

Spoil Management Sub Plan




Project Name:	Sydney Metro West		
Client Name:	Sydney Metro		
Project Address:	Delta will demolish buildings across the following sites: <ol style="list-style-type: none"> 1. Parramatta 2. Clyde 3. Westmead 		
Project Description/Scope:	Delta Pty Ltd (Delta) is responsible for the full structural demolition of existing structures including removal of all hazardous materials of the Sydney Metro West Demolition Project.		
Prepared By: CEnvP No. 1389	Name: [REDACTED]	Signature: [REDACTED] 	Date: 30/11/2021
Reviewed By: (Project Manager)	Name: [REDACTED]	Signature: [REDACTED]	Date: 30/11/2021
Authorised By: (Project Director):	Name: [REDACTED]	Signature: [REDACTED]	Date: 30/11/2021

Table of Contents

1	AUTHORISATION AND CONTROL	3
1.1	Authorisation	3
1.2	Distribution	3
1.3	Revision	3
2	INTRODUCTION	4
2.1	Purpose	4
2.2	Scope of the SpMSP	4
3	Project Description	4
3.1	Overall	4
3.2	Site establishment works (Phase C1)	5
3.3	Service disconnections and relocations (Phase C1)	6
3.4	Hazardous materials (HAZMAT) removal (Phase C1)	6
3.5	Internal strip-out of structures (Phase C1)	6
3.6	Demolition of existing structures and site clearing (Phase C1)	6
3.7	Asbestos impacted soil removal (Phase C1)	7
3.8	Archaeological test excavation and related investigations (Phase C2)	7
3.9	Environmental Policy	12
3.10	Spoil Management Objectives	12
4	LEGAL AND OTHER REQUIREMENTS	12
4.1	Legislation	12
4.2	Guidelines and Other Documents	12
4.3	Minister’s Conditions of Approval	12
4.4	Sydney Metro Requirements	13
4.5	Revised Environmental Mitigation Measures (REMMs)	15
4.6	Consultation	15
5	ROLES AND RESPONSIBILITIES	15
6	IMPLEMENTATION	16
6.1	Estimated Spoil Generation	16
6.2	Spoil Management Decision Framework	16
6.3	Reuse, recycling and disposal criteria	17
6.3.1	<i>Spoil Management Hierarchy</i>	17
6.3.2	<i>On-site Spoil Handling and Storage</i>	18
6.4	Waste Classification of Spoil	19
6.5	Spoil Transport and Haulage	19
6.6	Spoil Disposal	20
6.7	Training	20
6.8	Record Keeping	20
7	MONITORING AND INSPECTIONS	21
7.1	Spoil Inspections	21
7.2	Audits	21
8	REPORTING	21
8.1	Monthly Report	21
	Appendix A Environmental Control Maps – Spoil Management	22
	Appendix B Environmental Representative Endorsement	23

1 AUTHORISATION AND CONTROL

1.1 Authorisation

This Plan is authorised by the Project Director. All project personnel are to ensure that their work activities and those of Project Consultants, Contractors and Suppliers are carried out in accordance with the requirements of this Plan.

1.2 Distribution

This Plan is a Controlled Document and must be distributed and revised under the guidance of the Project Manager. People who hold Controlled copies are responsible for maintaining their copies up-to-date.

1.3 Revision

The Project Director will monitor the implementation of this Plan and review the need for change or improvements having due regard to:

- Change in work scope, client comments etc.
- Internal and external audits
- Suggestions and comments from project personnel
- Incidence and frequency of non-conformance
- Necessity for corrective or preventative action
- Legal Update and Requirements
- Review by Delta Groups Management team
- Annual Review

All changes must be formally approved by the Project Director.

Changes to the recent revision will be highlighted.

The following table provides a record of amendments made to this document.

Rev	Date	Description	Page	Developed By	Approved By
0	30/11/2021	Draft issued for review	All		
1	17/12/2021	Updated to address comments	All		
2	17/01/2022	Made stockpile height consistent	17		
3	09/03/2022	Updated to capture asbestos in soils removal at Westmead	All		

Distribution Register			
Rev No.	Date of Issue	Name of Recipient	Position / Organisation
0	30/11/2021		Principal Representative
1	17/12/2021		Principal Representative
2	17/01/2022		Principal Representative
3	09/03/2022		Principal Representative

2 INTRODUCTION

2.1 Purpose

This Spoil Management Sub Plan (SpMSP) has been prepared by Delta Pty Ltd. (Delta) to comply with the:

- Minister for Planning and Environment’s Conditions of Approval (CoA) for Phase C2 of the Sydney Metro West Project;
- Sydney Metro West Stage 1 – Phasing Report Rev 1.2 (Oct. 2021);
- Requirements of the Sydney Metro West Parramatta and Clyde Enabling Works Scope of Work for Spoil Management and Soil & Water Management and Waste Management For Phase C2 Works Package;
- Requirements of the Sydney Metro West Parramatta and Clyde Enabling Works Scope of Work for Spoil Management and Soil & Water Management and Waste Management for Phase C1 Asbestos contamination clearance - Westmead Site; and
- Construction Environment Management Framework (CEMF).

Delta has been engaged to carry out the demolition of buildings and assist with the archaeological investigation excavations as described in Section 2.3. The demolition of these buildings and structures is defined in this SpMSP as “the Project”.

This SpMSP provides specific management measures to ensure that Delta’s demolition and archaeological works are carried out so as to manage spoil in a sustainable manner and, where possible, provide enhanced environmental outcomes.

Implementing the SpMSP effectively will ensure that the Project meets regulatory and contract requirements in a systematic manner and continually improves its performance.

2.2 Scope of the SpMSP

This SpMSP addresses sustainability aspects and measures associated with the Project. It covers all areas where physical works will occur, or areas that may be impacted by the works, including procurement, demolition, and disposal, and is applicable over the full duration of the Project.

This SpMSP will be staged according to each relevant Package and Portion of demolition.

This plan forms part of the project management documentation that has been prepared in accordance with the requirements of the Contract. The Project will be guided by Delta’s Integrated Management System (IMS). Delta’s IMS is certified as meeting the requirements of:

- AS45001 Occupational Health and Safety Management Systems;
- ISO14001 Environmental management; and
- ISO9001 Quality Management Systems.

All Delta staff and subcontractors are required to comply fully with the requirements of this SpMSP.

3 Project Description

3.1 Overall

The Sydney Metro West project is a new 24-kilometre metro line with stations confirmed at Westmead, Parramatta, Sydney Olympic Park, North Strathfield, Burwood North, Five Dock, The Bays, Pyrmont and Hunter Street in the Sydney CBD (see **Figure 1**).

In order to enable the next phase of the overall Sydney Metro West Project, the Principal requires the demolition of all structures, and clearance of all vegetation (with the exception of riparian vegetation at Clyde) within three sites located in Clyde, Parramatta and Westmead. **Figures 2, 3 & 4** show each of the sites and specific buildings to be demolished.

Delta will be delivering the Parramatta, Clyde, and Westmead Enabling Works package (Phase C1), and the archaeological testing at Parramatta and Clyde (Phase C2). Phase C1 works are generally broken down into the following stages including; site establishment works, service disconnections and relocations, hazardous

materials (HAZMAT) removal, internal strip-out of structures, demolition of existing structures and site clearing. These stages of works will apply to each of the sites. The archaeological testing at Parramatta and Clyde (Phase C2) will be staged as the study areas become available.

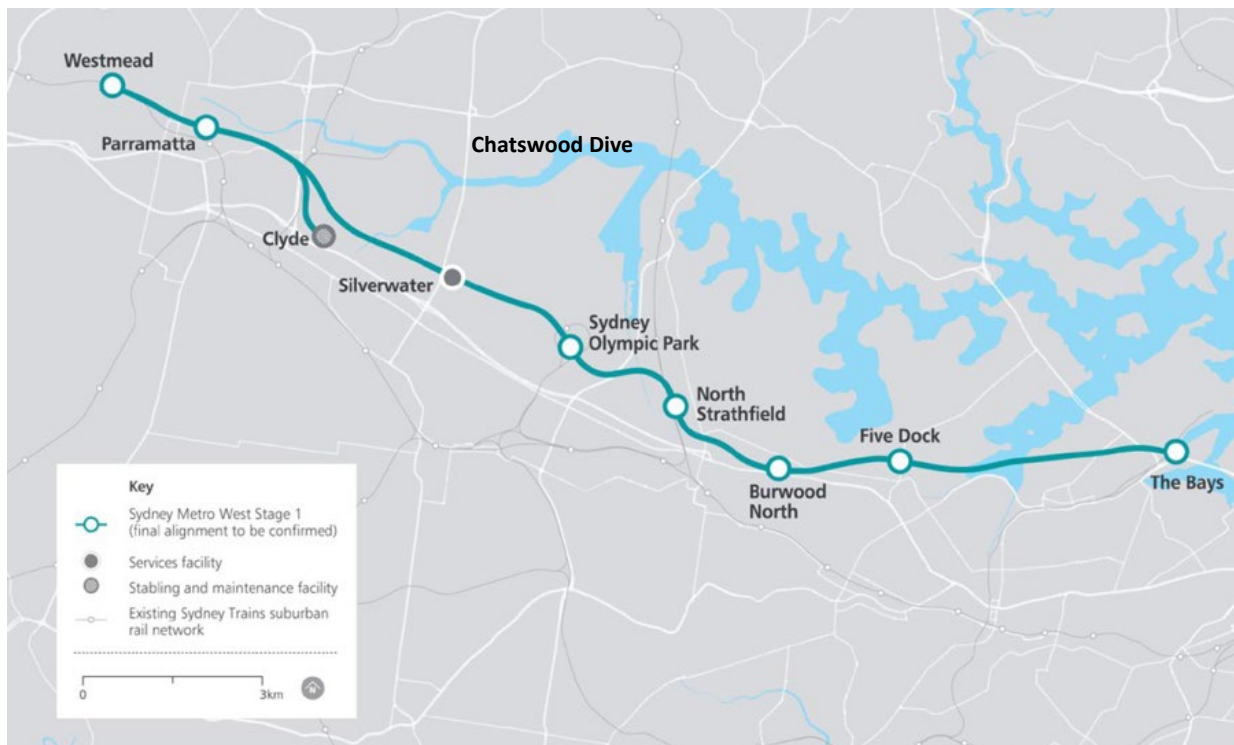


Figure 1 Sydney Metro West project

Source: Sydney Metro.

3.2 Site establishment works (Phase C1)

Site establishment works are required to facilitate the overall works and are generally considered to be relatively low impact works. These activities will generally be undertaken in accordance with the Sydney Metro West Low Impact Works approval pathway in accordance with MCoA A21 or under an approved Site Establishment Management Plan (SEMP) in accordance with MCoA A19. Any SEMP must be submitted to the Planning Secretary for approval one (1) month before the establishment of any ancillary facilities. Once the CEMP and relevant Sub Plans approved, any outstanding site establishment works will be managed in accordance with the project CEMP and relevant sub plans.

Site establishment works will generally include:

- Initial site investigations (e.g., specialist consultant inspections or surveys);
- Establishing perimeter security (e.g., installation of hoarding, fencing and boundary screening);
- Establishing environmental controls (e.g., erosion and sediment controls, and bat roosting boxes (if required));
- Salvaging any potential items identified by the Principal that may have heritage value; and
- Installation of site amenities and associated infrastructure (e.g., site sheds).

Note that in accordance with MCoA 21, the use of an ancillary facility for construction must not commence until the CEMP required by Condition C1 of this schedule, relevant CEMP Sub-plans required by Condition C5 of this schedule and relevant Construction Monitoring Programs required by Condition C14 of this schedule have been approved by the Planning Secretary or endorsed by the ER (whichever is applicable). Also noting that the requirement of Condition 21 does not apply to Condition A21 of this schedule or where the use of an ancillary facility is Low Impact Work or for Low Impact Work. In addition, Delta will be undertaking the Parramatta and Clyde archaeological investigative works (Phase C2).

3.3 Service disconnections and relocations (Phase C1)

Each site has a number of services that require disconnection and/or relocation in order to facilitate the safe demolition of structures and future phases of work on the site. Access to all utilities and properties will be maintained during works, unless otherwise agreed with the relevant utility owner, landowner or occupier. Service disconnection and/or relocation includes:

Service disconnection generally includes:

- Service location, generally using non-destructive techniques where appropriate;
- Accessing services via existing structures or via targeted excavation;
- Disconnecting relevant service in accordance with relevant requirements and approvals;

Relocating services generally includes:

- Service location, generally using non-destructive techniques where appropriate;
- Installing services via existing structures or via targeted excavation; and
- Connecting relevant service in accordance with relevant requirements and approvals;

3.4 Hazardous materials (HAZMAT) removal (Phase C1)

Due to the age of various structures to be demolished, there are number of sites that have been identified to contain hazardous materials such as asbestos, lead paint and dust. This material identified through target surveys and will be safely removed by appropriately licensed removalists prior to undertaking the strip-out or demolition.

Hazardous materials removal works will generally include:

- Accessing the site;
- Establishing appropriate controls and exclusion zones for the hazard;
- Licensed removalist will use relevant tools to safely undertake the strip-out;
- Waste is managed and disposed to an appropriately licensed facility; and
- Validation of removal works by an appropriately qualified professional (e.g., Licensed Asbestos Assessor)

3.5 Internal strip-out of structures (Phase C1)

To allow safe structural demolition, Delta will perform an internal strip-out of internal materials. This would include items such as; office furniture and internal fixtures and linings.

Internal strip-out works will generally include:

- Accessing the site;
- Using appropriate tools and machinery to remove items;
- Managing waste and recycling; and
- Making safe for the final demolition work.

3.6 Demolition of existing structures and site clearing (Phase C1)

Delta has been engaged to undertake the demolition of all structures within the nominated sites down to slab level. Structural demolition works will generally include:

- Use of mechanical demolition methods e.g. Using Excavators with hydraulic attachments to demolish buildings.
 - Demolition will predominantly by completed top-down methodologies;

- Mechanical demolition will be used either working from the slab on ground reaching up to the height of structure; or
- Mechanical demolition with excavators working on top of the structure progressively demolishing level by level.
- Using appropriate tools and machinery to demolish items;
- Removal of underground services to 1.5m below ground level at Westmead;
- Managing waste and recycling; and
- Making safe for handover.

External site clearing of vegetation will be undertaken during demolition and/or concurrently with other stages of the works. Site clearing will generally include:

- Use of available machinery to remove vegetation;
- Use of an arborist to remove trees where there is a safety or ecological requirement (e.g., where there is potential to damage neighbouring buildings or structures to be retained or where an ecologist has noted it is as a requirement);
- Manage the waste; and
- Pre and Post Clearing inspections and reporting.

3.7 Asbestos impacted soil removal (Phase C1)

Due to finds of asbestos containing material found within the surface soils at the Westmead site, Delta has been engaged to undertake the removal of approximately 3000 tonnes of asbestos impacted soil. The soil removal works will generally include:

- A soil strip of 0.1m below ground level across the Westmead Site over unsealed areas and underside of slab on ground (approximately 8,670m²) except for Lot 35 DP 4036, Lot 36 DP 4036, Lot 37 DP 4036, SP 67282, SP 61570, Lot 1 DP 949987 and Area 'W3' (see **Figure 4a** below).
- The soil will be classified in accordance with the NSW EPA Waste Classification Guidelines (2014) and disposed of to an appropriately licensed facility.

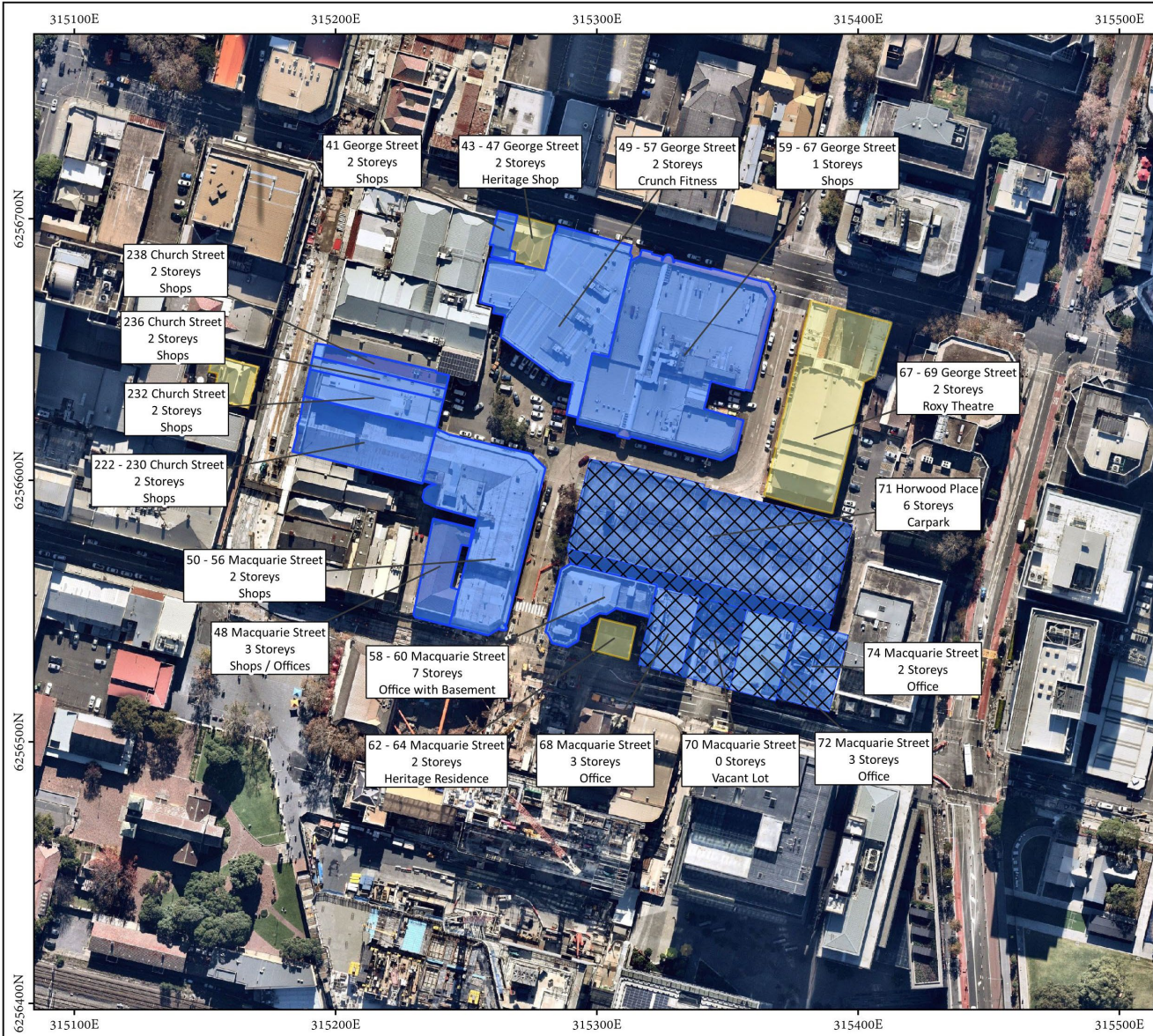
3.8 Archaeological test excavation and related investigations (Phase C2)

Archaeological test excavation and related investigations are required at the Parramatta and Clyde sites as identified in the Aboriginal Cultural Heritage Assessment Report of the EIS Stage 1. Delta will facilitate the excavation and spoil management requirements of the archaeological investigation. The archaeological investigation works will be undertaken by a Heritage specialist in accordance with the Archaeological Research Design and Excavation Methodology (ARDEM) 2021 and AHR 2021. The approximate extent of the Phase C2 works are shown in **Figures 2 and 3** below.

The investigation works will generally include:

- Test excavation;
- Salvage excavation;
- Archaeological monitoring if localised or shallow excavations are proposed in areas of potential and are not expected to impact significant archaeology; and
- Review for opportunities for conservation/relocation/interpretation of state significant archaeology to salvage.

Approximately 27,000 tonnes of spoil will be generated to facilitate archaeological clearance activities at Clyde and Parramatta. Of these 27,000 tonnes, approximately 20,000 tonnes of spoil will be transported offsite from the Parramatta works and 7,000 tonnes of spoil would be stockpiled at Clyde and used to backfill the trenches created during the archaeological clearance works at Clyde.



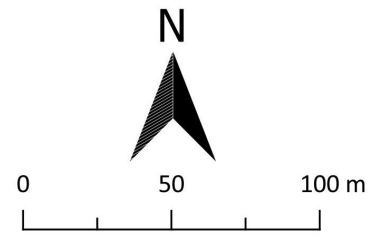
Project Location:
Sydney Metro West Parramatta, NSW 2150
Figure Number:
02
Title:
Sydney Metro West
Project ID:
PRJ000712_Sydney_Metro_West
Client Name:
Delta Group
Project Description:
CEMP

Map Scale:			
1:2,100			
CRS:			
GDA2020 / MGA zone 56			
Source:			
Nearmaps 05/06/2021			
Prepared: EW	Reviewed: WD	Date: 30/11/2021	Revision: 2

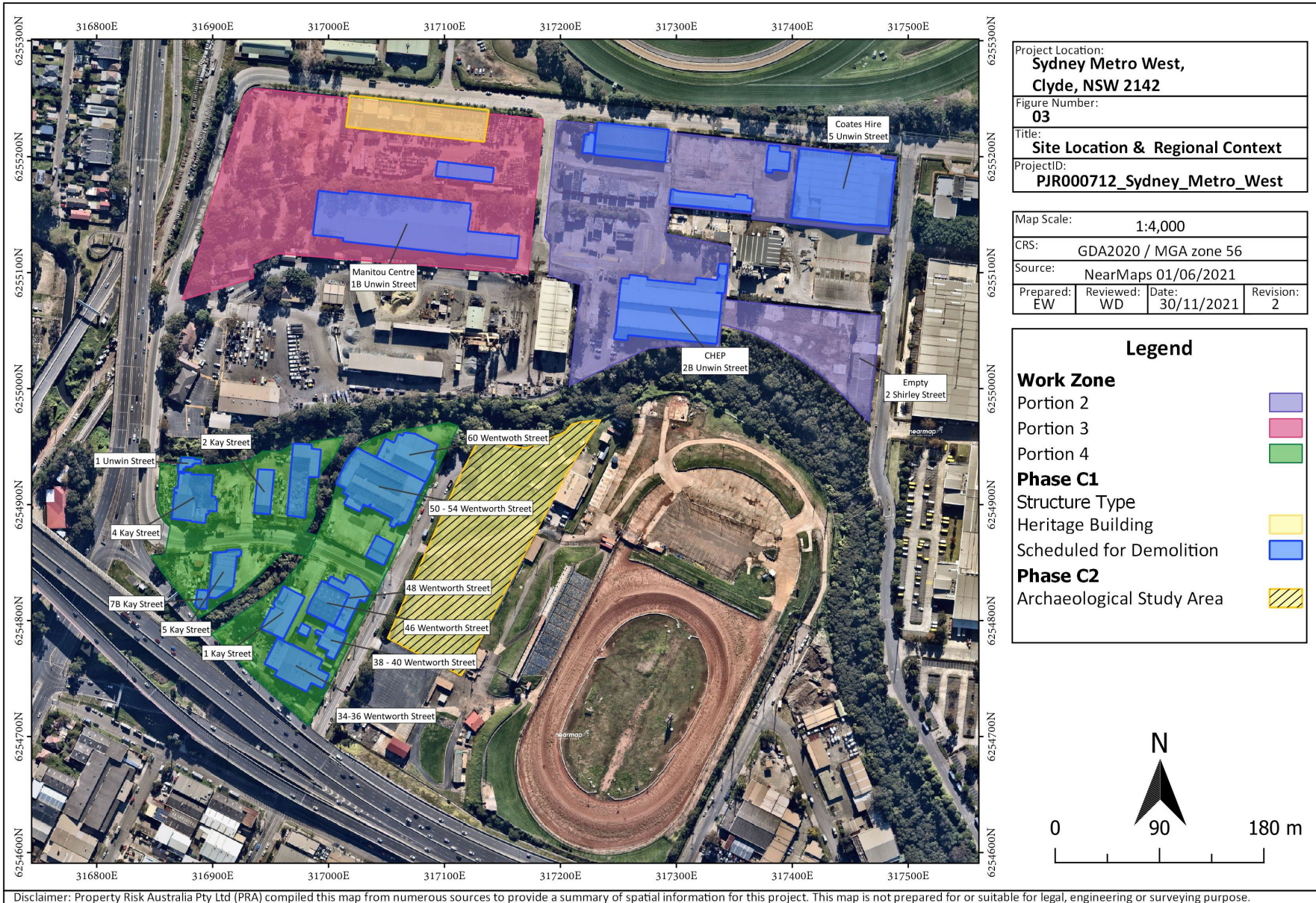
Legend

Phase C1
Structure Type
Heritage Building
Scheduled for Demolition (Phase C1)

Phase C2
Structure Type
Archaeological Survey (Phase C2)



Disclaimer: Property Risk Australia Pty Ltd (PRA) compiled this map from numerous sources to provide a summary of spatial information for this project. This map is not prepared for or suitable for legal, engineering or surveying purpose.

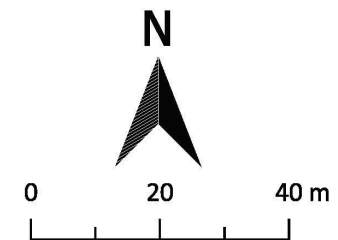




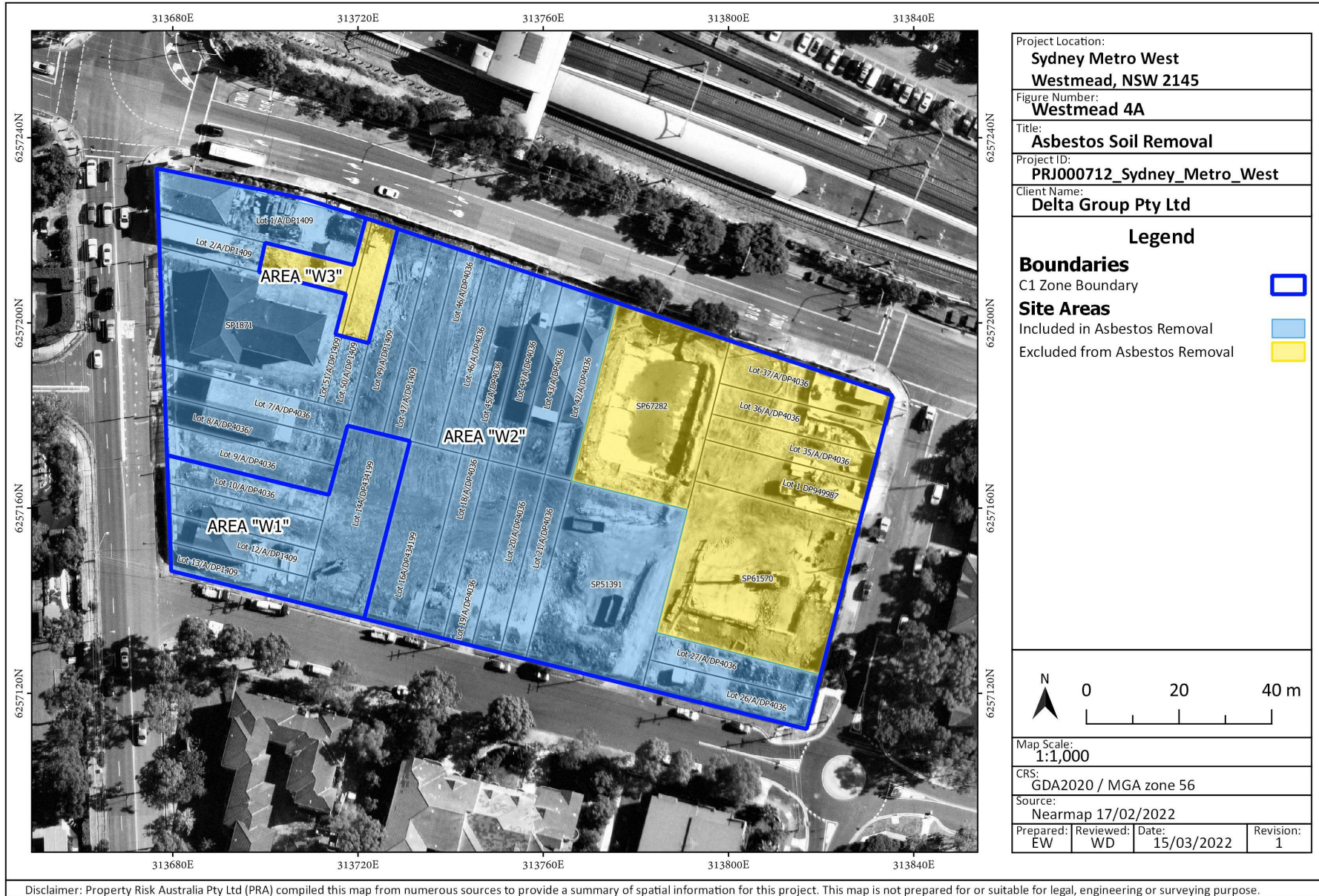
Project Location: Sydney Metro West Westmead, NSW 2145
Figure Number: 04
Title: Sydney Metro West
Project ID: PRJ000712_Sydney_Metro_West
Client Name: Delta Group
Project Description: CEMP - Westmead

Map Scale: 1:1,000
CRS: GDA2020 / MGA zone 56
Source: Source: Nearmaps 05/06/2021
Prepared: EW Reviewed: WD Date: 17/08/2021

Legend	
Structure Type	
Scheduled for Demolition	

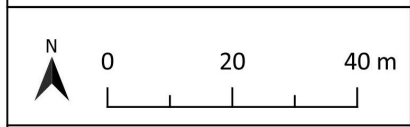


Disclaimer: Property Risk Australia Pty Ltd (PRA) compiled this map from numerous sources to provide a summary of spatial information for this project. This map is not prepared for or suitable for legal, engineering or surveying purpose.



Project Location: Sydney Metro West Westmead, NSW 2145
Figure Number: Westmead 4A
Title: Asbestos Soil Removal
Project ID: PRJ000712_Sydney_Metro_West
Client Name: Delta Group Pty Ltd

Legend	
Boundaries	
C1 Zone Boundary	
Site Areas	
Included in Asbestos Removal	
Excluded from Asbestos Removal	



Map Scale: 1:1,000
CRS: GDA2020 / MGA zone 56
Source: Nearmap 17/02/2022
Prepared: EW Reviewed: WD Date: 15/03/2022 Revision: 1

Disclaimer: Property Risk Australia Pty Ltd (PRA) compiled this map from numerous sources to provide a summary of spatial information for this project. This map is not prepared for or suitable for legal, engineering or surveying purpose.

3.9 Environmental Policy

Delta's Environmental Policy is entrenched firmly in furthering waste management (including spoil management) and sustainability in all of its operations. Delta's Environmental Policy is

"... not limited to minimising the environmental impact of our operations, but to actively take steps to reduce our energy usage, to reduce waste, to recycle everything we can, and to be rigorous about safe disposal of any residual contaminants in strict compliance with regulatory requirements".

3.10 Spoil Management Objectives

Delta's objectives for spoil management throughout the Project are:

- Minimise spoil generation where possible;
- The project will reuse or recycle (on or off-site) 100% 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; and
- Site contamination will be effectively managed to limit the potential risk to human health and the environment.

4 LEGAL AND OTHER REQUIREMENTS

4.1 Legislation

Delta will carry out its works on the Project in accordance with the following legislation relevant to waste and resource management:

- *Protection of the Environment Operations Act 1997;*
- *Protection of the Environment Operations (Waste) Regulation 2014;*
- *Waste Avoidance and Resource Recovery Act 2001;* and
- *Work Health and Safety Act 2011.*

4.2 Guidelines and Other Documents

The primary guidelines and policy documents relevant to Delta's SpMSP include:

- EPA Waste Classification Guidelines Part 1: Classifying Waste (2014);
- DECC Waste Avoidance and Resource Recovery Strategy 2007;
- Delta Sydney Metro West Waste Management Sub Plan;
- Delta IMS QF 029 Material Disposal Running Sheet.

4.3 Minister's Conditions of Approval

Delta notes that the Project must be carried out in accordance with the Minister's Conditions of Approval (MCoAs) and generally in accordance with the:

- (a) Sydney Metro West – Westmead to The Bays and Sydney CBD Environmental Impact Statement dated 15 April 2020;
- (b) Sydney Metro West – Westmead to The Bays and Sydney CBD Submissions Report dated 20 November 2020; and
- (c) Sydney Metro West – Westmead to The Bays and Sydney CBD Amendment Report dated 20 November 2020.; and
- (d) Sydney Metro West – Westmead to The Bays and Sydney CBD Modification Request Letter dated 21 June 2021. description provided in the EIS as amended by the PIR and the Conditions of Approval (CoA).

The relevant CoAs addressed by this SpMSP are summarised in **Table 1** below.

Table 1 Relevant Conditions of Approval

CoA	Relevant requirement	Where addressed								
A47	All Heavy Vehicles used for spoil haulage must be clearly marked on the sides and rear with the project name and application number to enable immediate identification by a person viewing the Heavy Vehicle standing 20 metres away.	Section 6.5								
C5	Of the CEMP Sub-plans required under Condition C1 of this schedule, the following CEMP Sub-plans must be prepared in consultation with the relevant government agencies identified for each CEMP Sub-plan. Details of issues raised by a government agency during consultation must be included in the relevant CEMP Sub-plan, including copies of all correspondence from those government agencies as required by Condition A6 of this schedule. Where a government agency (ies) request(s) is not included, the Proponent must provide the Planning Secretary / ER (whichever is applicable) justification as to why:	Section 4.6 Appendix B								
	<table border="1"> <thead> <tr> <th></th> <th>Required CEMP Sub-plan</th> <th>Relevant government agencies to be consulted for each CEMP Sub-plan</th> <th>Applicability to the Project</th> </tr> </thead> <tbody> <tr> <td>(e)</td> <td>Spoil</td> <td>Relevant Council(s) and SOPA (in respect of SydneyOlympic Park)</td> <td>Applicable as per phasing report prepared under MCoA A10</td> </tr> </tbody> </table>			Required CEMP Sub-plan	Relevant government agencies to be consulted for each CEMP Sub-plan	Applicability to the Project	(e)	Spoil	Relevant Council(s) and SOPA (in respect of SydneyOlympic Park)	Applicable as per phasing report prepared under MCoA A10
			Required CEMP Sub-plan	Relevant government agencies to be consulted for each CEMP Sub-plan	Applicability to the Project					
(e)	Spoil	Relevant Council(s) and SOPA (in respect of SydneyOlympic Park)	Applicable as per phasing report prepared under MCoA A10							
C6	The CEMP Sub-plans must state how:	This Plan								
	(a) the environmental performance outcomes identified in the documents listed in Condition A1 of this schedule will be achieved;	Section 3.9								
	(b) the mitigation measures identified in the documents listed in Condition A1 of this schedule will be implemented;	Section 4.5								
	(c) the relevant conditions of this approval will be complied with; and	Table 1								
	(d) issues requiring management during construction (including cumulative impacts), as identified through ongoing environmental risk analysis, will be managed through SMART principles.	CEMP Section								
D83	The locations of all Heavy Vehicles used for spoil haulage must be monitored in real time and the records of monitoring be made available electronically to the Planning Secretary and the EPA upon request for a period of no less than one (1) year following the completion of construction.	Section 6.5								
D90	Vehicles associated with the project workforce (including light vehicles and Heavy Vehicles) must be managed to: <ul style="list-style-type: none"> (a) minimise parking on public roads; (b) minimise idling and queueing on state and regional roads; (c) not carry out marshalling of construction vehicles near sensitive land user(s); (d) not block or disrupt access across pedestrian or shared user paths at any time unless alternate access is provided; and 	Relevant Construction Traffic Management Plan								
	(e) ensure spoil haulage vehicles adhere to the nominated haulage routes identified in the CTMPs.	Section 6.5								
D99	Opportunities to maximise spoil material removal by non-road methods must be investigated and implemented where reasonably practicable to minimise movements by road.	Not applicable to Delta's scope due to the limited nature of spoil generation and limited opportunities for alternative transport options.								

4.4 Sydney Metro Requirements

Sydney Metro Requirements for spoil management are provided within Section 6.2 of the Construction Environmental Management Framework (CEMF) and Section 2.9.3.5 of the Sydney Metro West Particular Specification (SMW-PS). The relevant CEMF and SMW-PS requirements addressed by this SpMSP are outlined in **Table 2** below.

Table 2 Relevant Sydney Metro Requirements

Reference	Relevant requirement	Where addressed
SMW-PS 2.9.3.5	(a) The Contractor must identify and implement initiatives to both reduce spoil quantities which will be generated during the performance of the Contractor's Activities and beneficially reuse 100% of reusable spoil, including topsoil.	Section 6
	(b) Beneficial reuse of spoil must be in accordance with the following spoil reuse hierarchy, in order of preference: <ul style="list-style-type: none"> i. within the Project; ii. environmental works; iii. other development projects; iv. land restoration; and v. landfill management. 	Section 6
	(c) Where spoil cannot be classified as virgin excavated natural material (VENM) or excavated natural material (ENM) the Contractor must determine the feasibility of beneficial reuse by characterises against the specific contaminant concentration (SCC) values in Table 1 of the Waste Classification Guidelines. Where Contamination falls below the LC1 threshold the Contractor must seek receivers who are able to re-use or recycled spoil that has a = LC1 classification.	Section 6
	(d) The Contractor must utilise reuse appropriate site-won materials onsite.	Section 6
CEMF 6.2 (a)	Principal Contractors will develop and implement a Spoil Management Plan for their scope of works. The Spoil Management Plan will include as a minimum:	This Plan
	i. The spoil mitigation measures as detailed in the environmental approval documentation;	Section 4.5
	ii. The responsibilities of key project personnel with respect to the implementation of the plan;	Section 5
	iii. Procedures and methodologies for the haulage and disposal locations, storage and stockpiling arrangements, including those for virgin excavated natural material, contaminated and unsuitable material;	Section 6
	iv. Procedures for the testing, excavation, classification, handling and reuse of spoil;	Sections 6.3.2, 6.4, and the WMSP
	v. Measures that will be implemented to both reduce spoil quantities and maximise the beneficial reuse of spoil which will be generated during the performance of the Contractor's Activities, including how spoil generation is minimised through the design development process;	Section 6.2 and 6.3
	vi. Details, links or references to where traffic movements in relation to spoil are described, and measures that will be implemented to minimise traffic and noise impacts associated with haulage and disposal of spoil;	Section 6.5, and Parramatta and Clyde HVLRs
	vii. Quantities for reuse of spoil within the Construction Site, for beneficial reuse of spoil off site and for spoil disposal;	Section 6.1
	viii. Processes and procedures for the management of the environmental and social impacts of spoil transfer and reuse;	Section 6
ix. 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;	Section 6.6	

Reference	Relevant requirement	Where addressed
	x. Spoil management monitoring requirements; and	Section 7
	xi. Compliance record generation and management.	Section 8
CEMF 6.2 (b)	Spoil management measures will be included in regular inspections undertaken by the Contractor, and compliance records will be retained. These will include:	Section 7.1
	i. Records detailing the beneficial re-use of spoil either within the project or at off-site locations; and	Section 6.8
	ii. Waste docket for any spoil disposed of to landfill sites.	Section 6.8

4.5 Revised Environmental Mitigation Measures (REMMs)

A number of REMMs associated with spoil management will apply to the additional archaeological clearance works. These REMMs are listed below for completeness, but they are generally addressed in the Waste Management Sub Plan (WMSP)

Table 3 Relevant Spoil Management REMMs

REMM	Relevant requirement	Where addressed
WR1	All waste would be assessed, classified, managed, transported and disposed of in accordance with the Waste Classification Guidelines and the Protection of the Environment Operations (Waste) Regulation 2014.	Section 6.4, and WMSP Sections 6 Section 6.10 - WR01
WR4	Waste streams would be segregated to avoid cross-contamination of materials and maximise reuse and recycling opportunities.	Section 6.3.2 WMSP Sections 3.5, 6.4 and 6.10 - WR04
WR5	A materials tracking system would be implemented for material transferred between Sydney Metro West sites and to offsite locations such as licensed waste management facilities.	Section 6.5 WMSP Section 6.7 Section 6.10 - WR05

4.6 Consultation

In accordance with MCoA C6 (e), this SpMSP has been provided to relevant stakeholders for consultation including the relevant Local Council (i.e., Parramatta City Council - PCC).

PCC were provided a copy of the SpMSP on 3rd December 2021 for their review and comment. Follow-up phone calls to PCC were 14th and 20th December 2021. However, no comments have been received to date and as such there are currently no comments to address as required by MCoA A6(d).

This Plan has also been submitted to the Environmental Representative for review and endorsement (refer to **Appendix B**) prior to submission to DPIE.

5 ROLES AND RESPONSIBILITIES

Table 4 provides the key roles and responsibilities for spoil management under the SpMSP. A complete list of roles and responsibilities, including interfaces between the various roles, is provided in the Construction Environmental Management Plan.

Table 4 Key Roles and Responsibilities

Project Role	Responsibilities
Project Director	<ul style="list-style-type: none"> Engaged full-time across each and all Packages and Portions throughout Delta's Activities to ensure that Delta meets all Contract obligations. Primary contact with the Principal's Representative on all aspects of the Project. Approve and ensure implementation of this SpMSP.

Project Role	Responsibilities
	<ul style="list-style-type: none"> Approve monthly reports and issue to the Principal.
Project Manager	<ul style="list-style-type: none"> Implement the SpMSP. Organise on-site personnel with regard to their responsibilities within the WMSP. Carry out periodic audits of spoil management processes. Manage non-conformances and initiate corrective action as required. Lead by example and promote sustainable spoil and waste management practices. Review reports, and follow up on recommendations.
Demolition Site Manager	<ul style="list-style-type: none"> Implement the SpMSP. Provide advice and assistance on the SpMSP to employees. Decide when training is required. Undertaking inspection of the contracted or planned works to ensure that SpMSP measures are implemented and effective. Lead by example and promote sustainable spoil and waste management practices. Carry out weekly toolbox talks. Manage the Site Folder and ensure all SpMSP requirements are compiled.
Environment and Sustainability Manager	<ul style="list-style-type: none"> Maintain and update the SpMSP as required. Ensure relevant information from the SpMSP is incorporated into project inductions or toolbox as required. Prepare monthly reports and submit to the Project Director. Identify waste management opportunities and support those identified by others. Communicate the requirements of the SpMSP and ensure these are addressed. Ensure subcontractor documentation captures the requirements of the SpMSP. Conduct audits and inspections of the site. Participate in Principal-led site audits. Attend toolbox meetings and inductions where required. Ensure that waste management defects are identified, actioned and closed out. Lead by example and promote sustainable spoil and waste management practices.

6 IMPLEMENTATION

6.1 Estimated Spoil Generation

Delta's package of works includes sections of excavation, which is required during service diversion works, the removal of asbestos impacted soil at Westmead (Phase C1) and archaeological investigation works (Phase C2). Delta will implement the management of spoil as outlined in the Spoil Management Sub Plan.

The estimated amounts of spoil generation during Phase C1 and Phase C2 works are provided in **Table 5** below.

Table 5 Estimated Amounts of Materials per Site

Site	Estimated Spoil (T)	Estimated for Disposal (T)	Estimated for Onsite Reuse* (T)
Parramatta	20,000	20,000	
Clyde	7,000		7,000
Westmead	3000	3000	0
TOTAL	30,000	23,000	7,000

* Subject to meeting reuse criteria as detailed in Section 6.3 below.

6.2 Spoil Management Decision Framework

Spoil would be managed in accordance with decision framework described in the Sydney Metro West – Waste Classification Procedure (SM-20-00040677). In simple terms the preferred spoil management hierarchy from most preferred to least preferred is as follows:

- Spoil is reused within the project boundary.
- Spoil is beneficially reused at an appropriate offsite location.
- Spoil is recycled at an offsite licenced facility.
- Spoil is disposed to landfill or at a licensed waste facility.

SM-20-00040677, which is appended to the WMSP, provides guidance on how to achieve this spoil management hierarchy. This guidance has been summarised in the sections below.

6.3 Reuse, recycling and disposal criteria

Spoil that is classified as virgin excavated natural material, or excavated natural material, subject to a resource recovery order/resource recovery exemption under the Protection of the Environment Operations (Waste) Regulation 2014 or is otherwise reusable would be reused following a set of criteria for reuse, recycling and disposal of material as provided in **Table 6** below.

Table 6 Reuse, recycling and disposal criteria

Option	Criteria
Reuse on Sydney Metro West sites	<ul style="list-style-type: none"> The material is suitable for the final land use at the placement location in accordance with guidelines made or approved under the Contaminated Land Management Act 1997 and would not cause pollution under the Protection of the Environment Operations Act 1997 The material meets engineering requirements for the placement location.
Reuse off-site	<ul style="list-style-type: none"> The material meets Virgin Excavated Natural Material (VENM) or Excavated Natural Material (ENM) definition Suitable off-site reuse locations have been identified and have necessary approvals to receive the material.
	<ul style="list-style-type: none"> The material does not meet VENM or ENM definition but has potential for reuse and a Resource Recovery Exemption/Resource Recovery Order has been granted Suitable off-site reuse locations have been identified and have necessary approvals to receive the material.
Recycling off-site	<ul style="list-style-type: none"> The material has value for recycling Suitable off-site reuse locations have been identified and have necessary approvals to receive the material.
Disposal off-site	<ul style="list-style-type: none"> The material is classified as General Solid Waste, Restricted Solid Waste, Special Waste or Hazardous Waste Suitable off-site reuse locations have been identified and have necessary approvals to receive the material.

6.3.1 Spoil Management Hierarchy

The strategy for management of spoil material suitable for reuse from Delta's works shall be guided by the hierarchy in **Table 7** below and the opportunities listed in **Table 8**.

It should be noted that beneficial reuse of spoil described in this document is considered to be any approved or appropriate offsite and onsite reuse.

Table 7: Spoil reuse hierarchy

Priority	Reuse options	Possible reuse options	Potential for option to be used at SMW works
1	Within the Stage 1 footprint	<ul style="list-style-type: none"> Reuse spoil for landscaping, structural fill, general fill, fill embankments and mounds within a short haulage distance of the source Reuse spoil to restore any pre-existing contaminated sites within the Stage 1 construction footprint Reuse spoil as a feed product in construction materials. 	<p>Clyde</p> <ul style="list-style-type: none"> Material will be stockpiled within the Stage 1 footprint where it meets the site reuse criteria. <p>Parramatta</p> <ul style="list-style-type: none"> Not likely to be reused within the Stage 1 footprint.
2	Environmental projects (outside of the Stage 1 footprint)	<ul style="list-style-type: none"> Reuse spoil for coastal protection, such as beach nourishment and land raising Reuse spoil in flood mitigation projects. 	<p>Clyde & Parramatta</p> <ul style="list-style-type: none"> Not likely to be reused for environmental projects.

Priority	Reuse options	Possible reuse options	Potential for option to be used at SMW works
3	Other development projects (including other Sydney Metro projects)	<ul style="list-style-type: none"> Reuse spoil for landscaping, structural fill, general fill, fill embankments and mounds on projects within a financially feasible transport distance of the site Reuse spoil for land reclamation or remediation projects Reuse sand for manufacturing concrete and shale for manufacturing bricks and tiles. 	Parramatta <ul style="list-style-type: none"> Where materials meet the relevant criteria and there is a valid approval in place may be used on other development projects, for land restoration, landfill management, and/or CT1 Soils.
4	Land restoration	<ul style="list-style-type: none"> Reuse 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"> Reuse spoil to cap completed landfill cells Reuse spoil in daily covering of landfill waste. 	
6	CT1 Soils (GSWr)	<ul style="list-style-type: none"> Provided for potential reuse options via CT1 soils at a facility licensed to receive the material. 	

Note: Where material does not meet the relevant criteria it will be disposed of to an appropriately licensed facility.

Table 8: Spoil characteristics and potential reuse opportunities

Spoil characteristic	Potential reuse opportunities for priority 1, 2 and/or 3 spoil management options
Clean granular fill	Structural fill
Excavated moist clay and clayey sand material	General fill (following moisture conditioning)
Excavated weathered shale and sandstone	Structural fill (following moisture conditioning to reduce reactivity for shale)
Medium strength or better-quality shale	Non-reactive fill
Medium to high strength sandstone	Structural fill
Wet clay and wet shale spoil	Unlikely to be suitable for reuse without substantial moisture conditioning
Contaminated soils	General fill for priority 1 (in accordance with guidelines made or approved under the Contaminated Land Management Act and would not cause pollution under the Protection of the Environment Operations Act 1997) General fill for priority 2 (subject to a resource recovery order and/or exemption under the Protection of the Environment (Waste) Regulation 2014)

6.3.2 On-site Spoil Handling and Storage

Spoil generated on site will be segregated by potential archaeological investigation requirements and/or by waste classification. In general, the spoil associated with the archaeological investigations will be divided into low potential archaeological material (i.e., surface, and modern fill layers), and higher potential archaeological material (i.e., historic fill, and natural/archaeological layers). These layers of potential archaeological material will be defined by the archaeological supervisors as the works progress, with direction provided to Delta operators whilst the investigation is occurring. Once the material is no longer required by the archaeologists it will be segregated by waste classification type or by fill type for waste classification.

Where spoil generated by the Project are required to be handled and stored on-site prior off-site reuse, recycling, or disposal the following control measures will be applied (see also Spoil Management Environmental Control Maps found in **Appendix A**):

- Spoil:
 - Where there is a valid waste classification and no requirement to stockpile, spoil will be loaded directly into trucks for disposal to an appropriately licensed facility;
 - Where material requires stockpiling on-site, it will be managed within sign posted allocated stockpile “bays”, within segregated waste classifications prior to load-out to an appropriately licensed facility; and
 - Directly loaded out material and stockpiles will be managed using appropriate dust controls and surface water measures.
 - Long term stockpiles will have:
 - Perimeter sediment controls (e.g. sandbags)
 - Finished level scraped and compacted
 - Final stockpile height to be progressively covered with geofabric or equivalent
 - Short term stockpiles (contaminated/ASS/PASS material) will have:
 - Perimeter to be self-contained to minimise run-off
 - Stockpiles to be covered with builders plastic or equivalent daily
 - Run-off water to be collected and managed
 - Stockpiles to be maintained below 4m in height
 - Material to be removed from site as soon as practical (in accordance with the Waste Management Sub Plan)
 - See additional controls for ASS/PASS below
- Acid Sulfate Soils (ASS):
 - Where ASS or Potential ASS has been identified it will be segregated and stockpiled within appropriately bunded areas prior to onsite treatment before being transported off-site;
 - Alternatively PASS/ASS may be loaded directly on a truck for treatment and/or disposal offsite; and
 - Directly loaded out material and stockpiles will be managed using appropriate dust controls and surface water measures.
- Asbestos Impacted Stockpiles:
 - Perimeter to be self-contained to minimise run-off
 - Stockpiles to be covered with builders plastic or equivalent daily
 - Stockpiles to be maintained below 4m in height
 - Material to be removed from site as soon as practical (in accordance with the Waste Management Sub Plan)

6.4 Waste Classification of Spoil

Where spoil is to be removed from site it will be classified in accordance with the Waste Classification Guidelines: Part 1 Classifying Waste (EPA 2014) (the Guidelines). Further details on the waste classification and management of waste is described in the WMSP.

6.5 Spoil Transport and Haulage

Spoil will be transported by registered road trucks. Construction site access, vehicle loading, traffic staging plans, traffic generation and haulage routes are detailed in the relevant Heavy Vehicle Local Road Report (Parramatta and Clyde) and have been selected on the basis that trucks are to utilise State and Regional Roads first before travelling on Local Roads. The selected routes aim to minimise impacts to sensitive receivers, the travelling public, and the local community whilst meeting compliance with road traffic rules in relation to vehicle length and weight limits.

Tracking and dust from spoil transportation activities would be managed in accordance with the CEMP.

Delta will use the QuickTrans waste tracking system as outlined in the WMSP. This system will document all spoil leaving site in terms of when, truck registration, characterisation and location of disposal.

The locations of all Heavy Vehicles used for spoil haulage will be monitored in real time and the records of monitoring be made available electronically to the Planning Secretary and the EPA upon request for a period of no less than one (1) year following the completion of construction.

All Heavy Vehicles used for spoil haulage will be clearly marked on the sides and rear with the project name and application number to enable immediate identification by a person viewing the Heavy Vehicle standing 20 metres away.

Due to the limited nature of spoil generation and limited opportunities for alternative transport options, spoil transport by road was considered the only feasible option for the works due to its location directly adjacent to the existing road network.

6.6 Spoil Disposal

Where spoil is removed from site it will be sent to an appropriately licensed facility for disposal or reuse (as appropriate), or to a site with an appropriate planning approval in place to accept VENM/ENM. An indicative list of proposed facilities for spoil offsite disposal/reuse are summarised in Table 9 below (noting that they are subject to change based on availability throughout the project). VENM/ENM locations will be nominated closer to the time of spoil removal based on suitable available sites. A completed 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 will be prepared prior to removal of spoil from site (see example of register in Table 10 below).

The Delta QuickTrans tracking system will be used to collate the final disposal locations and quantities of material disposed.

Table 9: Summary of spoil disposal facilities

Facility	EPL No.	Licensed to Accept
Elizabeth Drive Landfill Facility (Suez)	4068	<ul style="list-style-type: none"> GSW (non-putrescible) Asbestos Waste Restricted Solid Waste
Bingo Eastern Creek Landfill (Genesis)	13426	<ul style="list-style-type: none"> GSW (non-putrescible) GSW (non-putrescible) – Treated ASS/PASS Asbestos Waste
Cleanaway Co Pty Ltd	20271	<ul style="list-style-type: none"> Hazardous Solid Waste Acid Sulfate Soils & Potential Acid Sulfate Soils Asbestos

Table 10: Example reuse register

Site/Project Name	Location	Capacity	Site Owner	Spoil Reuse Hierarchy Tier

6.7 Training

Toolbox training will be provided weekly, in accordance with Delta’s IMS, and will address spoil management when the need arises, such as where existing procedures are not followed, new procedures are to be introduced, or where new hazards or opportunities are identified.

6.8 Record Keeping

Delta will retain compliance records in relation to spoil and waste management including records of inspections and waste dockets for all spoil removed from the site. Records will be made available in a timely manner to the Principal (or their representative) as required in the Contract.

Delta will meet the Principal’s reporting requirements by maintaining appropriate records of:

- Site inspections, audits, monitoring, reviews or remedial actions;
- Documentation as required by performance conditions, approvals, licences, and legislation;
- Modifications to site environmental documentation; and
- Other records as required by this Plan and the WMSP.

Waste records will be retained by Delta for the duration of works, and thereafter for a period of at least seven (7) years following completion of the Project.

7 MONITORING AND INSPECTIONS

7.1 Spoil Inspections

Delta will carry out surveillance of environmental measures, including waste management measures, in accordance with Delta IMS Procedure 24 Inspection, Monitoring and Measurement. Daily Pre-Starts will be carried out by the Site Manager and recorded on Safety and Environmental Form SEF 047 Site Diary - Daily Pre-Start.

Regular site inspections will be carried out by the Site Manager and recorded on SEF 049 Site Inspection Report. Site inspections cover the whole of the works, including the site perimeter, and include checking on the waste storage facilities on site as well as assessing progress, risk and opportunities, and quality, safety, and environmental aspects of the Project.

Periodic inspections by Delta’s Environmental and Sustainability Manager (or delegate) will be carried out to verify the adequacy of all environmental measures. This will be documented in SEF 049 Site Inspection Report.

A timetable of site inspections is provided in Table 11 below.

Table 11: Site Inspection Timetable

Inspection	Frequency	Content
Daily Pre-start	Daily	Safety, environment, quality
Site Inspection	Weekly	Safety, environment
Environmental Inspection	Weekly	Environment

7.2 Audits

Delta carries out routine safety, environmental, and quality audits of all of its projects. Spoil management will be incorporated into these in accordance with Delta’s IMS Procedure AUD 005 Audit Environmental and as a component of this SpMSP.

Where Delta performs compliance audits of its systems and procedures, the Principal will be invited to participate in the audit planning and oversee conduct of the audit. Delta will later provide a copy of the audit report to the Principal.

Where sub-contractors are employed to deliver aspects of the Project, Delta will require that its audit and surveillance requirements be maintained by the sub-contractor, and that the evidence be provided that the sub-contractor’s activities are being effectively overseen. If requested by the Principal, Delta will provide evidence of the effective implementation of management systems and procedures by its sub-contractors.

Delta’s management plans, systems, and processes will be subject to audit and surveillance by the Principal to gain assurance that Delta has established effective management systems and processes to meet the requirements of the Contract. The Principal may utilise its own auditors and surveillance officers to perform these activities, supported by subject matter experts where relevant.

Delta will be cooperative in assisting the Principal’s auditors and surveillance officers in undertaking their duties. This will include providing safe access to sites, systems and documentation, providing facilities to perform audits and surveillance, and the participation of Delta and Subcontractor representatives as required.

A timetable of site audits is provided in Table 12.

Table 12: Site Audit Timetable

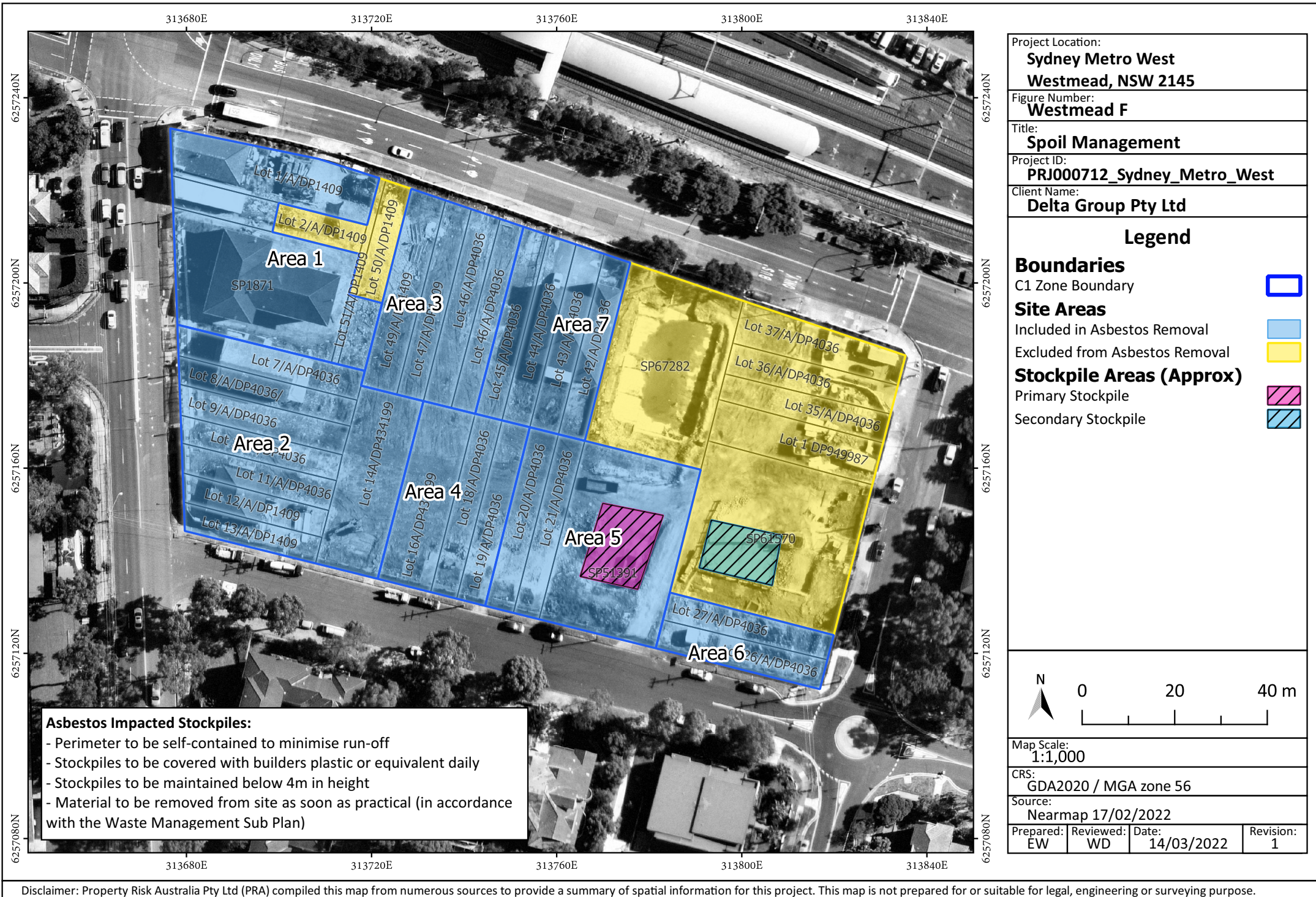
Inspection	Frequency	Content
Internal HSEQ Audit	Monthly	Safety, environment (including waste), quality
Internal Project Audit	Monthly	Project objectives Project specific management plans and procedures (including SpMSP)
Principal’s Audit	6 Monthly	Project management plans, systems, and processes

8 REPORTING

8.1 Monthly Report

Delta will prepare and submit a Monthly Progress Report which meets Sydney Metro West General Specification. The Progress Report will include a specific “Environmental Management” section which will include data on spoil management and will be submitted to the Principal’s Representative for review in accordance with the Contract.

APPENDIX A ENVIRONMENTAL CONTROL MAPS – SPOIL MANAGEMENT



Project Location:
Sydney Metro West
Westmead, NSW 2145

Figure Number:
Westmead F

Title:
Spoil Management

Project ID:
PRJ000712_Sydney_Metro_West

Client Name:
Delta Group Pty Ltd

Legend

Boundaries
 C1 Zone Boundary

Site Areas
 Included in Asbestos Removal
 Excluded from Asbestos Removal

Stockpile Areas (Approx)
 Primary Stockpile
 Secondary Stockpile



Asbestos Impacted Stockpiles:

- Perimeter to be self-contained to minimise run-off
- Stockpiles to be covered with builders plastic or equivalent daily
- Stockpiles to be maintained below 4m in height
- Material to be removed from site as soon as practical (in accordance with the Waste Management Sub Plan)

Map Scale:
1:1,000

CRS:
GDA2020 / MGA zone 56

Source:
Nearmap 17/02/2022

Prepared: EW	Reviewed: WD	Date: 14/03/2022	Revision: 1
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APPENDIX B ENVIRONMENTAL REPRESENTATIVE ENDORSEMENT

24 January 2022

██████████
Director Sustainability, Environment
& Planning
Metro West
Sydney Metro
Transport for NSW
PO Box K659
HAYMARKET NSW 1240

REF: SMSP REV2

Dear ██████████

RE: Sydney Metro Parramatta, Clyde and Westmead Enabling works: Spoil Management Sub Plan (SpMSP Rev2)

I refer to Sydney Metro's (SM) submission of the following revised document required by Condition C1 of the Sydney Metro West Infrastructure Approval (SSI 10038) which was approved by the Department of Planning, Industry and Environment (DPIE) on 11 March 2021:

- Sydney Metro West, Delta Group Spoil Management Sub Plan (SpMSP Rev 2, 17 January 2022).

It is noted that:

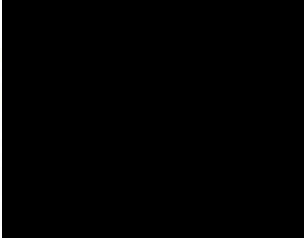
- The SpMSP has been developed by Delta for its demolition works (Phase C1) and Archaeological test excavation and related investigations (Phase C2) to meet the specific requirements of the Construction Environment Management Framework (CEMF), and address specific spoil management requirements of the Infrastructure Approval as these relate to works at Parramatta, Clyde and Westmead work sites.
- Previous versions of the document have been reviewed and updated following comments from the ER.
- Sydney Metro has also reviewed and commented on the document.

Following the above reviews, the document is considered to contain information required by the Conditions of Approval (SSI 10038) in relation to the CEMP (Condition C1).

Noting the above, as the approved Environmental Representative for the Metro West and as required by Conditions A30(d) and C8, the Spoil Management Sub Plan (SpMSP Rev 2) is endorsed.

The endorsement is conditional up Delta obtaining and complying with any relevant approval, licence or permit required for the works; complying with relevant Conditions of Approval as they relate to the works; and appropriate notifications being issued prior to the works.

Yours sincerely



Environmental Representative – Sydney Metro West

CC: [Redacted]