result of the implementation of the proposal, the Project Manager will be notified and will establish strategies for mitigation of impacts and site restoration. <u>Invasion of Exotic Species:</u> • Manage vegetation within the road reserve and adjacent to areas of vegetation clearing in accordance with Guide 6 Weed Management and Guide 10 Aquatic Habitats and Riparian Zones of Roads and Maritime's Biodiversity Guidelines (RTA, 2011) to reduce invasion of noxious weed species. • Use weed-free topsoil in landscaping and revegetate disturbed sites with locally indigenous species. • Construction machinery should be washed prior to entering and leaving site to ensure weed propagules are not transported.

	<u>Stockpiling:</u>
	• Only place stockpiles in low value vegetation, where cleared sites are unavailable.
	• Stockpiles should be no taller than 2m height.
	• Use existing stockpiles before creating new ones.
	
	<u>Site Restoration:</u>
	• The rehabilitation of disturbed areas will be carried out progressively as construction stages are completed, and in accordance with:
	  ○ Landcom's "Blue Book (4th Edition) on sediment and erosion control;
	  ○ RMS Landscape Guidelines; RMS Guidelines for Batter Stabilisation Using Vegetation.

Traffic and transport	• Where possible, current traffic movements and property accesses are to be maintained during the works. Any disturbance is to be minimised to prevent unnecessary traffic delays. • If traffic disturbance is unavoidable, a Traffic Management Plan (TMP) will be prepared in accordance with the RMS Traffic Control at Work Sites Manual RTA 2010) and QA Specification G10 Control of Traffic (RTA 2008). • Comply with Council requirements regarding traffic control, access and road/ pedestrian access. • Erect signs regarding proposed works, temporary road closures, diversions etc.
Noise and vibration	<u>Notification:</u> • Notification of works should be put out to the local community to inform mourners who may want to visit their relatives grave sites. • All sensitive receivers (eg local residents) likely to be affected will be notified at least five working days prior to the start of any works associated with the activity that may have an adverse noise or vibration impact. <u>Standard Hours of Operation:</u> • Works to be carried out during normal work hours (i.e. 7am to 6pm Monday to Friday; 8am to 1pm Saturdays).

	Any work that is performed outside normal work hours or on Sundays or public holidays may not be permitted and, if permitted, works are to minimise noise impacts. <u>Out of hours:</u> • Where out-of-hours activities are required, a Noise and Vibration Management Plan will be prepared and implemented in consultation with sensitive receivers.
Socio-economic	• Contain all work within the boundaries designated on the site plan • Notify the Works Supervisor and Asset Manager immediately of any complaints or any accidental damage to property • Locate services on DBYD search and peg out no-go areas to avoid service-disruption • All Council staff will exercise courtesy in dealing with the community
Waste	• A Waste Management Plan will be prepared as part of the CEMP • All surplus material, off cuts, and other debris resulting from the work shall be removed from site and disposed of by a licensed contractor to a licensed waste management facility. • Waste material, other than vegetation and tree mulch, is not to be left on site once the works have been completed. • Working areas are to be maintained, kept free of rubbish and cleaned up at the end of each working day.

2. Introduction

The environmental assessment and determination of the proposal has been undertaken in accordance with Part 5 of the Environmental Planning and Assessment Act 1979 (EP&A Act). For this proposal, Eurobodalla Shire Council is both a public authority proponent (EP&A Act s5.3) and the determining authority (EP&A Act s5.1). The REF has been prepared in accordance with Clause 228 of the EP&A Regulation (2000). Table 1 below outlines the proponent contact details.

Table 2. Proponent details

Project name	**George Bass Dr, Sylvan St & Kuppa Ave Roundabout**
Proponent (council) name	Eurobodalla Shire Council
Project manager	Philip Oste
Position	Divisional Manager, Major Projects
Contact details	0429 504 652

Project description and background

Background and scope

The project seeks to improve the efficiency and safety at the intersection of George Bass Dr, Sylvan St & Kuppa Ave Malua Bay by providing a major intersection upgrade. This will provide a safe, efficient, and accessible transport network, improving the connection from Batemans Bay and Broulee.
Works will include the construction of a roundabout at the George Bass Dr, Sylvan St & Kuppa Ave intersection, rehabilitation of the existing pavements to cater for B-Doubles, installation of appropriate kerb and gutter and stormwater drainage, construction of pedestrian refuges, and installation of new lighting and signs to support the economic growth of the Eurobodalla community.

Scope of Works

Stage 1 - Site Setup;

- Mark out and Installation of Exclusion Zone fencing coordinated by a Design and Survey Officer, Environmental Officer and works crew.
- Traffic control signages.
- Installation of sediment control measures.

Stage 2 – Initial Construction Works;

- Construct 80m SO kerb in existing table drain

Stages 3 & 4 cannot proceed until an AHIP Variation is obtained.

Stage 3 – Initial Construction Works in AHIP Variation area;

- Installation new stormwater pipes.
- Realign intersection street-lighting layout to suit roundabout.
- Realignment of Water mains.

- Realignment of Telstra
- Relocation of a phone booth

Stage 4 – Roundabout (main) Construction Works;

- Installation of subsurface drainage.
- Completion of earthwork for construction of new roundabout.
- Prepare Road base, subbase for the Bitumen and seal treatment.
- Bitumen/Asphalt surfacing treatment in George Bass Dr, Sylvan St & Kuppa Ave.
- Provision of improved sub-surface drainage system
- Construction new kerb and gutter around the roundabout and service lane.
- Constructions of concrete footpath, pram ramp all sides of the roundabout.
- Construction of concrete traffic islands in each leg of the roundabout.
- Installation road signages, line marking and delineation.

Stage 5 - Clean up and remediate the site.

- Revegetate batter.
- Landscaping to use native species where appropriate
- All fencing to be removed without causing further disturbance.

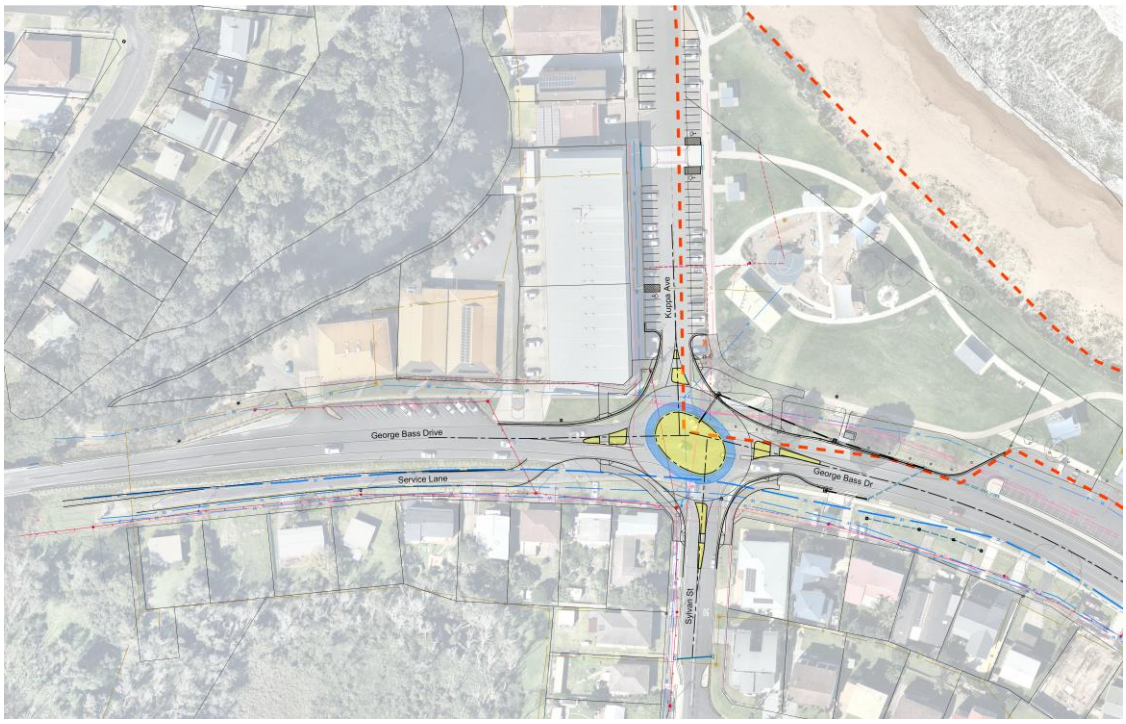

Figure 4. Design Scope of works for all stages.

Figure 5. Design for scope of works, stage 2.

Machinery and equipment

Machinery and equipment used for the works will include.

- Excavator / Backhoe
- Rigid Trucks
- Power Tools
- Skid Steer
- 3-point roller
- Grader
- Water cart
- Kerb Machine
- Walk behind roller
- Backhoe
- Float truck
- Multi-tyre roller

Access and ancillary works

The project manager will evaluate and determine a site compound and storage location for all stages of work closer to construction start date. There are sensitive Heritage and Environmental areas in close proximity to this work site and therefore it is advised that designated ESC storage and laydown areas are used. Personnel are advised to seek advice from the Environmental Officer if they are unsure of a suitable location.

Duration and working hours

The works are described as long term, as outlined in Table 3.

Table 3. Project timeframes

Start date	**June 2025**
Work duration	12 Months
Work hours	Working hours will be Monday-Friday 7am to 6pm Saturday 8am to 1pm Sunday & public holidays – No works other than inspections Any work outside these hours would require appropriate advice to residents, approval of the Divisional Manager – Major Projects and notification of the NSW EPA.

Project location and context

Location of the proposed activity

The works will be undertaken within the ESC owned road reserve between George Bass Dr, Sylvan St & Kuppa Ave, Malua Bay, 9.5km Southeast from Batemans Bay. (Latitude: -35.792160, Longitude: 150.229228)

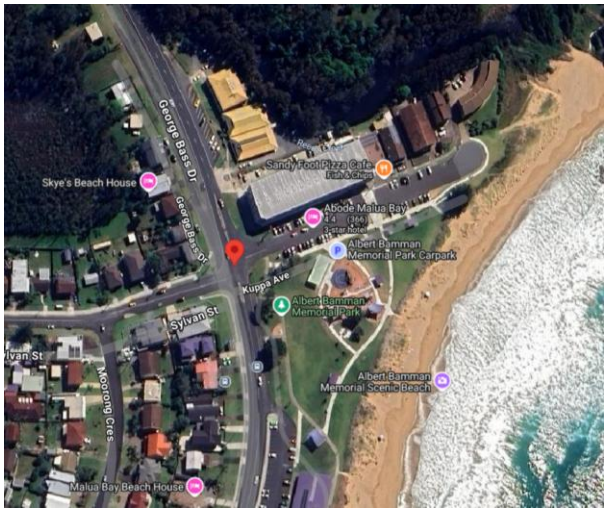

Figure 6. Location of new roundabout and associated works

Site context

The proposed scope of works is within the road reserve, Malua Bay. The area is predominantly characterised by soils having slow infiltration rates when thoroughly wetted and consisting chiefly of soils with a layer that impedes downward movement of water, or soils with moderately fine to fine texture. These soils have a slow rate of water transmission. The historical vegetation is a mixture of Southern Lowland Wet Sclerophyll Forests, Wet Sclerophyll Forests (Grassy subformation) and Swamp Oak Floodplain Forest

The site is surrounded by urban and commercial land, forests of low biodiversity value, public recreation park, a beach (Malua Bay Beach), and a creek (Reedy creek). The landform is gently undulating around 7m above sea level.

Land use and ownership

The project works are to occur in ESC owned road reserve. The surrounding area of the project site consists of Commercial, low-density Residential R2, and public recreation RE1. The works do not impinge on any, private owned estate, National Parks, or land owned by NPWS.

Project justification and consideration of alternatives

Eurobodalla Shire Council proposes to construct a new roundabout at the intersection of George Bass Dr, Sylvan St & Kuppa Ave. Malua Bay is a popular tourist destination and the increase in population size during summer greatly increases the chance of accidents occurring at the intersection as it stands.

Constructing a roundabout at this intersection will improve the road safety of this area. Conflicting traffic movements will be reduced, relative speeds of vehicles going through the roundabout will be reduced, and it is anticipated that fewer high impact crashes or casualties are likely to occur. The roundabout is modelled to balance movement demands improving traffic flow and reducing delayed queuing across the intersection. The scope of works is designed to meet future development in the area and economic growth.

Council also takes the opportunity to review other assets within the road reserve to assess the need to renew or upgrade these at the same time as the proposed road works are undertaken. This provides a more integrated approach reducing the need to undertake major surface disturbance in the street (on more than one occasion). Thus, the potential impact on residents is reduced, the efficiency of work is improved, and cost of the work and the potential adverse impacts on the environment are reduced.

3. Statutory and planning framework

Environmental Planning and Assessment Act 1979

The Environmental Planning and Assessment Act 1979 (EP&A Act) and the Environmental Planning and Assessment Regulation 2000 (EP&A Regulation) provide the framework for development and environmental assessment in NSW.

As Council is the proponent, the works have been assessed as 'development permissible without consent' under Part 5 of the EP&A Act. Therefore, the activity has been assessed in accordance with Sections 5.5, 5.6 and 5.7 of that Act by examining and taking into account to the fullest extent possible all matters which are likely to affect the environment. Environmental Planning Instruments made under the EP&A Act 1979 may also be relevant and are addressed below.

State Environmental Planning Policy (Transport and Infrastructure) 2021

The State Environmental Planning Policy (Transport and Infrastructure) 2021 aims to facilitate the delivery of infrastructure across NSW by identifying whether certain types of infrastructure require consent, can be carried out without consent or are exempt development.

Pursuant to Division 17 Section 2.109 (1) of the Transport and Infrastructure SEPP, development for the purpose of a road or road infrastructure facilities may be carried out by

or on behalf of a public authority without consent on any land. The proposed works are therefore assessed under Part 5 of the EP&A Act.

Not all roadside vegetation management requires assessment under Part 5 of the EP&A Act. Division 17 Section 2.113 (1) of the Transport and Infrastructure SEPP states:

> (1) Development for any of the following purposes is exempt development if it is carried out by or on behalf of a public authority in connection with a road or road infrastructure facilities and complies with general requirements for exempt development Division 4 section 2.20 of the Transport and Infrastructure SEPP:
>
> (f) upgrading or maintenance of landscaping, or vegetation management (such as weed spraying, slashing and pruning), and:
>
> (i) does not involve construction works, and
>
> (ii) involves the replacement (if any) of existing materials with similar materials only.

Clause 4 Section 2.20 in the T&I SEPP limits when 'exempt development' applies, including a statement that it must not involve clearing of vegetation that would otherwise require a permit – unless the clearing is undertaken in accordance with the permit.

Other environmental legislation

Table 3 outlines how the project has been considered under other relevant Commonwealth and State environmental legislation.

Table 4: Other environmental legislation

Legislation	Relevance to the proposed activity
COMMONWEALTH LEGISLATION	
Environmental Protection and Biodiversity Conservation Act 1999 **(EPBC Act)**	The EPBC Act protects matters of National Environmental Significance (NES), such as threatened species and ecological communities, migratory species (protected under international agreements), and National Heritage places (among others). **The protected matter search preformed on the 28/11/2024 shows the area to have 4 Threated Ecological Communities that may occur:** • **Lowland Grassy Woodland in the South East Corner Bioregion**

	• **Illawarra and south coast lowland forest and woodland ecological community** • **Araluen Scarp Grassy Forest** • **Coastal Swamp Sclerophyll Forest of New South Wales and South East Queensland** **Threated species:** • **Blue Warehou** • **Regent Honeyeater** • **Gang-gang Cockatoo** • **Greater Glider (southern and central)** • **White-capped Albatross** • **Fairy Prion (southern)** • **Flatback Turtle** • **Grey-headed Flying-fox** • **Green Turtle** • **White-throated Needletail** **The scope of works has a low likelihood of impacting on these communities and species.**
STATE LEGISLATION	
***Biodiversity Conservation Act 2016* (BC Act)**	Part 7 of the BC Act provides the environmental assessment requirements for activities being assessed under Part 5 of the EP&A Act 1979. If a significant impact is likely, a Species Impact Statement is required. A biodiversity development assessment report may also be required if the proponent elects for this. Section 7.2(1)(a) and 7.3 describe the assessment requirements and thresholds for what is considered a significant impact.

	 **Figure 7. Mapping showing the lack of known threatened species and communities within the project area.** **There will be no significant impact through the scope of works proposed for this project.** **Threatened species and communities listed under this Act will not be impacted by the works and therefore a Species Impact Statement or Biodiversity Development Assessment Report is not required.**
***Local Land Services Act 2013* (LLS Act)**	The objects of the LLS Act include 'to ensure the proper management of natural resources in the social, economic and environmental interests of the State, consistently with the principles of ecologically sustainable development. The Act regulates the clearing of native vegetation, however section 60(O)(b)(ii) excludes the need for consent under the LLS Act where the clearing is an activity carried out by a determining authority within the meaning of Part 5 of the EP&A Act 1979. **Clearing is being carried out by a determining authority within the meaning of Part 5 of the EP&A Act 1979.**
***Fisheries Management Act 1995* (FM Act)**	FM Act provides for the protection, conservation, and recovery of threatened species, populations and ecological communities of fish and marine vegetation and fish habitats, as well as promoting the development and sharing of fishery resources in NSW. **Not applicable, all mitigation measures in Table 1 of this REF must be followed to mitigate the risk of sediment entering Reedy Creek flowing into the Batemans Marine Park.**

National Parks and Wildlife Act 1974 **(NPW Act)** **SENSITIVE INFORMATION REDACTED**	The NPW Act regulates the control and management of all national parks, historic sites, nature reserves, and Aboriginal areas. The main aim of the Act is to conserve the natural and cultural heritage of NSW. Where works will disturb Aboriginal objects, an Aboriginal Heritage Impact Permit (AHIP) is required. **Works to be conducted under conditions in AHIP 4924 & Associated Variation#1**
Heritage Act 1977	The proposed activity does not involve an item or place listed on the NSW State Heritage Inventory or the subject of an interim heritage order or listing and is therefore not a controlled activity. Approval of works on the site is therefore not required under Part 4 of the Heritage Act. **Not applicable**
Protection of the Environment Operations Act 1997 **(POEO Act)**	The POEO Act is the key environmental protection and pollution statute. The POEO Act is administered by the EPA and establishes a licensing regime for waste, air, water and pollution. Relevant sections of the Act are listed below: • Part 5.3 Water Pollution • Part 5.4 Air Pollution • Part 5.5 Noise Pollution • Part 5.6 Land Pollution and Waste Any work potentially resulting in pollution must comply with the POEO Act. Relevant licences must be obtained if required. Check the POEO Public Register for any relevant Environment Protection Licences (EPLs). • **Measures to minimise or prevent air pollution or dust are to be used including watering or covering exposed areas.** • **Works to be carried out during normal work hours (i.e. 7am to 6pm Monday to Friday; 8am to 1pm Saturdays). Any work that is performed outside normal work hours or on Sundays or public holidays may not be permitted and, if permitted, works are to minimise noise impacts.** **No licenses are required under the POEO Act, mitigation measures and safeguards outlined in Table 1 of this REF must be followed.**

***Water Management Act 2000* (WM Act)**	The WM Act's main objective is to manage NSW water in a sustainable and integrated manner that will benefit today's generations without compromising future generations' ability to meet their needs. Section 91E of the Act establishes an approval regime for controlled activities within waterfront land. However, clause 41 of the Water Management (General) Regulation 2018 provides an exemption for public authorities in relation to all controlled activities on waterfront land. Therefore, approval under the WM Act is not required. **Although formal approval under the WM Act is not required, if the proposed activity is within 40m of a waterway, an attempt should be made to comply with the requirements of controlled activities in order to reduce risks to waterways**.
Roads Act 1993	Section 88 of the *Roads Act* states that a roads authority may, despite any other Act or law to the contrary, remove or lop any tree or other vegetation that is on or overhanging a public road if, in its opinion it is necessary to do so for the purposes of carrying out road work or removing a traffic hazard. **Majority of the works will be undertaken inside a Council managed Road Reserve, thus Section 88 of the Roads Act will be applied in this circumstance.**
State Environmental Planning Policy – Resilience and Hazards 2021, Chapter 2 - Coastal Management	Chapter 2 of The *State Environmental Planning Policy (Resilience and Hazards) 2021* provides controls for undertaking development and activities in coastal management areas. The four coastal management areas are: • Coastal wetlands and littoral rainforests area – areas which display the characteristics of coastal wetlands or littoral rainforests that were previously protected by SEPP 14 and SEPP 26 • Coastal vulnerability area – areas subject to coastal hazards such as coastal erosion and tidal inundation • Coastal environment area – areas that are characterised by natural coastal features such as beaches, rock platforms, coastal lakes and lagoons and undeveloped headlands. Marine and estuarine waters are also included • Coastal use area – land adjacent to coastal waters, estuaries and coastal lakes and lagoons. Under Chapter 2 Part 2.2 Division 1 of the Resilience and Hazards SEPP, clearing native vegetation in the mapped '*Coastal wetland and littoral*

	rainforest area' is permissible without consent when undertaken by or on behalf of a public authority and in accordance with a certified coastal management program, a plan of management under Clause 2 of Part 2 of Chapter 6 of the *Local Government Act*, or a plan of management under Division 6 of the *Crown Land Management Act 2016*. In other cases, the clearing requires consent. **Not Applicable**
State Environmental Planning Policy Biodiversity and Conservation 2021 – Chapter 2 Vegetation in Non-Rural Areas	Chapter 2, part 2.2 of the Biodiversity and Conservation SEPP states that an authority to clear vegetation under this policy is not required if it is a clearing authorised under section 60(O) of the Local Land Services Act 2013. Section 60(O) provides an exemption for clearing under Part 5 of the EP&A Act and therefore consent is not required under the B&C SEPP (Vegetation in Non-Rural Areas). **Clearing will be conducted under Section 60(0) of the B&C SEPP (Vegetation in Non-Rural Areas).**
State Environmental Planning Policy - Biodiversity and Conservation 2021 -Chapter 3 Koala Habitat Protection 2020	Biodiversity and Conservation SEPP aims to encourage the proper conservation and management of areas of natural vegetation that provide habitat for *Phascolarctos cinereus* (Koala) to ensure a permanent free-living population over their present range and reverse the current trend of Koala population decline. B&I SEPP applies to development under part 4 of the EP&A Act 1979. As the proposed activity is not 'development', Koala Habitat Protection SEPP doesn't apply. Regardless, consideration of impacts to koala and koala habitat may still be relevant under the BC Act 2016. **Not Applicable**

The Rural Fires Act 1997	Section 100C of the *Rural Fires Act 1997* takes in regard – a. the principles of ecologically sustainable development (as described by section 6 (2) of the *Protection of the Environment Administration Act 1991*), and b. any matter likely to affect the environment by reason of the carrying out of bush fire hazard reduction works on the land that a determining authority would be required to consider under section 5.5 (1) of *the Environmental Planning & Assessment Act 1979* if Part 5 of that Act were applicable to the work and the carrying out of the works were and activity within the meaning of that part. **Not Applicable**

4. Community and agency consultation

Table 5: Community and agency consultation

Community / agency consultation	Have any community stakeholders been identified for the proposed works? Yes ☒ No ☐ *If yes, provide details of consultation undertaken and identify where comments received are considered in the REF. Attach any correspondence sent or received (if relevant such as approval for stockpiles on private land, property access, impact on business, etc).* Affected residents, occupiers and businesses will be contacted during each stage of the project. Is consultation with other authorities required under the requirements of Clause 1, section 2.15 of the Transport and Infrastructure SEPP 2021? Yes ☐ No ☒ Are the works adjacent to a national park, nature reserve or other area reserved under the National Parks and Wildlife Act 1974? Yes ☐ No ☒ Are the works adjacent to a declared aquatic reserve under the Fisheries Management Act 1994?

	Yes ☐ No ☒ *If yes, provide details of consultation carried out and identify where comments received are considered in the REF. Also include copies of any correspondence in the REF appendices.* Other agency and community consultation: N/A

5. Environmental assessment

This section describes in detail the potential key environmental impacts associated with the proposal during both construction and operation and includes identifying site-specific safeguards to ameliorate the identified potential impacts.

Table 6: Impacts, environmental safeguards and mitigation measures

Issue	Description
Landform, geology and soils	Does the project involve the disturbance of large areas (eg >2ha) for earthworks? **Yes ☐ No ☒** Does the site have constraints for erosion and sedimentation controls such as steep gradients, narrow corridors or is located on private property? **Yes ☐ No ☒** Are there any sensitive receiving environments that are located in or nearby the likely project footprint or that would likely receive stormwater discharge from the project? Sensitive receiving environments include (but are not limited to) wetlands, state forests, national parks, nature reserves, rainforests, drinking water catchments). **Yes ☒ No ☐** **Reedy Creek in the wider vicinity all care must be taken to follow mitigation measures outlined in Table 1 of this REF.**
Potential impacts	Any disturbance of groundcover presents a potential risk for erosion, this risk can be minimised through implementation of the following safeguards.
Safeguards	• Site management will incorporate best management erosion and sediment control practices such as those found in the Landcom's "Blue Book (4th Edition) on erosion and sediment control.

	• Linear silt stop fencing to be installed down slope of all affected areas and stockpiles. Silt fencing will be installed before any excavation begins. • Sandbags, hay bales wrapped in geotextile fabric etc. will be used to slow water flow and trap sediment. No straw bales are to be used. • All erosion and silt control devices will be visually inspected weekly to ensure effectiveness as well as after each rainfall event. • The rehabilitation of disturbed areas will be carried out progressively as construction stages are completed, and in accordance with Landcom's "Blue Book (4th Edition) on sediment and erosion control. • Construct temporary drainage structures in accordance with the 'Technical Guideline - Temporary Stormwater Drainage for Road Construction' (RMS 2011) • Overburden will be placed in the form of a bund upslope of the site where necessary to reduce surface water entering the site. • Stockpiles will be designed, established, operated and decommissioned in accordance with the RMS Stockpile Site Management Guidelines 2015.
Contaminated land and acid sulfate soils	Is the project located within an area mapped as Potential Acid Sulfate Soils? **Yes ☒ No ☐** Are there any known occurrences of acid sulfate soils in the area? **Yes ☒ No ☐** *Provide details:* **Eurobodalla Shire Councils GIS maps acid sulfate as a low probability of occurrence with an elevation of 2-4m below surface level.** Is the project located within an area mapped as Potential Contaminated Land? **Yes ☐ No ☒** *Provide details*
Potential impacts	Disturbance of acid sulfate soils can generate large amounts of sulfuric acid leachate which can impact on the surrounding environment. Potential impacts include water quality impacts and impacts on flora and fauna.
Safeguards	If it is anticipated that Potential Acid Sulfate Soils will be disturbed, an Acid Sulfate Management Plan will be prepared.
	If contaminated areas are encountered during construction, appropriate control measures will be implemented to manage the immediate risks of contamination. All other works that may impact on the contaminated area will cease until the nature

	and extent of the contamination has been confirmed and any necessary site-specific controls or further actions identified in consultation with relevant government agencies.
Water quality and hydrology	Are the works located within or adjacent to a waterbody or wetland, or within 40m of a waterway? **Yes ☒ No ☐** *If yes, provide details:* *A proposed haul road cul-de-sac will be within 40 meter for service trucks to turn around.* If yes, the NSW DPI Water or DPI Fisheries should be notified. Have they been notified? **Yes ☐ No ☒** *If yes, is a permit required? Provide details:* Will the proposed works be undertaken on a bridge? **Yes ☐ No ☒** *If yes, name the bridge:* Is the location known to flood or be prone to water logging? **Yes ☐ No ☒** *If yes, provide details*
Potential impacts	Does the project pose any potential risk to the surrounding water quality? **Yes ☐ No ☒** *Describe the potential impact* Disturbance of groundcover, use of chemicals and generation of waste all have the potential to impact on the surrounding waterways via runoff. This risk can be minimised through implementation of the following safeguards.

Safeguards	• Visual monitoring of local water quality (ie turbidity, hydrocarbon spills/slicks) is to be undertaken on a regular basis to identify any potential spills or deficient erosion and sediment controls. • Water quality control measures are to be used to prevent any materials (eg. concrete, grout, sediment etc) entering drain inlets or waterways. • Wash down should use potable water and excess debris removed using hand tools. Wash down waste must be filtered before release, and away from all waterways. • No dirty water may be released into drainage lines and/or waterways. • Prevent sediment moving off-site and sediment laden water entering any water course, drainage lines, or drain inlets. • Reduce water velocity and capture sediment on site. • Minimise the amount of material transported from site to surrounding pavement surfaces. • Divert clean water around the site. • Store fuels, chemical and hazardous materials in secure, bunded areas within temporary construction ancillary facilities, and at least 50m from all waterways. • Capture and dispose of spill and contaminated materials from temporary construction ancillary facilities at a licensed facility. • Provide spill kits around temporary construction ancillary facilities. • Measures to control pollutants from stormwater and spills will be investigated and incorporated in the pavement drainage system at locations where it discharges to the receiving drainage lines. Measures aimed at reducing flow rates during rain events and potential scour will also be incorporated in the design of the pavement drainage system.
Biodiversity	Have relevant database searches been carried out? • NSW Bionet • Threatened species profile search (www.environment.nsw.gov.au/threatenedspeciesapp/) • Commonwealth EPBC • Fisheries? **Yes ☒ No ☐** **Date searches undertaken:**

	28/11/2024 Are the proposed works likely to impact on any vegetation including, shrubs, trees? **Yes ☒ No ☐** Did the database searches identify any endangered ecological communities, populations, threatened flora and/or threatened or protected fauna, or migratory species within the vicinity of the proposed works? Both Federal and State listed matters must be considered. **Yes ☒ No ☐** *Complete Threatened Species tables in Appendix B.* **The protected matter search preformed on the 28/11/2024 shows the area to have 4 Threated Ecological Communities that may occur:** • **Lowland Grassy Woodland in the South East Corner Bioregion** • **Illawarra and south coast lowland forest and woodland ecological community** • **Araluen Scarp Grassy Forest** • **Coastal Swamp Sclerophyll Forest of New South Wales and South East Queensland** **Threated species:** • **Blue Warehou** • **Regent Honeyeater** • **Gang-gang Cockatoo** • **Greater Glider (southern and central)** • **White-capped Albatross** • **Fairy Prion (southern)** • **Flatback Turtle** • **Grey-headed Flying-fox** • **Green Turtle** **White-throated Needletail** Are the works taking place in a roadside area designated as high conservation value vegetation? **Yes ☐ No ☒** *If yes, provide details:* Will the proposed works require the removal of any other vegetation?

	Yes ☒ No ☐ *If yes, provide details:* **The vegetation to be removed consists predominantly of kikuyu.** Do the proposed works involve pruning, trimming or removal of any tree/s? **Yes ☐ No ☒** *If yes, provide details:* **A group of 5 small black wattle saplings will be cleared on the northwestern side of the project to provide a turnaround bay for service trucks to turn around.** Will the proposed works affect any tree hollows or hollow logs? **Yes ☐ No ☒** *If yes, provide details:* Will the proposed works disturb any crevices or other locations (such as on bridges and culverts) for potential bat habitat? **Yes ☐ No ☒** *If yes, provide details:* Are there any known areas of Areas of Outstanding Biodiversity Value (formerly known as critical habitat), Directory of Important Wetlands in Australia within the vicinity of the proposed works? **Yes ☒ No ☐** *If yes, provide details:* **Reedy Creek is listed as an outstanding Biodiversity of low value. Mitigation measures in Table 1 of this REF will be followed and therefore it is not expected that the scope of works will impact on the Creek.** Will the proposed works disturb any natural waterways or aquatic habitat? **Yes ☐ No ☒** *If yes, provide details:* **There are no waterways within the footprint of works, all mitigation measures outlined in Table 1 must be followed to protect Reedy Creek and other waterways in the greater area.** Do the trees form part of a streetscape, an avenue or roadside planting?

	Yes ☐ No ☒ *If yes, provide details:* Have the trees been planted by a community group, Landcare group or by council or is the tree a memorial or part of a memorial group eg. has a plaque? **Yes ☐ No ☒** *If yes, provide details:* Do the trees form part of a heritage listing or have other heritage value? **Yes ☐ No ☒** *If yes, provide details:* Are there any significant weeds present? **Yes ☐ No ☒** *If yes, provide details:*
Potential impacts	Does the project pose any potential risk to the biodiversity within the vicinity of the site? **Yes ☐ No ☒** *If yes, describe the potential impacts:*

Safeguards	<u>General:</u>
	• As part of the site induction process, provide all site personnel with information on the biodiversity values of the study area, including threatened species, no-go areas and responsibilities under relevant environmental legislation, including but not limited to the EP&A Act, BC Act and EPBC Act and associated management plans for individual species.
	• Should unexpected, threatened fauna be located at any time during construction, cease work immediately in the area to prevent further harm to the individual. Contact Council's Environmental Officer and a suitably qualified ecologist to determine if further assessment or management plans are required.
	<u>Clearing of Vegetation: Pre-clearing:</u>
	• Qualified fauna experts are required to conduct pre-clearing surveys and undertake fauna handling if required. This may include:
	  • Hollow bearing tree survey;
	  • Stag-watching survey (targeted threatened bird species, arboreal mammals and microbats) in order to identify the number and type of nest boxes required and appropriate locations to install them.

	• Where clearing is required, establish exclusion zones in accordance with Guide 2 Exclusion Zones of Roads and Maritime Biodiversity Guidelines (RTA 2011) to ensure clearing does not extend beyond the approved area. • Trees that are to be trimmed (or removed if necessary) will be clearly marked. Any vegetation to be protected adjacent to the work area will be protected with exclusion fencing. • Exclusion fencing will be placed at or beyond the drip lines of the protected vegetation so as to prevent damage to their root systems. • Any trees with hollows are to be checked for native fauna prior to being removed. If any fauna is found, works will stop and WIRES will be contacted. Refer to any Council specific policy requirements for hollow bearing trees and amend mitigation measures accordingly. <u>Clearing of vegetation – general safeguards</u> • Remove minimum required vegetation and minimise disturbance to remaining vegetation • If any damage occurs to vegetation outside of the boundaries of the work site as a result of the implementation of the proposal, the Project Manager will be notified and will establish strategies for mitigation of impacts and site restoration. <u>Loss of threatened species and their habitats:</u> • Minimise removal of native vegetation and fauna habitat. • Implement exclusion zones to protect threatened ecological communities and threatened species habitat. • Remove trees in accordance with Guide 4: Clearing of Vegetation and Removal of Bushrock of Roads and Maritimes Biodiversity Guidelines (RTA, 2011) and in the presence of a qualified ecologist or wildlife expert experienced in the rescue of fauna. • Where reasonable and feasible, retain mature and hollow bearing habitat trees, including dead stags. • If hollow bearing trees are being removed, provide nest boxes to mitigate impacts, as determined by the pre-clearing survey. • Works are not to harm threatened fauna. • Works are not to create a barrier to fauna movement. <u>Aquatic habitats and Riparian Zones:</u> • Manage riparian areas in accordance with Roads and Maritime's 'Biodiversity Guidelines Guidance Note 10: Aquatic Habitats and Riparian Zones' (RTA 2011).

	• Should alteration of fish passage occur during construction consult with NSW Department of Primary Industries to determine if a permit under Section 219 of the FM Act is required.
	
	<u>Invasion of Exotic Species:</u>
	
	• Manage vegetation within the road reserve and adjacent to areas of vegetation clearing in accordance with Guide 6 Weed Management and Guide 10 Aquatic Habitats and Riparian Zones of Roads and Maritime's Biodiversity Guidelines (RTA, 2011) to reduce invasion of noxious weed species.
	• Use weed-free topsoil in landscaping and revegetate disturbed sites with locally indigenous species.
	• Construction machinery should be washed prior to entering and leaving site to ensure weed propagules are not transported.
	
	<u>Stockpiling:</u>
	
	• Only place stockpiles in low value vegetation, where cleared sites are unavailable.
	• Stockpiles should be no taller than 2m height.
	• Use existing stockpiles before creating new ones.
	
	<u>Site Restoration:</u>
	
	• The rehabilitation of disturbed areas will be carried out progressively as construction stages are completed, and in accordance with:
	  • Landcom's "Blue Book (4th Edition) on sediment and erosion control;
	  • RMS Landscape Guidelines;
	  • RMS Guidelines for Batter Stabilisation Using Vegetation.

Aboriginal heritage	Are the works likely to disturb previously undisturbed areas of the landscape? **Yes** ☐ **No** ☒ Has an AHIMS register search been conducted? **Yes** ☒ **No** ☐ Has Due Diligence been conducted? **Yes** ☒ **No** ☐ Are there any known Aboriginal artefacts/sites within the vicinity of the work site? **Yes** ☒ **No** ☐

SENSITIVE INFORMATION REDACTED	*If yes, provide details. You may need a permit under s90 of the NP&W Act.* https://www.environment.nsw.gov.au/topics/aboriginal-cultural-heritage/protect-and-manage/impact-permits **AHIP 4924 Variation #1 – Issued 22/5/25 – Refer Appendix B.** Would the proposal involve the removal of mature native trees? **Yes ☐ No ☒** *If yes, provide details of whether the trees have been checked to see if they are scarred or are of Aboriginal cultural significance.*
Potential impacts	Does the project pose any potential risk to Aboriginal heritage? **Yes ☐ No ☒** *If yes, provide details.*
Safeguards **SENSITIVE INFORMATION REDACTED**	**Refer to Appendix B for Full details of AHIP 4924 and associated Variation #1.**
Non-Aboriginal heritage	Complete online heritage database searches • NSW Heritage database • Commonwealth EPBC heritage list • Australian Heritage Places Inventory • Local Environmental Plan(s) heritage items Are there any items of Non-Aboriginal heritage located within the vicinity of the proposed works? **Yes ☐ No ☒** *If yes, list the item(s) and their heritage significance.* *Include details of any approvals that may be required.*
Potential impacts	Does the project pose any potential risk to Non-Aboriginal heritage? **Yes ☐ No ☒** *If yes, provide details*
Safeguards	Awareness:

	• All personnel working on site will receive training to ensure awareness of location of existing heritage items within the Study Area and immediate surrounds, and relevant statutory responsibilities. <u>Management of existing (known) items:</u> • Exclusion fencing will be placed around existing known heritage items to prevent damage to these objects. • Works to be carried out in accordance with the approved Conservation Management Plan for the heritage item (where available). <u>Unexpected Finds (Appendix D):</u> • If heritage items are uncovered during the works, STOP, MARK THE AREA, TAKE A PHOTO, REPORT!!! All works in the vicinity of the find must cease and the Project Manager and Environmental Officer contacted immediately. The Standard Management Procedure - Unexpected Heritage Items (RMS, 2015) must then be followed.
Noise	Are there any noise sensitive areas near the location of the proposed works that may be affected by the works (i.e. church, school, hospital, residences)? During construction? **Yes ☒ No ☐** During Operation? **Yes ☐ No ☒** *If yes, provide details including a map to show proximity to proposed works*

Figure 9. Residents within close proximity to the works who may be affected by the construction noise are shown marked with a red X.

Are the proposed works going to be undertaken during standard working hours detailed below?

Yes ☒ No ☐

Standard working hours	
Monday – Friday	*7:00am to 6:00pm*
Saturday	*8:00am to 1:00pm*
Sunday and Public Holidays	*No work*

Would operation of the proposal alter the noise environment for sensitive receivers? This might include, but not be limited to, altering the line or level of an existing carriageway, changing traffic flow, increasing traffic speeds by more than 10km/hr or installing audio-tactile line markings.

	Yes ☐ No ☒ *If yes, provide details*
Potential impacts	Does the project pose any potential risk to the surrounding noise quality? **Yes ☐ No ☒** *If yes, provide details*
Safeguards	<u>Notification:</u> • All sensitive receivers (eg local residents) likely to be affected will be notified at least five working days prior to the start of any works associated with the activity that may have an adverse noise or vibration impact. <u>Standard Hours of Operation:</u> • Works to be carried out during normal work hours (i.e. 7am to 6pm Monday to Friday; 8am to 1pm Saturdays). Any work that is performed outside normal work hours or on Sundays or public holidays may not be permitted and, if permitted, works are to minimise noise impacts. <u>Out of hours:</u> • Where out-of-hours activities are required, a Noise and Vibration Management Plan will be prepared and implemented in consultation with sensitive receivers.
Air quality	Are the proposed works likely to result in large areas (>2ha) of exposed soils? **Yes ☐ No ☒** Are there any dust sensitive receivers located within the vicinity of the proposed works during the construction period (i.e. church, school, hospital, residences)? **Yes ☐ No ☒** Is there likely to be an emission to air of dust, smoke, steam or vehicle emissions? **Yes ☐ No ☒**
Potential impacts	Does the project pose any potential risk to the surrounding air quality? **Yes ☐ No ☒** *If yes, provide details*
Safeguards	• Measures to minimise or prevent air pollution or dust are to be used including watering or covering exposed areas. • Works are not to be carried out during strong winds or in weather conditions where high levels of dust or air borne particulates are likely • Vegetation or other materials are not to be burnt on site.

	• Vehicles and vessels transporting waste or other materials that may produce odours or dust are to be covered during transportation • Vehicles and equipment are to be maintained in good working order. • Monitor work areas and stockpiles for dust generation and seed/cover/spray to suppress. • Measures (including watering or covering exposed areas) are to be used to minimise or prevent air pollution and dust • Do not leave vehicles idling
Waste and chemical management	Are the proposed works likely to generate >200 tonnes of waste material (contaminated and /or non-contaminated material)? **Yes ☐ No ☒** Are the proposed works likely to require a licence from EPA? **Yes ☐ No ☒** Is waste being transported off site to another location? **Yes ☒ No ☐** Waste will be transported to ESC waste management facility Surf Beach Does the project pose any potential risk to the surrounding environment as a result of waste generated? **Yes ☐ No ☒** ***If YES to any of these items, you need to prepare a Waste Management Plan (May be within CEMP document)***
Potential impacts	*Describe potential impacts*
Safeguards	• All surplus material, off cuts, and other debris resulting from the work shall be removed from site and disposed of by a licensed contractor to a licensed waste management facility. • Waste material, other than vegetation and tree mulch, is not to be left on site once the works have been completed. Working areas are to be maintained, kept free of rubbish and cleaned up at the end of each working day.

Traffic and transport	Are the proposed works likely to result in detours, disruptions or delays to traffic flow (vehicular, cycle and pedestrian) or access to properties or businesses? During construction **Yes** ☒ **No** ☐ During Operation **Yes** ☐ **No** ☒
Potential impacts	Are the proposed works likely to affect any other transport nodes or transport infrastructure (eg bus stops, bus routes) in the surrounding area? Result in detours or disruptions to traffic flow (vehicular, cycle and pedestrian) or access during operation? **Yes** ☒ **No** ☐ *Describe the potential impacts:* **For stage 1, residents who access their properties via the service lane may be affected by the works at various times.**
Safeguards	• Where possible, current traffic movements and property accesses are to be maintained during the works. Any disturbance is to be minimised to prevent unnecessary traffic delays. • If traffic disturbance is unavoidable, a Traffic Management Plan (TMP) will be prepared in accordance with the RMS Traffic Control at Work Sites Manual RTA 2010) and QA Specification G10 Control of Traffic (RTA 2008). • Comply with Council requirements regarding traffic control, access and road/ pedestrian access. • Erect signs regarding proposed works, temporary road closures, diversions etc.
Visual amenity/ landscape	Will the project have any potential impact on visual amenity of the site and surrounding landscape? **Yes** ☐ **No** ☒ *If yes, provide details*
Potential impacts	*Describe the potential impacts*

Safeguards	• Contain all work within the boundaries designated on the site plan • Restore work sites to as close to their original condition as possible • Minimise spread of stockpiles, waste, and parking
Socio-economic	Are the proposed works likely to impact on local business? **Yes ☒ No ☐** *If yes, provide details* **Traffic will be disrupted while trenching occurs over road areas. Alternative routes to local businesses and amenities are available.** Are the proposed works likely to require any property acquisition? **Yes ☐ No ☒** *If yes, provide details* Are the proposed works likely to alter any access for properties (either temporarily or permanently)? **Yes ☐ No ☒** *If yes, provide details:* Are the proposed works likely to alter any on-street parking arrangements (either temporarily or permanently)? **Yes ☐ No ☒** *If yes, provide details* Are the proposed works likely to change pedestrian movements or pedestrian access (either temporarily or permanently)? **Yes ☐ No ☒** *If yes, provide details:* Are the proposed works likely to impact on any items or places of social value to the community (either temporarily or permanently)? **Yes ☐ No ☒** *If yes, provide details* Are the proposed works likely to reduce or change visibility of any businesses, farms, tourist attractions or the like (either temporarily or permanently)?

	Yes ☐ No ☒ *If yes, provide details*
Potential impacts	Does the project pose any potential risk to the socio-economic factors? **Yes ☐ No ☒** *If yes, provide details*
Safeguards	• Contain all work within the boundaries designated on the site plan • Restore work sites to as close to their original condition as possible • Display public information signs until site restoration is complete • Carry out community and stakeholder consultation before works start • Notify the Works Supervisor and Asset Manager immediately of any complaints or any accidental damage to property • Locate services on DBYD search and peg out no-go areas to avoid service-disruption • All Council staff will exercise courtesy in dealing with the community

Environmental Planning and Assessment Regulation 2021 – Assessment Considerations

In accordance with the Environmental Planning and Assessment Act, the following factors have been considered in assessing the likely impact of this activity on the environment.

Does the work proposed:

a) **Have any environmental impact on a community?**

   During construction, the main impact on the people within the community will be from dust, noise and machinery. Works will be undertaken between 7am to 6pm Mondays to Fridays or 8am to 1pm Saturdays. This will be a living document which will be regularly refined or updated as needed to address emerging or new environmental management issues as they arise.

b) **Cause any transformation of a locality?**

   The footprint of works is within the heavily disturbed road reserve. Installation of the new roundabout, pedestrian footpaths and landscaping will improve road safety and accessibility.

c) **Have any environmental impact on the ecosystems of the locality?**

   No, the project area is heavily disturbed, and all works will be within the footprint of the road reserve. Limited vegetation will be disturbed.

d) **Have a reduction of the aesthetic, recreational, scientific or other environmental quality or value of a locality?**

   No, the project area is heavily disturbed and all works will be within the footprint of the road reserve. Limited vegetation will be disturbed posing no threat to the environmental values of the area. Installation of the new roundabout will improve road safety and accessibility.

e) **Have any effect upon a locality, place or building having aesthetic or anthropological, cultural, historical, scientific or social significance or other social significance or other special value for present or future generations?**

   Installation of the new roundabout will improve road safety and accessibility and improve the visual amenity of the area. A Due Diligence Assessment (Appendix C) has been carried out. An AHIP and associated variation has been issued to Council to allow the works to proceed (Appendix B). An Unexpected Finds Protocol has been developed (Appendix D) and should be followed.

f) **Have any impact on the habitat of protected or endangered fauna (as per Biodiversity Conservation Act 2016)?**

No, the project area is heavily disturbed and all works will be within the footprint of the road reserve. Limited vegetation will be disturbed.

g) Cause any long-term effects on the environment?

No, the project area is heavily disturbed and all works will be within the footprint of the road reserve.

h) Cause any degradation of the quality of the environment?

No, the project area is heavily disturbed and all works will be within the footprint of the road reserve. The high value environmental assets of the area will be fenced and remain undisturbed. See the mitigation measures outlined in Table 1.

i) Cause any risk to the safety of the environment?

No, the project will improve road safety in the area through improved accessibility and regulation of traffic flow which will reduce the likelihood of accidents.

j) Cause any reduction in the range of beneficial uses of the environment?

No, the project area is heavily disturbed and all works will be within the footprint of the road reserve. Installation of the new roundabout will improve road safety and accessibility. Installation of pedestrian footpaths will increase the beneficial use of the environment.

k) Cause any pollution of the environment?

No, the project area is heavily disturbed and all works will be within the footprint of the road reserve. All precautions to protect environmental sensitivities are outlined in Table 1 of this REF.

l) Have any environment problems associated with the disposal of waste?

No, there will not be large amounts of waste generated through the scope of works.

m) Increase demands on resources (natural or otherwise) which are, or are likely to become, in short supply?

No, there is no supply issues with the proposed materials to be used in this project.

n) Have any cumulative environmental effect with other existing or likely future activities?

No, the new roundabout and road realignment will improve the traffic flow and road safety of the crossroad. The scope of works is within the heavily disturbed road reserve and do not impinge on any of the environmental sensitivities adjacent to the road reserve.

o) Have any impact on coastal processes and coastal hazards, including those under projected climate change conditions.

No, the scope of the project will not impact on coastal processes and hazards.

Matters of national environmental significance

In accordance with the Environment Protection and Biodiversity Act 1999, the following factors have been considered in assessing the environmental impact of this activity.

Table 7. Matters of natural significance factors and possible impacts

Factor	**Impact**
(a) Any impact on a World Heritage property?	Nil
(b) Any impact on a National Heritage place?	Nil
(c) Any impact on a wetland of international significance?	Nil
(d) Any impact on nationally threatened species, ecological communities or migratory species?	Nil
(e) Any impact on a Commonwealth marine area?	Nil
(f) Does the proposal involve a nuclear action?	Nil
Additionally, any impact (direct or indirect) on the environment of Commonwealth land?	Nil

6. Certification, review and decision

This Review of Environmental Factors provides a true and fair review of the proposal in relation to its potential effects on the environment. It addresses to the fullest extent possible all matters affecting or likely to affect the environment as a result of the proposal. It identifies the likely impacts of the proposal on the environment and details the environmental safeguards and mitigation measures to be implemented to minimise the potential impact to the environment. In light of the above assessment of the proposed activity, it is considered that the overall impact on the environment is likely to be minimal and therefore acceptable. The long-term benefits of the activity will have a cumulative positive impact on the safety of road users and the activity should proceed accordingly.

REF Author 1: Zane Davis

Position: Cadet Civil Engineer

Date: 28/11/2024

REF Author 2: Prue McGuffie

Position: Engineering Environmental Support Officer

Date: 28/03/2025

REF Author 3: Geoff Armstrong

Position: Design Coordinator

Date: 23/05/2025

Reviewed and endorsed by: Kate Hines

Position: Design Officer

Date: 28/05/2025

Accepted by: Phil Oste

Position: Divisional Manager, Major Projects

Date: 30/05/2025

Appendix A – Works Location

Figure 10. Works location

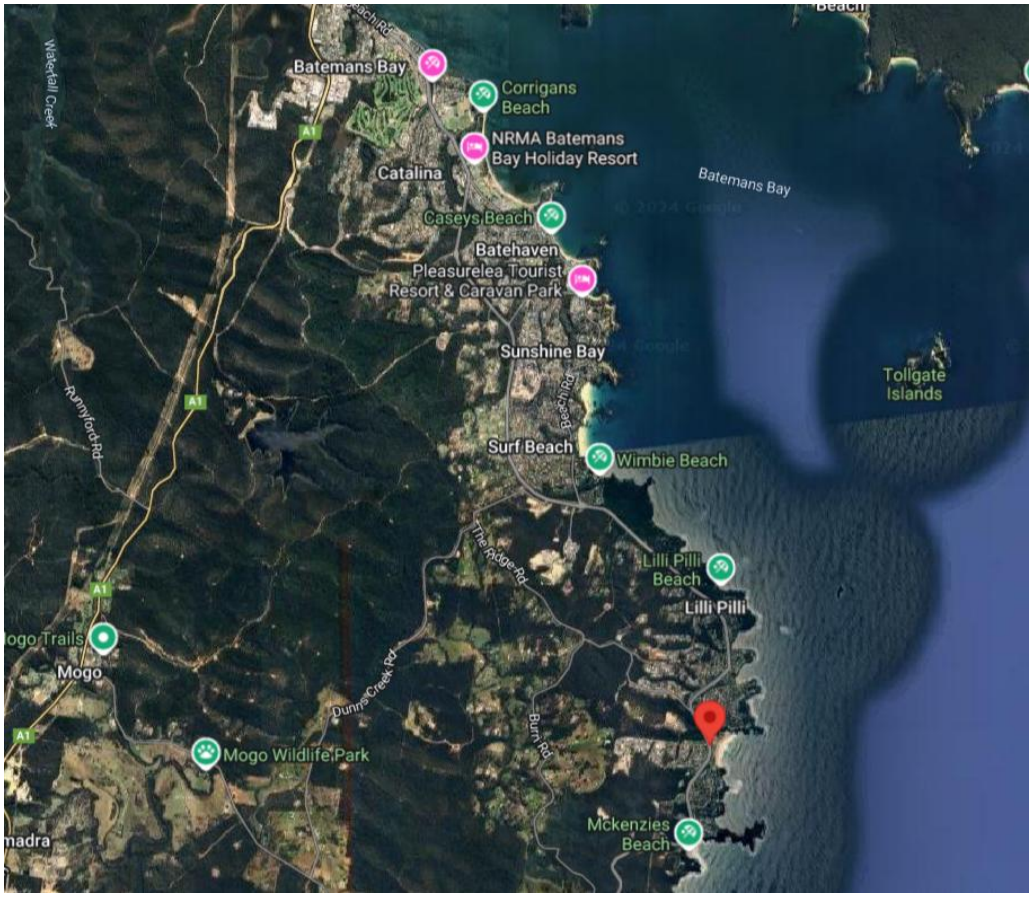

Figure 11. Works location in proximity to larger regional centres

Appendix B

Original AHIP 4924:

Variation#1 to AHIP 4924:

Management & Mitigation Measures Specified within Variation #1 AHIP 4924:

SENSITIVE INFORMATION REDACTED

Appendix C – Excerpt of Completed Due Diligence Aboriginal Heritage.

SENSITIVE INFORMATION REDACTED

Appendix D – Unexpected Finds Protocol

STOP, MARK THE AREA, TAKE A PHOTO, REPORT!!!

UNEXPECTED FINDS PROTOCOL

Eurobodalla Shire Council

Version 1.0

Purpose and scope

This protocol has been developed to provide a consistent method for Eurobodalla Shire Council (ESC) to manage unexpected heritage items (both Aboriginal and non-Aboriginal) that may be discovered during construction works. This protocol will apply to all construction activities undertaken by ESC.

Unexpected heritage items procedure

Step	Action
1	STOP, MARK THE AREA, TAKE A PHOTO, REPORT!!!
1.1	Stop all work in the immediate area of the item and notify the Project Manager and Environmental Officer.
1.2	Establish a 'no-go zone' around the item. Use high visibility fencing, where practical. Avoid digging posts in the area.
1.3	Inform all site personnel about the no-go zone.
1.4	Inspect, document and photograph the item.
1.5	Is the item likely to be bone? Where it is obvious that the bones are human remains, you must notify the local police by telephone immediately. They may take command of all or part of the site. Where human remains are likely to be aboriginal ancestral remains, also contact the OEH.
1.6	Confirm with the site environment representative that the site is unexpected and if a permit is in place.
2	**Contact Environmental Officer and Divisional Manager to engage an Aboriginal or Historical archaeologist and/or an Aboriginal heritage consultant**
2.1	Contact a qualified Aboriginal or Historical archaeologist to discuss the location and extent of the item and arrange a site inspection, if required. If requested, provide photographs.
3	**Preliminary assessment and recording of the find**
3.1	In a minority of cases, the Aboriginal or Historical archaeologist or LALC Rep may determine from the photographs that no site inspection is required because no archaeological constraint exists for the project (e.g., the item is not a 'relic', a

	'heritage item' or an 'Aboriginal object'). Any such advice should be provided in writing (e.g. via email) and confirmed by the Project Manager.
3.2	Arrange site access for the Aboriginal or Historical archaeologist/Aboriginal heritage consultant to inspect the item as soon as practicable
3.3	Subject to the Aboriginal or Historical archaeologist/Aboriginal heritage consultant's assessment, work may recommence at a set distance from the item. Existing protective fencing established in Step 1 may need to be adjusted to reflect the extent of the newly assessed protective area. No works are to take place within this area once established.
3.4	The Aboriginal or Historical archaeologist/Aboriginal heritage consultant may provide advice after the site inspection and preliminary assessment that no heritage constraint exists for the project (e.g. the item is not a 'relic' or a 'heritage item' or an 'Aboriginal item'. Any such advice should be provided in writing (e.g. via email or letter with the consultant's name and company details clearly identifiable) to the Project Manager.
3.5	Where required, seek additional specialist technical advice (such as a forensic or physical anthropologist to identify skeletal remains). The Aboriginal or Historical archaeologist consultant can provide contacts for such specialist consultants.
3.6	Where the item has been identified as a 'relic' or 'heritage item' or an 'Aboriginal object' the Aboriginal or Historical archaeologist should formally record the item. Where an Aboriginal object is recorded it must be registered on the Aboriginal heritage information management system (AHIMS) in accordance with section 89A of the NPW Act.
3.7	OEH (Heritage Division for non-Aboriginal relics and Planning and Aboriginal Heritage Section for Aboriginal objects) can be notified informally by telephone at this stage by the Environment and Cultural Heritage Manager. Any verbal conversations with regulators must be noted on the project file for future reference. • Heritage NSW ph.: 131 555 • Email: info@environment.nsw.gov.au Registered aboriginal parties (RAPs) will be notified at this point to inform them of unexpected find.

4	**Aboriginal or Historical Archaeologist to prepare management requirements for site**
4.1	An archaeological or heritage management plan is developed outlining management actions to ensure damage to the site is minimised and work can recommence. This plan will be developed by the Aboriginal or Historical archaeologist in consultation with the RAP's, OEH and DPE as required.
5	**Notify the regulator, if required.**
5.1	If notification is required, complete the template notification letter, including the archaeological/heritage management plan and other relevant supporting information. For historical relics a s146 notification form will be required to be submitted to the Heritage Division.
5.2	Forward the signed notification letter to OEH.
5.3	A copy of the final signed notification letter, archaeological or heritage management plan and the site recording form is to be kept on file and a copy sent to the Project Manager.
6	**Resume Work**
6.1	The management plan is implemented and the project construction environmental management plan (CEMP) is updated to reflect any additional controls and requirements
6.2	Seek written clearance to resume project work from the Environment and Planning Manager and the Aboriginal or Historical Archaeologist/Aboriginal heritage consultant. Clearance would only be given once all archaeological excavation and/or heritage recommendations and approvals (where required) are complete. Resumption of project work must be in accordance with all relevant project/heritage approvals/determinations.
6.3	If required, ensure archaeological excavation/heritage reporting and other heritage approval conditions are completed in the required timeframes. This includes artefact retention repositories, conservation and/or disposal strategies

Responsibilities

Role	Responsibility
Project Manager	Ensure the process for unexpected finds is included as part of all site inductions. Ensure that this protocol is implemented, and all personnel are aware of their responsibilities.
Construction Supervisor	Ensure this protocol is understood and implemented on site. Stops works immediately adjacent to any unexpected archaeological finds until they have been assessed in accordance with this protocol. Report any unexpected finds to the Project Manager.
Aboriginal or Historical archaeologist	On call to provide professional assistance should there be an unexpected find.
LALC	On call to provide professional assistance should there be an unexpected find.
Environmental Officer	On call to provide professional assistance should there be an unexpected find.
All personnel	Be familiar with this protocol and report any unexpected finds to their construction supervisor or project manager.

Contact details

Position	Name	Phone Number
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Types of unexpected heritage items and their legal protection

An ‘unexpected heritage item’ means any unanticipated discovery of an actual or potential heritage item, for which Eurobodalla Shire Council does not have approval to disturb or does not have a safeguard in place (apart from this procedure) to manage the disturbance.

These discoveries are categorised as either:

(a) Aboriginal objects

(b) Historic (non-Aboriginal) heritage items

(c) Human skeletal remains.

Aboriginal objects

The National Park and Wildlife Act 1974 protects Aboriginal objects which are defined as:

“Any deposit, object or material evidence (not being a handicraft made for sale) relating to the Aboriginal habitation of the area that comprises New South Wales, being habitation before or concurrent with (or both) the occupation of that area by persons of non-Aboriginal extraction, and includes Aboriginal remains”

Examples of Aboriginal objects include stone tool artefacts, shell middens, axe grinding grooves, pigment or engraved rock art, burial sites, and scarred trees.

Historic heritage

The Heritage Act 1977 protects relics which are defined as:

“Any deposit, artefact, object or material evidence that relates to the settlement of the area that comprises NSW, not being Aboriginal settlement; and is of State or local heritage significance”.

Historic (non-Aboriginal) heritage items may include: Archaeological ‘relics’; Other historic items (i.e. works, structures, buildings or movable objects).

Relics are archaeological items of local or state significance which may relate to past domestic, industrial or agricultural activities in NSW, and can include bottles, remnants of clothing, pottery, building materials and general refuse.

Human skeletal remains

Human skeletal remains can be identified as either an Aboriginal object or non-Aboriginal relic depending on ancestry of the individual (Aboriginal or non-Aboriginal) and burial context (archaeological or non-archaeological). Remains are considered to be archaeological when the time elapsed since death is suspected of being 100 years or more.

All bones must be treated as potential human skeletal remains and work around them must stop while they are protected and investigated urgently.

Appendix E – Threatened Species Search (Batemans region)

Scientific name	Common name	Conservation project	Type of species	NSW status	Occurrence	Vegetation class
Aldrovanda vesiculosa	Waterwheel Plant	Aldrovanda vesiculosa conservation project	Plant > Aquatic Plants	Endangered	Known	Show 4 linked vegetation classes
Botaurus poiciloptilus	Australasian Bittern	Botaurus poiciloptilus conservation project	Animal > Birds	Endangered	Known	Show 25 linked vegetation classes
Epacris gnidioides	Budawangs Cliff-heath	Epacris gnidioides conservation project	Plant > Shrubs	Vulnerable	Known	Show 8 linked vegetation classes
Burhinus grallarius	Bush Stone-curlew	Burhinus grallarius conservation project	Animal > Birds	Endangered	Known	Show 73 linked vegetation classes
Caladenia tessellata	Thick Lip Spider Orchid	Caladenia tessellata conservation project	Plant > Orchids	Endangered	Predicted	Show 10 linked vegetation classes
Calamanthus fuliginosus	Striated Fieldwren	Calamanthus fuliginosus conservation project	Animal > Birds	Endangered	Known	Show 8 linked vegetation classes
Calidris alba	Sanderling	Calidris alba conservation project	Animal > Birds	Vulnerable	Known	Show 17 linked vegetation classes
Calidris tenuirostris	Great Knot	Calidris tenuirostris conservation project	Animal > Birds	Vulnerable	Known	Show 17 linked vegetation classes

Calyptorhynchus lathami	**Glossy Black-Cockatoo**	**Calyptorhynchus lathami conservation project**	Animal > Birds	Vulnerable	Known	**Show 75 linked vegetation classes**
Cercartetus nanus	**Eastern Pygmy-possum**	**Cercartetus nanus conservation project**	Animal > Marsupials	Vulnerable	Known	**Show 68 linked vegetation classes**
Chalinolobus dwyeri	**Large-eared Pied Bat**	**Chalinolobus dwyeri conservation project**	Animal > Bats	Vulnerable	Known	**Show 58 linked vegetation classes**
Charadrius leschenaultii	**Greater Sand-plover**	**Charadrius leschenaultii conservation project**	Animal > Birds	Vulnerable	Known	**Show 15 linked vegetation classes**
Charadrius mongolus	**Lesser Sand-plover**	**Charadrius mongolus conservation project**	Animal > Birds	Vulnerable	Known	**Show 17 linked vegetation classes**
Climacteris picumnus victoriae	**Brown Treecreeper (eastern subspecies)**	**Climacteris picumnus victoriae conservation project**	Animal > Birds	Vulnerable	Known	**Show 64 linked vegetation classes**
Correa baeuerlenii	**Chef's Cap Correa**	**Correa baeuerlenii conservation project**	Plant > Shrubs	Vulnerable	Known	**Show 15 linked vegetation classes**
Cryptostylis hunteriana	**Leafless Tongue Orchid**	**Cryptostylis hunteriana conservation project**	Plant > Orchids	Vulnerable	Known	**Show 32 linked vegetation classes**
Dasyurus maculatus	**Spotted-tailed Quoll**	**Dasyurus maculatus conservation project**	Animal > Marsupials	Vulnerable	Known	**Show 73 linked vegetation classes**
Distichlis distichophylla	**Australian Saltgrass**	**Distichlis distichophylla conservation project**	Plant > Herbs and Forbs	Endangered	Known	**Show 5 linked vegetation classes**

Dry Rainforest of the South East Forests in the South East Corner Bioregion	**Dry Rainforest of the South East Forests in the South East Corner Bioregion**	**Dry Rainforest of the South East Forests in the South East Corner Bioregion conservation project**	Community > Threatened Ecological Communities	Endangered Ecological Community	Known	**Show 2 linked vegetation classes**
Esacus magnirostris	**Beach Stone-curlew**	**Esacus magnirostris conservation project**	Animal > Birds	Critically Endangered	Predicted	**Show 16 linked vegetation classes**
Eucalyptus sturgissiana	**Ettrema Mallee**	**Eucalyptus sturgissiana conservation project**	Plant > Mallees	Vulnerable	Known	**Show 5 linked vegetation classes**
Falco hypoleucos	**Grey Falcon**	**Falco hypoleucos conservation project**	Animal > Birds	Vulnerable	Known	**Show 39 linked vegetation classes**
Falsistrellus tasmaniensis	**Eastern False Pipistrelle**	**Falsistrellus tasmaniensis conservation project**	Animal > Bats	Vulnerable	Known	**Show 56 linked vegetation classes**
Galium australe	**Tangled Bedstraw**	**Galium australe conservation project**	Plant > Herbs and Forbs	Endangered	Known	**Show 6 linked vegetation classes**
Genoplesium vernale	**East Lynne Midge Orchid**	**Genoplesium vernale conservation project**	Plant > Orchids	Vulnerable	Known	**Show 6 linked vegetation classes**
Grammitis stenophylla	**Narrow-leaf Finger Fern**	**Grammitis stenophylla conservation project**	Plant > Ferns and Cycads	Endangered	Predicted	**Show 16 linked vegetation classes**
Haematopus fuliginosus	**Sooty Oystercatcher**	**Haematopus fuliginosus conservation project**	Animal > Birds	Vulnerable	Known	**Show 4 linked vegetation classes**

Haematopus longirostris	**Pied Oystercatcher**	**Haematopus longirostris conservation project**	Animal > Birds	Endangered	Known	**Show 9 linked vegetation classes**
Haloragis exalata subsp. exalata	**Square Raspwort**	**Haloragis exalata subsp. exalata conservation project**	Plant > Shrubs	Vulnerable	Known	**Show 12 linked vegetation classes**
Hamirostra melanosternon	**Black-breasted Buzzard**	**Hamirostra melanosternon conservation project**	Animal > Birds	Vulnerable	Known	**Show 44 linked vegetation classes**
Heleioporus australiacus	**Giant Burrowing Frog**	**Heleioporus australiacus conservation project**	Animal > Amphibians	Vulnerable	Known	**Show 45 linked vegetation classes**
Hoplocephalus bungaroides	**Broad-headed Snake**	**Hoplocephalus bungaroides conservation project**	Animal > Reptiles	Endangered	Known	**Show 24 linked vegetation classes**
Isoodon obesulus obesulus	**Southern Brown Bandicoot (eastern)**	**Isoodon obesulus obesulus conservation project**	Animal > Marsupials	Endangered	Known	**Show 42 linked vegetation classes**
Ixobrychus flavicollis	**Black Bittern**	**Ixobrychus flavicollis conservation project**	Animal > Birds	Vulnerable	Known	**Show 59 linked vegetation classes**
Phoniscus papuensis	**Golden-tipped Bat**	**Phoniscus papuensis conservation project**	Animal > Bats	Vulnerable	Known	**Show 45 linked vegetation classes**
Lathamus discolor	**Swift Parrot**	**Lathamus discolor conservation project**	Animal > Birds	Endangered	Known	**Show 77 linked vegetation classes**
Limosa limosa	**Black-tailed Godwit**	**Limosa limosa conservation project**	Animal > Birds	Vulnerable	Known	**Show 15 linked**

						vegetation classes
Litoria aurea	**Green and Golden Bell Frog**	**Litoria aurea conservation project**	Animal > Amphibians	Endangered	Known	**Show 41 linked vegetation classes**
Lophoictinia isura	**Square-tailed Kite**	**Lophoictinia isura conservation project**	Animal > Birds	Vulnerable	Known	**Show 87 linked vegetation classes**
Melanodryas cucullata cucullata	**Hooded Robin (south-eastern form)**	**Melanodryas cucullata cucullata conservation project**	Animal > Birds	Vulnerable	Known	**Show 82 linked vegetation classes**
Miniopterus orianae oceanensis	**Large Bent-winged Bat**	**Miniopterus orianae oceanensis conservation project**	Animal > Bats	Vulnerable	Known	**Show 76 linked vegetation classes**
Mixophyes balbus	**Stuttering Frog**	**Mixophyes balbus conservation project**	Animal > Amphibians	Endangered	Predicted	**Show 46 linked vegetation classes**
Micronomus norfolkensis	**Eastern Coastal Free-tailed Bat**	**Micronomus norfolkensis conservation project**	Animal > Bats	Vulnerable	Known	**Show 45 linked vegetation classes**
Myotis macropus	**Southern Myotis**	**Myotis macropus conservation project**	Animal > Bats	Vulnerable	Known	**Show 58 linked vegetation classes**
Neophema chrysogaster	**Orange-bellied Parrot**	**Neophema chrysogaster conservation project**	Animal > Birds	Critically Endangered	Predicted	**Show 19 linked vegetation classes**
Ninox connivens	**Barking Owl**	**Ninox connivens conservation project**	Animal > Birds	Vulnerable	Known	**Show 71 linked vegetation classes**

Ninox strenua	**Powerful Owl**	**Ninox strenua conservation project**	Animal > Birds	Vulnerable	Known	**Show 53 linked vegetation classes**
Pachycephala olivacea	**Olive Whistler**	**Pachycephala olivacea conservation project**	Animal > Birds	Vulnerable	Known	**Show 50 linked vegetation classes**
Pandion cristatus	**Eastern Osprey**	**Pandion cristatus conservation project**	Animal > Birds	Vulnerable	Known	**Show 48 linked vegetation classes**
Persicaria elatior	**Tall Knotweed**	**Persicaria elatior conservation project**	Plant > Herbs and Forbs	Vulnerable	Known	**Show 10 linked vegetation classes**
Petaurus australis	**Yellow-bellied Glider**	**Petaurus australis conservation project**	Animal > Marsupials	Vulnerable	Known	**Show 38 linked vegetation classes**
Petaurus norfolcensis	**Squirrel Glider**	**Petaurus norfolcensis conservation project**	Animal > Marsupials	Vulnerable	Known	**Show 61 linked vegetation classes**
Petroica rodinogaster	**Pink Robin**	**Petroica rodinogaster conservation project**	Animal > Birds	Vulnerable	Known	**Show 19 linked vegetation classes**
Pezoporus wallicus wallicus	**Eastern Ground Parrot**	**Pezoporus wallicus wallicus conservation project**	Animal > Birds	Vulnerable	Known	**Show 13 linked vegetation classes**
Phascogale tapoatafa	**Brush-tailed Phascogale**	**Phascogale tapoatafa conservation project**	Animal > Marsupials	Vulnerable	Known	**Show 57 linked vegetation classes**
Phascolarctos cinereus	**Koala**	**Phascolarctos cinereus conservation project**	Animal > Marsupials	Endangered	Known	**Show 87 linked vegetation classes**

Potorous tridactylus	**Long-nosed Potoroo**	**Potorous tridactylus conservation project**	Animal > Marsupials	Vulnerable	Known	**Show 44 linked vegetation classes**
Pteropus poliocephalus	**Grey-headed Flying-fox**	**Pteropus poliocephalus conservation project**	Animal > Bats	Vulnerable	Known	**Show 71 linked vegetation classes**
Ptilinopus superbus	**Superb Fruit-Dove**	**Ptilinopus superbus conservation project**	Animal > Birds	Vulnerable	Known	**Show 24 linked vegetation classes**
Chthonicola sagittata	**Speckled Warbler**	**Chthonicola sagittata conservation project**	Animal > Birds	Vulnerable	Known	**Show 57 linked vegetation classes**
Saccolaimus flaviventris	**Yellow-bellied Sheathtail-bat**	**Saccolaimus flaviventris conservation project**	Animal > Bats	Vulnerable	Known	**Show 81 linked vegetation classes**
Scoteanax rueppellii	**Greater Broad-nosed Bat**	**Scoteanax rueppellii conservation project**	Animal > Bats	Vulnerable	Known	**Show 51 linked vegetation classes**
Senecio spathulatus	**Coast Groundsel**	**Senecio spathulatus conservation project**	Plant > Herbs and Forbs	Endangered	Predicted	**Show 14 linked vegetation classes**
Sminthopsis leucopus	**White-footed Dunnart**	**Sminthopsis leucopus conservation project**	Animal > Marsupials	Vulnerable	Known	**Show 20 linked vegetation classes**
Stagonopleura guttata	**Diamond Firetail**	**Stagonopleura guttata conservation project**	Animal > Birds	Vulnerable	Known	**Show 62 linked vegetation classes**
Sternula albifrons	**Little Tern**	**Sternula albifrons conservation project**	Animal > Birds	Endangered	Known	**Show 9 linked vegetation classes**

Onychoprion fuscata	**Sooty Tern**	**Onychoprion fuscata conservation project**	Animal > Birds	Vulnerable	Known	**Show 3 linked vegetation classes**
Stictonetta naevosa	**Freckled Duck**	**Stictonetta naevosa conservation project**	Animal > Birds	Vulnerable	Known	**Show 12 linked vegetation classes**
Swamp Sclerophyll Forest on Coastal Floodplains of the New South Wales North Coast, Sydney Basin and South East Corner Bioregions	**Swamp Sclerophyll Forest on Coastal Floodplains of the New South Wales North Coast, Sydney Basin and South East Corner Bioregions**	**Swamp Sclerophyll Forest on Coastal Floodplains of the New South Wales North Coast, Sydney Basin and South East Corner Bioregions conservation project**	Community > Threatened Ecological Communities	Endangered Ecological Community	Known	**Show 4 linked vegetation classes**
River-Flat Eucalypt Forest on Coastal Floodplains of the New South Wales North Coast, Sydney Basin and South East Corner Bioregions	**River-Flat Eucalypt Forest on Coastal Floodplains of the New South Wales North Coast, Sydney Basin and South East Corner Bioregions**	**River-Flat Eucalypt Forest on Coastal Floodplains of the New South Wales North Coast, Sydney Basin and South East Corner Bioregions conservation project**	Community > Threatened Ecological Communities	Endangered Ecological Community	Known	**Show 5 linked vegetation classes**
Thesium australe	**Austral Toadflax**	**Thesium australe conservation project**	Plant > Herbs and Forbs	Vulnerable	Known	**Show 26 linked vegetation classes**
Thinornis cucullatus cucullatus	**Eastern Hooded Dotterel**	**Thinornis cucullatus cucullatus conservation project**	Animal > Birds	Critically Endangered	Known	**Show 15 linked vegetation classes**
Tyto novaehollandiae	**Masked Owl**	**Tyto novaehollandiae conservation project**	Animal > Birds	Vulnerable	Known	**Show 75 linked vegetation classes**

Tyto tenebricosa	**Sooty Owl**	**Tyto tenebricosa conservation project**	Animal > Birds	Vulnerable	Known	**Show 39 linked vegetation classes**
Wilsonia backhousei	**Narrow-leafed Wilsonia**	**Wilsonia backhousei conservation project**	Plant > Shrubs	Vulnerable	Known	**Show 5 linked vegetation classes**
Wilsonia rotundifolia	**Round-leafed Wilsonia**	**Wilsonia rotundifolia conservation project**	Plant > Shrubs	Endangered	Known	**Show 7 linked vegetation classes**
Anthochaera phrygia	**Regent Honeyeater**	**Anthochaera phrygia conservation project**	Animal > Birds	Critically Endangered	Known	**Show 43 linked vegetation classes**
Xenus cinereus	**Terek Sandpiper**	**Xenus cinereus conservation project**	Animal > Birds	Vulnerable	Known	**Show 16 linked vegetation classes**
Zieria tuberculata	**Warty Zieria**	**Zieria tuberculata conservation project**	Plant > Shrubs	Vulnerable	Known	**Show 8 linked vegetation classes**
Coastal Saltmarsh in the New South Wales North Coast, Sydney Basin and South East Corner Bioregions	**Coastal Saltmarsh in the New South Wales North Coast, Sydney Basin and South East Corner Bioregions**	**Coastal Saltmarsh in the New South Wales North Coast, Sydney Basin and South East Corner Bioregions conservation project**	Community > Threatened Ecological Communities	Endangered Ecological Community	Known	**Saltmarshes**
Littoral Rainforest in the New South Wales North Coast, Sydney Basin and South East Corner Bioregions	**Littoral Rainforest in the New South Wales North Coast, Sydney Basin and South East Corner Bioregions**	**Littoral Rainforest in the New South Wales North Coast, Sydney Basin and South East Corner Bioregions conservation project**	Community > Threatened Ecological Communities	Endangered Ecological Community	Known	**Show 4 linked vegetation classes**

Puffinus assimilis	**Little Shearwater**	**Puffinus assimilis conservation project**	Animal > Birds	Vulnerable	Known	**Show 2 linked vegetation classes**
Ardenna carneipes	**Flesh-footed Shearwater**	**Ardenna carneipes conservation project**	Animal > Birds	Vulnerable	Known	**Show 2 linked vegetation classes**
Chelonia mydas	**Green Turtle**	**Chelonia mydas conservation project**	Animal > Reptiles	Vulnerable	Known	**Show 5 linked vegetation classes**
Arctocephalus forsteri	**New Zealand Fur-seal**	**Arctocephalus forsteri conservation project**	Animal > Marine Mammals	Vulnerable	Known	**Show 2 linked vegetation classes**
Arctocephalus pusillus doriferus	**Australian Fur-seal**	**Arctocephalus pusillus doriferus conservation project**	Animal > Marine Mammals	Vulnerable	Known	**Show 2 linked vegetation classes**
Diomedea exulans	**Wandering Albatross**	**Diomedea exulans conservation project**	Animal > Birds	Endangered	Known	**Marine environments**
Diomedea gibsoni	**Gibson's Albatross**	**Diomedea gibsoni conservation project**	Animal > Birds	Vulnerable	Known	**Marine environments**
Eubalaena australis	**Southern Right Whale**	**Eubalaena australis conservation project**	Animal > Marine Mammals	Endangered	Known	**Marine environments**
Macronectes giganteus	**Southern Giant Petrel**	**Macronectes giganteus conservation project**	Animal > Birds	Endangered	Known	**Marine environments**
Macronectes halli	**Northern Giant-Petrel**	**Macronectes halli conservation project**	Animal > Birds	Vulnerable	Known	**Marine environments**

Physeter macrocephalus	**Sperm Whale**	**Physeter macrocephalus conservation project**	Animal > Marine Mammals	Vulnerable	Known	**Marine environments**
Pterodroma leucoptera leucoptera	**Gould's Petrel**	**Pterodroma leucoptera leucoptera conservation project**	Animal > Birds	Vulnerable	Known	**Show 8 linked vegetation classes**
Thalassarche cauta	**Shy Albatross**	**Thalassarche cauta conservation project**	Animal > Birds	Endangered	Known	**Marine environments**
Thalassarche melanophris	**Black-browed Albatross**	**Thalassarche melanophris conservation project**	Animal > Birds	Vulnerable	Known	**Marine environments**
Freshwater Wetlands on Coastal Floodplains of the New South Wales North Coast, Sydney Basin and South East Corner Bioregions	**Freshwater Wetlands on Coastal Floodplains of the New South Wales North Coast, Sydney Basin and South East Corner Bioregions**	**Freshwater Wetlands on Coastal Floodplains of the New South Wales North Coast, Sydney Basin and South East Corner Bioregions conservation project**	Community > Threatened Ecological Communities	Endangered Ecological Community	Known	**Coastal Freshwater Lagoons**
Swamp Oak Floodplain Forest of the New South Wales North Coast, Sydney Basin and South East Corner Bioregions	**Swamp Oak Floodplain Forest of the New South Wales North Coast, Sydney Basin and South East Corner Bioregions**	**Swamp Oak Floodplain Forest of the New South Wales North Coast, Sydney Basin and South East Corner Bioregions conservation project**	Community > Threatened Ecological Communities	Endangered Ecological Community	Known	**Show 4 linked vegetation classes**
Callocephalon fimbriatum	**Gang-gang Cockatoo**	**Callocephalon fimbriatum conservation project**	Animal > Birds	Vulnerable	Known	**Show 65 linked vegetation classes**

Alteration to the natural flow regimes of rivers and streams and their floodplains and wetlands	**Alteration to the natural flow regimes of rivers, streams, floodplains & wetlands.**	**Alteration to the natural flow regimes of rivers and streams and their floodplains and wetlands conservation project**	Threat > Habitat Loss/Change	Key Threatening Process	Predicted	
Infection by Psittacine Circoviral (beak and feather) Disease affecting endangered psittacine species and populations	**Infection by Psittacine circoviral (beak and feather) disease affecting endangered psittacine species**	**Infection by Psittacine Circoviral (beak and feather) Disease affecting endangered psittacine species and populations conservation project**	Threat > Disease	Key Threatening Process	Predicted	
Competition from feral honey bees, Apis mellifera L.	**Competition from feral honeybees**	**Competition from feral honey bees, Apis mellifera L. conservation project**	Threat > Pest Animal	Key Threatening Process	Predicted	
Introduction of the Large Earth Bumblebee Bombus terrestris (L.)	**Introduction of the large earth bumblebee (*Bombus terrestris*)**	**Introduction of the Large Earth Bumblebee Bombus terrestris (L.) conservation project**	Threat > Pest Animal	Key Threatening Process	Predicted	
Bushrock removal	**Bushrock Removal**	**Bushrock removal conservation project**	Threat > Habitat Loss/Change	Key Threatening Process	Predicted	
Loss or degradation (or both) of sites used for hill-topping by butterflies	**Loss and/or degradation of sites used for hill-topping by butterflies**	**Loss or degradation (or both) of sites used for hill-topping by butterflies conservation project**	Threat > Habitat Loss/Change	Key Threatening Process	Predicted	

Predation by the Feral Cat Felis catus (Linnaeus, 1758)	**Predation by feral cats**	**Predation by the Feral Cat Felis catus (Linnaeus, 1758) conservation project**	Threat > Pest Animal	Key Threatening Process	Predicted	
Infection of frogs by amphibian chytrid causing the disease chytridiomycosis	**Infection of frogs by amphibian chytrid causing the disease chytridiomycosis**	**Infection of frogs by amphibian chytrid causing the disease chytridiomycosis conservation project**	Threat > Disease	Key Threatening Process	Predicted	
Invasion of the Yellow Crazy Ant, Anoplolepis gracilipes (Fr. Smith) into NSW	**Invasion of the yellow crazy ant (*Anoplolepis gracilipes*) into NSW**	**Invasion of the Yellow Crazy Ant, Anoplolepis gracilipes (Fr. Smith) into NSW conservation project**	Threat > Pest Animal	Key Threatening Process	Predicted	
Removal of dead wood and dead trees	**Removal of dead wood and dead trees**	**Removal of dead wood and dead trees conservation project**	Threat > Habitat Loss/Change	Key Threatening Process	Predicted	
Herbivory and environmental degradation caused by feral deer	**Herbivory and environmental degradation caused by feral deer**	**Herbivory and environmental degradation caused by feral deer conservation project**	Threat > Pest Animal	Key Threatening Process	Predicted	
High frequency fire resulting in the disruption of life cycle processes in plants and animals and loss of vegetation structure and composition	**Ecological consequences of high frequency fires**	**High frequency fire resulting in the disruption of life cycle processes in plants and animals and loss of vegetation structure and composition conservation project**	Threat > Habitat Loss/Change	Key Threatening Process	Predicted	

Predation by the European Red Fox Vulpes Vulpes (Linnaeus, 1758)	**Predation by the European Red Fox**	**Predation by the European Red Fox Vulpes Vulpes (Linnaeus, 1758) conservation project**	Threat > Pest Animal	Key Threatening Process	Predicted	
Predation by Gambusia holbrooki Girard, 1859 (Plague Minnow or Mosquito Fish)	**Predation by the Plague Minnow (*Gambusia holbrooki*)**	**Predation by Gambusia holbrooki Girard, 1859 (Plague Minnow or Mosquito Fish) conservation project**	Threat > Pest Animal	Key Threatening Process	Predicted	
Competition and habitat degradation by Feral Goats, Capra hircus Linnaeus 1758	**Competition and habitat degradation by Feral Goats, *Capra hircus* Linnaeus 1758**	**Competition and habitat degradation by Feral Goats, Capra hircus Linnaeus 1758 conservation project**	Threat > Pest Animal	Key Threatening Process	Predicted	
Invasion of native plant communities by exotic perennial grasses	**Invasion of native plant communities by exotic perennial g rasses**	**Invasion of native plant communities by exotic perennial grasses conservation project**	Threat > Weed	Key Threatening Process	Predicted	
Predation, habitat degradation, competition and disease transmission by Feral Pigs, Sus scrofa Linnaeus 1758	**Predation, habitat degradation, competition and disease transmission by Feral Pigs (*Sus scrofa*)**	**Predation, habitat degradation, competition and disease transmission by Feral Pigs, Sus scrofa Linnaeus 1758 conservation project**	Threat > Pest Animal	Key Threatening Process	Predicted	
Importation of Red Imported Fire Ants Solenopsis invicta Buren 1972	**Importation of red imported fire ants into NSW**	**Importation of Red Imported Fire Ants Solenopsis invicta Buren 1972**	Threat > Pest Animal	Key Threatening Process	Predicted	

		conservation project				
Clearing of native vegetation	**Clearing of native vegetation**	**Clearing of native vegetation conservation project**	Threat > Habitat Loss/Change	Key Threatening Process	Predicted	
Competition and grazing by the feral European Rabbit, Oryctolagus cuniculus (L.)	**Competition and grazing by the feral European rabbit**	**Competition and grazing by the feral European Rabbit, Oryctolagus cuniculus (L.) conservation project**	Threat > Pest Animal	Key Threatening Process	Predicted	
Anthropogenic Climate Change	**Human-caused Climate Change**	**Anthropogenic Climate Change conservation project**	Threat > Habitat Loss/Change	Key Threatening Process	Predicted	
Infection of native plants by Phytophthora cinnamomi	**Infection of native plants by *Phytophthora cinnamomi***	**Infection of native plants by Phytophthora cinnamomi conservation project**	Threat > Disease	Key Threatening Process	Predicted	
Invasion of native plant communities by Chrysanthemoides monilifera	**Invasion of native plant communities by bitou bush & boneseed**	**Invasion of native plant communities by Chrysanthemoides monilifera conservation project**	Threat > Weed	Key Threatening Process	Predicted	
Pomaderris bodalla	**Bodalla Pomaderris**	**Pomaderris bodalla conservation project**	Plant > Shrubs	Vulnerable	Known	**Show 8 linked vegetation classes**
Bangalay Sand Forest of the Sydney Basin and South East Corner bioregions	**Bangalay Sand Forest of the Sydney Basin and South East Corner bioregions**	**Bangalay Sand Forest of the Sydney Basin and South East Corner bioregions**	Community > Threatened Ecological	Endangered Ecological Community	Known	**Show 2 linked vegetation classes**

		conservation project	Communities			
Themeda grassland on seacliffs and coastal headlands in the NSW North Coast, Sydney Basin and South East Corner Bioregions	***Themeda* grassland on seacliffs and coastal headlands in the NSW North Coast, Sydney Basin and South East Corner bioregions**	**Themeda grassland on seacliffs and coastal headlands in the NSW North Coast, Sydney Basin and South East Corner Bioregions conservation project**	Community > Threatened Ecological Communities	Endangered Ecological Community	Known	**Maritime Grasslands**
Invasion and establishment of the Cane Toad (Bufo marinus)	**Invasion and establishment of the Cane Toad**	**Invasion and establishment of the Cane Toad (Bufo marinus) conservation project**	Threat > Pest Animal	Key Threatening Process	Predicted	
Invasion, establishment and spread of Lantana (Lantana camara L. sens. Lat)	**Invasion, establishment and spread of Lantana (*Lantana camara* L. *sens. lat*)**	**Invasion, establishment and spread of Lantana (Lantana camara L. sens. Lat) conservation project**	Threat > Weed	Key Threatening Process	Predicted	
Invasion and establishment of exotic vines and scramblers	**Invasion and establishment of exotic vines and scramblers**	**Invasion and establishment of exotic vines and scramblers conservation project**	Threat > Weed	Key Threatening Process	Predicted	
Invasion and establishment of Scotch Broom (Cytisus scoparius)	**Invasion and establishment of Scotch Broom (*Cytisus scoparius*)**	**Invasion and establishment of Scotch Broom (Cytisus scoparius) conservation project**	Threat > Weed	Key Threatening Process	Predicted	
Lowland Grassy Woodland in the South East	**Lowland Grassy Woodland in the South East Corner Bioregion**	**Lowland Grassy Woodland in the South East Corner**	Community > Threatened Ecologica	Endangered Ecological	Known	**Show 3 linked vegetation classes**

Corner Bioregion		**Bioregion conservation project**	l Communities	Community		
Loss of Hollow-bearing Trees	**Loss of Hollow-bearing Trees**	**Loss of Hollow-bearing Trees conservation project**	Threat > Habitat Loss/Change	Key Threatening Process	Predicted	
Forest eucalypt dieback associated with over-abundant psyllids and Bell Miners	**Forest eucalypt dieback associated with over-abundant psyllids and Bell Miners**	**Forest eucalypt dieback associated with over-abundant psyllids and Bell Miners conservation project**	Threat > Other Threat	Key Threatening Process	Predicted	
Glossopsitta pusilla	**Little Lorikeet**	**Glossopsitta pusilla conservation project**	Animal > Birds	Vulnerable	Known	**Show 63 linked vegetation classes**
Predation and hybridisation by Feral Dogs, Canis lupus familiaris	**Predation and hybridisation by Feral Dogs, Canis lupus familiaris**	**Predation and hybridisation by Feral Dogs, Canis lupus familiaris conservation project**	Threat > Pest Animal	Key Threatening Process	Predicted	
Eucalyptus aggregata	**Black Gum**	**Eucalyptus aggregata conservation project**	Plant > Trees	Vulnerable	Predicted	**Show 12 linked vegetation classes**
Petroica phoenicea	**Flame Robin**	**Petroica phoenicea conservation project**	Animal > Birds	Vulnerable	Known	**Show 62 linked vegetation classes**
Hieraaetus morphnoides	**Little Eagle**	**Hieraaetus morphnoides conservation project**	Animal > Birds	Vulnerable	Known	**Show 94 linked vegetation classes**
Petroica boodang	**Scarlet Robin**	**Petroica boodang conservation project**	Animal > Birds	Vulnerable	Known	**Show 75 linked vegetation classes**

Circus assimilis	**Spotted Harrier**	**Circus assimilis conservation project**	Animal > Birds	Vulnerable	Known	**Show 75 linked vegetation classes**
Daphoenositta chrysoptera	**Varied Sittella**	**Daphoenositta chrysoptera conservation project**	Animal > Birds	Vulnerable	Known	**Show 88 linked vegetation classes**
Epthianura albifrons	**White-fronted Chat**	**Epthianura albifrons conservation project**	Animal > Birds	Vulnerable	Known	**Show 34 linked vegetation classes**
Araluen Scarp Grassy Forest in the South East Corner Bioregion	**Araluen Scarp Grassy Forest in the South East Corner Bioregion**	**Araluen Scarp Grassy Forest in the South East Corner Bioregion conservation project**	Community > Threatened Ecological Communities	Endangered Ecological Community	Known	**Coastal Valley Grassy Woodlands**
Invasion of native plant communities by African Olive Olea europaea subsp. cuspidata (Wall. ex G. Don) Cif.	**Invasion of native plant communities by African Olive Olea europaea subsp. cuspidata (Wall. ex G. Don) Cif.**	**Invasion of native plant communities by African Olive Olea europaea subsp. cuspidata (Wall. ex G. Don) Cif. conservation project**	Threat > Weed	Key Threatening Process	Predicted	
Calidris ferruginea	**Curlew Sandpiper**	**Calidris ferruginea conservation project**	Animal > Birds	Endangered	Known	**Show 23 linked vegetation classes**
Introduction and establishment of Exotic Rust Fungi of the order Pucciniales pathogenic on plants of the family Myrtaceae	**Introduction and establishment of Exotic Rust Fungi of the order Pucciniales pathogenic on plants of the family Myrtaceae**	**Introduction and establishment of Exotic Rust Fungi of the order Pucciniales pathogenic on plants of the family Myrtaceae conservation project**	Threat > Disease	Key Threatening Process	Predicted	

Loss and degradation of native plant and animal habitat by invasion of escaped garden plants, including aquatic plants	**Loss and degradation of native plant and animal habitat by invasion of escaped garden plants, including aquatic plants**	**Loss and degradation of native plant and animal habitat by invasion of escaped garden plants, including aquatic plants conservation project**	Threat > Weed	Key Threatening Process	Predicted	
Falco subniger	**Black Falcon**	**Falco subniger conservation project**	Animal > Birds	Vulnerable	Known	**Show 53 linked vegetation classes**
Aggressive exclusion of birds from woodland and forest habitat by abundant Noisy Miners, Manorina melanocephala (Latham, 1802)	**Aggressive exclusion of birds from woodland and forest habitat by abundant Noisy Miners *Manorina melanocephala*.**	**Aggressive exclusion of birds from woodland and forest habitat by abundant Noisy Miners, Manorina melanocephala (Latham, 1802) conservation project**	Threat > Pest Animal	Key Threatening Process	Predicted	
Artamus cyanopterus cyanopterus	**Dusky Woodswallow**	**Artamus cyanopterus cyanopterus conservation project**	Animal > Birds	Vulnerable	Known	**Show 103 linked vegetation classes**
Petauroides volans	**Southern Greater Glider**	**Petauroides volans conservation project**	Animal > Marsupials	Endangered	Known	**Show 56 linked vegetation classes**
Haliaeetus leucogaster	**White-bellied Sea-Eagle**	**Haliaeetus leucogaster conservation project**	Animal > Birds	Vulnerable	Known	**Show 92 linked vegetation classes**
Habitat degradation and loss by Feral Horses (brumbies, wild horses), Equus	**Habitat degradation and loss by Feral Horses (brumbies, wild horses), Equus caballus Linnaeus 1758**	**Habitat degradation and loss by Feral Horses (brumbies, wild horses), Equus**	Threat > Pest Animal	Key Threatening Process	Predicted	

caballus Linnaeus 1758		**caballus Linnaeus 1758 conservation project**				
Rhodamnia rubescens	**Scrub Turpentine**	**Rhodamnia rubescens conservation project**	Plant > Shrubs	Critically Endangered	Known	**Show 30 linked vegetation classes**
Litoria watsoni	***Watson's Tree Frog or Southern Heath Frog***	**Litoria watsoni conservation project**	Animal > Amphibians	Endangered	Known	**Show 9 linked vegetation classes**

Appendix F – Guidelines For Treatment of Potential Acid Sulfate (PASS) Soils During Construction

Field observations suggest that some areas contained within the proposed worksite have some likelihood to be areas where potential acid sulfate soils (PASS) may occur as they are located in a generally low lying , estuarine area. Also as acid sulfate soil risk maps have identified this zone as an area of risk of acid sulfate soil (ASS), Council should adopt a conservative approach and assume that any/all soils encountered during any excavation within the work zone have the potential for ASS and be managed accordingly.

Common methods of management as detailed in ASSMAC manual for acid sulfate soils include:

- Avoidance.
- Burial below a permanent water table.
- Neutralisation.

As it is inevitable that some excavation will take place during construction neutralisation of any disturbed/excavated soils will need to be performed.

NEUTRALISATION PROCESS

- Any excavated soils should be stockpiled on level graded firmly compacted area away from the worksite. Appropriate sediment and erosion controls should be adopted around stockpiles.
- Stockpiled soils should be mixed with fine powdered **agricultural** lime at a minimum rate of 20kg of lime to 1 tonne of soil. Mixing can be achieved by turning several times with a backhoe or excavator.
- Neutralised soil (target pH between 6.5 and 8.5) can then be disposed of to landfill or buried below a permanent water table.

OTHER PASS MANAGEMENT ISSUES

Any disturbed /excavated soils should be maintained in a moist state to prevent oxidation prior to neutralisation or other management process.

Faces of excavated areas should be dusted with lime prior to placement of geotextile and/or bedding material for construction to establish a “lime buffer” which any potential acid water must pass through.

Council should appoint an appropriately experienced person to manage potential ASS issues at the site during earthwork activities and monitor the effectiveness of neutralisation processes.

Appendix G - List of Cultural Heritage Inductees to Site

Name	Company & Role	Signature

Name	Company & Role	Signature