

HEALTH INFRASTRUCTURE

Review of Environmental Factors

Princes Highway, Moruya
Roundabout Works

May 2022

Version 1

 NSW GOVERNMENT	Health Infrastructure
DETERMINED – APPROVAL	
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HI Planning Document Control

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Declaration

This Review of Environmental Factors (REF) has been prepared for NSW Health Infrastructure (HI) and assesses the potential environmental impacts which could arise from the construction of a new roundabout on the Princes Highway, Moruya.

This REF has been prepared in accordance with the relevant provisions of the *Environmental Planning and Assessment Act 1979* (EP&A Act), the *Environmental Planning and Assessment Regulation 2021* (EP&A Regulation) and *State Environmental Planning Policy (Transport and Infrastructure) 2021* (TISEPP).

This REF provides a true and fair review of the activity in relation to its likely impact on the environment. It addresses to the fullest extent possible, all the factors listed in section 171(2) of the EP&A Regulation and the *Commonwealth Environmental Protection and Biodiversity Conservation Act 1999* (EPBC ACT).

Based upon the information presented in this REF, it is concluded that, subject to adopting the recommended mitigation measures, it is unlikely there would be any significant environmental impacts associated with the activity. Consequently, an *Environmental Impact Statement* (EIS) is not required.

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Appendices

Appendix	Description	Author	Rev/Ref/Date
A	Civil Drawings	PTC Consulting	REV P1, 19/04/2022
B	Electrical and Telecommunications Reticulation Drawings	PTC Consulting	Issue C, 28/04/2022
C	Traffic Assessment and Preliminary Construction Traffic Management Plan	Bitzios Consulting	Ref: P5059.003L, 5 May 2022
D	Contamination Assessment	JK Environments	Ref: E34938PLrpt, 11 May 2022
E	Historical Archaeological Assessment	Comber Consultants	B.2021, 18 April 2022
F	Civil Statement	PTC Consulting	17 May 2021
G	Prescribed Ecological Actions Report	Abel Ecology	AE22-REP-2436-ISS-2, 17 May 2022

H	Eurobodalla Shire Council Notification Letter and Response	Health Infrastructure NSW	2210065, 28 April 2022
I	State Emergency Services Notification Letter and Response	Health Infrastructure NSW	2210065, 28 April 2022
J	Erosion and Sediment Control Plan	PTC Consulting	19 April 2022
K	Arborist Report	Abel Ecology	AE22-2434-REP-ISS-2, 17 May 2022
L	Acoustic Assessment	Arup	AC03_v3, 8 May 2022
M	Aboriginal Archaeological Report	Comber Consultants	C.2022, 12 May 2022
N	Bushfire Letter	Abel Bushfire	2454-LET-ISS 2, 12 May 2022
O	Transport for NSW Correspondence	Transport for NSW	STH21/00065/11

Abbreviations

Abbreviation	Description
AHIP	Aboriginal Heritage Impact Permit
AHIMs	Aboriginal Heritage Information Management System BC Regulation
BC Act 2016	Biodiversity Conservation Act 2016
BC Act 2017	Biodiversity Conservation Act 2017
BC Regulation	Biodiversity Conservation Regulation 2017
BAM	Biodiversity Assessment Method
CMP	Construction Management Plan
CWC	Connecting with Country
DPE	Department of Planning and Environment
EIS	Environmental Impact Statement
EMP	Environmental Management Plan
EP&A Act	Environmental Planning and Assessment Act 1979
EP&A Regulation	Environmental Planning and Assessment Regulation 2021
EPBC Act (Cwth)	Environment Protection and Biodiversity Conservation Act 1999
EPI	Environmental Planning Instrument
Ha	Hectares
HI	NSW Health Infrastructure
LEP	Local Environmental Plan
LGA	Local Government Area
MNES	Matters of National Environmental Significance
NPW Act	National Parks and Wildlife Act 1974
NPW Regulation	National Parks and Wildlife Regulation 2009
NPWS	National Parks and Wildlife Service (part of EES)

NT Act (Cth)	Commonwealth Native Title Act 1993
PCMP	Preliminary Construction Management Plan
Planning Systems SEPP	State Environmental Planning Policy (Planning Systems) 2021
Proponent	NSW Health Infrastructure
REF	Review of Environmental Factors
RF Act	Rural Fires Act 1997
RFS	Rural Fire Service
Resilience and Hazards SEPP	State Environmental Planning Policy (Resilience and Hazards) 2021
SEPP	State Environmental Planning Policy
TISEPP	State Environmental Planning Policy (Transport and Infrastructure) 2021
WM Act	Water Management Act 2000

Executive Summary

The Proposal

This Review of Environmental Factors (REF) relates to the construction of a roundabout on the Princes Highway, Moruya, which will facilitate access to, and support the future development of, a large greenfield site to the north of the highway. The proposed activity comprises the following:

- Construction of a single lane roundabout which will allow for one lane of traffic in each direction to pass through on the Princes Highway
- Ancillary electricity reticulation and street lighting.

Need for the Proposal

The development is the result of a functional requirement to provide access to the adjacent greenfield site located at Lot 2, DP 1281576, directly to the north of the location of the proposed roundabout. This will facilitate future access and subsequent development of the site, whilst reducing any impacts on surrounding residents.

Proposal Objectives

The objectives of the proposal are to facilitate the required upgrades to the Princes Highway to provide access into the adjacent greenfield site to the north of the proposed roundabout location, to facilitate future access and subsequent development of the site.

Options Considered

The delivery of the roundabout as part of the overall future redevelopment of the greenfield site to the north of the roundabout was considered as an alternative option. However, it was anticipated that this pathway would result in unnecessary construction impacts, requiring any future development works on this greenfield site to access via the residential suburb to the north. This would have undue impacts on these residents, and therefore, the proposed roundabout was considered to be the most appropriate, allowing for any future development construction on the greenfield site to access the site via the Princes Highway.

Site Details

The REF will occur within the existing road reserve of the Princes Highway, to the south of a large greenfield lot, Lot 2, DP 1281576. The works also include some inground electrical and telecommunications reticulation works relating to the lighting of the roundabout, which will also be located in the Princes Highway road corridor.

Planning Approval Pathway

The road reserve is zoned SP2 Infrastructure – Classified Road.

The proposed road works and ancillary electrical and telecommunication works are permitted to be undertaken by any public authority on any land without consent under the *State Environmental Planning Policy (Transport and Infrastructure) 2021*. The specific sections of this SEPP are as follows:

- Road and road infrastructure facilities: Section 2.108 (1)
- Electricity transmission or distribution networks: Section 2.44 (1)
- Telecommunication works: Section 2.140 (1)

Accordingly, the works can be undertaken by Health infrastructure as a public authority as 'Development without consent'. As per Part 5 of the *Environmental Planning and Assessment Act* (EP&A Act), the proposal is identified as an activity and is therefore subject to an environmental assessment (REF) as presented in this report.

Statutory Consultation

The REF scope of works was notified for 21 calendar days to Eurobodalla Shire Council and State Emergency Services. The notification commenced on the 28 April and concluded on the 19 May 2022. Copies of the notification letters, as well as all responses received, are provided at **Appendix H** and **I**.

Environmental Impacts

This REF considers the requirements of Part 5 of the EP&A Act, as well as clause 171 of the Environmental Planning and Assessment Regulation 2021. **Section 6.1** outlines the potential impacts of the works on the environment, including traffic management, biodiversity and ecology, waste and management of construction activities, including noise, vibration and traffic.

The environmental impacts from the proposed development are considered to be temporary and / or negligible. Mitigation measures, included in **Section 6.3**, outline the appropriate measures to manage and minimise potential impacts arising from the development.

Justification and Conclusion

This REF describes the proposed development and has fully examined all possible matters affecting or likely to affect the environment as a result of the works. Potential impacts can be reasonably mitigated and managed where necessary through the adoption of suitable site practices and adherence to accepted industry standards.

The proposed activity can be justified as it responds to an existing need to provide access to the adjacent greenfield site, Lot 2, DP 1281576. By providing access to this site from Princes Highway, future development of this site can be facilitated with reduced impacts on surrounding residents. The works comply with all legislation, plans and policies, has minimal environmental impacts and incorporates adequate mitigation measures where necessary. Given the planning merits and compliance of the proposed works, the development warrants approval.

1. Introduction

This REF has been prepared by Ethos Urban on behalf of Health Infrastructure NSW (HI NSW) to assess the potential environmental impacts that could arise from the construction of a new roundabout on Princes Highway, Moruya.

The proposed development comprises the construction of a new roundabout and ancillary road works on the Princes Highway to provide access into a greenfield site located to the north of the Princes Highway, in order to accommodate the future development of this greenfield site. These works are classified as development without consent and are consistent under section 2.108(1) of the *State Environmental Planning Policy (Transport and Infrastructure) 2021* (TISEPP).

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

The description of the proposed works and associated environmental impacts have been undertaken in the context of section 171(2) of the Environmental Planning and Assessment Regulation 2021 (EP&A Regulation) and the Australian Government's *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act).

The assessment contained within the REF has been prepared having regard to:

- Whether the proposed activity is likely to have a significant impact on the environment and therefore the necessity for an EIS to be prepared and approval to be sought from the Minister for Planning and Homes under Part 5.1 of the EP&A Act; and
- The potential for the proposal to significantly impact *Matters of National Environmental Significance* (MNES) on Commonwealth land and the need to make a referral to the Australian Government Department of Agriculture, Water and the Environment for a decision by the Commonwealth Minister for the Environment on whether assessment and approval is required under the EPBC Act.

The REF helps to fulfil the requirements of section 5.5 of the EP&A Act, which requires that HI examine, and take into account to the fullest extent possible, all matters affecting, or likely to affect, the environment by reason of the proposed activity.

1.1 Proposal need and Alternatives

This REF relates to the construction of a roundabout on the Princes Highway, Moruya. The proposal will facilitate access to, and support the future development of, a large greenfield site to the north of the highway, being Lot 2, DP 1281576. In preparing this REF, two options were considered:

1. No REF works.
2. The proposal.

The preferred option has been identified as required to facilitate the future development of the greenfield site adjacent to the location of the proposed roundabout. The proposed roundabout works will facilitate future construction access, reducing the impact of any future development on this greenfield site on surrounding residences.

The proposed development is consistent with the four accepted principles of ESD:

- The precautionary principle.
- Intergenerational equity.
- Conservation of biological diversity and ecological integrity.
- Improved valuation and pricing of environmental resources.

The proposal has integrated short- and long-term social, financial and environmental considerations so that any foreseeable impacts are not left to be addressed by future generations. Issues with potential long-term implications can be avoided and/or minimised through construction planning and the application of safeguards and management measures described in this REF.

2. Site Analysis and Description

2.1 The Site and Locality

The site of the proposed roundabout and ancillary electrical and telecommunication works is located along the Princes Highway to the south of the Moruya town centre on the NSW south coast. The locational context of Moruya is shown in **Figure 1** below.

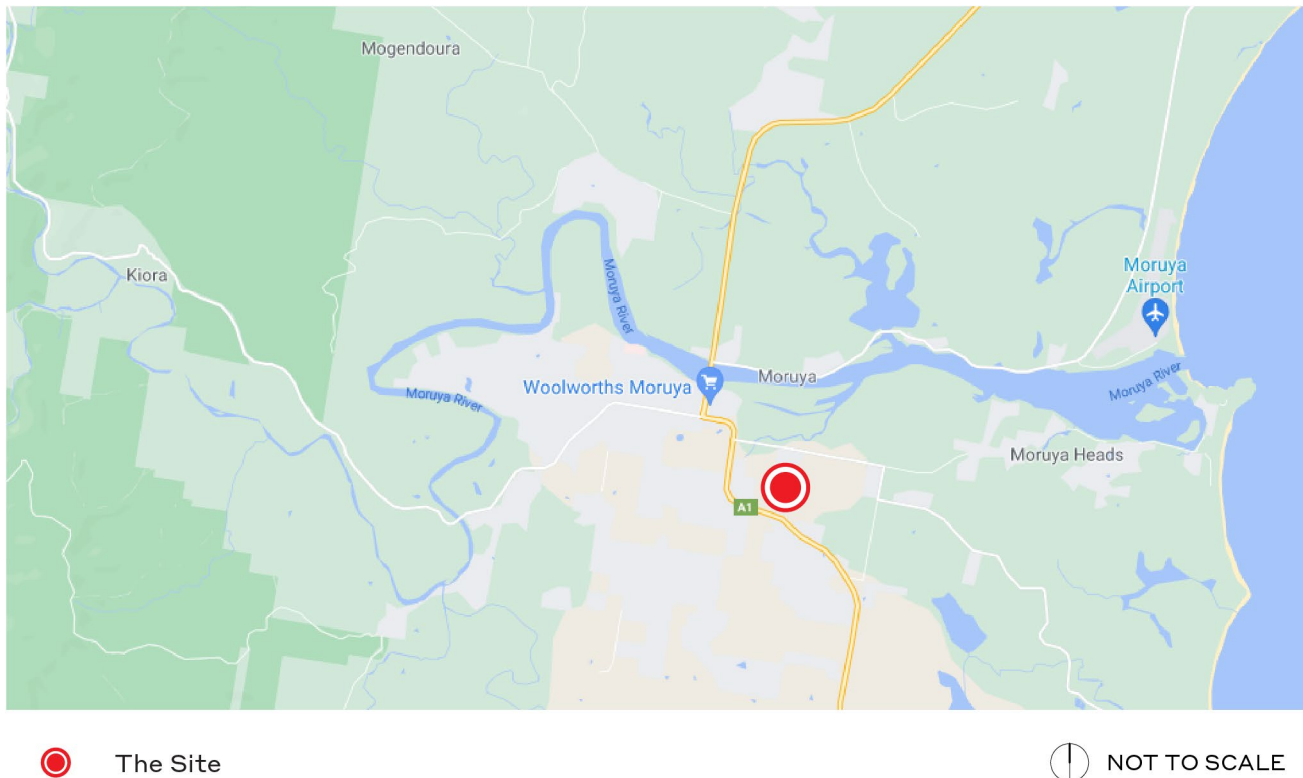


Figure 1: Locational context of the roundabout site in context to Moruya

Source: Google Maps, Ethos Urban

The exact location of the proposed roundabout does not have a specific address or legal description due to its position within an existing road reserve. However, the roundabout is proposed to provide access into a large greenfield site to the north of the Princes Highway to allow for future access and development of this greenfield site. The greenfield site is located at Braemar Drive, Moruya, and is legally described as Lot 2, DP 1281576. The location of the greenfield site, and the proposed location of the roundabout is shown in **Figure 2** below.

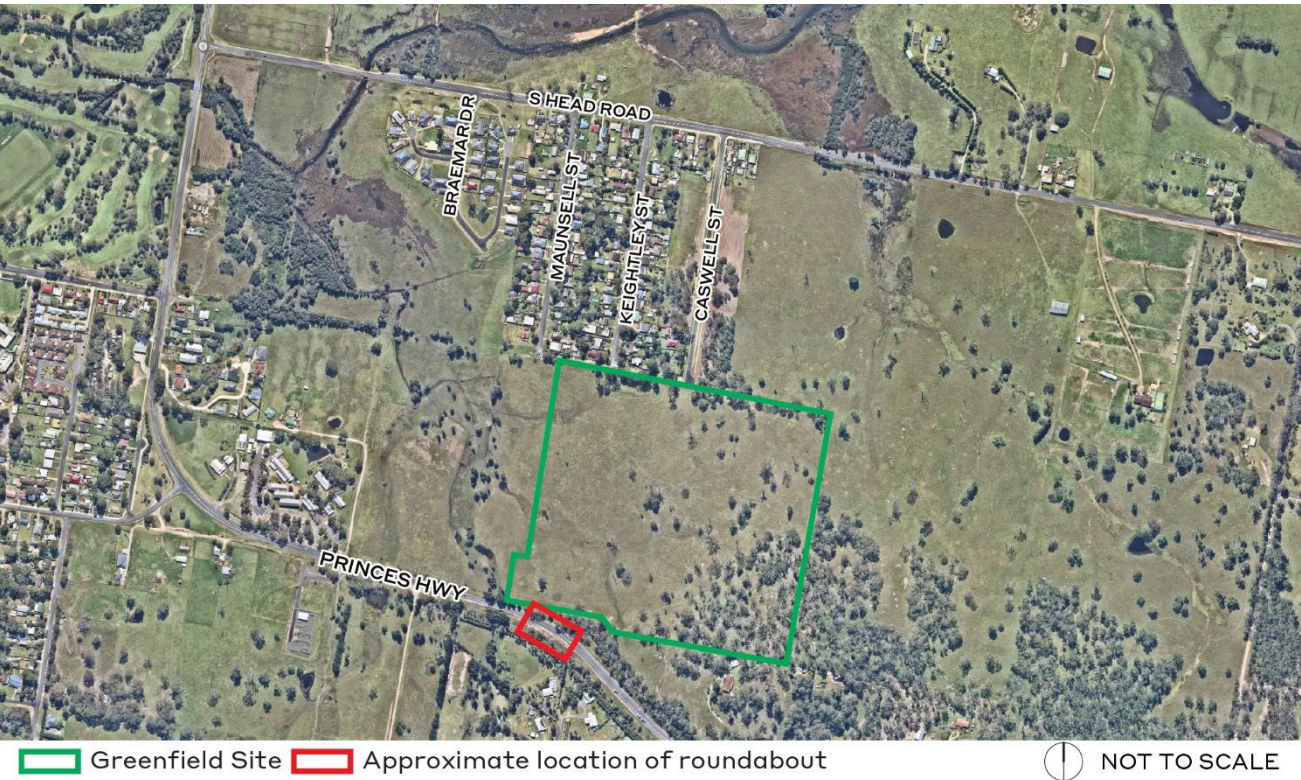


Figure 2: Aerial photograph of the location of the proposed roundabout

Source: Nearmap, Ethos Urban

2.1.1 Existing Development

The roundabout is proposed to be located entirely within the Princes Highway road reserve. This road reserve currently comprises the Princes Highway, which is asphalted and contains one lane of traffic in each direction, in some parts increasing to two lanes to allow for overtaking. Adjacent to the road reserve, the site currently contains native and exotic groundcover, as well as 275 trees.

2.1.2 Site Considerations and Constraints

A Section 10.7 Planning Certificate was not able to be obtained for the purposes of this REF, as the site of the proposed roundabout is located within an existing road reserve, without a specific legal description. The below outlines the specific site considerations and constraints. The site is located within the SP2 Infrastructure - Classified Roads zone under the Eurobodalla Local Environmental Plan 2012.

Table 1: Section 10.7 Planning Certificate

Affectation	Yes	No
Critical habitat		✓
Conservation area		✓
Item of environmental heritage		✓
Proclaimed to be in a mine subsidence district		✓
Affected by a road widening or road realignment		✓
Affected by a planning agreement		✓
Affected by a policy that restricts development of land due to the likelihood of landslip		✓
Affected by bushfire, tidal inundation, subsidence, acid sulphate or any other risk	✓	
Affected by any acquisition of land provision		✓

Biodiversity certified land or subject to any bio-banking agreement or property vegetation plan	✓
Significantly contaminated	✓
Subject to flood related development controls	✓
Identified on the riparian lands and watercourses map	✓
Identified on the terrestrial biodiversity map	✓

2.2 Surrounding Development

The site of the proposed works is located within and adjacent to a small portion of the Princes Highway road reserve, Moruya. The following describes the surrounding development:

- To the north of the site is a large greenfield site for which the proposed roundabout intends to provide access into. This greenfield lot is currently unoccupied and is largely cleared of any vegetation except for more dense tree planting in the south-east portion of the lot. Beyond this greenfield lot is a small residential subdivision called Mynora Estate, which contains approximately 150 lots utilised for low density residential uses. Moruya town centre is located to the north, beyond this estate.
- To the east of the site is further greenfield and agricultural lots, which are a mix of occupied and unoccupied. The Princes Highway extends to the south-east of the site. Further to the east of the Eurobodalla National Park, the eastern coastline.
- To the south of the site are a variety of greenfield and agricultural lots containing residential dwellings and agricultural facilities.
- To the west of the site is a mixture of greenfield and agricultural lots, as well as the more dense outskirts of the Moruya town centre. Moruya TAFE is also located to the west of the site. The Princes Highway continues to the west of the site before travelling north up the coastline.

3. Proposed Activity

3.1 Proposal Overview

This REF relates to the construction of a roundabout on the Princes Highway, Moruya, which will facilitate access to, and support the future development of, a large greenfield site to the north of the highway. The proposed activity comprises the following:

- Construction of a single lane roundabout which will allow for one lane of traffic in each direction to pass through on the Princes Highway.
- Ancillary electricity reticulation and street lighting.

3.1.1 Proposed Activity

Roundabout

The roundabout is the main portion of the works proposed and includes a single vehicle lane in both directions. The central island is proposed to be 20m in radius, with the single-lane entry path radii proposed to be 40-50 metres. The single-lane roundabout circulating carriageway width is proposed to be 7.3m. The roundabout has been designed in line with the *Austrroads Guide to Road Design Part 4B: Roundabouts*.

The design of the roundabout is shown in **Figure 3** below. A more detailed civil drawing is provided at **Appendix A**.



Figure 3: Proposed roundabout design

Source: PTC Consultants

Electrical Reticulation and Diversion

In conjunction to the proposed roundabout works, electrical works are proposed to reflect the altered road reserve. This includes the following:

- Diversion of existing Telstra cabling with additional pits.

- Provision of seven new streetlights around the roundabout.
- Electrical reticulation, including extension of underground mains.

Detailed drawings for these works are provided at **Appendix B**.

3.2 Proposal Need, Options and Alternatives

3.2.1 Strategic Justification

The preferred option has been identified as required to facilitate the future development of the greenfield site adjacent to the location of the proposed roundabout. The proposed roundabout works will facilitate future construction access, reducing the impact of any future development on this greenfield site on surrounding residences.

The proposed development is consistent with the four accepted principles of ESD:

- The precautionary principle.
- Intergenerational equity.
- Conservation of biological diversity and ecological integrity.
- Improved valuation and pricing of environmental resources.

The proposal has integrated short- and long-term social, financial and environmental considerations so that any foreseeable impacts are not left to be addressed by future generations. Issues with potential long-term implications can be avoided and/or minimised through construction planning and the application of safeguards and management measures described in this REF.

3.2.2 Alternatives and Options

An overview of the alternatives, and an identification of the preferred alternative, for the Proposal are provided within Table 1.

Table 1: Alternatives considered for the proposal

Alternative description	Advantages and disadvantages	Preferred alternative
No REF works	No access is provided into the greenfield site to the north, impacting future redevelopment of the site	
Roundabout works are undertaken at a later date, as part of the future redevelopment of the greenfield site to the north	Access to the greenfield lot may not be via the Princes Highway whilst the roundabout is built in conjunction with the development of the greenfield lot. This may cause impacts for residents to the north of the greenfield site, who are close to other access points.	✓

3.3 Construction Activities

The works are short term (approximately 7 months).

Table 3: Project Timeframes and Construction Activities

Construction activity	Description
Commencement Date	September 2022 – April 2023
Work Duration/Methodology	Stage 1: Site establishment, half roundabout construction – September – December 2022 Stage 2: Full roundabout construction – December 2022-April 2023
Work Hours and Duration/Construction	The work hours are in accordance with the Interim Construction Noise Guideline, being: <ul style="list-style-type: none"> • 7:00am – 6:00pm Monday to Friday • 8:00am – 1:00pm Saturday • No works Sunday, Public Holidays
Ancillary Facilities	A site amenities and compound will be erected during the construction of the works. The compound is proposed to be located on the adjacent greenfield site, Lot 2, DP 1281576, and will accommodate lunch, bathroom and change facilities for the duration of the project. This will be organised and managed by the Principal Contractor.
Plant Equipment	No plant equipment is proposed.
Earthworks	Earthworks are proposed to accommodate the construction of the new roundabout and services reticulation..
Source and Quantity of Materials	The source and quantity of materials will be identified and procured by the Principal Contractor following their appointment. The contractor will be required to recycle and reuse materials where possible. The contractor will be required to arrange for the sorting and recycling of waste materials and packaging to ensure maximum recycling is achieved. The contractor will be committed to achieving compliance with the EP&A guidelines. All packaging is to be removed before materials are delivered to site to minimise waste generation on site. Refer to the Preliminary Construction Traffic and Pedestrian Management Plan at Appendix C .
Traffic Management and Access	<p>A Preliminary Construction Traffic and Pedestrian Management Plan has been prepared by Bitzios and is included at Appendix C. A detailed Construction Pedestrian and Traffic Management Plan will be prepared by the Principal Contractor prior to construction works commencing. This document details how traffic, pedestrian and cyclist access will be managed during the construction works.</p> <p>Traffic flows are a major consideration, and traffic access along the Princes Highway is to be maintained throughout construction. Traffic control personnel will be provided by the Principal Contractor during operating hours, or as advised by the Principal Contractor within their Construction Pedestrian and Traffic Management Plan.</p> <p>Key issues for traffic, pedestrian and cyclist management during construction to be considered in the Construction Pedestrian and Traffic Management Plan include, but is not limited to:</p> <ul style="list-style-type: none"> • Provide safe and uninterrupted access for pedestrians and vehicles accessing the construction site and surrounds. • Ensure maximum safety of site personnel, pedestrians, cyclists, commuters and drivers. • Minimise environmental nuisance and impact as a result of construction traffic. • Ensure construction traffic does not unduly interrupt existing traffic flows on local road networks. • Safe operation of buses and other transport services during construction of roundabout. • Have no vehicles arrive at the site, without prior arrangement, outside of the approved working hours. • Fulfill any requirements from Eurobodalla Council and Transport for NSW Requirements.

4. Statutory Framework

4.1 Planning Approval Pathway

Section 4.1 of the EP&A Act states that if an EPI provides that development may be carried out without the need for development consent, a person may carry the development out, in accordance with the EPI, on land to which the provision applies. However, the environmental assessment of the development is required under Part 5 of the Act.

State Environmental Planning Policy (Transport and Infrastructure) 2021 (TISEPP) aims to facilitate the effective delivery of infrastructure across the State. The following sections of the TISEPP relate to the proposed works:

- Section 2.108 of TISEPP outlines the approval requirements for general road and infrastructure facilities.
- Section 2.44 of the TISEPP outlines the approval requirements for any electricity transmission or distribution networks.
- Section 2.140 of the TISEPP outlines the approval requirements for any telecommunications works.

Development for the purposes of road facilities and electricity transmission may be carried out by or on behalf of a public authority without consent on any land.

The proposal involves the construction of a roundabout and ancillary electrical and telecommunications transmission works, which is classified as development without consent as the proposed activity is consistent with sections 2.44, 2.108 and 2.140 of the TISEPP.

However, the project becomes an 'activity' for the purposes of Part 5 of the EP&A Act and is subject to an environmental assessment (REF). The proposal is considered an 'activity' in accordance with clause 5.1 of the EP&A Act because of the land use and carrying out of work.

In accordance with section 2.12 and 2.13 of the TISEPP, consultation with Eurobodalla Shire Council and State Emergency Services NSW is required because part of the REF site is identified as flood liable land. Refer to **Section 5** for further discussion.

Table 4: Description of proposed activities

Division and Section within TISEPP	Description of Works
Division 5, Section 2.44	<p>In accordance with section 2.44 of the TISEPP, development for the purposes of an electricity transmission or distribution network can be undertaken as development without consent by a public authority, on any land.</p> <p>The proposed ancillary works of electrical reticulation and street lighting related to the roundabout are considered to be works associated with an electricity transmission or distribution network and can therefore be carried out by HI NSW as 'development without consent' in accordance with section 2.44 of the TISEPP.</p>
Division 17, Section 2.108	<p>In accordance with section 2.108 of the TISEPP, development for the purposes of a road or any road infrastructure facilities can be undertaken as development without consent by a public authority on any land.</p> <p>The proposed roundabout construction and any ancillary road works fall under the categories of road or road infrastructure facilities, and therefore can be carried out by HI NSW as 'development without consent' in accordance with section 2.108 of the TISEPP.</p>
Division 21, Section 2.140	<p>In accordance with clause 2.140 of the of the TISEPP, development for the purposes of a telecommunication facility may be carried out by a public authority with consent on any land.</p> <p>Therefore, the proposed diversion of Telstra infrastructure as proposed is permissible to be undertaken by HI NSW as part of this REF.</p>

4.2 Environmental Protection and Biodiversity Conservation Act 1999

The provisions of the EPBC Act do not affect the proposal as it is not development that takes place on or affects Commonwealth land or waters. Further, it is not development carried out by a Commonwealth agency, nor does the proposed development affect any matters of national significance. An assessment against the EPBC Act checklist is provided at Table 5.

Table 5: EPBC Checklist

Consideration	Yes/No
The activity will not have any significant impact on a declared World Heritage Property?	No
The activity will not have any significant impact on a National Heritage place?	No
Consideration	Yes/No
The activity will not have any significant impact on a declared Ramsar wetland?	No
The activity will not have any significant impact on Commonwealth listed threatened species or endangered community?	No
The activity will not have any significant impact on listed migratory species?	No
The activity does not involve nuclear actions?	No
The activity will not have any significant impact on Commonwealth marine areas?	No
The activity will not have any significant impact on Commonwealth land?	No
The activity does not relate to a water resource, a coal seam gas development or large coal mining development?	No

4.3 Environmental Planning and Assessment Act 1979

Duty to Consider Environmental Impact

Part 5 of the EP&A Act applies to activities that are permissible without consent and are generally carried out by a public authority. Activities under Part 5 of the EP&A Act are assessed and determined by a public authority, referred to as the determining authority. Health Infrastructure is a public authority and is the proponent and determining authority for the proposed works.

For the purpose of satisfying the objects of the EP&A Act relating to the protection and enhancement of the environment, a determining authority, in its consideration of an activity shall, notwithstanding any other provisions of the Act or the provisions of any other Act or of any instrument made under the EP&A Act or any other Act, examine and take into account to the fullest extent possible all matters affecting or likely to affect the environment by reason of that activity (refer to sub-section 1 of section 5.5 of the EP&A Act).

Section 171 of the EP&A Regulation defines the factors which must be considered when assessing the likely impact of an activity on the environment under Part 5 of the EP&A Act. Section 7.1 specifically responds to the factors for consideration under section 171.

Table 6 below demonstrates the effect of the proposed development activity on the matters listed for consideration in sub-section 3 of section 5.5 of the EP&A Act.

Table 6: Matters for consideration under Sub-Section, Section 5.5 of the EP&A Act

Matter for Consideration	Impacts of Activity
<p><i>Sub-section 3:</i></p> <p>Without limiting subsection 1, a determining authority shall consider the effect of any activity on any wilderness area (within the meaning of the <i>Wilderness Act 1987</i>) in the locality in which the activity is intended to be carried on.</p>	<p>No wilderness area is located on the site. Therefore, this is not applicable.</p>

Note: If a biobanking statement has been issued in respect of a development under Part 7A of the *Threatened Species Conservation Act 1995*, the determining authority is not required to consider the impact of the activity on biodiversity values.

4.4 Environmental Planning and Assessment Regulation 2021

Section 171(2) of the EP&A Regulation provides a list of factors that must be taken into account for an environmental assessment under Part 5 of the EP&A Act. These requirements are considered at section 6.1 of this REF.

4.5 Other NSW Legislation

The following table lists any additional legislation that is required to be considered if it is applicable to the proposed activity.

Table 7: Other Possible Legislative Requirements

Legislation	Comment	Relevant? Yes/No
State Legislation		
Rural Fires Act 1997	The site is identified as bushfire prone. This is discussed further at Section 6.2.10 and at Appendix N .	Yes
Biodiversity Conservation Act 2016	The proposed works comprise the removal of native vegetation along the roadside. A Prescribed Ecological Actions Report has been prepared by Abel Ecology (Appendix G), which confirms that the extent of clearing is minimal (0.33ha) and contained to the southern edge of the woodland. On this basis, the proposed works are unlikely to have a significant effect on the threatened species and therefore, a Biodiversity Development Assessment Report is not required.	No
Water Management Act 2000	The proposed works are not located on 'waterfront land' and as such a Controlled Activity (CAA) is not required. Accordingly, no approval is required from the Office of Water (Department of Primary Industries) prior to the carrying out of works.	No
Contaminated Land Management Act 1997	The site is not listed on the register of contaminated sites.	No
Heritage Act 1977	The Heritage Act 1977 is the principal Act for the management of NSW's environmental heritage. It establishes the State Heritage Register (SHR) and includes provisions for Interim Heritage Orders, Orders to Stop Work and archaeological relics (both on land and underwater). It also requires government agencies to maintain a Heritage Conservation Register under Section 170. Comber Consultants have prepared a Historical Archaeological Assessment (Appendix E) which confirms the site is not listed on the State Heritage Register and this assessment has identified that it is highly unlikely that relics will exist within the study area and therefore, the Heritage Act 1977 does not apply.	No
Roads Act 1993	The proposed activity includes works to Pacific Highway, which is a classified road and therefore, will trigger the need for consent under the Roads Act 1993 under Section 139.	Yes
State Legislation Planning Policies		
State Environmental Planning Policy (Biodiversity and Conservation) 2021	This SEPP applies to the site as the Eurobodalla LGA is listed as being a koala management area in Schedule 1 of the policy. The Prescribed Ecological Actions Report prepared by Abel Ecology (Appendix G) identifies that more than 15% of the trees within the proposal area are identified as potential koala habitat species, meaning the site is therefore potential koala habitat. However, only one koala has been recorded within two kilometres of the site in the last 18 years. No evidence of koalas was identified on site	Yes

	<p>during surveys and it is therefore presumed unlikely by Abel Ecology that any koalas use the site. Therefore, the site is not considered core koala habitat.</p> <p>The site is also located within a coastal environment area under section 2.10 of the Biodiversity and Conservation SEPP. The works proposed relate to an existing road reserve, and it is not anticipated that there will be any impact on any coastal processes or coastal environmental values.</p>	
State Environmental Planning Policy (Resilience and Hazards) 2021	In accordance with section 4.6 of the Resilience and Hazards SEPP, a Contamination Assessment has been prepared by JK Environment and is included at Appendix D. This Contamination Assessment was concludes that any based on the historical land uses and potential sources of contamination, there would be no impacts relating to, or resulting from the development. This is discussed further at Section 6.2.13 .	Yes
State Environmental Planning Policy (Transport and Infrastructure) 2021	<p>The proposed development is consistent with the aims of the TISEPP (as outlined in Section 2.1 of the TISEPP), in that it:</p> <ul style="list-style-type: none"> Utilises the development without consent pathway to enable efficient delivery of infrastructure and services. Has considered the environmental impacts of the development and all necessary matters for consideration as outlined in the TISEPP. Will facilitate access and future development of the greenfield site adjacent, Lot 2, DP 1281576 Involves consultation with Eurobodalla Shire Council and relevant agencies. 	Yes
Eurobodalla Local Environmental Plan 2012		
2.2 Land Zone - SP2 Infrastructure – Classified Road	The works proposed are permitted without consent in any zone. The works are consistent with the objectives of the SP2 Classified Road zone.	Yes
5.10 Heritage Conservation	<p>The site is not identified as being located within a heritage conservation area.</p> <p>A Historical Archaeological Assessment has been prepared by Comber Consultants and is included at Appendix E.</p> <p>The report notes that there are a number of Aboriginal archaeological deposits on the site, however it confirms that the proposal will not affect the numerous of items on the development site. Notwithstanding, the report provides a number of recommendations to ensure the protection of all items. These are included as mitigation measures at Section 6.3.</p>	Yes
5.21 Flood Planning	<p>The site is partially identified as being flood prone land.</p> <p>A small portion of the in ground works are located on land that is identified as flood prone land, which includes an approximately 100m strip of the highway to the west of the proposed location of the roundabout. However, a statement prepared by PTC Consulting (Appendix F) confirms that these works are limited in scope and the area of works will be reinstated to the existing condition, hence there will be no change in flood affectation.</p>	Yes
6.3 Acid Sulfate Soils	<p>A small portion of the site is identified as containing Class 2 acid sulfate soils.</p> <p>Some of the ancillary works, including installation of conduits for electrical services, will be undertaken in the potential acid sulfate area. These works are limited to trenching and/or underboring for conduit installation. However, in the Civil Statement at Appendix F, PTC note that the works are able to be undertaken in such a manner that it does not impact the water table or disturb a large</p>	Yes

	volume of soil. This is discussed further at Section 6.2.4 , and appropriate mitigation measures are included at Section 7.0 .	
6.7 Riparian Lands and Watercourses	<p>The site is affected by a Riparian Category 3 watercourse, which requires that any development within 10 metres of the watercourse consider the impact of the development on the watercourse.</p> <p>The proposed roundabout works and ancillary in ground works are proposed to be located wholly within the road corridor and relate only to the upgrade of the existing road infrastructure. Therefore, there will be no impact to adjacent watercourse.</p> <p>Further, PTC Consulting have confirmed that there will be no impacts to flooding of this watercourse as a result of the proposed works.</p>	Yes

5. Consultation

This REF scope was notified for 21 calendar days to the following stakeholders:

- Eurobodalla Shire Council
- NSW State Emergency Services

Table 8: Stakeholders required to be notified

Stakeholder	Relevant Section
Eurobodalla Shire Council	Section 2.12
State Emergency Services	Section 2.13

The notification commenced on 28 April 2022 and concluded on 19 May 2022. Copies of the notification letters, as well as all responses received are provided at **Appendix H** and **I**.

No comments were received from either Eurobodalla Shire Council or the NSW State Emergency Services in this period.

It is noted that Transport for NSW (TfNSW) are the managing authority of the Princes Highway, where the roundabout is to be located. As TfNSW are the managing authority, consultation has occurred for the design of the intersection. In-principle acceptance of the intersection was received from TfNSW on 21 April 2022 (see **Appendix O**).

6. Environmental Impact Assessment

6.1 Environmental Planning and Assessment Regulation 2021 – Assessment Considerations

The relevant assessment considerations under Section 171(2) of the EP&A Regulation are provided below.

Table 2: Summary of Environmental Factors Reviewed in Relation to the Activity

Relevant Consideration	Response/Assessment		
a) any environmental impact on a community	The likely impacts upon the community will be limited to minor construction-related noise and traffic impacts. These will be able to be suitably managed through detailed management plans to be prepared by the nominated contractor. These will be living documents regularly refined or updated as needed to address emerging or new environmental management issues as they arise.	✓	-ve
Does the proposal have any natural or man-made impact on the Health Service Facility, or the broader residential or business community?			Nil
			+ve
(b) transformation of a locality	The works will not result in the transformation of the locality. The works are confined within the existing road reserve and do not result in any significant built form changes.		-ve
Prompt only: Does the proposal significantly change the nature of the locality?		✓	Nil
			+ve
(c) any environmental impact on the ecosystem of the locality	The works have a limited impact on vegetation through 0.33 hectares of vegetation removal to support the development. No significant ecosystem or biodiversity impacts will result from the proposed works.	✓	-ve (short term)
		✓	Nil (long term)
	It is noted that all trees proposed to be removed will be replaced by new tree planting on the adjacent greenfield site.		+ve
d) any reduction of the aesthetic, recreational, scientific or other environmental quality or value of a locality.	The proposed works are wholly within the existing road reserve, and no built form works are proposed. The works are wholly consistent with the use of the road and will allow for the future development of the adjacent greenfield site.		-ve
		✓	Nil
			+ve
e) Any effect on locality, place or building having aesthetic, anthropological, archaeological, architectural, cultural, historical, scientific, or social significance or other special value for present or future generations.	A Historical Archaeological Assessment and Aboriginal Archaeological Assessment has been prepared by the Comber Consultants (Appendix E and Appendix M). These assessments confirm that the proposed works will not impact upon any archaeological or cultural values on the site. No other aesthetic, anthropological, historic, scientific or social significance has been identified on the site.		-ve
		✓	Nil
			+ve
(f) Any impact on the habitat of protected fauna (within the meaning of the BC Act 2016).	There will be no adverse impacts on any fauna species or their habitats. All trees proposed to be removed are proposed to be replaced, and four habitat or hollow bearing trees are proposed to be relocated.		-ve
		✓	Nil
			+ve
(g) Any endangering of any species of animal, plant or other form of life, whether living on land, in water or in the air	There will be no significant impacts upon any species of animal, plant or other form of life, whether living on land, in water or in the air.		-ve
		✓	Nil
			+ve
(h) Any long term impacts on the environment	There are no anticipated long-term effects upon the environment given the modest nature of the works.		-ve
Prompt only: Does the natural of the proposal result in a long-term or permanent impact on the natural or man-made environment?		✓	Nil
			+ve

Relevant Consideration	Response/Assessment	
(i) Any degradation of the quality of the environment Prompt only: Does the proposal reduce the quality of the natural environment?	There will be no anticipated degradation to the environment during either the construction or the operation. Mitigation measures will manage any potential impacts. The existing road reserve is a largely modified urban environment.	-ve
		✓ Nil
		+ve
j) Any risk of safety of the environment	There is no risk to the safety of the environment.	-ve
		✓ Nil
		+ve
(k) Any reduction in the range of beneficial uses of the environment	The works will not reduce the beneficial use of the environment.	-ve
		✓ Nil
		+ve
(l) Any pollution of the environment	Minor localised air quality impacts during the works are suitably addressed and will be mitigated by the detailed Construction Management Plan and its anticipated co-related management plans (Noise and Vibration Management; Dust, Sediment and Erosion Control measures; and the Construction Traffic Management Plan). No further polluting impacts are likely to result for the works.	-ve
		✓ Nil
		+ve
(m) Any environmental problems associated with the disposal of waste	Disposal of any waste material will need to be appropriately classified and disposed of. No unusual circumstances are envisaged in this respect and typical waste handling policies will apply.	-ve
		✓ Nil
		+ve
n) Any increased demanded on resources (natural or otherwise) that are, or are likely to become, in short supply	There is no impact of the works upon any natural resources in short supply.	-ve
		✓ Nil
		+ve
(o) Any cumulative environmental effects with other existing or likely future activities.	The proposed works will not result in any cumulative impacts on any existing or future activities.	-ve
		✓ Nil
		+ve
(p) Any impact on coastal processes and coastal hazards, including those under projected climate change conditions.	Given their location, the works will have no impact upon coastal process or contribute to coastal hazards.	-ve
		✓ Nil
		+ve
q) applicable local strategic planning statements, regional strategic plans or district strategic plans made under the Act, Division 3.1,	The proposed works will have no bearing on the implementation of strategic plans.	-ve
		✓ Nil
		+ve

6.2 Identification of Issues

6.2.1 Traffic, Access and Parking

Questions to consider	Yes	No
Will the works affect traffic or access on any local or regional roads?	Yes	
Will the works disrupt access to private properties?		No
Are there likely to be any difficulties associated with site access?		No
Are the works located in an area that may be highly sensitive to movement of vehicles or machinery to and from the work site (i.e. schools, quiet streets)?		No
Will full or partial road closures be required?	Yes	
Will the proposal result in a loss of onsite car parking?		No
Is there onsite parking for construction workers?	Yes	

The location of the proposed roundabout is within the existing Princes Highway road reserve, and therefore during construction, some impact to access along the Princes Highway in this location may be momentarily impacted. Therefore, a Traffic Impact Statement and Construction Traffic Management Plan has been prepared by Bitzios (Appendix C) to address any potential traffic impacts relating to the construction of the works, as well as outlines any relevant mitigation measures needed to address construction traffic impacts.

The CTPMP assess the impacts associated with construction activities and maintain an accessible and efficient road network for all users. It is noted that the CTPMP will be further refined with both the projects contractor and Council and/or Transport for NSW.

The roundabout works are proposed to be undertaken over two stages to ensure that traffic impacts are reduced. This includes Stage 1 – site establishment and half roundabout construction, and Stage 2, which incorporates the remaining full roundabout construction. This Traffic Assessment has identified that the worst case for vehicle movements are expected to be between 200-240 movements per day based on the estimated haulage needs and number of workers. However, the overall number of movements are able to be accommodated on Princes Highway and its associated intersections.

The main traffic impacts of construction works will be managed by scheduling deliveries and staff shift changes outside of peak traffic periods. No additional infrastructure or temporary overlay measures are required to mitigate the construction traffic impacts.

Construction worker parking will be made available on the adjacent greenfield site, Lot 2, DP 1281576. No impact on surrounding public parking is expected as a result of the construction activity.

Any partial road closure of the Princes Highway needed to accommodate the construction of the roundabout will be managed by construction traffic controllers, who will manage traffic flow during any periods of closure.

6.2.2 Noise and Vibration

Questions to consider	Yes	No
Are there residential properties or other sensitive land uses or areas that may be affected by noise from the proposal during construction? (i.e. schools, nursing homes, residential areas or native fauna populations)?		No
Will any receivers be affected by noise for greater than three weeks?		No
Are there sensitive land uses or areas that may be affected by noise from the proposal during operation?	Yes	
Will the works be undertaken outside of standard working hours? Monday – Friday: 7am to 6pm Saturday: 8am to 1pm Sunday and public holidays: no work		No
Will the works result in vibration being experienced by any surrounding properties or infrastructure?		No
Are there residential properties or other sensitive land uses or areas that may be affected by noise from the proposal during construction? (i.e. schools, nursing homes, residential areas or native fauna populations)?	Yes	
Will any receivers be affected by noise for greater than three weeks?	Yes	

An Acoustic Assessment has been prepared by Arup and is included at Appendix L. This report considers the acoustic impact of construction and operation of the roundabout on adjacent sensitive receivers and the relevant mitigation measures required to address and mitigate these impacts.

All construction works will be carried out within the standard construction hours. Therefore, these construction hours have been applied in the assessment of noise and vibration impacts.

The key sensitive receivers are surrounding the site are three residential addresses at 38 Pear Tree Place, 2945 Princes Highway and 36 Keightley Street, Moruya.

The main acoustic impact expected from the proposal is the construction noise impact. There are no operational noise sources expected as a result of the proposed roundabout. The results of the acoustic assessment note that construction noise for the works could exceed the relevant 'noise affected' levels during standard hours for sensitive receivers, however this is modelled from the worst case scenario, which includes all construction activities and equipment running at the same time, which is highly unlikely.

In general however, construction works are temporary in nature, and therefore potential noise impacts on the community and surrounding environment will not be permanent or continuous.

In addition to this, the potential traffic noise level caused from construction traffic is expected to be less than 2dB, and therefore the proposed construction activity can be considered as a relatively minor impact that would not significantly affect the existing environment.

Further, due to the location and distance to the nearest surrounding sensitive receivers, it is not anticipated that construction activities will result in vibration impacts on these receivers. During the development of the detailed Construction Noise and Vibration Management Plan, an investigation of vibration impact upon nearby sensitive receivers should take place. It is expected that vibration monitoring will be required under this Management Plan. Further mitigation measures are discussed at **Section 7.0**.

6.2.3 Air Quality

Questions to consider	Yes	No
Could the works result in dust generation?	Yes	
Could the works generate odours (during construction or operation)	Yes	
Will the works involve the use of fuel-driven heavy machinery or equipment?	Yes	
Are the works located in an area or adjacent to land uses (e.g. schools, nursing homes) that may be highly sensitive to dust, odours, or emissions?		No

The future development works will be supported by a detailed Construction Management Plan prepared by the nominated contractor. This plan will specify the details of air quality, odour and energy. However, it is noted that the works are relatively minor and only relate to upgrading a piece of existing road infrastructure, and therefore, the construction impacts will be able to be appropriately mitigated.

Appropriate mitigation measures are included at **Section 7.0**.

6.2.4 Soils and Geology

Questions to consider	Yes	No
Will the works require land disturbance?	Yes	
Are the works within a landslip area?		No
Are the works within an area of high erosion potential?		No
Could the works disturb any natural cliff features, rock outcrops or rock shelves?		No
Will the works result in permanent changes to surface slope or topography?		No
Are there acid sulphate soils within or immediately adjacent to the boundaries of the work area? And could the works result in the disturbance of acid sulphate soils?	Yes	
Are the works within an area affected by salinity?		No
Is there potential for the works to encounter any contaminated material?		

The site is located within an area that does not contain any high erosion potential and no natural cliff or rock features.

The works won't result in permanent changes to surface slope or topography, however they will require a small amount of land disturbance, relating to the in ground electrical reticulation works from the roundabout down to the Moruya TAFE to the west of the roundabout site.

An Erosion and Sediment Control Plan has been prepared and is included at Appendix J. This plan confirms that the construction works can be safely undertaken. The works only relate to the inclusion of a roundabout within the existing road network, and therefore will not have any significant impact on the ground plane or form.

Acid sulfate soils are located on a small portion of the site where the in ground activity is occurring. The Civil Report at **Appendix F** notes that whilst the activity is located within a potential acid sulfate soil zone, the works could be undertaken in a manner that does not impact the water table or disturb a large volume of in-situ soil. Further, horizontal directional drilling could also be used to install the conduits through the potential acid sulfate area. Therefore, the activity is capable of managing any environmental impacts related to acid sulfate soils.

Appropriate mitigation measures relating to acid sulfate soils have been included at **Section 7.0**.

6.2.5 Hydrology, Flooding and Water Quality

Questions to consider	Yes	No
Are the works located near a natural watercourse?		No
Are the works located within a floodplain?		No
Will the works intercept groundwater?		No
Will a licence under the Water Act 1912 or the Water Management Act 2000 be required?		No

A Civil Design Statement has been prepared by PTC and is included at Appendix F to undertake an assessment of the flooding impacts on the site.

Ancillary works such as the installation of conduits for electrical services will be undertaken in the flood affected areas, including the Rural Flood Plain area identified within the Moruya Floodplain Management Plan, however, these works will be limited to trenching and under boring for conduit installation. Following these works, the area will be reinstated to the existing condition (including restoration to existing level) and therefore, there will be no change in flood affectation due to these ancillary works.

Overall, the site is not affected by flooding in the 1% AEP event and the road design complies with relevant parts of Austroads Guide to Road Design.

6.2.6 Visual Amenity

Questions to consider	Yes	No
Are the works visible from residential properties, or other land uses that may be sensitive to visual impacts?		No
Will the works be visible from the public domain?		No
Are the works located in areas of high scenic value?		No
Will the works involve night work requiring lighting?		No

The proposed works are occurring entirely within the existing road reserve and will not have any significant impact upon the existing topography of the road and will not impact visibility of the road from the public domain, nor have any visual impact from adjoining properties.

The construction of the proposed development will not extend beyond 6:00pm, and therefore, any lighting and illumination during dusk hours will have a negligible impact on the surrounding land uses.

The street lights proposed to be constructed and associated with the operation of the roundabout will be consistent with the relevant Australian Standards and will not exceed any relevant luminance limits. The lighting will not be inconsistent with any other lighting along the Princes Highway.

6.2.7 Aboriginal Heritage

Questions to consider	Yes	No
Will the works disturb any culturally modified trees?		No
Are there any known items of Aboriginal heritage located in the works area or in the vicinity of the works area (e.g. previous studies or reports from related projects)?	Yes	
Are there any other sources of information that indicate Aboriginal objects are likely to be present in the area (e.g. previous studies or reports from related projects)?		No
Will the works occur in the location of one or more of these landscape features and is on land not previously disturbed? (if yes see Note 15)		No
- Within 200m of waters.		
- Located within a sand dune system.		
- Located on a ridge top, ridge line or headland.		
- Located within 200m below, or above a cliff face.		
- Within 20m of, or in a cave, rock shelter or a cave mouth		
If Aboriginal objects or landscape features are present, can impacts be avoided?	Yes	
If the above steps indicate that there remains a risk of harm or disturbance, has a desktop assessment and visual inspection been undertaken?	Yes	
Is the activity likely to affect wild resources or access to these resources, which are used or valued by the Aboriginal community?		No
Is the activity likely to affect the cultural value or significance of the site?		No

An Aboriginal Archaeological Assessment has been prepared by Comber Consultants and is included at Appendix M. A search of the Aboriginal Heritage Information Management System (AHIMS) was undertaken as part of this report, which identifies that there are 18 Aboriginal sites in a 1km radius around the study area, including nine sites located immediately north of the study area. A site inspection and consultation with relevant Local Aboriginal Land Council members was also undertaken.

This report concludes there were no Aboriginal objects observed within the study area because the road and road reserve were highly disturbed. Construction of the road would have removed any evidence of Aboriginal occupation that may once have existed within the study area.

Any relevant mitigation measures are included at **Section 7.0**.

6.2.8 Non-Aboriginal Heritage

Questions to consider	Yes	No
Are there any heritage items listed on the following registers within or in the vicinity of the work area NSW heritage database (includes section 170 and local items) Commonwealth EPBC heritage list?		No
Will works occur in areas that may have archaeological remains?		No
Is the demolition of any heritage occurring?		No

A Historical Archaeological Assessment has been prepared by Comber Consultants and is included at Appendix E.

The report concludes that the highly disturbed road reserve does not contain historical archaeological potential and it is not expected that relics will be located within the property. Therefore, there are no constraints on the proposed development in respect of historical heritage and archaeology. However, if any previously unidentified relics are unexpectedly uncovered, all work must cease in the vicinity of that relic whilst advice is being sought from the consultant. The report provides a number of recommendations to ensure the protection of all items. These are included as mitigation measures at **Section 7.0**.

6.2.9 Ecology

Questions to consider	Yes	No
Could the works affect any <i>Environmental Protection and Biodiversity Conservation Act 1999 (Cth)</i> listed threatened species, ecological community or migratory species?		No
Is it likely that the activity will have a significant impact in accordance with the <i>Biodiversity Conservation Act (2016)</i> ? In order to determine if there is a significant impact, the REF report must address the relevant requirements of Section 7.2 of the BC Act:		No
<ul style="list-style-type: none"> - Section 7.2 (a) - Test for significant impact in accordance with section 7.3 of the BC Act. - Section 7.2 (c) – it is carried out in a declared area of outstanding biodiversity value. 		
Could the works affect a National Park or reserve administered by EES?		No
Is there any important vegetation or habitat (i.e. Biodiversity and Conservation SEPP) within or adjacent to the work area?		No
Could the works impact on any aquatic flora or habitat (i.e. seagrasses, mangroves)?		No
Are there any noxious or environmental weeds present within the work area?	Yes	
Will clearing of native vegetation be required?	Yes	

Ecology

A Prescribed Ecological Actions Report (PEAR) has been prepared by Abel Ecology (Appendix G) to assess the likely impacts of the proposed activity on species and ecological communities present in the area. This proposal includes the removal of 0.33ha of native vegetation.

The vegetation within the site area consists of native woodland (PCT834 Forest Red Gum – Rough-barked Apple – White Stringybark grassy woodland in dry valleys, southern South East corner Region) and grassland. The report found that both the woodland and grassland vegetation found within the road reserve is largely disturbed and therefore, the proposed clearing will be of minimal impact to ecology and biodiversity.

In addition to this, the groundcover vegetation was found to be predominantly exotic and weed species, with native vegetation at this level being rare or absent.

Additionally, the 'Test of Significance' was undertaken to examine the proposal, which indicated that the proposed activity is not likely to significantly affect any threatened species or Endangered or Critically Endangered Species. The report confirms that the provisions of the Environmental Protection and Biodiversity Conservation Act 1999 do not apply to the proposed activity, and it does not require referral to the Commonwealth.

Mitigation measures relating to ecology protection are included at **Section 7.0**.

Tree Removal

This activity will impact upon 125 trees in the road reserve where the proposed roundabout and ancillary works are to be located. An Arborist Report has been prepared by Abel Ecology and is included at Appendix K. This report has identified that of the 125 trees impacted by the proposal, 121 are identified for removal and four are identified to be relocated as they are hollow-bearing fauna habitat trees.

Given that the proposal will impact 1221 trees, the proposal must include amelioration. The trees on site are part of a remnant patch of an endangered ecological community. Whilst the extent of this community is in poor condition due to more than 100 years of grazing practices, the removal of 121 trees will reduce the extent of this community. Therefore, 121 new trees are proposed to be planted on the adjacent greenfield site to offset the impact of the proposed roundabout. Additional mitigation measures relating to tree removal and protection are included at **Section 7.0**.

6.2.10 Bushfire

Questions to consider	Yes	No
Are the works located on bushfire prone land	Yes	
Do the works include bushfire hazard reduction work?		No
Is the work consistent with a bush fire risk management plan within the meaning of the <i>Rural Fires Act 1997 (RF Act)</i> that applies to the area or locality in which the activity is proposed to be carried out?		No

A Bushfire Letter has been prepared by Abel Bushfire and is included at **Appendix N**. This letter has considered the NSW Rural Fire Service's *Planning For Bushfire Protection 2019* (PBP) as per section 2.16 of the TISEPP. The letter concludes that the proposed roundabout and associated infrastructure works can meet the aims and relevant objectives of the PBP, and that no new bushfire impacts will arise from the works.

6.2.11 Land Uses and Services

Questions to consider	Yes	No
Will the works result in a loss of, or permanent disruption of an existing land use?		No
Will the works involve the installation of structures or services that may be perceived as objectionable or nuisance?		No
Will the works impact on, or be in the vicinity of other services?		No

The proposed works are contained within the existing road reserve, and directly relate to the operation of the road. Therefore, the works will not cause a loss or permanent disruption to any existing land uses. The proposed development is required to support the infrastructure capacity of the road and to support the future development of adjacent greenfield sites.

The electrical and other services have been designed to connect to existing services. Electrical design is included at Appendix B.

6.2.12 Waste Generation

Questions to consider	Yes	No
Will the works result in the generation of non-hazardous waste?	Yes	
Will the works result in the generation of hazardous waste?		No
Will the works result in the generation of wastewater requiring off-site disposal?		No

The proposed works will likely generate a small amount of construction waste. The future detailed Construction Management Plan that the nominated contractor will prepare address the recycling and reuse of materials where possible. The contractor will be required to arrange the sorting and recycling of waste materials and packing to ensure maximum recycling is achieved. The contractor will be committed to achieving compliance with the EP&A Guidelines.

6.2.13 Hazardous Materials and Contamination

Questions to consider	Yes	No
Is there potential for the works to encounter any contaminated material?	Yes	
Will the works involve the disturbance or removal of asbestos?		No
Is the work site located on land that is known to be or is potentially contaminated?		No
Will the works require a Hazardous Materials Assessment?		No
Is a Remediation Action Plan required?		No
Is the work category 2 works under Resilience and Hazards SEPP?		No

A Preliminary Site Investigation (PSI) has been undertaken by JK Environmental and is included at **Appendix D**. JK Environmental have identified that based on the scope of works, fill material is the primary potential contamination source at the site of the works. Considering this, and based on a qualitative assessment undertaken as part of the PSI, JK Environmental is of the opinion that there is a relatively low potential for site contamination that could impact the development.

Based on the potential contamination sources and potential for contamination identified, several mitigation measures are proposed. These are included at **Section 7.0**.

6.2.14 Community Impact

Questions to consider	Yes	No
Is the activity likely to affect community services or infrastructure?		No
Does the activity affect sites of importance to local or the broader community for their recreational or other values or access to these sites?		No
Is the activity likely to affect economic factors, including employment numbers or industry value?		No
Is the activity likely to have an impact on the safety of the community?		No
Will the activity affect the visual or scenic landscape? This should include consideration of any permanent or temporary signage.		No
Is the activity likely to cause noise, pollution, visual impact, loss of privacy, glare or overshadowing to members of the community, particularly adjoining landowners?		No

6.2.15 Cumulative Impact

Questions to consider	Yes	No
Has there been any other development approved within 500m of the site		No
Will there be significant impacts (for example, including but not limited to, construction traffic impacts) from other development approved or currently under construction within 500m of the site?		No

There is no other significant development that has been recently approved within 500m of the site that is likely to cause cumulative impact in conjunction with the proposed roundabout works.

7. Summary of Mitigation Measure

Standard mitigation measures should be provided as a separate appendix. The mitigation measures should incorporate the recommendations of any technical reports and any other elements that are proposed to be incorporated to reduce environmental impacts.

Mitigation measures are to be implemented for the proposal to reduce impacts on the environment. The mitigation measures are provided at **Attachment A**.

7.1 Summary of Impacts

Based on the identification of potential issues, and an assessment of the nature and extent of the impacts of the proposed development, it is determined that:

- The extent and nature of potential impacts are low, and will not have significant adverse effects on the locality, community and the environment;
- Potential impacts can be appropriately mitigated or managed to ensure that there is minimal effect on the locality, community; and
- Given the above, it is determined that an EIS is not required for the proposed development activity.

8. Justification and Conclusion

The proposed construction of a new roundabout and associated in ground electrical and telecommunications works on the Princes Highway in Moruya, is subject to assessment under Part 5 of the EP&A Act. The REF has examined and taken into account to the fullest extent possible all matters affecting, or likely to affect, the environment by reason of the proposed activity.

As discussed in detail in this report, the proposal will not result in any significant or long-term impact. The potential impacts identified can be reasonably mitigated and where necessary managed through the adoption of suitable site practices and adherence to accepted industry standards.

As outlined in this REF, the proposed activity can be justified on the following grounds:

- It responds to an existing need within the community;
- It generally complies with, or is consistent with all relevant legislation, plans and policies;
- It has minimal environmental impacts; and
- Adequate mitigation measures have been proposed to address these impacts.

The environmental impacts of the proposal are not likely to be significant and therefore it is not necessary for an EIS to be prepared and approval to be sought for the proposal from the Minister for Planning and Homes under Part 5.1 of the EP&A Act. On this basis, it is recommended that HI determine the proposed activity in accordance with Part 5 of the EP&A Act and subject to the adoption and implementation of mitigation measures identified within this report.

Attachment A – Mitigation Measures

Aspect	Mitigation measure	Timing ¹
Construction Traffic	A detailed Construction Traffic Management Plan is to be prepared by the nominated contractor prior to construction.	Prior to Commencement of Works
Flora and Fauna	A preclearance survey is to be conducted for hollow trees (Figure 13 of the Prescribed Ecological Actions Report prepared by Abel Ecology) to relocate resident fauna, and hollows relocated under the provisions of a Hollow Management Guideline document.	Prior to Commencement of Works
Contamination	<p>Preliminary soil sampling and analysis should be undertaken to make an assessment of the soil contamination conditions prior to commencement of any soil disturbance on site as part of the proposed development works.</p> <p>An unexpected finds protocol (UFP) should be prepared and implemented during the proposed development works; and</p> <p>A waste classification should be undertaken prior to off-site disposal of any waste.</p>	Prior to Commencement of Works
Acid Sulfate Soils	An Acid Sulphate Soil Management Plan will be required to be prepared prior to construction in accordance with the Acid Sulphate Soil Manual (ASSMAC, 1998).	Prior to Commencement of Works
Construction Noise and Vibration	<p>For all construction works, the contractor would be expected to prepare a detailed Construction Noise and Vibration Management Plan (CNVMP). This plan should include but not be limited to the following:</p> <ul style="list-style-type: none"> • Roles and responsibilities • Noise and vibration sensitive receiver locations • Areas of potential impact • Mitigation strategy • Monitoring methodology • Community engagement strategy. <p>General guidance on the control of construction noise and vibration impacts relevant to this study are discussed in the following sections.</p> <p>In general, practices to reduce construction noise impacts will be required, and may include;</p> <ul style="list-style-type: none"> • Adherence to the standard approved working hours as outlined in the Project Approval. <p>Manage noise from construction work that might be undertaken outside the recommended standard hours.</p> <p>The location of stationary plant (concrete pumps, air-compressors, generators, etc.) as far away as possible from sensitive receivers</p> <p>Using site sheds and other temporary structures or screens/hoarding to limit noise exposure where possible.</p>	<p>Prior to Commencement of Works</p> <p>During Construction / Undertaking of Works</p>

- Sealing of openings in the building (temporary or permanent) prior to commencement of internal works to limit noise emission.

- The appropriate choice of low-noise construction equipment and/or methods

- Modifications to construction equipment or the construction methodology or programme. This may entail programming activities to occur concurrently where a noisy activity will mask a less noisy activity, or, at different times where more than one noisy activity will significantly increase the noise. The programming should also consider the location of the activities due to occur concurrently.

- Carry out consultation with the community during construction including, but not limited to; advance notification of planned activities and expected disruption/effects, construction noise complaints handling procedures.

The following noise mitigation work practices are recommended to be adopted at all times on site:

During Construction /
Undertaking of Works

- Regularly train workers and contractors (such as at toolbox talks) to use equipment in ways to minimise noise.

- Site managers to periodically check the site and nearby residences for noise problems so that solutions can be quickly applied.

- Avoid the use of radios or stereos outdoors

- Avoid the overuse of public address systems.

Recommended minimum working distances for vibration intensive plant, which are based on international standards and guidance, are provided in the Acoustic Assessment prepared by Arup

During Construction /
Undertaking of Works

Tree Management

Engage a project arborist to ensure and certify that tree protection measures are satisfactorily implemented and to provide advice as applicable. The arborist will inspect the site at least once within every six months during construction, and once upon completion of construction.

During Construction/
Undertaking of Work

Following completion / during
operation

Construct tree protection fence(s) at a minimum radius distance(s), measuring from the centre of the tree, prior to construction to prevent unnecessary root damage. Construct tree protection fences using chain wire mesh panels to a height of 1.8 metre high. Fences are to be held in place with secure footing (Figure 6 of Arborist Report, prepared by Abel Ecology)

During Construction/
Undertaking of Work

Exclude all site activity from tree protection zones during demolition, construction and demobilisation phases (see 'Tree protection guidelines' in Appendix 3 of the Arborist Report prepared by Abel Ecology).

During Construction/
Undertaking of Work

Do not remove tree protection fences until construction is completed, at which time the arborist will sign-off on fence removal and provide further advice as applicable.

During Construction/
Undertaking of Work

Apply mulch 100-150 mm deep with a radius of at least 2 metres, (or to the edge of the calculated tree protection zone where possible) around retained trees adjacent to excavation works prior to construction to stimulate growth of absorbing roots.	During Construction/ Undertaking of Work
Re-apply mulch annually to ameliorate impacts of root loss.	During Construction/ Undertaking of Work
	Following completion
Water fenced trees during periods of low rainfall. This will boost the vitality and adaptability of the trees, creating visual and shade assets that complement the site.	During Construction/ Undertaking of Work
Cleanly cut any roots with a thickness of 2 cm or more encountered during excavation to reduce damage to roots from tearing, splitting, and cracking.	During Construction/ Undertaking of Work
Show tree locations and protective fencing on all construction plans used on site.	During Construction/ Undertaking of Work
Engage a qualified ecologist to inspect hollow-bearing trees before they are removed. The ecologist will provide further advice as applicable.	During Construction/ Undertaking of Work
Potential habitat trees are to be inspected for hollows before removal by a qualified ecologist.	During Construction/ Undertaking of Work
Any trees found to have hollows that have not previously been identified as a habitat tree, must be inspected by a qualified ecologist, and all hollows removed and relocated.	During Construction/ Undertaking of Work
Protective fencing is to be placed at a minimum of the TPZ radius distance around trees in close proximity to construction zones.	During Construction/ Undertaking of Work
All site activity must be excluded from tree protection zones during demolition and construction phases (see 'Tree protection guidelines' in Appendix 2).	During Construction/ Undertaking of Work
Route all trenching for underground services outside the TPZs of retained trees. If any underground service installation or underground boring will occur within TPZs, engage an arborist to supervise the activity.	During Construction/ Undertaking of Work
Crown pruning must comply with the appropriate class of pruning described in AS4373-2007 Pruning of amenity trees and be undertaken by a qualified arborist practising modern arboricultural methods.	During Construction/ Undertaking of Work
Advice must be sought from a suitably skilled and experienced project arborist wherever roots over 40 mm diameter are encountered during excavation. The tearing of roots must be avoided, and root pruning undertaken as directed by the nominated arborist.	During Construction/ Undertaking of Work
Any and all landscaping or gardening for the proposal must use species that are native to the remnant Lowland	During Construction/ Undertaking of Work
Grassy Woodland ecological community. Species native to this community which are suitable for landscaping	
include:	

- *Acacia implexa*
- *Angophora floribunda*
- *Bursaria spinosa*
- *Bossiaea buxifolia*
- *Eucalyptus tereticornis*
- *Eucalyptus eugenioides*
- *Eucalyptus bosistoana*
- *Dianella longifolia*
- *Dianella revoluta*
- *Hardenbergia violacea*
- *Jacksonia scorparia*
- *Lomandra longifolia*
- *Rubus parvifolius*
- *Themeda australis*

An environmental offset area must be established to ameliorate the impacts of the proposal. The vegetation planted within the offset must be native to the Lowland Grassy Woodland ecological community.

Specifications can be finalised with a vegetation management plan.

Construction Traffic	Right turn movements out of the site/construction area will be priority controlled, with the exception of articulated vehicles and b-double movements which are to be managed under 'stop/go' traffic control	During Construction/ Undertaking of Work
	All through movements will be maintained and at a 60km/h speed through the works zone	During Construction/ Undertaking of Work
Archaeology	If any previously unidentified relics are unexpectedly uncovered, all work must cease in the vicinity of that relic whilst advice is being sought from the heritage consultant.	During Construction/ Undertaking of Work
Erosion and Sediment Control	The Erosion and Sediment Control Plan prepared by PTC Consulting dated 19/04/2022 is to be complied with.	During Construction/ Undertaking of Work