

Moorebank Avenue Realignment Works

Construction Waste and Resource
Management Plan

SSI - 10053

31 March 2023

NATIONAL INTERMODAL CORPORATION

MOOREBANK AVENUE REALIGNMENT WORKS

CONSTRUCTION WASTE AND RESOURCE MANAGEMENT PLAN

Author [Redacted] [Redacted]

Checker [Redacted] [Redacted]

Approver [Redacted] [Redacted]

Date 31/03/2023

Revision Text D

REVISIONS

Revision	Date	Description	Prepared By	Approved By
A	10/02/2023	Draft for Client Review	[Redacted]	[Redacted]
B	28/02/2023	Update in response to National Intermodal comments	[Redacted]	[Redacted]
C	14/03/2023	Update in response to National Intermodal comments	[Redacted]	[Redacted]
D	31/03/2023	Update based on ER comments	[Redacted]	[Redacted]

CONTENTS

ACRONYMS AND DEFINITIONS	V
1 INTRODUCTION	1
1.1 Context.....	1
1.2 Background and Project Description	1
1.3 Scope of the Plan	5
1.4 Environmental Management System Overview	5
1.5 CWRMP Endorsement and Approval	5
1.5.1 Interactions with Other Management Plans	5
1.6 Consultation	6
1.6.1 Consultation for Preparation of the CWRMP	6
1.6.2 Ongoing Consultation during Construction.....	6
2 PURPOSE AND OBJECTIVES	7
2.1 Purpose.....	7
2.2 Objectives	7
2.3 Targets	7
3 ENVIRONMENTAL REQUIREMENTS	8
3.1 Relevant Legislation and Guidelines.....	8
3.1.1 Legislation	8
3.1.2 Additional Approvals, Licences, Permits and Requirements	8
3.1.3 Guidelines and Standards	8
3.2 Commonwealth Approval	8
3.3 NSW Infrastructure Approval	8
3.4 Revised Environmental Management Measures	10
4 ENVIRONMENTAL ASPECTS AND IMPACTS	12
4.1 Construction Activities.....	12
4.2 Construction Waste Streams	12
4.3 Resource Use	13
4.3.1 Soil Volumes	13
4.3.2 Water Demand and Use.....	13
4.3.3 Energy Use	13
4.4 Potential Impacts	13
4.4.1 Cumulative Impacts.....	14
5 WASTE MANAGEMENT	16
5.1 Waste Management Hierarchy	16
5.1.1 Avoidance of Waste Generation.....	16
5.1.2 Reuse, Recycle or Recovery	16
5.1.3 Disposal	17
5.2 Classification of Waste Streams	17
5.3 Resource Recovery and Exemption	18
5.4 Waste Management Strategy	20
5.4.1 Waste Handling and Storage	28
5.4.2 Waste Transportation.....	29
5.4.3 Waste Disposal	29

5.5	Resources	29
5.5.1	Materials.....	29
5.5.2	Water	30
5.5.3	Energy Use	30
5.6	Management Measures	30
6	SPOIL MANAGEMENT PLAN	36
6.1	Classification of Spoil	36
6.2	Spoil Reuse and Disposal Measures	36
6.3	Spoil Tracking	37
6.4	Spoil Stockpile Management Procedures	37
6.5	Spoil Haulage Routes	38
7	COMPLIANCE MANAGEMENT	40
7.1	Roles and Responsibilities	40
7.2	Training	40
7.3	Monitoring and Inspections	40
7.4	Auditing	41
7.5	Reporting and Identified Records	41
7.5.1	Waste Management Register.....	41
7.5.2	Spoil Tracking Register	42
7.6	Incidents	42
7.7	Complaints	42
7.8	Non-Compliances and Corrective Actions	42
8	REVIEW AND IMPROVEMENT	44
8.1	Continuous Improvement	44
8.2	CWRMP Update and Amendment	44

APPENDICES

APPENDIX A ENVIRONMENTAL REPRESENTATIVE ENDORSEMENT

APPENDIX B SECONDARY COA AND REMMS

B1: Secondary CoA relevant to the development of this CWRMP

B2: Secondary REMMs relevant to the development of this CWRMP

APPENDIX C WASTE MANAGEMENT REGISTER TEMPLATE

APPENDIX D SPOIL TRACKING REGISTER TEMPLATE

LIST OF TABLES

Table 2.1: Project environmental targets for waste and resource management.....	7
Table 3.1: Primary NSW CoA relevant to the CWRMP	9
Table 3.2: Primary REMMs relevant to the development of this CWRMP.....	10
Table 4.1: Construction and demolition waste quantities	12
Table 4.2: Potential Construction Impacts and Risks	14
Table 5.1: Six-step process to classifying waste	17
Table 5.2: Resource Recovery Exemptions	18
Table 5.3: Expected waste streams and potential management options from general site activities.....	21
Table 5.4: Waste and resource management and mitigation measures	32

Table 7.1: Reporting requirements relevant to waste and resource management 41

LIST OF FIGURES

Figure 1.1: Project Location 3
Figure 1.2: Project layout 4
Figure 5.1: The waste hierarchy (Source: EPA, 2014) 16
Figure 6.1: Haulage routes..... 39

ACRONYMS AND DEFINITIONS

Acronym	Definition
CAQMP	Construction Air Quality Management Plan
CBMP	Construction Biodiversity Management Plan
CCMP	Construction Contamination Management Plan
CCS	Community Consultation Strategy
CEMP	Construction Environmental Management Plan
CoA	Conditions of Approval
Construction	Includes all work required to construct the Project as described in the EIS and RtS (NSW CoA A1) including commissioning trials of equipment and temporary use of any part of the Project but excluding Low Impact Work which is carried out or completed before approval of the CEMP.
CSWMP	Construction Soil and Water Management Plan
CTTMP	Construction Traffic and Transport Management Plan
CWRMP	Construction Waste and Resource Management Plan
DAWE	Department of Agriculture, Water and Environment (now DCCEEW)
DCCEEW	Department of Climate Change, Energy, Environment and Water (formerly DAWE)
DJLU	Defence Joint Logistics Unit
DPE	Department of Planning and Environment (formerly DPIE)
DPIE	Department of Planning, Industry and Environment (now DPE)
EHC Act	<i>Environmentally Hazardous Chemicals Act 1985 (NSW)</i>
EIS	Environmental Impact Statement
ENM	Excavated Natural Material
EP&A Act	<i>Environmental Planning and Assessment Act 1979</i>
EPA	NSW Environment Protection Authority
EPBC Act	<i>Environmental Protection and Biodiversity Conservation Act 1999</i>
EPL	Environment Protection Licence
ER	Environmental Representative
EWMS	Environmental Work Method Statement
Infrastructure Approval	SSI 10053 or NSW CoA
LV	Light vehicles
MARW	Moorebank Avenue Realignment Works
MIP	Moorebank Intermodal Precinct, which includes MPE and MPW
MPE	Moorebank Precinct East

Acronym	Definition
MPE Site	Comprises the MPE Stage 1 Project as approved by SSD 14-6766 for the development of the intermodal terminal facility (IMT) at Moorebank and MPE Stage 2 as approved under SSD 7628 (as modified) and MPE Concept Approval (MP 10_0193) for the construction and operation of warehousing and distribution facilities and upgrades to approximately 2.1 kilometres of Moorebank Avenue.
MPW	Moorebank Precinct West
MPW Site	Comprises the MPW Stage 2 Project which is the second stage of development under the MPW Concept Approval (SSD 5066) and SSD 7709. The Project involves the construction and operation of a multi-purpose intermodal terminal facility, Rail link connection, warehousing and upgraded intersection on Moorebank Avenue.
National Intermodal	National Intermodal Corporation
NGER Act	<i>National Greenhouse and Energy Reporting Act 2007 (Commonwealth)</i>
POEO Act	<i>Protection of the Environment Operations Act 1997</i>
Planning Secretary	Secretary to the DPE
Project Site	Refers to the construction footprint which is approximately 18.96 hectares and includes access for the construction of road embankments and cuttings, temporary and permanent fencing, temporary and permanent water quality control basins, ancillary facilities, access roads and construction side roads. It is generally bounded by the Defence Joint Logistics Unit (DJLU), MPE, Boot land and the Sydney Trains owned land adjacent to the East Hills Railway.
RAP	Remediation Action Plan
REMMs	Revised Environmental Management Measures
RtS	Response to Submissions
SMP	Spoil Management Plan
SSI	State Significant Infrastructure
TfNSW	Transport for NSW
The Project	Moorebank Avenue Realignment Works
VENM	Virgin Excavated Natural Material
WARR Act	<i>Waste Avoidance and Resource Recovery Act 2001</i>
Waste Regulation	Protection of the Environment Operations (Waste) Regulation 2014

1 INTRODUCTION

1.1 Context

This Construction Waste and Resource Management Plan (CWRMP) forms part of the Construction Environmental Management Plan (CEMP) for the Moorebank Avenue Realignment Works (MARW) (the Project).

This CWRMP has been prepared to address the requirements of the NSW Minister's Conditions of Approval (CoA) and the Revised Environmental Management Measures (REMMs) detailed in the Response to Submissions (RtS) and the applicable legislation. It is noted that there are no Commonwealth CoA related to waste and resources.

1.2 Background and Project Description

National Intermodal Corporation (National Intermodal) plans to realign and upgrade a section of Moorebank Avenue. The Project involves the realignment of an existing two-kilometre section of Moorebank Avenue, from a point approximately 130 meters south of the Anzac Road/Moorebank Avenue intersection to immediately north of the East Hills Railway. Moorebank Avenue currently divides the Moorebank Intermodal Precinct (MIP) into the Moorebank East Precinct (MPE site) and the Moorebank West Precinct (MPW site) (See Figure 1.1).

The Project is about three kilometres of additional road which ties in with the existing Moorebank Avenue at the northern and southern extremities. From its northernmost point, the realigned Moorebank Avenue follows the northern boundary of the MPE site, before continuing south along the MPE Site eastern boundary. This section of the realignment comprises four lanes (i.e. two lanes in each direction). At the south-western corner of MPE, the additional road section merges to become a dual lane road (i.e. one lane in each direction) before continuing in a south-west direction, crossing Anzac Creek, and re-joining the existing Moorebank Avenue alignment near the East Hills Railway (refer to Figure 1.1). At completion and commissioning of the realigned road section, the public through traffic using Moorebank Avenue will be redirected onto the upgraded alignment. The existing road alignment will be decommissioned and modified to function as a restricted access to the MIP.

The Project Site is about 18.96 hectares and includes access for the construction of road embankments and cuttings, temporary and permanent fencing, temporary and permanent water quality control basins, ancillary facilities, access roads and construction side roads. It is generally bounded by the Defence Joint Logistics Unit (DJLU), MPE, Boot land and the Sydney Trains owned land adjacent to the East Hills Railway (refer to Figure 1.1).

A detailed description of the Project is provided in Section 2 of the CEMP and is also shown on Figure 1.2.

The Project will not be staged but is anticipated to be undertaken in phases. Construction is expected to take approximately 16 months to complete.

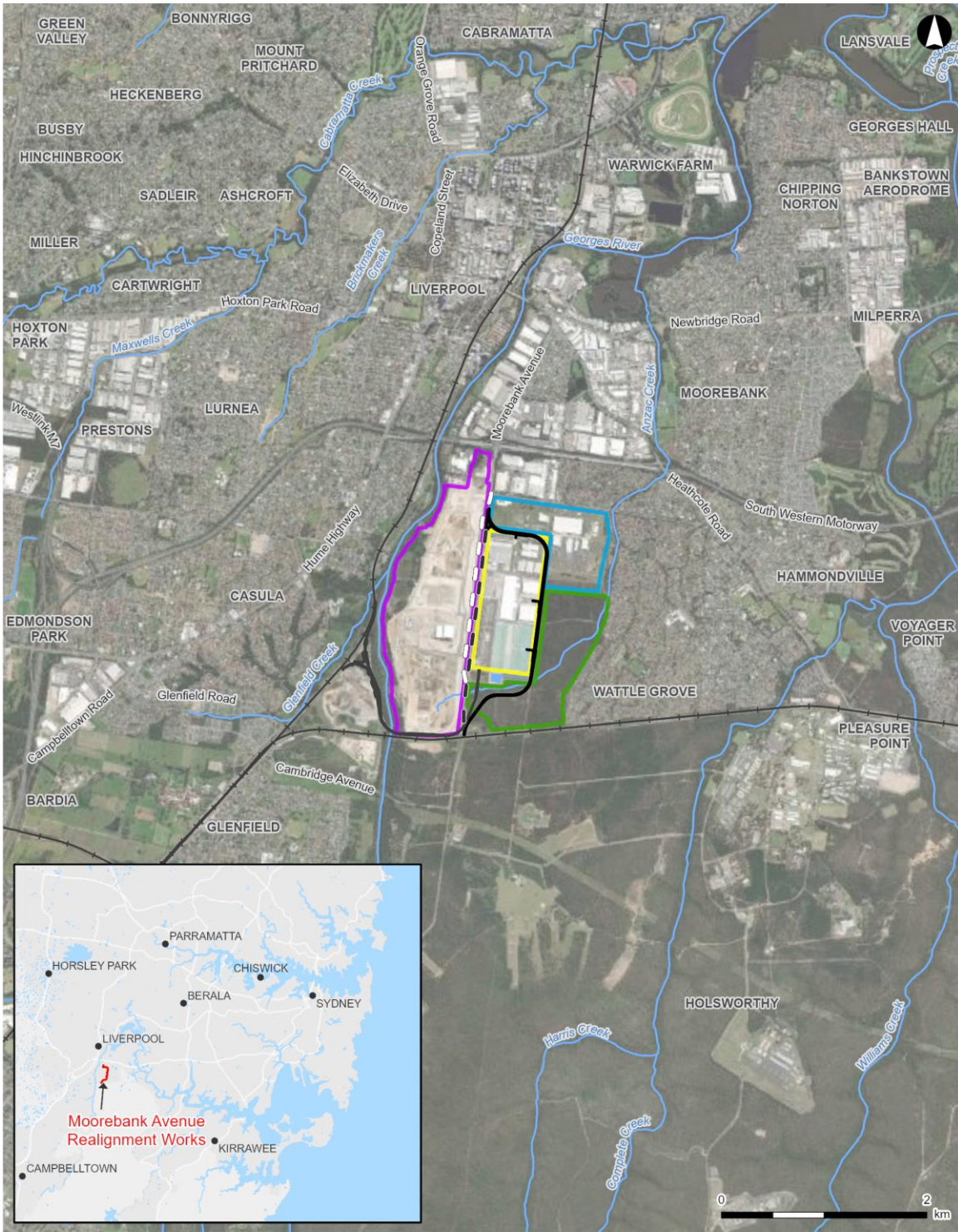
An Environmental Impact Statement (EIS) for the Project was prepared in March 2021 to describe and assess the Project and recommend management measures to address impacts. The EIS was exhibited by the then NSW Department of Planning, Industry and Environment (DPIE) from 17 March 2021 to 13 April 2021 to give the community and stakeholders the opportunity to provide comment. A RtS was submitted in May 2021 to address the identified issues.

The Project was approved by the NSW Minister for Planning on 14 October 2021 as State Significant Infrastructure (SSI-10053) (Infrastructure Approval) under Division 5.2 of the *Environmental Planning and*

Assessment Act 1979 (EP&A Act). The Project is also a controlled action under Section 130(1) and 133(1) of the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) and was approved by the Minister for the Environment on 7 December 2021 (EPBC Approval 2020-8839).

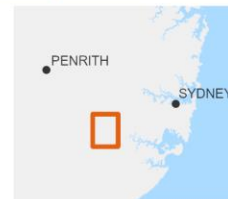
The EIS assessed the impacts of construction of the Project on generation of waste and use of resources. As part of EIS development, a desktop assessment was conducted to identify waste streams that might be generated during both the construction and operational phases of the Project. Potential waste types and quantities were estimated by reviewing the construction and operation activities proposed for the Project, in addition to their scale and extent, and by reviewing relevant guidelines and waste generated on similar projects.

Revised Environmental Management Measures (REMMs) were provided within the RtS. Where applicable, the REMMs from the RtS have been included in this CWRMP (Section 3.4 and Appendix B B).



Legend

- Moorebank Avenue Realignment Works
 - MIP Rail link
 - - - Previous Moorebank Avenue
 - Moorebank Avenue diversion road
 - ~ Watercourse
 - Railway
 - Moorebank Precinct West
 - Moorebank Precinct East
 - Boot Land boundary*
 - Defence Joint Logistics Unit
 - On-site detention
- *relates to the parcel of land known as the Boot Land, does not indicate biobanking boundaries



1:55,000 at A4
 Coordinate System: GDA2020 MGA Zone 56
 Date issued: March 16, 2023
 Imagery: Esri, HERE, Garmin, USGS, Earthstar Geographics

Path: C:\Users\cb98137\ARCADIS\30144760 - Env Panel Minor Projects - W1011 CEMP\01 Inputs\04 GIS\A_Current\B_Maps\CEMP\CEMP.aprx

Figure 1.1: Project Location



Legend

- Moorebank Avenue Realignment Works
- Construction footprint
- Construction compound
- Watercourse
- Railway



1:16,000 at A4
 Coordinate System: GDA2020 MGA Zone 56
 Date issued: March 30, 2023
 Imagery: Nearmap



Path: C:\Users\cb98137\ARCADIS\30144760 - Env Panel Minor Projects - W011 CEMP\01 Inputs\04 GIS\A_Current\B_Maps\CEMP\CEMP.aprx

Figure 1.2: Project layout

1.3 Scope of the Plan

This CWRMP is applicable to the construction stage of the Project. The CWRMP describes how potential waste and resource impacts will be managed during construction of the Project. Operational waste and resource impacts and measures do not fall within the scope of this CWRMP and therefore are not included within the processes contained herein.

1.4 Environmental Management System Overview

The environmental management framework for the Project is described in Section 3 of the CEMP. This CWRMP forms part of the framework for the Project. The requirements of the NSW CoA and the REMMs identified in this CWRMP will be complied with during construction.

Management measures identified in this CWRMP may also be incorporated into site or activity specific Environmental Work Method Statements (EWMS). EWMS incorporate appropriate mitigation measures and controls and identify key procedures to be used during construction activities. A template EWMS for use is provided in Appendix E of the CEMP.

1.5 CWRMP Endorsement and Approval

This CWRMP has been prepared to satisfy the NSW CoA in relation to waste and resource management during construction of the Project.

This CWRMP will be reviewed by the Project Manager / Delivery Team and will be endorsed by the Environmental Representative (ER) at least one month prior to the commencement of construction as nominated in the Project Risk Assessment Matrix approved by the Department of Planning and Environment (DPE) in accordance with NSW CoA A19. Construction of the Project will not commence prior to approval of the CEMP by the Secretary and endorsement of the CWRMP by the ER. The final approved Plan will be available on the MIP and/or National Intermodal website within 20 business days of approval by the Planning Secretary in accordance with Commonwealth CoA 15.

The ER can approve minor amendments to this CWRMP if they do not increase impacts to nearby receivers, are administrative nature and are consistent with the conditions of the Infrastructure Approval. This does not include any modifications to the conditions of the Infrastructure Approval.

1.5.1 Interactions with Other Management Plans

This CWRMP has the following interrelationships with other management plans and documents:

- The Construction Contamination Management Plan (CCMP) provides a framework for contaminated land management and outlines the procedure for the disposal contaminated waste material
- The Construction Traffic and Transport Management Plan (CTTMP) provides a framework for management and maintenance of traffic management including the location of all heavy vehicles required for spoil haulage
- The Construction Soil and Water Management Plan (CSWMP) addresses the potential impacts associated with waste storage and handling, as well as procedures for minimising water usage and managing wastewater generated through construction
- The Construction Air Quality Management Plan (CAQMP) address the air quality impacts associated with vehicle emissions

- Construction Biodiversity Management Plan (CBMP) outlines management measures relating to the appropriate storage and disposal of waste such that pest fauna are unable to gain access to construction waste. Additionally, the CBMP also outlines the management and disposal of weeds on the Project Site.

1.6 Consultation

1.6.1 Consultation for Preparation of the CWRMP

There is no requirement to consult with government agencies and stakeholders during the development of this CWRMP as nominated in the Project Risk Assessment Matrix and approved by the Department of Planning and Environment (DPE) in accordance with NSW CoA A19. Refer to Appendix D of the CEMP for additional consultation requirements.

1.6.2 Ongoing Consultation during Construction

Consultation with stakeholders, the community, and relevant agencies regarding the management of waste generated and resources used within the Project will be undertaken during the construction of the Project as required. The process for the consultation is documented in the Community Consultation Strategy (CCS).

Specific requirements of relevance to the management of waste and resources, which have emerged through consultation under the EIS and RtS are evident in the CoA and REMMs included in Section 3.3 and 3.4.

2 PURPOSE AND OBJECTIVES

2.1 Purpose

The purpose of this CWRMP is to describe how waste and resources will be minimised and managed during the construction of the Project.

2.2 Objectives

The key objective of the CWRMP is to ensure that waste and resources are managed appropriately throughout the construction of the Project and considers the mitigation and management measures referred to in:

- NSW Minister's Infrastructure Approval dated 14 October 2021 (SSI-10053)
- Federal Minister for the Environment Approval dated 7 December 2021 (EPBC 2020-8839)
- *Moorebank Avenue Realignment Environmental Impact Statement Volume 1 and Volume 2* prepared by EMM for Sydney Intermodal Terminal Alliance dated March 2021 (EIS)
- *Moorebank Avenue Realignment Response to Submissions* prepared for Sydney Intermodal Terminal Alliance dated May 2021 (RtS).

2.3 Targets

Table 2.1 details the targets established for the management of waste and resources during construction of the Project.

Table 2.1: Project environmental targets for waste and resource management

Objective	Target	Timeframe	Responsibility
Ensure compliance with relevant NSW and Commonwealth CoA and applicable legislation	No written warnings or infringement notices	Throughout construction	Construction Contractor
Avoid, minimise or manage potential adverse impacts within and adjacent to the Project corridor resulting from the generation of waste	No complaints from adjacent land users (e.g. MPE warehouse operators) No migration of waste from the Project Site to adjacent properties No reportable incidents	Throughout construction	Construction Contractor
Avoid, minimise or manage the inappropriate handling and disposal of waste	No reportable incidents	Throughout construction	Construction Contractor
Avoid, minimise or manage the generation of large volumes of waste material or unexpected finds that cannot be reused	Zero non-compliance	Throughout construction	Construction Contractor
Minimise impacts to nearby sensitive receivers.	No complaints from nearby sensitive receivers.	Throughout construction	Construction Contractor

3 ENVIRONMENTAL REQUIREMENTS

3.1 Relevant Legislation and Guidelines

3.1.1 Legislation

All legislation relevant to the Project is included in Appendix B of the CEMP. Legislation considered during the development of the CWRMP includes:

- *Environmental Planning and Assessment Act 1979 (EP&A Act)*
- *Protection of the Environment Operations Act 1997 (POEO Act)*
- *Protection of the Environment Operations (Waste) Regulation 2014 (Waste Regulation)*
- *Waste Avoidance and Resource Recovery Act 2001 (WARR Act)*
- *Biosecurity Act 2015*
- *Environmentally Hazardous Chemicals Act 1985 (EHC Act)*
- *National Greenhouse and Energy Reporting Act, 2007 (NGER Act) and Regulations 2008.*

3.1.2 Additional Approvals, Licences, Permits and Requirements

Refer to Appendix C of the CEMP.

3.1.3 Guidelines and Standards

The main guidelines, specifications and policy documents relevant to the CWRMP include:

- *Waste Classification Guidelines: Part 1 Classifying Waste (NSW EPA, 2014)*
- *NSW EPA: Storing and Handling Liquids: trainers manual, including Review of Best Practice and Regulation*
- *NSW Waste Avoidance and Resource Recovery Strategy 2014-21 (Environment Protection Authority (EPA), 2014).*

3.2 Commonwealth Approval

The Project is considered a controlled action under the EPBC Act and is therefore subject to Commonwealth CoA's. There are no Commonwealth CoA related to the management of waste and resources.

3.3 NSW Infrastructure Approval

The requirements of the Infrastructure Approval relevant to the development of this CWRMP are shown in Table 3.1. These are defined as 'primary NSW CoA' and specifically relate to the development of the CWRMP. Secondary CoA relevant to, but not specific to the development of the CWRMP, have been listed in Appendix B. A cross reference is also included to indicate where the CoA is addressed in the CWRMP or other Project plans.

Table 3.1: Primary NSW CoA relevant to the CWRMP

No.	Requirements	Document reference
A5	Where the terms of this approval require a document or monitoring program to be prepared or a review to be undertaken in consultation with identified parties, evidence of the consultation undertaken must be submitted to the Planning Secretary with the document. The evidence must include:	Section Error! Reference source not found.
(a)	Documentation of the engagement with the party identified in the condition of approval that has occurred before submitting the document for approval	
(b)	A log of the dates of engagement or attempted engagement with the identified party	
(c)	Documentation of the follow-up with the identified party where engagement has not occurred to confirm that they do not wish to engage or have not attempted to engage after repeated invitations	
(d)	Outline of the issues raised by the identified party and how they have been addressed	
(e)	A description of the outstanding issues raised by the identified party and the reasons why they have not been addressed	
C6	CEMP sub-plans as identified in documents listed in Condition A1 must be prepared in consultation with relevant government agencies and stakeholders. Relevant government agencies and stakeholders must be nominated in the risk assessment matrix submitted to the Planning Secretary require in accordance with Condition A14 or A19. Details of all information requested by an agency during consultation must be provided to the Planning Secretary as part of any submission of the relevant CEMP sub-plan, including copies of all correspondence from those agencies as required by Condition A5.	Section Error! Reference source not found.
C7	The CEMP Sub-plans must state how:	
(a)	the environmental performance outcomes identified in the documents listed in Condition A1 will be achieved;	Section 2.2 Section 2.3 Section 5 Section 7 Section 8
(b)	the mitigation measures identified in the documents listed in Condition A1 will be implemented;	Table 5.4
(c)	the relevant terms of this approval will be complied with; and	Section 7 Table 3.1 Table 3.2 Table 5.4 Appendix B
(d)	issues requiring management during construction (including cumulative impacts), as identified through ongoing environmental risk analysis, will be managed through SMART principles.	Section 2.2 Section 2.3 Section 4.4.1 Section 5.6

No.	Requirements	Document reference
C8	<p>With the exception of any CEMP Sub-plans expressly nominated by the Planning Secretary to be endorsed by the ER, all CEMP sub-plans must be submitted to the Planning Secretary for approval.</p> <p><i>Note: The Planning Secretary will consider the assessment of the predicted level of environmental risk and potential level of community concern required under Condition A14(e) when deciding whether any CEMP Sub-plans may be endorsed by the ER.</i></p>	<p>Section Error! Reference source not found.</p> <p>Appendix A Error! Reference source not found.</p>
C9	The CEMP Sub-plans not requiring the Planning Secretary's approval must obtain the endorsement of the ER as being in accordance with the conditions of approval and all relevant undertakings made in the documents listed in Condition A1. Any of these CEMP Sub-plans must be submitted to the ER with, or subsequent to, the submission of the CEMP but in any event, no later than one (1) month before construction or where construction is staged no later than one (1) month before the commencement of that stage	<p>Section Error! Reference source not found.</p> <p>Appendix A</p>
C10	Any of the CEMP Sub-plans to be approved by the Planning Secretary must be submitted to the Planning Secretary with, or subsequent to, the submission of the CEMP but in any event, no later than one (1) month before construction or where construction is staged no later than one (1) month before the commencement of that stage.	<p>Section Error! Reference source not found.</p> <p>Appendix A</p>
C11	Construction must not commence until the CEMP and all CEMP Sub-plans have been approved by the Planning Secretary or endorsed by the ER (whichever is applicable), unless otherwise agreed by the Planning Secretary. The CEMP and CEMP Sub-plans, as approved by the Planning Secretary or endorsed by the ER (whichever is applicable), including any minor amendments approved by the ER, must be implemented for the duration of construction.	<p>Section Error! Reference source not found.</p> <p>Appendix A</p>

3.4 Revised Environmental Management Measures

The REMMs presented in the RtS relevant to the development of this CWRMP, defined as 'primary REMMs' are detailed in Table 3.2. A cross reference is also included to indicate where the REMM is addressed in the CWRMP or other Project plans. Secondary REMMs relevant to, but not specific to the development of this CWRMP, have been listed in Appendix BB.

Table 3.2: Primary REMMs relevant to the development of this CWRMP

No.	Requirements	Timing	Document reference
WAS01	A CWRMP will be prepared for the Project and encompassed within the CEMP. The CWRMP will outline appropriate management procedures and include, but not be limited to:	Pre-construction	The CWRMP
	<ul style="list-style-type: none"> identification of the waste types and volumes that are likely to be generated by the Project; 	Pre-construction	Section 4.2 Table 4.1
	<ul style="list-style-type: none"> adherence to the waste minimisation hierarchy principles of avoid/reduce/reuse/recycle/ dispose; 	Pre-construction	Section 5.1 Figure 5.1

No.	Requirements	Timing	Document reference
	<ul style="list-style-type: none"> waste management procedures to manage the handling and disposal of waste, including unsuitable material or unexpected waste volumes; and 	Pre-construction	Section 5 Error! Reference source not found. Table 5.3
	<ul style="list-style-type: none"> identification of reporting requirements and procedures for tracking of waste types and quantities. 	Pre-construction	Section 7.5.1 Table 7.1 Appendix C
WAS02	<p>A Spoil Management Plan (SMP) will be prepared for the Project as part of the construction waste and resource management plan. The SMP will outline appropriate management procedures for the generation and importation of spoil. It will include, but not be limited to:</p> <ul style="list-style-type: none"> procedures for classification of spoil; identification of spoil reuse measures; spoil stockpile management procedures; spoil haulage routes; spoil disposal and reuse locations; and imported spoil sources and volumes. 	Pre-construction	Section 6
		Pre-construction	Section 6.1
		Pre-construction	Section 6.2 Error! Reference source not found. Table 5.3
		Pre-construction	Section 6.4
		Pre-construction	Section 6.5 Figure 6.1
		Pre-construction	Section 5.4 Section 6.2 Error! Reference source not found.
		Pre-construction	Section 4.3.1

4 ENVIRONMENTAL ASPECTS AND IMPACTS

4.1 Construction Activities

Section 2.3 of the CEMP provides an overview of the construction activities that have the potential for environmental impact. The potential risks have been identified based on the outcomes of the risk assessment provided in Appendix C of the CEMP. The potential environmental aspects and impacts associated with construction are identified in Table 4.1 of the CEMP.

4.2 Construction Waste Streams

Waste generated during construction will be from works associated with clearing, stripping, earthworks and construction of road carriageways, retaining soil structures and/or walls, and drainage infrastructure.

The EIS estimated that about 25,000 m³ of material will be excavated during construction of the Project. It is anticipated that the waste resulting from earthworks will comprise excavated material that is unsuitable for reuse.

A detailed site investigation and if required, remediation, will be undertaken prior to the commencement of construction in those areas. As such, contamination is not expected to be encountered. Notwithstanding, there may be potential to encounter asbestos containing materials, unexploded ordnance and per- and poly-fluoroalkyl substances (PFAS). The Construction Contamination Management Plan (CCMP) details potential contamination which may be encountered on the Project Site.

Section 5.4.5 of the EIS estimated quantities for construction and demolition waste. These are summarised in Table 4.1.

Table 4.1: Construction and demolition waste quantities

Waste Type	Estimated Quantity	Classification
Concrete and asphalt waste from demolition works	1,930 m ³ (Section 5.4.5 of the EIS)	General solid waste (non-putrescible)
Excess spoil and topsoil	25,000 m ³ (Section 5.4.4 of the EIS)	General solid waste (non-putrescible)
Contaminated material (contaminated fill/soil, asbestos containing material)	To be determined by the Construction Contractor	Will be determined in accordance with the EPA Waste Classification Guidelines
Vegetation waste (from removal of trees, shrubs and ground cover)	To be determined by the Construction Contractor	Will be determined in accordance with the EPA Waste Classification Guidelines
Operational and maintenance waste from construction vehicles and machinery (i.e. adhesives, oils, waste fuels, lubricants)	N/A	Will be determined in accordance with the EPA Waste Classification Guidelines
Construction material waste (i.e. formwork, scrap metal, electrical and plumbing fittings)	N/A	Will be determined in accordance with the EPA Waste Classification Guidelines
Liquid Waste	N/A	Will be determined in accordance with the EPA Waste Classification Guidelines
General office waste (i.e. paper, cardboard, glass, site litter)	N/A	General solid waste (non-putrescible)

4.3 Resource Use

4.3.1 Soil Volumes

The EIS estimated that 25,000 m³ of spoil material is expected to be generated for the works and a total of 105,000 m³ of fill material is required. This means there is a potential fill deficit of 80,000 m³ assuming the excavated material can be reused in the road construction (refer to Table 5.11 of the EIS). These quantities are preliminary and would be determined through detailed design.

Sources of imported material will be nominated prior to the start of construction once a contractor has been engaged. The following will be considered:

- Timing
- Limited stockpile storage capacity
- Extent of unsuitable material encountered during bulk earthworks
- Distance from the Project Site
- Compliance with material specifications (to be confirmed during detailed design).

Should any non-complying imported spoil be identified, the Unexpected Finds Protocol will be followed (Appendix C of the CCMP). For details of the management of contaminated material, refer to Table 5.3.

4.3.2 Water Demand and Use

Potable water demand during construction is expected to be sourced from the Sydney Water mains network. Stormwater collected in temporary sedimentation basins and/or permanent bioretention basins may be recycled for construction purposes such as dust suppression. It is expected that water used during construction can be managed without impacting (via extraction) local surface water and groundwater resources.

4.3.3 Energy Use

Construction activities such as the use of energy for ancillary facilities, travel to and from the Project Site, manufacture and processing of materials (concrete, steel, asphalt, aggregate, timber, and piping) and the use of petrol and diesel for the operation of plant and equipment will generate greenhouse gas emissions. The Construction Contractor will identify opportunities to minimise energy use and mitigate greenhouse gas emissions (refer to Section 5.5.3).

4.4 Potential Impacts

The impacts and potential risks resulting from waste generated during construction are summarised in Table 4.2.

Waste classification will be required during construction to determine appropriate waste management and disposal. Section 5.6 describes the mitigation measures to be implemented to avoid or minimise the abovementioned impacts.

Table 4.2: Potential Construction Impacts and Risks

Waste Type	Potential Impacts	Potential Risks
Concrete and asphalt waste from demolition works	<ul style="list-style-type: none"> • Generation of waste and litter • Incorrect waste disposal or on-site storage • Over ordering of materials • Use of resources 	<ul style="list-style-type: none"> • Depletion of natural resources and deposition of large amounts of waste to landfill • Loss of visual amenity • Contamination of waste streams
Excess spoil and topsoil	<ul style="list-style-type: none"> • Generation of waste and litter • Incorrect waste disposal or on-site storage • Use of resources 	<ul style="list-style-type: none"> • Depletion of natural resources and deposition of large amounts of waste to landfill • Loss of visual amenity • Contamination of waste streams
Contaminated material (contaminated fill/soil, asbestos containing material)	<ul style="list-style-type: none"> • Exposure of contaminated land and potential management of regulated waste • Mixing of waste streams • Use of unlicensed waste transport or disposal facility 	<ul style="list-style-type: none"> • Prosecution for use of unlicensed facility • Contamination of land or water • Greater costs associated with increased contamination
Vegetation waste (from removal of trees, shrubs and ground cover)	<ul style="list-style-type: none"> • Disposal of weed containing material and vegetation 	<ul style="list-style-type: none"> • Spread of weeds to native vegetated areas
Operational and maintenance waste from construction vehicles and machinery (i.e. adhesives, oils, waste fuels, lubricants)	<ul style="list-style-type: none"> • Incorrect waste disposal or on-site storage • Use of natural resources such as aggregates, fuels, water etc. • Over ordering of materials • Use of resources 	<ul style="list-style-type: none"> • Depletion of natural resources and deposition of large amounts of waste to landfill • Loss of visual amenity • Contamination of waste streams
Construction material waste (i.e. formwork, scrap metal, electrical and plumbing fittings)	<ul style="list-style-type: none"> • Incorrect waste disposal or on-site storage • Use of natural resources such as aggregates, fuels, water etc. • Over ordering of materials • Use of resources 	<ul style="list-style-type: none"> • Depletion of natural resources and deposition of large amounts of waste to landfill • Loss of visual amenity • Contamination of waste streams
Liquid Waste	<ul style="list-style-type: none"> • Cross-contamination of liquids • Incorrect disposal of liquid waste 	<ul style="list-style-type: none"> • Land/water contamination and pollution • Ecological degradation
General office waste (i.e. paper, cardboard, glass, site litter)	<ul style="list-style-type: none"> • Generation of waste and litter • Incorrect waste disposal or on-site storage • Over ordering of materials • Use of resources 	<ul style="list-style-type: none"> • Depletion of natural resources and deposition of large amounts of waste to landfill • Odour • Land/water contamination and pollution • Loss of visual amenity • Contamination of waste streams

4.4.1 Cumulative Impacts

Cumulative waste and resource impacts may arise from the interplay between construction activities associated with the Project, and other approved or proposed projects that are likely to occur within the area.

When considered in isolation, specific impacts may be considered minor. These minor impacts may be more substantial however, when the impact of multiple projects on the same receivers is considered.

As outlined in the EIS, a number of other projects in the area that may coincide with construction works include, but are not limited to the following:

- MPE Stage 2 (SSD 7628)
- MPW Stage 2 (SSD 7709) and Stage 3 (SSD 10431)
- M5 Motorway Westbound Traffic Upgrade
- Glenfield Waste Services Resource Recovery Facility (SSD 6249).

It is noted that the scale of impact is dependent upon timing, location and type of construction activities. It is anticipated that cumulative impacts will be short-term and minor as they will be limited to the construction phase and will be minimised through the implementation of management measures identified in Section 5.6.

Communication between the Construction Contractor and developers for these projects will be undertaken with the aim of combining messages relating to construction works when possible, to coordinate disruptive activities and to manage and minimise cumulative impacts to the local community as per the CCS.

5 WASTE MANAGEMENT

5.1 Waste Management Hierarchy

The general approach to the hierarchy of waste management for the Project will be in accordance with the *NSW Waste Avoidance and Resource Recovery Strategy 2014-21 (EPA, 2014)*. The waste hierarchy provides guidance on the order of preference of approaches to achieve efficient resource use, as shown in Figure 5.1. The aspects of the hierarchy applicable to the construction of the Project are outlined below.

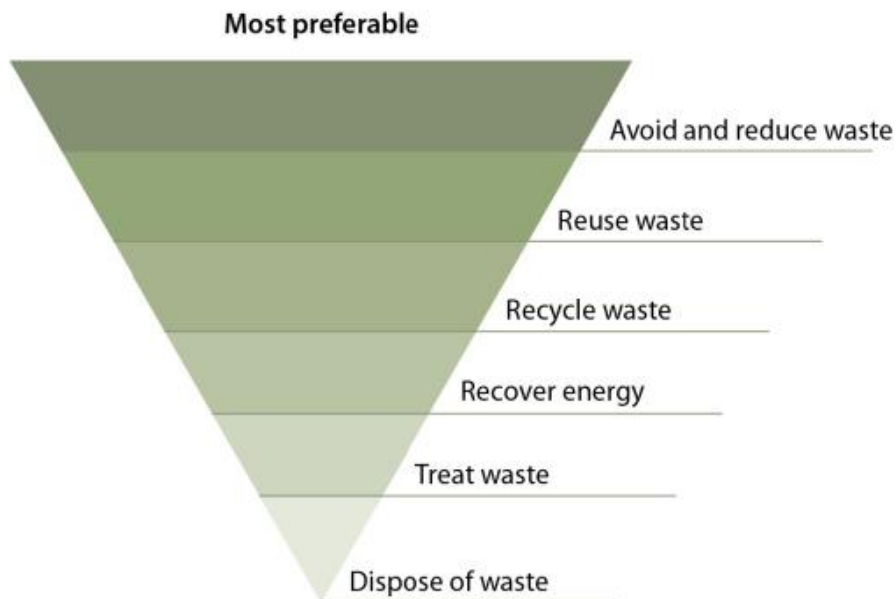


Figure 5.1: The waste hierarchy (Source: EPA, 2014)

5.1.1 Avoidance of Waste Generation

Waste generation will be avoided and where avoidance is not reasonably practicable, waste generation will be reduced. This is because it preserves resources, avoids the use of additional resources to manage waste that would have been generated and aims to eliminate disposal costs. The goal is to maximise efficiency and avoid unnecessary consumption by:

- Selecting items with the least packaging or that require the least resources to produce
- Avoiding single-use materials or disposable goods
- Using products and materials that are recycled, recyclable, repairable, refillable, reusable or biodegradable.

Waste avoidance management is discussed further in Table 5.3.

5.1.2 Reuse, Recycle or Recovery

Where avoiding or reducing waste is not possible, waste will be reused, recycled, or recovered. Resource recovery would be applied to the management of construction waste and would include:

- Recovery of resources for reuse – reusable materials generated by the Project would be segregated for reuse onsite, or offsite where possible, including the reuse of the major waste streams

- Recovery of resources for recycling – recyclable resources (such as metals, plastics and other recyclable materials) generated during construction and demolition would be segregated for recycling and sent to an appropriate recycling facility for processing
- Recovery of resources for reprocessing – cleared vegetation would be mulched or chipped onsite and used for landscaping, in the absence of a higher beneficial use being identified.

Wherever possible, excavated material would be stockpiled onsite and reused for construction (refer to Table 5.3 and Section 5.4.1). The ability to reuse excavated material would depend on the physical properties of the excavated material and require that the material is of suitable quality.

5.1.3 Disposal

Where re-using, recycling or recovering waste is not possible, waste will be disposed of at a waste management facility or premises lawfully permitted to accept the materials. Disposal of waste (and spoil) will be in accordance with the POEO Act. Treatment of waste is not proposed for the Project.

The selection of waste disposal and recovery facilities will be dependent on the nature and volume of waste streams generated and the capacity of the receiving facilities at the time of the waste generation. Waste that is unable to be reused or recycled will be disposed of off-site to an appropriately licenced waste management facility following classification. Refer Section 5.4.3 for proposed waste disposal.

5.2 Classification of Waste Streams

Where waste cannot be avoided, reused, recovered or recycled it will be classified and disposed of appropriately. The classification of waste will be undertaken in accordance with the *Waste Classification Guidelines Part 1: Classifying Waste* (NSW EPA, 2014) with appropriate records and disposal docketts retained for audit purposes in accordance with NSW CoA E74.

The construction activities and types of wastes which may be generated during the construction of the Project are outlined in Table 4.1. The EPA guidelines identify six classes of waste: Special, Liquid, Hazardous, Restricted Solid, General Solid (putrescible) and General Solid (non-putrescible) and describe a six-step process to classifying waste. This step process is summarised in Table 5.1.

Table 5.1: Six-step process to classifying waste

Step	Procedure
Step 1: Is it 'special waste'?	Establish if the waste should be classified as special waste. Special wastes include clinical and related waste, asbestos waste and waste tyres. <i>Note: Asbestos and clinical wastes must be managed in accordance with the requirements of Clauses 42 and 43 of the Waste Regulation.</i>
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 the horizontal, becomes free-flowing at or below 60°C or when it is transported, and is generally not capable of being picked up by a spade or shovel. Liquid wastes are sub-classified into: <ul style="list-style-type: none"> • 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	Procedure
Step 3: If not special or 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 must be chemically assessed to determine whether it is hazardous, restricted solid or general solid waste (putrescible or non-putrescible). If the waste is not chemically assessed, it must be treated as hazardous. Waste is assessed by comparing Specific Contaminant Concentrations of each chemical contaminant, and where required, the leachable concentration using the Toxicity Characteristics Leaching Procedure, against Contaminant Thresholds.
Step 6: Is the general solid waste putrescible or non-putrescible?	If the waste is chemically assessed as general solid waste, a further assessment is available to determine whether the waste is putrescible or non-putrescible. The assessment determines whether the waste is capable of significant biological transformation. If this assessment is not undertaken, the waste must be managed as general solid waste (putrescible).

5.3 Resource Recovery and Exemption

Clause 51 of the Waste Regulation enables the EPA to grant exemptions to the licensing and payment of levies for the land application or use of waste from some of the requirements under the POEO Act and Waste Regulation for certain wastes and resource recovery activities where it can be demonstrated that waste reuse would not cause harm to human or environmental health. Under these provisions, the NSW EPA requires two separate applications, either or both of which may be applicable to the Project:

- A Resource Recovery Order made under Clause 93 of the Regulation, which covers the requirements for the generation and/or processing of material for reuse
- A Resource Recovery Exemption made under clauses 91 and 92 of the Regulation, which relates to the consumption of any material for reuse.

The general Resource Recovery Exemptions and Orders are issued 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. These are general gazette exemptions that do not require approval. A specific exemption may be granted where an application is made to the EPA. The general 'Resource Recovery Exemptions' which may be applicable (but not limited) to the Project are defined in Table 5.2. These will be obtained by the Construction Contractor as required.

Table 5.2: Resource Recovery Exemptions

Exemption	General Conditions	Application
<i>Excavated Natural Material Exemption</i>	The chemical concentration or other attributes of the excavated natural material listed in the Excavated Natural Material Exemption must not be exceeded. The excavated natural material can only be applied to land as	Onsite reuse of spoil (ENM classified) as fill Importation of fill (ENM classified)

Exemption	General Conditions	Application
2014	<p>engineering fill or used in earthworks.</p> <p>ENM handling, processing and testing requirements are outlined in detail in the exemption.</p> <p>Relevant records must detail how the Exemption requirements are fulfilled.</p>	<p>Distribution of spoil (ENM classified) offsite to other projects or sites in accordance with the ENM Exemption.</p>
<i>Raw Mulch Exemption 2016</i>	<p>The raw mulch can only be applied to land for the purposes of filtration or as a soil alternative material or used either singularly or in any combination as input material(s) to a composting process.</p> <p>The consumer must apply the raw mulch within a reasonable period of time.</p> <p>Relevant records detailing fulfilment of Exemption requirements must be maintained.</p>	<p>Onsite and/or offsite reuse of mulch (non-weed vegetation) in erosion and sediment control or landscaping and in accordance with the Raw Mulch Exemption.</p>
<i>Recovered Aggregate Exemption 2014</i>	<p>The chemical concentration or other attribute of the recovered aggregate listed in Recovered Aggregate Exemption must be met.</p> <p>The recovered aggregate can only be applied to land for road making activities, building, landscaping and construction works. This exemption does not apply to any of the following applications:</p> <ul style="list-style-type: none"> • Construction of dams or related water storage infrastructure • Mine site rehabilitation • Quarry rehabilitation • Sand dredge pond rehabilitation • Back-filling of quarry voids • Raising or reshaping of land used for agricultural purposes • Construction of roads on private land unless: <ul style="list-style-type: none"> – the relevant waste is applied to land to the minimum extent necessary for the construction of a road, and – a development consent for the development has been granted under the relevant Environmental Planning Instrument or – it is to provide access (temporary or permanent) to a development approved by a Council – the works undertaken are either exempt or complying development. <p>Relevant records must detail how the Exemption requirements are fulfilled.</p>	<p>Onsite reuse of aggregate for landscaping and construction works.</p> <p>Distribution of aggregate offsite to recycling facility or resale facility in accordance with the Recovered Aggregate Exemption.</p>
<i>Reclaimed Asphalt Pavement Exemption 2014</i>	<p>Applies to reclaimed asphalt pavement (an asphalt matrix which was previously used as an engineering material and which must not contain a detectable quantity of coal tar or asbestos).</p> <p>Reclaimed asphalt can only be applied to land for road related activities including road construction or road maintenance activities being:</p> <ul style="list-style-type: none"> • use as a road base and sub base, • applied as a surface layer on road shoulders and unsealed roads, and • use as an engineering fill material. <p>Relevant records must detail how the Exemption requirements are fulfilled.</p>	<p>Potential use of reclaimed asphalt in relation to erosion and sediment control for provision of stabilised access points</p>
<i>Excavated public road</i>	<p>Excavated public road material can only be stored within the road corridor at the site where it is to be applied to land.</p>	<p>Onsite reuse of excavated material will</p>

Exemption	General Conditions	Application
<i>material exemption 2014</i>	<p>The excavated public road material can only be applied to land within the road corridor for public road related activities including road construction, maintenance and installation of road infrastructure facilities. This exemption does not apply to the land application of excavated public road material on any land outside the road corridor.</p> <p>The excavated public road material cannot be applied on private land.</p> <p>Relevant records must detail how the Exemption requirements are fulfilled.</p>	<p>only be accommodated within public roads i.e. at the northern and southern tie-in locations where Moorebank Avenue overlaps with the Project Site.</p>
<i>Stormwater Exemption 2014</i>	<p>The stormwater can only be applied to land within the definitions of “application to land”. Stormwater means rainfall that runs off all urban surfaces such as roofs, pavements, carparks, roads, gardens and vegetated open spaces.</p> <p>The exemption does not apply in circumstances where stormwater is received at the premises for which the consumer holds a licence under the POEO Act that authorises the carrying out of the scheduled activities on the premises under clause 39 ‘waste disposal (application to land)’ or clause 40 ‘waste disposal (thermal treatment)’ of Schedule 1 of the POEO Act.</p> <p>The consumer must ensure that any application of stormwater to land must occur within a reasonable period of time.</p> <p>Relevant records must detail how the Exemption requirements are fulfilled.</p>	<p>Potential stormwater reuse may be possible for dust suppression applications.</p>

5.4 Waste Management Strategy

The proposed management strategy for each waste stream identified in Section 4.2 is summarised in Table 5.3. Unsuitable and unexpected contaminated waste will be managed in accordance with the CCMP (refer to Appendix C of the CCMP). Refer to Section 5.4.3 for specific waste disposal facility information.

Table 5.3: Expected waste streams and potential management options from general site activities

Waste Stream	Waste Classification	Waste avoidance opportunities ¹	On-site reuse/recycling	Off-site reuse/recycling	Disposal	On-site storage (indicative options)	Waste Facility/Carriers
Concrete and asphalt waste from demolition works							
Road base, reclaimed asphalt/pavement/ and bitumen	General Solid Waste (Non-Putrescible)	Order correct quantities incrementally to suit Project needs	Reuse on temporary site roads and access points to stabilise surface. Reincorporate to support new asphalt pavements. Use for erosion control in channels/spillways.	Send to recycling facility where there is a surplus	-	Designated stockpile area. Segregation of material types to promote reuse.	Refer to Section 5.4.3
Sediment fences, hay bales, mesh and gravel inlet filters, sand bags, geotextile inlet filters, pipes and site fences	General Solid Waste (Non-Putrescible)	Order correct quantities incrementally to suit Project needs	Reuse until end of useful life	Reuse until end of useful life Remanufacturing of metals offsite Untreated timber to be sent to a recycling facility	-	Skip bin	Refer to Section 5.4.3
Construction concrete	General Solid Waste (Non-Putrescible)	Order correct quantities incrementally to suit Project needs	Reused on site wherever possible	Send to recycling or resale facility where there is a surplus for recycling	-	Skip bin / truck	Refer to Section 5.4.3
Surplus materials from construction such as timber, concrete, plasterboard, bricks, tiles, structural steel and metal	General Solid Waste (Non-Putrescible)	Order correct quantities incrementally to suit Project needs	Clean tiles and bricks and reuse for paving where possible Reuse untreated timber onsite for fencing or mulch for landscaping	Send back to supplier if possible. Concrete, bricks and tiles recycled offsite. Remanufacturing of plasterboard and metals offsite.	Send treated timber to landfill	Skip bin	Refer to Section 5.4.3

¹ To be implemented where reasonable, feasible and practical.

Waste Stream	Waste Classification	Waste avoidance opportunities ¹	On-site reuse/recycling	Off-site reuse/recycling	Disposal	On-site storage (indicative options)	Waste Facility/Carriers
				Timber to a recycling facility or second hand timber supplier offsite.			
Excess spoil and topsoil							
Topsoil: Non-weed contaminated	General Solid Waste (non-putrescible)	Minimise removal of non-weed contaminated topsoil, where possible	Undertake topsoil testing to determine nutrient value (where required contractually). Retain suitable topsoil for reuse in rehabilitation	Reuse on another project (if possible)	-	Designated stockpile area with stabilisation, erosion and sediment controls as per CSWMP in place.	N/A
Topsoil: Weed contaminated	General Solid Waste (non-putrescible)	Properly separate non-weed contaminated topsoil with weed contaminated topsoil	Treat on site and retain suitable topsoil for reuse as fill material.	Depending on type of contamination and volume, investigate potential for remediation options	Remaining weedy topsoil to be removed from site	Stockpile in restricted access area. Application of stabilisation, erosion and sediment controls as per ESCP in place.	Refer to Section 5.4.3
Aggregate and other sand	General Solid Waste (non-putrescible)	Order correct quantities incrementally to suit Project needs	Re-use surplus on site wherever possible	Send to recycling or resale facility where there is a surplus	-	Designated stockpile area. Segregation of material types to promote reuse	Refer to Section 5.4.3
Spoil (VENM / ENM)	Test prior to classification	-	Cut material to be used preferentially as fill on site where reasonable and feasible	To site with appropriate development approval and EPL to take the material (under s48 of the POEO Act) where required To other SIMTA projects, stockpile	-	Designated stockpile area with stabilisation, erosion and sediment controls as per ESCP in place	N/A

Waste Stream	Waste Classification	Waste avoidance opportunities ¹	On-site reuse/recycling	Off-site reuse/recycling	Disposal	On-site storage (indicative options)	Waste Facility/Carriers
				sites or concurrent local government projects subject to meeting the above conditions where relevant			
Contaminated material (contaminated fill/soil, asbestos containing material)							
Contaminated soil	Test prior to classification	Minimise spills from site activities	Depending on type of contamination and volume, investigate potential for on site treatment and reuse options	Depending on type of contamination and volume, investigate potential for remediation options	Landfill	Hazardous waste bags and stored in a closed skip. Stockpile contaminated material within a bunded area with a sump separated from sediment basin and stormwater drainage.	Will be assessed at time of spill and will be based on nature of contaminants Refer to Section 6.2
Asbestos contaminated heating equipment and fire resistant building elements	Special	Avoid contaminating other site materials with asbestos	-	-	To be removed by an accredited contractor and disposed of at an EPA licensed facility	Lockable asbestos waste bin	Refer to Section 6.2
Vegetation waste (from removal of trees, shrubs and ground cover)							
Vegetation: Native vegetation	General Solid Waste (non-putrescible)	Minimise removal of native vegetation, where possible	Mulch: Stockpile and reuse in erosion and sediment control or landscaping	Mulch: Stockpile and reuse in erosion and sediment control or landscaping	-	Stockpile on elevated ground 50 m from waterways (including floodplains) and stands of native vegetation and have a diversion bund on the	N/A

Waste Stream	Waste Classification	Waste avoidance opportunities ¹	On-site reuse/recycling	Off-site reuse/recycling	Disposal	On-site storage (indicative options)	Waste Facility/Carriers
						upstream side to direct water around stockpile	
Vegetation: Weed and non-native vegetation	General Solid Waste (non-putrescible)	Properly separate native vegetation, and weed and non-native vegetation	-	-	Remove to approved facility	Stockpile in-situ as above. Not to be mulched.	N/A
Operational and maintenance waste from construction vehicles and machinery (i.e. adhesives, oils, waste fuels, lubricants)							
Dangerous goods - Containers holding hazardous substances	Hazardous	Wherever possible, order non-hazardous materials and use all content	-	-	Send to an appropriately licensed waste facility	Bunded storage areas	Refer to Section 5.4.3
Spray cans	Hazardous (if compressed gas)	Use all contents of cans	-	Puncture to remove gas and place in co-mingled recycle bin	-	Co-mingled recycle bin	Refer to Section 5.4.3
Fluorescent tubes	Hazardous		-	Send to contractor	-	Flu-tube specific bin	Refer to Section 5.4.3
Hydrocarbon rags, drained oil filters, waste spill kit material (no free liquids)	Hazardous	-	-	-	Landfill	Skip bins	Refer to Section 5.4.3
Lead acid batteries	Hazardous	-	-	Investigate recycle options (e.g. ULAB Australia Battery Recycling Initiative)	-	-	Refer to Section 5.4.3
Chemicals	Hazardous	Use all contents of container	Dedicated on site storage to facilitate full use of products	-	Hazardous waste disposal	-	Refer to Section 5.4.3

Waste Stream	Waste Classification	Waste avoidance opportunities ¹	On-site reuse/recycling	Off-site reuse/recycling	Disposal	On-site storage (indicative options)	Waste Facility/Carriers
Tyres	Special	-	-	Send to contractor to chip for reuse or a TSA accredited recycler	-	Construction compound	Refer to Section 5.4.3
Fire extinguisher	Special	Order correct quantities incrementally to suit Project needs	-	Refill offsite and reuse during construction and operations stage of the Project	-	-	Return to supplier for refill
Construction material waste (i.e. formwork, scrap metal, electrical and plumbing fittings)							
Plastic pipes	General Solid Waste (non-putrescible)	Order correct quantities	-	Send to waste transfer facility to recycle	-	Skip bin	Refer to Section 5.4.3
Cables	General Solid Waste (non-putrescible)	Order correct quantities	-	Recover scrap metal and send to licensed contractor for recycling	-	Skip bin	Refer to Section 5.4.3
Paint cans	General Solid Waste (non-putrescible)	Use all content and absorb any residual liquid Use non-hazardous paints	-	Send to recycling facility	-	Co-mingled recycle bin	Refer to Section 5.4.3
Packaging	General Solid Waste (non-putrescible)	Bulk order. Where possible	-	Pallets to be sent back to manufacturer Plastics and cardboard placed in co-mingled recycle bin	-	Co-mingled recycle bin	Refer to Section 5.4.3
Spare parts (damaged air filters, hydraulic hose)	General Solid Waste (non-putrescible)	Order correct quantities	-	-	Landfill	Skip bins	Refer to Section 5.4.3
Containers	General Solid Waste (non-putrescible)	Bulk order, where possible	-	Recycle	-	Co-mingled waste bin	Refer to Section 5.4.3

Waste Stream	Waste Classification	Waste avoidance opportunities ¹	On-site reuse/recycling	Off-site reuse/recycling	Disposal	On-site storage (indicative options)	Waste Facility/Carriers
	putrescible) (no-liquid)						
Liquid Waste							
Waste oils, fuels, grease	Liquid/Hazardous	Use all contents of container	Dedicated on site storage to facilitate full use of products	-	Liquid waste disposal	-	Refer to Section 5.4.3
Degreasers, detergents, solvents and engine coolant	Liquid/ Hazardous	Ensure equipment arrives at Project site fully serviced	Dedicated on site storage to facilitate full use of products	-	Liquid waste disposal	-	Refer to Section 5.4.3
Sewage waste	Liquid	-	-	-	Sewage waste is to be disposed of by a licensed waste contractor in accordance with Sydney Water	Toilet facilities	Refer to Section 5.4.3
Trade waste	Liquid	-	-	-	Discharged to sewer through a trade waste agreement with Sydney Water	-	Discharged to sewer through a trade waste agreement with Sydney Water
Concrete washout	Liquid	Undertake washout at concrete plant	Allow to solidify and remaining water to be used as local dust suppression or allowed to evaporate	-	-	Concrete washout pits	NA
Oily water	Liquid	Cover storage areas	-	Use spill pads to clean oil and reuse water for dust suppression	-	Drip trays	NA
Turbid water	Liquid	Erosion control	-	Treat and use water for dust suppression	Discharge offsite when compliant with	Sediment basins	NA

Waste Stream	Waste Classification	Waste avoidance opportunities ¹	On-site reuse/recycling	Off-site reuse/recycling	Disposal	On-site storage (indicative options)	Waste Facility/Carriers
					discharge limits as per the Construction Soil and Water Management Plan		
General office waste (i.e. paper, cardboard, glass, site litter)							
Food	General Solid Waste (Putrescible)	-	-	-	-	General waste bin	Refer to Section 5.4.3
Paper / cardboard	General Solid Waste (Non-Putrescible)	Double sided printing, education	-	Recycle	-	Co-mingled recycle bin	Refer to Section 5.4.3
Glass, plastic, aluminium	General Solid Waste (Non-Putrescible)	-		Recycle	-	Co-mingled recycle bin	Refer to Section 5.4.3
Sanitary	General Solid Waste (Putrescible)	-	-	-	Landfill	Toilet facilities	Refer to Section 5.4.3
Waste electrical and electronic equipment	General Solid Waste (Non-Putrescible)	-	Continue use during operations stage of the Project where possible	Send excess to new projects / donate to schools or charities or recycle as E-waste	-	Site office	Refer to Section 5.4.3
Cleaning chemicals	Liquid/Hazardous	Use all contents or use on other projects	Continue use during operations stage of the Project where possible	-	-	Site office	Refer to Section 5.4.3

5.4.1 Waste Handling and Storage

Materials delivered to the Project Site will be received by the Construction Contractor to verify that the appearance of the material is consistent with the source material description. Measures to reduce risk of damage (and resultant product/materials waste) will include keeping materials in original packaging, protection from rain damage or collision by plant or vehicles.

The materials storage area will be secured during out of hours to prevent unauthorised access where possible. All chemicals, fuels and oils, including dangerous goods, will be stored and handled appropriately.

The temporary construction compound will be established at the northern end of the Project Site and includes storage areas of construction materials and spoil. Transient construction compounds and laydown areas will incorporate a nominated waste storage area within the Project Site. The storage area will contain skip bins for storage of general waste, and recyclable material.

Waste generated by the construction staff will be stored in receptacles throughout the site office and transferred to the waste storage area for collection. For the purpose of the CWRMP, it has been assumed that waste generated during construction will be collected on a weekly basis or as required by the waste contractor. The waste storage area will be located near the site construction compound entrance (or another suitable location determined by the Construction Contractor) to allow for collection of the waste bins.

Where waste is required to be handled and stored onsite prior to onsite reuse or offsite recycling/disposal, the following measures apply:

- Spoil, topsoil and mulch are to be stockpiled onsite in allocated areas, where appropriate, and management measures for dust control and surface water management will be implemented as per the Construction Air Quality Management Plan (CAQMP) and the Construction Soil and Water Management Plan (CSWMP)
- Liquid wastes are to be stored in appropriate containers in bunded areas until transported offsite. Bunded areas will have the capacity to hold 110% of the liquid waste volume for bulk storage or 120% of the volume of the largest container for smaller packaged storage
- Hazardous waste will be managed by appropriately qualified and licensed contractors, in accordance with the requirements of the *Environmentally Hazardous Chemicals Act 1985* and the EPA waste disposal guidelines
- All other recyclable or non-recyclable wastes will be stored segregated on-site where applicable and placed in appropriate bins or skips with regular replacement and disposal of the bins to approved and appropriately licensed facilities.

Site waste will be placed in skips in such a way to minimise 'empty' space. Where possible, skips and containers will be provided for segregating the following key waste streams:

- Skips:
 - Construction concrete
 - Plastic pipes and cables
 - Office and crib furniture waste
 - Plant and equipment spare parts
 - Hydrocarbon rags, drained oil filters and waste spill kit material
 - Hazardous contaminated soil.
- Containers and specific bins:
 - Miscellaneous wastes such as paint cans, spray cans and sharps

- Packaging
- Food
- Paper/cardboard, glass, plastic and aluminium.

5.4.2 Waste Transportation

Waste being transported between the Project Site and a disposal facility will be covered. Uncovered loads of waste can spill onto the road that create litter or dust and can wash into waterways via stormwater drain.

Materials classified under the *Waste Classification Guidelines Part 1: Classifying Waste* (EPA, 2014) as hazardous during construction will be transported in accordance with the *Dangerous Goods (Road and Rail Transport) Act 2008 (NSW)*, *Dangerous Goods (Road and Rail Transport) Regulation 2014 (NSW)* and *Australian Code for the Transport of Dangerous Goods by Road and Rail (National Transport Commission, 2008)*.

5.4.3 Waste Disposal

Waste (and spoil) disposal will be in accordance with the POEO Act 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 EPA approved waste management facility following classification.

Where the Construction Contractor is to dispose of waste in an off-site location that is not a licensed waste facility (i.e. private property), the Construction Contractor will complete a section 143 notice under the POEO Act for submission to the Principals Representative.

Where the waste is designated as special or hazardous waste, the waste carrier licence will be obtained.

Details of waste types, exemptions applied, volumes and destinations will be recorded in the Waste Management Register (Appendix C). Records confirming the legal transport, treatment and disposal of wastes, and records of waste contractor licences (such as EPA permissions), shall be reviewed to ensure that all wastes are disposed of at appropriate licensed facilities and records kept on file.

Specific waste locations will be identified by the Construction Contractor, however, are anticipated to be within NSW.

5.5 Resources

5.5.1 Materials

Where it is deemed that the material is technically suitable and/or where it is deemed to be cost effective, it virgin materials will be used preferentially to meet the Projects recycled content objectives and targets. Examples of where this might be achieved for this Project may include, but not be limited to:

- Pulverised fly ash as a replacement product for cement within concrete
- Glass sand as a replacement for natural sand
- Use of recycled steel rather than virgin steel within re-bar and other steel products
- Use of sustainably sourced certified timber such as FSC or PEFC
- Recycled asphalt pavement
- Crushed concrete, brick, tiles
- Crusher dust
- Blast and steel furnace slag
- Bottom ash

- Crumbed rubber.

5.5.2 Water

Construction activities that are likely to use potable water were investigated to determine potential reduction opportunities.

Potable water consumption will be minimised by:

- Avoiding unnecessary water use
- Use of water efficient equipment on site and in the offices
- Application of spray mist on hoses
- Use of polymers/covers to reduce dust rather than dust suppression using water
- Utilising water from sediment basins and sediment traps for dust suppression
- Use of binding agents in sub-grade stabilisation
- Reuse of washdown water.

The above opportunities have been evaluated and analysed based on their economic viability and their potential for implementation during construction as part of the Risk Register (Appendix D of the CEMP). Where opportunities were not considered to add value or be economically viable, they were not progressed any further.

5.5.3 Energy Use

Construction activities that are likely to emit greenhouse gas emissions were investigated to determine potential reduction opportunities. Below are potential measures that could be implemented during construction to reduce greenhouse gas emissions:

- Use of alternative fuels and power such as biodiesel and hybrid technology in plant and equipment
- Provision of emissions information in plant packs with subcontract requirement to emphasise the provision of plant and equipment with lowest emissions
- Use of well-maintained plant and equipment with a subcontract requirement to ensure that this is achieved
- Plant and equipment will not be left on idle when not in use
- Use of local suppliers and ordering of full loads where possible
- Include the requirement to conserve energy within the induction.

The above opportunities have been evaluated and analysed based on their economic viability and their potential for implementation during construction as part of the Risk Register (Appendix D of the CEMP). Where opportunities were not considered to add value or be economically viable they were not progressed any further.

5.6 Management Measures

The development of management measures has been based on SMART principles i.e. measures that are specific, measurable, achievable, relevant, and time-bound:

- **S**pecific –mitigation and management measures identified in Table 5.4 specifically to manage waste and resource impacts during construction
- **M**easurable – Inspection and monitoring requirements detailed in Section 7.3 include specific measures or indicators for which inspection and monitoring requirements will be triggered

- **Achievable** – Ongoing compliance with the Infrastructure Approval (Table 3.1 and Table 3.2) is achievable throughout the delivery of construction and represents the minimum requirements to be implemented by the Construction Contractor
- **Relevant** - The management measures outlined in Table 5.4 represent the approach to monitoring and tracking against the objectives, targets and environmental performance outcomes (identified in Section 2.3 of the CWRMP)
- **Time-bound** – The management measures set out within Table 5.4 are required to be implemented for the duration of construction, setting a clear and defined time frame and includes reference to other timeframes, including during detailed design, pre-construction, post-construction and/or operation.

Management actions prescribed by this CWRMP aim to avoid and minimise waste and resource impacts and are summarised in Table 5.4.

Table 5.4: Waste and resource management and mitigation measures

ID	Measure / Requirement	Timing	Responsibility	Ref	Evidence
General					
WR1	The requirements of this CWRMP will be implemented so that waste type and volumes that are generated during construction of the Project are appropriately planned and managed in accordance with the procedures outlined in this document.	Prior to construction and during construction	Construction Contractor	NSW CoA E72 NSW CoA E74 REMM WAS01	CWRMP Environmental inspection report Waste Management Register
WR2	<p>The waste minimisation hierarchy principles of avoid/ reduce/ reuse/ recycle/ dispose will be used. This will include:</p> <ul style="list-style-type: none"> • Designing the road and ancillary infrastructure to minimise on-site cutting of components, maximising on-site assembly tasks and minimising the volume of construction material wastage • Careful ordering of materials and building products to match quantities with amounts required, with on time ordering rather than having materials stored on-site for an extended period before being used • Incorporation of recycled construction products where possible • Segregating materials and providing weather protection for stored materials on-site, to minimise damage • Encouraging bulk handling and use of reusable and returnable containers • At the time of tendering, advising contractors and sub-contractors, and suppliers of requirements to minimise waste generation on-site. 	Prior to construction and during construction	Construction Contractor	NSW CoA E71 REMM WAS01 Section 5.1	Waste Management Register
WR3	All wastes, including contaminated wastes, will be identified and classified in accordance with the EPA's <i>Waste Classification Guidelines: Part 1 Classifying Waste</i> , with appropriate records and disposal docketts retained for audit purposes.	Prior to construction and during construction	Construction Contractor Site Supervisor Construction Contractor Site Engineer	NSW CoA E74 REMM WAS01	Waste Management Register Disposal docketts

ID	Measure / Requirement	Timing	Responsibility	Ref	Evidence
	Disposal of contaminated waste will be completed in accordance with the <i>POEO Act</i> , Protection of the Environment Operations (Waste) Regulation 2014.				
WR4	The importation of waste, and the storage, treatment, processing, reprocessing or disposal of waste will comply with the conditions of an EPL for the Project (if one applies). Otherwise, a Resource Recovery Exemption or Order issued under the <i>Protection of the Environment Operations (Waste) Regulation 2014</i> will be followed.	Prior to construction and during construction	Construction Contractor Environmental Advisor Site Supervisor	NSW CoA E72	Waste Management Register
WR5	Waste will only be exported to an EPA licensed site, or in accordance with a Resource Recovery Exemption or Order issued under the Protection of the Environment Operations (Waste) Regulation 2014, or any other facility that can lawfully accept the waste in accordance with Section 143 Notice.	Prior to construction and during construction	Construction Contractor	NSW CoA E73	Waste Management Register Disposal dockets S143 Notice
WR6	Wastes with potential to attract feral animals will be stored in bins with lids to minimise influx of feral animals and will be disposed off-site at an appropriately licenced facility. This includes the appropriate disposal appropriate to specific types of weeds during clearing works.	Prior to construction and during construction	Construction Contractor	REMM BIO18 REMM BIO19	Waste Management Register
WR7	Suitable areas to allow for the management of unexpected waste materials (including contaminated waste) will be identified and will be hardstand or lined areas that are stabilised and bunded with sufficient area for stockpile storage.	Prior to construction and during construction	Construction Contractor	REMM WAS03	Waste Management Register
Spoil Management					
WR8	A Spoil Management Plan will be implemented during construction of the Project as part of the CSWRMP to ensure the appropriate management procedures for the generation and importation of spoil are followed.	Prior to construction and during construction	Construction Contractor	REMM WAS02 Section 6	CWRMP Environmental inspection report Waste Management Register

ID	Measure / Requirement	Timing	Responsibility	Ref	Evidence
Resource Preservation					
WR9	Recycled materials and sources will be used wherever possible. This includes using fill or fly ash as an additive to concrete production and stormwater reuse to be prioritised over the use of potable water where possible.	During construction	Construction Contractor	REMM SUS02 REMM WAR05	Waste Management Register
WR10	Fill importation will be minimised, where possible. Material that is excavated during cut activities will be reused as much possible.	During construction	Construction Contractor	REMM SUS01	CWRMP
WR11	Green energy usage for ancillary facilities will be explored in addition to other measures to minimise greenhouse gas emissions. This includes controlling and reducing trips and trip distances where possible (i.e. coordinating delivery and removal of materials) and implementing policies which aim to minimise emissions from vehicles visiting the Project Site.	Prior to construction and during construction	Construction Contractor	REMM SUS03	CWRMP CTTMP
WR12	Stormwater re-use is to be prioritised over potable water for site water usage where possible.	During construction	Construction Contractor	REMM WAR05	CWRMP
Transportation of Spoil					
WR13	All trucks entering or leaving the site with loads must have their loads covered.	During construction	Construction Contractor	Best practise	Waste Management Register Spoil Tracking Register
WR14	Each truck entry will be visually checked and documented to confirm that only approved materials that are consistent with the environmental approvals are allowed to enter the Project Site.	During construction	Construction Contractor	Best practise	Waste Management Register Spoil Tracking Register CWRMP
Stockpiling					

ID	Measure / Requirement	Timing	Responsibility	Ref	Evidence
WR15	Manage any unexpected finds, including contaminated spoil through the Unexpected Finds Protocol for Imported Spoil Management.	During construction	Construction Contractor	Best practise	Appendix C of the CCMP

6 SPOIL MANAGEMENT PLAN

6.1 Classification of Spoil

All spoil material will be classified in accordance with the EPA (2014) Waste Classification Guidelines and any relevant NSW Resource Recovery Orders and Exemptions (refer to Section 4.3.3). The following resource recovery exemptions may be considered:

- The excavated public road material exemption 2014
- The reclaimed asphalt pavement exemption 2014
- Excavated Natural Material Order 2014 and Exemption.

All imported spoil entering the Project Site must be accompanied by a waste classification report completed by the supplier. Material characterisation will occur prior to being exported to the Project site in accordance with the *Waste Classification Guidelines: Part 1 Classifying Waste* (NSW EPA 2014).

Prior to and during the importation of spoil, a visual inspection will be undertaken by the Construction Contractor to verify the appearance of the material is consistent with the source material description.

Spoil that is classified as Virgin Excavated Natural Material (VENM) or Excavated Natural Material (ENM) will be reused on-site as fill material in road construction if the physical properties are suitable. VENM is defined in the POEO Act as:

Natural material (such as clay, gravel, sand, soil or rock fines):

- That has been excavated or quarried from areas that are not contaminated with manufactured chemicals, or with process residues, as a result of industrial, commercial, mining or agricultural activities and*
- That does not contain any sulfidic ores, soils or any other waste*
- And includes excavated natural material that meets such criteria for virgin excavated natural material as may be approved for the time being pursuant to an EPA Gazettal notice.*

A VENM certificate is required to be prepared by a suitably qualified professional prior to reuse on-site. Classification of ENM material requires chemical testing to confirm that the material properties comply with the criteria outlined in the Excavated Natural Material Order 2014 and Exemption. This applies to ENM that has:

- Been excavated from the ground
- Contains at least 98% (by weight) natural material
- Does not meet the definition of VENM in the Act.

There are sampling frequencies testing criteria identified in the ENM order for both in-situ and stockpiled material.

6.2 Spoil Reuse and Disposal Measures

The proposed potential destinations for spoil material are identified in **Error! Reference source not found.** Spoil will be appropriately classified and then either:

- Reused on-site as construction fill if classified as VENM or ENM with suitable physical properties
- Reused on-site for landscaping if uncontaminated topsoil material

- Transferred off site for reuse, if there is no on-site temporary storage location available
- Disposed of at an appropriate waste management centre if classified as contaminated spoil.

A specialist will undertake the sampling and testing of spoil material in accordance with relevant guidelines and exemption orders (i.e. Section 143 Notice) to validate and certify the spoil classification prior to removal off site for disposal or for further processing, or reuse on-site. Sampling records, soil classification and marking of spoil stockpiles is to be undertaken on site and will be the responsibility of the Site Supervisor. Note that some commonly generated waste types have been pre-classified by EPA including hazardous waste, restricted solid waste, general solid waste (putrescible) and general solid waste (non-putrescible) (refer to Table 5.1).

Contaminated material, and unsuitable and unexpected waste volumes will be handled in accordance with the unexpected finds procedure and unexploded ordnance waste management plan outlined in Appendix C and E of the CCMP). Where contamination is identified prior to or during works, the area of land will be captured within the Contamination Register (refer to Appendix D of the CCMP).

6.3 Spoil Tracking

Spoil material will be recorded in the Spoil Tracking Register (refer to Appendix D for template) to ensure all imported, reused and disposal of spoil is appropriately transported and handled in accordance with this CWRMP. Refer to Section 7.5.2 for further information on the Spoil Tracking Register details.

6.4 Spoil Stockpile Management Procedures

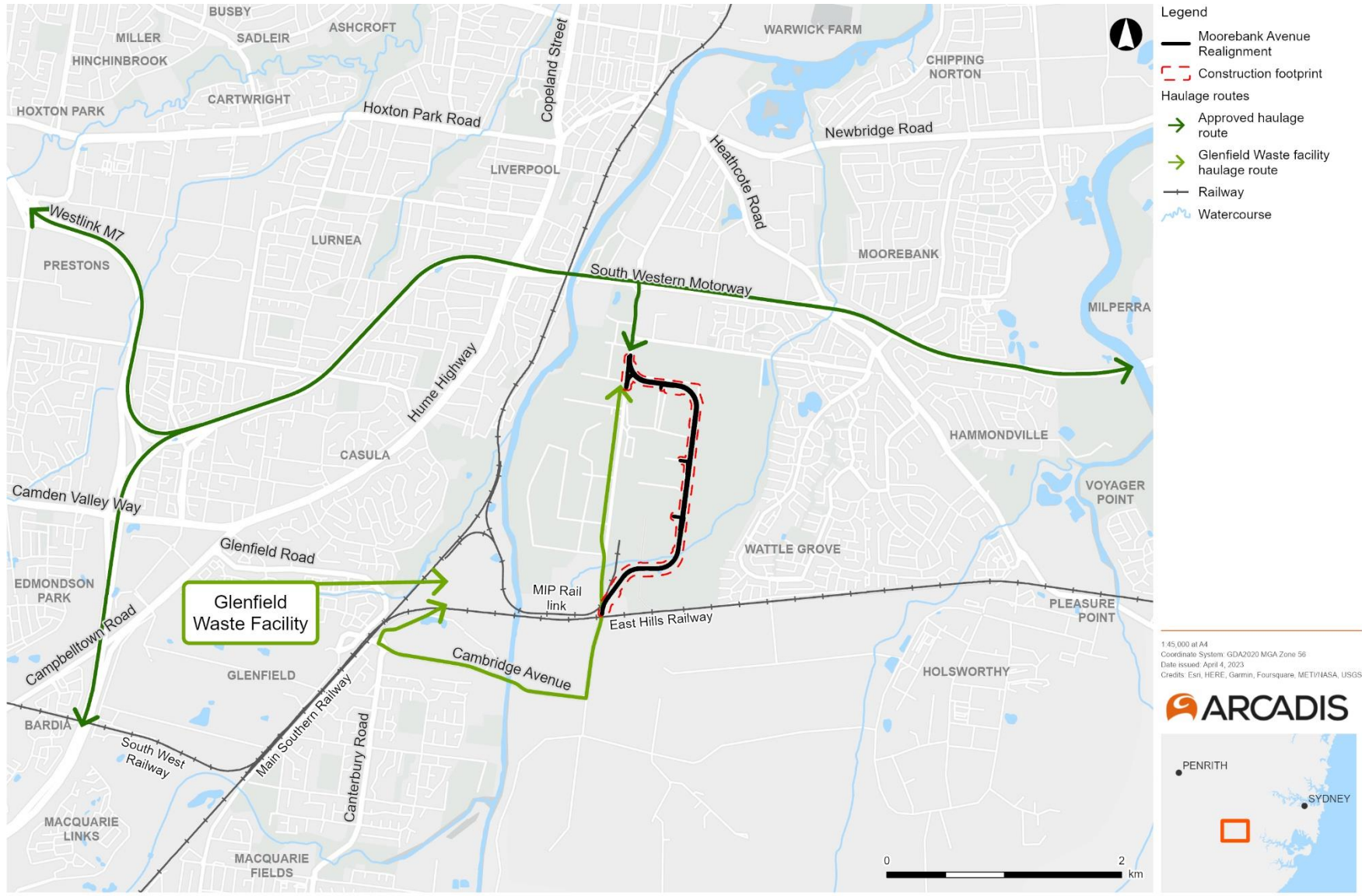
Due to limited space on the Project Site, spoil will likely need to be temporarily stockpiled along the proposed alignment adjacent to excavation areas prior to reuse or removal off site. Any stockpiles will be located wholly within the construction boundary (Project Site). The following management measures will be implemented to control segregation and maintenance of spoil stockpiles:

- Locate clean fill stockpiling areas in areas that are bunded using sediment fencing and graded to control runoff
- Stockpiles will include battered walls at gradients of 1V:3H to minimise erosion
- Potential contaminated spoil stockpiling areas will be lined with an impermeable liner in accordance with the requirements of REMMs WAS03. This material will be managed in accordance with the Unexpected Finds Procedure (Appendix C of the CCMP).
- Validate area following removal of the contaminated material, in accordance with the Remedial Action Plan (if one has been prepared)
- Manage stockpiles in accordance with the requirements of the CAQMP (refer to Appendix M of the CEMP) to minimise dust and the CSWMP (refer to Appendix J of the CEMP) to control erosion and sediment runoff and locate stockpiles away from waterways
- Segregate material by type and clearly demarcate the stockpiling area to reduce the risk of cross contamination
- Implement appropriate WHS management measures in accordance with the CCMP for any contaminated spoil material (refer to Appendix K of the CEMP)
- Schedule deliveries and removal of spoil and incoming soil material to optimise required area for stockpiling considering the construction phases.

Note: where an approved CEMP contains a stockpile management protocol, a material stockpile area located within the construction boundary is not considered to be an ancillary facility (Infrastructure Approval Definitions and glossary)

6.5 Spoil Haulage Routes

All spoil haulage will be delivered and removed from the Project Site via the M5 Motorway, and will be monitored in real time as required by NSW CoA E49 (see Section 7.3.1 of the CTTMP). The records of these movements must be stored electronically into the Spoil Tracking Register (Appendix D) and provided to the Planning Secretary and/or the EPA immediately upon request for a period of no less than one year following the construction completion. Refer to Figure 5.1 for the spoil haulage route for the Project.



Date: 4/04/2023 Path: C:\Users\tcb98137\ARCADIS\30144780 - Env Panel Minor Projects - WI011 CEMP\01 Inputs\04 GIS\A_Current\B_Maps\CTTMP\CTTMP.aprx

Figure 6.1: Haulage routes

7 COMPLIANCE MANAGEMENT

7.1 Roles and Responsibilities

The Project organisational structure and overall roles and environmental responsibilities are outlined in Section 5.1 of the CEMP. Specific responsibilities for the implementation of waste and resource management are detailed in Section 6 of this CWRMP.

7.2 Training

All site personnel (including sub-Construction Contractors) will undergo site induction training relating to the management of waste and resource prior to construction commencing. The induction training will address elements related to waste and resource management, including:

- Existence and requirements of this CWRMP
- Relevant legislation, regulations and EPL conditions (as relevant)
- Incident response, management and reporting
- Environmentally sensitive locations and exclusion zones
- Waste reporting requirements
- Waste minimisation principles
- Requirements of the waste hierarchy
- Waste/ recycle storage requirements
- Best practice energy efficiency
- Equipment start-up and shut-down procedures
- Location of refuse and recycling bins
- Other specific responsibilities for waste and reuse, and energy management.
- All requirements of Appendices contained within this CWRMP.

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 or those undertaking an activity with a high risk of environmental impact. Site personnel will undergo refresher training at not less than six monthly intervals.

Daily pre-start meetings conducted by the Construction Contractor Site Supervisor will inform the site workforce of any environmental issues relevant waste and resource management that could potentially be impacted by, or impact on, the day's activities.

Further details regarding staff induction and training are provided in Section 5.2 of the CEMP.

7.3 Monitoring and Inspections

Inspections of sensitive areas and activities with the potential to be impacted by waste material will occur for the duration of the construction phase of the Project.

Requirements and responsibilities in relation to monitoring and inspections are documented in Section 7.1 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, State and Commonwealth CoA and other relevant approvals, licenses and guidelines.

Audit requirements are detailed in Section 7.3 of the CEMP.

7.5 Reporting and Identified Records

Reporting requirements and responsibilities are documented in Section 7.4 of the CEMP.

Specific reporting requirements associated with the CWRMP are outlined in Table 7.1. The Construction Contractor may consolidate the Waste Management Register and Spoil Tracking Register, however must include all relevant information for either imported waste and spoil.

Table 7.1: Reporting requirements relevant to waste and resource management

Report	Frequency	Responsibility
Waste Management Register Records details of waste types, volumes and destinations for disposal or reuse, including details relating to records confirming the legal transport, treatment and disposal of wastes, and records of waste contractor licences (such as EPA permissions) and waste exemption documentation	Throughout construction and as required	Construction Contractor Site Supervisor and Site Engineer
Spoil Tracking Register Records details of imported spoil, type, classification, volume, location including records of waste contractor licences (such as EPA permissions) and waste exemption documentation.	Throughout construction as required	Construction Contractor Site Supervisor and Site Engineer
National Greenhouse and Energy Reporting Reporting of waste and energy will be undertaken in accordance with legislative requirements under the NGER Act.	Monthly	Construction Contractor Environmental Advisor
Waste Service Provider Reports Service provider waste reports provided to the Construction Contractor	Monthly	Waste Contractor/ Service Provider

The Construction Contractor will be required to maintain accurate records substantiating all construction activities associated with the Project or relevant to the State and Commonwealth CoA, including measures taken to implement this CWRMP. Records will be made available to the DPE and DCCEE upon request, within the timeframe nominated in the request.

7.5.1 Waste Management Register

Details of waste types, volumes and destinations will be recorded in the Waste Management Register. A template Waste Management Register is included in Appendix CC. The Waste Management Register will detail the following:

- The quantity of each type of waste generated including its classification and source location (recorded using latitude and longitude coordinates)
- The destination location/s for all wastes generated during construction
- The quantities of any waste types imported onto any Project Site, including their classification and emplacement location (recorded using latitude and longitude coordinates)

- The quantities and types of wastes that are subject to a Resource Recovery Order and/or Exemption
- Waste management facility name and licence number
- Disposal records demonstrating that receiving facilities have lawfully accepted the waste type.

The Construction Contractor Site Supervisor and Site Engineer will ensure:

- All material that is imported is tracked and recorded via the Waste Management Register
- Collect and keep legible copies of all receipts and/or weighbridge dockets from transporters and/or contractors in relation to disposal of waste from the premises.

The Waste Management Register will be made available to the Planning Secretary and EPA on request.

7.5.2 Spoil Tracking Register

Please refer to Section 6 for management of spoil. A template Spoil Tracking Register is included in Appendix D. The Spoil Tracking Register will detail that following:

- Date
- Time in and out of truck hauling imported spoil
- Truck registration number
- Source of imported spoil
- Material type and classification
- Details of the statement of compliance under the ENM Order
- Volume of imported spoil
- Location of stockpiled imported spoil
- Location of final destination of imported spoil
- Details of any sampling performed for purposes of certification.

The Construction Contractor Site Supervisor and/or Site Engineer will ensure:

- All spoil that is imported and recorded via the Spoil Tracking Register
- This register will be collected and keep legible copies of all receipts and/or weighbridge dockets from transporters, and/or contractors in relation to disposal of spoil from the premises.

The Spoil Tracking Register will be made available to the Planning Secretary and EPA on request.

7.6 Incidents

It is the responsibility of all personnel to report any incident in accordance with the incident management procedures detailed to Section 6.1 of the CEMP.

7.7 Complaints

Complaints will be managed as soon as possible in accordance with the requirements of the Community Communication Strategy (CCS) and Complaints Management System developed in accordance with NSW CoA B7 and B8 respectively. Complaints will be managed in accordance with Section 5.4.3 of the CEMP and CCS.

7.8 Non-Compliances and Corrective Actions

Non-compliance may be identified via internal and external audits, site monitoring, inspections and observations, environmental incidents and emergencies, complaints and management reviews.

Non-compliance and resulting corrective actions will be managed in accordance with Section 7.2 of the CEMP.

8 REVIEW AND IMPROVEMENT

8.1 Continuous Improvement

Continuous improvement of this CWRMP 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 and through SMART principles. 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-compliances and deficiencies
- Develop and implement a plan of corrective and preventative action to address any non-compliances 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.

Project environmental risks will be identified and included in the risk register and appropriate mitigation measures implemented throughout the construction of the Project as part of the continuous improvement process.

The process for ongoing risk identification and management during construction is outlined in Section 4.2 and Appendix C of the CEMP.

8.2 CWRMP Update and Amendment

The processes described in Section 7.5 of the CEMP may result in the need to update or revise this CWRMP. This will occur as needed.

Any revisions to the CWRMP will be endorsed and / or approved in accordance with the process outlined in Section 1.5 of the CEMP.

A copy of the updated Plan and changes will be distributed to all relevant stakeholders in accordance with the approved document control procedure.

APPENDIX A Environmental Representative Endorsement



20 October 2023

Our Ref: 2205 L11

National Intermodal Corporation
Senior Manager – Planning and Environment
Attention: Westley Owers

Dear Westley

**SSI 10053 - Moorebank Avenue Realignment Works (MARW)
Environmental Representative (ER) - Endorsement of the Construction Waste and
Resource Management Plan**

Pursuant to SSI10053 Conditions of Approval (CoA) A31(d) and C9, I confirm that I have reviewed and endorsed the following documentation as being consistent with the conditions of approval and relevant undertakings made in the documents listed in Condition A1:

- National Intermodal Corporation, Moorebank Avenue Realignment Works, Appendix F, Construction Waste and Resource Management Plan, Version D, dated 31 March 2023 (CWRMP).

In accordance with CoA A6, and as agreed by a nominee of the Planning Secretary (Department of Planning and Environment letter dated 22 November 2022, Reference: SSI-10053-PA-4), the CWRMP includes:

- Construction Waste and Resource Management Plan (REMM WAS01)
- Spoil Management Plan (REMM WAS02)

In accordance with CoA C8, the CWRMP was expressly nominated by a nominee of the Planning Secretary to be endorsed by the ER (Department of Planning and Environment letter dated 22 November 2022, Reference: SSI-10053-PA-4).

Yours sincerely,

Maurice Pignatelli
Environmental Representative – MARW Project
OptimE Pty Ltd



APPENDIX B Secondary CoA and REMMs

B1: Secondary CoA relevant to the development of this CWRMP

No.	Requirements	Document reference
E71	Waste management during construction and operation must be considered against a hierarchy of the following order:	Section 5.1
	(a) Avoidance of waste generation	Section 5.1.1
	(b) Re-use, recycle or recovery	Section 5.1.2
	(c) Treatment or disposal	Section 5.1.3
E72	Waste importation and the storage, treatment, processing, reprocessing or disposal of waste must comply with the conditions of an EPL for the SSI where one applies, or be undertaken in accordance with an applicable Resource Recovery Exemption or Order, issued under the Protection of the Environment Operations (Waste) Regulation 2014, as the case may be.	Section 5.3 Section 6.1 Table 5.4 WR4
E73	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 the waste.	Section 5.3 Section 6.1 Table 5.4 WR5
E74	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 Table 5.4 WR3 Table 7.1

B2: Secondary REMMs relevant to the development of this CWRMP

No.	Requirements	Document reference
BIO17	Appropriate disposal and management of weeds during clearing works.	Table 5.4 WR6 CBMP Table 6.2 MM27
BIO18	Waste to be stored appropriately in inaccessible bins and disposed off-site.	Section 5.4 Section 0 Table 5.4 WR1, WR6
BIO19	No waste will be left outside in open areas accessible to feral animals.	Section 0 Table 5.4 WR6 CBMP Table 6.2 MM25
CON04	Targeted investigation of any areas of soil/sediment disturbance proposed as part of the development (i.e. assessment of soils/sediments required to be excavated to assess waste classification or re-use suitability).	CCMP Section 6.1
WAR05	Stormwater re-use is to be prioritised over potable water for site water usage where possible.	Table 5.4 WR12
AIR19	Trips and trip distances will be controlled and reduced where possible, for example by coordinating delivery and removal of materials to avoid unnecessary trips.	Table 5.4 WR11 Section 6.2.1 of the CTTMP
AIR24	Policies will be implemented which aim to minimise emissions from the vehicles visiting the Project, such as queue management, and restrictions on idling and the use of auxiliary equipment.	Table 5.4 WR11 Table 6.1 of the CTTMP

No.	Requirements	Document reference
SUS01	Excavated material will be reused of as much as possible from cut activities associated with the Project.	Section 5.1.2 Section 5.5.1 Section 6.2
SUS02	Recycled materials and sources such as crushed pavement for select fill, fly ash as an additive to concrete production and reclaimed water will be used wherever possible.	Section 5.5.1 Table 5.4 WR9
SUS03	The Project will explore options for green energy usage for ancillary facilities and measures to minimise greenhouse gas emissions.	Table 5.4 WR11 Section 5.5.3
WAS03	Suitable areas will be identified to allow for contingency management of unexpected waste materials, including contaminated materials. Suitable areas will be required to be hardstand or lined areas that are appropriately stabilised and bunded, with sufficient area for stockpile storage.	Section 6.4

APPENDIX C Waste Management Register Template

SSI-10053 Moorebank Avenue Realignment Works

Date / time	Source Location (Lat/Long)	Waste classification	Description of waste (e.g. concrete, asphalt, vegetation)	Amount of spoil / waste collected (tonnes)	Transporter (name and waste transport licence, if applicable)	Destination Location (Lat/Long)	Waste use (reused, recycled, stockpiled or disposed)	Waste management facility (name and licence number)	Invoice no. / tip docket reference

APPENDIX D Spoil Tracking Register Template

Date / Time	Truck Registration #	Volume of Material (tonnes)	Source of Material	Material description	Waste classification	Location of stockpile (Lat/Long)	Final destination location (Lat/Long)	Sampling Details