McCONNELL DOWELL
CREATIVE CONSTRUCTION™

CEMP Appendix B7

Construction Waste and Energy Management Sub Plan

Kamay Ferry Wharves

March 2023

NSW GOVERNMENT

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Contents

Document control

Approval and authorisation

Title	Kamay Ferry Wharves Construction Waste and Energy Management Sub Plan
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Glossary / Abbreviations

Abbreviations	Expanded text
ASS	Acid Sulfate Soils
CEMP	Construction Environmental Management Plan
CT	Contaminant Thresholds
CMO	HSEQ compliance database software
Contractor	McConnell Dowell Constructors (Aust) Pty Ltd.
DPI	NSW Department of Primary Industries
DPE	NSW Department of Planning and Environment
EIS	Environmental Impact Statement
ENM	Excavated Natural Material, as defined in *The excavated natural material exemption*
EPA	NSW Environment Protection Authority
EP&A Act	*Environmental Planning and Assessment Act 1979*
EPBC Act	*Environmental Protection and Biodiversity Conservation Act 1999*
EPBC – CoA	*Environmental Protection and Biodiversity Conservation Act 1999* Conditions of Approval
EPL	Environmental Protection Licence
EMS	Environmental Management System
EPI	Environment Protection Instruction
EPL	Environment Protection Licence
ESMP	Emergency Spill Management Plan
EWMS	Environmental Work Method Statements
General solid waste	Either putrescible or non-putrescible as defined by the EPA guidelines
HSEQ	Health, Safety, Environment and Quality

Abbreviations	Expanded text
JSEA	Job Safety and Environment Analyses
MCD	McConnell Dowell Constructors (Aust) Pty Ltd.
MCoA	Minister's Conditions of Approval
NWPS	NSW National Parks and Wildlife Service
PESCP	Progressive Erosion and Sediment Control Plan
POEO Act	*Protection of the Environment Operations Act 1997*
PPE	Personnel Protective Equipment
RAP	Reclaimed asphalt pavement
Resource	Resource covers energy, fuel, oil, water and other materials used for construction of the project.
REMM	Revised Environmental Management Measures
Roads and Maritime (RMS)	Now Transport for NSW (TfNSW)
SDS	Safety data sheets
Site	Area defined by the construction boundary at La Perouse and Kurnell
SCC	Specific Contaminant Concentrations
TCLP	Toxicity Characteristics Leaching Procedure
Transport for NSW (TfNSW)	Transport for New South Wales
VENM	Virgin Excavated Natural Material
WARR Act	*Waste Avoidance and Resource Recovery Act 2001*
WMP	Waste and Energy Management Sub-Plan
WRAPP	Waste Reduction and Purchasing Policy

1 Introduction

1.1 Context

This Construction Waste and Energy Management Sub Plan (WMP) forms part of the McConnell Dowell's Construction Environmental Management Plan (CEMP) for the Kamay Ferry Wharves Project (the Project) as shown in Figure 1-1.

This WMP has been prepared to address the requirements of the Minister's Conditions of Approval (MCoA) and *Environment Protection and Biodiversity Conservation Act 1999* (EPBC) Conditions of Approval (EPBC-CoA), the Revised Environmental Management Measures (REMMs) listed in the Kamay Ferry Wharves Environmental Impact Statement (EIS) and all applicable legislation (refer to Appendix C of the CEMP).

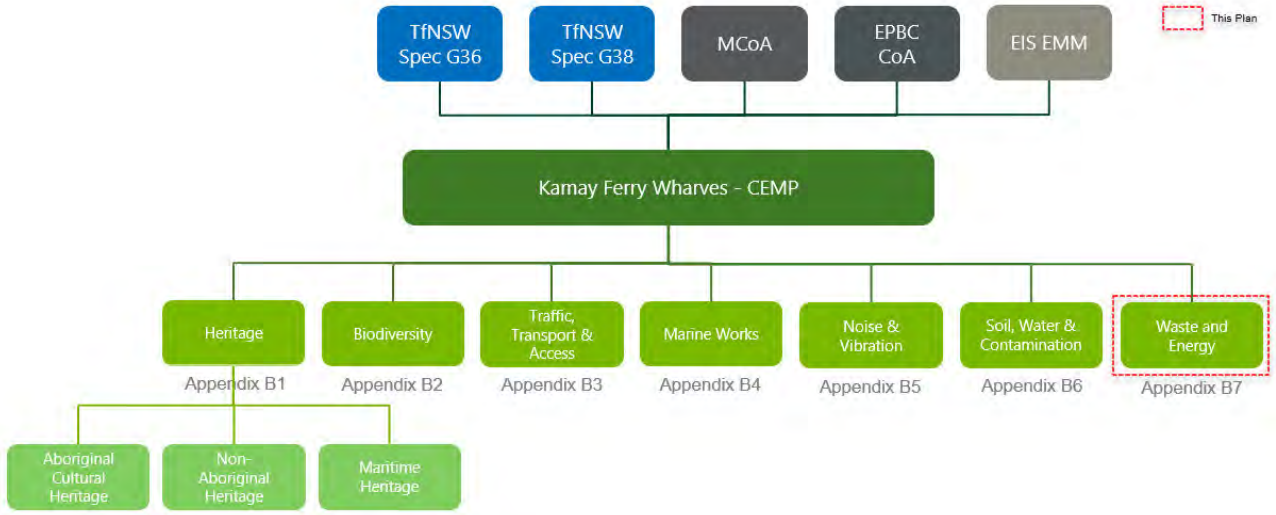

Figure 1-1 CEMP and Sub Plans

1.2 Background and project description

Transport for New South Wales (Transport for NSW) is constructing new ferry wharves at La Perouse and Kurnell in Botany Bay. This would allow for an alternative connection between La Perouse and Kurnell other than by road. The primary purpose of this infrastructure would be to enable the operation of a public ferry service. It would also provide supplementary temporary mooring for non-ferry commercial vessels (such as whale watching vessels) and recreational boating.

A detailed description of the Project is provided Chapter 5 of the EIS.

The Kamay Ferry Wharves EIS assessed the impacts of construction and operation of the Project in terms of waste generation, management and resource use, within Chapter 23.

As part of the EIS, detailed greenhouse gas calculations were prepared and included in the EIS as Chapter 21 and Appendix W Greenhouse Gas Calculations. Sustainability objectives for the Project are assessed in Chapter 22 of the EIS.

The EIS assessed the estimated types and volumes of waste generation during construction of the Project, and how this can be sustainably managed in line with circular economy principles. Types of waste assessed include construction, demolition and excavation waste, liquid waste, green

waste and packing materials and Site office wastes. It also identified opportunities to reuse, recycle and safety dispose of wastes.

1.3 Scope of this WMP

The WMP has been prepared in accordance with:

- *Environmental Procedure - Management of Wastes on Roads and Maritime Services Land* (Roads and Maritime Services, 2014)
- Transport for NSW QA Specification
- The REMMs
- Australian Standard/New Zealand Standard ISO 14001
- Ministers Conditions of Approval (MCoA) granted to the project on 21st July 2022.
- EPBC-CoA granted to the project on 16th March 2023.

And the following publications

- *NSW Government Resource Efficiency Policy (GREP);*
- *EPA Waste Classification Guidelines,*
- *EPA Resource Recovery orders and exemptions*
- *TfNSW Environmental Sustainability Strategy 2019-2023*
- *TfNSW Technical Guide "Management of road construction and maintenance wastes"*
- *TfNSW Technical Direction ETD 2015/020 "Legal offsite disposal of Roads and Maritime Services waste*
- *TfNSW Environment Fact Sheets*

Compliance of the WMP with key documents is outlined below in Table 1-1.This WMP includes:

- Measures to avoid and minimise waste associated with the project
- Classification of wastes generated by the project and management options (i.e. reuse, recycle, stockpile, disposal)
- Any other statutory approvals for managing both on and offsite waste which will be required to be obtained by the Contractor
- Procedures for sampling and management including the storage, transport and disposal of waste material, in accordance with the *Roads and Maritime Services Environmental Fact Sheet EFS-706* (Roads and Maritime Services 2015b
- Monitoring, record keeping and reporting, including any documentation management obligations arising from resource recovery exemptions
- Any cleared vegetation will be reused as millable timber wherever practicable and/or mulched and reused on-site if approved in the Biodiversity Management Sub Plan.

Ref.	Compliance Obligation	Compliance Reference
Transport for NSW specification		
4.11.1	Prepare a Waste Management Sub-Plan as part of the CEMP, or include mitigation strategies within the CEMP, to manage and minimise the generation of waste and encourage reuse of materials.	This Plan
	When preparing the Waste Management Sub-Plan or mitigation strategies, use as a guide the following publications: • *NSW Government Resource Efficiency Policy (GREP);* • *EPA Waste Classification Guidelines,* • *EPA Resource Recovery orders and exemptions* • *TfNSW Environmental Sustainability Strategy 2019-2023* • *TfNSW Technical Guide "Management of road construction and maintenance wastes"* • *TfNSW Technical Direction ETD 2015/020 "Legal offsite disposal of Roads and Maritime Services waste* • *TfNSW Environment Fact Sheets*	Section 1.3
	Use the concept of the waste hierarchy to set priorities for the efficient use of resources, consistent with the objectives of the Waste Avoidance and Resource Recovery Act 2001 (NSW).	Section 4.1
	The Waste Management Sub-Plan or mitigation strategies must: (a) identify the waste streams that will be generated during the Contract;	Section 3.1
	(b) provide details, for each of the identified waste streams, of the following: i. the waste classification (refer to EPA's "Waste Classification Guidelines" and TfNSW Environment Fact Sheets);	Section 4.2
	ii. how and where the waste is to be reused, recycled, stockpiled or disposed of;	Section 4.3
	iii. the receptacles that will be used for storing identified waste materials prior to reuse, recycling, stockpiling or disposal;	Section 4.3

Ref.	Compliance Obligation	Compliance Reference
	iv. how, and by whom, will the waste be transported between generation, storage and point of reuse, recycling, stockpiling or disposal;	Section 4.3
	v. sampling and testing requirements (refer to TfNSW Environment Fact Sheet "Waste Sampling");	Section 4.2
	vi. licensing requirements under the *POEO Act* and/or relevant NSW Resource Recovery Orders and Exemptions;	Section 4.1.4
	vii. procedures for verifying licences and permits for handling, transportation and disposal of waste;	Section 4.1.4
	(c) provide controls for minimising consumption of fuel, oil and other consumables, on-site electricity and water required for construction;	Section 6
	(d) include methods for monitoring the implementation of the Waste Management Sub-Plan or mitigation strategies;	Section 7.3
	(e) identify the need or otherwise for "s.143 Notices" (see Clause 4.11.4) or any other additional approval, licence and/or permit from an appropriate authority or the Principal;	Section 4.4
	(f) comply with the requirements of the POEO Act for any non-licensed as well as licensed waste activities that involve the storage, transport, treatment and/or disposal of waste.	Section 4
Minister's Conditions of Approval (MCoA)		

Ref.	Compliance Obligation	Compliance Reference
E111	Waste generated during construction and operation must be dealt with in accordance with the following priorities: a) waste generation must be avoided and where avoidance is not reasonably practicable, waste generation must be reduced; b) where avoiding or reducing waste is not possible, waste must be re-used, recycled, or recovered; and c) where re-using, recycling or recovering waste is not possible, waste must be treated or disposed of.	Section 4.1
E112	The importation of waste and the storage, treatment, processing, reprocessing or disposal of such waste must be done in accordance with a Resource Recovery Exemption or Order issued under the Protection of the Environment Operations (Waste) Regulation 2014, as the case may be.	Section 4.4
E113	Waste must only be exported to a site licensed by the EPA for the storage, treatment, processing, reprocessing or disposal of the subject waste, or in accordance with a Resource Recovery Exemption or Order issued under the Protection of the Environment Operations (Waste) Regulation 2014, or to any other place that can lawfully accept such waste.	Section 4.1 Section 4.4
E114	All waste must be classified in accordance with the EPA's Waste Classification Guidelines, with appropriate records and disposal dockets retained for audit purposes.	Section 4.1

1.4 Environmental management systems overview

The Contractor Environmental Management System (CEMS) overview is described in section 1.4 of the CEMP.

2 Purpose and objectives

2.1 Purpose

The purpose of this WMP is to describe how [Insert Contractor name] will manage and minimise waste generation, along with the consumption of resources and energy during construction of the Project.

2.2 Objectives

The key objectives of this WMP is to ensure that waste generation and energy consumption is minimised, along with all CoA, REMMs and licence and/or permit requirements relevant to waste and resources are described, scheduled and assigned responsibility as outlined in:

- The EIS prepared for the Project
- MCoA granted to the Project on 21st July 2022
- EPBC-CoA granted to the Project ton 16th March 2023
- Ensure the preferred waste management hierarchy of avoidance, minimising, reuse, recycling and finally disposal is followed
- Ensure the objectives of Transport for NSW Environmental Sustainability Strategy 2019-2023 (NSW Roads and Maritime Services, 2019) are followed.

2.3 Targets

The following targets have been established for the management of waste and resource impacts during the Project:

- Ensure full compliance with the relevant legislative requirements, MCoA, EPBC-CoA and REMMs
- Avoid the unnecessary production of waste where practical
- Dispose of waste materials in accordance with legislative requirements
- Minimise or reduce the quantities of resources to be used
- Achieve the waste re-use or recycling targets nominated.

3 Environmental aspects and impacts

3.1 Construction waste streams and resource use

The following construction related waste streams have been identified:

- Waste materials from existing structures that require demolition including the existing viewing platform at Kurnell, pavements, car parks and concrete pathways
- Excavation wastes including rock and spoil
- Unexpected finds hazardous waste
- Green waste resulting from vegetation clearing and where necessary grubbing
- Packaging materials associated with items delivered to Site such as pallets, crates, cartons, plastics and wrapping materials
- Wastes produced from the maintenance of various heavy construction equipment including liquid hazardous wastes and general solid wastes
- Non-hazardous wastes would be generated through the use of worker's facilities such as toilets
- General wastes including office wastes, scrap materials and biodegradable wastes.

The following sources of construction related resource consumption have been identified:

- Fuel including diesel and petrol and power (energy use)
- Water use (portable or non-potable)
- Procurement and delivery of materials to Site
- Site establishment, including compound set up
- Relocation and protection of services
- Earthworks including earth and rock cuttings and retaining walls
- Removal, relocation and compaction of excavated material in fill embankments
- Construction of pavements
- Demolition of structures and pavements
- Operation of Site compounds and lighting
- Construction plant including cranes, rollers, excavators, bulldozers, graders and water trucks.
- Septic pump out

The construction materials and the approximate quantities required are provided in Table 3-1.

Table 3-1: Construction material types and approximate quantities

Construction material	Quantity
Crushed rock	1,800 m^3
Piles	2,420 m
Pre-cast concrete headstocks	215 m^3
Pre-cast concrete planks	410 m^3

Construction material	Quantity
Insitu concrete for decking slabs	205 m^3
Fibreglass reinforced plastic (FRP) decking	46 m^3
Reinforcement for decking slabs	48 t
Electrical cables and coils	2,330 m
Handrails	900 m
Sand bags (temporary causeway)	1,350 m^3
Gravel layer and core fill rock	2,200 m^3
Car parking asphalt	125 m^2
Concrete for footpaths	765 m^2

3.2 Greenhouse gas

Chapter 21 of the EIS assessed the potential greenhouse gas emissions for the project during construction. The major sources of greenhouse gas emissions are presented below.

Table 3-2: Greenhouse gas emissions during construction

	Inclusions	Key assumptions	Total emissions (tCO_2-e)
SCOPE 1 (direct emissions)	• Stationary fuel – marine vessels	• Marine vessel (tugs, barges, work punts) movements during construction • Barges and tugs are fuelled by diesel, consume an average of 10L/hr and 150L/hr respectively, and operate for four hours per movement • 20 days worked each month, 13-month construction period	240
SCOPE 2 (indirect energy emissions)	• Construction site office energy use	• Two site offices each with an area of 400m^2 (20m x 20m) • Air-conditioned opened plan office uses 37 kWh/m2/year.	26

	Inclusions	Key assumptions	Total emissions (tCO_2-e)
SCOPE 3 (all other indirect emissions)	• Primary materials used in construction • Transport to and from site (site workers) • Transport of materials to site • Transport emissions from waste • Waste degradation	• Embodied energy of some materials based on estimations of material strength and densities • Transport of materials by diesel floats and unleaded vehicles • Deliveries as per the construction traffic movements summarised in Chapter 5 (Project description) • Waste transport emissions are associated with transport to Port Botany Transfer Station – Veolia or Breen Recycling Facility. • A workforce of 45 people who drive unleaded fuelled vehicles an average of 10km per day (roundtrip) with an average fuel consumption of 10.8L/100 km • Six-tonne skip disposed per site per week (construction and demolition waste) • 120L general waste bin collected per site per week • Emission from waste degradations based National Greenhouse Gas Factors (DoEE, 2019)	4,527
		Total	**4,793**

The figure below presents each scope emission in more detail. The results indicate that the major emission sources are the embodied carbon associated with the materials used for infrastructure (90 per cent).

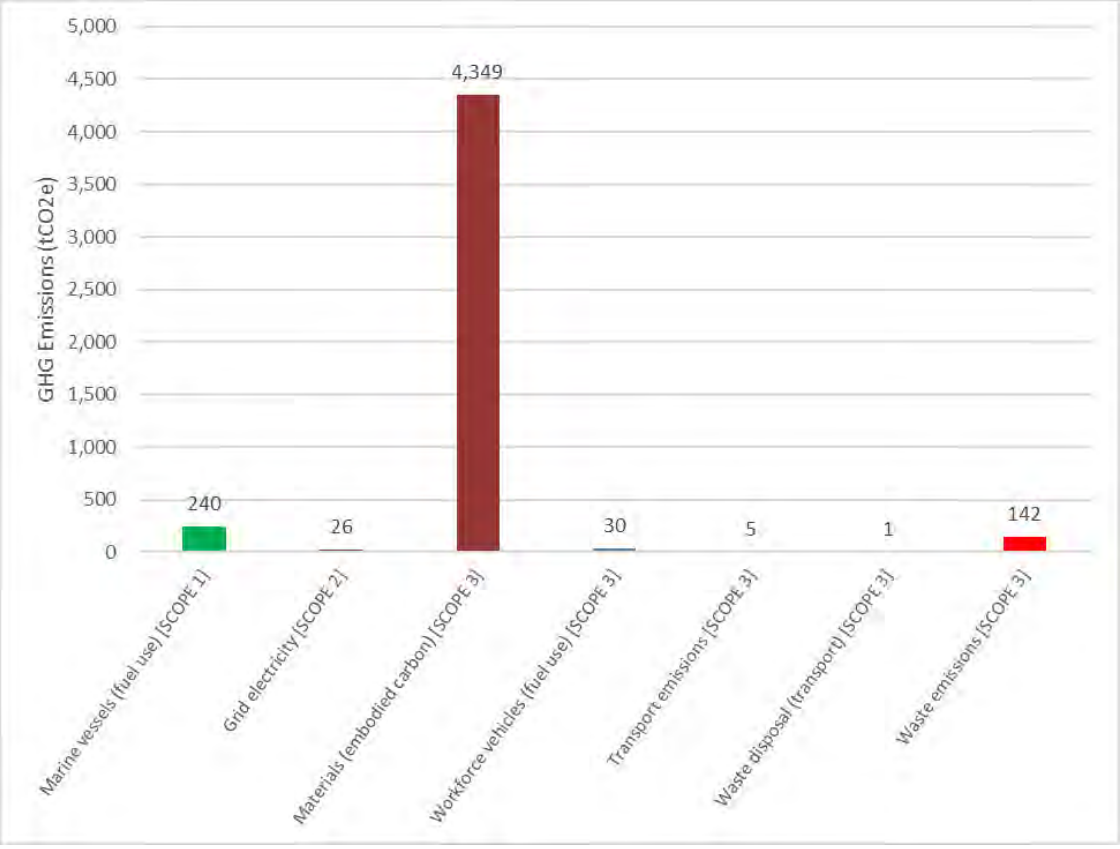

Figure 3-1: Greenhouse gas emissions during construction

3.3 Impacts

The potential environmental impacts associated with construction waste generation include:

- Generation of construction waste, such as excavated soil and rock, concrete and pavements
- Unexpected finds associated with contaminated land or acid sulfate soil disturbance
- Generation of dust
- Generation of green waste from vegetation clearing within the construction boundary
- Generation of domestic waste from construction personnel
- Inappropriate disposal of hazardous waste
- Generation, disturbance or spread of contaminated wastes or soils, e.g. groundwater, used or expired chemicals, or construction materials
- Water pollution due to sediment runoff from soil excavation, excess spoil storage and inappropriate site office waste management
- Weed infestation or dispersal of seeds during clearing and construction works.

The potential environmental impacts associated with construction resource use include:

- Consumption of non-renewable resources such as fossil fuel generated energy, diesel or petrol and other chemicals
- Greenhouse gas emissions due to consumption of fossil fuel generated energy and resources.

Refer also to the Aspects and Impacts Register included in Appendix C of the CEMP.

4 Waste management

4.1 Waste management hierarchy

4.1.1 Avoidance

The first preference in the waste management hierarchy is to avoid generating waste. The goal is to maximum efficiency and avoid unnecessary consumption through behaviours such as:

- Designing, selecting and utilising materials with a long design life to reduce further waste generation
- Selecting materials with the least packaging or that require fewer resources to produce
- Only ordering what is required
- Avoiding disposal goods or single-use materials.

4.1.2 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 on-site – Waste materials, including spoil and demolition waste, will be separated on-site into dedicated bins or stockpiles. Excavated spoil material will be reused on-site where possible and/or appropriate. Any excavated spoil material deemed unsuitable for reuse will be stockpiled, tested and classified in accordance with the NSW EPA Waste Classification Guidelines and transported to offsite an appropriate licenced facility for recycling or disposal.
- Construction Waste separation offsite at an appropriately licenced facility – If waste material is unable to be reused on-site, waste materials will be deposited into an appropriate bin(s) or, where the material type (eg concrete or pavement) is not appropriate, stockpiled in designated areas for sorting by a licenced waste contractor to allow for offsite recycling or disposal at a licence facility.

4.1.3 Waste handling and storage

Where waste is required to be handled and stored on-site prior to reuse or offsite recycling or 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 Soil, Water & Contamination Management Sub Plan.
- Liquid wastes are to be stored in appropriate containers in bunded areas until transported offsite. 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.
- Effluent wastes produced on-site will either be discharged to the local sewerage system or temporarily stored in septic or portable facilities. These facilities will be of sufficient capacity, located a way from environmentally sensitive areas, and material will be regularly collected by appropriately qualified contractors and disposed of to an appropriately licenced facility. Pit toilets will not be permitted.

- 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) or stockpiled in appropriate locations on-site and licenced contractors commissioned to regularly remove or empty the bins to appropriate licenced facility for the disposal or recycling of the material.
- Stockpile Register: a record of all materials placed in stockpiles which include the date, material type/description, stockpiled quantity, origin and intended reuse or disposal status. Material excavated and stockpiled will be identified with a marker flag or stake clearly labelled with the stockpile source information and a stockpile ID.
- Material Tracking Register: a record of all materials imported or excavated onsite, including the date, material type/description, quantity, origin and intended destination (i.e. reuse / disposal)

4.1.4 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 offsite to an appropriately licenced waste management facility following classification (refer to section 5.2).

Details of waste types, volumes and destinations are to be recorded in the Waste Management Register (Attachment B).

4.2 Classification of waste streams

Where waste cannot be avoided, reused or recycled it will be classified and appropriately disposed of. The classification of waste is undertaken in accordance with the EPA Waste Classification Guidelines Part 1: Classifying Waste (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 if 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).

All non-pre classified waste (Step 4, Step 5 & Step 6) will be classified in accordance with the EPA Waste Classification Guidelines by a suitably qualified professional. Waste Classification Reports will be prepared prior to the removal of the waste and can be provided to the Site Auditor as requested.

4.3 Management of waste streams

The types of wastes which may be generated during construction are outlined within classifications in Table 5-2.

Table 4-2: Management of waste streams

Construction Activity	Waste Type	Waste Classification	Approx. quantity	Proposed reuse/recycling/disposal methods	Reuse / Recycle Target	Comments
Soil disturbance	General solid waste (non-putrescible)	VENM		Where possible reuse on site or beneficial reuse off-site.	100%	
Soil disturbance		ENM (land soils and marine sediments)		Where possible reuse on site or beneficial reuse off-site.	100%	
Footpaths and car parking		Concrete from kerb demolition and in situ pours		Concrete recycling Hammered and reuse on site	100%	
Piling		Grout (or concrete) from the pile plug/headstock connections and land-based pile works		Concrete recycling Hammered and reuse on site	100%	
Demolition of existing viewing platform		Handrails, steel pipe offcuts from demolition of existing wharf lookout at Kurnell		Recycling	100%	
Site offices		Municipal solid waste from site offices		Sorted and recycled where possible	60%	

Construction Activity	Waste Type	Waste Classification	Approx. quantity	Proposed reuse/recycling/disposal methods	Reuse / Recycle Target	Comments
Temporary causeway Kurnell		Sand and rock materials from temporary causeway construction		Where possible reuse on site or beneficial reuse off-site.	100%	
Utilities installation		Electrical cabling offcuts from services		Sorted and recycled where possible	100%	
General construction		Vehicle maintenance waste		Engine oil recycling Oily rags GWS	100% N/A	
General construction		Packaging materials		Sorted and recycled where possible	80%	
Car parking		Asphalt		Where possible reuse on site or beneficial reuse off-site. Recycling for pavements	TBC	
Demolition of existing viewing platform	General solid waste (putrescible)	Timber from demolition of existing wharf lookout at Kurnell		Recycling	100%	
Site offices		Food waste from site offices		Composting if reasonable and practicable	80%	
Vegetation clearing		Green waste		Green waste disposal	100%	

Construction Activity	Waste Type	Waste Classification	Approx. quantity	Proposed reuse/recycling/disposal methods	Reuse / Recycle Target	Comments
Site offices	Liquid Waste	Wastewater, including sewage from site offices		Sent to liquid treatment plant	100%	
General construction		Fuels and oils from construction vehicles		Engine oil recycling	100%	
Car parking, wharves, footpaths		Concrete slurry		Allow to set in washout and breakup on site Concrete recycling Hammered and reuse on site	100%	
Site offices		Black & Grey water from the temporary crib and toilet facilities		Sent to liquid treatment plant	100%	
Soil disturbance	Hazardous Waste	Excavated material with elevated levels of contaminants		Disposed in accordance with NSW EPA waste guidelines	N/A	
General construction and soil disturbance	Special Waste	Waste tyres from construction vehicles and asbestos		Disposed in accordance with NSW EPA waste guidelines	N/A	

4.4 Waste exemption

Clause 51 Protection of the *Environment Operations (Waste) Regulation 2005* 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. The general Resource Recovery Exemptions and Orders may be applicable to this project are defined in Table 5-1 below. These are general gazette exemptions that do not require approval. A specific exemption may be granted where an application is made to the EPA.

Table 4-1: Waste Recovery Exemptions and Orders, and associated conditions relevant to the project

Exemption/Order	General Conditions
The excavated natural material exemption 2014 The excavated natural material order 2014	The chemical concentration or other attributes of the excavated natural material listed in the Excavated Natural Material (ENM) Exemption must not be exceeded. The excavated natural material can only be applied to land as engineering fill or used in earthworks. ENM handling, processing and testing requirements are outlined in detail in the exemption.
The excavated public road material exemption 2014 The excavated public road material order 2014	The excavated public road material can only be stored within the road corridor at the site where it is to be applied to land. 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. This exemption does not apply to the land application of excavated public road material on any land outside the road corridor. The excavated public road material cannot be applied on private land. The consumer must land apply the relevant waste within a reasonable period of time.
The mulch exemption 2016 The mulch order 2016	The raw mulch can only be applied to land for the purposes of filtration or as a soil amendment material or used either singularly or in any combination as input material(s) to a composting process. The consumer must land apply the raw mulch within a reasonable period of time.

5 Resource management and conservation

MCD is dedicated to implementing resource 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 induction, training and awareness programs for all site personnel regarding energy conservation methods
- Construction workers travelling to and from the Site will be encouraged to carpool or utilise public transport where applicable to minimise consumption of fuel, and
- Opportunities to buy in bulk would reduce excess packaging material. Where cost effective and fit for purpose, material will be sourced from companies that use sustainable, recycled and recyclable packaging.

6 Environmental control measures

Specific measures and requirements to meet the objectives of this WMP and to address contract specifications, CoA and REMMs are outlined in Attachment C.

Table 6-1: Waste and energy management and mitigation measures

ID	Measure/Requirement	Responsibility	When to implement	Timing/frequency	Reference	Evidence
General						
W_01	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 waste management hierarchy.	MCD Environment & Sustainability Lead	Construction	Prior to and during construction	REMM W1 MCoA E111	Induction Toolbox Talks Training Register
W_02	Waste minimisation training will include: • Energy consumption awareness • Water consumption awareness • Procurement of materials to minimise waste generation.	MCD Environment & Sustainability Lead	Construction	Site induction	REMM W1	Induction Toolbox Talks Training Register

ID	Measure/Requirement	Responsibility	When to implement	Timing/frequency	Reference	Evidence
W_03	Waste management and practices should follow waste regulations throughout construction.	MCD Environment & Sustainability Lead MCD Superintendent	Construction	During construction	REMM W1	Attachment D Environmental requirements
Procurement sustainability initiatives						
W_04	Request that suppliers do not provide any unnecessary packaging or take back packaging.	MCD Project Engineer MCD Environment & Sustainability Lead	Construction	During construction	REMM W1 REMM GG2	Attachment B Waste Management Register
Resource reduction initiatives						
W_05	Water efficient appliances and fitting will be installed at the ancillary facility offices and cribs.	Project Manager or delegate MCD Environment & Sustainability Lead	Contractor	When establishing site offices and ancillary facilities	REMM GG2	Site inspection report
W_06	Energy efficient appliances and lighting will be installed at the ancillary facility offices and cribs. These should have a minimum four star energy rating.	Project Manager or delegate MCD Environment & Sustainability Lead	Contractor	When establishing site offices and ancillary facilities	REMM GG2	Site inspection report

ID	Measure/Requirement	Responsibility	When to implement	Timing/frequency	Reference	Evidence
W_07	Water tanks will be installed at the ancillary facility to capture rainwater for reuse on Site. This is to minimise potable water usage.	Project Manager or delegate MCD Environment & Sustainability Lead	Construction	When establishing site offices and ancillary facilities	REMM GG2 Transport for NSW Sustainability Strategy	Site inspection report
W_08	Where reasonable and feasible the ancillary facilities will be connected to mains power.	Project Manager or delegate MCD Environment & Sustainability Lead	Construction	When establishing site offices and ancillary facilities	REMM GG2	Site inspection report
W_09	Where virgin excavated natural material is disturbed, this will be 100% beneficially reused.	MCD Project Engineer MCD Superintendent	Construction	During construction	Transport for NSW Sustainability Strategy Transport for NSW Waste Fact Sheet 1 - Virgin Excavated Natural Material	Attachment B Waste Management Register
W_10	McConnell Dowell will ensure that any recovered clean concrete will be 100% beneficially reused.	MCD Project Engineer MCD Superintendent	Construction	During construction	Transport for NSW Sustainability Strategy	Attachment B Waste Management Register

ID	Measure/Requirement	Responsibility	When to implement	Timing/frequency	Reference	Evidence
W_11	The McConnell Dowell will ensure that 100% of clean reclaimed asphalt pavement will be recycled.	MCD Project Engineer MCD Superintendent	Construction	During construction	Transport for NSW Sustainability Strategy	Attachment B Waste Management Register
Fuel and Chemical Management						
W_12	Containment devices should be located in an impervious bunded area which is ideally protected by an overhead shelter, and located away from sensitive areas such as water bodies. The bund volume must be: • For liquids stored in tanks: at least 110% of the largest tank; or • For liquids stored in drums or small containers: at least 25% of the total volume of liquid stored.	MCD Environment & Sustainability Lead MCD Superintendent	Construction	During construction	REMM W1	Site inspection report
W_13	Inspect containment devices as a part of weekly environmental inspections to identify potential for leakage or need for maintenance.	MCD Environment & Sustainability Lead	Construction	During construction	REMM W1	Site inspection report

ID	Measure/Requirement	Responsibility	When to implement	Timing/frequency	Reference	Evidence
W_14	Containment devices must be of sufficient quantity or volume to completely contain the liquid wastes generated.	MCD Environment & Sustainability Lead MCD Superintendent	Construction	During construction	REMM W1	Site inspection report
W_15	Containment devices must be structurally sound and leak free.	MCD Environment & Sustainability Lead MCD Superintendent	Construction	During construction	REMM W1	Site inspection report
W_16	Liquid wastes should be contained in a controlled area such as a holding pit, or portable tank prior to treatment and/or disposal.	MCD Environment & Sustainability Lead MCD Superintendent	Construction	During construction	REMM W1	Site inspection report
W_17	Asbestos handling and management will be undertaken in accordance with legislative and NSW Safe Work requirements including the *Code of Practice - How To Safely Remove Asbestos* and *Code of Practice - How To Manage And Control Asbestos In The Workplace* and the Asbestos Management Plan	MCD Environment & Sustainability Lead MCD Superintendent MCD Project Engineer	Construction	During construction	REMM W1 Waste Fact Sheet 5 - Asbestos Waste	Site inspection report Soil, Water & Contamination Management Sub Plan

ID	Measure/Requirement	Responsibility	When to implement	Timing/frequency	Reference	Evidence
W_18	Waste will be separated and managed to minimise cross contamination and to allow for either increased reuse or salvage opportunities	MCD Environment & Sustainability Lead MCD Superintendent	Construction	During construction	REMM W1	Site inspection report
W_19	Waste should be covered to prevent dust, odours or rainwater wherever possible.	MCD Superintendent	Construction	During construction	REMM W1	Site inspection report
W_20	Organic waste must be covered while stored on-site to prevent attracting animals and pest species to the area.	MCD Superintendent	Construction	During construction	REMM W1	Site inspection report
Waste Management						
W_21	Waste storage areas will be located within the Site and away from stormwater drainage areas.	MCD Environment & Sustainability Lead MCD Superintendent	Construction	During construction	REMM W1	Site inspection report

ID	Measure/Requirement	Responsibility	When to implement	Timing/frequency	Reference	Evidence
W_22	Waste storage area will be delineated to ensure the separation of waste is managed on-site.	MCD Environment & Sustainability Lead MCD Superintendent	Construction	During construction	REMM W1	Ancillary Facility Site Plan Soil, Water & Contamination Management Sub Plan – Attachment A Progressive Erosion Sediment Control Plan
W_23	Waste will be separated and bins will be provided this may include: • general waste • recycling • co-mingle • timber • concrete.	MCD Environment & Sustainability Lead MCD Superintendent MCD Project Engineer	Construction	During construction	REMM W1	Attachment B Waste Management Register
W_24	No construction generated waste is placed in public or residential bins	MCD Environment & Sustainability Lead MCD Superintendent	Construction	During construction	REMM W1	Site inspection report

ID	Measure/Requirement	Responsibility	When to implement	Timing/frequency	Reference	Evidence
W_25	On-site effluent will either be discharged to the local sewage system or temporarily stored in septic or portable facilities. These facilities will be of sufficient capacity and located away from environmentally sensitive areas such as waterways. The effluent will be regularly collected and disposed of to an appropriately licenced facility. Pit toilets are not permitted.	MCD Environment & Sustainability Lead MCD Superintendent	Construction	During construction	REMM W4	Attachment B Waste Management Register
W_26	Demolition waste will be reused where possible or where the material cannot be reused or recycled the waste will be disposed to an appropriately licensed facility.	MCD Environment & Sustainability Lead MCD Superintendent	Construction	During construction	REMM W1 REMM GG2 Transport for NSW Demolition of existing structure specification	Contractor to update based on demolition methodology Attachment B Waste Management Register
W_27	Unexpected finds of contaminated materials waste will be managed by an Unexpected Contaminated Finds Guide.	MCD Environment & Sustainability Lead MCD Superintendent	Construction	During construction	REMM W1 REMM SW3	Attachment C of Soil, Water & Contamination Management Sub Plan.

ID	Measure/Requirement	Responsibility	When to implement	Timing/frequency	Reference	Evidence
W_28	Any asbestos waste will be managed by an Asbestos Management Plan.	MCD Environment & Sustainability Lead MCD Superintendent	Construction	During construction	REMM W1 REMM SW3	Attachment D of Soil, Water & Contamination Management Sub Plan.
W_29	Vegetation, waste or other materials are not to be burnt onsite.	MCD Environment & Sustainability Lead MCD Superintendent	Construction	During construction	REMM W1	Site inspection report
Waste reporting and tracking						
W_30	A Waste Avoidance and Resource Recovery Report must be prepared containing information relating to wastes generated or recycled	MCD Environment & Sustainability Lead	Construction	During construction	REMM GG2	Waste Avoidance and Resource Recovery Report
W_31	Offsite waste disposal should comply with the POEO Act, including submitting a Section 143 notice.	MCD Environment & Sustainability Lead	Construction	During construction	MCoA E114	Section 143 notice

ID	Measure/Requirement	Responsibility	When to implement	Timing/frequency	Reference	Evidence
W_32	All waste must be classified in accordance with the EPA's Waste Classification Guidelines, with appropriate records and disposal dockets retained for audit purposes. ACM / Asbestos material may be tracked via the NSW EPAs WasteLocate platform as required.	MCD Environment & Sustainability Lead	Construction	During construction	MCoA E114	Waste Management Register Waste Classification Reports
W_33	The importation of waste and the storage, treatment, processing, reprocessing or disposal of such waste must be done in accordance with a Resource Recovery Exemption or Order issued under the Protection of the Environment Operations (Waste) Regulation 2014, as the case may be.	MCD Environment & Sustainability Lead	Construction	During construction	MCoA E112	Waste Management Register

ID	Measure/Requirement	Responsibility	When to implement	Timing/frequency	Reference	Evidence
W_34	Waste must only be exported to a site licensed by the EPA for the storage, treatment, processing, reprocessing or disposal of the subject waste, or in accordance with a Resource Recovery Exemption or Order issued under the Protection of the Environment Operations (Waste) Regulation 2014, or to any other place that can lawfully accept such waste.	MCD Environment & Sustainability Lead	Construction	During construction	MCoA E113	Waste Management Register

ID	Measure/Requirement	Responsibility	When to implement	Timing/frequency	Reference	Evidence
W_35	A Waste Management Register will be maintained, to record the type, amount and location of waste reused, recycled, stockpiled and disposed of. The Waste Management Register must include the following details: (a) type of waste and its classification (according to the *Protection of the Environment Operations Act 1997* (POEO Act) and Waste Classification Guidelines) (b) quantities of waste, measured in tonnes (c) how and where the waste was reused, recycled, stockpiled or disposed of (d) date when the waste was reused, recycled, stockpiled or disposed of (e) name and waste transport licence (if applicable) of the transporter used.	MCD Environment & Sustainability Lead	Construction	During construction	Best Practice	Attachment B Waste Management Register is located in Workbench
Waste avoidance						

ID	Measure/Requirement	Responsibility	When to implement	Timing/frequency	Reference	Evidence
W_36	Set up appropriate storage arrangements for materials to guard against product degradation or damage from weathering or moisture	MCD Superintendent MCD Project Engineer	Construction	During construction	REMM W1	Site inspection report
W_37	Where practicable and feasible, construction material will be managed to: • Maximise on-site materials reuse • Reuse recycled aggregates • Manage waste to maximum recycling and minimise the percentage sent to landfill • Incorporate fly ash in concrete • Procure prefabricated material to eliminate offcuts on-site • Reduce use of reinforced bar/steel.	MCD Environment & Sustainability Lead MCD Superintendent MCD Project Engineer	Construction	During construction	REMM GG2	Attachment B Waste Management Register

ID	Measure/Requirement	Responsibility	When to implement	Timing/frequency	Reference	Evidence
Land condition assessment						
W_38	A Pre-Construction Land Condition Assessment will be carried out in accordance with the Environmental Procedure - Management of Wastes on Roads and Maritime Services Land (NSW Roads and Maritime Services, 2014) before starting work. This will also identify any pre-existing wastes.	MCD Environment & Sustainability Lead MCD Superintendent MCD Project Engineer	Pre-construction	Prior to construction	REMM W2	Pre-construction land condition assessment report
W_39	A Post-Construction Land Condition Assessment will be carried out in accordance with the Environmental Procedure - Management of Wastes on Roads and Maritime Services Land (NSW Roads and Maritime Services, 2014). This will ensure the Site condition is reinstated and suitable for handback in accordance with wider contractor specifications.	MCD Environment & Sustainability Lead MCD Superintendent MCD Project Engineer	Post-construction	After completion of works	REMM W3	Post-construction land condition assessment report
Vegetation reuse and mulching						

ID	Measure/Requirement	Responsibility	When to implement	Timing/frequency	Reference	Evidence
W_40	All native trees removed during clearing and grubbing must be mulched, stockpiled and reused as landscaping where possible	MCD Environment & Sustainability Lead MCD Superintendent MCD Project Engineer	Construction	During construction	REMM W1 Transport for NSW Environmental Direction - Management of Tannins from Vegetation Mulch	Attachment B Attachment E
W_41	Stockpiles must be monitored and turned over as required to avoid spontaneous combustion.	MCD Superintendent	Construction	During construction	Transport for NSW Environmental Direction - Management of Tannins from Vegetation Mulch	Site inspection report
W_42	Mulch in excess of the quantity required for landscape planting must not be stockpiled on-site.	MCD Superintendent MCD Project Engineer	Construction	During construction	Best Practice	Site inspection report

ID	Measure/Requirement	Responsibility	When to implement	Timing/frequency	Reference	Evidence
W_43	Retain excavated topsoil to be re-used back on-site after construction where possible (not only does this reduce waste but also allows for natural soils and nutrients to be returned to the Site also allows for re-establishment of local vegetation)	MCD Superintendent MCD Project Engineer	Construction	During construction	REMM W1	Site inspection report Soil and Water Management Sub Plan
Spill management						
W_44	An Emergency Spill Management Plan (ESMP) will be prepared in accordance with the Code of Practice for Water Management (NSW Roads and Traffic Authority, 1999) and relevant NSW EPA guidelines. It will be implemented under the WMP. The ESMP will include measures to be implemented in the event of a spill, including initial response, containment/cleaning up, and emergency services and relevant authority notifications including Transport for NSW, Port Authority NSW and NSW EPA.	MCD Environment & Sustainability Lead MCD Superintendent MCD Project Engineer Marine Supervisor	Construction	During construction	REMM HZ4	Attachment A Emergency Spill Management Procedure Marine Works Management Sub Plan

ID	Measure/Requirement	Responsibility	When to implement	Timing/frequency	Reference	Evidence
W_45	Spill kits will be kept on-site, on vessels and held within all vehicles. Training will be provided in the use and correct disposal of kits.	MCD Environment & Sustainability Lead MCD Superintendent	Construction	During construction	REMM HZ5	Site inspection report
W_46	Any significant spill not contained on-site, whether it occurred in water or on land and subsequently entered the water, will be immediately reported to the Harbour Master, Sydney Vessel Traffic Service (VTS), Transport for NSW, Port Authority NSW and NSW EPA.	MCD Project Manager MCD Environment & Sustainability Lead MCD Superintendent	Construction	During construction	REMM HZ6	Attachment A Emergency Spill Management Procedure Marine Works Management Sub Plan

7 Compliance management

7.1 Roles and responsibilities

The McConnell Dowell Contractors Australia organisational structure and overall roles and responsibilities are outlined in Section 4.4 of the CEMP. Specific responsibilities for the implementation of environmental controls are detailed in Section 7 of this WMP.

7.2 Training

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

- Existence and requirements of this WMP
- Relevant legislation and guidelines
- Roles and responsibilities for waste and resource management
- Waste classification and separation into correct bins or stockpiles
- Appropriate waste storage to minimise air, soil and water pollution.

Targeted training in the form of toolbox talks or specific training will also be provided to personnel with a key role in waste and resource management.

Further details regarding staff induction and training are outlined in Section 6.3 and 6.4.1 of the CEMP.

7.3 Monitoring and inspection

Additional requirements and responsibilities in relation to inspections are documented in Section 8 of the CEMP.

7.4 Auditing

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

Audit requirements are detailed in Section 8.3 of the CEMP.

7.5 Reporting

Once a year, a Waste Avoidance and Resource Recovery Report must be prepared containing information relating to wastes generated or recycled, at the following dates:

- Within one month from 1 July of the current calendar year, for the previous twelve months of the contract period, or part thereof if the contract commenced after 1 July of the previous calendar year
- Actual Completion Date, for the final reporting period.

Reporting requirements and responsibilities are documented Section 8.2 of the CEMP.

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 WEMP update and amendment

The processes described in Section 8.5 to Section 8.6 of the CEMP may result in the need to update or revise this Plan. This will occur as needed.

The Contractor will review and update the WMP where required prior to significant changes in design or construction methodology that alter the risk rating identified in the Aspect and Impacts Register or after significant environmental incidents.

If the works are anticipated to extend beyond 18 months, the WMP would be reviewed and updated where required within 12 months of approval.

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

Where significant changes to the WMP have occurred, 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 6.8 of the CEMP.

Attachment A – Emergency Spill Management Procedure

Introduction

Context

This Emergency Spill Management Procedure (ESMP) has been prepared to address the requirements of the Minister's Conditions of Approval (MCoA). The ESMP has been prepared in accordance with the Code of Practice for Water Management (NSW Roads and Traffic Authority, 1999) and relevant NSW EPA guidelines.

Table 1 Ministers Conditions of Approval (MCoA)

MCoA No.	Condition	How Addressed
W_37	An Emergency Spill Management Plan (ESMP) will be prepared in accordance with the Code of Practice for Water Management (NSW Roads and Traffic Authority, 1999) and relevant NSW EPA guidelines. It will be implemented under the WMP. The ESMP will include measures to be implemented in the event of a spill, including initial response, containment/cleaning up, and emergency services and relevant authority notifications including Transport for NSW, Port Authority NSW and NSW EPA.	This Procedure
W_38	Spill kits will be kept on-site, on vessels and held within all vehicles. Training will be provided in the use and correct disposal of kits.	This Procedure Site Environmental Plans
W_39	Any significant spill not contained on-site, whether it occurred in water or on land and subsequently entered the water, will be immediately reported to the Harbour Master, Sydney Vessel Traffic Service (VTS), Transport for NSW, Port Authority NSW and NSW EPA.	This Procedure

Purpose

The purpose of this ESMP is to describe how McConnell Dowell proposes to manage emergency spills being encountered during the construction of the Project.

Objectives

The key objective of this ESMP is to ensure that a management procedure is in place in the event of an emergency spill occurring so they can be controlled in a way that minimise the impact upon the surrounding environment during the construction of the project.

To achieve this objective, McConnell Dowell will undertake the following:

- ensure appropriate controls and procedures are in place and implemented during construction activities to avoid or minimise the risk of an emergency spill occurring and;

- ensure appropriate monitoring is carried out during the project to ensure controls are being implemented and maintained.

Scope of Works

The scope of construction for the Project encompasses a land and water component.

A description of the land works is as follows:

- Setting up the construction compound
- Removing existing viewing platform at Kurnell
- Constructing the wharves including piling
- Constructing the wharf tie-in area including footpaths/landscaping
- Installing / relocating utilities
- Hardscaping & landscaping
- Removing construction compound

A description of the water works includes:

- Constructing the temporary crane platform (La Perouse) and temporary causeway (Kurnell)
- Constructing the wharves

Training / Inductions

Where required, all site personnel (including sub-contractors) will be trained on the requirements of emergency spill presentation, management and reporting along with the requirements of this Procedure during inductions and/or regular toolbox talks. Site personnel will be informed of the potential sources of spills within the Project

Emergency Spill Procedure

McConnell Dowell Contractors Australia will ensure emergency spill kits are available on site at all times during Construction. Spill kits will be located at all ancillary facilities and main construction work areas both on land or sea. All site personnel (including sub-contractors) will be made aware of the location of spill kits and trained in its use.

The emergency spill response process flow chart (refer to Figure A1) provides an overview of the process to be undertaken to minimise the risk of offsite discharge of pollution from chemicals, dangerous goods or other potential contaminants. Further details are also provided in the sections below.

In addition, the *NSW State Waters Marine Oil and Chemical Spill Contingency Plan* (Roads and Maritime, 2016) provides the arrangements to deal with marine oil or chemical spills and maritime incidents such as groundings, collisions, disabled vessel or fire on a vessel that could result in an oil or chemical spill into State waters of NSW i.e. Botany Bay.

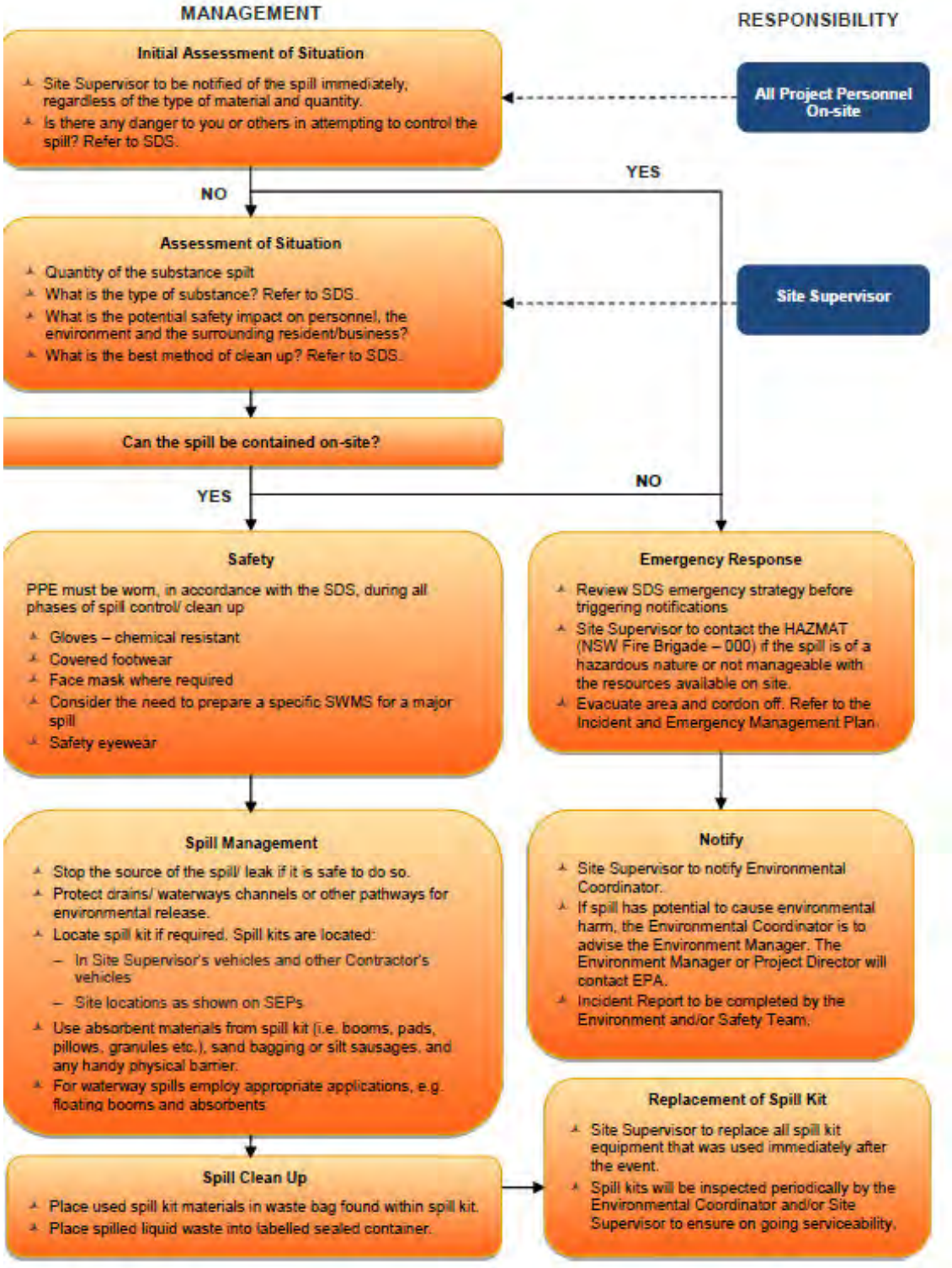

Figure A1 Emergency spill management procedure

Locating storage containers / bunds

Chemicals, fuel and lubricants will be stored in suitably located, clearly marked Class 3 dangerous goods storage containers to minimise the impact of any spillage or contamination on the work location or adjoining areas. Class 3 containers are equipped with an internal door release,

ventilation, bunded floor and a lockable stainless-steel valve in the bund wall. Chemicals, fuel or lubricants will not be stored within 50 metres of any aquatic habitat (where possible), flood prone areas or on steep slopes.

The type and volume of chemicals, fuel and lubricants to be stored do not justify the construction of bunded areas for material storage, however, should a bunded area need to be constructed, it must comply with the requirements of:

- Australian Standard AS 1940B1993: The Storage and Handling of Flammable and Combustible Liquids
- Australian Standard AS 4452B1997: The Storage and Handling of Toxic Substances
- *Dangerous Goods Act 1975*.

The containment system to be adopted should be compatible with the material being stored and provide an impervious barrier to prevent spills from discharging outside the containment system.

The net capacity of a bunded area must be at least 110% of the net capacity of the largest container.

All surface water flows should be diverted around or away from storage areas.

Maintaining storage containers / bund areas

To minimise the potential for spills to occur, the following measures should be implemented by the Foreman responsible for the storage area:

- All storage areas should be secured against unauthorised entry
- Chemicals in storage should be properly labelled and have safety data sheets (SDS) readily available in the work area
- Where possible, all storage areas should be roofed. If this is not possible, any stormwater entering such areas should be observed for contamination before appropriate discharge
- The drain valve remains in the fully closed position at all times when not in use and can only be opened by the responsible person
- All containers within a storage area should be sealed
- The "open" or "closed" positions on the drain valve must be clearly visible and locked when not in use
- The bund is under close supervision and local water quality will be visually monitored (turbidity, hydrocarbon spills/slicks) on a regular basis to identify potential spills or sediment-laden runoff
- The drains valve is routinely maintained to ensure it operates as designed
- The dangerous goods container / bund wall is routinely inspected to ensure it is always impervious to liquids
- Any pipework, valves and other equipment are routinely inspected
- Spillages of solid or liquid material within the dangerous goods container / bunded area is to be cleaned up immediately
- After rainfall, all bunds (if present on-site) are emptied as soon as possible to maintain full capacity. Never allow rainwater to build up to a level where leaking dangerous goods can float over the top of the bund.

Handling materials

To minimise the potential for spills to occur while handling and transferring materials, the following measures should be implemented:

- Personnel trained in preventing the risk of spills or leaks should be present during handling or transferring liquid chemicals, dangerous goods and other potential contaminants
- Handling areas and transfer points should be well separated from boundaries and protected places such as residences, public areas, hospitals and schools
- All surface water flows should be diverted around or away from chemical handling areas
- All vehicles should be inspected for leaks before and after loading and unloading liquid chemicals, dangerous goods and other potential contaminants
- Hoses, couplings and other equipment should be regularly inspected for failures or leaks
- Transfer points outside a handling area should be provided with suitable spill kits and containment, all connections used during the transfer of liquid chemicals, dangerous goods and other potential contaminants between vehicles and storage tanks should have tight fittings
- All transfer hoses should be protected from vehicles driving over the hose or striking its connection
- All nozzles and valves used during the transfer of liquid between tankers and storage tanks should be fitted with shut-off valves to prevent overflow
- Transfer pumps should be provided with emergency shut-down devices
- Hoses should be purged before uncoupling
- Overfill protection devices should be regularly inspected
- Stormwater from handling areas should be tested before discharge to minimise discharge of pollutants (in accordance with the measures outlined in the Soil and Water Management Sub Plan).

Spill kits

Spill kits are to be located at hazardous materials storage locations, in site compounds and in light vehicles. Typical spill kit materials, their application and use are described in Table A2.

Table A2 Typical spill kit materials and their application

Material	Application
Booms	• Floating booms to be used for spills in waterways to prevent spreading. • Deploy booms first to contain spill or divert spill away from waterway. • Reduce the size of the spill by gently pushing the booms towards the centre of the spill.
Pillows	• Lay down pads or pillows are best for thickly spread liquids.
Granules / Particulate	• If the booms alone cannot absorb the spill/leak, then use absorbent granules to soak up spilled liquid.

Material	Application
Pads	• Best for thinly spread liquids. Reduce the size of the spill/ leak by gently pushing the pads towards the centre of the spill.
Sorbents	• Sorbents are materials that soak up the spill and are used in waterway spills where spill material will float on the water. Once the absorbent material has been applied to the spill material, the mixture is recovered with the aid of nets, rakes, forks or pike poles.

Assessment of spill / situation

The assessment of potential spills will be completed via the following process:

- Stop all work in the affected area
- Ensure the safety of all workers, visitors and the public in the vicinity of the spill / leak
- Conduct a short assessment of the affected area and notify the McConnell Dowell Environment & Sustainability Lead and / or Supervisor of the results of this assessment. The assessment should include:
    - quantity of the substance spilt
    - type of substance (i.e. corrosive, poisonous, flammable etc)
    - location, and potential impact on the environment, and the health and safety of personnel
    - whether the spill is manageable by Project Staff of if emergency services needs to be contacted
    - the best method of clean up (only after referring to the substance's SDS).,
- Refer to the container label or SDS for detailed information on the substance spilled and to determine the appropriate Personnel Protective Equipment (PPE) and clean up / storage and disposal requirements
- Where the spill is not manageable and presents an immediate danger to people, property or the environment, the following needs to be determined:
    - Whether sufficient spill control equipment and materials, and personal protective equipment exist on-site to deal with the spillage
    - Whether attempts to deal with the spill on-site would pose any risk to personnel safety
    - Whether the site's waste management contractor should be contacted for clean-up, removal and safe disposal of the substance.
- Where it is determined that the spill cannot be managed by the resources on-site, efforts shall be made (only where safe to do so) to protect stormwater drains and sensitive areas. The McConnell Dowell Environment & Sustainability Lead or Project Manager will notify the NSW Fire Brigade (Phone 000) and other relevant organisations in accordance with the emergency contacts in the CEMP.

Spill management

Prior to any clean-up, appropriate PPE is to be worn as per the SDS. No clean-up should occur without the correct PPE.

If there is a possibility that the spill / leak will either contaminate a greater area or move offsite, protect drains, channels or any other pathways that would lead to further spread or release offsite.

Geo-fabric, absorbent materials, booms and sandbags should be placed around drains and grates, as required, to prevent the material spreading or leaving the Site.

Stop the spill/leak from spreading by:

- Putting the lid on
- Turning container up right
- Turning off machinery
- Plugging the hole if possible
- Using absorbent materials from spill kit (i.e. Booms, pads, pillows, granules, etc)
- Digging a hole to collect the spill
- Using sand bagging or silt sausages
- Making use of any handy physical barrier
- Pacing booms around the outside edges of spilled liquid, overlapping them to prevent leakage, and ensuring there are no gaps between the boom and the affected surface.

In order to minimise risk of offsite spread and/or discharge the following steps will be undertaken:

- Stop the spill / leak from spreading by using:
    - Absorbent materials from the spill kit (i.e. booms, pads, pillows, granules etc)
    - Sand bagging, spoil or impermeable material
    - Any handy physical barrier
    - Place booms downslope and around outside edges of spilled / leaked substance. Ensure booms are overlapped to prevent leakage to ensure there are no gaps between the boom and the affected surface.

Spill clean up

Clean-up measures will be undertaken as required and may include any combination of the following, depending on spill type and location:

- If required, deploy booms to contain and soak up spill
- Utilise pads or pillows to soak up spill
- Utilise granular sweep (remedial if possible) and work into spill. Use sufficient sweep to adequately absorb all spilt liquid
- The Environment & Sustainability Lead is to consider if on-site remediation of the spill can be effectively completed (i.e. bio-remedial treatment)
- If, in the Environment & Sustainability Lead opinion, the spill cannot be dealt with using the on-site remediation, the contaminated soils and spill response products are to be collected up in bags or bins and disposed of at a waste facility appropriately licensed and approved to accept such waste.

The Environment & Sustainability Lead is to arrange replacement of the used components as soon as possible considering the risk of future spills and their resultant impacts at that location.

Disposal of contaminated material

Spilled waste and materials used to control the spill must be stored temporarily in an impermeable and covered container while being classified in accordance with the Waste Classification Guidelines (EPA, 2014). The waste classification will determine how the waste must be disposed of.

It is important to note that it is an offense:

- under section 120 of the POEO Act to pollute waters
- under Part 5.6 of the POEO Act to unlawfully transport waste or to permit land to be used unlawfully as a waste facility.

Notification

The following notification would be carried out when a spill occurs.

Who	When notification is required
Harbour Master	Refer to Transport for NSW
Sydney Vessel Traffic Service (VTS)	Refer to Transport for NSW
EPA	Under Part 5.7 Protection of the Environment and Operations Act
Transport for NSW	G 36 Section 4.14 Environmental Incident Notification and Reporting
Port Authority NSW	Refer to Transport for NSW
DPIE	CoA A42 and A43 Refer to Transport for NSW
NPWS	Refer to Transport for NSW

Attachment B – Example waste management register

A Waste Management Register will be maintained by McConnell Dowell, to record the type, amount and location of waste reused, recycled, stockpiled and disposed of.

The Waste Management Register must include the following details:

(a) type of waste and its classification (according to the *Protection of the Environment Operations Act 1997* (POEO Act) and Waste Classification Guidelines)

(b) quantities of waste, measured in tonnes

(c) how and where the waste was reused, recycled, stockpiled or disposed of

(d) date when the waste was reused, recycled, stockpiled or disposed of

(e) name and waste transport licence (if applicable) of the transporter used.

Waste Reporting will be presenting to TfNSW using the below example template.

TABLE 1: WASTE AND RECYCLING DATA							
Material Generated	**Total quantity landfilled** (1)	**Unit**	**Total quantity reused/recycled** (2)	**Unit**	**Total quantity generated** (3)	**Unit**	**Comments**
Aggregates		tonnes		tonnes		tonnes	
Asphalt		tonnes		tonnes		tonnes	
Building and demolition materials (mixed)		tonnes		tonnes		tonnes	
Concrete		tonnes		tonnes		tonnes	
Fill		tonnes		tonnes		tonnes	
Glass		tonnes		tonnes		tonnes	
Non-ferrous metals		tonnes		tonnes		tonnes	
Steel		tonnes		tonnes		tonnes	
Timber		tonnes		tonnes		tonnes	
Vegetation		tonnes		tonnes		tonnes	
VENM		tonnes		tonnes		tonnes	
Other materials:		tonnes		tonnes		tonnes	

Notes:

(1) Enter the quantity of material that is disposed of to an offsite landfill facility.

(2) Enter the quantity of material that is reused on-site or taken offsite for reuse/recycling.

(3) Enter the total quantity of material generated in the course of undertaking Work Under the Contract. This must equal total landfilled (column 1) + total recycled (column 2).

Attachment C – Environmental requirements

Legislation

All legislation relevant to this WMP is included in Appendix A1 of the CEMP.

Guidelines and standards

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

- NSW Waste and Resource Recovery Strategy 2014-21 (EPA, 2014)
- NSW Government Resource Efficiency Policy (GREP) (OEH 2014)
- Waste Classification Guidelines (EPA 2014)
- Management of Wastes on Roads and Maritime Services Land (Roads and Maritime 2014)
- Management of road construction and maintenance wastes (Roads and Maritime 2016)
- Technical Direction: Legal offsite disposal of Roads and Maritime Services Waste (Roads and Maritime 2015)
- Technical Direction: Coal tar asphalt handling and disposal (Roads and Maritime 2015)
- Stockpile Site Management Guideline (Roads and Maritime 2011)
- Roads and Maritime waste fact sheets:
    - Waste Fact Sheet 1 - Virgin Excavated Natural Material
    - Waste Fact Sheet 2 - Excavated Natural Material
    - Waste Fact Sheet 3 - Excavated Public Road Materials
    - Waste Fact Sheet 4 - Recovered Aggregates
    - Waste Fact Sheet 5 - Asbestos Waste
    - Waste Fact Sheet 6 - Waste Sampling
    - Waste Fact Sheet 7 – Reclaimed asphalt pavement (RAP)
    - Waste Fact Sheet 9 – Re-use of waste off-site.

Ministers Conditions of Approval

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

Table C-1 Minister's Conditions of Approval relevant to the WMP

CoA No.	Condition Requirements	Document Reference
E111	Waste generated during construction and operation must be dealt with in accordance with the following priorities: (a) waste generation must be avoided and where avoidance is not reasonably practicable, waste generation must be reduced; (b) where avoiding or reducing waste is not possible, waste must be re-used, recycled, or recovered; and (c) where re-using, recycling or recovering waste is not possible, waste must be treated or disposed of.	Section 5.1
E112	The importation of waste and the storage, treatment, processing, reprocessing or disposal of such waste must be done in accordance with a Resource Recovery Exemption or Order issued under the Protection of the Environment Operations (Waste) Regulation 2014, as the case may be.	Section 5.4
E113	Waste must only be exported to a site licensed by the EPA for the storage, treatment, processing, reprocessing or disposal of the subject waste, or in accordance with a Resource Recovery Exemption or Order issued under the Protection of the Environment Operations (Waste) Regulation 2014, or to any other place that can lawfully accept such waste.	Section 5.1.4
E114	All waste must be classified in accordance with the EPA's Waste Classification Guidelines, with appropriate records and disposal dockets retained for audit purposes.	Section 5.2

EPBC Conditions of Approval

EPBC Conditions relevant to construction are listed Table D-2 below. This includes the responsible owner of the condition and relevant compliance evidence.

Table D-2 EPBC Compliance table

Ref	Description	Owner	Evidence
1)	The approval holder must not clear outside of the project area.	All	CEMP Appendix B2 – Biodiversity Management Sub Plan
National Heritage Places			
2)	The approval holder must comply with NSW Approval conditions E21 – E37 and E49 to minimise impacts on the Indigenous, Non-Indigenous, and Natural heritage values of Kurnell Peninsula Headland.	All	CEMP Appendix B1 – Heritage Management Sub Plan
Listed Threatened Species and Ecological Communities			
3)	Within the project area, the approval holder must not clear more than: a) 0.0683 hectares of seagrass meadows b) 0.0683 hectares of White's Seahorse habitat.	All	CEMP Appendix B2 – Biodiversity Management Sub Plan
4)	The approval holder must comply with NSW Approval conditions E6 – E8 and E11 related to preconstruction surveying and protection measures.	All	CEMP Appendix B2 – Biodiversity Management Sub Plan
5)	The approval holder must comply with NSW Approval conditions E62 – E65, E67 – E68, and E70 related to the prevention and management of contamination on protected matters.	All	CEMP Appendix B6 – Soil, Water & Contamination Management Sub Plan

Ref	Description	Owner	Evidence
Construction Environmental Management Plan			
6)	The approval holder must comply with NSW Approval conditions C1 – C13 related to the preparation and implementation of a Construction Environmental Management Plan (CEMP) to avoid, mitigate and manage impacts on protected matters during construction.	All	Construction Environmental Management Plan (this plan)
7)	The CEMP required by the NSW Approval must include environmental management measures to manage impacts to protected matters and be informed by the contamination documentation.	MCD	CEMP Appendix B6 – Soil, Water & Contamination Management Sub Plan
Marine Biodiversity Offset Strategy			
10)	The approval holder must comply with NSW Approval conditions E12 – E20 related to the requirements of the Marine Biodiversity Offset Strategy (MBOS) to compensate for the clearing of 0.0683 hectares of seagrass meadows and White's Seahorse habitat.	TfNSW	TfNSW

Ref	Description	Owner	Evidence
11)	To monitor the outcomes of the MBOS for seagrass meadows and White's Seahorse habitat, the approval holder must include a Marine Biodiversity Offset Report as part of the compliance report until at least the 10th anniversary of the commencement of the action, unless otherwise agreed to in writing by the Minister. Each Marine Biodiversity Offset Report must include: a. a progress report on the implementation of the MBOS; b. a list of success metrics; c. details of the monitoring methodology(ies) implemented and the locations of reference sites; d. monitoring results including a comparison against reference sites; e. a summary of any adaptive management steps taken to improve implementation and/or monitoring methodology(ies); and f. a conclusion as to whether the outcomes, as measured against the success metrics, have been achieved, are likely to be met or are unlikely to be met, as determined by a suitably qualified person.	TfNSW	TfNSW

Ref	Description	Owner	Evidence
12)	To assess the ongoing success of the MBOS, the approval holder must submit a Rehabilitation Monitoring Review to the department within 6 years of the date of this approval and every 5 years thereafter, unless otherwise agreed to in writing by the Minister. Each Rehabilitation Monitoring Review must include: a. a review of the monitoring methodology by a suitably qualified person; b. a conclusion based on the success metrics as to whether the environmental offsets for seagrass meadows and White's Seahorse habitat have been achieved, are likely to be met or are unlikely to be met, as determined by a suitably qualified person; and c. if environmental offsets for seagrass meadows and White's Seahorse habitat have not been achieved based on the success metrics: i. a list measurable and time-bound remediation measures which will be undertaken to ensure the success metrics are achieved; and ii. justification for how the remediation measures will provide full compensation for the impacts to seagrass meadows and White's Seahorse habitat.	TfNSW	TfNSW
Submission and Publication of Plans			
13)	The approval holder must submit all plans required by these conditions electronically to the department.	TfNSW	TfNSW
14)	If the approval holder submits a revised version of a plan for the Planning Secretary's approval, the approval holder must provide the revised plan to the department within 5 business days and an explanation of the differences between the approved plan and the revised plan.	TfNSW	TfNSW
15)	If a revised version of a plan is approved by the Planning Secretary, the approval holder must provide the revised plan to the department within 10 business days of the Planning Secretary's approval.	TfNSW	TfNSW

Ref	Description	Owner	Evidence
16)	Unless otherwise agreed to in writing by the Minister, the approval holder must publish each plan on the website within 15 business days of the date: a. the plan is approved by the Planning Secretary; or b. a revised version of the plan is approved by the Planning Secretary.	TfNSW	TfNSW
17)	The approval holder must keep all published plans required by these conditions on the website until the expiry date of this approval.	TfNSW	TfNSW
18)	The approval holder must exclude or redact sensitive ecological data from plans published on the website or otherwise provided to a member of the public.	TfNSW	TfNSW
19)	If sensitive ecological data is excluded or redacted from a plan, the approval holder must notify the department in writing what exclusions and redactions have been made in the version published on the website	TfNSW	TfNSW
Notification of Date of Commencement of the Action			
20)	The approval holder must notify the department electronically of the date of commencement of the action, within 5 business days of the commencement of the action.	TfNSW	TfNSW
21)	If the commencement of the action does not occur within 5 years from the date of this approval, then the approval holder must not commence the action without the prior written agreement of the Minister.	TfNSW	TfNSW
Compliance Records			
22)	The approval holder must maintain accurate and complete compliance records.	All	CEMP Section 8.4
23)	If the department makes a request in writing, the approval holder must provide electronic copies of compliance records to the department within the timeframe specified in the request.		

Ref	Description	Owner	Evidence
24)	Note: Compliance records may be subject to audit by the department, or by an independent auditor in accordance with section 458 of the EPBC Act, and/or be used to verify compliance with the conditions. Summaries of the results of an audit may be published on the department's website or through the general media.	TfNSW	TfNSW
25)	The approval holder must ensure that any monitoring data (including sensitive ecological data), surveys, maps and other spatial and metadata required under the conditions of this approval are prepared in accordance with the Guidelines for biological survey and mapped data (Commonwealth of Australia 2018), or as otherwise specified by the Minister in writing.	All	CEMP Section 8.1.2
26)	The approval holder must ensure that any monitoring data (including sensitive ecological data), surveys, maps and other spatial and metadata required under the conditions of this approval are prepared in accordance with the Guide to providing maps and boundary data for EPBC Act projects (Commonwealth of Australia 2021), or as otherwise specified by the Minister in writing.	All	CEMP Section 8.1.2
Annual Compliance Reporting			
27)	The approval holder must prepare a compliance report for each 12-month period following the date of this approval, or as otherwise agreed to in writing by the Minister.	TfNSW	TfNSW
28)	Each compliance report must be consistent with the Annual Compliance Report Guidelines (Commonwealth of Australia 2014).	TfNSW	TfNSW
29)	Each compliance report must include: a. Accurate and complete details of compliance and any non-compliance with the conditions and the plans, and any incidents. b. One or more shapefile showing all clearing of any protected matters, and/or their habitat, undertaken within the 12-month period at the end of which that compliance report is prepared. c. A schedule of all plans in existence in relation to these conditions and accurate and complete details of how each plan is being implemented.	TfNSW	TfNSW

Ref	Description	Owner	Evidence
30)	The approval holder must: a) Publish each compliance report on the website within 60 business days following the end of the 12-month period for which that compliance report is required. b) Notify the department electronically, within 5 business days of the date of publication, that a compliance report has been published on the website. c) Provide the weblink for the compliance report in the notification to the department. d) Keep all published compliance reports required by these conditions on the website until the expiry date of this approval. e) Exclude or redact sensitive ecological data from compliance reports published on the website or otherwise provided to a member of the public. f) If sensitive ecological data is excluded or redacted from the published version, submit the full compliance report to the department within 5 business days of its publication on the website and notify the department in writing what exclusions and redactions have been made in the version published on the website. Note: Compliance reports may be published on the department's website	TfNSW	TfNSW
Reporting Non-Compliance			
31)	The approval holder must notify the department electronically, within 2 business days of becoming aware of any incident and/or potential non-compliance and/or actual non-compliance with these conditions or commitments made in a plan.	TfNSW	TfNSW

Ref	Description	Owner	Evidence
32)	The approval holder must specify in the notification: a) Any condition or commitment made in a plan which has been or may have been breached. b) A short description of the incident and/or potential non-compliance and/or actual noncompliance. c) The location (including co-ordinates), date, and time of the incident and/or potential noncompliance and/or actual non-compliance. Note: If the exact information cannot be provided, the approval holder must provide the best information available.	TfNSW	TfNSW
33)	The approval holder must provide to the department in writing, within 12 business days of becoming aware of any incident and/or potential non-compliance and/or actual noncompliance, the details of that incident and/or potential non-compliance and/or actual noncompliance with these conditions or commitments made in a plan. The approval holder must specify: a) Any corrective action or investigation which the approval holder has already taken. b) The potential impacts of the incident and/or non-compliance and/or non-compliance. c) The method and timing of any corrective action that will be undertaken by the approval holder.	TfNSW	TfNSW
Independent Audit			
34)	The approval holder must ensure that an independent audit of compliance with these conditions is conducted for every five-year period following the commencement of the action until this approval expires, unless otherwise specified in writing by the Minister.	TfNSW	TfNSW

Ref	Description	Owner	Evidence
35)	For each independent audit, the approval holder must: a) Provide the name and qualifications of the nominated independent auditor, the draft audit criteria, and proposed timeframe for submitting the audit report to the department prior to commencing the independent audit. b) Only commence the independent audit once the nominated independent auditor, audit criteria and timeframe for submitting the audit report have been approved in writing by the department. c) Submit the audit report to the department for approval within the timeframe specified and approved in writing by the department. d) Publish each audit report on the website within 15 business days of the date of the department's approval of the audit report. e) Keep every audit report published on the website until this approval expires.	TfNSW	TfNSW
36)	Each audit report must report for the five-year period preceding that audit report.	TfNSW	TfNSW
37)	Each audit report must be completed to the satisfaction of the Minister and be consistent with the Environment Protection and Biodiversity Conservation Act 1999 Independent Audit and Audit Report Guidelines (Commonwealth of Australia 2019).	TfNSW	TfNSW
Completion of the Action			
38)	The approval holder must notify the department electronically 60 business days prior to the expiry date of this approval, that the approval is due to expire.	TfNSW	TfNSW
39)	Within 20 business days after the completion of the action, and, in any event, before this approval expires, the approval holder must notify the department electronically of the date of completion of the action and provide completion data.	TfNSW	TfNSW
Changes to State Conditions			

Ref	Description	Owner	Evidence
40)	The approval holder must inform the department in writing within 2 business days of requesting any change to the NSW Approval conditions that may relate to protected matters.	TfNSW	TfNSW
41)	The approval holder must inform the department in writing within 5 business days of any approved changes made to the NSW Approval conditions that may relate to protected matters.	TfNSW	TfNSW

Revised Environmental Management Measures

Relevant REMM are listed in Table D-3 below. This includes reference to required outcomes, the timing of when the commitment applies, relevant documents or sections of the environmental assessment influencing the outcome and implementation.

Table D-3 Environmental management measures relevant to this WMP

Outcome	REMM Ref #	Commitment	Responsibility	Timing	WMP Reference
Avoid, minimise, and sustainably manage waste	W1	A Waste and Energy Management Plan (WEMP) will be prepared in accordance with the Environmental Procedure - Management of Wastes on Roads and Maritime Services Land (NSW Roads and Maritime Services, 2014). It will be implemented under the CEMP. The WEMP will include: a) Measures and controls to minimise the amount of waste	Contractor	Pre-construction Construction	This Plan
		b) Measures to store, test, handle, transport, recovery, reuse, dispose of waste. It will also address any recovered material imported to Site			Chapter 5
		c) Waste management classification measures			Section 5.2
		d) Measures to ensure organic waste is covered and stored on-site to prevent birds being attracted to the area			Table 7-1 W_20
		e) Measure to ensure no construction generated waste is placed in public or residential bins.			Table 7-1 W_24

Outcome	REMM Ref #	Commitment	Responsibility	Timing	WMP Reference
		f) Monitoring, record keeping and reporting, including any documentation management obligations arising from resource recovery exemptions			Attachment B Workbench
		g) Sampling and waste management measures in accordance with the Roads and Maritime Services Environmental Fact Sheet EFS-706 (NSW Roads and Maritime Services, 2015b)			Reference 1.3 Scope of this WMP
		h) Measures to reuse and mulch cleared vegetation in accordance with QA Specification R178 (Vegetation).			Table 7-1 W_37
Existing condition of construction sites	W2	A Pre-Construction Land Condition Assessment will be carried out in accordance with the Environmental Procedure - Management of Wastes on Roads and Maritime Services Land (NSW Roads and Maritime Services, 2014) before starting work. This will also identify any pre-existing wastes.	Contractor	Pre-construction	Table 7-1 W_35
Condition of Site post-construction	W3	A Post-Construction Land Condition Assessment will be carried out in accordance with the Environmental Procedure - Management of Wastes on Roads and Maritime Services Land (NSW Roads and Maritime Services, 2014). This will ensure the Site condition is reinstated and suitable for handback in accordance with wider contractor specifications.	Contractor	Construction	Table 7-1 W_36
Manage effluent waste	W4	On-site effluent will either be discharged to the local sewage system or temporarily stored in septic or portable facilities. These facilities will be of sufficient	Contractor	Construction	Table 7-1 W_4

Outcome	REMM Ref #	Commitment	Responsibility	Timing	WMP Reference
		capacity and located away from environmentally sensitive areas such as waterways. The effluent will be regularly collected and disposed of to an appropriately licenced facility. Pit toilets will not be permitted.			
Accidental spills	HZ4	An Emergency Spill Management Plan (ESMP) will be prepared in accordance with the Code of Practice for Water Management (NSW Roads and Traffic Authority, 1999) and relevant NSW EPA guidelines. It will be implemented under the WEMP. The ESMP will measures to be implemented in the event of a spill, including initial response, containment/cleaning up, and emergency services and relevant authority notifications including Transport for NSW, Port Authority NSW and NSW EPA.	Contractor	Pre-construction and operation	Attachment A
	HZ5	Spill kits will be kept on-site, on vessels and held within all vehicles. Training will be provided in the use and correct disposal of kits.	Contractor	Construction	Table 7-1 W_42
Accidental spills over water	HZ6	Any significant spill not contained on-site, whether it occurred in water or on land and subsequently entered the water, will be immediately reported to the Harbour Master and Sydney Vessel Traffic Service (VTS).	Contractor	Construction	Table 7-1 W_43
Embodied carbon in construction materials	GG2	Where practicable and feasible, construction materials will be managed to: a. Maximise on-site materials reuse b. Reuse recycled aggregates	Contractor	Construction	Table 7-1 Noted

Outcome	REMM Ref #	Commitment	Responsibility	Timing	WMP Reference
		c. Manage waste to maximise recycling and minimise the percentage sent to landfill d. Incorporate fly ash in concrete e. Procure prefabricated materials to eliminate offcuts on-site Reduce use of reinforcement bar/steel.			
Sustainable development	SU1	The project will implement sustainability objectives driven by the Environmental Sustainability Strategy 2019-2023 (NSW Roads and Maritime Services, 2019) throughout all stages.	Contractor	Construction	Table 7-1 Noted

Attachment D – Transport for NSW Environmental Direction, Management of Tannins from Vegetation Mulch

Transport for NSW Environmental Direction - Management of Tannins from Vegetation Mulch (nsw.gov.au)