PROJECT MANAGEMENT PLAN

Waste Management Plan

Sydney Metro West – Western Tunnelling Package

Issue Date: JULY 2026

Document Details

Document Title	**Waste Management Plan**
Project Name	**Sydney Metro West – Western Tunnelling Package**
Client	**Sydney Metro**
GA Project No.	**00013/13065**
Document Reference No.	**SMWSTWTP-GLO-1NL-NL000-WM-PLN-000002**
Principal Contractor	**Gamuda Engineering (Australia)**
ABN	**36 636 433 522**
Project Address	**2 Unwin Street, Rosehill, NSW 2142**

Document Authorisation

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[redacted]		
Signature	Signature	Signature
16 July 2026	September 2026	September 2026
Date	Date	Date

TABLE OF CONTENTS

Document Details 2
Document Authorisation 2

DOCUMENT CONTROL 5
Revision History 5
Terms and Definitions 6

1 INTRODUCTION 8
1.1 Project Description 8
1.2 Context 10
1.3 Environmental Management System Overview 10
1.4 Consultation Requirements 10
1.5 Certification and Approval 10

2 PURPOSE AND SCOPE 12
2.1 Purpose 12
2.2 Scope 12

3 OBJECTIVES AND TARGETS 13

4 ENVIRONMENTAL REQUIREMENTS 16
4.1 Legislation and Standards 16
4.2 Approvals, Licenses and Permits 17
4.3 IS Rating Tool Requirements 17

5 ASPECTS AND IMPACTS 18
5.1 Waste Generation 18
5.2 Waste Predictions 20
5.3 Potential Impacts 20

6 ENVIRONMENTAL CONTROL MEASURES 22
6.1 Standard Management and Mitigation Measures 22
6.2 Design for Resource and Waste Efficiency (elimination/reduction) 25
6.3 Onsite Reuse, Recycling and Disposal Initiatives 25
6.3.1 Waste Reuse Measures 25
6.3.2 Waste Recycling Measures 26
6.3.3 Waste Disposal and Removal Measures 26
6.4 Waste Hierarchy 26
6.5 Waste Management 27
6.5.1 Classification of Waste Streams 27
6.5.2 Liquid Waste 30
6.5.3 Hazardous Building Materials 31
6.5.4 Waste Exemptions 31
6.6 On-site Handling, Transportation and Disposal 31
6.6.1 On-site Handling 31
6.6.2 Transportation 32
6.6.3 Receiving Facilities 32
6.7 Material Tracking 32

6.8 Record Keeping 32

7 COMPLIANCE MANAGEMENT 33
7.1 Roles and Responsibilities 33
7.2 Training 34
7.3 Monitoring, Inspections and Reporting 34
7.3.1 Waste Inspections 34
7.3.2 Monitoring of Records 35
7.3.3 Reporting 35
7.4 Auditing 37
7.5 Environmental Incidents 37
7.6 Complaints Register 37

8 REVIEW AND IMPROVEMENT 38
8.1 Continuous Improvement 38
8.2 Document Updates 38
8.3 Distribution 38

ATTACHMENTS 39
Attachment 1 – Compliance Matrix 39
Attachment 2 - Waste Tracking Register Template (GA-FRM-HSE-153 Waste Tracking Register) 46

DOCUMENT CONTROL

The current document version number and date of revision are shown in the document footer. All changes made to the Management Plan during its implementation on a live project are to be recorded in the amendment tables below.

Revision History

Revision	Date	Description of changes	Prepared by	Approved by
A	20/12/2021	Early Works Submission	[redacted]	[redacted]
B	01/03/2022	Revised draft for submission	[redacted]	[redacted]
C	12/04/2022	Final draft for submission	[redacted]	[redacted]
D	26/10/2023	Update for S.O.P scope and Annual Review	[redacted]	[redacted]
E	29/11/23	Update to Rev D following SM/ER Comments	[redacted]	[redacted]
F	20/11/2024	Annual review and update of the WMP	[redacted]	[redacted]
G	28/04/2025	Update following SM/ER Comments	[redacted]	[redacted]
H	16/07/2026	Annual Review – No changes	[redacted]	[redacted]

Terms and Definitions

Term	Definition
ASS	Acid Sulfate Soil
CEMF	Construction Environmental Management Framework
CEMP	Construction Environmental Management Plan
CERT	Carbon Estimate Reporting Tool
CSSI	Critical State Significant Infrastructure
CT	Contaminant Thresholds
WMP	Construction Waste Management Plan
DF	Deconstruction and Flexibility
DPHI	Department of Planning Housing and Infrastructure (Formerly DPE)
EA	Environmental Advisor
ECM	Environmental Control Measures
EIS	Environmental Impact Statement
EMS	Environmental Management System
ENM	Excavated Natural Material
EP	Waste Efficient Procurement
EPA	Environmental Protection Authority
EPL	Environmental Protection License
EP&A	NSW Environmental Planning and Assessment Act 1979
ER	Environmental Representative
ESCP	Erosion and Sediment Control Plan
ESR	Environmental Site Representative
EWMS	Environmental Work Method Statement
GLC	Gamuda Engineering (Australia) – Laing O'Rourke Consortium
GSW	General Solid Waste
IS	Infrastructure Sustainability
ISC	Infrastructure Sustainability Council
MCoA	Ministers' Condition of Approval
MO	Materials Optimisation
NABERS	National Australian Built Environment Rating System
OSC	Offsite Construction
PASS	Potential Acid Sulfate Soil
POEO	Protection of the Environment Operations Act 1997 (NSW)
RAP	Remediation Action Plan
REMM	Revised Environmental Mitigation Measures
RR	Resource Recovery
RSW	Restricted Solid Waste

Term	Definition
SCC	Specific Contaminant Concentrations
SM	Sydney Metro
TCLP	Toxicity Characteristics Leaching Procedure
TfNSW	Transport for New South Wales
VENM	Virgin Excavated Natural Material
WRAPP	Waste Reduction and Purchasing Policy
WTP	Sydney Metro West Western Tunnelling Package

1 INTRODUCTION

1.1 Project Description

The scope of the work being undertaken under the Sydney Metro West Western Tunnelling Package works (WTP) (the Project) includes but is not limited to, the following:

- Westmead Station box excavation, including temporary support, stub tunnels, partially mined station cavern and crossover cavern including permanent lining and support
- Parramatta Station, including excavation of station box and associated support
- Clyde Maintenance and Stabling Facility (MSF), including permanent dive structure, portal, spur running tunnels, spur tunnel junction cavern, bulk earthworks, civil structures, utilities corridor, road crossing and creek diversion
- Rosehill Services Facility, including shaft excavation, permanent lining, and lateral support
- A precast segment manufacturing facility at Eastern Creek
- Demolition and site clearance works
- Tunnelling between Sydney Olympic Park (SOP) and Westmead. Tunnelling will be undertaken by placing the tunnel boring machines (TBMs) at the Rosehill Services Facility box and retrieved out at the SOP Station Box and then placed back at the Rosehill Services Facility and retrieved at the Westmead Station Box. Some surface works will be required for site establishment and to facilitate TBM retrieval and relaunching, such as crane set up, spoil handling and removal, and plant and material deliveries. Station box works would also be required to facilitate TBM retrieval and re-launching.

Refer to Figure 1 for the location of the WTP project.

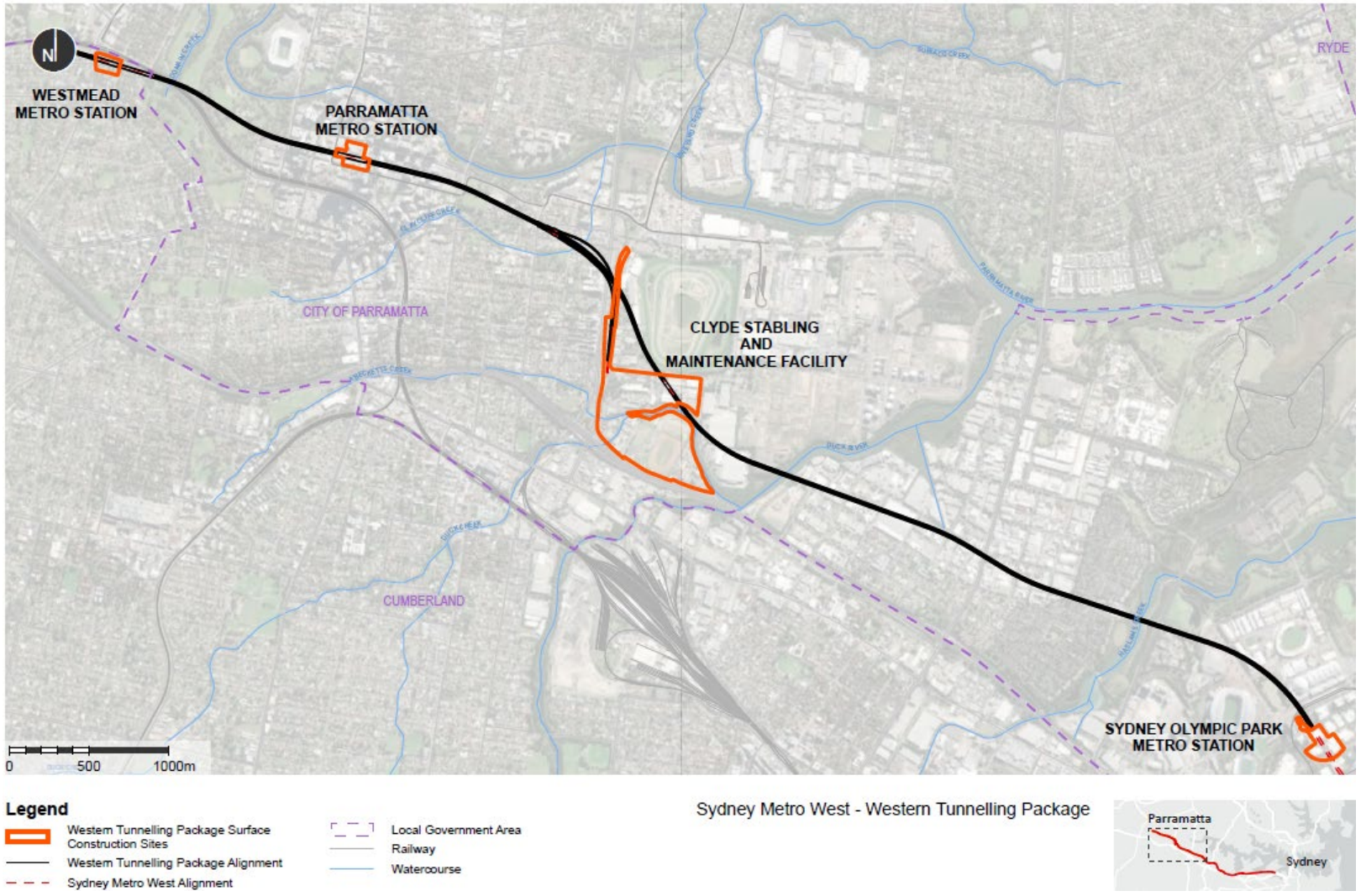

Figure 1: WTP Project Location

1.2 Context

The Construction Environmental Management Plan (CEMP) and sub-plans have been developed for the delivery of the WTP. It will be delivered by Gamuda Australia Laing O'Rourke Consortium (GLC). This Waste Management Plan (WMP) forms part of the CEMP (GA-PLN-ENV-001-Construction Environmental Management Plan).

Sydney Metro West – Westmead to The Bays Concept and Stage 1 received planning approval on 11 March 2021 (SSI 10038). The Project comprises the WTP, which is the western portion of Stage 1 of SSI 10038, from Sydney Olympic Park to Westmead. This WMP has been prepared to address requirements of the Minister's Conditions of Approval (MCoA), Revised Environmental Management Measures (REMMs) listed in the Sydney Metro West – Submissions Report, dated 20 November 2020, the Construction Environmental Management Framework (CEMF) requirements and all applicable legislation as they relate to the Project.

1.3 Environmental Management System Overview

An overview of the Environmental Management System (EMS) is provided in the CEMP Section 4.

Key interactions for this sub-plan with other management plans in the EMS include:

- Air Quality Management –Plan (Sub-Plan)
- Spoil Management Plan (Sub-Plan)
- Flora and Fauna Management Plan (Sub-Plan)
- Soil and Water Quality Management Plan (Sub-Plan)
- Sustainability Management Plan.

1.4 Consultation Requirements

In accordance with MCoA C5, consultation with relevant government agencies is not required for this WMP.

1.5 Certification and Approval

Sydney Metro West – Westmead to The Bays Concept and Stage 1 was subject to environmental impact assessment under the NSW Environmental Planning and Assessment Act 1979 (EP&A Act). It was also declared a Critical State Significant Infrastructure (CSSI) by the Minister for Planning & Public Spaces (the Minister).

An Environmental Impact Statement (EIS) has been prepared under Division 5.2 of the EP&A Act and in accordance with Part 3 of Schedule 2 of the Environmental Planning and Assessment Regulation 2000. Following exhibition of the EIS, an Amendment Report and Submissions Report were also prepared. After an assessment was carried out, the Minister determined that the Sydney Metro West – Stage 1 would be approved subject to conditions.

- Modification 1 of the Project Approval, which sought to amend Conditions of Approval A11d, C10 and D25 and propose a new Condition A39.1, was approved on 28 July 2021.
- Modification 2 of the Project Approval, relating to the relocation and extension of the Rosehill dive structure and realignment of Kay Street and Unwin Street, was approved on the 3 June 2022.
- Modification 3 of the Project Approval, to amend Conditions of Approval C-B10, D10, D11, D18, D37, D63 and D66, was approved on the 4 July 2022.

- Modification 4 of the Project Approval, to amend Conditions of Approval D26 and D122 was approved on the 22 December 2022.
- Modification 5 of the Project Approval sought an administrative change to the total amount of Plant Community Type 920 (PCT 920) that could be removed, increasing the clearing limit by an additional 0.40 ha. This Modification also sought to amend Conditions of Approval D4, D6 and add D6A and D6BIt was approved on 20 September 2023.
- Modification 6 of the Project approval, to amend Conditions of Approval C-B8, A16, A17, A21, A30, D51, D71, D111 and D117, and was determined on 8 November 2024.

The planning approval (Infrastructure Approval SSI 10038) and related environmental assessment documents are located at: https://www.planningportal.nsw.gov.au/major-projects/project/25631.

The WMP (Revision C) was endorsed by the ER on 26 April 2022, and submitted to DPE for information on 4 May 2022, no later than one (1) month before the commencement of construction (19 July 2022).

Any minor amendments approved by the ER, will be implemented for the duration of construction.

2 PURPOSE AND SCOPE

2.1 Purpose

The purpose of this WMP is to describe the waste management approach that will be employed by GLC employees and its sub-contractors during construction of the Project. This sub-plan forms an integral part of the project CEMP and GLC's EMS. It applies to all works associated with Project works and establishes the environmental management controls to be implemented by GLC employees and its sub-contractors.

This WMP will address the waste requirements of the:

- Sydney Metro Construction Environmental Management Framework (CEMF)
- Minister for Planning and Public Space's Conditions of Approval for the Project (MCoA)
- Revised Environmental Mitigation Measures (REMM)
- Infrastructure Sustainability Council (ISC) Infrastructure Sustainability (IS) rating tool.
- SSI Modifications - Modification 1 Administrative Modification
- SSI Modifications - Modification 2 Clyde Stabling and Maintenance Facility
- SSI Modifications - Modification 3 Administrative Modification
- SSI Modifications - Modification 4 Administrative Modification
- SSI Modifications - Modification 5 Administrative Modification
- SSI Modifications – Modification 6 Administrative Modification

2.2 Scope

This sub-plan outlines the mitigation and management measures that GLC will use to address potential waste impacts during design and construction of the Project, while complying with relevant approval, statutory and contract requirements.

Specifically, this sub-plan addresses environmental aspects and impacts that relate to:

- Excavations
- Importing/exporting fill material
- Vegetation removal
- Transport of waste
- Stockpiling material
- Disturbance of contaminated soils
- Demolition of structures and site clearance
- Disposal of contaminated material
- Establishment of Water Treatment Plants
- Use of office amenities
- Plant and equipment maintenance.

3 OBJECTIVES AND TARGETS

The key objective of this sub-plan is to outline the approach to managing waste in accordance with Project Requirements, including the MCoA, REMMs, CEMF requirements and EPL requirements. This will also include the IS rating tool requirements for material consumption and waste management. Objectives and targets applicable to construction waste management are detailed in Table 1.

Table 1: Objectives and Targets

Objective	Target	Performance Indicators
Ensure waste is minimised throughout the project life cycle	• Implementation of waste minimisation initiatives where practical	Waste Tracking Register, Compliance Reporting
Ensure waste management strategies are implemented in accordance with the Waste Avoidance and Resource Recovery Act 2001 management hierarchy as follows: • Avoidance of unnecessary resource consumption • Resource recovery (including reuse, reprocessing, recycling and energy recovery); and • Disposal.	Implementation of waste minimisation initiatives where practical • Waste products are recovered and reused on site where practical • Meeting the following IS Was-2 targets: – 100 % of useable spoil is beneficially reused in accordance with the spoil use hierarchy. – 95% of inert and non-hazardous construction waste is recycled. – Waste streams will be segregated to avoid cross-contamination of materials and maximise recycling opportunities. • At least 60% of office waste is recycled or alternatively beneficially reused.	Waste Tracking Register, Compliance Reporting
Ensure all waste is assessed, classified, managed, transported, and disposed of in accordance with the Waste Classification Guidelines.	• Quantify 100% of waste in waste management reports. • Transfer certificates retained for 100% of prescribed wastes	Waste Tracking Register, Compliance Reporting, audits
Ensure Waste streams are segregated to avoid cross-contamination of materials and maximise reuse and	• All waste generated during construction is classified in accordance with the EPA's Waste Classification Guidelines, with appropriate records and disposal dockets retained for audit purposes.	Regular monitoring, audits, Compliance Reporting, audits

Objective	Target	Performance Indicators
recycling opportunities.	• Identify and implement pollution control initiatives in design and construction which target zero major pollution incidents.	
Ensure spoil generated during the construction is effectively stored, handled, treated (if necessary), reused, and/or disposed of lawfully and in a manner that protects environmental values.	• All waste generated during construction is classified in accordance with the EPA's Waste Classification Guidelines, with appropriate records and disposal dockets retained for audit purposes. • Identify and implement pollution control initiatives in design and construction which target zero major pollution incidents.	Waste Tracking Register, Compliance Reporting, audits
Ensure importation and exportation of waste complies with the relevant legislation, approvals and licenses	• All waste generated during construction is classified in accordance with the EPA's Waste Classification Guidelines, with appropriate records and disposal dockets retained for audit purposes. • Identify and implement pollution control initiatives in design and construction which target zero major pollution incidents.	Compliance Reporting
Guide further understanding of where potential for hazardous or special waste material is, and ensure it is handled and managed in accordance with relevant legislation, codes of practice and Australian standards.	No loss of hazardous materials to the environment as a result of works	EPA online waste tracking system, audits
Compliance with the MCoAs, REMMs, CEMF requirements and relevant legislation as it applies to the Project	Full compliance	Compliance Reporting
Compliance – permits/licences	Full compliance	Compliance Reporting
Implementation of performance outcomes,	Full compliance	Compliance Reporting

Objective	Target	Performance Indicators
commitments and mitigation measures specified in planning approval documents		
Meet IS rating tool requirements and objectives applicable to waste management detailed in the Sustainability Management Plan	Level 2 for credit IS Mat-1 'Materials footprint measurement and reduction', demonstrating a 15% reduction in materials lifecycle impacts compared to a base case footprint. Level 3 for credit IS Was-2 ‘Diversion from landfill’, demonstrating a diversion of 100% of spoil volume, >90% of inert and non-hazardous waste volume, and >60% of office waste material volume. ● Negotiate and implement packaging take-back arrangements with suppliers. ● Use reusable formwork where practicable. ● Use compostable or reusable temporary erosion control devices where practicable	Monthly Waste Reporting

4 ENVIRONMENTAL REQUIREMENTS

4.1 Legislation and Standards

GLC obligations include satisfying the requirements and complying with the provisions of the relevant legislation, guidelines, and policies, as well as international and Sydney Metro's standards. Details are provided in Table 2.

Table 2: Shows the legislation, standards, policies, and guidelines relevant to the Project.

Legislation	*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* *Protection of the Environment Operations (Waste) Amendment Regulation 2019* *Contaminated Land Management Act 1997 (CLM Act)* *Environmentally Hazardous Chemicals Act 1985* *Waste Avoidance and Resource Recovery Act 2001 (WARR Act)* *Work Health and Safety Act 2011* *Work Health and Safety Regulation 2017.*
Standards	AS2601:1991 Demolition of Structures AS 4361.2 2017 Part 2: Lead Paint Management in residential, public and commercial buildings
Guidelines and Specifications	Waste Classification Guidelines, Part 1: Classifying Waste (NSW EPA, November 2014) Waste Classification Guidelines, Part 4: Acid Sulfate Soils (NSW EPA, November 2014) NSW Government Resource Efficiency Policy (OEH, 2014) (Refer to Carbon and Energy Management Plan) NSW Waste Avoidance and Resource Recovery Strategy (2007) Best Practice Waste Reduction Guidelines for the Construction and Demolition Industry (tools for Practice), Natural Heritage Trust, 2000 Environmental Best Practice Guidelines for Concreting Contractors (Department of Environment and Conservation, 2004) Local government guidelines for waste/recycling as appropriate Australian Dangerous Goods Code 7th Edition (ADG7) (National Transport Commission, October 2011) TfNSW Standard Requirements General resource recovery exemptions under Part 9, Clause 91 and 92 of the Protection of the Environment Operations (Waste) Regulation 2014 NSW Code of Practice: Demolition Work, 2016 NSW Code of Practice: How to Manage and Control Asbestos in the Workplace, 2020 Polychlorinated Biphenyls Management Plan, Revised Edition April 2003. NSW Asbestos Waste Strategy 2019-2021 (NSW EPA, 2019) Code of Practice – How to Safely Remove Asbestos (SafeWork NSW, 2019)

4.2 Approvals, Licenses and Permits

This WMP has been developed to satisfy the requirements of MCoA C1. A full list of applicable MCoA, REMMs, CEMF requirements and EPL condition requirements is provided in Attachment 1.

Any conditions or requirements prescribed by the EPL as they relate to waste management are listed in Attachment 1 and have been considered in the development of this sub-plan.

In the Assessment Report for Sydney Metro West - Stage 1, DPHI considers that the EIS has adequately assessed construction waste issues and that they can generally be managed through the MCoA, REMMs, CEMF requirements and EPL condition requirements in Attachment 1. Therefore, no further assessment of construction waste impacts has been undertaken for this WMP.

The Project's construction activities are regulated by EPL 21676 issued by the EPA. and are included in Attachment 2 of the CEMP.

4.3 IS Rating Tool Requirements

Table 3: IS rating tool requirements applicable to waste management

ID	IS Rating Tool Requirement	Document Reference
Was-1 L1	• Predictions for waste quantities and types have been developed for construction and operation • Measures to minimise waste during construction and operation have been identified and implemented • Monitoring of all wastes is undertaken during construction	Section 5.2, Section 6.1, Section 6.2, and Section 7.3
Was-1 L2	• Requirements for L1 are achieved. • Waste monitoring and management has been managed, reviewed or audited by a suitably qualified professional. • Waste handling and disposal/recycling all the way to final destination has been audited at appropriate intervals	Section 7.4
Was-2 L1	• 70 to <80% of spoil volume diverted • 25 to <50% of volume of inert and non-hazardous waste diverted • 25 to <40% by volume of office waste material diverted	Section 7.3.2
Was-2 L2	• 80 to <100% of spoil volume diverted • 50 to 90% of by volume of inert and non-hazardous waste diverted • 40 to 60% by volume of office waste material diverted	Section 7.3.2
Was-2 L3	• 100% by volume of spoil diverted • >90% by volume of inert and non-hazardous waste diverted • >60% by volume of office waste material diverted	Section 7.3.2
Mat-1 L1	• Monitoring and modelling of materials lifecycle impacts is undertaken using the Materials Calculator (or other suitable Lifecycle Assessment technique) across the infrastructure lifecycle.	Section 7.3.2
Mat-1 L2	Requirements for L1 have been achieved. Monitoring and modelling demonstrates a reduction in materials lifecycle impacts compared to a base case footprint up to 15%.	Section 6.1

5 ASPECTS AND IMPACTS

The key aspects and potential impacts associated with the consumption of materials and generation of waste during construction are detailed in this section. Refer to the Environmental Risk Register included in Attachment 3 of the CEMP for the environmental risks identified as they relate to waste management. These identified aspects, impacts and risks have been taken into account in the development of the Project waste management strategy detailed in this sub-plan.

5.1 Waste Generation

The waste streams anticipated to be generated from construction of the Project are summarised in Table 4.

Table 4: Indicative construction waste streams

Activity	Waste Stream	Anticipated Waste Classification	Document where waste stream is addressed
Demolition of buildings and other structures	General demolition Waste	General Solid Waste (GSW) Non-Putrescible	This WMP
	Hazardous waste including asbestos	Hazardous Waste Special Waste	Hazardous and Special waste (including asbestos) is addressed in the Project Safety Management documentation and will be managed in accordance with Section 6.5
	Recoverable materials	Recoverable materials to be recycled include for example, steel, timber, concrete, glass, brick, plasterboard, plastic etc.	This WMP The SpMP
Clearing and grubbing of vegetation, or landscaped areas	Vegetation waste	GSW (Non-Putrescible)	This WMP
Tunnelling, excavation, and general earthworks	Spoil	Virgin Excavated Natural Material (VENM)/ Excavated Natural Material (ENM) GSW (Non-Putrescible) Special waste	Spoil from station excavations and general earthworks is addressed in the Spoil Management Plan. Contaminated soil including PASS and

Activity	Waste Stream	Anticipated Waste Classification	Document where waste stream is addressed
		Restricted solid waste (RSW) Hazardous waste	ASS is addressed in the Soil and Water Management Plan.
	TBM wastes	VENM/GSW (Non-putrescible)	This WMP.
	Wastewater	Recycled/treated or clean water (for discharge)	Wastewater to be discharged is addressed in the Groundwater Management Plan and Soil and Water Management Plan.
	Water Treatment Plant solid waste	Variable – dependent on Waste Classification	This WMP
Dust suppression, wash down of plant and equipment, and staff amenities at construction sites	Wastewater	Recycled/treated or clean water (for discharge)	Wastewater to be discharged is addressed in the Groundwater Management Plan and Soil and Water Management Plan.
		Liquid waste	This WMP
General construction and resource use	General construction and demolition wastes	GSW (Non-Putrescible)	This WMP
		Spoil	Spoil Management Plan
	Recoverable materials	Recoverable materials to be recycled include for example, steel, timber, concrete, glass, brick, plasterboard, plastic etc.	This WMP The SpMP
Maintenance of plant, vehicles, and equipment	Mechanical wastes	Hazardous waste	Hazardous and Special waste (including oils and greases)

Activity	Waste Stream	Anticipated Waste Classification	Document where waste stream is addressed
			is addressed in the Project Safety Management Documentation and will be managed in accordance with Section 6.5
		Liquid waste	This WMP
Site offices and cribs rooms	General Waste	GSW (Non-Putrescible)	This WMP
		GSW (Putrescible)	This WMP
	Recoverable materials	Recoverable materials include paper, cardboard, plastic, coffee pods, organics etc.	This WMP The SpMP

5.2 Waste Predictions

The indicative quantities of waste that will be generated on the Project for each main waste streams is as follows:

- Construction and demolition waste: 20,080.58 tonnes.
- Reusable spoil (VENM, ENM): 2,173,570.91 tonnes.
- Office waste (e.g., Paper, general waste, recycling, toner): 440.80 tonnes.
- General solid waste: 138,956.76 tonnes.
- Contaminated spoil waste: 27,729.31 tonnes.
- Wastewater: 2,850ML of wastewater
- Vegetation waste: Yet to be determined

While spoil has the potential to be the largest waste stream for this project, initiatives and targets focusing on spoil reuse will lead to a significant reduction in spoil as a waste stream. Refer to the Spoil Management Plan for further information around management including reuse and disposal as necessary.

5.3 Potential Impacts

Potential impacts could result from poor waste management. These may include:

- Weed infestation from dispersal of seed during vegetation clearing activities

- Excessive volumes of waste directed to landfill due to excessive resource consumption, inadequate recycling and reuse, classification, and disposal of waste
- Contamination of soil, surface and / or groundwater from the inappropriate storage, transport, and disposal of liquid and solid waste
- Waste potentially being unnecessarily directed to landfill due to the inadequate collection and/or incorrect classification which would increase the demand for landfill capacity within the Sydney region
- Potential increase in vermin from the incorrect storage, handling, and disposal of putrescible waste from construction sites
- Potentially excessive amounts of materials being ordered, resulting in a large amount of left-over, unused resources
- Lack of identification of feasible options for recycling or reuse of resources
- Potential cumulative impacts as a result of temporary increases in resource demand and availability, waste and spoil generation
- Temporary impacts to reuse and disposal opportunities within the Sydney metropolitan region.

The impacts outlined above are typical of an infrastructure construction project and are manageable through the implementation of the mitigation measures detailed in Section 6.

6 ENVIRONMENTAL CONTROL MEASURES

6.1 Standard Management and Mitigation Measures

Specific measures and requirements to meet the objectives of this sub-plan and to manage impacts on construction waste are outlined in Table 5, with more detail provided in sections 6.2 to 6.8. These measures have been developed in line with the requirements in the EIS. As a minimum, the following will be incorporated at each construction site and documented on the Environmental Controls Map in Attachment 8 of the CEMP, where applicable.

Table 5: Environmental Mitigation and Management Measures

Item	Mitigation and management measures and Project site requirements	Responsibility	Timing	Reference
ESL – Environment & Sustainability Lead, SEA – Senior Environmental Advisor, EA – Environmental Advisor, CM – Construction Manager, SS – Site Supervisor				
1.	Should unexpected contaminated waste or asbestos (or suspected contaminated waste or asbestos) be excavated or otherwise discovered during construction, the Unexpected Contaminated Land and Asbestos Finds Procedure will be followed (Attachment 4 of the Soil and Water Sub-plan). The Unexpected Contaminated Land and Asbestos Finds Procedure will be implemented for the duration of construction.	SEA/EA/CM/SS	During construction	MCoA D78
2.	All Heavy Vehicles used for spoil haulage will be clearly marked on the sides and rear with the project name and application number to enable immediate identification by a person viewing the Heavy Vehicle standing 20 metres away.	CM/SS	During construction	MCoA A47
3.	The locations of all Heavy Vehicles used for spoil haulage will be monitored in real time and the records of monitoring be made available electronically to the Planning Secretary and the EPA upon request for a period of no less than one (1) year following the completion of construction	CM/SS	During construction	MCoA D83
4.	Opportunities to maximise spoil material removal by non-road methods will be investigated and implemented where reasonably practicable to minimise movements by road.	ESL/SEA/CM	Pre-construction / During construction	MCoA D99
5.	Waste generated during construction and operation will be dealt with in accordance with the following priorities (outlined further in sections 6.2 and 6.3): • Waste generation will be avoided and where avoidance is not reasonably practicable, waste generation will be reduced • Where avoiding or reducing waste is not possible, waste will be re-used, recycled, or recovered	EA/CM/SS	Pre-construction / During construction / Operation	MCoA D111, CEMF 14.1a

Item	Mitigation and management measures and Project site requirements	Responsibility	Timing	Reference
ESL – Environment & Sustainability Lead, SEA – Senior Environmental Advisor, EA – Environmental Advisor, CM – Construction Manager, SS – Site Supervisor				
	• Where re-using, recycling or recovering waste is not possible, waste will be treated or disposed of.			
6.	Waste will only be exported to a site licensed by the EPA for the storage, treatment, processing, reprocessing or disposal of the subject waste, or in accordance with a Resource Recovery Exemption or Order issued under the *Protection of the Environment Operations (Waste) Regulation 2014*, or to any other place that can lawfully accept such waste. This is further detailed in Section 6.6.	CM/SS	During construction	MCoA D113
7.	All waste will be assessed, classified, managed, transported and disposed of in accordance with the EPA's Waste Classification Guidelines, with appropriate records and disposal dockets retained for audit purposes.	EA/CM/SS	During construction	MCoA D114, REMM WR1, CEMF 14.2a(iv), CEMF 14.2d
8.	A hazardous material survey will be completed for those buildings and structures suspected of containing hazardous or special waste materials (particularly asbestos) prior to their demolition. If hazardous waste or special waste (e.g., asbestos) is encountered, it will be handled and managed in accordance with relevant legislation, codes of practice and Australian standards.	SEA/CM	Pre-construction / during construction	REMM WR2
9.	Construction waste will be minimised by accurately calculating materials brought to the site and limiting materials packaging, following the process in Section 6.2.	SEA/CM/SS	Pre-construction / during construction	REMM WR3
10.	Waste streams will be segregated to avoid cross-contamination of materials and maximise reuse and recycling opportunities.	CM/SS/EA	During construction	REMM WR4
11.	A materials tracking system will be implemented for material transferred between Sydney Metro West sites and to offsite locations such as licensed waste management facilities.	EA/CM/SS	During construction	REMM WR5

6.2 Design for Resource and Waste Efficiency (elimination/reduction)

As part of the design process, and during planning for delivery of the Project, Materials efficiency workshops will be held with the design team to identify opportunities to reduce wastage through a more efficient use of raw materials such that waste is eliminated through:

- Materials elimination
- Reduction in material usage
- Material reuse.

These workshops will set the tone for the considerations required during the design phase by identifying existing initiatives and design points at which further optimisation can occur. Such initiatives and design points will include methods for minimising resource use by accurately calculating materials brought to the site and limiting materials packaging. This will assist in predicting waste quantities and types required for construction and operation.

These workshops will be based around identifying opportunities associated with the following principles:

- Reuse and recovery (RR)
- Offsite construction (OSC)
- Materials optimisation (MO)
- Waste efficient procurement (EP)
- Deconstruction and flexibility (DF).

Consideration will be given to the potential reuse of materials. This includes:

- Materials available on site
- Materials available as a result of other contractors' works
- Materials available as an output from construction activities.

Particular consideration will be given to avoiding the production of hazardous waste where practical.

At Design Stage 1, Design Documentation will include evidence of how materials used have been minimised through materials avoidance, reduction, and innovative design.

6.3 Onsite Reuse, Recycling and Disposal Initiatives

6.3.1 Waste Reuse Measures

Every effort will be made to ensure that waste material is seen as a resource and is used, either on-site within the Project or off-site either on other projects or by other persons. The Waste Reuse Principles adopted will for example include:

- Identifying materials for a reuse purpose
- Segregating materials at the source of generation to facilitate reuse, and store or reuse those items, either on-site or off-site
- Re-useable formwork will be used where practicable.
- Compostable erosion and sediment control measures will be used where possible
- Recycled and recyclable materials will be used where possible, without compromise to the structural integrity, longevity and visual quality of materials and structure.

6.3.2 Waste Recycling Measures

Recycling is a process involving the collection and separation of waste materials, which are transformed into useable products. The principles adopted for the Project are:

- Erect signage to encourage the reuse and recycling of recovered waste material
- Identify materials for a recycling purpose
- Sort materials into components/material streams to facilitate recycling. Separation of materials
- Various types and sizes of waste receptacles will be provided to promote separation of materials for ease of reuse/recycling may occur off-site by specialised licensed waste handling contractors
- A waste contractor with access to a sophisticated materials reclamation facility offsite, will be contracted to sort, recycle and manage construction waste removed from site
- Implement packaging take-back initiatives with sub-contractors & suppliers.

GLC will recycle or beneficially reuse 60% of office waste through:

- Onboarding process to include processes and opportunities to maximise office recycling
- Training of all office cleaning staff to ensure waste segregation processes are clearly understood and effective
- No individual under-desk bins
- Clearly signed and strategically placed recycling bins with informative recycling posters in communal kitchen and rest areas
- Conducting office waste audits to identify problematic waste streams
- Publicly displayed waste performance reporting, including printing data, to promote site-specific accountability.

6.3.3 Waste Disposal and Removal Measures

Waste removal requires the transport and disposal of waste material off-site that cannot be reused or recycled. The following waste removal principles have been adopted:

- The Project will seek to limit the wastes which it sends directly to landfill. A waste contractor with a sophisticated recycling facility will be contracted to achieve the highest recycling rates achievable for the waste streams generated. Residual waste will be landfilled after the reclamation process is carried out at that facility
- Hazardous and liquid wastes will be securely stored within appropriate receptacles within a bunded area prior to removal by licensed contractors
- A regular collection/removal or emptying of bins or skips will be implemented
- Waste will be classified and disposed of in accordance with the guidelines.

6.4 Waste Hierarchy

The Project has planned to take actions to address waste management and recycling risks and opportunities, its compliance obligations, and its objectives. The Project has determined what will be done, what resources will be required, who will be responsible, when it will be completed and how the results will be evaluated.

When planning action, the project has and will apply the waste hierarchy detailed below Figure 2, focusing on the waste streams with the most significant lifecycle impacts first, by prioritising (in order of preference):

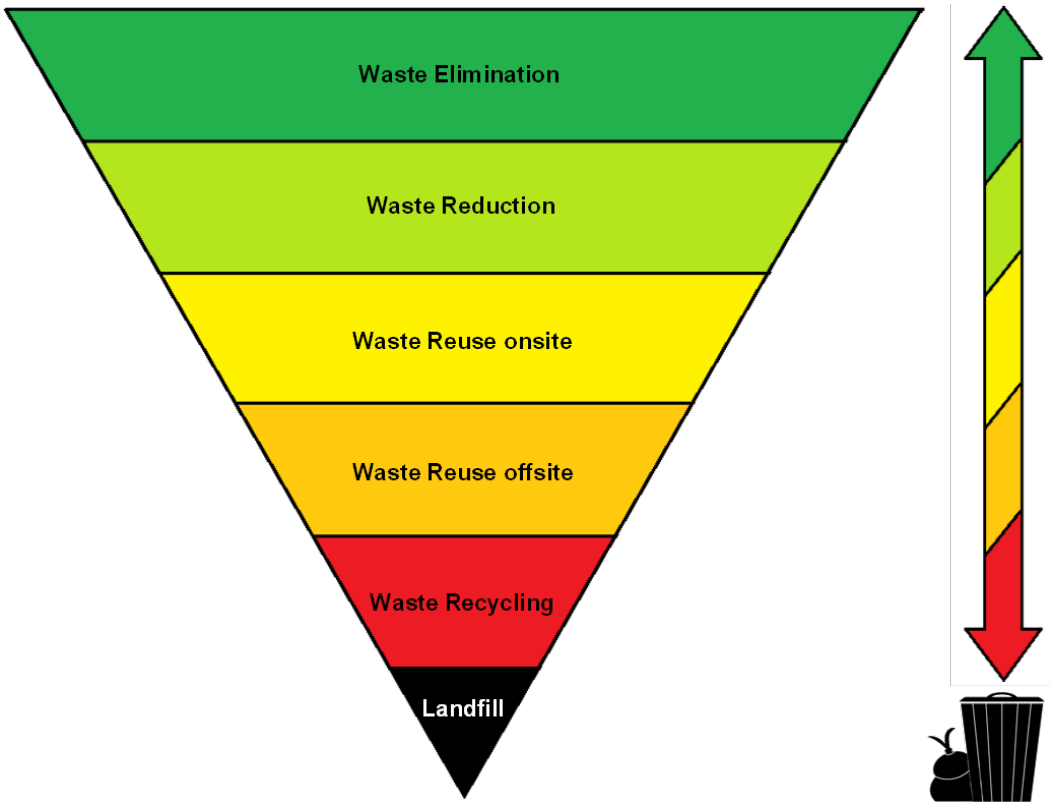

Figure 2 Waste Hierarchy to be utilised on site.

6.5 Waste Management

Note: Spoil classification will be dealt with in the Spoil Management Plan.

6.5.1 Classification of Waste Streams

Waste that cannot be avoided, will be classified in accordance with Part 1 and 4 of the NSW EPA Waste Classification Guidelines. This document identifies six classes of waste as defined in clause 49 of Schedule 1 of the Protection of the Environment Operations Act 1997 (POEO Act):

- Special waste
- Liquid waste
- Hazardous waste
- Restricted solid waste
- General solid waste (putrescible)
- General solid waste (non-putrescible).

The steps below in Figure 3 will be implemented to determine which of the above classifications applies to the Project's waste. Once a classification has been established under a particular step, the waste will be taken to have that classification and will be managed accordingly.

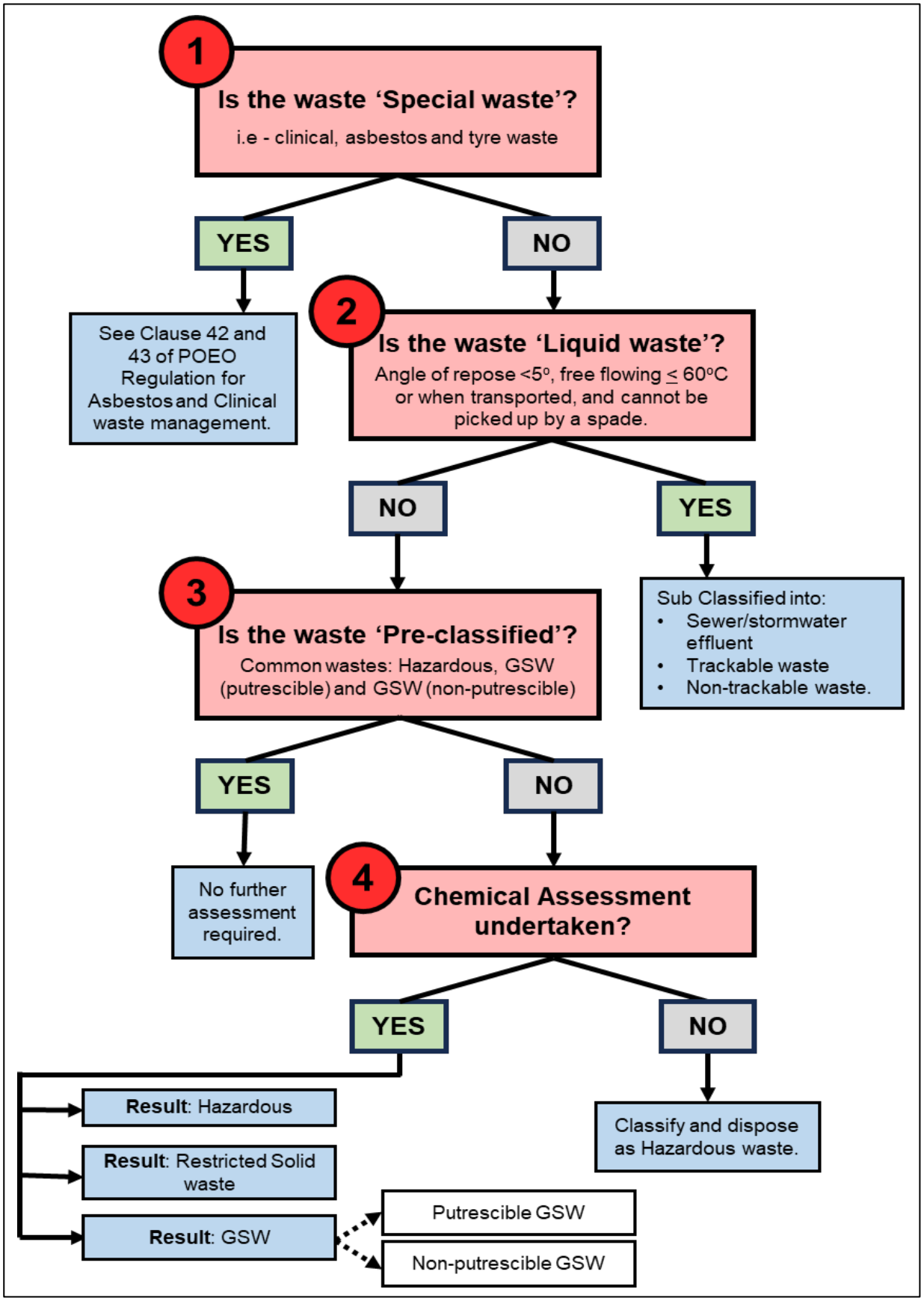

Figure 3 Presents a flowchart of the NSW EPA Waste Classification Guidelines. Refer to the guideline for specific details regarding waste classification and handling.

6.5.1.1 Management of Contaminated Waste

MCoAs D71 through D75 clearly define a process for the management of areas of contamination. The process is consistent with the guidelines for the management of contaminated land in NSW. For all sites with potential or known contamination a DSI will be completed prior to site establishment. If contamination is reported at concentrations exceeding the applicable guidance a Remediation Action Plan (RAP) will be developed to guide remedial activities and then reported in a validation report. The process is shown in Figure 4 and further discussed below.

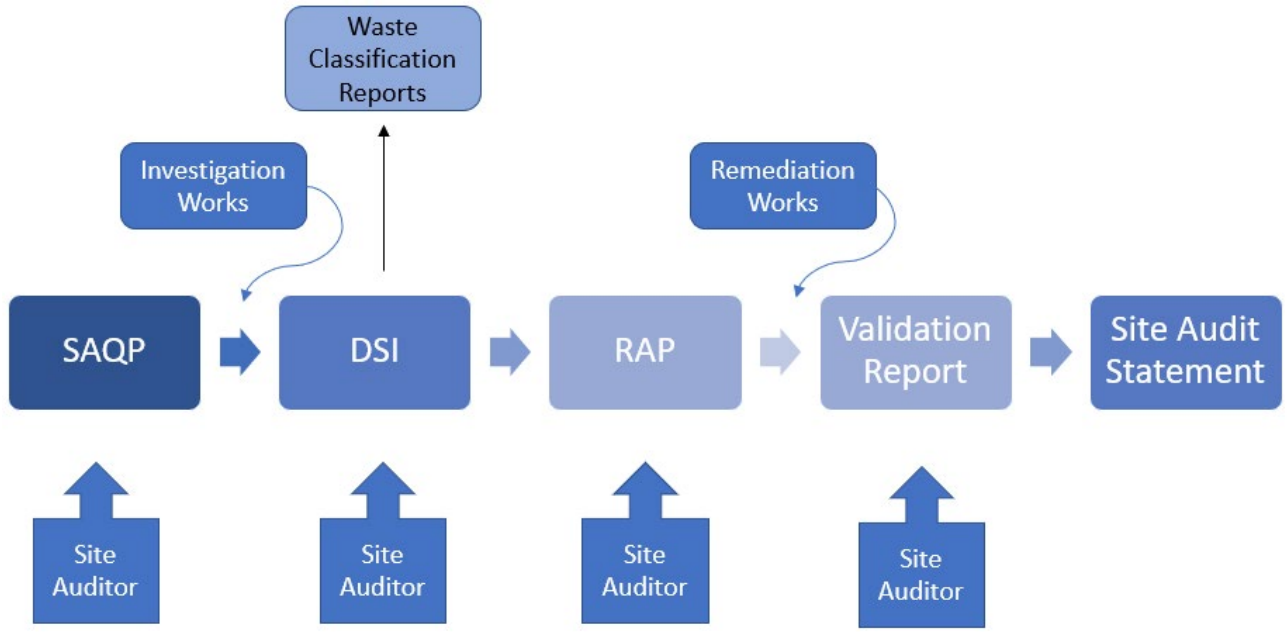

Figure 4: Contamination Management Process

Each RAP will include measures to remediate contamination at the site to ensure the site will be suitable for the proposed use once the RAP has been implemented. Remediation options in the RAP will consider effectiveness, durability, and maintenance and monitoring of the option, including in relation to the removal, transport and disposal of contaminated waste. The RAP will also include at least one indicator from each of the sustainability dimensions – environmental, social and economic from the 'Framework for Assessing the Sustainability of Soil and Groundwater Remediation' (SuRF 2009), as described in Table 6.

Table 6: Sustainability indicators from the 'Framework for Assessing the Sustainability of Soil and Groundwater Remediation' (SuRF 2009)

Environmental	Social	Economic
1. Impacts on air (including climate change); 2. Impacts on soil; 3. Impacts on water; 4. Impacts on ecology; 5. Use of natural resources and generation of wastes; 6. Intrusiveness	7. Impacts on human health and safety; 8. Ethical and equity considerations; 9. Impacts on neighbourhoods or regions; 10. Community involvement and satisfaction; 11. Compliance with policy objectives and strategies;	13. Direct economic costs and benefits; 14. Indirect economic costs and benefits; 15. Employment and capital gain; 16. Gearing; 17. Life-span and 'project risks'; 18. Project flexibility

Environmental	Social	Economic
	12. Uncertainty and evidence.	

Contamination reports including the DSIs, RAPs and validation reports will be certified under either the Environment Institute of Australia and New Zealand's Certified Environmental Practitioner (Site Contamination) scheme (CEnvP(SC)) or the Soil Science Australia Certified Professional Soil Scientist Contaminated Site Assessment and Management (CPSS CSAM) scheme.

To ensure contamination management activities, including fieldwork and reporting, are completed in accordance with relevant guidelines and legislation, an NSW accredited Site Auditor (Site Auditor) will be engaged to provide reviews of key documents. These include the following:

- Review of the RAP and provision of a Section B Site Audit Statement
- Review of the validation report and provision of a Section A1 or Section A2 Site Audit Statement and accompanying Site Audit Report.

At the completion of works, in accordance with MCoA D75, Site Audit Statement (accompanied by an Environmental Management Plan) and its accompanying Site Audit Report will be submitted to the Planning Secretary and the Relevant Council(s) after remediation and before the commencement of operation of the Project.

6.5.2 Liquid Waste

In accordance with the waste classification guidelines, liquid waste means any waste (other than special waste) that:

- Has an angle of repose of less than 5 degrees above horizontal
- Becomes free-flowing at or below 60 degrees Celsius or when it is transported
- Is generally not capable of being picked up by a spade or shovel
- Is classified as liquid waste under an EPA gazettal notice.

If the waste meets the criteria outlined above, it is classified as liquid waste, and no further assessment for classification is required, noting that some liquid waste needs to be tracked.

Liquid wastes (e.g. waste oil) are to be stored in appropriate containers in bunded areas until it can be transported off-site for disposal at a licenced facility. Bunded areas must have the capacity to hold 110% of the liquid waste volume for bulk storage.

Sediment laden water would be managed in accordance with the Soil and Water Management Plan. Where evidence of contamination is present (oil, grease) further testing would be carried out, and appropriate treatment or disposal if required.

Concrete washout water would be contained within the washout area and allowed to either evaporate or harden. In the event that capacity is reached, it would be removed by vacuum truck or pumped to an appropriately bunded container.

Waste from non-destructive digging would be taken offsite for disposal. Where there are significant quantities of waste, a bunded area would be established to allow the waste to be dried out and then reused on site where applicable.

Sanitary wastes from temporary site amenities would be removed by a licenced contractor and taken to an appropriately licenced liquid waste facility for treatment or disposal.

6.5.3 Hazardous Building Materials

Hazardous building materials, including asbestos containing materials, lead paint and transformer oils (including those containing polychlorinated biphenyls) would be managed in accordance with all appropriate legislation, codes, standards and guidelines as per Section 1.

A hazardous material survey would be completed for those buildings and structures suspected of containing hazardous or special waste materials (particularly asbestos) prior to their demolition. Licensed removalists and specialist contractors will be used, and works would be overseen by Occupational Hygienists. Hazardous building materials would be transported to, and disposed of at, facilities licensed to accept the waste.

6.5.4 Waste Exemptions

Under the Protection of the Environment Operations (Waste) Regulation 2005, the EPA has issued general exemptions that allow for reuse of a range of common waste materials. They specify ways in which the waste can be reused, chemical concentrations or other attributes to be met as well as other requirements such as record keeping. Where the criteria specified in the exemption and/or order is met, the following public exemptions and orders may be applied to the works:

- The excavated natural material exemption and order, 2014
- The reclaimed asphalt pavement exemption and order, 2014
- The recovered aggregate order, 2014
- The treated drilling mud exemption and order, 2014
- The mulch exemption and order, 2016.

The project will seek specific resource recovery exemptions (RRE) from the EPA as required. Currently, GLC possess two RRE and RRO's, which permit the reuse of tunnel spoil and Parramatta station box excavated material on site, given certain criteria are fulfilled prior.

6.6 On-site Handling, Transportation and Disposal

The importation of waste and the storage, treatment, processing, reprocessing or disposal of such waste will comply with the conditions of the EPL for the Project (refer to Attachment 1), or be done in accordance with a Resource Recovery Exemption or Order issued under the *Protection of the Environment Operations (Waste) Regulation 2014*, as the case may be.

6.6.1 On-site Handling

Materials segregation facilities will be provided on site. This will include:

- Reusable materials will be stored separately, in secure facilities
- Recyclable waste will be stored separately from other waste and recycling bins will be stored adjacent to general waste bins
- Sufficient storage areas which will be secured and materials will be collected on a regular basis
- Work sites will be kept free of litter and good housekeeping will be maintained
- Vermin proof bins will be used on site
- Specialist bins for specialist waste streams (including electrical and electronic waste, and equipment waste)
- Waste oil, other liquid wastes and spillages will be collected and stored in bunded areas.

6.6.2 Transportation

Where waste cannot be reused on site, it will be transported off site using an appropriately licensed waste management contractor. All transport vehicles will be covered, and tailgates secured prior to trucks leaving the work site. All vehicles will be appropriate for transport of the waste as classified.

Transporters will hold an environment protection licence (EPL) if transporting higher risk wastes ('controlled' or 'trackable' waste). All wastes, including high risk waste will be tracked using the Project Specific Waste Tracking system.

6.6.3 Receiving Facilities

Facilities used for the receiving of waste will be appropriately licensed to accept the classified waste type. The Environmental and Sustainability Lead will review the licence of the receiving facility before any waste is transported. List of facilities and locations can be found in Attachment 3 of the Spoil Management Plan and in the Waste Tracking Register.

6.7 Material Tracking

Waste and material tracking data will aim to track waste lifecycle, capturing:

- Types and quantity of waste sent to landfill
- Types and quantity of waste reused or recycled
- Types and quantity of waste treated
- Types and quantity of hazardous/regulated waste generated and its method of treatment and disposal
- Location of treatment and disposal
- Quantity of spoil generated
- Reduction in disposal to landfill achieved
- Records of legal transport, treatment and disposal, including license reference of receiving and transportation as required.

The quantity of waste in each solid waste stream is measured by weight and liquid waste stream by volume, with records provided by the waste transport contractor in the form of Waste Dockets.

A Waste Tracking Register (refer to 2) will be kept detailing the information listed above. The information will be collated, and register maintained by the Environment and Sustainability Lead (or delegate).

6.8 Record Keeping

The following records will be retained electronically on the Project's document management system:

- Records of inspections in relation to waste management and recycling activities, including inspections of waste storage facilities
- Records detailing the beneficial re-use or recycling of material either within the project or at off-site locations.

The following records will be retained on site or on the SharePoint in a designated folder:

- Waste tracking forms and dockets
- Waste Tracking Register.

7 COMPLIANCE MANAGEMENT

7.1 Roles and Responsibilities

The GLC Project Team's organisational structure and overall roles and responsibilities are outlined in Section 7 of the CEMP. The key roles and their responsibilities critical to the management of waste are outlined in Table 7.

Table 7: Roles, responsibilities, and authorities

Role	Responsibilities for Waste Management
Environment and Sustainability Lead (or delegate)	• Develop and implement the WMP • Ensure all waste management and recycling activities are performed in an environmentally compliant and responsible manner • Oversee the keeping of all environmental records • In consultation with the Project Director and Construction Director, oversee the investigation and reporting of environmental incidents arising from waste management • Regularly engage with the key stakeholders and other interface contractors to achieve environmental alignment.
Stakeholder and Community Engagement Manager	• Manages key stakeholder relationships, including in relation to any waste management issues throughout construction • Provision of strategic advice to the leadership team • Identify and mitigate reputational risks, including any relating to waste management. • Accountable for crisis and incident communications
Senior Environmental/ Approvals/ Sustainability Advisor	• Complete monitoring, inspections and reporting (refer to 7.3) • Manage ongoing compliance with the project's environmental management documents • Prepare ECMs to outline the controls in this sub-plan relevant to each work activity • Engage suitably qualified consultants to support implementation of this sub-plan • Administer compliance with the EPL and Planning Approval requirements • Oversee compliance tracking and reporting • Ensure all waste management and recycling activities are performed in an environmentally compliant and responsible manner • Respond to environmental incidents and non-conformances. • Engage suitably qualified consultants to support implementation of this sub-plan
Environmental Advisor	• Delivery of toolbox / prestart presentation (or other specific training) to inform work crews of the controls documented in the ECMs • Perform regular on-site liaison and inspections • Provide environmental advice and assistance to construction personnel • Manage implementation of WMP • Respond to environmental incidents and non-conformances

Role	Responsibilities for Waste Management
Construction Logistics Manager	• Ensures compliance with this WMP, procedures and ECMs • Work collaboratively with environment teams to ensure the mitigation and management measures in this WMP are integrated into construction works • Ensure that waste management is always considered in forward planning and scheduling • Classify, manage and dispose of waste • Oversee compliance tracking and reporting • Engage suitably qualified consultants to support implementation of this sub-plan • Implement the WMP • Ensure heavy vehicles used for spoil haulage are compliant with the Project Approval requirements.
Site Supervisor	• Install and maintain environmental controls in accordance with ESCPs and ECMs, including clear delineation of site boundaries • Attend inspections with the Environmental Representative, Sydney Metro / ER, or other stakeholders • Implement corrective actions raised during environmental inspections in agreed timeframes • Notify the Environmental Advisor any observed impacts on waste.
All personnel	• Notify Site Supervisor of any observed impacts on waste.

7.2 Training

All personnel working on the Project will undergo a site induction which will include information pertaining to the waste requirements on this Project as needed. The following elements will be addressed as part of the induction, and or through specific targeted training and toolboxes as it relates to the construction personnel:

- The existence of this WMP
- Incident response
- Waste recording and reporting requirements
- The waste hierarchy and reuse and recycling requirements
- Potential for contaminated or hazardous material to be encountered on site and relevant management practices
- Other specific responsibilities as appropriate.

7.3 Monitoring, Inspections and Reporting

The project team will monitor, measure, analyse and evaluate its waste and recycling performance.

7.3.1 Waste Inspections

Environmental Inspections will be conducted weekly and will include scope for inspection of waste generated on the project. This inspection will include the following as a minimum:

- Visual assessments that the on-site storage of waste is in accordance with the ECM (and CEMP and sub-plans)

- Visual assessments that the segregation of waste in accordance with the ECM (and CEMP and sub-plans)
- Visual assessments that the records of disposal have been collected and stored in the appropriate location
- Discussions with Site Foreman/Supervisors to confirm the reuse and recycling principals had been adopted where practicable in the preceding week.

The waste inspection will be documented on the GLC Environment Inspection Form (Attachment 7 of the CEMP). Results of the waste inspection, including distribution and potential non-compliances, will be dealt with as per the Environmental Inspection as outlined in the CEMP.

Site inspections with the ER and Sydney Metro representatives, will be undertaken at a frequency that represents the project's environmental risk and contractor performance. The Environment and Sustainability Lead (or delegate) will attend any ER site inspections.

7.3.2 Monitoring of Records

Monitoring in relation to waste and recycling will also be undertaken in accordance with the applicable compliance requirements.

Monitoring will include details pertaining to:

- Types and quantity of waste generated
- Types and quantity of waste reused or recycled
- Types and quantity of waste disposed to landfill
- Percentage of waste reused or recycled
- Quantity of spoil generated.

The Waste Tracking Register will be made available to the ER, Sydney Metro, contamination consultants preparing the Validation Reports, and the Site Auditor on request. The Waste Tracking Register will also be subject to review in project site audits.

Monitoring and modelling of materials lifecycle impacts will be undertaken using the Materials Calculator (or other suitable Lifecycle Assessment technique) across the Project's lifecycle, in accordance with Mat-L1.

7.3.3 Reporting

The Project will communicate relevant waste performance information both internally and externally, as identified in its communication processes and as required by its compliance obligations. Project waste information will be captured and provided to Sydney Metro as outlined in Table 8.

Additionally, the following reporting will be undertaken if a complaint is received:

- Within one working day of receiving a complaint, notify Sydney Metro
- Within 5 working days, provide Sydney Metro with a final report regarding the complaint
- Detail of any corrective actions and confirmation of successful implementation.

Table 8: Waste reporting

Form / *Frequency*	Waste information to be provided
Project Monthly Report *Monthly*	Relevant waste disposal information will be summarised and included in the Environmental Management section of the Project Monthly Report. This will include all tracking, monitoring, sampling, and testing information and data associated with waste management, including: ● Demolition waste ● Materials scheduled for on-site reuse ● Resource consumption ● Carbon emissions ● Waste recycling and disposal ● Spoil management ● Concrete mixes ● Materials disposed off-site, and ● Materials imported to site
Sustainability Report *Quarterly*	In accordance with Section 5.2.4 of the General Specification, GLC will prepare a quarterly Sustainability Report and submit it to Sydney Metro. This report will include data that conforms to the TfNSW CERT tool.
Compliance Monitoring and Reporting Program *Prior to Construction*	GLC will provide Sydney Metro and the ER documented evidence that all MCoA and REMMs which have a pre-construction requirement, have been met and are compliant two weeks prior to the anticipated date for commencement of construction
*During Construction** **6 Monthly typically*	GLC will provide Sydney Metro and the ER with all documented evidence demonstrating compliance for each MCoA and REMM in accordance with the Sydney Metro West Compliance Tracking Program requirements.
NSW Government Resource Efficiency Policy (GREP) and Waste Reduction and Purchasing Policy (WRAPP) Reporting *Annually for the financial year and at completion of works*	The aim of the GREP is to reduce the NSW Government's operating costs and lead by example in increasing the efficiency of the resources it uses. The policy will help to ensure NSW meets the goals of NSW 2021: A plan to make NSW number one. This policy replaces the previous NSW Government Sustainability Policy and streamlines reporting under the Waste Reduction and Purchasing Policy (WRAPP).
Waste Avoidance and Resource Recovery Reporting (WARR) *Annually for the financial year and at completion of works*	There are three components to the report to be addressed as follows: ● Purchasing data: data on the amount of material purchased by the Project to enable construction works listed under the contract. ● Waste and recycling data: data on the amount of material generated and recycled by GLC in the course of completing work under the contract. ● Project initiatives and barriers: provide information taken to reduce waste, recycle resources and purchase recycled content materials in the course of completing work under the contract

7.4 Auditing

Audits (both internal and independent) will be undertaken to assess the effectiveness of environmental controls, compliance with this sub-plan, MCoA and other relevant approvals, licenses, and guidelines. These audits will be undertaken at planned intervals to provide information on whether the Project:

- Is meeting its compliance obligations
- Conforms to this sub-plan
- Determines if this sub-plan is effectively implemented and maintained.

GLC will undertake an internal audit of the CEMP within the first three months from commencement of construction and then at least annually for the CEMP and or its sub-plans, including the WMP.

The approach to internal and independent audits, including auditing schedule, is outlined further in Section 11.3 of the CEMP.

As part of these audits, waste specific audits as required by the IS rating tool will include:

- Annual review covering systems used to manage waste and the data recording and reporting. Must be an objective assessment of the accuracy and completeness of reported waste information with the aim to provide confidence that the reported information represents a faithful, true, and fair account of waste management practices and performance. Must be undertaken by a suitably qualified person (someone with at least five years' waste management experience, or a NABERS Assessor, or equivalent)
- Auditing to final destination at least six monthly for construction. Final destination means at least to a waste facility where the waste is transformed into another product or material or into landfill. Physical sorting of waste is not considered a final destination. The audit should include a physical/visual verification of waste destinations.

In accordance with IS Was-1 credit requirements, a suitably qualified professional will be engaged for waste management for the Project. The nominated suitably qualified professional is GLC's Hayley Young, who has over 5 years' waste management experience and is qualified as Lead Auditor.

7.5 Environmental Incidents

Management of environmental incidents is detailed in Section 12.2 of the CEMP. Examples of incidents and non-compliances as they relate to waste management may typically include:

- Waste taken to incorrect waste facility
- Failure to maintain waste records in accordance with the Planning Approval
- Failure to use a licensed transporter for prescribed waste.

7.6 Complaints Register

All complaints made by the community and stakeholders will be managed in accordance with the Sydney Metro Overarching Community Communication Strategy, including the Sydney Metro Construction Complaints Management System (CCMS) (2021), as well as relevant MCoAs (B1 – B6). Further details on the complaints register can be found in the Project CEMP (SMWSTWTP-GLO-1NL-EV-PLN-000001), Section 10.

8 REVIEW AND IMPROVEMENT

8.1 Continuous Improvement

The Project Management Team will review the status and adequacy of the EMS including this CEMP and Sub-plans. The objective of the review will be to ensure that it meets current Sydney Metro and GLC requirements as well as relevant environmental standards.

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

The continuous improvement process will be designed to:

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

In order to ensure continual improvement and prevent recurring issues, this sub-plan will be reviewed in response to:

- Corrective actions arising from non-conformance, incidents, or audits
- Opportunity for improvement in environmental management performance which may be identified by the project team, ER or Sydney Metro
- Changes to the Gamuda Australia EMS.

Review of this sub-plan will occur annually as a minimum, or as needed in consultation with Sydney Metro and the ER. A copy of the updated plan and changes will be distributed to all relevant stakeholders in accordance with the approved document control procedure as outlined in the CEMP.

8.2 Document Updates

The processes described above may result in the need to update or revise this sub-plan. This will occur annually as a minimum, or as needed, and may only be approved by the Environment and Sustainability Lead, or delegate.

Where minor amendments are required to this WMP, the revised WMP will be issued to the ER for review and endorsement in accordance with MCoA A30(j).

8.3 Distribution

All GLC personnel and contractors will have access to this WMP via the project document control management system. A copy of the WMP will be published on the Project website in accordance with MCoA B11, within one week of its approval or before the commencement of any work to which they relate.

The document is uncontrolled when printed.

ATTACHMENTS

Attachment 1 – Compliance Matrix

The MCoA, REMMs, CEMF requirements and EPL requirements that relate to this WMP are detailed in the following tables.

Conditions of Approval

ID	Conditions of Approval	Document Reference
A2	Stage 1 of the CSSI must only be carried out in accordance with all procedures, commitments, preventative actions, performance criteria and mitigation measures set out in the documents listed in Condition A1 of this schedule unless otherwise specified in, or required under, this approval.	CEMP
A47	All Heavy Vehicles used for spoil haulage must be clearly marked on the sides and rear with the project name and application number to enable immediate identification by a person viewing the Heavy Vehicle standing 20 metres away.	Section 6.1
C1	Construction Environmental Management Plans (CEMPs) and CEMP Sub-plans must be prepared in accordance with the Construction Environmental Management Framework (CEMF) included in the documents listed in Condition A1 of this schedule to detail how the performance outcomes, commitments and mitigation measures specified in the documents listed in Condition A1 of this schedule will be implemented and achieved during construction.	CEMP and this document
C6	The CEMP Sub-plans must state how:	
	(a) the environmental performance outcomes identified in the documents listed in Condition A1 of this schedule will be achieved;	This document
	(b) the mitigation measures identified in the documents listed in Condition A1 of this schedule will be implemented;	This document
	(c) the relevant conditions of this approval will be complied with; and	This document
	(d) issues requiring management during construction (including cumulative impacts), as identified through ongoing environmental risk analysis, will be managed through SMART principles.	Section 5, Section 6 and the CEMP

ID	Conditions of Approval	Document Reference
C7	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.	Section 1.5
C9	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 phased no later than one (1) month before the commencement of that phase.	Section 1.5
C10	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. Where construction of Stage 1 of the CSSI is phased, construction of a phase must not commence until the **CEMP** and **CEMP Sub-plans** for that phase have been approved by the Planning Secretary or certified by the **ER** upon nomination by the Planning Secretary (whichever is applicable).	Section 1.5
D77	An **Unexpected Contaminated Land and Asbestos Finds Procedure** must be prepared before the commencement of construction and must be followed should unexpected contaminated land or asbestos (or suspected contaminated land or asbestos) be excavated or otherwise discovered during construction.	Section 6.1 and the Soil and Water Sub-plan
D83	The locations of all Heavy Vehicles used for spoil haulage must be monitored in real time and the records of monitoring be made available electronically to the Planning Secretary and the EPA upon request for a period of no less than one (1) year following the completion of construction.	Section 6.1
D99	Opportunities to maximise spoil material removal by non-road methods must be investigated and implemented where reasonably practicable to minimise movements by road.	Section 6.1
D111	Waste generated during construction must be dealt with in accordance with the following priorities:	
	(a) waste generation must be avoided and where avoidance is not reasonably practicable, waste generation must be reduced;	Section 6.1
	(b) where avoiding or reducing waste is not possible, waste must be re-used, recycled, or recovered; and	Section 6.1
	(c) where re-using, recycling or recovering waste is not possible, waste must be treated or disposed of.	Section 6.1

ID	Conditions of Approval	Document Reference
D112	The importation of waste and the storage, treatment, processing, reprocessing or disposal of such waste must comply with the conditions of the current EPL for Stage 1 of the CSSI, or be done in accordance with a Resource Recovery Exemption or Order issued under the *Protection of the Environment Operations (Waste) Regulation 2014*, as the case may be.	Section 6.6
D113	Waste must only be exported to a site licensed by the EPA for the storage, treatment, processing, reprocessing or disposal of the subject waste, or in accordance with a Resource Recovery Exemption or Order issued under the *Protection of the Environment Operations (Waste) Regulation 2014*, or to any other place that can lawfully accept such waste.	Section 6.6.3
D114	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 6.7

Revised Environmental Management Measures

ID	Revised Environmental Mitigation Measure	Document Reference
WR1	All waste would be assessed, classified, managed, transported and disposed of in accordance with the Waste Classification Guidelines.	Section 6.5
WR2	A hazardous material survey would be completed for those buildings and structures suspected of containing hazardous or special waste materials (particularly asbestos) prior to their demolition. If hazardous waste or special waste (e.g., asbestos) is encountered, it would be handled and managed in accordance with relevant legislation, codes of practice and Australian standards.	Section 6.5.3
WR3	Construction waste would be minimised by accurately calculating materials brought to the site and limiting materials packaging.	Section 6.3
WR4	Waste streams would be segregated to avoid cross-contamination of materials and maximise reuse and recycling opportunities.	Section 6.1
WR5	A materials tracking system would be implemented for material transferred between Sydney Metro West sites and to offsite locations such as licensed waste management facilities.	Section 6.1

Construction Environmental Management Framework

Clause	Requirement	Document Reference
3.4 d. iii	For each plan under the CEMP include a matrix of the relevant Conditions of Approval or Consent reference where each requirement is addressed	Attachment 1
3.4 d. iv	For each plan under the CEMP, set objectives and targets and identify measurable key performance indicators relevant to these	Section 3
6.2 b. ii	Spoil management measures will be included in regular inspections undertaken by the Contractor, and compliance records will be retained. These will include: Waste dockets for any spoil disposed of to landfill sites	Section 6.7
14.1 a	The following waste objectives will apply to construction: • minimise waste throughout the project life cycle • waste management strategies will be implemented in accordance with the Waste Avoidance and Resource Recovery Act 2001 management hierarchy as follows: – avoidance of unnecessary resource consumption – resource recovery (including reuse, reprocessing, recycling and energy recovery) – disposal.	Section 6.1
14.1 b	Targets for the recovery, recycling or reuse of construction waste, and beneficial reuse of spoil will be provided by the Principal Contractor	Section 3
14.2 a	Principal Contractors will develop and implement a Waste Management Plan which will include as a minimum:	
i	The waste management mitigation measures as detailed in the environmental approval documentation	Attachment 1 and Section 6.1
ii	The responsibilities of key project personnel with respect to the implementation of the plan	Section 7.1
iii	Waste management monitoring requirements	Section 7.1
iv	A procedure for the assessment, classification, management and disposal of waste in accordance with the waste classification guidelines	Section 6.5.1
v	Compliance record generation and management	Section 6.8

Clause		Requirement	Document Reference
b		Principal Contractors will undertake the following waste monitoring as a minimum:	Section 7.3.1
	i	Weekly inspections	
	ii	All waste removed from the site will be appropriately tracked from 'cradle to grave' using waste tracking dockets.	Section 6.7
c		Principal Contractors will report all necessary waste and purchasing information to Sydney Metro as required for Sydney Metro to fulfill their WRAPP reporting requirements	Section 7.4
d		Compliance records will be retained by the Principal Contractors in relation to waste management including records of inspections and waste dockets for all waste removed from the site.	Section 6.7 and 6.8

Environment Protection Licence

The Project construction activities are designated as '***Railway activities—railway infrastructure construction'*** under Schedule 1 of the POEO Act. Scheduled activities under clause 48 of the POEO Act, require an Environmental Protection Licence (EPL) for the premise at which a scheduled activity is carried on. The EPL typically regulates the emissions of potentially offensive odours and dust. The following table extracts the Conditions relevant to Waste from GLC's EPL No. 21676.

ID	EPL Condition	Document Reference
O5	Waste Management	
O5.1	Waste Management Plans must be prepared and implemented for all demolition/ construction/ excavation works undertaken on the premises that generate waste that will be disposed offsite (not including office paper or cardboard). The plan must be completed prior to waste being transported off the premises. The plans must include the following: a) Estimations of the different waste types to be generated from the proposed works; and b) Estimations of how much of each waste type will be generated from the proposed works; and c) List of all places (full street address) where waste will be transported to; and	This document, Waste Tracking Register, Attachment 3 of the Spoil Management Plan

ID	EPL Condition	Document Reference
	d) Written confirmation from each place of disposal (listed in point c) that they can lawfully receive the types of waste proposed to be transported there. e) Where the place of disposal changes after the plan has been made, an amendment to the plan can be made as a register that includes an update to points a) to d) above. The Waste management plan must be submitted to the EPA prior to the commencement of scheduled activities. Any subsequent amendments must be provided to the EPA upon request.	
O5.2	The licensee must keep detailed records of waste generated, received or removed from the premises that includes (at a minimum): a) the addresses and facility/business names of destination location(s) for all waste generated and transported off the premises for any purpose (including recycling, reuse, processing, treatment and disposal); b) details of all waste received on the premises or transported off the premises that is subject to a Resource Recovery Order and/or Exemption under the Protection of the Environment Operations (Waste) Regulation 2014, and demonstration that the waste meets the requirements of the Order and/or Exemption; c) legible copies of all documents/records evidencing that all waste transported from the premises was taken to a facility/premises that lawfully accept that waste type; and d) records of all compliance checks conducted under condition O5.3. Note: A copy of an up-to-date CWMP and records must be kept on the premises for the duration of the licence and provided to an EPA officer upon request.	Waste Tracking Register, this document, Attachment 3 of the Spoil Management Plan
O5.3	The licensee must develop a compliance program to ensure that all waste is being managed, transported, reused, recycled or disposed in a lawful manner. The compliance program must include, but not limited to: a) desktop investigations; b) site inspections of reuse, recycling or disposal locations; c) any other suitable method to check compliance with the CWMP. The records for the compliance program must be available to the EPA upon request.	Audit Schedule
O5.4	Excavated material suitable for re-use within the premises, may be transported from one part of the premises to another part of the premises by road.	Spoil Management Plan

ID	EPL Condition	Document Reference
O5.5	The licensee must not cause, permit or allow any waste generated outside the licensed premises to be received at the licensed premises, except virgin excavated natural material or as expressly permitted by a condition of this licence or a resource recovery order and/or resource recovery exemption under the Protection of the Environment Operations (Waste) Regulation 2014.	RRO, Spoil Management Plan, Incident records

Attachment 2 - Waste Tracking Register Template (GA-FRM-HSE-153 Waste Tracking Register)

Date	Material Type	FORECAST COST CODE	FORECAST DESCRIPTION	Net tonnes disposed at TIP (tonnes)	Truck Registration	Docket #	Metro Approval ID	WTP Site	Waste Classification Document	Destination Name	EPL / or DA number	Transporter	Comments	Haulage Invoice No.	Disposal Invoice No.	Reconciled by	Claimed by Metro (DATE)	Landfill (Yes / No)