

Appendix B8

Construction Waste and Resource Management Sub Plan

Transport for NSW Package 3 – Portion 2 Early Works

Parramatta Light Rail – Stage 1
February 2021

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Parramatta Light Rail – Stage 1

Package 3 Portion 2 Early Works – Waste and Resource Management Sub-plan

Document Control

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Signed	
Dated	26/02/2021
Approved on behalf of Ventia Utility Services Pty Ltd by	██████████ Project Manager
Signed	██████████
Dated	26/02/2021
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Signed	<i>Refer Appendix C</i>

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Glossary/ Abbreviations

Abbreviations	Expanded text
ACM	Asbestos containing material
ARCP	Asbestos Removal Control Plan
CEMP	Construction Environmental Management Plan
CERT	Carbon Estimate and Reporting Tool
CLMP	Contaminated Land Management Plan
CLM Act	<i>Contaminated Land Management Act 1997</i>
CoA	NSW Minister for Planning Conditions of Approval
DP&E	NSW Department of Planning and Environment
ECM	Environmental Control Map
The EIS	<i>Parramatta Light Rail (Stage 1) – Westmead to Carlingford via Parramatta CBD and Camellia Environmental Impact Statement, August 2017</i>
Environmental aspect	Defined by AS/NZS ISO 14001:2015 as an element of an organisation's activities, products or services that can interact with the environment
Environmental impact	Defined by AS/NZS ISO 14001:2015 as any change to the environment, whether adverse or beneficial, wholly or partially resulting from an organisation's environmental aspects
Environmental incident	An unexpected event that has, or has the potential to, cause harm to the environment and requires some action to minimise the impact or restore the environment
Environmental objective	Defined by AS/NZS ISO 14001:2015 as an overall environmental goal, consistent with the environmental policy, that an organisation sets itself to achieve
Environmental target	Defined by AS/NZS ISO 14001:2015 as a detailed performance requirement, applicable to the organisation or parts thereof, that arises from the environmental objectives and that needs to be set and met in order to achieve those objectives

Abbreviations	Expanded text
Environmental Representative (ER)	A suitably qualified and experienced person independent of the Contractor and Proponent, and project design and construction personnel, employed for the duration of construction. The Environmental Representative sits under the Independent Certifier.
EMS	Environmental Management System
ENM	Excavated Natural Material, as defined in <i>The excavated natural material exemption</i>
EPA	NSW Environment Protection Authority
EP&A Act	<i>Environmental Planning and Assessment Act 1979</i>
EPL	Environmental Protection Licence
GREP	Government Resource Efficiency Policy
Minister, the	Minister of the NSW Department of Planning and Environment (or delegate)
Non-compliance	Failure to comply with the requirements of the Project approval or any applicable licence, permit or legal requirements
Non-conformance	Failure to conform to the requirements of Project system documentation including this CEMP or supporting documentation
OEH	Office of Environment and Heritage
Planning Approval	The Planning Approval includes the Conditions of Approval, the EIS and the Submissions and Preferred Infrastructure Report
PLR	Parramatta Light Rail
Principal, the	Transport for NSW
POEO Act	<i>Protection of the Environment Operations Act 1997 (NSW)</i>
Project, the	Parramatta Light Rail – Stage 1 (Westmead to Carlingford)
RAP	Remediation Action Plan for 6-10 Grand Avenue, Camellia, NSW, November 2017)
REMMM	Revised Environmental Mitigation and Management Measures
Resource	Resource covers energy, fuel, oil, water and other materials used for construction of the project.
RWVP	Remediation Works Validation Plan
SaM Facility	Stabling and Maintenance Facility

Abbreviations	Expanded text
SDG	TfNSW Sustainable Design Guideline
SPIR	Submissions and Preferred Infrastructure Report
SWMP	Soil and Water Management Plan
VENM	Virgin Excavated Natural Material
WARR Act	<i>Waste Avoidance and Resource Recovery Act 2001</i>
WRMP	Waste and Resource Management Sub-Plan
WRAPP	Waste Reduction and Purchasing Policy

1 Introduction

1.1 Context and scope

This Waste and Resources Management Sub Plan (WRMP or Plan) forms part of the Construction Environmental Management Plan (CEMP) for the upgrade of the Parramatta Light Rail – Stage 1 (PLR Stage 1 or the Project) and has been prepared to target specifically *Package 3: Early Works in Portion 2* (referred to hereafter as Portion 2 Early Works or Package 3) as part of the Enabling Stage of the Project. Refer to the *Parramatta Light Rail (Stage 1) Staging Report (Project Wide)* (TfNSW 2019) for further detail.

Package 3: Early Works Portion 2: *the remediation (capping) of the TfNSW owned site at 6-8 Grand Avenue, Rosehill. This is the allocated site for the SaM Facility.*

Ventia Pty Ltd (Ventia) has been appointed by Transport for NSW (TfNSW) as the head contractor for Portion 2 Early Works, responsible for delivering the remediation (capping) of the TfNSW owned site at 6-8 Grand Avenue Rosehill (refer to Section 1.3 in CEMP for project scope).

This WRMP has been prepared to address the requirements of the Minister's Conditions of Approval (CoA) and the revised environmental mitigation and management measures (REMMM) listed in the *Parramatta Light Rail (Stage 1) – Westmead to Carlingford via Parramatta CBD and Camellia Environmental Impact Statement, August 2017* (the EIS) and the subsequent Submissions Report (incorporating Preferred Infrastructure Report) (TfNSW 2018) and all applicable legislation. This WRMP specifically addresses CoA E127-E131 and REMMM Gen-1 & WM2, with the broader applicable CoA's and REMMM's outlined in **Table 3-1: Conditions of Approval relevant to the WRMP** and **Table 3-2: Revised Environmental mitigation and management measures relevant to this WRMP** respectively. This plan has also been prepared in accordance with the Ventia Environmental Management System, accredited to ISO 14001.

This WRMP provides the management approach and requirements (including environmental mitigation measures, controls, monitoring and reporting) for managing waste and resource during construction of Portion 2 Early Works. This Plan forms one of six sub-plans which are collectively covered by the Construction Environmental Management Plan (CEMP). Effective implementation of the CEMP (and associated sub-plans) will ensure that environmental resources, responsibilities and management measures are adopted during the construction activities.

The implementation of the CEMP and associated sub-plans are aligned with Project level management plans including the Community and Stakeholder Engagement Plan and the Sustainability Plan as illustrated in Figure 1-1.

The review and document control process for this Plan are described further in Section 9.

The context of this WRMP in relation to the environmental management system is presented below in Figure 1-1: **Portion 2 Early Works Environmental Management System and CEMP Context**.

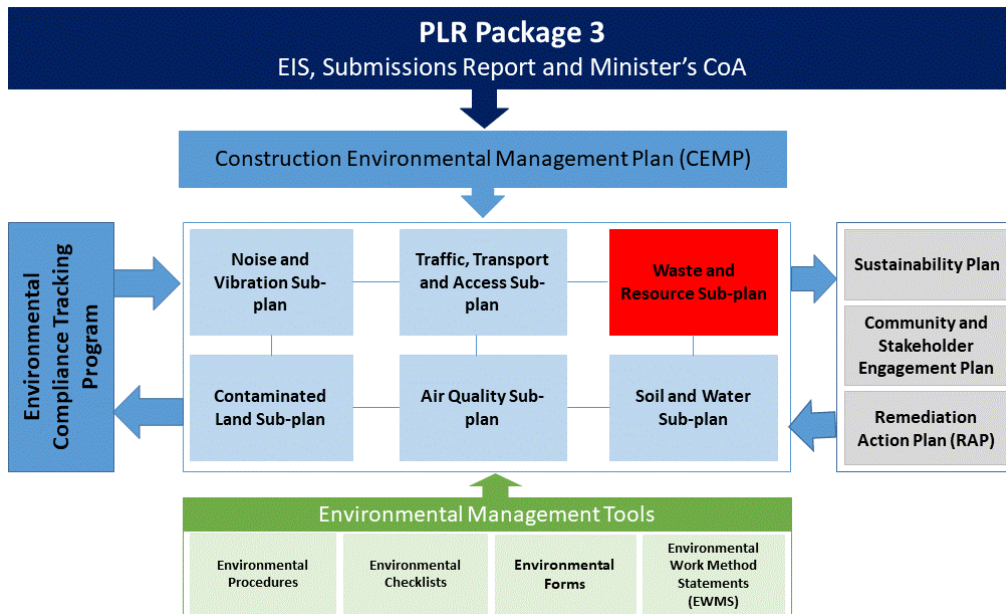


Figure 1-1: Portion 2 Early Works Environmental Management System and CEMP Context

1.2 Background and project description

Parramatta Light Rail is one of the NSW Government's major infrastructure projects being delivered to serve a growing Sydney population, particularly the population growth of the Parramatta Local Government Area (LGA).

Parramatta Light Rail Stage 1 will connect Westmead to Carlingford via Parramatta Central Business District (CBD) and Camellia. Stage 1 is expected to be operational in 2023.

PLR Stage 1 project will link Parramatta's central business district (CBD) and train station to a number of key locations, including the following:

- Westmead Precinct.
- Parramatta North Growth Centre.
- The new Western Sydney Stadium.
- The Camellia Town Centre.
- The new Powerhouse Museum.
- Riverside Theatre arts and cultural precinct.
- The private and social housing redevelopment at Telopea.
- The Rosehill Gardens Racecourse.
- The three Western Sydney University campuses.

In summary, the key features of the project include:

- A new dual track light rail network of approximately 12 kilometres in length (including approximately seven kilometres within the existing road corridor and approximately five kilometres within the existing Carlingford Line and Sandown Line, replacing current heavy rail services).

- A total of 16 stops that are fully accessible and integrated into the urban environment including a terminus stop at each end of Westmead and Carlingford.
- High frequency 'turn-up-and-go' services operating seven days a week from 5 am to 1 am. Weekday services will operate approximately every 7.5 minutes in the peak period between 7 am and 7 pm.
- Modern and comfortable air-conditioned light rail vehicles, nominally 45 metres long and driver-operated, each carrying up to 300 passengers.
- Intermodal interchanges with existing public transport services at Westmead terminus, Parramatta CBD and the Carlingford terminus.
- Creation of two light rail and pedestrian zones (no general vehicle access) within the Parramatta CBD along Church Street (generally between Market Street and Macquarie Street) and along Macquarie Street (generally between Horwood Place and Smith Street).
- A Stabling and Maintenance (SaM) Facility located in Camellia for light rail vehicles to be stabled, cleaned and maintained.
- New bridge structures along the alignment including over James Ruse Drive and Clay Cliff Creek, Parramatta River (near the Cumberland Hospital), Kissing Point Road and Vineyard Creek, Rydalmere.
- Alterations to the existing road network including line marking, additional traffic lanes and turning lanes, new traffic signals, and changes to traffic flows.
- Relocation and protection of existing utilities.
- Public domain and urban design works along the corridor and at Stop precincts.
- Closure of the heavy rail line between Carlingford and Clyde.
- Active transport corridors and additional urban design features along sections of the alignment and within Stop precincts.
- Integration with the Opal Electronic Ticketing System (ETS).
- Real time information in light rail vehicles and at Stops via visual displays and audio.

An overview of Parramatta Light Rail Stage 1 route is shown in Figure 1-1 of the CEMP.

1.2.1 Stabling and Maintenance Facility

As part of the development of the Project, the TfNSW owned land located at 6-8 Grand Avenue Camellia was identified as the preferred site for the Stabling and Maintenance Facility (SaM Facility). The SaM Facility is being constructed on the former industrial site adjacent to the Rosehill Gardens Racecourse within the Rosehill and Camellia precinct (refer to Figure 1-2: **Portion 2 Early Works - SaM Facility location**).

The SaM Facility would provide for the storage of light rail vehicles, maintenance, repair, refurbishing, upgrading, stabling, cleaning of light rail vehicles and a base for infrastructure maintenance activities and will operate 24 hours a day and 7 days a week.

Administration and staff facilities as well as the operations control centre for the light rail network will be located within the maintenance building. Parking for staff and visitors will be provided on site, including maintenance vehicle parking. An electrical substation will be located at the rear of the site to power the facility and light rail.

To accommodate the development of the SaM facility, and reduce the potential for interaction with contaminated material during construction, the following activities will be undertaken as part of the enabling works:

- Importation and placement of appropriate fill material across the site to raise the surface finish level by about two metres;
- Installation of an appropriate capillary break to eliminate subsurface contamination migration;
- Installation of an appropriate vapour barrier and structural surface capping layer;
- The Temporary Works encompasses establishment of plant, equipment and facilities on the Site to support the delivery of the Works;
- The Enabling Works encompasses establishment and management of utilities and other below-ground infrastructure on the Site to support the delivery of the Works;
- Construction of a containment cell for the retention and containment of waste materials on-site;
- Implementation of Ground Improvement Works where required;
- Implementation of the monitoring and validation program; and
- Preparation of Stage 2 Site Validation Report and a Long Term Environmental Management Plan (LTEMP) to the satisfaction of the Site Auditor.

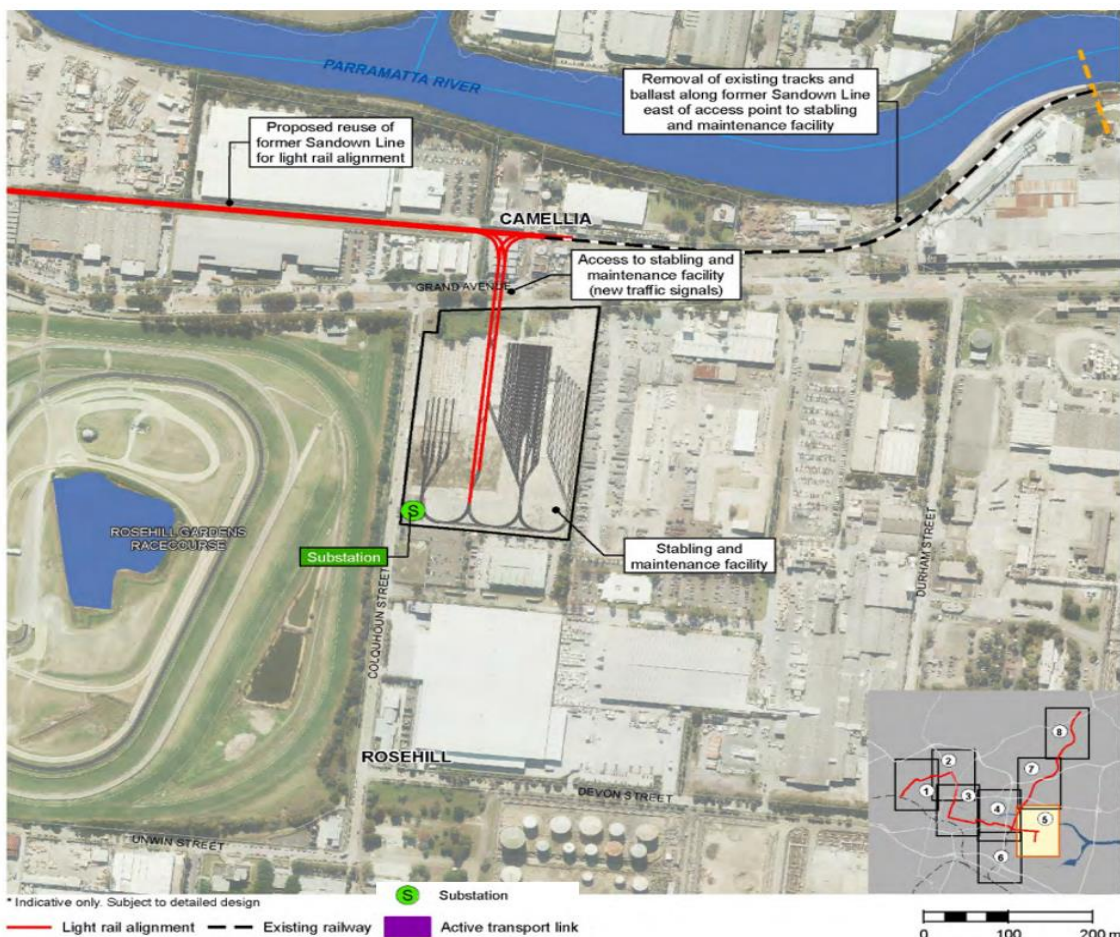


Figure 1-2: Portion 2 Early Works - SaM Facility location (Source: EIS Figure 6.2e)

1.2.2 Statutory Context

The Project is Critical State Significant Infrastructure (CSSI) pursuant to section 5.13 of the *Environmental Planning and Assessment Act, 1979* (EP&A Act). The Minister for Planning is the approval authority for the Project.

In accordance with section 5.22(2) of the EP&A Act, the only environmental planning instruments that apply to the proposal are State Environmental Planning Policy (Infrastructure) 2007 (insofar as it relates to the declaration of development that does not require consent) and State Environmental Planning Policy (State and Regional Development) 2011 (as it pertains to the declaration of infrastructure as SSI). There are no other environmental planning instruments that substantially govern the carrying out of the project.

The Portion 2 Early Works site has been subject to long term regulation by the NSW Environmental Protection Authority (EPA) under the Contaminated Land Management Act 1997 (CLM Act). The remediation strategy for the Site is detailed within the Remediation Action Plan (RAP) including the requirements of the CLM Act. The objective of the RAP is to document the preferred remediation option and outline the methodology for the installation, verification and validation of the preferred remediation option.

The Portion 2 Early Works will be undertaken to achieve Objective 3 of the RAP (as outlined in Section 7.1). Objective 3 is as follows:

Render the site suitable for commercial / industrial land use, specifically for the redevelopment of the site as the SaM facility for the PLR Project.

This objective is to be achieved by:

- Design and implementation of a capping system, appropriately integrated with the cut-off wall, and incorporating layered components appropriate to;
- Mitigate and manage soil vapour (both indoor and outdoor as dictated by the facility design) from VCHs;
- Create a physical barrier to prevent site users from accessing contaminated materials; and
- Prevent Cr (VI) wicking into future site structures infrastructure and paved surfaces.

The RAP has been reviewed and endorsed by a NSW EPA-accredited Site Auditor in accordance with the CLM Act.

Detailed environmental impact assessments have been carried out and approved by the Minister for Planning. The Planning Approval for the project is described below in [Section 1.2.3](#).

1.2.3 Parramatta Light Rail Planning Approval

The Environmental Impact Statement (EIS) for the project was placed on public exhibition between 23 August and 23 October 2017. During this period, government agencies, interested stakeholders and the community were invited to make written submissions on the project to the Department of Planning and Environment. Following the conclusion of the public exhibition period, Transport for NSW prepared a Submissions Report and Preferred Infrastructure Report for the project to address the issues raised in community and stakeholder submissions, and to document a number of proposed design changes and additional investigations undertaken since exhibition of the EIS.

In May 2018, the Minister for Planning granted approval of the Project, under Section 115ZB of the EP&A Act. Following approval of the CSSI, a modification was assessed by the DP&E and subsequently approved on the 21st December 2018 under section 115ZI of the EP&A Act (Modification 1). Modification 2 was requested from DP&E and approved on the 25th January 2019.

The planning approval (Infrastructure approval SSI 8285) and related environmental assessment documents are located on Department of Planning and Environment's major project website:

http://majorprojects.planning.nsw.gov.au/index.pl?action=view_job&job_id=8285

1.3 Environmental management systems overview

The environmental management system overview is described in section 1.6 of the CEMP and is summarised in Figure 1-1.

2 Purpose and objectives

2.1 Purpose

The purpose of this Plan is to provide the foundation for the management of waste and resource impacts in accordance with best practice and legal requirements (including environmental mitigation measures, controls, monitoring and reporting) during the construction phase of Portion 2 Early Works.

Mitigation measures (specific to waste and resource) required to satisfy the CoA requirements are derived from the EIS and through risk assessment processes (refer [Section 3.2](#)) and included within this WRMP. Refer to [Section 3.3](#) for relevant waste and resource mitigation measures and controls and refer [Section 3.4](#) for relevant Environmental Performance Outcomes.

Effective implementation of these measures is ensured through monitoring, training and competence, inspection, audit and reporting actions detailed in Sections [8.2](#), [8.3](#), [8.4](#) & [8.5](#), with the responsibilities for implementation identified in [Section 8](#). Continual improvement processes in relation to compliance with regulatory requirements are detailed in [Section 9](#).

Effective implementation of this Plan will assist the Contractor and relevant sub-contractors to achieve compliance with necessary environmental regulatory and policy requirements in a systematic manner with an outcome of continual environmental management performance.

2.2 Objectives

The key objectives and strategies of this WRMP is to ensure that waste disposal and energy use are minimised and reuse/recycle of waste is maximised.

To achieve these objectives, the contractor will undertake the following;

- Ensure appropriate measures are identified and implemented to address the applicable management and mitigation measures detailed in Table 17.2 of the EIS to minimise waste, manage waste and conserve energy throughout the construction of the Project;
- Ensure the preferred waste management hierarchy of avoidance, minimisation, reuse, recycling and disposal as the last option is followed;
- Ensure staff awareness regarding waste and resource use management issues;
- Ensure appropriate measures are implemented to address the relevant CoA, Revised Environmental Mitigation and Management Measures (REMMM) and environmental performance outcomes (EPO);
- Ensure appropriate measures are implemented to comply with all relevant legislation and other requirements as described in [Section 3.1](#) of this Plan; and
- Meet sustainability objectives and commitments outlined within the Sustainability Management Plan developed by TfNSW.

2.3 Targets

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

- Implementation of waste minimisation initiatives where practical;

- Waste products are recovered and reused on site where reasonable and practical (in line with the targets in Table 2-1);
- Undertaken recovery/recycling of all recyclable materials on site or at an offsite recovery facility (in line with the targets in Table 2-1: **Construction waste streams and targets for Portion 2 Early Works**);
- Dispose of waste materials in accordance with legislative requirements and are sent to appropriately licenced facility;
- Minimise / reduce the quantities of resources to be used (in line with the targets in Table 2-1); and
- Documentation of the intended management of wastes e.g. avoid, reduce, reuse, recycle or dispose to ensure waste is managed in accordance with accepted standards and appropriately implemented waste control measures.

Based on the requirements defined at [Section 2.2](#) above, the following targets have been nominated for managing waste and resources on the project (refer to Table 2-1). Any deviance from the targets will result in project management review and implementation of corrective actions where appropriate.

Table 2-1: Construction waste streams and targets for Portion 2 Early Works

Metric / measure	Target	Timeframe	Accountability
% of waste quantified in waste management reports	100%	At all times	Engineers Environment and Hygiene Manager
% of prescribed wastes for which transfer certificates are retained	100%	At all times	Engineers Environment and Hygiene Manager
Number of enforcement notices and penalties received from regulators and/or client	Zero	At all times	Environment and Hygiene Manager Project Manager
% of waste reused or recycled	>90% of waste generated	12 months	Environment and Hygiene Manager Project Manager
% reduction of construction related GHG emissions by from project baseline	5%	Duration of project	Environment and Hygiene Manager Project Manager

All waste correctly classified and disposed of appropriately	100%	At all times	Environment and Hygiene Manager Project Manager
Number of loss of hazardous materials to the environment as a result of the works	Zero	Duration of project	Engineers Environment and Hygiene Manager

3 Environmental requirements

3.1 Relevant legislation and guidelines

3.1.1 Legislation

Legislation and regulations relevant to waste and energy management includes:

- Protection of the Environment Operations Act 1997 (POEO Act);
- Protection of the Environment Operations (Waste) Regulation 2014;
- Waste Avoidance and Resource Recovery Act 2001 (WARR Act);
- Contaminated Land Management Act 1997 (CLM Act);
- National Greenhouse and Energy Reporting Act 2007 (NGER Act);
- Environmentally Hazardous Chemicals Act 1985 (EHC Act);
- Protection of the Environment Operations (General) Regulation 2009; and

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

3.1.2 Guidelines and standards

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

- NSW Government Resource Efficiency Policy (GREP) (OEH 2014);
- Waste Classification Guidelines (EPA 2014);
- NSW Government Resource Efficiency Policy (OEH, 2014);
- NSW Waste Avoidance and Resource Recovery Strategy 2014 – 2021 (EPA, 2014);
- Best Practice Waste Reduction Guidelines for the Construction and Demolition Industry (tools for Practice), Natural Heritage Trust, 2000;
- NSW Waste Reduction and Purchasing Policy; and
- NSW Environment Protection Authority (EPA) Contaminated Land Management – Guidelines for the NSW Site Auditor Scheme (3rd edition) (2017).

3.2 Minister's Conditions of Approval

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

Table 3-1: Conditions of Approval relevant to the WRMP

CoA No.	Condition Requirements	Document Reference	How Addressed
E127	Waste generated during construction and operation must be managed 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 2.3 of WRMP Section 5.1 of WRMP	Waste generation will be avoided where practicable. If this is not possible, waste generation will be minimised. Material disturbance, including the retention of existing hardstand, will be minimised as much as possible to reduce waste volumes, whilst meeting Excavation activities will be limited The Portion 2 Early Works is conducting remediation activities to install an integrated capping system and engineered, on-site containment berm for maintaining waste on-site.
	(b) where avoiding or reducing waste is not possible, waste must be re-used, recycled, or recovered; and	Section 2.3 of WRMP Section 5.1 of WRMP	Remediation works will require the generation of potentially contaminated materials, where possible material will be retained on-site within the integrated capping system or an engineered, on-site containment berm.

CoA No.	Condition Requirements	Document Reference	How Addressed
	(c) where re-using, recycling or recovering waste is not possible, waste must be treated or disposed of.	Section 2.3 of WRMP Section 5.1 of WRMP	Where materials cannot be retained, they will be classified in accordance with the NSW EPA Waste Classification Guidelines. Waste that are unable to be reused or recycled will be disposed of offsite to an appropriately licenced waste management facility following classification.
E128	The importation of waste and the storage, treatment, processing, reprocessing or disposal of such waste must comply with the conditions of a current EPL for the CSSI (if applicable), 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.	Sections 5.1.5 of WRMP	Imported materials are required for Portion 2 Early Works as an important component of the integrated capping system. Imported materials shall be validated as either Virgin Excavated Natural Materials (VENM) or Excavated Natural Materials (ENM) as defined under the POEO Act 1997 and the POEO (Waste) Regulation 2014. Imported VENM or ENM will be assessed in accordance with the ENM Order 2014 (NSW EPA 2014). Prior to importation, the source site of the imported materials will be investigated. The site history will be reviewed to ensure previous activities undertaken on the source site have not caused contamination of the imported materials. For VENM, the materials being excavated are visually assessed by the validation consultant to confirm that no sign of contamination is present and that the materials are undisturbed. In some cases existing documentation/classification reports may be available and an adequacy review may be sufficient (coupled with a site inspection if required) by the Validation Consultant prior to importation of materials.

CoA No.	Condition Requirements	Document Reference	How Addressed
E129	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. Disposal of waste at these facilities must include GPS tracking of waste vehicles, audits of waste facility receipts and cross verification with the facility. All asbestos waste over 10m ³ must be tracked through EPA's WasteLocate service.	Sections 5.1.3 & 5.1.4 of WRMP	Where waste from Portion 2 Early Works needs to be disposed offsite, classification of waste is undertaken prior to disposal in accordance with the EPA Waste Classification Guidelines (2014), transported by a licensed waste transporter and disposed of to an appropriately licenced facility. Disposal of waste will include GPS tracking of trucks, materials tracking documentation, including weighbridge receipts, stockpile maps, waste classification reports etc. Where necessary, EPA waste transport certificates shall be generated for each waste consignment. If asbestos waste needs to be disposed offsite, it will also be tracked through EPA's <i>WasteLocate</i> service.
E130	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 of WRMP	Where waste from Portion 2 Early Works needs to be disposed offsite, classification of waste is undertaken prior to disposal in accordance with the EPA Waste Classification Guidelines (2014), transported by a licensed waste transporter and disposed of to an appropriately licenced facility. Disposal of waste will include GPS tracking of trucks, materials tracking documentation, including weighbridge receipts, stockpile maps, waste classification reports etc. Where necessary, EPA waste transport certificates shall be generated for each waste consignment.

CoA No.	Condition Requirements	Document Reference	How Addressed
E131	Asbestos or asbestos-contaminated materials be uncovered during demolition and construction activities of the CSSI must be strictly managed in accordance with the requirements under the Protection of the Environment Operations (Waste) Regulation 2014 and any guidelines or requirements in force at the date of this approval and issued by the EPA in relation to those materials.	Section 5.3 of WRMP & Contaminated Land Management Plan (CLMP)	Asbestos has been identified as a potential contaminant of concern on the site during previous site investigation and remediation works. Where asbestos is identified, the project Asbestos Removal Control Plan shall be implemented to ensure the removal is carried out in accordance with the Code of Practice for How to Safely Remove Asbestos (SafeWork NSW, 2016). Disposal of waste will include GPS tracking of trucks, materials tracking documentation, including weighbridge receipts, stockpile maps, waste classification reports etc. Where necessary, EPA waste transport certificates shall be generated for each waste consignment. Asbestos waste needs to be disposed offsite, it will also be tracked through EPA's <i>WasteLocate</i> service.

3.3 Revised Environmental Mitigation and Management Measures

Relevant REMMMs are listed in **Table 3-2: Revised Environmental mitigation and management measures relevant to this WRMP** below. This includes reference to required outcomes, the timing of when the commitment applies, relevant documents or sections of the environmental assessment influencing the outcome and implementation.

Table 3-2: Revised Environmental mitigation and management measures relevant to this WRMP

Ref #	Commitment	Timing	WRMP reference	How Addressed
GEN-1	A construction environmental management plan (CEMP) would be prepared for the construction phase of the project. The CEMP would provide a centralised mechanism through which all potential environmental impacts would be managed. The CEMP would document mechanisms for demonstrating compliance with the commitments made in the Environmental Impact Statement), the submissions report, as well as any other relevant statutory approvals (e.g. conditions of approval, licences and permits). The CEMP would outline a framework for the management of environmental impacts during construction, including further details on the following: • Traffic, transport and access management. □ Noise and vibration management. • Heritage management. • Air quality and dust management. • Soil and water management. • Flora and fauna management. • Waste and resource management. • Site compound and ancillary works management. • Landscape and temporary works management. • Emergency and incident response management.	Pre-construction	This Plan	This purpose of this sub-plan to the CEMP is to provide the foundation for the management of waste and resource impacts in accordance with best practice and legal requirements (including environmental mitigation measures, controls, monitoring and reporting) during the construction phase of Portion 2 Early Works. The CEMP and this sub-plan would be prepared by the responsible contractor(s) and approved by the Secretary of the NSW Department of Planning and Environment.

Ref #	Commitment	Timing	WRMP reference	How Addressed
	The CEMP would be prepared by the responsible contractor(s) and approved by the Secretary of the NSW Department of Planning and Environment.			
GG-3	Management of emissions would be incorporated into site inductions, training and pre-start talks.	During construction	Section 8.2	Management of plant emissions shall be incorporated into site inductions and periodically communicated during site toolbox presentations. Controls for operators such as turning off idling plant, identifying issues on the daily pre-start inspection form if visible exhaust emissions 10 seconds after start up and ongoing plant and equipment maintenance in accordance with plant requirements.
GG-4	The CEMP would incorporate measures to minimise the emission of greenhouse gases during construction. Activities with the potential to cause substantial emissions (such as material delivery and loading and bulk earthworks) would be identified in the energy and greenhouse gas emissions strategy. Emissions management actions would be investigated and applied where reasonable and feasible. These would potentially include: • The use of biodiesel and other low carbon fuels in vehicles and equipment. • The use of fuel-efficient construction equipment. • The use of energy efficient construction practices. • Use of energy efficient or solar powered lighting for temporary construction facilities.	During construction	Section 6	A Carbon Estimate and Reporting Tool (CERT) shall be conducted in accordance with the TfNSW Carbon Estimate and Reporting User Manual (7TP-ST-035) to establish a baseline footprint for the project and identify a reduction in construction related GHG emissions by 5% from project baseline as determined by the Carbon Estimate and Reporting Tool (CERT). Construction methodologies will be appraised to identify reasonable and feasible measures to meet the project sustainability targets. The methodology appraisal will include consideration of energy and GHG emissions, waste volume generation and impacts to water. All mobile non-road diesel plant and equipment (with an engine greater than 19kW) to report engine conformity with relevant United States Environmental Protection Agency (US EPA), European Union (EU) or equivalent emissions

Ref #	Commitment	Timing	WRMP reference	How Addressed
				standards and the fitting of any exhaust after-treatment devices.
GG-5	Local procurement of construction services and materials would be undertaken (where feasible and cost effective) to reduce fuel consumption for transport. Where practical and reasonable, construction planning would ensure that deliveries are managed in an efficient manner to minimise the number of trips required and therefore reduce the amount of emissions.	During construction	Section 6	The project's primary material is imported spoil and wherever practical, materials for the clean fill cap will be sourced from Sydney based Infrastructure Projects. Procurement and transport of locally sourced materials for the site works reduce emissions by reusing materials close to the source.
GG-6	Energy efficient work practices, such as switching off construction plant, vehicles and equipment when not in use to minimise idling, would be implemented during construction.	During construction	Section 6	Energy efficient work practices will be implemented as far as practicable such as switching off energy using devices (including vehicles) when not in use.
GG-7	Regular monitoring, auditing and reporting on energy, resource use and associated greenhouse gas emissions would form part of the environmental reporting requirements specified within the CEMP, and would be carried out.	During construction	Section 8.3	Regular monitoring, auditing and reporting on energy, resource and greenhouse gas emissions will be performed. A Sustainable Design Guideline Checklist will be updated every 6 months to monitor performance with sustainability, including the Carbon Estimate and Reporting Tool. Findings and reports are communicated as per reporting requirements outlined in Table 3-6 and Table 3-7 of CEMP.
HY-6	A soil and water management plan would be prepared as part of the CEMP. Specific measures would be identified in consultation with relevant government agencies and would be consistent with the principles and practices detailed in Landcom's (2004) Managing	Pre-construction	Section 5 & Section 6	Addressed in the SWMP and partially address in this sub-plan. As required by REMMM HY-6, remediation works will require the generation of potentially

Ref #	Commitment	Timing	WRMP reference	How Addressed
	Urban Stormwater: Soils and Construction. The objectives and strategies of the soil and water management sub-plan would include the following: - Minimise the extent and duration of exposed surfaces (particularly those works that have the greatest potential to disturb soils that are contaminated or have a high erosion and runoff hazard). - Develop and implement adequate water quality control measures prior to the carrying out of significant earthwork or bridge construction activities. - Minimise and manage impacts on water quality and downstream receiving environments during instream activities. - Flood response measures for activities located on land affected by the 20 year ARI flood level (e.g. bridge support construction compounds), or works within waterways (such as bridge works). - Where possible, reuse excavated materials as fill on other parts of the project in preference to disposing off-site in accordance with OEH's Waste Classification Guidelines (2016). - Areas of potential contamination concern would be identified and works in these areas managed to minimise disturbance. - Excavate pre-classified contaminated materials and transfer such materials directly into haulage trucks for off-site disposal at a waste facility licensed to accept the contaminated material. - Transport for NSW would also undertake consultation with DPI Fisheries with respect to the development for the			contaminated materials, where possible material will be retained on-site within the integrated capping system or an engineered, on-site containment berm. Construction waste from Portion 2 Early Works will be managed through waste hierarchy from the Waste Avoidance and Resource Recovery Act 2001. Where waste from Portion 2 Early Works needs to be disposed offsite, classification of waste as required by REMMM HY-6 is undertaken prior to disposal in accordance with the EPA Waste Classification Guidelines (2014), transported by a licensed waste transporter and disposed of to an appropriately licenced facility.

Ref #	Commitment	Timing	WRMP reference	How Addressed
	CEMP, and Erosion and Sediment Control Plan for the project. Develop procedures for the assessment, handling and stockpiling of potentially contaminated materials, in accordance with EPA Waste Classification Guidelines (2014).			
WM-1	During detailed design and detailed construction planning, the following resource and material minimisation initiatives would be explored, and if determined to be reasonable and feasible, implemented:			
	(i) Use of recycled materials, such as the maximum permitted recycled content for asphalt and concrete (including use of fly ash and blast furnace slag).	During construction	Section 5.1.2	The project's primary material is imported spoil and wherever practical, materials for the clean fill cap will be sourced from Sydney based Infrastructure Projects. Procurement and transport of locally sourced materials for the site works reduce emissions by reusing materials close to the source. Reuse of excavated material as general fill under or as part of the integrated capping system where it meets the contaminated land management and project specification requirements. This will reduce volumes requiring off-site disposal to an appropriately licensed landfill facility. Reuse of removed concrete slabs under the integrated capping system as part of the capillary break and structural fill layer where it meets specification and environmental requirements. This will reduce volumes requiring off-site disposal to an appropriately licensed landfill facility.

Ref #	Commitment	Timing	WRMP reference	How Addressed
	(ii) Use of wastewater or recycled water to reduce potable water demand during construction and operation.	During construction	Section 5.1.2	Due to the contaminated nature of the remediation works, re use of water from contaminated areas will not be permitted. An assessment of feasibility of using treated water from the Aquanet, recycled water system was investigated in previous remediation activities. Due to the length of project it was not practicable to be used for Portion 2 Early Works however details have been shared with the TfNSW for distribution to the future stabling and maintenance (SaM) facility operator for potential incorporation into future works.
WM-2	A waste and resource management plan would be prepared for the project as part of the overall CEMP. This plan would set out details for managing waste generation and resource consumption. The plan would be informed by the Parramatta Light Rail Sustainability Plan and the requirements of the Waste Avoidance and Resource Recovery Act 2001. The objectives and strategies of the waste and resource management plan would include the following:			
	(i) Construction waste would be managed through the waste hierarchy established under the <i>Waste Avoidance and Resource Recovery Act 2001</i> management hierarchy.	During construction	Section 5.1	Construction waste from Portion 2 Early Works will be managed through waste hierarchy from the <i>Waste Avoidance and Resource Recovery Act 2001</i> .
	a) Classification of waste during construction in accordance with the current guidelines	During construction	Section 5.2	Where waste from Portion 2 Early Works needs to be disposed offsite, classification of waste is undertaken prior to disposal in accordance with the EPA Waste Classification Guidelines (2014), transported by a licensed waste transporter and disposed of to an appropriately licenced facility.
	b) Segregation of waste into stockpiles of spoil, concrete, steel, timber, paper and cardboard and vegetation to make it easier to recycle components and prevent cross contamination.	During construction	Section 5.1.3	Waste segregation onsite will be performed for various waste materials, including spoil and demolition waste. Waste will be separated onsite into dedicated stockpiles or bins for either reuse

Ref #	Commitment	Timing	WRMP reference	How Addressed
				onsite or collection by a waste contractor and transport to appropriate off-site facilities.
	c) Procurement of materials would be carried out on an 'as-needed' basis to reduce over-ordering and wastage, and exploring opportunities to reuse materials, where applicable.	During construction	Sections 5.1.1 , 5.1.2 & Section 6	Prior to commencing construction, a detailed design shall be conducted of key project stages, including to identify material volumes and cut-to-fill profiles for the Portion 2 Early Works. The detailed design will be used to prepare an Earthworks plan to identify staging works and will address requirements and constraints identified by the specifications. The Earthworks Plan will be developed in accordance with the applicable ASA Standard(s) for the project. The design assessments shall also be utilised to estimate materials required for the works. Ongoing materials tracking, including Imported material volumes, such as VENM and ENM shall be tracked in accordance with a Materials Tracking System. The project's primary material is imported spoil and wherever practical, materials for the clean fill cap will be sourced from Sydney based Infrastructure Projects. Procurement and transport of locally sourced materials for the site works reduce emissions by reusing materials close to the source. Reuse as part of the ground improvement works and/or integrated capping system will reduce volumes requiring disposal at other sources, such as landfill.

Ref #	Commitment	Timing	WRMP reference	How Addressed
	(ii) Targets for materials use, waste disposal and recovery, recycling or reuse of construction waste, and beneficial reuse of spoil. A Construction Waste, Reuse, Recycling and Energy Plan would be prepared as part of the CEMP. It would ensure resource energy use is minimised by tracking and reporting performance, and applying corrective action as required.	During construction	Section 5.1.2 & Section 6	This plan has been prepared as a part of CEMP to manage waste and resource related to Portion 2 Early Works. The project has established environmental targets for waste and sustainability. These are shown in Section 2.3 and include, minimise waste production, >90% re-use/recycle of produced waste and minimal recourse usage. All related actions will be reported as stated in section 8.5.
	(iii) Identification of carbon and energy strategies and initiatives to minimise carbon and energy use associated with construction (e.g. selection of equipment, inclusion of renewable energy sources to power temporary facilities and equipment, designing site offices for energy efficiency, and efficient operation of vehicles and equipment).	During construction	Section 5.1.1 & Section 6	A Carbon Estimate and Reporting Tool (CERT) shall be conducted in accordance with the TfNSW Carbon Estimate and Reporting User Manual (7TP-ST-035) to establish a baseline footprint for the project and identify a reduction in construction related GHG emissions by 5% from project baseline as determined by the Carbon Estimate and Reporting Tool (CERT).
	(iv) Consideration of materials mitigation and management measures including use of recycled materials, recycling and reuse of materials on site, use of materials with lower embodied impact, and consideration of whole of life costs during procurement.	During construction	Sections 5.1.1 & 5.1.2	The project's primary material is imported spoil and wherever practical, materials for the clean fill cap will be sourced from Sydney based Infrastructure Projects. Procurement and transport of locally sourced materials for the site works reduce emissions by reusing materials close to the source. Concrete stockpiles classified as GSW where practicable are to be crushed and blended with imported material to achieve compaction specifications and to facilitate onsite reuse. Reuse as part of the ground improvement works and/or integrated capping system will reduce volumes

Ref #	Commitment	Timing	WRMP reference	How Addressed
				requiring disposal at other sources, such as landfill. Remediation works will require the generation of potentially contaminated materials, where possible material will be retained on-site within the integrated capping system or an engineered, on-site containment berm.
	(v) Prior to disposal/removal or reuse off-site, all wastes would be classified in accordance with the waste classification guidelines (Waste Classification Guidelines (OEH , 2016) and Waste Avoidance and Resource Recovery Strategy 2014-2021 (EPA, 2014) to ensure the most appropriate disposal or reuse option.	During construction	Section 5.2	Remediation works will require the generation of potentially contaminated materials, where possible material will be retained on-site within the integrated capping system or an engineered, on-site containment berm. Where waste from Portion 2 Early Works needs to be disposed offsite, classification of waste is undertaken prior to disposal in accordance with the EPA Waste Classification Guidelines (2014), transported by a licensed waste transporter and disposed of to an appropriately licenced facility. Disposal of waste will include GPS tracking of trucks, materials tracking documentation, including weighbridge receipts, stockpile maps, waste classification reports etc. Where necessary, EPA waste transport certificates shall be generated for each waste consignment.
	(vi) Monitoring and compliance requirements.	During construction	Section 8.3	Regular monitoring, auditing and reporting on waste management and resource consumption will be performed throughout the construction. Findings will be reported as per the requirements outlined in section 8.5.

Ref #	Commitment	Timing	WRMP reference	How Addressed
WM-3	The project would achieve a diversion rate for construction waste from landfill of a minimum of 90 per cent of waste by volume, with a target of 95 per cent. The project would also reuse 100 per cent of paving and other reusable materials or facilitate reuse of such materials. Contaminated waste which cannot be diverted from landfill would be excluded from this calculation. Where targets cannot be achieved, the project must demonstrate all feasible measures have been taken to achieve as close to the targets as possible.	During construction	Section 2.3 & Section 5.1.2	Remediation works will require the generation of potentially contaminated materials, where possible material will be retained on-site within the integrated capping system or an engineered, on-site containment berm. Where waste from Portion 2 Early Works needs to be disposed offsite, classification of waste is undertaken prior to disposal in accordance with the EPA Waste Classification Guidelines (2014), transported by a licensed waste transporter and disposed of to an appropriately licenced facility.
WM-4	Construction waste would be segregated and stockpiled on site, with materials such as bricks and tiles, timber, plastic, metals and existing track materials (such as rail and ballast materials) being separated where practicable and sent to a waste facility with recycling capabilities.	During construction	Section 5.1.3	Waste segregation onsite will be performed for various waste materials, including spoil and demolition waste. Waste will be separated onsite into dedicated stockpiles or bins for either reuse onsite or collection by a waste contractor and transport to appropriate off-site facilities.
WM-5	The disturbance, movement and disposal of asbestos containing materials would be carried out in accordance with the Work Health and Safety Regulation 2011 and other relevant guidelines.	During construction	Section 5.2 Unexpected Finds Procedure (Appendix A of CLMP)	Asbestos has been identified as a potential contaminant of concern on the site during previous site investigation and remediation works. Where asbestos is identified, the project Asbestos Removal Control Plan shall be implemented to ensure the removal is carried out in accordance with the Code of Practice for How to Safely Remove Asbestos (SafeWork NSW, 2016).
WM-6	Where possible and fit for purpose, spoil would be beneficially reused within the project before off-site reuse or disposal options are pursued. A spoil management strategy would be developed prior to the commencement of construction and implemented during	During construction	Section 5.1	Waste generation will be avoided where practicable. If this is not possible, waste generation will be minimised. Remediation works will require the generation of potentially contaminated materials, where

Ref #	Commitment	Timing	WRMP reference	How Addressed
	construction. The strategy would identify spoil disposal sites and describe the management of spoil on-site and during off-site transport.			possible material will be retained on-site within the integrated capping system or an engineered, on-site containment berm. All remediation activities will be carried out in accordance with a Remediation Works Validation Plan, which will be endorsed by the EPA accredited, Site Auditor. This will outline the strategy for the management of materials on-site and where necessary, the process for off-site disposal to an appropriately licensed off-site facility.

3.4 Environmental Performance Outcomes

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

Table 3-3: Environmental Performance Outcomes relevant to this WRMP

ID Ref#	Environmental Performance Outcome	Timing	WRMP reference	How Addressed
EPO-SU-2	The project would comply with the relevant requirements of the NSW Government Resource Efficiency Policy.	During construction	Section 6	Prior to commencement, the project shall complete the Sustainable Design Guideline Checklist and a Greenhouse Gas Inventory Report using the TfNSW Carbon Estimate and Reporting Tool (CERT). The SDG Checklist is to demonstrate compliance with elements of the NSW Government Resource Efficiency Policy (GREP).

4 Environmental aspects and impacts

4.1 Construction waste streams and resource use

The following construction related waste streams have been identified:

- Contaminated materials generated from remediation activities;
- Wastes from existing structures that require demolition, pipe work, pavements and concrete pathways;
- Excavation wastes including excavated natural material (ENM), virgin excavated natural material (VENM) and contaminated soils;
- Vegetation from removal of shrubs and plants;
- Groundwater and Residual water generated from construction activities;
- Packaging materials associated with items delivered to site such as pallets, crates, cartons, plastics and wrapping materials;
- Wastes produced from the operation and maintenance of various heavy construction equipment including liquid hazardous wastes from cleaning, repairing and maintenance;
- Non-hazardous wastes would be generated through the use of worker's facilities such as toilets;
- General wastes including office wastes, scrap materials and biodegradable wastes; and
- Used spill kit materials.

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

- Procurement and delivery of materials to site;
- Site establishment, including compound set up;
- Removal, relocation and compaction of excavated materials for ground improvement works;
- Removal of hard stand materials such as concrete;
- Operation of site compounds and lighting;
- Construction plant and machinery;
- Importation of material to site; and
- Removal of waste from the site.

4.2 Impacts

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

- Generation of construction waste, such as excavated soil and rock;
- Generation of domestic waste from construction personnel;
- Inappropriate handling and disposal of hazardous waste;

- Generation or spread of contaminated waste/soils, e.g. groundwater, used or expired chemicals, or construction materials;
- Water pollution due to sediment runoff from soil excavation and excess spoil storage;
- Weed infestation from dispersion of seeds and so forth during clearing and access upgrading activities;
- Consumption of non-renewable resources such as energy, diesel and other chemicals;
- Greenhouse gas emissions due to consumption of energy from non-renewable resources;
- Excessive volumes of spoil directed to landfill due to inadequate recycling and reuse;
- Excessive volumes of waste directed to landfill due to excessive resource consumption and inadequate collection, classification and disposal of waste;
- Contamination of soil, surface and / or groundwater from the inappropriate storage, transport and disposal of liquid and solid waste;
- Generation of excessive waste; and
- Generation or spread of contaminated waste/soils.

Refer also to the Environmental Risk Register included in Appendix A2 of the CEMP.

5 Waste management

5.1 Waste management hierarchy

The *Waste Avoidance and Resource Recovery Act 2001* aims to promote waste avoidance and resource recovery through (amongst other things) the establishment of the following waste hierarchy:

1. Avoidance of unnecessary waste and resource consumption – the first priority in waste management includes actions to reduce the amount of waste generated;
2. Resource recovery – the second priority in waste management involves opportunities for reuse (without further processing), recycling (processing waste materials to make the same or different products), reprocessing and energy recovery; and
3. Disposal – the least desirable option in the waste management hierarchy involves the disposal of waste in an appropriate manner so as to minimise the potential adverse environmental impacts associated with its disposal.

Refer to **Figure 5-1** for the most recent waste hierarchy provided by the EPA in the *NSW Waste Avoidance and Resource Recovery Strategy 2014-21, 2014*.



Figure 5-1: The Waste Hierarchy

The approach to the steps in the waste hierarchy most relevant to the Portion 2 Early Works is briefly described below.

5.1.1 Reduce or avoid

The waste hierarchy nominates reduction and/or avoidance of waste as the primary aim in waste management. During the Portion 2 Early Works activities, the following measures will be implemented to avoid generation of waste;

- Conduct a detailed design to identify the excavation cut-to-fill profile to minimise the disturbance of materials to be retained and maximise the potential reuse of materials on-site;
- Construction of an engineered containment cell for the retention and containment of waste materials on-site;
- Ensure necessary planning and efficient management of the delivery and storage of materials to avoid spoilage of materials;
- Establish agreements with suppliers for 'take back' arrangements for packaging/pallets/drums where possible;
- Procurement of materials with minimal packaging;
- Procurement of materials on 'as needed' basis, based on design or assessment of necessary quantities;
- Ensure correct types and quantities of materials are ordered to avoid excess material waste;
- Avoid waste and disposal from slab demolition through crushing and processing concrete by Concrete Crusher or similar for re use in ICS or GI works where practicable
- Coordinate site activities to minimise waste through utilisation of unused materials;
- Employ trained and qualified plant and machinery operators to avoid damage to materials and reduce wastage of consumables during plant and machinery operation and maintenance; and
- Ensure protection of stored materials from inclement weather

5.1.2 Reuse and recycling

Waste separation and segregation will be managed on-site for Portion 2 Early Works to facilitate reuse and recycling as a priority of the waste management program as follows:

- Waste segregation onsite- waste materials, including spoil and demolition waste, will be separated onsite into dedicated stockpile areas or bins for either reuse onsite or collection by a waste contractor and transport to off-site facilities;
- Construction of an engineered containment cell for the retention and containment of waste materials on-site;
- Use of recycled materials, spoil from other projects will be prioritised where applicable for Portion 2 Early Works;
- Crushing and re-use of demolished concrete slabs as part of the ICS and GI works will be employed where practicable. This may include blending with other recycled materials to achieve necessary specifications.
- Portion 2 Early Works will aim to meet waste management and sustainability targets; and
- Assess the feasibility of using treated water from the Aquanet, recycled water system.

5.1.3 Waste handling and storage

Where waste is required to be handled and stored onsite prior to onsite reuse or offsite recycling/disposal, it shall be stored in accordance with Waste Storage (Clause 42) limits within schedule 1 of the POEO Act. The following measures apply:

- Spoil, topsoil and mulch are to be stockpiled onsite in allocated areas, where appropriate, and mitigation measures for dust control and surface water management will be implemented as per the Air Quality Management Sub-plan and the Soil and Water Management Sub-plan (SWMP);
- Ongoing materials tracking, including waste and imported material volumes shall be tracked in accordance with the Materials Tracking System requirements identified in the Remediation Works Validation Plan (RWVP), which will be endorsed by the EPA-accredited Site Auditor;
- Stockpiles will be clearly marked and their location tracked on the Stockpile tracking map. Stockpile locations, along with appropriate environmental controls will be further detailed on the relevant ECMs (refer to Appendix A6 of the CEMP);
- Liquid wastes are to be stored in appropriate containers in bunded areas until transported offsite. Bunded areas will have the capacity to hold 110 per cent of the liquid waste volume for bulk storage or 120 per cent of the volume of the largest container for smaller packaged storage;
- 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; and
- All other recyclable or non-recyclable wastes are to be stored in appropriate covered receptacles (e.g. bins or skips) in appropriate locations onsite and contractors commissioned to regularly remove/empty the bins to approved disposal or recycling facilities.

5.1.4 Waste disposal

Waste (and spoil) disposal is to be in accordance with the *Protection of the Environment Operations Act 1997* and the *Waste Avoidance and Resource Recovery Act 2001*. Wastes that are unable to be reused or recycled will be disposed of offsite to an appropriately licenced waste management facility following classification (refer to section 5.2). Details of waste types, volumes and destinations shall be recorded in a Materials Tracking Register. Disposal of waste at licensed facilities shall include GPS tracking of waste vehicles, audits of waste facility receipts and cross verification with the facility. If asbestos waste needs to be disposed offsite, it will be tracked through EPA's *WasteLocate* service.

The site has an existing groundwater treatment plant (GTP). The GTP is designed to remove contaminants from groundwater pumped from the north-eastern boundary of the site. Discharge of treated groundwater to sewer is licensed under Trade Waste Agreement (TWA) Number 15831.

5.1.5 Imported Materials

Imported materials are required for Portion 2 Early Works as an important component of the integrated capping system. Imported materials shall be validated as either Virgin Excavated Natural Materials (VENM) or Excavated Natural Materials (ENM) as defined under the POEO Act 1997 and the POEO (Waste) Regulation 2014.

Imported VENM or ENM will be assessed in accordance with the ENM Order 2014 (NSW EPA 2014). Prior to importation, the source site of the imported materials will be investigated. The site history will be reviewed to ensure previous activities undertaken on the source site have not

caused contamination of the imported materials. For VENM, the materials being excavated are visually assessed by the validation consultant to confirm that no sign of contamination is present and that the materials are undisturbed.

In some cases existing documentation/classification reports may be available and an adequacy review may be sufficient (coupled with a site inspection if required) by the Validation Consultant prior to importation of materials.

5.2 Classification of waste streams

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

Step 1: Is it 'special waste'?

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

Note: Asbestos and clinical wastes must be managed in accordance with the requirements of Part 7 of the *Protection of the Environment Operations (Waste) Regulation 2014* which outline special requirements in the areas of transportation, disposal, re-use or recycling. Relevant WorkCover requirements will also be complied with and detailed further in Project Work Health and Safety (WHS) documentation.

If it is established that the waste is not special waste, progress to waste classification under Step 2.

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

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

Liquid wastes are sub-classified into:

- Sewer and stormwater effluent
- Trackable liquid waste according to *Protection of the Environment Operations (Waste) Regulation 2014*
- Non-trackable liquid waste

If it is established that the waste is not liquid waste, progress to waste classification under Step 3.

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

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

Note: Wastes that have been classified by the EPA cannot be reclassified by any other party. A list of all pre-classified waste streams is located in *NSW EPA Waste Classification Guidelines – Part 1: Classifying Waste (pg. 7-10)*.

If it is established that the waste is not pre-classified waste, progress to waste classification under Step 4.

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.

If it is established that the waste is not hazardous waste, progress to waste classification under Step 5.

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

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

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

If it is established that the waste is not hazardous or restricted waste, it is then general solid waste. Progress to waste classification under Step 6 and determine whether the general solid waste is putrescible or non-putrescible.

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 Classification of potential waste streams

The types of wastes which may be generated during construction are outlined within classifications in **Table 5-1**.

Table 5-1: Classification of potential waste streams

Construction Activity	Waste Type	Waste Classification	Proposed reuse/recycling/disposal methods
Bulk Earthworks / Excavations	VENM (Virgin Excavated Natural Material) or ENM (Excavated Natural Material)	Imported materials shall be validated as either Virgin Excavated Natural Materials (VENM) or Excavated Natural Materials (ENM) as defined under the POEO Act 1997 and the POEO (Waste) Regulation 2014.	Beneficial reuse on site as engineering fills and where possible, optimise reuse on the Project. Beneficial reuse offsite. Offsite disposal at an approved facility.
	Potentially contaminated soils	If material is taken off site classification will be carried out, based on soil tests carried out prior to construction and in accordance with the EPA Waste Classification Guidelines: Parts 1 & 2.	On-site containment of contaminated materials in an engineered containment cell. Off-site disposal at an approved facility Off-site reuse as engineering fill or used in earthworks On site burial / remediation
Vegetation Removal	Potentially contaminated soils	General solid waste (non-putrescible)	On-site containment of contaminated materials in an engineered containment cell. Off-site disposal at an approved facility Off-site reuse as engineering fill or used in earthworks On site burial / remediation

Construction Activity	Waste Type	Waste Classification	Proposed reuse/recycling/disposal methods
General Demolition	Concrete, asphalt, bricks and gravel	General solid waste (non-putrescible)	Re-use onsite – Crush and use as backfill/road base, access tracks, landscape mounds and other applications where suitable and approved by TfNSW. Resource recovery offsite – Reuse, recycle, reprocess or energy recovery at an appropriately licensed waste facility in accordance with EPA Waste Classification Guidelines (2009). On-site containment of contaminated materials in an engineered containment cell.
	Scrap metal	General solid waste (non-putrescible)	Off-site recycle
	Glass	General solid waste (non-putrescible)	Off-site recycle
Asbestos Removal	Asbestos	Special Waste (Asbestos)	On-site containment of contaminated materials in an engineered containment cell. Dispose offsite at a licenced facility to accept asbestos waste
General Site Operations	Waste generated by the maintenance of plant and equipment including air and oil filters and rags	General solid waste (non-putrescible)	Offsite disposal at an approved facility

Construction Activity	Waste Type	Waste Classification	Proposed reuse/recycling/disposal methods
	Oils, grease, fuel, chemicals and other fuels	Liquid	Offsite disposal at an approved facility
	Tyres	Special waste	Offsite disposal/ recycling at an approved waste facility
	Batteries	Hazardous waste	Offsite disposal/recycling at an approved facility
	Radiator fluid	Hazardous waste	Offsite disposal at an approved facility
	Hydraulic fluid	Hazardous waste	Offsite disposal at an approved facility
	Domestic waste generated by workers	General solid waste (putrescible)	Offsite disposal at an appropriate licensed waste facility
	Sewage from amenities	General solid waste (putrescible)	Offsite disposal at an appropriately licensed waste facility
	Waste water / recycled water / storm water	Liquid	Treated and/or reused on-site when biologically and chemically suitable
Office Operations	Paper, cardboard and plastic	General solid waste (non-putrescible)	Offsite recycling
	Glass bottles and aluminium cans	General solid waste (non-putrescible)	Offsite recycling
	Ink cartridges	General solid waste (non-putrescible)	Offsite recycling

Construction Activity	Waste Type	Waste Classification	Proposed reuse/recycling/disposal methods
	Food waste	General solid waste (putrescible)	Offsite disposal at an approved facility
	Effluent	Liquid	Offsite disposal at an appropriately licensed waste facility and/or treated and reused on site
Groundwater Treatment	Contaminated groundwater	Trade waste	On-site treatment of treated groundwater through a groundwater treatment plant (GTP) to sewer. Licensed under Trade Waste Agreement (TWA) Number 15831.

5.4 Waste exemption

Clause 51 Protection of the Environment Operations (Waste) Regulation 2005 enables the EPA to grant exemptions to the licensing and payment of levies for the land application or use of waste. The EPA has issued general exemptions for a range of commonly recovered, high volume and well characterised waste materials that allow their use as fill or fertiliser at unlicensed, off-site facilities. The general Resource Recovery Exemptions and Orders may be applicable to this project are defined in **Table 5-2** below. These are general gazette exemptions that do not require approval. A specific exemption may be granted where an application is made to the EPA.

Table 5-2: Waste Recovery Exemptions and Orders and associated conditions

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

Exemption/Order	General Conditions
The recovered aggregate exemption 2014 The recovered aggregate order 2014	• The chemical concentration or other attribute of the recovered aggregate listed in the Recovered aggregate Exemption must be met. • The recovered aggregate can only be applied to land for road making activities, building, landscaping and construction works. This approval does not apply to any of the following applications: • Construction of dams or related water storage infrastructure, • Mine site rehabilitation, • Quarry rehabilitation, • Sand dredge pond rehabilitation, • Back-filling of quarry voids, • Raising or reshaping of land used for agricultural purposes, and • Construction of roads on private land unless: 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 (EPI), or it is to provide access (temporary or permanent) to a development approved by a Council, or the works undertaken are either exempt or complying development.
The blast furnace slag exemption 2014 The blast furnace slag order 2014	• Blast furnace slag or blended slag can only be applied to land in cementitious mixes such as concrete or in non-cementitious mixes such as an engineering fill in earthworks or roadmaking activities.
The reclaimed asphalt pavement exemption 2014 The reclaimed asphalt pavement order 2014	• Reclaimed asphalt can only be applied to land for road related activities including road construction or road maintenance
Project Specific Exemptions	• Issued by EPA on a case-by-case basis. Exemption only valid if implemented in accordance with its requirements.

6 Resource management and conservation

The Project team is dedicated to implementing resource conservation best practice and the reduction of greenhouse gases by adopting energy efficient work practices according to *NSW Government Resource Efficiency Policy*. Steps include:

Developing and implementing effective procurement practices to minimise energy and resource use such as;

- Prepare and track sustainability compliance with the TfNSW NSW Sustainable Design Guidelines to achieve a minimum 'Pass' design rating;
- A Carbon Estimate and Reporting Tool (CERT) shall be conducted in accordance with the TfNSW Carbon Estimate and Reporting User Manual (7TP-ST-035) to establish a baseline footprint for the project and identify innovations and methods to achieve a minimum 5% reduction in project greenhouse gas emissions;
- Use of energy efficient construction equipment and vehicles;
- Procurement of locally sourced materials from other Sydney based Infrastructure Projects on 'as needed' basis to reduce over-ordering and wastage;
- Switching off construction plant, vehicles and equipment when not in use to minimise idling; and
- Conducting awareness programs through inductions, tool-box talks and other methods for all site personnel regarding energy conservation methods.

Considering sustainable design principles in the establishment of the Project compound sites. These shall include but are not limited to:

- Investigation and implementation of emissions management actions such as use of energy efficient construction practices and fuel-efficient construction equipment and vehicles;
- Onsite crushing and reuse of concrete where practicable;
- Identify and implement feasible sustainability initiatives into the project works;
- Install and operate temporary site facilities in compliance with sustainability targets identified for the project;
- Maximise the potential for beneficial spoil reuse on the project, in accordance with contaminated land site reuse criteria; and
- Tracking of water, energy, waste and materials volumes and GHG emissions throughout the duration of the project.

7 Environmental control measures

Specific measures and requirements to meet the objectives of this WRMP and to address contract specifications, CoA and REMMMs are outlined in Table 7-1.

Table 7-1: Waste, energy, and water management and mitigation measures

ID	Measure/Requirement	Resources needed	When to implement	Responsibility	Reference
WR1	A waste and resource management plan will be prepared detailing how Portion 2 early works will manage waste generation and resource consumption.	WRMP	Pre-construction	Environment & Hygiene Manager	REMMM GEN-1, WM-2
WR2	Waste generation will be avoided where practicable.	WRMP Waste hierarchy - <i>Waste Avoidance and Resource Recovery Act 2001</i>	During construction	Environment & Hygiene Manager Site Supervisor	CoA E127 REMMM WM-2
WR3	Where avoidance of waste generation is not possible, measures will be taken to minimise the waste generation.	WRMP Waste hierarchy - <i>Waste Avoidance and Resource Recovery Act 2001</i>	During construction	Environment & Hygiene Manager Site Supervisor	CoA E127 REMMM WM-2
WR4	Portion 2 Early works targets to recycle or reuse >90% waste generated onsite	WRMP	During construction	Environment & Hygiene Manager	REMMM HY-6, WM-3, WM-6
WR5	Beneficial reuse of recycled materials/spoil will be carried out where possible.	WRMP	During construction	Project Manager Environment & Hygiene Manager	REMMM WM-3, WM-6
WR6	Where waste from Portion 2 Early Works needs to be disposed offsite, classification of waste is undertaken prior to disposal in accordance with the EPA Waste Classification Guidelines Part 1: Classifying Waste (2014) and disposed of to a licenced facility.	WRMP Waste hierarchy - <i>Waste Avoidance and Resource Recovery Act 2001</i>	During construction	Environment & Hygiene Manager	CoA E127, E129, E130 REMMM HY-6, WM-2

ID	Measure/Requirement	Resources needed	When to implement	Responsibility	Reference
WR7	Disposal of waste will include GPS tracking, audits or receipts and cross verification.	WRMP Material Tracking Waste Transport Certificates GPS tracking Receipts from Waste facilities	During construction	Environment & Hygiene Manager	CoA E129, E130, REMMM HY-6
WR8	If asbestos is found unexpectedly, the Unexpected Finds Procedure will be implemented.	WRMP Asbestos Removal Control Plan (ARCP) Unexpected Finds Procedure (Appendix A of CLMP)	During construction	Environment & Hygiene Manager	REMMM WM-5
WR9	If asbestos waste needs to be disposed offsite, it will be tracked through EPA's WasteLocate service.	Unexpected Finds Procedure WRMP	During construction	Environment & Hygiene Manager	CoA E129, E131
WR10	Waste segregation onsite will be performed for waste materials	WRMP	During construction	Environment & Hygiene Manager	REMMM WM-2, WM-4
WR11	Use of recycled materials, spoil from other projects, wastewater or recycled water will be prioritised where applicable	WRMP	During construction	Environment & Hygiene Manager	REMMM WM-1
WR12	Management of emissions will be incorporated into staff inductions.	WRMP, CEMP Site Induction	During construction	Environment & Hygiene Manager	REMMM GG-3

ID	Measure/Requirement	Resources needed	When to implement	Responsibility	Reference
WR13	Relevant measures as stated in CEMP and WRMP will be taken to minimise the emissions and will be included in site induction / training material.	WRMP, CEMP Site Induction	During construction	Environment & Hygiene Manager	REMMM GG-4, GG-5, GG-6 EPO-SU-2
WR14	Energy efficient work practices will be implemented as far as practicable	WRMP	During construction	Environment & Hygiene Manager	REMMM GG-6, WM-2 EPO-SU-2
WR15	Procurement of materials will be performed on 'as needed' basis	WRMP	During construction	Environment & Hygiene Manager	REMMM WM-2 EPO-SU-2
WR16	Regular monitoring, auditing and reporting will be performed against the requirements of this WRMP.	WRMP Sustainable Design Checklist	During construction	Environment & Hygiene Manager	REMMM GG-7, WM-2

8 Compliance management

8.1 Roles and responsibilities

The Portion 2 Early Works project team's organisational structure and overall roles and responsibilities are outlined in Section 3.3 of the CEMP. Specific responsibilities for the implementation of environmental controls are detailed in [Section 7](#) of this Plan.

The following table outlines the main parties who will be involved in use of the Plan, and their corresponding roles and responsibilities. This table is not intended to list all responsibilities under relevant legislation, but is presented as a brief clarification of the respective responsibilities in implementing this Plan.

Table 8-1: Roles and Responsibilities of Portion 2 Early Works

Role	Responsibility
TfNSW	Promote good environmental and WHS management.
Project Manager	Ensure all personnel entering the site are inducted to an appropriate level in environmental and emergency procedures. Provide subcontractors with the requirements of this Plan prior to commencement of work.
Environment & Hygiene Manager	Preparation of this Plan. Implement, control and maintain the Plan. Provide subcontractors with the requirements of this Plan prior to commencement of work. Ensure that all changes to the Plan are communicated to relevant authorities (stated in all personnel working on site, including subcontractors).
Site Supervisor	Take all practical measures to ensure the workplace under their supervision is operating according to the agreed principles of the Plan, and without risks to health or the environment. Ensure all personnel under their control entering the site are inducted to an appropriate level in environmental and emergency procedures. Respond to any SHEQ incidents. Ensure any changes to this Plan or procedures are communicated to all personnel under their control.
Subcontractors	All subcontractors are required to comply with this Plan and to comply with directions from the Project Manager and/or Environment & Hygiene Manager in this respect.

Environmental Representative	Review, provide comment on and endorse this plan to verify its compliance with relevant environmental legislation, standards and planning approval for Portion 2 Early Works. Ensure implementation of this plan, facilitated through inspections and that environmental auditing is performed in accordance with all relevant project requirements. Provide independent guidance and advice to TfNSW and the Contractor in relation to environmental compliance issues and the clarification of planning approval conditions;
Employees and Visitors to Site	Attend appropriate induction and training sessions, following procedures and making the Project Manager and/or Environment & Hygiene Manager aware of any actual or potential breaches of procedures. Where encountered, reporting of previously unidentified areas of contamination to the Site Manager.

8.2 Training

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

- Existence and requirements of this sub-plan;
- Existence and requirements of other management plans and guidelines such as Spoil Management Strategy within the SWMP;
- Relevant legislation;
- Incident response, management and reporting;
- Waste reporting requirements;
- Requirements of the waste hierarchy;
- Waste/ recycle storage requirements;
- Potential for contaminated material (including asbestos containing material) to be present on site and management requirements for such material if identified;
- Energy and resource efficient best practices;
- Waste handling requirements and details of the types of wastes that are intended for on-site reuse;
- Management of emissions;
- Other specific responsibilities for waste and reuse management; and
- Other specific responsibilities for resource management.

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

Further details regarding staff induction and training are outlined in Section 3.5 of the CEMP.

8.3 Monitoring and inspection

Compliance with the requirements of this WRMP, its implementation and effectiveness will be monitored through regular inspections of worksite and activities and quarterly compliance tracking. A Compliance Tracking Report will be prepared for submission to the Department of Planning and Environment (DP&E) on a 6-monthly basis. This includes regular monitoring of energy, resource use and associated greenhouse gas emissions related to Portion 2 Early Works.

Additional requirements and responsibilities in relation to inspections are documented in Section 3.8.1 and Section 3.8.4 of the CEMP.

8.3.1 Materials Tracking Procedure

Waste and Materials tracking is based on a strict sequence of decisions that are followed to allow waste and material to proceed from its origin through to its final use. Waste and materials tracking data is collected on the project to allow reporting of the following:

- The quantity of each type of waste sent to landfill;
- The quantity of each type of waste recycled;
- The quantity of each type of waste reused;
- The quantity of each type of waste treated;
- The quantity of each type of hazardous / regulated waste generated on the project;
- Its method of treatment and disposal;
- The location of treatment and disposal;
- Copies of records confirming the legal transport, treatment and disposal; and
- Measurement of any reduction in waste generation that has been achieved.

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.

Waste and materials tracking data will be captured in a Materials Tracking Register. The Materials Tracking Register will include a Stockpile Register and Stockpile Map to track materials generated throughout the project. These documents will be provided to TfNSW and NSW EPA accredited Site Auditor via the Monthly Reports and Monthly Remediation Tracking Reports. Waste and materials tracking data will be maintained and updated as soon as reasonably practicable to inform weekly environmental site inspections.

The disposal of materials from Site will follow the process shown in Figure 8-1 below:

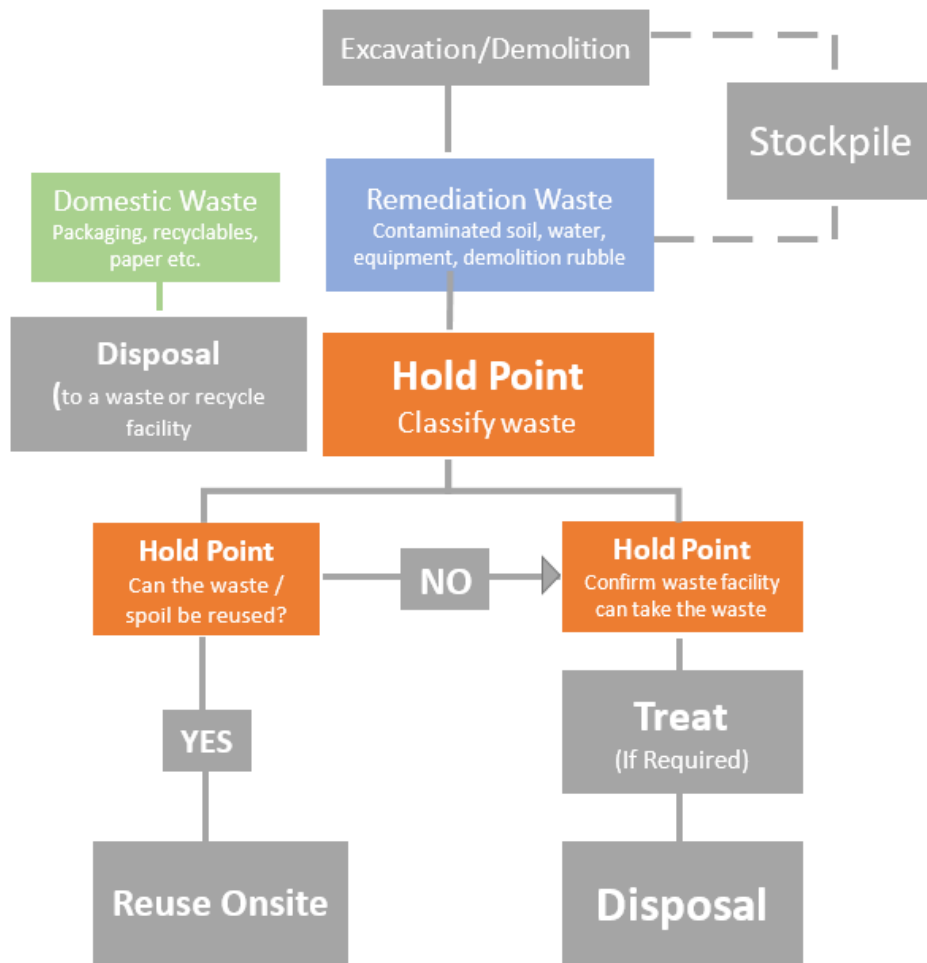


Figure 8-1: Process of disposal of materials

8.4 Auditing

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

Audit requirements are detailed in Section 3.9.3 of the CEMP.

8.5 Reporting

Reporting requirements and responsibilities are documented Section 3.9.5 of the CEMP.

All relevant waste disposal information is summarised and included in the project monthly environmental report which is provided to the Environmental Representative (ER) and TfNSW Project Manager.

Waste tracking certificates and any other waste dockets will be retained on site in a designated folder.

All tracking, monitoring, sampling and testing information and data associated with waste management at the Portion 2 Early Works site will be reported on, including:

- Demolition waste;

- Materials scheduled for on-site re-use;
- Materials disposed off-site; and
- Materials imported to site

All concrete washout areas and sediment controls or areas that store water / waste water will be inspected in accordance with the TfNSW Guidelines for Concrete Washout and Water Discharge and Reuse (refer to Erosion and Sediment Control Plan of SWMP).

Inspection checklists assessing their integrity and capacity will be completed, as a minimum, at the following times:

- Weekly during dry weather;
- Prior to forecast rainfall events; and
- During rainfall events (as often as possible) and as soon as possible following a rainfall event when the site is unattended.

Water quality testing, including on trade waste, shall be conducted in accordance with the SWMP.

Incident reports will be generated if an incident occurs on site. Examples of incidents include:

- Bins overflowing and not being managed correctly;
- Waste taken to incorrect waste facility (not licensed for that waste);
- Failure to retain waste dockets and provide them to staff for entering into waste registers;
- Failure to maintain waste registers; and
- Failure to use a licensed transporter for prescribed waste.

Corrective actions may include:

- Training on correct segregation and identification of waste streams;
- Improved signage on bins;
- Temporary supervision to oversee waste management at the site;
- Selective removal of non-compliant waste to another disposal facility; and
- Implementation of a new or improved procedure to clarify issues.

9 Review and improvement

9.1 Continuous improvement

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

The continuous improvement process will be designed to:

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

9.2 WRMP update and amendment

The processes described in Section 3.9 to Section 3.13 of the CEMP may result in the need to update or revise this Plan. This will occur as needed in consultation with TfNSW 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 – refer to Section 3.12.1 of the CEMP.

A copy of the ER endorsement is included in Appendix C of the plan.

Appendix A – Material Tracking Register

The material tracking register is filed as '*Materials Tracking Register (US-050056-OPS-REG-002)*'. A copy of the template is provided below.

[illegible]

Appendix B – Licensed Transporter and Waste Facility Register



Licensed Transporter and Waste Facility Register

Transporter of Waste	Licence No	Licensee	Premises	Contact Number	Contact Name	Licenced to Accept or Transport								Date of License Review	Comments
						GSW	GSW[R]	RSW	HAZ	PASS	ACM	Liquid	B&D		
Lantrak NSW P/L (Transporter)	20916	Lantrak NSW PTY LTD	PO BOX 744, STANHOPE GARDENS NSW 2768	0448 873 782	Lindsay Webb	Y	Y	Y	Y	Y	Y	Y	Y	28/03/2022	Designated transporter for solid waste.
EPH NSW P/L (Transporter)	20982	EPH NSW PTY LTD	14/85 BOURKE ROAD MASCOT NSW 2020	02 8158 6049	N/A (24 hour)	N	N	N	N	N	N	N	N	8/08/2022	Designated transporter for solid waste. EPH NSW - s.79 Revocation of a Licence (1603299). Effective as of 29 Jan 2021.
Suez Landfill (Disposal Facility)	4068	SUEZ RECYCLING & RECOVERY PTY LTD	1725 Elizabeth Drive, Kemps Creek NSW	0401 980 443	Geoff Jordan	Y	Y	Y	N	N	Y	N	Y	10/12/2025	Designated disposal facility for GSWs, RSW, RSWs and immobilised waste. Previous Licensee: SITA Australia P/L
Suez Landfill (Disposal Facility)	2065	SUEZ RECYCLING & RECOVERY PTY LTD	New Illawarra Road, Lucas Heights NSW 2234	0401 980 443	Geoff Jordan	Y	Y	N	N	N	Y	N	Y	13/06/2025	Alternative disposal facility for GSW, GSWs and GSW (B&D). Previous Licensee: SITA Australia P/L
Kurnell Landfill (Disposal Facility)	4608	BREEN RESOURCES PTY LTD	Captain Cook Drive, Kurnell NSW	0418 274 468	Ian Spencer	Y	Y	N	N	N	N	N	Y	22/02/2023	Designated disposal facility for GSW. Previous Licensee: Breen Holdings P/L
CLEANWAY CO (Treatment Facility)	20271	CLEANWAY CO PTY LTD	42-46 CHARLES STREET ST MARYS NSW 2760	(02) 9851 4200	Site Office	N	N	Y	Y	Y	Y	Y	N	26/09/2023	Designated receiving facility for hazardous waste and offsite treatment of ASS/PASS where required. Note: Not an end destination.
Concrete Recyclers (Recycling Facility)	6664	CONCRETE RECYCLERS (GROUP) PTY LIMITED	14 THACKERAY STREET, CAMELLIA NSW	0418 137 099	Edward Jenvey	N	N	N	N	N	N	N	Y	8/12/2021	Designated facility for disposal of unimpacted concrete and asphalt.
Dial-a-Dump	13426	DIAL-A-DUMP (EC) PTY LTD	HONEYCOMB DRIVE, EASTERN CREEK NSW 2766	0418 600 008	Maxine Walters	Y	Y	N	N	Y	Y	N	Y	13/02/2022	Alternate disposal option for GSW/GSWs on Saturdays. Name changed to Bingo - same facility.
Veolia	20339	VEOLIA ENVIRONMENTAL SERVICES (AUSTRALIA) PTY LTD	WALLGROVE ROAD, HORSLEY PARK NSW 2175	0429 128 368	Jim Hennessy	Y	Y	N	N	N	N	N	N	24/06/2024	Alternate disposal option for GSW/GSWs on Saturdays
Brandown Pty. Limited (Recycling Facility)	12618	BRANDOWN PTY. LIMITED	Elizabeth Drive, Cecil Park, NSW, 2178	0417 458 178	Steve Cottell	N	N	N	N	N	N	N	Y	14/02/2022	Alternate disposal option for Asphalt/concrete
Brandown Pty. Limited (Recycling Facility)	2186	BRANDOWN PTY. LIMITED	Lot 90 Elizabeth Drive, KEMPS CREEK, NSW, 2178	0417 458 178	Steve Cottell	Y	N	N	N	N	Y	N	N	13/11/2025	Alternate disposal option for Asphalt, GSW, ACM, concrete
Bingo Recycling (Recycling Facility)	12857	BM RECYCLING PTY LTD	38 McPherson St, Banksmeadow NSW 2019	1300 424 646	N/A (24 hour)	Y	N	N	N	N	N	N	Y	5/07/2023	Alternate disposal option for Asphalt/concrete, GSW. Previous Licensee: MCPHERSON RECYCLING PTY LTD
Bingo Recycling (Recycling Facility)	10835	ADDERLEY RECYCLING PTY LTD	3-5 DUCK STREET AUBURN NSW 2144	1300 424 646	N/A (24 hour)	Y	N	N	N	N	N	N	Y	6/07/2025	Alternate disposal option for Asphalt/concrete, GSW
Molts (Rock & Dirt Recycling)	4848	N. MOIT & SONS (NSW) PTY. LTD.	ROCK AND DIRT RECYCLING 306 RACECOURSE ROAD SOUTH WINDSOR NSW 2756	0407 240 672	Mickey Poriris	Y	N	N	N	N	N	N	Y	17/07/2025	Alternate disposal option for Asphalt/concrete, GSW
Benedict Recycling (Recycling Facility)	4504	WARRINGAH GRAVEL & STONE SUPPLIES PTY LTD	WARRINGAH GRAVEL & STONE SUPPLIES END OF CHALLENGER DRIVE BELROSE NSW 2085	0427 087 897	Gay Willis	N	N	N	N	N	N	N	Y	26/05/2021	Alternate disposal option for Asphalt/concrete
CLEANWAY CO (Treatment Facility)	4602	CLEANWAY CO PTY LTD	CNR BLACKMAN CRES & FAIREY ROAD SOUTH WINDSOR NSW 2756	(02) 9851 4200	Site Office	Y	Y	Y	Y	Y	Y	Y	N	4/05/2021	Disposal option for HAZ
CLEANWAY CO (Transporter of Waste)	13274	CLEANWAY CO PTY LTD	PO Box 1108 OSBORNE PARK DC WA 6916	(08) 6216 7000	Site Office	Y	Y	Y	Y	Y	Y	Y	Y	10/06/2025	Licence to transport trackable waste category 1 & 2
Cleanaway (Liquid Disposal)	4560	CLEANWAY OPERATIONS PTY LTD	HOMEBUSH BAY LIQUID TREATMENT PLANT CORNER OF PONDAGE LINK & HILL RD HOMEBUSH BAY NSW 2127	0402 791 231	Dustin Hansen	N	N	N	N	N	N	Y	N	27/05/2023	Liquid Waste Disposal Facility
Cleanaway (Disposal/Treatment Facility)	10774	CLEANWAY INDUSTRIAL SOLUTIONS PTY LTD	Lot 3 Charcoal Close, Unanderra NSW 2326	0402 791 231	Dustin Hansen	Y	Y	Y	Y	Y	Y	Y	N	4/11/2024	Alternate disposal/treatment option for GSW(s), RSW and HSW. Previous Licensee: TRANSPACIFIC INDUSTRIAL SOLUTIONS PTY LTD
Cleanaway (Transporter)	6172	CLEANWAY OPERATIONS PTY LTD	CNR PONDAGE LINK & HILL RDS HOMEBUSH BAY NSW 2127	0402 791 231	Dustin Hansen	Y	Y	Y	Y	Y	Y	Y	Y	7/06/2025	Alternate Transporter of Waste. Licence to transport trackable waste category 1 & 2.
Hi-Quality Group (Transporter)	6625	Hi-Quality Waste Management PTY LTD	PO BOX 42, KEMPS CREEK NSW 2171	0418 855 885	Greg Leghissa	Y	Y	Y	Y	Y	Y	Y	Y	2/06/2025	Alternate Transporter of Waste. Licence to transport trackable waste category 1 & 2.

Hi-Quality Group (Transporter)	6625	Hi-Quality Waste Management PTY LTD	PO BOX 42, KEMPS CREEK NSW 2171	0418 835 885	Greg Leghisse	Y	Y	Y	Y	Y	Y	Y	Y	2/06/2025	Alternate Transporter of Waste. Licence to transport trackable waste category 1 & 2.
Hi-Quality Group	3857	Hi-Quality Waste Management PTY LTD	37 Lee Holm Street, St Marys 2760	0418 835 885	Greg Leghisse	Y	Y	N	N	N	N	N	Y	31/01/2025	Waste disposal facility for GSW (R) Rock. Alternate disposal option for Asphalt/concrete.
CLEANAWAY CO (Treatment Facility)	12963	CLEANAWAY CO PTY LTD	66 LINKS ROAD, ST MARYS, NSW 2760	0427 225 951	Kivin Rollinson	N	N	Y	Y	N	Y	Y	N	28/02/2023	Waste Storage Facility
Sell and Parker	11355	Sell and Parker Pty Ltd	43 Tattersall Road, Kings Park, NSW 2148	02 9621 2633	Brian Dennis	N	N	N	N	N	N	N	Y	27/02/2023	Scrap Metal facility
Central Waste (Recycling Facility)	13013	Central Waste Plant Pty Ltd	8 Styles Street, Kurri Kurri, NSW 2327	1800 180 180	N/A (24 hour)	Y	N	N	N	N	N	N	N	26/02/2025	Alternate disposal option for GSW
ECO Cycle Materials (Recycling Facility)	10699	ECO Cycle Materials Pty Ltd	155 Newton Rd, Wetherill Park, NSW 2164	02 9757 2999	Site Office	Y	N	N	N	N	N	N	Y	8/05/2024	Alternate disposal option for Asphalt/concrete, GSW
Enviroguard (Disposal Facility)	4865	Enviroguard Pty Ltd	Erskine Park Landfill, 4 Quarry Road, Erskine Park NSW 2759	02 8602 8720	Paul Smolder	Y	Y	N	N	N	Y	N	Y	16/06/2024	Alternative facility for GSW(a) soils
MET Recycling	20948	MET Recycling Pty Ltd	134 Newton Street North (Cnr Newton Street North and Carnarvon Street), Silverwater NSW 2128	1300 638 123	Jason Kennet	Y	Y	N	N	N	N	N	Y	11/11/2022	GSW CT1 criteria accepted.
Marsden Park Landfill (Disposal Facility)	11487	Blacktown Waste Services Pty Ltd	25 Harris Avenue, Marsden Park NSW 2765	9835 4544		Y	Y	N	N	N	Y	N	N	31/10/2024	
Alcon Disposals (Disposal Facility)	20882	Alcon Disposals Pty Ltd	5 Lucca Road, Wyong North NSW 2259	9835 4544	Benjamin Buckley	Y	N	N	N	N	N	N	N	4/12/2023	GSW alternative (Lantrak)

Appendix C – ER Endorsement



15 March 2021

Transport for NSW

Attention to: 
Senior Manager Environment
Parramatta Light Rail
130 George St, Parramatta, NSW 2150

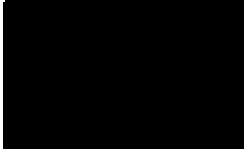
**Review of Appendix B8
Construction Waste and Resource Management Sub Plan.
Package 3 – Portion 2 Early Works
(PLR-VNT-SAM-WM-PLN-000002)**

Pursuant to SSI8285 Condition of Approval A23 (d) i), as the approved Environmental Representative, I confirm that I have reviewed the updated document Appendix B8, Construction Waste and Resource Management Sub Plan, Package 3 – Portion 2 Early Works (PLR-VNT-SAM-WM-PLN-000002), revision 04, dated 26 February 2021, revised by Ventia, for consistency with the requirements of the Conditions of Approval.

In my opinion the changes to the aforementioned document, updated to include accurate Licensed Transporter and Waste Facility Register and other editorial changes, are minor amendments that are administrative in nature and remain consistent with the requirements included in or required under the terms of the Conditions of Approval for the Parramatta Light Rail (Stage 1) development.

The minor amendments are approved in accordance with CoA A29(g)(iii).

Yours sincerely,


Environmental Representative



