Appendix B9

Waste Management Sub-plan

M4-M5 Link Mainline Tunnels

June 2020

WestConnex M4-M5 Link Tunnels

lendlease | SAMSUNG C&T | BOUYGUES CONSTRUCTION AUSTRALIA

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Document control

Approval and authorisation

Title	M4-M5 Link Mainline Tunnels Waste Management Sub-plan
Document No/Ref	M4M5-LSBJ-PRW-EN-MP01-PLN-0009-07

Version Control

Revision	Date	Description
01	25 July 2018	For DPE Review
02	22 August 2018	For DPE Approval
03	23 August 2018	For DPE Approval
04	17 September 2018	For DPE Approval
05	17 October 2018	For DPE Approval
06	4 February 2019	Minor updates following Project Modification
07	27 February 2019	Minor updates following Project Modification – For ER Approval
08	22 June 2020	Minor updates addressing audit findings

Internal review

Name	Position	Date	Signed/Authorised
[redacted]			

Note:
Revision 04 Document Number has changed from M4M5-LSBJ-PRW-GEN-EV01-PLN-0010-04 (previous revisions) to M4M5-LSBJ-PRW-GEN-EV01-PLN-0010-05

Glossary/ Abbreviations/Definitions

Abbreviations	Expanded text
AQMP	Air Quality Management Sub-plan
ASS	Acid Sulfate Soils
CEMP	Construction Environmental Management Plan
CLM	*Contaminated Land Management Act 1997*
CoA	Conditions of Approval
CSSI	The Critical State Significant Infrastructure, as described in Schedule 1, the carrying out of which is approved under the terms of the SSI 7485 approval
DECC	Former Department of Environment and Climate Change
DIPNR	Former NSW Department of Infrastructure, Planning and Natural Resources (superseded and renamed to the Department of Planning and Environment)
EIS	Environmental Impact Statement
ENM	Excavated Natural Material, as defined in *the excavated natural material exemption*
EPA	NSW Environment Protection Authority
EPL	Environment Protection Licence
EWMS	Environmental Work Method Statements
FMC	Forest Management Certification
GREP	NSW Government Resource Efficiency Policy 2016
Hold point	A verification point that prevents work from commencing prior to release from WestConnex Transurban
IS	Infrastructure Sustainability
ISCA	Infrastructure Sustainability Council of Australia
KPI	Key Performance Indicator
LLE	Lendlease Engineering
LSBJV	Lendlease Samsung Bouygues Joint Venture
NGER	National Greenhouse and Energy Reporting

Abbreviations	Expanded text
PASS	Potential Acid Sulfate Soil
POEO Act	*Protection of the Environment Operations Act 1997* (NSW)
Project, the	M4-M5 Link Mainline Tunnels
Resource	Resource covers energy, fuel, oil, water and other materials used for construction of the Project.
REMM	Revised Environmental Management Measures
RRO	Resource Recovery Order
Roads and Maritime	Roads and Maritime Services
s.143 Notice	Section 143 notice, a signed notice under section 143(3A) of the *Protection of the Environment Operations Act 1997* (NSW) ("POEO Act")
Secretary	Secretary of the NSW Department of Planning and Environment or nominee, whether nominated before or after the date on which this approval was granted
SEMP	Site Establishment Management Plan
SMC	Sydney Motorway Corporation
SPIR	Submissions and Preferred Infrastructure Report
SSWMP	Soil and Surface Water Management Sub-plan
TfNSW	Transport for NSW (formerly Roads and Maritime Services)
TTAMP	Traffic and Transport and Access Management Sub-plan
VENM	Virgin Excavated Natural Material as defined in Schedule 1 of the *Protection of the Environment Operations Act* 1997
WARR	Waste Avoidance and Resource Recovery
WARR Act	*Waste Avoidance and Resource Recovery Act 2001*
WCX	WestConnex Transurban

Abbreviations	Expanded text
Waste	As defined in the *Protection of the Environment Operations Act 1997* (POEO Act): "(a) any substance (whether solid, liquid or gaseous) that is discharged, emitted or deposited in the environment in such volume, constituency or manner as to cause an alteration in the environment, or (b) any discarded, rejected, unwanted, surplus or abandoned substance, or (c) any otherwise discarded, rejected, unwanted, surplus or abandoned substance intended for sale or for recycling, processing, recovery or purification by a separate operation from that which produced the substance, or (d) any processed, recycled, re-used or recovered substance produced wholly or partly from waste that is applied to land, or used as fuel, but only in the circumstances prescribed by the regulations, or (e) any substance prescribed by the regulations to be waste. A substance is not precluded from being waste for the purposes of this Act merely because it is or may be processed, recycled, re-used or recovered."
WMP	Waste Management Sub-plan

1 Introduction

1.1 Context

This Waste Management Sub-plan (WMP or Plan) forms part of the Construction Environmental Management Plan (CEMP) for WestConnex M4-M5 Link Mainline Tunnels (the Project).

This WMP has been prepared to address the requirements of the Minister's Conditions of Approval (CoA), the WestConnex M4-M5 Link Environmental Impact Statement (EIS), the Revised Environmental Management Measures (REMM) listed in the WestConnex M4-M5 Link Submissions and Preferred Infrastructure Report (SPIR), the WestConnex M4-M5 Link Mainline Tunnel Modification report (September 2018) and all applicable guidance and legislation.

1.2 Project Background

The M4-M5 Link EIS (AECOM 2017) assessed the impacts of construction and operation of the Project on waste management, within Chapter 23 (Resource use and waste minimisation).

The EIS identified the potential for minor impacts on resource use and waste management during construction of the Project. This was typically associated with excessive resource consumption, waste generation and disposal and the management of excavated wastes. However, the EIS concluded that any potential impacts could be managed by standard mitigation and management measures described in this WMP.

Please refer to Section 1.3 of the CEMP for the Project Description.

1.3 Scope of the Sub-plan

The scope of this Plan is to describe how LSBJV propose to manage waste during construction of the Project. Operational Waste Management and operation measures do not fall within the scope of this Plan and therefore are not included within the processes contained within this Plan.

1.4 Environmental management systems overview

The environmental management system overview is described in Section 1.5 of the CEMP.

2 Purpose and objectives

2.1 Purpose

The purpose of this Plan is to describe how LSBJV proposes to manage waste during construction of the Project. This Plan also explores relevant aspects of resource management and sustainability requirements for the Project, however for detailed information refer to the Project's Sustainability Strategy and Sustainability Management Plan.

2.2 Objectives

The key objective of the WMP is to ensure all CoA, REMM and licence/permit requirements relevant to waste management are described, scheduled and assigned responsibility as outlined in:

- The EIS prepared for WestConnex M4-M5 Link
- The SPIR prepared for WestConnex M4-M5 Link
- The Modification report for WestConnex M4-M5 Link Mainline Tunnel (September 2018)
- Conditions of Approval granted to the Project on 17 April 2018 and as modified on 25 February 2019
- Roads and Maritime Services (Roads and Maritime) QA Specifications G36 and G40
- The Project's Environment Protection Licence (EPL)
- All relevant legislation and other requirements described in Section 3.1 of this Plan.

2.3 Environmental performance outcomes and targets

The desired environmental performance outcome for waste management, as outlined and addressed in the EIS, is that all wastes generated during the construction of the Project are effectively stored, handled, treated, reused, recycled and/or disposed of lawfully and in a manner that protects environmental values.

The targets presented in Table 2-1 have been established to achieve this environmental performance outcome, as related to the management of waste during construction of the Project. The Project has also established key performance indicators (KPIs) for these targets.

Table 2-1 KPIs for waste management

Target / KPI number	Target	KPI	Records	Source
1	Timber product will must be sourced from either reused/ recycled timber or from sustainably managed forests that have obtained Forest Management Certification (FMC).	100%	FMC	Sustainability Management Plan Transport Environment and Sustainability Policy Framework WestConnex Sustainability Strategy (SMC 2015) (Objective 4)

Target / KPI number	Target	KPI	Records	Source
2	The Project will reuse or recycle around 95 per cent of usable spoil (uncontaminated surplus excavated material), uncontaminated spoil generated for beneficial purposes, either within the Project or at other locations in accordance with the Project spoil management hierarchy.	95%	Waste and Spoil Management Tracking Register	EIS Appendix A NSW Waste Avoidance and Resource Recovery Strategy 2014-21 (EPA 2014) Sustainability Management Plan REMM RW8 WestConnex Sustainability Strategy (SMC 2015) (Objective 4)
3	The Project will reuse or recycle 80 per cent of uncontaminated construction and demolition waste.	80%	Appendix B – Waste and Spoil Management Tracking Register	NSW Waste Avoidance and Resource Recovery Strategy 2014-21 (EPA 2014) Sustainability Management Plan WestConnex Sustainability Strategy (SMC 2015) (objective 4 and on page 19)
4	Achieve an ‘As Built’ Infrastructure Sustainability (IS) rating level of ‘Excellent’, with a minimum score of 55, rating level, as a minimum score, of 55 under the Infrastructure Sustainability Council of Australia (ISCA) Rating Tool vV1.2.	Excellent Rating (minimum of 55)	ISCA Certification	Sustainability Management Plan
5	Achieve a ‘Design’ Infrastructure Sustainability (IS) rating level of ‘Excellent’, with a minimum score of 55, for the design and construction of the Project works and temporary works under the Infrastructure Sustainability Council of	Excellent Rating (minimum of 55)	ISCA Certification	Sustainability Management Plan

Target / KPI number	Target	KPI	Records	Source
	Australia Rating Tool V1.2.			
6	Office waste diversion from landfill	40-60%	Appendix B – Waste and Spoil Management Tracking Register	ISCA Was-2 Level 2 Sustainability Management Plan
7	Electricity requirements met from renewable energy sources and/or accredited Green Power energy supplier.	20%	Resource (Electricity) Records Green Energy Supplier Certification	EIS Ch23, Section 23.3.1 Sustainability Management Plan WestConnex Sustainability Strategy (Sydney Motorway Corporation 2015)
8	Percentage of recycled material used in road base and sub base during the construction stage	10%	Appendix B – Waste and Spoil Management Tracking Register	Sustainability Management Plan
9	A target minimum of six 6 per cent of construction electricity requirements would be offset, with any offset undertaken in accordance with the Australian Government National Carbon Offset.	6%	Appendix B – Waste and Spoil Management Tracking Register Audit reports The National Greenhouse and Energy Reporting (NGER) Reporting	EIS Ch23, Section 23.3.1 Australian Government National Carbon Offset NSW Long Term Transport Master Plan, Government Resource Efficiency Policy Sustainability Management Plan WestConnex Sustainability Strategy (SMC 2015) (Objective 4)
10	Percentage of cement replacement material, measured by mass, used in concrete during the construction stage	5%	Appendix B – Waste and Spoil Management Tracking Register	Sustainability Management Plan
11	Manage off-site waste re-use in accordance with relevant NSW Environment Protection Authority resource recovery exemptions and requirements.	At all times	Appendix B – Waste and Spoil Management Tracking Register Completed s.143 Notice	EIS Appendix A

Target / KPI number	Target	KPI	Records	Source
			Waste Transport Receipts and Dockets Relevant waste facility licence records	
12	Dispose of waste at appropriately licensed facilities.	At all times	Appendix B – Waste and Spoil Management Tracking Register Completed s.143 Notice Waste Transport Receipts and Dockets Relevant waste facility licence records	EIS Appendix A

3 Environmental requirements

3.1 Relevant legislation and guidelines

3.1.1 Legislation

All legislation relevant to this WMP 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 Waste and Resource Recovery Strategy 2014-21 (EPA, 2014)
- NSW Government Resource Efficiency Policy (GREP) (OEH 2014)
- Waste Classification Guidelines (EPA 2014)
- Management of Wastes on Roads and Maritime Services Land (Roads and Maritime 2014)
- Management of road construction and maintenance wastes (Roads and Maritime 2016)
- Technical Direction: Legal offsite disposal of Roads and Maritime Services Waste (Roads and Maritime 2015)
- Technical Direction: Coal tar asphalt handling and disposal (Roads and Maritime 2015)
- Stockpile Site Management Guideline (Roads and Maritime 2011)
- Roads and Maritime waste fact sheets:
    - Waste Fact Sheet 1 - Virgin Excavated Natural Material (VENM)
    - Waste Fact Sheet 2 - Excavated Natural Material (ENM)
    - Waste Fact Sheet 3 - Excavated Public Road Materials
    - Waste Fact Sheet 4 - Recovered Aggregates
    - Waste Fact Sheet 5 - Asbestos Waste
    - Waste Fact Sheet 6 - Waste Sampling
    - Waste Fact Sheet 7 – Reclaimed asphalt pavement
    - Waste Fact Sheet 9 – Re-use of waste off-site
- Managing Urban Stormwater: Soils and Construction Volume 1 (Landcom 2004) and Volume 2 (A. Installation of Services; B. Waste Landfills; C. Unsealed Roads; D. Main Roads; E. Mines and Quarries) (NSW Department of Environment and Climate Change 2008)
- WestConnex Sustainability Strategy (Sydney Motorway Corporation 2015)
- Transport Environment and Sustainability Policy Framework (Transport for NSW 2013)
- Guideline for the Management of Contamination (Roads and Maritime 2013)
- AS2601: 2001 The Demolition of Structures
- Code of Practice for the Safe Removal of Asbestos 2nd Edition (National Occupational Health and Safety Commission 2005a)
- Code of Practice for the Management and Control of Asbestos in Workplaces (National Occupational Health and Safety Commission 2005b)
- Guideline for the Management of Acid Sulfate Materials (NSW Roads and Traffic Authority 2005c)

- Roads and Maritime QA Specification G36 – Environmental Protection
- Roads and Maritime QA Specification G40 – Clearing and Grubbing
- National Environment Protection (assessment of site contamination) Measure 1999
- Storing and Handling Liquids: Environmental Protection – Participants Manual (NSW Department of Environment and Climate Change (DECC) 2007)
- Preparation of Environmental Management Plans (NSW Department of Environment, Climate Change and Water (DIPNR) 2004)
- Lendlease Engineering's (LLE) LLE712 Waste Management Procedure (internal document)
- LLE603 Safety Inspections and Observations Procedure (internal document)
- LLE607 Asbestos Procedure (internal document)
- LLE611 Hazardous Substances and Dangerous Goods Procedure (internal document).

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 WMP

<table>
<tr><th>CoA No.</th><th>Condition Requirements</th><th>Document Reference</th><th>How Addressed</th></tr>
<tr><td>C4</td><td>The following CEMP Sub-plans must be prepared in consultation with the relevant authorities identified for each CEMP Sub-plan and be consistent with the CEMP referred to in the EIS.
<table>
<tr><th></th><th>Required CEMP Sub-plan</th><th>Relevant authority(s) and council(s) to be consulted for each CEMP Sub-plan</th></tr>
<tr><td>i)</td><td>Waste Management</td><td>N/A</td></tr>
</table></td><td>This Plan</td><td>This WMP has been prepared in accordance with this condition and describes how LSBJV propose to manage waste during construction of the Project.</td></tr>
<tr><td rowspan="3">C5</td><td colspan="3">The CEMP Sub-plans must state how:</td></tr>
<tr><td>(a) the environmental performance outcomes identified in the EIS and SPIR as modified by these conditions will be achieved</td><td>Section 2.3
Table 7-1
Appendix A – Other Conditions of Approval and Revised Environmental Management Measures relevant to this Plan</td><td>This plan was prepared in accordance with the environmental performance outcomes identified in the EIS and SPIR and is evidenced primarily in Section 2.3 and Table 2-1.</td></tr>
<tr><td>(b) the mitigation measures identified in the EIS and SPIR as modified by these conditions will be implemented</td><td>Table 7-1</td><td>The implementation of waste management and mitigation measures identified in the EIS and SPIR are listed in Table 7-1.</td></tr>
</table>

CoA No.	Condition Requirements	Document Reference	How Addressed
	(c) the relevant terms of this approval will be complied with	Section 3.2 Appendix A – Other Conditions of Approval and Revised Environmental Management Measures relevant to this Plan	Details regarding how LSBJV propose to comply with the relevant terms of approval are listed in this Table and in Appendix A.
	(d) issues requiring management during construction (including cumulative impacts), as identified through ongoing environmental risk analysis, will be managed.	Section 4.3 Table 7-1 Appendix A – Other Conditions of Approval and Revised Environmental Management Measures relevant to this Plan Environmental Risk Assessment Workshop (Appendix A2 of CEMP)	Waste management issues requiring management during construction of the Project have been identified through the EIS, SPIR and Environmental Risk Assessment Workshop. These issues including cumulative impacts have been detailed in Section 4.3 of this plan and Appendix A2 of the CEMP. Environmental risk analysis will be ongoing and regularly reviewed in accordance with Section 3.9 to Section 3.13 of the CEMP to ensure effective management of waste. Mitigation and management measures for these issues are listed in Table 7-1, Appendix A and Appendix A2 of the CEMP.
C6	The CEMP Sub-plans must be endorsed by the ER and then submitted to the Secretary for approval no later than one (1) month prior to the commencement of the construction activities to which they apply.	CEMP Section 2.2	This WMP (Revision 1) was endorsed by the Lead ER, on 26 July 2018 (17021-LT-ED-001_0). The WMP will be submitted to DPE for approval no later than one month prior to the commencement of the construction activities.
C7	Any of the CEMP Sub-plans may be submitted to the Secretary along with, or subsequent to, the submission of the CEMP.	CEMP Section 2.2	This Sub-plan has been submitted for approval to DPE prior to the final submission of the CEMP for DPE approval.

CoA No.	Condition Requirements	Document Reference	How Addressed
C8	Construction must not commence until the CEMP and all CEMP Sub-plans have been approved by the Secretary. The CEMP and CEMP Sub-plans, as approved by the Secretary, including any minor amendments approved by the ER, must be implemented for the duration of construction. Where the CSSI is being staged, construction of that stage is not to commence until the relevant CEMP and CEMP sub-plans have been endorsed by the ER and approved by the Secretary.	CEMP Section 2.2	Construction will not commence until the CEMP and all CEMP Sub-plans have been approved by DPE.

Please refer to Appendix A for all other CoA relevant to the development of this Plan.

3.3 Revised Environmental Management Measures

Refer to Appendix A for all REMMs relevant to the development of this Plan.

4 Environmental aspects and impacts

4.1 Construction waste streams

The following construction related waste streams are expected during construction of the Project:

- Excavated wastes, such as soil and rock, primarily from tunnelling and cutting
- Demolition wastes including concrete, bricks, tiles, timber (untreated and treated), metals, plasterboard, carpets, electrical and plumbing fittings and furnishings
- Asbestos and soil containing asbestos
- Hazardous waste
- Vegetation waste from the removal of trees, shrubs and ground cover that are unable to be mulched and reused within the Project
- General construction waste such as timber formwork, scrap metal, steel, concrete, plasterboards and packaging material (crates, pallets, cartons, plastics and wrapping materials)
- Waste from operation and maintenance of construction vehicles and machinery including adhesives, lubricants, waste fuels and oils, engine coolant, batteries, hoses and tyres
- Residual water generated from tunnel excavation and other construction activities
- Wastewater from other sources such plant / equipment wash down or sewage/greywater from construction compounds
- General wastes from site offices such as putrescibles, paper, cardboard, plastics, glass and printer cartridges.

4.2 Construction resource consumption

Construction of the Project will require the consumption of a number of resources and materials. Estimates of the type and quantity of materials required for construction of the M4-M5 Link project are demonstrated in Table 4-1. The following sources of construction related resource consumption are expected during construction of the Project:

- Procurement and delivery of materials to site
- Removal of vegetation
- Site establishment, including compound set up
- Relocation and protection of services
- Earthworks including earth and rock cuttings and retaining walls
- Tunnelling works
- Removal, relocation and compaction of excavated material
- Construction of pavements, bridges and culverts
- Demolition of structures and pavements
- Operation of site compounds and lighting
- Construction plant
- Removal of waste from site
- Concrete and precast concrete.

Table 4-1 Indicative quantities of materials required for construction for the M4-M5 Link project as identified in the EIS

Material	Estimated quantity	Anticipated Source/Origin
Concrete	400,000 cubic metres	Sydney suppliers located close to the Project
Precast concrete	32,250 cubic metres	Combination of NSW and overseas suppliers
Structural steel	450 tonnes	Manufactured in Australia and/or overseas
Reinforcing steel	15,000 tonnes	Manufactured in Australia
Asphalt	70,000 tonnes	Sydney suppliers located close to the Project
Road base	20,000 tonnes	Quarries within the Sydney region
Water	2,000 megalitres	Recycled construction and mains water
Petrol	30,000 litres	Local Sydney supplier
Diesel	12 megalitres	Local Sydney supplier
Power	100,000 megawatt hours	Renewable energy sources and local substations

4.3 Impacts

4.3.1 Waste Management Impacts

The potential environmental impacts associated with construction waste management as identified in the EIS (Chapter 23) include:

- Large volumes of waste being directed to landfill due to inadequate collection, classification and disposal of waste
- Large volumes of spoil being directed to landfill due to inadequate recycling and reuse
- Large number of spoil haulage vehicles on road network impacting local traffic
- Dust impacts due to incorrect storage, handling, transport and disposal of spoil
- Contamination of soil, surface and/or groundwater from the inappropriate excavation, storage, transport and disposal of liquid and solid waste
- Risks to human health from the handling, storage, transport and disposal of contaminated material (including asbestos) from demolition waste generated by the Project
- Generation of excessive construction waste
- Inappropriate handling or disposal of vegetation waste
- Inappropriate handling or disposal of hazardous waste
- Generation of domestic waste from construction personnel
- Weed infestation from dispersion of seeds and so forth during clearing and access upgrading activities.

4.3.2 Resource Consumption Impacts

The potential environmental impacts associated with construction resource use include:

- Impacts on construction resource availability within the local area over the construction period
- Consumption of non-renewable resources such as energy, diesel and other chemicals
- Greenhouse gas emissions due to consumption of energy or fuels from non-renewable resources.

Refer also to the Aspects and Impacts Register included in Appendix A2 of the CEMP.

4.3.3 Cumulative Impacts

There is the potential for cumulative impacts related to spoil disposal for the Project if the spoil management sites identified for the Project reach capacity as a result of receiving spoil from other tunnelling projects. These sites are identified in Section 5.2.5. However, as stated in the EIS section 23.3.2, it is considered unlikely that any one spoil management site would reach capacity and it is highly unlikely that all the sites would reach capacity at the same time.

5 Waste management

5.1 Background

5.1.1 Waste

Waste streams generated during construction of the Project would likely include construction and demolition waste, vegetation waste, packaging materials and liquid wastes. There is the potential for special, hazardous and otherwise contaminated waste and spoil to be encountered during tunnelling and surface works. However, construction waste management activities are not considered likely to pose a significant risk to the environment or human health, with the implementation of standard mitigation and management measures.

5.1.2 Spoil

The generation of up to 3,000,000 cubic metres of spoil has been estimated during construction of the Project as a result of tunnel construction activities as well as surface works. Wherever possible and fit for purpose, uncontaminated spoil will be beneficially reused as part of the Project before alternative spoil disposal options are pursued. This spoil is likely to be a combination of VENM, ENM or classified in accordance with other waste exemptions or orders.

The anticipated spoil volumes associated with the Project are outlined in Table 5-1 below and have been sourced from estimates determined during detailed design.

Table 5-1 Indicative estimated Project spoil volumes

Site	Estimated spoil volume (cubic metres)		
	Tunnel	Surface	Total
Wattle Street civil and tunnel site (C1a)	300,000	35,000	350,000
Northcote Street civil and tunnel site (C3a)	550,000	-	550,000
Haberfield civil site (C2b)	-	-	-
Parramatta Road civil sites (C1b) and (C3b)	-	20,000	20,000
Pyrmont Bridge Road tunnel site (C9)	1,176,052	14,000	1,190,052
Campbell Road civil and tunnel site (C10)	842,912	45,000	887,912
Total	2,868,964	114,000	2,982,964

5.2 Waste management hierarchy

To achieve positive waste and resource management outcomes, the Project will adopt waste management strategies in accordance with the waste hierarchy and requirements identified in the CoA, EIS, SPIR, NSW *Waste Avoidance and Resource Recovery Act 2001* (WARR Act) and the NSW Waste Avoidance and Resource Recovery Strategy 2014-21 (EPA 2014).

Waste generated during delivery of the Project will be dealt with in accordance with the following priorities (in order of preference):

- Waste generation is to be avoided, and where avoidance is not reasonably practicable, waste generation is to be reduced
- Where avoiding or reducing waste is not possible, waste is to be reused, recycled, or recovered
- Where re-using, recycling or recovering waste is not possible, waste is to be treated or disposed of at a waste management facility, premise lawfully permitted to accept the

materials, 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.

Methods for management, transportation and disposal of waste would be selected based on the classification of the waste material. All waste generated during construction will be classified in accordance with the Waste Classification Guidelines (EPA 2014).

In accordance with the NSW Waste Avoidance and Resource Recovery Strategy 2014-21 (EPA 2014), waste will also be managed using the principles outlined in the strategy to avoid and reduce waste generation, increase recycling, divert more waste from landfill, manage problem wastes better, reduce litter and reduce illegal dumping.

Waste generated outside the Project will not be received at Project sites for storage, treatment, processing, reprocessing, or disposal on the site, except as expressly permitted by a licence or waste exemption under the *Protection of the Environment Operations Act 1997* (POEO Act), if such a licence is required in relation to that waste.

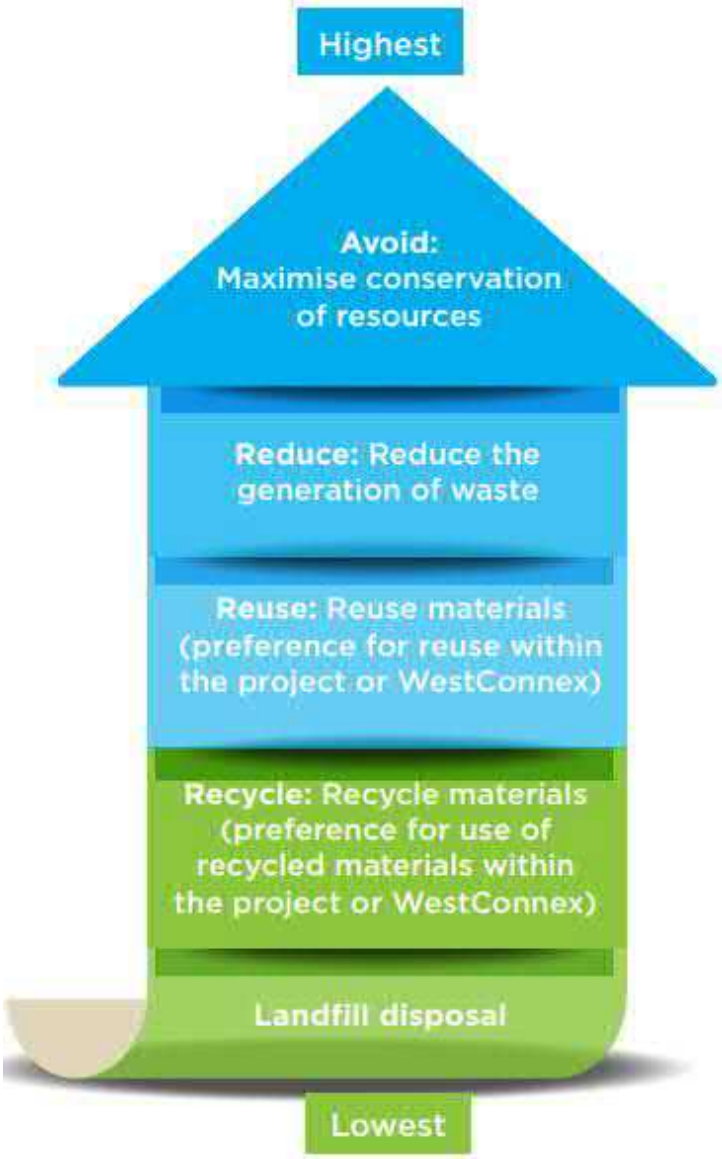

Figure 5-1 Demonstrates the waste hierarchy in the order of preference to achieve efficient resource use (Source: Page 19, WestConnex Sustainability Strategy (SMC 2015)

5.2.1 Waste Avoidance and Reduction Schemes

As demonstrated in

Figure 5-1, the waste hierarchy (which governs the management of waste during construction of the Project) nominates avoidance of waste as the most important priority. During the construction phase, the following measures will be implemented to avoid creation of waste:

- Ensuring that the necessary planning is undertaken to enable efficient management of the delivery and storage of materials, to avoid spoilage of materials
- Wherever possible, establishing agreements with suppliers for 'take back' arrangements for packaging/pallets/drums
- Highlighting the minimisation of packaging as an important factor in the product procurement process
- Ensuring correct types and quantities of materials are ordered, essentially avoiding excess material waste
- Coordinating site activities to minimise waste through utilisation of unused materials
- Employing trained and qualified plant and machinery operators to avoid damage to materials and reduce wastage of consumables during plant and machinery maintenance
- Ensure that stored supplies are properly protected from the weather
- Reporting of waste avoidance data in an annual WARR Report.

5.2.2 Reuse and recycling

In accordance with the waste hierarchy principles, when avoiding or reducing waste is not possible, waste is to be reused on site or off site for the same or a similar use. It may also be recovered through recycling and reprocessing, so that waste can be processed into a similar non-waste product.

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

- Waste segregation on site (construction activities) – Waste materials, including spoil and demolition waste, will be separated on site into dedicated bins / areas for either reuse on site or collection by a waste contractor and transport to off site facilities
- Waste segregation on site (office) – Waste within the office shall be segregated on site with colour coded bins being provided for mixed recyclable, organic waste, landfill and paper. Blue paper bins will be provided throughout the office to encourage the recycling of scrap paper
- Waste separation off site at an appropriately licenced facility – Wastes to be deposited into one bin where space is not available for placement of multiple bins, and the waste is to be sorted off site by a waste contractor.

When possible, waste shall be beneficially reused on or off site in accordance with relevant approvals.

This may occur through the following pathways and in compliance with appropriate legislation:

- Resource recovery exemptions as referenced in Section 5.4 of this Plan
- Appropriately approved recycling facility
- Appropriately approved developments which are able to accept waste through the use of a notice under Section 143(3A) of the POEO Act (s.143 Notice) as detailed in Roads and Maritime QA Specification G36.

Waste sampling and classification is to occur when waste is being transported off site. In general, waste sampling shall be in accordance with the Roads and Maritime 'Waste Sampling' sheets as

well as the relevant Resource Recovery Exemption or Order as discussed in Section 5.5. Where large quantities are involved, further input from specialist may be obtained. In some instances, Project specific resource recovery exemptions may be sought from EPA.

Spoil

Where possible and fit for purpose, spoil would be beneficially reused as part of the Project before alternative spoil disposal options are pursued. Excess spoil which cannot be reused or recycled would be disposed of at a suitably licensed landfill or waste management facility. Spoil reuse would be prioritised in accordance with the spoil management hierarchy outlined below.

Where feasible and reasonable, spoil would be managed according to the following hierarchy:

- Minimisation of spoil generation through design and management
- Reuse of spoil within the Project
- Beneficial reuse of spoil outside the Project
- Where reuse is not possible, disposal of spoil would be the last resort.

The following spoil reuse opportunities have been identified within the Project:

- The use of tunnel spoil for the backfill of cut-and-cover tunnels and the infill of temporary access shafts and declines
- The use of tunnel and civil surface works spoil for fill, landscaping and site rehabilitation purposes
- Potential use of tunnel spoil for local road upgrades, namely the replacement of existing unsuitable pavement subgrade material.

Further spoil reuse opportunities will be investigated during the construction of the Project.

Preliminary spoil disposal locations have been listed in Appendix D – Spoil Disposal Location Register. Delivery of spoil to these reuse / disposal sites would occur in accordance with any EPL requirements governing those sites.

Due to the number of options for potential spoil reuse and disposal, in order of priority, the following factors will be considered to determine appropriate spoil management: the environmental benefits, traffic impacts, approvals and economic feasibility.

As discussed in Section 2.3 of this Plan there are waste management targets associated with the Project in accordance with the Project's EIS, WestConnex Sustainability Strategy (SMC 2015) and the NSW Waste Avoidance and Resource Recovery Strategy 2014-21 (EPA 2014). These targets include:

- The reuse or recycling of around 95% of uncontaminated spoil generated during construction of the Project for beneficial purposes, either within the Project or at other locations in accordance with the Project waste management hierarchy
- The reuse or recycling of 80% of uncontaminated construction and demolition waste.

Refer to the Sustainability Strategy and Sustainability Management Plan for detailed information on the reuse and recycling targets for the Project.

Water

Significant volumes of wastewater are expected to be generated as a result of tunnelling and surface construction activities. Opportunities for the reuse of treated water will be considered in preference to discharge to the stormwater system, receiving waterbodies or trade waste. Construction water will either be reused on site wherever feasible, or discharged into the local stormwater system in accordance with the requirements of the EPL. Water reuse opportunities are further detailed within the Water Reuse Strategy developed in accordance with CoA E198. Refer to the Soil and Surface Water Management Sub-plan (SSWMP), Sustainability Strategy and Sustainability Management Plan for further information on targets and treatment methods and discharge water quality.

5.2.3 Waste handling and storage

Where waste is required to be handled and stored on site prior to either on site reuse or off site recycling/disposal, it will be stored in accordance with Clause 42 (Schedule 1) of the POEO Act.

The following handling and storage measures will apply:

- Spoil, topsoil and mulch are to be stockpiled on site in allocated areas, where appropriate, and mitigation measures for dust control and surface water management will be implemented as per the Air Quality Management Sub-plan (AQMP) and the SSWMP. Mitigation measures for dust control and water management will be implemented as per the AQMP and SSWMP
- Liquid wastes are to be stored in appropriate containers in bunded areas until transported off site. Bunded areas will have the capacity to hold 110 per cent of the liquid waste volume for bulk storage or 120 per cent of the volume of the largest container for smaller packaged storage
- Wastewater generated during construction activities will require collection and treatment onsite using water treatment plants. If there is no opportunity for reuse treated wastewater will be discharged. Water treatment methods and discharge water quality criteria are provided in the SSWMP
- The excavation, handling and storage of asbestos containing material will be undertaken in accordance with procedures detailed in the Unexpected Contaminated Lands and Asbestos Finds Procedure and Asbestos Management Plan
- Identified ASS material will be stored temporarily in a bunded area prior to being disposed of off site at a licenced facility in accordance with the *Guideline for the Management of Acid Sulfate Materials (NSW Roads and Traffic Authority 2005c)*. Acid sulfate soil management procedures will be prepared as part of the SSWMP as part of the CEMP
- The excavation, handling and storage of waste material that is identified as being contaminated with heavy metals will be undertaken in strict accordance with the procedures detailed in the CEMP and the *Work Health and Safety Regulation 2001* (NSW)
- 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
- Material that is identified as contaminated will be stockpiled and stored in suitable hardstand or lined areas and segregated from uncontaminated material on site to prevent cross-contamination
- Recyclable or previously unmentioned non-recyclable wastes will be stored in appropriately covered receptacles (e.g. bins or skips) on site and contractors will be commissioned to regularly remove/empty the bins to approved disposal or recycling facilities.

5.2.4 Extra measures for spoil handling and storage

Spoil stockpiles will be managed within acoustic sheds, cut-and-cover ramps, tunnel sections or in other areas where dust impacts can be appropriately managed. Where excavations are carried out prior to the construction of cut-and-cover ramps, spoil will be stored on the surface and stockpiled for short periods prior to being loaded into spoil trucks and removed from site.

Stockpiles will be covered and bunded where appropriate to avoid potential impacts associated with runoff, sedimentation and leachate. Spoil from construction activities will be stockpiled on site at locations including but not limited to those sites outlined in Table 5-2.

Table 5-2 LSBJV Stockpile volumes estimates for the Project by site. These quantities are only indicative and likely to be updated or revisited during detailed design

Stockpile location on site	Estimated stockpile volume (cubic metres)
Wattle Street civil and tunnel site (C1a)	3,000
Northcote Street civil and tunnel site (C3a)	7,000
Pyrmont Bridge Road tunnel site (C9)	6,500
Campbell Road civil and tunnel site (C10)	6,000

Potential impacts related to the disturbance of landfill areas are unlikely during construction of the Project, except at the Campbell Road civil and tunnel site (C10). Landfill related contamination will be managed in accordance with the Site Audit Report which may be required as per the CoA E182.

5.2.5 Waste disposal and s.143 notices

Wastes and spoil that are unable to be reused, recycled on site will be disposed of off site to an appropriately licenced waste management facility or spoil management sites following classification. The disposal of any waste including spoil generated from the construction of the Project is to be in accordance with the POEO Act and the WARR Act.

Prior to transporting spoil wastes generated by the Project to a facility that is not a licensed waste facility, LSBJV will submit (via the hold point system) a completed and signed notice under section 143(3A) of the POEO Act ("s.143 Notice") to the WestConnex Transurban Environmental Manager along with accompanying documentation confirming that the proposed disposal site holds appropriate planning approvals to receive the spoil.

Section 143 Notices must include:

- A letter (consistent with the templates in Appendix E – s.143 Notice Letter to Landholders Template), and a blank s.143 Notice (as per Appendix F – s.143 Notice template) sent to the landholder that will receive the waste
- An accurate description of the waste
- Evidence that the waste site has the appropriate planning consent
- Confirmation of the waste delivery arrangements with the landholder prior to transporting materials to the waste site
- A copy of the s.143 Notice is provided to the waste transporter, who will be made aware of the waste's classification and the details on the s.143 Notice.

Disposal of the spoil material will not occur until the relevant authority such as WestConnex Transurban or Transport for NSW (TfNSW) have released the s.143 Notice hold point.

All waste generated during construction that is to be disposed of will be classified in accordance with the Waste Classification Guidelines (EPA 2014), with appropriate records and disposal dockets retained for audit purposes. Details of waste types, volumes and destinations are to be recorded in the Waste and Spoil Management Tracking Register (Appendix B).

Potential spoil reuse and disposal sites are identified in Table 5-3. Potential spoil management sites identified for the Project are shown in Table 5-4. It is anticipated that alternative locations for spoil disposal could become available during construction of the Project. Where new sites are identified, the s.143 Notice hold point process detailed above will be followed.

Table 5-3 Potential spoil disposal sites and their stockpile capacity volumes as stated in the EIS chapter 23.3.2

Project	Spoil management site	Distance from the Project (kilometres)	Location	Capacity for site to accept spoil (cubic metres)
M4-M5 Link	Horsley Park (manufacturing facility)	Approximately 40	Wallgrove Road at Horsley Park	Capacity for entirety of Project spoil generation
	Blacktown Waste Services (landfill)	Approximately 45	920 Richmond Road at Marsden Park	250,000
	Sakkara Development (industrial estate)	Approximately 45	Riverstone Parade at Riverstone	3,500,000
	Kurnell Landfill	Approximately 20	330 Captain Cook Drive at Kurnell	7,000,000
	Moorebank Intermodal Terminal Precinct	Approximately 30	Moorebank Avenue, Moorebank	2,500,000
	Western Sydney Airport	Approximately 50	Lot 1 DP 838361, Badgerys Creek	Capacity not known at this stage

Table 5-4 Spoil volumes and site capacities for Sydney Tunnelling projects as stated in the EIS chapter 23.3.2

Project and estimated spoil volume (cubic metres)	Spoil management site	Capacity for site to accept spoil (cubic metres)
M4 East (2,400,000)	Sakkara Development	3,500,000
	Quakers Hill	600,000
	Marsden Park	360,000
	Horsley Park	Capacity for entirety of Project spoil generation
New M5 (3,2000,000)	Boral-CSR Brick Pit, Schofields	550,000
	Quakers Hill	600,000
	Horsley Park	Capacity for entirety of Project spoil generation

Project and estimated spoil volume (cubic metres)	Spoil management site	Capacity for site to accept spoil (cubic metres)
	Sakkara Development	3,500,000
	Kurnell Landfill	7,000,000
NorthConnex (2,600,000)	Former Australian Defence Industries site, St Marys	2,500,000
	Gosford Quarry	2,500,000
	Hornsby Quarry	3,300,000
	CSR Quarry	1,160,000
	Quakers Hill	500,000
	Sandy Point Quarry	5,000,000
Sydney Metro	Horsley Park (No. 2 and No. 3 Plants only)	600,000
	CSR Quarry, Schofields	1,100,000
	CSR Quarry, Horsley Park	2,000,000
	Gosford Quarry	2,500,000
	Hornsby Quarry	1,800,000

5.3 Classification of waste streams

Waste classification will be undertaken in accordance with the Waste Classification Guidelines (EPA 2014). Part 1 of the Waste Classification Guidelines (EPA 2014) 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. Sampling and testing requirements for the waste streams above are detailed in Table 5-5 below.

That process is described below:

Step 1: Is it 'special waste'?

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

Note: Asbestos and clinical wastes will be managed in accordance with the requirements of Part 7 of the *Protection of the Environment Operations (Waste) Regulation 2014*.

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

If it is established that the waste is not special waste it will 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.

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

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

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

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

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

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

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

Waste is assessed by comparing specific contaminant concentrations of each chemical contaminant, and where required the leachable concentration using the toxicity characteristics leaching procedure, against contaminant thresholds.

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

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

5.4 Management of waste streams

The types of wastes which may be generated during construction are outlined in Section 4.1 and Table 5-5.

Table 5-5 Management of waste streams

Construction Activity	Waste Type	Waste Classification	Proposed reuse/recycling/disposal methods	Storage receptacle	Sampling and Testing Requirements	Reuse / Recycle Target	Comments
Site Establishment and Demolition	Demolition Waste: vegetation waste	General solid waste (non-putrescible)	On site reuse as timber or mulch where possible Off site reuse in accordance with Mulch Exemption Off site disposal in accordance with Noxious Weeds Act 1993 at a licensed facility or deep burial of weeds in accordance with Roads and Maritime Specification G40 and	Stockpile	N/A	To be included in calculations for 80% of construction and demolition waste reused / recycled target	
	Demolition Waste: scrap metal	General solid waste (non-putrescible)	Recycle where possible	Scrap metal bin	N/A	To be included in calculations for 80% of construction and demolition waste reused / recycled target	
	Demolition Waste: concrete, asphalt, bricks and gravel (not including refractory bricks, refractory materials or asphalt containing coal tar)	General solid waste (non-putrescible)	Following crushing, reuse on site as backfill, road base, on access tracks or for ongoing road maintenance Reuse / recycle off site in accordance with Reclaimed Asphalt, Excavated Public Road Material and Recovered Aggregate Exemptions	Stockpile or skip bin	Will be sampled and tested for contaminants prior to being transported off site and applied to land outside a road corridor. Sampling will be in accordance with the relevant Resource Recovery Order (RRO) (detailed in Table 5-6) with testing of samples undertaken by analytical laboratories accredited by the National Association of Testing Austhorities (NATA), or equivalent.	To be included in calculations for: • 80% of construction and demolition waste reused / recycled target • 5% concrete replacement material used in concrete during construction target • 10% recycled material used in road base and sub base during construction target	

Construction Activity	Waste Type	Waste Classification	Proposed reuse/recycling/disposal methods	Storage receptacle	Sampling and Testing Requirements	Reuse / Recycle Target	Comments
	Demolition Waste: hazardous or special waste	Special or hazardous waste such as asbestos	Off site disposal by authorised contractors at a licenced facility	Bunded and contained storage facility	Will be appropriately classified in accordance with the waste guidance and exemption requirements As detailed in the Unexpected Contaminated Lands and Asbestos Finds Procedure	N/A	Asbestos survey will be undertaken of buildings to be demolished by a suitably qualified person
Earthworks and excavation, including tunnelling activities	Spoil	VENM or ENM or other project specific RRO	Reuse on site where possible Relocate VENM or ENM to approved community beneficial use off site Off site reuse in accordance with ENM Exemption Beneficial reuse off site (s.143 Notice requirement) Off site disposal at an approved facility	Stockpiles (separate for each classification)	Will be appropriately classified in accordance with the waste guidance and exemption requirements Sampling will be in accordance with the relevant RRO (detailed in Table 5-6) with testing of samples undertaken by analytical laboratories accredited by the National Association of Testing Authorities (NATA), or equivalent.	To be included in calculations for 95% reuse / recycling of usable spoil (uncontaminated surplus excavated material)	When disposing of ENM off site to a private or publicly owned site will need a section 143 notice
	Potentially contaminated or contaminated soils	If material is taken off site classification will be carried out, based on soil tests carried out prior to off site disposal and in accordance with the EPA Waste Classification Guidelines (EPA 2014)	On site burial / remediation / reuse / encapsulation in accordance with Unexpected Contaminated Lands and Asbestos Finds Procedure, and/or guidelines, and/or Remedial Action Plan if applicable Off site disposal at an approved facility	Stockpiles (separate for each classification)	Will be sampled and tested for contaminants prior to being transported off site and applied to land outside a road corridor As detailed in the Unexpected Contaminated Lands and Asbestos Finds Procedure where appropriate	N/A	
	Landfill leachate and/or contaminated stormwater at St Peters Interchange	More than one potential waste classification and will depend on the results of testing, but likely to be Special Waste or Hazardous Waste	Will be managed in accordance with the Site Audit Report produced in accordance with the CoA E182	N/A	Will be sampled and tested in accordance with the Site Auditor Report produced in accordance with the CoA E182	N/A	Unlikely except at C10

Construction Activity	Waste Type	Waste Classification	Proposed reuse/recycling/disposal methods	Storage receptacle	Sampling and Testing Requirements	Reuse / Recycle Target	Comments
	Gases and landfill gases at St Peters Interchange	More than one potential waste classification and will depend on the results of testing, but likely to be Special Waste or Hazardous Waste	Will be managed in accordance with the Site Audit Report produced in accordance with the CoA E182	N/A	Will be sampled and tested in accordance with the Site Auditor Report produced in accordance with the CoA E182	N/A	Unlikely except at C10
	Landfill Waste (solids) at St Peters Interchange	More than one potential waste classification and will depend on the results of testing, but likely to be Special Waste or Hazardous Waste	Will be managed in accordance with the Site Audit Report produced in accordance with the CoA E182	N/A	Will be sampled and tested in accordance with the Site Auditor Report produced in accordance with the CoA E182	N/A	Unlikely except at C10
Surface works and general construction activities (including utility works)	Construction Wastes: steel reinforcing	General solid waste (non-putrescible)	Recycle at an off site facility	Scrap metal bin	N/A	To be included in calculations for 80% of construction and demolition waste reused / recycled target	
	Construction Wastes: conduits and pipes	General solid waste (non-putrescible)	Recycle at an off site facility	Construction waste bin for off site segregation	Will be sampled and tested for contaminants (namely asbestos) prior to reuse on site or prior to being transported off site and applied to land outside a road corridor	To be included in calculations for 80% of construction and demolition waste reused / recycled target	
	Construction Wastes: conduits and pipes (asbestos containing)	Special Waste such as Asbestos	Off site disposal by authorised contractors at a licenced facility	Bunded and appropriately contained in storage facility	Will be sampled and tested for contaminants (namely asbestos) prior to reuse on site or prior to being transported off site and applied to land outside a road corridor	N/A	

Construction Activity	Waste Type	Waste Classification	Proposed reuse/recycling/disposal methods	Storage receptacle	Sampling and Testing Requirements	Reuse / Recycle Target	Comments
	Construction Wastes: concrete (solids and washouts) and asphalt	General solid waste (non-putrescible)	Following crushing, reuse on site as backfill, road base, on access tracks or for ongoing road maintenance Reuse / recycle off site in accordance with Reclaimed Asphalt, Excavated Public Road Material and Recovered Aggregate Exemptions	Stockpile or skip bin	Will be sampled and tested for contaminants prior to being transported off site and applied to land outside a road corridor Sampling will be in accordance with the relevant RRO (detailed in Table 5-6) with testing of samples undertaken by analytical laboratories accredited by the National Association of Testing Authorities (NATA), or equivalent.	To be included in calculations for: • 80% of construction and demolition waste reused / recycled target • 5% concrete replacement material used in concrete during construction target • 10% recycled material used in road base and sub base during construction target	
	Construction Wastes: timber formwork	General solid waste (non-putrescible)	Reuse until end of useful life	Timber skip bin or construction waste bin for off site segregation	N/A	To be included in calculations for 80% of construction and demolition waste reused / recycled target	
	Construction Wastes: packaging materials, including wood, plastic, cardboard and metals	General solid waste (non-putrescible)	Return to supplier where possible Recycle at an off site facility	Separate skip bins for plastics, timber, metals, cardboard or construction waste bin for offsite segregation	N/A	To be included in calculations for 80% of construction and demolition waste reused / recycled target	
	Construction Wastes: empty oil and other drums	General solid waste (non-putrescible)	Return to supplier where possible Off site disposal at an approved facility	Oil drum skip bin, plastics skip bin	N/A	To be included in calculations for 80% of construction and demolition waste reused / recycled target	
	Construction Wastes: pesticides, herbicides, spill clean ups, paints and other chemicals	Hazardous waste / liquid waste	Return unused portions or empty containers to supplier where possible Off site disposal at an approved facility	Bunded and contained storage facility	Sampling to confirm EPA waste classification	N/A	
	Construction Wastes Metals and electrical cabling	General solid waste (non-putrescible)	Recycle at an off site facility Use on other TfNSW projects	Scrap metal bin	N/A	N/A	
	Construction Wastes: aerosol cans	General solid waste (non-putrescible)	Recycle at an off site facility	Recycling bin	N/A	N/A	

Construction Activity	Waste Type	Waste Classification	Proposed reuse/recycling/disposal methods	Storage receptacle	Sampling and Testing Requirements	Reuse / Recycle Target	Comments
	Construction Wastes: sediment basin discharge and solids (sediment)	Liquid waste / General Solid (non-putrescible)	Dust suppression / Beneficial reuse on site (such as noise mounds or off site as per WMP)	Sediment Basin	As in accordance with SSWMP	N/A	Discharge in accordance with EPL requirement Detailed in SSWMP Basin Discharge Permit
Compounds and Workshop Operation	Tyres	Special waste	Off site disposal / recycling at an approved facility / in accordance with the Recovered Tyre Exemption	Stockpile	The material will meet all chemical and other material requirements for recovered tyres Sampling will be in accordance with the relevant RRO (detailed in Table 5-6) with testing of samples undertaken by analytical laboratories accredited by the National Association of Testing Authorities (NATA), or equivalent. The recovered tyres can only be applied to land for use in civil engineering structures and road making activities (using industry recognised standards such as the Building Code of Australia)	N/A	
	Waste generated by the maintenance of equipment including oil filters and rags	General solid waste (non-putrescible)	Off site disposal at an approved facility	Skip bin	N/A	N/A	
	Oils, grease, fuel, chemicals and other fluids	Liquid Waste	Off site disposal at an approved facility	Bunded and contained storage facility	N/A	N/A	
	Batteries	Hazardous waste	Off site disposal / recycling at an approved facility	Bunded and contained storage facility	N/A	N/A	
	Radiator fluid	Hazardous waste	Off site disposal at an approved facility	Bunded and contained storage facility	N/A	N/A	
	Hydraulic fluid	Hazardous waste	Off site disposal at an approved facility	Bunded and contained storage facility	N/A	N/A	

Construction Activity	Waste Type	Waste Classification	Proposed reuse/recycling/disposal methods	Storage receptacle	Sampling and Testing Requirements	Reuse / Recycle Target	Comments
	Domestic waste generated by workers	General solid waste (putrescible)	Off site disposal at an approved facility	General waste bin	N/A	N/A	
	Wastewater / recycled water / stormwater	Liquid	Treated and reused on site when biologically and chemically suitable If unable to be reused on site will be discharged in accordance with EPL and SSWMP water discharge criteria	Water Treatment Plants	In accordance with SSWMP	15% percent of water (rainwater, stormwater, wastewater, groundwater, tunnel inflow water) generated/collected during construction to be reused, recycled or reclaimed	
	Gas cylinders and bulk chemicals containers for Water Treatment Plant	General solid waste (non-putrescible)	Return to supplier where possible Recycle at an off site facility	Bottle cage/rack	N/A	N/A	
Site office use	Paper, cardboard and plastic	General solid waste (non-putrescible)	Recycle at an off site facility	Paper and cardboard bin	N/A	To be included in calculations for 40-60% by volume of office waste diversion from landfill	
	Glass bottles and aluminium cans	General solid waste (non-putrescible)	Recycle at an off site facility	Co-mingled bin	N/A	To be included in calculations for 40-60% by volume of office waste diversion from landfill	
	Ink cartridges	General solid waste (non-putrescible)	Recycle at an off site facility	Printer cartridge bin	N/A	To be included in calculations for 40-60% by volume of office waste diversion from landfill	
	Food waste	General solid waste (putrescible)	Off site disposal at a licensed facility	General waste bin	N/A	N/A	
	Effluent and sewage	Liquid	Off site disposal at an approved facility by a sewage collection service and/or treated and reused on site	Tank	N/A	N/A	
	Sanitary waste	Special Waste (Clinical Waste)	Off site Disposal at a licensed facility	Sanitary Waste Bin	N/A	N/A	

5.5 Waste exemption

Clause 91 *Protection of the Environment Operations (Waste) Regulation 2014* enables the EPA to grant exemptions to the licensing and payment of levies for the land application or use of waste. The EPA has issued general exemptions for a range of commonly recovered, high volume and well characterised waste materials that allow their use as fill or fertiliser at unlicensed, off-site facilities. Under the *Protection of the Environment Operations (Waste) Regulation 2014*, there are a number of resource recovery orders and resource recovery exemptions currently in force.

Relevant Resource Recovery Exemptions and Orders which may be applicable to this Project are defined in Table 5-6 below. These are general gazette exemptions that do not require additional approval. Specific exemptions may be granted where an application is made to the EPA and it is likely that the Project team will seek additional exemptions as the Project is delivered.

Table 5-6 Waste Recovery Exemptions and Orders, and associated conditions relevant to the Project

Exemption/Order	General Conditions
The excavated natural material exemption 2014 The excavated natural material order 2014	The chemical concentration or other attributes of the excavated natural material listed in the Excavated Natural Material 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 apply the relevant waste within a reasonable period of time.
The reclaimed asphalt pavement exemption 2014 The reclaimed asphalt pavement order 2014	The reclaimed asphalt can only be: • Applied to land for road related activities including road construction or road maintenance activities, being: a) A use as a road base and sub base b) Applied as a surface layer on road shoulders and unsealed roads and c) Use as engineering fill material. Used as an alternative raw material in the manufacture of asphalt.

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: a) The relevant waste is applied to land to the minimum extent necessary for the construction of a road and b) A development consent for the development has been granted under the relevant Environmental Planning Instrument (EPI) or c) It is to provide access (temporary or permanent) to a development approved by a Council or d) The works undertaken are either exempt or complying development.
The stormwater exemption 2014 The stormwater order 2014	Stormwater can be applied to land by: • Spraying, spreading or depositing on the land • Ploughing, injecting or mixing into the land and • Filling, raising, reclaiming or contouring the land.
The cement fibre board waste order 2014 The cement fibre board waste exemption 2014	The chemical concentration or other attributes of the cement fibre board material listed in the order must not be exceeded. Cement fibre board can only be applied to land when incorporated within road making material or used as an alternative input into thermal processes for non-energy recovery purposes in the manufacture of building products. Handling, processing, sampling and testing requirements are outlined in detail in the order.
The recovered tyres order 2014 The recovered tyres exemption 2014	The material must meet all chemical and other material requirements for recovered tyres. The recovered tyres can only be applied to land for use in civil engineering structures and road making activities (using industry recognised standards such as the Building Code of Australia).
The mulch order 2016 The mulch exemption 2016	The 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. Mulch does not include plant material from kerbside waste collections.

Exemption/Order	General Conditions
The recovered plasterboard order 2014 The recovered plasterboard exemption 2014	The chemical concentration or other attributes of the recovered plasterboard material listed in the order must not be exceeded. Recovered plasterboard can only be applied to land as a soil amendment. Prior to application to land the soil to which the material will be applied must be characterised to determine appropriate application rates. The recovered plasterboard must be incorporated into the topsoil. Handling, processing, sampling and testing requirements are outlined in detail in the order. *Protection of the Environment Operations (Waste) Regulation 2014* applies to this order.

5.6 Waste tracking

In accordance with the CoA E53, the locations of all construction spoil haulage vehicles will be monitored in real time via GPS tracking. Furthermore, in accordance with the CoA A44 these haulage vehicles will be clearly marked as being for the WestConnex M4-M5 Link (including the display of the Critical State Significant Infrastructure (CSSI) application number) in such a manner to enable immediate identification within at least 50 metres of the vehicles such as through Project branding on haul trucks.

Consistent with the *Protection of the Environment Operations (Waste) Regulation 2014* the following wastes potentially encountered/generated are required to be tracked within NSW:

- Hazardous Wastes as defined by Table 3 in the NSW EPA 'Waste that must be tracked' guideline
- Liquid Waste (Category 1 trackable waste)
- More than 100 kilograms of asbestos waste or more than 10 square meters of asbestos sheeting in any single load
- More than 200kg of waste tyres, or 20 tyres (whichever is heavier)
- Waste oil/water, hydrocarbon/water mixtures emulsions
- Wastes listed in Table 1 of the NSW EPA 'Waste that must be tracked' Guideline.

Details of waste types, volumes and destinations will be recorded in the Project Waste Management Register for all waste movements off site. A template Waste and Spoil Management Tracking Register is included for reference in Appendix B of this Plan.

The NSW EPA WasteLocate system will be used to track asbestos waste and waste tyres, whilst the online waste tracking system developed by EPA will be utilised to track all other trackable waste. For further details regarding GPS Tracking of Spoil Haulage please refer to Section 4.7.2 of the Traffic and Transport and Access Management Sub-plan (TTAMP).

6 Resource management and conservation

6.1 Background

As stated in the EIS Section 23.3.1, significant quantities of materials, water and electricity are expected to be required for the construction of the Project. Consequently, the EIS identified that resource consumption and waste generated by the Project could also contribute to the emission of greenhouse gases during construction.

Construction materials would likely be sourced from off site suppliers, however locally sourced construction materials will be prioritised for use where practical to minimise haulage distances and the associated impacts on traffic in the area.

Water would be required during construction for tunnelling activities, surface works, site offices and ablutions. Preference would be given to the use of non-potable water over potable water, in accordance with the WestConnex Sustainability Strategy (SMC 2015). Water would for example be sourced (in order of general preference) from stormwater harvesting (non-potable water), on site construction water treatment and reuse (non-potable water) and mains supply (potable water). It is anticipated that the local water supply network would have sufficient capacity to accommodate water requirements.

Similarly, power requirements are expected to be significant during construction of the Project, however local substations are expected to have the required capacity to supply the construction ancillary facilities without affecting the local supply network.

6.2 Resource Management

The general resource recovery principles that will govern the management and conservation of resources are:

- Recovery of resources for reuse - reusable materials generated by the Project will be segregated for reuse on site, or off site where possible, including the reuse of the major waste streams (VENM)
- Recovery of resources for recycling - recyclable resources (such as metals, plastics and other recyclable materials) generated during construction and demolition
- Resources will be segregated for recycling and sent to an appropriate recycling facility for processing and
- Recovery of resources for reprocessing – cleared vegetation will be mulched or chipped on site and used for landscaping, in the absence of a higher beneficial use being identified.

The Project will commit to implementing the resource recovery principles stated above during construction of the Project. This will be done by adopting efficient work practices in accordance with the WestConnex Sustainability Strategy (SMC 2015). These practices include:

- Negotiating and implement packaging take-back arrangements with suppliers
- Monitoring and recording quantities of materials used, waste to be beneficially reused and waste to be recycled during the construction stage
- Conducting awareness programs for all site personnel regarding energy conservation methods
- Capitalise on opportunities to reduce material use and maximise the use of materials with low environmental impact
- Maximise the use of reused/recycled timber products and timber from sustainably managed forests that have obtained FMC which will also contribute towards ISCA Rating Tool IS Materials Credits as an “Environmentally labelled products and supply chains”

- Optimise the amount of cement replacement material used in concrete
- Optimise the amount of recycled material used in road base and sub-base
- Preference would be given to the use of non-potable water over potable water as governed by workplace health and safety considerations, economic feasibility, the functional specifications of the design, tunnelling equipment specifications, and non-potable water availability
- Non-potable water will be used where possible during construction for dust suppression and end-of-project landscaping.

With the adoption of these principles, the Project would minimise long-term impacts through the sustainable use of construction materials, water resources, electricity consumption and consequently reduce greenhouse gas emissions.

7 Environmental control measures

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

Table 7-1 Waste management and mitigation measures

ID	Measure/Requirement	Resources needed	When to implement	Responsibility	Reference	Evidence
General Project Requirements						
W1	Waste generated during construction of the Project will be managed in accordance with the following waste hierarchy priorities: • Waste generation is to be avoided • Where avoidance is not reasonably practicable, waste generation is to be reduced • Where avoiding or reducing waste is not possible, waste is to be reused, recycled, or recovered on site or off site • Where waste reuse, recycling or recovery is not possible, waste will be treated and/or disposed of at a waste management facility or premise lawfully permitted to accept the materials 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.	Waste Management Plan, Waste and Spoil Management Register	Construction	Environment and Sustainability Manager Foreman	CoA E202 REMM RW4 Roads and Maritime QA Specification G36 Section 4.11.1	Waste and Spoil Management Tracking Register records WARR reporting

ID	Measure/Requirement	Resources needed	When to implement	Responsibility	Reference	Evidence
W2	Prior to transporting wastes generated by or for TfNSW to a place that is not owned by TfNSW and is not a licensed waste facility a completed and signed notice under section 143(3A) of the POEO Act ("s.143 Notice") will be submitted to TfNSW. A completed and signed original copy of "s.143 Notice" received from the landholder receiving the waste will be retained as evidence that the Waste Site has the appropriate planning consent. This includes waste transported for reuse, recycling, disposal or stockpiling.	s.143 Notice template and letter for landholder A completed s.143 Notice letter from landholder and completed notice	Construction	Environment and Sustainability Manager	Roads and Maritime QA Specification G36 Section 4.11.4 LLE712 WM13 (internal document)	Completed s.143 Notice letter from landholder Completed s.143 Notice Waste and Spoil Management Tracking Register records
W3	Obtain the relevant licenses / approvals for off site waste facilities utilised for the disposal of Project waste.	N/A	Prior to Construction Construction	Environment and Sustainability Manager Foreman	Best Practice	Relevant licence records
W4	All staff and subcontractors will receive a site induction and ongoing toolbox talks that will detail waste and resource management measures (including the waste management hierarchy).	N/A	Construction	Environment and Sustainability Manager Foreman	CoA C2	Induction records Toolbox talk records
W5	A hazardous building materials survey will be undertaken of buildings to be demolished as part of the Project.	A suitably qualified person in Asbestos Investigation	Prior to Construction	Safety Manager	REMM RW13 REMM CM03 LLE611 (internal document)	Asbestos Survey Report

ID	Measure/Requirement	Resources needed	When to implement	Responsibility	Reference	Evidence
Management of Waste – General						
W6	A Construction WMP has been prepared as part of the CEMP and will be regularly updated during detailed design and construction. It will include mitigation strategies to manage and minimise the generation of waste and encourage reuse of materials.	Project Team	Prior to Construction	Environment and Sustainability Manager	CoA C4 REMM RW3 Roads and Maritime QA Specification G36 Section 4.11.1 LLE712 WM1 (internal document) LLE712 WM13 (internal document)	This Plan
W7	Waste will be managed and disposed of in accordance with the POEO Act. Reporting requirements and procedures for the reduction of generation of waste, resource recovery and use of recycled materials are detailed within this Plan.	N/A	Construction	Environment and Sustainability Manager	REMM RW2	This Plan
W8	Waste management measures from this WMP will be included in relevant Environmental Work Method Statements (EWMS) to be developed prior to the commencement of specific activities.	EWMS	Prior to Construction Construction	Environment and Sustainability Manager	Best practice	EWMS

ID	Measure/Requirement	Resources needed	When to implement	Responsibility	Reference	Evidence
W9	Wastes generated on site will be stored to prevent unauthorised access and uncontrolled release.	Waste receptacles	Construction	Environment and Sustainability Manager Foreman	Best practice	LLE703A Environmental Inspection Checklist (internal document)
W10	Waste generated outside the site will not be received on site for storage, treatment, processing, reprocessing, or disposal on the site, except as expressly permitted by a licence or waste exemption under the POEO Act, if such a licence is required in relation to that waste.	N/A	Construction	Project Manager Environment and Sustainability Manager	CoA E203 REMM RW2 REMM RW6	Licence or waste exemption, if relevant
W11	All waste generated during construction will be classified in accordance with the Waste Classification Guidelines (EPA 2014). Waste sampling and testing to be guided by the Waste Classification Guidelines and Roads and Maritime Fact Sheet 'Waste Sampling'.	Waste Classification Guidelines (EPA 2014)	Prior to Construction Construction	Environment and Sustainability Manager	CoA E204 LLE712 WM8 (internal document) REMM RW2 Roads and Maritime QA Specification G36 Section 4.11.1	Waste Classification Reports
W12	Any disposal of weeds and exotics resulting from clearing and grubbing operations will be managed in accordance with *Noxious Weeds Act 1993* and the Flora and Fauna Management Sub-Plan (FFMP).	Waste Classification Guidelines (EPA 2014)	Construction	Environment and Sustainability Manager	Roads and Maritime QA Specification G40/D	Waste and Spoil Management Tracking Register records

ID	Measure/Requirement	Resources needed	When to implement	Responsibility	Reference	Evidence
W13	Suitable areas will be identified to allow for contingency management of unexpected waste materials, including contaminated materials. Areas will be hardstand or lined areas that are appropriately stabilised and bunded, with sufficient space for stockpile storage.	Suitable areas for contaminated material stockpiling	Prior to Construction Construction	Environment and Sustainability Manager Project / Site Engineers	REMM RW9 REMM CM08 LLE712 WM16 (internal document)	Site layout plans in the CEMP
W14	Stockpiles will be managed to control combustibility, dust, odour and cross contamination. Mulch in excess of the quantity required for landscape planting will not be stockpiled on Construction Site.	N/A	Construction	Environment and Sustainability Manager Foreman	REMM CM05 Roads and Maritime QA Specification G40 Section 4.2	LLE703A Environmental Inspection Checklist (internal document)
W15	Stockpile sites will be located away from drainage lines and watercourses and arranged to minimise damage to natural vegetation and trees.	N/A	Construction	Environment and Sustainability Manager	Roads and Maritime QA Specification G40 Section 4.2	LLE703A Environmental Inspection Checklist (internal document)
W16	Suitably licensed waste contractors will be used for the collection and transport of all non-domestic, retail and commercial wastes for either off site processing and/or disposal to an appropriately licensed facility. Receipts for waste transfer and disposal will be checked to ensure all details are correct and retained for audit purposes.	N/A	Construction	Environment and Sustainability Manager Procurement Team	CoA E204 LLE712 WM10 (internal document)	Receipts for waste transfer and disposal Appendix C

ID	Measure/Requirement	Resources needed	When to implement	Responsibility	Reference	Evidence
W17	Combustible waste will be managed to prevent the risk of fire, by regular removal and safe disposal.	N/A	Construction	Environment and Sustainability Manager Foreman	LLE712 WM4 (internal document)	Waste and Spoil Management Tracking Register records
Management of Waste - Spoil						
W18	The handling of spoil generated during construction of the CSSI is to be conducted in conjunction with the WMP and TTAMP.	TTAMP	Construction	Environment and Sustainability Manager Area Manager	EIS Section 23.3.2	Spoil Management records TTAMP
W19	Where possible and fit for purpose, spoil will be beneficially reused as part of the Project before alternative spoil disposal options are pursued. Spoil reuse opportunities will be regularly reviewed and updated during detailed design and Project construction.	N/A	Construction	Environment and Sustainability Manager Area Manager	REMM RW7 LLE712 WM14 (internal document)	Spoil Management records
Management of Waste - Hazardous or special waste						
W20	Hazardous substances, dangerous goods and hazardous materials will not be stored on site except in small volumes within a well-ventilated, purpose built structure with roof cover. The store will have a concrete sealed or equivalent impervious floor with bunding, isolated drainage, signage and security fencing.	N/A	Construction	Project Manager	Best practice LLE611 (internal document)	Site plans

ID	Measure/Requirement	Resources needed	When to implement	Responsibility	Reference	Evidence
W21	The discovery of previously unexpected contaminated land or asbestos be excavated or otherwise will be managed and disposed of in accordance with an Unexpected Contaminated Lands and Asbestos Management Procedure located in the SSWMP. Any contaminated waste will be handled, separated, contained, managed and disposed of to prevent migration and further contamination.	Unexpected Contaminated Lands and Asbestos Management Procedure	Construction	Environment and Sustainability Manager Safety Manager Foreman	CoA E184 REMM RW10 REMM CM04 REMM CM06 REMM CM08 CLM Act	Unexpected Contaminated Lands and Asbestos Management Procedure
W22	Asbestos handling and management will be undertaken in accordance with an Asbestos Management Plan prepared in accordance with relevant legislation, regulations and codes of practice including LLE607 Asbestos Procedures (internal document). Adjacent communities will be provided with advance notification about potential hazards.	Asbestos Management Plan, LLE607 (internal document)	Construction	Safety Manager	REMM RW14 REMM CM02 LLE712 WM11 LLE611 (internal document) LLE607 (internal document)	LLE603B Safety – Area Inspection (internal document)
W23	If hazardous waste is to be handled, e.g. healthcare facilities, safe and secure collection, storage and disposal facilities will be available.	Hazardous waste management facilities	Construction	Environment and Sustainability Manager	LLE712 WM3 (internal document)	LLE603B Safety – Area Inspection (internal document)
Resource Consumption – General						

ID	Measure/Requirement	Resources needed	When to implement	Responsibility	Reference	Evidence
W24	Resource recovery will be applied to the management of construction waste and will include: • Recovery of resources for reuse-reusable materials generated by the Project will be segregated for reuse on site, or off site where possible, including the reuse of the major waste streams (VENM) • Recovery of resources for recycling - recyclable resources (such as metals, plastics and other recyclable materials) generated during construction and demolition • Resources will be segregated for recycling and sent to an appropriate recycling facility for processing • Recovery of resources for reprocessing - cleared vegetation will be mulched or chipped on site and used for landscaping, in the absence of a higher beneficial use being identified.	N/A	Construction	Environment and Sustainability Manager Commercial Manager Project / Site Engineers	REMM RW5 LLE712 WM6 (internal document)	Waste and Spoil Management Tracking Register records WARR reporting
W25	All excavated natural, non-contaminated soil, aggregate or rock should be separately stockpiled and reused on site where possible or off site. Landfill disposal of clean excavated natural materials should be avoided.	N/A	Construction	Environment and Sustainability Manager Foreman Area Manager	LLE712 WM7 (internal document)	Waste and Spoil Management Tracking Register records Spoil Management records

ID	Measure/Requirement	Resources needed	When to implement	Responsibility	Reference	Evidence
Resource Consumption – Materials						
W26	Construction material will be sourced in accordance with the relevant aims of the WestConnex Sustainability Strategy (Sydney Motorway Corporation 2015) and the Project Sustainability Management Plan.	N/A	Construction	Environment and Sustainability Manager Commercial Manager Procurement Team	REMM RW1	Waste and Spoil Management Tracking Register records NGER reporting GREP reporting WARR reporting ISCA audits
W27	Waste will be segregated between recyclable and non-recyclable waste, as well as between categories of recyclable wastes (paper/ cardboard/ plastic/ glass/ timber/ metals/ fluorescent lighting/ printer cartridges/ICT equipment) and volumes reported. Wherever possible, packaging will be avoided or minimised.	Appropriate receptacles for segregation	Construction	Environment and Sustainability Manager	LLE712 WM6 (internal document)	Waste and Spoil Management Tracking Register records LLE703A Environmental Inspection Checklist (internal document)
W28	A sufficient amount of waste receptacles will be provided for all relevant materials (including hazardous and recyclable materials) and will be regularly collected and appropriately managed.	Appropriate receptacles for segregation	Construction	Project Manager	Best practice LLE712 WM6 (internal document)	LLE703A Environmental Inspection Checklist (internal document)

ID	Measure/Requirement	Resources needed	When to implement	Responsibility	Reference	Evidence
W29	Where possible LSBJV will request suppliers not to provide unnecessary packaging. LSBJV commits to implementing takeback arrangements – this does not suggest that LSBJV commits to implementing such arrangements with all suppliers. LSBJV will request suppliers to deliver materials when needed to reduce the opportunity for waste through error or change in estimate.	N/A	Prior to Construction Construction	Environment and Sustainability Manager Commercial Manager Procurement Team	LLE712 WM6 (internal document) LLE712 WM17 (internal document) LLE712 WM18 (internal document)	Written/signed agreements with suppliers
W30	The Project will reuse or recycle around 95 per cent of uncontaminated spoil generated for beneficial purposes, either within the Project or at other locations in accordance with the Project waste management hierarchy.	N/A	Construction	Environment and Sustainability Manager Commercial Manager Area Manager Sustainability Manager	REMM RW8 Sustainability Management Plan	Waste and Spoil Management Tracking Register records ISCA Scorecard
W31	100 per cent of all timber products used in the Project will be sourced from either reused/recycled timber or from sustainably managed forests that have obtained FMC.	Reused/recycled timber or FMC certified timber	Construction	Environment and Sustainability Manager Commercial Manager	Sustainability Management Plan	Timber with a FMC or source records ISCA Scorecard

ID	Measure/Requirement	Resources needed	When to implement	Responsibility	Reference	Evidence
W32	Where practicable, surplus existing materials will be identified and utilised where fit for purpose.	N/A	Construction	Foreman Project / Site Engineers	Best practice	N/A
W33	Locally produced goods and services will be procured where feasible and cost effective to reduce transport fuel emissions.	N/A	Prior to Construction Construction	Commercial Manager Procurement Team	GHG5	Procurement records
Resource Consumption – Water						
W34	Where practicable construction water will either be reused on site wherever feasible and opportunities for the reuse of treated water would be considered in preference to discharge into the stormwater system.	N/A	Construction	Environment and Sustainability Manager Project / Site Engineers Foreman	Best practice	ISCA Scorecards Sustainability reports
W35	Wastewater not reused on site will be discharged into the local stormwater system in accordance with the requirements of an Environment Protection Licence issued for the Project.	EPL	Construction	Environment and Sustainability Manager	Best practice	EPL Annual Returns
Resource Consumption – Power						

ID	Measure/Requirement	Resources needed	When to implement	Responsibility	Reference	Evidence
W36	At least 20 per cent of construction energy (electricity) required for the Project will be sourced from renewable energy generated on site and/or an accredited GreenPower energy supplier, where possible. Six per cent of construction energy (electricity) requirements will be offset, with any offset undertaken in accordance with the Australian Government National Carbon Offset Standard.	N/A	Construction	Environment and Sustainability Manager Sustainability Manager Procurement Team	GHG6	ISCA Scorecard
Resource Consumption – Emissions						
W37	Construction plant and equipment will be operated and maintained to maximise efficiency and reduce emissions, with construction planning used to minimise vehicle wait times and idling on site and machinery turned off when not in use.	N/A	Construction	Foreman Plant Manager	GHG4	Plant records
W38	Opportunities to use low emission construction materials, such as recycled aggregates in road pavement and surfacing, and cement replacement materials will be investigated and incorporated where feasible and cost-effective.	N/A	Construction	Environment and Sustainability Manager Procurement Team	GHG3	Procurement records
Recording / Reporting						

ID	Measure/Requirement	Resources needed	When to implement	Responsibility	Reference	Evidence
W39	A Waste and Spoil Management Tracking Register will be maintained until the construction completion date, to record the type, amount and location of waste reused, recycled, stockpiled and disposed of.	Waste and Spoil Management Tracking Register	Prior to Construction Construction	Environment and Sustainability Manager	Roads and Maritime QA Specification G36 Section 4.11.2 LLE712 WM5 (internal document) LLE712 WM12 (internal document) LLE712 WM5 (internal document)	Waste and Spoil Management Tracking Register records Waste Dockets
W40	Any servicing of plant and equipment will be performed in accordance with a risk assessment and within an appropriate on site servicing area supported by immediately accessible spill controls and waste storage. Maintenance records will be readily available for inspection.	N/A	Construction	Environment and Sustainability Manager Plant Manager	Best Practice LLE712 WM9 (internal document)	Plant maintenance records

ID	Measure/Requirement	Resources needed	When to implement	Responsibility	Reference	Evidence
W41	An annual WARR report will be submitted containing information relating to wastes generated or recycled in accordance with Roads and Maritime QA Specification G36 Annexure G36/F.	Completed WARR Report	Construction	Environment and Sustainability Manager	Roads and Maritime QA Specification G36 Section 4.11.3 Roads and Maritime QA Specification G36/F1	WARR reporting
W42	Collect data and produce annual reporting in accordance with the NSW GREP.	Completed Register	Construction	Environment and Sustainability Manager Sustainability Manager	GREP	GREP tool register
W43	Collect data and produce annual reporting in accordance with NGERs requirements.	Completed Register	Construction	Environment and Sustainability Manager Sustainability Manager	NGER Act 2007	NGER register

ID	Measure/Requirement	Resources needed	When to implement	Responsibility	Reference	Evidence
W44	All construction spoil haulage vehicles will be clearly marked as being for WestConnex M4-M5 Link and the locations of these haulage vehicles will be GPS tracked and monitored in real time. Records of haulage vehicle monitoring will be made available electronically to the Secretary and the EPA upon request.	GPS tracking	Construction	Environment and Sustainability Manager	CoA A44 CoA E53	GPS Tracking records WestConnex M4-M5 Link project branding on haul trucks including the CSSI application number Section 4.7.2 of the TTAMP
W45	Ensure that each Project site has an informed, delegated officer authorised to sign off any Waste Transport Certificates when waste is picked up from site.	N/A	Construction	Environment and Sustainability Manager Foreman	CoA E204 LLE712 WM15 (internal document)	Waste Transport Certificates

8 Compliance management

8.1 Roles and responsibilities

The LSBJV 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.

8.2 Training

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

- Existence and requirements of this Sub-plan
- Existence and requirements of other management plans and guidelines such as the Unexpected Contaminated Lands and Asbestos Finds Procedure, the Sustainability Strategy and the Sustainability Management Plan
- Relevant legislation and guidelines
- Roles and responsibilities for waste management
- Incident response, management and reporting
- Waste reporting requirements
- Requirements of the waste hierarchy
- Waste/recycle storage requirements
- Energy and resource efficient best practices
- Potential for contaminated material to be present on site and management requirements if such material is identified
- Expectations for targets relevant to waste and resource management including ISCA targets.

Targeted training in the form of toolbox talks or specific training will also be provided to personnel with a key role in waste 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 WMP, its implementation and effectiveness will be monitored through:

- Regular inspections of worksite and activities
- LSBJV Environmental Inspections which occur weekly (or more depending on works/weather conditions)
- Internal and external audits, including regular audits of appointed Project Waste Management Contractor(s) and waste disposal facilities
- Compliance Tracking Report (6 monthly).

Requirements and responsibilities in relation to inspections are documented in Section 3.9.1 and 3.9.2 of the CEMP. Regular monitoring and inspections will be carried out during construction in accordance with the LLE703 Environmental Monitoring and Inspection Procedure (internal

document). Inspection and monitoring requirements relevant to waste management for the Project are identified in Table 8-1.

Table 8-1 Inspection and monitoring requirements relevant to waste management

Item	Frequency	Standards	Records	Responsibility
Asbestos survey	As required, prior to demolition	Inspection to be undertaken by a qualified asbestos surveyor	Reporting as per Asbestos Management Plan	Safety Manager
Site Inspections	Weekly	Waste Classification Guidelines (EPA 2014) Roads and Maritime Waste Fact Sheets	LLE703A Environmental Inspection Checklist (internal document)	Environment and Sustainability Manager
Site Inspections	Fortnightly	Implementation of this Plan	Environmental Representative Inspection Report	ER
Visual surveillance	Daily	Storage containers (bins, skips, tanks, etc.) in sufficient numbers to facilitate segregation Correct bin type used Containers clearly sign posted Containers emptied at sufficient frequency	Log book and photos as relevant	Foreman Environment and Sustainability Manager
Sustainability Monitoring	As specified in the Sustainability Management Plan	As specified in the Sustainability Management Plan	As specified in the Sustainability Management Plan	Sustainability Manager

8.4 Auditing

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

In accordance with the ISCA waste management requirements, as detailed in the Sustainability Management Plan, external audits of the waste management system will be undertaken at least annually.

Audit requirements are detailed in Section 3.9.3 of the CEMP.

8.5 Reporting

Reporting requirements and responsibilities are documented in Section 3.9.5 of the CEMP. Subcontractors will supply all required data to the delivery team including data for waste movements to inform the Waste and Spoil Management Tracking Register.

Reporting requirements relevant to waste management are identified in Table 8-2.

Table 8-2 Reporting requirements relevant to waste management

Item	Frequency	Standards	Records	Responsibility
Diesel Plant and Equipment Reporting	Annual	Roads and Maritime QA Specification G36 Section 4.4.2 and GREP reporting tool	Reporting on the conformity, or otherwise, of mobile non-road diesel plant and equipment used for the work under the deed. Prepared in accordance with the GREP "Clean Air Data Management Tool1" included for reference in Appendix G.	Environment and Sustainability Manager
GREP Reporting	Annually (before 31 July) and on completion of construction	GREP "Clean Air Data Management Tool1" United States Environmental Protection Agency, European Union (EU) standards or approved equivalent emission standards	Conformity, or otherwise, of mobile non-road diesel plant and equipment used for the work under the deed with the relevant United States Environmental Protection Agency, European Union (EU) standards or approved equivalent emission standards.	Environment and Sustainability Manager
NGER Reporting	Annual	NGER Scheme	Required report information including: • Diesel usage • Electricity from site generators • Bitumen and asphalt produced • Explosives used on site Amount of acetylene.	Environment and Sustainability Manager
Sustainability / resource consumption monitoring	As specified in the Sustainability Management Plan	As specified in the Sustainability Management Plan	As specified in the Sustainability Management Plan.	Sustainability Manager

Item	Frequency	Standards	Records	Responsibility
WARR Reporting	Annual	Roads and Maritime Specification G36 Annexure G36/F	Reporting will include the following three components to the report to be addressed: • Purchasing data: data on the amount of material purchased by the Project to enable construction works listed under the contract • Waste and recycling data: data on the amount of material generated and recycled by LSBJV in the course of completing work under the contract • Project initiatives and barriers: provide information taken to reduce waste, recycle resources and purchase recycled content materials in the course of completing work under the contract.	Environment and Sustainability Manager

8.5.1 Waste and Spoil Management Register

A Waste and Spoil Management Tracking Register (example attached in Appendix B will be maintained which identifies all waste produced on site and subsequent management. The Register shall document the following:

- Type and quantity of waste
- Whether the waste is to be recovered (either for use on site or off site) or sent for disposal
- Tracking information of various waste streams
- Upon removal of waste from site: date of removal, transport contractor information and final destination.

All relevant documentation such as dockets and receipts will be retained within the Waste and Spoil Management Tracking Register.

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 identified through the following:
    - As a result of any investigations into any exceedances or non-conformances that determine changes to this Plan are required to prevent reoccurrences
    - To take into account changes to the Environment or generally accepted environmental management practices, new risks to the Environment, any Hazardous Substances, Contamination or changes in Law
    - In response to internal or external audits or annual management reviews.
- Where requested or required by the NSW Department of Planning and Environment or any other Authority
- Make comparisons with objectives and targets
- Meet approval requirements and conditions such as EPL requirements.

9.2 WMP 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.

Any revisions to the WMP will be in accordance with the process outlined in Section 1.5 of the CEMP.

A copy of the updated plan and changes will be distributed to all relevant stakeholders in accordance with the approved document control procedure – refer to 3.11.2 of the CEMP.

Appendix A – Other Conditions of Approval and Revised Environmental Management Measures relevant to this Plan

Other Conditions of Approval relevant to the development of this Plan

CoA No.	Condition Requirements	Document Reference
A44	All construction spoil haulage vehicles must be clearly marked as being for WestConnex M4-M5 Link (including Critical State Significant Infrastructure (CSSI) application number) in such a manner to enable immediate identification within at least 50 metres of the vehicles.	Table 7-1 W44
E53	The locations of all construction spoil haulage vehicles must be able to be monitored in real time and the records of monitoring be made available electronically to the Secretary and the EPA upon request for a period of no less than one year following construction.	Table 7-1 W44 TTAMP Section 4.7.2
E184	An Unexpected Contaminated Land and Asbestos Finds Procedure must be prepared and must be followed should unexpected contaminated land or asbestos be excavated or otherwise discovered during construction.	Section 5 Table 7-1 W21 Unexpected Contaminated Lands and Asbestos Finds Procedure located in the Soil and Surface Water Management Sub-plan (SSWMP) prepared as part of the CEMP
E202	Waste generated during delivery of the CSSI is to be dealt with in accordance with the following priorities: a) waste generation is to be avoided and where avoidance is not reasonably practicable, waste generation is to be reduced b) where avoiding or reducing waste is not possible, waste is to be re-used, recycled, or recovered c) where re-using, recycling or recovering waste is not possible, waste is to be treated or disposed of at a waste management facility or premise lawfully permitted to accept the materials or in accordance with a Resource Recovery Exemption or Order issued under the *Protection of the Environment Operations (Waste) Regulation 2014*, or to any other place that can lawfully accept such waste.	Section 5.2 Table 7-1 W1

CoA No.	Condition Requirements	Document Reference
E203	Waste generated outside the site must not be received at the site for storage, treatment, processing, reprocessing, or disposal on the site, except as expressly permitted by a licence or waste exemption under the *Protection of the Environment Operations Act 1997*, if such a licence is required in relation to that waste.	Section 5 Table 7-1 W10 Appendix B
E204	All waste generated during construction and operation must be classified in accordance with the EPA's Waste Classification Guidelines, with appropriate records and disposal dockets retained for audit purposes.	Section 5 Table 7-1 W11 Appendix B

Revised Environmental Management Measures relevant to the development of this Plan

Outcome	Ref REMM #	Commitment	Timing	WMP Reference
Resource Consumption	RW1	Construction material will be sourced in accordance with the relevant aims of the WestConnex Sustainability Strategy (Sydney Motorway Corporation 2015) and a Sustainability Management Plan that will be developed during detailed design, including to optimise resource efficiency and waste management, and select locally sourced materials and prefabricated assets where possible, to reduce greenhouse gas emissions. Unnecessary resource consumption will be avoided through the detailed design of the project and by making realistic predictions about the required quantities of resources, such as construction materials.	Construction	Sustainability Strategy Sustainability Management Plan Procurement Management Plan Section 5.2 Section 6.1 Section 6.2 Table 7-1 W26
Waste Generation and Disposal	RW2	Wastes will be managed and disposed of in accordance with relevant NSW legislation and government policies.	Construction	Section 3.1 Section 5 Table 7-1 W7, W10, W11, W21, W22, W42, W43, W44

Outcome	Ref REMM #	Commitment	Timing	WMP Reference
	RW3	A Construction Waste Management Plan will be prepared as part of the CEMP and regularly updated during detailed design and construction, detailing appropriate procedures for waste management. The Plan will include the waste management measures described in the project EIS.	Construction	This Plan Table 7-1 W7
	RW4	Wastes will be managed using the waste hierarchy principles of: • Avoidance of unnecessary resource consumption to reduce the quantity of waste being generated • Recovery of resources for reuse on site or off site for the same or similar use, without reprocessing • Recovery of resources through recycling and reprocessing so that waste can be processed into a similar non-waste product and reused • Disposal of residual waste.	Construction	Table 2-1 Section 5.2 Table 7-1 W1
	RW5	Resource recovery will be applied to the management of construction waste and will include: • Recovery of resources for reuse-reusable materials generated by the project will be segregated for reuse on site, or off site where possible, including the reuse of the major waste streams (VENM) • Recovery of resources for recycling - recyclable resources (such as metals, plastics and other recyclable materials) generated during construction and demolition • Resources will be segregated for recycling and sent to an appropriate recycling facility for processing and	Construction	Table 2-1 Section 5 Section 0 Table 7-1 W7, W19, W24, W30, W31, W34, W35, W39, W41 Sustainability Strategy Sustainability Management Plan Waste Avoidance and Resource Recovery (WARR) reporting

Outcome	Ref REMM #	Commitment	Timing	WMP Reference
		• Recovery of resources for reprocessing - cleared vegetation will be mulched or chipped on site and used for landscaping, in the absence of a higher beneficial use being identified.		
	RW6	Options identified for the off-site reuse of waste will comply with relevant NSW EPA resource recovery exemptions and requirements.	Construction	Section 5 Section 0 Table 7-1 W16, W19, W30 Appendix C - Contact List and Locations of Potential Local Waste Transporters and Waste Facilities Appendix D – Spoil Disposal Location Register
	RW7	The Construction Waste Management Plan will document anticipated volumes of spoil that will be generated by the project, spoil storage locations within project sites and likely spoil disposal sites. The Construction Waste Management Plan and spoil reuse opportunities will be regularly reviewed and updated during detailed design and project construction.	Construction	Sustainability Strategy Sustainability Management Plan This Plan Section 5.1 Section 6.2 Table 7-1 W18, W19 Appendix B – Waste and Spoil Management Tracking Register Appendix D – Spoil Disposal Location Register
	RW8	The project will reuse or recycle around 95 per cent of uncontaminated spoil generated for beneficial purposes, either	Construction	Table 2-1 KPI 2 Section 5.2.2

Outcome	Ref REMM #	Commitment	Timing	WMP Reference
		within the project or at other locations in accordance with the project spoil management hierarchy.		Table 5-5 Table 7-1 W30
	RW9	Suitable areas will be identified to allow for contingency management of unexpected waste materials, including contaminated materials. Suitable areas will be required to be hardstand or lined areas that are appropriately stabilised and bunded, with sufficient area for stockpile storage.	Construction	Section 5.2.3 Table 7-1 W13
Exposure to unexpected contaminated land	RW10	The discovery of previously unidentified contaminated material will be managed in accordance with an unexpected contaminated lands discovery procedure, as outlined in the *Guideline for the Management of Contamination* (Roads and Maritime 2013) and detailed in the CEMP.	Construction	Unexpected Contaminated Land and Asbestos Finds Procedure, located in the SSWMP prepared as part of the CEMP Section 5 Table 7-1 W21
Dust generation, erosion and sedimentation of stockpiles	RW11	Spoil stockpiles will be provided with appropriate environmental controls and managed to reduce potential impacts associated with dust generation, erosion and sedimentation.	Construction	Section 5 Table 7-1 W14, W15 Air Quality Management Sub-plan (AQMP), and the SSWMP prepared as part of the CEMP Appendix B – Waste and Spoil Management Tracking Register
Generation of general waste	RW12	General wastes from site offices such as putrescibles, paper, cardboard, plastics, glass and printer cartridges will be separated and collected for recycling off site wherever practicable.	Construction	Table 2-1 KPI 6 Section 5 Table 7-1 W27

Outcome	Ref REMM #	Commitment	Timing	WMP Reference
Exposure to Asbestos	RW13	An asbestos survey will be undertaken of buildings to be demolished as part of the project in accordance with an Asbestos Management Plan as part of the Work Health and Safety Plan. The survey will be conducted by a suitably qualified person.	Construction	Table 7-1 W5 Work Healthy and Safety Plan
	RW14	Asbestos handling and management will be undertaken in accordance with an Asbestos Management Plan (or similar) prepared in accordance with relevant legislation, regulations and codes of practice as described in Chapter 23 (Resource Use and Waste Minimisation) of the EIS. Adjacent communities will be provided with advance notification about potential hazards.	Construction	Unexpected Contaminated Land and Asbestos Finds Procedure, located in the SSWMP prepared as part of the CEMP Asbestos Management Plan Section 5.2.3 Table 7-1 W21, W22
Impacts on human and/or ecological receptors through disturbance and mobilisation of contaminated material	CM02	Asbestos handling and management will be undertaken in accordance with an Asbestos Management Plan (or similar) prepared in accordance with relevant legislation, regulations and codes of practice) as described in Chapter 23 (Resource use and waste minimisation) of the EIS.	Construction	
	CM03	A hazardous materials assessment will be carried out prior to and during the demolition of buildings. Demolition works will be undertaken in accordance with the relevant Australian Standards and relevant NSW WorkCover Codes of Practice, including the *Work Health and Safety Regulation 2011* (NSW).	Construction	Table 7-1 W5
	CM04	The Construction Waste Management Plan for the project, prepared as described in Chapter 23 (Resource use and waste minimisation) of the EIS, will include procedures for handling and storing potentially contaminated substances.	Construction	Unexpected Contaminated Land and Asbestos Finds Procedure, located in the SSWMP prepared as part of the CEMP Section 5.2.3 Table 5-5 Table 7-1 W21

Outcome	Ref REMM #	Commitment	Timing	WMP Reference
	CM05	Stockpile management procedures will be implemented to control dust, odour and cross contamination.	Construction	Section 5.2 Table 5-5 Table 7-1 W13, W14, W15 AQMP, and the SSWMP prepared as part of the CEMP Appendix B – Waste and Spoil Management Tracking Register
	CM06	The discovery of previously unidentified contaminated material will be managed in accordance with an unexpected contaminated lands discovery procedure, as outlined in the Guideline for the Management of Contamination (Roads and Maritime 2013) and detailed in the CEMP. The procedure will include: • Cease work in the vicinity • Initial assessment by an appropriately qualified environmental consultant • Further assessment and management of contamination, if confirmed, in accordance with section 105 of the *Contaminated Land Management Act 1997* (CLM Act).	Construction	Unexpected Contaminated Land and Asbestos Finds Procedure, located in the SSWMP prepared as part of the CEMP Section 5.2.3 Table 7-1 W21
Impacts on soil and water quality through incorrect handling of hazardous or contaminated material	CM08	Measures identified in Chapter 25 (Hazard and risk) of the EIS will be implemented to appropriately store contaminated materials and materials with the potential to cause contamination and reduce the potential for environmental contamination due to spills and leaks.	Construction	Unexpected Contaminated Land and Asbestos Finds Procedure, located in the SSWMP prepared as part of the CEMP Section 5.2.3 Table 5-5 Table 7-1 W13, W20, W23

Appendix B – Waste and Spoil Management Tracking Register

Date	Time	Waste Classification *	Description of waste e.g. timber, steel, ACM	Surface civil or tunnel site waste was generated (C1-C10)	Amount		Transporter		Receiving facility			Description of how and where waste was reused, recycled, stockpiled or disposed of	Location of Reuse, if reused on site	Reference/evidence (Docket, Transport Certificate/Invoice no. / receiving facility ref. no.)
					(tonnes)	(m3)	Name	Waste Licence no.	Name	Address	Waste Licence no.			

**(in accordance with EPA Waste Classification Guidelines and POEO Act). 1. Special waste (e.g. asbestos and tyres) 2. General solid waste (putrescible) (e.g. general litter and food waste) 3. General solid waste (non-putrescible) (e.g. glass, paper, building demolition waste, concrete) 4. Restricted solid waste 5. Liquid waste (e.g. oil, fuels, chemicals and pesticides) 6. Hazardous waste (e.g. lead-acid batteries and lead paint) 7. Spoil (clean fill) 8. Spoil VENM*

Appendix C - Contact List and Locations of Potential Local Waste Transporters and Waste Facilities

This list is provided as an indicative list only. Potential transporters and facilities would be developed throughout the project.

Transporter or Facility	Name	Contact Details	Waste Accepted
Waste Transporter	Bingo Bins Pty Ltd	305 Parramatta Rd, Auburn NSW 2144 Ph: 1300 424 646	Transport of category 2 trackable waste Transport of category 1 trackable waste
	Remondis Australia Pty Ltd	Level 4, 163 O'Riordan Street, Mascot Ph: 9032 7100	Transport of category 2 trackable waste Transport of category 1 trackable waste
	JJ Richards & Sons Pty Ltd	16 Childs Road, Chipping Norton Ph: 9832 4022	Transport of category 2 trackable waste Transport of category 1 trackable waste
	Solveco Pty Ltd	38 Links Road, St Marys Ph: 9833 7035	Transport of category 2 trackable waste Transport of category 1 trackable waste
	Transpacific Cleanaway Pty Ltd	Level 4/441 St Kilda Rd, Melbourne Ph: 13 13 39	Transport of category 2 trackable waste Transport of category 1 trackable waste
Recycler / Recovery / Waste Management Facility	Camellia Resource Recovery & Treatment Facility	Grand Avenue, Camellia Ph: 1300 651 116	Liquid waste Recycling - mixed plastics, cardboard and paper, aluminium cans, organics and metals.

Transporter or Facility	Name	Contact Details	Waste Accepted
	Chullora Resource Recovery Facility	15 Muir Road, Chullora Ph: 1300 651 116	Waste storage - other types of waste Composting Waste storage - waste tyres Non-thermal treatment of general waste Waste storage - hazardous, restricted solid, liquid, clinical and related waste and asbestos waste Recovery of general waste
	Concrete Recyclers	14 Thackeray Street, Camellia Ph: 8832 7400	Concrete, Bricks, Tiles and Asphalt
	Metropolitan Demolitions & Recycling Pty Ltd	396 Princes Highway, St Peters Ph: 9519 3099	Demolition Rubble (Brick & Concrete)
	REMONDIS Australia Pty Ltd - Transfer Station	2 Bay Road, Taren Point 2229 Ph: 9526 2642	Recycling - gas bottles, batteries – car, oil - used motor

Transporter or Facility	Name	Contact Details	Waste Accepted
	Sims Metal Management - Alexandria	72 Burrows Road, Alexandria Ph: 9509 7002	Metal recyclers
	Solveco St Marys Sydney waste treatment facility	38 Links Road, St Marys Ph: 9833 7035	Liquid waste
	Bingo St Peters Recycling Facility	6-10 Burrows Road South, St Peters Ph: 1300 424 646	Building & Demolition Waste Rubble, Sand, Soil Asphalt, Brick, Concrete, Tiles Timber & Green Waste Metals Plasterboard Paper & Cardboard Plastics
	TransPacific	12 Stuart St, Padstow NSW 2211 Ph: 02 8748 0900	Liquid or hazardous waste

Transporter or Facility	Name	Contact Details	Waste Accepted
	Visy Taren Point Material Recovery Facility	43 Bay Road, Taren Point, Ph: 02 9524 8533	Newspapers Magazines Office Paper Envelopes Without a Window Envelopes With a Window Phone Books Pizza Boxes (clean) Egg Cartons Cardboard
Waste Management Facility and Landfill	Elizabeth Drive (Kemps Creek) Landfill	Elizabeth Drive, Kemps Creek NSW 2178 Ph: 1300 651 116	General solid classified contaminated soils. General solid classified asbestos contaminated soils. Restricted classified contaminated wastes. VENM/ENM.
	Genesis Xero Waste Facility	Honeycomb Drive, Eastern Creek NSW 2766 Ph: 9832 3333	All wastes (including asbestos waste). Exclusions – hazardous, restricted, food, liquid, medical and chemical wastes
	Horsley Park Waste Management Facility	Wallgrove Road, Horsley Park Ph: 9620 1944	General Solid Waste (Non-putrescibles) includes VENM Asbestos Waste Waste Tyres

Transporter or Facility	Name	Contact Details	Waste Accepted
	Lucas Heights Landfill and Resource Recovery Park	New Illawarra Road, Lucas Heights Ph: 1300 651 116	General Solid Waste (Putrescible) General Solid Waste (Non-putrescibles) includes VENM Asbestos Waste Waste Tyres
	Wallgrove Road (Eastern Creek) Landfill	Wallgrove Road, Eastern Creek Ph: 1300 651 116	General Solid Waste (Putrescible) General Solid Waste (Non-putrescibles) includes VENM Asbestos Waste Waste Tyres

Appendix D – Spoil Disposal Location Register

Estimated spoil volume (cubic metres) for the Project	Spoil management site	Distance from the project (kilometres)	Location	Contact details	Capacity for site to accept spoil (cubic metres)	Further notes
3,000,000	Horsley Park (manufacturing facility)	Approximately 40	Wallgrove Road at Horsley Park	Ph: 9620 1944	Capacity for entirety of project spoil generation	The Horsley Park spoil management site is a manufacturing facility and currently does not have a definitive limit for the amount of spoil it can receive.
	Blacktown Waste Services (landfill)	Approximately 45	920 Richmond Road at Marsden Park	Ph: 9835 4007	250,000	
	Sakkara Development (industrial estate)	Approximately 45	Riverstone Parade at Riverstone	Ph: 8248 7900	3,500,000	
	Kurnell Landfill	Approximately 20	330 Captain Cook Drive at Kurnell	Ph: 9668 8537	7,000,000	
	Moorebank Intermodal Terminal Precinct	Approximately 30	Moorebank Avenue, Moorebank	Ph: 8265 5600	2,500,000	
	Western Sydney Airport	Approximately 50	Lot 1 DP 838361, Badgerys Creek	TBC	Capacity not known at this stage	

This list is provided as an indicative list only. Other options for management sites will be investigated throughout the project and it is anticipated that alternative locations may emerge during construction.

Appendix E – s.143 Notice Letter to Landholders Template

The text below is adapted from RMS Specification D&C G36 Annexure G36/F, template for letter to accompany “s.143 notice” to landholders. All letters to accompany s.143 Notices to landholders must be consistent with the following template.

[Insert reference number, if applicable]

[Insert file number, if applicable]

[Date]

[Recipient name]

[Recipient company (if applicable)]

[Recipient address]

Dear [Recipient Name]

RECEIVING WESTCONNEX M4-M5 LINK WASTE AT [INSERT LOCATION OF WASTE FACILITY]

[Insert Company Name] has been engaged by LSBJV to undertake [insert brief description of the works].

Your interest in receiving [discuss type and quantity of waste of the waste] (“M4-M5 Link Waste”) which will be generated by the M4-M5 Link Mainline Tunnels Project (the Project) is appreciated. It is understood that you intend to use the M4-M5 Link Waste for [insert intended use for the waste]. It is important to M4-M5 Link that all waste materials from this Project are managed in a way that meets legislated requirements and will not harm the environment or human health.

This letter provides important information that will help you to understand what you need to do to legally receive this material and avoid harm to environmental and human health.

You will need to do the following things before the M4-M5 Link Waste is delivered to your property:

Read the “Questions and Answers” attached to this letter. The Environment Protection Authority (“EPA”) has other information that may help you to understand the laws relating to receiving waste materials.

This information is available on the EPA website at http://www.epa.nsw.gov.au/waste/dumping.htm

Check with your local council and the EPA whether any approvals or licenses are needed before your property can accept the New M5 Waste.

Make sure that you obtain all relevant approvals, licenses or permits that are required for you to legally receive the M4-M5 Link Waste. Often there will be no need for any approvals; licenses or permits, but always check with council whether this will be the case for your property.

Complete and sign a “Section 143 Notice” (copy attached). Only sign this form if you are confident that the details on the Section 143 Notice are correct, your property can lawfully receive the New M5 Waste, and the materials can be legally used for the intended purpose.

Keep a copy of the completed Section 143 Notice for your records and mail the original document to: Please contact [insert name of contact person] on [insert telephone number] if you have any questions in relation to the M4-M5 Link Waste. This will help you, the local council and the EPA to decide whether any approvals or licenses are needed, and whether the New M5 Waste needs to be managed in any particular way once delivered to your property.

Once we have received the completed and signed Section 143 Notice and have confirmed that the M4-M5 Link Waste can be legally transported to your property, we will contact you to make arrangements for waste delivery.

When the M4-M5 Link Waste arrives on your property, you must ensure that:

- The M4-M5 Link Waste is as described on the Section 143 Notice

- The M4-M5 Link Waste is managed in a way that complies with any relevant approvals, licences or permits and avoids harm to the environment, human health and other people's property.
- [Optional – outline any further requirements, depending on the environmental risks associated with the M4-M5 Link Waste and the proposed use].

If you have any inquiries about these matters, please contact [insert name of contact person] on [insert contact telephone number].

Yours faithfully,

[Insert sender name]

[Insert sender title]

Appendix F – s.143 Notice template

ORIGINAL: TO BE COMPLETED BY LANDOWNER AND GIVEN TO WASTE TRANSPORTER OR DISPLAYED AT WASTE FACILITY

APPROVED NOTICE UNDER SECTION 143

PROTECTION OF THE ENVIRONMENT OPERATIONS ACT 1997

WARNING: If you sign this notice it could be used as a defence by a transporter if they deposit waste on your land. It does not give you a defence. It is an offence to provide false or misleading information about waste (section 144AA)

I (*full name*) ……

am the owner and/or occupier (*delete if not applicable*) of (*insert street address and/or folio identification number of place*):

……

……

certify that this place can lawfully be used as a waste facility for the **waste(s) specified** in the following table.

(Note: you must clearly state the exact type. Do not use terms like 'fill' or 'clean fill'.)

Table of specified wastes

Type of waste e.g. virgin excavated natural material	**Classification of waste** e.g. general solid waste	**Amount of waste** e.g. 50 tonnes
……	……	……
……	……	……
……	……	……
……	……	……

Before signing this notice you should read the back of this form for important information about offences.

Signature	……	Signature	……
Name	……	Name	……
Position title (e.g. director, owner, occupier)	……	Position title (e.g. director, owner, occupier)	……
ACN	……	ACN	……
Date	……	Date	……

Note that only one signature is required if the person signing this notice is **not** signing on behalf of a company.

Lawful authority to use place as waste facility for the specified waste

The place can lawfully be used for the types of waste described in the notice **because** (Delete whichever is not applicable):

A. This use is permitted by EPA licence number: ……

Or

An EPA licence is not required (for example, a resource recovery exemption may apply)

And because (Delete whichever is not applicable):

B. The place has consent or approval under the *Environmental Planning and Assessment Act 1979* for the uses described in the table above.

Or

The place can be used as a waste facility without consent or approval under the *Environmental Planning and Assessment Act 1979*.

The use(s) for the waste at the place are: ……

Land owners and occupiers should note that it is an offence to use land as a waste facility without lawful authority, see section 144 of the *Protection of the Environment Operations Act 1997* (POEO Act). It is also an offence to carry out an activity listed in Schedule 1 to the POEO Act without and Environment Protection Licence when one is required (see section 48). Offences carry a maximum penalty of $250,000 for an individual and $1,000,000 for a corporation. In the case of a continuing offence, a further penalty applies for each day the offence continues, being $60,000 for an individual and $120,000 for a corporation.

Regardless of this notice, any person who carries out any development or activity on land involving waste must ensure they comply with any planning requirements including obtaining any planning consent or approval and complying with any conditions attached to that consent or approval

Information about this notice

Waste is a very broad concept under the law and covers many types of materials you may not think of as waste; for example, it covers waste tyres, building and demolition materials and virgin excavated natural material.

Under the POEO Act, a waste facility includes any premises used for storage, treatment, processing, sorting or disposal of waste. For example, if you are planning to build a road or dam, or fill a gully, this could involve using your place as a waste facility.

Section 143 of the POEO Act makes it an offence to transport waste to a place that cannot lawfully be used as a waste facility for that waste. The notice above is the approved notice under section 143 (3A) of the POEO Act. If you sign this notice it may be used as a defence by a transporter if they are charged with unlawfully transporting or depositing waste on your land. It does not give you a defence to using your land as a waste facility without lawful authority.

If you sign this notice, you should give it to the transporter or display it at the waste facility. The transporter should keep the original and you should keep a copy.

If the landowner or occupier signing this notice is a company, the full name of the company and ACN should be used and the notice must be executed in accordance with the Corporations Law.

If you operate an unlicensed landfill site for business or commercial purposes you should contact the EPA to discuss reporting and operating requirements.

If you are not sure if you require an EPA licence you can ring the Environment Line on 131 555.

You are likely to need development consent to use your land as a waste facility. If you are not sure if you require development consent you should contact your local council.

COPY: TO BE KEPT BY LANDOWNER AND KEPT FOR RECORDS

APPROVED NOTICE UNDER SECTION 143

PROTECTION OF THE ENVIRONMENT OPERATIONS ACT 1997

WARNING: If you sign this notice it could be used as a defence by a transporter if they deposit waste on your land. It does not give you a defence. It is an offence to provide false or misleading information about waste (section 144AA)

I (*full name*) ……

am the owner and/or occupier (*delete if not applicable*) of (*insert street address and/or folio identification number of place*):

……

……

certify that this place can lawfully be used as a waste facility for the **waste(s) specified** in the following table.

(Note: you must clearly state the exact type. Do not use terms like 'fill' or 'clean fill'.)

Table of specified wastes

Type of waste e.g. virgin excavated natural material	**Classification of waste** e.g. general solid waste	**Amount of waste** e.g. 50 tonnes
……	……	……
……	……	……
……	……	……
……	……	……

Before signing this notice you should read the back of this form for important information about offences.

Signature	……	Signature	……
Name	……	Name	……
Position title (e.g. director, owner, occupier)	……	Position title (e.g. director, owner, occupier)	……
ACN	……	ACN	……
Date	……	Date	……

Note that only one signature is required if the person signing this notice is **not** signing on behalf of a company.

Appendix G - GREP Clean Air Data Management Tool – Page One

NSW Government Resource Efficiency Policy (GREP) Clean Air data management tool

Clean Air measure A1: Air emission standards for mobile non-road diesel plant and equipment

Welcome to the Government Resource Efficiency Policy (GREP) reporting template for the *Clean Air measure A1 - Air emission standards for mobile non-road diesel plant and equipment* . For additional information about the GREP, please refer to the Office of Environment and Heritage (OEH) website: http://www.environment.nsw.gov.au/government/140567-resource-efficiency.htm.

The GREP requires government sector agencies to report performance against the policy by publishing financial year data annually. This reporting template has been prepared by the NSW Environment Protection Authority (EPA) to assist agencies and their contractors to provide information on the performance of their mobile non-road diesel equipment against US EPA, EU, or equivalent emissions standards. (US and EU non-road diesel engine emission standards are the most widely referenced and applied standards, and most countries have adopted emissions standards derived from those models. For equipment that meets another international standard, record the equivalent US or EU standard.)

Definition of 'mobile non-road diesel plant and equipment' for GREP

For the purposes of GREP annual reporting, mobile non-road diesel plant and equipment means diesel engines used in a wide range of construction, agricultural and industrial equipment, with or without conditional registration#. It includes compression-ignition, internal combustion engines installed on self-propelled equipment and equipment that is propelled while performing its function, for example, tractors, excavators, bulldozers, loaders, graders, logging equipment, portable generators, forklifts, etc. It also includes cranes, whether self-propelled or fixed.* The reporting template includes an extensive list of equipment, as well as general groupings (eg, 'other construction equipment') for items not listed.

The following non-road engine categories are **NOT** to be included in the GREP reporting:

· engines less than 19kW (25HP)

· registered motor vehicle engines (but DO include non-road vehicles with conditional registration#);

· stationary engines (or engines that generally remain at one location), with the exception of cranes*

· engines used in aircraft;

· engines used in railway locomotives;

· engines used in marine vessels

· engines used in underground equipment (ie, for mining, extractive and construction related activities).

Projects involving multiple LGAs

If a project involves multiple LGAs, select either the LGA where the majority of the work will be undertaken, or one of the 'Multiple' options (Sydney, Lower Hunter, Illawarra, Regional), if more appropriate.

Help

If you require assistance or have any queries regarding completing this reporting template, please contact OEH at *government@environment.nsw.gov.au* or the NSW EPA's Air Policy Section via email at *AirPolicy@epa.nsw.gov.au* .

Instructions

1. Complete the details below regarding agency name, contractor name, etc.
2. Complete the reporting template.
3. Save the file and return as per the emailed instructions.

Start

In accordance with the requirements of the NSW Government Resource Efficiency Policy – A1 Clean Air measure, I certify that the information provided in the attached reporting template is complete and accurate as far as practical.

NSW Government contracting/reporting agency:	
Contractor:	
Name of authorising officer:	
Job title:	
Telephone:	
Email address:	
Date:	
Electronic signature:	

Save Clear