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CONSTRUCTION ENVIRONMENTAL MANAGEMENT PLAN

Wells Crossing to Glenugie

Section 2 - Pacific Highway Upgrade

SEPTEMBER 2019

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RMS Environment Manager

[signed]

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Revision history

Revision	Date	Description	Approval
0		Initial for review	
1	19/03/15	Including RMS feedback	
2	07/04/15	Including RMS feedback	
3	01/05/15	Includes agency feedback	
4	20/05/15	Close out of DoPE comments	
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Glossary / Abbreviations

ASS	Acid sulfate soils
CEMP	Construction environmental management plan
Compliance audit	Verification of how implementation is proceeding with respect to a construction environmental management plan (CEMP) (which incorporates the relevant approval conditions).
LLE	Lendlease Engineering
CoA	Conditions of approval
DECC	Former Department of Environment and Climate Change (NSW) *now NSW Office of Environment and Heritage.*
DoEE	Commonwealth Department of the Environment and Energy
DP&E	NSW Department of Planning and Environment (Note- now identified as NSW Department of Planning, Industry and Environment)
DPI	NSW Department of Primary Industries
Ecological sustainable development	Using, conserving and enhancing the community's resources so that the ecological processes on which life depends are maintained and the total quality of life now and in the future, can be increased (Council of Australian Governments, 1992).
EEC	Endangered Ecological Communities.
EIS	Woolgoolga to Ballina Pacific Highway Upgrade Environmental Impact Statement (December 2012)
EMS	Environmental Management System
Environmental aspect	Defined by AS/NZS ISO 14001:2004 as an element of an organisation's activities, products or services that can interact with the environment.
Environmental impact	Defined by AS/NZS ISO 14001:2004 as any change to the environment, whether adverse or beneficial, wholly or partially resulting from an organisation's environmental aspects.
Environmental incident	An unexpected event that has, or has the potential to, cause harm to the environment and requires some action to minimise the impact or restore the environment.
Environmental objective	Defined by AS/NZS ISO 14001:2004 as an overall environmental goal, consistent with the environmental policy, that an organisation sets itself to achieve.
Environmental policy	Statement by an organisation of its intention and principles for environmental performance.
Environmental target	Defined by AS/NZS ISO 14001:2004 as a detailed performance requirement, applicable to the organisation or parts thereof, that arises from the environmental objectives and that needs to be set and met in order to achieve those objectives.
Environmental	A suitably qualified and experienced person independent of

Representative	project design and construction personnel employed for the duration of construction. The principal point of advice in relation to all questions and complaints concerning environmental performance.
EP&A Act	*NSW Environmental Planning and Assessment Act 1979*
EPA	NSW Environment Protection Authority
EPBC Act	*Commonwealth Environment Protection and Biodiversity Conservation Act 1999*
EPL	NSW Environment Protection Licence under the *Protection of the Environment Operations Act 1997*.
ERG	Environmental Review Group – comprising representatives of Roads and Maritime, Environmental Representative, Project delivery team, regulatory authorities (EPA, DPI – Fisheries Conservation and Aquaculture, NOW) and local councils. The ERG will be maintained for the duration of the Project and will meet regularly and undertake environmental inspections. The role the ERG is to provide proactive advice on environmental management issues and review the environmental performance of the Project.
EWMS	Environmental Work Method Statement
Minister, the	NSW Minister for Planning and Public Spaces
Non-compliance	Failure to comply with the requirements of the Project approval or any applicable license, permit or legal requirements.
Non-conformance	Failure to conform to the requirements of Project system documentation including this CEMP or supporting documentation.
NOW	NSW Office of Water
OEH	NSW Office of Environment and Heritage
SPIR	Woolgoolga to Ballina Pacific Highway Upgrade Submissions Preferred Infrastructure Report (November 2013)
PoEO Act	*NSW Protection of the Environment Operations Act 1997*
Project, the	Wells Crossing to Glenugie.
Roads and Maritime	NSW Roads and Maritime Services
Secretary	Secretary of the Department of Planning, Industry and Environment
SSI	State significant infrastructure
TSC Act	NSW Threatened Species Conservation Act 1995

1 Introduction

1.1 Background

On behalf of the Australian and NSW governments, NSW Roads and Maritime Services (Roads and Maritime) is progressively upgrading the Pacific Highway to dual carriageway between the Hunter and NSW/Queensland border.

The Woolgoolga to Ballina Project was declared critical State significant infrastructure under section 115V of the *Environmental Planning and Assessment Act 1979* (EP&A Act) and was assessed under Part 5.1 of the EP&A Act.

An Environmental Impact Statement (EIS) was prepared for the Woolgoolga to Ballina Project and placed on public exhibition for 60 days between December 2012 and February 2013. A Submissions/Preferred Infrastructure Report (SPIR) was prepared for the Woolgoolga to Ballina Project to address key revisions and updates from the EIS following public exhibition of the EIS. A total of 145 submissions were received in response to the exhibition of the EIS. The SPIR was published in November 2013. Approval was granted by the Minister for Planning on 26 June 2014. The Woolgoolga to Ballina Project has also been subject to approval under the Commonwealth *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act). The Woolgoolga to Ballina Project was declared by the Commonwealth Minister for the Environment to be a controlled action under this Act on 20 June 2012. Approval was granted on 14 August 2014. The Woolgoolga to Ballina approval was last modified on the 21 February 2018 (Modification 6) for the realignment of a section of the Woolgoolga to Ballina Pacific Highway Upgrade project between Glenugie and Eight Mile Lane. The Conditions of Approval directly related to the CEMP are included within Table 1-1.

The Woolgoolga to Ballina Project comprises approximately 155 kilometres of four-lane dual carriageway motorway that bypasses the towns of Grafton, South Grafton, Ulmarra, Woodburn, Broadwater and Wardell. The project does not include the Pacific Highway upgrades at Glenugie and Devils Pulpit as these are separate projects and now complete, however the tie-ins to these projects are included within the DP&E approval.

The Wells Crossing to Glenugie Project is about 8 kilometres long and includes the construction of two north bound lanes extending north from Wells Crossing, to the southern end of the existing Glenugie upgrade (Figure 2-1). The project is entirely situated within the Clarence Valley Council area.

1.2 Purpose of this CEMP

This Construction Environmental Management Plan (CEMP) and its associated sub-plans have been prepared to comply with the Minister for Planning's Conditions of Approval for the Woolgoolga to Ballina Project. A detailed description of the project is provided in Chapter 2.

This CEMP has been developed for the construction of two north bound lanes between Wells Crossing and Glenugie. The CEMP has been prepared in accordance with Roads and Maritime QA Specification G36 and the Guideline for the Preparation of Environmental Management Plans (DIPNR, 2004). It is also consistent with AS/NZS ISO 14001.

The project joins to the southern end of the constructed Glenugie upgrade project. The Ministers conditions of approval for this section have been included to ensure tie in works are consistent with the requirements. These conditions are included in Table 1.1.

The purpose of this CEMP is to provide a structured approach to the management of environmental issues during construction of the project. Implementing this CEMP effectively will ensure that the project team meets regulatory and policy requirements in a systematic manner and continually improves its performance. The CEMP is to ensure that the

requirements of Roads and Maritime, the Project Environment Protection Licence, the Lendlease Engineering Environmental Management System and the Minister's conditions of approval, Environmental Mitigation Measures in the EIS and S/PIR including DoE requirements are met (see Appendix A1 and Compliance Tracking Program).

In particular, this CEMP:

- Describes the project in detail including activities to be undertaken and relative timing.
- Provides specific mitigation measures and controls that can be applied on-site to avoid or minimise negative environmental impacts.
- Provides specific mechanisms for compliance with applicable policies, approvals, licences, permits, consultation agreements and legislation.
- Describes the environmental management related roles and responsibilities of personnel.
- States objectives and targets for issues that are important to the environmental performance of the project.
- Outlines a monitoring regime to check the adequacy of controls as they are implemented during construction.

This CEMP meets the requirements of CoA D25, D26 relating to a Construction Environmental Management Plan. The requirements of these conditions and where they are met in this CEMP are shown in Table 1-1. CoA D21 relating to Ancillary Facilities Management Plan is proposed to be included within the broader CEMP, and so is included within Table 1-1. CoA D27 relating to Compliance Monitoring and Tracking is discussed in Chapter 8-4 of this CEMP.

Table 1-1 Conditions of approval

CoA no.	Requirement	Reference
Woolgoolga to Ballina Conditions of Approval 24 June 2014 (as amended);		
	ANCILLARY FACILITIES	
D21	The Applicant shall prepare and implement an **Ancillary Facilities Management Plan** to detail the management of ancillary facilities associated with the SSI. The Plan shall be developed in consultation with the EPA, OEH, DPI (Fisheries) and the relevant council, and to the satisfaction of the Environmental Representative, and shall include, but not necessarily be limited to: (a) a description of the ancillary facility (including a site layout plan), its components and details of the existing environment on and in the vicinity of the site; (b) details of the activities to be carried out at the facility, including the hours of operation, staging of operation and predicted date of commissioning; (c) a description of the plant, equipment and materials to be used and/or stored on the site, including dangerous and hazardous goods; (d) details of the light and heavy construction vehicle movements to and from each facility, including site access and route(s) to be used during the establishment and operation of the facility, and an	Appendix B8

CoA no.	Requirement	Reference

assessment of potential construction traffic impacts on the local road network and access tracks;

(e) a summary of the potential environmental impacts associated with the construction and operation of the facility;

(f) demonstrate compliance with the locational and environmental criteria in condition B73(a) — B73(n);

(g) details of the mitigation, monitoring and management procedures specific to the facility that would be implemented to minimise environmental and amenity impacts or, where this is not possible, feasible and reasonable measures to offset these impacts;

(h) a description of how the management and mitigation measures set out in the documents listed in condition A2 will be implemented on the site, and if not, justification for such decisions particularly on those sites assessed as having a high risk of flood impacts;

(i) an assessment of alternative site layouts where either noise management levels are predicted to be exceeded and acoustic treatment of residences is not proposed, or where such treatment is proposed (consequent to the operational impacts of the SSI) but will not be provided prior to establishment of an ancillary facility;

(j) a cumulative noise impact statement for the ancillary facility addressing the worst-case cumulative noise impacts resulting from the concurrent operation of the site (including construction traffic movements to and from the site), nearby construction works within the SSI corridor and any other nearby construction activities associated with other road upgrade projects;

(k) identification of the timing for the completion of activities at the facility and how the site will be decommissioned (including any necessary rehabilitation); and

(l) mechanisms for the monitoring, review and amendment of this plan.

The plan shall be approved by the Environmental Representative prior to the establishment of the facility. In considering the approval of the plan, the Environmental Representative shall take into account the Proponent's response to public authority and council comments on the plan.

The Applicant may prepare a separate plan for each facility or include multiple sites within a single or multiple management

CoA no.	Requirement	Reference
	plans.	
	CONSTRUCTION ENVIRONMENTAL MANAGEMENT PLAN	
D25	The Applicant shall prepare and implement (following approval) a **Construction Environmental Management Plan** for the SSI, prior to the commencement of construction, or as otherwise agreed by the Secretary. The Plan shall be prepared in consultation with the EPA, OEH, DPI (Fisheries), NOW and DoE and outline the environmental management practices and procedures that are to be followed during construction, and shall be prepared in consultation with the relevant government agencies and in accordance with the *Guideline for the Preparation of Environmental Management Plans* (Department of Infrastructure, Planning and Natural Resources, 2004). The Plan shall include, but not necessarily be limited to:	This plan
D25 (a)	A description of activities to be undertaken during construction of the SSI (including staging and scheduling).	Chapter 2
D25 (b)	Statutory and other obligations that the Proponent is required to fulfil during construction, including approvals, consultations and agreements required from authorities and other stakeholders under key legislation and policies.	Chapter 3 and Appendix A1
D25 (c)	A description of the roles and responsibilities for relevant employees involved in the construction of the SSI, including relevant training and induction provisions for ensuring that employees, including contractors and sub-contractors are aware of their environmental and compliance obligations under the conditions of approval.	Chapter 4 and Chapter 5
D25 (d)	An environmental risk analysis to identify the key environmental performance issues associated with the construction phase and details of how environmental performance would be managed and monitored to meet acceptable outcomes, including what actions will be taken to address identified potential adverse environmental impacts (including any impacts arising from the staging of the construction of the SSI). In particular, the following environmental performance issues shall be addressed in the Plan:	Section 3.4 and Appendix A2
	i. measures to monitor and manage dust emissions including dust from stockpiles, blasting, traffic on unsealed public roads and materials tracking from construction sites onto public roads;	Appendix B6
	ii. measures to minimise hydrology impacts, including measures to stabilise bed and bank structures as required;	Appendix B4
	iii. measures for the handling, treatment and management of contaminated materials;	Appendix B4

CoA no.	Requirement		Reference
	iv.	measures to monitor and manage waste generated during construction including but not necessarily limited to: general procedures for waste classification, handling, reuse, and disposal; use of secondary waste material in construction wherever feasible and reasonable; procedures or dealing with green waste including timber and mulch from clearing activities; and measures for reducing demand on water resources (including potential for reuse of treated water from sediment control basins);	Appendix B7
	v.	measures to monitor and manage spoil, fill and materials stockpile sites including details of how spoil, fill or material would be handled, stockpiled, reused and disposed in a Stockpile Management Protocol. The Protocol shall include details of the locational criteria that would guide the placement of temporary stockpiles, and management measures that would be implemented to avoid/minimise amenity impacts to surrounding residents and environmental risks (including surrounding water courses). Stockpile sites that affect heritage, threatened species, populations or endangered ecological communities require the approval of the Secretary, in consultation with the EPA, OEH and DPI (Fisheries);	Appendix B4
	vi.	measures to monitor and manage hazard and risks including emergency management and management measures to address potential risks to the Woodburn borefield drinking water catchment. These measures shall be developed in consultation with Rous Water;	N/A
	vii.	the issues identified in condition D26;	Appendices B1-B11
	viii.	details of community involvement and complaints handling procedures during construction, consistent with the requirement of conditions C1 to C4;	Communication Strategy(not in this doc)
	ix.	details of compliance and incident management consistent with the requirements of condition D27; and	Section 7, 8
	x.	procedures for the periodic review and update of the Construction Environmental Management Plan and Plans required under condition D26, as necessary (including where minor changes can be approved by the Environmental Representative).	Chapter 9
	The Plan shall be submitted for the approval of the Secretary of the Department of Planning and Environment no later than one month prior to the commencement of construction, or as otherwise agreed by the Secretary of the Department of Planning and Environment. The Plan may be prepared in stages, however, construction works shall not commence until written approval of the relevant stage has been received from the Secretary of the Department of Planning and		Section 1.4

CoA no.	Requirement	Reference
	Environment. The approval of a Construction Environmental Management Plan does not relieve the Applicant of any requirement associated with this SSI approval. If there is an inconsistency with an approved Construction Environmental Management Plan and the conditions of this SSI approval, the requirements of this SSI approval prevail.	
D26	As part of the Construction Environmental Management Plan for the SSI, the Applicant shall prepare and implement:	
D26 (a)	a **Construction Noise and Vibration Management Plan**	Appendix B3
D26 (b)	a **Construction Traffic and Access Management Plan**	Appendix B1
D26 (c)	a **Construction Soil and Water Quality Management Plan**	Appendix B4
D26 (d)	a **Construction Heritage Management Plan**	Appendix B5
D26 (e)	a **Construction Flora and Fauna Management Plan**	Appendix B2
D27	The Applicant shall prepare and implement a Compliance Tracking Program, to track compliance with the requirements of this approval, prior to the commencement of construction and operate from the date of its approval to a minimum of one year following commencement of operation, or as otherwise agreed by the Secretary. The Program shall be prepared for the approval of the Secretary, and include, but not necessarily be limited to: (a) provisions for the notification of the Secretary prior to the commencement of construction and prior to the commencement of operation of the SSI (including prior to each stage, where works are being staged); (b) provisions for periodic review of the compliance status of the SSI against the requirements of this approval; (c) provisions for periodic reporting of compliance status to the Secretary, including a Pre-Construction Compliance Report, prior to the commencement of construction, and a Pre-Operation Compliance Report prior to the commencement of operation. These reports may be staged to suit the staged construction/operation of the SSI; (d) a program for independent environmental auditing in accordance with ISO 19011:2003 - Guidelines for Quality and/or Environmental Management Systems Auditing; (e) mechanisms for recording environmental incidents during construction and actions taken in response to those incidents; (f) provisions for reporting environmental incidents to the Secretary and relevant public authorities during construction; (g) procedures for rectifying any non-compliance identified during environmental auditing, review of compliance or	Section 8.4 Table 8.3

CoA no.	Requirement	Reference
	incident management; and (h) provisions for ensuring all employees, contractors and sub-contractors are aware of, and comply with, the conditions of this approval relevant to their respective activities.	
	Full details of CoA D25 are provided in the Appendices of this CEMP relating to each of plans listed above.	
	Glenugie Upgrade DoP Conditions of Approval 17 Dec 2009	
CoA 6.2	**Construction Environmental management Plan** *- Prior to the commencement of construction, the Proponent shall prepare and implement a Construction Environment Management Plan for the project. The Plan shall:* *a) outline the environmental management practices and procedures that are to be followed during construction;* *b) b) be prepared in consultation with the Department, DECCW and relevant public authorities;* *c) c) be consistent with the Framework CEMP in Appendix G of the Environmental Assessment and Guideline for the Preparation of Environmental Management Plans (DIPNR, 2004); and* *d) include a:* *- Construction Traffic Management Plan;* *- Construction Flora and Fauna Management Plan;* *- Construction Heritage Management Plan; and* *- Construction Noise and Vibration Management Plan.*	This document
2.18	Certain construction activities (Out of Hours Works) may be allowed to occur outside the standard construction hours with the prior written approval of the Director-General. Requests for out of hours approval will be considered for construction activities which cannot be undertaken during standard construction hours for technical or other justifiable reasons and will be considered on a case by case or activity-specific basis. Any request for Out of Hours Works must be accompanied by: a) details of the nature and need for activities to be conducted during the varied construction hours; b) written evidence to the DECC and the Director-General that activities undertaken during the varied construction hours are justified, appropriate consultation with potentially affected receivers and notification of Council has been undertaken, issues raised have been addresses, and all feasible and	Appendix B3

CoA no.	Requirement	Reference
	reasonable mitigation measures have been put in place; and c) evidence of consultation with the DECC on the proposed variation in standard construction hours.	
2.21	The construction noise objective for the project is to manage noise from construction (as measured by a Lmo (15minute) descriptor) so that it does not exceed the background LAgo noise level by: a) more than 20 dB(A) for a construction period of equal to or less than four weeks; b) more than 10 dB(A) for a construction period of greater than four weeks, but not exceeding 26 weeks; and c) more than 5 dB(A) for a construction period greater than 26 weeks. Any activities that could exceed the construction noise objectives specified under this condition shall be identified and managed in accordance with a Construction Noise and Vibration Management Plan specified under Condition 6.3 d) of this approval. If the noise from construction is substantially tonal or impulsive in nature (as described in Chapter 4 of the NSW Industrial Noise Policy), 5dB(A) shall be added to the measured construction noise level when comparing the measured noise with the construction noise objectives. The Proponent shall implement all reasonable and feasible noise mitigation measures with the aim of achieving the construction noise objective.	Appendix B3

The CEMP is also to meet the requirements of the revised Environmental Impact Statement (EIS) mitigation measures for the project as presented in the Submissions / Preferred Infrastructure Report (November 2013), presented in Table 1-2.

Table 1-2 Woolgoolga to Ballina EIS requirement for a CEMP

Issue	Requirement	Reference
Construction Environmental Management Plan	A construction environmental management plan is to be prepared by each contractor and will identify measures to be implemented to minimise environmental impacts. The construction environmental management plan will be required to include any conditions of approval for the project and construction measures identified in the EIS. The CEMP will be required to include: - Roles and responsibilities for planning, approval, implementation, assessment and monitoring of environmental controls. - Required licences, approvals and permits. - Environmental legislation that will be required to be complied with. - Potential environmental impacts resulting from construction of the proposed upgrade and the control and mitigation measures to be implemented.	W2B EIS S19.1

	- Objectives and targets for environmental performance. - Environmental monitoring programs and a mechanism for evaluating environmental performance. - Communication procedures. - Document control procedures. - Emergency response procedures to mitigate potential environmental damage. - Training, competence and awareness assessment procedures and programs. - An environmental auditing program and a mechanism for control and management of non- conformances. The Construction Environmental Management Plan would provide specific information in particular areas of environmental management, either by way of direct reference or by environmental management sub-plans.	

Relevant management measures and requirements for the project are included within the attached plans to this CEMP (Appendix B):

- Appendix B1 - Construction traffic and access management plan
- Appendix B2 - Construction flora and fauna management plan
- Appendix B3 - Construction noise and vibration management plan
- Appendix B4 - Construction soil and water quality management plan
- Appendix B5 - Construction heritage management plan
- Appendix B6 - Construction air quality management plan
- Appendix B7 - Construction waste and energy management plan.
- Appendix B8 – Ancillary facilities management plan
- Appendix B11 – Construction acid sulfate materials management plan

Other relevant management measures to be addressed in construction (visual, urban design and landscape, Traffic and transport, Land use and property and Social and economic) which have not been captured by specific plans are described in Appendix A7.

This CEMP is the overarching document in the environmental management system for the Project that includes a number of management documents. These are described in Section 4.1. It is applicable to all staff and sub-contractors associated with the construction of the Project.

1.3 Consultation

Extensive consultation for the Project commenced during the route selection phase and continued during the environmental impact assessment of the concept design. The primary objective of consultation was to keep stakeholders well informed and involved during each stage of Project development.

Further consultation with relevant stakeholders and government authorities has continued through the development of this CEMP and associated plans. Those consulted include:

- NSW Environment Protection Authority
- NSW Department of Primary Industries – Fisheries Conservation and Aquaculture

- NSW Office of Environment and Heritage
- Clarence Valley Council
- NSW Office of Water
- Commonwealth Department of the Environment.

Consultation will continue throughout the Project with relevant stakeholders and government authorities. The outcomes of this consultation will be documented where relevant in subsequent revisions of the CEMP and the management review.

1.4 Certification and approval

This CEMP must be approved by the Roads and Maritime Project Manager and Roads and Maritime Environmental Manager prior to submission to DP&E. Submission to DP&E is required no later than one month prior to commencement of construction or as otherwise agreed.

The CEMP must be approved by the Secretary of the Department of Planning and Environment prior to the commencement of construction.

The plans prepared under CoA D26 also require approval by the Secretary prior to commencement of construction. Further explanation and details of these documents are provided in Section 4.1.

1.5 Distribution

This CEMP is available to all personnel and sub-contractors via the Project document control management system. An electronic copy can be found on the Project website.

The document is uncontrolled when printed. One controlled hard copy of the CEMP and supporting documentation will be maintained by the Quality Manager at the Project office.

Registered copies will be distributed to:

- Project Manager
- Environmental Representative
- Roadworks Manager
- Environmental Manager
- Communications Manager
- Roads and Maritime Representative
- Roads and Maritime Environmental Services Manager, Pacific Highway.

1.6 Revision

A document review process ensures that environmental documentation including this CEMP is updated as appropriate for the specific works that are occurring on-site. This includes the management review process described in Chapter 9.

Should the document review process identify any issues or items within the documents that are either redundant or in need of updating, it is the responsibility of the Environmental Manager or Environmental Coordinators to prepare the revised documents.

The revised document will then be issued to the Project Manager and the Environmental Representative for certification of the changes. The Environmental Representative can approve minor changes to the CEMP. Minor changes would typically include those that:

- Are editorial in nature e.g. staff and agency/authority name changes.

- Do not increase the magnitude of impacts on the environment when considered individually or cumulatively.
- Do not compromise the ability of the Project to meet approval or legislative requirements.

Where the Environmental Representative deems it necessary, the amended CEMP will be forwarded to the Secretary for approval.

Revised versions of the CEMP will be made available through the processes described in Section 1.5.

Updates and revisions made to the CEMP throughout the project will be updated on an external server. Sub contractors will be given a hyperlink to the new revision via e-mail. A toolbox will be held on the changes and sent out with the revision.

2 Project description

2.1 General features

The general features of the project are:

- Bulk earthworks, including five (5) hard rock cuttings. Four (4) of the cuttings will require drill and blasting;
- Extension of eight major transverse fauna and combined drainage culverts;
- Extension of a bebo arch structure;
- 8km of north bound pavement works with Plain Concrete Pavement;

The Woolgoolga to Ballina Pacific Highway Upgrade Environmental Impact Statement divided the alignment into 11 sections, the second stage which is applicable to this CEMP is:

- Wells Crossing to Glenugie (Section 2 & associated tie in works to Glenugie upgrade)

The works to be completed under this CEMP is the Wells Crossing to Glenugie upgrade project (Section 2 & associated tie in works to Glenugie upgrade), which is situated between two other upgraded sections of the Pacific Highway; Halfway Creek upgrade to the south and Glenugie upgrade to the north approximately 17km south of the NSW town of Grafton.

The section between Wells Crossing to the Glenugie upgrade is about 8 kilometres long, extending from just north of Wells Crossing to the southern end of the Glenugie upgrade (Figure 2-1). This section will be A-class standard.

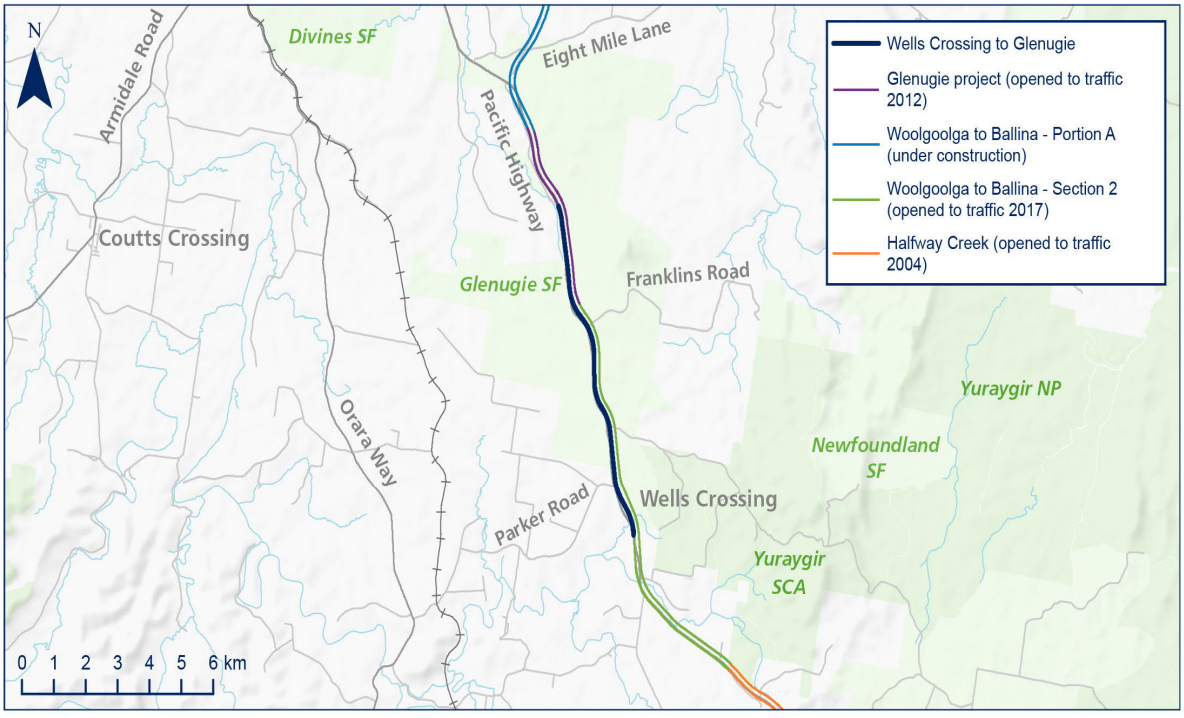


Figure 2-1 - Wells Crossing to Glenugie upgrade

2.2 Construction activities and sequence

Typically the following sequences of construction activities are anticipated:

- **Site establishment** – installing boundary fencing, construction facilities, environmental controls and carrying out pre-clearing vegetation fauna surveys.
- **Relocation or protection of services** – relocating and protecting electricity, gas, water and telecommunications infrastructure affected by the Project.
- **Site preparation** – removal of harvestable timber, clearing and grubbing, topsoil stripping and storage.
- **Earthworks** – undertaking cut and fills works along the alignment to achieve desired levels, removal of unsuitable material, batter and embankment shaping.
- **Structures** –Drainage and fauna underpass facilities.
- **Pavements** – forming sub and base layers and construction final pavement finishes.
- **Road furniture** – installing signage, line marking, safety barriers and fauna overpass structures.
- **Landscaping and restoration** – reuse of topsoil, planting of native plants and seeding disturbed areas with native and cover crops species (note this will take place throughout construction as elements of the Project are complete where ongoing disturbance is not anticipated).
- **Open to traffic** – decommission construction facilities and commissioning new road and related infrastructure.

2.3 Compound and ancillary facilities

A number of temporary compound and ancillary facilities will be required to support construction of the Project. Primary site compounds will be established for each stage of the Project. These sites will accommodate the majority of management, engineering, specialist and administrative personnel. Typically these facilities include:

- Office accommodation.
- Staff amenities.
- Light vehicle parking.
- A plant and equipment maintenance workshop.
- Material and chemical storage.

Due to the geographical scale of the Project, a number of ancillary facilities will also be required. These are generally located closer to active work zones and support site based construction personnel. Typically these facilities will include:

- Crib sheds and minimal office accommodation.
- Concrete and asphalt plant.
- Equipment storage.
- Material storage.

A summary of the assessment criteria for ancillary facilities is provided in Section 3.7.2. The ancillary facilities assessment as part of the Ancillary facilities management plan (Appendix B8) details the location, composition and purpose of compound and ancillary facilities required for the Project. An assessment of the ancillary facility assessment criteria required by CoA B73 is also provided. This assessment shall be approved by the Environmental Representative and included within the Ancillary Facilities Management Plan required under condition D21 Through the approval of this CEMP by DP&E it is deemed that these ancillary facilities are also approved and comply with the requirements set out in the CoA. Ancillary

facilities not identified or assessed in the EIS and S/PIR will need to comply with B73, and be approved under B74 or B75.

3 Planning

3.1 Project environmental obligations

All construction personnel working on the Project have the following general obligations:

- Minimise pollution of land, air and water.
- Use pollution control equipment and keep it in proper working order.
- Preserve the natural and cultural heritage environment.
- Give notice to the Roads and Maritime and relevant authorities of a non-Aboriginal or Aboriginal heritage discovery.
- Minimise the occurrence of offensive noise. Where noise management level has been exceeded, undertake review and investigate what reasonable and feasible actions can be implemented.
- Be a good neighbour to surrounding land users.
- Keep the community informed of Project milestones, upcoming activities and duration of relevant aspects of the works.
- Use equipment with noise control features where available and ensure that it is properly maintained.
- Take all feasible and reasonable steps to ensure compliance with the requirements of this CEMP.

3.2 Legal and other requirements

The key legal, approval and other requirements that apply, or may relate to the Project arise from the following sources:

- Legislative requirements – Appendix A1 describe the primary pieces of environmental legislation applicable to the Project and any associated licensing requirements.
- Minister for Planning's Conditions of Approval (CoA) for the Woolgoolga to Ballina Project. The requirements of these conditions and where they are met in this CEMP are shown in Appendix A1.
- The revised Environmental Impact Statement (EIS) mitigation measures for the project as presented in the Submissions / Preferred Infrastructure Report (November 2013).
- Roads and Maritime requirements - in the delivery of the Project, Roads and Maritime requires that Lendlease Engineering complies with the Roads and Maritime Project Deed including specifications for the development of Environmental Management Plans, as well as AS/NZS ISO 14001:2004. Sections 3.5, 3.6, the cross-reference matrix (Appendix A1) and the Compliance Tracking Program detail where Lendlease Engineering has, or will, address the specific Roads and Maritime Environmental and QA requirements.

A register of legal and other requirements for the Project is contained in Appendix A1. This register is maintained as a checklist. This register will be reviewed at regular intervals e.g. during management reviews, and updated with any applicable changes in accordance with Managing Statutory Changes IMS-QA-PRO-0077. . Any changes made to the legal requirements register will be communicated to the wider team where necessary through toolbox talks, specific training and other methods detailed in Chapter 5.

3.3 Approvals, permits and licences

A number of approvals, permits and licences have and/or will be obtained for the Project. Appendix A1 contains a register of all relevant environmental approvals, permits and licences. The register will be maintained by the Environmental Manager and will be reviewed prior to the commencement of construction and/or stages of construction, and at regular intervals during construction and at least annually as part of the management review.

The EIS recognised that the following approvals and licences identified in the planning approval process would be obtained or are required for the Project:

- Project Approval under the EP&A Act.
- Project Approval under the EPBC Act
- Environment protection licence (EPL) under the *Protection of the Environment Operations Act 1997* (PoEO Act) for any scheduled activities that are triggered such as for road construction and/or for the operation of ancillary facilities.
- Approvals under the *Water Act 1912* for access to ground or surface water during construction.

In accordance with CoA A6, all necessary licences, permits and approvals required for the development of the Project will be obtained and maintained as required throughout the life of the Project. No condition of the Project Approval removes the obligation for Roads and Maritime or Lendlease Engineering to obtain, renew or comply with such necessary licences, permits or approvals except as provided under Section 115ZG of the EP&A Act.

The Project Approval is contained in the Compliance Tracking Program, which provides a reference to where each requirement is addressed by this CEMP or other Project documentation. A checklist of compliance with Roads and Maritime specification G36 is included as Appendix A1.

3.4 Environmental aspects and impacts

A risk management approach will be used to determine the severity and likelihood of an activity's impact on the environment and to prioritise its significance. This process considers potential regulatory and legal risks as well as taking into consideration the concerns of community and other key stakeholders.

The objectives of risk assessment are to:

- Identify activities, events or outcomes that have the potential to adversely affect the local environment and/or human health/property.
- Qualitatively evaluate and categorise each risk item.
- Assess whether risk issues can be managed by environmental protection measures.
- Qualitatively evaluate residual risk with implementation of measures.
- Qualitatively evaluate the risk of adverse impacts occurring beyond those that were identified in the EIS/SPIR.

Risk assessments for the Project are based on AS/NZS 4360:1999, the Australian standard for risk management that describes the use of risk assessments in managing risk.

Appendix A2 includes a list of activities associated with the Project, related aspects and corresponding risks. Measures to minimise the identified environmental risks are also provided.

In accordance with the Risk Management Procedure (CIV-HSE-PRO-0003) all high risk environmental aspects will be incorporated into the Project Risk Register, which will act as the key project risk management document.

3.5 Environmental policy

The environmental policy describes Lendlease Engineering's commitment to continual improvement in environmental performance and compliance with applicable legal requirements.

The environmental policy will be displayed on the Project website and at the site office, and communicated to staff and other interested parties via inductions and ongoing awareness programs.

3.6 Objectives and targets

As a means of assessing environmental performance during construction of the Project, environmental objectives and targets have been established. These objectives and targets have been developed with consideration of key issues identified through the environmental assessment and risk assessment process. The objectives and targets are consistent with the Project environmental policy and will assist in monitoring whether the commitments of the policy are being met.

The targets are incorporated into relevant environmental management plans.

The performance of the Project against the objectives and targets will be documented in the Project construction compliance reports and at least on an annual basis as part of the management review.

Environmental objectives and targets for the Project are provided in Table 3-1.

Table 3-1 Environmental Objectives and Targets

Objective	Target	Measurement tool
Construction the Project in accordance with environmental approvals.	• Full compliance with statutory approvals and approved management plans.	Audits, construction compliance reporting, management view.
Compliance with all legal requirements.	• No regulatory infringements (PINs or prosecutions). • No formal regulatory warning.	Audits, construction compliance reporting, management view.
Implement a rigorous and comprehensive EMS that meets the requirements of AS/NZS ISO 14001 and project approvals from state and federal governments.	• Address non-conformances and corrective actions within specific timeframes as committed in the relevant approved management plans.	Audits, management reviews.
Engage with the effected and broader community, minimise complaints and respond to any complaints within a suitable timeframe.	• Disseminate regular Project updates and other information through the Project website and other tools identified in the Communications and Stakeholder Engagement Strategy. • Record and response to complaints within the timeframe specified in the Communications and Stakeholder Engagement Strategy.	Review complaints register, construction compliance report, audits.

Objective	Target	Measurement tool
Continuously improve environmental performance.	• Develop and maintain a program of ongoing environmental training. • Capture lessons learnt from environmental incidents to minimise repeat issues. • Encourage and reward innovation and effort throughout the works force. • Regularly inspect and monitor environmental performance	Construction compliance report, management review, Environmental Awards, Daily and Weekly Inspections.

3.7 Project refinements

3.7.1 General changes

Refinements to the Project may result from detailed design refinement or changed circumstances throughout construction. Roads and Maritime is responsible for formally seeking approval from the Minister for any Project modifications and for documenting refinements that are consistent with the approved Project.

The Roads and Maritime Environmental Manager, Northern Project Office is responsible for the assessment of Project refinements and management of the consistency assessment process. The Environmental Manager is responsible for incorporating any new environmental impacts and/or new statutory approval requirements into the appropriate environmental management documentation.

Any design changes or changes in scope of works should be communicated to the Environmental Manager. The Environmental Manager or Environmental Coordinator will then undertake an additional environmental assessment and consistency review in consultation with the Roads and Maritime Environmental Manager, Northern Project Office to determine if a Project modification may be required.

Should the consistency review determine that a Project modification maybe required ie the impacts are of a nature and scale that it is not considered consistent with the Project approval, the Environmental Representative will be informed and a modification application under Section 115ZI of the EP&A Act 1979 prepared and submitted to the Secretary of the Department of Planning and Environment for determination.

The Roads and Maritime Director W2B Major Projects or the Environmental Manager, Northern Project Office will approve all refinements that are deemed consistent with the Project approval.

3.7.2 Ancillary facilities assessment criteria

Ancillary facilities are defined as a “temporary facility for construction, including for example an office and amenities compound, construction compound, batch plant (concrete or bitumen), materials storage compound, maintenance workshop, testing laboratory or material stockpile area”.

The main site compound and any ancillary facilities shall be assessed and approved in accordance with the Ancillary facilities management plan (Appendix B8). Circumstance may arise during construction where additional, or changes to the location of, ancillary facilities are required.

Where this situation arises, an assessment against the criteria detailed in CoA B73 will be undertaken. This criteria requires that ancillary facilities:

(a) be located more than 50 metres from a waterway (100 metres for a *State Environmental Planning Policy No. 14* wetland or known Oxleyan Pygmy Perch habitat waterway);
(b) not impact on connectivity structures or vegetation leading to a connectivity structure;
(c) be located within or adjacent to the SSI boundary;
(d) have ready access to the road network;
(e) be located in areas of low ecological significance and require no clearing of native vegetation;
(f) be located more than 50 metres from threatened species and endangered ecological communities and their habitats;
(g) be located on relatively level land;
(h) be separated from the nearest residences by at least 200 metres (or at least 300 metres for a temporary batching plant) and comply with construction noise management levels at sensitive receivers;
(i) be above the 20 year ARI flood level unless a contingency plan to manage flooding is prepared and implemented;
(j) have minor impacts on flood storage and not result in obstruction of floodplain flow or blockage of culverts and drains;
(k) not unreasonably affect the land use of adjacent properties;
(l) operate in accordance with the construction hours set out in conditions B15 and B16;
(m) provide sufficient area for the storage of material to minimise, to the greatest extent practical, the number of deliveries required outside standard construction hours; and
(n) be located in areas of low heritage conservation significance (including areas identified as being of Aboriginal cultural value) and not impact on heritage sites beyond those already impacted by the SSI.

The Applicant shall undertake an assessment of the facility against the above criteria in consultation with the relevant public authority(s) and the relevant council. The assessment shall be approved by the Environmental Representative and included in the Ancillary Facilities Management Plan required under CoA D21 (refer Appendix B8).

Note that any proposed additional ancillary facilities and changes to ancillary facilities will be required to meet all relevant CoA where applicable as described in Appendix A1.

4 Implementation and operation

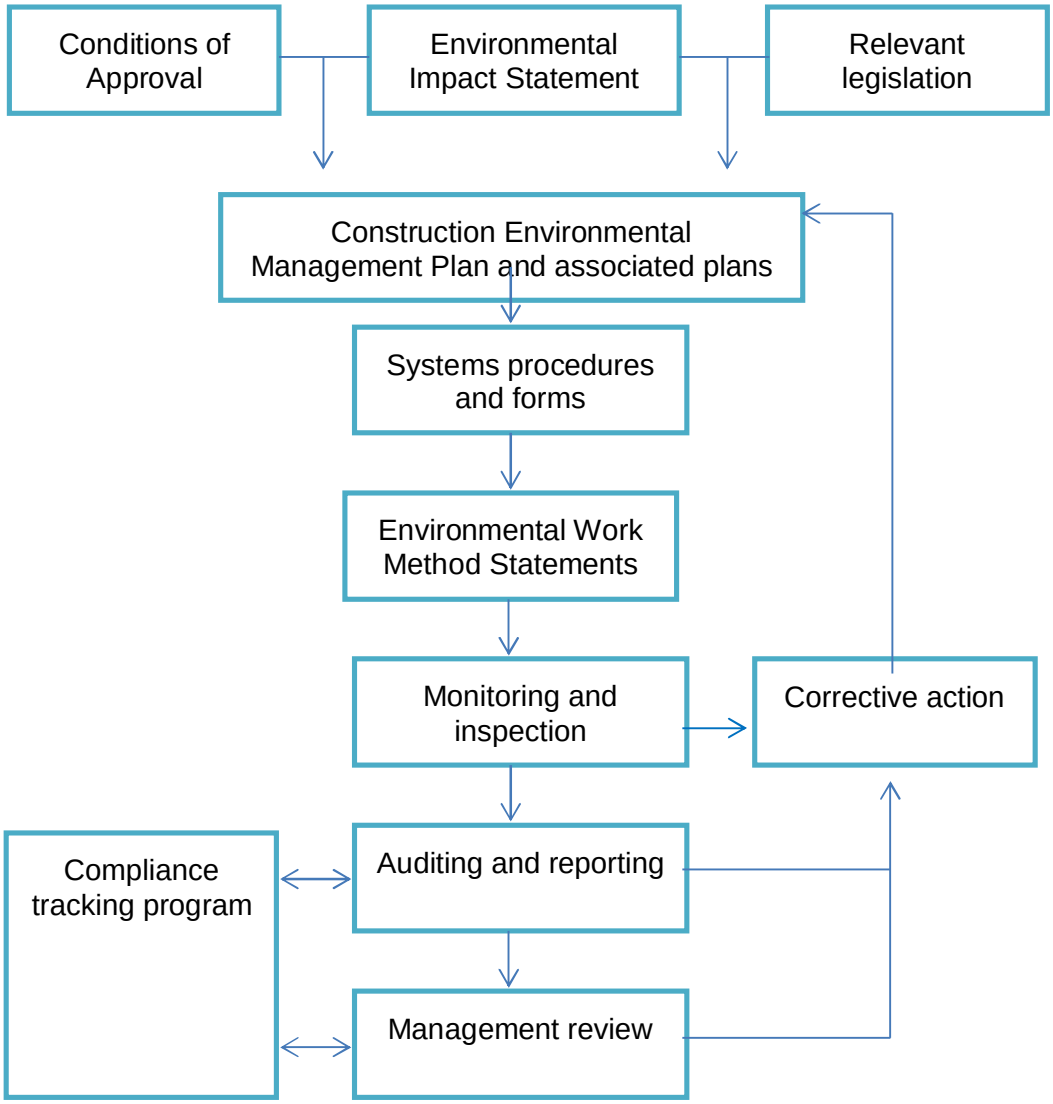
This CEMP is the overarching management plan for a suite of environmental management documents. It provides a structured and systematic approach environmental management.

The primary purpose of the system of documentation is to:

- Ensure compliance with all applicable environmental laws, obligations and approvals.
- To minimise environmental impacts.

The structure of the environmental management system for the Project is shown in Figure 1.

Figure 1 Environmental management system structure



4.1 Environmental management system documentation

4.1.1 Construction environmental management plan

This CEMP provides the system to manage and control the environmental aspects of the Project during pre-construction and construction. It identifies all requirements applicable to activities described in Chapter 2. It also provides the overall framework for the system and procedures to ensure environmental impacts are minimised and legislative and other requirements are fulfilled. The strategies defined in this CEMP have been developed with consideration of the Project approval requirement, safeguards and mitigation measures presented in the environmental assessment and approval documents. This CEMP establishes the system for implementation, monitoring and continuous improvement to minimise impacts from the Project on the environment.

This CEMP is consistent with:

- Guideline for the preparation of Environmental Management Plans (DIPNR, 2004).
- AS/NZS ISO14001: 2004, '*Environmental Management Systems - requirements with guidance for use*'.
- Roads and Maritime QA Specification G36.

The CEMP and associated plans required under CoA D25 and D26 will be provided to the Secretary of the Department of Planning and Environment for approval.

4.1.2 Other environmental management plans and strategies

A number of environmental management plans support the CEMP. These documents are prepared to identify requirements and processes applicable to specific impacts or aspects of the activities described in Chapter 2. They address requirements of the CoA and mitigation measures identified in the environment impact assessment documentation.

Environmental strategies may also be developed as required throughout the Project. These will also guide environmental management of potential impacts on-site.

A list of construction plans and strategies for the Project, and their approval pathways, are provided in Table 4-1 Environmental Management Plans and Strategies.

Consultation with DoE is required for the Construction Flora and Fauna Management Plan, the Construction Soil and Water Quality Plan and the Ancillary Facilities Management Plan. The Minister may choose to call in these plans for approval under the EPBC Act if required.

As no contaminated land has been identified within the project boundaries a Contaminated Land Management Plan has not been included. However an Unexpected Contaminated Land Find procedure has been included should contaminants be identified. There is no intention to open a new or use an existing borrow pit, therefore no Borrow Pit Management Plan has been included.

Table 4-1 Environmental Management Plans and Strategies

Document name	Document number	Approval pathway
Construction traffic and access management plan (Appendix B1)		DP&E approval
Construction flora and fauna management plan, including threatened species		DP&E approval

Document name	Document number	Approval pathway
management plans and weed management plan (Appendix B2)		
Construction noise and vibration management plan including a blast management plan (Appendix B3)		DP&E approval
Construction soil and water quality management plan (Appendix B4		DP&E approval
Construction heritage management plan (Appendix B5)		DP&E approval
Construction air quality management plan including dust management plan (Appendix B6)		Roads and Maritime approval
Construction waste and energy management plan including surplus material management plan (Appendix B7)		Roads and Maritime approval
Ancillary facilities management plan (Appendix B8)		Environmental Representative
Construction acid sulphate materials management plan (Appendix B11)		Roads and Maritime approval

4.1.3 Environmental work method statements

Environmental Work Method Statements (EWMS) are prepared to manage and control all activities that have the potential to negatively impact on the environment. EWMS will be prepared prior to the commencement relevant construction activities on site and will incorporate relevant mitigation measures and controls from management plans. They also identify key procedures to be used concurrently with the EWMS. EWMS are specifically designed to communicate requirements, actions, processes and controls to construction personnel using plans, diagrams and simply written instructions.

EWMS will be prepared progressively in the lead up to and throughout construction in consultation with relevant members from the Project team, and approved by the Environment Manager.

EWMS for activities identified as having high environmental risk will undergo a period of consultation with stakeholders and authorities prior to approval. A list of upcoming/future EWMS will be provided to ERG participants during regular meetings. The ERG will determine which EWMS are high risk and require consultation and those that do not.

EWMS for activities likely to be considered high risk due to their proximity to environmentally sensitive areas include:

- Working platforms in or adjacent to waterways.
- Temporary waterway crossings.

- Site compound establishment.
- Stockpile management
- Public road accesses and managing mud tracking.
- Batch plant establishment and operation.
- Managing runoff from curing processes.
- Clearing and grubbing.
- Sediment basin, construction and management.
- Dewatering activities.
- Soft soil treatment.
- Piling.
- Blasting.
- Tannin Leachate
- Topsoil Stripping
- Bridge Demolition

All construction personnel and sub-contractors undertaking a task governed by an EWMS must participate in training on the EWMS, and acknowledge that they have read and understood their obligations prior to commencing work.

Regular monitoring, inspections and auditing against compliance with the EWMS will be undertaken by Project management, quality, and environmental personnel to ensure that all controls are being followed and that any non-conformances are recorded and corrective actions implemented.

A register of EWMS will be maintained in Appendix A4.

4.1.4 Erosion and sediment control plans

Erosion and Sediment Control Plans (ESCPs) are planning documents that clearly show the site layout and the approximate location of erosion and sediment control structures onsite. They cover all construction stages from initial vegetation clearing through to rehabilitation when erosion and sediment control are no longer required and are removed. ESCP will be developed and implemented across the Project where there is a risk of erosion and sediment loss.

ESCPs will be developed in accordance with the Construction Soil and Water Quality Management plan (Appendix B4) once approved.

ESCPs may be produced in conjunction with EWMS to provide more detailed site-specific environmental mitigation measures.

ESCP will be developed by environment staff in consultation with the General Superintendent, site engineers, Foreman and other relevant site personnel, as required. They will be modified to reflect site condition at the time of construction. The Environmental Manager will approve ESCP in the first instance. Minor changes thereafter will be approved by environment staff in consultation with the Environmental Manager, as required.

ESCPs will be developed for all work areas prior to commencing activities.

4.1.5 Sensitive area plans

The Project traverses a diversity of environmental and socially sensitive areas/sites. To assist pre-construction planning and on-site construction management, these site constraints are consolidated on a series of map-based sheets that extend the length of the Project. Sensitive area maps include information pertaining, but not limited to:

- Noise sensitive receivers e.g. residential dwellings, educational institutions.
- Flora features, including threatened species and endangered ecological communities.
- Aboriginal and non-Aboriginal heritage sites including assessment boundaries, items, places, objects and sites.
- Local waterways.
- Recorded threatened fauna sightings.
- State / Flora Reserves
- Areas of vegetation to be retained
- Contaminated sites
- Monitoring locations for groundwater, surface water and dust
- Clearing limit boundary

.

The sensitive area plans are presented in Appendix A5. They are a working element of the CEMP and will be revised throughout construction to reflect true ground conditions and the most up-to-date information available on sensitive sites. Sensitive area plans will be used in conjunction with EWMS to help identify key risk areas and to promote ongoing communication to construction personnel during the Project.

4.1.6 System procedures, forms and other documents

The Project environmental management system procedures, forms and other documents provide instructions and records related to both environmental and non-environmental activities throughout the Project.

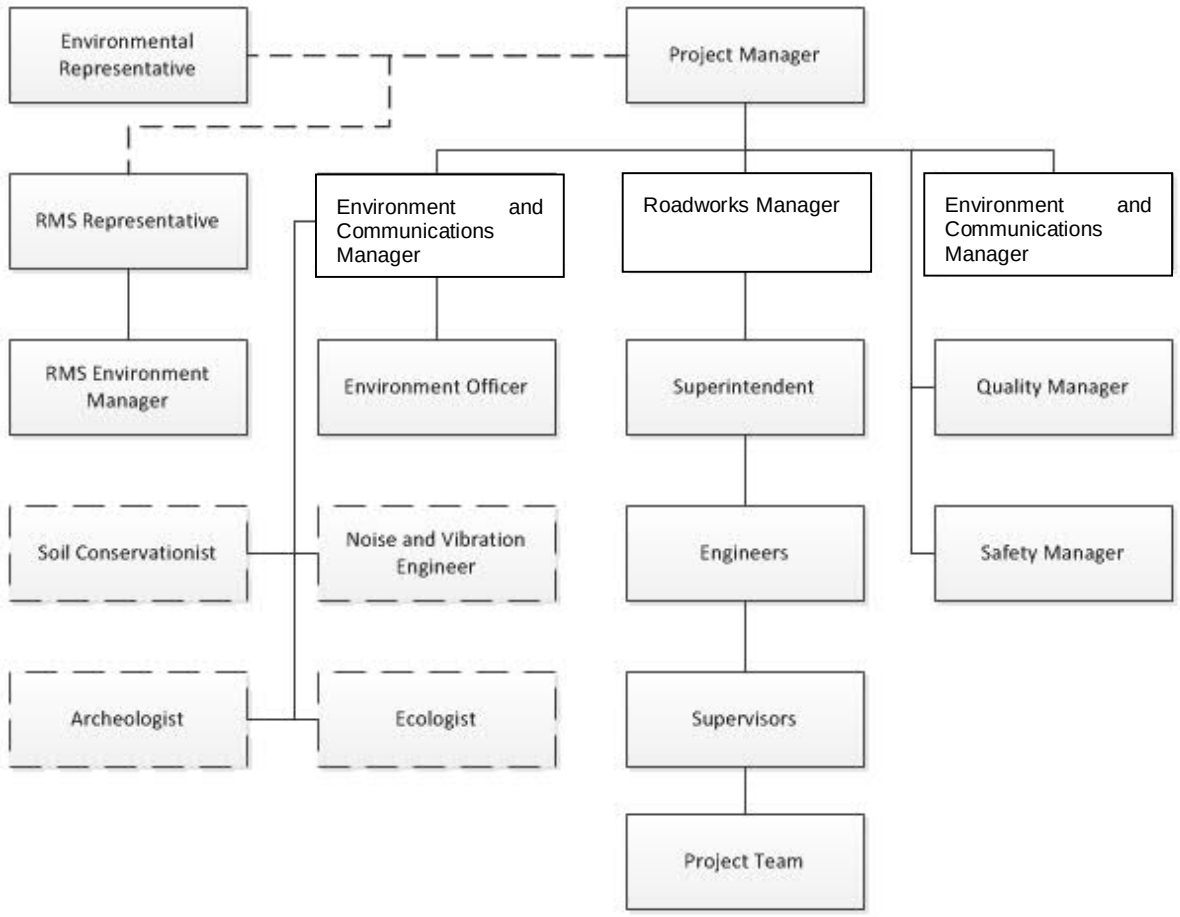
Project specific procedures will be developed in accordance with the requirements for the Project. Where applicable, existing contractor procedures and work instructions will be applied or amended for use on the Project.

A register of relevant environmental procedures and forms are maintained in Appendix A4.

4.2 Resources, roles, responsibilities and authority

The key environmental management roles and responsibilities for the construction phase of the Project are described below. The structure of these roles is shown in Figure 2.

Figure 2 Management structure



4.2.1 Environmental Representative

The environmental responsibilities of the Environmental Representative are detailed in CoA D23 and include:

a) Be the principal point of advice in relation to the environmental performance of the Project.
b) Monitor the implementation of environmental management plans and monitoring programs required under the Project Approval and advise the Proponent upon the achievement of these plans / programs.
c) Consider and advise the Proponent on matters specified in the CoA, and other licences and approvals related to the environmental performance and impacts of the Project.
d) Ensure that environmental auditing is undertaken in accordance with the Environmental Management System.
e) Approve / reject minor amendments to the CEMP.
f) Approve / reject ancillary facilities in accordance with CoA B73 and B74.
g) Require reasonable steps be taken to avoid or minimise unintended or adverse environmental impacts, and failing the effectiveness of such steps, to direct that relevant actions be ceased immediately should an adverse impact on the environment be likely to occur.

h) Be consulted in responding to the community concerning the environmental performance of the Project where the resolution of points of conflict between the Proponent and the community is required.

Also in accordance with CoA D24:

The Environmental Representative shall prepare and submit to the Secretary a monthly report on the Environmental Representative's actions and decision on matters specified in condition D23 for the preceding month. The reports shall be submitted for the duration of construction of the SSI, unless otherwise agreed by the Secretary.

4.2.2 Roads and Maritime Environmental Manager

The environmental responsibilities of the Roads and Maritime Environmental Manager include (but are not limited to):

- Review any environmental management plans and related documents prepared for the Project.
- Review minor Project refinements that are consistent with the Project environmental assessment and approval documentation and recommend they be approved to the Director W2B Major Projects.
- Monitor the environmental performance of the Project in relation to Roads and Maritime requirements.

4.2.3 Roads and Maritime Representative

The environmental responsibilities of the Roads and Maritime Representative include (but are not limited to):

- Evaluate and advise on compliance with Roads and Maritime environmental requirements.
- Review and approve any environmental management plans for the Project or related activities that are not required to be approved by the Secretary of the Department of Planning and Environment.

4.2.4 Project Manager

The environmental responsibilities of the Project Manager include (but are not limited to):

- Ensure all works comply with relevant regulatory and Project requirements.
- Ensure the requirements of the CEMP are fully implemented, and in particular, that environmental requirements are not secondary to other construction requirements.
- Endorse and support the Project environmental policy attached at Appendix A3.
- Liaise with Roads and Maritime, Environmental Representative and other government authorities as required.
- Participate and provide guidance in the regular review of this CEMP and supporting documentation.
- Provide adequate resources (personnel, financial and technological) to ensure effective development, implementation and maintenance of the CEMP.
- Ensure that all personnel receive appropriate induction training, including details of the environmental and community requirements.
- Ensure that complaints are investigated to ensure effective resolution.
- Stop work immediately if an unacceptable impact on the environment is likely to occur.

4.2.5 Roadworks Manager

The environmental responsibilities of the Roadworks Manager include (but are not limited to):

- Plan construction works in a manner that avoids or minimises impact to environment.
- Ensure the requirements of the CEMP are fully implemented.
- Ensure construction personnel manage construction works in accordance with statutory and approval requirements.
- Ensure environmental management procedures and protection measures are implemented.
- Ensure all Project personnel attend an induction prior to commencing works.
- Liaise with Roads and Maritime, the Environmental Representative and other government authorities as required.
- Stop work immediately if an unacceptable impact on the environment is likely to occur.

4.2.6 General General Superintendent

The environmental responsibilities of the General Superintendent include (but are not limited to):

- Communicate with all personnel and sub-contractors regarding compliance with the CEMP and site-specific environmental issues.
- Ensure all site workers attend an environmental induction prior to the commencement of works.
- Coordinate the implementation of the CEMP.
- Coordinate the implementation and maintenance of pollution control measures.
- Identify resources required for implementation of the CEMP.
- Report any activity that has resulted, or has the potential to result, in an environmental incident immediately to the Environmental Manager / Environmental Coordinators.
- Coordinate action in emergency situations and allocate required resources.
- Stop activities where there is an actual or immediate risk of harm to the environment and advise the Roadworks Manager and Environmental Manager.

4.2.7 Environmental Manager

The environmental responsibilities of the Environmental Manager include (but are not limited to):

- Overall responsibility for the implementation of environmental matters on the Project.
- Development, implementation, monitoring and updating of the CEMP and associated environmental plans in accordance with ISO14001.
- Report to Project Manager and other senior managers on the performance and implementation of the CEMP.
- Ensure management reviews of the CEMP are undertaken annually, documented and actions implemented.
- Ensure environmental risks of the Project are identified and appropriate mitigation measures implemented.
- Identify where environmental measures are not meeting the targets set and where improvement can be achieved.
- Ensure environmental protocols are in place and managed.
- Approve / reject Out of Hours Works activities. These works shall be conducted in accordance with the Out of Hours Works Protocol (OOHW Protocol)

- Ensure environmental compliance.
- Obtain and update all environmental licences, approvals and permits as required.
- Lead liaison with Environmental Representative and approval authorities.
- Manage environmental document control, reporting, inductions and training.
- Manage environmental reporting within the Project team and to the Roads and Maritime and regulatory authorities.
- Preparing reports on a monthly basis outlining the Project Works undertaken and the achievements that have been met, as well as identifying those areas where improvements were made.
- Oversee site monitoring, inspections and audits.
- Manage all subcontractors and consultants with regards to environmental matters, including assessing their environmental capabilities and overseeing the submission of their environmental documents.
- Prepare and/or distribute environment awareness notes.
- Review and approve ESCP.
- Develop and facilitate induction, toolbox talks and other training programs regarding environmental requirements for all site personnel.
- Notify Roads and Maritime and relevant authorities in the event of an environmental incident and manage close-out of these.
- Stop activities where there is an actual or immediate risk of harm to the environment, or to prevent environmental non-conformities, and advise the Project Manager, Roadworks Manager and General Superintendent.
- Assist the Communications Manager to resolve environment-related complaints.

4.2.8 Environmental Coordinator

The environmental responsibilities of the Environmental Coordinator include (but are not limited to):

- Assist in preparing the CEMP (including any future revisions) in accordance with all relevant requirements.
- Develop ESCP in consultation with the General Superintendent, site engineers, Foreman and other relevant site personnel, as required.
- Undertake site inspections, carry out monitoring activities and complete site checklists.
- Ensure monitoring records are appropriately maintained, reviewed and any non-compliance issues addressed.
- Manage the day-to-day environmental elements of construction.
- Record and provide written reports to the Environmental Manager of non-conformances or corrective actions with the CEMP. This may include the need to implement additional, or revise existing, mitigation measures.
- Assist in identifying environmental risks.
- Advise the Environmental Manager and Roadworks Manager of the need to stop work immediately prior to non-conformance/non-compliance occurring. If an unacceptable impact on the environment is likely to occur or to require other reasonable steps to be taken by the Roadworks Manager or site construction staff to avoid or minimise impacts.
- Provide reports to the Environmental Manager on any major issues resulting from the Project.
- Assist all site staff with issues concerning Project environmental matters.

- Assist in developing training programs regarding environmental requirements and deliver where required, including delivery of the environmental component of toolbox talks.
- Stop activities where there is an actual or immediate risk of harm to the environment and advise the Project Manager, Roadworks Manager, General Superintendent and Environmental Manager.

4.2.9 Communications Manager

The environmental responsibilities of the Communications Manager include (but are not limited to):

- Ensure that all community consultation activities are carried out in accordance with approved plans and strategies.
- Report any environmental issues to the Environmental Manager raised by stakeholders or members of the community.
- Communicate general Project progress, performance and issues to stakeholders including the community.
- Maintain the 24 hour complaints hotline.

4.2.10 Project/Site Engineers

The environmental responsibilities of the Project / Site engineers include (but are not limited to):

- Provide input into the preparation of environmental planning documents as required.
- Ensure that instructions are issued and adequate information provided to employees that relate to environmental risks on-site.
- Ensure that the works are carried out in accordance with the requirements of the CEMP and supporting documentation, including the implementation of all environmental controls.
- Identify any environmental risks.
- Identify resource needs for implementation of CEMP requirements and related documents.
- Ensure that complaints are investigated to ensure effective resolution.
- Take action in the event of an emergency and allocate the required resources to minimise the environmental impact.
- Report any activity that has resulted, or has the potential to result, in an environmental incident immediately to the General Superintendent and Environmental Manager.

4.2.11 Foreman

The environmental responsibilities of the Foreman include (but are not limited to):

- Undertake any environmental duties as defined by the General Superintendent or Project/site engineer.
- Control field works and implement/maintain effective environmental controls.
- Where required, undertake environmental risk assessment of works prior to commencement.
- Ensure site activities comply with EWMS and relevant records are kept.
- Ensure all site workers are site inducted prior to commencement of works.
- Attend to any spills or environmental incidents that may occur on-site.

- Report any activity that has resulted, or has the potential to result, in an environmental incident immediately to the General Superintendent.
- Stop activities where there is an actual or immediate risk of harm to the environment and advise the Project Manager, Roadworks Manager, General Superintendent or Environmental Manager.

4.2.12 Soil Conservationist

A consultant project soil conservationist shall be appointed for the duration of the project. The project soil conservationist will:

- Conduct ESCP reviews and site inspections throughout the construction period as per the G36 Specification (or at an alternate timeframe agreed to by Roads and Maritime).
- Inspections will be documented and any improvements, maintenance or actions required will be closed out in a timely manner.
- Work alongside environmental personnel, construction personnel, drainage designers and engineers to advise on aspects of drainage design, culverts, chutes, drains, lining materials and timing.
- Assist in project training in regards to project erosion and sediment control issues.

4.2.13 Wider Project Team (including sub-contractors)

The environmental responsibilities of the wider Project Team (including sub-contractors) include (but are not limited to):

- Comply with the relevant requirements of the CEMP, or other environmental management guidance as instructed by a member of the Project's management.
- Participate in the mandatory Project/site induction program.
- Report any environmental incidents to the Foreman immediately or as soon as practicable if reasonable steps can be adopted to control the incident.
- Undertake remedial action as required to ensure environmental controls are maintained in good working order.
- Stop activities where there is an actual or immediate risk of harm to the environment and advise the Project Manager, Roadworks Manager, General Superintendent or Environmental Manager.

4.3 Sub-contractor management

Environmental requirements and responsibilities are to be specified to sub-contractors in the contract documentation. As part of the selection process, consideration will also to be given to their past environmental performance. The Environmental Manager, or delegate, will participate in the tender assessment and selection process where it is deemed necessary due to associated environmental risks. All sub-contractors will be required to complete a sub-contractor questionnaire or similar.

All sub-contractors are required to work in accordance with the approved CEMP and EWMS.

All sub-contractors are required to attend Project and/or site inductions where the requirements and obligations of the CEMP are communicated. A record of all sub-contractors inducted will be maintained as part of the Project induction and training register.

A standard monitoring form will be developed that will be used to assess:

- The sub-contractor's general work practices.

- The effectiveness of the sub-contractor's environmental protection measures.
- The sub-contractor's compliance with the requirements of this CEMP.
- The maintenance of environmental measures.

Subcontractor environmental performance will be evaluated during weekly and post rainfall environmental inspections using form LLE703A.

4.4 CEMP availability

This CEMP will be made available for public inspection on request. Confidential information, which may include the location of threatened species, Aboriginal objects or places and personnel contact details, will be removed from all documents provided or made available to the public.

An electronic copy of the CEMP is provided on the Project website.

5 Competence, training and awareness

To ensure that this CEMP is effectively implemented, each level of management is responsible for ensuring that all personnel reporting to them are aware of the requirements of this CEMP. The Environmental Manager will coordinate the environmental training in conjunction with other training and development activities (eg safety) in accordance with Lendlease Engineering's. Training Procedure and the LLE700 Procedure for General Requirements.

5.1 Environmental induction

All personnel (including sub-contractors) are required to attend a compulsory site induction that includes an environmental component prior to commencement on-site. This is done to ensure all personnel involved in the Project are aware of the requirements of the CEMP and to ensure the implementation of environmental management measures.

Short-term visitors to site for purposes such as deliveries will be required to be accompanied by inducted personnel at all times.

The Environmental Manager (or delegate) will conduct the environmental component of the site inductions.

The environmental component will include, but not limited to, an overview of:

- Relevant details of the CEMP including purpose and objectives.
- Key environmental issues.
- Conditions of environmental licences, permits and approvals.
- Specific environmental management requirements and responsibilities.
- Mitigation measures for the control of environmental issues.
- Incident response and reporting requirements.
- Information relating to the location of environmental constraints.

A record of all environment inductions will be maintained and kept on-site. The Environmental Manager may authorise amendments to the induction at any time. Possible reasons for changes to the induction may be Project modifications, legislative changes or amendments to this CEMP or related documentation.

The Environmental Representative will review and approve the induction program and monitor implementation.

5.2 Toolbox talks, training and awareness

Toolbox talks will be one method of raising awareness and educating personnel on issues related to all aspects of construction including environmental issues. The toolbox talks are used to ensure environmental awareness continues throughout construction.

Toolbox talks will include details of EWMS for relevant personnel. Toolbox talks will also be tailored to specific environmental issues relevant to upcoming works.

Relevant environmental issues may include (but are not limited to):

- Erosion and sedimentation control.
- Hours of work.
- Emergency and spill response.
- Aboriginal and non-Aboriginal heritage.
- Threatened species, endangered ecological communities, clearing controls and vegetation protection.

- Weed management.
- Dust control.
- Minimise noise at ancillary sites at the start of and end of work shift and meal breaks, during out of hours work (e.g. slamming vehicle doors, loud talking, revving engines, etc.); and
- Hygiene practices to stop the spread of diseases and pathogens from affected to non-affected areas.

Toolbox attendance is mandatory and attendees of toolbox talks are required to sign an attendance form and the records maintained.

Targeted environmental awareness training will be provided to individuals or groups of workers with a specific authority or responsibility for environmental management or those undertaking an activity with a high risk of environmental impact. Topics covered may include those detailed above, or others deemed necessary in the lead up to or during construction.

A refresher general environmental awareness training session will be conducted as required, but no less than every 6 months, based on environmental risk assessment and turnover of project personnel. An example of the training schedule is included below in Table 5-1 and will be further developed throughout construction. The Environmental Manager will review the training schedule and monitor implementation.

Table 5-1 Example Environmental Training Schedule

Training	Project Manager	General Superintendent	Engineers	Environmental staff	Community staff	Foreman	Leading Hand	Labourers	Sub-contractors	Administration staff
Project Environmental Induction	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Heritage Awareness	✓	✓	✓	✓	✓	✓	✓	✓	✓	
Erosion and Sediment Control	✓	✓	✓	✓		✓	✓	✓	✓	
Spill response	✓	✓	✓	✓		✓	✓	✓	✓	
General awareness	✓	✓	✓	✓		✓	✓	✓	✓	
EWMS (where relevant)		✓	✓	✓		✓	✓	✓	✓	

Another way to inform construction personnel will be through the development and distribution of awareness notes. These will typically take the form of a poster, booklet, or similar and will be distributed to engineers, leading hands, foreman and others with a responsibility for managing specific work locations or activities. This documentation will be used to inform the broader workforce through either daily pre-starts meeting (see section 5.3) or provision in worker crib sheds / break facilities.

The Environmental Representative will review and approve the training program and monitor implementation.

5.3 Daily Pre-Start Meetings

The pre-start meeting is a tool for informing the workforce of the day's activities, safe work practices, environmental protection practices, work area restrictions, activities that may affect the works, coordination issues with other trades, hazards and other information that may be relevant to the day's work.

The Foreman will conduct a daily pre-start meeting with the site workforce before the commencement of work each day (or shift) or where changes occur during a shift. Daily pre-start meetings are generally succinct in nature and take approximately 10-15 minutes.

The environmental component of pre-starts will be determined by relevant foreman and environmental personnel and will include any environmental issues that could potentially be impacted by, or impact on, the day's activities. All attendees will be required to sign on to the pre-start and acknowledge their understanding of the issues explained.

Pre-start topics, dates delivered and a register of attendees will be recorded using the Lendlease Engineering's Pre-start meeting record.

6 Communication

6.1 Internal communication

Environmental communications will be conducted in accordance with Lendlease Engineering LLE700 Procedure for General Requirements.

Clear lines of communication throughout all levels and functions (e.g. management, staff and sub-contracted service providers) are key to minimising environmental impacts and achieving continual improvements in environmental performance.

The environmental team will meet regularly to discuss any issues with environmental management on-site, any amendments to plans that might be required or any new / changes to construction activities.

Regular meetings may also be scheduled with the Environmental Representative and relevant Roads and Maritime environmental staff. The purpose of these meetings would be to communicate ongoing environmental performance and to identify any issues to be addressed.

In addition, environment team members will participate in toolbox talks on at least a weekly basis. This forum will provide an opportunity for the environment team members to communicate on environmental performance, to advise on any upcoming sensitive environmental matters for future work areas and to receive feedback from on-site personnel.

Further internal communications regarding environmental issues and aspects will be through awareness training as described in Section 5.2.

6.2 External and government authority consultation

The Environmental Manager will be the main point of contact regarding specific environmental issues. The Environmental Manager has the responsibility to report on the ongoing environmental performance of the Project to Roads and Maritime, Environmental Representative and EPA. The Environmental Manager will report regularly to Roads and Maritime on progress and any key environmental matters and to the EPA through monthly EPL reports.

6.3 Stakeholder and community communication

6.3.1 Communications and Stakeholder Engagement Strategy

The Woolgoolga to Ballina Communications and Stakeholder Engagement Strategy was approved by the Secretary on the 13 May 2015. This Strategy has been developed to provide a consistent approach to stakeholder and community communications in accordance with the requirements of CoA C1. The strategy identifies opportunities for providing information and consulting with the community and stakeholders during the construction phase of the Project. The strategy defines:

- The engagement groups.
- The key messages of the Project.
- The range of tools that will be used to interact with community and stakeholders.

Communication tools defined in the strategy include:

- Targeted community open days.
- Advertisements.
- Displays.
- Door-knock.

- Letterbox drops.
- Signage.
- Website.
- Focus meetings.
- 1800 number and email address.

The Woolgoolga to Ballina Communications and Stakeholder Engagement Strategy will be implemented for the Wells Crossing to Glenugie Project.As part of the Wells Crossing project, Roads and Maritime will develop a communication action plan that sits underneath this overarching plan, with specific consultation to be carried out for this project

6.3.2 Complaints and enquires procedure

A Complaints and Enquiries Procedure, consistent with *AS 4269: Complaints Handling*, will be developed for the Project, in accordance with the requirements of CoA C2 and C3.

All community inquiries and complaints related to the construction activities will be referred to the 24-hour community information line (1800778900). A postal address PO Box 1565 Grafton, 2460 and email address will be developed for receipt of complaints and enquiries. The telephone number, the postal address and the email address will be published in newspapers circulating in the local area prior to the commencement of construction and will be provided on the Project website.

Information on all complaints received, including the means by which they were addressed and whether resolution was reached and whether mediation was required or used, will be included in a complaints register. The information contained within the register will be made available to the Secretary on request.

Attempts will be made to resolve all complaints in accordance with the Communications and Stakeholder Engagement Strategy. An initial response to complaints will be provided within 24 hours of a complaint being received. A further detailed response, including steps taken to resolve the issue(s) that lead to the complaint, will be provided within 10 days. All complaints should be closed off in the stakeholder database. At all times the stakeholder will be kept informed of when they will receive a response.

The Environmental Manager will apply an adaptive approach to ensure that corrective actions are applied in consultation with the appropriate construction staff to allow modifications and improvements in the management of any environmental issues resulting in community complaints. The Environmental Representative to be consulted where resolution of community complaints is required.

7 Incidents and emergencies

In the event of an environmental incident, Roads and Maritime Environmental Incident Classification and Reporting Procedure will be implemented. The full procedure is provided in Appendix A6.

The procedure provides references to:

- Types of incidents.
- Criteria for classifying of environmental incidents.
- Processes for systematically responding to and managing emergency situations.
- Processes, and legal requirements (e.g. Acts, Regulations, EPL), for reporting and notification of an environmental incident.

The procedure covers the management of events such as, but not limited to:

- Spills of fuels, oils, chemicals and other hazardous materials.
- Unauthorised discharge from sediment basins or other containment devices.
- Unauthorised clearing or clearing beyond the extent of the Project boundary or premises.
- Inadequate installation and subsequent failure of temporary erosion and sediment controls.
- Unauthorised damage or interference to threatened species, endangered ecological communities or critical habitat.
- Unauthorised harm or desecration to Aboriginal objects and Aboriginal places.
- Unauthorised damage or destruction to any State or locally significant relic or Heritage item.
- Unauthorised damage to marine vegetation and mangroves.
- Unauthorised dredging or reclamation works within a watercourse.
- Potential contamination of waterways or land.
- Accidental starting of a fire or a fire breaking out of containment.
- Any potential breach of legislation, including a potential breach of a condition of: an environment protection licence; CoA approval; or any agency permit condition.
- Works undertaken without appropriate approval or assessment under the EP&A Act.
- Works undertaken that are not in accordance with a Project assessment.
- Unauthorised dumping of waste.

In accordance with the requirements of CoA D27, the Compliance Tracking Program will document:

- Mechanisms for reporting and recording incidents and actions taken in response to those incidents.
- Provisions for reporting environmental incidents to the Secretary during construction and operation.
- Procedures for rectifying any non-compliance identified during review of incident management.

Typically, environmental incidents will be notified verbally immediately and in writing within one hour of any incident occurring to the Roads and Maritime Representative and the Environmental Representative. Incident reports will be provided to the Roads and Maritime Representative and the Environmental Representative within 24 hours of the incident occurring, including lessons learnt from each environmental incident and proposed measures to prevent the occurrence of a similar incident. All efforts will be undertaken immediately to

avoid and reduce impacts of incidents and suitable controls put in place. Incidents will be closed out as quickly as possible, taking all required action to resolve each environmental incident.

All incidents will be reported internally to Lendlease Engineering NSW & ACT Environment, Community and Sustainability Manager in accordance with the LLE702 Procedure, within 2 hours for agency notifiable incidents. Incidents will be reported using Lendlease Engineering's internal Incident Reporting procedures and minor incidents will be recorded on a Minor Environmental Incident Log.

The EPA will be immediately notified of any environmental incidents or pollution incidents by the Environment Manager on or around the site via the EPA Environment Line (telephone 131 555) in accordance with Part 5.7 of the PoEO Act. The circumstances where this will take place include:

a) If the actual or potential harm to the health or safety of human beings or ecosystems is not trivial.

b) If actual or potential loss or property damage (including clean-up costs) associated with an environmental incident exceeds $10,000.

Where an incident involves an Aboriginal site, the OEH and relevant Registered Aboriginal Parties will be notified and their input sought in closing out the incident.

The DPE will be notified of environmental incidents and non-conformances in accordance with the conditions of approval.

RMS will notify the Secretary and relevant public authorities of any incident with actual or potential significant off-site impacts on people or the biophysical environment within 24 hours of becoming aware of the incident. RMS shall provide full written details of the incident to the Secretary within seven days of the date on which the incident occurred.

Significant off-site impacts on people or the biophysical environment is when-

- The actual or potential harm to the health or safety of human beings or ecosystems is not trivial.
- The actual or potential loss or property damage (including clean-up costs) associated with an environmental incident exceeds $10,000.

The requirements of the Secretary or relevant public authority (as determined by the Secretary) will be met to address the cause or impact of any incident, as it relates to this approval, reported in accordance with condition A12, within such period as the Secretary may require.

NSW Heritage Council and Heritage Division of the OEH will be notified of non-aboriginal heritage incidents.

Roads and Maritime Environment Branch and Project team will maintain all records relating to environmental incidents.

Procedures for specific emergencies such as Fauna rescue and Spill Response are outlined in their corresponding sub plans in the Appendices of this document

8 Inspections, monitoring and auditing

8.1 Environmental inspections

Environmental inspections will be conducted in accordance with the RMS Specification G36 and Lendlease Engineering's Inspections and Monitoring Procedure..

As well as work under the contract these inspections will include environmentally sensitive areas and site preparedness for adverse weather conditions, including adequacy of environmental controls and availability of emergency equipment.

8.1.1 Weekly and post rainfall site inspections

The Environmental Manager and/or Environmental Coordinators will undertake weekly and post rainfall inspections of the work sites to evaluate the effectiveness of environmental controls. Post rainfall inspections occur typically within 24 hours of a rainfall event that exceeds 10 millimetres rainfall or as required by the EPL. The Environmental Coordinators will record inspection findings on an inspection checklist form.

If any maintenance and/or deficiencies in environmental controls or in the standard of environmental performance are observed, they will be recorded on the checklist form. Records will also include details of any maintenance required, the nature of the deficiency, any actions required and an implementation priority.

8.1.2 Environmental Representative, Roads and Maritime and ERG inspections

The Environmental Representative, Roads and Maritime staff and members of the ERG will undertake regular inspections of works sites, and in particular critical activities throughout construction of the Project. Inspections by the Environmental Representative and Roads and Maritime Project staff would typically occur on a fortnightly basis depending on the complexity and anticipated risks associated with the stage of construction. ERG inspections will typically be less frequent, more likely on a monthly or three-monthly basis depending on the construction staging of Project.

A member of the Project environment teamwill participate in all Environmental Representative, client and ERG inspections, and records maintained. Deficiencies and required actions will be analysed and prioritised at the completion of the inspection and timeframes for implementation of corrective actions agreed.

8.1.3 Pre-work inspections

Prior to the commencement of works on each shift, an inspection will be carried out and will include a check of relevant environmental controls and resources required to ensure effective operation and maintenance. Works are not to commence unless inspections are found to be satisfactory.

The Foreman will undertake the inspections.

8.2 Monitoring

Monitoring will be undertaken to validate the impacts predicted for the Project, to measure the effectiveness of management plans, environmental controls and implementation of this CEMP, and to address approval requirements. The monitoring requirements for required aspects are included in the relevant management plans and summarised in Table 8-1.

Table 8-1 Summary of environmental monitoring required by Project approval

CoA	Description	Relevant Sub-Plan	Reporting Requirements
B24 (c)	Monitoring procedures to be implemented in regards to blast management and mitigation measures	Construction noise and vibration management plan (Appendix B3)	Refer to plan
D8 (d)	Ecological monitoring as part of Threatened Species Management Plans	Construction flora and fauna management plan (Appendix B2).	Annual reporting of results to the Secretary and relevant regulatory authorities including the DoE.
D12 (e)(f)	Water Quality Monitoring Program to monitor impacts on surface and groundwater quality and resources and wetlands.	Construction soil and water quality management plan (Appendix B4).	Reporting of results to DP&E, EPA, DPI and NOW.
D20 (j)	Monitoring procedures for the built elements and landscaping (including weed control).	Urban Design and Landscape Plan	Refer to Urban Design and Landscape Plan
D21 (l)	Monitoring of the construction compound and ancillary facilities management.	Ancillary Facilities Management Plan	Refer Section 2.4 and Appendix B8
D23 (b)	Monitoring the implementation and outcomes of EMPs and monitoring programs by the Environmental Representative.	N/A	Report to Roads and Maritime
D25 (d)(v)	Monitor and measure dust emissions including dust from stockpile, blasting, traffic on unsealed roads and materials tracking from construction sites onto public roads	Construction Air Quality Management Plan (Appendix B6)	Refer to plan
D26 (a)(v)	Monitoring of noise and vibration proposed, how results of monitoring recorded and reported, how to rectify any non-compliance	Construction noise and vibration management plan (Appendix B3)	Refer to plan
D26 (b)(vii)	Monitoring of construction traffic and access management plan.	Construction traffic and access management plan (Appendix B1)	Refer to plan
D26 (c)(ix)	Monitoring of effectiveness of soil and water quality management measures and the soil and water quality management plan.	Construction soil and water quality management sub plan (Appendix B4).	Refer to plan
D26 (d)(iii)	Protection / monitoring of Aboriginal cultural heritage sites and historic heritage items and the heritage management plan.	Construction heritage management plan (Appendix B5)	Refer to plan

CoA	Description	Relevant Sub-Plan	Reporting Requirements
D26 (e)	Monitoring of the flora and fauna management plan.	Construction flora and fauna management plan (Appendix B2).	Refer to plan
D28 (a)	Monitoring of noise and vibration, effectiveness of noise mitigation measures	Construction noise and vibration management plan (Appendix B3)	Operational Noise Compliance Report

The monitoring procedure will address how these activities will be undertaken.

The monitoring procedure will include:

- Purpose and scope.
- Minimum acceptable frequency and standards listed in applicable approvals, licences and regulations.
- Relevant EPA approved methods, Australian Standards or, in the absence of an Australian Standard, industry acceptable procedures.
- Targets and parameters.
- Processes for response to any exceedances of targets/standards.
- Processes for recording and reporting results.

The Environmental Representative and Roads and Maritime Representative will be advised of any non-conformances from monitoring and details reported in the monthly report.

All environmental non-conformances will be managed in accordance with Lendlease Engineering's Non-Conformances and Improvements Procedure and clause 3.10 and 3.11 of the environmental specification G36. .

Where a non-conformance is detected or monitoring results are outside of the expected range and are directly attributable to the Project (ie are influenced by factors under the direct control of the Project e.g. noise from construction equipment), the process described in Section 8.6 will be implemented. Steps in the process will typically include:

- A review and analysis of the results by the Environmental Manager in more detail with a view of determining possible causes for the non-conformance.
- A site inspection by the Environmental Manager or delegate.
- Advising relevant personnel of the problem.
- Identifying and agreeing on actions to resolve or mitigate the non-conformance.
- Implementing actions to rectify or mitigate the non-conformance.

A non-conformance Environmental Incident Report and/or Environmental Improvement Notice may be issued by the Environmental Manager in response to the non-conformance problem if it is found to be construction related.

The timing for any improvement will be agreed between the relevant Engineer/General Superintendent and Environmental Manager based on the level of risk (eg a significant risk will require immediate action).

All environmental monitoring equipment shall be maintained and calibrated according to manufacturer's specifications and appropriate records kept in accordance with Lendlease Engineering's Monitoring and Measuring Equipment procedure.

8.3 Auditing and reporting

Table 8-2 presents auditing requirements that are applicable to the Project.

8.3.1 Contractor audits

A risk based internal environmental auditing program will be developed and reviewed follow each audit. Internal auditing will be undertaken generally on a six monthly basis throughout the Project in accordance with Lendlease Engineering's LLE106 Procedure for Internal Auditing. The purpose of auditing is to verify compliance with:

- This CEMP and associated plans.
- Approval requirements (CoAs).
- Any relevant legal and other requirements (e.g. licences, permits, regulations, Roads and Maritime contract documentation).

An audit checklist will be developed and amended as necessary to reflect changes to this CEMP, subsequent approvals and changes to Acts, regulations or guidelines.

8.3.2 Independent external audits

External auditing will be undertaken by an independent environment auditor in accordance with ISO 19011:2003 - *Guidelines for Quality and/ or Environmental Management Systems Auditing*.

Table 8-2 Audit requirements

No.	Audit	Requirement	Timing	Responsibility	Recipient
1	Internal audit	Verify compliance with approval and legal requirements, Roads and Maritime specifications and construction documentation	The first audit within three months of the commencement of construction and then at six monthly intervals thereafter. The final submitted within five working days of contract completion date.	Environmental Manager	Project Manager, Roads and Maritime
2	External independent audit	Verify compliance with approval and legal requirements, Roads and Maritime specifications,	Six monthly	Environmental Manager	Project Manager, Roads and Maritime

No.	Audit	Requirement	Timing	Responsibility	Recipient
		construction documentation and any other commitments.			
3	Site Audit	Verify compliance of Phase 2 contamination investigations and remediation of (where required) with approval and legal requirements, Roads and Maritime specifications, construction documentation and any other commitments.	Prior to commencement of site preparation and excavation activities in areas identified as having moderate to high risk of contamination.	Environmental Manager, Environmental Coordinator (s)	Project Manager, Roads and Maritime
4	Independent Environmental Audit to meet MCoA D30 and D31*.	Verify compliance with approval (MCoA D30 & 31) and legal requirements, Roads and Maritime specifications, construction documentation and any other commitments	Within twelve months of the commencement of operation.	Environmental Manager, Environmental Coordinator (s)	Project Manager, Roads and Maritime; Department of Planning, Infrastructure and Environment.

* As required by MCoA D30, this audit shall:

(a) be conducted by a suitably qualified, experienced and independent team of experts whose appointment has been endorsed by the Secretary;

(b) include consultation with the relevant agencies;

(c) assess the environmental performance of the SSI and assess whether it is complying with the requirements in this approval, and any other relevant approvals (including any assessment, plan or program required under these approvals);

(d) review the adequacy of any approved strategy, plan or program required under the abovementioned approvals; and

(e) recommend measures or actions to improve the environmental performance of the SSI, and/or any strategy, plan or program required under these approvals.

Note:

• This audit team shall be led by a suitably qualified auditor, and include experts in biodiversity, noise and vibration, hydrology and any other fields specified by the Secretary.

• The audit may be staged to suit the staged operation of the SSI.

Within 60 days of commissioning the independent environmental audit, or as otherwise agreed by the Secretary, the Applicant shall submit a copy of the audit report to the Secretary and relevant public authorities, together with its response to any recommendations contained in the audit report.

8.4 Compliance tracking program

A Compliance Tracking Program has been developed for the Project (Appendix A8). The requirements of the Compliance Tracking Program, as prescribed in CoA D27 are:

CoA D27: The Applicant shall develop and implement a **Compliance Tracking Program** to track compliance with the requirements of this approval. The Program shall be submitted to the Secretary of the Department of Planning and Environment for approval prior to the commencement of construction and operate for a minimum of one year following commencement of operation, or as otherwise agreed by the Secretary of the Department of Planning and Environment.. The Program shall include, but not necessarily be limited to:

a) Provisions for the notification of the Secretary prior to the commencement of construction and prior to the commencement of operation of the Project (including prior to each stage, where works are being staged).

b) Provisions for periodic review of the compliance status of the Project against the requirements of the Project approval.

c) Provisions for periodic reporting of compliance status to the Secretary, including a Pre-Construction Compliance Report, during construction reporting and a Pre-Operation Compliance Report.

d) A program for independent environmental auditing in accordance with *ISO 19011:2003 - Guidelines for Quality and/ or Environmental Management Systems Auditing*.

e) Mechanisms for recording environmental incidents during construction and actions taken in response to those incidents.

f) Provisions for reporting environmental incidents to the Secretary and relevant public authorities during construction.

g) procedures for rectifying any non-compliance identified during environmental auditing, review of compliance or incident management; and

h) provisions for ensuring all employees, contractors and sub-contractors are aware of, and comply with, the conditions of this approval relevant to their respective activities.

The Compliance Tracking Program describes how the requirements of CoA D27 will be met and sets out a program and frequency for compliance reporting and independent auditing. The compliance reporting required under the Compliance Tracking Program will record how

the CoA has been addressed. A summary of the required compliance reporting, as required by CoA D27, is provided in Table 8-3.

Note: Lendlease Engineering is required to track and report on the compliance status of all construction related CoA.

Table 8-3 Compliance reporting

No.	Report	Requirement	Timing	Responsibility	Recipient
1	Compliance tracking program CoA D27	Describes how the requirements of CoA D27 will be met and sets out a program and frequency for compliance reporting and independent auditing.	Prior to construction	Roads and Maritime	DP&E approved the W2B Stage 1 Compliance tracking program on the 7/5/15.
2	Pre-Construction Compliance Report CoA D27	Review of compliance status of the Project against the requirements of the Project approval prior to construction	At least 4 weeks prior to construction commencing	Roads and Maritime to develop and submit	DP&E
3	Construction reporting CoA D27	Periodic review of compliance status of the Project against the requirements of the Project approval during construction	Six months following the commencement of construction and then at six month intervals thereafter	LLE to prepare Roads and Maritime to review and submit	DP&E
4	Pre-Operation Compliance Report CoA D27	Review of compliance status of the Project against the requirements of the Project approval prior to operation	Prior to operation commencing	LLE to prepare Roads and Maritime to review and submit	DP&E

8.5 Other reporting

Prior to, during and following construction, various reports will be prepared to fulfil internal Roads and Maritime and contractor reporting needs, and requirements under the Project approval.

Table 8-4 sets out the reporting requirement applicable to the Project, timing of the reporting, who is responsible for managing preparation of the reports and the intended recipient(s).

Additional reporting may be necessary as the works progress. In such a circumstance,

Table 8-4 will be amended to reflect these changes.

Table 8-4 Reporting requirements

No.	Report	Requirement	Timing	Responsibility	Recipient
1	Monthly environmental report	For incorporation in Project Monthly Reports including environmental statistics (ie incidents, regulatory action, complaints on environmental issues), regulatory and authority considerations, monitoring program performance and key environmental issues.	Monthly	Environmental Manager	Roads and Maritime
2	EPL monthly report (where required by an EPL issued by NSW EPA)	Details of all non-compliances with conditions of EPL, measures taken to prevent recurrence, and details of discharges from sediment basins where water quality results exceed EPL conditions, or reporting on other licence requirements.	Within 10 working days of the end of each calendar month.	Environmental manager	EPA
3	EPL annual returns	Report on compliance with EPL.	Within 60 days of the anniversary of the EPL.	Environmental Manager	EPA

No.	Report	Requirement	Timing	Responsibility	Recipient
4	ER inspection report	Report of site environmental performance following routine inspections.	Monthly	Environmental Representative	Roads and Maritime /DP&E
5	Environmental risk assessment	Conducted for each construction stage, Project changes and significant issues.	Prior to construction during development of CEMP and as required thereafter.	Environmental Manager, Roadworks Manager	Roads and Maritime
6	Monitoring results	Report on monitoring data recorded and potential exceedances against criteria.	Monthly	Environmental Manager, Environmental Coordinator (s)	Roads and Maritime
7	RMS and/or EPA environmental inspection reports	Response to matter raised in Roads and Maritime and/or EPA site inspections.	As required. (Typically every two weeks for Roads and Maritime inspection reports and monthly for EPA inspection reports).	Environmental Manager, Environmental Coordinator (s)	Roads and Maritime /EPA
8	Internal audit report	Verify compliance with approval and legal requirements, Roads and Maritime specifications and construction documentation	The first audit within three months of the commencement of construction and then at six monthly intervals thereafter. The final submitted within five working days of contract completion date.	Environmental Manager	Project Manager, Roads and Maritime

No.	Report	Requirement	Timing	Responsibility	Recipient
9	External independent audit report	Verify compliance with approval and legal requirements, Roads and Maritime specifications, construction documentation and any other commitments.	Six monthly	Environmental Manager	Project Manager, Roads and Maritime
10	Site Audit Report	Report on outcomes of Phase 2 contamination investigations. Where remediation is required, site audit statement(s) shall be prepared verifying that the site has been remediated to a standard that is consistent with the intended land use.	Prior to commencement of site preparation and excavation activities in areas identified as having moderate to high risk of contamination.	Environmental Manager, Environmental Coordinator (s)	Roads and Maritime
11	Independent Environmental Audit	Report on environmental performance and compliance, and adequacy of the environmental management system.	Within twelve months of the commencement of operation.	Environmental Manager, Environmental Coordinator (s)	Roads and Maritime & DPI & E

8.6 Non-conformity, corrective and preventative actions

Any member of the Project team may raise a non-conformance or improvement opportunity. The Quality Plan (reference to be provided) describes the process for managing non-conforming work practises and initiating corrective/preventative actions or system improvements.

Corrective actions will be implemented in response to an event and are intended to ensure that prompt and immediate action is taken to correct the event in accordance with Lendlease Engineering's Non-Conformance Corrective and Preventative Action Procedure (LLE107). The Project Manager will ensure that corrective actions identified on daily and weekly inspections and audits and incident reports are transferred to the HSE Corrective Action Log and timeframes and responsibilities assigned. Outstanding actions will be reviewed at weekly project meetings.

The Environmental Representative, Roads and Maritime Representative or public authority may also raise a non-conformance or improvement opportunity using the same process.

A non-conformance is the failure or refusal to comply with the requirements of this CEMP and supporting documentation.

For each non-conformance identified a corrective/preventative action (or actions) must be implemented. In addition, any environmental management improvement opportunities can be initiated as a result of incidents or emergencies, monitoring and measurement, audit findings or other reviews. Improvement opportunities may also result in the implementation of corrective/preventative actions.

Corrective/preventative actions and improvement opportunities will be entered into Lendlease Engineering's quality system database and include detail of the issue, action required and timing and responsibilities. The record will be updated with date of close out and any necessary notes. The database will be reviewed regularly to ensure actions are closed out as required.

Non-conforming activities may be stopped, if necessary, by the Environmental Manager, Environmental Coordinators or Project / Site Engineer following consultation with the Roadworks Manager or delegate. The works will not commence until a corrective / preventative action has been closed out. The Environmental Representative may also stop works in these circumstances. In such circumstances a non-conformance report must be prepared in accordance with the Quality Plan.

Procedures for rectifying any non-compliance identified during environmental auditing, review of compliance or incident management are also documented in the Compliance Tracking Program.

9 Review and improvement

Management reviews are undertaken as part of the continual improvement process. The management review can consist of group reviews, or executive reviews.

A group review is initiated by the Environmental Manager and includes relevant Project team members and stakeholders. The environment team also meet as least quarterly, or at other pre-determined periods, to review environmental management issues for the Project. The environment team meeting can be run in conjunction with a wider group meeting if the Environmental Manager deems it appropriate.

The environment group meetings include:

- A review of the aspects and impacts register, legal register and environmental induction.
- Consideration of monitoring, inspection and audit results.
- Consideration of incidents and any lessons learnt.
- Consideration of any new regulatory issues.
- A review of the effectiveness of erosion and sediment controls.
- Consideration of issues raised by ERG.
- Consideration of changes in operational needs such as resourcing.
- Feedback from management reviews.

An executive review will involve the management team. This review will be held every 12 months and will include a review of:

- Effectiveness of environmental management documentation implementation.
- Management effectiveness.
- Potential improvements to the environmental management documentation.
- Adequacy of resources.
- Findings of audits.
- Environmental objectives and targets.
- Environmental performance.
- Compliance with legal and other requirements.
- Critical non-conformance or repeated non-conformances.
- Organisation changes.
- Effectiveness of training and inductions.

The outcomes of the group and executive reviews could include amendments to this CEMP and related documentation, revision to the Project's environmental management system, risk assessment review, re-evaluation of the Project objectives and targets as well as feeding into other Project documents.

10 Documentation

10.1 Environmental records

The Environmental Manager is responsible for maintaining all environmental management documents as current at the point of use. All project records will be managed and maintained for the life of the project in accordance with Lendlease Engineering's Record Management Procedure and will include, but not be limited to, the following:

- All monitoring, inspection and compliance reports/records.
- Correspondence with public authorities.
- Induction and training records.
- Reports on environmental incidents, other environmental non-conformances, complaints and follow-up action.
- Community engagement information.
- Minutes of CEMP and construction environmental management system review meetings and evidence of any action taken.

All environmental management documents are subject to ongoing review and continual improvement. This includes times of change to scheduled activities or to legislative or licensing requirements.

Only the Environmental Manager, or delegate, has the authority to change any of the environmental management documentation.

10.2 Document control

All documents will be maintained and managed in accordance with Lendlease Engineering's Document Control Procedure.

Lendlease Engineering or Roads and Maritime where relevant, will coordinate the preparation, review and distribution, as appropriate, of the environmental documents listed above. During the Project, the environmental documents will be stored at the main site compound.

Lendlease Engineering will implement a document control procedure to control the flow of documents within and between Roads and Maritime, stakeholders and subcontractors.

The procedure will also ensure that documentation is:

- Developed, reviewed and approved prior to issue.
- Issued for use.
- Controlled and stored for the legally required timeframe.
- Removed from use when superseded or obsolete.
- Archived.

A register and distribution list will identify the current revision of particular documents or data.

Appendices

Appendix A1

Legal and other requirements

Appendix A1

Wells Crossing to Glenugie - Register of legal and other requirements

Table 1 Legal register

Act	Activity / aspect	Requirement	Reference	Part 5.1 applicability
General				
Environmental Planning and Assessment Act 1979	All	Comply with the terms Minister for Planning's approval for the project. Obtain the Minister's approval for any project modifications that are not consistent with the planning approval.	S115ZI	Yes
Water				
Water Management Act 2000 With the exception of controlled activity approvals, the *Water Management Act 2000* (WM Act) only applies in relation to those water sources covered by operational water sharing plans – these areas cover most of the State's major regulated river systems.	Water access and use.	Do not take water from a water source (a lake, river or estuary or place where water occurs naturally on or below the surface of the ground, and includes coastal waters) without an access licence. Do not use water on land (unless supplied by a water utility, irrigation corporation or in accordance with basic landholder rights) without a water use approval.	S56 S60A S89 S91A	No
Water Management Act 2000	Water management works	Do not construct/use a water supply work, drainage work or flood work without the appropriate approval.	S90 S91B S91C S91D	No

Act	Activity / aspect	Requirement	Reference	Part 5.1 applicability
Water Management Act 2000	Waterfront land.	Do not deposit material, excavate, or remove material within a watercourse bank, shore or bed, or on land 40 metres inland, or interfere with the likely flow of water to such a body, without a controlled activity approval.	S91	No Public authorities are exempt from the need to obtain a controlled activity approval. Water Management (General) Regulation 2004 (cl.39A)
Water Act 1912 Note that this Act is being progressively repealed by the *Water Management Act 2000* (WM Act). With the exception of controlled activity approvals, the WM Act only applies in relation to those water sources covered by operational water sharing plans – these areas cover most of the State's major regulated river systems.	Surface water	Obtain a licence or permit for construction or use of 'work' for purposes including the taking and using of water.	S21B	Yes
	Groundwater	Obtain a licence where interference with groundwater is likely to occur.	S112 S121A	S112 does not apply to the Crown. RMS is therefore not required to obtain a licence under this provision.
	Floodplains	Obtain an approval for controlled works. These include works which occur on a designated floodplain, which can prevent land from being flooded or which can affect water flow to or from a river or lake.	S180	An exemption in relation to roads potentially applies – see clause 4 of the Water (Part 8-General) Regulation 1995.

Act	Activity / aspect	Requirement	Reference	Part 5.1 applicability
Protection of the Environment Operations Act 1997	Water pollution	Do not cause water pollution (other than to a sewer), except in accordance with the conditions of any EPA licence (i.e. Environment Protection Licence (EPL).	S120 S122	Yes
Noise				
Protection of the Environment Operations Act 1997	Plant maintenance and operation	Do not operate plant if it emits noise caused by poor maintenance or operation.	S139	Yes
Protection of the Environment Operations Act 1997	Materials management	Do not cause noise by failing to properly and efficiently deal with materials.	S140	Yes
Contaminated material				
Protection of the Environment Operations Act 1997	Land pollution	Do not cause or permit land pollution other than under authority of a licence or regulation. (However it is not a land pollution offence to place virgin excavated natural material or lawful pesticides and fertilisers on land, or by placing matter on land that has been notified to the EPA as an unlicensed landfill and which is operated in accordance with the regulations.)	S142A – S142E	Yes
Contaminated Land Management Act 1997	Reporting contamination	Notify the EPA if • Contaminants exceed thresholds contained in guidelines or the regulations where contamination has entered or will foresee ably enter neighbouring land, the atmosphere, groundwater or surface water. • Contaminants in soil are equal to or exceed guideline levels with respect to the current or approved use of the land. • Contamination meets other criteria that may be prescribed by the regulations.	S60	Yes

Act	Activity / aspect	Requirement	Reference	Part 5.1 applicability
Biodiversity				
Biosecurity Act 2015	Weed control	As a public authority occupier of land, control invasive weeds on the land as required under the control category or categories specified in relation to the weeds concerned. Notify relevant control authority within 3 days of becoming aware that a notifiable weed (W1 weed) is on land. (or ought reasonably to have known). Must not scatter or cause to scatter notifiable weed material.	S22	Yes
National Parks and Wildlife Act 1974	Native fauna	Do not harm any animal that is of a threatened species population or ecological community, or its habitat except in accordance with a planning approval.	Part 8A	Yes
		Do not harm critical habitat except as in accordance with a planning approval.	S98	Yes
		Do not harm native fauna (other than listed unprotected fauna) except in accordance with a planning approval or licence.	S120, S127, 132C	Yes
Biodiversity Conservation Act 2016	Flora and native vegetation conservation	Only clear native vegetation in accordance with a planning approval or property vegetation plan.	S2.8	Yes
National Parks and Wildlife Act 1974	Flora and native vegetation conservation	Do not pick protected native plants without a licence.	S117 S131	Yes

Act	Activity / aspect	Requirement	Reference	Part 5.1 applicability
Fisheries Management Act 1994	Mangroves, seagrasses and marine vegetation	Do not harm any mangroves, seagrasses or other marine vegetation on public water land protected by the regulations without a permit.	S205	No
Fisheries Management Act 1994	Fish passage	Do not block fish passage without a permit.	S219	No
Environment Protection and Biodiversity Conservation Act, 1999 (Commonwealth)	Flora and fauna conservation	Do not kill, injure or take a member of a listed threatened species without a permit.	Part 13	Yes
	All	Comply with the terms of any EPBC Act approval for the project.		Yes
Waste				
Protection of the Environment Operations Act 1997	Littering	Do not litter in a public place or an open private place. Do not litter from a vehicle. Only deposit advertising material in receptacles provided for mail or newspapers or under the door of the premises. Do not deposit advertising material on or in vehicles.	Part 5.6A	Yes
Protection of the Environment Operations Act 1997	Waste and transportation	Do not undertake a scheduled waste activity unless in accordance with an environment protection licence. A licence must be obtained when construction and demolition wastes are applied to land under certain circumstances. This includes the reincorporation of crushed road base material back into roads and the placing of excess fill material onto properties. A licence is not required if the material: • Is Virgin Excavated Natural Material. • Does not exceed 200 tonnes in the Sydney, Newcastle and Wollongong areas, or 20,000 tonnes outside these areas. • Is covered by a “general exemption”. Current exempted	Part 3.2 Schedule 1	Yes

Act	Activity / aspect	Requirement	Reference	Part 5.1 applicability
		materials are Excavated Natural Material, recycled aggregates and raw mulch. These exemptions are conditional and require some chemical testing of materials before they are placed onto land. A licence must be obtained if more than 2,500 tonnes (or cubic metres, whichever is lesser) are stored on a stockpile site at any one time, or more than 30,000 tonnes of waste is received per year from off site.		
		Only transport waste to a facility that can lawfully accept the waste.	S143	Yes
		Do not dispose of waste in a manner that harms or is likely to harm the environment.	S115	Yes
Protection of the Environment Operations (Waste) Regulation 2005	Waste and transportation	Comply with general requirements for the transport of waste. For example, any vehicle used by the person to transport waste must be kept in a clean condition and be maintained so as to prevent spillage of waste. For some wastes only licensed transporters can be used.	Regulation cl.49	Yes
		Comply with record keeping requirements in relation to the transport of certain types of waste.	Regulation Part 3	Yes

Act	Activity / aspect	Requirement	Reference	Part 5.1 applicability
Heritage				
Heritage Act 1977	Heritage	Do not undertake an activity that will affect a place, building, work, relic, moveable object or precinct which is subject to an Interim Heritage Order or is listed on the State Heritage Register without approval from the Heritage Council.	S56-57	No
		Do not disturb or excavate land with knowledge or reasonable cause to suspect that the disturbance or excavation will or is likely to result in a relic being discovered, exposed, moved, damaged or destroyed. Do not disturb or excavate land on where a relic has been discovered or exposed.	S139	No
		Notify the heritage Council on discovery of a relic.	S146	Yes
National Parks and Wildlife Act 1974	Aboriginal places and objects	Do not harm or desecrate an Aboriginal object or Aboriginal place without consent.	S86 S90	No
		Notify the NPWS within reasonable time of becoming aware of the location or discovery of certain Aboriginal objects.	S89A	Yes
Aboriginal and Torres Strait Islander Heritage Protection Act 1984 (Commonwealth)	Protection of areas and objects	Report any discovery of Aboriginal remains to the Federal Minister for the Environment.	S20	Yes
		Comply with the provisions of any declaration in relation to a significant Aboriginal area or object.	S22	Yes

Act	Activity / aspect	Requirement	Reference	Part 5.1 applicability
General				
Protection of the Environment Operations Act 1997	Harming the environment	Do not risk harming the environment by wilfully or negligently: • Disposing of waste unlawfully. • Causing any substance to leak, spill or otherwise escape (whether or not from a container). • Emitting an ozone depleting substance.	S115 S116 S117	Yes
Protection of the Environment Operations Act 1997	Control equipment	Properly and efficiently maintain and operate any installed pollution control equipment (including monitoring devices).	S167	Yes
Protection of the Environment Operations Act 1997	Notification of pollution incidents	Notify the EPA immediately of pollution incidents where material harm to the environment is caused or threatened.	S148	Yes
Protection of the Environment Operations Act 1997	Site licensing	Do not carry out or allow an activity listed in Schedule 1, or carry out work to enable such an activity, unless the premises are licensed by the EPA. This applies to: • road construction: meaning the construction, widening or re-routing of roads if it results in the existence of 4 or more traffic lanes (other than bicycle lanes or lanes used for entry or exit) for 1 kilometres of their length in the metropolitan area, or 5 kilometres in length in any other area, where the road is classified, or proposed to be classified, as a freeway or tollway under the Roads Act 1993.	S47 S48	Yes
Environmentally Hazardous Chemicals Act, 1985	Hazards and risks	Obtain a licence to undertake prescribed activities involving environmentally hazardous chemicals or declared chemical wastes.	S28	Yes
Dangerous Goods (Road and Rail Transport) Act 2008	Hazards and risks	Ensure that dangerous goods are transported in a safe manner.	S9	Yes

Act	Activity / aspect	Requirement	Reference	Part 5.1 applicability
Pesticides Act 1999	Hazards and risks	Use pesticides in an environmentally sensitive manner. Do not use an unregistered pesticide without a permit. Read the label or permit for the pesticide. Use registered pesticides in accordance with instructions on the label. Do not use any restricted pesticide unless authorised by a certificate of competency or a pesticide control order under the Act. Compliance with pesticide codes of practice is required.	S12 S13 S14 S15 S17	Yes
National Greenhouse and Energy Reporting Act, 2007 and Regulations 2008	Greenhouse gas emissions	Accounting and reporting of greenhouse gases produced and energy consumed during construction. Applicability dependent on thresholds.	-	Yes

Table 2 RMS G36 requirements

Requirement	Relevant section of CEMP or supporting documentation
Implement a Contractors Environmental Management System (CEMS)	This document
An environmental policy must be included in the CEMS	Appendix A3
Prepare and implement a CEMP in accordance with ISO 14001 Clause 4.	This document
Nominate the Environmental Manager directly responsible for ensuring that the requirements of the CEMS are implemented and maintained.	Section 4.2
Indicate how suitable resources will be assigned to ensure that the CEMP is fully implemented.	Section 4.2
Detail the relationship between the designated Environmental Manager and other personnel responsible for implementing the CEMP.	Section 4.2
Include a matrix or index in the CEMP showing where the environmental protection requirements of G36 have been addressed.	This table
Advise RMS Representative of any changes to the CEMS or CEMP	Chapter 9
Monitor and evaluate environmental performance.	Chapter 8
Detail how control of non-conformity, corrective and preventive actions will be implemented and closed out.	Section 8.6
Schedule and undertake CEMS audits and CEMP compliance audits.	Section 8.3
A CEMP must be prepared and include environmental protection practices, resources and sequence of activities required to comply with relevant environmental legislation, conditions of any applicable licence, approval and permit, ISO 14001 Clause 4.	This document
The CEMP must be either incorporated or part of the project quality plan.	Noted
The CEMP must identify potential adverse environmental effect, applicable regulatory requirements and/or compliance limits, with a particular emphasis on a risk-based	Appendix A2

Requirement	Relevant section of CEMP or supporting documentation
approach. Appropriate environmental protection measures must be documented to keep environmental effects within compliance limits.	
The CEMP must include all supplementary plans for environmental protections	Appendix B1 – Appendix B11
The CEMP must indicate the names, responsibilities and authority of your site management personnel who have primary responsibility for implementing the CEMP, monitoring its effectiveness, rectifying and reporting any environmental deficiencies, controlling further construction activities until deficiencies are rectified and keeping your environmental records.	Section 4.2
The CEMP must identify the Environmental Manager as the authorised contact person for communications with the RMS Representative and EPA on environmental matters.	Section 4.2
The CEMP must detail how changes to the environmental management documentation and data are to be identified and communicated to relevant project personnel.	Section 1.6
The CEMP must include details of: • Key emergency response personnel showing responsibilities and contact details including all-hours telephone numbers. • Emergency services (e.g. ambulance, fire brigade, spill clean-up services). • Communications strategy (internal and external). • Containment measures to be taken in the event of emergency situations that may arise during the Contractor's Work and procedures for restoration.	Contacts, Section 4.2, Chapter 6, Chapter 7
All Environmental Incidents must be managed and reported in accordance with the RTA Environmental Incident Classification and Management Procedure.	Appendix A7
EPA will be notified via the EPA Environment Line (telephone 131 555) of any environmental incidents or pollution incidents on or around the Site in accordance with Part 5.7 of the Protection of the Environment Operations Act 1997 (NSW) (POEO Act), in the following circumstances: • If the actual or potential harm to the health or safety of human beings or ecosystems is not trivial.	Chapter 7 and Appendix A7

Requirement	Relevant section of CEMP or supporting documentation
• If actual or potential loss or property damage (including clean-up costs) associated with an environmental incident exceeds $10,000. Notify RMS verbally immediately, and in writing within 24 hours, of all environmental incidents.	
Ensure that all staff and subcontractors working on the Site are provided with environmental training to achieve a level of competence and awareness appropriate to their assigned activities before they commence their assigned activities.	Chapter 5
Include in the CEMP the procedures to be implemented to ensure subcontractor compliance.	Section 4.3
The CEMP must identify at least two people (and their contact telephone numbers) who will be available to be contacted by the EPA on a 24 hour basis and who have authority to take immediate action to shut down any activity, or to effect any pollution control measures, as directed by an authorised officer of the EPA.	Contacts
Notify local residents about new or changed construction activities which will affect access to their properties or otherwise significantly disrupt residents' use of their premises.	Section 6.3
Inform residents of the proposed work outside normal working hours.	Section 6.3
The CEMP must include a procedure for notifying RMS and all relevant authorities in advance of proposed extension to hours of work.	Section 6.3
Report on complaint about any environmental issue, including pollution, arising from the Works.	Section 6.3
Maintain environmental records to demonstrate compliance with the CEMP.	Section 8.3, Section 8.4 and Section 8.5
Document in the CEMP and implement a checking procedure to verify that work is in compliance with this Specification.	Section 8.3
Undertake inspections and surveillance, and report on performance on high risk events and activities, works in environmentally sensitive areas, the adequacy of operational	Chapter 8

Requirement	Relevant section of CEMP or supporting documentation
controls, and measurements for aspects where compliance limits have been specified.	
Develop and implement a risk-based auditing program.	Section 8.3
Implement and document in the CEMP a waste and recycling material data collection program.	Appendix B7
Detail in the CEMP the location of environmental controls in environmentally sensitive areas.	Appendix A5
Identify obligations under environmental legislation relevant to the Work.	Appendix A1
Obtain all necessary approvals, licences and permits required for the work and carry out work in accordance with the requirements.	Section 3.3
Identify construction activities and access requirements to the construction site and the other areas affected by the Work.	Appendix B1
Prepare and implement a construction traffic and access management plan	Appendix B1
Prepare and implement a construction soil and water quality management plan addressing: • Erosion and sedimentation control. • Water extraction. • Dewatering. • Works in waterways • Impacts on groundwater from construction.	Appendix B4
Prepare and implement a construction air quality management plan.	Appendix B6
Prepare and implement a construction noise and vibration management plan.	Appendix B3
Manage clearing, mulch, flora and fauna. Prepare and implement a construction flora and fauna management plan.	Appendix B2

Requirement	Relevant section of CEMP or supporting documentation
Include fauna habitat conservation measures in the CEMP. The CEMP must include provisions for compliance with the EPBC Act and Threatened Species Conservation Act where listed threatened species or migratory species are affected.	Appendix B2
Plan and execute the Work so as to minimise the possibility of pollution of the Site and adjoining areas from chemicals, dangerous goods and other potential contaminants.	Appendix B4
The CEMP must include details of the management of the bunded area including, but not be limited to, monitoring of the bunded areas, drainage requirements and procedures to meet environmental requirements and to ensure that bund capacities are maintained.	Appendix B4
Plan and execute the Work so as to minimise the possibility of pollution of the Site and adjoining areas from chemicals, dangerous goods and other potential contaminants.	Appendix B4
Prepare and implement a construction heritage management plan to manage Aboriginal and non-Aboriginal heritage.	Appendix B5
Manage contaminated land.	Appendix B4
Prepare and implement a construction waste and energy management Plan.	Appendix B7
The CEMP must contain details of types and quantities of proposed material likely to be generated and proposed methods of disposal, recycling or re-use of such surplus materials.	Appendix B7
Reinstate all disturbed areas both on and off the Site.	Appendix B4, Design and Landscape Plan
Prepare and implement an ancillary facilities management plan.	Appendix B8
Prepare and implement a borrow sites management plan.	Appendix B9 ((not required)
Prepare and implement a construction contaminated land management plan	Appendix B10 (not required)
Prepare and implement a construction acid sulphate materials management plan	Appendix B11 (Not required)

Appendix A2

Environmental aspects and impacts

Appendix A2

Environmental aspects and impacts register

This Environmental Aspect and Impact Register has been prepared to supplement the Environmental Risk Analysis conducted as part of the Environmental Impact Statement (EIS). This register has been updated with relevant risks as included in the Project Risk Register.

The identification of significant construction activities and associated impacts that could eventuate during construction of the Project is central to the selection of appropriate environmental safeguards.

The risk management process involved an assessment of all specific project activities/aspects in or near environmentally sensitive areas and resulted in the development of a list of environmental risks (effects and impacts) and a corresponding risk mitigation strategy and risk ranking. Each environmental risk was categorised, based on the following:

- The environmental aspect.
- Relative scale of the potential impact.
- Type of potential impact.
- Likelihood of occurrence.

The identification of risks included a review of the proposed works, the CoA (June 2014), and review of the environmental risks identified by the EIS and the Submissions / Preferred Infrastructure Report.

This Environmental Aspects and Impact Register is to be revisited and revised as part of the construction contract.

Table 1 Aspects and impacts register

Issue	Construction activity / aspect	Potential impact	Risk level prior to mitigation	Indicative Mitigation Measures (to be considered and where applicable further developed in associated management documents)	Risk level following mitigation	Management Documents / Training Required
Hydrology and flooding	• Waterway crossings • Transverse drainage • General earthworks and construction • Bridge design & construction	• Alteration to flood behaviour due to road infrastructure structures placed on floodplain	A (high) i	• Design drainage structures to cope with design flood events. • Locate compounds / plant / storage above the 20 ARI flood level unless a contingency plan to manage flooding is prepared and implemented. • Evacuation and access will be assessed in consultation with landowners. • Design and build temporary crossings to be stabilised and minimise scour / erosion during flood events. • Install scour protection as early as possible. • Look at predicting flood events from gauges or rainfall predictions.	B (moderate)i	CONSTRUCTION SOIL AND WATER QUALITY MANAGEMENT PLAN EWMS Establish design for temporary waterway crossings. Induction
		• Increases in flood afflux levels during flood events	A (high) ii		B (moderate) ii	
		• Increases in duration of flood inundation	A (high) iii		B (moderate) iii	
		• Increases in flood impacts and damage costs on residential properties and cane land	B (moderate) iv		C (low) iv	
		• Change to creek bed and bank stability due to increases in runoff volumes and flow rates	B (moderate) v		C (low) v	
		• Impacts to flood evacuation and access movements	B (moderate) vi		C (low) vi	
Soils, sediments and water	• Clearing and grubbing • Earthworks • Storage of fuels, chemicals and other dangerous goods • Material stockpiles • Maintenance of plant and equipment, including servicing and refuelling • Sediment basin management • Drainage works • Water use / extraction • Concrete works • Batch plant operations • Temporary access road construction / removal from waterway areas. • Bridge construction • Waterway crossings	• Potential for groundwater discharge during construction, resulting in localised drawdown of groundwater resources	B (moderate) i	• Appropriately designed erosion control structures (eg sedimentation basins, ERSED-, silt fences and sand bags) will be installed, maintained and cleaned regularly. • Locate spoil stockpiles, plant and equipment away from drainage lines, watercourses or stormwater drains in accordance with established criteria. • Develop and implement a groundwater management strategy • Install clean water diversions to ensure clean and dirty water are not mixed on site. • Storage, compound access and parking areas sealed, as early during works as practicable. • Chemical storage meets WorkCover and EPA bunding/storage requirements. • Wheel mud reduction/ cleaning measures at exit of all sites where required. • Well designed temporary waterway crossings minimising risk of fines in waterways and designed to address larger flow volumes. • Buffer zones of vegetation will be maintained adjacent to waterways for as long as practical. • Rehabilitation and landscaping works of disturbed areas	C (low) i	CONSTRUCTION SOIL AND WATER QUALITY MANAGEMENT PLAN EWMS Basin management procedure ERSED training RMS mulch and tannin protocol Unexpected discovery of contamination land procedure Induction
		• Changes to water chemistry altering aquatic habitats, including threatened species habitats	A (high) iii		B (moderate) iii	
		• Major impacts to various sensitive receiving environments through accidental release of water pollutants during construction	B (moderate) iv		C (low) iv	
		• Impact to water quality due to fuels and leaks and inappropriate storage of material	B (moderate) v		C (low) v	
		• Changes in water chemistry, in particular pH values, affecting aquatic ecosystems	B (moderate) vi		C (low) vi	
		• Exposed soils during earthworks or landscaping will erode and cause sedimentation of waterways and aquatic environments	A (high) vii		B (moderate) vii	
		• Potential acidic leachate from exposure of acid sulfate soils	C (low) viii		C (low) v	
		• Potential release of tannins from stored mulch piles	A (high) ix		B (moderate) ix	
		• Disturbance of contaminated material causing pollution	C (low) viiix		C (low) v	

Issue	Construction activity / aspect	Potential impact	Risk level prior to mitigation	Indicative Mitigation Measures (to be considered and where applicable further developed in associated management documents)	Risk level following mitigation	Management Documents / Training Required
	• Landscaping • Noxious weed treatment			undertaken as soon as the works are completed and/or progressively where possible. • Appropriately designed, implemented and maintained silt control systems to mitigate risk of water pollution during upgrade of the creek bridges. • . • Implement concrete washout process within bunded areas. • Provide and maintain spill kits. • Consult / confirm with EPA and Primary Industries for temporary creek crossings construction / removal methods. • Establish clean water catch drains/ diversion early in Project before topsoil stripping. • Design drainage to maximise dirty water to sediment basins. • Engage soil conservationist to advise on ERSED issues. • Install signage at discharge points to assist workers to understand implications of dirty water release in sensitive areas. • Implement the RMS dewatering guidelines. • Implement the RMS Acid Sulfate Soil Management Procedure. • Implement appropriate procedures to identify, contain, handle and management contaminated material. • Implement the RMS mulch and tannin protocol.		
Biodiversity	• Clearing of native vegetation • Stockpile/haul road construction near vegetation • Works near / in creeks and temporary crossings • General earthworks near vegetation • Vehicular movements • Open excavation works • Use of chemicals • Noise impacts • Bushfires	• Clearing and fragmentation of native vegetation, including threatened ecological communities and loss of habitat for threatened species	A (high) i	• Induct personnel on biodiversity issues and mitigation measures. • Ensure vegetation clearing boundaries are clearly marked and visible as per CONSTRUCTION FLORA AND FAUNA MANAGEMENT PLAN • Prior to construction, identify and fence all flora and fauna habitat areas required to be protected. • Minimise clearing of all vegetation and undertake progressive revegetation. • Locate and construct fauna crossings in accordance with the Connectivity Strategy • Implement ongoing weed monitoring and management programs. • Disturbed areas will be monitored for effective soil stabilisation and restoration / rehabilitation. • Implement a staged clearing process and undertake fauna rescue during clearing as required. • Engage arborist to provide advice on habitat tree health and provide ongoing advice.	B (moderate) i	CONSTRUCTION FLORA AND FAUNA MANAGEMENT PLAN EWMS WMS Vegetation clearing procedure Fauna handling and rescue procedure Induction
		• Loss and fragmentation of terrestrial fauna habitat impacting on threatened species and populations, including direct impacts on threatened flora and potential impacts on threatened fauna as a result of habitat loss and fragmentation	A (high) ii		B (moderate) ii	
		• Loss and fragmentation of riparian and aquatic habitat	A (high) iii		B (moderate) iii	
		• Direct mortality of protected and threatened fauna	B (moderate) iv		C (low) iv	
		• Creation of barriers to fauna movement	B (moderate) v		C (low) v	
		• Edge effects from road noise, light and wind turbulence	B (moderate) vi		B (moderate) vi	
		• Invasion and spread of terrestrial and aquatic weeds and pest fauna species	B (moderate) vii		C (low) vii	
		• Impacts on aquatic habitat resulting from impacts on hydrology, groundwater and water quality	A (high) viii		B (moderate) viii	
		• Potential spread of disease pathogens	B (moderate) ix		C (low) ix	

Issue	Construction activity / aspect	Potential impact	Risk level prior to mitigation	Indicative Mitigation Measures (to be considered and where applicable further developed in associated management documents)	Risk level following mitigation	Management Documents / Training Required
				• Design and construct all temporary and permanent waterway crossings to maintain fish passage. • Undertake threatened species management as required under the Conditions of Approval. • Implement washing procedures to prevent the spread of pests and disease. • Undertake monitoring as required in the Approval. • Obtain permits from Fire authorities during high risk fire periods		
Visual amenity, urban design and landscaping	• General earthworks and construction • Stockpiling • Open excavation works • Clearing of vegetation • Construction site compounds • Rehabilitation of disturbed land • Bridge design • Cuttings and cut finishes • Evening / night works	• Change to landscape character and visual environment as a result of large cuttings, bridges, interchanges and realignment of the highway away from the existing road corridor	B (moderate) i	• Landscape and rehabilitation plan including extensive seeding planting in required areas will be developed and implemented. • Landscape treatments will incorporate the surrounding landscape types and vegetation patterns and address view scapes. • Embankments and cuttings will be stabilised by the use of appropriate landscape treatments. • The use of night-lighting will be minimised where possible during the construction phase and directed away from residential areas. • Site compounds and areas surrounding them will be kept tidy and be regularly cleaned and maintained. • Undertake landscaping and revegetation works in accordance with the approved Urban Design and Landscape Plan. • Monitoring and weed control.	C (low) i	Urban Design Landscape Plan EWMS CONSTRUCTION FLORA AND FAUNA MANAGEMENT PLAN Induction
		• Temporary visual impacts as a result of construction activities and ancillary facilities	B (moderate) ii		C (low) ii	
		• Poor management of revegetation	B (moderate) iii		C (low) iii	
Aboriginal heritage	• Early works including non-substantial construction activities e.g. services relocations. • Planned salvage of Aboriginal heritage items • Clearing of vegetation • Initial removal of topsoil • Construction of site compounds and stockpile areas • Temporary access roads	• Disturbance and / or destruction of Aboriginal sites, artefacts and cultural places	B (moderate) i	• Prior to construction, identify and assess Aboriginal heritage items on proposed sites and predict potential impacts. • Induct personnel on heritage issues and mitigation measures. • Protect identified heritage items with protective fencing, exclusion zones or flagging and signage from being disturbed during construction. • Undertake salvage works in accordance with the CONSTRUCTION HERITAGE MANAGEMENT PLAN prior to impacting site. • If design changes or construction activities impact on areas outside of those identified in the EIS, OEH and relevant Aboriginal groups will be consulted, and approval obtained pre any required salvage. • Implement unexpected find procedures as required.	C (low) i	CONSTRUCTION HERITAGE MANAGEMENT PLAN EWMS CONSTRUCTION NOISE AND VIBRATION MANAGEMENT PLAN Unexpected archaeological find procedure Education and training package Induction
		• Impacts on unknown Aboriginal sites or artefacts	A (high) ii		B (moderate) ii	
		• Change in visual integrity of cultural area	A (high) iii		B (moderate) iii	
		• Finding / disturbing burials or human remains	B (moderate) iv		C (low) iv	
		• Impact (machinery vibration, stockpiles, blasting) during the construction period to identified sites	C (low) v		C (low) v	
Non-Aboriginal historic heritage	• Early works • Clearing of vegetation	• Disturbance and/or destruction of items of heritage significance, including items listed on heritage registers	B (moderate) i	• Prior to construction, identify and assess non- Aboriginal heritage items on proposed sites and predict potential impacts.	C (low) i	CONSTRUCTION HERITAGE MANAGEMENT PLAN

Issue	Construction activity / aspect	Potential impact	Risk level prior to mitigation	Indicative Mitigation Measures (to be considered and where applicable further developed in associated management documents)	Risk level following mitigation	Management Documents / Training Required
	• Initial removal of topsoil • Construction of site compounds and stockpile areas • Temporary access roads	• Change in the visual character of historic heritage items, precincts or places	B (moderate) ii	• Induct personnel on heritage issues and safeguards. • Protect identified heritage items with protective fencing, exclusion zones or flagging from being disturbed during construction. • Undertake archival recording as specified in the CONSTRUCTION HERITAGE MANAGEMENT PLAN. • Regular inspection of heritage protection fencing. • Implement unexpected find procedures as required. • Landholder consultation.	C (low) ii	EWMS CONSTRUCTION NOISE AND VIBRATION MANAGEMENT PLAN Unexpected archaeological find procedure Education and training package Induction
		• Vibration damage during the construction period to identified sites	B (moderate) iii		C (low) iii	
		• Impact on undiscovered or undocumented heritage sites.	B (moderate) iv		C (low) iv	
Traffic and transport	• Temporary access roads • General earthworks and construction • Import of material / plant / equipment. • Construction site compounds • Construction vehicle movements and deliveries • Travel to /from site	• Temporary disruptions / delays to local and highway traffic	A (high) i	• Develop and update Traffic Management Plans for all stages of work. • Identify and assess roads likely to be affected by Project construction and develop methods to minimise traffic increases. • Undertake before and after dilapidation surveys on local roads • Traffic controllers and / or signage for both egress and ingress off the work sites. • All vehicles carrying materials to be adequately covered to prevent any loss of material, which may cause driver safety issues. • Liaise with schools and service providers	B (moderate) i	CONSTRUCTION TRAFFIC AND ACCESS MANAGEMENT PLAN CONSTRUCTION AIR QUALITY MANAGEMENT PLAN CONSTRUCTION WASTE AND ENERGY MANAGEMENT PLAN EWMS Induction *Communications Strategy*
		• Temporary restrictions to private access roads	B (moderate) ii		C (low) ii	
		• Permanent adjustment to some private property access roads and local / regional roads	A (high) iii		B (moderate) iii	
		• Changed traffic patterns	B (moderate) iv		C (low) iv	
		• Noise vibration and dust nuisance to residents on haul routes	A (high) v		B (moderate) v	
		• Delays/interruptions to school bus services	B (moderate)ii l]		*C (low) i]*	
Noise and vibration	• Site establishment • Clearing and grubbing • Demolition	• Temporary noise impacts on sensitive receivers during construction	A (high) i	• Liaise (agreements where applicable) with local communities and affected residents. • Adherence to working hours in CONSTRUCTION NOISE AND VIBRATION MANAGEMENT PLAN unless otherwise	B (moderate) i	CONSTRUCTION NOISE AND VIBRATION MANAGEMENT PLAN EWMS Blast Management Plan Complaints
		• Temporary vibration impacts on sensitive receivers during construction	B (moderate) ii		C (low) ii	

Issue	Construction activity / aspect	Potential impact	Risk level prior to mitigation	Indicative Mitigation Measures (to be considered and where applicable further developed in associated management documents)	Risk level following mitigation	Management Documents / Training Required
	• Earthworks and drainage • Batch plant • Bridge work • Piling • Paving • Saw cutting • Blasting crushing and screening • Rock hammering and drilling • Quarrying • Road furnishing			approved. • Implement operational noise mitigation measures as early as possible. • Respite periods for particularly noisy / short duration activities (in accordance with regulatory guidelines and/or CONSTRUCTION NOISE AND VIBRATION MANAGEMENT PLAN). • Construction equipment selected, operated and maintained to minimise noise impacts and where necessary fitted with silencers and “smart” reversing alarms. • Reduced use of horns to signal trucks loaded where residences close by. • Minimise impacts from saw cutting / use effective shielding. • Regular noise monitoring to monitor predicted verses actual noise levels. • Implementing management measures where regenerated noise is found to be excessive and agreements are not in place. • Managing construction vehicle routes and speed of vehicles. • Modelling vibration impacts and monitoring where impacts are predicted. • Establish and maintain complaints management system. • Building condition reports on potentially impacted buildings as required by Project approval. • Undertake trial blasting to establish site law for follow up blasting.		procedure Induction
Greenhouse gas emissions	• Vehicular movements • Vehicle emissions • Equipment / plant use • Vegetation clearing	• Greenhouse gases emitted from construction plant, equipment and vehicles	B (moderate) i	• Vegetation clearance minimised where feasible. • Reuse of materials maximised where possible. • Maximise use of resources with recycled components / contents. • Efficient use of plant and equipment • Regular maintenance of plant and equipment	C (low) i	CONSTRUCTION WASTE AND ENERGY MANAGEMENT PLAN EWMS Induction
		• Greenhouse gases embodied in materials consumed in construction or impacted by the project, such as vegetation removal and soil disturbance	B (moderate) ii		C (low) ii	
Air quality	• Site establishment • General earthworks • Vegetation clearing • Bulk earthworks • Drilling and blasting • Spoil handling – including liming of	• Potential for decreases in air quality during construction associated with dust generating activities and emissions from heavy construction machinery	B (moderate) i	• Induct personnel on air quality issues and safeguards. • Suppress dust on unsealed surfaces, stockpiles and other exposed surfaces. • Modify or cease operations during high winds. • All trucks on public roads to cover loads. • Vehicles, equipment, machinery used and all facilities – designed, operated and maintained to control the emission of	C (low) i	CONSTRUCTION AIR QUALITY MANAGEMENT PLAN EWMS CONSTRUCTION SOIL AND WATER QUALITY MANAGEMENT PLAN ESCP
		• Impacts on residential sensitive receivers, including impacts on living areas, swimming pools and general amenities	C (low) ii		C (low) ii	
		• Potential adverse health effects	C (low) iii		C (low) iii	

Issue	Construction activity / aspect	Potential impact	Risk level prior to mitigation	Indicative Mitigation Measures (to be considered and where applicable further developed in associated management documents)	Risk level following mitigation	Management Documents / Training Required
	Acid Sulphate Soils. • Stockpiling • Vehicular movements • Material haulage • Batch plant • Vehicle emissions • Handling of chemicals, waste and hazardous goods	• Impacts on water quality and vegetation health from dust deposition	C (low) iv	smoke, dust, odours and fumes. • Vegetation clearing to be staged to minimise time and area that surfaces are exposed. • All disturbed areas stabilised, revegetated and/or landscaped as soon as practicable. • Install shake down/ wheel wash facilities • No burning or incineration of any material at any time. • Regularly inspect erosion control measures. • Dust monitoring. • Regularly apply dust suppression such as water trucks and street sweepers	C (low) iv	Complaints procedure Induction
		• Complaints from neighbours	B (moderate) v		C (low) v	
Resource management and waste	• General earthworks • Vegetation clearing • Open excavation works • Spoil handling • Stockpiling • Quarrying • Material haulage • Handling of chemicals, waste and hazardous goods • Dewatering activities • General earthworks / compaction.	• Disposal of unsuitable or surplus earthworks material	B (moderate) i	• Refine cut-and-fill balance and maximise reuse of material on site. • Develop and implement a resource management strategy. • Maintain a waste register. • Manage waste in accordance with the Waste Classification Guidelines and PoEO Act. • Use recycled products where possible • Undertake additional waste classification where required • Locate appropriate waste removal contractor and / or appropriately licenced waste facilities in the area • Reuse wherever possible, site water from basins, excavations & sumps etc during construction works such as general fill compaction, dust control, and revegetation works.	C (low) i	CONSTRUCTION WASTE AND ENERGY MANAGEMENT PLAN EWMS Induction
		• Disposal of green waste (not including millable timber)	B (moderate) ii		C (low) ii	
		• Disposal of materials resulting from replacement of existing pavements	B (moderate) iii		C (low) iii	
		• Depletion or sterilisation of non-renewable resources, including sand and aggregate materials	B (moderate) iv		C (low) iv	
		• Direct impacts to existing quarries	B (moderate) v		C (low) v	
		• Difficult disposal of waste materials including hazardous waste	B (moderate) vi		C (low) vi	
		• Discharge of site water to surrounding waterways.	B (moderate) vii			

Appendix A3

Environmental policies

POLICY

Environment

Group Sustainability

Approver's name and title:	**Effective date:**
Board	November 2017
Review date:	**Next review date:**
November 2017	November 2019

Purpose

The purpose of this Policy is to outline Lendlease's commitment to environmental sustainability.

Scope

This Environment Policy covers the Group's operations in all countries where we operate.
It includes, but is not limited to, assessment and management of all our activities and operations with respect to climate change, pollution prevention, biodiversity protection, water conservation and resource scarcity.

This policy applies to the following:

Relationship to Lendlease	Employment contract	Time type	Payroll type
✓ Employees	✓ Permanent	✓ Full time	✓ Salaried
✓ Consultants	✓ Fixed Term	✓ Part time	✓ Wages (Aust only)
✓ Contractors	✓ Casual (Aust only)		✓ Union (US only)

In the following geographies:

Americas	Asia	Australia	Europe
✓ North America	✓ Singapore	✓ Australia	✓ UK
	✓ Malaysia		✓ Italy
	✓ Japan		
	✓ China		

Policy

Lendlease's vision to create the best places is underpinned by its commitment to sustainability as a core operating principle.

Lendlease aspires to be a sustainable organisation which goes beyond minimising harm to the natural environment. To achieve this aspiration, we will not only employ strategies to prevent pollution but also explore every opportunity to leave a positive environmental impact.

Lendlease have an integrated Environment, Health & Safety (EHS) framework, comprising our Global Minimum Requirements, which sets out the process of how we will set objectives relating to environmental management. Lendlease commit to complying with legislation, regulation, codes of practice, industry standards, contractual relationships and other requirements that we subscribe to. We will monitor, measure and report our performance in accordance with our EHS framework, ISO 14001 requirements and internationally recognised standards. To exhibit leadership, we will continually improve our environmental performance through the ongoing review and setting of objectives within our EHS framework.

We will also seek out opportunities to partner and engage with leading organisations, industry associations and our supply chain to drive better environmental outcomes for a sustainable future.

In support of this Environment Policy we will:

- Reduce our contribution to climate change and build resilience into the places we create and in the communities where we have a presence;
- Seek to prevent and minimise pollution associated with any of our operations;
- Protect biodiversity and ecosystems through the ongoing assessment and management of our activities;
- Value water as a natural resource and conserve its use;
- Recognise resource scarcity through responsible procurement, use and management of materials; and
- Advocate and pursue a holistic approach to the design, delivery and operation of high performance green buildings, infrastructure and sustainable precincts that exceeds best practice through innovation.

Further information and related materials

Related information	Description
Health & Safety Policy	This policy is supported by our GMRs.

Contact	Details
Group Head of Sustainability	If you have any questions on this policy please contact Group Sustainability.

Appendix A4

Document register

Table 1 Environmental document register

Environmental management document	Purpose	Document no.	Document title	Approval requirement
Environmental Policy	Outlines the LLE environmental management commitments.		Environmental Policy	LLE
Construction environmental management plan	Policy Legal and other requirements Risk assessment Objectives and targets Roles and responsibilities Communication and training Monitoring, auditing and reporting Corrective action Management review Management actions		Wells Crossing to Glenugie Stage Construction Environmental Management Plan	Secretary, Department of Planning and Environment, DP&E
Environmental management plans	Objectives and targets Roles and responsibilities Legal and other requirements Training Monitoring, auditing and reporting Management actions		Construction traffic and access management plan (Appendix B1)	Secretary, Department of Planning and Environment, DP&E
			Construction flora and fauna management plan (Appendix B2)	Secretary, Department of Planning and Environment, DP&E
			Construction noise and vibration management plan (Appendix B3)	Secretary, Department of Planning and Environment, DP&E
			Construction soil and water quality management plan (Appendix B4)	Secretary, Department of Planning and Environment, DP&E
			Construction heritage management plan	Secretary, Department of Planning and

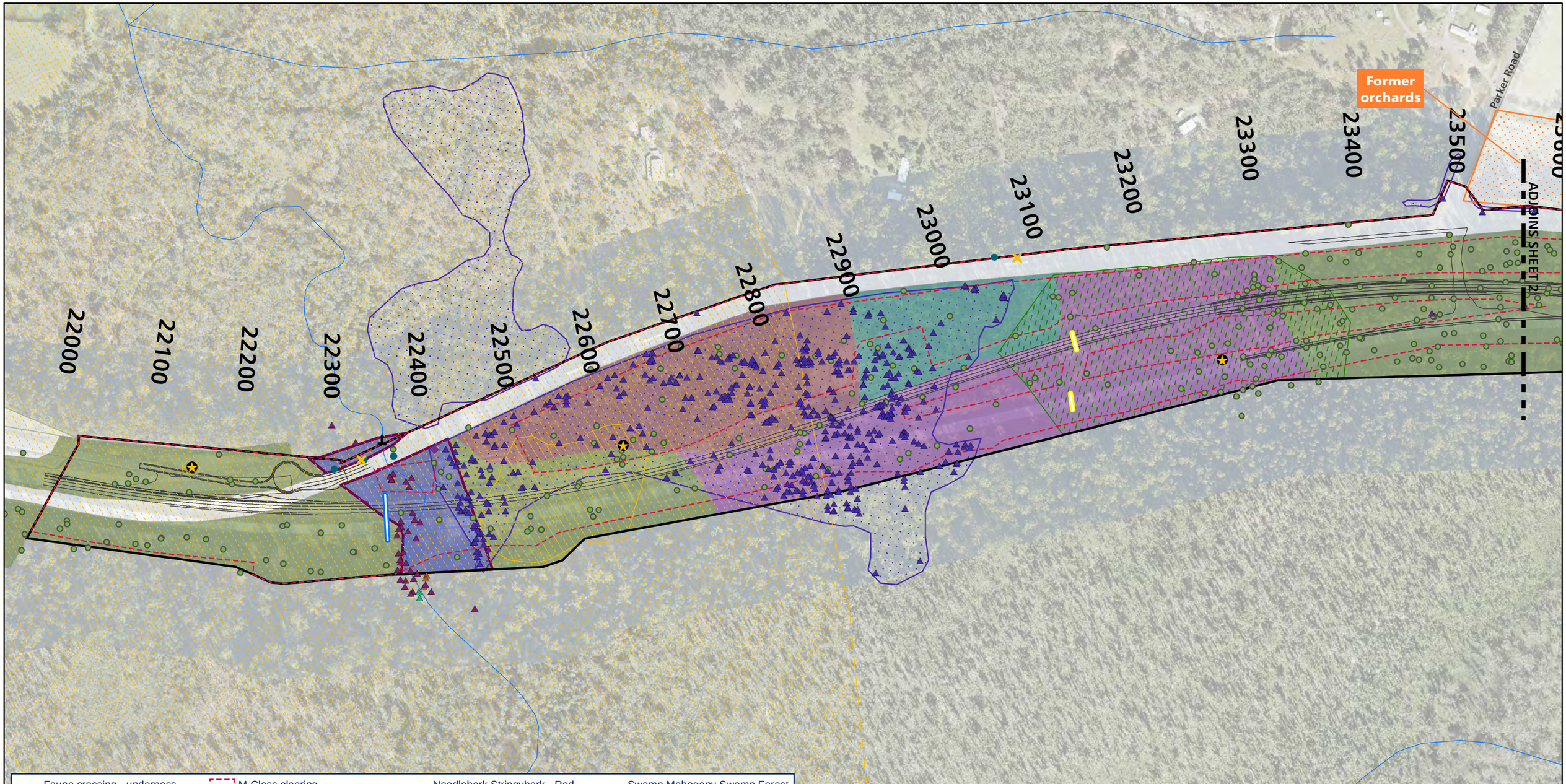
Environmental management document	Purpose	Document no.	Document title	Approval requirement
			(Appendix B5)	Environment, DP&E
			Construction air quality management plan (Appendix B6)	Roads and Maritime
			Construction waste and energy management plan (Appendix B7)	Roads and Maritime
Other environmental plans			Ancillary facilities management plan (Appendix B8)	Environmental Representative
			Appendix A Nest Box Plan	Secretary, Department of Planning and Environment, DP&E
			Appendix B Threatened Flora Management Plan	Secretary, Department of Planning and Environment, DP&E
			Appendix E Threatened Frog Management Plan	Secretary, Department of Planning and Environment, DP&E
			Appendix I Glider Management Plan	Secretary, Department of Planning and Environment, DP&E
			Appendix J Micro-bat Management Plan	Secretary, Department of Planning and Environment, DP&E
			Appendix S Mitigation Framework	Secretary, Department of Planning and Environment, DP&E
			Appendix T Flora Translocation Strategy	Secretary, Department of Planning and Environment, DP&E

Environmental management document	Purpose	Document no.	Document title	Approval requirement
			Appendix U Threatened Mammal Management Plan	Secretary, Department of Planning and Environment, DP&E
			Appendix V Connectivity Strategy Section 1 and 2	Secretary, Department of Planning and Environment, DP&E
Urban Design and landscape plan	Objectives Materials Methodology Monitoring		Urban Design and Landscape Plan	Secretary, Department of Planning and Environment, DP&E
Compliance tracking program	Compliance status Auditing Recording and reporting		Compliance tracking program Woolgoolga to Ballina Stage 1	Secretary, Department of Planning and Environment, DP&E
Environmental procedures	Operational controls and instructions Step by step activity description Timing Equipment to be used Monitoring criteria / standards		Noise and Vibration Monitoring Dewatering Water Quality Monitoring Management of Potentially Contaminated Material Groundwater Monitoring Sediment Basin Management RMS environmental incident classification and reporting procedure Stockpile Management Protocol Tannin Leachate Protocol	LLE

Environmental management document	Purpose	Document no.	Document title	Approval requirement
Environmental forms and checklists	Monitoring and auditing Recording and reporting			LLE
Environmental work method statements	Management measures Operational controls			Environment Manager
Erosion and sediment control plans	Management measures			Environment Manager
Flood management study	Management measures			Secretary, Department of Planning and Environment, DP&E
Hydrological mitigation report	Management measures Roles and responsibilities			Secretary, Department of Planning and Environment, DP&E
Water quality monitoring program	Monitoring and reporting Management measures		*Woolgoolga to Glenugie Water Quality Monitoring Program*	Secretary, Department of Planning and Environment, DP&E
Community communication strategy	Procedures and mechanisms		*Woolgoolga to Ballina Communications and Stakeholder Engagement Strategy*	Secretary, Department of Planning and Environment, DP&E
Complaints and enquiries procedure	Procedures and mechanisms			Roads and Maritime
Incident and emergency response plan	Roles and responsibilities Legal and other requirements Management actions			Roads and Maritime

Appendix A5

Sensitive area plans



- Fauna crossing - underpass combined
- Fauna crossing - underpass dedicated
- Maundia
- Noah's false chickweed
- Slender screw fern
- Square-fruited Ironbark
- Square-stemmed Olax
- Aboriginal heritage site
- Hollow bearing tree (Woolgoolga to Ballina project)
- PAD
- Potential contaminated site
- M-Class clearing
- Project boundary
- Alignment design (13/6/2019)
- Watercourse (DFSI Spatial Services, 2019)
- *Eucalyptus tetrapleura* habitat
- Green-thighed frog - foraging/dispersal habitat

EEC

- Swamp Sclerophyll Forest on Coastal Floodplains

Vegetation Community

- Cleared
- Needlebark Stringybark - Red Bloodwood Heathy Woodland On Sandstones Of The Lower Clarence Of The North Coast
- Orange Gum (Eucalyptus Bancroftii) Open Forest Of The North Coast
- Scribbly Gum - Red Bloodwood Heathy Open Forest Of The Coastal Lowlands Of The North Coast
- Spotted Gum - Grey Ironbark - Pink Bloodwood Open Forest Of The Clarence Valley Lowlands Of The North Coast
- Swamp Mahogany Swamp Forest Of The Coastal Lowlands Of The North Coast

Clarence Valley Council Weed Class (Ecosure, 2014)

Class 0

- Coolatai grass (*Hyparrhenia hirta*)

Class 3

- Groundsel bush (*Baccharis halimifolia*)

Class 5

- Annual ragweed (*Ambrosia artemisiifolia*)

Australian Government

BUILDING OUR FUTURE

WOOLGOOLGA TO BALLINA
WELLS CROSSING TO GLENUGIE
Sensitive Area Map

Sheet 1 of 6

NSW GOVERNMENT

Map Published: 18/06/2019

Author: WILSOTH

Coordinate System: GDA 1994 MGA Zone 56
Projection: Transverse Mercator
Horizontal Datum: GDA 1994

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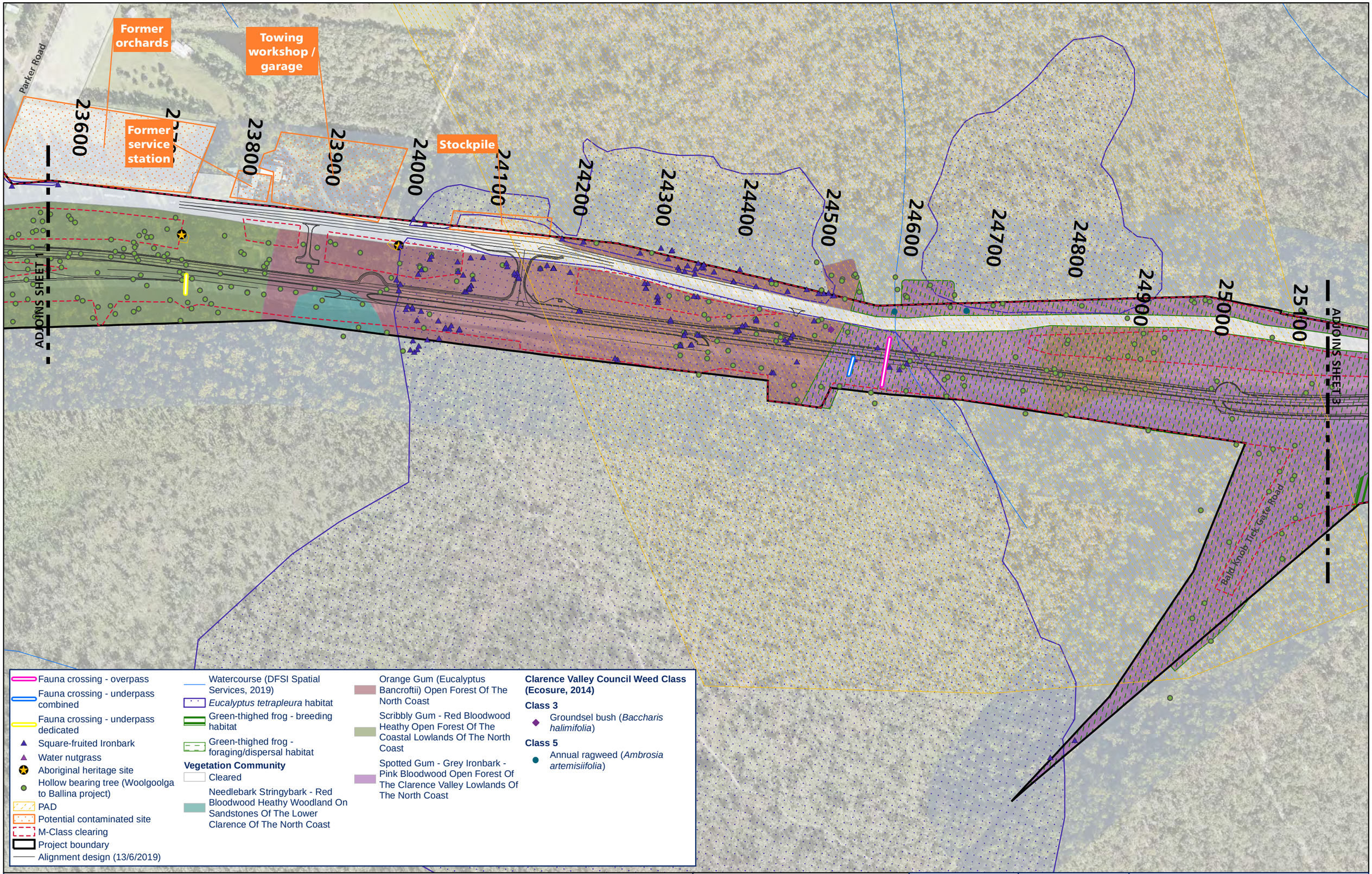

Australian Government

BUILDING OUR FUTURE

WOOLGOOLGA TO BALLINA
WELLS CROSSING TO GLENUGIE
Sensitive Area Map

Sheet 2 of 6

NSW GOVERNMENT

Map Published: 18/06/2019

Author: WILSOTH

Coordinate System: GDA 1994 MGA Zone 56
Projection: Transverse Mercator
Horizontal Datum: GDA 1994

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ADJOINS SHEET 4

ADJOINS SHEET 2

Six mile tick gate remains; Glenugie

Bald Knob Tick Gate Road

- Fauna crossing - underpass dedicated
- Square-fruited Ironbark
- Hollow bearing tree (Woolgoolga to Ballina project)
- PAD
- Non-Aboriginal heritage site
- M-Class clearing
- Project boundary
- Alignment design (13/6/2019)
- Watercourse (DFSI Spatial Services, 2019)
- *Eucalyptus tetrapleura* habitat
- Green-thighed frog - breeding habitat
- Green-thighed frog - foraging/dispersal habitat

Vegetation Community

- Cleared
- Orange Gum (Eucalyptus Bancroftii) Open Forest Of The North Coast
- Spotted Gum - Grey Ironbark - Pink Bloodwood Open Forest Of The Clarence Valley Lowlands Of The North Coast

Clarence Valley Council Weed Class (Ecosure, 2014)

Class 0

- African lovegrass (*Eragrostis curvula*)

Class 3

- Mother-of-millions (*Bryophyllum delagoense*)

Australian Government

BUILDING OUR FUTURE

WOOLGOOLGA TO BALLINA
WELLS CROSSING TO GLENUGIE Sheet 3 of 6
Sensitive Area Map

NSW GOVERNMENT

Map Published: 18/06/2019

Author: WILSOTH

Coordinate System: GDA 1994 MGA Zone 56
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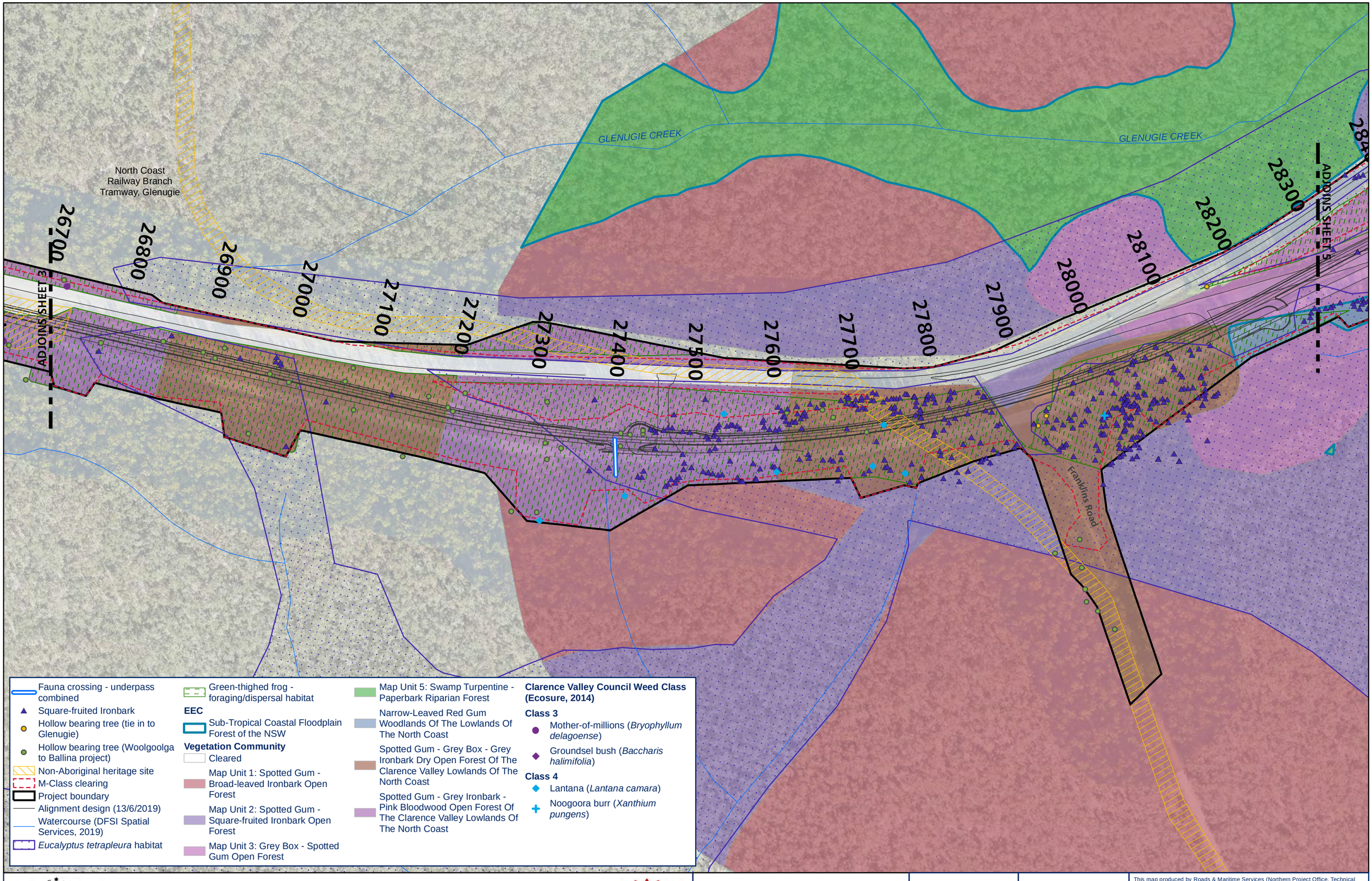

- Fauna crossing - underpass combined
- Square-fruited Ironbark
- Hollow bearing tree (tie in to Glenugie)
- Hollow bearing tree (Woolgoolga to Ballina project)
- Non-Aboriginal heritage site
- M-Class clearing
- Project boundary
- Alignment design (13/6/2019)
- Watercourse (DFSI Spatial Services, 2019)
- *Eucalyptus tetrapleura* habitat
- Green-thighed frog - foraging/dispersal habitat

EEC

- Sub-Tropical Coastal Floodplain Forest of the NSW

Vegetation Community

- Cleared
- Map Unit 1: Spotted Gum - Broad-leaved Ironbark Open Forest
- Map Unit 2: Spotted Gum - Square-fruited Ironbark Open Forest
- Map Unit 3: Grey Box - Spotted Gum Open Forest
- Map Unit 5: Swamp Turpentine - Paperbark Riparian Forest
- Narrow-Leaved Red Gum Woodlands Of The Lowlands Of The North Coast
- Spotted Gum - Grey Box - Grey Ironbark Dry Open Forest Of The Clarence Valley Lowlands Of The North Coast
- Spotted Gum - Grey Ironbark - Pink Bloodwood Open Forest Of The Clarence Valley Lowlands Of The North Coast

Clarence Valley Council Weed Class (Ecosure, 2014)

Class 3

- Mother-of-millions (*Bryophyllum delagoense*)
- Groundsel bush (*Baccharis halimifolia*)

Class 4

- Lantana (*Lantana camara*)
- Noogoora burr (*Xanthium pungens*)

Australian Government

BUILDING OUR FUTURE

WOOLGOOLGA TO BALLINA
WELLS CROSSING TO GLENUGIE Sheet 4 of 6
Sensitive Area Map

NSW GOVERNMENT

Map Published: 18/06/2019

Author: WILSOTH

Coordinate System: GDA 1994 MGA Zone 56
Projection: Transverse Mercator
Horizontal Datum: GDA 1994

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GLENUGIE CREEK

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ADJOINS SHEET 4

ADJOINS SHEET 6

- Fauna crossing - overpass
- Fauna crossing - underpass combined
- Fauna crossing - underpass dedicated
- Square-fruited Ironbark
- Hollow bearing tree (tie in to Glenugie)
- M-Class clearing
- Project boundary
- Alignment design (13/6/2019)
- Watercourse (DFSI Spatial Services, 2019)
- *Eucalyptus tetrapleura* habitat
- Green-thighed frog - foraging/dispersal habitat

EEC

- Sub-Tropical Coastal Floodplain Forest of the NSW

Vegetation Community

- Map Unit 1: Spotted Gum - Broad-leaved Ironbark Open Forest
- Map Unit 2: Spotted Gum - Square-fruited Ironbark Open Forest
- Map Unit 3: Grey Box - Spotted Gum Open Forest
- Map Unit 4: Scribbly Gum - Bloodwood Open Forest
- Map Unit 5: Swamp Turpentine - Paperbark Riparian Forest
- Map Unit 6: Narrow-leaved Redgum - Paperbark Open Woodland
- Narrow-Leaved Red Gum Woodlands Of The Lowlands Of The North Coast
- Nest box (existing microbat box)

Australian Government

BUILDING OUR FUTURE

WOOLGOOLGA TO BALLINA
WELLS CROSSING TO GLENUGIE Sheet 5 of 6
Sensitive Area Map

NSW GOVERNMENT

Map Published: 18/06/2019

Author: WILSOTH

Coordinate System: GDA 1994 MGA Zone 56
Projection: Transverse Mercator
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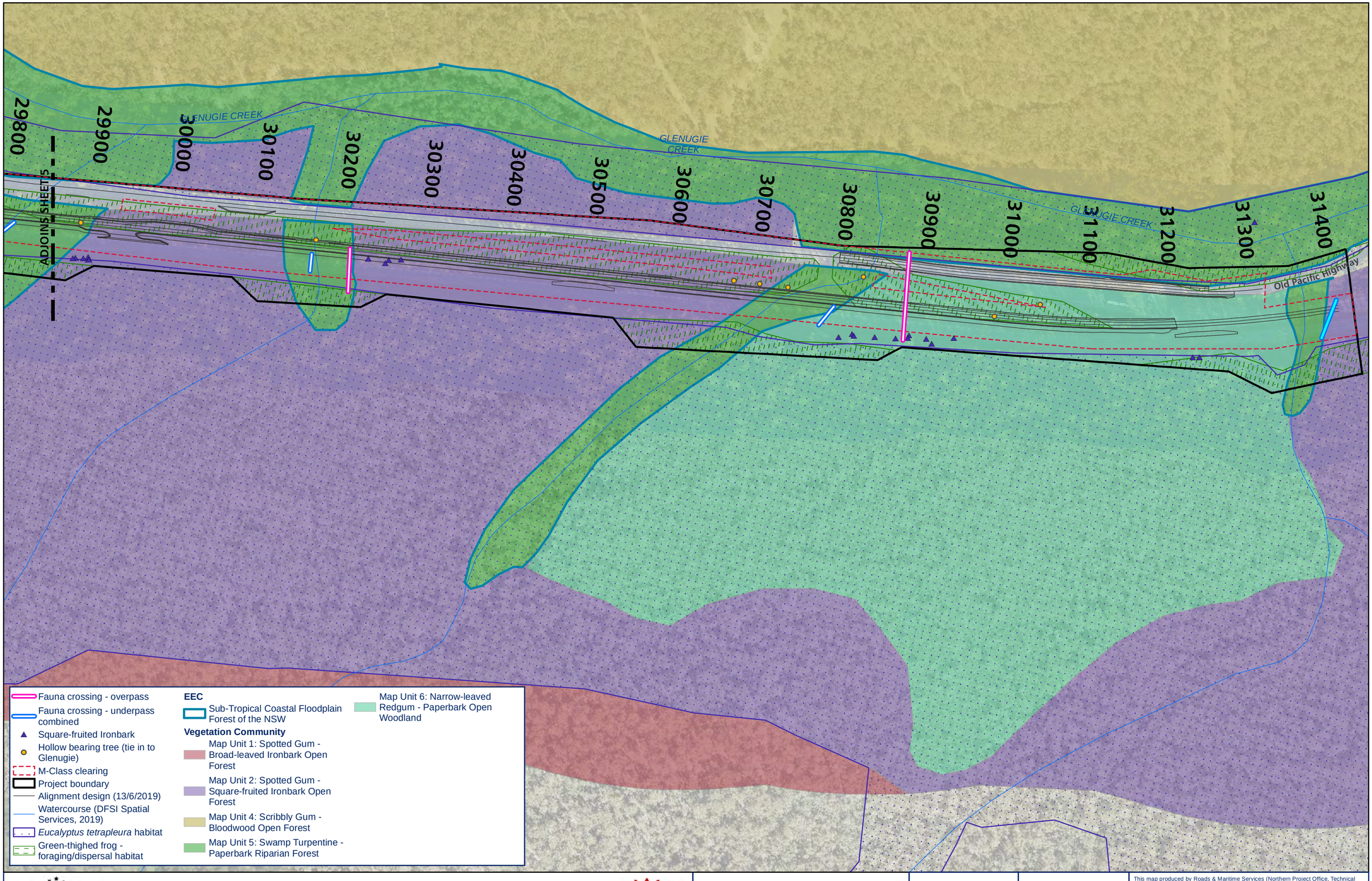

Australian Government

BUILDING OUR FUTURE

WOOLGOOLGA TO BALLINA
WELLS CROSSING TO GLENUGIE
Sensitive Area Map

Sheet 6 of 6

NSW GOVERNMENT

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1:4,000 at A3

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Appendix A6
Environmental incident classification and reporting

Environmental Incident Classification and Reporting Procedure

Roads and Maritime Services | November 2018

Document No. | RMS 17.374 | Version 5.1

NSW GOVERNMENT

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About this release

Title	Environmental Incident Classification and Reporting Procedure

Approval		
Prepared by	Environment Manager Performance Improvement	Scott Machar
Reviewed by	Director Environment Operations	Sally Durham
Approved by	Director Environment	Michael Crowley

Document Control			
Version	5.1	**Release date**	November 2018
Publication Number	RMS 17.374	**ISBN**	978-1-925659-57-3

Contents

Acronyms and definitions	
Acronym	**Definition**
DE	(Roads and Maritime Services) Director Environment
DES	(Roads and Maritime Services) Director Environment Sydney
DPE	Department of Planning and Environment
Environmental harm	Any act that degrades or pollutes the environment
EPA	NSW Environment Protection Authority
EP&A Act	*Environmental Planning and Assessment Act 1997*
EPBC Act	*Environment Protection and Biodiversity Conservation Act 1999*
EPL	Environment Protection Licence
POEO Act	*Protection of the Environment Operations Act 1997*
REF	Review of Environmental Factors
Roads and Maritime	NSW Roads and Maritime Services
SEQC	(Roads and Maritime Services) Safety Environment and Quality Co-ordinator
SEQO	(Roads and Maritime Services) Safety Environment and Quality Officer
WHS	Work Health and Safety

1. Introduction

1.1 Aim

The Environmental Incident Classification and Reporting Procedure (the Procedure) aims to ensure Roads and Maritime Services workers and contractors understand how to classify, respond to and report environmental incidents that occur as a result of Roads and Maritime managed activities.

1.2 Objectives

The objectives of the Procedure are to:

- Ensure all relevant Roads and Maritime workers, managers and contractors are made aware of environmental incidents promptly and can respond accordingly
- Ensure site workers understand the immediate environmental incident reporting requirements
- Ensure all workers understand reporting timeframes, including statutory requirements
- Ensure incidents are reported to enable monitoring, sharing of lessons learnt and response to emerging environmental incident trends
- Comply with statutory obligations to report certain environmental incidents to regulators and other relevant government agencies (see section 5.1).

1.3 Scope and coverage

This Procedure is applicable to all Roads and Maritime activities where environmental incidents may occur. This includes (but is not limited to):

- Temporary activities, such as preliminary investigations (e.g. geotechnical and environmental surveys) and the construction and maintenance of Roads and Maritime assets
- Activities at Roads and Maritime properties and facilities
- Vessels operated by Maritime division
- Activities undertaken by contractors on behalf of Roads and Maritime.

The requirements of this Procedure must be communicated to all Roads and Maritime workers and contractors (e.g. during inductions) who are undertaking activities where incidents may occur.

The Procedure is for internal reporting processes, except where incidents are identified that need to be notified to regulators, and other relevant authorities (see section 5.1).

The procedure does NOT cover environmental incidents caused by:

- Operational road and traffic activities of the general public (e.g. vehicle accidents, fires caused by discarded cigarette butts)
- Boating accidents (except those involving Roads and Maritime vessels)
- Dumping of materials by members of the public on Roads and Maritime roadsides or land (except where hazardous materials are unexpectedly found during road construction or maintenance activities). Illegal dumping should be reported to the NSW Environment Protection Authority (EPA)
- Marine oil and chemical spills covered by the National Plan for Maritime Environmental Emergencies (Australian Maritime Safety Authority, 2014).

2. Environmental incident classification

There are three categories of environmental incidents, as detailed in Table 2.

Table 2: Environmental incident classification

Category	Description	Examples	
Category 1	Potential breaches of legislation or failures of process that result in actual off-site environmental harm, or residual on-site environmental harm or Works undertaken outside approved areas, without required approval or without environmental assessment or Any Material Harm pollution incident as defined by Part 5.7 of the *Protection of the Environment Operations Act 1997* (POEO Act).	Pollution Incidents	Discharge of waters from site not in accordance with any approval requirements (e.g. discharge criteria in an Review of Environmental Factors (REF) safeguard or Environment Protection Licence (EPL) condition)
			Pollution, or potential pollution, of waters
			Unmanaged vehicle tracking of materials or emissions of dust, offensive odours or noise beyond the site boundary that are not managed in accordance with approval requirements and/or might impact on nearby land users
			Pollution incidents that threaten harm to the health or safety of people (e.g. uncontrolled releases of hazardous substances)
			Unauthorised or illegal disposal or transport of waste
			A spill or other incident that causes pollution to land
		Conservation Breaches	Unauthorised harm or damage to native flora and fauna (terrestrial or aquatic/marine)
			Unauthorised dredging or reclamation works within a watercourse
			A fire caused by Roads and Maritime activities that travels beyond the boundary causing or potentially causing harm to the environment or community
		Heritage Breaches	Unauthorised harm to Aboriginal objects and Aboriginal places
			Unauthorised damage to any State or locally significant relic or Heritage item, or item listed on the Roads and Maritime Section 170 register

Table 2: Environmental incident classification			
Category	**Description**	**Examples**	
		Planning and compliance breaches	Failure to comply with the requirements of: • The *Environmental Planning and Assessment Act 1997* (EP&A Act), including exempt activities, Part 5 determinations and Part 5.1 approvals • An *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) approval • An EPL • A CEMP or environmental work method statement • A permit from a regulator (e.g. under the *Fisheries Management Act 1994*)
Category 2	Failures of process or events that do not result in off-site environmental harm, or residual on-site environmental harm. These incidents may result in temporary on-site environmental harm that can be rectified to pre-existing conditions.	A procedural, administrative or technical breach of environmental requirements, including: • Failure to prepare or submit required documents, reports or other correspondence • Failure to comply with the requirements of: o The *Environmental Planning and Assessment Act 1997* (EP&A Act), including exempt activities, Part 5 determinations and Part 5.1 approvals o An *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) approval o An EPL o A CEMP or environmental work method statement o A permit from a regulator (e.g. under the *Fisheries Management Act 1994*).	
		Spills and discharges that do not leave a site boundary and are cleaned up without residual on-site environmental harm, and the area of temporary impact can be restored to pre-existing conditions	
		A fire that is contained on site and does not cause or potentially cause adverse impact to the environment or community	
Reportable Event	An event or unexpected find that occurs outside the scope of reasonable environmental controls and mitigation measures	Sediment or site water travelling beyond a site boundary, and where it can be demonstrated that: • Erosion and sediment controls were installed and maintained in accordance with an erosion and sediment control plan, and • The cause of the incident was reasonably unforeseen or the weather (rain, wind etc) event exceeded the design capacity of controls.	

Table 2: Environmental incident classification		
Category	**Description**	**Examples**
		Note these events are considered to have occurred (and the response should commence in accordance with Section 3) when sediment or site water first travels beyond the site boundary (e.g. when an appropriately sized and maintained sediment basin commences overtopping)
		An unexpected archaeological find that is being managed in accordance with the "Roads and Maritime Standard Management Procedure - Unexpected Archaeological Finds"
		An unexpected threatened species find that is being managed in accordance with the "Roads and Maritime Biodiversity Guidelines – unexpected threatened species finds procedure"
		An unexpected find of contaminated soils, asbestos or other potentially hazardous substances during construction or maintenance works. Note that once a particular contaminant is identified or found for the first time (either during project planning or construction phases) it is then reasonably expected to be found, so additional finds need not be reported in this category.
Regulatory Action	Formal regulatory action from an environmental regulator (that has not already been reported in conjunction with another incident)	Formal regulatory action from an environmental regulator includes, but is not limited to: • Penalty infringement notices (PINs) • Clean up notices • Prevention notices • Official cautions / warnings • EPA show cause notifications.

Note: For any incident where there is associated formal regulatory action from an environmental regulator, copies of this correspondence must be forwarded to envops@rms.nsw.gov.au in addition to the Environmental Incident Report (see section 4).

3. Environmental incident response

3.1 Considerations and steps for environmental incident response

The step-by-step response for Category 1 incidents, Category 2 incidents and Reportable Events is detailed in Table 3.1a (activities undertaken by contractors) and Table 3.1b (activities undertaken by Roads and Maritime Regional Maintenance). However, some key points apply throughout all stages of the response to any environmental incident:

- If in doubt, treat all incidents as Category 1 to ensure reporting timeframes can be met
- Project teams should also undertake the following notifications as appropriate:
    - Roads and Maritime Corporate Communications for any incidents that have potential for community or media attention (see section 4.4)
    - Roads and Maritime Work Health and Safety (WHS) Branch for any incidents that involve actual or potential risks to worker health and safety (see section 4.4).
- The person responsible for operational management of the site/activity shall assume responsibility for the response to the incident and direct actions as necessary and in accordance with this Procedure
- The Director Environment Sydney (DES) may reclassify the category of an incident where appropriate, in consultation with the relevant Roads and Maritime Environment Manager.

Any Regulatory Action received (that has not already been reported in conjunction with another incident) should be immediately forwarded to the envops@rms.nsw.gov.au mailbox, and followed by an immediate phone call to the relevant Roads and Maritime Environment Manager, who will immediately advise the DES. Consideration should then be given as to whether an environmental incident has occurred (see section 2) that should be reported in accordance with this section.

Table 3.1a: Environmental incident response – activities undertaken by contractors				
Step	**Action**	**Responsibility for completing action**	**Timeframe**	
			Category 1 Incidents	Category 2 Incidents / Reportable Events
1	Stop work in relevant area (if necessary) and take actions to prevent adverse impact to human health or the environment. Note human health and safety is the primary concern, and no action should be taken if it is not safe to do so - in these instances emergency services should be contacted (phone triple zero).	Person who identifies incident	Immediate	Immediate
2	Advise the contractor site management team (and Roads and Maritime Corporate Communications and/or WHS Branch as appropriate)	Person who identifies incident	Immediate	Immediate
3	Advise the Roads and Maritime project management team and the relevant Roads and Maritime Environment Manager.	Contractor	Immediate	Day of the incident
4	Consider if the incident is a pollution incident that constitutes Material Harm in accordance with Part 5.7 of the POEO Act. For Material Harm pollution incidents, notify relevant agencies (see section 5.2). Sites with an EPL should implement their Pollution Incident Response Management Plan.	Contractor	Immediate	Immediate
5	Advise DES by phone. The DES may request photographs and a brief summary of known information via email. The following Roads and Maritime managers should also be notified by phone as relevant: • Director Environment (Regions) • Director Environment (Motorways).	Roads and Maritime Environment Manager	Immediately following advice of the incident	N/A
6	Where relevant, notify incident to appropriate regulatory agency (see section 5.1). Note this does not refer to the requirement to notify Material Harm pollutions incidents (see Step 4).	Contractor	As required by legislation	As required by legislation
7	Complete the incident report form (see section 4.2), including sign-off from Roads and Maritime Project Manager, and submit to Roads and Maritime Environment Manager* (see sections 4.3 and 4.4).	Contractor	Within 3 business days of the incident	Within 3 business days of the incident
8	Sign and submit incident report form to envops@rms.nsw.gov.au.	Roads and Maritime Environment Manager	On the day of receipt of the form	On the day of receipt of the form
9	For Material Harm pollution incidents, provide a written report to each relevant authority (see section 5.2).	Contractor	Within 7 days of the incident	N/A
10	Undertake incident investigation (level of investigation to be appropriate to the severity of the incident) to determine root cause and any necessary corrective actions. Summarise findings in 'Incident Lessons Learnt' template and submit to Environment Manager for review.	Contractor	Within 1 month of incident	N/A
11	Submit final Incident Lessons Learnt to envops@rms.nsw.gov.au.	Roads and Maritime Environment Manager	Within 1 week of receipt	N/A
12	Consider the need for any required corrective actions to be addressed through a management system (e.g. corrective action request), and any required updates to a risk register.	Roads and Maritime Environment Manager and project team	As appropriate	As appropriate

*Alternate workflow / signatory arrangements may be required for projects where a third party is involved (e.g. a delivery authority). These arrangements can be confirmed with the relevant Roads and Maritime Environment Manager.

Table 3.1b: Environmental incident response – activities undertaken by Regional Maintenance (including contractors or RMCC on behalf of Regional Maintenance)				
Step	**Action**	**Responsibility for completing action**	**Timeframe**	
			Category 1 Incidents	Category 2 Incidents / Reportable Events
1	Stop work in relevant area (if necessary) and take actions to prevent adverse impact to human health or the environment. Note human health and safety is the primary concern, and no action should be taken if it is not safe to do so - in these instances emergency services should be contacted (phone triple zero).	Person who identifies incident	Immediate	Immediate
2	Advise the Roads and Maritime site management team and the relevant Roads and Maritime Environment Manager and Safety Environment Quality Officer (SEQO) / Safety Environment Quality Co-ordinator (SEQC) (and Corporate Communications and/or WHS Branch as appropriate)	Person who identifies incident	Immediate	Immediate
3	Advise DES by phone. The DES may request photographs and a brief summary of known information via email. The relevant Regional Maintenance Manager must also be notified.	Environment Manager	Immediate	N/A
4	Consider if the incident is a pollution incident that constitutes Material Harm in accordance with Part 5.7 of the POEO Act. For Material Harm pollution incidents, notify relevant agencies (see section 5.2). Sites with an EPL should implement their Pollution Incident Response Management Plan.	DES	Immediately following advice of the incident	N/A
5	Where relevant, notify incident to appropriate regulatory agency (see section 5.1). Note this does not refer to the requirement to notify Material Harm pollutions incidents (see Step 4).	Environment Manager	As required by legislation	As required by legislation
6	Complete the incident report form (see section 4.2), including sign-off from Roads and Maritime Project Manager, and submit to SEQC (see section 4.3).	Relevant Roads and Maritime site representative	Within 3 business days of the incident	Within 3 business days of the incident
7	SEQC to sign and submit incident report form to relevant Environment Manager (see section 4.4).	SEQC	On the day of receipt of the form	On the day of receipt of the form
8	Sign and submit incident report form to envops@rms.nsw.gov.au.	Environment Manager	On the day of receipt of the form	On the day of receipt of the form
9	For Material Harm pollution incidents, provide a written report to each relevant authority (see section 5.2).	DES	Within 7 days of the incident	N/A
10	Undertake incident investigation (level of investigation to be appropriate to the severity of the incident) to determine root cause and any necessary corrective actions. Summarise findings in 'Incident Lessons Learnt' template and submit both to Environment Manager for review. Consider the need for any required corrective actions to be addressed through a management system (e.g. corrective action request), , and any required updates to a risk register.	SEQC	Within 1 month of incident	N/A
11	Submit final Incident Lessons Learnt to envops@rms.nsw.gov.au.	Roads and Maritime Environment Manager	Within 1 week of receipt	N/A

Copies of formal regulatory action from an environmental regulator (that has not already been reported in conjunction with another incident) must be forwarded to the relevant Roads and Maritime Environment Manager (and SEQC/SEQO for Regional Maintenance projects) and envops@rms.nsw.gov.au immediately upon receipt.

3.2 Critical incidents

Some Category 1 incidents require escalation so relevant members of the Roads and Maritime Executive are aware of the incident and ready to respond as necessary. Category 1 incidents will be deemed 'Critical Incidents' for escalation to the Executive when they have the potential for:

- Regulatory action (e.g. EPA Penalty Infringement Notice) and/or
- Reputational damage (e.g. media coverage) and/or
- Significant environmental harm.

Guiding factors that will be considered when determining whether there has been 'significant' environmental harm include:

- When there has been actual or potential harm to the health or safety of people or to the environment that is not trivial
- Actions required to prevent, mitigate or make good the actual or potential environmental harm are likely to exceed $10,000

When a potential 'Critical Incident' is reported, the DES will immediately brief the Director Environment (DE) who will make a determination on whether it will be considered a 'Critical Incident'. The DE will then brief the Roads and Maritime Chief Executive and relevant Executive Director, as well as any other members of the Executive as appropriate. When the DE cannot be contacted, the DES will make the determination and make the relevant Executive briefings.

4. Environmental incident reporting

4.1 Environmental incident report form

The Environmental Incident Report Form should be completed for Category 1 incidents, Category 2 incidents and Reportable Events, and is available on the Roads and Maritime website.

4.2 Completing the incident report form

All parts of the Incident Report Form must be completed in accordance with this procedure and following the instructions within the form. The Form (and any subsequent reports) must only include factual information. Speculation about the causes and outcomes of incidents are not to be included.

The Form must be signed by the following:

Signatory	Reason
The person making the report	The person witnessed the incident or has the most knowledge of the incident, and can provide sufficient factual information.
The Roads and Maritime Project Manager	To ensure all relevant Roads and Maritime parties can be made aware of the incident, and appropriate resources can be allocated and/or approved to respond to the incident. This also ensures the project management team are aware of any environmental performance trends if multiple incidents occur.
Safety Environment and Quality Co-ordinator (Roads and Maritime Regional Maintenance only)	To ensure Regional Maintenance management system staff are aware of the incident, and any necessary management system changes can be made once corrective actions and lessons learnt are finalised.
The relevant Roads and Maritime Environment Manager	Concurrence that the incident is adequately described, and the immediate actions and corrective actions are appropriate.

As noted in Table 3.1a, alternate signatory arrangements may be required for projects where a third party is involved (e.g. a delivery authority). These arrangements can be confirmed with the relevant Roads and Maritime Environment Manager.

4.3 Submitting the incident report form

All Incident Report Forms must be populated, signed and submitted electronically (never printed / signed / scanned etc.) to enable Roads and Maritime to electronically capture the information entered in the form.

Completed Incident Report Forms should be submitted by the Roads and Maritime Environment Manager to the Environment Operations mailbox:

- envops@rms.nsw.gov.au

It is essential that a clear and consistent subject line convention is used to allow tracking of correspondence about each incident. All emails about an incident between all parties should structure the subject line as follows:

- Category X - project name / incident location - date
- For example, Category 1 – Main Road Upgrade – dd/mm/yy.

Where information cannot be gathered within the timeframes set out in this Procedure, the incident form should be submitted to the mailbox as a ‘draft’, whether or not the information contained is fully completed.

- For example, Category 1 – Main Road Upgrade – dd/mm/yy (DRAFT).

The Environment Manager should then request further information from the person making the report, and the final report should be submitted within the next 24 hours.

4.4 Roads and Maritime contacts

The relevant Environment Manager for each region and Project Office is the first point of contact for enquiries relating to environmental incidents. Current contacts for all Roads and Maritime Environment Managers can be found on the Roads and Maritime website.

Environment Managers can also provide contact details for other relevant contacts during an incident, such as Communications or Work, Health and Safety. Hazards and occurrences that occur during Roads and Maritime activities should be reported through the Roads and Maritime WHS reporting line on 1300 131 469.

The DES oversees the application of this Procedure, and can be contacted in the absence of the relevant Environment Manager for Category 1 incidents:

- Phone - (02) 0428 608 758

5. Regulatory agency notification

5.1 Notification of Material Harm pollution incidents

5.1.1 Definition of Material Harm pollution incidents

Under Part 5.7 of the POEO Act, there is a duty to immediately notify (i.e. promptly and without delay) each relevant authority (see section 5.1.3) of a pollution incident where material harm to the environment is caused or threatened.

The POEO Act states that a pollution incident should be considered Material Harm if:

> *"(i) it involves actual or potential harm to the health or safety of human beings or to ecosystems that is not trivial, or*
>
> *(ii) it results in actual or potential loss or property damage of an amount, or amounts in aggregate, exceeding $10,000"*

Material Harm only relates to pollution incidents. Other environmental incidents, such as conservation, heritage and planning breaches, are not included in the definition of a pollution incident.

5.1.2 Determining if an incident should be considered Material Harm

As soon as a person becomes aware of a pollution incident that has the potential to cause Material Harm, the Category 1 incident response should be followed (see Table 3.1a and Table 3.1b above). The determination on whether a pollution incident should be considered Material Harm should be made in accordance with Table 5.1.2.

Table 5.1.2: Determination of Material Harm pollution incidents

Project delivery	Material Harm determination
Activities undertaken by Regional Maintenance	The DES should make the determination (and any associated notifications) on whether a pollution incident should be considered Material Harm. If the DES is not available, the relevant Environment Manager should seek advice from other Roads and Maritime Environment Branch Directors, or make the material harm determination themselves. If no assistance can be obtained and it is suspected that a pollution incident should be considered Material Harm, the project should notify the relevant authorities in accordance with Table 5.1.3a or Table 5.1.3b (as relevant).
Activities undertaken by contractors	The contractor project team should make the determination (and any associated notifications) on whether a pollution incident should be considered Material Harm. The relevant Roads and Maritime Environment Manager or Environment Branch Director may contact the DES to assist in making an assessment of the incident, to aid the contractor in determining if the pollution incident should be considered Material Harm. Where Roads and Maritime believes a pollution incident should be considered Material Harm but the contractor disagrees, Roads and Maritime is required by law to notify EPA and other relevant authorities. In this instance the DES or DE would make a determination on whether the incident should be notified by Roads and Maritime as Material Harm. Roads and Maritime would provide details of any notifications made to the contractor.

Even if only limited information is available for a pollution incident being considered Material Harm, each relevant authority must be immediately notified with the information available and updates provided as soon as further relevant information becomes available.

In circumstances where there is doubt about the need to notify a pollution incident as Material Harm, Roads and Maritime and its contractors should always err on the side of notification.

When in doubt, communicate!

Note: Roads and Maritime is not responsible for notifying a Material Harm pollution incident caused by a traffic or vehicle accident where notification has already occurred by someone at the scene. However, if it is believed notification has not been undertaken, Roads and Maritime should undertake notification in accordance with section 5.1.3. Environment Branch can provide advice in this instance (see section 4.4).

5.1.3 Relevant authorities to notify

The relevant authorities that must be notified for a Material Harm pollution incident are listed in tables 5.1.3a and 5.1.3b below. It is important to note the order of notification and phone numbers to use can vary depending on the nature of the pollution incident, as detailed in the two tables.

All of the authorities listed (whether considered relevant or not) must be contacted for each Material Harm pollution incident to satisfy POEO Act requirements. Serious penalties apply to both individuals and corporations for failing to notify Material Harm pollution incidents:

- Maximum penalty for individuals - $500,000
- Maximum penalty for corporations - $2,000,000.

Table 5.1.3a: Authorities to notify for Material Harm pollution incidents that present an immediate threat to human health or property

Order	Authority	Contact Number
1	Fire and Rescue NSW	000
2	NSW EPA environment line	131 555
3	Ministry of Health (via the local Public Health Unit)*	Contact 1300 066 055 to be directed to the local Public Health Unit, or visit the NSW Health Website
4	SafeWork NSW	131 050
5	The Appropriate Regulatory Authority*, being either: • Local council • Western Lands Commissioner for the Western Division (except any part of the Western Division within the area of a local council).	Local council - contact Office of Local Government on 4428 4100, or visit the Office of Local Government website Western Lands Commissioner – phone 6883 5400

Table 5.1.3b: Authorities to notify for Material Harm pollution incidents that do NOT present an immediate threat to human health or property

Order	Authority	Contact Number
1	NSW EPA environment line	131 555
2	The Appropriate Regulatory Authority*, being either: • Local council • Western Lands Commissioner for the Western Division (except any part of the Western Division within the area of a local council).	Local council - contact Office of Local Government on 4428 4100, or visit the Office of Local Government website Western Lands Commissioner – phone 6883 5400

3	Ministry of Health (via the local Public Health Unit)*	Contact 1300 066 055 to be directed to the local Public Health Unit, or visit the NSW Health Website
4	SafeWork NSW	131 050
5	Fire and Rescue NSW	1300 729 579

* The appropriate contact for the Appropriate Regulatory Authority and Public Health Unit will vary according to the geographic location of the activity. These contact numbers should be found in advance and stored for immediate access (e.g. in a project's Construction Environmental Management Plan and/or on site notice boards) should a pollution incident need to be notified.

5.1.4 The relevant information to provide

It is important to avoid speculation on origin, causes or outcomes of a pollution incident in discussions with the authorities. Section 150 of the POEO Act provides the information that needs to be notified, being:

a) The time, date, nature, duration and location of the incident

b) The location of the place where pollution is occurring or is likely to occur, the nature, the estimated quantity or volume and the concentration of any pollutants involved, if known

c) The circumstances in which the incident occurred (including the cause of the incident, if known)

d) The action taken or proposed to be taken to deal with the incident and any resulting pollution or threatened pollution, if known

e) Other information prescribed by the regulations.

Only known information should be provided when notifying of a Material Harm pollution incident. If further information becomes known after the initial notification, that information must immediately be notified to all authorities in accordance with Section 150 (see above). The immediate verbal notification is to be followed by written notification to each relevant authority within seven days of the date on which the incident occurred.

Complying with these notification requirements does not remove the need to comply with any other legislative requirements for incident notification (e.g. requirements under EPL conditions or the Work Health and Safety Act 2011).

5.2 Summary of other regulatory agency notification requirements

Specific statutory requirements relating to the notification of environmental incidents to relevant regulatory agencies are summarised in Table 5.2. Additional requirements adopted by Roads and Maritime are indicated in *italics*. Any notification to regulatory agencies should be indicated in the Environmental Incident Report Form to confirm that any required notifications have been initiated.

Table 5.2: Regulatory agency notification requirements

Legislation / issue	Regulating authority	Section / requirement
Commonwealth Aboriginal and Torres Strait Islanders Heritage Protection Act 1984	Department of the Environment and Energy	Section 20 – requirement to notify the Minister of the discovery of Aboriginal remains.
Contaminated Land Management Act 1997	EPA	Section 60 – requirement to notify if Roads and Maritime activities have contaminated land or if Roads and Maritime owns land that has been contaminated.
Heritage Act 1977	Office of Environment and Heritage	Section 146 – requirement to notify the Heritage Council of the location of the relic once a relic has been discovered or located.
National Parks and Wildlife Act 1974	Office of Environment and Heritage	Section 89A – requirement to notify the location of an Aboriginal object that is the property of the Crown.

Protection of the Environment Operations Act 1997	EPA and other relevant authorities	Section 148 – requirement to immediately notify pollution incidents that cause or threaten Material Harm to the environment (see Section 5.1)
	EPA	*Pro-active reporting to the local EPA officer of offsite pollution incidents that occur as a result of Roads and Maritime activities is encouraged as soon as practicable after the pollution incident occurs.*
Rural Fires Act 1997	NSW Rural Fire Service	Section 64 – requirement to notify an appropriate fire officer of the inability to extinguish any fire burning during a bush fire danger period applicable to the land.
Breach of Conditions of Approval (projects approved under Part 5.1 of the EP&A Act)	Department of Planning and Environment (DPE)	DPE should be notified by the project proponent when there has been a breach of a Condition of Approval (CoA). There may also be other notification requirements included in the CoA.
Water supply catchment areas	*Local water supply authority*	*If an environmental incident has the potential for unapproved impacts on a drinking water supply, the relevant water supply authority must be advised.*

5.3 Requests for written reports from regulatory authorities (activities delivered internally by Roads and Maritime)

Should Roads and Maritime directly receive a request from a regulatory authority for a written report regarding an environmental incident, Environment Branch and Legal Branch must be immediately contacted for advice. No further correspondence (including email) about the incident should be distributed either internally or externally until advice is received. Environment Branch will coordinate with Legal Branch to:

- Assist in the investigation of the incident
- Provide legal advice to the project
- Co-ordinate the preparation of the written response to the regulatory authority.

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Customer feedback
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Appendix A7

Other relevant management measures

APPENDIX A7

Other relevant management measures

Wells Crossing to Glenugie

Pacific Highway Upgrade

JUNE 2019

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Contents

Tables

Glossary / Abbreviations

CEMP	Construction Environmental Management Plan
LLE	Lendlease Engineering
CoA	Condition of approval
DP&I	Former NSW Department of Planning and Infrastructure (now DP&E)
DP&E	NSW Department of Planning and Environment
EEC	Endangered Ecological Community
ENM	Excavated Natural Material
EIS	Woolgoolga to Ballina Pacific Highway Upgrade Environmental Impact Statement (December, 2012)
EPA	NSW Environment Protection Authority
EP&A Act	*NSW Environmental Planning and Assessment Act 1979*
EPBC Act	*Commonwealth Environmental Protection and Biodiversity Conservation Act 1999*
EPL	NSW Environment Protection Licence under the Protection of the Environment Operations Act 1997.
ESCP	Erosion and Sediment Control Plan
EWMS	Environmental Work Method Statements
FM Act	*NSW Fisheries Management Act 1994*
CHMP	Construction Heritage Management Plan
Minister, the	NSW Minister for Planning
NOW	NSW Office of Water
NPW Act	*NSW National Parks and Wildlife Act 1974*
OEH	NSW Office of Environment and Heritage
PoEO Act	*NSW Protection of the Environment Operations Act 1997*
Project, the	Pacific Highway Upgrade – Woolgoolga to Ballina Project, SSI 4963
Secretary	Secretary of the Department of Planning and Environment
SPIR	Woolgoolga to Ballina Pacific Highway Upgrade Submissions Preferred Infrastructure Report (November, 2013)
RMS, Roads and Maritime Services	NSW Roads and Maritime
VENM	Virgin Excavated Natural Material
WARR Act	*Waste Avoidance and Resource Recovery Act 2001*
CWEMP	Construction Waste and Energy Management Plan
WRAPP	Waste Reduction and Purchasing Policy

1 Other environmental mitigation and management measures

A range of environmental requirements are identified in the various environmental documents, including the EIS, Submissions / Preferred Infrastructure Report, supplementary assessments, Conditions of Approval and RMS documents, and from recent experience on similar road projects.

Relevant management measures and requirements for the project are included within the plans attached to this CEMP (Appendix B):

- Appendix B1 - Construction traffic and access management plan
- Appendix B2 - Construction flora and fauna management plan
- Appendix B3 - Construction noise and vibration management plan
- Appendix B4 - Construction soil and water quality management plan
- Appendix B5 - Construction heritage management plan
- Appendix B6 - Construction air quality management plan
- Appendix B7 - Construction waste and energy management plan
- Appendix B8 – Ancillary facilities management plan

Other relevant management measures to be addressed in construction (Visual, urban design and landscape, Traffic and transport, Land use and property and Social and economic) which have not been captured by specific plans are described in this document, see Tables 1.1 to 1.4.

Table 1-1 Visual, urban design and landscape management and mitigation measures

ID	Measure / Requirement	When to implement	Responsibility	Reference
VISUAL, URBAN DESIGN AND LANDSCAPE				
UD1	If further noise modelling identifies that noise walls are required, further visual assessment address the visual implications of the change. Their location and design will be in accordance with the Noise Wall Design Guideline (RTA, 2007) and the principles identified in Working Paper – Urban design, Landscape Character and Visual Impact (Section 4.6.3).	Pre-construction	Project Engineer / Site Engineer	Submissions / PIR (UD1)
UD2	The project will be carried out in accordance with the urban design and landscaping strategy, as identified in Section 11.4.1 of this EIS. Detailed landscape design for all project batters, and median planting areas will be developed in accordance with the Landscape Guidelines (RTA, 2008), the requirements of the Working Paper – Biodiversity (Section 5.2.2) and the landscape strategy to provide a robust, successful and effective planting design.	Pre-construction	Project Engineer / Site Engineer	Submissions / PIR (UD3)
UD3	The built form of the project, including consideration of the height, bulk, scale, materials and finishes for: · Bridges. · Retaining walls. · Cuttings and embankments. · Road barriers. · Signage. · Fences. · Clear zones. · Topsoil management. · Water quality control ponds. · Fauna crossing. · Place marking and cultural plantings. The project will be designed in accordance with the design principles identified in Working Paper – Urban Design, Landscape Character and Visual Impact, and relevant Roads and Maritime guidelines.	Pre-construction	Project Engineer / Site Engineer	Submissions / PIR (UD4)

ID	Measure / Requirement	When to implement	Responsibility	Reference
UD4	Further assessment will be undertaken of the impact of overshadowing on areas surrounding the project, interchanges and overpasses near residential properties.	Pre-construction	Project Engineer / Site Engineer	Submissions / PIR (UD5)
UD5	Measures to mitigate visual impacts to viewpoints will be implemented, as identified in Table 11-42 and Working Paper – Urban Design, Landscape Character and Visual Impact. If any further viewpoints were identified during detailed design that have a moderate–high or high impact, screen planting also be considered.	Construction	Roadworks Manager / Environment Manager	Submissions / PIR (UD6)
UD6	Disturbed areas will be progressively revegetated throughout the construction period.	Construction	Roadworks Manager / Environment Manager	Submissions / PIR (UD7)
UD7	Where required, typical landscape treatments for ancillary facilities in forest areas will include: · Providing screen planting. · Considering reinstatement of disturbed forest in heavily forested. · Considering the importance of the visual landscape at each location and allowing restoration of important forest vegetation to prominent ridge lines or other landscape elements where feasible and reasonable. · Negotiating with private landowners, as applicable, to determine future treatments for other non-forested ancillary facility locations. · Re-grading disturbed areas to achieve a sustainable and functional landform. · Stabilising all surfaces in accordance with good engineering and environmental practice.	Construction	Roadworks Manager / Environment Manager	Submissions / PIR (UD8)
UD8	Typical landscape treatments for ancillary facilities in agricultural areas will include: · Considering returning remnant agricultural land to agricultural uses. · Providing screen planting. · Reinstating riparian vegetation through ancillary facilities, where practicable, in the open landscape. · Considering the visual landscape at each ancillary facility and considering restoration of important forest vegetation to prominent ridge lines or other landscape elements where feasible and reasonable. · Re-grading disturbed areas to achieve a sustainable and functional	Construction	Roadworks Manager / Environment Manager	Submissions / PIR (UD9)

ID	Measure / Requirement	When to implement	Responsibility	Reference
	landform. · Stabilising all surfaces in accordance with good engineering and environmental practice.			
UD9	The extent of excavation and the landscaping strategy at borrow sites will be reviewed considering material requirements on the project and the visual impact on the resultant cuttings.	Pre-construction	Project Engineer / Site Engineer	Submissions / PIR (UD10)
UD10	Landscape and rehabilitation works will be monitored and remedial measures implemented where required until vegetation has stabilised.	Operation	Project Engineer / Site Engineer	Submissions / PIR (UD13)
UD11	The mounding profile of any earth mound will blend suitably into the existing landscape setting. Any mounding to be landscaped will be compacted in 1.5 metre layers with 1:3 maximum batter slopes where reasonable in consideration of constraints within the project corridor. Where feasible and reasonable, permanent mounds will be treated with ameliorants and overlaid with topsoil to minimum 150 millimetres to ensure suitable planting conditions are achieved.	Construction	Roadworks Manager / Environment Manager	Submissions / PIR (UD14)

Table 1-2 Traffic and transport management and mitigation measures

ID	Measure / Requirement	When to implement	Responsibility	Reference
TRAFFIC AND TRANSPORT				
T&T1	Construction traffic management plans will be prepared and implemented for work sites. They will include: • Identification of all public roads to be used by construction traffic. • Management methods to direct construction traffic to use identified roads. • Identification of all public roads that may be partially or completely closed during construction, and the expected timing and duration of closures. • Details on likely impacts on existing traffic (including pedestrians, vehicles, cyclists and disabled persons). • Temporary traffic arrangement measures, including property access. • Details on access to construction sites, including entry and exit locations, and measures to prevent construction vehicles queuing on public roads. • A response plan for any incident involving construction traffic. • Mechanisms for monitoring, reviewing and amending the success of the plans. The traffic management plans be prepared in consultation with councils.	Pre-construction and construction	Project Engineer / Site Engineer	Submissions / PIR (T&T1)
T&T2	Traffic control schemes will be inspected as follows: • Pre-start and pre-closedown inspections of short-term traffic controls. • Weekly inspections of long-term traffic controls. • Night-time inspections of long-term traffic controls.	Construction	Roadworks Manager / Environment Manager	Submissions / PIR (T&T3)
T&T3	Vehicle movement plans and haulage route plans will be prepared. Drivers will be briefed on these vehicle movement plans during project induction. Deliveries be planned to occur outside peak traffic periods, where possible. To minimise queuing of construction vehicles on the highway, site personnel use two-way radios to call up haulage trucks from layover areas on a 'just in time' basis.	Construction	Roadworks Manager / Environment Manager	Submissions / PIR (T&T4)

ID	Measure / Requirement	When to implement	Responsibility	Reference
T&T4	Applications for Road Occupancy licences will be submitted to Roads and Maritime Services and the relevant council at least 10 working days prior to proposed occupancy.	Pre-construction and construction	Project Engineer / Site Engineer	Submissions / PIR (T&T5)
T&T5	Pre-construction road dilapidation reports will be prepared for all roads likely to be used by construction traffic. Post-construction road dilapidation reports will be prepared following the completion of construction for all roads assessed prior to construction. Dilapidation resulting from construction activity will be repaired. Copies of road dilapidation reports will be sent to the relevant roads authority.	Pre-construction and construction	Project Engineer / Site Engineer	Submissions / PIR (T&T6)
T&T6	Access be maintained to properties during construction including, where necessary and feasible, temporary alternative access unless otherwise agreed with property owners. Where any legal access is permanently affected, alternative access to an equivalent standard to and from a public road will be provided where a property has no other legal means of access and where such alternative access is feasible and practical. Where alternative access arrangements are not feasible or practical and a property is left with no access to a public road, negotiations will be undertaken with the relevant property owner for acquisition of the property in accordance with the provisions of the *Land Acquisition (Just Terms Compensation) Act 1991*.	Construction	Roadworks Manager / Environment Manager	Submissions / PIR (T&T7)
T&T7	Where changes in access affect bus stop locations, temporary alternatives will be provided in conjunction with bus operators and affected schools to maintain access during construction.	Construction	Roadworks Manager / Environment Manager	Submissions / PIR (T&T8)
T&T8	Where access to State forest land is affected during construction, a new access route will be provided in consultation with the Department of Primary Industries (Forests NSW).	Construction	Roadworks Manager / Environment Manager	Submissions / PIR (T&T9)

Table 1-3 Land use and property management and mitigation measures

ID	Measure / Requirement	When to implement	Responsibility	Reference
LAND USE AND PROPERTY				
LU1	Ongoing communication and consultation will be undertaken with directly affected property owners about the property acquisition process. This includes the provision of information on the timing of acquisitions, and the process for property acquisitions under the *Land Acquisition (Just Terms Compensation) Act 1991* and Roads and Maritime' Land Acquisition Policy (RTA, 1999).	Pre-construction	Project Engineer / Site Engineer	Submissions / PIR (LU1)
LU2	Ongoing consultation will be undertaken with directly affected property owners during the detailed design phase to identify measures to mitigate potential impacts on the use and viability of land. This will relate to matters such as adjustments to fencing, access, farm infrastructure and relocation of impacted ancillary structures, as required.	Pre-construction	Project Engineer / Site Engineer	Submissions / PIR (LU2)
LU3	Property adjustments will be completed for fencing, access tracks, cattle underpasses and other farm infrastructure in consultation with the impacted land owner.	Pre-construction	Project Engineer / Site Engineer	Submissions / PIR (LU3)
LU4	The Fencing Strategy will be further developed during detailed design, in consultation with relevant stakeholders. This will build upon the principles of the strategy described in Chapter 3 of the Submissions and Preferred Infrastructure Report (Roads and Maritime, 2013).	Pre-construction	Project Engineer / Site Engineer	Submissions / PIR (LU4)
LU5	Sterilisation and severance of land uses and lots will be minimised by amalgamating severed parcels of land together, where possible, with provision of road access, in accordance with the project's remnant land use strategy.	Pre-construction	Roadworks Manager / Environment Manager	Submissions / PIR (LU5)
LU6	Where required, acquisition of State forests will be minimised in accordance with the provisions of the *Forestry Act* 2012. Revocation of land dedicated or reserved as national parks or nature reserves will be in accordance with the *National Parks and Wildlife Act 1974*. Acquisition of land owned by Local Aboriginal Land Councils will be in accordance with the provisions of the *Aboriginal Land Rights Act 1983*.	Pre-construction	Project Engineer / Site Engineer	Submissions / PIR (LU6)
LU7	A remnant land strategy to minimise land use severance and sterilisation, and a mitigation strategy for final land uses will be developed in consultation with cane industry stakeholders, Coffs Harbour City, Clarence Valley, Richmond Valley and Ballina Councils.	Pre-construction	Project Engineer / Site Engineer	Submissions / PIR (LU7)
LU8	Access to properties near construction works will be maintained,	Construction	Roadworks Manager /	Submissions / PIR (LU9)

ID	Measure / Requirement	When to implement	Responsibility	Reference
	including where required for the movement of farm equipment and livestock between properties, unless otherwise agreed with landowners.		Environment Manager	
LU9	Where temporary changes to property access are required during construction, alternative access will be determined in consultation with affected property owners and tenants.	Construction	Roadworks Manager / Environment Manager	Submissions (LU10) / PIR
LU10	There will be ongoing communication with local communities about changes to the local road network, including likely delays and disruptions and alternative accesses if required.	Construction	Roadworks Manager / Environment Manager	Submissions (LU11) / PIR
Construction impacts to primary industry, including forestry, an agriculture uses				
LU11	Where possible, onsite reuse of any spoil is the preferred solution for managing the impacts, although alternative options for the reuse or disposal of spoil will be identified in the surplus material management plan.	Construction	Roadworks Manager / Environment Manager	Submissions (LU12) / PIR
LU12	The management of surplus material will be further developed during detailed design, in consultation with relevant stakeholders. This will build upon the principles of the strategy described in Chapter 3 of the Submissions and Preferred Infrastructure Report (Roads and Maritime, 2013).	Pre-construction	Project Engineer / Site Engineer	Submissions (LU13) / PIR
LU13	Forestry Corporation of NSW will be able to harvest millable timber in affected State forests prior to works commencing. However, consideration will also be given to opportunities for the productive use of trees removed from non-State forest areas of the project, including ancillary facilities where necessary.	Construction	Roadworks Manager / Environment Manager	Submissions (LU14) / PIR
LU14	Environmental management measures will be implemented to minimise potential for impacts on adjoining agricultural uses, including from changes in water quality and spread of weeds and pests.	Construction	Roadworks Manager / Environment Manager	Submissions (LU15) / PIR
LU15	Where pesticides are required during construction, implement appropriate environmental management measures to avoid potential impacts on adjoining agricultural properties.	Construction	Roadworks Manager / Environment Manager	Submissions (LU16) / PIR
LU16	There will be ongoing consultation and communication with managers of agricultural properties to identify any potential impacts on nearby construction workers from farm operations (ie use of pesticides on agricultural properties).	Construction	Roadworks Manager / Environment Manager	Submissions (LU17) / PIR
Utilities and infrastructure				
LU17	Relocation or adjustment of infrastructure will be planned to minimise disruptions and impacts on surrounding properties.	Construction	Roadworks Manager / Environment Manager	Submissions (LU19) / PIR
LU18	Communication will be undertaken with nearby communities about the	Construction	Roadworks Manager /	Submissions / PIR

ID	Measure / Requirement	When to implement	Responsibility	Reference
	timing and duration of potential disruptions to infrastructure.		Environment Manager	(LU20)
Property management				
LU19	Roads and Maritime' land that is required for the project will be appropriately maintained. This will be undertaken by regional Roads and Maritime officers or a designated local authority. Roads and Maritime manage the leasing and maintenance of property identified as suitable for tenants.	Operation	Roadworks Manager / Environment Manager	Submissions / PIR (LU21)
Operational impacts to primary industries				
LU20	Ongoing consultation will be undertaken with owners of agricultural properties affected by the project – through acquisition, changes to local access or fragmentation of properties – about potential impacts on farming operations and potential measures to manage or mitigate identified impacts.	Pre-construction / Construction	Roadworks Manager / Environment Manager	Submissions / PIR (LU23)
LU21	Consultation with Forestry Corporation will be undertaken regarding access to and within State forests where required, in accordance with the *Forestry Act* 2012.	Pre-construction / Construction	Roadworks Manager / Environment Manager	Submissions / PIR (LU24)
LU22	Consultation with Forestry Corporation will be undertaken regarding the relocation of fire trails directly impacted by the project's construction or operation.	Pre-construction / Construction	Roadworks Manager / Environment Manager	Submissions / PIR (LU25)
Property access				
LU23	As far as possible, property accesses will be reinstated or new access provided, in consultation with impacted landowners.	Construction	Roadworks Manager / Environment Manager	Submissions / PIR (LU27)
LU24	Access to national parks and nature reserves will be reinstated in consultation with the relevant department in Office of Environment and Heritage.	Construction	Project Engineer / Site Engineer	Submissions / PIR (LU28)
Mining and petroleum production				
LU26	Consultation will be undertaken with the relevant State Government agency to consider any future coal seam gas production in the vicinity of the project.	Pre-construction	Project Engineer / Site Engineer	Submissions / PIR (LU30)
Utilities and infrastructure				
LU27	Consultation will be undertaken with service and utility providers to verify locations, impacts and any relocation or construction protection	Preconstruction	Roadworks Manager /	Submissions / PIR (LU31)

ID	Measure / Requirement	When to implement	Responsibility	Reference
	work required.		Environment Manager	

Table 1-4 Social and economic management and mitigation measures

ID	Measure / Requirement	When to implement	Responsibility	Reference
SOCIAL AND ECONOMIC				
SE1	Consultation will be undertaken with local business owners, industry and tourism operators directly affected by construction and located closest to construction works. The focus will be on the timing, duration and likely impact of construction activities, to identify appropriate measures to manage potential impacts.	Pre-construction and construction	Roadworks Manager / Environment Manager	Submissions / PIR (SE1)
SE2	Consultation will be undertaken with managers of community services and facilities near the proposed construction works, to ensure that potential impacts are appropriately managed.	Pre-construction and construction	Roadworks Manager / Environment Manager	Submissions / PIR (SE2)
SE3	Consultation will be undertaken with residents and local communities closest to construction works about construction activities, including timing, duration and likely impacts.	Pre-construction and construction	Roadworks Manager / Environment Manager	Submissions / PIR (SE3)
SE4	Maintain access to properties near to the project during construction, including, where required, for the movement of farm equipment and livestock between properties, and other affected agribusinesses.	Construction	Roadworks Manager / Environment Manager	Submissions / PIR (SE7)
SE5	Where temporary changes to property access are required during construction, alternative access will be determined in consultation with affected property owners and tenants.	Construction	Roadworks Manager / Environment Manager	Submissions / PIR (SE8)
SE6	Undertake consultation with community facilities located adjacent to the project about proposed changes to local access.	Construction	Roadworks Manager / Environment Manager	Submissions / PIR (SE9)
SE7	Undertake early and ongoing communication and consultation with emergency services to allow planning for potential changes to response patterns and input into the design development.	Construction	Roadworks Manager / Environment Manager	Submissions / PIR (SE10)

2 Compliance management

2.1 Roles and responsibilities

The Contractors Project Team's organisational structure and overall roles and responsibilities are outlined in *Section 4.2 of the CEMP*. Specific responsibilities for the implementation of environmental controls are detailed in *Chapter 1 of this Plan*.

2.2 Training

Details regarding staff induction and training are outlined in Chapter 5 of the CEMP.

2.3 Monitoring and inspection

Regular monitoring and inspections will be undertaken during construction.

Additional requirements and responsibilities in relation to inspections, in addition to those in Table 1-1, are documented in *Section 8.2 of the CEMP*.

2.4 Auditing

Audits (both internal and external) will be undertaken to assess the effectiveness of environmental mitigation and management measures, compliance with this sub plan, CoA and other relevant approvals, licenses and guidelines.

Audit requirements are detailed in *Section 8.3 of the CEMP*.

2.5 Reporting

Reporting requirements and responsibilities are documented in the *Sections 8.3, 8.4 and 8.5 of the CEMP.*