



APPENDIX B7

Construction Waste and Energy Management Plan

Whytes Lane to Pimlico Road Early Works – Wave 2

Woolgoolga to Ballina Pacific Highway Upgrade

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Glossary / Abbreviations

CEMP	Construction Environmental Management Plan
CoA	Condition of Approval
DECC	Former Department of Environment and Climate Change (NSW) now NSW Office of Environment and Heritage (OEH).
EEC	Endangered Ecological Community
EIS	Environmental Impact Statement
ENM	Excavated Natural Material
EPA	NSW Environment Protection Authority
EP&A Act	<i>NSW Environmental Planning and Assessment Act 1979</i>
EPL	NSW Environment Protection Licence under the <i>Protection of the Environment Operations Act 1997</i> .
EWMS	Environmental Work Method Statements
FM Act	<i>Fisheries Management Act 1994</i>
Minister, the	NSW Minister for Planning
NOW	NSW Office of Water
OEH	Office of Environment and Heritage Former Department of Environment and Climate Change (DECC)
POEO Act	<i>NSW Protection of the Environment Operations Act 1997</i>
Project, the	Whytes Lane to Pimlico Road Early Works – Wave 2
ESCP	Erosion and Sediment Control Plan
RMS, Roads and Maritime Services	Roads and Maritime
Secretary	Secretary of the Department of Planning and Environment
SEE Civil	SEE Civil Pty Ltd
SoC	Revised Statement of Commitments included in the Submissions Report
SPIR	Woolgoolga to Ballina Pacific Highway Upgrade Submissions Preferred Infrastructure Report (November, 2013)
VENM	Virgin Excavated Natural Material
WARR Act	<i>Waste Avoidance and Resource Recovery Act 2001</i>
CWEMP	Construction Waste and Energy Management Plan
WRAPP	Waste Reduction and Purchasing Policy

1 Introduction

1.1 Context

This Construction Waste and Energy Management Plan (CWEMP or Plan) forms part of the Construction Environmental Management Plan (CEMP) for Construction of the Whytes Lane to Pimlico Road Early Works – Wave 2 (the Project).

This CWEMP has been prepared to address the requirements of the Minister's Conditions of Approval (CoA), the mitigation measures listed in the *Pacific Highway Upgrade: Woolgoolga to Ballina Environmental Impact Statement December 2012* (the EIS), the *Submissions / Preferred Infrastructure Report November 2013* (SPIR) and all applicable legislation.

There are four tie in projects within the Woolgoolga to Ballina project limits, namely the Sapphire to Woolgoolga, Glenugie Upgrade, Devils Pulpit and Ballina Bypass projects. These tie in projects have been approved separately by the Minister for Planning. Relevant conditions of approval for these projects have been referenced in the Whytes Lane to Pimlico Road Early Works – Wave 2 CEMP and plans as appropriate.

Wave 2 (the Project) is located within Section 11 of the Woolgoolga to Ballina Pacific Highway Upgrade. Wave 2 of the Early Works (soft soil treatments) is to allow the future upgrade of the section of HW10 Pacific Highway, Woolgoolga to Ballina. The Project specifically covers the following soft soil site as detailed below:

- Soft Soil Site 11 – between Whytes Lane and Pimlico Road (W2P) (STN 159,900 to STN 163,800).

1.2 Background

The EIS assessed the impacts of construction in terms of waste generation/management and resource use, within chapter 18.3. Greenhouse gas emissions and energy issues were assessed in the EIS in chapter 18.1.

The EIS identified the various waste streams that will be generated during the construction of the Project, including construction and demolition waste, vegetation waste, packaging materials and liquid wastes. It also identified opportunities to avoid, reduce and recycle waste.

The EIS identified potential impacts in regards to greenhouse gas emissions. Measures to help address greenhouse gas emissions in construction were identified.

Additional management measures were provided within the SPIR, with applicable management measures from that report included as part of this CWEMP.

1.3 Environmental management systems overview

The overall Environmental Management System for the Project is described in the Construction Environmental Management Plan (CEMP).

The CWEMP is part of the SEE Civil environmental management framework for the Project, as described in *Section 4.1 of the CEMP*. Management measures identified in this Plan will be incorporated into site or activity specific Environmental Work Method Statements (EWMS).

EWMS will be developed and signed off by environment and management representatives prior to associated works and construction personnel will be required to undertake works in accordance with the identified mitigation and management measures.

Used together, the CEMP, strategies, procedures and EWMS form management guides that clearly identify required environmental management actions for reference by SEE Civil personnel and contractors.

The review and document control processes for this Plan are described in *Section 10 of the CEMP*.

2 Purpose and objectives

2.1 Purpose

The purpose of this Plan is to describe how SEE Civil proposes to minimise the amount of waste for disposal, manage waste and reduce energy consumption during construction of the Project.

2.2 Objectives

The key objective of the CWEMP is to ensure that waste for disposal and energy use are minimised. To achieve this objective, SEE Civil will undertake the following:

- Ensure measures are identified and implemented to minimise waste, manage waste and conserve energy throughout the construction of the project.
- Ensure the preferred waste management hierarchy of avoidance, minimisation, reuse, recycling and finally disposal is followed.
- Provide staff with an increased level of understanding and awareness of waste and resource use management issues.
- Ensure appropriate measures are implemented to address the relevant CoA outlined in *Table 3.1 and Table 3.2*, and the mitigation measures detailed in the EIS.
- Ensure appropriate measures are implemented to comply with all relevant legislation and other requirements as described in *Section 3.1* of this Plan.

2.3 Targets

The following targets have been established for the management of waste and energy consumption during the project:

- Avoid the unnecessary production of waste where practical to do so.
- Dispose of waste materials in accordance with legislative requirements.
- Minimise / reduce the quantities of resources to be used.
- Achieve the waste re-use / recycling targets nominated in Table 2-1

Table 2-1 Construction waste streams and targets

Construction Activity	Waste Type	Waste Classification	Likely quantity	Disposal methods	Reuse / Recycle Target
Demolition / Site Clearing	Vegetation (native vegetation - logs, mulched timber)	General solid waste (non-putrescible)	10-100t	Beneficial reuse on site where possible. Mulched native vegetation material will be disposed off-site at an approved licenced facility.	20%
	Vegetation (weeds)	General solid waste (non-	10-100t	. Mulched weed	0%

Construction Activity	Waste Type	Waste Classification	Likely quantity	Disposal methods	Reuse / Recycle Target
		putrescible)		material will be disposed off-site at an approved licenced facility	
	Vegetation (tannin management)	Liquid	<1kL	Off-site disposal of liquid tannins at an approved facility or re-used on site for dust suppression	100%
	Structures demolition waste	General solid waste (non-putrescible)	10-100t	Effective source separation to enable reuse / recycling to be undertaken off-site.	20%
	Concrete and gravel	General solid waste (non-putrescible)	10-100t	Crushed and reused in rock check dam walls or sent off-site for recycling	100%
	Reclaimed asphalt pavement	General solid waste (non-putrescible)	10-100t	Used as road base or sub-base, or as engineering fill, or sent off-site for recycling	100%
	Scrap metal	General solid waste (non-putrescible)	1-10t	Off-site recycling	100%
	Hazardous and contaminated waste	Hazardous waste	Unknown	Off-site disposal at an approved facility	0%
Bulk Earthworks	Excavated Natural Material (ENM) Virgin Excavated Natural Material (VENM)	Classification based on soil tests carried out preconstruction and in accordance with the EPA document Waste Classification Guidelines: Part 1 (EPA 2014)	0t	Material deficit. ENM/ VENM to be imported to site.	100%
	Potentially contaminated	Classification based on soil	Unknown	Off-site disposal at	0%

Construction Activity	Waste Type	Waste Classification	Likely quantity	Disposal methods	Reuse / Recycle Target
	soils	tests carried out preconstruction and in accordance with the EPA document Waste Classification Guidelines: Part 1 (EPA 2014)		an approved facility	
	Potential acid sulphate soils	Classification based on soil tests carried out during construction and in accordance with Waste Classification Guidelines: Part 4 (EPA 2014)	Unknown	Treat and reuse on-site as per CASMMP (Appendix B11 to CEMP)	100%
Road Construction	Steel reinforcing	General solid waste (non-putrescible)	1-10t	Off-site recycling	100%
	Conduits and pipes	General solid waste (non-putrescible)	1-10t	Off-site disposal at an approved facility	0%
	Concrete (solids and washouts)	General solid waste (non-putrescible)	1-10t	Crushed and reused in rock check dam walls or sent off-site for recycling	100%
	Reclaimed asphalt pavement	General solid waste (non-putrescible)	10-100t	Used as road base or sub-base, or as engineering fill, or sent off-site for recycling	100%
	Timber formwork	General solid waste (non-putrescible)	1-10t	Reuse on-site where possible or off-site recycling	100%
	Packaging materials, including wood, plastic, cardboard and metals	General solid waste (non-putrescible)	1-10t	Off-site recycling	100%
	Empty oil and other drums	General solid waste (non-putrescible)	<1t	Off-site disposal at an approved facility	0%
	Pesticides, herbicides, spill	Hazardous	<1t	Off-site disposal at	0%

Construction Activity	Waste Type	Waste Classification	Likely quantity	Disposal methods	Reuse / Recycle Target
	clean ups, paints and other chemicals	waste		an approved facility	
	Metals and electrical cabling	General solid waste (non-putrescible)	<1t	Off-site recycling	100%
Compounds and Workshop Operation	Tyres	Special waste	1-10t	Off-site disposal at an approved facility	100%
	Waste generated by the maintenance of equipment including air and oil filters and rags	General Solid (non-putrescible)	<1t	Off-site disposal at an approved facility	0%
	Oils, grease, fuel, chemicals and other fluids	Liquid	<1kL	Off-site disposal at an approved facility	0%
	Batteries	Hazardous Waste	<1t	Off-site disposal at an approved facility	0%
	Radiator Fluid	Hazardous Waste	<1kL	Off-site disposal at an approved facility	0%
	Hydraulic Fluid	Hazardous Waste	<1kL	Off-site disposal at an approved facility	0%
	Domestic waste generated by workers	General solid waste (putrescible)	1-10t	Off-site disposal at an approved facility	0%
	Sewage	General solid waste (putrescible)	10-100kL	Black water treatment or trade waste agreement	0%
Office operation	Paper, cardboard and plastic	General solid waste (non-putrescible)	1-10t	Off-site recycling	100%
	Glass bottles and aluminium cans	General solid waste (non-putrescible)	1-10t	Off-site recycling	100%
	Ink cartridges	General solid waste (non-putrescible)	<1t	Off-site recycling	100%
	Food waste	General solid waste (non-putrescible)	<1t	Off-site disposal at an approved facility	0%
	Effluent (eg STP)	Liquid	10-100kL	Black water treatment or	0%

Construction Activity	Waste Type	Waste Classification	Likely quantity	Disposal methods	Reuse / Recycle Target
				trade waste agreement	

Table 2-2 Energy consumption and greenhouse gas generation

Construction Activity	Emission Source
Demolition / Site Clearing	Demolition equipment is operated by the burning of fossil fuels which creates greenhouse gas emissions.
Bulk Earthworks	Excavation equipment is operated by the burning of fossil fuels which creates greenhouse gas emissions.
Road Construction	Construction equipment is operated by the burning of fossil fuels which creates greenhouse gas emissions.
Compounds and Workshop Operation	Electricity is consumed for various uses, including lighting and operation of power tools.
Office Operation	Electricity is consumed for various uses, including lighting, refrigeration, air conditioning and operating office equipment.

3 Environmental requirements

3.1 Relevant legislation, guidelines and management plans

3.1.1 Legislation

Legislation and regulations relevant to waste and energy management includes:

- *Protection of the Environment Operations Act 1997.*
- Protection of the Environment Operations (General) Regulation 2009.
- Protection of the Environment Operations (Waste) Regulation 2005.
- *Waste Avoidance and Resource Recovery Act 2001 (WARR Act).*
- *Contaminated Land Management Act 1997.*
- *National Greenhouse and Energy Reporting Act 2007.*
- *Noxious Weeds Act 1993.*
- *Environmentally Hazardous Chemicals Act 1985.*

Relevant provisions of the above legislation are explained in the register of legal and other requirements included in Appendix A1 of the CEMP.

3.1.2 Guidelines and standards

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

- Waste Classification Guidelines Part 1: Classifying Waste 2014 (EPA Publication).
- Waste Classification Guidelines Part 4: Acid Sulfate Soils 2014 (EPA Publication).
- NSW Government “Waste Reduction and Purchasing Policy” (WRAPP).
- Best Practice Waste Reduction Guidelines for the Construction and Demolition Industry (tools for Practice), Natural Heritage Trust, 2000.
- Environmental Procedure Management of Wastes on Roads and Maritime Services Land 2014 (RMS Publication).
- RMS Waste Fact Sheets: Virgin Excavated Natural Material (VENM), Excavated Natural Material (ENM), Excavated Public Road Materials, Recovered Aggregates, Asbestos Waste, Waste Sampling.

3.1.3 Management Plans

Other management plans prepared as part of the CEMP relevant to waste management include:

- Construction Contaminated Land Management Plan (Appendix B10 to CEMP).
- Construction Acid Sulphate Materials Management Plan (Appendix B11 to CEMP).

3.2 Minister's Conditions of Approval

The CoA relevant to this Plan are listed Table 3-1 below. A cross reference is also included to indicate where the condition is addressed in this Plan or other Project management documents.

Table 3-1 Conditions of Approval relevant to the CWEMP

CoA No.	Condition Requirements	Document Reference
B68.	Waste generated outside the site shall not be received at the site for storage, treatment, processing, reprocessing, or disposal on the site, except as expressly permitted by a licence or waste exemption under the <i>Protection of the Environment Operations Act 1997</i> , if such a licence is required in relation to that waste.	Chapter 6
B69.	The reuse and/or recycling of waste materials generated on site shall be maximised as far as practicable, to minimise the need for treatment or disposal of those materials off site.	Chapter 6
B70.	All liquid and/or non-liquid waste generated on the site shall be assessed and classified in accordance with <i>Waste Classification Guidelines</i> (Department of Environment, Climate Change and Water, 2009)	Chapter 6
B71.	All waste materials removed from the site shall only be directed to a waste management facility or premises lawfully permitted to accept the materials.	Chapter 6
D25	The Applicant shall prepare and implement (following approval) a Construction Environmental Management Plan for the SSI, prior to the commencement of construction, or as otherwise agreed by the Secretary. The Plan shall be prepared in consultation with the EPA, DPI (Fisheries), NOW and DoE and outline the environmental management practices and procedures that are to be followed during construction, and shall be prepared in consultation with the relevant government agencies and in accordance with the Guideline for the Preparation of Environmental Management Plans (Department of Infrastructure, Planning and Natural Resources, 2004). The Plan shall include, but not necessarily be limited to: (d) an environmental risk analysis to identify the key environmental performance issues associated with the construction phase and details of how environmental performance would	

CoA No.	Condition Requirements	Document Reference
	<p>be managed and monitored to meet acceptable outcomes, including what actions will be taken to address identified potential adverse environmental impacts (including any impacts arising from the staging of the construction of the SSI). In particular, the following environmental performance issues shall be addressed in the Plan:</p> <p>(vii) measures for the handling, treatment and management of contaminated materials;</p> <p>(viii) measures to monitor and manage waste generated during construction including but not necessarily limited to: general procedures for waste classification, handling, reuse, and disposal; use of secondary waste material in construction wherever feasible and reasonable; procedures for dealing with green waste including timber and mulch from clearing activities; and measures for reducing demand on water resources;</p>	<p>Appendix B10 to CEMP This document</p>

4 Environmental aspects and impacts

4.1 Construction waste streams and energy use

The following construction related waste streams have been identified:

- Excavation wastes.
- Clearing and grubbing wastes including:
 - Timber.
 - Weeds.
 - Green wastes.
- Demolition wastes
- Construction wastes including:
 - Waste generated from chemical/spill clean-up or remediation.
 - Waste generated from remediation of contaminated material.
 - Waste generated from Acid Sulfate Soil treatment.
 - Waste water from tannin affected water, water captured in excavations; and acid sulphate leachate runoff resulting from pre-loading works.
- Packaging materials.
- Waste produced from the maintenance of construction vehicles and plant, which might include oils, fluids, fuels, tyres.
- Sewage and general waste from construction compounds.
- Waste from litter and cigarette butts specifically around structures and crib sheds.
- Miscellaneous wastes.
- General waste from office and compounds.

The following sources of construction related energy consumption (fuel and power) have been identified:

- Procurement and delivery of materials to site.
- Vegetation clearing and mulching.
- Site establishment, including compound set up.
- Relocation and protection of services.
- Compaction of excavated material in fill embankments.
- Construction of culverts.
- Demolition of structures and pavements.
- Operation of site compounds and lighting.
- Construction plant including rollers, excavators, bulldozers, graders and water trucks.
- Removal of waste from the site.

4.2 Impacts

The potential environmental impacts associated with construction waste generation and energy use include:

- Weed infestation from dispersion of seeds and so forth during clearing and access upgrading activities.
- Generation or spread of contaminated waste/soils, e.g. groundwater, used or expired chemicals, or construction materials.
- Water pollution due to sediment runoff from soil excavation and excess spoil storage.
- Consumption of non-renewable resources such as energy, diesel and other chemicals.
- Greenhouse gas emissions due to consumption of energy from non-renewable resources.

The mismanagement of waste streams has the potential to result in the following impacts:

- Excessive waste being directed to landfill.
- Various types of waste being generated and stored onsite, with the potential for misclassification.
- Water pollution.
- Land contamination.
- Degradation of local amenity, including visual and odour impacts.
- Economic impacts, such as the increased cost for landfill disposal compared to reuse/ recycling.

Earthworks would potentially generate the greatest amount of waste. To ensure the amount of waste is minimised, the construction contractor would manage earthworks requirements across the entire project, with construction staging taking into account efficient resource use and opportunities for reusing materials to limit waste generation. Roads and Maritime would also investigate whether unused resources could be used on other Pacific Highway projects.

A full list of management measures relating to construction waste and energy management are included in Section 6 of this Plan.

5 Waste and energy management

5.1 Classification of waste streams

Where waste cannot be avoided, reused or recycled it will be classified and appropriate disposal will then occur. The classification of waste is undertaken in accordance with the *Waste Classification Guidelines Part 1: Classifying Waste* (EPA 2014). This document identifies six classes of waste: Special, Liquid, Hazardous, Restricted Solid, General Solid (putrescible) and General Solid (non-putrescible), and describes a six step process to classifying waste. That process is described below:

Step 1: Is it 'special waste'?

Establish if the waste should be classified as special waste. Special wastes are: clinical and related, asbestos, waste tyres. Definitions are provided in the guidelines.

Note: Asbestos and clinical wastes must be managed in accordance with the requirements of Clauses 42 and 43 of the Protection of the Environment Operations (Waste) Regulation 2005.

Step 2: If not special, is it 'liquid waste'?

If it is established that the waste is not special waste it must be decided whether it is 'liquid waste'. Liquid waste means any waste that: has an angle of repose of less than 5° above horizontal becomes free-flowing at or below 60° Celsius or when it is transported is generally not capable of being picked up by a spade or shovel.

Liquid wastes are sub-classified into:

- Sewer and stormwater effluent.
- Trackable liquid waste according to Protection of the Environment Operations (Waste) Regulation 2005 Schedule 1 Waste to which waste tracking requirements apply
- Non-trackable liquid waste

Step 3: If not liquid, has the waste already been pre-classified by the NSW EPA?

The EPA has pre-classified several commonly generated wastes in the categories of hazardous, general solid waste (putrescibles) and general solid waste (non-putrescibles). If a waste is listed as 'pre-classified', no further assessment is required.

Step 4: If not pre-classified, is the waste hazardous?

If the waste is not special waste (other than asbestos waste), liquid waste or pre-classified, establish if it has certain hazardous characteristics and can therefore be classified as hazardous waste.

Hazardous waste includes items such as explosives, flammable solids, substances liable to spontaneous combustion, oxidizing agents, toxic substances and corrosive substances.

Step 5: If the waste does not have hazardous characteristics, undertake chemical assessment to determine classification.

If the waste does not possess hazardous characteristics, it needs to be chemically assessed to determine whether it is hazardous, restricted solid or general solid waste (putrescible and non-putrescible). If the waste is not chemically assessed, it must be treated as hazardous.

Waste is assessed by comparing Specific Contaminant Concentrations (SCC) of each chemical contaminant, and where required the leachable concentration using the Toxicity Characteristics Leaching Procedure (TCLP), against Contaminant Thresholds (CT).

Step 6: Is the general solid waste putrescible or non-putrescible?

If the waste is chemically assessed as general solid waste, a further assessment is available to determine whether the waste is putrescible or non-putrescible. The assessment determines whether the waste is capable of significant biological transformation. If this assessment is not undertaken, the waste must be managed as general solid waste (putrescible).

5.2 Waste exemptions

The Protection of the Environment Operations (Waste) Regulation 2014 (2014 Waste Regulation) enables the EPA to grant exemptions to the licensing and payment of levies for the land application or use of waste. The EPA has issued general exemptions for a range of commonly recovered, high volume and well characterised waste materials that allow their use as fill or fertiliser at unlicensed, off-site facilities.

Under the provisions of the 2014 Waste Regulation, the EPA issues two separate documents: a resource recovery order and a resource recovery exemption.

Resource recovery orders include conditions which generators and processors of waste must meet to supply the waste for land application. They may include specifications, record-keeping, reporting and other requirements. All resource recovery orders are made under clause 93 of the 2014 Waste Regulation.

Resource recovery exemptions contain the conditions which consumers must meet to apply waste to land outside certain requirements of the waste regulatory framework. They may include requirements on how to re-use or apply the waste, and record-keeping, reporting and other requirements. All resource recovery exemptions are made under clauses 91 and 92 of the 2014 Waste Regulation.

The resource recovery orders and resource recovery exemptions currently in force may be used by anyone in NSW, without seeking approval from the NSW EPA, provided the waste generators, processors and consumers fully comply with the conditions.

The resource recovery orders and resource recovery exemptions that may be applicable to this project are defined in Table 3-1 below. Where no resource recovery order or resource recovery exemption is currently available for the intended use of a waste material, an application can be made to the EPA in accordance with the guidelines on resource recovery exemptions.

Table 5-1 Resource recovery orders and resource recovery exemptions

Order and Exemption	Conditions of Exemption
Effluent Order 2014 Effluent Exemption 2014	The effluent can only be applied to land as a soil amendment or for the purposes of irrigation. The consumer must ensure that any application of effluent to land must occur within a reasonable period of time after its receipt.
Excavated Natural Material Order 2014 Excavated Natural Material Exemption 2014	At the time the excavated natural material is received at the premises, the material must meet all chemical and other material requirements for excavated natural material which are required on or before the supply of excavated natural material under 'the excavated natural material order 2014'. The excavated natural material can only be applied to land as engineering fill or for use in earthworks.

Order and Exemption	Conditions of Exemption
	<p>The consumer must keep a written record of the following for a period of six years:</p> <ul style="list-style-type: none"> • the quantity of any excavated natural material received; and • the name and address of the supplier of the excavated natural material received. <p>The consumer must make any records required to be kept under this exemption available to authorised officers of the EPA on request.</p> <p>The consumer must ensure that any application of excavated natural material to land must occur within a reasonable period of time after its receipt.</p>
<p>Excavated Public Road Material Order 2014</p> <p>Excavated Public Road Material Exemption 2014</p>	<p>The excavated public road material can only be applied to land within the road corridor for public road related activities including road construction, maintenance and installation of road infrastructure facilities.</p> <p>The excavated public road material can only be stored within the road corridor at the site where it is to be applied to land.</p> <p>The excavated public road material cannot be applied to private land.</p> <p>The consumer must ensure that any application of excavated public road material to land must occur within a reasonable period of time after its receipt.</p>
<p>Pasteurised Garden Organics Order 2014</p> <p>Pasteurised Garden Organics Exemption 2014</p>	<p>At the time the pasteurised garden organics are received at the premises, the material must meet all chemical and other material requirements for pasteurised garden organics which are required on or before the supply of pasteurised garden organics under 'the pasteurised garden organics order 2014'.</p> <p>The pasteurised garden organics can only be applied to land as a soil amendment.</p> <p>The consumer must ensure that they do not cause or permit the migration of leachate from the land application site.</p> <p>The consumer must ensure that any application of pasteurised garden organics to land must occur within a reasonable period of time after its receipt.</p>
<p>Raw Mulch Order 2014</p> <p>Raw Mulch Exemption 2014</p>	<p>At the time the raw mulch is received at the premises, the material must meet all material requirements for raw mulch which are required on or before the supply of raw mulch under 'the raw mulch order 2014'.</p> <p>The raw mulch can only be applied to land as a soil amendment.</p> <p>The consumer must ensure that they do not cause or permit the migration of leachate from the land application site.</p> <p>The consumer must not undertake further processing of the raw mulch at the land application site.</p> <p>The consumer must ensure that any application of raw mulch to land occurs within a reasonable period of time after its receipt.</p>
<p>Reclaimed Asphalt Pavement Order 2014</p> <p>Reclaimed Asphalt Pavement Exemption 2014</p>	<p>The reclaimed asphalt pavement can only be:</p> <p>(1) applied to land for road related activities including road construction or road maintenance activities being:</p> <p>(a) use as a road base and sub base,</p> <p>(b) applied as a surface layer on road shoulders and unsealed roads, and</p> <p>(c) use as an engineering fill material</p> <p>(2) used as an alternative input into thermal processes for non-energy recovery purposes in the manufacture of asphalt.</p> <p>The consumer must ensure that any application of reclaimed asphalt pavement to land or any use of reclaimed asphalt pavement in connection with a process of thermal treatment must occur within a reasonable period of time after its receipt.</p>
<p>Recovered Aggregate Order 2014</p> <p>Recovered Aggregate Exemption 2014</p>	<p>At the time the recovered aggregate is received at the premises, the material must meet all chemical and other material requirements for recovered aggregate which are required on or before the supply of recovered aggregate under 'the recovered aggregate order 2014'.</p> <p>The recovered aggregate can only be applied to land in road making activities, building,</p>

Order and Exemption**Conditions of Exemption**

landscaping and construction works. This approval does not apply to any of the following applications:

- Construction of dams or related water storage infrastructure,
- Mine site rehabilitation,
- Quarry rehabilitation,
- Sand dredge pond rehabilitation,
- Back filling of quarry voids,
- Raising or reshaping of land used for agriculture, and
- Construction of roads on private land unless:
 - the recovered aggregate is applied only to the minimum extent necessary for the construction of the road, and
 - a development consent has been granted under the relevant Environmental Planning Instrument (EPI), or
 - it is to provide access (temporary or permanent) to a development approved by a Council, or
 - the works are either exempt or complying development.

The consumer must keep a written record of the following for a period of six years:

- the quantity of any recovered aggregate received; and
- the name and address of the supplier of the recovered aggregate received.

The consumer must make any records required to be kept under this exemption available to authorised officers of the EPA on request.

The consumer must ensure that any application of recovered aggregate to land must occur within a reasonable period of time after its receipt.

Stormwater Order 2014

The stormwater can only be applied to land within the definitions of “application to land”. Application or apply to land means applying to land by: spraying, spreading or depositing on the land; or ploughing, injecting or mixing into the land; or filling, raising, reclaiming or contouring the land.

Stormwater Exemption 2014

The consumer must ensure that any application of stormwater to land must occur within a reasonable period of time after its receipt.

Treated Drilling Mud Order 2014

At the time the treated drilling mud is received at the premises, the material must meet all chemical and other material requirements for treated drilling mud which are required on or before the supply of treated drilling mud under ‘the treated drilling mud order 2014’. The treated drilling mud can only be applied to land as engineering fill or for use in earthworks.

Treated Drilling Mud Exemption 2014

The consumer must keep a written record of the following for a period of six years:

- the quantity of any treated drilling mud received; and
- the name and address of the supplier of the treated drilling mud received.

The consumer must make any records required to be kept under this exemption available to authorised officers of the EPA on request.

The consumer must ensure that any application of treated drilling mud to land must occur within a reasonable period of time after its receipt.

5.3 Classification of potential waste streams

The construction aspects and types of wastes, which may be generated during construction, are outlined with classifications in Table 5-2.

Table 5-2 Classification of potential waste streams

Aspect	Waste Types	Classification	Proposed reuse / Recycling / Disposal
Demolition / Site Clearing	Vegetation (native vegetation - logs, mulched timber)	General solid waste (non-putrescible)	Disposed off-site at an approved licenced facility
	Vegetation (weeds)	General solid waste (non-putrescible)	Disposed off-site at an approved licenced facility
	Structures demolition waste	General solid waste (non-putrescible)	Effective source separation to enable reuse / recycling to be undertaken off-site.
	Concrete and gravel	General solid waste (non-putrescible)	Crushed and reused in rock check dam walls or sent off-site for recycling
	Reclaimed asphalt pavement	General solid waste (non-putrescible)	Used as road base or sub-base, or as engineering fill, or sent off-site for recycling
	Scrap metal	General solid waste (non-putrescible)	Off-site recycling
	Hazardous and contaminated waste	Hazardous waste	Off-site disposal at an approved facility
Bulk Earthworks	ENM (Excavated Natural Material) VENM (Virgin Excavated Natural Material)	Classification based on soil tests carried out preconstruction and in accordance with the EPA document Waste Classification Guidelines: Part 1 (EPA 2014)	Material deficit. ENM/ VENM to be imported to site.
	Potentially contaminated soils	Classification based on soil tests carried out preconstruction and in accordance with the EPA document Waste Classification Guidelines: Part 1 (EPA 2014)	Off-site disposal at an approved facility.
	Potential acid sulphate soils	Classification based on soil tests carried out during construction and in accordance with Waste Classification Guidelines: Part 4 (EPA 2014)	Treat and reuse on-site as per CASMMP (Appendix B11 to CEMP)
Road Construction	Steel Reinforcing	General solid waste (non-putrescible)	Off-site recycling
	Conduits and pipes	General solid waste (non-putrescible)	Off-site disposal at an approved facility
	Concrete (solids and washouts)	General solid waste (non-putrescible)	Crushed and reused in rock check dam walls or sent off-site for recycling
	Reclaimed asphalt pavement	General solid waste (non-putrescible)	Used as road base or sub-base, or as engineering fill, or sent off-site for recycling
	Timber formwork	General solid waste (non-putrescible)	Reuse on-site where possible or off-site

	Packaging Materials, including wood, plastic, cardboard and metals	General solid waste (non-putrescible)	Off-site recycling
	Empty oil and other drums	General solid waste (non-putrescible)	Off-site disposal at an approved facility
	Pesticides, herbicides, spill clean ups, paints and other chemicals	Hazardous waste	Off-site disposal at an approved facility
	Metals and electrical cabling	General solid waste (non-putrescible)	Off-site recycling
Compounds and Workshop Operation	Tyres	Special Waste	Off-site disposal at an approved facility
	Waste generated by the maintenance of equipment including air and oil filters and rags	General solid waste (non-putrescible)	Off-site disposal at an approved facility
	Oils, grease, fuel, chemicals and other fluids	Liquid	Off-site disposal at an approved facility
	Batteries	Hazardous waste	Off-site disposal at an approved facility
	Radiator Fluid	Hazardous waste	Offsite disposal at an approved facility
	Hydraulic Fluid	Hazardous waste	Off-site disposal at an approved facility
	Domestic waste generated by workers	General solid waste (putrescible)	Off-site disposal at an approved facility
	Sewage	General solid waste (putrescible)	Black water treatment or trade waste agreement
Office Operation	Paper, cardboard and plastic	General solid waste (non-putrescible)	Off-site recycling
	Glass bottles and aluminium cans	General solid waste (non-putrescible)	Off-site recycling
	Ink cartridges	General solid waste (non-putrescible)	Off-site recycling
	Food Waste	General solid waste (non-putrescible)	Off-site disposal at an approved facility
	Effluent (eg STP)	Liquid	Black water treatment or trade waste agreement

5.4 Reuse and recycling

Waste separation and segregation will be promoted on-site to facilitate reuse and recycling as a priority of the waste management program as follows:

Waste segregation onsite – Waste materials, including spoil and demolition waste, will be separated on-site into dedicated bins/areas for either reuse on-site or collection by a waste contractor and transport to off-site facilities.

Waste separation off-site – Wastes to be deposited into one bin where space is not available for placement of multiple bins, and the waste is to be sorted off-site by a waste contractor.

Where sections of the existing Pacific Highway or local roads are excavated, the re-use of this material will be done in accordance with the conditions attached to the general resource recovery exemption, Excavated Public Road Material Exemption 2014 (EPA, 2014). Where this material has not been subjected to potentially contaminating sources, it can be reused

within the road corridor without further testing or any specific licensing requirements. Where this material is suspected of being subject to contamination (e.g section of road is adjacent to a service station, or an old sheep dip), testing and classification of this material will be undertaken.

Secondary waste material would be used in construction wherever feasible and reasonable. Where materials cannot be reused and recycled, all waste would be handled and disposed in accordance with the *Protection of the Environment Operations Act 1997*.

Roads and Maritime would also investigate whether unused resources could be used on other Pacific Highway projects.

5.5 Waste Handling and Storage

Where waste is required to be handled and stored on-site prior to on-site reuse or off-site recycling/disposal, the following measures apply:

- Spoil, topsoil and mulch are to be stockpiled on-site in allocated areas, where appropriate, and mitigation measures for dust control and surface water management will be implemented as per the Air Quality Management Plan and the Soil and Water Management Plan.
- Liquid wastes are to be stored in appropriate containers in bunded areas until transported off-site. Bunded areas will have the capacity to hold 110 per cent of the liquid waste volume for bulk storage or 120 per cent of the volume of the largest container for smaller packaged storage
- Hazardous waste will be managed by appropriately qualified and licensed contractors, in accordance with the requirements of the *Environmentally Hazardous Chemicals Act 1985* and the EPA waste disposal guidelines.
- All other recyclable or non-recyclable wastes are to be stored in appropriate covered receptacles (e.g. bins or skips) in appropriate locations on-site and contractors commissioned to regularly remove/empty the bins to approved disposal or recycling facilities.
- It is estimated that mulching of timber and green wastes for the project will generate significant quantities of mulch. Mulch has the potential of creating tannin affected water, which in turn has the potential of causing water pollution. Mulch stockpiles are to be managed in accordance with the Soil and Water Management Plan.

5.6 Waste Disposal

Waste (and spoil) disposal is to be in accordance with the *Protection of the Environment Operations Act 1997* and the *Waste Avoidance and Resource Recovery Act 2001*. Wastes that are unable to be reused or recycled will be disposed of off-site to an EPA approved waste management facility following classification (*refer to section 5.1*). The location of waste management / disposal facilities are included in Appendix B. Details of waste types, volumes and destinations are to be recorded in the Waste Management Register (Appendix D).

Where possible wastes will be removed off-site to a recycling facility or will be disposed of at a licensed waste facility. There will be no burning off of waste on-site.

5.7 Sub-Contractor Management

The following methods will be implemented to ensure subcontractors recycle, reuse or dispose of surplus materials in accordance with statutory requirements:

- Subcontractors will be instructed on waste management principles through the induction process and progressively via tool box information sessions.
- As part of the procurement process, service contracts will include the requirements for the progressive submission of reports detailing waste information e.g. type, quantities, disposal locations etc.
- Subcontractors will be monitored during the construction process to evaluate waste management practices. Inspection reports will be prepared and issued where required to maintain compliance with this Plan.
- Where significant issues are identified, the non-conformance process will be followed to implement corrective actions and ensure continual improvement of waste management practices.

5.8 Licences and Permits

In accordance with the POEO (Waste) Regulation 2005 waste generators are required to identify and complete tracking information for all trackable wastes, as identified in Schedule 1 of the Regulation. In regards to the Project these waste types may include:

- Asbestos
- Clinical waste
- Lead acid batteries
- Sewage

Waste tracking may be managed by either operating directly with a licensed waste facility or engaging a subcontractor to manage trackable wastes on behalf of the Project.

As part of the procurement process and when engaging services, copies of licences required in accordance with Schedule 1 of the *POEO Act 1997* for Scheduled Activities will be obtained for transporters of 'trackable wastes', industrial/hazardous waste treatment facilities and waste disposal facilities prior to disposal of these wastes.

All waste to be disposed on or off site will be classified in accordance with the Waste Classification Guidelines prior to determining the appropriate end use. Offsite disposal of waste will occur at a waste facility with a compliant Environmental Protection Licence allowing the disposal of such waste.

The construction of the Project may result in opportunities that will enable the reuse of waste generated through construction works such as spoil, fill, Virgin Excavated Natural Material (VENM), crushed rock, reclaimed asphalt pavement (RAP), mulched vegetation and waste concrete. Waste determined appropriate for use on site will be subject to the appropriate Resource Recovery Orders and Exemptions issued by OEH as detailed in Section 5.2.

In accordance with Section 143(3A) of the *POEO Act 1997* such wastes may also be transported and received by lands other than a licensed waste facility and land owned by RMS, provided the place to which the waste is transported can lawfully be used as a waste facility for the waste and a Section 143 Notice (*POEO Act 1997*) is received prior to transfer of waste.

5.9 Energy Conservation

The Project Team is dedicated to implementing energy conservation best practice and the reduction of greenhouse gases by adopting energy efficient work practices including:

- Developing and implementing procedures to minimise energy use.
- Conducting awareness programs for all site personnel regarding energy conservation methods.

Specific measures to address greenhouse gas and energy conservation are outlined in Table 6 1.

6 Environmental mitigation and management measures

A range of environmental requirements are identified in the various environmental documents, including the EIS, Submissions / Preferred Infrastructure Report, Statement of Commitments, supplementary assessments, Conditions of Approval and Roads and Maritime documents, and from recent experience on similar road projects. Specific measures and requirements to address waste management and energy use issues are outlined in Table 6-1.

Table 6-1 Management and mitigation measures

ID	Measure / Requirement	When to implement	Responsibility	Reference
GENERAL				
WE1	The NSW Governments Waste Management Hierarchy of “avoid-reduce-reuse- recycle- dispose” will be followed as the framework of waste management throughout the project. The reuse and/or recycling of waste materials generated on site shall be maximised as far as practicable, to minimise the need for treatment or disposal of those materials off site.	Pre-construction Construction	Construction Manager / Environment Manager	G36 CoA B69
WE2	Waste management measures from this CWEMP will be included in relevant Environmental Work Method Statements to be developed prior to the commencement of specific activities.	Pre-construction / Construction	Site Engineer / Environmental Manager	Good practice
WE3	All staff and subcontractors will undergo a site induction and ongoing toolbox talks that will detail waste minimisation and reuse management measures, including the requirements of the waste management hierarchy. Waste minimisation training will include energy consumption awareness that promotes energy conservation methods including minimising energy use by switching off equipment when not in use.	Construction	Environment Manager / Foreman	Good Practice
WE4	Procurement of materials will be planned and managed to avoid the over-ordering of products and minimise excess packaging is to be carried out.	Construction	Site Engineer / Foreman	Good Practice
WE5	Recycled material will be considered for use in all aspects of the project where feasible and reasonable in accordance with the NSW Government’s Waste Reduction and Purchasing Policy.	Construction	Site Engineer / Environment Manager	G36
WE6	Weeds will be managed, handled and disposed of in accordance to The Weed Management Strategy (refer to the FFMP). If disposal is appropriate, the weed material will be transferred to a licensed waste facility.	Construction	Foreman / Environment Manager	G40 Good practice
WE7	Sediment recovered from erosion and sediment control devices will be reused on site as general fill material or it will be incorporated within landscaping materials where possible.	Construction	Foreman	Good Practice
WE8	The cut and fill balance of the project will be further refined to obtain as much material as possible for re-use on the project.	Pre-construction	Construction Manager / Environment Manager	W2B Submissions / PIR (WM1)

ID	Measure / Requirement	When to implement	Responsibility	Reference
WE9	<p>A resource use management strategy will be prepared for construction of the project and identify the hierarchy for sourcing and use of resources.</p> <p>This will include:</p> <ul style="list-style-type: none"> - Available project cutting material (including SMZ and verge material) will be used for the construction of the embankments, SMZ and verge within that section to the extent that it is suitable. - Project sections with a deficit in material will import surplus material from other project sections in preference to external sources. - Where possible, the distances that earthworks materials are moved across the project as a whole will be minimised, notwithstanding the above two requirements. - Any unsuitable material will be used for landscaping or disposed of within each project section, either for batter flattening or noise mounds or placed in stockpile. - Contractors will reduce the amount of unsuitable waste generated during excavations, where feasible (eg treatment at source) - Other locations of disposal of unsuitable material will be considered including borrow source areas created as part of the project - The generation and management of unsuitable material during project earthworks will be monitored to ensure appropriate management of the issue 	Pre-construction and construction	Construction Manager / Environment Manager	W2B Submissions / PIR (WM2)
WE10	<p>Resource use management strategy will also identify:</p> <ul style="list-style-type: none"> - Details on materials that will be sourced from the project (including location and type). - Viable material suppliers (including water) near the project. - Proposed sustainable material sources practices (such as recycled materials or use of waste water). - Materials that could be recycled and re-used on-site or transferred to other project sections. 	Pre-construction and construction	Construction Manager / Environment Manager	W2B Submissions / PIR (WM3)
WE11	Where possible, materials will be bought in bulk to minimise the amount of package required. Sources of material that have sustainable packaging design, recycled and recyclable packaging will be favoured over other material sources where cost effective.	Construction	Construction Manager / Environment Manager	W2B Submissions / PIR (WM4)
WE12	All waste material generated on-site will be dealt with in accordance with the <i>Protection of the Environment Operations Act 1997</i> and <i>Waste Classification Guidelines Part 1: Classifying Waste</i> (EPA 2014), or any superseding document. Waste will be disposed of at	Construction	Construction Manager / Environment Manager	W2B Submissions / PIR (WM5) CoA B68, CoA B70

ID	Measure / Requirement	When to implement	Responsibility	Reference
	facilities listed in Appendix B of this CWEMP. Waste generated outside the site shall not be received at the site for storage, treatment, processing, reprocessing, or disposal on the site, except as expressly permitted by a licence or waste exemption under the <i>Protection of the Environment Operations Act 1997</i> , if such a licence is required in relation to that waste.			
WE13	Waste minimisation and management measures will be developed based on the principles in the <i>Waste Avoidance and Resource Recovery Act 2001</i> , the NSW Government's Waste Reduction and Purchasing Policy, and resource recovery orders and resource recovery exemptions including: - Effluent Order and Exemption (EPA, 2014) - Excavated Natural Material Order and Exemption (EPA, 2014) - Excavated Public Road Material Order and Exemption (EPA, 2014) - Pasteurised Garden Organics Order and Exemption (EPA, 2014) - Raw Mulch Order and Exemption (EPA, 2014) - Reclaimed Asphalt Pavement Order and Exemption (EPA, 2014) - Recovered Aggregate Order and Exemption (EPA, 2014) - Stormwater Order and Exemption (EPA, 2014) - Treated Drilling Mud Order and Exemption (EPA, 2014)- Measures will seek to avoid, minimise, re-use, recycle, treat or dispose of waste streams during construction and address transport and disposal arrangements.	Construction	Construction Manager / Environment Manager	W2B Submissions / PIR (WM6)
WE14	Millable timber will be harvested for reuse off-site. All other felled timber will be reused on-site in the form of habitat recreation or mulch in landscaping and erosion and sedimentation controls. Where mulch cannot be reused on-site, consideration will be given to making the mulch available to the public in accordance with the RMS Environmental Direction 25 (2012), the Raw Mulch Exemption (EPA, 2014) and Pasteurised Garden Organics Exemption (EPA, 2014).	Construction	Foreman / Environment Manager	W2B Submissions / PIR (WM7)
WE15	Where feasible, the contractor will be required to re-use materials. This could include, but is not limited to concrete formwork or surplus concrete pours.	Construction	Construction Manager / Environment Manager	W2B Submissions / PIR (WM9)
WE16	Site inductions on waste minimisation principles and measures will be developed.	Construction	Construction Manager / Environment Manager	W2B Submissions / PIR (WM10)
WE17	At site compounds, on-site recycling facilities will be provided for recycling paper, plastic, glass and other re-useable materials.	Construction	Construction Manager / Environment Manager	W2B Submissions / PIR (WM11)

ID	Measure / Requirement	When to implement	Responsibility	Reference
			Environment Manager	
WE18	Regular visual inspections will be conducted to ensure that work sites are kept tidy and to identify opportunities for reuse and recycling.	Construction	Foreman / Environment Manager	W2B Submissions / PIR (WM12)
WE19	Water captured in excavations will be required to be either: - Managed in accordance with the construction Soil and Water Management Plan, or - Re-used for construction water or dust suppression	Construction	Construction Manager / Environment Manager	W2B Submissions / PIR (WM13) G38
WE20	Any contaminated waste will be handled, separated, contained, managed and disposed of to prevent migration and further contamination.	Construction	Foreman / Environment Manager	CLM Act G36 CCLMP (Appendix B10 to CEMP)
WE21	Waste will be recorded in Pre-construction and Post-construction Land Condition Assessments and include responsibilities for management and disposal.	Pre-Construction Post-Construction	Construction Manager / Environment Manager	G36
WASTE DISPOSAL				
WE22	A waste register will be maintained, detailing types of waste collected, amounts, date/time and details of disposal.	Construction	Environment Manager	W2B Submissions / PIR (WM3)
WE23	Waste will be managed and disposed of in accordance with the PoEO Act and the WRAPP. Wastes that are unable to be reused or recycled will be disposed of off-site at a licensed waste management facility, or premises lawfully permitted to accept the materials following classification.	Construction	Environment Manager	G36 CoA B71
WE24	Oils and other hazardous liquids will be labelled and stored in a sealed container within a bunded area. Material collected from within bunded areas will be disposed off-site at a waste facility approved by the EPA.	Construction	Foreman / Environment Manager	G36
WE25	A s143 notice under the PoEO Act will be completed should the off-site (on private property) disposal of road construction waste material or VENM be deemed necessary.	Construction	Foreman / Environment Manager	PoEO Act G36
WE26	The relevant licences of waste facilities utilised for the disposal of project waste will be obtained (on a regular basis if necessary) to	Construction	Foreman	G36

ID	Measure / Requirement	When to implement	Responsibility	Reference
	ensure they are legally able to accept that waste.			
WE27	The disposal of chemical, fuel and lubricant containers, solid and liquid wastes must be in accordance with the requirements of the local Council or the EPA.	Construction	Foreman / Environment Manager	G36
WE28	All trucks transporting wastes off site will be appropriately licensed to carry the materials to appropriately licensed waste facilities.	Construction	Site Engineer / Foreman	G36
GREENHOUSE GAS AND ENERGY CONSERVATION				
WE29	Reuse of excavated road materials will be maximised as far as possible where they are cost, quality and performance competitive to reduce use of materials (with embedded energy).	Pre-construction and construction	Environment Manager	W2B Submissions / PIR (GHG2)
WE30	Steel with high recycled content will be specified where feasible where they are cost, quality and performance competitive. Contractors will be required to propose recycled content construction materials where they are cost, quality and performance competitive.	Pre-construction and construction	Environment Manager	W2B Submissions / PIR (GHG3)
WE31	The feasibility of using biofuels (biodiesel, ethanol, or blends such as E10 or B80) will be investigated by the contractor, taking into consideration the capacity of plant and equipment to use these fuels, ongoing maintenance issues and local sources. Works will be planned to minimise fuel use.	Construction	Environment Manager	W2B Submissions / PIR (GHG4)
WE32	An energy management plan will be developed during the construction of the project. The plan will include a commitment to monitor on-site energy consumption and identify and address on-site energy waste.	Pre-construction and construction	Environment Manager	W2B Submissions / PIR (GHG5)
WE33	Onsite energy consumption is to be monitored in accordance with the energy management plan and include metering of electricity and fuel usage as part of the implementation of the CWEMP during construction.	Construction	Environment Manager	W2B Submissions / PIR (GHG5)
WE34	Inefficient use of energy is to be identified and measures are to be taken to address on-site energy waste, including planning works to reduce fuel consumption and turning off all unnecessary electrical devices and lights when not in use.	Construction	Environment Manager	W2B Submissions / PIR (GHG5)
WE35	Roads and Maritime will investigate the use of LED lighting in place of incandescent lamps as part of the project's detailed design, and	Pre-construction	Environment Manager	W2B Submissions / PIR (GHG6)

ID	Measure / Requirement	When to implement	Responsibility	Reference
	use them where practicable to reduce electrical energy consumption. Any energy-efficient alternatives will have to meet lighting standards for major roads.			
WE36	An education program will be developed and delivered to the construction personnel to promote energy-efficient work practices.	Construction	Environment Manager	W2B Submissions / PIR (GHG7)

7 Compliance management

7.1 Roles and responsibilities

The SEE Civil Project Team's organisational structure and overall roles and responsibilities are outlined in *Section 4.2 of the CEMP*. Specific responsibilities for the implementation of environmental controls are detailed in *Chapter 6 of this Plan*.

7.2 Training

All employees, contractors and utility staff working on site will undergo site induction training relating to waste and energy management issues. The induction training will address elements including:

- Existence and requirements of this sub-plan;
- Relevant legislation;
- Incident response, management and reporting;
- Waste reporting requirements;
- Requirements of the waste hierarchy;
- Waste/ recycle storage requirements;
- Energy efficient best practices; and
- Other specific responsibilities for waste and reuse management.

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

7.3 Monitoring and inspection

Regular monitoring and inspections will be undertaken during construction.

Additional requirements and responsibilities in relation to inspections, in addition to those in Table 6-1, are documented in *Section 8.2 of the CEMP*.

7.4 Auditing

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

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

7.5 Reporting

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

Waste information that is reportable under the NSW Government 'Waste Reduction and Purchasing Policy' will be reported as follows:

- • Monthly to RMS's Representative and the Project Verifier.
- • Annually by 31 July for the preceding financial year.
- • At Project completion.

The reporting will be in accordance with the RMS Waste Avoidance and Resource Recovery Report template and include the date waste was reused, recycled, stockpiled or disposed, quantity and disposal location.

8 Review and improvement

8.1 Continuous improvement

Continuous improvement of this Plan will be achieved by the ongoing evaluation of environmental management performance against environmental policies, objectives and targets for the purpose of identifying opportunities for improvement.

The continuous improvement process will 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.

8.2 CWEMP update and amendment

The processes described in *Chapter 8 and Chapter 9* of the CEMP may result in the need to update or revise this Plan. This will occur as needed.

Any revisions to the CWEMP will be in accordance with the process outlined in *Section 1.6 of the CEMP*.

A copy of the updated plan and changes will be distributed to all relevant stakeholders in accordance with the approved document control procedure – refer to *Section 10.2 of the CEMP*.

Appendix A
Waste contact list

Table A-1 Contact List of Potential Waste Contractors and Recyclers

Name	Details	Contact Details	Waste Services	Waste Recycled
Solo Resource Recovery	Waste reduction and disposal services	1300 467 656	Skip bins for waste management and recycling. Collection and disposal of liquid wastes.	Bottles, glass paper, cardboard, aluminium, metals, brass, copper, lead, etc
Ballina Pumping		0437 963 976	Collection and disposal of effluent waste.	N/A

Appendix B

Location of waste facilities

Table B-1 Location of waste facilities

Name	Details	Address	Waste Accepted	Waste Recycled	Environment Protection Licence No.
Ballina Shire Council Waste Management Facility	Waste Management Facility	167 Southern Cross Drive, Ballina 02 6686 1287	E-waste, fluorescent light bulbs, batteries, motor and vegetable oil, tyres, refrigerators, gas bottles/pressure containers, dead animals, excavated material, construction demolition waste		EPL 6350
Lismore Recycling & Recovery Centre	Waste Facility	313 Wyrallah Road, East Lismore 1300 87 83 87	Asbestos, unsorted waste, green waste, clean fill, contaminated soils, building waste, scrap metal, timber, concrete, bricks, blocks, pavers, tiles, whitegoods, oil, hazardous chemicals, drillers waste, tyres	Steel, aluminium, glass, gypsum plasterboard, timber, bricks, tiles, concrete and plastics	EPL 5880

Appendix C

Surplus material management plan

NOTE: This appendix is not applicable to the Wave 2 project and therefore has been intentionally omitted.

Appendix D

Example waste management register

