



Spoil Management Plan

SMCSWSSJ-JHL-WSS-EM-PLN-000031

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Terms and definitions

The following terms, abbreviations and definitions are used in this plan.

Table 1 - Glossary

Terms	Explanation
BOM	Bureau of Meteorology
CoA	Condition of Approval
CEMF	Construction Environmental Management Framework
CEMP	Construction Environmental Management Plan
CSSI	Critical State Significant Infrastructure
ECM	Environmental Control Map
EIS	Environmental Impact Statement
EMS	Environmental Management System
ENM	Excavated Natural Material
EP&A Act	Environmental Planning and Assessment Act 1979
EPA	Environment Protection Authority
EPL	Environment Protection Licence
GSW	General Solid Waste
HSEMS	Health Safety Environmental Management System
HSW	Hazardous Solid Waste
JHLOR	John Holland Laing O'Rourke
OEH	Office of Environment and Heritage
POEO Act	Protection of the Environment Operations Act 1997
RMS	Roads and Maritime Services
RSW	Restricted Solid Waste
SES	State Emergency Service
SMu	Sydney Metro upgrade (formerly SSJ)
SpMP	Spoil Management Plan
SSJ	Sydenham Station and Junction
TfNSW	Transport for New South Wales
VENM	Virgin Excavated Natural Material

1. Introduction

1.1 Purpose

This Spoil Management Sub-plan (SpMP) outlines the Sydenham Metro upgrade (SMu) and Southwest Metro Corridor Works (SMC) Project's approach to implementing spoil related measures to achieve planning, environmental protection licence and contractual requirements

1.2 Background and Scope

The Sydenham Metro upgrade project site is located within the rail corridor at Sydenham Station and several hundred meters to the north and south of the station, 11 Sydenham Road, Marrickville, NSW, the Sydenham Pit and Drainage Pump Station and future precinct areas on Railway Parade and Burrows Avenue, Sydenham, NSW. It is noted that the SMu project is also referred to as Sydenham Station Junction (SSJ).

Southwest Metro Corridor Works, including Bankstown Early Works are located within the rail corridor between Carrington Road, Marrickville and Marion Street, Bankstown.

The works will be undertaken by a John Holland Group Pty Limited (John Holland) and Laing O'Rourke Construction Pty Limited (Laing O'Rourke) joint venture referred to as JHLOR. Laing O'Rourke has been nominated as Principal Contractor and as such the works will occur under Laing O'Rourke's Management Systems.

This SpMP has been developed for the Construction phase of the project, in compliance with the Client's requirements, Laing O'Rourke's health safety environmental management system (HSEMS), the JHLOR Environmental Protection Licence (EPL21147) and the Minister's Conditions of Approval and Revised Environmental Mitigation Measures (REMMs).

1.3 Overview of the Sydenham Metro upgrade (SMu) Project

Sydney Metro City & Southwest is a new 30km metro line extending metro rail from the end of Sydney Metro Northwest at Chatswood under Sydney Harbour, through new CBD stations and southwest to Bankstown. It is due to open in 2024 with the capacity to run a metro train every two minutes each way through the centre of Sydney. The SMu project forms part of the Sydney Metro City & Southwest project and includes upgrades to Sydenham Station, the surrounding network and other ancillary infrastructure to accommodate Sydney Metro trains.

The SMu works were not assessed under the planning approval for the Sydney City Metro Chatswood to Sydenham that was approved by the Minister on 9 January 2017 under Part 5.1 of the *Environmental Assessment & Planning Act 1979*. The Sydenham to Bankstown State Significant Infrastructure Application Report identified an opportunity to accelerate the phased opening of the Chatswood to Sydenham Metro Service, through to Sydenham Station if Sydenham Metro upgrade works commence earlier under a separate planning approval. As such, the works have been assessed as a modification to the Sydney City Metro Chatswood to Sydenham Environmental Impact Statement to allow the phased opening of the Metro services from Chatswood to Sydenham Station. The works will occur under SSI-7400.

1.4 Overview of the Southwest Metro Corridor Works (SMC)

The Southwest Metro Corridor will be undertaken in accordance with the Sydney Metro City & Southwest Sydenham to Bankstown Upgrade Instrument of Approval (SSI_8256). The SMC Project site is located on the T3 Bankstown line between Sydenham and Bankstown stations, NSW. Works will predominately occur within the rail corridor, with limited activities occurring within station precincts. Southwest Metro Station Upgrade Packages will be undertaken by others.

1.5 SMu and SMC Scope of Works

1.5.1 SMu Permanent Works

The works include all permanent new infrastructure and modifications to existing infrastructure, which must be constructed to enable the construction of SMu. The permanent new infrastructure and modifications to existing infrastructure to be constructed includes;

- Sydenham Station and precinct works – demolition and reconstruction of platforms 1 and 2 for metro rail operations and a new aerial concourse connecting to new station entries at Railway Parade and Burrows Avenue. Upgrades to transport interchange facilities and provision for active transport would be delivered as part of the station works
- Track and rail system facilities – reconfiguration of existing track and rail systems to segregate the T3 Bankstown Line and the Goods Line, installation of metro tracks and rail systems including crossover and turnback facilities
- Adjustments to the Sydenham Pit and Drainage Pumping Station – including a new aqueduct over the pit, new pumping station and new maintenance access ramp
- Ancillary infrastructure and works – including fencing, maintenance access, utilities works, drainage, noise barriers, road and transport network works, bridge works, and temporary facilities to support construction.

1.5.2 SMC Permanent Works

It is noted that although not required under the Sydney Metro Sydenham to Bankstown Staging Report this plan will be implemented on JHLOR Sydney Metro Sydenham to Bankstown Upgrade projects (SSI-8256). This is for the purposes of compliance with waste provisions under JHLOR's EPL only (EPL 21147).

The scope of works for Sydenham to Bankstown works includes;

- The permanent works include:
- Installation and commissioning of Combined Service Route (GST, GLT, pit & pipe)
- Signalling, communications and HV diversions
- Rail embankment stabilisation including retaining walls
- Installation of drainage
- Installation of security and segregation fencing
- Civil enabling works for traction substations
- Vegetation clearing
- Access road upgrades/establishment
- Utility diversions
- Bridge remedial works, including installation of crash barriers and throw screens
- Modifications to the existing rail track (including crossovers and hi-rail access pads),
- Overhead wire works
- Demolition of redundant infrastructure

Bankstown Early Works Scope includes;

- Service Building works inclusive of:
 - Installation of contiguous piled retaining wall

- Form Reo Pour for ground slab and first floor slab
- erection of structural steel frame,
- installation of precast walls,
- internal fit out of building inclusive of LV reticulation, HVAC systems, Hydraulic services, fire suppressant services and architectural finishings
- external finishing inclusive of masonry brickwork and architectural cladding
- Southern (down) platform inclusive of
 - piling,
 - FRP ground beams and slab
 - installation of structural steel sub frame,
 - installation of precast platform decks and cast in-situ capping slab
 - installation of modular platform canopies

1.5.3 SMu and SMC Temporary Works

The temporary works include:

- temporary arrangements to divert and control pedestrians, public transport users, cyclists, public transport and traffic and to provide public access, amenity, security and safety during all stages of design and construction of the Works;
- temporary arrangements for people and vehicles to safely access all property, including publicly accessible space affected by the Contractor's Activities;
- temporary arrangements for people and vehicles to safely access the Site;
- temporary access stairs, walkways and platforms within the Site;
- temporary construction hoardings, fencing, noise walls, access gates and barriers on and around the Site;
- all environmental safeguards and measures necessary to mitigate environmental effects which may arise during the design and construction of the Works;
- cleaning, maintenance, repair, replacement and reinstatement, as required, of all areas occupied by the Contractor during design and construction of the Works;
- temporary site facilities required for design and construction of the Works;
- temporary infrastructure, safety screens and ground support installed or erected to undertake design and construction of the Works;
- temporary arrangements for Utility Services including water, electricity, stormwater, sewerage, gas and electronic communications;

temporary works and measures required as a consequence of requirements arising from the stakeholder and community liaison process; and all other temporary works and measures required for the construction of the Works

1.6 Works Location and Site Layout

The SMu work location and site layout is highlighted in Figure 1 below. The SMC site is included within Figure 2.

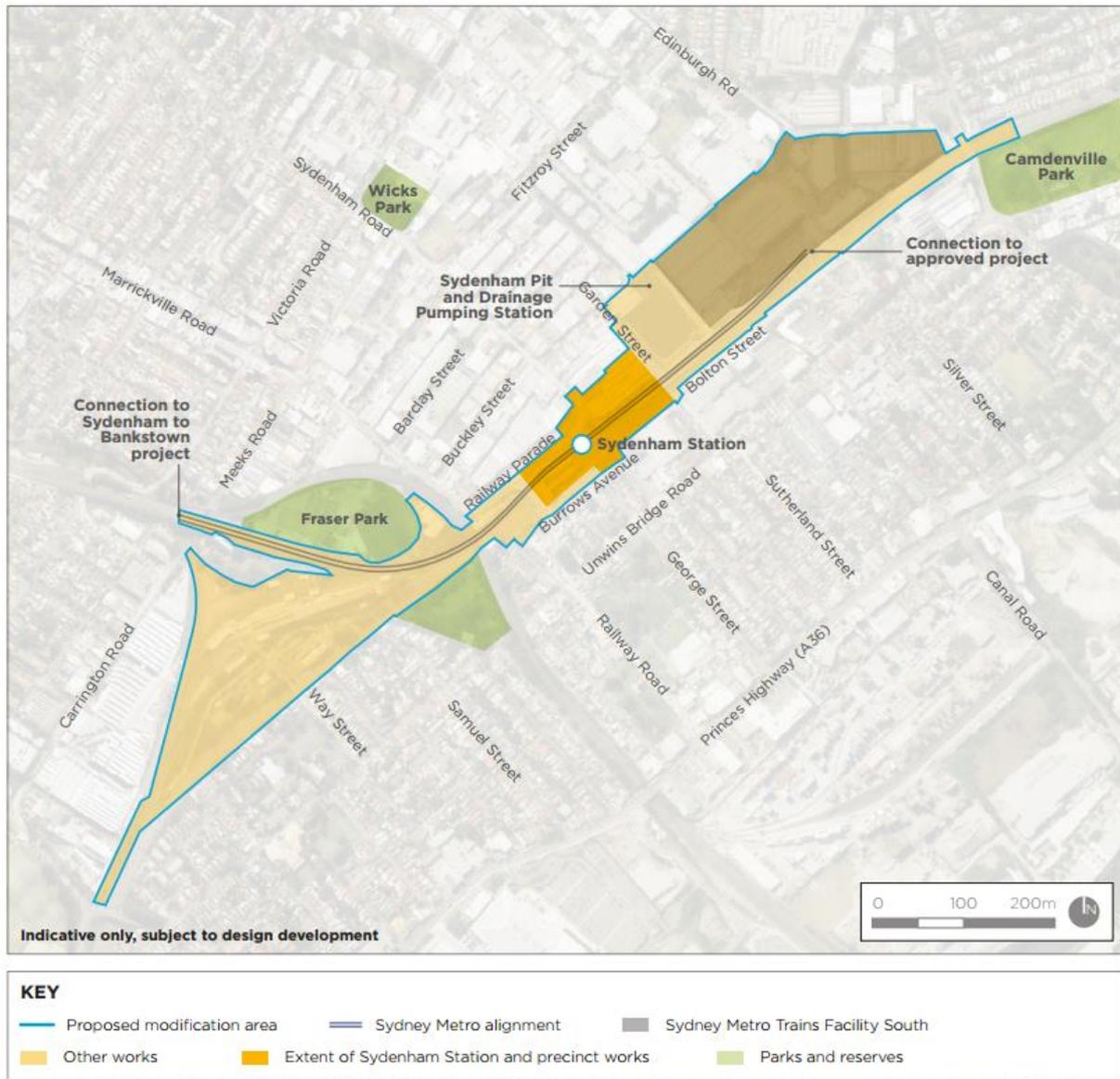
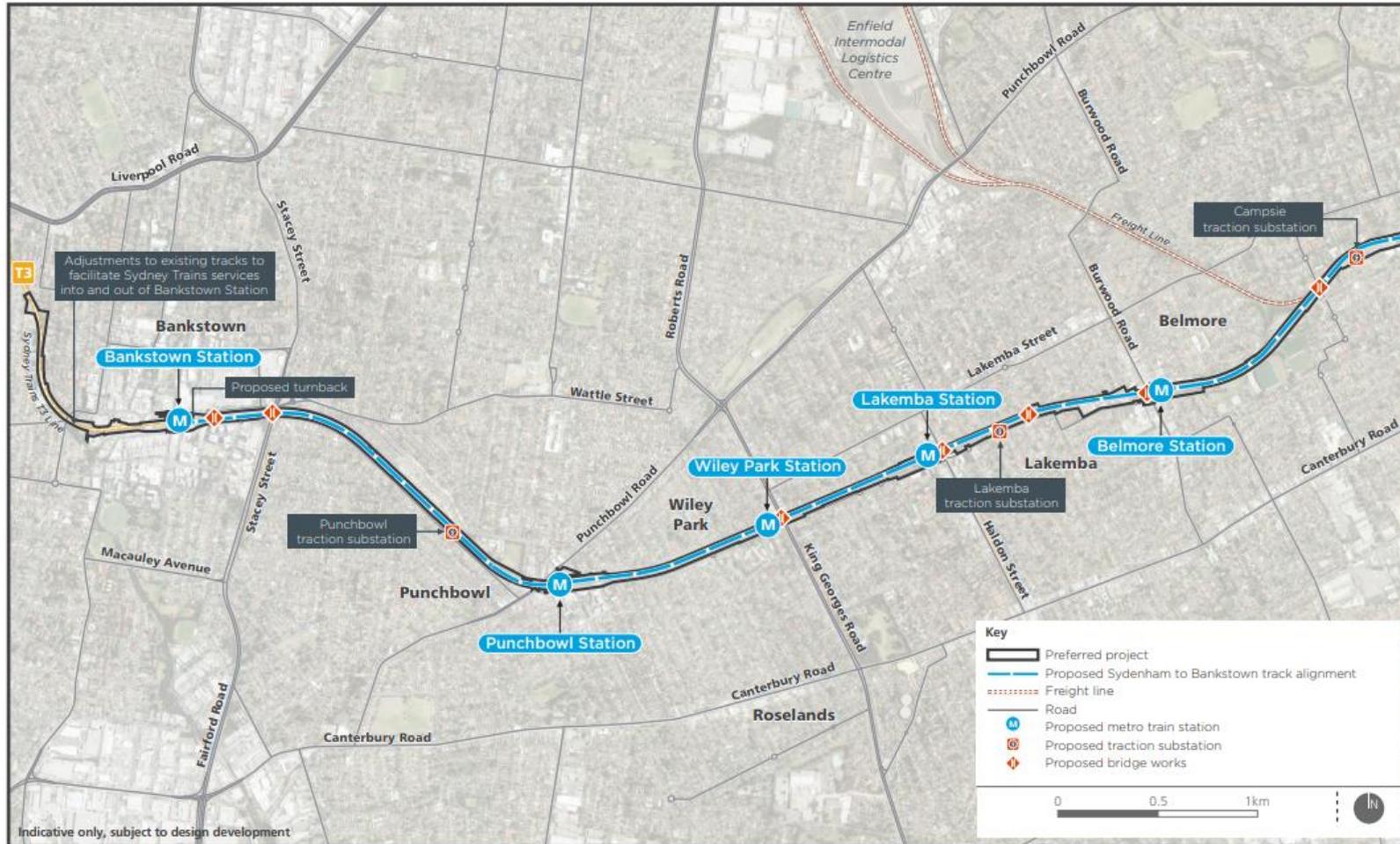
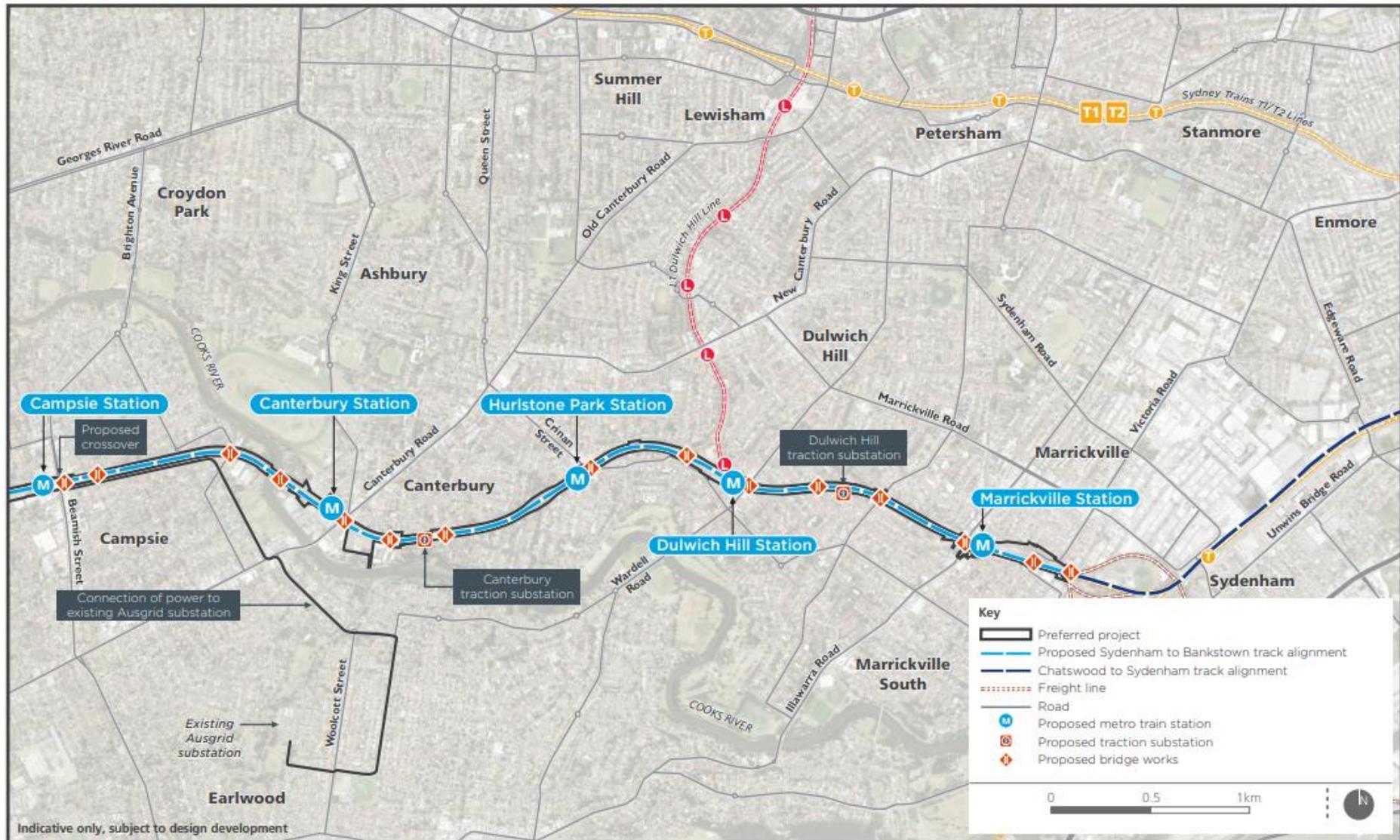


Figure 1 - Sydenham, Station and Junction Project Site

Figure 2: Site Layout (source: Sydney Metro City & Southwest - Sydenham to Bankstown - Submissions and Preferred Infrastructure Report, 2018)





1.7 Objectives and Targets

This SpMP provides the basis for the management of spoil issues and to minimise risk of impact during works. The objectives and targets of spoil management and mitigation are outlined below:

Objective	Target
Minimise spoil generation where possible	The project will mandate 100% reuse or recycling (on or off-site) of usable spoil
Spoil will be managed with consideration to minimising adverse traffic and transport related issues.	No complaints with respect to spoil haulage
Spoil will be managed to avoid contamination of land or water.	No contamination of land and water from spoil
Spoil will be managed with consideration of the impacts on residents and other sensitive receivers.	No dust complaints from Spoil Haulage
Site contamination will be effectively managed to limit the potential risk to human health and the environment.	Unexpected finds procedure implemented if contamination is found

These objectives conform to Sydney Metro objectives as described in the Construction Environmental Management Framework (CEMF).

2. Legal and Other Requirements

The SPMP addresses the following requirements;

- The Sydney Metro City and Southwest – Project Approval – Determination, dated 9th January 2017
- The Sydney Metro City and Southwest - Environmental Impact Statement, dated 3rd May 2016;
- The Sydney Metro City and Southwest - Sydenham Station and Sydney Metro Trains Facility South Modification Report, June 2017
- The Sydney Metro City and Southwest - Sydenham Station and Sydney Metro Trains Facility South Submissions Report October 2017
- The Sydney Metro City and Southwest Modification 4 Instrument of Approval
- Sydney Metro City & Southwest - Chatswood to Sydenham Staging Report
- The Sydney Metro Construction Environmental Management Framework v3;
- The Sydney Metro City & Southwest – Sydenham to Bankstown – State Significant Infrastructure Assessment (SSI 8256), dated 12 December 2018
- The Sydney Metro City & Southwest – Sydenham to Bankstown - Environmental Impact Statement (EIS), dated 7 September 2017;
- The Sydney Metro City & Southwest – Sydenham to Bankstown – Submissions and Preferred Infrastructure Report (SPIR), June 2018;
- The Sydney Metro City & Southwest – Sydenham to Bankstown – Instrument of Approval (CoA), dated 12 December 2018
- Sydney Metro City & Southwest – Sydenham to Bankstown Upgrade Staging Report Rev05 (Sydney Metro, 2021).
- The Sydney Metro Construction Environmental Management Framework v3.2 (CEMF);
- The Sydney Metro – Sydenham to Bankstown – Bankstown Station Modification Report May 2020
- The Sydney Metro – Sydenham to Bankstown – Modification of Infrastructure Approval, dated 22 October 2020
- The Sydenham Station and Junction Project Deed
- Applicable Legislative Obligations.
- Sydney Metro City & Southwest Sustainability Strategy

The Compliance Matrix in Appendix A provides a comprehensive list of compliance requirements, environmental documents and the contract documents

Table 2 below details the legislation and planning instruments considered during development of this Plan.

Table 2 - Legislation and Planning Instruments

Legislation	Description	Relevance to this SPMP
<i>Environmental Planning and Assessment Act 1979</i>	This Act establishes a system of environmental planning and assessment of development proposals for the State.	The approval conditions and obligations are incorporated into this SpMP.
<i>Protection of the Environment Operations Act 1997 (POEO Act)</i>	The object of the Act is to achieve the protection, restoration and enhancement of the quality of the NSW environment	All works must be in accordance with relevant sections of the act
<i>Waste Avoidance and Resource Recovery Act 2001</i>	This Act promotes waste avoidance and resource recovery to achieve a continual reduction in waste generation. The Act provides for the development of a state-wide Waste Strategy and introduces a scheme to promote extended producer responsibility for the life-cycle of a product	Spoil reuse will be managed in accordance with relevant sections of the act
<i>Roads Act 1993</i>	Regulates the carrying out of various activities on public roads.	Transport of spoil must be managed in accordance with the act
<i>Contaminated Land Management Act 1997</i>	This Act enables the EPA to respond to contamination that it has reason to believe is significant enough to warrant regulation	Contamination must be managed in accordance with the act
<i>Airports (Environment Protection) Regulations 1997</i>	This regulation relates to requirements for environmental protections at Australian Airports. The regulation is Federal legislation	Schedule 3 relates to soil pollution accepted limits, relevant to import of material to the Sydney Gateway road project

2.1 Guidelines

Additional guidelines and standards relating to the management of spoil include:

- Waste Classification Guidelines, Part 1: Classifying Waste (EPA, November 2014)
- Waste Classification Guidelines, Part 4: Acid Sulfate Soils (DECC August 2009)
- Australian and New Zealand Guidelines for Assessment and Management of Contaminated Sites (ANZECC/NHMRC 1992)
- Contaminated Sites: Guidelines for the NSW Site Auditor Scheme (EPA 1998)
- Contaminated Sites: Guidelines for Consultants Reporting on Contaminated Sites (EPA 1997a)
- Contaminated Sites: Sampling Design Guidelines (EPA 1995b)
- Acid Sulfate Soil Manual (NSW Acid Sulfate Soil Management Advisory Committee 1998)
- Draft Protocol for managing asbestos during resource recovery of construction and demolition waste (NSW EPA 2014)
- The National Environment Protection (Assessment of Site Contamination) Measure (2013)
- Airport (Environment Protection) Regulations (1997)

2.2 Roles and Responsibilities

The roles and responsibilities of key JHLOR Personnel with respect to spoil management are as follows in Table 3:

Table 3 - Roles and Responsibilities

ROLES	RESPONSIBILITIES
Project Leader	Managing the delivery of the works including overseeing implementation of spoil management as Contractor's Representative
Environment Manager	Oversee the implementation of all spoil management initiatives Responsible for managing ongoing compliance with the CoA and environmental document requirements
Construction Supervisors Subcontractors	Manage the delivery of the construction process, in relation to spoil management across all sites in conjunction with the Environment Manager Implement spoil management activities during construction works
Environmental Coordinator	Manage the on-ground application of spoil management measures during construction Monitor and report on spoil management during construction
Sustainability Manager	Track and report spoil reuse against sustainability targets
Commercial Manager	Ensure that relevant spoil management requirements are considered in procuring materials and services
Specialist Consultant	Specialist consultants will be engaged to undertake investigations and respond to unexpected finds
Environmental Representative	Endorse this plan prior to the commencement of construction Conduct site inspections and monitor the compliance of this plan and its implementation
Engineers	Organise for stockpile waste classification testing where spoil is to be removed from site as waste Maintain the Waste Spoil Register on the Project Drive, including verifying spoil dockets Where contamination is encountered, ensure materials are disposed of appropriately.

3. Aspects and Impacts

Impacts directly related to construction works are described in Table 4 . Management measures to address these impacts are contained in Sections 5 to 7. Refer to Section 8 of the CEMP for details of the risk assessment process.

Table 4 – Spoil – Aspects and Impacts

Aspects	Potential Impacts
Air quality	Dust from stockpiles, haul trucks and access roads may reduce air quality
Community	Cumulative impacts of aspects associated with spoil management generate complaint
Contamination	Previously unidentified contaminated spoil may impact on construction activities or environmentally sensitive areas
Design specifications	Limitations on opportunities to minimise spoil generation Limited ability to reuse material due to design requirements
Erosion	Increased erosion potential as a result of spoil excavation and management
Land use	Licensing and approval requirements may impact on availability of potential beneficial reuse sites
Noise	Disturbance of sensitive receivers as a result of noise associated with spoil management
Sedimentation	Potential for sediment-laden site runoff from spoil stockpiles
Sustainability	Availability of suitable reuse sites decreases volume for beneficial reuse Distance to beneficial reuse or disposal sites increases the carbon footprint
Weed management	Potential for spread of weeds during spoil movement

4. Spoil Generation

It is envisaged that the SMu works will generate approximately 44,715 m³ of spoil. The majority of spoil will be generated from excavation works associated with track formation, station platform works and drainage works.

The estimated quantities of spoil to be generated (subject to detailed design) are detailed below in Table 5

Table 5 – Estimated Spoil Quantities

Location	Approximate Quantities (m3)
Rail Corridor	28,915
Junction Works	5,500
Station Platform	4,000
Drainage Works	6,300
Total	44,715

Design for JHLOR's Sydenham to Bankstown works is ongoing. An estimate for spoil generation will be provided at completion of design.

5. Spoil Types

It is expected that the spoil material on the project will predominantly be a mixture of VENM (Virgin Excavated Natural Material), ENM (Excavated Natural Material) and GSW (General Solid Waste). The project has also encountered acid sulfate soils to a depth of four metres below ground level.

5.1 Classification

Topsoil and spoil, other than VENM will be sampled, analysed and characterised in accordance with the Waste Classification Guidelines: Part 1 Classifying Waste (EPA 2014). Sampling may occur either in-situ or from a stockpile. It is also noted that testing may occur in accordance with the NSW EPA Resource Recovery Orders.

5.2 VENM

Virgin excavated natural material means natural material (such as clay, gravel, sand, soil or rock fines) that has been excavated or quarried from areas that are not contaminated with manufactured chemicals, or with process residues, as a result of industrial, commercial, mining or agricultural activities. That does not contain sulfidic ores or soils, or any other waste, and includes excavated natural material that meets such criteria for virgin excavated natural material as may be approved from time to time by a public notice published in the NSW Government Gazette.

JHLOR as the generator of the VENM, or its Environmental Consultant will consider the following four questions when classifying material as VENM:

1. Are manufactured chemicals or process residues present?
2. Are sulfidic ores or soil present?
3. Are naturally occurring asbestos soils present?
4. Is there any other waste present?

If material meets the definition of VENM it can be reused on or offsite without prior testing. However, if there is any doubt as to whether the material is VENM, JHLOR will sample and test the material as per the excavated natural material resource recovery exemption to confirm that the material is free of contaminants.

5.3 ENM

If spoil is unable to be classified as VENM it will be sampled, and tested to determine whether it meets the excavated natural material (ENM) classification criteria in accordance with the *Protection of the Environment Operations (Waste) Regulation 2014* (the Regulation) current general resource recovery exemption, the excavated natural material exemption 2014:

Excavated natural material (ENM) means naturally occurring rock or soil (including but not limited to materials such as sandstone, shale, clay and soil) that has:

- (a) Been excavated from the ground, and
- (b) Contains at least 98% by weight natural material, and
- (c) Does not meet the definition of Virgin Excavated Natural Material in the Act

ENM does not include material that has been processed or contains acid sulphate soils or potentially acid sulphate soils.

5.4 GSW

Spoil not classified as either VENM or ENM due to contamination from either construction material or other sources shall be characterised in accordance with the Waste Classification Guidelines: Part 1 Classifying Waste (EPA 2014). General Solid Waste (Non putrescible) is any waste that is not classified as special waste, liquid waste, hazardous waste, restricted solid waste or general solid waste (putrescible).

5.5 Special Waste

Special Waste is a class of waste that has unique regulatory requirements. The potential environmental impacts of special waste need to be managed to minimise the risk or harm to the environment or human health.

Special waste means any of the following:

- Clinical and related waste
- Asbestos waste
- Waste tyres
- Anything classified as special waste under an EPA gazettal notice.

5.6 Restricted Solid Waste

If either the Specific Contamination Concentration (SCC) or Toxicity Characteristics Leaching Procedure (TCLP) values exceed threshold guidelines for GSW, the waste must be classified as Restricted Solid Waste.

5.7 Hazardous Waste

The following waste types (other than special waste or liquid waste) have been pre-classified by the EPA as 'hazardous waste':

- Containers, having previously contained a substance of Class 1, 3, 4, 5 or 8 within the meaning of the Transport of Dangerous Goods Code, or a substance to which Division 6.1 of the Transport of Dangerous Goods Code applies, from which residues have not been removed by washing or vacuuming,
- Coal tar or coal tar pitch waste (being the tarry residue from the heating, processing or burning of coal or coke) comprising of more than 1% (by weight) of coal tar or coal tar pitch waste,
- Lead-acid or nickel-cadmium batteries (being waste generated or separately collected by activities carried out for business, commercial or community services purposes)

If the values exceed those for RSW, then the spoil would also be classed as hazardous waste.

5.8 Acid Sulfate Soils

Acid Sulfate Soils and Potential Acid Sulfate Soils will be managed and tested in accordance the Construction Soil and Water Management Plan.

5.9 Resource Recovery Exemptions

The *Protection of the Environment Operations (Waste) Regulation 2014* enables the EPA to issue 'resource recovery exemptions' which allow for the beneficial reuse of wastes via land application or for use as a fuel. These exemptions enable a project to comply with the principle of 'wastes to resources for beneficial reuse' (where the wastes are fit for beneficial reuse). During the project, materials may be encountered that do not meet the VENM or ENM classification but

are also not contaminated material. In these circumstances the Project will check for existing resource recovery exemptions such as:

- The excavated public road material exemption 2014 (EPA);
- The reclaimed asphalt pavement exemption 2014 (EPA);
- The recovered aggregate exemption 2014 (EPA); and
- Raw mulch material exemption 2014 (EPA).

Should the existing resource recovery exemptions not be appropriate, the Project will consider application for a site specific exemption established through consultation with the EPA.

5.10 National Environment Protection (Assessment of Site Contamination) Measure—Industrial Land Use Type

Site wide contamination testing has indicated that spoil on site meets the criteria for application to industrial land in accordance with the National Environment Protection (Assessment of Site Contamination) Measure (NEPM). Where contamination has been observed within stockpiles, additional NEPM testing has occurred.

It is noted that the industrial land type criteria allows for spoil to be reused on sites with low levels of bonded asbestos materials within the spoil, subject to conditions of the NEPM.

Above the NEPM levels, asbestos may remain on site subject to a Remediation Action Plan and Environmental Management Plan.

6. Spoil Reuse

The spoil reuse hierarchy adopted for the works is consistent with the preferred hierarchy identified in Chapter 24 of the EIS. The target for spoil recycling or reuse for the project is 100%.

The hierarchy is listed below in Table 6:

Table 6 - Spoil Reuse Hierarchy

Priority	Re-use Options	Possible Reuse Options
1	Within the project	<ul style="list-style-type: none"> • Re-use spoil in the project for fill embankments and mounds within a short haulage distance of the source • Re-use spoil to restore any pre-existing contaminated sites within the project boundary • Re-use spoil as a feed product in construction materials).
2	Environmental work	<ul style="list-style-type: none"> • Re-use spoil for coastal protection, such as beach nourishment and land raising • Re-use spoil in flood mitigation projects
3	Other development projects (including other Sydney Metro projects)	<ul style="list-style-type: none"> • Re-use spoil for fill embankments and mounds on projects within a financially feasible transport distance of the site • Re-use spoil for land reclamation or remediation projects • Re-use sand for manufacturing concrete and shale for manufacturing bricks and tiles. • Reuse on airport land under the <i>Airports (Environment Protection) Regulations 1997</i>
4	Land restoration	<ul style="list-style-type: none"> • Re-use spoil to fill disused facilities (for example mines and quarries) to enable either future development or site rehabilitation
5	Landfill management	<ul style="list-style-type: none"> • Re-use spoil to cap completed landfill cells • Re-use spoil in daily covering of landfill waste

6.1 Reuse Opportunities

There are currently limited opportunities for on-site reuse of spoil material due to;

- Limited requirements for backfilling with general fill within the works (i.e. suitability from a geotechnical perspective);
- available storage space and timing of works

Re-use has been possible within the backfilling of the shunt track adjacent to Retaining Wall 1, backfilling of the eastern channel and general reuse and backfilling within the 11 Sydenham Road area.

Once all material has been classified, opportunities for offsite reuse will be investigated if the material is suitable and not contaminated. Offsite reuse opportunities have also been identified primarily for spoil meeting the site specific criteria in the *Airport (Environment Protection) Regulations 1997* on Commonwealth land on the Sydney Gateway road project. It is noted that the Sydney Gateway road Project has limited capacity to receive spoil.

Re-use may also occur off-site by the recycling of GSW, where the appropriate criteria within the EPL of the Waste Facility is met.

The table below provides an overview of the current reuse options.

Table 7 - Spoil reuse Options

Location	Approximate Quantities Generated (m3)	On site reuse	Offsite reuse or disposal
Rail Corridor	28,915	8,715	20,200
Junction Works	5,500	1000	4,500
Station Platform	4,000		4,000
Drainage Works	6,300		6,300
Total	44,715	7,100	35,000

6.2 Reducing Spoil During Design Development General Principles

The design process has been used to:

- Carry out site investigations to identify ground conditions and aid in informing decisions about reducing the amount of geotechnical unsuitable material that may need removal
- Minimise the quantity of material requiring excavation to accommodate the design footprints
- Identify the location of spoil suitable for reuse on site
- Identify opportunities to maximise reuse of site-won spoil
- Maximise the quantity of spoil available for reuse on site
- Identify areas of contamination that may be avoided or require additional management measures

7. Spoil Management

All spoil movements will be managed through the project Spoil Waste Register, including export of spoil to approved disposal and recycling facilities. A Spoil Permit Form will also be used to cover:

- Importing spoil to site (such as VENM, ENM, Roadbase etc)
- Exporting material off the project site to new facilities and developments (to landfill, other developments etc)

This process will ensure the following documentation is obtained:

- Waste Classification, VENM reports etc
- EPL of the licenced facilities
- Appropriate development consents of receiving developments
- Any EPA exemptions of receiving developments
- Section 143 certificates
- EPA exemption compliance assessment
- Conformance check with the *Airports (Environment Protection) Regulations 1997* spoil criteria

7.1 General Management

- All waste would be assessed, classified, managed and disposed of in accordance with the NSW Waste Classification Guidelines.
- Spoil suitable for reuse on Airport land will be assessed, classified, managed and disposed of in accordance with the *Airports (Environment Protection) Regulations 1997*
- 100 per cent of spoil that can be reused would be beneficially reused in accordance with the project spoil reuse hierarchy
- Reduce as far as practicable the total volume of spoil generated by minimising clearing for work sites, haul road and access tracks, and maximising topsoil reuse on-site
- Implementation of the spoil re-use hierarchy
- Handling spoil to minimise potential for air or water pollution
- Minimise traffic impacts associated with spoil removal
- Ensure that temporary spoil stockpiles are not within or in close proximity to sensitive areas identified in ECM's, or within flood prone areas
- Manage temporary spoil stockpiles in accordance with the Construction Soil & Water Management Plan and Air Quality Plan
- Undertake haulage of spoil off-site in accordance with the Construction Traffic Management Plan (including relevant work site specific sub-plans) which includes haulage roads, hours of work, and queuing
- Implement measures in the Air Quality Plan and Construction Soil and Water Management Plan to prevent the tracking of spoil mud onto roads and the generation of both wheel and load generated dust, for trucks transporting spoil off-site
- Ensure all trucks transporting spoil off-site are appropriately licenced to carry the materials to appropriately licenced waste facilities

- Maintain all waste sampling and classification results and waste transfer dockets/ receipts for the life of the project in the spoil waste register
- Any stockpiles containing weeds that will be reused on site will be appropriately treated to prevent weeds being spread
- No waste generated outside the premise is to be received at the premise, except for recycled materials from Sydney Trains rail corridor (EPL 12208) or Sydney Trains recycling facility (EPL 7515) or materials that meet the EPA's Resource Recovery Exemptions for engineered fill purposes, except as permitted in Condition O4.3 of the EPL

7.2 Onsite Spoil Management

Where spoil isn't immediately cut to fill, it will be stockpiled and classified for reuse (either on or offsite) or offsite disposal. Different types of spoil will be segregated as far as practicable and stored separately to prevent mixing and cross-contamination.

All stockpiles will be managed in accordance with the requirements of the 'Blue Book' to prevent erosion and minimise the potential for pollution. Water based organic polymers will be used for short term control of risks associated with erosion and pollution.

Stockpiles would be located away from sensitive receivers, where feasible and reasonable, and protected from the elements through barriers, covering or establishing a cover crop.

Spoil that is to be stockpiled for an extended period will be managed to prevent erosion and minimise the potential for pollution. Typically water based polymers, vegetation cover or geofabric will be used to stabilise stockpiles. Stockpiles must not be placed in drainage lines, channels or paths.

Stockpiling locations for each worksite will be selected and developed and shown on Environmental Control Maps (ECM) and the Erosion and Sediment Control Plans (ESCP)s. Stockpiles located on land outside the Construction Site are subject to the land owner's and occupier's written consent, compliance with the law, consent of relevant Authorities and compliance with the Project Approval.

7.3 Offsite Reuse or Disposal

All material will be classified in accordance with the classifications in Section 05.

Material that can be reused off site includes:

- VENM
- ENM
- GSW (if it meets contaminant thresholds for waste processing as stated within the EPL of the receiving facility)

Spoil meeting these waste classifications is to be reused unless;

- Spoil does not meet the criteria for reuse on an industrial/commercial site in accordance with National Environmental Protection (Assessment of Site Contamination) Measure (NEPM)
- The development consents of receiving developments does not permit the classification of the subject spoil
- The spoil does not meet NSW EPA Resource Recovery Exemptions for export to other sites

- The spoil does not meet the *Airports (Environment Protection) Regulations 1997* and therefore cannot be accepted by the Sydney Gateway road Project
- Geotechnical properties of the spoil do not meet the requirements for reuse as fill. It is noted that a geotechnical report is not always required to assess spoil for reuse. A geotechnical engineer or experienced civil engineer can undertake a visual assessment to determine whether certain properties of the spoil or impurities, such as organics, make the spoil suitable for reuse
- A suitable re-use location is not available

Offsite disposal would occur for the below:

- GSW (that does not meet the contaminant threshold for waste processing as stated within the EPL of the relevant receiving facilities)
- RSW
- Special or Hazardous Waste
- Acid Sulfate Soils

7.3.1 [Spoil Disposal and Reuse Locations](#)

Potential spoil offsite disposal and reuse locations will be identified by the Construction Manager and construction teams. A register of currently approved disposal and reuse facilities is contained in Appendix B and will be progressively updated as works progress. The following will be completed:

- Check that appropriate approvals are in place for the receiving site,
- If applicable for reuse, check that a s143 Notice has been completed by the reuse location owner and / or site operator
- Gain acceptance from the Sydney Gateway road Project Spoil Manager for any spoil transferred to that particular project in accordance with *Airports (Environment Protection) Regulations 1997*
- Agree to commercial terms with the site operator and / or owner, and
- Ensure that relevant CoA, environmental, community and traffic impacts are managed under the approved CEMP and sub plans, and the Construction Traffic Management Plan (CTMP) including approved haulage routes.

Where spoil offsite reuse locations have the potential to receive a significant volume of material, the Construction Manager will generally complete a site inspection of the reuse location to confirm:

- The site has suitable access, e.g. wet weather access with exit controls if the site is proposed to be used during or following periods of rain
- The site has capacity to receive the volume of spoil indicated by the site owner or manager
- The type and number of spoil trucks which can access the site hourly / daily, and
- Appropriate management measures are in place.

Spoil disposal and reuse sites are required to have an appropriate planning approval in place to lawfully receive the material from the project. Such planning approvals (issued under the relevant part of the *Environmental Planning and Assessment Act 1979* or as relevant to the Sydney

Gateway road Project the *Airports Act 1996 (Commonwealth)* will be obtained by the operators of the sites, and be in place prior to spoil being deposited at a specific location.

Where the development application for a spoil disposal and reuse site is pending, the Project will not place spoil at the location until evidence of an approved development application has been provided to the Project Environment Manager. The Project will ensure that relevant requirements of the receiving site approval are communicated to construction teams and spoil haulage drivers, including hours of operation and roads to be used to access the site.

Spoil to be taken to the Sydney Gateway road Project will only be removed from site once Spoil Characterisation Reports are reviewed by the Gateway Spoil Manager and confirmation has been received that they are acceptable.

Once these checks have been completed and it has been confirmed that approved haulage routes (refer to CTMP) can be used to access the reuse location, approval will be sought from the Project Environmental Manager for the project to use this reuse location.

If the proposed reuse location cannot be accessed using the approved haulage routes (refer to CTMP), the project will update the CTMP and haulage routes and seek approval, either from Secretary or the project Environmental Representative in accordance with the Construction Environmental Management Plan. The Project Environmental Representative will not provide approval for the project to the reuse location until the revised haulage routes have been approved.

If the checks have been completed and the reuse does not have appropriate approvals or an s143 Notice, this reuse location would not be used by the project.

JHLOR will maintain records of waste disposal and spoil transfers.

Disposal of material to licensed facilities is costly due to the waste disposal levy. The Project will reuse 100% of reusable spoil, both onsite and offsite, to limit the amount of material that is disposed of at licensed facilities.

Spoil reuse as opposed to spoil disposal is not only positive from an environmental perspective it is also positive commercially and saves the public money.

7.4 Spoil Haulage

It is proposed wherever possible to use trains for the removal of spoil. This would be completed predominantly during rail possessions where spoil would be transported to the Sydney Trains Ballast Recycling Centre in Chullora. This facility is licenced to receive spoil from the rail corridor. Where trains are not available or practical to use, spoil movements would be via truck. Haulage routes associated with the movement of spoil are described in the Construction Traffic Management Plan. Typical controls would be as follows:

- The public would be notified of proposed traffic changes by newspaper, radio, project web site and other forms of community liaison.
- Access to existing properties and buildings will be maintained
- Where schools occur in the immediate vicinity of the construction sites, heavy vehicle movement would be minimised (where reasonable and feasible), between 08:00-09:30 and 14:30 – 16:00 Monday to Friday (on School Days)
- Planning to allow sufficient space for truck layover. Truck queuing can be wholly accommodated on site with minimal risk of truck parking/queuing on surrounding roads.

According to Condition E48 of SSI7400 (SMu), notwithstanding Condition E36 of the project approval and subject to Condition E47 haulage and delivery of spoil and materials may be undertaken 24 hours per day, seven (7) days per week subject to any EPL requirements.

There are no Conditions of Approval under SSI8256 (SMC) that allow for haulage to occur outside of standard construction hours.

Excavated material suitable for re-use within the premises, may be transported from one part of the premises or the Sydney Trains rail corridor or Sydney Trains recycling facility to another part of the premises by road. The key principle for spoil haulage by road is to select the most appropriate route which will minimise impact and facilitate efficient access to arterial roads. The following conditions apply to haulage:

- The body of any vehicle or trailer, used to transport waste or excavation spoil from the premises, is covered before leaving the premises to minimise any spill or escape of any dust, waste, or spoil from the vehicle or trailer
- Mud, splatter, dust and other material likely to fall from or be cast off the wheels, underside or body of any vehicle, trailer or motorised plant leaving the premises, is removed to the greatest extent practicable before the vehicle, trailer or motorised plant leaves the premises
- Road surfaces subject to the tracking of material by vehicles leaving the premises are effectively cleaned at the end of each workday

8. Training, Reporting and Review

8.1 Training

Personnel will receive training appropriate to their role in spoil management on the project. Ongoing toolbox talks covering the requirements for management of spoil will be used to raise awareness to the wider project team.

Responsibility for management of spoil will rest with the Construction Team, supported by the Environment and Sustainability Team.

Personnel within the Construction Team will be responsible for the day to day management of environmental and social aspects associated with spoil excavation, reuse and transfer, including:

- Identifying opportunities to minimise spoil quantities and maximise reuse
- Identifying contamination and implementing appropriate management processes and procedures
- Tracking of spoil quantities and spoil transfer
- Managing traffic impacts associated with spoil transfer
- Implementing environmental controls required to mitigate impacts associated with spoil excavation and transfer.

The site induction will be utilised to train all staff in the general requirements of spoil management.

Specific training relating to aspects associated with the management of spoil will be provided to JHLOR staff as identified in the CEMP and training plan, or as otherwise deemed necessary to address an event or to manage risk.

8.2 Monitoring, Compliance and Reporting

Spoil management measures will be included in weekly site inspections by the Environment Team. The Inspections would typically cover the following:

- Stockpile locations, volume, effectiveness of ERSED controls and classification
- Compliance with haul routes and gates
- Checking that loads are covered
- Exit controls and mud tracking on roads

Compliance records will be retained and will include:

- Spoil Disposal Permit where waste will go to a waste receiving facility that is not pre-Approved under Appendix B of this Plan
- Records of inspections in relation to spoil management
- Records detailing the beneficial re-use of spoil either within the project or at off-site locations.
- Waste dockets for any spoil disposed of to landfill sites.
- Results and outcomes of inspections, monitoring and auditing will be reported internally on a monthly basis.
- Six-monthly construction compliance reports will be prepared to report on compliance with the Project Approval.

8.3 Review and Improvement

Construction must not commence until the CEMP and all CEMP sub-plans have been approved by the Secretary. This plan will be submitted to the DPIE for information only. Construction will not commence until this plan is reviewed by Sydney Metro and endorsed by the ER.

This SpMP will be reviewed and updated at least annually. JHLOR will undertake the ongoing development, amendment and updating of the SpMP to ensure it remains consistent with Project priorities, risk management, client requirements and Project objectives, taking into account:

- The status and progress of JHLOR's activities
- Changes in the design, delivery and operations processes and conditions
- Lessons learnt during delivery and operations
- Changes in other related Project Plans
- Requirements and matters not covered by the existing Project Plans
- Changes to Project Plans as directed by Sydney Metro's Representative under the Deed.
- Where deemed appropriate in relation to items raised within inspections or audits

ER Endorsement is required for minor amendments to the SpMP in accordance with the Staging Report

9. Enquiries, Complaints and Incident Management

Environmental incidents and complaints are to be investigated, reported, documented, actioned and closed out as per the details provided in the Community Consultation Strategy and the CEMP.

Appendix A – Compliance Matrix

No.	Measure	Timing	Requirement	Responsibility	Reference
Project Approval SSI 7400- Specific Management Plan Requirements					
1.	A Construction Environmental Management Plan (CEMP) must be prepared in accordance with the Construction Environmental Management Framework (CEMF) included in the PIR and the Department's Guideline for the Preparation of Environmental Management Plans to detail how the performance outcomes, commitments and mitigation measures specified in Chapter 11 of the PIR will be implemented and achieved during construction.	Before Construction	C1	Environment Manager	Refer to SMCSWSSJ-JHL-WSS-EM-PLN-000028_ Construction Environmental Management Plan
	Notwithstanding Condition E36 of this approval and subject to Condition E47, the following activities may be undertaken 24 hours per day, seven (7) days per week: (a) tunnelling and associated support activities (excluding cut and cover tunnelling); (b) excavation within an acoustic enclosure; (c) excavation at Central (excluding Central Walk works at 20-28 Chalmers St Sydney) without an acoustic enclosure; (d) station and tunnel fit out; and (e) haulage and delivery of spoil and materials.	During Construction	E48	Project Engineer	Section 7.4
Revised Environmental Mitigation Measures SSI-7400 (Modification 4 Submissions Report)					
	All waste would be assessed, classified, managed and disposed of in accordance with the NSW Waste Classification Guidelines.	During Construction	WM1	Environment Manager	Section 7.1 Section 5.1
	100 per cent of spoil that can be reused would be beneficially reused in accordance with the project spoil reuse hierarchy.	During Construction	WM2	Project Engineer	Section 6 Section 7.1
	<ul style="list-style-type: none"> All waste would be assessed, classified, managed and disposed of in accordance with the NSW Waste Classification Guidelines 100 per cent of spoil that can be reused would be beneficially reused in accordance with the project spoil reuse hierarchy 	During Construction	Table 11-2	Project Engineer Environment Manager	Section 5.1 Section 6
Project Approval SSI 8256- Specific Management Plan Requirements					

A Construction Environmental Management Plan (CEMP) must be prepared in accordance with the Construction Environmental Management Framework (CEMF) included in the documents listed in Condition A1 to detail how the performance outcomes, commitments and mitigation measures specified in the documents listed in Condition A1 will be implemented and achieved during Construction.	Before Construction	C1	Environment Manager	Refer to SMCSWSSJ-JHL-WEC-EM-PLN-000011 – Construction Environment Management Plan
The importation of waste and the storage, treatment, processing, reprocessing or disposal of such waste must comply with the Protection of the Environment Operations Act 1997, under the Protection of the Environment Operations (Waste) Regulation 2014, and orders or exemptions made under the regulation.	During Construction	E74	Construction Manager Environment Manager	Section 7
Waste must only be exported to a site licensed by the EPA for the storage, treatment, processing, reprocessing or disposal of the subject waste, or in accordance with a Resource Recovery Exemption or Order issued under the Protection of the Environment Operations (Waste) Regulation 2014, or to any other place that can lawfully accept such waste.	During Construction	E75	Construction Manager Environment Manager	Section 7
All waste must be classified in accordance with the EPA's Waste Classification Guidelines, with appropriate records and disposal dockets retained for audit purposes.	During Construction	E76	Construction Manager Environment Manager	Section 7
Revised Environmental Mitigation Measures SSI-8256				
Spoil would be managed in accordance with the spoil management hierarchy	During Construction	WM3	Construction Manager Environment Manager	Refer to Appendix 4 within SMCSWSSJ-JHL-WEC-EM-PLN-000011 – Construction Environment Management Plan
Target 100 per cent reuse of reusable spoil	During Construction	WM4	Construction Manager Environment Manager Sustainability Manager	Section 6 Section 7
All waste would be assessed, classified, managed and disposed of in accordance with the Waste Classification Guidelines (EPA, 2014).	During Construction	WM6		Section 5 Section 7

Construction Environmental Management Framework (for SSI-7400 & SSI-8256)

<p>The following spoil management objectives will apply to the construction of the project:</p> <ul style="list-style-type: none"> • Minimise spoil generation where possible • The project will mandate 100% reuse or recycling (on or off-site) of usable spoil. • Spoil will be managed with consideration to minimising adverse traffic and transport related issues. • Spoil will be managed to avoid contamination of land or water. • Spoil will be managed with consideration of the impacts on residents and other sensitive receivers. • Site contamination will be effectively managed to limit the potential risk to human health and the environment. 	During Construction	6.1(a)	Environment Manager	Section 1.7
<p>Spoil Management Implementation</p> <p>Principal Contractors will develop and implement a Spoil Management Plan for their scope of works. The Spoil Management Plan will include as a minimum:</p> <ul style="list-style-type: none"> • The spoil mitigation measures as detailed in the environmental approval documentation. • A link or reference to where traffic movements in relation to spoil are described. • A register of spoil receipt sites that includes the site or project name, location, capacity, site owner and which tier the site is classified as under the spoil reuse hierarchy. • The responsibilities of key project personnel with respect to the implementation of the plan. • How spoil generation is minimised through the design development process. • Procedures for the testing, classification, handling and reuse of spoil. • Spoil management monitoring requirements. • Compliance record generation and management. 	During Construction	6.2(a)	Environment Manager	<p>This Plan</p> <p>This Table</p> <p>Section 7.4</p> <p>Appendix Section 2.2</p> <p>Section 6.2</p> <p>Section 0, 6, 7</p>

<p>Spoil management measures will be included in regular inspections undertaken by the Contractor, and compliance records will be retained. These will include:</p> <ul style="list-style-type: none"> Records detailing the beneficial re-use of spoil either within the project or at off-site locations. Waste dockets for any spoil disposed of to landfill sites. 	6.2(b)	Environment Manager Project Engineer	Section 8.2
<p>Spoil Mitigation</p> <p>Examples of spoil mitigation measures include:</p> <ul style="list-style-type: none"> Implementing the spoil re-use hierarchy. Handling spoil to minimise potential for air or water pollution. Minimise traffic impacts associated with spoil removal. 	6.3(a)	Project Engineer	Section 6 Section 7.2 Section 7.4
Environment Protection Licence (21147)			
<p>The licensee must assess, classify and manage any waste generated at the premises in accordance with the <i>Waste Classification Guidelines Part 1: Classifying Waste, November 2014</i> prior to taking the waste off the premises.</p>	O4.1	Project Engineer	Section 7.1
<p>The licensee must not cause, permit or allow any waste generated:</p> <p>(a) Outside the premises to be received at the premises, except for recycled materials from Sydney Trains rail corridor (EPL 12208) or Sydney Trains recycling facility (EPL 7515) or materials that meet the EPA's Resource Recovery Exemptions for engineered fill purposes;</p> <p>(b) At the premises to be land applied at the premises, except as permitted in Condition O4.3.</p>	O4.2	Project Engineer Environment Manager	Section 7.1
<p>Excavated material suitable for re-use within the premises, may be transported from one part of the premises or the Sydney Trains rail corridor or Sydney Trains recycling facility to another part of the premises by road.</p>	O4.3	Project Engineer	Section 7.4

Appendix B - Spoil Receipt Sites

This will be progressively updated as sites become available and further classification is completed.

Site Name	Location	Capacity	Site Owner
Breen Recycling Facility	Captain Cook Drive Kurnell NSW 2231	1,450,000 tonnes	Breen Resources Pty Ltd
Genesis Facility	Honeycomb Drive Eastern Creek NSW 2766	700,000 tonnes	Dial-a-dump (ED) Pty Ltd
Bingo Recycling Centre Banksmeadow	38 McPherson Street Banksmeadow NSW 2019	20,000 tonnes	McPherson Recycling Pty Ltd
Bingo Resource Recovery Centre Patons Lane	123-129 Patons Lane Orchard Hills NSW 2748	140,000 tonnes	SRC Operations Pty Ltd
MET Recycling Pty Ltd	134 Newtown Street Silverwater NSW 2128	20,000 tonnes	MET Recycling Pty Ltd
Sydney Recycling Park	16-23 Clifton Avenue Kemps Creek NSW 2178	147,000 cubic meters	Sydney Recycling Park Pty Ltd
Elizabeth Drive Landfill Facility	1725 Elizabeth Drive Kemps Creek NSW 2178	Tyre stockpile- 50 tonnes Other stockpiles- 4,000 cubic meters	Suez Recycling and Recovery Pty Ltd
Environmental Treatment Solutions Blayney	79 Marshalls Lane Blayney NSW 2799	300 tonnes	Environmental Treatment Solutions Pty Ltd
Sydney Gateway Project	Sydney Airport Kingsford Smith Mascot NSW 2020	>10,000 tonnes	Commonwealth Government John Holland/ Seymore White
Waste and Resources Kemps Creek	Lot 90 Elizabeth Drive Kemps Creek NSW 2178	500,000 tonnes	Brandown Pty Ltd
Hi-Quality Waste Management St Marys	37 Lee Holm Street St Marys NSW 2760	110,500 tonnes	Hi-Quality Waste Management Pty Ltd

