Member of the Surbana Jurong Group

Eurobodalla Southern Water Supply Storage Project: Stage 1 - TRIPS Site Clearing

Construction Environmental Management Plan

Prepared for: Eurobodalla Shire Council
Reference No: 30012835
14/05/2020

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1.2	14/05/2020	J. Adams	C. Purss	C. Purss

Glossary/Abbreviations

Abbreviation	Detail
CEMP	Construction Environmental Management Plan
DPIE	NSW Department of Planning, Industry and Environment
EIS	Environmental Impact Statement
Environmental aspect	Defined by AS/NZS ISO 14001:2015 as an element of an organisation's activities, products or services that can interact with the environment
EES	Environment, Energy and Science Group
Environmental impact	Defined by AS/NZS ISO 14001:2015 as any change to the environment, whether adverse or beneficial, wholly or partially resulting from an organisation's environmental aspects
Environmental objective	Defined by AS/NZS ISO 14001:2015 as an overall environmental goal, consistent with the environmental policy, that an organisation sets itself to achieve
Environmental target	Defined by AS/NZS ISO 14001:2015 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
EPA	NSW Environment Protection Authority
EP&A Act	*Environmental Planning and Assessment Act*
Heavy vehicle	Trucks and buses (defined by AusRoads vehicles classifications, class 3 and higher)
Light vehicle	Passenger vehicles, cars, vans, utilities, motorcycles (defined by AusRoads vehicles classifications as class 1 and class 2)
Night	The period from 10pm to 7am on Monday to Saturday, and 10pm to 8am on Sundays and Public Holidays
NVMP	Noise and Vibration Management Plan
POEO Act	*Protection of the Environment Operations Act 1997*
Sensitive receivers	A location where people are likely to work, occupy or reside, including a dwelling, school, hospital, office or public recreational area
The Department	Refers to the DPIE
TMP	Traffic Management Plan
TRIPS	Tuross River Intake Pump Station

Table of Contents

Table of Figures

List of Tables

Appendices

1. Introduction

1.1. Purpose

This Construction Environmental Management Plan (CEMP) has been prepared to outline and describe how the contractor responsible for Stage 1 – Tuross River Intake Pump Station (TRIPS) site clearing for the Eurobodalla Southern Water Supply Storage Project will comply with State Significant Development (SSD) 7089 conditions of consent, the EIS, Addendum Submissions Report and all associated licences, permits and approvals required for the Eurobodalla Southern Water Supply Project.

The CEMP specifically outlines how the Stage 1 - TRIPS site clearing contractor is to minimise environmental risks and achieve environmental outcomes for the project by providing a structured approach to ensure appropriate mitigation measures and controls are implemented.

The CEMP has been prepared in accordance with the *Guideline for the Preparation of Environmental Management Plans* (DIPNR) and:

- Describes the Stage 1 – TRIPS site clearing activities to be undertaken and their timing
- Identifies the planning approval requirements, legal obligations, permits, licences, standards and guidelines that clearing activities are to adhere to
- Provides specific mitigation measures and controls to be implemented on-site to avoid or minimise negative environmental impacts
- Describes the environmental management related roles and responsibilities including competence, training and awareness, effective communication and consultation processes
- Outlines a monitoring, auditing and reporting regime to ensure compliance with the requirements including incident investigation and action response.

The requirements of SSD 7089 conditions of consent, including agency consultation requirements, their relevance and where they are covered in this CEMP are provided in Section 2.

This CEMP is applicable to all staff and sub-contractors associated with the Stage 1 – TRIPS site clearing work.

1.2. Objectives

The objective of the Stage 1 - TRIPS site clearing CEMP is to ensure all mitigation measures and licence/permit requirements relevant to environmental management are described, scheduled and assigned responsibility as outlined in:

- The Environmental Impact Statement for Eurobodalla Southern Water Supply Storage Project
- Addendum Submissions Report for the Eurobodalla Southern Water Supply Storage Project
- SSD 7089 Conditions of Consent for the Eurobodalla Southern Water Supply Storage Project.

1.3. Project background

Eurobodalla Shire Council (ESC) are seeking to augment water supply through construction of the Eurobodalla Southern Water Supply Storage Project. The development site for the Eurobodalla Southern Water Supply Storage Project is located about 30 kilometres south of Moruya. The storage site would be located on an unnamed third-order ephemeral stream about 950 metres east of the Tuross River, within the Tuross River catchment, and predominantly within the Bodalla State Forest. The TRIPS is located on the Tuross River (Figure 1-1).

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COORDINATE SYSTEM GDA 1994 MGA Zone 56

FIG NO. 1-1

FIGURE TITLE TRIPS Site Location

PROJECT NO. 30012385

PROJECT TITLE TRIPS Site CEMP

CREATED BY EC13990

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Location: \\AUSYFSV003\Group\projects\30012127 – Eurobodalla Southern Strorage\014 GIS, Photos & Graphics\01 GIS\Maps\CEMP\30012385_CEMP_Locality Map.mxd

Last updated by: EC13990 on 3/12/2019 at 9:58

The Eurobodalla Southern Water Supply Storage Project is progressing in two stages, specifically:

- Stage 1 –TRIPS site clearing
- Stage 2 – Clearing and construction of the remaining components of the Eurobodalla Southern Water Supply Storage Project.

This CEMP concerns only the Stage 1 – TRIPS site clearing activities. Clearing of the TRIPS site does not include any in-stream works. As specified in the SSD 7089 conditions of consent, the following sub-plans accompany this CEMP:

- Flora and Fauna Management Plan (FFMP)
- Soil and Water Management Plan (SWMP)
- Emergency Response Procedure (ERP)
- Unexpected Find Procedure (UFP).

Additional CEMPs and associated sub-plans would be developed for the Stage 2 package of works.

1.4. TRIPS site clearing activities

Activities associated with Stage 1 – TRIPS site clearing works include:

- Site mobilisation and preparation of the work area, including:
  - Installation of erosion and sediment control as outlined in the SWMP (Appendix A)
  - Implementation of a nest-box strategy and other threatened fauna pre-clearance strategies as outlined in the FFMP (Appendix B)
- Vegetation removal, involving:
  - Slashing light vegetation down to ground level with either a slasher or flail mower. The slashed vegetation, unless there is a specific need for it not to, would be left in place
  - Larger trees will be cut down, but the trunks and roots are to be left in situ to minimise of soil erosion
  - Heads of larger trees are to be mulched and the mulch used in windrows to control potential run off if appropriate and/or spread over disturbed earth to minimise soil erosion
  - Larger timber is to be removed from the site
- Stabilisation of the TRIPS site in accordance with the SWMP in preparation for earthworks and other activities to be undertaken in the Stage 2 package of works.

The extent of the clearing permitted is shown in Figure 1-2. The Stage 1 - TRIPS site clearing works are to be limited to clearing of vegetation only. They will not involve any construction activities in the Tuross River, and will not involve any earthworks or excavation. There may be some soil disturbance due to the machinery movements.

During Stage 1 – TRIPS site clearing, a compound would be established for use as a lay down area for storage of materials, contractor vehicles and equipment. The location of the temporary compound area and site office is shown in Figure 1-3. The compound has been located as far as possible, but still within the development site boundary, from the Tuross River to minimise environmental impacts. Suitable environmental controls are to be implemented as detailed in this CEMP and sub-plans.

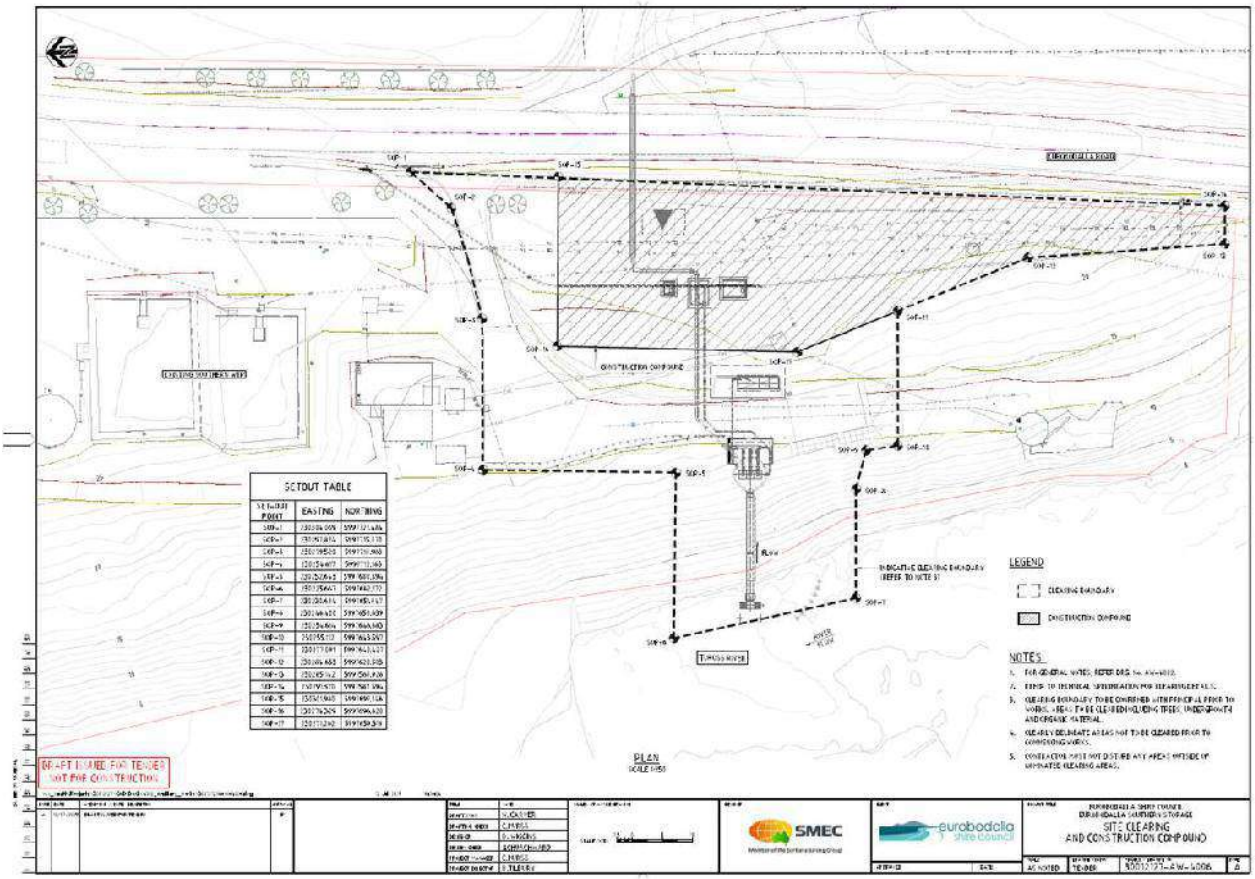

Figure 1-2. Approved vegetation clearance boundary for the TRIPS site

Plant and equipment to be used during Stage 1 – TRIPS site clearing include:

- Ute
- Chainsaws
- Wood chipper
- Trucks.

TRIPS site clearing is to be conducted during the following hours:

- 7:00 a.m. to 6:00 p.m. Monday to Friday
- 8:00 a.m. to 1:00 p.m. Saturday
- At no time on Sunday or public holidays.

Works outside the hours outlined above may be undertaken under the following circumstances:

- Works that are inaudible at the nearest sensitive receivers
- For the delivery of materials required outside these hours by the NSW Police Force or other authorities for safety reasons
- Where it is required in an emergency to avoid the loss of life, property or to prevent environmental harm
- Where a variation is approved in advance in writing by the Planning Secretary or his nominee if appropriate justification is provided for the works.

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COORDINATE SYSTEM GDA 1994 MGA Zone 56

FIG NO. 1-3

FIGURE TITLE Site Compound

PROJECT NO. 30012385

PROJECT TITLE TRIPS Site CEMP

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2. Legislation and approvals

2.1. Legal requirements

A register of legal requirement relevant to the Stage 1 - TRIPS site clearing activities are provided in Table 2-1.

Table 2-1. Register of legal requirements

Legislation	Requirement	Authority
Environmental Planning and Assessment Act 1979	Modification to the project scope requiring modification to the project approval.	Department of Planning, Industry and Environment
Protection of the Environment Operations Act 1997	Any unauthorised pollution of waters is considered an offence under section 120 of the POEO Act. Notification to EPA of any pollution incidents that have caused or give rise to material harm (section 148).	NSW EPA
Biodiversity Conservation Act 2016	Protection of threatened species and communities. Duty to notify EES in the event that unexpected threatened species are impacted or injured during works.	DPIE EES
National Parks and Wildlife Act 1974	Protection of Aboriginal Objects and Places. Duty to notify EES in the event that an Aboriginal object is uncovered during the works.	DPIE EES
Biosecurity Act 2015	Priority weeds are regulated under the Biosecurity Act with a general biosecurity duty to prevent, eliminate or minimize any biosecurity risk they may pose. Some priority weeds have additional management obligations which may apply generally, or under specific circumstances. Any person who deals with any plant, who knows (or ought to know) of any biosecurity risk, has a duty to ensure the risk is prevented, eliminated or minimised as far as is reasonably practicable.	Department of Primary Industries
Rural Fires Act 1997	Sections 63(1) and 63(2) of the Rural Fires Act 1997 require public authorities and owners/occupiers of land to take all practicable steps to prevent the occurrence of bushfires on, and to minimise the danger of the spread of bushfires on or from, that land	Rural Fire Service

2.2. Environmental Planning and Assessment Act 1979

The *Environmental Planning and Assessment Act 1979* (EP&A Act) establishes the framework for environmental planning and assessment in NSW.

Part 4 of the EP&A Act provides for development that requires consent under an environmental planning instrument. Division 4.7 (previously Part 4, Division 4.1) of Part 4 deals with SSD which due to

the size, economic value or potential impacts of the development, is deemed to have State significance. Section 4.36 provides for certain types of development or development on specified land to be declared SSD by means of a SEPP or by a Ministerial Order. The full list of SSD development types and identified sites is provided in Schedules 1 and 2 of *State Environmental Planning Policy (State and Regional Development) 2011* (SRD SEPP).

Section 4.38 provides for the Minister for Planning to be the consent authority for SSD. However, section 2.4 provides for the Minister to delegate the consent authority function to the Planning Assessment Commission, the Secretary of the DP&E or to any other public authority.

An Environmental Impact Statement (EIS) was prepared on behalf of the proponent, ESC, under Part 4, Division 4.7 of the EP&A Act as SSD 7089. The EIS went on public exhibition in September 2018 and a Submissions Report was subsequently prepared to outline the responses to submissions received. The project was approved by the Department of Planning, Industry and Environment (DPIE) as the determining authority, on 17 October 2019, and conditions of consent issued.

All personnel associated with the either Stage 1 or Stage 2 works for the Eurobodalla Southern Water Supply Storage Project must comply with all environmental requirements for the Project, including the SSD 7089 conditions of consent, legal and statutory requirements, permits, licences, standards and guidelines. The Conditions of Consent relating to the Eurobodalla Southern Water Supply Storage Project and their applicability to the Stage 1 - TRIPS site clearing is outlined in Table 2-2.

As the Eurobodalla Southern Water Supply Storage Project was determined to be SSD it must also comply with the relevant guidelines for SSD under the EP&A Act. Part 4, Division 4.7 specifies the approvals and legislation etc. that does not apply to an approved SSD project, and those that must be applied consistently along with the SSD consent.

Table 2-2. Conditions of Consent

Condition Reference	Condition Requirement	Condition Delivery
B2	No more than 54.61 of native vegetation is to be cleared	Appendix B – FFMP
B3	Prior to clearing of native vegetation, the Applicant must prepare a Construction Flora and Fauna Management Plan (CCFFMP) in consultation with DPIE Fisheries and to the satisfaction of the Planning Secretary.	Appendix B – FFMP
B4	The CCFFMP must form part of the CEMP required by Condition C2 and, in addition to the general management plan requirements listed in Condition C1, the CCFFMP must include the following: (a) measures to ensure biodiversity values not intended to be impacted are delineated by mapping of 'no-go areas' and the installation of on-site measures such as temporary exclusion fencing prior to clearing; (b) measures to minimise the risk of introducing weed species via construction vehicles, plant and equipment and control of pest and weed species existing at the site; (c) method of vegetation removal and measures to minimise impacts outside the water storage facility construction boundary and within the perimeter road construction boundary as a result of the equipment used for clearing and general access for heavy vehicles and construction plant and equipment; (d) options to reuse cleared vegetation, in preference to burning, such as relocation of hollow logs for habitat and mulch for use in areas to be revegetated within the site and use elsewhere within the local area; (e) measures to minimise the impacts on fauna within the site including the installation of nest boxes prior to clearing, relocation of fauna to adjacent habitat (including any fish during dewatering of the cofferdam), staged clearing and timing of clearing outside breeding seasons; and (f) details on rehabilitation and revegetation including: (i) use of locally indigenous plant species including collection of seed prior to clearing for this purpose;	Appendix B – FFMP (where applicable)

Condition Reference	Condition Requirement	Condition Delivery
	(ii) for construction areas outside the full supply level including the construction compounds, on-site quarry areas and the new storage access road batters; (iii) for the construction area at the existing water treatment plant (WTP) including for the bed and banks of the Tuross River affected by the temporary cofferdam.	
B5	Prior to removing/clearing any vegetation or any demolition, pre-clearing surveys and inspections for threatened species must be undertaken. The surveys and inspections, and any subsequent relocation of species and associated management measures, must be undertaken under the guidance of a suitably qualified and experienced ecologist.	Completed for TRIPS site to inform Appendix B – FFMP
B6	The Applicant must: (a) not commence any clearing work until the CCFFMP is approved by the Planning Secretary; and (b) implement the most recent version of the CCFFMP approved by the Planning Secretary for the duration of works.	Appendix B – FFMP
B7	Before any clearing or construction works, the Applicant must submit a Biodiversity Offset Strategy to the Planning Secretary for approval	BOS prepared and to be submitted by Council
B8	Within 24 months of approval of the Biodiversity Offset Strategy, or another timeframe agreed to by the Planning Secretary, the Applicant must prepare and implement a Biodiversity Offset Package which outlines how the retirement of credits will be achieved in accordance with the NSW Biodiversity Offsets Policy for Major Projects, i.e. by: (a) acquiring or retiring credits under the Biobanking scheme established under the-then Threatened Species Conservation Act 1995; (b) making payments into an offset fund that has been established by the NSW Government; or (c) providing suitable supplementary measures.	Not applicable to this CEMP.
B13	Prior to commencement of any surface disturbance the Applicant must prepare a Construction Soil and Water Management Plan as part of the CEMP required by Condition C2. The Construction Soil and Water	Appendix A - SWMP

Condition Reference	Condition Requirement	Condition Delivery
	Management Plan must be prepared by a suitable qualified person(s) in consultation with the EPA and include: (a) guidelines and procedures to reuse dirty water collected in sediment basins with reuse prioritised over discharge to receiving waters; (b) an assessment of cumulative risks associated with sediment pond settling agents; (c) discharge criteria based on an assessment of potential impacts against the NSW Water Quality Objectives (WQO) for receiving waters; (d) identification and implementation of mitigation measures to avoid pollution including, but not limited to, dosing procedures, discharge procedures, direct ecotoxicology testing; (e) a detailed Erosion and Sediment Control Plan prepared in consultation with DPIE Fisheries and Water (in addition to the EPA); and (f) evidence of consultation with the EPA and DPIE Fisheries and Water.	
B14	Erosion and sediment control measures must: (a) be in accordance with the relevant requirements of Managing Urban Stormwater: Soils and Construction Volume 1 (Landcom, 2004) and mitigation measures outlined in the Policy and guidelines for fish habitat conservation and management (DPI 2013); and (b) have sediment basins sized to a 90th or 95th percentile 5-day rainfall depth or as otherwise agreed with the EPA during the preparation of the Erosion and Sediment Control Plan referred to in Condition B13(e).	Appendix A - SWMP
B15	The development must comply with section 120 of the POEO Act, which prohibits the pollution of waters, except as expressly provided for in an EPL	Appendix A - SWMP
B16	The Applicant must store all chemicals, fuels and oils used on-site in accordance with: (a) the requirements of all relevant Australian Standards; and (b) the NSW EPA's Storing and Handling of Liquids: Environmental Protection – Participants Manual' if the chemicals are liquids.	Section 3.6

Condition Reference	Condition Requirement	Condition Delivery
B17	In the event of an inconsistency between the requirements Conditions B16(a) and B16(b), the most stringent requirement must prevail to the extent of the inconsistency.	Section 3.6
B20	The CEMP required by Condition C2 and OEMP required by Condition C5 must include emergency response procedures in the event of flooding or bushfire.	Appendix C - ERP
B25	The Applicant must take all reasonable steps to minimise dust generated during all works authorised by this consent	Section 3.5 Appendix A - SWMP
B26	During construction, the Applicant must ensure that: (a) unsealed roads used for truck access and exposed surfaces and stockpiles within the construction area are regularly watered to suppress dust; (b) all trucks entering or leaving the site with loads have their loads covered; (c) trucks associated with the development do not track dirt onto the public road network; (d) public roads used by these trucks are kept clean; and (e) measures are implemented to minimise dust from exposed surfaces following vegetation clearing and until transfer of storage water to the WTP.	Section 3.5 Appendix A – SWMP
B27	The Applicant must install and operate equipment in line with best practice to ensure that the development complies with all load limits, air quality criteria/air emission limits and air quality monitoring requirements as specified in the EPL applicable to the site	An EPL not applicable to the activities cover under this CEMP
B28	Prior to the commencement of construction, the Applicant must prepare a Construction Traffic Management Plan for the development. The plan must form part of the CEMP required by Condition C2 and must: (a) be prepared by a suitably qualified and experienced person(s); (b) include a Road Safety Audit for the Eurobodalla Road/Nerrigundah Mountain Road intersection in accordance with the relevant Austroads guidelines; (c) detail the measures that are to be implemented to ensure road safety during construction;	Not applicable to this CEMP

Condition Reference	Condition Requirement	Condition Delivery
	(d) detail heavy vehicle routes, access and parking arrangements; and (e) include procedures for notifying residents of the duration and times when heavy vehicles are accessing the site via particular routes and in particular Waincourt Road.	
B29	The Applicant must: (a) not commence construction until the Construction Traffic Management Plan is prepared in accordance with Condition B28; and (b) implement the most recent version of the Construction Traffic Management Plan for the duration of construction.	Not applicable to this CEMP
B30	The Applicant must ensure that public access is managed to prevent erosion or damage to native vegetation by restricting access through site fencing to pedestrians	Not applicable to this CEMP
B31	The Applicant must comply with the hours detailed in the table below, unless otherwise agreed in writing by the Planning Secretary.  Activity / Day / Time Earthworks and construction (other than blasting): Monday – Friday 7 am to 6 pm; Saturday 8 am to 1 pm; not permitted on public holidays Blasting: Monday – Friday 9 am to 3 pm; not permitted on public holidays Operation: Monday – Sunday 24 hours	Section 1.4
B32	Works outside of the hours identified in Condition B31 may be undertaken in the following circumstances: (a) works that are inaudible at the nearest sensitive receivers; or (b) for the delivery of materials required outside these hours by the NSW Police Force or other authorities for safety reasons; or (c) where it is required in an emergency to avoid the loss of lives, property or to prevent environmental harm; or	Section 1.4

Condition Reference	Condition Requirement	Condition Delivery
	(d) where a variation is approved in advance in writing by the Planning Secretary or his nominee if appropriate justification is provided for the works.	
B33	The development must be constructed to achieve the construction noise management levels detailed in the Interim Construction Noise Guideline (DECC, 2009) (as may be updated or replaced from time to time). All feasible and reasonable noise mitigation measures must be implemented and any activities that could exceed the construction noise management levels must be identified and managed in accordance with the management and mitigation measures in Appendix 2.	Not applicable to this CEMP
B34	The Applicant must prepare a Construction Noise and Vibration Management Plan for the development. The Plan must form part of a CEMP in accordance with Condition C2 and must: (a) be prepared by a suitably qualified and experienced noise expert; (b) describe procedures for achieving the noise management levels in EPA's Interim Construction Noise Guideline (DECC, 2009) (as may be updated or replaced from time to time); (c) describe the measures to be implemented to manage high noise generating works such as blasting, in close proximity to sensitive receivers; and (d) include strategies that have been developed with the affected sensitive receivers for managing high noise generating works.	Not applicable to this CEMP
B35	The Applicant must: (a) not commence construction of any relevant stage until the Construction Noise and Vibration Management Plan is prepared in accordance with Condition B34; and (b) implement the most recent version of the Construction Noise and Vibration Management Plan for the duration of construction.	Not applicable to this CEMP
B40	If any item or object of Aboriginal heritage significance is identified on site: (a) all work in the immediate vicinity of the suspected Aboriginal item or object must cease immediately; (b) a 10 m wide buffer area around the suspected item or object must be cordoned off; and	Section 3.4 Appendix D - UFP

Condition Reference	Condition Requirement	Condition Delivery
	(c) the EESG must be contacted immediately.	
B41	Work in the immediate vicinity of the Aboriginal item or object may only recommence in accordance with the provisions of Part 6 of the National Parks and Wildlife Act 1974	Section 3.4 Appendix D - UFP
B42	If any unexpected archaeological relics are uncovered: (a) all work in the immediate vicinity of the find must cease immediately; (b) the Heritage Division DPC must be notified; (c) a suitably qualified and experienced archaeologist must record and assess the significance of the find with the results reported to the Planning Secretary and the Heritage Division DPC; and (d) where required by Heritage Division DPC, a Management Strategy is to be developed and implemented in consultation with the Heritage Division DPC.	Section 3.4 Appendix D - UFP
B43	Work in the immediate vicinity of the find may only recommence on the advice of the archaeologist	Section 3.4 Appendix D - UFP
B44	The CEMP required under Condition C2 must detail the quantities of each waste type generated during construction and the proposed reuse, recycling and disposal locations.	Section 3.2
B45	The Applicant must assess and classify all liquid and non-liquid wastes to be taken off site in accordance with the latest version of EPA's Waste Classification Guidelines Part 1: Classifying Waste (EPA, 2014) and dispose of all wastes to a facility that may lawfully accept the waste.	Section 3.2
B46	The Applicant must retain all sampling and waste classification data for the life of the development in accordance with the requirements of the EPA	Section 3.2
C1	Management plans required under this consent must be prepared in accordance with relevant guidelines, and include: (a) details of: (i) the relevant statutory requirements (including any relevant approval, licence or lease conditions);	This CEMP Appendix A – SWMP Appendix B – FFMP Appendix C – ERP

Condition Reference	Condition Requirement	Condition Delivery
	(ii) any relevant limits or performance measures and criteria; and (iii) the specific performance indicators that are proposed to be used to judge the performance of, or guide the implementation of, the development or any management measures; (b) a description of the measures to be implemented to comply with the relevant statutory requirements, limits, or performance measures and criteria; (c) a program to monitor and report on the: (i) impacts and environmental performance of the development; (ii) effectiveness of the management measures set out pursuant to paragraph (b) above; (d) a contingency plan to manage any unpredicted impacts and their consequences and to ensure that ongoing impacts reduce to levels below relevant impact assessment criteria as quickly as possible; (e) a program to investigate and implement ways to improve the environmental performance of the development over time; (f) a protocol for managing and reporting any: (i) incident and any non-compliance (specifically including any exceedance of the impact assessment criteria and performance criteria); (ii) complaint; (iii) failure to comply with statutory requirements; and (g) a protocol for periodic review of the plan. Note: The Planning Secretary may waive some of these requirements if they are unnecessary or unwarranted for particular management plans	Appendix D – UFP
C2	The Applicant must prepare a Construction Environmental Management Plan (CEMP) in accordance with the requirements of Condition C1.	This CEMP

Condition Reference	Condition Requirement	Condition Delivery
C3	As part of the CEMP required under Condition C2 of this consent, the Applicant must include the following: (a) Construction Flora and Fauna Management Plan (see Condition B3) (b) Construction Soil and Water Management Plan (see Condition B13); (c) emergency response procedures in the event of flooding or bushfire (as required under Condition B20); (d) Construction Traffic Management Plan (see Condition B28); and (e) Construction Noise and Vibration Management Plan (see Condition B34).	Section 6 Appendix A – SWMP Appendix B – FFMP Appendix C – ERP Appendix D – UFP
C7	Within three months of: (a) the submission of an incident report under Condition C9; (b) the approval of any modification of the conditions of this Consent; or (c) the issue of a direction of the Planning Secretary under Condition A2(b) which requires a review, the strategies, plans and programs required under this consent must be reviewed and submitted to the Planning Secretary	Section 5.2
C8	If necessary, to either improve the environmental performance of the development, cater for a modification or comply with a direction, the strategies, plans and programs required under this consent must be revised, to the satisfaction of the Planning Secretary. Where revisions are required, the revised document must be submitted to the Planning Secretary for approval within six weeks of the review. Note: This is to ensure strategies, plans and programs are updated on a regular basis and to incorporate any recommended measures to improve the environmental performance of the development.	Section 5.2
C9	The Department must be notified in writing to compliance@planning.nsw.gov.au immediately after the Applicant becomes aware of an incident. The notification must identify the development (including the development application number and the name of the development if it has one) and set out the location and nature of the incident. Subsequent notification requirements must be given, and reports submitted in accordance with the requirements set out in Appendix 3	Section 4.3.2. Section 6

Condition Reference	Condition Requirement	Condition Delivery
C10	The Department must be notified in writing to compliance@planning.nsw.gov.au within seven days after the Applicant becomes aware of any non-compliance.	Section 4.3.2 Section 6
C11	A non-compliance notification must identify the development and the application number for it, set out the condition of consent that the development is non-compliant with, the way in which it does not comply and the reasons for the non-compliance (if known) and what actions have been, or will be, undertaken to address the non-compliance.	Section 4.3.2 Section 6
C12	A non-compliance which has been notified as an incident does not need to also be notified as a non-compliance	Section 4.3.2 Section 6
C13	Construction Compliance Reports and a Pre-Operational Compliance Report of the project must be carried out in accordance with the Compliance Reporting Post Approval Requirements (Department 2018) or any revision as in force from time to time.	Section 4.3.2 Section 6
C14	The Applicant must make each Compliance Report publicly available no later than 60 days after submitting it to the Department and notify the Department in writing at least 7 days before this is done.	Section 4.3.2 Section 6
C15	At least 48 hours before the commencement of construction until the completion of all works under this consent, including rehabilitation, the Applicant must: (a) make the following information and documents (as they are obtained or approved) publicly available on its website: (i) the documents referred to in Condition A2 of this consent and the final layout plans for the development; (ii) all current statutory approvals for the development; (iii) all strategies, plans and programs required under the conditions of this consent; (iv) regular reporting on the environmental performance of the development in accordance with the reporting requirements in any plans or programs approved under the conditions of this consent;	Section 4.3 Section 5.2

Condition Reference	Condition Requirement	Condition Delivery
	(v) a comprehensive summary of the monitoring results of the development, reported in accordance with the specifications in any conditions of this consent, or any approved plans and programs; (vi) contact details to enquire about the development or to make a complaint; (vii) the Compliance Reporting of the development; (viii) any other matter required by the Planning Secretary; and (b) keep such information up to date, to the satisfaction of the Planning Secretary.	
1.1	A CEMP would be prepared to detail the approach to environmental management during construction, as described in Section 20.1.1 and in accordance with the conditions of approval.	This CEMP
1.2	The CEMP would include a number of sub plans identified in the safeguards and management measures and include: • Traffic management plan • Flora and fauna management plan • Aboriginal heritage management plan • Noise and vibration management sub plan • Construction erosion and sediment control plan • Air quality management plan • Bush fire management plan • Landscape management plan.	Appendix A – SWMP Appendix B – FFMP Appendix C – ERP Appendix D – UFP The following sub plans have not been prepared for the Stage 1 - TRIPS CEMP due to the limited scope of works: • Aboriginal Heritage • Air quality • Landscape • Traffic • Noise and vibration

Condition Reference	Condition Requirement	Condition Delivery
		Mitigations measures relevant to the above are provided in this CEMP.
1.3	DPI Fisheries requests the opportunity to review and provide comment on the: Construction Environmental Management Plan; Erosion and Sediment Control Plan; and Flora and Fauna Management Plan. DPI Fisheries to be provided with advance notice of the submission of the CEMP for review, as a one week turnaround is required for the Principal Contractor to meet the delivery timeframe.	Noted
2.2	Construction planning would consider flood risk for all compounds and work sites. The site layout and staging of construction activities would avoid or minimise obstruction of overland flow paths and limit the extent of flow diversion required.	This CEMP
2.5	Works within or near watercourses would be undertaken with consideration given to the DPI Water's guidelines for controlled activities.	Appendix A - SWMP
2.7	The current WQMSP will be revised (as necessary) and implemented during construction and operation of the proposal. The plan will specify: • sampling locations relevant to assessing potential impacts and / or the effectiveness of control measures • the frequency of monitoring and sampling and the triggers for event-based monitoring / sampling • the monitoring and sampling methodology in accordance with relevant guidelines, and the parameters to be monitored and sampled • general and reactive management and mitigation processes • procedures addressing relevant matters specified in relevant legislation and guidelines.	Appendix A – SWMP
2.8	Erosion and sediment mitigation measures would be installed and maintained for the duration of the construction period.	Section 3.5 Appendix A – SWMP

Condition Reference	Condition Requirement	Condition Delivery
2.9	Discharges would be monitored to ensure compliance with WQOs and discharge criteria in the environment protection licence.	Not applicable to this CEMP
2.10	During construction a coffer dam will be in place to cater for medium level events and a sediment and erosion control plan in place to minimise risks of sediment-laden water escaping from the site.	Not applicable to this CEMP
2.13	Discharge of water temporarily stored in sediment basins and/or the coffer dam to the Tuross River would, where practicable, be avoided or minimised through practical reuse such as for on-site dust suppression, irrigation, or discharged to vegetated swales, which would act as a natural filter.	Not applicable to this CEMP
2.14	Sediment basins would discharge soon after rainfall events, avoiding discharges during periods of low flows. Treatment of sediment basins would commence soon after rainfall events using chemical dosing (coagulants and/or flocculants) using either an automatic or manual chemical dosing system. Prior to treatment, jar testing would be used to determine the chemical dosing requirements of the sediment basins.	Not applicable to this CEMP
2.15	The water quality of 'clean water' would be maintained through implementation of appropriate erosion and sediment controls and staged vegetation clearing in upslope areas. The coffer dam outlet will connect to the diversion pipe constructed through the base of the embankment, diverting 'clean' flow through the site to the outlet works.	Not applicable to this CEMP
2.16	Discharges would not occur during the construction of in-stream features within the Tuross River (i.e. intake pump structures). Temporary in stream structures (i.e. temporary coffer dam) would be constructed in accordance with the NSW DPI policy and guidelines and dewatering activities designed to avoid re-enter the waterway.	Not applicable to this CEMP
2.17	Water quality impacts from uncontrolled discharges (i.e. significant wet weather) would be reduced by ensuring adequate size, location and operation & maintenance requirements of the temporary sediment basins. This includes: • Sizing of the basins would account for a minimum of 5-day rainfall depth, 80th percentile rain events in accordance with published guidelines for extended construction period (> 6 months)	Appendix A – SWMP Note that only one PESCP would be prepared for the Stage 1 - TRIPS site clearing. Note that an Independent audit of the PESCP is not required for the

Condition Reference	Condition Requirement	Condition Delivery
	• A series of Progressive Erosion and Sediment Control Plans (PESCP) would be prepared which detail construction sediment basin location and sizing with respect to each individual construction stage • Nomination of an environmental representative on site to complete audits and monitor PESCPs. Independent audits would be carried out by a soil conservationist or accredited erosion and sediment control professional • Operation and maintenance of sediment basins would refer to available guidance within the industry practice (e.g. Blue Book, 2004 and IECA, 2018).	Stage 1 - TRIPS site clearing. This would be undertaken only during the Stage 2 package of works. Note sediment basins would not be implemented for the Stage 1 - TRIPS site clearing. They will be considered, as necessary, for the Stage 2 package of works.
2.18	The storage would have continuous de-stratification equipment in place to ensure that water is consistently mixed to avoid issues of de-oxygenated water.	Not applicable to this CEMP
2.19	Discharge by either the spillway or outlet works (if it occurs) would have erosion protection (i.e. stabilised outlets consisting of rock rip rap) to reduce water velocities and minimise the risk of additional erosion downstream of the storage	Not applicable to this CEMP
2.20	Water quality impacts from controlled discharges would also be reduced by adequate selection, dosing and management of chemical coagulants and flocculants. This includes: • Consideration would be given to the selection of suitable chemical coagulants and/or flocculants by the contractor's environmental representative. Reference would be made to Safety Data Sheets for chemical specific ecotoxicity information. The use of biodegradable products and/or non-hazardous would be considered first preference. • Chemical dosing and operation of discharges from sediment basins would be managed by suitably qualified and experienced persons. A detailed plan for management, storage and use of chemical coagulants and/or flocculants would be prepared as part of PESCPs. • Operation and maintenance of sediment basins would refer to available guidance within the industry practice (e.g. Blue Book, 2004 and IECA, 2018).	Not applicable to this CEMP
2.21	Council will review the need for mitigation works and management of the channel, in particular the movement of the sand slug, to ensure it does not encroach on and impact the pumping infrastructure	Not applicable to this CEMP

Condition Reference	Condition Requirement	Condition Delivery
	based on previous experience associated with the operation of original intake pump station that had been in operation since the 1950's.	
3.1	A Flora and Fauna Management Plan will be prepared and implemented as part of the CEMP. It will include, but not be limited to: • plans showing areas to be cleared and areas to be protected, including exclusion zones, protected habitat features and revegetation areas • pre-clearing survey requirements • procedures for unexpected threatened species finds and fauna handling • procedures addressing relevant matters specified in the Policy and guidelines for fish habitat conservation and management (DPI Fisheries, 2013).	Appendix B - FFMP
3.4	As part of the Flora and Fauna Management Plan, a management sub-plan will be produced to establish pre-construction and construction mitigation measures to minimise the impacts on River plains EEC.	Appendix B – FFMP
3.5	Monitoring water quality during construction will be evaluated for potential impacts to on threatened species and EEC, and corrective measures applied in consultation with Council.	Appendix B – FFMP
3.6	Pre-clearing surveys are to ensure exclusion zones (at the construction footprint boundary) are established prior to vegetation clearing.	Appendix B – FFMP
3.7	The Flora and Fauna Management Plan will include a Weed and Pathogens Management Sub-plan which will include, but not be limited to: • weed management controls for construction and post-construction (if required) • protocols to prevent introduction or spread of *Phytophthora cinnamomi* • protocol to manage vehicle cleaning in accordance to reduce the potential for spread of noxious weeds, plant pathogens or animal diseases into retained forested habitats.	Appendix B – FFMP
3.8	The Flora and Fauna Management Plan is to describe a process for: • pre-clearing surveys	Appendix B – FFMP

Condition Reference	Condition Requirement	Condition Delivery
	• supervision of vegetation clearing by a suitably qualified fauna ecologist/spotter • fauna handling including the capture of any injured fauna or fauna that does not naturally relocate, and identifying suitable services for the treatment of injured fauna, for example a local vet or local wildlife carer • identifying opportunities for further minimisation of native vegetation removal when developing construction methodologies, in order to retain the maximum amount of habitat for native fauna possible.	
3.9	The Flora and Fauna Management Plan will: • identify hollow-bearing trees for retention and establish exclusion zones which will be mapped and clearly marked out on site prior to construction commencing • outline a staged approach to habitat removal of hollow-bearing trees and other established/ prominent trees that cannot be retained • include a nest box strategy would be implemented prior to vegetation removal.	Appendix B – FFMP
3.10	Ensure that fish passage is not blocked during construction. If blockage cannot be avoided, gain a permit from Fisheries prior to undertaking any activities that will cause blockage.	Appendix B – FFMP
3.12	Temporary in stream structures will be constructed in accordance with the NSW DPI policy guideline and will: • avoid spanning the full width of the waterway channel • be inserted during low-flow periods with management plans being submitted to NSW DPI detailing how high flow events will be managed Dewatering of temporary in-stream structures should follow the following guidelines: • NSW DPI is to be notified seven days prior to any dewatering activities in order to organise potential fish rescue activities. A separate s.37 permit may be required from NSW DPI to relocate fish	Appendix B – FFMP

Condition Reference	Condition Requirement	Condition Delivery
	• water is to be pumped a minimum of 30 m away from the waterway and should preferentially not re-enter the waterway. If water is to re-enter the waterway, ANZECC water quality guidelines need to be adhered to with the proponent being required to submit a detailed water quality monitoring program.	
3.13	Should any large woody debris be required to be removed the following management guidelines would be followed in accordance with the removal of large woody debris from NSW rivers and streams Prime Fact 11 (DPI 2005b): • lopping (trimming) should be considered as a first option; • instream realignment should be considered as the next option; • if realignment is unfeasible, relocation within the river channel is preferable to removal; • removal should be considered as a last resort; and • removal/relocation of snags would be undertaken so as to cause the least disturbance to the bed or nearby sensitive aquatic habitat. An aquatic ecologist shall be present on site when working with snags that require lopping, realignment, relocation and/or removal.	Not applicable to this CEMP
4.1	A Community and Stakeholder Engagement (CSE) Plan will be prepared for the proposal and be inclusive of: • a Construction Communications Plan, identifying when communication would occur, to whom, the method of communication and timing. • outlining the dedicated service and scope of assistance to be provided to landowners, residents and businesses with the effects of property acquisition and the relocation process. This would be prepared with reference to the NSW Government Land Acquisition Reform 2016.	Not applicable to this CEMP
4.2	The Construction Communications Plan will be prepared and will include (as a minimum): • mechanisms to provide details and timing of proposed activities to affected residents, businesses and community facilities, including, but not limited to, changed traffic and access conditions, vegetation clearing • contact name and number for complaints	Not applicable to this CEMP

Condition Reference	Condition Requirement	Condition Delivery
	• a complaints-handling procedure and register.	
4.3	Council would: • identify and categorise affected landowners, residents and businesses and the nature of assistance that may be required • establish communication protocols, including an acquisition hotline, requirements for English as a second language assistance with negotiations and communications.	Section 4.3.3
4.4	On-going communication and consultation will occur with local business owners located close to construction works about the timing, duration and likely impact of construction activities and to identify appropriate measures to manage potential impacts. A project hotline will be established as a direct contact for businesses to consult with.	Section 4.3
4.5	Local residents would be notified at least five days prior to works commencing and would be kept regularly informed of construction activities during the construction process.	Section 4.3
4.6	The affected community will be consulted regarding the proposed noise mitigation measures for construction.	Section 4.3
5.1	A construction Aboriginal heritage management plan will be prepared for the project. The plan would provide details of management measures and procedures to be carried out during construction to minimise and manage impacts on Aboriginal heritage and includes an unexpected finds procedure.	Not applicable to this CEMP
5.2	Aboriginal cultural awareness training for all relevant staff and contractors would be carried out prior to commencing work onsite. All relevant staff, contractors and subcontractors will be made aware of their statutory obligations for heritage under the *National Parks and Wildlife Act 1974.*	Section 4.2
6.1	While impacts to historic heritage items are considered unlikely, the following protocol for unexpected finds would be undertaken in accordance with the requirements of the NSW Heritage Manual (OEH, 1996):	Appendix D - UFP

Condition Reference	Condition Requirement	Condition Delivery
	• should an item of historic heritage be identified, works in the vicinity of the find would cease. The Heritage Division (NSW Office of Environment and Heritage) would be contacted prior to further work being carried out in the vicinity of the find.	
7.1	A Construction Traffic Management Plan (TMP) would be prepared prior to construction and would be included in the CEMP. The TMP would: • identify the traffic management requirements during construction • describe the general approach and procedures to be adopted when producing specific traffic control plan • identify designated parking areas for construction workforce. • determine temporary speed restrictions to ensure safe driving environment around work zones, including on unsealed roads, and at major intersections (e.g. Nerrigundah Mountain Road and Eurobodalla Road) • identify any high-risk periods (such as during school bus operations), and whether delivery to site, and material haulage can be undertaken outside of these hours • identify opportunities to stagger heavy vehicle arrivals to site (e.g. use of minimum headways between arriving haul trucks), to avoid the potential for heavy vehicle convoys arriving on site • identify and provide temporary works, such as for site access, turn-around bays, parking areas for heavy vehicle dwelling, and minor site distance clearing around local road intersection sites (e.g. at the access points to the construction site) • provide temporary warning and advisory signposting, such as during periods of material haulage, and at major intersections (e.g. Nerrigundah Mountain Road and Eurobodalla Road), where there will be increased traffic activity • where practical, program deliveries of construction plant and materials (such as over-mass and over-dimension vehicles) outside peak traffic periods	Not applicable to this CEMP

Condition Reference	Condition Requirement	Condition Delivery
	• identify steps to minimise construction traffic, such as car-pooling by construction staff to site • regularly review and modify the TMP (such as at changes of construction stages), to ensure the TMP remains valid and appropriate • document communication protocols amongst heavy vehicle operators, such as when approaching higher risk areas. This could be through the establishment of a call point system, whereby call point signage is erected on the approach to higher risk areas, such as the intersection of Nerrigundah Mountain Road and Eurobodalla Road, or the single lane Tuross River (Tyrone) bridge, and access points to the construction site • maintain access to private properties (and liaise with property owners), particularly that off Bullockys Hut Road, which may be used as a site access • identify a contact person (and phone number) for liaison and complaints, by project stakeholders and the community. Consultation with various stakeholders will also be undertaken in the development and periodic review of the Construction TMP, including: • ensuring all relevant requirements from emergency service providers are included, including from NSW Rural Fire Service, NSW Ambulance Service and NSW Police • consultation with the respective road authorities including Roads and Maritime Services and Eurobodalla Shire Council • consultation with other relevant parties including school bus operators • periodic notification of construction activities and changes in traffic control arrangements would be publicly notified, including through local newspapers, community noticeboards, and through a letter box drop off for residents in proximity to the construction site as appropriate. Detailed traffic control plans would be developed for each construction phase. These would include: • provision for emergency services passage through construction zones • Only accredited traffic controllers would be permitted to prepare and implement traffic control plans.	

Condition Reference	Condition Requirement	Condition Delivery
7.2	Council will undertake a photographic inspection of local roads and undertake a pre-dilapidation survey of local road pavements before construction commences, in order to document the state and condition of local roads. Periodic surveys will be undertaken during construction activities to identify any road damage, with road damage to local roads being repaired by Council as soon as practical. The construction contractor will also monitor the incidence of mud tracking off the construction site and onto local roads and will sweep or clean local roads to minimise mud tracking. The contractor will preferably install controls to minimise the incidence of mud-tracking in the first instance, such as by use of grids at site access points. Construction personnel will also be encouraged to report road hazards and road damage	Section 5.1
8.1	A Construction Noise and Vibration Management Plan (NVMP) will be prepared and implemented as part of the CEMP. The NVMP will generally follow the approach in ICNG (DECC, 2009a) and will consider the following as a minimum: • identify nearby residences and other sensitive land uses • develop noise management levels consistent with the ICNG • assess the potential impact from the proposed construction methods • where management levels are exceeded examine feasible and reasonable noise mitigation and develop associated noise monitoring program • develop reactive and proactive strategies for dealing with any noise complaints • identify a site contact person to follow up complaints.	Not applicable to this CEMP
8.2	• where feasible and reasonable, works would be undertaken within ICNG recommended working hours • where works are required to be undertaken outside of recommended working hours, an Out of Hours procedure as described in the NVMP must be followed and all appropriate approvals would be obtained prior to works, and all affected receivers would be notified of the works • noisy activities that cannot be undertaken during standard construction hours would be scheduled as early as possible during the evening and/or night-time periods	Section 1.4 Not applicable to this CEMP

Condition Reference	Condition Requirement	Condition Delivery
	• any out of hours works would comply with the Roads and Maritime Construction Noise Guidelines.	
8.3	All relevant noise and vibration management measures would be incorporated into site inductions for all employees, contractors and sub-contractors. The environmental component may be covered in toolboxes and should include: • relevant licences and approval conditions • permissible hours of work • location of nearest sensitive receivers • construction employee parking areas • designated loading/unloading areas and procedures • site opening/closing times.	Not applicable to this CEMP
8.4	The environmental induction program would include specific noise and vibration issues awareness training including, but not limited to, the following: • avoiding use of radios during work outside normal hours • avoiding shouting and slamming doors • where practical, operating machines at low speed or power and switching off when not being used rather than left idling for prolonged periods • minimising reversing • avoiding dropping materials from height and avoiding metal to metal contact	Section 4.2
8.5	All plant and equipment are to be maintained to ensure optimum running conditions, with periodic monitoring.	Section 3.5 Section 5.1
8.6	Consider construction compound layout so that primary noise sources are at a maximum distance from sensitive receivers (primarily residential receivers), with solid structures (sheds and containers) placed between sensitive receivers and noise sources (and as close to the noise sources as is practical).	Section 1.4 Section 3.5

Condition Reference	Condition Requirement	Condition Delivery
8.7	• locate compressors, generators, pumps and any other fixed plant as far from residences as possible and behind site structures. • alternatives to reversing alarms would be considered for site compound equipment subject to OHS compliance requirements and risk assessments. • avoid and limit the use of engine compression brakes at night and in residential areas • delivery times would be scheduled, where feasible, to the recommended construction hours to minimise noise impacts from heavy vehicle movements.	Section 1.4 Section 3.5
8.8	• use quieter and less noise/vibration emitting construction methods, where feasible and reasonable • plant and equipment would be selected to ensure only necessary size and power plant and equipment are used • plant used intermittently would be throttled down or shut off when not in use • simultaneous operation of noisy plant within discernible range of a sensitive receiver is to be limited/avoided where possible • the offset distance between noisy plant and adjacent sensitive receivers is to be maximised where practicable. • noise-emitting plant to be directed away from sensitive receivers where possible. • stage work to limit high noise impacts to sensitive receivers.	Section 1.4 Section 3.5
8.9	The following approach would be adopted with regard to noise monitoring procedures during the construction works: • where potential noise impacts are predicted to be 20 to 30 dB(A) above the RBL, the potential construction noise nuisance is considered to be moderate. Noise monitoring would be carried out to confirm predicted noise impacts within two weeks of commencement of construction. Feasible and reasonable noise reduction measures would be investigated, where necessary.	Not applicable this CEMP

Condition Reference	Condition Requirement	Condition Delivery
	• where potential noise impacts are predicted to be more than 30 dB(A) above the RBL, the potential construction noise nuisance is considered to be high. All feasible and reasonable noise control measures would be implemented prior to the commencement of the noisy activity.	
8.10	A blast management plan will be developed prior to construction. The blast management plan will include: • limiting criteria • identified blast sensitive receivers • performance indicators • monitoring protocols • roles and responsibilities • blasting controls • protocols for community consultation, incidents and complaints • contingency protocols • reporting requirements.	Not applicable to this CEMP
8.11	The blast management plan will consider the following with regard to overpressure and ground vibration: • restriction of blasting to between the hours of 9.00am to 5.00pm Monday to Fridays, except Public Holidays • blast monitoring and inspection including: - blast monitoring at key sensitive sites - trial blasts to assist in the development of “site laws” based on monitoring data.	Not applicable to this CEMP

Condition Reference	Condition Requirement	Condition Delivery
9.1	A construction erosion and sediment control plan (ESCP) will be prepared for the proposal in accordance with the principles and practices detailed in Managing Urban Stormwater: Soils and Construction (the Bluebook) (Landcom, 2004), Volume 2D: Main Road construction (DECC 2008). The ESCP would form part of the CEMP and would be supported by a qualified and experienced soil conservationist.	Appendix A - SWMP
9.2	The ESCP will contain as a minimum the following elements: • site specific ESCMP, including detailed consideration of staging and management at ancillary sites, in accordance with the Blue Book • identification of site conditions or construction activities that could potentially result in erosion and associated sediment runoff • methods to minimise potential adverse impacts of construction activities on the water quality within surrounding waterways • details of measures to minimise any adverse impacts of sedimentation on the surrounding environment • details of measures to minimise soil erosion caused by all construction works including clearing, grubbing and earthworks • details of measures to make site personnel aware of the requirements of the CSWMP by providing information within induction, toolbox and training sessions • details of the roles and responsibilities of personnel responsible for implementing the CSWMP • details of measures for the inspection and maintenance of construction phase water treatment devices and structures • details of water quality monitoring.	Appendix A - SWMP
9.3	• watercourse crossings, including temporary work platforms, waterway crossings and/or coffer dams, shall be designed and constructed in consultation with the Department of Primary Industries (DPI) (Fisheries) and the NSW Office of Water.	Not applicable to this CEMP

Condition Reference	Condition Requirement	Condition Delivery
9.4	• additional assessment will be undertaken for soils requiring off-site disposal to ensure the correct waste classification is determined. Excavated material that is not suitable for on-site reuse or recycling, such as contaminated material should be transported to a site legally able to accept that material. • a classification system will be used to control the excavation, stockpiling and disposal of all potentially contaminated materials. Soils should be classified (where possible) in-situ prior to excavation or when stockpiled during excavation, depending on available time and room for stockpile areas. Any unexpected finds should follow the same procedures. • if groundwater is encountered during construction, it will be managed and disposed of in accordance with legislation.	Section 3.6 Appendix A - SWMP
9.5	• vehicles and machinery will be properly maintained to minimise the risk of fuel/oil leaks. Routine inspections of all construction vehicles and equipment should be undertaken for evidence of fuel/oil leaks • all fuels, chemicals and hazardous liquids will be stored within an impervious bunded area in accordance with Australian standards and EPA guidelines • any on-site refuelling will occur in a designated area with impervious surfaces.	Section 3.6
9.6	Any dewatering activities will be undertaken in accordance with the Technical Guideline: Environmental management of construction site dewatering (RTA, 2011b) in a manner that prevents pollution of waters.	Appendix A - SWMP
9.7	A waste management plan would be developed as part of the CEMP and will take into account the waste hierarchy.	Not applicable to this CEMP
11.1	Equipment will be properly maintained to ensure it is operating efficiently.	Section 3.5 Section 3.6
11.3	The construction contractor is to include consideration of the following as a minimum to minimise the potential for GHG emissions:	Section 3.5 Section 3.6

Condition Reference	Condition Requirement	Condition Delivery
	• preferential use of local materials (where feasible and practicable) to reduce quantities of fuel consumption associated with material transportation • delivery of materials with full loads where feasible • ensure that all plant and vehicles are maintained regularly to maintain fuel efficiency • seek opportunities to reduce the quantity of construction materials used through innovative design and construction methodologies • where reasonable and feasible, procure recycled content road construction and maintenance materials such as recycled aggregates in road pavement and surfacing (including crushed concrete, granulated blast furnace slag, glass, slate waste and fly ash). This measure forms part of RMS' implementation of the NSW Government's 'Waste Reduction and Purchasing Policy' (WRAPP).	
12.1	Display the name and contact details of person(s) accountable for air quality and dust issues on the site boundary. This may be the environment manager/engineer or the site manager.	Section 3.3
12.2	A Dust Management Plan will be prepared and implemented as part of the CEMP. The DMP will include, but not be limited to: • potential sources of air pollution and dust • air quality management objectives consistent with any relevant published EPA and/or EES guidelines • mitigation and suppression measures to be implemented • methods to manage work during strong winds or other adverse weather conditions • a progressive rehabilitation strategy for exposed surfaces.	Not applicable to this CEMP
12.3	Record all dust and air quality complaints, identify cause(s), take appropriate measures to reduce emissions in a timely manner, and record the measures taken.	Not applicable to this CEMP
13.1	A Landscape Management Plan (LMP) will be prepared during the detailed design phase of the project and implemented as part of the CEMP.	Not applicable to this CEMP

Condition Reference	Condition Requirement	Condition Delivery
	The LMP will present an integrated landscape and urban design for the project, providing practical detail on the application of design principles and objectives identified in the environmental assessment. The Plan will include design treatments for: • location and identification of existing vegetation and proposed landscaped areas, including species to be used, density and size • hydromulch seed mix designs and locations • built elements including any retaining walls and bridge walls • fixtures such as lighting, fencing and signs • details of the staging of landscape works taking account of related environmental controls such as erosion and sedimentation controls and drainage • procedures for monitoring and maintaining landscaped or rehabilitated areas.	
13.2	To reduce the potential visual impact of construction activities: • work sites will be left tidy at the end of each work day • where appropriate, fencing with material attached (e.g. shade cloth) will be provided around the construction compound to screen views from adjoining properties • lighting for night-time work will comply with relevant Australian Standards, including AS4282-1997 (Control of the obtrusive effects of outdoor lighting).	Section 3.5
13.4	The Construction TMP for the proposal will be prepared with consideration for other nearby road upgrade project traffic management plans if still being implemented. A coordinated approach to traffic management between the nearby projects will be adopted to minimise travel time and congestion impacts on road users.	Not applicable to this CEMP
Appendix 3	Written incident notification requirement	Section 6.1

2.3. Protection of the Environment Operations Act 1997

The *Protection of the Environment Operations Act 1997* (POEO Act) regulates certain activities with respect to air, water and noise pollution and waste. Part 3.2 of the POEO Act requires an Environment Protection Licence (EPL) for scheduled development work and for carrying out scheduled activities.

Schedule 1 of the POEO Act identifies activities and thresholds related to activity types and volume(s) of emissions that require an EPL. Water storages and related infrastructure are not included in Schedule 1.

The activities to be carried out for the Stage 1 – TRIPS site clearing does not meet the criteria specified in Schedule 1 of the POEO Act, and as such an EPL is not required for the Stage 1 – TRIPS site clearing works.

The POEO Act also identifies a number of pollution offences, including offences relating to:

- The wilful or negligent disposal of waste in a manner that harms or is likely to harm the environment
- The wilful or negligent causing of a substance to leak, spill or otherwise escape (whether or not from a container) in a manner that harms or is likely to harm the environment
- The wilful or negligent causing of any controlled substance to be emitted into the atmosphere in contravention of the regulations under the Ozone Protection Act 1989 and in a manner that harms or is likely to harm the environment
- Water pollution
- Air pollution
- Noise pollution
- Land pollution and waste.

Part 5.7 of the POEO Act specifies a general duty to notify the relevant authority (defined in section 148(8)) of a pollution incident where there is actual or potential material harm to the environment. The activities associated with the Stage 1 – TRIPS site clearing works are to be managed to ensure pollution risks are minimised. Measures were incorporated in the EIS to ensure risks to soils, waterways and air quality are avoided or minimised. The Environment Protection Authority (EPA) are to be notified if a 'pollution incident' occurs that causes or threatens 'material harm' to the environment.

Legal requirements for the management of waste are also established under the POEO Act and the *Protection of the Environment Operations (Waste) Regulation 2005*. Unlawful transportation and deposition of waste is an offence under section 143 of the POEO Act.

Schedule of 8 of the *Protection of the Environment Operations (Clean Air) Regulation 2010*, identifies Eurobodalla LGA as an area in which all burning (including vegetation and domestic waste) is prohibited except with approval.

2.4. Permits and licensing requirements

No permits or licences are required for the Stage 1 - TRIPS site clearing activities.

2.5. Performance measures and indicators

Environmental objectives and targets outlined in Table 2-3 have been developed to evaluate environmental performance during the Stage 1 – TRIPS site clearing activities and guide the implementation of the development of any management measures required.

Table 2-3. Project environmental objectives

Objective	Target	Measurement/Tool
Compliance with the Conditions of Consent	All Conditions of Consent implemented throughout the clearing in accordance with requirements and within designated time frames No non-conformances identified during self-regulation through monitoring and auditing	Site inspections Auditing Review
Compliance with all legal requirements	No breaches or environmental infringement notices	Site inspections Auditing Review

3. Implementation

3.1. Construction Environmental Management Plan and Sub Plans

The CEMP is the primary environmental management document in relation to the environmental performance during the Stage 1 - TRIPS site clearing works. The CEMP is supported by several aspect-specific sub plans which provide additional environmental management requirements. The sub plans prepared as part of the CEMP include:

- Soil and Water Management Plan – Appendix A
- Flora and Fauna Management Plan – Appendix B
- Emergency Response Plan – Appendix C.

In addition to the sub-plans, the following protocol is to be complied with during the Stage 1 – TRIPS site clearing works:

- Unexpected Finds Protocol – Appendix D.

3.2. Waste management

The Stage 1 – TRIPS site clearing works will generate green waste only. Mitigation measures would be implemented on site to manage and minimise the generation of waste and encourage the reuse of materials including:

- Slashing of light vegetation down to ground level and left in place
- Larger trees to be cut down, but the trunks and roots are to be left *in situ* to minimise of soil erosion
- Heads of larger trees are to be mulched and the mulch is to be used in windrows to control potential run off if appropriate and/or spread over disturbed earth to minimise soil erosion.

Removal of timber is to comply with the requirements of the POEO Act for storage, transport, treatment and disposal of waste.

A Waste Management Register is to be maintained until the completion of the Stage 1 – TRIPS site clearing works and is to include:

- The classification according to the EPA's Waste Classification Guidelines Part 1: Classifying Waste (EPA, 2014)
- Volume of waste
- Evidence of disposal to a facility that may lawfully accept the waste or reuse location.

3.3. Air quality

The Stage 1 – TRIPS site clearing works will involve the use of plant and machinery. This has the potential to generate emissions of particulate matter, and combustion by-products. Mitigation measures are to be implemented on site to manage and minimise emissions that may impact local air quality. These include:

- Maintaining equipment to ensure it is operating efficiently
- Use of plant, materials and equipment sourced locally to minimise fuel consumption associated with plant, equipment and material transportation
- Implementation of on-site strategies to minimise dust generation during clearing works.

3.4. Heritage

If any item or object of Aboriginal heritage significance is identified on site during the Stage 1 – TRIPS site clearing works:

- All work within a 10 m^2 area surrounding the suspected Aboriginal item or object is to cease immediately
- A 10 m^2 buffer area around the suspected item or object is to be cordoned off
- the Environment, Energy and Science Group (EESG) of the DPIE is to be notified immediately
- Work within a 10 m^2 area surrounding the Aboriginal item or object may only recommence in accordance with the provisions of Part 6 of the *National Parks and Wildlife Act 1974*.

If any unexpected archaeological relics are uncovered during the Stage 1 – TRIPS site clearing works:

- All work within a 10 m^2 area surrounding the find is to cease immediately
- The Heritage Division DPC is to be notified
- A suitably qualified and experienced archaeologist is to be engaged to record and assess the significance of the find and the results are to be reported to the Planning Secretary and the Heritage Division DPC
- Where required by Heritage Division DPC, a Management Strategy is to be developed and implemented in consultation with the Heritage Division DPC
- Work within a 10 m^2 area surrounding the find may only recommence on the advice of the archaeologist.

3.5. Site management

General site management procedures that are to be implemented during the Stage 1 – TRIPS site clearing works include:

- The work site is to be maintained in an orderly manner to reduce the potential visual impact
- Surveys are to be undertaken to identify any damage to local roads caused by movement of plant and machinery into and out of the site. Any damage to local roads is to be repaired by ECS as soon as practical
- Mud tracking off the site and onto the local roads is to be monitored, and local roads are to be cleared of mud should this occur
- All plant and equipment are to be maintained to minimise the risk of pollution to the environment.

3.6. Contamination, spill prevention and response

The following controls are to be implemented to minimise the risk of site contamination during the Stage 1 – TRIPS site clearing works:

- Vehicles and machinery are to be maintained to minimise the risk of fuel/oil leaks. Routine inspections for evidence of fuel/oil leaks are to be carried out on all vehicles and machinery
- All fuels, chemicals and hazardous liquids are to be stored within an impervious bunded area in accordance with Australian standards and NSW EPA's *Storing and Handling of Liquids: Environmental Protection – Participants Manual*
- No on-site refuelling is to occur

- In the event of an inconsistency between the requirements conditions of consent B16(a) and B16(b), the most stringent requirement is to prevail to the extent of the inconsistency
- A spill kit is to be located at the site compound. If a spill occurs, it is to be managed using the following Spill Response Procedure:
  - Check for any hazards to the responder or other personnel
  - Control the source of the spill, following the Safety Data Sheet (SDS) instructions for Personal Protective Equipment (PPE) and handling
  - Contain the spread of the spill, if safe to do so
  - Clean up the spill
  - Document the spill in the Incident Management Procedure
  - Some spills may require external reporting.

4. Accountability, competence, communications

4.1. Responsibilities and accountabilities

Table 4-1 outlines the roles and responsibilities of personnel for carrying out the requirements outlined in this CEMP.

Table 4-1. Stage 1 – TRIPS site clearing roles and responsibilities

Role	Responsibility
Project Manager	• Include the environment into all aspects of project planning • Allocate project resources to handle environmental issues • Ensure suppliers and contractors comply with environmental requirements • Investigate and ensure that environmental incidents are reported and recorded • Review the performance of environmental management • Ensure environmental inspections are conducted.
Environmental Representative	• Assist and guide the respective workers to meet their environmental responsibilities • Check the implementation of the environmental requirements as per this CEMP • Report to the Project Manager on environmental issues • Monitor the rectification of incidents • Provide technical advice to personnel and management in the review of environmental management method • Carry out environmental inductions, environmental toolbox talks and discuss environmental matters during the daily pre-start meetings where required • Implement appropriate action to address any environmental incidents • Development, implementation, monitoring and updating of the CEMP and sub-plans • Ensure environmental risks of the Project are identified and appropriate mitigation measures implemented. • Manage environmental document control, reporting, inductions and training • 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 • Respond to stakeholder enquires/complaints within required timeframes • Ensure suppliers and contractors comply with environmental requirements.

Role	Responsibility
Site supervisor	• Communicating with all personnel and sub-contractors regarding compliance with the CEMP and site specific environmental issues • Notification of environmental incidents. • Coordinating the implementation of the CEMP. • Undertaking site inspections. • Co-ordinating the implementation and maintenance of pollution control measures. • Identifying resources required for implementation of the CEMP. • Coordinating action in emergency situations and allocating required resources in accordance with the Incident Response Plan. • Notify the Project Manager and environmental representative of any environmental harm or potential environmental harm, or if authorised by the Project Manager notify the Client. • Ensuring that instructions are issued, and adequate information is provided to site resources which relate to environmental risks on site.
Contractors	• Contribute to effective environmental management at the site for the life of the project, by implementing this CEMP within their area of responsibility • Comply with the relevant Act(s), Regulations, Specifications and Standards • Promptly report to management any environmental non-conformances, incidents and/or breaches • Participate in environmental awareness training as directed.

4.2. Competence, training and awareness

Onsite environment training will be coordinated and recorded by the Environmental Representative. Records include details of topics, attendees, and duration will be stored in the training register, signed attendance sheets will be filed.

4.2.1. Induction

All contractors at site are required to attend a health and safety, quality and environment induction prior to commencing work. The induction is to cover core issues including (but not limited to):

- Purpose and objectives of the CEMP
- Requirements of due diligence and duty of care
- Conditions of environmental permits and approvals
- Potential environmental emergencies and emergency response procedures
- Reporting and notification requirements for pollution and other environmental incidents
- High-risk activities and associated environmental safeguards, e.g. working near waterways
- Working in or near environmentally sensitive areas

- Traffic management, including clear instructions to all contractors with regards to speed limits, approved access tracks, approved working hours and delivery times
- Unexpected finds procedure (Appendix D)
- All relevant noise and vibration management measures including:
  - Avoiding use of radio during work outside normal hours
  - Avoiding shouting and slamming doors
  - Operating machines at low speed or power and switching off when not being used rather than left idling for prolonged periods, where practical
  - Minimising reversing
  - Avoid metal to metal contact.

4.2.2. Daily pre-start meetings

Daily pre-start meetings are to be undertaken by the Site Supervisor or delegated representative. All contractors for the Stage 1 – TRIPS site clearing works that are present are required to attend.

Pre-start are to include information about health and safety, environmental aspects, impacts and risks relevant to the proposed work activities and location. Attendance, meeting content and issues raised is to be recorded.

Specific environmental toolbox meetings may be developed and implemented as required at the discretion of the Environmental Representative. Relevant environmental issues for discussion may include (but are not limited to):

- Waste management
- Erosion and sediment control
- Noise and vibration control
- Environmental monitoring
- Emergency response procedures
- Environmental reporting
- Traffic and transport
- Flora and fauna management
- Relevant licences and approval conditions
- Permissible hours of work
- Location of nearest sensitive receivers
- Construction employee parking areas
- Designated loading/unloading areas and procedures
- Site opening/closing times.

A register of lesson learnt is to be maintained by the Environmental Representative for the Stage 1 – TRIPS site clearing works. These are to be included in inductions and daily pre-start meetings as necessary and appropriate.

4.3. Emergency contacts, general communication and consultation

4.3.1. Emergency contacts

Emergency contact details relevant to the Stage 1 – TRIPS site clearing works are provided in Table X.

Table 4-2. Emergency contact details relevant to the Stage 1 – TRIPS site clearing works

Organisation / Project Position	Responsible representative	Contact details
EPA pollution hotline	-	131 555
Fire and Rescue NSW	-	000 (for incidents that present an immediate threat to human health or property) or 1300 729 579 (for incidents that do not present an immediate threat to human health or property)
Southern NSW Local Health District	-	1300 066 055
SafeWork NSW	-	131 050
Eurobodalla Shire Council	Brett Corven Manager Water and Sewer	02 4474 7458 0419 588 681
Council's Representative	Ross Bailey Public Works Advisory	02 4474 7556 0412 320 064
Environmental Representative	[insert detail]	[insert detail]
Project Manager	[insert detail]	[insert detail]
Clearing Contractors Representative	[insert detail]	[insert detail]

4.3.2. Internal communication

Regular internal communications are to be carried out between the project team, including sub-contractors. Internal lines of communication are to include:

- Meetings
- Phone calls
- Written correspondence
  - Management reports
  - Site inspection reports
  - Audit reports
  - Incident reports

- Employee induction, toolbox talks, daily pre-start meetings
- Notice boards, alerts and notifications.

4.3.3. External communication

ESC will be responsible for consultation with government authorities (if required), key stakeholders and the community. Government agencies, including the NSW EPA, Department of Industry (DoI) - Water, DoI – Fisheries and DPIE have been consulted during preparation of the EIS and this CEMP and sub plans. A summary of relevant discussions is included in the SWMP.

Public Information

In addition to government agency consultation, at the commencement of Stage 1 – TRIPS site clearing works until the completion of all works, the following information and documents will be publicly available:

- SSD 7089 Conditions of consent
- Eurobodalla Southern Water Supply Storage Project EIS
- Eurobodalla Southern Water Supply Storage Project EIS response to submissions
- Site layout
- Management and mitigation measures
- All current statutory approvals for Eurobodalla Southern Water Supply Storage Project Stage 1 – TRIPS site clearing works
- All strategies, plans and programs required under the conditions of consent
- Reporting on environmental performance in accordance with the reporting requirements in any plans or programs approved under the conditions of consent
- Compliance Report.

4.3.4. Community and stakeholder communication

Community and stakeholder engagement for the Stage 1 – TRIPS site clearing works will include:

- Provision of notice to local residents of proposed Stage 1 – TRIPS site clearing activities at least 5 days prior to commencement of activities.
- As required, local residents are also to be informed of any changes to Stage 1 – TRIPS site clearing activities.
- Where works are determined to have a noise impact to sensitive receivers, the affected community will be consulted regarding the proposed noise mitigation measures for activities.
- Where dust and air quality complaints are made, the cause will be identified, and appropriate measures made to reduce emissions in a timely manner. Details of the complaint and rectification actions will be recorded.

Due to the location of the TRIPS site, there is expected to be no impact to local business owners or local residents. The nearest sensitive receiver is located about 500 m to the north-east of the site.

Due to the limited anticipated impact of the Stage 1 - TRIPS site clearing works, a project hotline will not be established.

5. Auditing and reporting

5.1. Environmental inspections

The Environmental Representative is responsible for ensuring effective environmental inspections are carried out and appropriately documented. This is to comprise

- Informal daily inspection
- Weekly site environmental inspections, documented in a format that enables capture of all information such as environmental status, action and close out
- Inspections carried out after heavy rainfall to ensure environmental controls are effective
- Inspections of plant and equipment maintenance records to ensure all plant and equipment is being maintained to ensure optimum running conditions.

5.2. Environmental monitoring

Any required environmental monitoring will be detailed within the relevant sub-plans.

5.3. Reporting

The Environmental Representative and construction contractor are responsible for all relevant reporting requirements specified in the conditions of consent.

Construction compliance reports and a pre-operational compliance reporting for the Eurobodalla Southern Water Supply Storage Project must be carried out in accordance with the *Compliance Reporting Post Approval Requirements* (2018) or any revision in force from this time.

The Environmental Representative is responsible for making each compliance report publicly available no later than 60 days after submitting it to the Department and must notify the Department in writing at least 7 days before this is done.

Reviews of the CEMP and associated environmental management plans are to be undertaken by the Project Manager or Environmental Representative, where required, as part of a continual improvement process.

The review is to consider:

- Additional processes or management that would improve the environmental performance of the Stage 1 – TRIPS site clearing activities
- Compliance with a direction, strategy, plans and/or program required under the conditions of consent, to the satisfaction of the Department.

Where revisions are required, the revised document must be submitted to the Planning Secretary for approval within six weeks of the review.

In addition, the strategies, plans and programs required as a part of the conditions of approval for the Eurobodalla Southern Water Supply Storage Project, must be reviewed and submitted to the Planning Secretary within three months of:

- The submission of an incident report
- The Approval of any modification to the conditions of consent for this Project
- The issue of a direction of the Planning Secretary which outlines the requirement for a review.

The continuous improvement process is to be designed to:

- Identify areas of opportunity for improvement of environmental management and performance
- Determine the cause or causes of non-conformances and deficiencies
- Develop and implement a plan of corrective and preventative action to address any non-conformances and deficiencies
- Verify the effectiveness of the corrective and preventative actions.
- Document any changes in procedures resulting from process improvement.
- Make comparisons with objectives and targets.

6. Incidents and Emergencies

An Emergency Response Plan is provided in Appendix C.

6.1. Incident Notification and Reporting

Incident reporting and notification is the responsibility of the Council. The clearing contractor will be required to provide information to the Council to inform reporting requirements detailed in Section 6.1.1. and Section 6.1.2.

6.1.1. Emergency Notification

In addition to the requirements specified in the Emergency Response Plan, the Department must be notified in writing to compliance@planning.nsw.gov.au immediately after the incident has become known.

The notification will include the following information:

- Development application number SSD7089
- Name of the development – Eurobodalla Southern Water Supply Storage Project
- Details of the incident (date, time, location, a brief description of what occurred and why it is classified as an incident)
- Identify how the incident was detected
- Identify when the incidents became known
- Identify any actual or potential non-compliance with conditions of consent
- Describe what immediate steps were taken in relation to the incident
- Identify further action(s) that will be taken in relation to the incident
- Identify a project contact for further communication regarding the incident.

6.1.2. Notification of Non-Compliance with Conditions of Consent

Following a non-conformance incident, the Department must be notified in writing to compliance@planning.nsw.gov.au within **seven** days after the non-compliance has become known.

In reporting the non-compliance, the notification must identify the following:

- Development application number SSD7089
- Name of the development – Eurobodalla Southern Water Supply Storage Project
- The condition of consent that has been breached
- Outline how condition has not been met and the reasons for the non-compliance (if known)
- What actions have been, or will be, undertaken to address the non-compliance

A non-compliance which has been notified as an incident does not need to also be notified as a non-compliance.

Appendix A Stage 1 – TRIPS Site Clearing Soil and Water Management Plan

Member of the Surbana Jurong Group

Eurobodalla Southern Water Supply Storage Project: Stage 1 - TRIPS Site Clearing

Soil and Water Management Plan

Prepared for: Eurobodalla Shire Council

Reference No: 30012835

24/02/2020

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1.0	24/02/2020	A. Williams	M. Davey	M. Davey

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Table of Contents

Table of Figures

List of Tables

Appendices

1. Introduction

1.1. Purpose

This Soil and Water Management Sub Plan (SWMP) forms part of the Construction Environmental Management Plan (CEMP) for Stage 1 – TRIPS site clearing works for the Eurobodalla Southern Water Supply Storage Project. The Eurobodalla Southern Water Supply Storage Project is currently progressing in two stages, specifically:

- Stage 1 – Clearing of the Tuross River Intake Pump Station (TRIPS) site
- Stage 2 – Clearing and construction of the remaining components of the Eurobodalla Southern Water Supply Storage Project.

The purpose of this Soil and Water management Plan (SWMP) is to describe how the Contractor is required to manage and protect water quality during the Stage 1 – TRIPS site clearing for the Eurobodalla Southern Water Supply Storage Project.

The conditions of consent for the Eurobodalla Southern Water Supply Storage Project state that the proponent or contractor are required to:

- Prevent, minimise, or offset adverse environmental impacts
- Set standards and performance measures for acceptable environmental performance
- Require regular monitoring and reporting
- Provide for the ongoing environmental management of the development.

1.2. Objectives

The objective of the Stage 1 - TRIPS site clearing SWMP is to ensure all mitigation measures and licence/permit requirements relevant to soil and water management are described, scheduled and assigned responsibility with reference to commitments outlined in:

- The Environmental Impact Statement prepared for the Eurobodalla Southern Water Supply Storage Project
- Addendum Submissions Report for the Eurobodalla Southern Water Supply Storage Project
- Conditions of consent for the Eurobodalla Southern Water Supply Storage Project.

1.3. Targets

The following targets have been established for the management of soil and water impacts during the project:

- Ensure full compliance with the relevant legislative requirements, EIS, and conditions of consent
- Manage downstream water quality impacts attributable to the project (i.e., maintain water waterway health by avoiding the introduction of nutrients, sediment and chemicals outside of that permitted by the environmental protection licence and/or ANZECC guidelines)
- Ensure training on best practice soil and water management is provided to all construction personnel through site inductions.

Conditions of consent specific to this SWMP are described in Table 1-1.

Table 1-1. Soil and Water Management Conditions of Consent

Condition	Section where condition addressed in SWMP
B13.Prior to commencement of any surface disturbance the Applicant must prepare a Construction Soil and Water Management Plan to the satisfaction of the Planning Secretary as part of the CEMP required by Condition C2. The Construction Soil and Water Management Plan must be prepared by a suitable qualified person(s) in consultation with the EPA and include:	This document
(a) guidelines and procedures to reuse dirty water collected in sediment basins with reuse prioritised over discharge to receiving waters;	Not applicable to the Stage 1 - TRIPS site clearing.
(b) an assessment of cumulative risks associated with sediment pond settling agents;	Not applicable to the Stage 1 - TRIPS site clearing.
(c) discharge criteria based on an assessment of potential impacts against the NSW Water Quality Objectives (WQO) for receiving waters;	Not applicable to the Stage 1 - TRIPS site clearing.
(d) identification and implementation of mitigation measures to avoid pollution including, but not limited to, dosing procedures, discharge procedures, direct ecotoxicology testing; and	Not applicable to the Stage 1 - TRIPS site clearing.
(e) a detailed Erosion and Sediment Control Plan prepared in consultation DPI Fisheries and DPIE Water in addition to the EPA.	Section 6.3 and Appendix A
B14 Erosion and sediment control measures must: (a) be in accordance with the relevant requirements of Managing Urban Stormwater: Soils and Construction Volume 1 (Landcom, 2004) and mitigation measures outlined in the Policy and guidelines for fish habitat conservation and management (DPI 2013); and	Section 3.3 and Section 6.1
(b) have sediment basins sized to a 90th or 95th percentile 5-day rainfall depth where possible.	Not applicable to the Stage 1 - TRIPS site clearing.
B15 Compliance with section 120 of the POEO Act, which prohibits the pollution of waters, except as expressly provided for in an EPL	Section 7.3
B16 The Applicant must store all chemicals, fuels and oils used on-site in accordance with: (a) the requirements of all relevant Australian Standards; and (b) the NSW EPA's Storing and Handling of Liquids: Environmental Protection – Participants Manual if the chemicals are liquids.	Section 6.4.3
B18 The Applicant must:	Section 6.3.5

Condition	Section where condition addressed in SWMP
(a) design and manage stormwater runoff from access roads so that it does not result in erosion and pollution of receiving waters;	
(b) maintain erosion control measures downstream of the spillway, storage outlet works and at the river intake; and	Not applicable to the Stage 1 - TRIPS site clearing.
(c) use natural materials, such as rock rip rap, for erosion and river bank protection	Section 6.3.10
B30 The Applicant must ensure that public access is managed to prevent erosion or damage to native vegetation by restricting access through site fencing to pedestrians	Not applicable to the Stage 1 - TRIPS site clearing.

1.4. Relevant guidelines

The guidelines, specifications and policy documents that informed this SWMP include:

- Managing urban stormwater: soils and construction Volume 1, Landcom, 2004 (referred to herein as the 'Blue Book')
- Managing urban stormwater: soils and construction Volume 2D, Main road construction, Department of Environment and Climate Change, NSW, 2008
- NSW Office of Environment and Heritage (NSW OEH, 2012), Erosion and Sediment Control on Unsealed Roads, Sydney
- Policy and guidelines for fish habitat conservation and management (DPI 2013).

2. Existing environment

2.1. Topography and drainage

The TRIPS site is elevated at between 0 and 23 m AHD and located on the eastern embankment of the Tuross River adjacent to Eurobodalla Road. An environmental engineer from SMEC carried out a site inspection to make observations and photograph the site and surrounding topographic features as described below.

Surrounding area:

- To the east, Eurobodalla Road is approximately level with the TRIPs site at the driveway, before it descends to the south at a gentle to moderate gradient within a road 'cutting' (Photo 2-1). Potential surface water run-on to the TRIPS site is currently intercepted and diverted along the western edge of the road via an existing PVC pipe culvert (currently blocked) at the TRIPS site driveway entrance (Photo 2-2).
- To the north of the site, existing Southern Water Treatment Plant is upslope of the TRIPS site. Surface runoff from the existing southern water treatment plant is expected to drain south-east towards Eurobodalla Road or south towards the TRIPS site. An existing stormwater pit is located at the hydraulic low point, intercepting surface water runoff from the facility before discharging via pipe to the Tuross River (Photo 2-3).
- To the south, surface runoff is expected to discharge towards the south-west and west towards the Tuross River
- To the west and downslope of the site is the Tuross River which runs in a northerly direction pas the site.

TRIPS site area:

- The north eastern portion of the TRIPS site comprises a levelled area near the driveway (Photo 2-4). The site descends to the west at gentle to moderate slope gradients (up to 15%).
- An existing vehicle access track (gravelly soils) is formed within a 'cutting' into the river embankment at gradient of approximately 8-10%. Existing earthen berms are noted to divert surface runoff towards the Tuross river (Photo 2-5). Some rock outcropping is noted in this cutting.
- Between the access track and the Tuross River, steep to very steep slope gradients are noted ranging from 50% to 85% in upper to mid-embankment slopes (Photo 2-6), before dropping off steeply to greater than 100% (>45 degrees) on lower embankment slopes (Photo 2-7). Some rock outcropping and vertical cliff edge is noted along the lower embankment slopes and along the edge of the river (Photo 8). This section of the river bank extends between 0 and 18 m AHD, includes areas of semi-permanent water and inundating within flooding. The soils are currently stabilised by existing native vegetation including mature trees and undergrowth plants and shrubs.

Photo 2-1. Eurobodalla Road within cutting. TRIPS site to left of photo

Photo 2-2. Driveway entrance to TRIPs site. Existing PVC pipe culvert (blocked)

Photo 2-3. Existing stormwater pit immediately south of the Southern Water Treatment Plant, adjacent to the TRIPs site

Photo 2-4. Levelled area at access driveway to TRIPs site

Photo 2-5. Existing vehicle access track. Earthen bunds noted.

Photo 2-6. Steep slope gradients, approximately 50% to 85% on upper to mid-embankment slopes

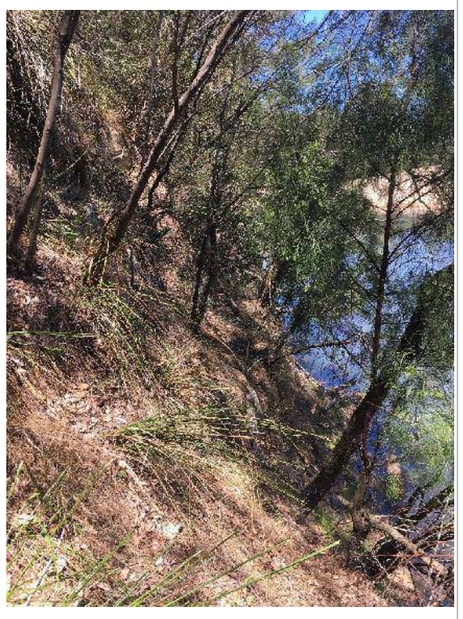

Photo 2-7. Vey steep slopes gradients, estimated greater than 100% (greater than 45 degrees) on lower embankment

Photo 2-8. Rock outcropping near Tuross River water edge

2.2. Soil landscape and geology

Previous geotechnical investigations undertaken at the TRIPS site included near surface mapping, subsurface investigation test pits and boreholes, and groundwater level monitoring. The site subsurface conditions consisted of surficial silty topsoil and residual clayey silt soils (mostly relatively shallow), overlying interbedded and foliated laminated siltstones and sandstones (depths greater than 1.4 m depth). The strength and weathering profile of the rock at the TRIPS location are generally related, with rock strength increasing as the degree of weathering reduces. Groundwater beneath the TRIPs site is expected to remain relatively consistent at elevation of 6.5 m AHD. Alluvial deposits comprising sands, silts and gravels are expected in the river bed, although these were not encountered within geotechnical test locations located near the river embankment.

Further details are presented within the Geotechnical Investigations Factual Report (SMEC, 2018a) and Geotechnical Investigations Interpretive Report (SMEC, 2018b).

2.3. Erosion hazard

A preliminary assessment of existing erosion impacts was undertaken based on visual observations made during initial site visit by SMEC senior environmental engineer on 13 November 2019. below provides a summary of the relevant observations.

Table 2-1. Identified erosion hazards

Observations	Photograph
Existing minor gully erosion was observed within drainage line alongside the adjacent to the vehicle access track. Eroded soils appeared to have scoured to top of underlying shallow rock. Surface water runoff is expected to flow towards Tuross River via this drainage line.	 *Photo 2-9. Minor gully erosion in site drainage line*

Observations	Photograph
Difficult foot access was noted on the steep embankment slopes. An existing 'goats trail' was observed to be present with apparent minor erosion impacts to downslope topsoil and leaf litter.	 *Photo 2-10. 'Goats' trail evidence on steep embankment*
Existing temporary steps, constructed with star pickets and timber, appeared to be formed at a single location. The steps appeared to provide stabilised foot access up/down the site slopes (east of access track). Minimal erosion was noted.	 *Photo 2-11. Temporary steps (star pickets and timber) provided safe and stabilised up/down slope foot access*

Observations	Photograph
The existing low lift pump station (offsite to the south) was noted to be constructed with a concrete stabilised wall on lower embankment slopes, preventing erosion in this area of prior disturbance.	 Photo 2-12. Existing low lift pump station (offsite to south) included concrete stabilised wall

2.4. Receiving water quality

Maintaining the surface water quality in the Tuross River has been identified as being a primary water quality objective. Existing water quality conditions, and potential risks to water quality posed by the proposal are discussed in Appendix D of the Addendum Submissions Report.

Water Quality Objectives (WQO) for this section of the Tuross River relate to the protection of:

- Aquatic ecosystems
- Visual amenity
- Primary contact recreation
- Secondary contact recreation
- Livestock water supply
- Irrigation water supply
- Homestead water supply
- Drinking water at point of supply (disinfection only, clarification and disinfection, groundwater)
- Aquatic foods (cooked).

A Water Quality Monitoring and Sampling Plan (WQMSP) was developed and has been implemented for the Project. Baseline water quality monitoring included scheduled (monthly) and event based (e.g. immediately after rainfall) sampling carried out within several locations along this section of the Tuross River for various water quality parameters including total dissolved solids (TDS), total suspended solids (TSS), turbidity, pH, nutrients, heavy metals, various organic pollutants and microbial parameters. Baseline water quality data indicated that the Tuross River is characterised by:

- Elevated turbidity, nutrients and chlorophyll and selected heavy metals (aluminium and zinc), following wet weather events
- Other pollutants such as heavy metals (excluding aluminium and zinc), petroleum hydrocarbons, pesticides and other contaminants were below adopted assessment criteria.

Construction water quality monitoring will be carried out throughout the construction of the Project (including Stage 1 and Stage 2 packages of works), enabling a comparison of water quality to the pre-construction baseline water quality and triggering the need for additional mitigation and management measures.

SMEC are currently interpreting baseline data to establish site specific trigger values for comparison during construction water quality monitoring, in accordance with Australian and New Zealand Guidelines for Fresh and Marine Water Quality (ANZG 2018).

2.5. Climate and river flows

Climate and river monitoring data for the proposal were sourced from the two nearby available weather and river monitoring stations:

1. Daily river flows and rainfall monitoring data at 'Tuross River @ Eurobodalla (Station ID 218008)', located immediately adjacent to the proposal within the existing southern water treatment plant sourced from the Department of Primary Industries, Office of Water website (DPI, 2017).
2. Rainfall monitoring data only at 'Bodalla Post Office (Station ID 069036)' located approximately six kilometres north-east of the proposal sourced from the Bureau of Meteorology website (BOM, 2017).

Moderate to high rainfall occurs throughout the year (871 millimetres annually), with a slight summer dominance (118 millimetres in February). The lowest rainfall occurs in spring (41 millimetres in September). SMEC consider that rainfall data at Source 1 is typically less than Source 2 and may provide a better estimate of actual rainfall expected at the proposal site.

Similarly, mean monthly flow within the Tuross River was 23309 Megalitres (all months), with highest flows observed in March (42007 Megalitres) or June (44433 Megalitres) and the lowest flow in September (9721 Megalitres). Seasonal monthly runoff figures show the Tuross River experiences its highest flows in autumn, possibly resulting from dominant summer rainfall.

Historically, water levels within the Tuross River ranged between -1 metre AHD (dry) and 13 metres AHD (highest recorded flow). Within 2016, at least two events were recorded where river flows exceeded 10 metres AHD.

3. Potential environmental impacts

The potential impacts on soil and water resources will depend on several factors. Primarily impacts will be dependent on the nature, extent and magnitude of Stage 1 – TRIPS site clearing activities and their interaction with the natural environment. If inadequately managed, Stage 1 – TRIPS site clearing activities can impact water quality if they disturb soils or watercourses or result in uncontrolled discharges of contaminating or polluting substances to watercourses.

Potential sources of water quality impacts include:

- Increased sediment loads due to exposed soil transported during rain events discharging to Tuross River
- Increased concentrations of nutrients, metals, and other pollutants, transported via sediment-laden (i.e., dirty water) discharge to Tuross River
- Chemicals, oils, grease and petroleum hydrocarbon spills from construction machinery directly polluting downstream watercourses
- Gross pollutants (e.g., litter) from construction activities polluting downstream watercourses.
- Stockpiles of cleared vegetation (including mulch) could also impact watercourses through leaching of tannins.

Impacts to water quality that may result from these activities include:

- Smothering of aquatic life and/or inhibiting critical processes (e.g., photosynthesis) of aquatic and riparian flora
- Impacts to breeding and spawning conditions of aquatic fauna
- Changes to water temperature due to reduced light penetration, or from discharge of water that is not at ambient temperature
- Impacts to downstream ecosystems such as wetlands, floodplains and coastal estuaries
- Increased turbidity and nutrient concentrations leading to a proliferation of nuisance aquatic flora
- Pollutant runoff in surface water from herbicide application
- Runoff high in tannins can increase the biological oxygen demand (BOD) of the receiving environment, which in turn would decrease the availability of dissolved oxygen. Tannins may also reduce light penetration and alter the pH of receiving waters. These impacts may affect aquatic ecosystems in receiving environments.

Some impacts on soil and water attributable to the Project are anticipated. Chapter 4 provides mitigation measures that will be implemented to avoid or minimise those impacts.

4. Mitigation and management measures

4.1. Key management strategies

Key management strategies which underpin this SWMP have been developed from the Blue Book principles and include:

- Maintaining existing tree stumps, roots and ground level vegetation (i.e., grass, shrubs and undergrowth), particularly on steep slopes
- Works carried out Environmental Work Method Statements (EWMS) prepared by the Contractor, including effective consultation and implemented by construction personnel
- Minimising extent and duration of disturbance
- Early clean water diversions around the site (i.e., minimising run-on)
- Control stormwater flows onto, through and from the site
- Use erosion control measures to prevent onsite damage
- Use sediment control measures to prevent off site damage
- Stabilise disturbed areas quickly and progressively throughout construction stage
- Regular inspection and maintaining controls measures
- Scheduling construction activities outside of inclement heavy rainfall periods or high river flows.

4.2. Environmental Work Method Statements (EWMS)

The Contractor will prepare a detailed Environmental Work Method Statement (EWMS) for clearing activities to comply with the requirements of this SWMP. The EWMS should detail the:

- Proposed activities to be undertaken
- Identify environmental hazards and assess initial risk ranking
- Nominated proposed control measures with reference to this SWMP
- Assess residual risk ranking and responsible personnel to implement controls.

Prior to works, the EWMS will require review and approval by the Environmental Representative and consultation / induction with all construction personnel involved in the activity. External input or review may be carried out by a soil conservation consultant or accredited erosion and sediment control professional.

4.3. Erosion and sediment control plan

Appendix A (Drawing no. 30012835-001 to Drawing no. 30012835-004) includes the detailed Erosion and Sediment Control Plan for the works. The plans include the minimum requirements to be progressively installed by the Contractor during the works.

Standard controls are identified where relevant to the Stage 1 - TRIPS site clearing works in the following sections. In summary, these include:

- Up-gradient clean water diversions to be installed around the site
- Install silt fencing along perimeter to prevent clean water run-on and divert dirty water flows away from steep embankment area

- Site-won mulch propose to be used in windrows to control/treat dirty water runoff
- Vegetation clearing to leave tree stumps and roots in place, and maintain existing grass covered areas, low-lying shrubs and undergrowth to minimise soil destabilisation
- Install a sump area at low point with level spreader or equivalent to permit discharge to vegetated area. No site water runoff permitted to enter Tuross River
- Install coir logs and temporary steps (timber and star picket) to provide stabilised and safe downslope access by foot along contour slopes
- Install geotextile cover layer up to minimum 5 m AHD following vegetation removal on steepest slopes. Secure by fixing with soil pins and/or tree stumps remaining.

4.3.1. Consultation with agencies

SMEC undertook initial discussions with the NSW EPA via a teleconference on 26 November 2019. The purpose was to enable development of suitable and effective control measures to be incorporated within this SWMP and detailed Erosion and Sediment Control Plans. NSW EPA comments were considered and adopted within this plan. Evidence of correspondence is included in Appendix B.

SMEC have not undertaken discussion with DPI Fisheries and Water. Prior to finalisation of this SWMP (and ESCP), review comments received by DPI Fisheries and Water would be considered and addressed in the subsequent revision of the ESCPs.

4.3.2. Standard controls

The following standard erosion and sediment controls are indicative of controls that may be used to manage soil and water impacts during construction. Table 4-1 details the relevant section from the following guidelines where the drawings (or requirements) are detailed. Controls should be implemented where appropriate and maintained to ensure proper function:

- Volume 1 Soils and Construction – Managing Urban Stormwater (Landcom, 2004) ('the Blue Book')
- Volume 2D Soils and Construction – Main Road Construction (DECC, 2008); and
- Erosion and sediment control on unsealed roads (NSW OEH, 2012).

Where the drawings are detailed, controls should be implemented where appropriate and maintained to ensure proper function. Selection of control measures requires the following:

- Identifying the problem – erosion or sedimentation to be managed
- Where the problem is erosion, identifying whether it is caused by raindrop impact or concentrated flow
- Where the problem is sedimentation, identifying if sediment is conveyed by sheet or concentrated flow
- Selecting the appropriate techniques depending on the identified specific nature of the problem.

Table 4-1. Standard erosion and sediment controls, Stage 1 - TRIPS site clearing only

Control	Drawing Reference	Source Page Reference	Recommended standard erosion and sediment controls: Y (yes recommended) NR (not recommended) TBA (to be assessed by contractor)
Stockpiles	SD 4-1	4-5 Blue Book	Y – where applicable
Replacing topsoil	SD4-2	4-6 Blue Book	NR
Temporary waterway crossing	SD5-1	5-14 Blue Book	NR
Rock check dams	SD 5-4	5-22 Blue Book	NR
Earth Bank (low flow)	SD 5-5	5-25, Blue Book	Y – Clean water diversions
Earth Bank (high flow)	SD 5-6	5-26 Blue Book	Y – Sump area
Concentrated Flow (Batter Chute)	SD 5-7	5-28 Blue Book	NR
Energy dissipater	SD 5-8	5-34 Blue Book	Y – at discharge outlet or where scour potential
Sediment Fence	SD 6-8	6-36 Blue Book	Y – North and western perimeter (minimum)
Rock sediment basin	SD 6-1	6-16 Blue Book	NR

Control	Drawing Reference	Source Page Reference	Recommended standard erosion and sediment controls: Y (yes recommended) NR (not recommended) TBA (to be assessed by contractor)
Gabion sediment basin	SD 6-1	6-17 Blue Book	NR
Earth basin - wet	SD6-4	6-19 Blue Book	NR
Turbidity barrier	SD6-10	6-39 Blue Book	TBA (see note)
Mesh and Gravel Inlet Filter	SD 6-11	6-40 Blue Book	Y – Existing stormwater pit
Geotextile Inlet Filter	SD 6-12	6-41 Blue Book	Y – Existing stormwater pit
Stabilised Site Access	SD 6-14	6-48 Blue Book	Y – Driveway entrance
Control of wind erosion	SD6-15	6-49 Blue Book	NR
Temporary batter drains – typical arrangement	C2	Vol 2D Appendix C, p57	NR
Check dams in drains and gullies	C3 Figure 32	Vol 2D Appendix C, p58 NSW OEH (2012), p41	Y – If concentrated flows develop (i.e. drainage pathways)
Sediment Traps at drop inlets	C5	Vol 2D Appendix C, p60	Y – Existing stormwater pit

Control	Drawing Reference	Source Page Reference	Recommended standard erosion and sediment controls: Y (yes recommended) NR (not recommended) TBA (to be assessed by contractor)
Sediment fence – typical arrangement	C6	Vol 2D Appendix C, p61	Y – North and western perimeter (minimum)
Crowning and in fall drainage	Figure 5 & 7 (example photo)	NSW OEH (2012)	NR
Typical road drainage features (incl. Catch drain, table drain, mitre drain)	Figure 8	NSW OEH (2012)	NR
Rollovers	Figure 13 (example photo)	NSW OEH (2012)	NR
Catch drains	Figure 16	NSW OEH (2012)	NR
Temporary cross drain	Figure 14	NSW OEH (2012)	Y – Driveway entrance
Temporary crossing (Culvert)	Figure 27	NSW OEH (2012)	NR
Batter slope stabilisation (various)	Table D1 Group 1	Vol 2D Appendix C, p61	Y – Steep embankment area
Erosion control blankets	Section 6.1.3, Figure 30 and Figure 31	NSW OEH, p38-40	Y – Steep embankment area
Sediment fences	Figures 33, 34 and 35	NSW OEH (2012), p43-44	Y – North and western perimeter (minimum)

Control	Drawing Reference	Source Page Reference	Recommended standard erosion and sediment controls: Y (yes recommended) NR (not recommended) TBA (to be assessed by contractor)
Spoon drains on batters	Figures 40 and 41	NSW OEH (2012), p54	NR
Soil surface Mulching	Section 6.1.2 and 7.1.3	NSW OEH (2012), p38	TBA

4.3.3. Weed control and management

Weed control will be carried out prior to vegetation clearing for construction works. Specific weed control measures are contained within the Flora and Fauna Management Plan. Mitigation measures will be employed to prevent soil land water impacts include:

- Herbicide application (if required):
  - The handling and use of herbicides on the site will be in accordance with labelling instructions and Safety Data Sheets and comply with the NSW Pesticides Act 1999. Herbicides should generally be applied when wind speeds are generally low.
  - Herbicide application will take place after two consecutive days with no rain and prior to at least five consecutive days with no predicted rain. Herbicide application should be delayed if rain is forecasted.
- Vehicle washdown (if required):
  - Vehicle washdown to occur within designated hygiene control points established at site access points for any vehicle, machinery or personnel entering site.
  - Minimisation of water volume will be achieved through high pressure
  - Runoff from vehicle washdown will be contained within suitable earth bunded areas and standard controls used to prevent runoff entering site drains and pits.

4.3.4. Clean water diversions

The Contractor will install upgradient clean water diversions around the site (i.e., minimising run-on) including:

- Silt fencing will be installed along existing fence line to the north of the TRIPS site to separate clean and dirty water flows
- Installing a mesh and gravel filter inlet (or equivalent geotextile filter) will be placed over the existing stormwater pit downslope of the Southern Water Treatment Plant
- Installing perimeter silt fencing and mulch bunds at the crest of the steep embankment to divert dirty water and prevent from entering the Tuross River.

Appendix A, Drawing no. 30012835-002 shows clean water diversions.

4.3.5. Sediment treatment and sump

Stage 1 - TRIPS site clearing will not involve earthworks, noting only minor ground disturbance is expected. The following sediment controls will be installed, using precautionary principle, to reduce site runoff velocity, prevent erosion and treat dirty water flows (if applicable) prior to leaving the site:

- Mulch windrow/bund along the crest of steep embankment to divert dirty water flows away from steep embankments (applicable to cleared portion only)
- Install geotextile or jute mesh lined catch drain to divert site water from steep embankment across the contours of the access track
- Remove existing earth berms where these are likely to divert dirty water towards the steep embankment
- Exposed soil areas (i.e. unsealed access track to be stabilised with mulch cover (site won) or suitable imported washed gravel road base to prevent scour

- A proposed sump area would be installed at the hydraulic low point to permit discharge of site water into the downslope vegetated area. The sump outlet would discharge runoff at low velocities with level spreader or equivalent to prevent scour. The sump area is considered to intercept possible dirty water runoff from site or contain accidental spills (Refer to contingency measures Section 4.4.3).

4.3.6. Maintaining vegetation

Vegetation clearing, including tree felling and slashing within the clearance boundary is required to be carried out during the Stage 1 - TRIPS site clearing package of works. In addition to requirements specified elsewhere in the CEMP and sub-plans, the Contractor will adopt the following control measures when undertaking vegetation clearing activities to prevent topsoil destabilisation, along steep embankment slopes.

- Grubbing and soil disturbance should be avoided. Retained roots can assist in soil stabilisation and some regrowth and coppicing can assist in the rehabilitation stage post construction
- Slashed native vegetation, unless there is a specific need to remove, should be left in place
- Larger trees within 10 metres of the clearing boundary are to be cut down with a chainsaw, not pushed over. Trees are to be felled into the clearing boundary to minimise damage to retained vegetation. Trunks and roots are to be left in situ to minimise soil erosion
- Trees could be chipped, and the mulch used in windrows to control potential run off if appropriate and/or spread over disturbed earth to avoid soil erosion.

4.3.7. Mulch windrows / cover

During and after vegetation clearing, organic mulch is to be progressively installed using the following progressive erosion and sediment controls including:

- Mulch windrows / bunds to intercept and divert dirty water runoff and filter sediment
- Mulch ground cover to stabilised exposed soil areas or revegetation zones to prevent further erosion.

Appendix A, Drawing no. 30012835-002 shows indicative minimum mulch windrow locations.

Mulch would be used according the following controls:

- Site-won mulch will be sourced from native vegetation which is felled and tree stumps inside the vegetation clearance boundary. Site-won mulch must not comprise any exotic or invasive vegetation species to prevent spread of weeds.
- Alternatively, imported mulch may be sourced from a reputable supplier (i.e., Councils Brou Landfill or equivalent) noting it will be required evidence of certification to meet the minimum testing and quality requirements of the applicable Australia Standards. Preference will be given to the use of older mulch that won't readily leach.

4.3.8. Tannin management

The RMS Environment Direction Management of Tannins from Vegetation Mulch (RMS, 2012) states that '*Tannins are naturally occurring plant compounds. Tannin generation from vegetation mulch is likely to be highest from low-lying coastal floodplain areas. The species of vegetation (e.g. Melaleuca) will have a major impact on the likelihood of tannin generation.'*

The Contractor would assess and employ tannin management control measures wherever organic mulch us used or stockpiled onsite (mulch windrows, stockpiles and mulch cover areas,). Reference would be made to suitable control measures within the RMS Environmental Direction (RMS, 2012) including but not limited to:

- Placement of silt fence on downslope side of mulch to prevent leaching of tannins
- Visual monitoring during wet weather events for evidence of tannins
- Mulch windrows to be limited in height (i.e., avoid excessive height above 1m) and placed along the contours to reduce concentrated flows.
- Mulch stockpile areas (if required) should be established no less than 50 m from the Tuross River. Upgradient water should be diverted around stockpiles to prevent it entering the stockpile
- Mulch cover should not be spread mulch in thicker than 100 mm layers.
- Do not use mulch for surface cover on steep embankment slopes
- Visual inspection of organic mulch vegetation areas within 24 hours following rainfall event greater than 10mm to ensure tannin impacted water does not leach.

Appendix A, Drawing no. 30012835-004 shows details of level spreader, sediment fence and organic fibre (jute mesh) drain.

4.3.9. Temporary access path

Prior to vegetation clearing, the Contractor will provide a suitable temporary access path to provide stabilised and safe downslope access by foot along slope contours. The temporary access path is required to prevent destabilisation using the following:

- Install coir logs or temporary steps (timber and star picket) on downslope side of path
- Maintain low lying and ground vegetation outside of path areas
- Foot traffic to keep to the designated temporary access path to maintain low lying vegetation in remaining areas
- Maintain existing temporary steps (timber and star picket) as shown in Photo 2-11.

Appendix A, Drawing no. 30012835-003 shows an indicative temporary access path.

4.3.10. Batter stabilisation

During and immediately after vegetation clearing, the Contractor will install progressive erosion controls on steep embankment slopes using the following:

- Install coir logs at regular intervals to stabilise slopes following vegetation clearing. These would be positioned at regular intervals, including downslope of any ground disturbance or destabilised topsoil areas and where concentrated flows have potential to form
- Install geotextile (Bidum or equivalent) cover layer over the surface of exposed soil areas to prevent erosion from raindrop impact. At a minimum, geotextile would be installed from the toe of the embankment near the water edge to 5m AHD. Additional areas would be covered with geotextile subject wherever there was ground disturbance during vegetation removal. The geotextile would be secured to the slope by fixing with soil pins and/or tree stumps remaining.

Appendix A, Drawing no. 30012835-004 shows an indicative batter stabilisation measures

4.4. Contingency measures

4.4.1. Wet weather (heavy rainfall)

The following contingency measures are to be implemented to mitigate risks associated with inclement wet weather (heavy rainfall) during the works:

- Weather and flood monitoring will be carried out daily as outlined in Section 5.3.2
- Works will be scheduled to not occur prior to or during heavy rainfall. Works will be postponed until after predicted heavy rain events
- Progressive erosion and sediment controls (i.e., batter stabilisation measures) would be installed and maintenance inspections/repairs undertaken prior to weekends or periods of predicted heavy rainfall
- Additional visual monitoring inspections to be undertaken during wet weather (heavy rainfall) as outlined in Section 5.3.1.

4.4.2. River flood potential

The following additional contingency measures will be carried out to mitigate risks of river flood potential:

- Weather and flood monitoring will be carried out daily as outlined in Section 5.3.2
- Works will be scheduled to not occur prior to or during heavy rainfall. Works will be postponed until after predicted heavy rain events
- Erosion and sediment controls will be progressively installed during works installed and inspected prior to weekends and predicted heavy rainfall events
- Progressive batter stabilisation measures will be installed during works on steep embankment slopes. A geotextile cover will be employed over fluctuating water level zone.
- Where possible, batter stabilisation measures are to be located above 2-year ARI flood to prevent impacts from concentrated water flows
- During construction activities, stockpile or store materials away from the core riparian zone (i.e., 20 m zone).

4.4.3. Environmental spills

The following contingency measures apply for environmental spills:

- All liquid chemical handling/storage, refuelling and vehicle washdown activities will be located at a designated bunded area near the driveway entrance, away from stormwater drains and at least 50 m away from the Tuross River
- A sediment sump located at the hydraulic low point at the site will be used a contingency pollution sump to capture and treat contaminated runoff
- An environmental spill kit will be readily available
- No refuelling activities will occur on the steep embankment slopes. All powered plant will be inspected and checked prior to use.

5. Compliance management

5.1. Roles and responsibilities

The roles and responsibilities of all project staff of relevance to the SWMP are listed in the CEMP. Specific roles and responsibilities for this SWMP are outlined within Table 5-1. The clearance contractor will be primarily responsible for the implementation of the SWMP and may engage a qualified consultant with experience in erosion and sediment control for monitoring and auditing.

Table 5-1. Project staff roles and responsibilities – specific to SWMP

Role	Responsibility
ESC Environmental representative	• Develop/review Environmental Work Method Statements for compliance with this SWMP • Review and update of Progressive Erosion and Sediment Control Plans • Monitoring and inspections within this SWMP • Complete self-audits and monitor compliance with this SWMP

5.1.1. Visual monitoring

Regular visual monitoring is to commence following site mobilisation for the Stage 1 - TRIPS site clearing works for any potential or observable impacts to the Tuross River during clearing activities. Visual monitoring is to be carried out at least daily (or more frequently if required) by the Environmental Representative during clearing activities, and during and after wet weather (heavy rain) events. Visual monitoring is to include:

- Making observations and photographic evidence for signs of:
  - Damaged or ineffective erosion and sediment control measures
  - Dirty water runoff from construction site directed towards Tuross river
  - Tannin impacted runoff from use of mulch windrows or stockpiles
  - Evidence of turbid plumes forming within the river
  - Loose leaves or vegetation debris fallen into the river
- Employing appropriate corrective measures will be taken as required including:
  - Temporarily stopping works (where appropriate)
  - Review and amendment to Environmental Work Method Statements
  - Inspecting and maintaining erosion and sediment control measures
  - Incident investigations and reporting of notifiable incidents (where appropriate)
- Documentation of visual monitoring and corrective actions undertaken during the construction period will be recorded.

5.1.2. Weather and flood monitoring

Weather and flood monitoring is to be carried out by the Environmental Representative during the clearing activities to ensure that scheduled works do not occur during or shortly after heavy rainfall periods (including subsequent high river flows).

- Daily monitoring data is to be obtained from the following online data sources:
  - Daily river flows and rainfall monitoring data at 'Tuross River @ Eurobodalla (Station ID 218008)', located immediately adjacent to the proposal within the existing southern water treatment plant sourced from the Department of Primary Industries, Office of Water website (DPI, 2017).
  - Rainfall monitoring data only at 'Bodalla Post Office (Station ID 069036)' located approximately six kilometres north-east of the proposal sourced from the Bureau of Meteorology website (BOM, 2017).
- Predicted rainfall forecasts for 24-48 hours (or 72 hours prior to weekends) are to be notified to construction personnel during Daily Pre-start/toolbox discussions prior to undertaking works. Works will be stopped and rescheduled to avoid predicted heavy rainfall and high river flows.
- Documentation of actual daily rainfall and river flows during construction will be recorded.

5.1.3. Water quality monitoring

No additional water quality monitoring is required during Stage 1 - TRIPs site clearing works, noting vegetation clearing activities will not involve any major earthworks or direct interaction with the Tuross River.

Eurobodalla Shire Council will be undertaking construction water quality monitoring during the construction of the Project (including Stage 1 and Stage 2).

6. References

écologique 2017, *Eurobodalla Southern Storage Water Supply – aquatic ecological assessment*, écologique, Balgowlah.

Fairfull and Witheridge 2003 *Why do Fish Need to Cross the Road? Fish Passage Requirements for Waterway Crossings*

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Fisheries Management Act 1994 (Cwlth), viewed 22 November 2019, https://www.legislation.nsw.gov.au/#/view/act/1994/38

NSW Office of Environment and Heritage (2012), Erosion and Sediment Control on Unsealed Roads, Sydney

NSW Fisheries 2003, *Policy and guidelines for fish friendly waterways crossings*, NSW Fisheries, Cronulla.

Roads and Maritime Services 2012, *QA Specification G40: Clearing and Grubbing*, NSW Government, Sydney.

Roads and Maritime Services 2019, *QA Specification G36: Environmental Protection*, NSW Government, Sydney.

SMEC 2017, *Eurobodalla Southern Storage Water Quality Monitoring and Sampling Plan, SMEC* Australia, North Sydney. Ref: 30012127_R01, Revision 01, dated 17 August 2017

SMEC 2018a, *Eurobodalla Southern Storage Ancillary Works Geotechnical Investigation – Interpretive Report, SMEC* Australia, North Sydney. Ref: 30012127_R12, Revision 02

SMEC 2018b, *Eurobodalla Southern Storage Ancillary Works Geotechnical Investigation – Interpretive Report, SMEC* Australia, North Sydney. Ref: 30012127_R13, Revision 02

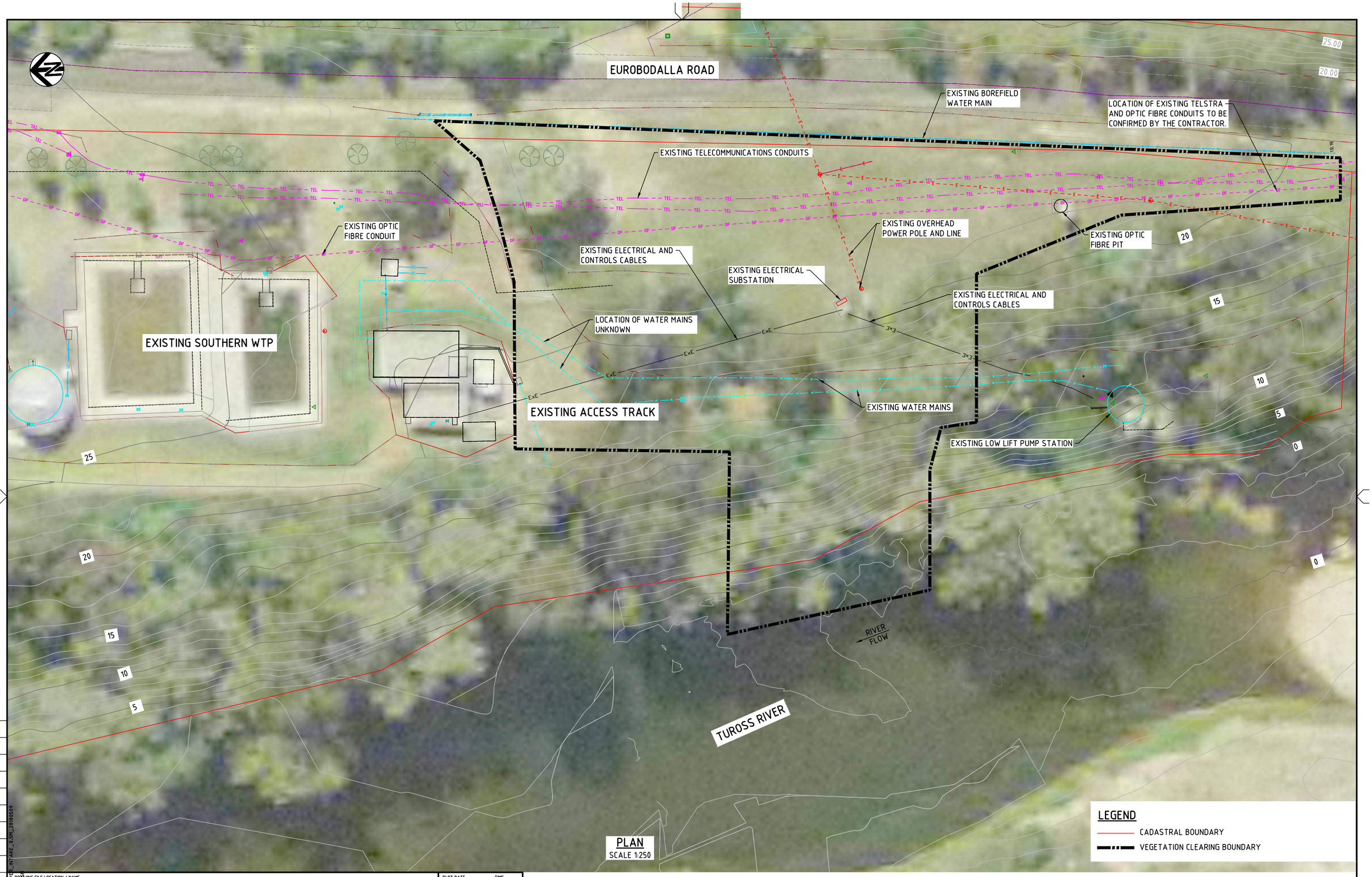
SMEC 2018c, *Eurobodalla Southern Storage Conceptual Erosion and Sediment Control Plan, SMEC* Australia, North Sydney. Ref: 30012127_R10, Revision 02, dated 24 April 2019

SMEC 2018d, *Eurobodalla Southern Water Supply Storage, Environmental Impact Statement,* SMEC Australia, North Sydney, Ref: 30012127_R16_V01 dated 27 August 2018

SMEC 2019a, *Eurobodalla Southern Storage Tuross River Intake Pump Station Design Report*, SMEC Australia, North Sydney, Ref: 30012127_R24, Revision 01, dated 24 January 2019

SMEC 2019b, *Eurobodalla Southern Storage, Addendum Submissions Report*, SMEC Australia, North Sydney, Ref: 30012127_SR dated 24 May 2019

Appendix A Erosion and sediment control plan



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01	28.11.19	ISSUED FOR INFORMATION	001	AW

TITLE	NAME
DRAFTER	S. ALLEN
DRAFTING CHECK	A. WILLIAMS
DESIGNER	A. WILLIAMS
DESIGN CHECK	E. WINGATE
PROJECT MANAGER	M. DAVEY
PROJECT DIRECTOR	C. MASTERS

SCALES AT A1 SIZE DRAWING
SCALE 1:250 AT A1 SIZE
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DESIGNER
SMEC
SMEC AUSTRALIA PTY LTD
ABN 47 065 475 149
LEVEL 5 20 BERRY STREET
NORTH SYDNEY NSW. 2060
PH 02 9925-5555 FAX 02 9925-5566
SMEC PROJECT No 30012085

CLIENT
eurobodalla shire council

PROJECT TITLE
EUROBODALLA SHIRE COUNCIL
TRIPS SITE
EXISTING SITE CONDITIONS

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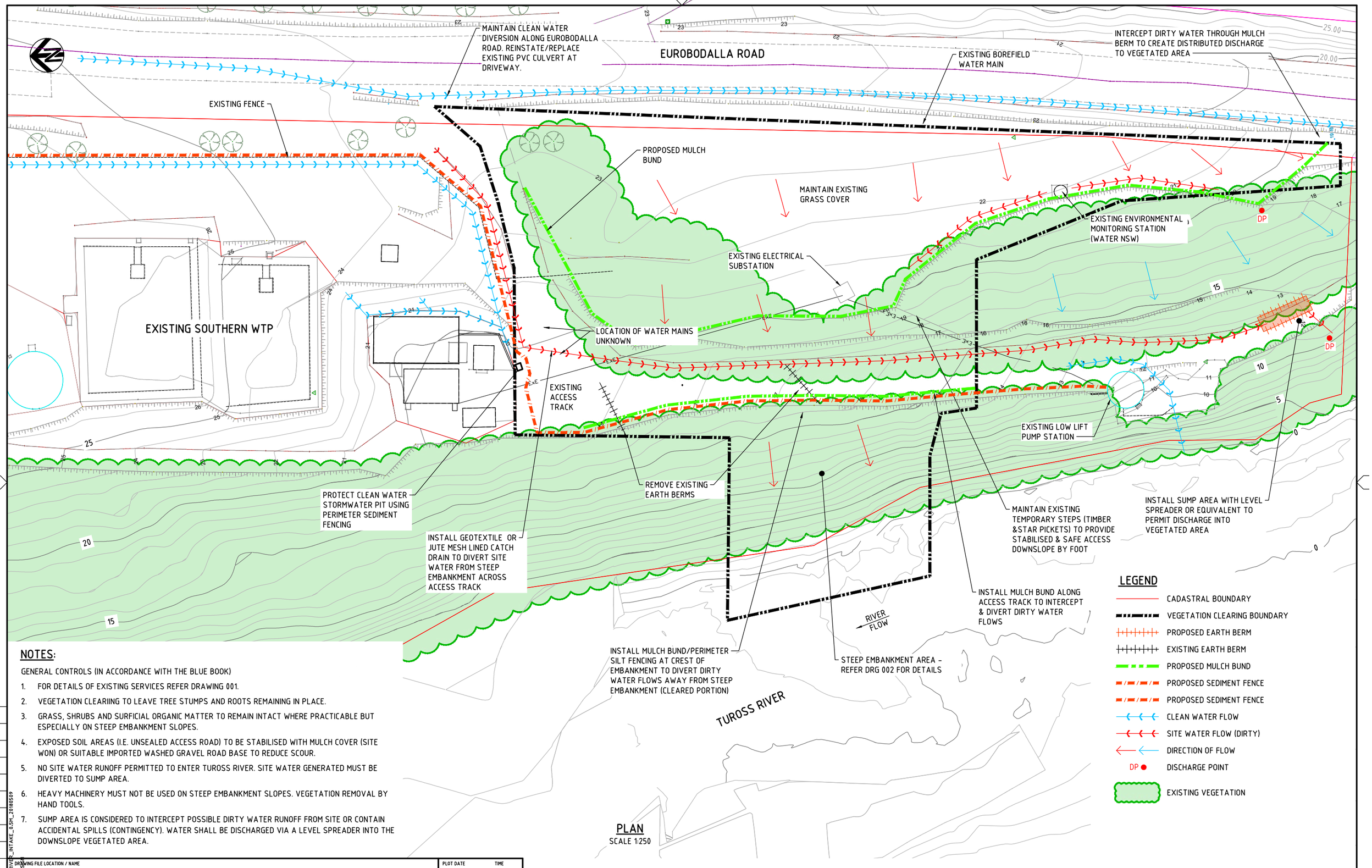
AS NOTED	PRELIMINARY	30012835-001	01



NOTES:

GENERAL CONTROLS (IN ACCORDANCE WITH THE BLUE BOOK)

1. FOR DETAILS OF EXISTING SERVICES REFER DRAWING 001.
2. VEGETATION CLEARIING TO LEAVE TREE STUMPS AND ROOTS REMAINING IN PLACE.
3. GRASS, SHRUBS AND SURFICIAL ORGANIC MATTER TO REMAIN INTACT WHERE PRACTICABLE BUT ESPECIALLY ON STEEP EMBANKMENT SLOPES.
4. EXPOSED SOIL AREAS (I.E. UNSEALED ACCESS ROAD) TO BE STABILISED WITH MULCH COVER (SITE WON) OR SUITABLE IMPORTED WASHED GRAVEL ROAD BASE TO REDUCE SCOUR.
5. NO SITE WATER RUNOFF PERMITTED TO ENTER TUROSS RIVER. SITE WATER GENERATED MUST BE DIVERTED TO SUMP AREA.
6. HEAVY MACHINERY MUST NOT BE USED ON STEEP EMBANKMENT SLOPES. VEGETATION REMOVAL BY HAND TOOLS.
7. SUMP AREA IS CONSIDERED TO INTERCEPT POSSIBLE DIRTY WATER RUNOFF FROM SITE OR CONTAIN ACCIDENTAL SPILLS (CONTINGENCY). WATER SHALL BE DISCHARGED VIA A LEVEL SPREADER INTO THE DOWNSLOPE VEGETATED AREA.

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01	28.11.19	ISSUED FOR INFORMATION	001	AW

TITLE	NAME
DRAFTER	S. ALLEN
DRAFTING CHECK	A. WILLIAMS
DESIGNER	A. WILLIAMS
DESIGN CHECK	E. WINGATE
PROJECT MANAGER	M. DAVEY
PROJECT DIRECTOR	C. MASTERS

SCALES AT A1 SIZE DRAWING
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DESIGNER
SMEC AUSTRALIA PTY LTD
© ABN 47 065 475 149
LEVEL 5 20 BERRY STREET
NORTH SYDNEY NSW. 2060
PH 02 9925-5555 FAX 02 9925-5566
SMEC PROJECT No 30012085

CLIENT
eurobodalla shire council

PROJECT TITLE
EUROBODALLA SHIRE COUNCIL
TRIPS SITE
EROSION & SEDIMENT CONTROL PROPOSED WORKS OVERALL PLAN

SCALE	PHASE	PROJECT / DRAWING No.	REVISION
AS NOTED	PRELIMINARY	30012835-002	01

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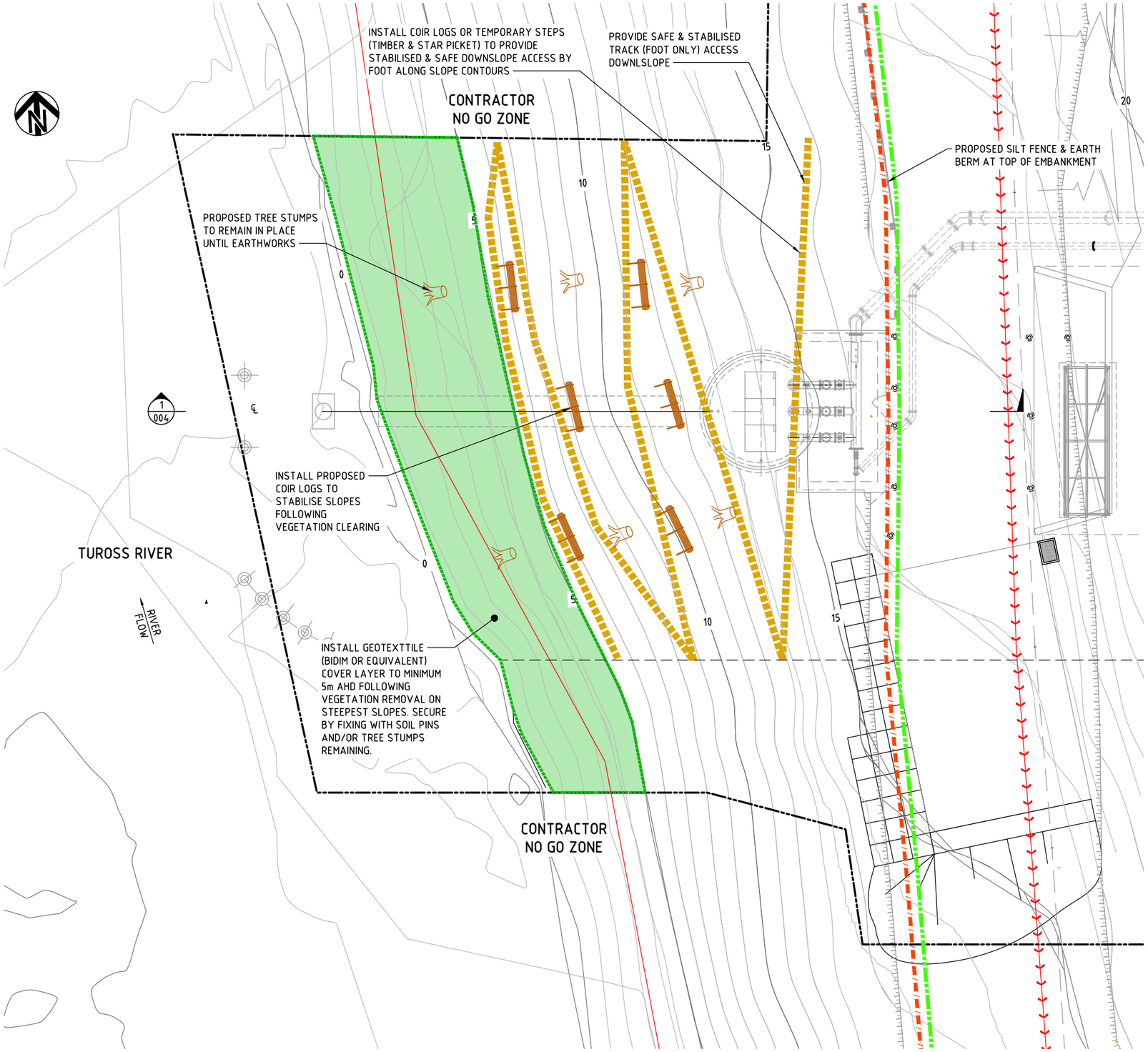

NOTES:

1. ALL WORKS IN ACCORDANCE WITH THE BLUE BOOK.
2. FOR DETAILS OF EXISTING SERVICES REFER DRAWING 001.
3. DIVERT SITE WATER AWAY FROM THE STEEP EMBANKMENT AREA TO PREVENT RUNON.
4. PROVIDE SAFE ACCESS TRAIL DOWN STEEP EMBANKMENT, SUCH AS WINDING ACCESS TRACK ALONG CONTOURS. STABILISE TRAIL USING COIR LOGS AND TEMPORARY STEPS (TIMBER AND STAR PICKETS).
5. HAND TOOLS AND EQUIPMENT TO BE SECURED AND CONSTRAINED TO PREVENT ACCIDENTAL SPILLAGE.
6. NO REFUELLING OPERATIONS TO BE PERFORMED ON STEEP SLOPE. REFUELLING TO OCCUR WITHIN BUNDED AREA ON FLAT SURFACE WITH READILY AVAILABLE SPILL KITS.
7. NO HEAVY MACHINERY AND PLANT NOT TO BE USED ON STEEP SLOPE. CRANE WORKING PADS OR PLATFORMS TO MINIMISE DISTURBANCE THROUGH PREPARATION OF SUITABLE PLATFORMS (GRAVEL ROAD BASE) AND STABILISATION MEASURES.
8. TREES TO BE SECURED USING CHAIN/ROPE BEFORE BEING RAZED. MINIMISE DAMAGE TO EMBANKMENT SLOP WHEN DRAGGING UP THE BANK.

LEGEND

- PROPOSED MULCH BUND
- SEDIMENT FENCE
- VEGETATION CLEARING BOUNDARY
- TEMPORARY ACCESS TRACK
- SITE WATER FLOW (DIRTY)
- GEOTEXTILE

STABILISATION PLAN

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A1

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PLOT DATE: 28 Nov 2019 TIME: 14:07:19

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X_ANCILLARY_WORKS_TYPICAL_SECTIONS_DETAILS
X_SURV_FEAT_20170203_PRELIMINARY_DESIGN_BORD-BOD_PIPE_DESIGN
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X_ANCILLARY_WORKS_DIVERSION_PLAN
X_30012835_SMEC_c1

REV	DATE	AMENDMENT / REVISION DESCRIPTION	WVR No.	APPROVAL
01	28.11.19	ISSUED FOR INFORMATION	001	AW

DRAFTER	S. ALLEN
DRAFTING CHECK	A. WILLIAMS
DESIGNER	A. WILLIAMS
DESIGN CHECK	E. WINGATE
PROJECT MANAGER	M. DAVEY
PROJECT DIRECTOR	C. MASTERS

SCALES AT A1 SIZE DRAWING

SCALE 1:100 AT A1 SIZE

1 0 1 2 3 4 5

DESIGNER

SMEC

SMEC AUSTRALIA PTY LTD
© ABN 47 065 475 149
LEVEL 5 20 BERRY STREET
NORTH SYDNEY NSW. 2060
PH 02 9925-5555 FAX 02 9925-5566
SMEC PROJECT No 30012085

CLIENT

eurobodalla shire council

PROJECT TITLE

EUROBODALLA SHIRE COUNCIL
TRIPS SITE
EROSION & SEDIMENT CONTROL
PROPOSED WORKS
STEEP EMBANKMENT AREA - PLAN

SCALE	PHASE	PROJECT / DRAWING No.	REVISION
AS NOTED	PRELIMINARY	30012835-003	01

ZONE 1 - MAIN WORKS AREA

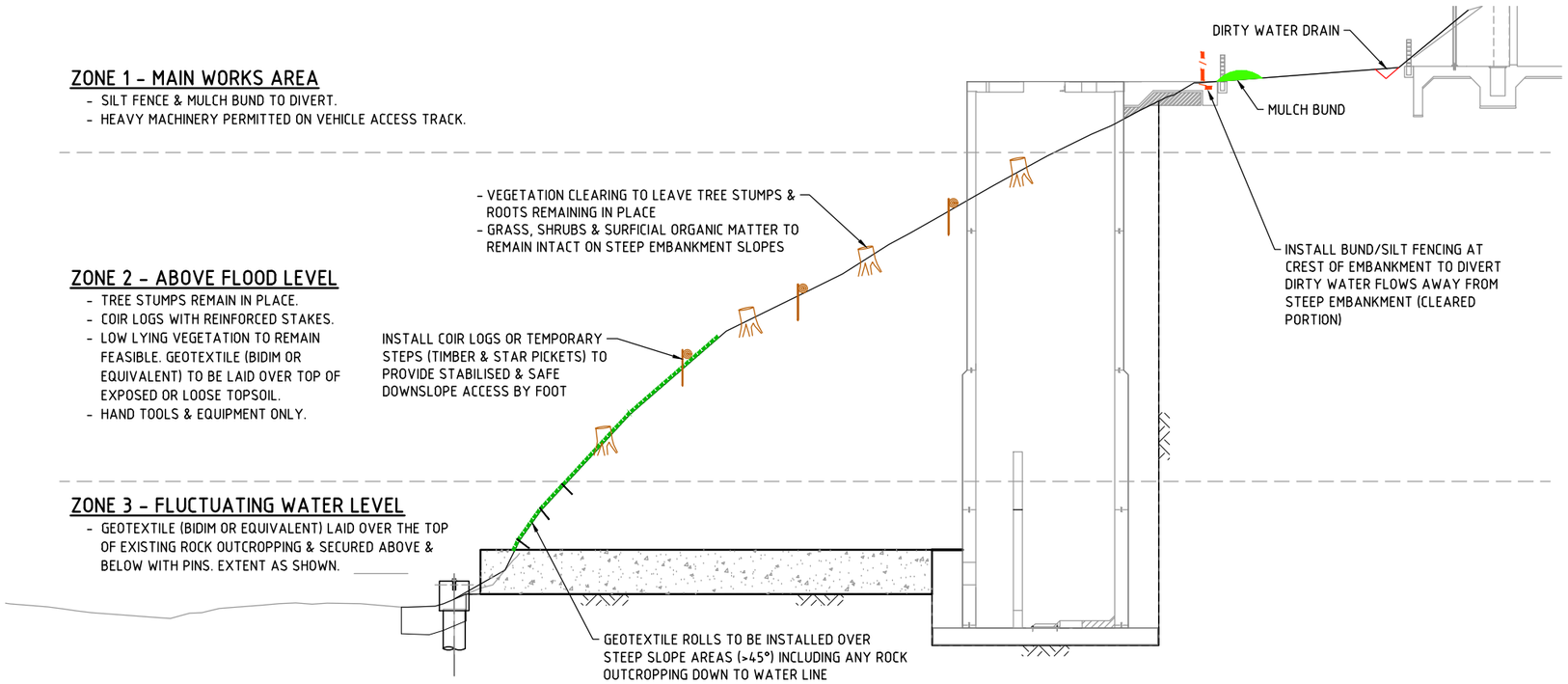
- SILT FENCE & MULCH BUND TO DIVERT.
- HEAVY MACHINERY PERMITTED ON VEHICLE ACCESS TRACK.

ZONE 2 - ABOVE FLOOD LEVEL

- TREE STUMPS REMAIN IN PLACE.
- COIR LOGS WITH REINFORCED STAKES.
- LOW LYING VEGETATION TO REMAIN FEASIBLE. GEOTEXTILE (BIDIM OR EQUIVALENT) TO BE LAID OVER TOP OF EXPOSED OR LOOSE TOPSOIL.
- HAND TOOLS & EQUIPMENT ONLY.

ZONE 3 - FLUCTUATING WATER LEVEL

- GEOTEXTILE (BIDIM OR EQUIVALENT) LAID OVER THE TOP OF EXISTING ROCK OUTCROPPING & SECURED ABOVE & BELOW WITH PINS. EXTENT AS SHOWN.



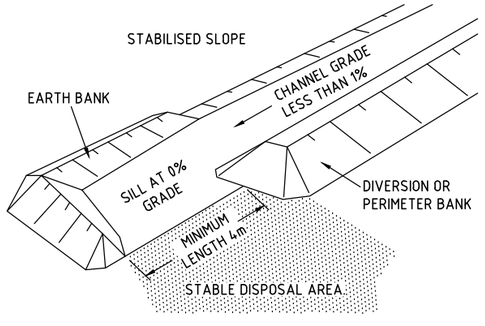
SECTION 1/003
SCALE 1:100

NOTES:

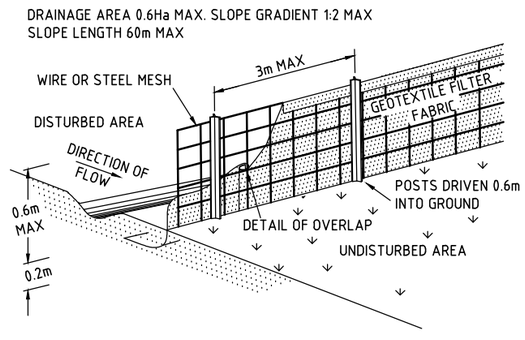
1. ALL WORKS IN ACCORDANCE WITH THE BLUE BOOK.
2. FOR DETAILS OF EXISTING SERVICES REFER DRAWING 001.

LEGEND

- PROPOSED MULCH BUND
- SEDIMENT FENCE
- GEOTEXTILE



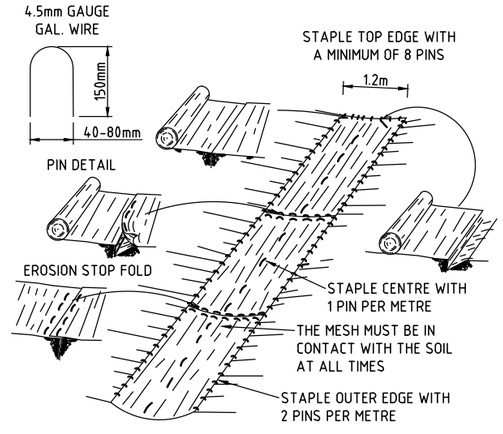
LEVEL SPREADER (OR SILL)
NTS



SEDIMENT FENCE
NTS

NOTES:

1. BURY THE TOP END OF THE ORGANIC FIBRE REINFORCED MESH STRIP IN A TRENCH 150mm OR MORE IN DEPTH.
2. TRAMP THE TRENCH FULL OF SOIL. SECURE WITH A ROW OF PINS - MIN. NUMBER 8.
3. LAY MESH ALONG DRAIN WITHOUT STRETCHING THE MESH.
4. OVERLAP-BURY UPPER END OF LOWER STRIP AS IN 1 AND 2. OVERLAP END OF TOP STRIP 150mm AND STAPLE.
5. EROSION STOP FOLD OF MESH BURIED IN SLIT TRENCH AND TAMPED; DOUBLE ROW OF STAPLES.
6. STAPLE THE MESH ALONG EACH EDGE AND CENTRE WITH TWO PINS ON EACH EDGE AND 1 IN CENTRE PER METRE OF MESH.



ORGANIC FIBRE REINFORCED JUTE MESH DRAIN
NTS

150 mm ON ORIGINAL
A1

DRAWING FILE LOCATION / NAME: Vault\Projects\30012835\CAD\DWG\30012835-004.dwg
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X_ANCILLARY_WORKS_FLOW_PATH_DETAILS
X_30012835_SMEC_01

REV	DATE	AMENDMENT / REVISION DESCRIPTION	WVR No.	APPROVAL
01	28.11.19	ISSUED FOR INFORMATION	001	AW

TITLE	NAME
DRAFTER	S. ALLEN
DRAFTING CHECK	A. WILLIAMS
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PROJECT MANAGER	M. DAVEY
PROJECT DIRECTOR	C. MASTERS

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CLIENT
eurobodalla shire council

PROJECT TITLE
EUROBODALLA SHIRE COUNCIL
TRIPS SITE
EROSION & SEDIMENT CONTROL PROPOSED WORKS STEEP EMBANKMENT AREA - SECTION

SCALE	PHASE	PROJECT / DRAWING No.	REVISION
AS NOTED	PRELIMINARY	30012835-004	01

Appendix B Correspondence

From:	Kathy BURTON
To:	Claudine Jeffery; Matthew Rizzuto
Cc:	Alex WILLIAMS; Eric WINGATE
Subject:	FW: Eurobodalla Southern Storage - Overview and strategy summary - DRAFT FOR REVIEW
Date:	Monday, 25 November 2019 4:42:18 PM
Attachments:	191125 Eurobodalla check prints - working only.pdf image002.png

Hi Claudine and Matthew,

Thanks for your email – Alex has prepared the response below for discussion tomorrow.

Please find a proposed outline of what will be discussed in the meeting.

- Tuross River Intake Pump Station (TRIPS) is a part of the overall Eurobodalla Southern Storage Project. The TRIPS site is located adjacent to the Tuross River as shown in the attached Figure 1. Council are proposing to undertake the works in the following stages including:
  1. The first work will be vegetation clearing (only) across the site. This will not involve any major excavations.
  2. The second work will be main construction across the site, involving all excavations
- The works are required to comply with the Development Consent conditions including the following for Construction Soil and Water Management Plan
  - *Prior to commencement of any surface disturbance the Applicant must prepare a Construction Soil and Water Management Plan as part of the CEMP required by **Condition C2**. The Construction Soil and Water Management Plan must be prepared by a suitable qualified person(s) in consultation with the EPA and include:*
    - *guidelines and procedures to reuse dirty water collected in sediment basins with reuse prioritised over discharge to receiving waters;*
    - *an assessment of cumulative risks associated with sediment pond settling agents;*
    - *discharge criteria based on an assessment of potential impacts against the NSW Water Quality Objectives (WQO) for receiving waters;*
    - *identification and implementation of mitigation measures to avoid pollution including, but not limited to, dosing procedures, discharge procedures, direct ecotoxicology testing;*
    - *a detailed **Erosion and Sediment Control Plan** prepared in consultation with DPIE Fisheries and Water (in addition to the EPA); and*
    - *evidence of consultation with the EPA and DPIE Fisheries and Water.*
- To comply with the above, SMEC are currently preparing a Construction Soil and Water Management Plan for the TRIPs vegetation clearing activities only. Key strategies adopted within the SWMP plan include:
  - General
    - Upgradient clean water diversions around the site
    - Maintaining ground level vegetation (i.e. existing grass and native shrubs)
    - Installing perimeter sediment fencing and mulch bunds to divert dirty water away from Tuross River bank
    - Contingency – A proposed earth bund/ sump area may be located at the hydraulic low point of the site to collect and contain dirty water runoff. This would be inspected/treated or removed.
  - Additional controls - on steep embankment slopes including:
    - Provide stabilised temporary access trail (using timber and star picket – refer to Photo and coir logs)

Maintaining tree stumps and roots in place.

- Provide coir logs on slopes <45%
- Other controls to be discussed may include consideration of geofabric on slopes.

The SWMP would include a detailed drawings of erosion and sediment control plans. Attached is a working document only illustrating the above strategies being considered for the site, noting these are subject to change.

SMEC would be interested in discussing the details with EPA of the proposed controls to achieve the required level compliance with the consent conditions.

Kind regards,

Alex Williams
Senior Environmental Engineer
SMEC (Member of the Surbana Jurong Group)
M +61 415 188 089 **T** +61 2 9900 7039

From: Claudine Jeffery <Claudine.Jeffery@epa.nsw.gov.au>
Sent: Monday, 25 November 2019 2:40 PM
To: Alex WILLIAMS <Alex.Williams@smec.com>
Cc: Kathy BURTON <Kathy.Burton@smec.com>
Subject: Eurobodalla Southern Storage - CEMP meeting

Hi Alex,

Last week during our phone call you agreed to provide some information in the form of an email about what will be discussed in the meeting. Matt and I would like to read through that information prior to out meeting tomorrow morning so could you please send it through as soon as possible.

Thanks,

Claudine

Claudine Jeffery
Regional Operations Assistant – South East Region
South and West Branch, NSW Environment Protection Authority
02 6229 7002

Claudine.Jeffery@epa.nsw.gov.au www.epa.nsw.gov.au @EPA_NSW

From:	Alex WILLIAMS
To:	Claudine Jeffery; Matthew Rizzuto
Cc:	Eric WINGATE; Kathy BURTON; Mark DAVEY
Subject:	RE: Eurobodalla Southern Storage - Overview and strategy summary - DRAFT FOR REVIEW
Date:	Friday, 29 November 2019 9:01:00 AM
Attachments:	image002.png

Hi Claudine and Matthew,

Thanks for our discussion on Tuesday 26th regarding the construction Soil and Water Management Plan for the TRIPs site Stage 1 (vegetation clearing).

In summary, please find a brief record of what was discussed regarding erosion and sediment controls proposed for the TRIPs site vegetation clearing stage only:

- Mark (SMEC) clarified that the TRIPS Stage 1 would involve vegetation clearing only and consists of activities such as slashing vegetation, tree removal with stumps to remain and mulching
- Alex (SMEC) referred to the working draft ESCP drawings (attached to previous email) to describe the following proposed erosion and sediment control strategies:
    1. Up-gradient clean water diversions to be installed around the site
    2. Install silt fencing along perimeter to prevent clean water runon and divert dirty water flows away from steep embankment area
    3. Site-won mulch propose to be used in windrows to control/treat dirty water runoff
    4. Vegetation clearing to leave tree stumps and roots in place, and maintain existing grass covered areas, low-lying shrubs and undergrowth to minimise soil destabilisation
    5. Install a sump area at low point with level spreader or equivalent to permit discharge to vegetated area. No site water runoff permitted to enter Tuross River
    6. Install coir logs and temporary steps (timber and star picket) to provide stabilised and safe downslope access by foot along contour slopes.
- Matt (EPA) noted that water that comes from the site needs to be of sufficient standard to not impact the high conservation environment discharging towards. The SWMP to include rain procedures (if rain forecast) including covering of any disturbed soils areas. Matt noted that as sediment basins are not proposed, use of enhanced erosion and sediment controls (such as geotextile cover layers) on steep slopes are required.
- Alex (SMEC) considered turbidity booms in the Tuross River are unlikely to be of much benefit during vegetation clearing stages noting that as earthworks are not proposed. Additional impacts of turbidity booms would need to be considered. It was agreed that focus should be on the erosion and sediment control prevention measures. Visual monitoring of pollution would be undertaken to monitor compliance.
- Matt (EPA) identified the need to ensure training of everyone involved in the activity, ensuring there is understanding of potential impacts to downstream water users.
- Alex (SMEC) noted that construction activities would require Environmental Work Method Statements prepared for the activity in accordance with the principles in the CEMP including the SWMP.
- Matthew (EPA) requested that similar workshop discussions are requested to be carried out during the proposed TRIPs site earthworks stages.

Would you kindly reply confirming if the above summary represents the discussions. As this was an initial workshop meeting, we understand further inputs from the EPA may would follow upon

review of the draft SWMP.

Kind regards,

Alex Williams
Senior Environmental Engineer
SMEC (Member of the Surbana Jurong Group)
M +61 415 188 089 **T** +61 2 9900 7039

From: Kathy BURTON
Sent: Monday, 25 November 2019 4:42 PM
To: Claudine Jeffery <Claudine.Jeffery@epa.nsw.gov.au>; Matthew Rizzuto <Matthew.Rizzuto@epa.nsw.gov.au>
Cc: Alex WILLIAMS <Alex.Williams@smec.com>; Eric WINGATE <Eric.Wingate@smec.com>
Subject: FW: Eurobodalla Southern Storage - Overview and strategy summary - DRAFT FOR REVIEW

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Please find a proposed outline of what will be discussed in the meeting.

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Subject: Eurobodalla Southern Storage - CEMP meeting

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Claudine

Claudine Jeffery
Regional Operations Assistant – South East Region
South and West Branch, NSW Environment Protection Authority
02 6229 7002

Claudine.Jeffery@epa.nsw.gov.au www.epa.nsw.gov.au @EPA_NSW
Report pollution and environmental incidents 131 555 (NSW only) or +61 2 9995 5555

Please send all official electronic correspondence to queanbeyan@epa.nsw.gov.au

Member of the Surbana Jurong Group

SMEC Australia Pty Ltd
Level 5, 20 Berry Street
North Sydney, NSW, 2060
T +61 2 9925 5555
F +61 2 9925 5566
ww.smec.com

Appendix B Stage 1 – TRIPS site clearing Flora and Fauna Management Plan

Member of the Surbana Jurong Group

TRIPS Site

Flora and Fauna Management Plan

Prepared for: Eurobodalla Shire Council

Reference No: 30012835

13/05/2020

Document/Report Control Form

File Location Name:	"I:\projects\30012835 - Eurobodalla Southern Storage\140 Deliverables\02 CEMP\FFMP"
Project Name:	Eurobodalla Southern Storage TRIPS site FFMP
Project Number:	30012835
Revision Number:	4.0

Revision History

Revision #	Date	Prepared by	Reviewed by	Approved for Issue by
0.1	2/12/2019	G. Goldin / J. Callaghan	R. Musgrave	M. Davey
0.2	3/12/2019	G. Goldin / J. Callaghan	R. Musgrave	M. Davey
1.0	10/12/2019	M. Davey	R. Musgrave	M. Davey
2.0	21/02/2020	R. Musgrave	M. Davey	M. Davey
3.0	21/04/2020	L. Kowald	R. Musgrave	J. Adams
4.0	13/05/2020	J. Callaghan	R. Musgrave	C. Purss

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The report supersedes all previous draft or interim reports, whether written or presented orally, before the date of this report. This report has not and will not be updated for events or transactions occurring after the date of the report or any other matters which might have a material effect on its contents or which come to light after the date of the report.

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Table of Contents

Table of Figures

List of Tables

Appendices

1. Introduction

1.1. Context

This Flora and Fauna Management Sub Plan (FFMP) forms part of the Construction Environmental Management Plan (CEMP) for Stage 1 of the Eurobodalla Southern Storage (ESS) project (the Project).

The Project will be developed in two stages as follows:

- Stage 1 – Clearing of the Tuross River Intake Pump Station (TRIPS) site
- Stage 2 – Clearing and construction of the remaining components of the Eurobodalla Southern Water Supply Storage

This FFMP has been prepared for the Stage 1 package of works. A separate FFMP will be developed for Stage 2. Figure 1 of the CEMP outlines the Eurobodalla TRIPS location.

This FFMP has been prepared to address the requirements of the ESS Environmental Impact Statement (EIS), Conditions of Consent and all applicable legislation. The Conditions of Consent, under Section 4.38 of the *Environmental Planning and Assessment Act 1979* (EP&A Act) for the Project were assigned on 17 October 2019.

1.2. Background and project description

The ESS EIS, submitted for determination in September 2018, assessed the impacts of construction and operation of the Project on flora, fauna and ecological communities. As part of the EIS, a detailed flora and fauna assessment was prepared in the form of a Biodiversity Assessment Report (BAR) (SMEC 2018) to assess the impact of the project and provide measures to minimise and manage impacts to flora and fauna. The BAR was included in the EIS as Appendix E.

The EIS proposed the implementation of the mitigation and management measures, including further survey, monitoring and the development of a FFMP.

1.2.1. Project description

The Project is required to provide drought security to the water supply system, ensuring the long-term water supply for the Eurobodalla regional area while complying with the water sharing plans that guarantee environmental flows to the Tuross River. Raw water would be extracted from the Tuross River from a new river intake pump station, as well as the existing bore field, for transfer to the new storage.

The Project's location is approximately 30 kilometres south of Moruya within the Eurobodalla Local Government Area (LGA). The subject site is located around a north facing valley within Bodalla State Forest; it is bound to the north by a private residence, to the west and south-west by Bullockys Hut Road, and to the south-east and east by Big Rock Road and Cpt3007/3 Road.

1.2.2. Construction activities

Clearing activities for the TRIPS site include:

- Site mobilisation and preparation of work area, including:
  - Installation of erosion and sediment control as outlined in the SWMP
  - Implement nest-box strategy as outlined in the FFMP
- Vegetation removal, involving:

  - Slashing light vegetation down to ground level with either a slasher or flail mower. The slashed vegetation, unless there is a specific need for it not to, would be left in place
  - Larger trees will be cut down, but the trunks and roots are to be left in situ to minimise of soil erosion
  - Heads of larger trees to be mulched and the mulch used in windrows to control potential run off if appropriate and/or spread over disturbed earth to minimise soil erosion
  - Larger timber is to be removed from the site.
- Stabilisation of the TRIPS site in preparation of subsequent Stage 2 earthworks in accordance with the SWMP.

2. Purpose and objectives

2.1. Purpose

The purpose of this FFMP is to describe how construction impacts on flora and fauna will be minimised and managed during the construction of the Project.

The Conditions of Consent for the Project, provided by the Minister for Planning, state that the conditions are required to:

- Prevent, minimise, or offset adverse environmental impacts;
- Set standards and performance measures for acceptable environmental performance;
- Require regular monitoring and reporting; and
- Provide for the ongoing environmental management of the development.

The specific Construction Flora and Fauna Management conditions are described in Table 2-1.

Table 2-1. Construction Flora and Fauna Management Conditions of Consent

Condition	Section where condition addressed in CFFMP
B2. No more than 54.61 ha of native vegetation is to be cleared.	N/A
B3. Prior to clearing of native vegetation, the Applicant must prepare a **Construction Flora and Fauna Management Plan** (CFFMP) in consultation with DPIE Fisheries and to the satisfaction of the Planning Secretary.	This document
B4. The CFFMP must form part of the CEMP required by **Condition C2** and, in addition to the general management plan requirements listed in **Condition C1**, the CFFMP must include the following:	
(a) measures to ensure biodiversity values not intended to be impacted are delineated by mapping of 'no-go areas' and the installation of on-site measures such as temporary exclusion fencing prior to clearing;	6.1.1
(b) measures to minimise the risk of introducing weed species via construction vehicles, plant and equipment and control of pest and weed species existing at the site;	Appendix A
(c) method of vegetation removal and measures to minimise impacts outside the water storage facility construction boundary and within the perimeter road construction boundary as a result of the equipment used for clearing and general access for heavy vehicles and construction plant and equipment;	6.1 and 6.2
(d) options to reuse cleared vegetation, in preference to burning, such as relocation of hollow logs for habitat and mulch for use in areas to be revegetated within the site and use elsewhere within the local area;	6.1 and 6.2
(e) measures to minimise the impacts on fauna within the site including the installation of nest boxes prior to clearing, relocation of fauna to adjacent habitat (including any fish during dewatering of the cofferdam), staged clearing and timing of clearing outside breeding seasons; and	6.1 and 6.3

Condition	Section where condition addressed in CFFMP
(f) details on rehabilitation and revegetation including: (i) use of locally indigenous plant species including collection of seed prior to clearing for this purpose; (ii) for construction areas outside the full supply level including the construction compounds, on-site quarry areas and the new storage access road batters; (iii) for the construction area at the existing water treatment plant (WTP) including for the bed and banks of the Tuross River affected by the temporary cofferdam.	Not applicable to the TRIPS site clearing.
B5. Prior to removing/clearing any vegetation or any demolition, pre-clearing surveys and inspections for threatened species must be undertaken. The surveys and inspections, and any subsequent relocation of species and associated management measures, must be undertaken under the guidance of a suitably qualified and experienced ecologist.	Section 6.1 Section 6.2 Section 6.3
B6. The Applicant must:	
(a) not commence any clearing work until the CFFMP is approved by the Planning Secretary; and	This document
(b) implement the most recent version of the CFFMP approved by the Planning Secretary for the duration of works.	This document

2.2. Targets

The following targets have been established for the management of flora and fauna impacts during the project:

- Ensure full compliance with the relevant legislative requirements, EIS, and Conditions of Consent
- No disturbance to flora and fauna outside the proposed construction footprint and associated access tracks and site compounds
- No increase in distribution of weeds currently existing within the project areas
- No new weeds introduced to the project areas
- No transfer of plant diseases or pathogens to or from the project work areas
- All fauna species encountered during construction are handled humanely in accordance with industry standards
- No pollution or siltation of aquatic ecosystems, wetlands, endangered ecological communities or threatened species habitat
- Minimise barriers to fauna movement.

3. Environmental requirements

3.1. Legislation

All legislation relevant to this FFMP is included in Section 2.3 of the CEMP, including the following:

- *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act)
- *Environmental Planning and Assessment Act 1979* (EP&A Act)
- *Biodiversity Conservation Act 2016* (BC Act)
- *Fisheries Management Act 1994*
- *Biosecurity Act 2015*
- *State Environmental Planning Policy No 44 – Koala Habitat Protection*.

3.2. Additional approvals, licences, permits and requirements

As part of the EP&A Act, there are Conditions of Consent that have been specified by the Minister for Planning that the Project must comply with. These conditions are stated in Section 2.1.

The Project has been determined to be a State Significant Development (SSD), and as such must comply with the relevant guidelines for SSD under the EP&A Act.

No additional approvals, licenses, and permits are required.

3.3. Guidelines

The main guidelines, specifications and policy documents relevant to this FFMP include:

- Best Practice Management Guidelines for *Phytophthora cinnamomi* within the Sydney Metropolitan Catchment Management Authority Area (Botanic Gardens Trust 2008)
- New South Wales Weed Control Handbook (DPI 2018)
- Hygiene protocol for the control of disease in frogs (DECCW 2008)
- Australian Standard AS4373 Pruning of Amenity Trees (Standards Australia 2007)
- Australian Standard AS4970 Protection of Trees (Standards Australia 2009)
- NSW Biodiversity Offsets Policy for Major Projects (OEH 2014).

4. Existing environment

4.1. Location and surrounding environment

The Project's location is approximately 30 kilometres south of Moruya within the Eurobodalla Local Government Area (LGA). The TRIPS site is located along the eastern bank of the Tuross River, just south of the existing water treatment facility on Eurobodalla Road – Lot 1 DP 1168581. The TRIPS facility will occur on a section of the Tuross River that runs in a north-easterly direction through the valley on the western side of Bodalla State Forest. The extent of the Tuross River occurring within the TRIPS site has created a steep bank (Photograph 4-1 and Photograph 4-2) that will need to be managed throughout the clearing and construction works. The bank of the Tuross River within the TRIPS site support both vegetated and rocky terrain.

Photograph 4-1. The steep bank of the Tuross River within the TRIPS site supports extents of both vegetated and rocky terrain

Photograph 4-2. Vegetated and rocky terrain on the banks of the Tuross River

The vegetation within the TRIPS site is comprised of one native vegetation community and one predominantly non-native community, as shown in Figure 4-1. The native vegetation community was assessed within the Project EIS (SMEC 2018) as the threatened ecological community *River Flat Eucalypt Forest on Coastal Floodplains of the NSW North Coast, Sydney Basin and South East Corner bioregions*. The extent of this community was intersected by an access track that ran from the existing water treatment facility in a southerly direction terminating at the bank of the Tuross River (outside of the TRIPS site). The non-native community has arisen from the cleared land associated with the maintenance of the existing water treatment facility and Eurobodalla Road. It is predominantly comprised of exotic grasses and forbs (Photograph **4-3**).

Photograph 4-3. The non-native community that occurs on land that has been cleared and is being maintained for the existing water treatment plant. The native community occurs behind the non-native community

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COORDINATE SYSTEM
GDA 1994 MGA Zone 56

FIG NO. 4-1

FIGURE TITLE Existing Environment and Surrounding Vegetation Within the TRIPS Site

PROJECT NO. 30012466

PROJECT TITLE Eurobodalla Southern Storage TRIPS CFFMP

CREATED BY FA13847

SOURCES Roadnet MDS 2019
public_NSW_Imagery: © Department of Finance, Services and Innovation 2018

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4.2. Threatened Ecological Communities

As previously mentioned, the PCT (1108/SR608) identified within the TRIPS site is a component of a Threatened Ecological Community (TEC). Specifically, PCT1108/SR608 is a component of *River Flat Eucalypt Forest on Coastal Floodplains of the NSW North Coast, Sydney Basin and South East Corner bioregions*. This community is listed as an Endangered Ecological Community under Schedule 1 of the TSC Act. No EPBC listed TECs were found to occur within the development site.

Table 4-1. TECs associated with PCT occurring within the development site

PCT Code	PCT Name	TEC Name	TEC Status	Assessed as Associated TEC
1108/SR608	River Peppermint – Rough-barked Apple – River Oak herb/grass forest of coastal lowlands, southern Sydney Basin Bioregion and South East Corner Bioregion	River Flat Eucalypt Forest on Coastal Floodplains of the NSW North Coast, Sydney Basin and South East Corner bioregions	Endangered	Yes

The canopy within this community is dominated by a mixture of eucalypts including *Eucalyptus muelleriana*, *Eucalyptus botryoides - saligna* intergrade and *Angophora floribunda*, as well as *Casuarina cunninghamiana* growing immediately along the banks of the Tuross River.

The midstory consists of *Melicytus dentatus*, *Pittosporum undulatum* and *Acacia mearnsii*. There has been a loss of structural and floristic integrity within the lower strata of the community as a result of weed invasion and edge effects stemming from vegetation clearing up slope of the river. As such, the lower strata consist of a mixture of locally indigenous and exotic species including *Pseuderanthemum variable*, *Adiantum aethiopicum*, *Doodia aspera*, *Microlaena stipoides* var. *stipoides*, *Entolasia marginata*, *Dianella caerulea*, *Morinda jasminoides*, *Pandorea pandorana*, *Eustrephus latifolius*, *Tradescantia fluminensis*, *Acetosa sagittata*, *Ehrharta erecta*, *Paspalum dilatatum*, and *Lonicera japonica*.

4.3. Threatened flora

Threatened flora species that were identified as having the potential to occur in the TRIPS site are listed in Table 4-2. Note that no threatened flora species were recorded in the TRIPS site. *Galium australe* was assumed to be present on the site in response to DPIE's EES comments on the BAR.

Table 4-2. Threatened flora species assessed as potentially occurring in the TRIPS site

Common name	Scientific name	BC Act	EPBC Act
Tangled Bedstraw	*Galium australe*	E	-

4.4. Fauna habitat

Six fauna habitat types were identified in the ESS EIS. These are listed in Table 4-3 below.

Table 4-3. Fauna habitat types in the TRIPS site

Name	Habitat features
Remnant vegetation	Foraging, nesting, roosting and sheltering for birds, reptiles, amphibians, arboreal and terrestrial mammals and bat species. High quality habitat available for species with large home ranges including, but not limited to *Dasyurus maculatus* (Spotted-tailed Quoll), *Tyto novaehollandiae* (Masked Owl), *Ninox strenua* (Powerful Owl) and *Ninox connivens* (Barking Owl).
Hollow bearing trees	Nesting, roosting and sheltering habitat for numerous threatened and non-threatened birds, arboreal mammals and microbats. Species predicted to occur that may utilise this resource on site include *Callocephalon fimbriatum* (Gang Gang Cockatoo), *Tyto novaehollandiae* (Masked Owl) and various microbat species.
Shrubby midstory	Foraging, nesting, roosting, and sheltering for small and medium sized birds; reptiles; arboreal and terrestrial mammals and arboreal frogs.
Fallen tree trunks, woody debris and deep leaf litter	Sheltering habitat for small terrestrial mammals, amphibians, and reptiles.
Access roads and pathways	Foraging habitat and flyways for microbats.
Tuross River	Riparian vegetation contains foraging, nesting, roosting and sheltering habitat for small, medium and large birds, arboreal mammals, as well as providing connectivity through cleared agricultural land. River provides foraging habitat for threatened and non-threatened microbat species. The river also provides foraging habitat for water birds, namely birds in the groups Anseriformes, Ciconiiformes and Coraciiformes.

4.5. Threatened fauna

Threatened fauna species identified during the ESS EIS surveys and those which were predicted to occur using the Biobanking Calculator are listed in Table 4-4. Note that some of the recorded species were recorded in the broader development site and were not necessarily recorded in the TRIPS site itself during the surveys carried out by SMEC in 2016-2017.

Table 4-4. Threatened fauna recorded/predicted to occur in the TRIPS site

Common name	Scientific name	BC Act	EPBC Act	Recorded
Regent Honeyeater	*Anthochaera phrygia*	CE	CE	-
Gang-gang Cockatoo	*Callocephalon fimbriatum*	V	-	✓
Varied Sitella	*Daphoenositta chrysoptera*	V	-	✓
Spotted-tailed Quoll	*Dasyurus maculatus*	V	E	-
Eastern False Pipistrelle	*Falsistrellus tasmaniensis*	V	-	-
Little Lorikeet	*Glossopsitta pusilla*	V	-	-
Little Eagle	*Hieraaetus morphnoides*	V	-	-
Square-tailed Kite	*Lophoictinia isura*	V	-	-
Eastern Coastal Free-tailed Bat	*Micronomus norfolkensis*	V	-	✓
Southern Myotis	*Myotis macropus*	V	-	-
Turquoise Parrot	*Neophema pulchella*	V	-	-
Barking Owl	*Ninox connivens*	V	-	-
Powerful Owl	*Ninox strenua*	V	-	-
Scarlet Robin	*Petroica boodang*	V	-	-
Koala	*Phascolarctos cinereus*	V	V	-
Yellow-bellied Sheathtail-bat	*Saccolaimus flaviventris*	V	-	✓
Greater Broad-nosed Bat	*Scoteanax rueppellii*	V	-	✓
Diamond Firetail	*Stagonopleura guttata*	V	-	-
Masked Owl	*Tyto novaehollandiae*	V	-	✓

It should be noted that the Koala and the Southern Myotis have been assumed to be present on the site in response to the DPIE EES comments on the BAR.

4.6. Aquatic fauna

Species recorded in freshwater and estuarine habitats during investigations for the EIS, as well as those predicted to occur, are shown in Table 4-5.

One threatened aquatic fauna species, *Prototroctes maraena* (Australian Grayling), had previously been recorded in the Tuross River by NSW Fisheries in 2003/04. *Prototroctes maraena* was not detected in subsequent sampling or surveys for the EIS. The Aquatic Ecological Assessment (écologique 2017) prepared for the EIS determined that it was unlikely both that the Australian Grayling was present in the development site and that the development site was an important habitat for the species.

Table 4-5. Aquatic fauna recorded in the Tuross River

Common name	Scientific name	BC Act	EPBC Act
Short-finned Eel	*Anguilla australis*	-	-
Long-finned Eel	*Anguilla reinhardtii*	-	-
Plague Minnow	*Gambusia holbrookii**	-	-
Striped Gudgeon	*Gobiomorphus australis*	-	-
Firetail Gudgeon	*Hypseleotris galii*	-	-
Australian Smelt	*Retropinna semoni*	-	-
Mullet (juvenile)	*Mugil cephalus*	-	-
Freshwater Shrimp	*Paratya australiensis*	-	-

** denotes an introduced species*

The fisheries habitat classification for each of the waterways referred to above is provided in Table 4-6. TRIPS site clearing does not affect important fish habitats.

Table 4-6. Aquatic habitat in the TRIPS site

Waterway	Classification	Description
Tuross River	Class 1 Waterway, major key fish habitat (reference AE report)	Sand-bedded meandering river with an intermittent/ephemeral discharge regime. Limited cobbles and gravels. Adjacent vegetation = PCT SR608

4.7. Aquatic flora

Species recorded in freshwater and estuarine habitats during investigations for the EIS are shown in Table 4-7.

Table 4-7. Aquatic flora recorded in the Tuross River

Common name	Scientific name	BC Act	EPBC Act
Dense water weed*	*Egeria densa*	-	-
Spotted Knotweed	*Persicaria praetermissa*	-	-
Water Pepper	*Persicaria lapathifolia*	-	-

5. Environmental Impacts

5.1. Vegetation clearing activities

The Project will involve direct impacts to native vegetation and fauna habitat, primarily within the construction phase. As the operation of the development will be relatively contained within the TRIPS site, impacts of the operation phase will be minimal and confined to indirect impacts.

As stated within the Conditions of Consent, no more than 54.61 hectares of native vegetation is to be cleared. Of this, no more than 0.26 hectares of native vegetation can be cleared within the TRIPS site.

5.2. Ecological impacts

The biodiversity impacts associated with project are discussed in ESS EIS, BAR and Aquatic Ecology Report, and summarised in Table 5-1.

Table 5-1. Summary of potential impacts of the Project to terrestrial ecology

Likely Impact	Details	Extent/Scale	Relevant mitigation measure
Loss and fragmentation of native vegetation	Loss of wet sclerophyll forest.	0.26 hectares of native vegetation will be cleared.	• Delineation of no-go zones
Loss of threatened ecological communities	River Flat Eucalypt Forest on Coastal Floodplains.	0.26 hectares of EEC will be cleared.	• Delineation of no-go zones
Loss of threatened flora species and fragmentation of habitat	No threatened flora species were recorded. The following species are assumed present in the TRIPS site as per Table 4-2: • *Galium australe*.	The Project will impact the following area of habitat for threatened flora species assumed to be present within the TRIPS site: • *Galium australe*.	• Delineation of no-go zones
Loss of fauna habitat	Remnant vegetation with hollow bearing trees provides potential habitat for 10 threatened species occurring within the development site.	0.26 hectares of general fauna habitat will be cleared. This includes impacts to habitat for the following threatened species assumed to be present within the development site: • Southern Myotis • Koala.	• Delineation of no-go zones • Installation of nestboxes • Relocation of fallen logs
Fauna fragmentation	Removal of corridor habitat of fauna species.	May reduce the capacity of some less mobile fauna to move within and between patches of remaining habitat adjacent to the TRIPS site.	• Installation of nestboxes

Likely Impact	Details	Extent/Scale	Relevant mitigation measure
Fauna mortality	May result from clearance works, earthworks or collisions with vehicles or machinery.	Most likely during clearance activities.	• Delineation of no-go zones • Preclearance surveys • Fauna management protocols
Degradation of aquatic habitats	Caused by changes in run-off, infiltration, pollution and erosion. May influence downstream habitats.	Impacts to aquatic habitat are described in Table 5-2.	• Erosion and sediment control
Impacts on fish passage	No important fish passage habitat is present within the development site.	None. See Table 5-2.	N/A
Edge effects and weed invasion	Vehicles and plant may transport weed propagules into the development site. New edges will be created as a result of the development creating the potential for edge effects.	Most likely during clearance activities.	• Implementation of hygiene control points during site set up • Weed control and management
Pests and pathogens	Vehicles and plant may transport pathogens into the development site. Clearing of native vegetation and increased human activity increase the risk of pest animal species increasing.	May occur during construction and operational phases.	• Implementation of hygiene control points during site set up

Table 5-2. Summary of potential impacts of the Project to aquatic ecology (écologique 2017)

Likely Impact	Details	Extent/Scale
Clearing of riparian vegetation – KTP under the FM Act	0.26 hectares of River Flat Eucalypt Forest on Coastal Floodplains will be cleared.	See Table 5-1.
Impacts to key fish habitat (KFH)	Approximately 2.5 km of ephemeral stream habitat (tributaries) replaced by lake habitat – (i.e. inundated as a result of the storage).	N/A to TRIPS site clearing

	Construction of the river intake structure, both temporary and permanent impacts.	N/A to TRIPS site clearing
Obstruction and/or barriers to fish migration and free fish passage	No important fish passage habitat is present within the unnamed creek and tributaries.	N/A to TRIPS site clearing
	Blockages to fish passage include the construction of physical barriers (e.g. cofferdams, slit curtains or nets), the presence of hydrological barriers (e.g. alteration of the gradient of the stream bed or increases in water velocities).	N/A to TRIPS site clearing
	Blockages to fish passage include the creation of behavioural barriers (e.g. where water quality or temperature is altered, deterring fish passage).	N/A to TRIPS site clearing
Sediment and erosion	Short-term changes in water quality, which in turn could impact on aquatic ecology.	N/A to TRIPS site clearing
Risks of the introduction and spread of water weeds	*Egeria densa* (Leafy Elodea, Dense Waterweed, Egeria), a water weed is reasonably widespread in the TRIPS site.	During construction and operation. Measures addressed in Appendix A.

Notwithstanding, mitigation and management measures provided in Section 5.2.1 aim to minimise the above likely and potential impacts on those threatened plant species identified in Table 5-1.

In the absence of appropriate mitigation measures, there is the potential for significant impacts on those threatened flora and fauna species identified as occurring in, or with the potential to occur within, the project corridor.

5.2.1. Tree Hollow Loss

Three hollow-bearing trees and one large fallen log were recorded within the TRIPS clearing boundary, as shown in Figure 5-1. Between them, the three hollow bearing trees supported five hollows, as shown in Table 5-3. The fallen log was approximately 11 metres long with a maximum diameter of 60 centimetres. Three additional hollow-bearing trees occurring just outside the TRIPS clearing boundary were identified and marked. Note, that Tree 1 – and its associated hollows - will not be cleared.

Table 5-3. Tree hollows recorded in the TRIPS clearing boundary

	Hollow 1 size (centimetres)	Hollow 2 size (centimetres)	Hollow 3 size (centimetres)
Tree 1	20+	11-15	6-10
Tree 2	16-20	-	-
Tree 3	1-5	-	-

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COORDINATE SYSTEM
GDA 1994 MGA Zone 56

FIG NO. 5-1

FIGURE TITLE Hollow Bearing Trees and Fallen Logs Capable of Supporting Fauna Habitat

PROJECT NO. 30012466

PROJECT TITLE Eurobodalla Southern Storage TRIPS CFFMP

CREATED BY FA13847

SOURCES Roadnet MDS 2019
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6. Mitigation and management measures

6.1. Pre-vegetation clearance management measures

The pre-vegetation clearance procedures described in this section must be carried out before the scope of works commence.

6.1.1. Environmental inductions

An environmental induction must be carried out by everyone working on the TRIPS site prior to works commencing. Details of the environmental induction is discussed in Sections 6.1.2 and 6.1.3 below.

6.1.2. Site set up

Site set up includes establishing site access points located off Eurobodalla Road. Hygiene control points will be established at all site access points for any vehicle, machinery or personnel entering site. A mixture of bleach to water with a ratio of 1:1 should be used for all wash down procedures in in line with best practice methods of managing the spread of *Phytophthora cinnamomi* and Chytrid fungus. Hygiene management protocols are detailed in Appendix A.

6.1.3. Delineation of No-go zones

'No-go zones' are any areas outside the designated boundary indicated in Figure 4-1. A clearing boundary will be identified prior to clearance and 'No-go zones' marked with high visibility bunting. Trees for felling should be directed to fall within the clearance boundary where possible to minimise impacts within the retained vegetation.

The retention of one of the largest habitat trees on the site, (Tree 1) should be a priority. An arborist should be engaged by Council to assess the tree and advise on appropriate measures to retain the tree. The tree should be flagged with high visibility bunting for identification.

6.1.4. Weed control and management

Weed control will be carried out prior to vegetation clearing for construction works. Specific weed control measures are contained within Appendix A.

6.1.5. Relocation of fallen logs and bushrock

Prior to vegetation clearance, fallen logs greater than 10 centimetres in diameter and bushrock greater than approximately 20 centimetres by 20 centimetres in size are to be relocated to retained vegetation within, or adjacent to, the project site. Should any fauna be found during the relocation process, it should be relocated in accordance with the protocols detailed in Section 6.3.

6.1.6. Installation of nest boxes

Council must engage an ecologist to install nest boxes. Nest boxes are to be installed at a ratio of 2:1 for each hollow lost as a result of the vegetation clearing works. Nest boxes are to be installed prior to hollow bearing tree removal. Nest boxes are to be installed across the site in areas of retained vegetation and should be done so in a manner similar to the specifications detailed in Table 6-1 below. Fixing arrangements must be the most appropriate for the permanent installation of each box, minimal movement of the box is a necessity once installed, and orientation of the boxes must be varied across the site.

Table 6-1. Nestbox replacement specifications

Nestbox type/ fauna group	Number required	Inner dimensions (mm)	Depth (mm)	Entrance width (mm)	Height above ground (m)	Additional requirements
Microbats	4	200 x 200	400	10-30	5-8	Nest box must be a wedge shape design to reduce build-up of guano. Entrance must include a slit at the base and be heavily grooved to promote grip.
Possums/gliders	4	250 x 300	400	85-100	5-8	Nest box must include a ladder of wire mesh or have steps cut on the inside to allow young to climb out. Provide 5mm drainage holes in the base of nest box

6.1.7. Erosion and Sediment Control

Prior to vegetation removal, erosion and sediment control measures will be implemented to minimise impacts to retained vegetation and waterbodies as a result of erosion and water runoff. The specific erosion and sediment control measures as detailed within the SWMP.

6.2. Vegetation clearance

The vegetation clearance procedures described in this section must be carried out during the commencement of vegetation clearing activities.

6.2.1. Preclearing surveys

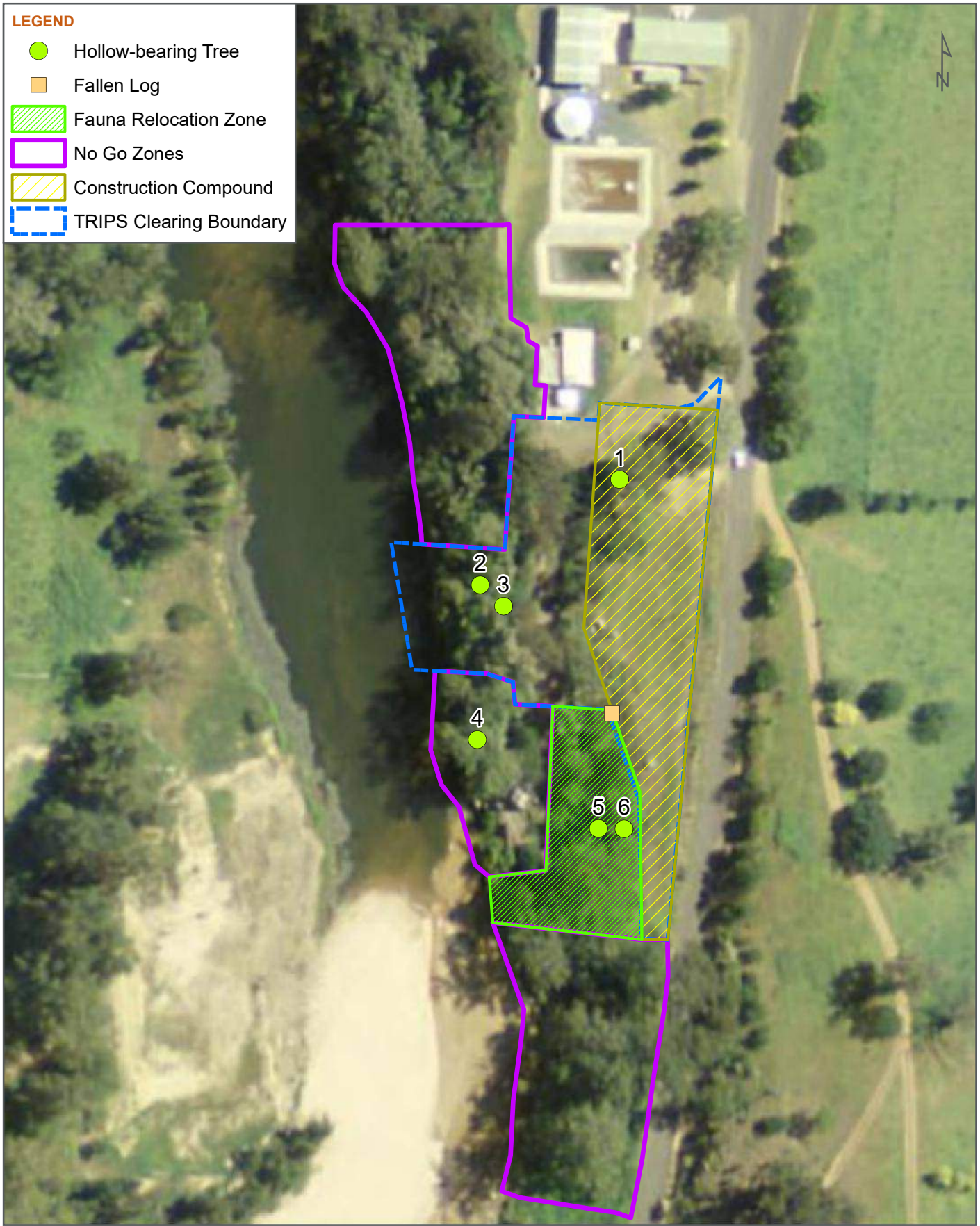
Immediately prior to clearance of any vegetation, pre-clearing surveys and inspections for threatened and non-threatened fauna must be conducted. The surveys and inspections, and any subsequent relocation of species and associated management measures, must be undertaken under the guidance of a suitably qualified and experienced ecologist.

6.2.2. Vegetation clearing

Vegetation clearing will take place as a two-stage process, with understorey and non-hollow bearing trees removed prior to HBTs. This section pertains to the first stage of vegetation clearance. Vegetation clearance must be overseen by a suitably qualified ecologist. The following best-practice vegetation clearing methodology will be applied to the TRIPS site:

- Light vegetation (shrubs, herb, forbs and grasses) should be cut down to ground level. This could be achieved with either a slasher of flail mower
- Grubbing and soil disturbance should be avoided. Retained roots can assist in soil stabilisation and some regrowth and coppicing can assist in the rehabilitation stage post construction
- Slashed native vegetation, unless there is a specific need to remove, should be left in place
- Weed and exotic vegetation in seed should be removed and disposed of appropriately in order to prevent spread as required under the Biosecurity Act. This would namely include the Honeysuckle and Blackberry vines

- Larger trees within 10 metres of the clearing boundary are to be cut down with a chainsaw, not pushed over. Trees are to be felled into the clearing boundary to minimise damage to retained vegetation. Trunks and roots are to be left in situ to minimise soil erosion
- Trees could be chipped, and the mulch used in windrows to control potential run off if appropriate and/or spread over disturbed earth to avoid soil erosion
- Larger timber can be removed from site; however, where practicable some should be retained as fauna habitat. The ecologist present for habitat tree removal should be consulted during this process.



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COORDINATE SYSTEM GDA 1994 MGA Zone 56

FIG NO. 6-1

FIGURE TITLE No Go and Fauna Relocation Zone

PROJECT NO. 30012466

PROJECT TITLE Eurobodalla Southern Storage TRIPS CFFMP

CREATED BY FA13847

SOURCES Roadnet MDS 2019
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6.2.3. Habitat tree clearing

Vegetation clearing involves removal of the HBTs. These trees have been marked with an 'H' and/or flagged with flagging tape (Photograph 6-1). Vegetation clearance must be overseen by a suitably qualified ecologist. The following best-practice vegetation clearing methodology will be applied to the identified fauna habitat trees within the TRIPS site:

- Removal of understorey vegetation and non-hollow bearing trees will occur at least 48 hours before habitat trees are removed
- HBTs are felled in the following method:
  - HBT to be knocked or shaken with an excavator bucket or other machinery to encourage fauna to evacuate the tree immediately prior to felling
  - Pause and wait five minutes to give fauna the opportunity to escape
  - Repeat knocking or shaking HBT with excavator bucket
  - Pause and wait five minutes to give fauna the opportunity to escape
  - Using the excavator bucket, slowly lower the tree to the ground. Where feasible, HBT should be lowered in a direction or position such that damage to hollows are minimised
- Felled trees must be left for a short period of time on the ground to give any fauna trapped in the trees an opportunity to escape before further processing of the trees
- Felled hollow bearing trees must be inspected by an ecologist as soon as possible (not any longer than 2 hours after felling)
- Should fauna be observed either during the felling process or during the inspection by an ecologist, the tree should be retained in place for 24 hours to allow fauna the opportunity to move on during the night.

Photograph 6-1. Hollow-bearing trees were marked with pink flagging tape and spray paint

6.3. Fauna management protocols

6.3.1. General protocols

Should fauna be observed on the project site during vegetation clearance activities, and there is a risk these activities may harm the animal or pose risk to site personnel, the following steps will be taken.

- Stop all work in the vicinity of the fauna and immediately notify the Project Ecologist
- Preferably allow fauna to leave the area without intervention
- If the fauna cannot or will not leave the area without intervention, the fauna will be removed by the Project Ecologists, or a licensed fauna ecologist or wildlife carer with specific animal handling experience as follows:
  - Cover larger animals with a towel or blanket and place in a cardboard box and/or canvas bag
  - Place smaller animals in a cotton bag, tied at the top
  - Keep the animal in a quiet, cool, ventilated and dark located away from noisy construction activities until it can be relocated

- Aquatic fauna are to be placed in plastic aquaria or a plastic bag with sufficient amount of water. Frogs will be transported in moistened plastic bags (1 frog/bag) with a small amount of leaf litter. The translocation of frogs shall be in accordance with the Hygiene Protocol for the Control of Disease in Frogs
- If the animal cannot be handled (i.e. venomous reptiles):
  - Exclude all personnel from the vicinity with fencing and/or signage
  - Record the exact location of the animal/s and provide to the Project Ecologist or appropriate rescue agency (i.e., WIRES).

6.3.2. Injured fauna

Should fauna be injured as part of the vegetation clearing process, the follow steps will be undertaken:

- Call the appropriate rescue agency immediately and follow any advice provided by the agency
- Once the rescue agency arrives at the site, they are responsible for the animal. Any decisions regarding the care of the animal will be made by the rescue agency
- In the event the rescue service and/or local veterinary service cannot be contacted, the injured animal will be delivered to the relevant agency as soon as practicably possible.

The relevant fauna rescue services and local veterinary surgeries contact details are listed in Table 6-2.

Table 6-2. Fauna rescue services' contact details

Agency/Business	Contact Number
Project Ecologist	TBD
WIRES	1300 094 737
Vet 1 – Narooma Veterinary Hospital	(02) 4476 1125
Vet 2 – Moruya Veterinary Hospital	(02) 4474 2532

6.3.3. Relocation of fauna

Relocation of fauna adjacent to the footprint will be carried out where possible by the Project Ecologist or wildlife rescuer and will be recorded during clearing as part of the ecologists clearing report.

If the animal is not injured or stressed, it may be released nearby in an area that is not to be disturbed by the project construction works, in accordance with the following procedures:

- Site identified as suitable release points by the Project Ecologist or wildlife rescuer
- Release site will contain similar habitat and occur as close to the original capture location as possible
- If the species is nocturnal, release will be carried out at dusk
- Release would generally not be carried out during periods of heavy rainfall
- Hollow-dependent species, particularly those with dependent young, shall be released into a temporary nest box.

Adjacent riparian vegetation south of clearing site offers the best relocation site for most species, as shown in Figure 6-1. The area of riparian vegetation maintains some connection with native vegetation and is in closest proximity to Bodalla State Forest.

6.3.4. Important fauna handling information

It is important to consider the following information when handling fauna:

- Some animals require particular handling (e.g. venomous reptiles, raptors) and should only be handled by appropriately qualified personnel i.e. Project Ecologist or WIRES representative(s)
- If handling bats, the handler must be vaccinated against the Australian Bat Lyssavirus (ABL – a form of rabies)
- Any frog handling will be carried out in accordance with the Hygiene Protocol for the Control of Disease in Frogs (DECC 2008). This protocol recommends onsite hygiene precautions be carried out to minimise the transfer of disease between and within wild frog populations. Measures recommended include:
  - Thoroughly cleaning/disinfecting footwear and equipment when moving from one site to another
  - Where necessary in high risk areas, spraying/flushing vehicle tyres with a disinfecting solution
  - Cleaning/disinfecting hands between collecting samples/frogs (preference would be given to using bags, rather than bare hands to handle frogs). Limiting one frog or tadpole to a bag. Bags should not be reused.

6.4. Unexpected finds

If any threatened species are observed within the project site during the vegetation clearing activities that was not identified within this plan, the following procedure will be followed:

- Immediately cease all work likely to affect the threatened species.
- The Project Ecologist shall contact the relevant representatives from Eurobodalla Shire Council and inform of the situation.
- The Project Ecologist shall then contact the following stakeholders to determine the appropriate corrective actions and additional safeguards to be carried out:
  - DPIE ESS (131 555)
  - Others as instructed DPIE ESS.
- The adequacy of existing safeguards will be reviewed in consultation with the above stakeholders.
- Environmental Representative to record find using the Environmental Incident Reporting process where required following consultation with Council representatives. All relevant characteristics of the find should be recorded to the extent practicable
- Following consultation with all relevant stakeholders, the Environmental Representative shall implement any corrective actions and additional safeguards
- Following confirmation by the Environmental Representative that all appropriate safeguards have been implemented, construction works shall recommence
- All relevant project documentation would be updated to display the new findings and subsequent management measures required. This would include such documents as the FFMP (and associated documents) and the CEMP.

6.5. Rehabilitation and re-vegetation

Areas cleared for construction works will be allowed to recover through re-colonisation by the surrounding native flora. Weeds and invasive species will need to be managed as they will likely colonise the disturbed areas. Due to the small area of native vegetation to be cleared and its occurrence on a steep slope, manually replanting native species would be difficult and unnecessary. A detailed methodology of the rehabilitation and re-vegetation of the site will be provided in the CEMP for the TRIPS construction as this work will involve significant excavation of the river bed and will occur within 6 months of the initial clearing.

7. Compliance management

7.1. Compliance management

Details regarding the compliance management of the FFMP is detailed within Section 6 of the CEMP. This includes:

- Identification of roles and responsibilities
- Training
- Monitoring and inspections
- Auditing

8. References

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Appendix A Weeds and pathogens management sub-plan

Hygiene measures and protocols

The following general weed management measures are to be adopted for the clearing works in the TRIPS site:

Light vehicles and mobile plant should be brought to site in clean condition to prevent the introduction of new weeds or pathogens. Likewise, soil and plant material should be cleaned from vehicles before leaving the site in order to prevent the transport of weeds into areas outside the development site

Vehicle wash bays equipped with a high-pressure water cleaner and backpack or handheld sprayer containing disinfectant solution will be established at vehicle access points. Prior to entering site, the vehicle or plant (namely wheels, chassis, undercarriage) must be cleaned with the high-pressure water cleaner to remove loose soil and weed propagules. The vehicle must then be disinfected for pathogens using the disinfectant solution

Boot washdowns will be located adjacent to site offices and ancillaries and equipped with a tub filled with disinfectant solution and scrubbing brush. Prior to accessing the site, boots must be washed in the disinfectant solution with the scrubbing brush used to remove dirt and mud

Most measures to prevent the colonisation of weeds in disturbed areas are to be addressed in the construction and rehabilitation stages, including follow up weed treatment and monitoring. No pre-clearance management of weeds is seen as necessary other than the appropriate disposal of any material removed.

Priority weed control

Weeds that are listed as 'priority weeds' for Eurobodalla LGA must be removed from the site or controlled depending on the category of weed and according to the provisions of the Biosecurity Act. Priority weed control is to be carried out across the entire site for the duration of the management works recommended in the FFMP. Works will be undertaken according to industry best practices.

Primary Weeding

Primary weeding is the first round of weeding activity and involves the removal of most of the weed biomass present (shown in Figure A-1). Primary weeding methods include:

'Cut-and-paint', 'frill and fill', long stem scrape or target spraying of woody weeds (eg *Grevillea robusta*)

Hand-removal and spot spraying of smaller woody, vine and herbaceous weeds

Spot-spraying and hand-weeding of annuals (eg. Blackberry, Fireweed and *Bidens pilosa*).

Primary weeding will occur prior to construction commencing.

Secondary weeds

Secondary weeding will occur approximately one to three months after the completion of primary weeding, depending on the amount of regrowth of herbaceous annuals (and other weeds that have an abundant seed source present in the soil). The site will be inspected at regular monthly intervals by a Council and ecologist to determine the need and appropriate timing of secondary weeding. This will vary according to the timing of the primary weeding, insofar as regrowth will be stronger if primary weeding occurs during spring and summer, and slower during autumn and winter. The need for secondary weeding will also depend on climatic conditions in the intervening period (eg periods of sustained rainfall will promote germination of weed seeds and require secondary weeding to occur sooner than it would under dry conditions).

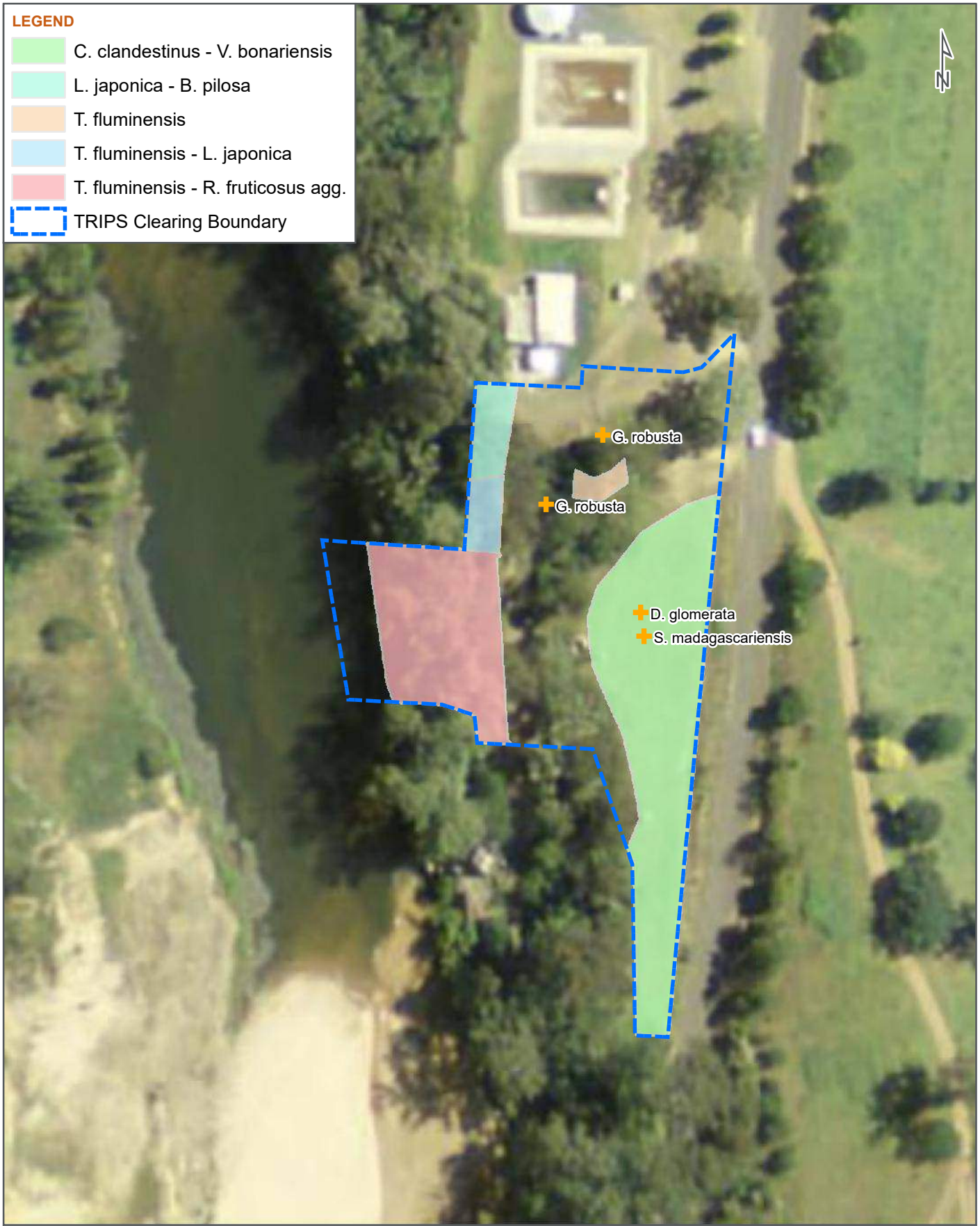
Secondary weeding will involve the targeted removal of priority weed regrowth and hand removal and spot spraying of exotic grasses, herbaceous weeds and seedlings of woody weeds.

Maintenance weeding

Maintenance weeding will occur after construction works and is not subject to this FFMP.

Herbicide Application

Herbicide applications by cut and paint, frill and fill, long stem scrape or spray will mainly use Glyphosate (or equivalent). Treatment of some noxious weeds species or grass weeds may require selective or residual herbicides. The use of herbicides on the site must be in accordance with labelling instructions and MSDS's, and comply with the NSW Pesticides Act 1999. Herbicides should generally be applied when wind speeds are generally low. Where possible herbicide application should take place after two consecutive days with no rain; application should be delayed if rain is forecasted. Appropriate PPE should be worn during herbicide application.



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PAGE SIZE A4

COORDINATE SYSTEM GDA 1994 MGA Zone 56

FIG NO. A-1

FIGURE TITLE Weed Infestation

PROJECT NO. 30012466

PROJECT TITLE Eurobodalla Southern Storage TRIPS CFFMP

CREATED BY FA13847

SOURCES Roadnet MDS 2019
public_NSW_Imagery: © Department of Finance, Services and Innovation 2018

SMEC
Member of the Surbana Jurong Group

Member of the Surbana Jurong Group

SMEC Australia Pty Ltd

Level 5, 20 Berry Street
North Sydney, NSW, 2060

T +61 2 9925 5555
F +61 2 9925 5566

ww.smec.com

Appendix C Stage 1 – TRIPS Site Clearing Emergency Response Plan

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Eurobodalla Southern Water Supply Storage Project: Stage 1 - TRIPS Site Clearing

Emergency Response Plan

Prepared for: Eurobodalla Shire Council
Reference No: 30012835
24/02/2020

Document/Report Control Form

File Location Name:	"I:\projects\30012835 - Eurobodalla Southern Storage\140 Deliverables\02 CEMP\Emergency Response Procedures"
Project Name:	Eurobodalla Southern Storage TRIPS site
Project Number:	30012835
Revision Number:	1.0

Revision History

Revision #	Date	Prepared by	Reviewed by	Approved for Issue by
0.1	26/11/2019	J. Adams	K. Burton	M. Davey
0.2	10/12/2019	J. Adams	C. Masters	M. Davey
1.0	24/02/2020	J. Adams	M. Davey	M. Davey

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Table of Contents

List of Tables

1. Introduction

1.1. Context

This Emergency Response Procedure (ERP) forms part of the Construction Environmental Management Plan (CEMP) for Stage 1 – TRIPS site clearing works for the Eurobodalla Southern Water Supply Storage Project. The Eurobodalla Southern Water Supply Storage Project is currently progressing in two stages, specifically:

- Stage 1 – Clearing of the Tuross River Intake Pump Station (TRIPS) site
- Stage 2 – Clearing and construction of the remaining components of the Eurobodalla Southern Water Supply Storage.

The purpose of this ERP is to provide emergency response procedures relevant to the Stage 1 - TRIPS site clearing works.

1.2. Objective

The primary objective is for all environmental incidents to be resolved and reported appropriately and in a timely manner to:

- Ensure that all environmental incidents that occur are identified, reported, managed and investigated in a logical and consistent manner, and in compliance with applicable environmental legal requirements.
- Establish an adequate procedure that allows the establishment of environmental incident response actions to eliminate or minimise environmental incidents and to meet legislative requirements during the construction phase of the TRIPS scope
- Identify the relevant authorities to be contacted in the event of an emergency.

All reported events need to be reviewed, and if necessary, further investigated to determine what actions can be taken to prevent further recurrence of the incident.

The procedure applies to all employees and subcontractors and their workers, contractors, consultants' visitors and others who have a shared duty of care for environmental matters or who may be involved or affected by the Project activities.

1.3. Targets

The following targets have been established for the management of flood impacts during the construction of the Project:

- Ensure full compliance with the relevant legislative requirements, the development consent, the EIS and the Submissions Reports
- Ensure all reasonable and practical measures are taken prior to a flood and bushfire to mitigate environmental damage, including minimising the potential damage by materials and equipment damaging other infrastructure or impacting the waters up and down-stream.

2. Existing environment

The following sections summarise existing flood regimes within the Project area based on information provided in the EIS.

2.1. Flooding

The construction activities will be carried out adjacent to the Tuross River. The Tuross River is subject to significant flood events, which have occurred in 1978, 1991 and 1992 (with three large floods in this two-year period), 2010 and 2011. In each of these events peak daily flows exceeded 150,000 megalitres per day at the Eurobodalla gauging station. More recent floods have occurred in December 2014 (130,000 megalitres per day), January 2015 (120,000 megalitres per day), June 2016, and December 2017. The flood variability within the Tuross River is among the highest of all rivers in southeast NSW.

2.2. Bushfire

The construction activities will be carried out within bushfire prone area. The Project is vulnerable to bushfire due to the dense cover of vegetation surrounding the area. Uncontrolled bushfires can result in property damage; and pose risk to the safety and health of the workforce, road users and local residences due to heat, smoke and ash generation.

There is a risk of bushfire at the TRIPS site, due to external influences or from to equipment failure or malfunction, hot works or accidental bushfires due to poor housekeeping.

3. Management measures

A range of environmental management measures would be implemented to address bushfire and flooding emergency risks. The management measures would include:

- Weather and climatic data monitoring would include the following:
  - Weather would be monitored daily for construction planning purposes to identify any risk of high rainfall and subsequent flooding events
  - Flood watch and flood warning notifications
  - Ensure evacuation routes are kept clear during high risk periods
  - Storage of materials would be above the 1 in 20 years ARI modelled flood level.

3.1. Emergency muster area

The clearing contractor will nominate one or several, as necessary, emergency muster area for the TRIPS site. Each emergency muster area is to be clearly identified on the site layout plan. The muster area will consider:

- The location of the work area
- The availability of large enough open/protected area to accommodate all persons
- The topography of the site in relation to ease of travel to the muster area
- The location of emergency equipment such as first aid kits, fire-fighting equipment, ease of access etc.

3.2. Bushfire

Actions during bushfire emergency situation are outlined below:

- Person discovering (if the fire was not previously known)
  - Alert persons in the vicinity of the fire
  - Contact the Supervisor/Project Manager (if unable to quickly contact then ring 000)
  - Note details of emergency, exact location, situation and name of person advising
  - Notify the Fire Brigade (call 000), if not already called
  - Ensure that persons are kept away from the bush fire area and Fire Brigade ingress route
- Site supervisor/Project Manager
  - Confirm Fire Brigade informed and responding
  - Confirm that all persons are evacuated from potential danger area and move to the emergency muster area, and initiate broader evacuation if appropriate
  - Consult with emergency services personnel regarding site evacuation need

3.3. Flooding

Actions during a flood emergency situation are outlined below.

- Site supervisor/Project Manager
  - If flooding is anticipated, ensure that any loose objects are secured or able to be removed

- If torrential rain is likely, ensure that windows and doors are closed to minimise water ingestion
- If a severe electrical storm is anticipated, review safety precautions concerning critical processes or outdoor work activity (staff and contractors) with applicable specialist personnel – caution persons concerning use of electrical equipment such as phones and computers. Monitor passage of storm cell/s and temporarily suspend outdoor movement if risk of lightning strike
- Extreme weather events will be monitored to assess what ever precautionary measures need to be implemented to secure project facilities and equipment.
- Consult with emergency services personnel regarding site evacuation need
- Any temporary work will be inspected prior to recommencement of works after a severe weather event
- The areas of the project affected by severe weather events will be inspected for damage, undermining, collapse etc. prior to reopening the site.

3.4. Emergency contact details

Emergency contact details are provided in Table 3-1.

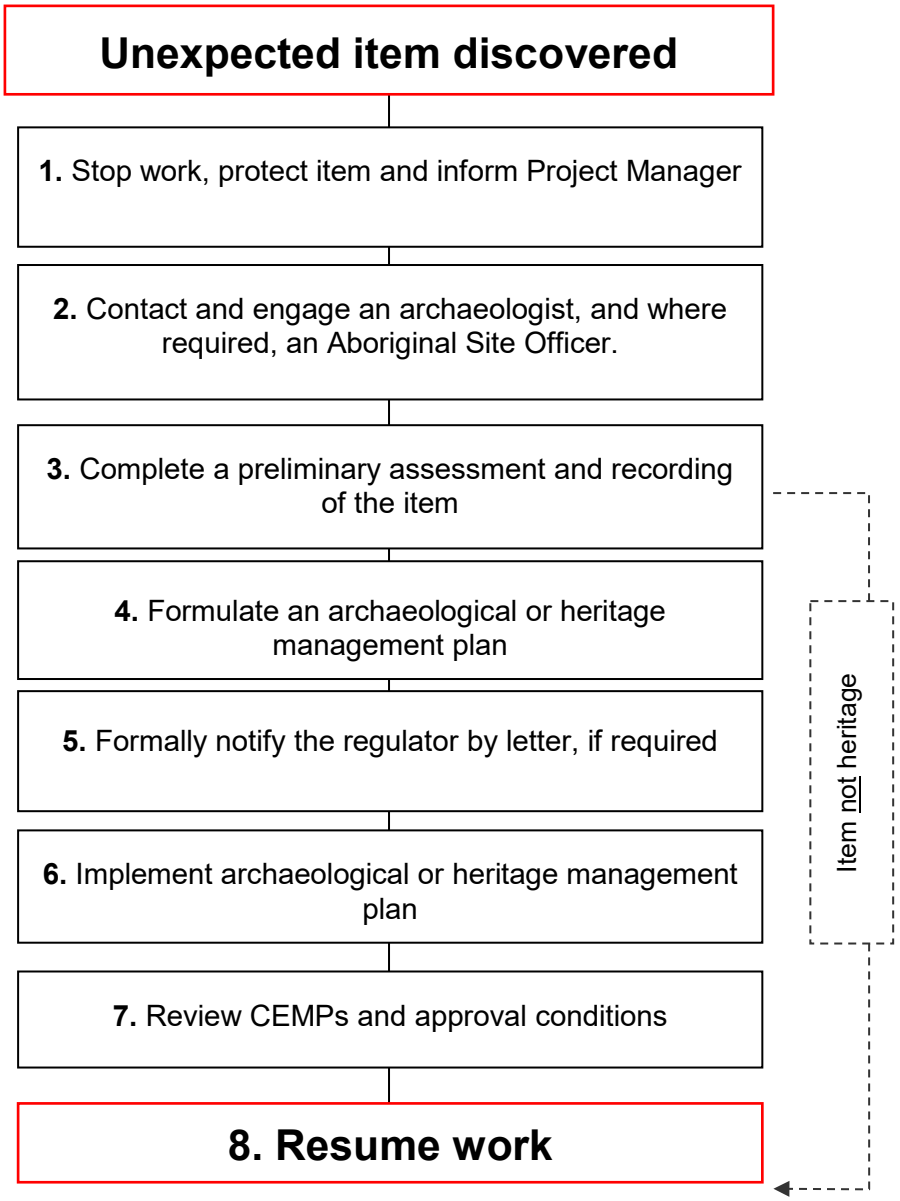
Table 3-1. Emergency contact details

Name / Agency	Contact Details
TRIPS site Clearing Project Manager	TBA
NSW Police	000
NSW Fire and Rescue	000
NSW Ambulance	000
Moruya District Hospital	(02) 4474 2666

Member of the Surbana Jurong Group

SMEC Australia Pty Ltd
Level 5, 20 Berry Street
North Sydney, NSW, 2060
T +61 2 9925 5555
F +61 2 9925 5566
ww.smec.com

Appendix D Stage 1 – TRIPS Site Clearing Unexpected Finds Procedure


Unexpected item discovered
1. Stop work, protect item and inform Project Manager
2. Contact and engage an archaeologist, and where required, an Aboriginal Site Officer.
3. Complete a preliminary assessment and recording of the item
4. Formulate an archaeological or heritage management plan
5. Formally notify the regulator by letter, if required
6. Implement archaeological or heritage management plan
7. Review CEMPs and approval conditions
8. Resume work
Item not heritage

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SMEC Australia Pty Ltd
Level 5, 20 Berry Street
North Sydney, NSW, 2060
T +61 2 9925 5555
F +61 2 9925 5566
ww.smec.com